

# Atlantic States Marine Fisheries Commission

## American Eel Management Board

May 1, 2024  
3:00 – 5:00 p.m.

### 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 (*K. Kuhn*) 3:00 p.m.
2. Board Consent 3:00 p.m.
  - Approval of Agenda
  - Approval of Proceedings from January 2024
3. Public Comment 3:05 p.m.
4. Consider Addendum VI on Maine Glass Eel Quota for Final Approval 3:15 p.m.  
**Final Action**
  - Review Options and Public Comment Summary (*C. Starks*)
  - Advisory Panel Report (*M. Feigenbaum*)
  - Consider Approval of Addendum VI
5. Consider Addendum VII on Yellow Eel Coastwide Cap and Monitoring for Final Approval **Final Action** 4:00 p.m.
  - Review Options and Public Comment Summary (*C. Starks*)
  - Advisory Panel Report (*M. Feigenbaum*)
  - Consider Approval of Addendum VII
6. Elect Vice-Chair **Action** 4:55 p.m.
7. Other Business/Adjourn 5:00 p.m.

The meeting will be held at The Westin Crystal City, 1800 Richmond Highway, Arlington, VA; 703.486.1111, and via webinar; click [here](#) for details.

# MEETING OVERVIEW

## American Eel Management Board

May 1, 2024

3:00 – 5:00 p.m.

Chair: Kris Kuhn (PA) Assumed Chairmanship: 10/23	Technical Committee Chair: Danielle Carty (SC)	Law Enforcement Committee Rep: Rob Beal (ME)
Vice Chair: Vacant	Advisory Panel Chair: Grant Moore (MA)	Previous Board Meeting: January 23, 2024
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, PRFC, VA, NC, SC, GA, FL, DC, NMFS, USFWS (19 votes)		

### 2. Board Consent

- Approval of Agenda
- Approval of Proceedings from January 2024

**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 Addendum VI on Maine Glass Eel Quota for Final Approval (3:15-4:00 p.m.) Final Action

#### Background

- In August 2023, the Board initiated Draft Addendum VI to address the quota for Maine’s glass eel fishery for the 2025 fishing year and beyond. The current quota expires at the end of 2024.
- Draft Addendum VI for Public Comment was approved in January 2024. A public hearing was held in February (**Supplemental Materials**).
- Draft Addendum VI considers options for Maine’s commercial glass eel quota level and duration (**Briefing Materials**).

#### Presentations

- Overview of Addendum VI options and public comment summary by C. Starks
- Advisory Panel Report by M. Feigenbaum

#### Board actions for consideration at this meeting

- Select management options and implementation dates
- Final approval of Addendum VI

**5. Consider Addendum VII on Yellow Eel Coastwide Cap and Monitoring for Final Approval (4:00-4:55 p.m.) Final Action**

**Background**

- In August 2023, the Board initiated Draft Addendum VII to consider changes to the coastwide cap for yellow eel harvest in response to the stock assessment findings that the American eel stock is depleted to historically low levels, and recommendation to reduce yellow eel fishing mortality.
- Draft Addendum VII for Public Comment was approved in January 2024. Public hearings were held in February and March (**Supplemental Materials**).
- Draft Addendum VII considers options for the yellow eel coastwide harvest cap, monitoring requirements, and evaluation of *de minimis* status (**Briefing Materials**).

**Presentations**

- Overview of Addendum VII options and public comment summary by C. Starks
- Advisory Panel Report by M. Feigenbaum

**Board actions for consideration at this meeting**

- Select management options and implementation dates
- Final approval of Addendum VII

**6. Elect Vice Chair (4:55-5:00 p.m.) Action**

**Background**

- The vice chair seat is empty since Kris Kuhn (PA) has assumed the role of chair.

**Board actions for consideration at this meeting**

- Elect Vice Chair

**7. Other Business/Adjourn (5:00 p.m.)**

**DRAFT PROCEEDINGS OF THE  
ATLANTIC STATES MARINE FISHERIES COMMISSION  
AMERICAN EEL MANAGEMENT BOARD**

**The Westin Crystal City  
Arlington, Virginia  
Hybrid Meeting**

**January 23, 2024**

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

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## INDEX OF MOTIONS

1. **Approval of Agenda** by consent (Page 1).
2. **Approval of Proceedings of October 19, 2023** by consent (Page 1).
3. **Move to remove in Section 3.1, Option 2: Reduce Maine’s glass eel quota by 21.8%** (Page 5). Motion by Megan Ware; second by Eric Reid. Motion passes (14 in favor, 3 opposed, 2 abstentions) (Page 7).
4. **Move to approve Draft Addendum VI for public comment, as modified today** (Page 7). Motion by Megan Ware; second by Cheri Patterson. Motion passes by consent (Page 7).
5. **Move to remove Sections 3.1 and 3.2 from the draft addendum VII and postpone further action on the coastwide cap options until coastwide landings reach 600,000 lb. in a given year** (Page 14). Motion by John Clark; second by Russel Dize. Motion fails (1 in favor, 18 opposed) (Page 16).
6. **Motion to remove Section 3.1, option 2** (Page 16). Motion by John Clark; second by Megan Ware. Motion fails (8 in favor, 11 opposed) (Page 16).
7. **Move to approve Draft Addendum VII for public comment, as modified today** (Page 16). Motion by Cheri Patterson; second by Shanna Madsen. Motion passes by consent (Page 16).
8. **Move to approve the American Eel FMP Review for the 2022 fishing year, state compliance reports, and *de minimis* status for New Hampshire, Massachusetts, Pennsylvania, D.C., and Georgia** (Page 18). Motion by Ingrid Braun; second by Lynn Fegley. Motion passes by consent (Page 18).
9. **Move to approve Sara Rademaker and Timothy LaRochelle to the American Eel Advisory Panel** (Page 19). Motion by Megan Ware; second by Dan McKiernan. Motion passes by consent (Page 19).
10. **Move to adjourn** by consent (Page 19).

**ATTENDANCE TO BE FILLED ON A LATER DATE**

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The American Eel Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia, via hybrid meeting, in-person and webinar; Tuesday, January 23, 2024, and was called to order at 4:30 p.m. by Chair Kristopher M. Kuhn.

### **CALL TO ORDER**

CHAIR KRISTOPHER M. KUHN: Good afternoon, everyone. Welcome to the Atlantic States Marine Fisheries Commission American Eel Board. I would like to call this meeting to order. I'm Kris Kuhn; I'm the Administrative Proxy for Pennsylvania, and today I'm going to begin Chairmanship of the American Eel Management Board, so please bear with me as I transition into this new role.

I want to thank Phil Edwards for his service and leadership in this capacity previously. We currently do not have a Vice-Chair for this Board, but when the time comes to seek a nomination, please let us know if you're interested. Our Technical Committee Chair is Danielle Carty from South Carolina. Advisory Panel Chair is Mari-Beth Delucia with the Nature Conservancy, and our Law Enforcement Representative is Rob Beal from Maine. I am joined at the front table here by Caitlin Starks and Dr. Kristen Anstead.

### **APPROVAL OF AGENDA**

CHAIR KUHN: We'll go ahead and get started with today's meeting, and the first order of business is Approval of the Agenda. Are there any proposed modifications to the agenda? Seeing none in the room, are there any hands online? Okay, seeing none; the agenda is approved by consent.

### **APPROVAL OF PROCEEDINGS**

CHAIR KUHN: Next, we'll move on to the approval of the proceedings from the October, 2023 Board meeting. Are there any edits to the proceedings from October, 2023? All right, seeing none again, the proceedings from 2023 are approved by consent.

### **PUBLIC COMMENT**

CHAIR KUHN: Next up is public comment. Are there

any public comments pertaining to items that are not on today's agenda? Again, items not on today's agenda. Yes, Sara Rademaker.

MS. SARA RADEMAKER: Good afternoon. I thank you for the opportunity to speak. I just wanted to quickly introduce myself. My name is Sara Rademaker; I am the owner of American Unagi, the aquaculture farm that is up in Maine. I just wanted to share a couple of quick updates on the farm in Maine.

Ten years ago, I started with this idea to grow eels in Maine, and now we have the largest eel aquaculture farm in North America, and it is being watched globally. I've had a lot of reach out to people around the world who are very encouraged to see what we've doing in the U.S. Much of the success of this business has been because of the aquaculture quota that was approved back in 2018 by the Atlantic States. From that we've been able to build out this operation year over year, and now we can take 500 pounds of glass eels and grow them out to 500,000 pounds of adult yellow eels.

That is only 5 percent of the U.S. market right now, so we're still importing around 11 million pounds of product from China. There is a lot of opportunity up in Maine with our success to build more aquaculture facilities. I just wanted to thank the Atlantic States for the continued support and approval of our aquaculture quota, and also invite any of you who are interested to come see our facility up in Maine, to please reach out. Thank you.

CHAIR KUHN: Thank you, and I'll remind myself, because I didn't have it down when I said thank you, but I'll just remind Commissioners and others when making comments, to move their microphones down so we can hear you.

### **CONSIDER APPROVAL OF DRAFT ADDENDUM VI ON MAINE'S GLASS EEL QUOTA FOR PUBLIC COMMENT**

CHAIR KUHN: Moving on to Item Number 4 on the agenda, which is to Consider the Approval of

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Addendum VI on Maine’s Glass Eel Quota for Public Comment.

This is an action item, and we have two primary considerations to decide upon today, based on Board motions from 2023, August of 2023, and those are options for Maine’s glass eel quota and then the timeframe for Maine’s glass eel quota. Caitlin Starks is going to start us off with a presentation, and following that we’ll take questions on the presentation. Caitlin.

MS. CAITLIN STARKS: In my presentation I’m going to start off with a timeline for the development of this addendum, the problem statement and background, and then cover the proposed management options and end with next steps. Draft Addendum VI was initiated in August, 2023, when the Board moved to initiate an addendum to address the Maine glass eel quota.

Following that meeting the Plan Development Team or PDT developed the draft addendum document for public comment, and today the Board will consider approving the document for public comment. If it is approved, we would have the public comment period and hearings in February, and the Board would be able to consider this action for final action in May.

That would allow enough time for the implementation of the measures before January, 2025. The statement of the problem and reason for this addendum is that Maine’s commercial glass eel quota needs to be established for 2025 and beyond. That quota was set for 2015 through 2017 at 9,688 pounds by Addendum IV, and then Addendum V maintained that quota, which has been extended via Board action through 2024.

However, fishing beyond 2024 requires an addendum, so Draft Addendum VI is addressing this issue by considering implementation of a Maine glass eel commercial quota for 2025 and beyond. Since 2015, when the quota was implemented, Maine’s annual glass eel landings have remained below that quota.

The fishery is monitored using a swipe card program to track individual fishing quotas daily, and track glass eel catch with associated weights from dealer purchase to export. As a condition of the glass eel fishery, Maine also conducts life-cycle monitoring. They’ve conducted the young of year eel survey since 2001, and the yellow eel/silver eel survey since 2018. In those young of year data there has been a linear increasing trend. For the glass eel elver catch per unit effort for the fishery, that has also been calculated since 2016. For some visuals, this is the annual Maine glass eel landings shown by the columns and the ex-vessel value shown by the black line.

Then on the next slide here it’s the Maine glass eel young of year survey results for each year with catch on the Y axis and the linear trend shown by the dashed line. Then this graph compares the young of year survey results with the harvester CPUE. The top line is the CPUE, and the bottom is the YOY survey catch.

The trend in these two datasets have tracked each other pretty closely for the available time period. I’ll move into the proposed management options. For quota levels the PDT developed two options, and Option 1 is status quo, which would be 9,688 pounds. Then Option 2 is to reduce the Maine quota by 21.8 percent. That 21.8 percent is derived from the yellow eel draft addendum, which we’ll talk about later, and it’s equivalent to the smallest percent reduction that is being considered for yellow eels in their coastwide cap.

Option 2 would result in an annual quota of 7,576 pounds. The rationale for this option was responding to the stock assessment results, which indicate the stock’s depleted status, and they chose to go with the smallest reduction for yellow eel, as this percent reduction for glass eel, given glass eel experience a higher natural mortality rate than yellow eel, and are therefore thought to have a lower relative impact to the coastwide population than yellow eel harvest does.

The second set of options in Section 3.2 are regarding the duration of the quota that is

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established at final action. Option 1 would be no sunset, meaning the quota would remain the same indefinitely, unless it's changed through another addendum or amendment. Option 2 is a three-year duration, after which the Board would have to initiate a new addendum to establish Maine's glass eel quota for 2028 and beyond.

Then Option 3 is a three-year duration, where after that period the Board could extend the quota indefinitely via Board action. If a change to the quota is desired under Option 3, then a new addendum would be needed. As I mentioned at the outset, after the Board considers this draft addendum for approval for public comment.

If we have approval, the public hearings and comments could occur this February, and the Board would be able to consider those comments and the draft addendum for final approval at the spring Commission meeting, and that Maine would be able to implement the quota for 2025. With that the Board action for consideration today are whether the Board wants to make any modifications to the draft addendum before it goes out for comments, and then to consider approval of the draft addendum for public comment. I can take any questions.

CHAIR KUHN: Any questions for Caitlin? Shanna Madsen.

MS. SHANNA MADSEN: I actually have a couple of questions. I'm going to start off with the quota questions, and then I also have a couple of questions about the timeframe, so just cut me off if I'm going too long. My first question in regards to the quota is, I was a little bit confused in seeing Option 2, a reduction. I think I was confused, because I guess my question is, didn't the assessment say that the abundance of yellow eel is what is driving the depletion of the stock currently?

MS. STARKS: I'm not sure it said what is driving it, but it's where the assessment is noting a decline in relative abundance.

MS. MADSEN: Okay, and then secondarily, I guess I was also surprised, because I was reading some of

the memos, the previous memos from the yellow eel PDT, which actually recommended that like an option essentially, of trying to pursue some sort of switch from yellow eel fishing to glass eel fishing, because of the mortality rates on glass eels are so much higher natural mortality. Was I also correct in that? Was that a recommendation as well of the other PDT?

MS. STARKS: The other PDT did discuss that, and ultimately decided not to put forward any options related to that idea.

MS. MADSEN: Oh, one more. I forgot about my timeframe question. I was a little confused on the timeframe question for Option 3 that you had up there. I think for Option 3 you said that the Board can extend the quota indefinitely. But the way that I read this was that the Board can extend a quota for up to three years at a time.

Then the way that I read this is sort of like a spec-setting process, where after those three years we would come back and determine whether or not we wanted to continue with that quota, based off of some data that the TC would be providing us, I'm guessing. It just seemed like what was on the screen was different than what I was at least interpreting Option 3 in the document to say. I just wanted to kind of get clarification on that.

MS. STARKS: Yes, thanks for that question. It does say in the Addendum draft that this would allow the Board to extend the quota for up to three years at a time, until the provision is modified by another addendum or amendment. I think it would be up to the Board to ask for the Technical Committee to provide some kind of update for them to consider when they are considering extending the quota.

MS. MADSEN: Okay, so Option 3 isn't an indefinite extension of quota, it's just every three years. The other question I had is, I was reading through the PDTs recommendations on these timings, and it seemed like they wanted to go with Option 2, because they felt like it was important for us to review the quota every three years in some time frame.

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If we would like to make a motion to essentially clarify in Option 3 that we would come back after those three years, and make some considerations before we move forward with extending the quota for another three years, or changing the quota, whatever that ends up looking like. I feel like that would sort of get to their concerns with Option 3, and I would be happy to add something along those lines whenever it is appropriate.

CHAIR KUHN: Okay, we have another question, Lynn Fegley.

MS. LYNN FEGLEY: I just want to start by saying that I have no problem with this going out for public comment. But I'm really struggling to put all the pieces together with eels, I admit it. I wanted to ask a question about the paper that was brought to our attention by Shiraishi and Kaifu entitled An Early Warning of an Upsurge in International Trade in the American Eel.

That seems to say that they are concerned about the impacts of large amounts of glass eels being sent over, being imported into Asia, potentially having an impact on the range-wide population. The TC is clear that this shouldn't affect our decision on the glass eel quota, but I'm really trying, I understand the point about the mortality being very high on glass eel, so that is where the mortality should be focused.

But then we have people saying that maybe the glass eel fishery, the glass eel catch could be a negative impact on the coastwide or the global range of the animal. Which is it? I mean glass eels become yellow eels, become silver eels, produce baby eels. I'm really trying to understand, just in order to answer cogently to people who ask me, should we worry or not about the increasing harvest of the young eels globally?

DR. KRISTEN ANSTEAD: I'll take that one. The TC did bring this paper up for discussion, and it was mostly just kind of to flag it that there seems to be evidence that there has been a lot of export of glass eels. Now, you might have noticed in the paper the exports being attributed to the U.S. is higher than our current quota, and that is because the way that the exporting

works sometimes, we get exports from like the Caribbean, and then they get attributed to the U.S.

Out of eel moving through the U.S. that then get attributed to us. I just want to be clear that there is no concern that we're exporting like a weekly harvest of U.S. eel. Second, I think that there was a concern that a huge increase in glass eels from the Caribbean could potentially affect the stock range wide.

That is something to consider, because there is always this opportunity on the table to do a range-wide assessment, and events like this would support a movement to considering this on a larger scale. But it's true that the mortality on glass eels isn't as concerning as it is on the yellow eel stage. But certainly, if the data in that paper are true, it's something we should consider when we're talking about the future of eel.

CHAIR KUHN: Thank you for that question and response, appreciate it. Are there any hands online? Okay, if there are no more questions on the presentation, let's open it up to discussion around the table before we move on to any motions. Is there any discussion? Megan Ware.

MS. MEGAN WARE: I had two suggested modifications to the intro of the document. I don't think those would require a motion, and then I had sent a motion to staff. But I'll start with the two suggestions. The first is on Page 5, Section 2.4, status of the stock. That first paragraph talks about the assessment and the recommendation for the reduction in the yellow eel fishery.

Given this addendum is on the glass eel fishery, I think a pretty logical question from the public will be, what was the recommendation coming out of the assessment for glass eels. My understanding is there no recommendation for reduction in F, so I would ask that that be added to that paragraph. Then on that same page, the next paragraph, it talks about the MARS models that were used. I'll just use the YOY sentence as an example. But the Addendum said a declining trend in coastwide YOY abundance was observed. I think when I went back to the

assessment report, the assessment is, I'll say a little more nuanced in this statement that it reads.

It says, there is a slightly declining trend, but that the confidence intervals overlap 0, which would indicate a stable population. I think there are kind of two different things you could take away from the Addendum versus the assessment. I would just ask that those get federal lined, maybe just take the sentence from the assessment and put that in there.

CHAIR KUHN: This change is acceptable?

MS. STARKS: Yes, I'm clear on those changes, so as long as that is the will of the Board, I can do that.

CHAIR KUHN: Yes, Shanna Madsen.

MS. MADSEN: I think I'm going to try and do the same thing that Megan did, not make a motion but just a recommendation. I think that if in Option 3 we clarified that we would come back to the table after those three years. Essentially, I think the types of information that I was anticipating the Board receiving, before deciding on either extending the quota or going into an addendum process, with essentially the information that you presented today, and was presented in this addendum.

I don't think I need to see an addendum in order to make that consideration. I think that the Board can look at this sort of information that they are doing now, and make that consideration then, without having to go through the whole addendum process for something as simple as dealing with quota.

CHAIR KUHN: Are there any objections to that change? Yes, we have a hand online, Eric Reid.

MR. ERIC REID: I have a question. Honestly, I'm not all that thrilled about the 20 something percent reduction in Option 2. But my question would be, what would be the impact on that to the Unagi set-aside. Let's call it the Unagi set-aside, because that is what happened. Will their 500 pounds become 400 pounds, or how does that work, or how would that work?

MS. STARKS: I'm not sure I have an answer to that question, Eric. But it looks like Bob or Toni does.

MS. TONI KERNS: Eric, if you're referring to the 200 pounds that we set aside for aquaculture, that would not be impacted. Are you referring to a different set-aside?

MR. REID: No, no, I thought Ms. Unagi herself said it was 500 pounds turned into something else. But if it was only 200, maybe I didn't hear her correctly. But I just was wondering if the overall quota goes down, does it affect the RSA? You're saying no. Thank you.  
MS. STARKS: I have a clarification to that point, I believe. American Unagi gets their 200-pound allocation from Maine through the aquaculture program in our FMP. Then they are also able to buy glass eels from the industry.

MR. REID: Okay, great, thank you.

CHAIR KUHN: Any other comments, questions around the table? Anyone at the point where there is time for a motion? Megan Ware.

MS. WARE: I am pretty concerned that there is an option in the document for a 21.8 percent reduction when there is no recommendation coming out of the assessment for a reduction in F. I don't see the statement problem in the addendum acknowledging a need for a reduction in F, and the economic impacts of this are pretty severe. I had sent a motion to staff. I'll read it into the record. I would appreciate a second for an opportunity on rationale.  
**Move to remove in Section 3.1, Option 2: Reduce Maine's glass eel quota by 21.8 percent.**

CHAIR KUHN: Thanks for that, do we have a second? Eric Reid seconds.

MS. WARE: I was able to listen in to both of the PDT meetings on this. I heard many PDTs members struggling to identify and justify a quota reduction. As the PDT memos note, there is no specific recommendation coming out of the assessment to reduce F in the glass eel fishery. Maine surveys are actually increasing, and I think this reflects a lot of

the efforts that the state has put into improved connectivity in the state.

