Atlantic States Marine Fisheries Commission

Weakfish Management Board

February 9, 2012
10:15 a.m. – 11:15 a.m.
Alexandria, Virginia

Draft Agenda

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

1.	Welcome/Call to Order (*J. Gilmore)*	10:15 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from August 2011	10:15 a.m.
3.	Public Comment	10:20 a.m.
4.	Technical Committee Report (*L. Paramore)* • Update on NC Conservation Equivalency	10:25 a.m.
5.	Consider 2011 FMP Review and State Compliance (*M. Waine*) **Action**	10:55 a.m.
6.	Review and Populate Committee on Economics and Social Sciences Membership (*M. Waine)* **Action**	11:10 a.m.
7.	Other Business/Adjourn	11:15 a.m.

The meeting will be held at the Crowne Plaza, 901 N. Fairfax Street, Alexandria, VA 22314; 703-683-6000

MEETING OVERVIEW

Weakfish Management Board Meeting
Thursday, February 9, 2012
10:15 a.m. – 11:15 a.m.
Alexandria, Virginia

Chair: Jim Gilmore (NY) Assumed Chairmanship: 1/11	Technical Committee Chair: Lee Paramore (NC)	Law Enforcement Committee Representative: Mike Davis (NC)
Vice Chair: Russ Allen (NJ)	Advisory Panel Chair: Billy Farmer (NC)	Previous Board Meeting: August 3, 2011
Voting Members: MA, RI, CT, NY, NJ, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (15 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 3, 2011

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. Technical Committee Report on NC Conservation Equivalency (10:25-10:55 a.m.)

Background

- At the August meeting, the Board tasked the Technical Committee to update their assessment regarding NC conservation equivalency through September 2011.
- The Technical Committee assessed the NC conservation equivalency measure and the measures of other states as directed by the Board.

Presentations

- Report on NC conservation equivalency program by L. Paramore, TC Chair (**Briefing CD**).

Board actions for consideration at this meeting

- None

5. Fishery Management Plan Review (10:55-11:10 a.m.) Action

Background

- State Compliance Reports are due on September 1 (**Briefing CD)**
- The Plan Review Team reviewed each state report and drafted the 2011 FMP Review (**Briefing CD**)
- The states of Massachusetts, Connecticut, Georgia, and Florida requested *de minimis*.

Presentations

- Overview of the 2011 FMP Review by M. Waine

Board actions for consideration at this meeting

- Accept the 2011 Fishery Management Plan Review and Compliance Report
- Approve *de minimis* requests from Massachusetts, Connecticut, Georgia, and Florida.

6. Committee on Economics and Social Sciences Membership (11:10-11:15 a.m.)

Background

- The Committee on Economics and Social Sciences has recommended Mr. Manoj Shivlani be appointed as the social scientist representative to the Plan Development Teams and Technical Committees for Weakfish (**Briefing CD**).

Presentations

- Nominations by M. Waine

Board actions for consideration at this meeting

- Approve Mr. Manoj Shivlani

7. Other Business/Adjourn

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

WEAKFISH MANAGEMENT BOARD

Crowne Plaza
Old Town Alexandria, Virginia
August 3, 2011

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

TABLE OF CONTENTS

INDEX OF MOTIONS

ATTENDANCE

Board Members

Mark Gibson, RI, Administrative Proxy
Rick Bellavance, RI, proxy for Rep.Martin (LA)
David Simpson, CT (AA)
Bill McElroy, RI (AA)
Andrew Voros, NY, proxy for Sen. Johnson (LA)
Pat Augustine, NY (GA)
James Gilmore, NY (AA)
Russ Allen, NJ, proxy for D. Chanda (AA)
Tom Fote, NJ (GA)
Rick Cole, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Bernie Pankowski, DE, proxy for Sen.Venables (LA)
Tom O'Connell, MD (AA)
Bill Goldsborough, MD (GA)
Russell Dize, MD, proxy for Sen. Colburn (LA)
Catherine Davenport, VA (GA)
Michelle Duval, NC, proxy for L. Daniel (AA)
John Frampton, SC (AA)
Malcolm Rhodes, SC (GA)
Robert Boyles, SC (LA)
Bill Cole, NC (GA)
Spud Woodward, GA (AA)
Michael Denmark, GA, proxy for J. Duren (GA)
Bill Orndorf, FL (GA)
Aaron Podey, FL, proxy for J. McCawley (AA)
Sen. Thad Altman, FL (LA)
Steve Meyers, NMFS
Jaime Geiger, USFWS
A.C. Carpenter, PRFC

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

Ex-Officio Members

Lee Paramore, Technical Committee Chair

Staff

Vince O'Shea
Bob Beal
Chris Vonderweidt
Mike Waine

Guests

Rob O'Reilly, VMRC

The Weakfish Management Board of the Atlantic States Marine Fisheries Commission convened in the Presidential Ballroom of the Crowne Plaza Hotel Old Town, Alexandria, Virginia, August 3, 2011, and was called to order at 11:00 o'clock a.m. by Chairman James Gilmore.

CALL TO ORDER

CHAIRMAN JAMES GILMORE: Good morning, everybody. My name is Jim Gilmore. I'm the administrative commissioner for New York, and I'm chairing the Weakfish Board meeting today.

APPROVAL OF AGENDA

The first order of business is to approve the agenda. Are there any changes to the agenda? Seeing none, we'll accept that.

APPROVAL OF PROCEEDINGS

The second order of business is the approval of the minutes from the March 2011 meeting, which is in your Briefing CD. Does anybody have any changes to the minutes from the meeting? Seeing none, we will move on from that and we'll accept those.

PUBLIC COMMENT

Before each meeting, we have a period for public comment at the start of each meeting to give the public an opportunity to speak on issues not on the agenda.

TECHNICAL COMMITTEE REPORT ON THE NORTH CAROLINA CONSERVATION EQUIVALENCY

Without any public comment, I think we'll move on to the first agenda item, which is the Technical Committee Report on the North Carolina Conservation Equivalency. If you recall, North Carolina requested a 10 percent bycatch allowance up to a thousand pounds. The board approved that. There was a requirement that they provide some monitoring and do an annual review. They've done that and Lee Paramore is go through that and explain the details of the review.

MR. LEE PARAMORE: I briefly want to go through the document that you had in your mailout. I will do that here in this presentation. I've summarized most of the information in your document here on these slides. This is a report on the North Carolina Conservation Equivalency Measures. August 20th North Carolina implemented a 10 percent weakfish bycatch allowance.

This was a 10 percent allowance that allowed up to a thousand pounds of weakfish to be landed as long as the 10 percent bycatch was not exceeded. This was done in lieu of the hundred pound commercial trip limit that was implemented up and down the rest of the coast for the other states. Basically, we have taken landings here and the compliance with those landings and summarized it for two periods.

The measure went in effect August 20th, but I've summarized it for the period of September through December of 2010 and then January through April of 2011. As far as landings go, during that first period, September through December, North Carolina landed approximately 63,000 pounds. This occurred over about 2,300 trips. Of these trips, 17 percent of these trips had landings that exceeded the 10 percent bycatch allowance, so 10 percent of these trips were out of compliance. The total pounds that were landed on these trips that are out of compliance accounted for 19,519 pounds.

This was 31 percent of the total catch during this period, so a pretty high non-compliance in this period. During the more recent period, January through April 2011, North Carolina landed 32,000 pounds, a little over 1,300 trips. Five percent of these trips exceeded the 10 percent bycatch allowance. This accounted for 1,143 pounds. You can see the compliance has vastly improved since the first period and was 3 percent in 2011 so far.

If you want to look at the same information but just break it down by gear so you can kind of see who the primary culprits were in terms of the non-compliance, you can see winter trawls had zero trips that were non-compliant, so they were pretty good. They only landed 4,000 pounds of weakfish during this period, but none of those trips were out of compliance.

It was primarily gill nets and long hauls. Gill nets landed the vast majority of the landings, nearly 38,000 pounds. This occurred over 2,000 trips. Seventeen percent of these trips were out of compliance, and over 12, 576 pounds were landed on these trips that were non-compliant. This accounted for 33 percent of the total gill net landings.

Long hauls, a similar situation – actually, almost 30 percent of the long-haul trips were non-compliant and approximately 35 percent of the landings that

occurred in long hauls were non-compliant. The overall combined average for all gears was 31 percent non-compliant. This is for that first period again, September through December.

If we look at the second period, which is the more recent period, after the regulation has been in place for a while, January through April we can pretty much all gears had fairly good compliance. The biggest gear here that accounted for most of the landings were gill nets. They landed 32,613 pounds. Five percent of those trips were out of compliance and accounted for 948 pounds, and that was 3 percent of the total.

Others, it looks really bad but you have to keep in mind that was based on only two trips, that 59 percent non-compliance, and accounted for 195 pounds. So, really, compliance from January through April seems to have been pretty good and sort of in line with what we kind of expected from most gears in fisheries is 2 to 3 percent non-compliance is pretty normal.

If we just sort of break it down into pounds per trip landed in categories of less than 100 to 500 pounds and then 500 to a thousand pounds, we can see that of the 3,700 trips that were made, 96 percent of those trips landed less than a hundred pounds. This would be sort of analogous to the regulations that the other states have. Three percent of the trips landed between 100 and 500 pounds, and we had 31 trips that landed between 500 and 1,000 pounds.

We had no trips that landed over a thousand pounds, so we had full compliance with the thousand pound cap. Trips that landed less than a hundred pounds accounted for 53 percent of the landings, and then trips that landed over a hundred pounds combined accounted for about 47 percent of the landings.

After the technical committee meeting, we had a recommendation. The recommendation is basically that the board would want to see what would have happened in North Carolina had we have had a hundred pound trip limit in place. We've thought about different ways that we could sort of simulate what North Carolina landings would look like under a hundred pound trip limit, and I'll explain how we did that here in just a second.

I'm going to give various scenarios. Each of these scenarios has assumptions for the level of compliance with regulations. Basically the compliance would be either a hundred percent of the trips complied with the regulation or we had the same level of non-compliance if we would have had a hundred pound trip limit in place as what we did when we had the 10 percent bycatch allowance in place.

Also, there are some assumptions with the magnitude of discards. Either we assumed that there were no discards or we assumed that trips that did not meet 10 percent bycatch allowance would have had discards and could have landed up to a hundred pounds of weakfish. This first slide here shows the assumption of the landings that could have occurred under a hundred percent compliance.

Scenario 1 at the bottom, you see 76,483 pounds were landed. This is basically North Carolina's landings minus all the landing that occurred that were not compliant. We had essentially a little over 20,000 pounds of fish that were landed out of compliance. Scenario 2 should be considered sort of a bottom range of what would be assumed to occur under a hundred pound trip limit.

This assumes that all trips that landed over a hundred pounds would have been limited to a hundred pounds. We would have had a hundred percent compliance and that there would have been no discards that occurred in the fishery. Scenario Number 3 assumes a hundred pound trip limit with a hundred percent compliance.

It assumes that all those trips that met the 10 percent bycatch allowance under the current rule could have landed more weakfish, and there were discards so we assumed that those trips could have landed a hundred pounds. Essentially what you would expect to see here is sort of where North Carolina falls out in the current regulations as to what would have happened under a hundred pound trip limit.

You can see that 76,000 pounds falls sort of in between the 65,000 and 87,000 pounds, so with that regard things looked pretty good. Now, there is a second scenario I'll show you on the next slide. This has the assumption of landings but it assumes that there is the same level of non-compliance, meaning that people who didn't abide by the 10 percent bycatch allowance, that rate of non-compliance would continue if we would have had a hundred pound trip limit in place.

Scenario Number 4 basically assumes the same thing as previously assumed is basically a hundred pound trip limit but assumes that there were no discards with the 10 percent bycatch allowance. Scenario

Number 5 assumes a hundred pound trip limit but assumes those people who met the 10 percent bycatch allowance under the current rule would have had discards, so we assumed that those people could have landed up to a hundred pounds.

As you can see, the current landings under this scenario for North Carolina are 97,144 pounds, which is what we actually landed. The lower bound would have been 77,000 pounds and the upper bound is 99,887 pounds under what we assume would have happened under a hundred pound trip limit. North Carolina is at the upper end of that, pushing the upper boundary of the hundred pound trip limit. Under this scenario, it looks like North Carolina probably landed more fish than they would have landed under a hundred pound trip limit.

One of the other questions from the technical committee that they thought might be relevant to the board was just to look at what kinds of species are commonly landed with weakfish. I just picked the three major gears here that account for the vast majority of weakfish landings. Primarily the main one is gill nets here in the center, and weakfish are primarily landed with croaker and bluefish. For the largest extent that accounts for the vast majority of weakfish landings.

Winter trawls is primarily croaker, but we also see them with flounder and bluefish. Long haul is a smaller gear in terms of landings, but they're landed with spot and sea mullet and you can also see weakfish made the list, which is kind of ironic. Some in summary for North Carolina's compliance we obviously had initial poor compliance at 31 percent non-compliance with the regulation when it first went in place in 2010.

The compliance has vastly improved since 2011 with the current compliance rate around 3 percent. Of course, it remains to see what remains to be seen what will happen with the rest of the year in terms of compliance. The magnitude of landings is within the range of what was assumed to occur under a hundred pound trip limit although it is near the upper estimate under the assumption of continued non-compliance. In closing, really the majority of the weakfish landings occur with croaker, bluefish, flounder and spot. With that, I can take any questions or anything you may have about that subject.

CHAIRMAN GILMORE: Thanks, Lee, great presentation. Any questions for Lee? A.C.

MR. A.C. CARPENTER: Lee, you had a slide up there a moment ago and you talked about there were no landings greater than a thousand pounds but there are non-compliant issues, and I am assuming that the non-compliant is that they did not have 10,000 pounds of something else associated with that catch, is that correct, in order to meet the 10 percent?

MR. PARAMORE: A non-compliant trip would simply be a trip where the pounds of fish landed other than weakfish did not make up 90 percent of the catch. As a example, you could have – I mean, literally you could have five pounds of weakfish and if you didn't have 90 percent of other fish, then that five pounds is non-compliance. It always would have gone into the non-compliant category.

MR. ROB O'REILLY: Lee, I guess the what if scenarios; I'm kind of curious as to whether you think that they really carry any weight given the situation that North Carolina chose the 10 percent option because certainly other states could say, well, if we thought everyone landed up to the hundred pound limit, some of our non-compliance wouldn't be significant so what was the technical committee really trying to show there and do you think it has any validity at this time?

MR. PARAMORE: You mean in terms of the upper and lower bounds on the assumptions of a hundred pound trip limit?

MR. O'REILLY: Yes. If I may follow up, I think you were characterizing what would have occurred if a hundred pounds was assigned to all those trips rather than the current measure that's in North Carolina, and I guess the question is, is that going to be important for the future; is that something that should carry forward and should other states also look at that once the plan review team looks at all the state data; is it a useful tool?