The identification of any amount or percent reduction at this point is arbitrary. I understand that our next topic is considering the yellow eel fishery, and they are facing potential reductions in the catch cap. That said, I don't find that a compelling argument or justification for a 21.8 percent reduction in Maine's glass eel quota.

The assessment is very clear that harvesting glass eels has a lower impact on the population, given that high natural mortality rate. To quote the assessment here, "The glass eel fishery could withstand a greater amount of fishing mortality than the yellow eel fishery." The addition of fishing mortality to natural mortality at the glass eel stage has a much lower relative effect on total mortality compared to the addition of fishing mortality, natural mortality at the yellow eel stage. The economic impacts of this cannot be understood, based on 2022 numbers.

I estimate that this is about a four-million-dollar impact in just ex-vessel value to the state. This impacts not only those who are licensed with DMR, but also our tribal nations in Maine. By law they get a portion of our Maine glass eel quota. I am concerned that with this option in the document, Maine, which has no recommendation for a reduction whose surveys are increasing, is really facing the biggest socioeconomic hit here. I would ask that the Board take this option out ahead of public comment, thank you.

CHAIR KUHN: Eric Reid, as seconder, would you like to provide any additional rationale for the motion?

MR. REID: Ms. Ware covered it really well, but the socioeconomic impact is, you know these aren't 90 footers, glass eel fishing these are artisanal fishermen and tribal fishermen, and I think that there is really no basis for it in the problem statement. It's a regulatory housekeeping issue not a biological issue.

I just don't see Option 2 being anywhere near proper for this document. There are other options for

timing and et cetera, et cetera. But Option 2 doesn't belong in this document, it's not fair to the state of Maine, and it's not necessary to the biology of the eels themselves. Thank you.

CHAIR KUHN: Thank you, Eric, Bill Hyatt.

MR. WILLIAM HYATT: This isn't a substantive comment, but I just wonder if somebody from the Commission might speak to the history of sending out addendum with only a single option.

MS. KERNS: I think we've done it before. There is no regulations or information that say you can't. We've done it in the past, in this fishery maybe last time. We did maybe one other option the last time for glass eel. But we have done it in other fisheries.

CHAIR KUHN: We're starting behind schedule, but are there any members of the public that would like to make comment on this motion? Okay, seeing none; discussion on the motion. Adam Nowalsky.

MR. ADAM NOWALSKY: Given that we have an annual quota for Maine's commercial glass eel fishery in place already, without a finite end date for it. What would be the purpose of even continuing this addendum if we removed this option? I understand that there is a section here about the timelines here with the three years. But essentially, by taking this out it would seem that our message is, we intend to keep the Maine commercial glass eel quota status quo, period, and we would just bring forward another addendum. To what purpose does this even serve if we take this out?

MS. STARKS: If it is removed and the action is not approved, then Maine would not have a quota for 2025. That is kind of an alternative option to remaining status quo, if you will, with the quota number that they have now.

CHAIR KUHN: Any additional discussion? John Clark.

MR. JOHN CLARK: While I don't think there would be any reason to put this on Maine, this type of reduction. Keeping it in the addendum, I don't see there is any problem with that. Probably reduced

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the cognitive dissonance for people looking at this, especially yellow eel fishermen.

They are seeing some of these caps are like miniscule, and yet the message is that you can catch as many glass eels as you want. That doesn't have any impact on the yellow eel stock, which obviously, a lot of glass eels grow up into yellow eels. I don't see any problem with keeping it in there, I really don't think it's going to be something that will affect Maine. I doubt that will happen. But you know just in the sense of fairness, to have that in there, since yellow eels are possibly facing a cap cut. Then just to show the public that we're looking at the same type of options across the board for eels.

CHAIR KUHN: Shanna.

MS. MADSEN: I think this question is for Megan. Megan, could you maybe enlighten the Board on what a public hearing would look like if you're going out and saying that you are going to potentially reduce Maine's glass eel quota by 21 percent?

MS. WARE: Sure. I would expect a very lively public hearing. I would be requesting marine patrol at this hearing. I'm not trying to make light of the situation. This is not an insignificant option to be bringing out for public comment. I mean this is potentially catastrophic here for the fishery. If the Board is not serious about this option, I would ask that we remove it.

I think if the Board isn't serious, and the only reason to keep it in is to say, oh, we want a range or we want the yellow eel fishery to see that we're considering something else. I don't find that a strong enough justification for people to feel like their livelihoods are threatened.

CHAIR KUHN: Any additional discussion on this motion? Nothing online? Okay, I guess we're ready to call the question. Is there a need for a caucus? We'll go two minutes for caucus. Okay, two minutes is up. We'll go ahead and call the question. **All those in favor, please raise your hands. Okay, you can put your hands down. All opposed. Three opposed.**

**Any null votes? Abstentions? (NOAA Fisheries abstains). Motion passes, 14, 3, 0 to 2.**

Okay, so we still need to account for the timeframe, correct? The timeframe aspect of this. We'll go back to the table to discuss the options for the timeframe. Are there any modifications for the timeframe motion at this time? Is there anyone willing to make a motion regarding the timeframe options, just for the approval of the addendum, rather. Megan Ware.

MS. WARE: I would think it would be **move to approve Draft Addendum VI for public comment, as modified today.**

CHAIR KUHN: Seconded by Cheri Patterson. Okay, we'll try and do this the easy way. **Is there any opposition to the motion? Seeing none; motion passes by consent.**

**CONSIDER APPROVAL OF DRAFT ADDENDUM VII  
ON YELLOW EEL COASTWIDE CAP AND  
MONITORING REQUIREMENTS FOR PUBLIC  
COMMENT**

CHAIR KUHN: Okay, so we'll go ahead and move on to Item 5 in the agenda, which is to consider the approval of Draft Addendum VII on yellow eel coastwide cap and monitoring requirements for public comment. We have multiple considerations in this draft addendum. Caitlin Starks is again going to lead us into questions and discussion with the presentation, then we'll take questions on the presentation. Caitlin, the floor is yours.

MS. STARKS: At the start I'm just going to note that this is a much longer one, so please hang in there. In this presentation I'm going to start off with the timeline and background information on this addendum, including the problem statement, recent data and monitoring requirements relevant to the option, and then I'll go over the proposed management options, which address the yellow eel coastwide cap and management response to exceeding the cap, the young of year survey requirements and catch and effort reporting requirements. Then we'll talk about the next step. As a reminder, this addendum was also initiated in

August, 2023, after the Board reviewed the 2023 benchmark stock assessment. Then this fall the Plan Development Team drafted management options and put this document together. Now here we are in January, and today the Board will consider Draft Addendum VII for public comment.

Back in August, the Board approved the recent benchmark stock assessment for American eel for management use, and this assessment found that the American eel stock is depleted, and it recommended that yellow eel catch be reduced. In response to the stock assessment findings and recommendation, the Board initiated Draft Addendum VII to address coastwide catch of yellow eel, by using the recommended tool in the assessment called I-TARGET to recommend a range of catch cap.

This addendum addresses the poor stock condition of American eel, and the fact that the assessment has not been able to provide biologically-based reference points upon which to base management of yellow eel, and instead the current coastwide cap that we have is based on historical landings.

While the 2023 assessment still hasn't provided biological reference points, it did identify a trend-based tool that could be used to inform management, which is I-TARGET, and I-TARGET uses only the time series of coastwide landings and the fishery independent abundance indices to provide catch advice.

This graph is showing the yellow eel abundance index, which is the dotted gray line, and the coastwide landings, which is the black line, and this is showing you the decline in both the abundance index and landings over time. The Addendum also considers some options to change some monitoring requirements, based on recommendations from the Stock Assessment Subcommittee and Technical Committee.

The PDT taking these recommendations thought it was worthwhile to group these together with the yellow eel options in this addendum. First, the 2023 assessment indicated that the biological sampling

that is required is part of the state young of year surveys, specifically the individual length and pigment stage, that those could be made optional, because the data have not been able to inform trends in the stock.

Additionally, a note that the catch per unit effort data that are provided by the states have not been used in any of the stock assessments until now, as was intended for those data, because they are not indicative of trends in the stock as a whole. Moving into the review of the options, the proposed options are organized in the document by issue, starting with options on the coastwise yellow eel harvest cap, and the management response to exceeding that.

Then the timeframe for the yellow eel provision, followed by options for the young of year survey and the catch and effort monitoring requirement. Section 3.1, Issue 1, deals with the yellow eel coastwide harvest cap. Our current cap is 916,473 pounds, and that's based on the average landings from 1998 to 2010. This is our status quo option. There are four additional options, which propose a range of alternative harvest caps using the I-TARGET tool with different configurations based on management goals. As a reminder, when using I-TARGET, there are these three variables or knobs that can be adjusted to configure the tool, and these are the reference period, multiplier, and threshold. The reference period is meant to be a time period where the population is stable, or at the desirable abundance level. Then the multiplier determines the level of abundance that the management is aiming to achieve.

If the multiplier is set to one, that means you're aiming to achieve the same abundance from the reference period that's set, and if you use a multiplier of 1.25, that means you are aiming to achieve an abundance level that is 25 percent higher than what it was during the reference period. Then our last one here is the threshold value, and that is a portion of the I-TARGET value that depends on the goals of the fishery.

A threshold of 0.5 is less conservative, and would generally result in higher catch cap, whereas a

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threshold of 0.8 is a more conservative value, and that was what was recommended by the Northeast Fishery Science Center when they used or evaluated the use of this tool. Just another note. When the Stock Assessment Subcommittee recommended using I-TARGET, they recommended that the Board use the threshold value rather than the other two knobs, to adjust the configuration in setting management.

In the options, okay it's really difficult to see on the screen, so I apologize. But in the options that use I-TARGET to recommend a catch cap, you'll see that there are two different reference periods that are used. These are identified by the orange and blue shaded areas, which are really hard to see. But these two reference periods were based on distinct regimes that were identified in the stock assessment.

The blue area, which is the earlier reference period from 1974 to 1987, in that reference period the abundance index was higher, representing a more desirable abundance level, and then the later reference period, which is in an orange square, is a period of lower abundance, but still above the abundance in our most recent decade.

This table is showing the four proposed options for a coastwide cap, based on I-TARGET. Option 2 and 3 both use the earlier reference period, and they both use a multiplier value of 1.25, meaning they are both aiming to achieve stock abundance that is 25 percent greater than the abundance during that earlier reference period.

They differ in that Option 2 uses a threshold of 28, which is again the more conservative threshold, which would result in a coastwide cap of 202,453 pounds, and then Option 3 uses a threshold of 0.5, which is the less conservative threshold value resulting in a coastwide cap of 518,281 pounds.

Then Options 4 and 5 use the later reference period, which is 1988 to 1999, and they both use a threshold value of 0.5, which is the less conservative threshold. However, Option 4 uses a multiplier of 1.5, and Option 5 uses a multiplier of 1.25. This means these

two options are aiming for two different levels of stock abundance.

Option 4 is aiming for a 50 percent greater abundance than the reference period, and Option 5 is aiming for 25 percent greater than that reference period. To try and better explain how these options compare to each other, this is how they compare in terms of the abundance level they are aiming to achieve. The target abundance increases from the bottom up. Options 2 and 3 both aim for the highest level of relative abundance, and then Option 5 aims for the lowest relative abundance, and Option 4 is between those.

In this graph you can see the coastwide caps that would result from each of these options, compared to the current coastwide cap and the coastwide yellow eel landings since 2015. Our current cap is the black dashed line at the top, and that has not been exceeded since 2016. Then of the alternative options, Option 5 would result in the highest cap, and landings have not exceeded that level since 2018.

Functionally it has the least potential to reduce fishing mortality. The caps under Option 3 and 4 are pretty similar, they are the yellow and green dot/dash lines in the middle, and the landings have not exceeded those levels since 2019. Then Option 2 produces the lowest coastwide cap, and landings have exceeded this cap in all years since 2015. Functionally, it has the most potential to reduce fishing mortality.

As a reminder, that Option 2 is the recommended option that the SAS put forward in the stock assessment document. Now we'll move on to the management response to exceeding the coastwide cap. The status quo option is that if landings exceed the cap by 10 percent for two consecutive years, then the state's whose landings are greater than 1 percent of the coastwide landings in the years when that cap is exceeded, will be responsible for reducing their landings to achieve the coastwide cap in the subsequent year.

Our Option 2 in this document would modify this

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response, so that the states whose landings are greater than 5 percent of the coastwide landings would be responsible for reducing their landings to achieve the coastwide cap in the subsequent year. This option is responding to the fact that as total landings of yellow eel have declined drastically over the past few years, states with very minimal landings are still winding up contributing more than 1 percent of the total coastwide landings.

Just for a visual, the shaded cells in this table, which apparently do not show up on this projector. Okay, that one shows it. This shows the states whose landings were greater than the 5 percent of the coastwide total in each year since 2014. Now I'll move on to the options on the timeframe for these yellow eel cap provisions.

The PDT developed two proposed options for consideration. Option 1 is that the cap would not have a sunset date, but that it would have to remain in place for three years before being updated. The three-year minimum timeframe is recommended, because less than three years of data with the cap in place would be insufficient for evaluating the performance of that cap.

Then Option 2 is that the cap would again not have a sunset date, but that it would have to remain in place for five years before being updated. Five years is also recommended as more years of data would make a more robust dataset to look at that cap. I want to note here that when it says update the cap, we are talking about adding additional years of catch and index data, and running that through the I-TARGET tool as it is configured by approval of this Addendum, if that's the way it goes. It would not allow for changes to be made to the reference period multiplier and threshold that are set through this action. If changes to those items, or the configuration of I-TARGET is desired, then that would require a new addendum, and that is under either of these options.

That is the end of the provisions related to the cap, and then these are the options related to the young of year survey sampling. Option 1 is status quo, which would mean the states must continue to

collect individual length and pigment stage data during the young of year surveys. Then Option 2 is that the biological sampling of length and pigment stage would become optional.

As I mentioned, this was the recommendation from the Stock Assessment Subcommittee and the Technical Committee in the 2023 assessment, and that would ease the monitoring in some of the states. Next are options related to the fishery dependent catch and effort monitoring. Option 1, status quo, is that the requirements for harvester reporting of trip level CPUE data, which was established by Addendum I, would be maintained.

This means the states would continue to require trip level CPUE data and harvester reports, including soak time, number of units of gear fished and pounds landed. Then Option 2 is that the states would no longer be required to collect trip level CPUE data for yellow eel catch. The states of course would be able to continue to require those data if they choose to do so, and the majority of states, when we ask the Technical Committee, indicated that they would collect these data, even if it were voluntary.

Then as a note, this option is specific to yellow eel, it does not apply to glass eel fisheries, so more to the young of year survey options, this was proposed to ease the monitoring burden on states, since there are no plans to use those catch per unit effort data for the assessment. The Technical Committee has no concerns with making this an optional requirement, optional data.

That was the last of the options that were included in the draft document that you received in the materials. However, I wanted to offer for the Board's consideration the potential to add options to this Addendum that address the Commission's new de minimis policy, which was modified in November, 2022.

In that new policy the standard is that a state can be considered de minimis if the average landings for the last three years is less than 1 percent of the coastwide landings. However, the American eel FMP uses the average landings of the last two years to evaluate the states qualification for de minimis

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status. The new Commission policy doesn't automatically update the de minimis criteria for any of our species FMPs, so that change has to be made through an addendum or an amendment for each species.

It is also not required that the Board adopt the new standard for American eel, but if the Board wants to keep using two year-average landings rather than three years, then it needs to provide a rationale as to why two years is more appropriate for eel than three years. If the Board does want to add options to address the de minimis policy, then these are two draft options for consideration that could be easily thrown into the Addendum. Status quo would be to continue using the average landings for the preceding two years to evaluate de minimis status, and again, it would need to include a rationale as to why. Then Option 2 would be to update the criteria to apply the Commission policy to eels, meaning that a state would be de minimis if the average landings for the last three years is less than 1 percent of the coastwide landings.

Thanks for hanging in there, that wraps up all the options, and then this is our potential timeline again for next steps. If the Board approves this for public comment today, we would start the public comment period and state hearings in February, and the Board would be able to consider Draft Addendum VII for final approval in May at the spring meeting, and then would determine the implementation dates for the different provisions of the Addendum.

With that, these are the Board actions to consider. First the Board should consider any modifications to the document, including whether or not to add these de minimis policy options. Then consider approving the document Draft Addendum for public comment. With that I can take any questions.

CHAIR KUHN: Questions for Caitlin. Megan Ware.

MS. WARE: I just have two questions. My first is under 3.2 timeframe. You were kind of getting at it with your slide there. Maybe this reflects that I don't totally understand I-TARGET. But if the timeframe, the threshold and the other value are not changing,

does that mean the catch cap is also not changing with new data, or it is?

MS. STARKS: The catch cap would be updated if you add additional years of data from the abundance index and the coastwide landings data into the I-TARGET tool. It would take those two things into account and produce a new catch cap.

MS. WARE: Okay, thank you, and then my second question was on the catch and effort monitoring section. Under Option 2 it says states would no longer be required to mandate that harvesters or dealers report certain things, one of them is pounds landed. I assume that is harvesters or dealers, not both, and if that is the case, then I just want to clarify that.

MS. STARKS: Just to clarify, the requirement to report landings, pounds of landings, would still remain for either harvesters or dealers as was in the Addendum I language. But it wouldn't be per trip or per year type. You wouldn't have to report it separately for each of those different pieces of effort data, if that makes sense.

MS. WARE: As an example, our harvester would still need to report total pounds landed, I'll say monthly, or whatever the reporting timeframe is, but not per trip or gear type.

MS. STARKS: Yes.

MS. WARE: Okay. I think we could better clarify that, maybe, in Option 2, but I'll see what others have to say.

CHAIR KUHN: Thanks, Megan and Caitlin, Erika Burgess.

MS. ERIKA BURGESS: I had a question about 3.2 as well, the timeframe for yellow eel provisions. This was more of a philosophical type question. This Addendum would put in place something that says the cap cannot be updated for either three or five years. Technically, is it possible to hold the Board to something like that? What would prevent a Board from coming in and saying, in Year 2 or Year 4,

depending on which option is chosen, that they wanted to make changes. Is that even feasible?

MS. STARKS: Yes, so without a new addendum it would remain in place for three years. But if the Board were to initiate a new addendum to change that management program, it could change the coastwide cap earlier.

CHAIR KUHN: Any additional questions? Lynn Fegley.

MS. FEGLEY: Mr. Chair, I'm not sure if this is a question or a comment, so cut me off if it's inappropriate. But I think for the I-TARGET, it would help people to understand, and I don't have a specific language modification, but if you take that, I'm looking right now at Figure 11 in the Addendum, that shows the different iterations of I-TARGET.

The lowest version, as I understand, the options for the 200 something thousand catch cap is the last time, it's the terminal year of that time series. But that catch cap was calculated across the time series, and starts at a level that is higher, maybe close to 500,000, if I'm making sense. I think it would help the public to understand that it is the index and the landings that are driving the changes in that I-TARGET. We're going to choose to set a cap somewhere, but that cap would be changing if we were to run it, based on what the index and the landings show.

I only say that, because I think it will help people understand, and if we can see that there is some sort of change in a positive direction, you know maybe that would provide some motivation for the Board to initiate that addendum. I don't know. It's really hard to wrap your head around the fact that you are sort of watching this time series of a cap, and we're setting it at a terminal year. Somehow, I think there is some language to help clarify that a little bit.

MS. STARKS: Thanks, Lynn, I think I can work on kind of clarification of that in this document.

CHAIR KUHN: Shanna Madsen.

MS. MADSEN: I think we might be getting into comment zone. First of all, I want to say, I completely agree with Lynn. I think that would really, really help this document to shine a little bit more. I think the public is going to have a hard time understanding what I-TARGET is, and its actually kind of simple in its essence, so it just needs some more wording to kind of help that along, in my opinion.

The other thing that I didn't notice in the document, and if I'm wrong, Caitlin, please feel free to kick me. But I think it's kind of important to give that back recommendation that was, if we were going to vary anything we should be varying the threshold, yes, the threshold, but not the reference period for the multipliers. I think it would be really useful in 3.1, and I think we should also say it in Option 3. I think you guys do a good job in Option 2 of laying out what the SAS recommendation was, and the SAS said to us, you know please keep these two things, but if you want to modify, this would be a really good way to do it. I think it's important for us to note that in this document.

CHAIR KUHN: Lynn Fegley.

MS. FEGLEY: I do have a question now, based on what Shanna just said. When this decision is made, does the Board have the opportunity to pick a cap within the range of what is presented, or will the Board be restricted to picking a cap based on particular knobs, if you get my question?

MS. STARKS: I believe the Board would be able to pick a cap that falls within the range of cap values, so that 916,000 that we have now, and the lowest one is 202 thousand something. I think if it were in that range, even though it's not produced by I-TARGET, it would still be on the table, because our current cap is not based on I-TARGET.

CHAIR KUHN: Any additional discussion here? John Maniscalco.

MR. JOHN MANISCALCO: Caitlin's response kind of confused me. I mean I thought we were trying to be driven by the I-TARGET, and by setting those knobs into the future, just responding to how landings and

index values changed over time, and choosing some other cap and ignoring the I-TARGET advice doesn't make a lot of sense.

I thought we were trying to kind of set a base for what we're doing. I understand the Board usually has the discretion to kind of set a cap, given the spread of options that we put out for public comment, but I guess I would discourage that and it sounds counterproductive. I don't know if there is a way to kind of force the Board to use the knobs that we set, rather than give us that discretion to use a little bit too much discretion.