MR. PARAMORE: Well, I think the idea of having the different scenarios is I think the lower scenario is really unrealistically low and the high scenario is unrealistically high in that the people who met the 10 percent bycatch allowance obviously are not always going to land a hundred pounds. They may only have a few pounds over what they actually landed.

The people who we assumed did not have any discards, obviously there were discards. I mean, the whole idea there is that's basically an upper and lower bound that really spans a spectrum of reality is probably somewhere in the middle. Obviously, we

were hoping that our landings would come out somewhere in the middle.

I had no idea where they would come out when I began this analysis. I think it's a useful tool but without on-the-water observer data to know what the level of discards are, there is really no way to really get a good handle on what is going on. That was just the best way we thought that we could get an answer to provide you with additional information.

MR. O'REILLY: A little different question, Lee; what does the agency plan to do with the individuals who were non-compliant? And in a similar situation, since you have the trip ticket system, do you have any concerns that if there is a notification process at least to inform the non-compliant individuals; how do you plan to address that with the trip ticket?

The reason I'm asking is we looked at our information over a 12-month period on the hundred pound trip limit and depending on which are the major gears, it ranges from 1.2 to about 5.7 percent non-compliance. Our natural reaction would be to notify those individuals. However, we haven't thought about what that might do in terms of reporting. Have you thought about that?

MR. PARAMORE: I think I'm going to defer to Michelle since I'm speaking as the technical committee chair.

DR. MICHELLE DUVAL: Obviously, we were disappointed in the rather high level of non-compliance. This was a new regulation. We generally don't see quite that high level of non-compliance. In talking to our law enforcement staff, he said there was actually a lot of confusion on the water about the interpretation of the proclamation that we put out, and so it took a while for our officers on the water to get the word out to the fishermen in that regard.

I think in terms of notifying, I assume you mean specific notifications to those fishermen who were actually over. I'm going to have to defer that to Louis. I know he really wanted to be here for this. Unfortunately, that couldn't happen. I would be happy to get back to the board on that particular question in terms of informing.

I think just looking at the data that Lee has presented, our compliance has vastly improved over the four months that Lee showed from January through April. I'm glad that you looked at your data. Certainly, I think most of the rest of the states have had the hundred pound limit in place longer than we've had this 10 percent with no more than a thousand pounds that has been in place for, well, now would be just about one year; but because of the lag in our trip ticket data, we don't have quite a year of information with which to compare. I would certainly be curious as to other states if they were able to provide that level of analysis as well.

MR. O'REILLY: Just a little followup; I think this is an important point since this is the first time that we've had this system, and your words, Michelle, are very encouraging because I think it probably is a good idea at least on the part of what we'll try to do to notify. You're indicating what we're wondering about how did the word get out and how effective was the wording getting out, so perhaps for the first time around notification could be a good process. I appreciate your comments.

DR. DUVAL: And just a quick followup to that, we send our proclamations to all of our license holders and not just someone who might have landed weakfish in the past. Those are sent by snail mail, they're sent by electronic mail. We have quite an extensive notification process, and I think it was really in the interpretation of how the proclamation was worded by the folks who were reading that. We will certainly do a better job of that.

MR. RICK COLE: I'm just trying to get a better understanding of this improvement in compliance. In 2010 did North Carolina just have the hundred pound limit in place – and this is a comparison with that 2010 data, this improvement; is that correct?

MR. PARAMORE: The information that was presented here is based on the four months when North Carolina did have the 10 percent bycatch allowance in place. We never had the hundred pound trip limit in place prior to that. We basically went from no regulations on the commercial fishery to a few months where we were actually out of compliance with Addendum IV to asking the board to allow us conservation equivalency on the 10 percent bycatch allowance, which was granted in August and we implemented it in August. What I'm reporting here is what has occurred since August 20th of 2010.

MR. R. COLE: But you're making that comparison – the improvement position that it was based relative to the 2010 non-compliance? In other words, it was 31 percent non-compliance in 2010; is that correct?

MR. PARAMORE: Yes, that's correct. I mean, just to speak to that and in talking to Michelle and Louis and other people, and me being the North Carolina representative and as the technical committee chair, they've expressed to me that there was some confusion with the regulation. Like Michelle said, there was some confusion with the way that the proclamation was originally written and there were some problems with enforcement being able to enforce that 10 percent. I think that lent to a lot of the non-compliance that occurred. I think since January a lot of that has been cleared up and that's why you see the vast improvement in the compliance.

MR. R. COLE: Okay, well, based on that 2010 information, the winter gill net fishery was one of the most non-compliant fisheries, and that's not surprising. It will be interesting to see what happens this winter with that particular fishery. Mr. Chairman, will we receive an update on that at a subsequent meeting?

CHAIRMAN GILMORE: That's actually what I was going to ask Michelle at the end of this was that I think Louis did a very impassioned speech on why this made sense and how it was going to work, and I guess we're all disappointed that at the beginning we had such non-compliance. Now if it turns out that the enforcement and the announcement of this whole thing was really the problem and now that we've got some good data, but will we be able to get an update at the annual meeting, Michelle?

DR. DUVAL: That was going to be my suggestion is that we try to update these numbers in time for the annual meeting. Lee is the one who has to crunch them. We do obviously have some lag time between our trip ticket information coming in and that being entered and verified, but we would at that point have verified information for an entire year, so we would at least be able to go through August and possibly September, Lee, do you think?

MR. PARAMORE: For November; is that what you're – at least August and probably September, also, I would say. I want to express another sort of thing that was brought up in the technical committee meeting obviously is North Carolina has asked for alternative management, and there is certainly a feeling on the technical committee that North Carolina should be held to a really high standard to ensure that our landings are not being excessive to what the board intended. Obviously, if our performance doesn't improve and isn't in compliance – and this was sort of an industry request. They were worried about the discards in the fishery, so I kind of expected the industry to comply with these regulations. It's kind of, you know, a thing where show us what you want but do what you say you're going to do. I definitely think this is something we should bring back to the board and continue to monitor North Carolina's performance and evaluate it. The board can do what they want to, but that's where we stand.

DR. DUVAL: And I think to kind of sum it up a little bit, you know, live by the data and die by the data, and certainly our commission is going to hear about this next week and certainly putting the fishermen on notice. I think it has been expressed to the industry that they given a gift here by this management board to try this alternative management measure.

Certainly, I'm optimistic given the 3 percent non-compliance based on the last several months of data, but, again, as we expressed – I can't be as impassioned as Louis, that's not my style, but with the board's consent we'd like to move forward and at least be able to have a full year of data to present to you at the annual meeting.

DR. MALCOLM RHODES: Lee, I just had one question. Since you have the trip tickets, have you had an increased number of trips with the allowance of a larger number of a good commercial fish or is it similar trip tickets compared to a year and two years prior? I mean, have you had more fishery because there is more they can bring in?

MR. PARAMORE: With regard to weakfish; I don't follow –

DR. RHODES: Well, I mean, just overall you have the number of trips, you had 2,362 trips; is that similar to previous years or have you seen a bump-up in trips?

MR. PARAMORE: In terms of weakfish trips, they've been declining just like the landings have been declining. Our weakfish landings in 2010 I think were about 40 percent down from what they were in 2009. I haven't actually looked at the number of trips, but I'm pretty sure the number of trips are down pretty similarly. Of course, for a good portion of our spring fishery, which is a large part of our fishery for weakfish, the regulations were unchanged. They didn't change until the fall. I feel

very confident in saying that the number of trips have decreased substantially over the prior couple of years that are landing weakfish.

DR. RHODES: Okay, so that doesn't appear to have gotten a more directed fishery because of the ability to keep a thousand pounds instead of a hundred pounds. That's great!

MR. PARAMORE: Yes, under this regulation it seems like people can go out and catch a thousand pounds, but in reality it's very, very difficult with the 10 percent. I mean, essentially you have to have 10,000 pounds of fish on board to have a thousand pounds of weakfish. There are very few fisheries other than, say, primarily the winter trawl fishery, which has a hundred percent compliance, is really the only fishery that could actually probably on a day-to-day basis have that thousand pounds,

Our biggest weakfish fishery right now is our inshore gill net fishery and you're talking about a fishery that typically lands anywhere from a hundred to three or four hundred pounds of fish per day, so at best they're looking at bringing in thirty to forty pounds of weakfish. That's our biggest weakfish fishery over the last few years.

MR. THOMAS FOTE: I guess you know I had to say something about this and to the long battle that we had over this thing. I really was upset because that was never – the original intent of my motion was to allow a hundred pound bycatch and not a conservation equivalency. As a matter of fact, if we had stayed at the hundred pound bycatch, there would probably be less failure to be in compliance because a lot of those problems was because – which I understand and maybe I'm wrong – with some of those fish that only had 80 or 90 pounds or even less of the hundred pounds but didn't have the 10 percent.

And in the motion that we had basically approved to allow for the hundred pound bycatch, it did require the 10 percent. It just was trying to basically allow fishermen to bring in a hundred pounds and not have a directed fishery. Maybe North Carolina should think about this because of the angst it has caused with many other states dealing with this problem to go back to what we originally made the motion for was to allow a hundred pound by catch in fisheries that would not complicate the issue and not look at it like a directed fishery, which some people have basically looked at this as. That's just my comment on this.

MR. O'REILLY: Mr. Chairman, I don't see an opportunity to address this later, but I want to make sure despite the sort of alternative management regime of North Carolina, that all the commercial states are on the same footing. North Carolina and Virginia have a trip ticket system so it's easy for those states to incriminate themselves as far as the bycatch limits go.

For the other states – and I don't know the answer to this, so I guess it's Mike perhaps and Lee, but what will be the mechanism to I suppose use ACCSP and by way of SAFIS to get other states that have commercial landings to look at their trip limits because whether we recognize it or not today there is certainly going to be times where abundance is going to be there, especially during the migratory periods, and it's going to be important to track all the states and have a way to do that. And it's just my guess that with what has been going on over the last couple of years through ACCSP, that mechanism will be available for the other states; is that correct, and is that something that's anticipated?

MR. MICHAEL WAINE: Yes, like you said, the trip ticket states, we can get the landings by, and Virginia and North Carolina and I believe Florida and Maryland is on that list as well. For the other states it's going to be a little bit more tricky and we can with the ACCSP to see if there is some resolution in the data to get an understanding of how states are complying the hundred trip limit given that they don't have the trip ticket options. That's something that the technical committee will be reviewing annually and updating the board on to the extent possible.

MR. ROY MILLER: Lee, I'm wondering if I could probe just a little bit to find out more about fisheries and how the gill net fishery is prosecuted. Is it primarily a sink net that is set overnight or is this a piece of gear that is fished continually. If it's the former, I don't know how they go about reducing their bycatch appreciably. Can you comment on that?

MR. PARAMORE: I would say it's a combination. I think a lot of ocean gill net fisheries are what we call drop-net fisheries. They go out in the ocean in the morning and fish during the day and then pull their nets up by the evening and come back to the dock and unload. Some of our inshore gill net fishery, which has sort of become our larger fishery in recent years for weakfish, which is a complete change over historical landings, they primarily fish

with evening sets and fishing in the early morning so those are overnight sets that are not actively fished during the night. It's a combination of those two, I would say.

MR. MILLER: I guess we all assumed initially that the problematic gear was going to be trawls, and I'm surprised to see that it's long haul seine and gill nets, because honestly I think it's trickier to eliminate excessive landings of weakfish from those two gears than it might be from trawls. How are they avoiding weakfish with the gill nets, for instance, considering the species complement that's on the list for being taken in gill nets?

MR. PARAMORE: In the gill net fishery they're primarily fishing in the ocean. They're primarily fishing for croaker and bluefish, but they do catch weakfish in those efforts. I mean, it does occur. I can't say for certain that they have the means to catch bluefish and they know where to go catch weakfish, that they wouldn't try to catch weakfish. I don't know.

How the fishermen operate and behave is obviously they're much more creative than we ever thought and that we can ever account for. On the inshore fishery it's just pretty much a mixed fishery. It's hard to avoid the weakfish. They're fishing for bluefish mostly on the inshore fishery in the spring, and weakfish are somewhat just a product of that.

They can certainly in some cases maybe avoid areas where there are high densities of weakfish, but here recently weakfish are just kind of a random occurrence. There is really no pattern to where you would catch them. The numbers just aren't there to really avoid them at all. It's just something that kind of happens as you're fishing for the other species. I don't know that there is a whole lot that they could do to avoid what little bycatch they are going to have on the inshore fishery.

CHAIRMAN GILMORE: Are there any other questions for Lee on this? Okay, the sense I'm getting is I guess there is concern on the board right now; and I don't know if we're ready to do anything in terms of taking an action yet, but I guess we'll wait for the update at the annual meeting and hopefully we'll see good things. A.C.

MR. CARPENTER: It's not a question but maybe a suggestion that since you have started with a four-month period, that your annual reports be still broken out into four-month sections so that we can see if there is any kind of pattern, seasonality or trend developing that an annual summary would not reveal.

CHAIRMAN GILMORE: Thanks, A.C.; a good idea. Anything else on this? Okay, we're going to move along now to the technical committee report on weakfish population modeling. There was a presentation to the technical committee, and Lee is going to take us through the results of that.

TECHNICAL COMMITTEE REPORT ON WEAKFISH POPULATION MODELING

MR. PARAMORE: Okay, this is a little bit shorter presentation here in just this one slide. Essentially Rob had asked at the last meeting that the technical committee and the stock assessment subcommittee get together with Yan Jiao. She spent the better part of three years working on some weakfish modeling.

She was essentially provided the same data that went into our last benchmark assessment, all of our data sets, and she has done some pretty complex modeling on weakfish. I guess the whole idea here is to see if the stock assessment subcommittee could use some of Yan's assessments as sort of a moving-forward point to sort of advance our assessment techniques for weakfish.

She actually addresses a lot of the recommendations that came out of the review committee to move sort towards a statistical catch-at-age model. Anyway, we talked about the appropriate time period for the next benchmark stock assessment. The last assessment was completed and reviewed in 2009.

Most of the members there at the technical committee and stock assessment subcommittee felt that the most appropriate benchmark would be to just kind of stick with the five-year cycle and go to 2014. Dr. Jiao provided us an update for weakfish modeling. Some of her work is still in progress but a lot of it is ongoing. She has produced several models and done a lot of work, very complex models, a lot of information.

She has looked at sort of the population dynamic issues that occur with weakfish, things such as some of the spatial and distribution differences in weakfish, differences in growth of weakfish, obviously the issue that we've had with the idea of change in mortality in weakfish. Her whole product is really to produce sort of an operational model; to develop usable reference points for the board to work with is

something we really don't have right now in our current model.