CHAIR KUHN: Thanks, John, I'm not sure I know the answer to that one. I mean you could pick between the range right now. But I understand where you're coming from with that sticking to the set values that come out of the black box, so to speak. Is there any additional discussion? Do you have some comments on that, Caitlin?

MS. STARKS: Yes, I can just add that that ability for the Board to pick a cap between those two values is just an artifact of the way all of our Commission documents work. It is possible for the Board to choose any option that falls within the range that goes out for public comment, and that also includes combining things across options, or issue.

CHAIR KUHN: We'll move this along a little bit. Are there any additions that the Board would like to see for de minimis or other modifications to the Addendum? Shanna.

MS. MADSEN: I just think that Lynn and John have pointed out something that maybe should be in the document, to let the public know that that is, and I realize this is something that we can do for all of our species. If we can just pop something in there that does exactly that. Then my other comment is, I think that what you guys have prepared for another set of options for de minimis is sufficient. I was happy with those, and I'm okay adding those to the document.

MS. STARKS: That language is already in the document about being able to combine and pick between the range.

CHAIR KUHN: Seeing no other discussion around this, is there any motions that we could entertain here at this time? Erika Burgess.

MS. BURGESS: I'm assuming we need a motion to add the change for de minimis requirement.

MS. STARKS: I believe we could do it without a motion if there is agreement among all of the Board.

CHAIR KUHN: Is there any disagreement to Erika's comments there, any addition? Okay, we'll just go ahead and add that. Okay, Shanna.

MS. MADSEN: Caitlin, I did find that section under 3.0. I think what John is getting at is still something maybe important for us to say, like yes, you can choose from the range of options. However, they may not be supported by some configuration of I-TARGET. Because I think that is an important distinction to make.

CHAIR KUHN: Toni.

MS. KERNS: That is the status quo option, so that is pulling from the range of options. We can try to add some language in there. But the status quo option is just an arbitrary value that the Board chose the last round. You're taking the arbitrary value and then using a reduction, if it were a reduction. It could be anywhere between what the current value is and the lowest value in the options, because you are combining those two. You're using the rationale of status quo with the reductions of I-TARGET.

CHAIR KUHN: It seems like what we're discussing here are modifications to the addenda for clarification, say not necessarily in my interpretation the options. Is there any additional discussion on clarification? Shanna.

MS. MADSEN: Sorry, just a question to Toni's point. Toni, what does that mean if we selected something outside of the I-TARGET values for the other sections of the document that discuss timing of when we would look at the cap in relation to I-TARGET?

MS. STARKS: I believe it would mean that whatever level is set, if it is not set using I-TARGET then it would just remain in place indefinitely, because it is saying in those two options that it has to remain in place for three years if you're using I-TARGET.

CHAIR KUHN: Are there any motions to modify the options? Okay, seeing none, we need a motion to approve the document. Is someone willing to make that motion? John Clark, seconded by Shanna Madsen.

MR. CLARK: No, I'm not willing to do that. I was going to propose something different.

CHAIR KUHN: Oh, okay. My apologies.

MR. CLARK: Sorry about that for the confusion. I wanted to **move to postpone further action on the coastwide cap options until coastwide landings reach 600,000 pounds in a given year**. If I get a second, I can speak to that.

CHAIR KUHN: Do we have a second? Sorry, Russ Dize second. Do you want to speak to your motion?

MR. CLARK: Yes, I find this whole process has been very upsetting to a lot of people that have been, obviously to a lot of yellow eelers, but in addition, I just think it's very unnecessary at this time. This is a market driven fishery. We've seen landings, as pointed out in the presentation, we were above the coastwide cap as recently as 2016, and the last few years we've been well below 500,000 pounds.

If we look at the catch in the fisheries, we would see that the catch per unit effort, especially in the Chesapeake, which Maryland is the bulk of the landings, has actually been going up. As it has been pointed out, over the decades that we've been looking at eels, we actually have, it almost looks like two different populations of eels, the estuarine eels, which is where all the fisheries are prosecuted, and then eels in fresh water.

Their fates do seem to be differing, where the freshwater eels are in much bigger trouble than estuarine eels. I think, as was just pointed out with

the glass eels, the fact that we're talking about the recommended option in here from this I-TARGET method is an enormous cut in the coastwide cap.

I know this is just a proposal at this point, but it's bringing a lot of consternation to those who do fish for eels. As I said, based on the fact that this is a fishery that is market dependent, and it doesn't look like the market is coming back anytime soon. I would just say, our current system is not broken, and this is not the fix that we need, and I would just leave it alone at this point.

CHAIR KUHN: Russ Dize, as the seconder, would you like to add any comments to that?

MR. RUSSEL DIZE: I think if you look at the graph, and what John was talking about is that our line of catch is down. But the reason is, because there is no market. In their area, I'm a fisherman, in our area of the Chesapeake Bay we've got so many eels, yellow eels that someone handlining or still fishing for perch, have a hard time catching the perch., because we've got so many eels.

You can throw an eel trap over and you're going to fill in a matter of hours. The problem is, we can't sell it. All of our commercial guys that were selling eels have quit, again selling, they had to do something else. I agree with John that the problem isn't here, and I think you'll find out where they are taking their samples, in the Hudson River, in Maryland in the upper Bay, we have an abundance of blue cats and snakeheads. You're not going to get a very good sample in those areas. I understand you have to have ten years of sampling before you can have that to be what you're going to go by. I think it's time you moved the sampling to another part of another area on the coast, because we may never have any more eels in the Hudson River, and in the Sassafras River in Maryland. But down our way, we've got Bou coups of eels.

CHAIR DIZE: Erika.

MS. BURGESS: I had a question for clarification, but I see that staff has modified the motion, although the motion has already been seconded, so it belongs to

the Board. I don't know if that is in order to do that. My question was, whether the actions in the Draft Addendum under consideration regarding monitoring would still move forward. John, is that your intent?

MR. CLARK: Yes, Erika, I just wanted to postpone action on the cap. Thanks.

CHAIR KUHN: Any other discussion on the motion? John.

MR. CLARK: Toni said that I needed to say that into the record, so yes, my intention is that all other parts of the Addendum would move forward, and just postpone action on the cap part of the options.

CHAIR KUHN: Do we have any public comments on the motion? Dan McKiernan.

MR. DANIEL MCKIERNAN: My question is, you know John's proposal is an interesting one. But couldn't he bring up that same motion after this goes to public hearing? I mean I guess I would like to have a chance to talk to my TC members. I'm kind of intrigued by it, but couldn't you make that same motion at the next meeting?

CHAIR KUHN: John Clark, response.

MR. CLARK: Yes, Dan, if I can channel my inner Tom Fote. I've been on eels for such a long time that I remember back in 2008, I was on the Technical Committee, and we had come up with a life table method for trying to reduce yellow eel mortality by coming up with a slot that could be harvested, so you would have to let go eels that were smaller than the slot eels that were larger, to get more escapement.

It did go out to the public that way, and then the Board just rejected going with the life table type of reductions that would have been required there, and just approved the other parts of the addendum. It could be done that way, I just wanted to put on the record I'm just very skeptical of some of these cap numbers that are coming up.

CHAIR KUHN: Shanna Madsen.

MS. MADSEN: As much as I love John, and as much as I love the first state, I have to say I'm going to oppose this motion. In going through the stock assessment, I think one of the things that really hit home for me is this one sentence that says, the SAS thinks the continued fishing pressure on a depleted stock is likely contributing to the continued decline in abundance seen over several assessments, being the 2012 one, the 2017 one and the 2013 one. I think that we're being incredibly irresponsible by not taking this out to public comment. At least having the discussion on what these I-TARGET limits look like, and what could potentially be feasible. We're at the point where we have been asked several times by our SAS, by our TC, to reduce fishing pressure on this specific life stage of eels. Every single time we have declined and/or have raised the cap. I can't support this motion.

CHAIR KUHN: Joe Cimino.

MR. JOE CIMINO: I echo Shanna's comments on both trying to be supportive, but also, you know there has to be some need for concern here. This is a species that's life history is very complicated. Our understanding of its population is very complicated. It's one that's been discussed for listing at times. To just push this off for a future date on a poundage that isn't even something that would hurt our commercial fisheries at this point. I would much rather see this go to public comment as is. I think there are darn good reasons for it, so thank you.

CHAIR KUHN: Rick Jacobson.

MR. RICK JACOBSON: I agree with some of the comments that have been offered that I do not support this motion. Given the status of the stock, and the declining status over the years. I do believe that we need to go out for public comment with these sorts of options. We've given due diligence into analyzing what may be drivers to the abundance issue.

This is the best science we have available to us at this time. Add to that, if we were ultimately to conclude that this is the right time to lower the coastwide cap, no better time to do it than during a period when the

actual harvest is decreased, and it's easier to accept that change. I can't support the motion at this time.

CHAIR KUHN: Okay, we've had considerable discussion on this item. I think we're ready to call the question. Assuming there is going to be a need to caucus, so we'll go with two minutes for caucus. Okay, we had two minutes. Let's go ahead and wrap this up. Before I call the question, I'm going to read this motion back into the record. Move to approve Sections 3.1 and 3.2 from the Draft Addendum, and postpone further action on coastwide cap options until coastwide landings, did I say, I'm sorry.

It looks like I read that wrong., so I'll start over. Apologies. **Move to remove Sections 3.1 and 3.2 from the Draft Addendum, and postpone further action on the coastwide cap options until coastwide landings reach 600,000 pounds in a given year.** Motion made by Mr. Clark and seconded by Mr. Dize. **All those in favor, raise your hand. All those opposed. Any null votes, abstentions? The motion fails, 1 to 18 to 0 to 0.** John Clark.

MR. CLARK: I'll take another crack at this. How about, I would like to make a **motion to remove Section 3.1 Option 2**, that is the lowest cap value in the document.

CHAIR KUHN: Thank you, John, do we have a second? Megan Ware. John, would you like to provide some additional rationale?

MR. CLARK: Obviously the Board has made it clear that they would like the coastwide cap options to go out to the public. I just think this one would have zero possibility of ever passing the Board, and is probably the one that would be most concerning to the eel fishermen. Sort of the similar reasoning that was used for the glass eel addendum. It's why would you take something out that really is just going to cause a lot of concern and worry, when it's not something that we probably want to consider as a Board?

CHAIR KUHN: Megan Ware, any additional comments?

MS. WARE: Seconded for discussion, so John could provide his rationale.

CHAIR KUHN: We're running behind, obviously. Let's go ahead and take any comments in support of John's motion. Lynn Fegley.

MS. FEGLEY: I would go ahead and support this. I recognize that this is what was recommended by scientists. But I will say that while I do, I have concern about the potential recruitment overfishing of yellow eels. But I also have concern that we really have very little understanding for analysis of the levels of fishing mortality that are happening on glass eels, and glass eels become yellow eels.

We also have an issue in Maryland, where we have the highest catch per unit effort in the history of our time series, and I understand that's a local view. It's a concentration. But a 200,000-pound catch cap is essentially a moratorium. I mean you might as well go there if you're going to go to 200,000 pounds. While I am in the camp of making a move on this fishery and not ignoring the problem, I could support moving this lowest option.

CHAIR KUHN: I'll take one more comment in support if there are any, that differs from the rationale Lynn provided. Okay seeing none; is there any comments in opposition to that before we call the question? Okay, assuming again there is going to be a need for caucus. Need for caucus? Okay, I'm not seeing any, yes. We'll take one minute. I'm going to read the motion back into the record before we call the question. Motion to remove Section 3.1, Option 2. Motion by John Clark, second by Ms. Ware.

**All those in favor, raise their hands. Okay, you may lower your hands. All those opposed, okay lower your hands. Null votes, abstentions. Okay, the motion fails 8 to 11, 0, 0.** Okay, are there any additional modifications to the Draft Addendum for public comment? Seeing none; do we have a motion to approve the Draft Addendum for public comment? Cheri Patterson, seconded by Shanna Madsen.

MS. CHERI PATTERSON: I'm just going to read it. **Move to approve Draft Addendum VII for public comment, as modified today.**

CHAIR KUHN: Shanna, any additional comments? Okay, we'll try this the easy way, maybe. **Is there any opposition to this motion? Okay, seeing none; the motion passes by consent.**

**CONSIDER APPROVAL OF FISHERY MANAGEMENT PLAN REVIEW AND STATE COMPLIANCE REPORTS FOR THE 2022 FISHING YEAR**

CHAIR KUHN: Okay, we have two items remaining on the agenda, so let's move on to Item 6 on the agenda, which is to Consider the Approval of the Fisheries Management Plan Review and State Compliance Reports for 2022 Fishing Year. Caitlin.

MS. STARKS: I'm going to make this briefer than it was supposed to be. But I'll quickly go over the status of the fishery and then the PRT Review, the State Compliance and their recommendations. I'm going to skip through these first couple slides just showing on the screen. These are the glass eel fishery regulations in place under the FMP, and there haven't been any changes in recent years.

These are the yellow eel fishery regulations, and then these are the silver eel fishery regulations. Then in addition, there are other management measures in place, including the catch in effort reporting, sustainable fishery management plans, and then there have not been changes in those as well. Just an update, Maine has used the aquaculture plan provision. They've submitted a continuation of the aquaculture plan for 2023. That was approved by the Board in August, 2022, and 200 pounds were harvested by America Unagi in 2022.

For commercial landings, the state reported landings of yellow and silver eels were around 334,653 pounds in 2022, and that is a 2 percent increase from 2021. States that contribute 91 percent of the coastwide harvest are Maryland, Virginia, New Jersey and New York. Maine's glass eel harvest in 2022 was 9,459 pounds.

South Carolina also has minimal glass eel harvest, but

it's confidential. I'm not going to continue reporting on recreational eel fisheries, because as we discussed, the design of MRIP is not geared to inland fisheries, so we don't have any estimates. Unless this changes, I will no longer report on that.

This is the PRT Review of the compliance reports. They found no issue with the glass eel fishery. Then with regard to the yellow eel provision, the PRT noted one issue, which is that New York's regulations for a minimum mesh size are not consistent with the requirements of the FMP. Addendum III requires states and jurisdictions to implement a 1/2 inch by 1/2 inch minimum on the mesh size that is used in the commercial yellow eel pots.

Addendum III allows states to use an escape panel constructed of that mesh size for three years, in order to reduce the financial burden on this fishery for those gear changes. However, that provision for the three-year escape panel thing has expired. Now all the yellow eel pots should be required to use the minimum mesh size, regardless of the presence of an escape panel.

New York's regulations still allowed the pots to have the escape panel instead of using the minimum mesh size, so therefore New York should update those regulations to require the minimum mesh size for all yellow eel pots to meet that FMP requirement. For silver eel the PRT noted two small issues, which are that Delaware and Florida have not implemented regulations that prevent harvest of eels from pound nets from September 1 through December 31.

However, Delaware has not had any reported pound net landings for 50 years, and they will be able to address this issue the next time they have to make a change to their eel regulations. Florida is also unaware of any active pound net fishery in the past 10 to 15 years. As discussed earlier, the de minimis threshold for eel is that average landings for the two preceding years must be under 1 percent of the coastwide landings for a particular life stage. For this year, New Hampshire, Massachusetts, Pennsylvania, D.C., Georgia and Florida all requested de minimis status for yellow eels. While the rest of the states qualify, Florida's average landings for 2021 and 2022

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



are greater than 1 percent of the coastwide landings, and it is 2.25 percent of the coastwide.

The PRT recommends that the Board consider those compliance issues that they noted, and then they also recommend that New York separate the yellow and silver eel landings in their reporting. The PRT maintained the recommendation for the states to quantify upstream and downstream passage, and provide information to the TC for evaluation regularly.

To address this, they suggested making a section in the compliance report, so that the states are reporting on this annually. The PRT also recommends the Board engage the Committee on Economic and Social Sciences to conduct an analysis of market demand specific to the food versus state markets and international market demand, and also recommends working with U.S. Fish and Wildlife to compare the U.S. landings and the exports. With that I can take any questions.

CHAIR KUHN: Any questions for Caitlin? Okay, if there are no more questions, Doug Grout.

MR. DOUGLAS E. GROUT: I just wanted to ask, Mr. Chairman, has there been any reason that New York has not passed those changes to the minimum mesh size, and if not, are there plans to change those in the near future?

CHAIR KUHN: Would you like to address that, John?

MR. MANISCALCO: Yes, thank you, just an oversight, and we will address it as quickly as possible to our regulatory.

CHAIR KUHN: Are there any modifications to the FMP as presented? Is someone willing to make a motion to accept the FMP Review? Ingrid Braun.

MS. INGRID BRAUN: **Move to approve the American Eel FMP Review for the 2022 fishing year, state compliance reports, and de minimis status for New Hampshire, Massachusetts, Pennsylvania, D.C., and Georgia.**

CHAIR KUHN: We have a second by Megan Ware, sorry, Lynn Fegley. They are sitting somewhat close together. Any comments on that? Okay, it's getting late, my apologies. **Is there any opposition to the motion? Seeing none; the motion passes by consent.**

MS. STARKS: I just wanted to clarify that if, unless I hear any objections, I will add a section to the compliance reports for the states to report on their upstream and downstream passage.

CHAIR KUHN: Thanks for that clarification, Caitlin.

#### **REVIEW AND POPULATE ADVISORY PANEL MEMBERSHIP**

CHAIR KUHN: Moving on to the last item on the agenda. It is to Review and Populate the Advisory Panel membership, and for this I am going to turn it over to Tina Berger.

MS. TINA L. BERGER: Thank you, Mr. Chair, I offer for your consideration and approval two nominations to the American Eel Advisory Panel, Sara Rademaker, sorry, Sara, an eel aqua culturist, and Timothy LaRochelle, a commercial net fisherman. Both are from Maine, and they replace two previous advisors on the panel who are no longer active in the fishery. Thank you.

CHAIR KUHN: Thank you, Tina, do we have a motion regarding the nomination? Megan Ware. Second, Dan McKiernan.

MS. WARE: **Move to approve Sara Rademaker and Timothy LaRochelle to the Eel Advisory Panel.**

CHAIR KUHN: Would anyone around the table like to make a comment? Okay, seeing none; **is there any opposition to the motion? Seeing none; the motion passes by consent.**

#### **ADJOURNMENT**

CHAIR KUHN: At this point is there any other business to come before the American Eel Management Board today? Seeing none; do we have

a motion to adjourn? Justin Davis, second Cheri Patterson. Thank you, this meeting is adjourned.

(Whereupon the meeting adjourned at 5:54 p.m. on Tuesday, January 23, 2024)

***Atlantic States Marine Fisheries Commission***

**DRAFT ADDENDUM VI TO THE INTERSTATE FISHERY  
MANAGEMENT PLAN FOR AMERICAN EEL**

***Commercial Glass/Elver Eel Management***



**January 2024**



**Sustainable and Cooperative Management of Atlantic Coastal Fisheries**

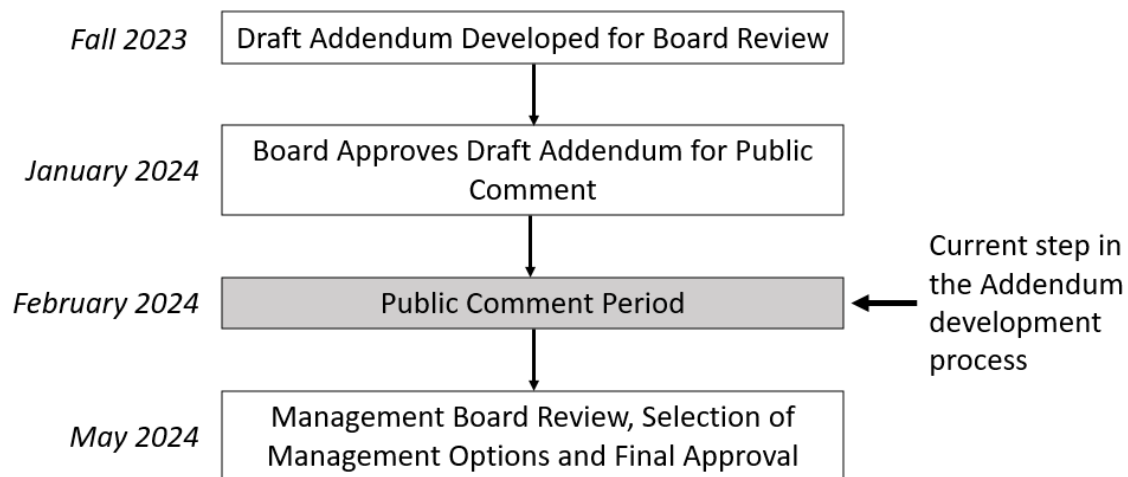
## Public Comment Process and Proposed Timeline

In August 2023, the American Eel Management Board initiated the development of an addendum to the Interstate Fishery Management Plan (FMP) to address the Maine commercial quota for glass eel starting in the 2025 fishing season. This Draft Addendum presents background on the Atlantic States Marine Fisheries Commission's (Commission) management of American eel, the addendum process and timeline, and a statement of the problem. This document also provides management options for public consideration and comment.

The public is encouraged to submit comments regarding this document at any time during the public comment period. The final date comments will be accepted is **March 4, 2024 at 11:59 p.m.** Comments may be submitted at state public hearings or by mail or email. If you have any questions or would like to submit comment, please use the contact information below.