Anyway, we just wanted to point out that the whole idea of the time-varying M, which she did find indications that the M is changing over time similar to what we found in our current assessment, and this sort of moves us towards an ecosystem management type model. We even talked about this possibly may be something that the Multispecies Technical Committee or the Assessment Science Committee may want to look at some of her techniques and what she is doing and at least be abreast of what is going on with her modeling techniques.

There is a need, really, for the stock assessment subcommittee really to get together with Dr. Jiao and sort of determine an endpoint of how far she can take her assessment techniques and sort of what type of model we would want to have to move forward with the benchmark assessment. That was one thing that came out of that so probably at some point in the future there needs to be more of a formal meeting to sit down and have Dr. Jiao actually go through a lot of technical reports and documents with the stock assessment subcommittee so that they can kind of flesh those things out.

Like I said, her models are fairly complex. She is using Bayesian Statistics. To a lot of members of the stock assessment subcommittee, this is sort of like a foreign language. They're not really up to speed on these techniques and the statistics and they had suggested maybe that ASMFC may want to think about some training workshops or some other things first with the technical committees and then more formally with the stock assessment subcommittees to get these people up to speed.

If we move forward with Dr. Jiao's stock assessment, which I think the technical committee and stock assessment subcommittee feels like is a really good idea, just keep in mind that right now we're pretty heavily dependent upon her and her expertise in these modeling techniques and these statistics that she is using because we just don't have that level of expertise on our committee.

She has expressed that she is willing to stick around for the next four or five years to kind of see it through a peer review. Then we had to kind of figure where we go from there, if we do that. Anyway, I can try to answer any questions. I don't want to get too much into the details of her work because I'm not really ready to defend her work or anything, but that's kind of where we're at.

CHAIRMAN GILMORE: Thanks, Lee; I don't think we have too many Bayesian Statistics experts in the room. Any questions for Lee? Rob.

MR. O'REILLY: Well, just to comment I guess. I don't know if it was six years ago or when it exactly was but bluefish was teetering a little bit as far as the assessment approach went, and there was a professor – Toni would remember, of course – from New Hampshire who was going to use sort of a Bayesian approach then. Unfortunately, he fell ill and things were shifted to a more traditional type of biomass dynamic approach and then later on to the statistical catch at age, I guess, so this does have a little precedence.

The other thing I wanted to mention was I've had some positive comments from the technical committee meeting and even to the point where some folks who you would think might be reserved about progressing beyond what they're used to indicated that these types of approaches might be good for other species as well.

CHAIRMAN GILMORE: Thanks, Rob. Any other questions on this? Mark.

MR. MARK GIBSON: Mr. Chairman, I wanted to ask if there were any discussions going on or consideration being given to looking at contingents within the overall weakfish population; that is, the possibility of a migratory component which periodically infiltrates Southern New England estuaries and then contingents of non-migrant fishes and the relative strengths of those waxing and waning over time. Are there any discussions going about that? I know it's something we talked about a long time ago in our days on the technical committee and I wonder where that ended up.

MR. PARAMORE: I do know that Dr. Jiao has looked at sort of the spatial and temporal distributions of weakfish and how they shift over time and modeling how that affects the stocks in general. I don't know specifically to what you're referring to and whether or not she has incorporated that information.

That is certainly something that her modeling techniques seem to be capable of evaluating some of that type of information. They're very complex models, but the complexity of them actually does

allow for a lot of different inputs and looking at different variables, whether they be environmental variables or differences in growth rates or differences in migration patterns of different segments of the population and that sort of thing. It's certainly something that we could bring up with her and see if that's a possibility.

REQUEST FOR STOCK ASSESSMENT SUBCOMMITTEE MEMBERSHIP

CHAIRMAN GILMORE: Any other questions for Lee on this? Okay, thanks for that report. Lee. The next item we have is on the stock assessment subcommittee membership. I think we learned yesterday or most people knew that Dr. Doug Vaughan had retired from the Southeast Fisheries Science Center. I didn't know this, but Vic Crecco I guess is planning on retiring in the fall of 2011. They're both on the committee, actually.

Vic was one of the first people I met when I worked consulting a power plant so he is a really old guy. Anyway, we have a couple of vacancies coming up. Actually, every time I have been at a board meeting with this, we've had some recommendations on replacements, but we don't have any right now, so this is really a plea out to the board to see if there are any suggestions on replacements for these two distinguished gentlemen. If you have any suggestions now I'd take now; but if not please get to us later on. If there is any now, if anybody has a recommendation, please raise your hand. A.C.

MR. CARPENTER: I don't have a recommendation but if we're going to go with this new very complicated model, we may look for a driver of that thing, that somebody has got some expertise or at least the ability to start it up.

CHAIRMAN GILMORE: Yes, good point, A.C. Any other comments on it?

MR. RUSS ALLEN: I just want to mention that it's not only two people, but Des Kahn was also on that stock assessment committee and there was a lot of influence from Joseph Mondorio from Florida had a lot of input, and I don't believe he is still involved. I was also a help on that, too, so it's a small committee now, so it really needs some help.

CHAIRMAN GILMORE: Thanks, Russ. Who actually is still on the committee; do you actually know? Yes, we only have about three people left on it, so it's not going to be much of a committee anymore. Go ahead, Vince.

EXECUTIVE DIRECTOR JOHN V. O'SHEA: Well, somebody might be tempted to note that it's tracking with the biomass so at least it's proportional.

CHAIRMAN GILMORE: Yes, good point, Vince. Again, if there are any recommendations on this, if you could get them to me or Mike, whatever, and we'll consider that and bring them up at the next meeting. Our last item on the agenda is biological sampling plans for 2011, and I think Mike is going to take us through that.

2011 BIOLOGICAL SAMPLING PLANS

MR. WAINE: I'm just going to review for a second here; Addendum I required states to submit sampling plans by April for our current fishing year based on the preliminary landings in the previous year. The board would review and accept those sampling plans; however, compliance was based on actual landings reported in annual compliance reports in September, so predicting sampling based on a previous year was unnecessary.

In response to this, in 2010 the board approved simplification of the 2011 sampling plan requirements so states currently submit a template memo that acknowledges the sampling requirements in Addendum I. To simplify this process further, the PRT recommended that staff would send a reminder memo to each state indicating their responsibility to comply with monitoring requirements in Addendum I, and we just wanted to pass that around to the board.

CHAIRMAN GILMORE: Any questions for Mike? I guess we're all still not doing so well on our compliance, but I guess when the weakfish come back we will have no problem. I don't think we need much of a motion on this. We just wanted to approve this recommendation by consensus, so is everybody okay with that and does anybody have any objection to that? Okay, then we'll approve that by consensus and move on.

ADJOURNMENT

That's pretty much the agenda unless anybody has any other business before the board. Seeing none, I look for a motion to adjourn. Thanks, we're adjourned.

(Whereupon, the meeting was adjourned at 11:49 o'clock a.m., August 3, 2011.)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

WEAKFISH MANAGEMENT BOARD

Crowne Plaza
Old Town Alexandria, Virginia
August 3, 2011

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

TABLE OF CONTENTS

INDEX OF MOTIONS

ATTENDANCE

Board Members

Mark Gibson, RI, Administrative Proxy
Rick Bellavance, RI, proxy for Rep.Martin (LA)
David Simpson, CT (AA)
Bill McElroy, RI (AA)
Andrew Voros, NY, proxy for Sen. Johnson (LA)
Pat Augustine, NY (GA)
James Gilmore, NY (AA)
Russ Allen, NJ, proxy for D. Chanda (AA)
Tom Fote, NJ (GA)
Rick Cole, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Bernie Pankowski, DE, proxy for Sen.Venables (LA)
Tom O'Connell, MD (AA)
Bill Goldsborough, MD (GA)
Russell Dize, MD, proxy for Sen. Colburn (LA)
Catherine Davenport, VA (GA)
Michelle Duval, NC, proxy for L. Daniel (AA)
John Frampton, SC (AA)
Malcolm Rhodes, SC (GA)
Robert Boyles, SC (LA)
Bill Cole, NC (GA)
Spud Woodward, GA (AA)
Michael Denmark, GA, proxy for J. Duren (GA)
Bill Orndorf, FL (GA)
Aaron Podey, FL, proxy for J. McCawley (AA)
Sen. Thad Altman, FL (LA)
Steve Meyers, NMFS
Jaime Geiger, USFWS
A.C. Carpenter, PRFC

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

Ex-Officio Members

Lee Paramore, Technical Committee Chair

Staff

Vince O'Shea
Bob Beal
Chris Vonderweidt
Mike Waine

Guests

Rob O'Reilly, VMRC

The Weakfish Management Board of the Atlantic States Marine Fisheries Commission convened in the Presidential Ballroom of the Crowne Plaza Hotel Old Town, Alexandria, Virginia, August 3, 2011, and was called to order at 11:00 o'clock a.m. by Chairman James Gilmore.

CALL TO ORDER

CHAIRMAN JAMES GILMORE: Good morning, everybody. My name is Jim Gilmore. I'm the administrative commissioner for New York, and I'm chairing the Weakfish Board meeting today.

APPROVAL OF AGENDA

The first order of business is to approve the agenda. Are there any changes to the agenda? Seeing none, we'll accept that.

APPROVAL OF PROCEEDINGS

The second order of business is the approval of the minutes from the March 2011 meeting, which is in your Briefing CD. Does anybody have any changes to the minutes from the meeting? Seeing none, we will move on from that and we'll accept those.

PUBLIC COMMENT

Before each meeting, we have a period for public comment at the start of each meeting to give the public an opportunity to speak on issues not on the agenda.

TECHNICAL COMMITTEE REPORT ON THE NORTH CAROLINA CONSERVATION EQUIVALENCY

Without any public comment, I think we'll move on to the first agenda item, which is the Technical Committee Report on the North Carolina Conservation Equivalency. If you recall, North Carolina requested a 10 percent bycatch allowance up to a thousand pounds. The board approved that. There was a requirement that they provide some monitoring and do an annual review. They've done that and Lee Paramore is go through that and explain the details of the review.

MR. LEE PARAMORE: I briefly want to go through the document that you had in your mailout. I will do that here in this presentation. I've summarized most of the information in your document here on these slides. This is a report on the North Carolina Conservation Equivalency Measures. August 20th North Carolina implemented a 10 percent weakfish bycatch allowance.

This was a 10 percent allowance that allowed up to a thousand pounds of weakfish to be landed as long as the 10 percent bycatch was not exceeded. This was done in lieu of the hundred pound commercial trip limit that was implemented up and down the rest of the coast for the other states. Basically, we have taken landings here and the compliance with those landings and summarized it for two periods.

The measure went in effect August 20th, but I've summarized it for the period of September through December of 2010 and then January through April of 2011. As far as landings go, during that first period, September through December, North Carolina landed approximately 63,000 pounds. This occurred over about 2,300 trips. Of these trips, 17 percent of these trips had landings that exceeded the 10 percent bycatch allowance, so 10 percent of these trips were out of compliance. The total pounds that were landed on these trips that are out of compliance accounted for 19,519 pounds.

This was 31 percent of the total catch during this period, so a pretty high non-compliance in this period. During the more recent period, January through April 2011, North Carolina landed 32,000 pounds, a little over 1,300 trips. Five percent of these trips exceeded the 10 percent bycatch allowance. This accounted for 1,143 pounds. You can see the compliance has vastly improved since the first period and was 3 percent in 2011 so far.

If you want to look at the same information but just break it down by gear so you can kind of see who the primary culprits were in terms of the non-compliance, you can see winter trawls had zero trips that were non-compliant, so they were pretty good. They only landed 4,000 pounds of weakfish during this period, but none of those trips were out of compliance.

It was primarily gill nets and long hauls. Gill nets landed the vast majority of the landings, nearly 38,000 pounds. This occurred over 2,000 trips. Seventeen percent of these trips were out of compliance, and over 12, 576 pounds were landed on these trips that were non-compliant. This accounted for 33 percent of the total gill net landings.

Long hauls, a similar situation – actually, almost 30 percent of the long-haul trips were non-compliant and approximately 35 percent of the landings that

occurred in long hauls were non-compliant. The overall combined average for all gears was 31 percent non-compliant. This is for that first period again, September through December.

If we look at the second period, which is the more recent period, after the regulation has been in place for a while, January through April we can pretty much all gears had fairly good compliance. The biggest gear here that accounted for most of the landings were gill nets. They landed 32,613 pounds. Five percent of those trips were out of compliance and accounted for 948 pounds, and that was 3 percent of the total.

Others, it looks really bad but you have to keep in mind that was based on only two trips, that 59 percent non-compliance, and accounted for 195 pounds. So, really, compliance from January through April seems to have been pretty good and sort of in line with what we kind of expected from most gears in fisheries is 2 to 3 percent non-compliance is pretty normal.

If we just sort of break it down into pounds per trip landed in categories of less than 100 to 500 pounds and then 500 to a thousand pounds, we can see that of the 3,700 trips that were made, 96 percent of those trips landed less than a hundred pounds. This would be sort of analogous to the regulations that the other states have. Three percent of the trips landed between 100 and 500 pounds, and we had 31 trips that landed between 500 and 1,000 pounds.

We had no trips that landed over a thousand pounds, so we had full compliance with the thousand pound cap. Trips that landed less than a hundred pounds accounted for 53 percent of the landings, and then trips that landed over a hundred pounds combined accounted for about 47 percent of the landings.

After the technical committee meeting, we had a recommendation. The recommendation is basically that the board would want to see what would have happened in North Carolina had we have had a hundred pound trip limit in place. We've thought about different ways that we could sort of simulate what North Carolina landings would look like under a hundred pound trip limit, and I'll explain how we did that here in just a second.

I'm going to give various scenarios. Each of these scenarios has assumptions for the level of compliance with regulations. Basically the compliance would be either a hundred percent of the trips complied with the regulation or we had the same level of non-compliance if we would have had a hundred pound trip limit in place as what we did when we had the 10 percent bycatch allowance in place.

Also, there are some assumptions with the magnitude of discards. Either we assumed that there were no discards or we assumed that trips that did not meet 10 percent bycatch allowance would have had discards and could have landed up to a hundred pounds of weakfish. This first slide here shows the assumption of the landings that could have occurred under a hundred percent compliance.

Scenario 1 at the bottom, you see 76,483 pounds were landed. This is basically North Carolina's landings minus all the landing that occurred that were not compliant. We had essentially a little over 20,000 pounds of fish that were landed out of compliance. Scenario 2 should be considered sort of a bottom range of what would be assumed to occur under a hundred pound trip limit.

This assumes that all trips that landed over a hundred pounds would have been limited to a hundred pounds. We would have had a hundred percent compliance and that there would have been no discards that occurred in the fishery. Scenario Number 3 assumes a hundred pound trip limit with a hundred percent compliance.

It assumes that all those trips that met the 10 percent bycatch allowance under the current rule could have landed more weakfish, and there were discards so we assumed that those trips could have landed a hundred pounds. Essentially what you would expect to see here is sort of where North Carolina falls out in the current regulations as to what would have happened under a hundred pound trip limit.

You can see that 76,000 pounds falls sort of in between the 65,000 and 87,000 pounds, so with that regard things looked pretty good. Now, there is a second scenario I'll show you on the next slide. This has the assumption of landings but it assumes that there is the same level of non-compliance, meaning that people who didn't abide by the 10 percent bycatch allowance, that rate of non-compliance would continue if we would have had a hundred pound trip limit in place.

Scenario Number 4 basically assumes the same thing as previously assumed is basically a hundred pound trip limit but assumes that there were no discards with the 10 percent bycatch allowance. Scenario

Number 5 assumes a hundred pound trip limit but assumes those people who met the 10 percent bycatch allowance under the current rule would have had discards, so we assumed that those people could have landed up to a hundred pounds.

As you can see, the current landings under this scenario for North Carolina are 97,144 pounds, which is what we actually landed. The lower bound would have been 77,000 pounds and the upper bound is 99,887 pounds under what we assume would have happened under a hundred pound trip limit. North Carolina is at the upper end of that, pushing the upper boundary of the hundred pound trip limit. Under this scenario, it looks like North Carolina probably landed more fish than they would have landed under a hundred pound trip limit.

One of the other questions from the technical committee that they thought might be relevant to the board was just to look at what kinds of species are commonly landed with weakfish. I just picked the three major gears here that account for the vast majority of weakfish landings. Primarily the main one is gill nets here in the center, and weakfish are primarily landed with croaker and bluefish. For the largest extent that accounts for the vast majority of weakfish landings.

Winter trawls is primarily croaker, but we also see them with flounder and bluefish. Long haul is a smaller gear in terms of landings, but they're landed with spot and sea mullet and you can also see weakfish made the list, which is kind of ironic. Some in summary for North Carolina's compliance we obviously had initial poor compliance at 31 percent non-compliance with the regulation when it first went in place in 2010.

The compliance has vastly improved since 2011 with the current compliance rate around 3 percent. Of course, it remains to see what remains to be seen what will happen with the rest of the year in terms of compliance. The magnitude of landings is within the range of what was assumed to occur under a hundred pound trip limit although it is near the upper estimate under the assumption of continued non-compliance. In closing, really the majority of the weakfish landings occur with croaker, bluefish, flounder and spot. With that, I can take any questions or anything you may have about that subject.

CHAIRMAN GILMORE: Thanks, Lee, great presentation. Any questions for Lee? A.C.

MR. A.C. CARPENTER: Lee, you had a slide up there a moment ago and you talked about there were no landings greater than a thousand pounds but there are non-compliant issues, and I am assuming that the non-compliant is that they did not have 10,000 pounds of something else associated with that catch, is that correct, in order to meet the 10 percent?

MR. PARAMORE: A non-compliant trip would simply be a trip where the pounds of fish landed other than weakfish did not make up 90 percent of the catch. As a example, you could have – I mean, literally you could have five pounds of weakfish and if you didn't have 90 percent of other fish, then that five pounds is non-compliance. It always would have gone into the non-compliant category.

MR. ROB O'REILLY: Lee, I guess the what if scenarios; I'm kind of curious as to whether you think that they really carry any weight given the situation that North Carolina chose the 10 percent option because certainly other states could say, well, if we thought everyone landed up to the hundred pound limit, some of our non-compliance wouldn't be significant so what was the technical committee really trying to show there and do you think it has any validity at this time?

MR. PARAMORE: You mean in terms of the upper and lower bounds on the assumptions of a hundred pound trip limit?

MR. O'REILLY: Yes. If I may follow up, I think you were characterizing what would have occurred if a hundred pounds was assigned to all those trips rather than the current measure that's in North Carolina, and I guess the question is, is that going to be important for the future; is that something that should carry forward and should other states also look at that once the plan review team looks at all the state data; is it a useful tool?

MR. PARAMORE: Well, I think the idea of having the different scenarios is I think the lower scenario is really unrealistically low and the high scenario is unrealistically high in that the people who met the 10 percent bycatch allowance obviously are not always going to land a hundred pounds. They may only have a few pounds over what they actually landed.

The people who we assumed did not have any discards, obviously there were discards. I mean, the whole idea there is that's basically an upper and lower bound that really spans a spectrum of reality is probably somewhere in the middle. Obviously, we

were hoping that our landings would come out somewhere in the middle.

I had no idea where they would come out when I began this analysis. I think it's a useful tool but without on-the-water observer data to know what the level of discards are, there is really no way to really get a good handle on what is going on. That was just the best way we thought that we could get an answer to provide you with additional information.

MR. O'REILLY: A little different question, Lee; what does the agency plan to do with the individuals who were non-compliant? And in a similar situation, since you have the trip ticket system, do you have any concerns that if there is a notification process at least to inform the non-compliant individuals; how do you plan to address that with the trip ticket?

The reason I'm asking is we looked at our information over a 12-month period on the hundred pound trip limit and depending on which are the major gears, it ranges from 1.2 to about 5.7 percent non-compliance. Our natural reaction would be to notify those individuals. However, we haven't thought about what that might do in terms of reporting. Have you thought about that?

MR. PARAMORE: I think I'm going to defer to Michelle since I'm speaking as the technical committee chair.

DR. MICHELLE DUVAL: Obviously, we were disappointed in the rather high level of non-compliance. This was a new regulation. We generally don't see quite that high level of non-compliance. In talking to our law enforcement staff, he said there was actually a lot of confusion on the water about the interpretation of the proclamation that we put out, and so it took a while for our officers on the water to get the word out to the fishermen in that regard.

I think in terms of notifying, I assume you mean specific notifications to those fishermen who were actually over. I'm going to have to defer that to Louis. I know he really wanted to be here for this. Unfortunately, that couldn't happen. I would be happy to get back to the board on that particular question in terms of informing.

I think just looking at the data that Lee has presented, our compliance has vastly improved over the four months that Lee showed from January through April. I'm glad that you looked at your data. Certainly, I think most of the rest of the states have had the hundred pound limit in place longer than we've had this 10 percent with no more than a thousand pounds that has been in place for, well, now would be just about one year; but because of the lag in our trip ticket data, we don't have quite a year of information with which to compare. I would certainly be curious as to other states if they were able to provide that level of analysis as well.

MR. O'REILLY: Just a little followup; I think this is an important point since this is the first time that we've had this system, and your words, Michelle, are very encouraging because I think it probably is a good idea at least on the part of what we'll try to do to notify. You're indicating what we're wondering about how did the word get out and how effective was the wording getting out, so perhaps for the first time around notification could be a good process. I appreciate your comments.

DR. DUVAL: And just a quick followup to that, we send our proclamations to all of our license holders and not just someone who might have landed weakfish in the past. Those are sent by snail mail, they're sent by electronic mail. We have quite an extensive notification process, and I think it was really in the interpretation of how the proclamation was worded by the folks who were reading that. We will certainly do a better job of that.

MR. RICK COLE: I'm just trying to get a better understanding of this improvement in compliance. In 2010 did North Carolina just have the hundred pound limit in place – and this is a comparison with that 2010 data, this improvement; is that correct?

MR. PARAMORE: The information that was presented here is based on the four months when North Carolina did have the 10 percent bycatch allowance in place. We never had the hundred pound trip limit in place prior to that. We basically went from no regulations on the commercial fishery to a few months where we were actually out of compliance with Addendum IV to asking the board to allow us conservation equivalency on the 10 percent bycatch allowance, which was granted in August and we implemented it in August. What I'm reporting here is what has occurred since August 20th of 2010.

MR. R. COLE: But you're making that comparison – the improvement position that it was based relative to the 2010 non-compliance? In other words, it was 31 percent non-compliance in 2010; is that correct?

MR. PARAMORE: Yes, that's correct. I mean, just to speak to that and in talking to Michelle and Louis and other people, and me being the North Carolina representative and as the technical committee chair, they've expressed to me that there was some confusion with the regulation. Like Michelle said, there was some confusion with the way that the proclamation was originally written and there were some problems with enforcement being able to enforce that 10 percent. I think that lent to a lot of the non-compliance that occurred. I think since January a lot of that has been cleared up and that's why you see the vast improvement in the compliance.

MR. R. COLE: Okay, well, based on that 2010 information, the winter gill net fishery was one of the most non-compliant fisheries, and that's not surprising. It will be interesting to see what happens this winter with that particular fishery. Mr. Chairman, will we receive an update on that at a subsequent meeting?

CHAIRMAN GILMORE: That's actually what I was going to ask Michelle at the end of this was that I think Louis did a very impassioned speech on why this made sense and how it was going to work, and I guess we're all disappointed that at the beginning we had such non-compliance. Now if it turns out that the enforcement and the announcement of this whole thing was really the problem and now that we've got some good data, but will we be able to get an update at the annual meeting, Michelle?

DR. DUVAL: That was going to be my suggestion is that we try to update these numbers in time for the annual meeting. Lee is the one who has to crunch them. We do obviously have some lag time between our trip ticket information coming in and that being entered and verified, but we would at that point have verified information for an entire year, so we would at least be able to go through August and possibly September, Lee, do you think?

MR. PARAMORE: For November; is that what you're – at least August and probably September, also, I would say. I want to express another sort of thing that was brought up in the technical committee meeting obviously is North Carolina has asked for alternative management, and there is certainly a feeling on the technical committee that North Carolina should be held to a really high standard to ensure that our landings are not being excessive to what the board intended. Obviously, if our performance doesn't improve and isn't in compliance – and this was sort of an industry request. They were worried about the discards in the fishery, so I kind of expected the industry to comply with these regulations. It's kind of, you know, a thing where show us what you want but do what you say you're going to do. I definitely think this is something we should bring back to the board and continue to monitor North Carolina's performance and evaluate it. The board can do what they want to, but that's where we stand.

DR. DUVAL: And I think to kind of sum it up a little bit, you know, live by the data and die by the data, and certainly our commission is going to hear about this next week and certainly putting the fishermen on notice. I think it has been expressed to the industry that they given a gift here by this management board to try this alternative management measure.

Certainly, I'm optimistic given the 3 percent non-compliance based on the last several months of data, but, again, as we expressed – I can't be as impassioned as Louis, that's not my style, but with the board's consent we'd like to move forward and at least be able to have a full year of data to present to you at the annual meeting.

DR. MALCOLM RHODES: Lee, I just had one question. Since you have the trip tickets, have you had an increased number of trips with the allowance of a larger number of a good commercial fish or is it similar trip tickets compared to a year and two years prior? I mean, have you had more fishery because there is more they can bring in?

MR. PARAMORE: With regard to weakfish; I don't follow –

DR. RHODES: Well, I mean, just overall you have the number of trips, you had 2,362 trips; is that similar to previous years or have you seen a bump-up in trips?

MR. PARAMORE: In terms of weakfish trips, they've been declining just like the landings have been declining. Our weakfish landings in 2010 I think were about 40 percent down from what they were in 2009. I haven't actually looked at the number of trips, but I'm pretty sure the number of trips are down pretty similarly. Of course, for a good portion of our spring fishery, which is a large part of our fishery for weakfish, the regulations were unchanged. They didn't change until the fall. I feel

very confident in saying that the number of trips have decreased substantially over the prior couple of years that are landing weakfish.

DR. RHODES: Okay, so that doesn't appear to have gotten a more directed fishery because of the ability to keep a thousand pounds instead of a hundred pounds. That's great!

MR. PARAMORE: Yes, under this regulation it seems like people can go out and catch a thousand pounds, but in reality it's very, very difficult with the 10 percent. I mean, essentially you have to have 10,000 pounds of fish on board to have a thousand pounds of weakfish. There are very few fisheries other than, say, primarily the winter trawl fishery, which has a hundred percent compliance, is really the only fishery that could actually probably on a day-to-day basis have that thousand pounds,

Our biggest weakfish fishery right now is our inshore gill net fishery and you're talking about a fishery that typically lands anywhere from a hundred to three or four hundred pounds of fish per day, so at best they're looking at bringing in thirty to forty pounds of weakfish. That's our biggest weakfish fishery over the last few years.

MR. THOMAS FOTE: I guess you know I had to say something about this and to the long battle that we had over this thing. I really was upset because that was never – the original intent of my motion was to allow a hundred pound bycatch and not a conservation equivalency. As a matter of fact, if we had stayed at the hundred pound bycatch, there would probably be less failure to be in compliance because a lot of those problems was because – which I understand and maybe I'm wrong – with some of those fish that only had 80 or 90 pounds or even less of the hundred pounds but didn't have the 10 percent.

And in the motion that we had basically approved to allow for the hundred pound bycatch, it did require the 10 percent. It just was trying to basically allow fishermen to bring in a hundred pounds and not have a directed fishery. Maybe North Carolina should think about this because of the angst it has caused with many other states dealing with this problem to go back to what we originally made the motion for was to allow a hundred pound by catch in fisheries that would not complicate the issue and not look at it like a directed fishery, which some people have basically looked at this as. That's just my comment on this.

MR. O'REILLY: Mr. Chairman, I don't see an opportunity to address this later, but I want to make sure despite the sort of alternative management regime of North Carolina, that all the commercial states are on the same footing. North Carolina and Virginia have a trip ticket system so it's easy for those states to incriminate themselves as far as the bycatch limits go.

For the other states – and I don't know the answer to this, so I guess it's Mike perhaps and Lee, but what will be the mechanism to I suppose use ACCSP and by way of SAFIS to get other states that have commercial landings to look at their trip limits because whether we recognize it or not today there is certainly going to be times where abundance is going to be there, especially during the migratory periods, and it's going to be important to track all the states and have a way to do that. And it's just my guess that with what has been going on over the last couple of years through ACCSP, that mechanism will be available for the other states; is that correct, and is that something that's anticipated?

MR. MICHAEL WAINE: Yes, like you said, the trip ticket states, we can get the landings by, and Virginia and North Carolina and I believe Florida and Maryland is on that list as well. For the other states it's going to be a little bit more tricky and we can with the ACCSP to see if there is some resolution in the data to get an understanding of how states are complying the hundred trip limit given that they don't have the trip ticket options. That's something that the technical committee will be reviewing annually and updating the board on to the extent possible.

MR. ROY MILLER: Lee, I'm wondering if I could probe just a little bit to find out more about fisheries and how the gill net fishery is prosecuted. Is it primarily a sink net that is set overnight or is this a piece of gear that is fished continually. If it's the former, I don't know how they go about reducing their bycatch appreciably. Can you comment on that?