Mail: Caitlin Starks, Senior FMP Coordinator  
Atlantic States Marine Fisheries Commission  
1050 North Highland Street, Suite 200A-N  
Arlington, VA 22201

Email: [comments@asmfc.org](mailto:comments@asmfc.org)  
(Subject: Draft Addendum VI)  
Phone: 703.842.0740



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## **1.0 Introduction**

The Atlantic States Marine Fisheries Commission (Commission) has coordinated interstate management of American eels (*Anguilla rostrata*) from 0-3 miles offshore since 2000. American eel is currently managed under the Interstate Fishery Management Plan (FMP) and Addenda I-V to the FMP. Management authority in the exclusive economic zone (EEZ) from 3-200 miles from shore lies with NOAA Fisheries. The management unit is defined as the portion of the American eel population occurring in the territorial seas and inland waters along the Atlantic coast from Maine to Florida.

The Commission's American Eel Management Board (Board) approved the following motion on August 1, 2023:

*Move to initiate an addendum to address the Maine glass eel quota.*

This Draft Addendum proposes options for commercial quota provisions for Maine's glass eel fishery including quota level and duration.

## **2.0 Overview**

### **2.1 Statement of Problem**

Addendum V, approved in August 2018, examined Maine's glass/elver eel quota based on updated information but made no changes to the state's quota of 9,688 pounds. The Addendum specified Maine's 9,688 pound glass eel quota be set for three years (starting in 2019; from 2019-2021), and could be revisited before year four (2022). At that point, the quota of 9,688 pounds could be extended for an additional three years (2022-2024) without requiring a new addendum. Fishing beyond 2024 would need to be addressed through a new addendum.

Therefore, Maine's current glass eel quota of 9,688 pounds expires after 2024, and a new addendum is required to establish a quota for the 2025 fishing season and beyond.

### **2.2 Background**

American eels inhabit fresh, brackish, and coastal waters along the Atlantic, from the southern tip of Greenland to Brazil. American eel eggs are spawned and hatch in the Sargasso Sea. After hatching, leptocephali (the larval stage) are transported to the coasts of North America and the upper portions of South America by ocean currents. Leptocephali then transform into glass eels via metamorphosis. In most areas, glass eels enter nearshore waters and begin to migrate up-river, although there have been reports of leptocephali found in freshwater in Florida. Glass eels settle in fresh, brackish, and marine waters, where they undergo pigmentation, reaching the elver life stage. Elvers subsequently mature into the yellow eel phase, most by the age of two years.

The Commission's American Eel Board first convened in November 1995 and finalized the FMP for American Eel in November 1999. The goal of the FMP is to conserve and protect the

American eel resource to ensure its continued role in its ecosystems while providing the opportunity for commercial, recreational, scientific, and educational uses. The FMP requires a minimum recreational size and possession limit and a state license for recreational harvesters to sell eels. The FMP requires that states and jurisdictions maintain existing or more conservative American eel commercial fishery regulations for all life stages, including minimum size limits. Each state is responsible for implementing management measures within its jurisdiction to ensure the sustainability of its American eel population.

Since the FMP was approved in 1999, it has been modified four times. Addendum IV (2014) specified an annual glass eel commercial quota for Maine of 9,688 pounds for the 2015-2017 fishing seasons, and that it be re-evaluated after 3 years (prior to the start of the 2018 fishing season). In October 2017, the Board specified a glass eel commercial quota for Maine of 9,688 pounds for the 2018 fishing season. Addendum V (2018) examined Maine's glass/elver eel quota based on updated information but made no changes to the state's quota. In 2021 the Board extended the quota of 9,688 pounds through 2024.

Addendum V also maintained other provisions of Addendum IV relevant to the glass eel/elver fishery. Overages of any state's commercial glass/elver eel quota would require that state or jurisdiction to deduct their entire overage from their quota the following year, on a pound for pound basis. Any state or jurisdiction with a commercial glass eel fishery harvesting at least 750 pounds is required to implement daily trip-level reporting with daily electronic accounting to the state for both harvesters and dealers. Additionally, any state or jurisdiction with a commercial glass eel fishery harvesting at least 750 pounds must implement a fishery-independent life cycle survey covering glass/elver, yellow, and silver eels within at least one river system. Any state or jurisdiction can request an allowance for commercial harvest of glass eels based on stock enhancement programs implemented after January 1, 2011, subject to TC review and Board approval. To qualify for the allowance the state must demonstrate that the stock enhancement program has resulted in a measurable increase in glass eel passage and/or survival.

## **2.3 Description of the Fishery**

### **2.3.1 Glass Eel/Elver Fishery**

Life stage glass and elver eel harvest along the Atlantic coast is prohibited in all states except Maine and South Carolina. Prior to the implementation of the FMP, Maine was the only state compiling glass eel and elver fishery catch statistics. Under the FMP, all states are now required to submit fishery-dependent information. In recent years, Maine was the only state reporting substantial glass eel or elver harvest.

#### *Maine Glass Eel/Elver Fishery*

Since the implementation of the 9,688 pound Maine glass eel quota in 2015, landings have tracked closely with the quota. Since 2016, landings have remained above 94% of the quota, but have not exceeded it.

**Table 1.** Maine's Glass/Elver Eel Landings in pounds 2007-2022 (Source: Maine DMR)

Year	Landings	Value	Year	Landings	Value
2007	3,714	\$1,287,479	2015	5,259	\$11,422,831
2008	6,951	\$1,486,353	2016	9,400	\$13,446,828
2009	5,199	\$519,569	2017	9,343	\$12,166,417
2010	3,158	\$584,851	2018	9,194	\$21,753,350
2011	8,585	\$7,653,332	2019	9,620	\$20,119,194
2012	21,611	\$40,384,618	2020	9,652	\$5,067,521
2013	18,080	\$32,931,077	2021	9,106	\$16,681,103
2014	9,690	\$8,474,302	2022*	9,429	\$20,163,965

\*Preliminary landings

In 2012, Maine’s glass eel landings hit an all-time high of 21,610 pounds with a landed value of over \$38 million. This huge spike in price per pound created a gold rush mentality that brought with it poaching problems that most thought Maine could not overcome, and there was a call to close the fishery all together. Over the next two years, the Maine Department of Marine Resources (ME DMR) responded by instituting a voluntary reduction in harvest of 35% from the 18,076 pounds that was landed in 2013. This established the first glass eel quota for Maine at 11,749 pounds. With the implementation of Addendum IV, the elver quota was cut another 11%, reducing Maine’s glass eel quota to 9,688 pounds. Since the implementation of the 9,688 pound glass eel quota, landings have tracked closely with the quota with the exception of 2015 where a late spring with ice and high water contributed to a drop in landings down to 5,260 pounds.

In 2013, Maine instituted individual fishing quotas, and penalties were moved from civil to criminal and included a “two-strike” provision where a harvester license would be permanently revoked. Also in 2013, ME DMR developed a swipe card program that allows dealers to enter daily landings data and allows ME DMR to analyze that data within 24 hours of receipt; it also serves as a fishery management tool to implement an individual fishing quota (IFQ) for harvesters. The program was expanded in 2015 to include dealer-to-dealer transactions. Using the swipe card program, ME DMR has effectively tracked the overall quota by closely monitoring the IFQs of over 1,000 harvesters, which includes quota for the four indigenous tribes and non-tribal quota. In 2022 and 2023 over 5,500 daily landings reports did not need to be key-entered as a result of the swipe card program, which has reduced the burden on ME DMR staff. The swipe card program has also shown to be reliable with no card failures reported in the last 3 years (2020 to 2023).

In addition, the number of fishery-related infractions reported by the ME Marine Patrol dropped from over 200 in 2013 to under 20 in 2014 through 2016. Elver related violations have continued to remain low in 2016 through 2023. The addition of the dealer-to-dealer swipe card program allows the ME DMR to track the glass eels from initial purchase to export out of the state. For a dealer to export out of Maine, they are required to have a separate “export” license and ME Marine Patrol must be present to weigh the shipment. ME Marine Patrol will also weigh



the glass eels at the dealer facilities and report that verified amount along with the amount the swipe card program indicates should be at the facility. ME Marine Patrol can also remove any dead loss to reconcile the dealer's inventory.

Given the high market value, poaching of glass eels and elvers remains a serious concern in several states. Enforcement of the regulations is challenging due to the nature of the fishery (very mobile, nighttime operation, and high value for product). Cooperation between the State's enforcement agencies and the U.S. Fish and Wildlife Service remains a high priority. This cooperation resulted in several convictions for violation of the Lacey Act in 2013 through 2016. From 2016 through 2023, the number of federal investigations and violations followed the same decreasing trend as fishery-related infractions.

### *Aquaculture*

Addendum IV to the FMP also allows approved Aquaculture Plans from states and jurisdictions to harvest up to 200 pounds of glass/elver eel annually from within their state waters for use in domestic aquaculture activities. Aquaculture Plans have been approved each year for Maine starting in 2018 for the 2019 fishing season.

## **2.4 Status of the Stock**

The last peer reviewed and accepted benchmark stock assessment was approved for management use in 2023. The Assessment and Peer Review Reports indicate the American eel stock is depleted and has likely been experiencing overfishing in the last few decades. The stock assessment recommended a drastic reduction to the yellow eel coastwide cap to between 21% and 33% of the current cap. The stock assessment did not provide recommendations regarding glass eel harvest.

The abundance indices developed and used in the 2023 assessment are more robust and better defined than previous assessments. State-mandated young-of-year (YOY) surveys have been in operation for twenty years or more in some cases. From Maine to Florida, 25 surveys were developed into individual indices of relative abundance and then combined into a coastwide YOY index using a multivariate auto-regressive state-space (MARSS) model. A slightly declining trend in coastwide YOY abundance was observed from 1987-2020 but the 95% confidence intervals on population growth rate estimates overlapped 0 suggesting a stable population. Ten elver indices were developed from multiple surveys from Maine to Virginia that were combined into a coastwide index using the MARSS model. The coastwide index indicated no trend in elvers from 1999-2020. There were also 14 yellow eel indices developed from multiple surveys from New Hampshire to South Carolina that were combined into a coastwide index using the MARSS model. There was a declining trend in coastwide yellow eel abundance from 1974-2020.

Additional analyses provide convergent results indicating the stock has decreased over the monitored time series. The Mann-Kendall test detected significant trends in 6 of the 26 YOY indices; of these two (33%) were increasing (Maine and New York) and four (67%) decreasing. For elver, two of nine indices had significant Mann-Kendall detected trends with one increasing and one decreasing (both in Virginia). For the yellow eel indices, the Mann-Kendall test

detected significant trends in 7 of the 15 Yellow Eel indices; of these two (29%) were increasing and five (71%) decreasing. The Traffic Light method also showed similar results for both YOY and yellow eel indices, indicating green values for the 1980s, changing to orange, then to red by the end of the time series.

#### **2.4.1 Maine Eel Lifecycle Monitoring**

In 2011, the glass eel life stage was identified as a unique opportunity to assess the annual recruitment of each year's cohort, because glass eels result from the previous year's spawning activity and are all the same age. In order to assess the annual variation in recruitment of American eel, Addendum III (2011) required that each member state conduct an annual survey of YOY abundance. In 2018, Addendum V further required: *“Any state or jurisdiction with a commercial glass eel fishery must implement a fishery-independent life cycle survey covering glass/elver, yellow, and silver eels within at least one river system. If possible and appropriate, the survey should be implemented in the river system where the glass eel survey (as required under Addendum III) is being conducted to take advantage of the long-term glass eel survey data collection.”* Maine's YOY survey has been running since 2001 and the yellow and silver eel surveys since 2018. Each year ME DMR staff summarize the results of the YOY, yellow, and silver eel lifecycle surveys into a compliance report. The methods and a summary of results are described below.

##### *Methods*

Fishery-independent monitoring for young-of-year eels at West Harbor Pond in Maine has been carried out continuously since 2001. Each year eel ramps with collection traps are installed at the site in early spring, typically in March, and are checked daily throughout the run, which typically ends in late June. Glass eels and elvers are separated and enumerated before being released into the pond.

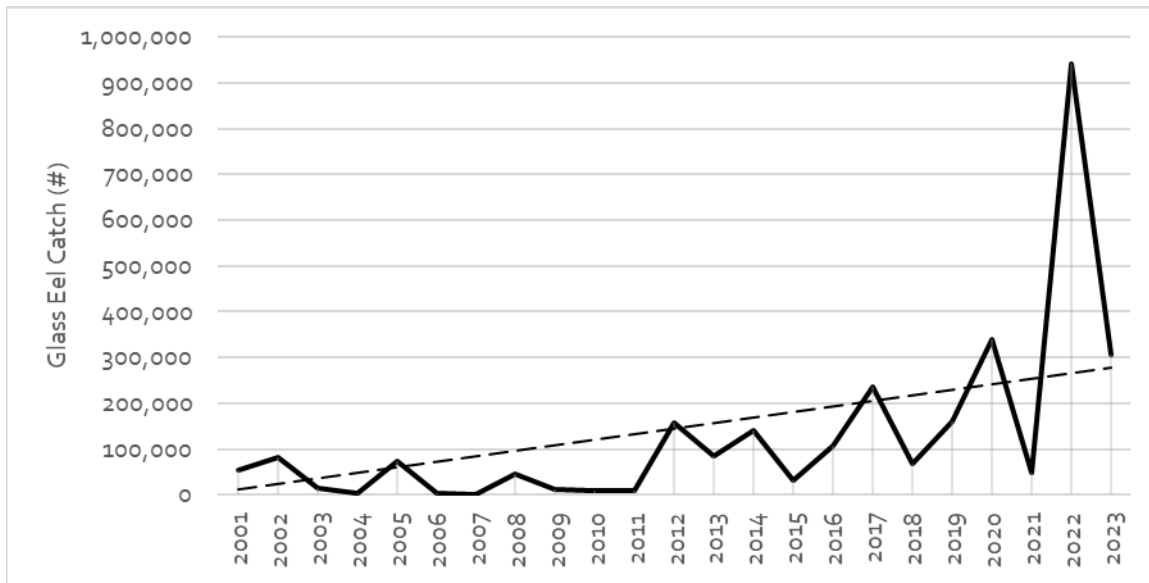
Monitoring of yellow and silver eels was initiated in 2018. The survey was initially on Cobbosseecontee Stream, but ME DMR moved the surveys to West Harbor Pond in 2019. Monitoring for yellow eels includes sampling with baited eel pots beginning in July and continuing through September of each year. Each time the pots are checked all eels are removed, measured for length and weight, tagged with a PIT tag if they are not already tagged, and released. Monitoring for silver eels includes daily checking of a fyke net set at the outlet of West Harbor Pond. The fyke net is set starting in September and continues until December. All eels are removed from the fyke net each day, scanned for a PIT tag, a subsample is measured for length and weight, and released downstream.

##### *Results*

A total of 942,327 glass eels were captured during 2022. The catch of glass eels in 2022 far exceeded any previous catches and was more than seven times the average of 127,591 since 2001. Preliminary data from 2023 indicate a total of 307,216 glass eels were captured in 2023, more than double the average, which continues a trend five of the last seven years significantly exceeding average annual catch since 2001 (Figure 1). A total of 4,356 elvers were also captured in the trap boxes during 2022, which was the second largest catch of elvers from 2001

through 2022. Preliminary data from 2023 report a total of 6,344 elvers were captured in trap boxes, which is the highest amount to date.

A total of 459 yellow eels were caught in baited pots in West Harbor Pond at least once in 2022, with many being caught multiple times (up to 4 recaptures). Of the yellow eels caught in 2022, 51 were tagged in 2018, 77 were tagged in 2019, 92 were tagged in 2020, 123 were tagged in 2021, and 116 eels were untagged when captured in 2022 and received a PIT tag before release. 1,019 yellow eels have been caught, tagged, and released into West Harbor Pond as of December 2022.



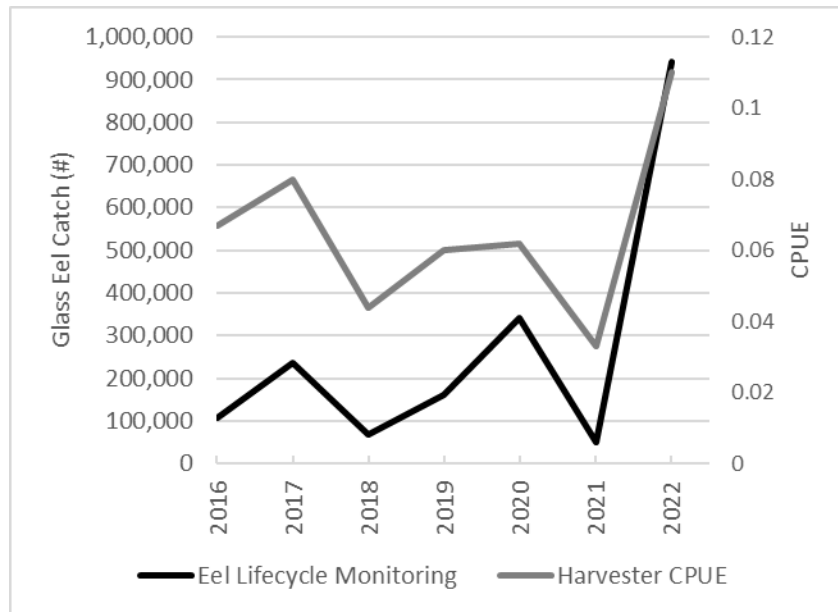
**Figure 1. Glass eel capture at West Harbor Pond Maine as part of the ME DMR Eel Lifecycle study (solid line). The linear trendline, with the intercept set to zero and an  $R^2$  value of 0.5009, shows an increase over time (dashed line).**

In 2022, a total of 269 eels were caught in the fyke net set at the outlet of West Harbor Pond, all of which were silver phase. Including the 2022 season, 5,888 silver eels have been captured and released at the site since 2018 and the annual average catch is 1,178. In 2022, length ranged from 24.8 cm to 102.6 cm TL, with an average of 34.6 cm TL, and weight ranged from 25.7 g to 2600 g, with an average of 119.7g. These lengths and weights did not differ significantly from previous years.

#### **2.4.2 Maine Glass/Elver Eel Index**

In addition to the in-season reporting of landings that allows for the close management of the Glass/Elver eel fishery in Maine, ME DMR also requires each harvester to report gear type, location, and set time for each gear type. These data were analyzed to produce a catch-per-unit-effort (CPUE) index for the Glass/Elver Eel fishery, which adds additional context to the proposed management options. Data from 2016-2022 were reviewed and a subset of that data was included in this analysis. Due to the difference between fyke nets and dip nets, in terms of the method for fishing each and the impact on set times, dip nets were excluded from the

analysis to standardize the results. In addition, harvesters had the option to report set times in minutes, hours, days, and weeks. However, only those harvesters that reported in hours were included in the analysis due to irregularities in reporting in other units of time (e.g., reporting of: ‘0 days’; ‘1300 days’). With the exclusions described above, the remaining data accounted for the majority of harvesters in all years. For example, harvesters that reported both the use of fyke nets and set times in hours accounted for 75.5% of harvesters in 2022.



**Figure 2. Glass eel capture at West Harbor Pond Maine as part of the ME DMR Eel Lifecycle Study (black line) and CPUE of Harvesters from 2016-2022 (gray line).**

The CPUE for catches in fyke nets in the glass/elver fishery, expressed as pounds caught per one hour unit, ranged from 0.033 to 0.110 from 2016 to 2022 with an average of 0.065. CPUE was greatest in 2022, at nearly double the average, but otherwise CPUE decreased slightly from 2016-2021. In addition, CPUE for harvesters is closely correlated to the glass eel capture at West Harbor Pond as part of the Maine Eel Lifecycle Monitoring Program (Figure 2).

### 3.0 Proposed Management Options

The following options were developed from the Board motion from August 2023.

When the Board takes final action on the addendum, there is the opportunity to select any measure within the range of options that went out for public comment, including combining options across issues.

### **3.1 Maine Glass Eel Quota**

Selection of one of the following options would determine the annual quota level for the Maine commercial glass eel fishery, starting in the 2025 fishing year. If no action is taken on this draft addendum, the Maine commercial glass eel fishery would not be managed with a quota under the American Eel FMP.

#### *Option 1: Status quo*

Under this option, the annual quota for Maine's commercial glass eel fishery would remain at 9,688 pounds.

### **3.2 Timeframe for Maine Glass Eel Quota**

Selection of one of the following options would determine the number of years the Maine quota would remain in place once it is implemented, and whether or not an addendum would be required to maintain the same quota for subsequent years.

#### *Option 1: No sunset*

Under this option, the commercial quota selected for Maine's glass eel fishery in Section 3.1 will remain in place until modified through an addendum or amendment to the FMP.

#### *Option 2: Three years*

Under this option, the quota selected for Maine's glass eel fishery in Section 3.1 may remain in place for up to three years (2025-2027). Prior to the 2028 fishing year, the Board must initiate an action to establish Maine's glass eel commercial quota for 2028 and beyond. If a change to the quota is desired before 2028, the Board must initiate an addendum or amendment to modify the FMP.

#### *Option 3: Three years, with the ability to extend via Board action*

Under this option, the quota selected for Maine's glass eel fishery in Section 3.1 may remain in place for three years (2025-2027). If no change to Maine's quota is desired, the Board may extend the selected quota for up to three years at a time via Board action, until this provision is modified by an addendum or amendment to the FMP. If a change to the quota is desired for 2028 or earlier, the Board must initiate an addendum or amendment to establish Maine's glass eel commercial quota.