MR. PARAMORE: I would say it's a combination. I think a lot of ocean gill net fisheries are what we call drop-net fisheries. They go out in the ocean in the morning and fish during the day and then pull their nets up by the evening and come back to the dock and unload. Some of our inshore gill net fishery, which has sort of become our larger fishery in recent years for weakfish, which is a complete change over historical landings, they primarily fish

with evening sets and fishing in the early morning so those are overnight sets that are not actively fished during the night. It's a combination of those two, I would say.

MR. MILLER: I guess we all assumed initially that the problematic gear was going to be trawls, and I'm surprised to see that it's long haul seine and gill nets, because honestly I think it's trickier to eliminate excessive landings of weakfish from those two gears than it might be from trawls. How are they avoiding weakfish with the gill nets, for instance, considering the species complement that's on the list for being taken in gill nets?

MR. PARAMORE: In the gill net fishery they're primarily fishing in the ocean. They're primarily fishing for croaker and bluefish, but they do catch weakfish in those efforts. I mean, it does occur. I can't say for certain that they have the means to catch bluefish and they know where to go catch weakfish, that they wouldn't try to catch weakfish. I don't know.

How the fishermen operate and behave is obviously they're much more creative than we ever thought and that we can ever account for. On the inshore fishery it's just pretty much a mixed fishery. It's hard to avoid the weakfish. They're fishing for bluefish mostly on the inshore fishery in the spring, and weakfish are somewhat just a product of that.

They can certainly in some cases maybe avoid areas where there are high densities of weakfish, but here recently weakfish are just kind of a random occurrence. There is really no pattern to where you would catch them. The numbers just aren't there to really avoid them at all. It's just something that kind of happens as you're fishing for the other species. I don't know that there is a whole lot that they could do to avoid what little bycatch they are going to have on the inshore fishery.

CHAIRMAN GILMORE: Are there any other questions for Lee on this? Okay, the sense I'm getting is I guess there is concern on the board right now; and I don't know if we're ready to do anything in terms of taking an action yet, but I guess we'll wait for the update at the annual meeting and hopefully we'll see good things. A.C.

MR. CARPENTER: It's not a question but maybe a suggestion that since you have started with a four-month period, that your annual reports be still broken out into four-month sections so that we can see if there is any kind of pattern, seasonality or trend developing that an annual summary would not reveal.

CHAIRMAN GILMORE: Thanks, A.C.; a good idea. Anything else on this? Okay, we're going to move along now to the technical committee report on weakfish population modeling. There was a presentation to the technical committee, and Lee is going to take us through the results of that.

TECHNICAL COMMITTEE REPORT ON WEAKFISH POPULATION MODELING

MR. PARAMORE: Okay, this is a little bit shorter presentation here in just this one slide. Essentially Rob had asked at the last meeting that the technical committee and the stock assessment subcommittee get together with Yan Jiao. She spent the better part of three years working on some weakfish modeling.

She was essentially provided the same data that went into our last benchmark assessment, all of our data sets, and she has done some pretty complex modeling on weakfish. I guess the whole idea here is to see if the stock assessment subcommittee could use some of Yan's assessments as sort of a moving-forward point to sort of advance our assessment techniques for weakfish.

She actually addresses a lot of the recommendations that came out of the review committee to move sort towards a statistical catch-at-age model. Anyway, we talked about the appropriate time period for the next benchmark stock assessment. The last assessment was completed and reviewed in 2009.

Most of the members there at the technical committee and stock assessment subcommittee felt that the most appropriate benchmark would be to just kind of stick with the five-year cycle and go to 2014. Dr. Jiao provided us an update for weakfish modeling. Some of her work is still in progress but a lot of it is ongoing. She has produced several models and done a lot of work, very complex models, a lot of information.

She has looked at sort of the population dynamic issues that occur with weakfish, things such as some of the spatial and distribution differences in weakfish, differences in growth of weakfish, obviously the issue that we've had with the idea of change in mortality in weakfish. Her whole product is really to produce sort of an operational model; to develop usable reference points for the board to work with is

something we really don't have right now in our current model.

Anyway, we just wanted to point out that the whole idea of the time-varying M, which she did find indications that the M is changing over time similar to what we found in our current assessment, and this sort of moves us towards an ecosystem management type model. We even talked about this possibly may be something that the Multispecies Technical Committee or the Assessment Science Committee may want to look at some of her techniques and what she is doing and at least be abreast of what is going on with her modeling techniques.

There is a need, really, for the stock assessment subcommittee really to get together with Dr. Jiao and sort of determine an endpoint of how far she can take her assessment techniques and sort of what type of model we would want to have to move forward with the benchmark assessment. That was one thing that came out of that so probably at some point in the future there needs to be more of a formal meeting to sit down and have Dr. Jiao actually go through a lot of technical reports and documents with the stock assessment subcommittee so that they can kind of flesh those things out.

Like I said, her models are fairly complex. She is using Bayesian Statistics. To a lot of members of the stock assessment subcommittee, this is sort of like a foreign language. They're not really up to speed on these techniques and the statistics and they had suggested maybe that ASMFC may want to think about some training workshops or some other things first with the technical committees and then more formally with the stock assessment subcommittees to get these people up to speed.

If we move forward with Dr. Jiao's stock assessment, which I think the technical committee and stock assessment subcommittee feels like is a really good idea, just keep in mind that right now we're pretty heavily dependent upon her and her expertise in these modeling techniques and these statistics that she is using because we just don't have that level of expertise on our committee.

She has expressed that she is willing to stick around for the next four or five years to kind of see it through a peer review. Then we had to kind of figure where we go from there, if we do that. Anyway, I can try to answer any questions. I don't want to get too much into the details of her work because I'm not really ready to defend her work or anything, but that's kind of where we're at.

CHAIRMAN GILMORE: Thanks, Lee; I don't think we have too many Bayesian Statistics experts in the room. Any questions for Lee? Rob.

MR. O'REILLY: Well, just to comment I guess. I don't know if it was six years ago or when it exactly was but bluefish was teetering a little bit as far as the assessment approach went, and there was a professor – Toni would remember, of course – from New Hampshire who was going to use sort of a Bayesian approach then. Unfortunately, he fell ill and things were shifted to a more traditional type of biomass dynamic approach and then later on to the statistical catch at age, I guess, so this does have a little precedence.

The other thing I wanted to mention was I've had some positive comments from the technical committee meeting and even to the point where some folks who you would think might be reserved about progressing beyond what they're used to indicated that these types of approaches might be good for other species as well.

CHAIRMAN GILMORE: Thanks, Rob. Any other questions on this? Mark.

MR. MARK GIBSON: Mr. Chairman, I wanted to ask if there were any discussions going on or consideration being given to looking at contingents within the overall weakfish population; that is, the possibility of a migratory component which periodically infiltrates Southern New England estuaries and then contingents of non-migrant fishes and the relative strengths of those waxing and waning over time. Are there any discussions going about that? I know it's something we talked about a long time ago in our days on the technical committee and I wonder where that ended up.

MR. PARAMORE: I do know that Dr. Jiao has looked at sort of the spatial and temporal distributions of weakfish and how they shift over time and modeling how that affects the stocks in general. I don't know specifically to what you're referring to and whether or not she has incorporated that information.

That is certainly something that her modeling techniques seem to be capable of evaluating some of that type of information. They're very complex models, but the complexity of them actually does

allow for a lot of different inputs and looking at different variables, whether they be environmental variables or differences in growth rates or differences in migration patterns of different segments of the population and that sort of thing. It's certainly something that we could bring up with her and see if that's a possibility.

REQUEST FOR STOCK ASSESSMENT SUBCOMMITTEE MEMBERSHIP

CHAIRMAN GILMORE: Any other questions for Lee on this? Okay, thanks for that report. Lee. The next item we have is on the stock assessment subcommittee membership. I think we learned yesterday or most people knew that Dr. Doug Vaughan had retired from the Southeast Fisheries Science Center. I didn't know this, but Vic Crecco I guess is planning on retiring in the fall of 2011. They're both on the committee, actually.

Vic was one of the first people I met when I worked consulting a power plant so he is a really old guy. Anyway, we have a couple of vacancies coming up. Actually, every time I have been at a board meeting with this, we've had some recommendations on replacements, but we don't have any right now, so this is really a plea out to the board to see if there are any suggestions on replacements for these two distinguished gentlemen. If you have any suggestions now I'd take now; but if not please get to us later on. If there is any now, if anybody has a recommendation, please raise your hand. A.C.

MR. CARPENTER: I don't have a recommendation but if we're going to go with this new very complicated model, we may look for a driver of that thing, that somebody has got some expertise or at least the ability to start it up.

CHAIRMAN GILMORE: Yes, good point, A.C. Any other comments on it?

MR. RUSS ALLEN: I just want to mention that it's not only two people, but Des Kahn was also on that stock assessment committee and there was a lot of influence from Joseph Mondorio from Florida had a lot of input, and I don't believe he is still involved. I was also a help on that, too, so it's a small committee now, so it really needs some help.

CHAIRMAN GILMORE: Thanks, Russ. Who actually is still on the committee; do you actually know? Yes, we only have about three people left on it, so it's not going to be much of a committee anymore. Go ahead, Vince.

EXECUTIVE DIRECTOR JOHN V. O'SHEA: Well, somebody might be tempted to note that it's tracking with the biomass so at least it's proportional.

CHAIRMAN GILMORE: Yes, good point, Vince. Again, if there are any recommendations on this, if you could get them to me or Mike, whatever, and we'll consider that and bring them up at the next meeting. Our last item on the agenda is biological sampling plans for 2011, and I think Mike is going to take us through that.

2011 BIOLOGICAL SAMPLING PLANS

MR. WAINE: I'm just going to review for a second here; Addendum I required states to submit sampling plans by April for our current fishing year based on the preliminary landings in the previous year. The board would review and accept those sampling plans; however, compliance was based on actual landings reported in annual compliance reports in September, so predicting sampling based on a previous year was unnecessary.

In response to this, in 2010 the board approved simplification of the 2011 sampling plan requirements so states currently submit a template memo that acknowledges the sampling requirements in Addendum I. To simplify this process further, the PRT recommended that staff would send a reminder memo to each state indicating their responsibility to comply with monitoring requirements in Addendum I, and we just wanted to pass that around to the board.

CHAIRMAN GILMORE: Any questions for Mike? I guess we're all still not doing so well on our compliance, but I guess when the weakfish come back we will have no problem. I don't think we need much of a motion on this. We just wanted to approve this recommendation by consensus, so is everybody okay with that and does anybody have any objection to that? Okay, then we'll approve that by consensus and move on.

ADJOURNMENT

That's pretty much the agenda unless anybody has any other business before the board. Seeing none, I look for a motion to adjourn. Thanks, we're adjourned.

(Whereupon, the meeting was adjourned at 11:49 o'clock a.m., August 3, 2011.)

An update on North Carolina's alternative management strategy for measures in Addendum IV to Amendment 4 to the Interstate Fishery Management Plan for Weakfish

June 17, 2011
Updated January 10, 2012

Prepared by
Lee Paramore

Report for Weakfish TC and Weakfish Management Board

Under Addendum IV, states were required to implement harvest measures to aid in the recovery of the severely depleted weakfish stocks. These measures include a one fish recreational creel limit, 100 pound commercial trip limit, 100 pound commercial bycatch limit, and 100 undersized fish per trip allowance for the finfish trawl fishery. Measures of Addendum IV were required to be implemented by May 1, 2010. North Carolina failed to implement the 100 pound commercial limit by this date and was temporarily found out of compliance. In August of 2010, North Carolina requested that the ASMFC Weakfish Management Board consider a conservationally equivalent management measure in lieu of the 100 pound commercial trip limit. The proposed alternative would allow North Carolina to harvest weakfish strictly as a bycatch where weakfish could not exceed 10% of the landings of all finfish landed on a trip up to 1,000 pounds. The Board approved North Carolina's request and the measure was implemented August 20, 2010. This report provides a detailed summary of commercial weakfish landings under the current management program for North Carolina.

A summary of weakfish landings in North Carolina occurring since the 10% bycatch limit was implemented is provided in Table 1. Results are broken into three periods; September through December 2010, January through April 2011 and May through September, 2011. During the initial implementation of the regulation in 2010, overage pounds with the regulation were considerable. In all, 31% of the 63,479 pounds of weakfish harvested for the period in 2010 were the result of overage (i.e. landings that either exceeded the 10% bycatch allowance or 1,000 pound cap). During January through April of 2011, 3% of the landings were overage. In the most recent period of May through September of 2011, 19% of North Carolina's commercial landings were overage.

Table 1. Landings of weakfish, number of trips exceeding the 10% bycatch allowance, and the pounds of weakfish landed that exceeded the legal limits.

Year	Period	Trips with weakfish	Pounds weakfish	Overage Trips*	%	Total pounds on overage trips	overage pounds	% of catch by weight that is overage
2010	Sept to Dec	2,362	63,479	390	17%	34,101	19,519	31%
2011	Jan to April	1,358	33,969	75	6%	2,328	1,279	4%
2011	May to Sept	1,139	11,953	47	4%	4,792	2,269	19%

Further details of landings by each of the major gear types is provided in Table 2. The majority of the overage trips and landings have occurred in the gill net and long haul fishery.

Table 2. Landings of weakfish by gear type, number of trips exceeding the 10% bycatch allowance, and the pounds of weakfish landed that exceeded the legal limits.

Year/Period	Gear	Trips with weakfish	Pounds weakfish	overage Trips*	%	Total pounds on overage trips	overage pounds	% of catch by weight that is overage
2010	Winter Trawl/Flynet	34	4,365	0	0%	-	-	0%
Sept-Dec	Gill Nets	2,044	37,944	339	17%	19,396	12,576	33%
	Long Haul	119	19,723	35	29%	14,540	6,864	35%
	Shrimp Trawl	25	234	0	0%	63	33	14%
	Others**	140	1,214	16	11%	103	45	4%
2011	Beach Seine	12	275	0	0%	-	-	0%
Jan-Apr	Winter Trawl/Flynet	8	449	0	0%	-	-	0%
	Gill Nets	1,333	32,969	73	5%	2,060	1,084	3%
	Others**	5	276	2	40%	268	195	71%
2011	Beach Seine	17	180	4	24%	45	5	3%
May-Sept	Gill Nets	907	3,758	18	2%	264	82	2%
	Poundnets	112	882	8	7%	72	27	3%
	Long Haul	80	7,034	15	19%	4,391	2,142	30%
	Shrimp Trawl	16	71	0	0%	-	-	0%
	Others**	7	28	2	29%	20	13	46%

*based on trips where weakfish weight exceeds 10% bycatch allowance or trips where weight of weakfish landed > 1,000 lb

**Gears with low number of observations are grouped into 'Others' due to confidentiality

Table 3 provides a summary of weakfish landings categorized by the amount of weakfish landed on each trip. Categories include less than or equal to 100 lb, 101 to 500 lb and 501 to 1,000 lb. No trips occurred where weakfish exceeded 1,000 lb. The vast majority of the trips landed 100 lb or less. Trips exceeding 100 lb accounted for only 2% to 4% of all trips made but accounted for between 41% and 58% of the landings during each period.