### **4.0 Compliance**

If the existing American Eel FMP is revised by approval of this Draft Addendum, the Board will designate implementation deadlines for the addendum provisions.

### **5.0 References**

Atlantic States Marine Fisheries Commission (ASMFC). 2000. [Interstate Fishery Management Plan for American Eel \(\*Anquilla rostrata\*\)](#). Washington D.C.

ASMFC. 2014. [Addendum IV to the Interstate Management Plan for American Eel](#). Arlington, VA.

ASMFC. 2018. [Addendum V to the Interstate Management Plan for American Eel](#). Arlington, VA.

ASMFC. 2023. [American Eel Benchmark Stock Assessment and Peer Review Reports](#). Arlington, VA.

***Atlantic States Marine Fisheries Commission***

**DRAFT ADDENDUM VII TO THE AMERICAN EEL INTERSTATE  
FISHERY MANAGEMENT PLAN FOR PUBLIC COMMENT**

***Commercial Yellow Eel Management and Monitoring Requirements***



**February 2024**



Sustainable and Cooperative Management of Atlantic Coastal Fisheries

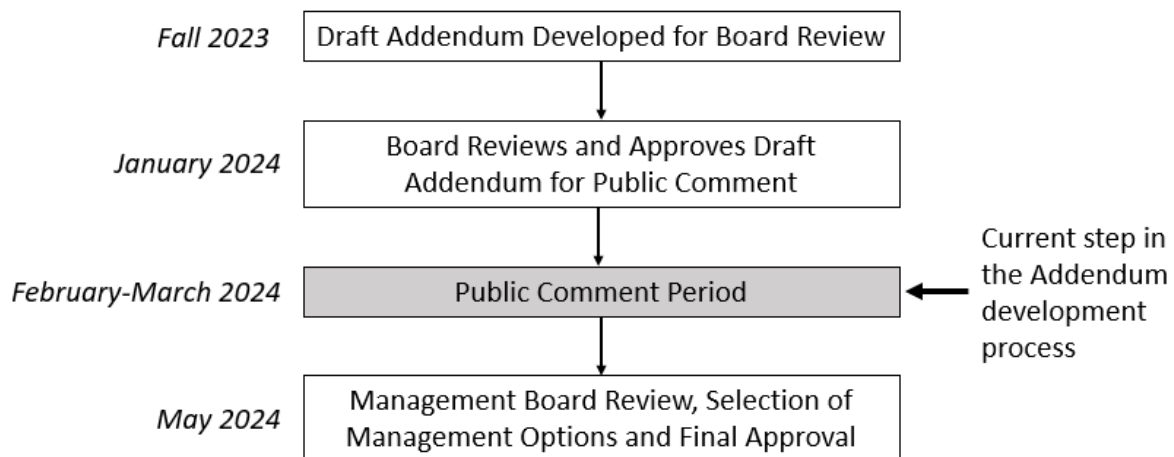
## Public Comment Process and Proposed Timeline

In August 2023, the American Eel Management Board initiated the development of an addendum to the Interstate Fishery Management Plan (FMP) to consider changes to the coastwide yellow eel harvest cap. The results of the recent benchmark stock assessment indicate the stock is at or near historically low levels due to a combination of historical overfishing, habitat loss, food web alterations, predation, turbine mortality, environmental changes, and toxins, contaminants, and disease. The benchmark assessment proposed a new tool for setting the coastwide cap based on abundance indices and catch. This Draft Addendum presents background on the Atlantic States Marine Fisheries Commission's (Commission) management of American eel, the addendum process and timeline, and a statement of the problem. This document also provides management options for public consideration and comment.

The public is encouraged to submit comments regarding this document at any time during the public comment period. The final date comments will be accepted is **March 24, 2024 at 11:59 p.m.** Comments may be submitted at state public hearings or by mail or email. If you have any questions or would like to submit comments, please use the contact information below.

Mail: Caitlin Starks, Senior FMP Coordinator  
Atlantic States Marine Fisheries Commission  
1050 North Highland Street, Suite 200A-N  
Arlington, VA 22201

Email: [comments@asmfc.org](mailto:comments@asmfc.org)  
(Subject: Yellow Eel Harvest Cap Draft Addendum)  
Phone: (703) 842-0740





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## 1.0 Introduction

The Atlantic States Marine Fisheries Commission (Commission) has coordinated interstate management of American eel (*Anguilla rostrata*) from 0-3 miles offshore since 2000. American eel is currently managed under the Interstate Fishery Management Plan (FMP) and Addenda I-V to the FMP. Management authority in the exclusive economic zone (EEZ) from 3-200 miles from shore lies with NOAA Fisheries. The management unit is defined as the portion of the American eel population occurring in the territorial seas and inland waters along the Atlantic coast from Maine to Florida.

The Commission's American Eel Management Board (Board) approved the following motions on August 1, 2023:

*Move to draft an addendum to consider using  $I_{TARGET}$  to recommend various catch caps, but not use  $I_{TARGET}$  to set biological reference points or stock status.*

This Draft Addendum proposes options for coastwide commercial landings caps for yellow eel, and alternative management responses if the coastwide cap is exceeded. The objective of Addendum VII is to recommend a coastwide cap using the  $I_{TARGET}$  tool from the stock assessment based on abundance indices and catch to reduce coastwide landings of yellow eel. The Draft Addendum also considers options to modify the biological sampling requirements of the annual young-of-the-year (YOY) survey, the harvester catch per unit effort (CPUE) reporting requirements, and the *de minimis* policy.

## 2.0 Overview

### 2.1 Statement of Problem

The Commission established the FMP for American Eel in November 1999, which has since been modified through five addenda. The FMP goal and objectives highlight the conservation, protection, and enhancement of American eel abundance in its current range as priorities for management. In response to the 2012 American Eel Benchmark Stock Assessment recommendation to reduce mortality on all life stages, the Board adopted Addendum IV. Addendum IV (2014) established a coastwide harvest cap of 907,671 pounds of yellow eel, reduced Maine's glass eel quota to 9,688 pounds, and allowed for the continuation of New York's silver eel weir fishery in the Delaware River. Addendum V was approved in 2018, which increased the yellow eel coastwide cap to 916,473 pounds starting in 2019 to reflect a correction in the historical harvest data. It also adjusted the process for reducing total landings to the coastwide cap when the cap has been exceeded.

The coastwide cap was intended to control fishing mortality on the coastwide population of eel at the yellow eel life stage. Because the assessment could not establish biological reference points for American eel, historical harvest was used as the basis for setting the coastwide cap. The cap was set at a level equivalent to the average annual harvest between 1998 and 2010. The selected cap was greater than the Technical Committee's recommendation at the time, which was to establish a cap equivalent to a 12% reduction from the 1998-2010 average landings.

Despite these management changes, the 2023 benchmark stock assessment found that the yellow eel population remains depleted, and was at lower levels than the previous assessment. The assessment and peer review recommend reducing fishing mortality on the yellow eel life stage, while also recognizing that stock status is affected by other factors including historical overfishing, habitat loss due to damming mainstems and tributaries of rivers, mortality from passing through hydroelectric turbines, pollution, possibly parasites and disease, climate change, and other unexplained factors at sea. Similar to previous assessments, a statistical model could not be developed for the species to determine stock status or give management advice. However, the assessment explored several index-based methods and recommended a new tool called  $I_{TARGET}$  for management use to provide advice on coastwide catch.  $I_{TARGET}$  is an index-based method that needs only catch and abundance data to provide management advice on coastwide landings.

## **2.2 Background**

Since its implementation in 2000, the Commission's FMP for American Eel has aimed to conserve and protect the American eel resource to ensure its continued role in its ecosystems while providing the opportunity for commercial, recreational, scientific, and educational uses. The FMP requires all states and jurisdictions to implement an annual young-of-year (YOY) abundance survey to monitor annual recruitment of each year's cohort. In addition, the FMP requires a minimum recreational size and possession limit and a state license for recreational harvesters to sell eels. The FMP requires that states and jurisdictions maintain existing or more conservative American eel commercial fishery regulations for all life stages, including minimum size limits. Each state is responsible for implementing management measures within its jurisdiction to ensure the sustainability of its American eel population.

Because of the unique life history of American eel, separate management measures have been developed to address fisheries targeting each life state (i.e., glass eel, yellow eel, and silver eel). Management measures for yellow eel, which is the primary life stage harvested by commercial and recreational fishermen, have been modified through Addendum I (2006), Addendum III (2013), Addendum IV (2013), and Addendum V (2018). Addendum I established a mandatory catch and effort monitoring program for American eel, requiring trip-level landing and effort data by state. Addendum III made changes to the commercial yellow eel fishery, specifically increasing the yellow eel size limit from 6 to 9 inches, and requiring a  $\frac{1}{2}$ -by- $\frac{1}{2}$  minimum mesh size in commercial yellow eel pots. Responding to the 2012 Benchmark American Eel Stock Assessment, which found the American eel population in U.S. waters to be depleted, Addendum IV set goals of reducing overall mortality and maximizing the conservation benefit for American eel stocks (ASMFC 2014). The Addendum established a coastwide commercial harvest cap for yellow eel of 907,671 pounds to limit fishing mortality. The coastwide cap was implemented starting in the 2015 fishing year and established two management triggers: (1) if the coastwide cap is exceeded by more than 10% in a given year, or (2) the coastwide cap is exceeded for two consecutive years regardless of the percent overage. If either trigger were met, states would implement state-specific allocations based on average landings from 1998-2010 with allocation percentages derived from 2011-2013.

Following the implementation of Addendum IV states expressed some concerns about the management program, including 1) the lack of information available to determine what changes in landings would be necessary to affect fishing mortality rates and spawning stock status, 2) the administrative burden on the states associated with moving to state-specific quotas, and 3) the difficulty of achieving an equitable allocation of this resource given the variation in availability and market demand for eels along the Atlantic coast. To address concerns about state allocations the Board approved Addendum V, which established a new commercial coastwide landings cap for the yellow eel fishery based on corrected landings data, developed new management triggers, and modified the allocation process that would occur if the coastwide cap were exceeded by more than 10% of the coastwide cap for two consecutive years (ASMFC 2018).

### **2.3 Status of the Stock**

The 2023 Benchmark Stock Assessment and Peer Review indicates the American eel stock remains depleted at or near historically low levels due to a combination of historical overfishing, habitat loss, food web alterations, predation, turbine mortality, environmental changes, toxins and contaminants, and disease (ASMFC 2023), consistent with the results of the 2012 and 2017 stock assessments. Despite the large number of surveys and studies available for use, the American eel stock is still considered data-poor. Additionally, eels have an extremely complex life history that is difficult to describe using traditional stock assessment models. The 2023 assessment explored additional approaches for assessing American eel that were suggested in past stock assessments including a delay-difference model, traffic light analysis and surplus production models, and developing an egg-per-recruit model, but overfished and overfishing determinations still could not be made due to data limitations. However, the 2023 stock assessment found that the yellow eel population has declined since the previous assessment (2017), and recommended reducing yellow eel harvest. Unlike previous assessments, the 2023 assessment and peer review identified an index-based tool to provide management advice without requiring an assessment model, which is being considered for management use through this draft addendum.

The Commission's assessments only consider the portion of the stock residing in US coastal waters, but there have been efforts to characterize the stock in other regions. In 2003, declarations from the International Eel Symposium (AFS 2003, Quebec City, Quebec, Canada) and the Great Lakes Fisheries Commission (GLFC) highlighted concerns regarding the health of eel stocks worldwide. In 2010, Fisheries and Oceans Canada (DFO) conducted a stock assessment on American eels in Canadian waters and found that region-specific status indices showed abundance is very low in comparison to levels in the 1980s for the Lake Ontario and upper St. Lawrence River stock, and is either unchanged or increasing in the Atlantic Provinces.

### **2.4 Description of the Yellow Eel Fishery**

#### **2.4.1 Coastwide Description**

Yellow eel fisheries exist in all Atlantic Coast states and jurisdictions with the exception of Pennsylvania and the District of Columbia. American eels are harvested for food, bait, and export markets. Yellow eel landings have varied considerably over the years due to a

combination of market trends and availability. These fluctuations are evident both within states and jurisdictions, as well as at a regional level. American eel landings ranged from over 3 million pounds in the 1970s to early 1980s to around 1 million pounds or less since the late 1990s (Figure 1). Since 2014, when the coastwide cap for yellow eel was adopted under Addendum IV, total coastwide landings have generally experienced a steady decline to a time series low of 263,892 pounds in 2020. Landings in 2021 and 2022 increased slightly, but still remain near all-time low levels.

Fishery participants have noted that recent declines in landings have primarily been related to market demand; demand for wild-caught American eel from the US for European food markets has decreased in recent years due to increased aquaculture in Europe. Additionally, demand for domestic bait in 2020 was negatively impacted by COVID-19 restrictions. A smaller proportion of US yellow eel landings typically goes to the domestic bait market, and landings are not expected to increase significantly from current levels in the near future.

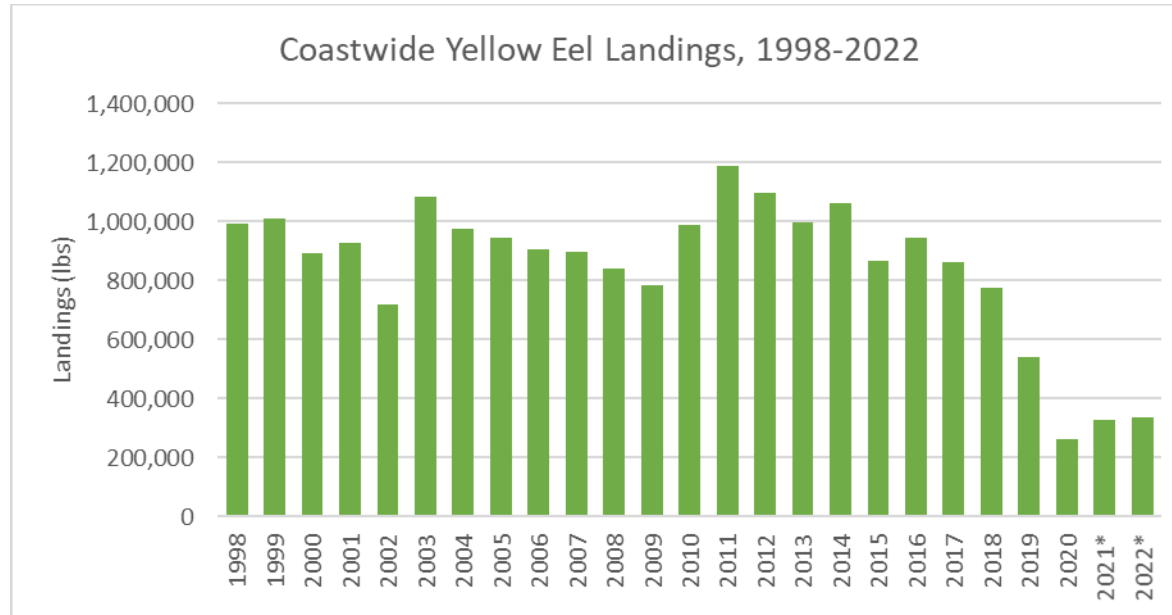


Figure 1. Yellow Eel Coastwide Landings 1998-2022. \*2021 and 2022 data are considered preliminary.

Table 1. State-by-state Yellow Eel Landings: 2014-2023. Source: Atlantic Coastal Cooperative Statistics Program, 2023, and state compliance reports. \*2021 and 2022 data are considered preliminary.

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	PRFC	VA	NC	SC	GA	FL	Total
2014	7,578	Time series average < 400 pounds	3,903	2,353	1,390	38,143	91,225	62,388	619,935	49,293	109,537	60,755	Time series average < 400 pounds	Time series average < 400 pounds	14,092	1,060,725
2015	4,142		2,213	1,538	2,271	50,194	88,828	44,708	493,043	31,588	86,715	57,791			5,632	868,663
2016	6,811		1,705	2,651	2,445	36,371	67,422	44,558	583,578	58,223	96,336	39,911			6,034	946,045
2017	6,358		592	2,968	905	41,732	77,499	29,945	541,270	33,555	97,328	24,752			7,456	864,360
2018	2,832		375	3,988	3,268	39,218	69,679	31,378	514,226	31,151	57,281	18,058			4,659	776,112
2019	2,567		1,577	4,056	5,275	33,039	76,241	13,628	331,878	27,111	34,247	8,140			1,542	539,301
2020	7,012		84	1,425	2,783	16,411	23,742	1,942	159,816	24,971	21,916	3,291			499	263,892
2021*	457		C	1,863	3,255	16,097	26,273	4,433	204,701	10,439	46,345	5,705			9,050	328,618
2022*	877		0	605	3,755	16,570	52,585	2,967	187,810	12,814	36,525	4,202			6,073	317,456

### 2.4.2 State-by-state Descriptions

All states are subject to the FMP requirements for a yellow eel minimum size limit of 9 inches and a ½-by-½ inch minimum mesh size in commercial yellow eel pots. The yellow eel fishery in Maine occurs in both inland and tidal waters. Yellow eel fisheries in southern Maine are primarily coastal pot fisheries managed under a license requirement, minimum size limit, and gear and mesh size restrictions. Yellow eels are taken by a very small number of harvesters (four to five annually) for use as bait. Reported landings have been under 10,000 pounds annually since 2013, and were below 1,000 pounds in 2022.

The New Hampshire fishery has diminished significantly since the early 2000s. Commercial harvest of yellow eel in Massachusetts occurs only in coastal waters; commercial permitting for inland harvest was eliminated in 2013. Massachusetts allows eel harvest by nets, pots, spears, or angling. The commercial fishery is now mainly conducted using baited pots with over 200 permits issued and reported harvest under 2,000 pounds since 2015. Reporting of activity under commercial permits is mandatory, however, underreporting of eels harvested for commercial striped bass fishing bait is expected.

Small-scale, commercial eel fisheries occur in Rhode Island and are mainly conducted in coastal rivers and embayments with pots during May through November. Connecticut has a similar small-scale, seasonal pot fishery for yellow eel in the tidal portions of the Connecticut and Housatonic rivers. All New England states presently require commercial fishing licenses to harvest eels and maintain trip-level reporting.

Licensed eel fishing in New York occurs primarily in the Hudson River, the upper Delaware River (Blake 1982), and in the coastal marine district. A slot limit (greater than 9 inches and less than 14 inches to limit PCB exposure) exists for eels fished in the tidal Hudson River, strictly for use as bait or for sale as bait only. Due to PCB contamination of the main stem, commercial fisheries have been closed on the freshwater portions of the Hudson River and its tributaries since 1976. The fishery in the New York portion of the Delaware River consists primarily of silver eels collected in a weir fishery. New Jersey fishery regulations require a commercial license when using more than two pots or selling catch. Mandatory trip level reporting is required for every month of the year a license is possessed, even if no fishing occurs. Eel pot diameter may not exceed 16 inches if cylindrical or 201 square inches in cross section if any other configuration.

The Delaware eel commercial fishery exclusively uses baited pots equipped with ½-by-½ inch mesh. Delaware mandated catch reporting in 1999 and more detailed effort reporting in 2007. The fishery occurs primarily in the tidal tributaries of Delaware Bay although a small proportion of annual harvest may occur in the Atlantic coastal or “Inland Bays” in some years. American eels are sold for both food and bait, dependent upon market demand. Historically, total annual landings in Delaware were consistently greater than 100,000 pounds and ranked in the top three in value for the State among all Delaware commercial fisheries. A suite of variables (bait supply, market demand, aging out of the most knowledgeable eel fishers) has contributed to recent low annual landings for Delaware.

Maryland, Virginia, and Potomac River Fisheries Commission primarily have pot fisheries for American eels in the Chesapeake Bay. Maryland required eel fisherman to be licensed in 1981 and effort reporting began in 1990. Over 99% of all eel harvest in Maryland occurs with the use of eel pots, and all harvest occurs in tidal waters. Average annual landings and effort have declined 50% and 60%, respectively, from 2018 levels. However, catch per unit effort (CPUE, pounds per pot) in recent years is at the highest levels since effort reporting began in 1990.

Large eels are generally exported whereas small eels are used for bait in the crab trotline fishery, except in Virginia. Almost all of the eel harvest in Virginia is done using eel pots as the main gear. Virginia formerly had a voluntary buyer reporting system that was replaced by a mandatory harvester reporting system for all species in 1993. Most of Virginia's American eel are sold locally for bait with no harvest being exported for sale in recent years. Eel harvesters can sell their eels directly to consumers or to businesses with a VMRC issued eel self-market permit. Some eel harvesters also buy and sell eels from other harvesters and are required to have a seafood buyer permit and an eel buyer permit; monthly reporting of the weights of any purchased eels is required. The Potomac River Fisheries Commission has had harvester reporting since 1964, and has collected eel pot effort since 1988.

North Carolina has a coastal pot fishery with fluctuating effort depending on market demands. While a standard commercial fishing license is required for participation in the commercial eel pot fishery, a permit is not, but a notification letter must be provided as part of the mandatory reporting system. Most commercial yellow eel landings in North Carolina occur in October and November, but there is also a small fishery in the spring. Most landings come from the Albemarle Sound area, with additional landings reported from the Pamlico Sound and southern waterbodies under the jurisdiction of North Carolina Division of Marine Fisheries. No catch records are maintained for freshwater inland waters, and the sale of eels harvested from these waters is prohibited. Trip-level commercial landings are required to document all transfers of fish sold from coastal waters from the fishermen to the dealer. Data reported on these forms include transaction date, area fished, gear used, species landed, and fishermen and dealer information. In 2007, to comply with Addendum I, an eel pot logbook program was implemented at the individual commercial fisherman level to collect additional information not reported on trip tickets including pot soak time, the number of pots fished, and landings (pounds) per pot. Annual yellow eel landings in North Carolina historically were greater than 100,000 pounds; however, market demand and attrition of the most knowledgeable eel fishers has contributed to recent low annual landings.

South Carolina instituted a permitting system in 1998 to document total eel gear and commercial landings. Traps or pots used to capture yellow or silver eels must be permitted by water area fished. Restrictions include specific water designations, possession and size limits. Permit conditions outline fishing closure from September 1 through December 31 and immediate bycatch release. Mandatory reporting of effort and catch is required by the 10th of each month. Since 1999, a total of 583.80 pounds of eels were reported.



American eel fishing in Georgia was restricted to coastal waters prior to 1980 but has since expanded to approved inland waters, including portions of the following rivers: Savannah River, Ogeechee River, Altamaha River, Oconee River, Ocmulgee River, Satilla River, and St. Marys River. Landings data are available for Georgia, and as of April 1, 2018, effort data are available due to commercial eel fishermen being required to possess an eel endorsement stamp in addition to a commercial fishing license. Florida's commercial eel pot fishery is operated under a permit system; the recreational fishery has a 25 fish/angler/day bag limit.

### **2.4.3 Catch per Unit Effort**

CPUE can be used as an index to estimate relative abundance for a population. These indices are often used in stock assessments to inform decisions for how to manage a fishery using options such as quotas, catch limitations, or gear restrictions. For American eel, fishery-dependent CPUE data are available for some states prior to the Addendum I requirement for mandatory catch and effort reporting, but CPUE data were not considered indicative of trends in the stock as a whole in the 2023 stock assessment (ASMFC 2023). Fishery-dependent CPUE is almost exclusively composed of positive trips only; trip reports with zero eels caught are rare because most agencies do not require reports of zero catches. While the CPUE indices provided by individual states do not tend to agree and are not useful for assessing trends in the coastwide stock, they may be useful for understanding fishery trends within each state.

The Connecticut commercial CPUE index was calculated for yellow eels from the pot fishery (Figure 2). The index has fluctuated up and down with no clear trend.

The New York commercial CPUE is an arithmetic mean of pounds per pot per hour fished, based on data from VTR monthly harvester reports (Figure 3). With only five years of data, there is no clear trend in the index.

The New Jersey index generally declined until 2015 then exhibited an upward trend (Figure 4), though it is possible it overestimates CPUE since there were very few trips reported with zero catch.

Delaware considers its American eel catch and effort records since 1999 fairly accurate, and the CPUE in the Delaware fishery has remained fairly stable since 2003 (Figure 5).

Maryland has calculated a commercial CPUE index for the pot fishery since 1992 (Figure 6). The CPUE index was relatively flat from 1992–2002 and then generally increased until hitting the time series high CPUE in the terminal year.

Virginia's commercial eel pot fishery CPUE has shown a general decline since the beginning of the time series (Figure 7). Only data associated with positive effort are included in the calculations as commercial harvesters only report positive catches to the VMRC.

North Carolina logbook data (which began in 2007) was used for calculating a fishery-dependent index of abundance, which has been fairly stable over time (Figure 8).

South Carolina Department of Natural Resources has calculated CPUE for the commercial fishery using monthly dealer reports but the data are confidential.

Commercial catch and effort data collection for American eel in Florida began in 2006, and the CPUE index is available for 2007-2019 but shows no clear trend (Figure 9).

The state CPUE data have not been used in the stock assessment as originally intended when the reporting requirement was established under Addendum I. In the 2012 and 2023 benchmark stock assessments, these data were considered but the assessment team decided against their inclusion because they were not considered indicative of trends in the stock as a whole, and differences in baiting practices and bait preference vary geographically which can confound the accuracy and analysis of fishery-dependent CPUE data. The 2023 stock assessment peer review panel also noted that given the variety of fishing gears and fishing areas, the analysis of fishing effort would not be straightforward. The 2023 stock assessment and peer review reports indicate that there is no plan to use the fishery-dependent CPUE data moving forward. As such, this Draft Addendum includes options to make it voluntary for states to collect these CPUE data for American eel.

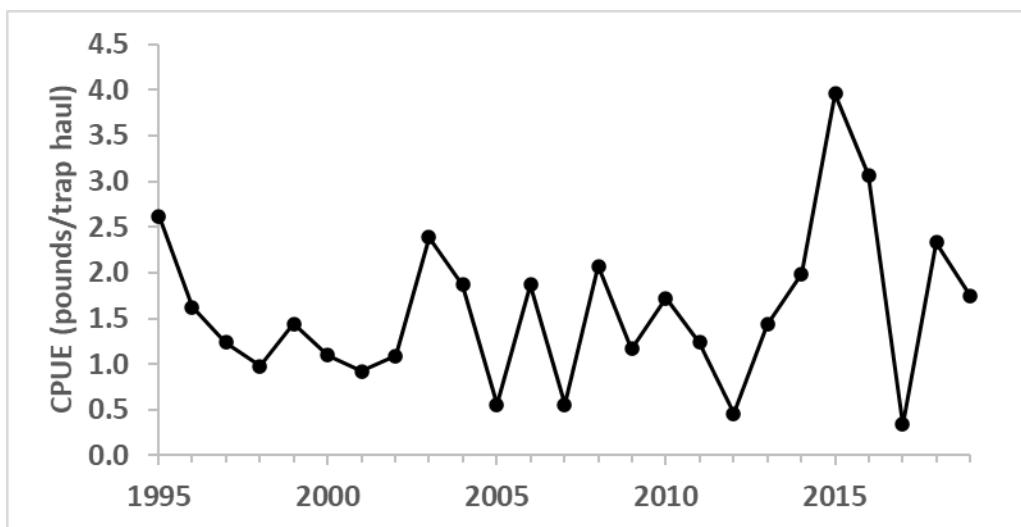


Figure 2. Fishery-dependent catch-per-unit-effort for Connecticut's yellow eel pot fishery. Estimated errors associated with the index were not provided.

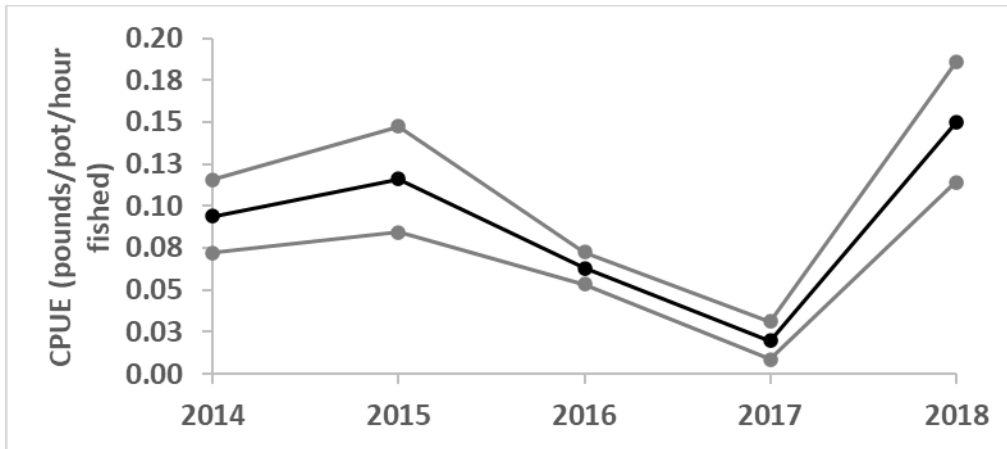


Figure 3. Fishery-dependent catch-per-unit-effort for New York's yellow eel pot fishery. The black line indicates the CPUE and the grey lines indicate 95% confidence intervals.

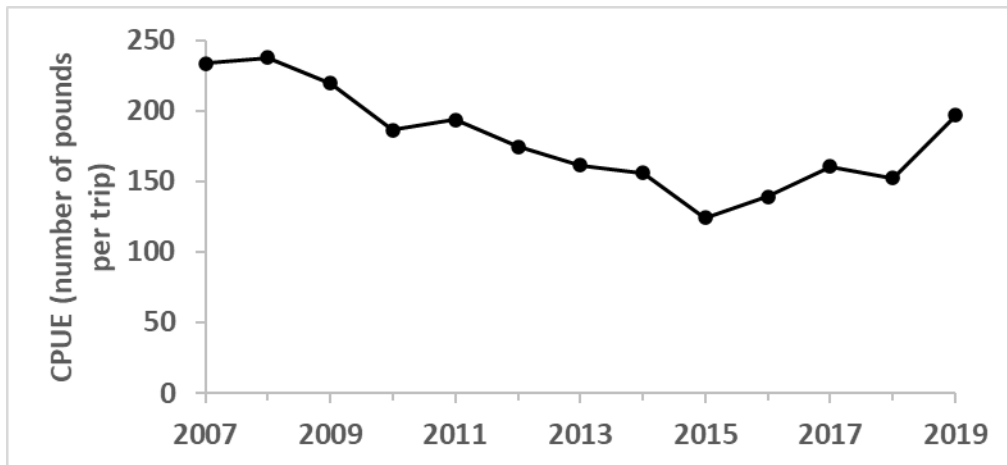


Figure 4. Fishery-dependent catch-per-unit-effort for New Jersey's yellow eel fyke net fishery. Estimated errors associated with the index were not provided.

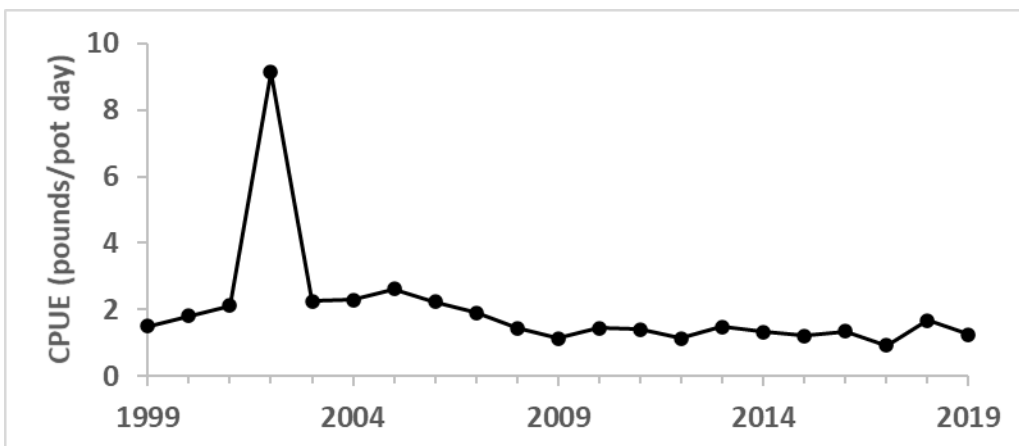


Figure 5. Fishery-dependent catch-per-unit-effort for Delaware's yellow eel pot fishery. Estimated errors associated with the index were not provided.

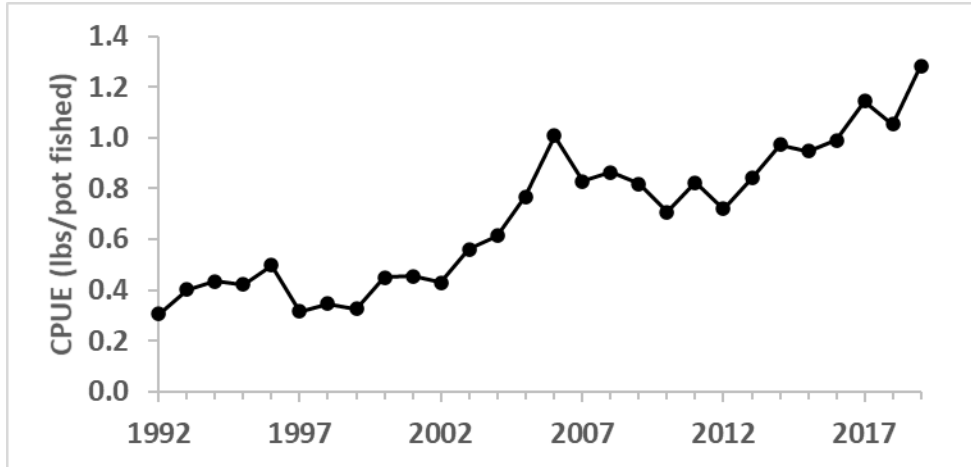


Figure 6. Fishery-dependent catch-per-unit-effort for Maryland's yellow eel pot fishery. Estimated errors associated with the index were not provided.

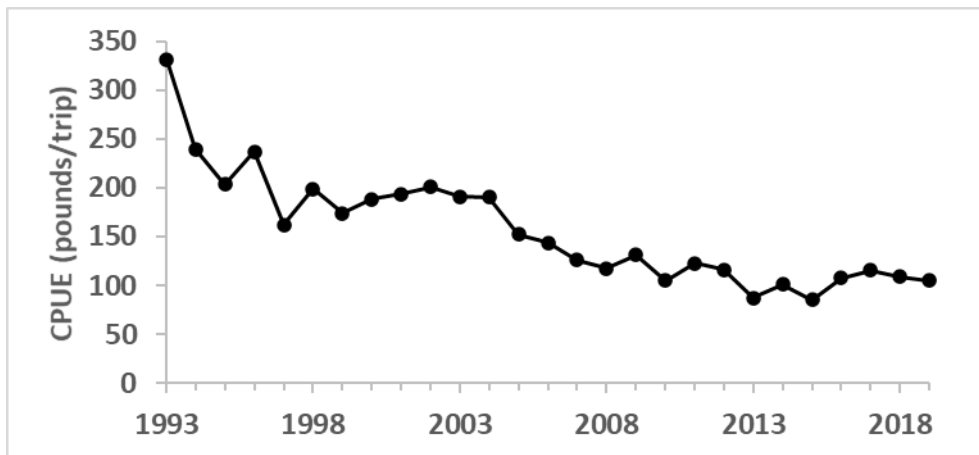


Figure 7. Fishery-dependent catch-per-unit-effort for Virginia's yellow eel pot fishery. Estimated errors associated with the index were not provided.

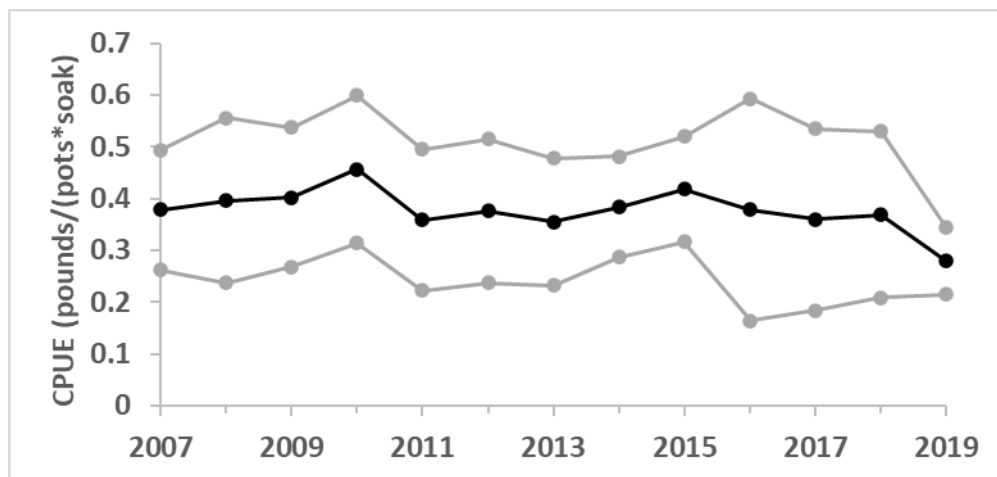


Figure 8. Fishery-dependent catch-per-unit-effort for North Carolina's yellow eel pot fishery. The black line indicates the CPUE and the grey lines indicate 95% confidence intervals.

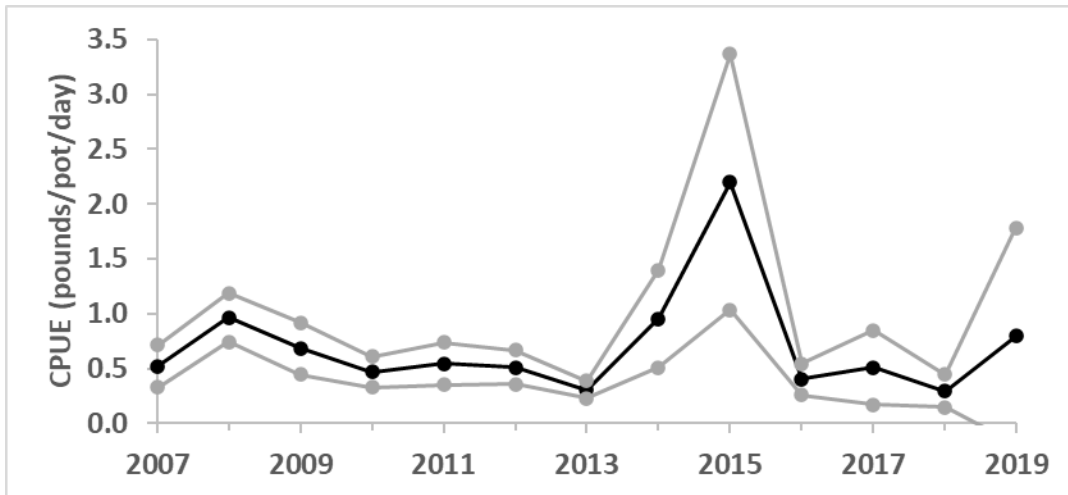


Figure 9. Fishery-dependent catch-per-unit-effort for Florida’s yellow eel pot fishery. The black line indicates the CPUE and the grey lines indicate 95% confidence intervals.

### 3.0 Proposed Management Program

The following options were developed in response to the Board motion from August 2023<sup>1</sup>. The options are organized by issue item.

When the Board takes final action on the addendum, there is the opportunity to select any measure within the range of options that went out for public comment, including combining options across issues. This means when selecting final management measures, the Board may select a coastwide cap that falls within the range of options, i.e., between 202,453 and 916,473 pounds.

### 3.1 Yellow Eel Coastwide Cap and Management Response to Exceeding the Coastwide Cap

#### Issue 1: Coastwide Cap

Addendum V established a coastwide cap of 916,473 pounds, which is the coastwide average landings during the years of 1998 through 2010 (based on revised landings information through 2016 as of January 2018). This timeframe was also the period covered by the 2012 benchmark stock assessment.

Alternative options for coastwide caps were developed using  $I_{TARGET}$ , an index-based method that provides management advice based on abundance indices and catch information, as well as management goals specified by the Board.

When using  $I_{TARGET}$  to recommend a catch cap, there are three parameters that must be specified: the reference period, multiplier, and threshold. The reference period should be a time period where the population is stable or at a desirable abundance level. The multiplier

<sup>1</sup> Move to draft an addendum to consider using  $I_{TARGET}$  to recommend various catch caps, but not use  $I_{TARGET}$  to set biological reference points or stock status.

represents the target level of abundance that management is aiming to achieve, and can range from 1 to 1.5. A multiplier of 1 indicates that the target abundance level is equal to the abundance over the reference period, and a multiplier equal to 1.5 indicates that the target is 1.5 times the average index value over the reference period. The threshold value reflects goals of the fishery. If landings exceed the threshold, then future landings are reduced. A threshold of 0.5 is less conservative, whereas a threshold of 0.8 is more conservative. Adjusting these three parameters affects the resulting coastwide catch cap recommendation.

The stock assessment included analyses that identified regimes in the American eel abundance index data. Regimes are time periods where the abundance index data are more similar compared to other time periods. There were three regimes detected in the yellow eel index: a high yellow eel abundance regime in 1974-1987, a low regime in 1988-1999, and an even lower regime in 2000-2020. The first two regimes are included as reference period options in this addendum. A stable period of relative high abundance (1974-1987) was recommended in the stock assessment as an appropriate reference period. The Management Board requested a reference period when more surveys were available (1988-1999) also be evaluated. This reference period reflects lower relative abundance levels, but relative abundance during this period was higher than in recent years (2000-2020).

Figure 10 shows the relative abundance index and catch time series, with the two reference periods considered in this document identified by the shaded areas.



**Figure 10. Yellow eel landings and abundance index, 1974-2020. The high abundance regime (1974-1987) is represented by the dark gray shaded area. The lower abundance regime (1988-1999) is represented by the light gray shaded area.**

The assessment recommended using  $I_{TARGET}$  with a reference period of 1974-1987, which represents a stable period of relative high abundance of yellow eel. The stock assessment used a multiplier of 1.25 rather than 1.5, because it recognizes that more factors beyond fishing have influenced the stock and may have changed the maximum population size for American eel that can be supported by the environment, therefore higher abundance levels (e.g., 1.5 times the abundance during the higher abundance regime) might not be achievable under current conditions. The Stock Assessment Subcommittee (SAS) recommended that if the Board elects to use the  $I_{TARGET}$  tool to establish the yellow eel coastwide cap, it should use the recommended reference period (1974-1987) and multiplier (1.25) and adjust the tool by choosing the threshold value.

*Option 1: Status Quo*

Under this option, the coastwide cap for yellow eel of 916,473 pounds would be maintained. Based on the 2023 stock assessment advice, this option is not recommended by the Plan Development Team.