Table 3. Weakfish trips and landings by weight categories.

Period	Pounds per trip	Trips	% Trips	Landings (lb)	% Landings
2010	≤100	2,280	97%	37,312	59%
Sept-Dec	101 - 500	63	3%	11,335	18%
	501 - 1000	19	1%	14,832	23%
	Total	2,362	100%	63,479	100%
2011	≤100	1,283	96%	14,179	42%
Jan-Apr	101 - 500	44	3%	10,630	32%
	501 - 1000	12	1%	8,856	26%
	Total	1,339	100%	33,665	100%
2011	≤100	1,114	98%	5,827	49%
May-Sept	101 - 500	24	2%	5,616	47%
	501 - 1000	1	0%	510	4%
	Total	1,139	100%	11,953	100%

The ASMFC Weakfish Technical Committee met on June 23, 2011. During the meeting the committee was provided with information on North Carolina's harvest since implementing the alternative management plan for commercial harvest as provided in this paper. It was suggested that additional analysis be conducted in order to provide insight into how the fishery might have performed under a 100 lb trip limit. The following addresses this request and updates the results to include the most recent period.

Analysis was conducted using several scenarios where landings under the 10% bycatch allowance were manipulated to simulate how landings could have differed under a 100 lb trip limit. The scenarios are provided:

Scenario 1: Landings that occurred under the 10% bycatch allowance and 1,000 lb cap minus any overage. (assumes 100% compliance).

Scenario 2: Provides estimates of what landings may have looked like under a 100 lb trip limit with 100% compliance. All trips that exceeded 100 lb under the 10% bycatch allowance were capped at 100 lb. Additionally, it was conservatively assumed that all trips that landed less than 100 lbs had no discards due to the 10% bycatch allowance regulation. This scenario likely provides a low estimate of landings under a 100 lb trip limit.

Scenario 3: Same as Scenario 2 with the exception that this analysis assumed that some discards did occur due to the 10% bycatch regulation. Trips that met the 10% bycatch allowance and landed less than 100 lb were assumed to have landed 100 lb under this scenario. Trips that landed less than 100 lb and did not meet the 10% bycatch limit were unchanged. This scenario likely provides a high estimate of landings under a 100 lb trip limit.

Scenario 4: Same as Scenario 2 (100 lb trip limit without discards) but does not assume 100% compliance. This scenario likely provides a low estimate of landings under a 100 lb trip limit.

Scenario 5: Same as Scenario 3 (100 lb trip limit with discards) but does not assume 100% compliance. This scenario likely provides a high estimate of landings under a 100 lb trip limit.

Actual landings and results for each scenario are provided in Table 4. For scenarios where 100% compliance was assumed, the estimated landings under the 10% bycatch allowance (Scenario 1) were intermediate to landings for the various scenarios of the 100 lb trip limit (Scenario 2-3).

When 100% compliance was not assumed landings under the 100 lb trip limit provided estimates that were lower (Scenario 4) and higher (Scenario 5) than the actual landings that occurred, although the actual landings were closer to the high estimate (Scenario 5).

Table 5 reports, for each of the major gear types, the five top species, by weight, that were landed on trips that reported weakfish from September 2010 through September 2011.

Table 4. North Carolina landings of weakfish by gear type and year under various regulatory scenarios and assumptions compared to how the fishery actually performed under a 10 % bycatch allowance and 1,000 lb cap.

		Actual	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Year	Period	Landings	Curent management with no overage	100 lb trip limit with no overage (no discards)	100 lb trip limit with no overage (w/ discards)	100 lb trip limit (no discards)	100 lb trip limit (discards)
2010	Sept-Dec	63,479	43,961	45,513	61,722	57,496	74,377
2011	Jan-Apr	33,968	32,689	20,083	25,964	20,502	26,093
2011	May-Sept	11,953	9,684	8,328	11,316	11,219	14,018
	Combined	109,400	86,334	73,924	99,002	89,217	114,488

Table 5. Top five species, by weight, that were landed on trips reported with weakfish. Included for trips occurring from September 2010 through September 2011.

Beach Seine	Winter Trawl/Flynet	Gill Nets	Longhaul	Pound Net
spot	flounder	croaker	spot	flounders
bluefish	croaker	bluefish	sea mullet	Spanish mackerel
sea mullet	bluefish	sea mullet	weakfish	menhaden
menhaden	scup	spiny dogfish	pigfish	spadefish
striped mullet	menhaden	flounders	croaker	starbutter

Appendix 1

At the August 2011 Weakfish Board Meeting, the TC reported on the performance of NC with their conservation equivalency measures in lieu of measures in Addendum IV to Amendment 4 to the ISFMP for Weakfish. The Board tasked the TC to report on the performance from other states that implemented the original management measures outlined in Addendum IV. The tables below represent landing and trip data from states that have a trip ticket monitoring program, making it possible to evaluate their performance relative to the trip limit regulations. In Table 1, the landings are split by three separate time periods and represent the number of overage pounds and the percent of overage pounds relative to the total pounds of weakfish landed in each period. Table 2 provides the total number of trips made that landed weakfish and the number of trips that had overages for each of the three time periods. Note that some landings are summarized because of confidentiality.

Table 1.

	Sept-Dec 2010			Jan-Apr 2011			May-Sept 2011		
State	total harvest (lbs)	overage lbs	% overage lbs	total harvest (lbs)	overage lbs	% overage lbs	total harvest (lbs)	overage lbs	% overage lbs
NC	63,480	19,519	31%	33,969	1,279	4%	11,953	2,269	19%
RI	<2,000	0	0%	<2,000	0	0%	<700	0	0%
NJ	7,473	998	13%	8,949	4,598	51%	1,031	0	0%
DE	1,528	0	0%	181	0	0%	764	0	0%
MD	1,754	257	15%	<400	<150	<50%	53	0	0%
PRFC	26	0	0%	0	0	0%	70	0	0%
VA	48,636	1,528	3%	1,951	0	0%	6,156	<15	<1%
FL	20	0	0%	25	0	0%	475	0	0%

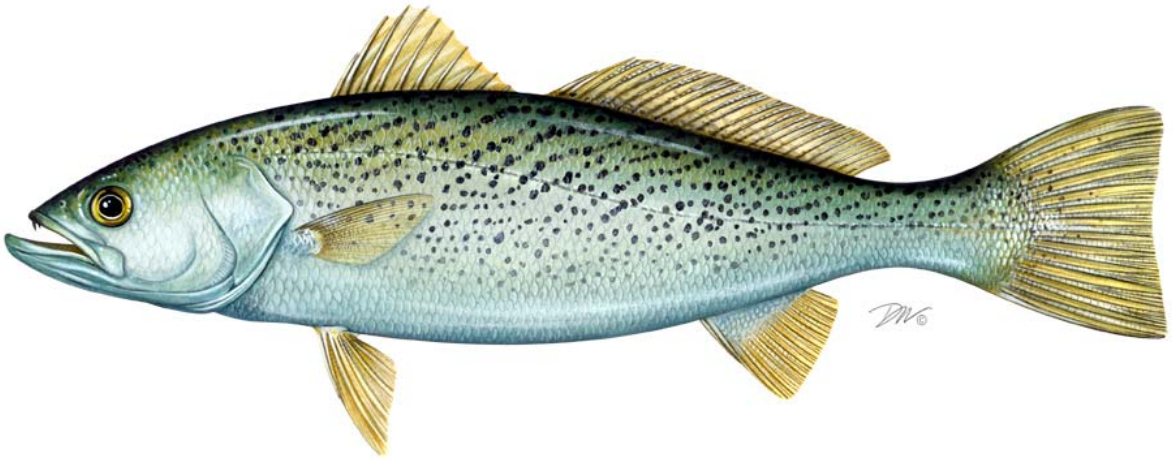
Table 2.

	Sept-Dec 2010		Jan-Apr 2011		May-Sept 2011	
State	Total Trips	overage trips	Total Trips	overage trips	Total Trips	overage trips
NC	2,362	387	1,358	75	1,139	47
RI	<300	0	<300	0	<300	0
NJ	178	16	91	26	99	0
DE	54	0	26	0	125	0
MD	56	6	<10	<5	11	0
PRFC	7	0	0	0	9	0
VA	1,421	32	56	0	408	<5
FL	9	0	21	0	67	0

2011 REVIEW OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION FISHERY MANAGEMENT PLAN FOR

WEAKFISH
(Cynoscion regalis)

2010 FISHING YEAR



Weakfish Plan Review Team
Joe Cimino, Virginia Marine Resources Commission
Rick Cole, Delaware Division of Fish and Wildlife
Wilson Laney, United States Fish and Wildlife Service
Erin Levesque, South Carolina Department of Natural Resources
Lee Paramore, North Carolina Division of Marine Fisheries
Michael Waine, Atlantic States Marine Fisheries Commission, Chair

Tables of Contents

I. Status of the Fishery Management Plan

The Atlantic States Marine Fisheries Commission (Commission) adopted its first Fishery Management Plan (FMP) for Weakfish in 1985. Amendment 1 to the FMP (1992) unsuccessfully aimed to improve the status of weakfish. Amendment 2 (1995) resulted in some improvement to the stock, but several signs indicated that further improvement was necessary. Thus, Amendment 3 (1996) was implemented to increase the sustainability of the fishery. Addendum I to Amendment 3 was approved in 2000 in order to extend the management program until the next amendment was implemented.

Amendment 4 was approved in 2002. The goal of Amendment 4 is to utilize interstate management so that Atlantic coastal weakfish recover to healthy levels that will maintain commercial and recreational harvest consistent with a self-sustaining spawning stock and to provide for restoration and maintenance of essential habitat (ASMFC 2002). The management objectives are to:

1) establish and maintain an overfishing definition that includes target and threshold fishing mortality rates and a threshold spawning stock biomass to prevent overfishing and maintain a sustainable weakfish population;
2) restore the weakfish age and size structure to that necessary for the restoration of the fishery;
3) return weakfish to their previous geographic range;
4) achieve compatible and equitable management measures among jurisdictions throughout the fishery management unit, including states' waters and the federal EEZ;
5) promote cooperative interstate research, monitoring, and law enforcement necessary to support management of weakfish;
6) promote identification and conservation of habitat essential for the long term stability in the population of weakfish; and
7) establish standards and procedures for both the implementation of Amendment 4 and for determination of states' compliance with provisions of the management plan.

Amendment 4 established target and threshold fishing mortality rates and a threshold spawning stock biomass level to determine overfishing and overfished stock status. The amendment requires states to implement recreational and commercial management measures to achieve annual fishing mortality targets. Some management measures are specified (e.g., minimum size limit, minimum mesh size, bycatch limit), while the amendment provides the states flexibility in implementing other regulations (e.g., trip limits, area or season closures). States may request implementation of alternative management plans with conservationally equivalent measures. States deemed to have insignificant landings were exempt from the recreational and commercial requirements, with the exception of the bycatch reduction devise requirements.

The Commission adopted Addendum I to Amendment 4 (2005) to replace the biological sampling program in section 3.0 of Amendment 4. In response to a significant decline in stock abundance and increasing total mortality since 1999, the Commission approved Addendum II to Amendment 4 (2007) to reduce the recreational creel limit and commercial bycatch limit, and set landings levels that when met will trigger a re-evaluation of management measures. Addendum III to Amendment 4 (2007) altered the bycatch reduction device certification requirements in Section 4.2.8 of Amendment 4 for consistency with the South Atlantic Fishery Management

Council's Shrimp FMP. The Commission approved Addendum IV to Amendment 4 in 2009 to respond to the results of the 2009 benchmark stock assessment (additional information is provided in Section VI. Status of Management Measures and Issues).

Weakfish are managed under this plan as a single stock throughout their coastal range. All Atlantic coast states from Massachusetts through Florida and the Potomac River Fisheries Commission have a declared interest in weakfish. See Table 1 for a summary of state-by-state regulations in 2009.

II. Status of the Stock

The weakfish stock is depleted and overfishing is not occurring (NEFSC 2009a, NEFSC 2009b). In general, weakfish biomass has declined to an all time low, total mortality is currently high, and non-fishing mortality has increased in recent years. While overfishing has not occurred in recent years, harvest was reduced by an estimated 60% in Addendum IV to reduce additional mortality from fishing and poise the stock for a quicker recovery should natural mortality decline.

Between 1982 and 1990, age 1+ weakfish biomass[1] declined drastically from 113.1 million pounds to 17.6 million pounds (Figure 1). Overfishing was the main cause of this decline, with fishing mortality (F) accounting for about 60-90% of total mortality (fishing plus natural mortality) during the period. Fishing mortality[2] peaked at 1.01 in 1989, but with the implementation of management measures in the early to mid-1990s, F declined to 0.24 in 1995 and biomass responded favorably by increasing to a peak of 62.1 million pounds in 1996 (Figure 1). While F remained relatively stable (between 0.26 and 0.58) after that time, the stock began another drastic decline in 2001 to the time-series low of 10.8 million pounds in 2008. However, the contribution of fishing mortality to total mortality was substantially reduced during this period; from 2004-2007 only 10-20% of total mortality is attributed to fishing mortality. Conversely, natural mortality has risen substantially since 1995 (Figure 1), and factors such as predation, competition, and changes in the environment are thus believed to be having a stronger influence on recent weakfish stock dynamics than fishing mortality. Bycatch and under-reported catches would have to be much greater than those estimated, growing from about 3-4 times the estimates in 1996 to 15-20 times in the most recent years, to account for the biomass decline. Thus far, there is no evidence available of an Atlantic coast fishery capable of generating additional unreported weakfish discards of this magnitude.

Currently, the stock's spawning potential is considered to be at only 3% of an unfished stock, well below the 20% spawning potential threshold and 30% spawning potential target adopted in Addendum IV. Trends in F indicate a stable and modest fishing mortality. Thus, while the stock biomass is depleted, overfishing is not occurring.

Despite the decline in age 1+ biomass, young-of-year relative abundance appears to have remained in a productive pattern; however, 2006 and 2009 were the lowest years on record since 2004 (Figure 2). While inter-annual variability is common in juvenile indices, fluctuations in the

[1] Biomass estimates are for January 1 stock size. All mortality rates are also based on January 1 stock size.
[2] F estimates are based on age 1+ biomass and are therefore affected by partial recruitment and can not be comparable to the F target and threshold in Amendment 4 which are for fully recruited ages only.

recent time series appear more pronounced than in earlier years. Conflicting trends in age-0 indices and age 1+ biomass suggest the emergence of a demographic bottleneck (strong young-of-year indices do not translate into high biomass).