*Option 2: Coastwide Cap set at **202,453 pounds** using  $I_{TARGET}$  configuration recommended in the 2023 benchmark stock assessment*

The coastwide cap for yellow eel would be set at 202,453 pounds, using the following configuration of  $I_{TARGET}$ , which was recommended in the 2023 Benchmark Assessment and Peer Review Report with catch and abundance index data through 2020:

Reference Period: 1974-1987  
Multiplier: 1.25  
Threshold: 0.8

This option aims to achieve a relative abundance level that is 1.25 times the average index value from 1974-1987, meaning a 25% larger population than the average population during that time period.

The assessment used a threshold value of 0.8 because it reflects a more conservative approach, and was recommended in the recent research track assessment conducted by the Northeast Fisheries Science Center (NEFSC) that examined methods for providing catch advice in data-limited fisheries.

*Option 3: Coastwide Cap set at **518,281 pounds** using  $I_{TARGET}$*

Under this option, the catch cap is set at 518,281 pounds, which is based on the following configuration of  $I_{TARGET}$  with catch and abundance index data through 2020:

Reference Period: 1974-1987  
Multiplier: 1.25  
Threshold: 0.5

This option uses a reference period of 1974-1987 and multiplier of 1.25, as recommended in the stock assessment. It aims to achieve a relative abundance level that is 1.25 times the average index value from 1974-1987, which is the same target abundance in Option 2. The threshold value of 0.5 reflects a less conservative approach to managing the fishery to achieve the target abundance than the previous option. This would likely increase the amount of time needed to achieve the target index compared to Option 2.

**Option 4: Coastwide Cap set at 509,780 pounds using  $I_{TARGET}$**

Under this option, the catch cap is set at 509,780 pounds, which is based on the following configuration of  $I_{TARGET}$  with catch and abundance index data through 2020:

Reference Period: 1988-1999

Multiplier: 1.5

Threshold: 0.5

This option uses a reference period of 1988-1999, which represents a period of lower abundance, and a multiplier of 1.5. Thus, this option aims to achieve a relative abundance level that is 1.5 times the average index value from 1988-1999, meaning a 50% larger population than the average population during that time period. The abundance target in this option is slightly lower than the abundance target in Options 2 and 3. The threshold value of 0.5 reflects a less conservative approach to managing the fishery to achieve the target abundance.

**Option 5: Coastwide Cap set at 716,497 pounds using  $I_{TARGET}$**

Under this option, the catch cap is set at 716,497 pounds, which is based on the following configuration of  $I_{TARGET}$  with catch and abundance index data through 2020:

Reference Period: 1988-1999

Multiplier: 1.25

Threshold: 0.5

This option uses a reference period of 1988-1999, which represents a period of lower abundance, and a multiplier of 1.25. Thus, this option aims to achieve a relative abundance level that is 1.25 times the average index value from 1988-1999, meaning a 25% larger population than the average population during that time period. The abundance target for this option is 39% lower than the target recommended in the stock assessment. The threshold value of 0.5 reflects a less conservative approach to managing the fishery to achieve the target abundance.

The PDT does not recommend consideration of this option. The catch cap recommended when using this configuration is more than three times the catch cap that was recommended in the stock assessment (Option 2).



Figure 11 illustrates the difference in the catch caps produced by each of the above configurations of  $I_{TARGET}$ , where each colored line consists of annual data points representing the catch cap that would have been produced with each year as the terminal year of data. This demonstrates that coastwide caps recommended using  $I_{TARGET}$  change based on the time series of catch and abundance data that are used in the model. The assessment used 2020 as the terminal year; therefore, the catch caps considered in this draft addendum are based on landings and index data through 2020. If the Board selects any of the options that base the coastwide cap on  $I_{TARGET}$ , additional years of catch and abundance index data could be used to update the recommended catch level in the future based on changes in yellow eel catch and abundance (see Section 3.2).

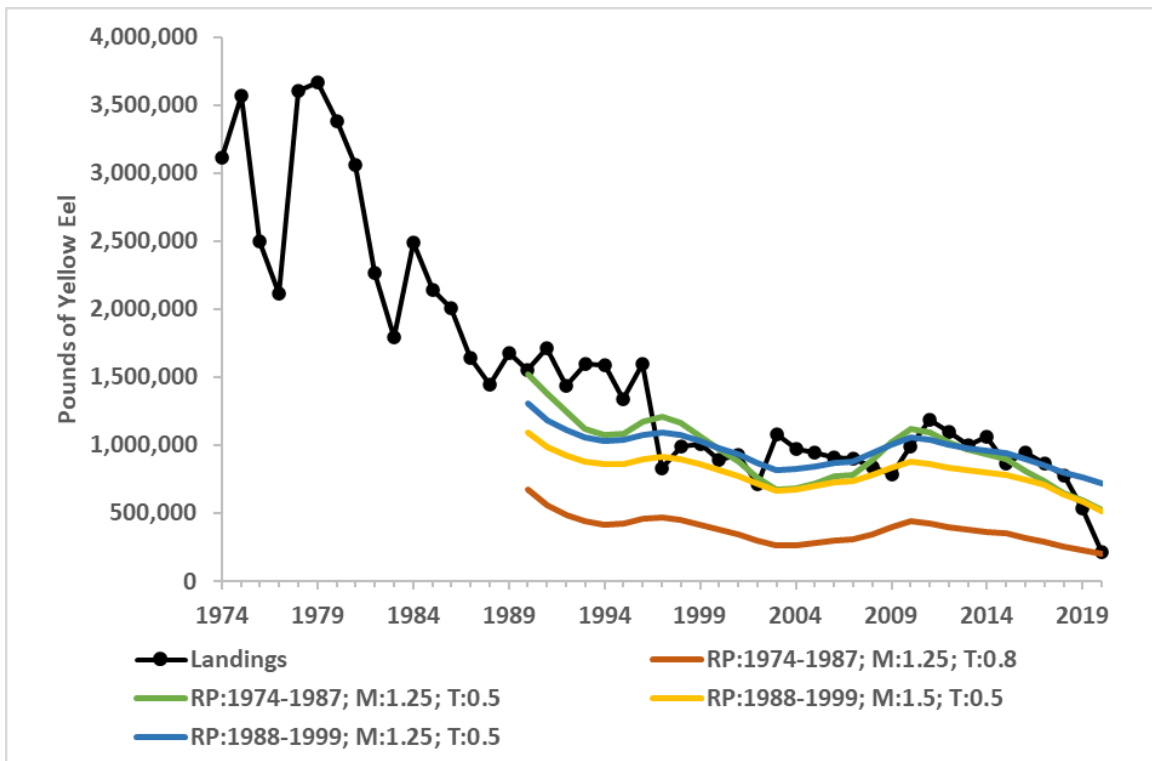
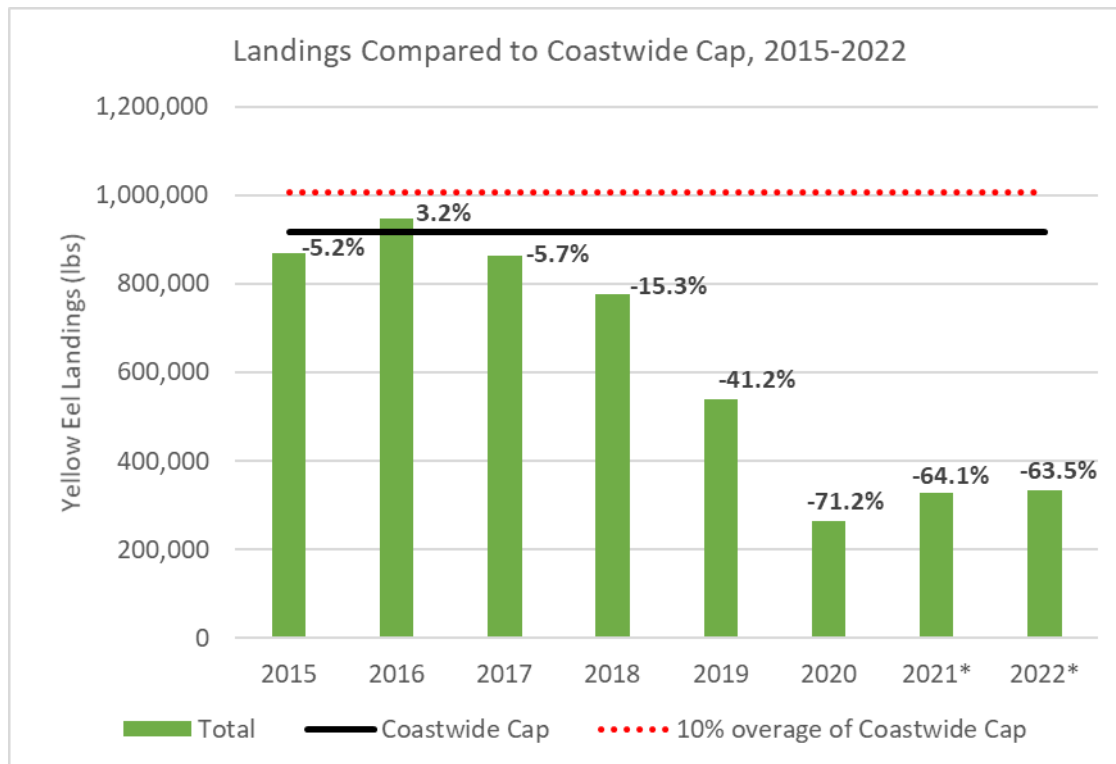


Figure 11. Comparison of catch advice produced by each of the proposed configurations of  $I_{TARGET}$  relative to annual coastwide catch. RP=reference period; M=multiplier; T=threshold value. The orange line represents Option 2, the green line represents Option 3, the yellow line represents Option 4, and the blue line represents Option 5. Each year represents the terminal year of data used in the model.

### Issue 2: Management Response to Exceeding the Coastwide Cap

Addendum V established that the coastwide landings are annually evaluated against a two-year management trigger. If the coastwide cap is exceeded by 10% (10% of the coastwide cap = 91,647 pounds; coastwide cap + 10% = 1,008,120 pounds) for two consecutive years, then only states with landings greater than 1% of the coastwide landings, in the year(s) when the management trigger is tripped, will be responsible for reducing their landings to achieve the coastwide cap in the subsequent year. States with landings greater than 1% of the coastwide landings will work collectively to achieve an equitable reduction to the coastwide cap. For

states with landings less than 1% of the coastwide landings, if in subsequent years a state’s landings exceeds 1% of the coastwide landings after reductions have been applied, that state must reduce their individual state landings in the subsequent year to return to the less than 1% level. More details on the process the Management Board will undertake to respond to overages of the coastwide cap are outlined in the Appendix.



**Figure 12. Coastwide yellow eel landings from 2015-2022 compared to the Addendum V coastwide cap and a 10% overage of the cap (the Management Trigger). Percentages above each bar indicate percent above or below the coastwide cap.**

**Option 1: Status Quo**

The management trigger, landings evaluation process, and management response established in Addendum V would remain in place (see Appendix).

**Option 2: States with 5% or greater of coastwide landings**

This option would modify the management response that would take place if the coastwide cap is exceeded by 10% under the addendum V guidelines. Under this option, only states with landings greater than 5% of the coastwide landings in the year(s) when the management trigger is tripped will be responsible for reducing their landings to achieve the Coastwide Cap in the subsequent year. Those states with landings greater than 5% of the coastwide landings will work collectively to achieve an equitable reduction to the Coastwide Cap. For those states with landings less than 5% of the coastwide landings, if in subsequent years a state’s landings exceeds 5% of the coastwide landings after reductions have been applied, that state must reduce their individual state landings in the subsequent year to return to the <5% level.

For reference, Table 2 shows the percent of the coastwide landings contributed by each state in recent years.

**Table 2. Percent of total coastwide yellow eel landings contributed by each state. Shaded cells represent > 5% of the annual coastwide landings.**

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	PRFC	VA	NC	SC	GA	FL
2014	0.7%	Time series average < 0.1%	0.4%	0.2%	0.1%	3.6%	8.6%	5.9%	58.4%	4.6%	10.3%	5.7%	Time series average < 0.1%	Time series average < 0.1%	1.3%
2015	0.5%		0.3%	0.2%	0.3%	5.8%	10.2%	5.1%	56.8%	3.6%	10.0%	6.7%			0.6%
2016	0.7%		0.2%	0.3%	0.3%	3.8%	7.1%	4.7%	61.7%	6.2%	10.2%	4.2%			0.6%
2017	0.7%		0.1%	0.3%	0.1%	4.8%	9.0%	3.5%	62.6%	3.9%	11.3%	2.9%			0.9%
2018	0.4%		0.0%	0.5%	0.4%	5.1%	9.0%	4.0%	66.3%	4.0%	7.4%	2.3%			0.6%
2019	0.5%		0.3%	0.8%	1.0%	6.1%	14.1%	2.5%	61.5%	5.0%	6.4%	1.5%			0.3%
2020	2.7%		0.0%	0.5%	1.1%	6.2%	9.0%	0.7%	60.6%	9.5%	8.3%	1.2%			0.2%
2021*	0.1%		C	0.6%	1.0%	4.9%	8.0%	1.3%	62.3%	3.2%	14.1%	1.7%			2.8%
2022*	0.3%		C	0.2%	1.1%	8.1%	15.7%	0.9%	56.4%	3.8%	10.6%	1.1%			1.8%

### 3.2 Timeframe for Yellow Eel Provisions

The following options would determine how long the selected coastwide cap would remain in place before any changes are considered.

#### Option 1: No sunset date, cap can be updated after three years

Under this option there would be no sunset date for this Addendum. The selected coastwide landings cap for yellow eel would remain in place for three years (2025-2027). After three years, the Board may choose whether to update the coastwide cap with additional years of catch and abundance data, or maintain the same coastwide cap. If the Board chooses to update the cap using the selected  $I_{TARGET}$  configuration established in this addendum, this could be done via Board action and a new addendum would not be required. The additional years of data available at that time would be included in the  $I_{TARGET}$  model to provide an updated coastwide cap.

The PDT recommends three years as the minimum amount of time that the cap should remain static before being updated. This is because less than three years of additional data from the yellow eel abundance index and the coastwide landings would not be sufficient to evaluate the performance of the cap and provide an updated catch limit.

If a new or different management program is desired than what is specified in the prior sections (e.g., a different configuration of  $I_{TARGET}$ ), a new addendum would be required.

#### Option 2: No sunset date, cap can be updated after five years

Under this option there would be no sunset date for this Addendum. The selected coastwide landings cap for yellow eel would remain in place for five years (2025-2029). After five years, the Board may choose whether to update the coastwide cap with additional years of data, or

maintain the same coastwide cap. If the Board chooses to update the cap using the selected  $I_{TARGET}$  configuration established in this addendum, this could be done via Board action and a new addendum would not be required. The additional years of data available at that time would be included in the  $I_{TARGET}$  model to provide an updated coastwide cap.

A time period of five years is provided as an alternative to three years. Five years of additional data from the yellow eel abundance index and the coastwide landings would be more robust for providing an updated catch limit.

If a new or different management program is desired than what is specified in the prior sections (e.g., a different configuration of  $I_{TARGET}$ ), a new addendum would be required.

### **3.3 Annual Young-of-Year Abundance Survey**

The following options consider modifying the biological sampling requirements of the annual YOY abundance survey established in the FMP.

#### *Option 1: Status Quo*

Under this option all requirements for the annual YOY abundance survey established in Section 3.1.1 of the FMP would remain in place. This means states must continue to collect individual lengths and pigment stage of the entire survey catch, or a statistical subsample where the catch of young-of-year is too large.

#### *Option 2: Voluntary biological sampling in the YOY survey*

Under this option the requirements of the annual YOY abundance survey established in Section 3.1.1 of the FMP would be modified such that the states would no longer be required to collect individual lengths and pigment stage of the YOY catch. All other survey requirements would remain in place. States may continue to collect biological data voluntarily.

This option is proposed in response to a recommendation from the SAS and Technical Committee (TC). The SAS and TC recommend that the biological sampling requirement for YOY surveys be made optional, given the lack of trends in pigment, length, and weight within and among sampling sites (ASMFC 2023).

### **3.4 Catch and Effort Monitoring Program**

Addendum I established fishery-dependent monitoring requirements for commercial eel fisheries. Specifically, since 2007 states have been required to implement mandatory reporting of eel catch and effort by either harvesters or dealers as a condition of their permit. The following options consider changing the Addendum I fishery-dependent monitoring requirements.

#### *Option 1: Status Quo*

Under this option there would be no change to the current fishery-dependent reporting requirements. Harvesters or dealers would still be required to report trip-level data including soak time, number of units of gear fished, and pounds landed by life stage.

### Option 2: Voluntary collection of fishery-dependent catch-per-unit-effort (CPUE) for yellow eel harvest

Under this option states would no longer be required to mandate that harvesters or dealers report trip-level CPUE data (i.e., soak time, number of units of gear fished, and pounds landed per unit) for yellow eel harvest. If a state wishes to maintain this reporting requirement it may do so voluntarily. All states would continue to be required to collect estimates of directed harvest by month, life stage, and gear type, to be provided in the annual compliance report. This option would not modify any fishery-dependent reporting requirements for the glass eel life stage.

### **3.5 De Minimis Status**

The Commission defines *de minimis* as "a situation in which, under existing condition of the stock and scope of the fishery, conservation, and enforcement actions taken by an individual state would be expected to contribute insignificantly to a coast-wide conservation program required by a Fishery Management Plan or amendment." Under the American Eel FMP, *de minimis* status exempts a state from having to adopt the commercial and recreational fishery regulations for a particular life stage, and any fishery-dependent monitoring elements for that life-stage listed in Section 3.4.1. of the FMP. States may apply for *de minimis* status for each life stage if (given the availability of data), for the preceding two years, their average commercial landings (by weight) of that life stage constitute less than one percent of coast wide commercial landings for that life stage for the same two-year period.

The Commission updated its *De minimis* Policy in November 2022. The Policy outlines *de minimis* standards for FMPs. A species management board may deviate from these standards to address unique characteristics of a fishery. If a board deviates from the Policy's standards, a rationale must be provided within the FMP. This Policy does not automatically change the provisions of current FMPs. In order to change *de minimis* standards, an addendum or amendment process must be completed, unless the FMP specifies a different process. Therefore, this Draft Addendum considers options to modify the American Eel *de minimis* criteria to align with the updated Commission Policy.

### Option 1: Status Quo

If this option is selected, the *de minimis* threshold for American eel will continue to be based on the average landings from the previous two years of landings. A state can be considered *de minimis* if the average landings for the last two years are less than 1% of the coastwide landings for the same two years.

### Option 2: Modify de minimis policy for eel to apply the Commission policy

If this option is selected, the *de minimis* threshold for American eel will be based on the average landings from the previous three years of landings. The averaging of multiple years of data prevents a state from taking action as a result of a rare event. A state can be considered *de minimis* if the average landings for the last three years are less than 1% of the coastwide landings for the last three years.

#### **4.0 Compliance**

If the existing American Eel FMP is revised by approval of this draft addendum, the American Eel Management Board will establish dates by which states will be required to implement the addendum provisions.

#### **5.0 References**

Atlantic States Marine Fisheries Commission (ASMFC). 2000. [Interstate Fishery Management Plan for American Eel \(\*Anquilla rostrata\*\)](#). Washington D.C. NOAA Oceanic and Atmospheric Administration Award No. NA97 FGO 0034 and NA07 FGO 024.

ASMFC. 2012. [American Eel Benchmark Stock Assessment](#). Arlington, VA.

ASMFC. 2014. [Addendum IV to the Interstate Management Plan for American Eel](#). Arlington, VA.

ASMFC. 2017. [American Eel Stock Assessment Update](#). Arlington, VA.

ASMFC. 2018. [Addendum V to the Interstate Management Plan for American Eel](#). Arlington, VA.

ASMFC. 2023. [American Eel Benchmark Stock Assessment and Peer Review Reports](#). Arlington, VA.

Blake, L. M. 1982. Commercial fishing for eel in New York State. In K. H. Loftus (ed). Proceedings of the 1980 North American eel conference. Ont. Fish. Tech. Rep. Ser. No. 4. 97pp

## Appendix

### Policy to Address Coastwide Cap Overages for the Yellow Eel Commercial Fishery

This appendix describes the Board response that was established under Addendum V for in the event that the coastwide cap of 916,473 pounds of American eel is exceeded in a given year. Sections 3.3.2 and 3.3.3 of this Addendum state the following regarding the management trigger and the response:

#### 3.3.2 Yellow Eel Coastwide Cap Management Trigger

*Starting in 2019, the coastwide landings are annually evaluated against a two-year management trigger. If the coastwide cap is exceeded by 10% (10% of the coastwide cap = 91,647 pounds; coastwide cap + 10% = 1,008,120 pounds) for two consecutive years, the Board is required to alter the management program as specified below to ensure the objectives of the management program are achieved.*

#### 3.3.3 Allocation

*The yellow eel fishery is managed without state-specific quotas through adaptive management. If the management trigger is tripped. Only states with landings greater than 1% of the coastwide landings, in the year(s) when the management trigger is tripped, will be responsible for reducing their landings to achieve the coastwide cap in the subsequent year. States with landings greater than 1% of the coastwide landings will work collectively to achieve an equitable reduction to the coastwide cap. For states with landings less than 1% of the coastwide landings, if in subsequent years a state's landings exceeds 1% of the coastwide landings after reductions have been applied, that state must reduce their individual state landings in the following year to return to the less than 1% level<sup>2</sup>.*

A management objective under this Addendum is to manage landings to the coastwide cap (cap). Annual landings are not finalized until the spring of the following fishing year. Therefore, if an overage occurs, a year lag time will likely occur before full action is taken to reduce harvest to the cap. For example, a cap overage in 2019 would not be determined until 2020, and action would likely be delayed until 2021 since some states do not have authority to act within the same fishing year when the overage is determined.

One way to proactively manage the yellow eel fishery is to closely monitor landings and encourage states to take voluntary action when it is clear an overage has occurred in the previous year. By engaging with states before the management trigger is tripped, but after landings have exceeded the cap, a lengthy addendum process can be avoided and more immediate action can be taken to ensure the fishery is managed to the cap. This proactive approach encourages vigilance and voluntary action in the first year of an overage, and provides opportunity for collaborative, rapid action to prevent an overage in the second

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<sup>2</sup> To clarify, reduction measures apply when the management trigger is tripped. States are not held to a landings level until coastwide landings have exceeded the coastwide cap.

consecutive year, thereby preventing the triggering of mandatory management action through an addendum.

Thus, to improve the expediency in reacting to an overage, it is recommended that preliminary commercial yellow eel landings from the ACCSP Data Warehouse be made available for the Board's consideration prior to the ASMFC Spring Meeting, annually. Based on the preliminary data review, if it's determined the cap has likely been exceeded in one year the Board will convene a work group (WG) consisting (at a minimum) of one representative from each state/jurisdiction that harvested more than 1% of the coastwide landings in the year of the overage. The charge of the WG is to consider the overage relative to the decision trees (Figure 1) and determine if and how the Board should recommend voluntary action by those states that harvested more than 1% of the coastwide landings (1% states).

### ***Response Strategy When Cap is exceeded in One Year***

Once convened by the Board, the WG will review the magnitude and the pattern of the overage relative to the decision trees (Figures 1-3) to determine the need for voluntary action. "Pattern" refers to whether landings of American eel increased in all states or in some states while harvest decreased in others. "Magnitude" refers to the extent of the overage and, for individual states, the amount of harvest increase relative to the previous year. It will be important for the WG to examine potential reasons for increasing harvest, such as increased effort, increased availability of eels, improved market conditions, etc. Once the Board recommends states decrease landings it will be up to the states to take action.

States may utilize (but are not restricted to) the following voluntary methods to reduce eel harvest as considered by the Board in Draft Addendum II (2007):

- Seasonal restrictions,
- Gear limits, and
- Size limits.

**Note:** Harvest reductions were not approved by the Board and were not included in Addendum II (2008).

Seasonal restrictions are the simplest method of reducing harvest, but there was strong opposition to the seasonal restrictions from the Advisory Panel when proposed in Draft Addendum II. However, those seasonal closures were designed to increase escapement of silver eels and occurred in the fall during times of maximal fishing effort, so it is conceivable that a seasonal closure could be designed that would reduce harvest without imposing a severe hardship on the fishery. The Board considered a maximum size limit as a method to allow more escapement of silver eels and increase eggs-per-recruit (EPR). A range of size limits were presented in the Draft Addendum ranging from a 19" maximum size limit, which was estimated to increase EPR by 138%, but at a reduction of 40% to the harvest, to a 23" maximum size, which only increased EPR by 3.8% and reduced harvest by less than 10%. A larger minimum size also will reduce harvest if harvest reduction is the sole goal. Size limits could either be enforced by gear modifications or by grading the eels on the water. Gear modifications can impose a



large financial burden on harvesters, depending on the number of pots fished and length limit. If a minimum length is used, eel pots can be modified by installing an escape panel of a mesh size that would only retain eels above the minimum length. If a maximum eel length is used, the funnel(s) on the eel pots can be modified by restricting the circumference. A grader can also be used to comply with length limits at a lower cost to the harvesters than gear modification. Grader bars can be set to pass all eels below a minimum length or to hold all eels above a maximum length. Although the Advisory Panel favored grading for complying with a maximum length limit during the Draft Addendum II deliberations, the Law Enforcement Committee thought on-water enforcement of the length limit by grading would be difficult.

***Response Strategy if the Two-Year Management Trigger is Tripped***

If a review of landings at the Commission's Spring Meeting indicates the two-year management trigger has been met, the Board will initiate an addendum to reduce landings to or below the cap. A Plan Development Team (PDT) will be convened to draft the addendum (Table 1). The PDT will consider a variety of actions to reduce harvest back to the cap, including but not limited to: (1) an equal percent reduction taken only from the 1% states whose harvest increased in the overage year(s); (2) an equal percent reduction taken from all 1% states regardless of whether their harvest increased or decreased; (3) each 1% state takes a base reduction that is less than the total reduction needed, and the remainder of the reduction is taken only by those 1% states who had substantially increased harvest leading up to the overage year. The PDT should consider the impacts of calculating a reduction in harvest from a single overage year, the 2 years over which the trigger was reached or from a baseline within the last 5 years using a maximum of 3 years that ensures equitable reductions.

Once action is taken to reduce harvest to the cap (either voluntary after the first year of an overage or required after the management trigger is tripped), actions will remain in place until the coastwide harvest returns to a level that is at or below the cap. At this point, states may propose adjustments to the Board recognizing the process will begin again if another year's overage occurs or a management action is enacted.

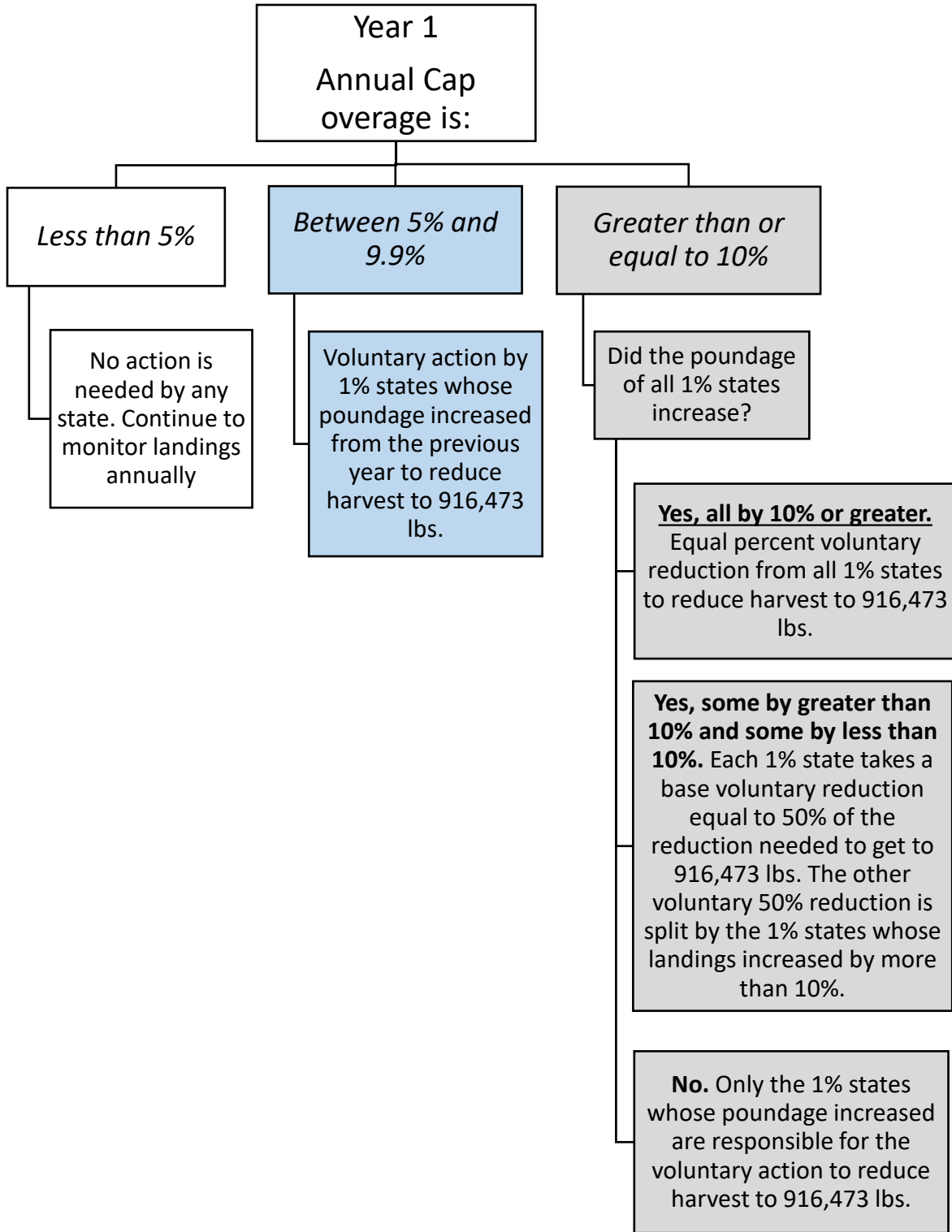


Figure A1. Decision tree for management response to cap overage in Year 1.

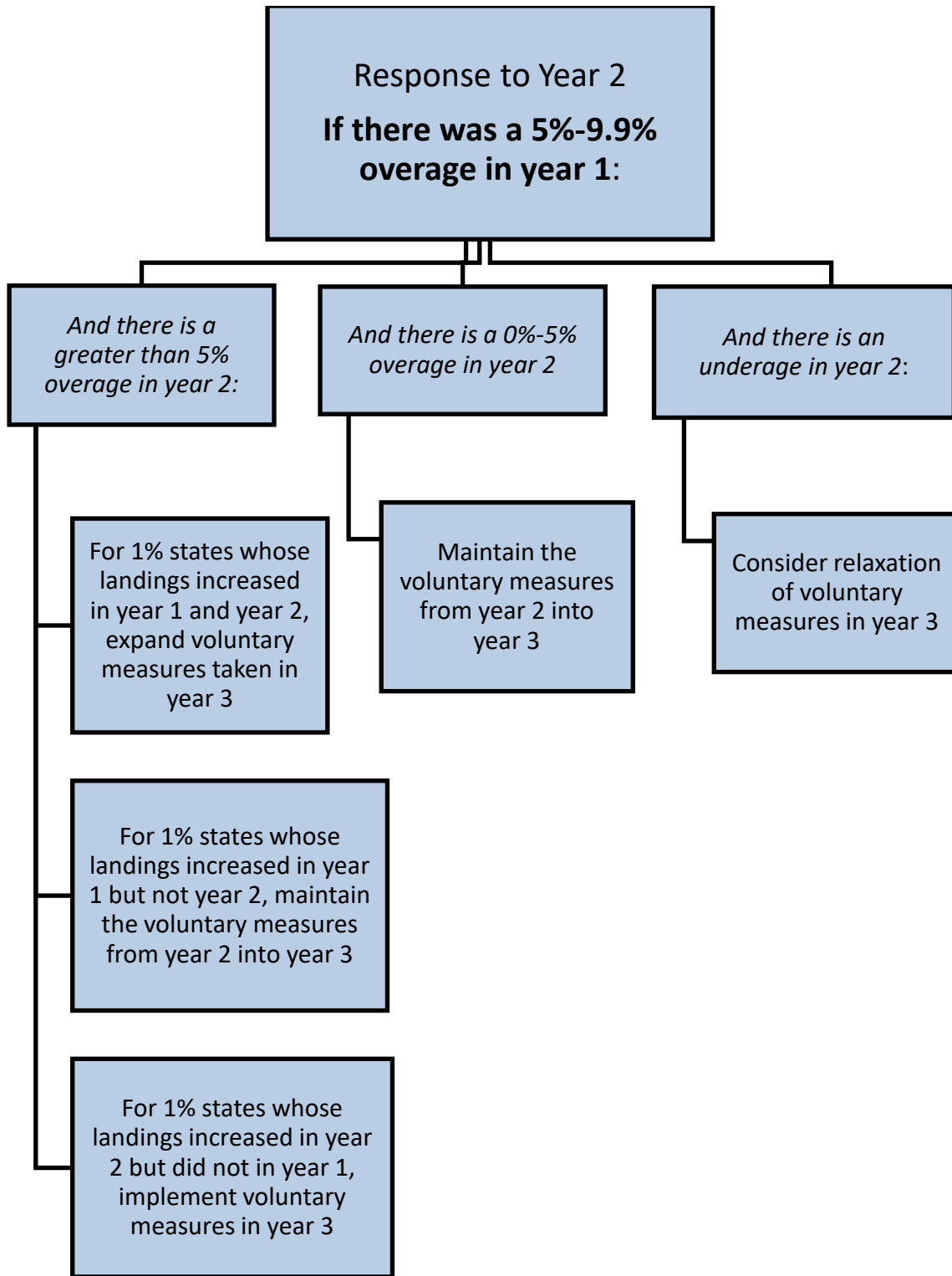


Figure A2. Decision tree for management response in Year 3 if overage is less than 10% in Year 1.

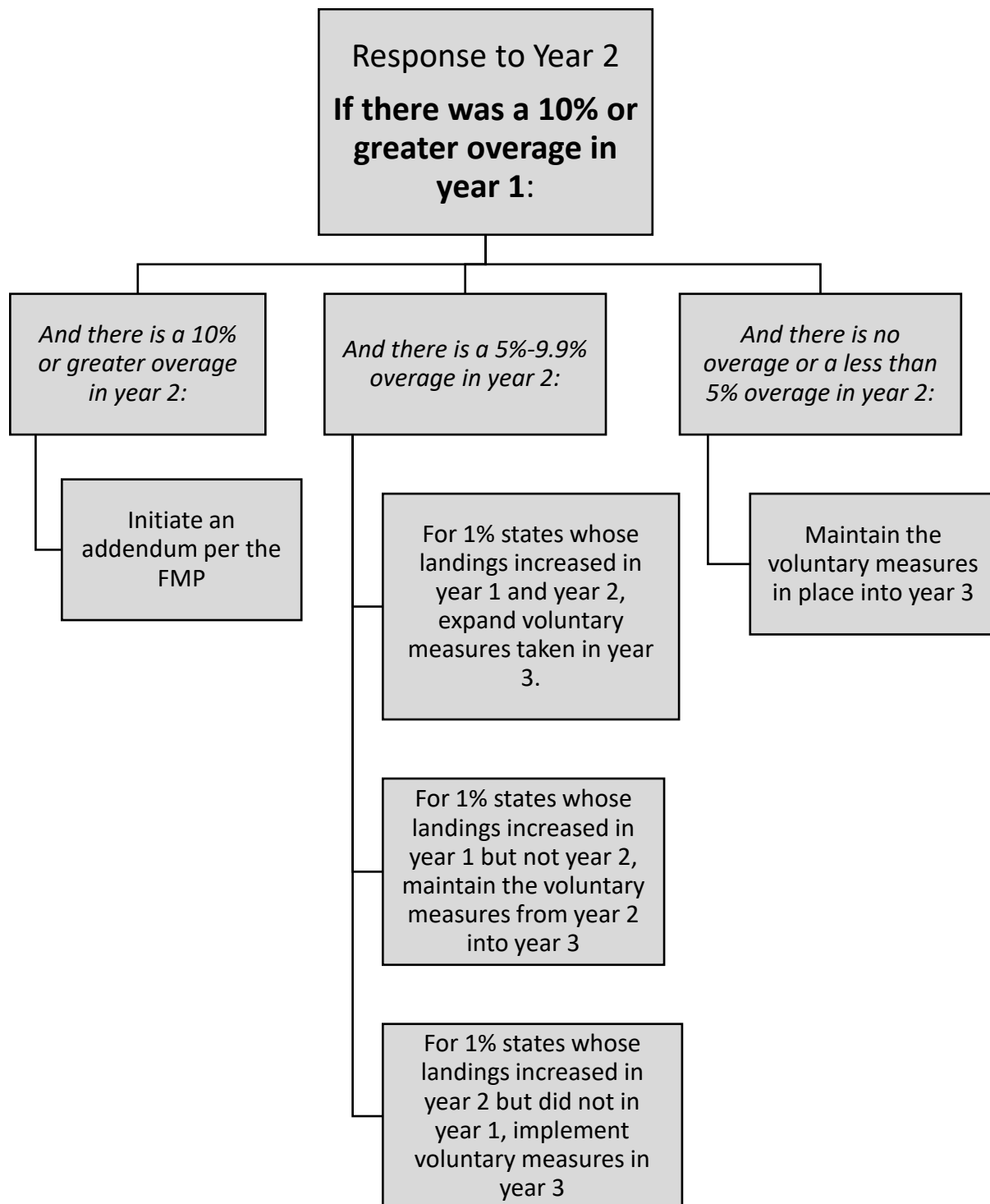


Figure A3. Decision tree for management response in Year 3 if overage is more than 10% in Year 1.



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

**TO:** American Eel Management Board  
**FROM:** American Eel Advisory Panel  
**DATE:** April 16, 2024  
**SUBJECT:** Advisory Panel Report

The Advisory Panel (AP) met virtually April 2, 2024 to review Draft Addenda VI and VII, as well as a summary of public input received during the comment period, and to elect a new AP Chair. Five AP members were in attendance on the call (see below). Staff continues to recommend states revisit their current AP membership in order to improve attendance and participation.

**Participating AP Members:** Mari-Beth DeLucia (TNC, Chair), Mitch Feigenbaum (PA), Richard Stoughton (SC), Timothy LaRochelle (ME), Sara Rademaker (ME)

**Additional Attendees:** Megan Ware (ME), Corrin Flora, Barry Kratchman, Jesse Hornstein (NYDEC), Kristen Anstead (ASMFC)

Caitlin Starks provided an overview of the two Draft Addenda currently under development. Draft Addendum VI addresses Maine's glass eel quota, and Draft Addendum VII considers changes to the yellow eel coastwide catch limit and monitoring requirements. The advisors' input on the proposed options in the Addenda and the public comments is summarized below.

### Draft Addendum VI

On the Maine glass eel quota, Tim LaRochelle and Sara Rademaker, both advisors representing Maine, support the status quo option. Tim noted that in the last few years they have seen phenomenal amounts of glass eels in Maine, and have had large catches that had to be released to prevent exceeding the quota.

Tim and Sara also supported Option 1 for the quota timeframe, so that Board action is not required to keep the same quota in place. Mitch Feigenbaum and Richard Staunton agreed with the Maine advisors. They think Maine is doing a good job managing the fishery and they see no reason to disagree with the public comments in support of status quo.

### Draft Addendum VII

Regarding the coastwide harvest cap for yellow eel (Section 3.1), three of the five AP members on the meeting favored status quo. This was the overwhelming position of adult eel harvesters that attended the state meetings in New Jersey, Maryland, Delaware.

Although Mitch was in favor of status quo, he acknowledged that of the other cap options, Option 5 would cause little short-term disruption to the fishery while, at the same time, expressing that Option 2 is so draconian that it would likely put the yellow eel industry out of business and could lead to the end of the commercial fishery altogether. If currently-depressed market conditions were to improve, Option 5 would allow for some growth in the fishery only up to a point that would still be restricted to the low end of historical volumes.

Mitch did not express a preference for either of the option under Issue 2 (management response to exceeding the quota) but he did comment that the current process if the cap is exceeded seems very complicated it seems that quota management for yellow eel might be simpler.

Mari-Beth DeLucia supported Option 3 for the coastwide cap (518,281 pounds) because there is enough data to support taking a more precautionary approach with the species. This is especially true because we only have information on a portion of the range, and there are more drastic declines in other parts of the range.

AP member Sara Rademaker expressed no position about the coastwide cap options.

Regarding Section 3.2 (timeframe for yellow eel cap) Mitch and Sara spoke in support of Option 1, meaning the cap could be updated after 3 years. As there is better data and modeling, the cap should be able to be updated sooner. The other AP members did not comment on this issue.

On Section 3.3 (young-of-year [YOY] biosampling), all of the AP members present were in favor of Option 2, to make the collection of individual lengths and pigment stages during YOY surveys optional. They did clarify that the surveys should always distinguish the age class they are sampling (i.e., glass eel or elvers, year 0 or year 1).

On Section 3.4 (Catch-per-unit-effort [CPUE] reporting), Mitch, Sara, and Richard supported Option 1, status quo. They said it is important to keep the CPUE requirement since this is a data poor species and the public comments support it. Mitch added that the Technical Committee has said previously that without effort the fishery catch information cannot be used as an index.

Mari-Beth was in favor of Option 2 to make the CPUE reporting requirement optional; she noted that with limited resources, the states may be able to improve data collection in other areas without the burden of this requirement.

Regarding Section 3.5 (*de minimis* status) the AP members said they do not have a strong preference and can support Option 2 if that is the recommendation from the Commission.

Mitch provided some additional thoughts related to Draft Addendum VII, including concerns about the accuracy of the fishery independent indices that are used for  $I_{TARGET}$  and that the

surveys are only capturing areas where the fishery occurs, not the vast majority of the US range. He noted that the stock assessment faces challenges with eel being a data poor species with a very unique life cycle. The last four assessments have been searching for a model that will get us closer to biological reference points, but he does not think *I<sub>TARGET</sub>* is necessarily better than previous models.

#### AP Chair

The AP held an election for the AP Chair position. Mitch Feigenbaum was nominated, and was elected with the support of all the AP members present. Mitch noted that he will serve as the AP Chair for an appropriate term, based on the feedback and preferences of the Eel Board Chair and other Pennsylvania delegates. Thereafter, he expects to step down from the AP, after almost twenty years of proud participation at ASMFC on the Panel and as a (proxy) Commissioner for Pennsylvania.