III. Status of the Fishery

At 271 thousand pounds, the total coastwide landings of weakfish in 2010 are the lowest on record from at least 1982 (Table 2). Total landings dropped 49% from the 2009 landings of 536 thousand pounds, and 93% from the ten-year (2000-2009) average of 3.71 million pounds. The commercial fishery (199,780 pounds) accounts for 74% of the total 2010 landings, and the recreational fishery (71,991 pounds) for 26% (Table 2).

Commercial Fishery

Commercial data are cooperatively collected and compiled by the National Marine Fisheries Service (NMFS) and state fishery agencies from state mandated trip-tickets, landing weigh-out reports from seafood dealers, federal logbooks, shipboard and portside interviews, and biological sampling of catches. Landings from the NMFS Fisheries Statistics Division are used within this report unless a state reports alternative values in its compliance report to the Commission, in which case these values are used (see notes for Table 3).

Between 1982 and 2010, coastwide commercial weakfish landings have ranged from the high of 21.1 million pounds in 1986 to the low of 271,771 pounds in 2010 (Table 3). Since 1988, the overall trend is declining except for during the period of 1990-1998 when landings hovered between 6.1 and 9.1 million pounds (Figure 3).

North Carolina (53%), Virginia (29%), and New York (7%), landed the three largest shares of the 2010 coastwide commercial weakfish landings. A 87% decrease in landings for New York and a steady decrease in landings for most other states were the notable changes since 2009 (Table 3, Figure 4).

The dominant commercial gears in 2010 were gill nets, haul seines, and trawls (about 57%, 14%, and 13% of the total commercial landings, respectively; NMFS 2011). There has been a shift in the dominant source of landings from trawls in the 1950s-1980s to gill nets in the 1990s-present. The majority of commercial landings tend to occur in the fall and winter months, presumably as the fish congregate to migrate to over-wintering grounds in the South Atlantic (Hogarth and others 1995).

Recreational Fishery

Recreational catch statistics are collected by the NMFS. Effort data are collected through telephone interviews. Catch expansions are based on angler interviews and biological sampling conducted by trained interviewers stationed at fishing access sites. All recreational data in this report are from the NMFS Fisheries Statistics Division (2011).

Since 1982, coastwide recreational landings have ranged from the high of 11.4 million pounds in 1983 to the low of 71,991 pounds in 2010 (Table 4). Landings averaged 7.8 million pounds from 1982-1988, before falling to 2.1 million pounds in 1989. Annual recreational landings generally fluctuated between one and four million pounds from 1990 to 2002, before dropping below one

million pounds in 2003 (Figure 3). Landings have averaged 464 thousand pounds (or 372 thousand fish) the last five years (Table 5), and are estimated at 71,991 pounds (78,529 fish) in 2010. The number of fish released alive by anglers remained above 1 million fish from 1992 to 2008, peaked at over 5 million in 1996, decreased to 349 thousand fish in 2009, and increased to 635 thousand fish in 2010 (Table 6, Figure 5).

New Jersey anglers have nearly consistently harvested the most weakfish by pounds along the coast. In the 1980s and 1990s, anglers in Delaware, Maryland, and Virginia often took the next largest shares of the recreational total largest amount. In the 2000s, New Jersey anglers led in the harvest, whereas anglers in Virginia and North Carolina tended to take the second and third largest amounts (Tables 4 and 5). However, in 2010, North Carolina anglers landed 69% of the coastwide harvest, followed by South Carolina anglers with 14%, and Virginia anglers with 5% (by pounds; Figure 6).

The recreational fishery catches weakfish using live or cut bait, jigging, trolling, and chumming. The vast majority of recreationally harvested weakfish are caught in state waters (96% in 2010 by pounds). In 2010, nearly all recreationally harvested fish were caught from private or rental boats (82%) or from shore (11%). Eighty-nine percent of the harvest occurred May-December.

IV. Status of Assessment Advice

An assessment was completed in 2009 by the Weakfish Stock Assessment Subcommittee (NEFSC 2009a, NEFSC 2009b) and peer reviewed by the 48th Stock Assessment Review Committee (Sullivan et al. 2009) at the 48th Northeast Regional Stock Assessment Workshop (SAW). The assessment includes fishery data and survey indices through 2007.

As recommended by previous review panels, an age-structured VPA was used to evaluate trends in population parameters. This model provided reasonable estimates of fishing mortality and biomass from 1981-2001 with estimates converging regardless of the terminal year of the model; however, estimates from 2002 onward were subject to excessive bias when adding additional years of data, making them unusable for analysis. An alternative approach using an index-based model (where relative values are estimated from harvest and survey data and then scaled to absolute values based on results from the early, more stable part of the VPA time series) was developed. Two surplus production models were also included in the assessment because these could include additional sources of mortality, such as predation, competition, and environmental factors. The peer review panel endorsed using, on an interim basis, the index-based model for estimating biomass and fishing mortality, weakfish relative spawning stock biomass projections, and a biomass threshold approximating 20% of unfished SSB. The review panel recommended that the SAS develop additional methods to analyze the stocks in the next assessment.

V. Status of Research and Monitoring

Fishery-Independent Data

Young-of-year indices of relative abundance are provided by Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, and Florida. Connecticut, New Jersey, Delaware, North Carolina, Georgia, and Florida provide age-0+ or 1+ indices of relative abundance. The Northeast Fisheries Science Survey Groundfish Trawl Survey also produces an age-structured index for the Mid-Atlantic coast, while the Southeast Area

Monitoring and Assessment Program (SEAMAP) survey produces another for the South Atlantic Coast. The Northeast Area Monitoring and Assessment Program (NEAMAP) began spring and fall surveys between Martha's Vineyard and Cape Hatteras in the fall of 2007, and will provide an index in the future. The Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP), which began in 2002, collects data on relative abundance, length, weight, age, sex, and trophic interactions in the Bay. See Table 9 for the indices provided in the 2009 compliance reports.

Fishery-Dependent Data

The coastal states and the NMFS collect data on commercial and recreational landings. Addendum I to Amendment 4 requires the collection of otoliths and lengths to characterize the catch; the number of samples required is based on the magnitude of each state's fisheries. Each spring, the states are required to submit biological sampling plans, and each fall, through the compliance reports, the states are required to provide the actual sampling levels completed. See Section VII for more information.

VI. Status of Management Measures and Issues

Fishery Management Plan

Addendum IV to Amendment 4 was approved in November 2009, and was implemented in May 2010. In response to the 2009 stock assessment results, the addendum implements more appropriate biological reference points in response to recent stock dynamics and reduces harvest while attempting to minimize unnecessary bycatch waste, thus poising the stock for recovery should natural mortality decrease. Addendum IV requires all states in the management unit (including those that are *de minimis*) to implement a recreational creel limit no greater than 1 fish, commercial trip and bycatch limits no greater than 100 pounds, and a finfish trawl fishery allowance for up to 100 undersized fish. The addendum adopted percentage based biological reference points with an overfished/depleted threshold of 20% SSB and a target of 30% SSB. The biological sampling requirements under Addendum I are unchanged, and all regulations previously enacted to protect weakfish and reduce bycatch are to remain effective.

No additional amendments or addenda are under development.

Florida Management Area and Landings Data

In November 2009, the Management Board approved a proposal from Florida to reduce the state's weakfish management area to a small area in northeast Florida where pure weakfish are known to occur based on genetics data. The revision is intended to address the misidentification of weakfish, sand seatrout, and their hybrids, and the consequential law enforcement issue. Inside the newly established weakfish management area (St. Mary's River only), any fish that resembles weakfish will be considered weakfish for enforcement purposes, both for commercial and recreational limits. Outside the weakfish management area, all fish that resemble weakfish will be considered sand seatrout.

As a result of the approved proposal, the commercial and recreational landings data provided in Florida's 2010 compliance report represent the best estimate of pure weakfish landings in the state. Commercial landings data from Florida's trip ticket program and recreational landings

from the NMFS's Marine Recreational Fisheries Statistics Survey include only weakfish landed in Nassau and Duval counties, as revised on the basis of the genome proportions within the *Cynoscion*-complex found in the counties (48% weakfish in Nassau County and 17% in Duval County). The landings tables and figures in this report use the landings as reported by Florida.

De Minimis Status

Amendment 4 permits states to request *de minimis* status if, for the last two years, their combined average commercial and recreational landings (by weight) constitute less than 1% of the coastwide commercial and recreational landings for the same two year period. The *de minimis* threshold for 2010, calculated with 2009 and 2010 harvest data, is 4,040 pounds.

Four states requested *de minimis* status in their 2011 compliance reports: Florida, Georgia, Connecticut, and Massachusetts. Each of these states has had a previous *de minimis* request approved and qualify for continued *de minimis* status (Florida 0.36%; Georgia 0.94%, Connecticut 0.17%, and Massachusetts 0.01%). If any *de minimis* state were to lose its designation as such, the state would be required to implement the regulatory and monitoring requirements from which it was previously exempt.

Addendum II Management Triggers

Addendum II established two management triggers that would require the Board to consider modifying management measures if reached. First, commercial management measures are to be re-evaluated if coastwide commercial landings exceed 80% of the mean commercial landings from 2000-2004, or 2.99 million pounds. Second, commercial and recreational management measures are to be re-evaluated if any single state's landings exceed its five-year mean by more than 25% in any single year.

The 2010 coastwide commercial landings are 199,780 pounds, thus the first trigger has not been exceeded. The second trigger was not met in any state because all state landings in 2010 decreased from their 2005-2009 average, except for Massachusetts whose landings comprise 0.03% of the total coast wide commercial landings (Table 7).

In 2010, the recreational and commercial management measures in Addendum IV replaced those in Addendum II. However, the Plan Review Team will continue to include an evaluation of the two management triggers as they provide perspective on the magnitude of fishery landings (but hitting a trigger will not require Board reconsideration of the management measures).

VII. Implementation of FMP Compliance Requirements for 2010

Mandatory compliance elements for 2010 were provided by Amendment 4 and its three addenda.

Regulatory Requirements

The management program includes regulatory requirements for non *de minimis* states as follows:

- Recreational management measures including maximum creel limits and minimum size limits (see Addendum II to Amendment 4)

- Commercial management measures including minimum size limits, minimum mesh size limits, trip limits, bycatch limits, closed seasons and areas, and bycatch reduction device requirements (see Section 4.2 of Amendment 4, and Addendum II)

The PRT finds all states to have implemented the plan's compliance requirements.

See Table 1 for a summary of state commercial and recreational regulations in 2010.

Monitoring Requirements

Addendum I implemented monitoring requirements for non *de minimis* states as follows:

- Maintenance of at least the 2005 level of recreational sampling of individual lengths through the Marine Recreational Fisheries Statistics Survey;
- Collection of six individual fish lengths for each metric ton of weakfish landed commercially;
- Collection of three individual fish ages for each metric ton of total weakfish landed, with a maximum of 1000 ages annually per state.

Table 8 provides the otolith and length collection requirements for 2010. These are based on the best available 2010 landings data provided to the Commission by the NMFS and the states. Table 8 also provides the number of otoliths and lengths collected by the states in 2010. Three states did not fulfill the requirements of Addendum I: Rhode Island (otoliths and lengths), New York (otoliths and lengths), and Delaware (otoliths and lengths). The states report funding issues, personnel shortages, and limited landings as the causes for inadequate sample numbers.

Addendum I specifies that if the Board determines that a state has not successfully implemented the required biological sampling program the state will be prohibited from harvesting weakfish until it develops, and the Board approves, a plan to collect the required samples the following year. Each state has submitted to continue a sampling plan for 2011 that has been approved by the Board. The Board may also choose to forward a recommendation of non-compliance to the Policy Board for consideration.

VIII. Recommendations of the Plan Review Team

Management Recommendations

- That the Board consider the *de minimis* requests from Massachusetts, Connecticut, Georgia, and Florida.
- That the Board consider the compliance of Rhode Island, New York, and Delaware with the monitoring requirements in 2010.
- That the Technical Committee and Stock Assessment Subcommittee explore alternative assessment methods for the next benchmark stock assessment and continue to compile the input data for the interim assessment model should an update assessment be requested prior to the next benchmark assessment.
- The Board should (1) task the TC and SASC to review the recreational sampling requirements of the FMP to establish data needs for stock assessments, and (2) consider if they intend to make states responsible for meeting any sampling deficiencies with the NMFS recreational survey as Addendum I requires.

Research Recommendations

Biological

High Priority

- Collect catch and effort data including size and age composition of the catch, determine stock mortality throughout the range, and define gear characteristics. In particular, increase length-frequency sampling in fisheries from Maryland north.
- Derive estimates of discard mortality rates and the magnitude of discards for all commercial gear types from both directed and non-directed fisheries. In particular, quantify trawl bycatch, refine estimates of mortality for below minimum size fish, and focus on factors such as distance from shore and geographical differences.
- Conduct an age validation study.
- Identify stocks and determine coastal movements and the extent of stock mixing, including characterization of stocks in over-wintering grounds (e.g., tagging).
- Conduct spatial and temporal analysis of the fishery independent survey data. The analysis should assess the impact of the variability of the surveys in regards to gear, time of year, and geographic coverage on their (survey) use as stock indicators.
- Analyze the spawner recruit relationship and examine the relationships between parental stock size and environmental factors on year-class strength.

Medium Priority

- Biological studies should be conducted to better understand migratory aspects and how this relates to observed trends in weight at age. Test for individual growth difference and he geospatial pattern, as well as the geospatial pattern of the catch rate surveys.
- Define reproductive biology of weakfish, including size at sexual maturity, maturity schedules, fecundity, and spawning periodicity. Continue research on female spawning patterns: what is the seasonal and geographical extent of "batch" spawning; do females exhibit spawning site fidelity?
- Continue studies on mesh-size selectivity, particularly for trawl fisheries.
- Continue studies on recreational hook-and-release mortality rates, including factors such as depth, warmer water temperatures, and fish size in the analysis. Studies are needed in deep and warm water conditions. Further consideration of release mortality in both the recreational and commercial fisheries is needed, and methods investigated to improve survival among released fish.

Low Priority

- Develop a coastwide tagging database.

Social/Economic

- Assemble socio-demographic-economic data as it becomes available from ACCSP.
- Detailed information on production activities (e.g., fishing effort and labor used by gear, vessel characteristics, areas fished, etc.) and costs and earnings for the harvesting and processing sectors.
- Information on retail sales and demand for weakfish in order to estimate the demand and economic benefits of at-home and away-from home consumption of weakfish.
- Development of bio-economic models that link the underlying population dynamics to the economic aspects of the commercial and recreational fisheries.
- Distribution of weakfish to the various markets and across states.

- Information on the margins of various stages of processing and marketing also need to be obtained; this information is necessary to construct mathematical models that can be used to estimate the economic impacts of management and regulation.
- A directed data collection program for weakfish including the same variables presently collected by NMFS in support of MRFSS and by the economic add-on. Data collected includes information on travel distance, mode of angling, expenditures, area fished, catch on previous trips, and other information.
- Development of commercial decision-making or behavioral models to explain how fishers might respond to various regulations.
- Estimation and assessment of consumer (net economic benefits to consumers) and producer (net economic benefits or profits to producers) surplus; the sum of consumer and producer surplus is a measure of the net economic value to society of a good or service.
- Development of input/output models for all states having commercial weakfish activity, or alternatively, full-blown economic impact models, which might consist of input/output models or General Equilibrium models.
- Determination of the economic value derived from recreational angling including the economic value of a catch and release fishery

Habitat

- Conduct hydrophonic studies to delineate weakfish spawning habitat locations and environmental preferences (temperature, depth, substrate, etc.) and enable quantification of spawning habitat.
- Compile existing data on larval and juvenile distribution from existing databases in order to obtain preliminary indications of spawning and nursery habitat location and extent.
- Document the impact of power plants and other water intakes on larval, post larval and juvenile weakfish mortality in spawning and nursery areas, and calculate the resulting impacts on adult stock size.
- Define restrictions necessary for implementation of projects in spawning and over-wintering areas and develop policies on limiting development projects seasonally or spatially.

XI. References

Atlantic States Marine Fisheries Commission (ASMFC). 2002. Amendment 4 to the Interstate Fishery management Plan for Weakfish. Washington (DC): ASMFC Fishery Management Report No. 29. 84 p.

Hogarth WT, Meyer T, Perra P, Shaefer RH. 1995. Final environmental impact statement and draft regulatory impact review for a regulatory amendment for the Atlantic Coast weakfish fishery in the Exclusive Economic Zone (EEZ). Silver Spring (MD): US Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Fisheries Conservation and Management, Recreational and Interjurisdictional Fisheries Division. 84 p.

National Marine Fisheries Service (NMFS). 2009. Personal communication with the Fisheries Statistics Division. See: http://www.st.nmfs.gov/st1/

Northeast Fisheries Science Center (NEFSC). 2009a. 48th Northeast Regional Stock Assessment Workshop (48th SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 09-10; 50 p. Available from: National Marine Fisheries Service, 166

Water Street, Woods Hole, MA 02543-1026, or online at http://www.nefsc.noaa.gov/nefsc/saw/

Northeast Fisheries Science Center. 2009b. 48th Northeast Regional Stock Assessment Workshop (48th SAW) Assessment Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 09-15; 834 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026, or online at http://www.nefsc.noaa.gov/nefsc/saw/

Sullivan PJ, Bell M, Gibson J, Kupschus S. 2009. Summary Report of the 48th Northeast Regional Stock Assessment Review Committee (SARC 48). Report prepared for the Northeast Regional Stock Assessment Workshop. 39 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026, or online at http://www.nefsc.noaa.gov/nefsc/saw/

X. Figures

Figure 1. Estimated weakfish age 1+ biomass, fishing mortality, and natural mortality from 1982 to 2008 (NMFS 2009a, NMFS 2009b).

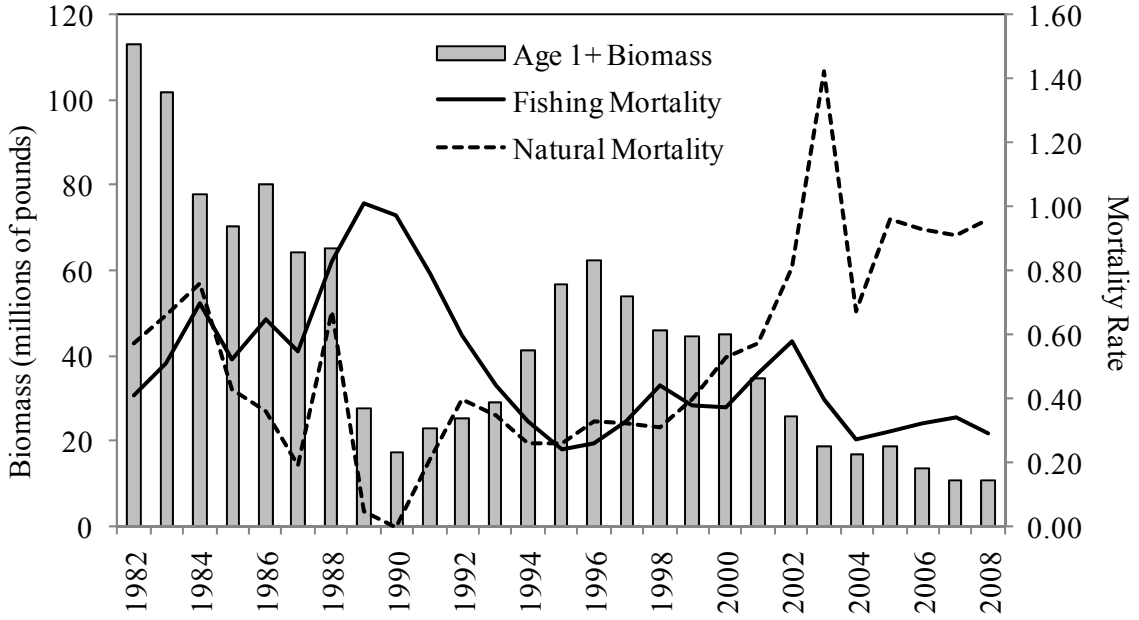


Figure 2. Age-0 weakfish indices of relative abundance from 1982 to 2010. Indices are standardized into the same units. The solid line represents the annual average, and the dashed line represents the time series average (Note: 2010 data are preliminary).

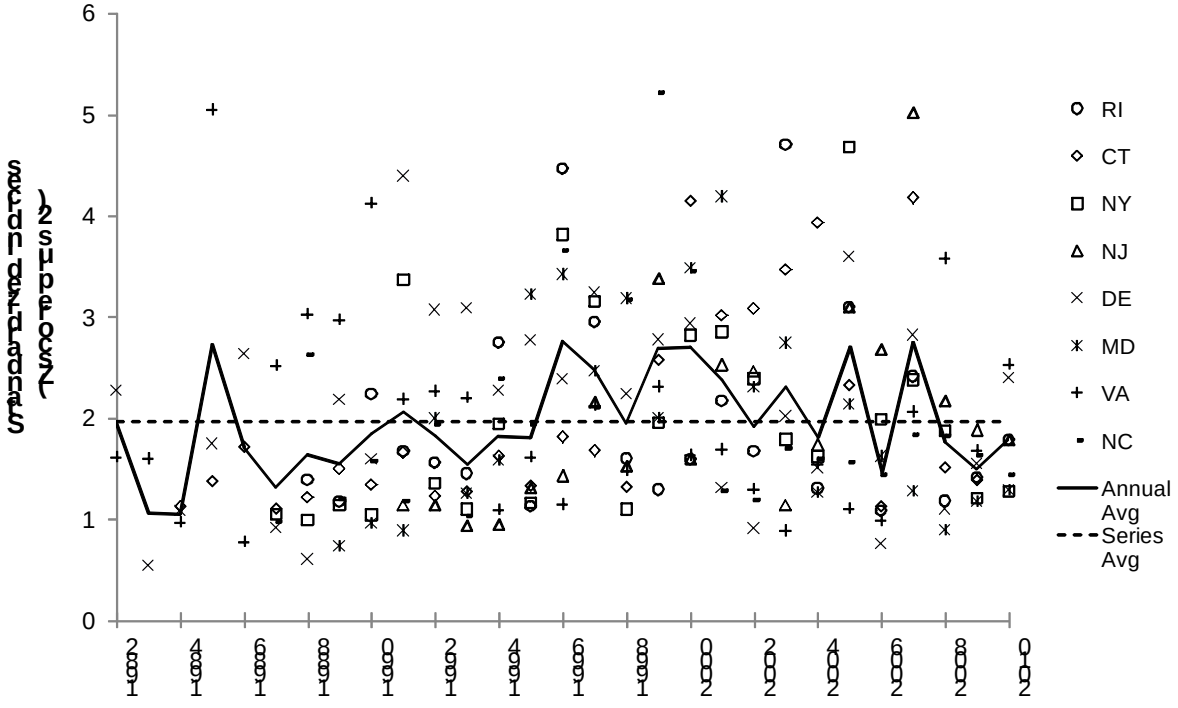


Figure 3. Commercial and recreational weakfish harvest (pounds), from 1982 to 2010 (see Tables 3 and 4 for source information and values).

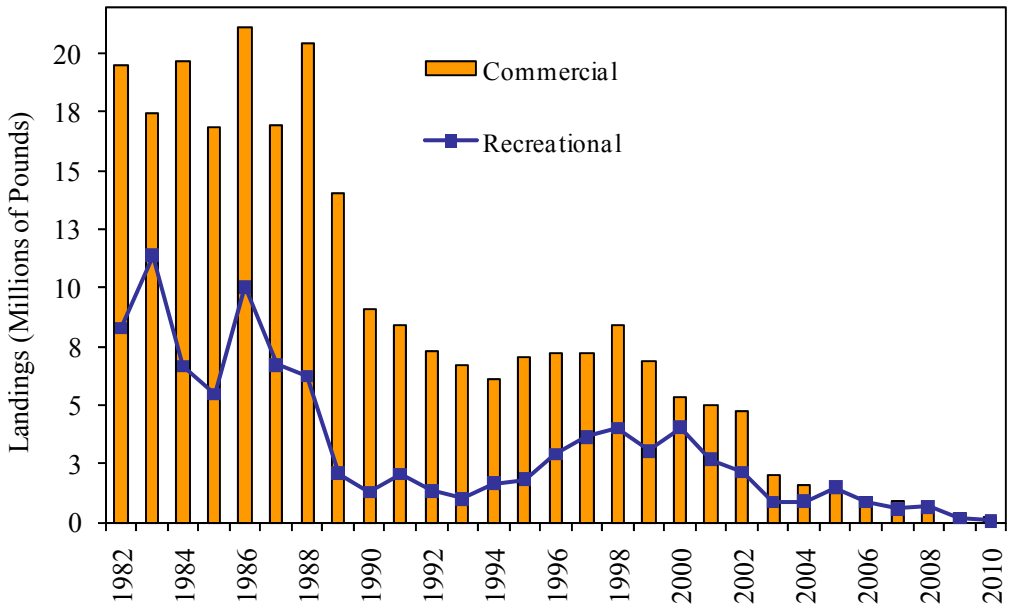


Figure 4. Commercial weakfish landings (pounds) by state, from 2007 to 2010 (see Table 3 for source information and values).

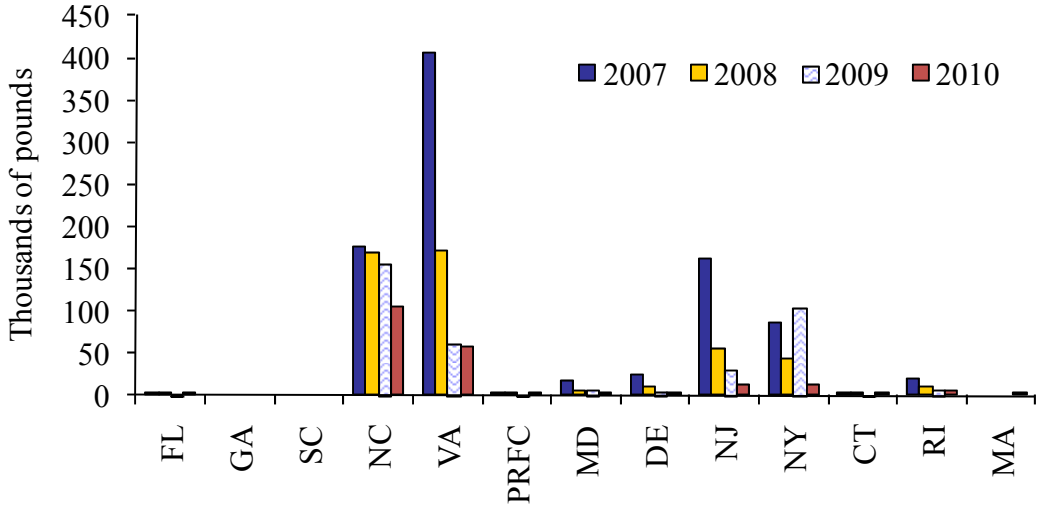


Figure 5. Recreational weakfish harvest and releases (number of fish), from 1982 to 2010 (see Tables 5 and 6 for source information and values).

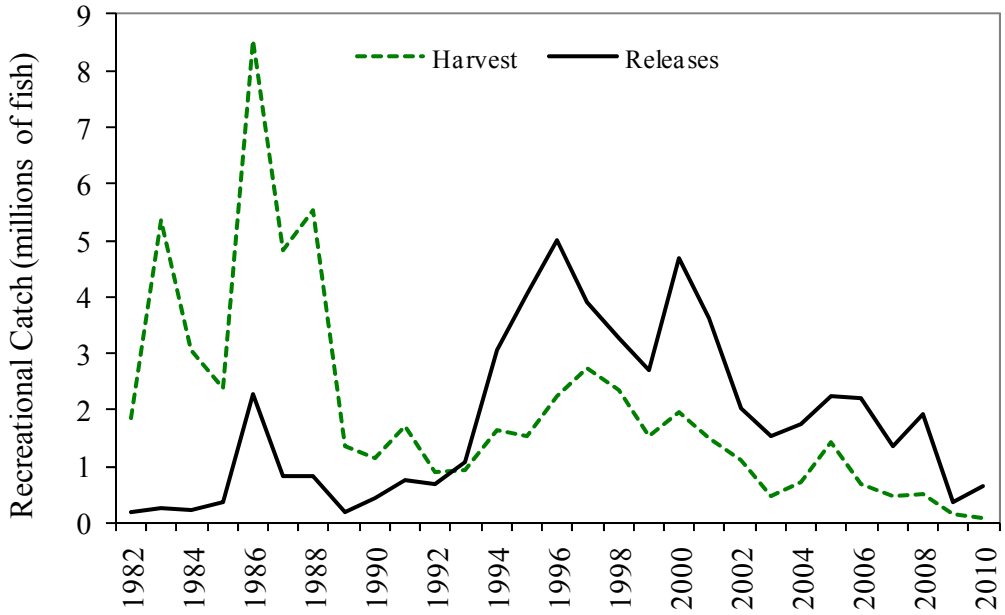
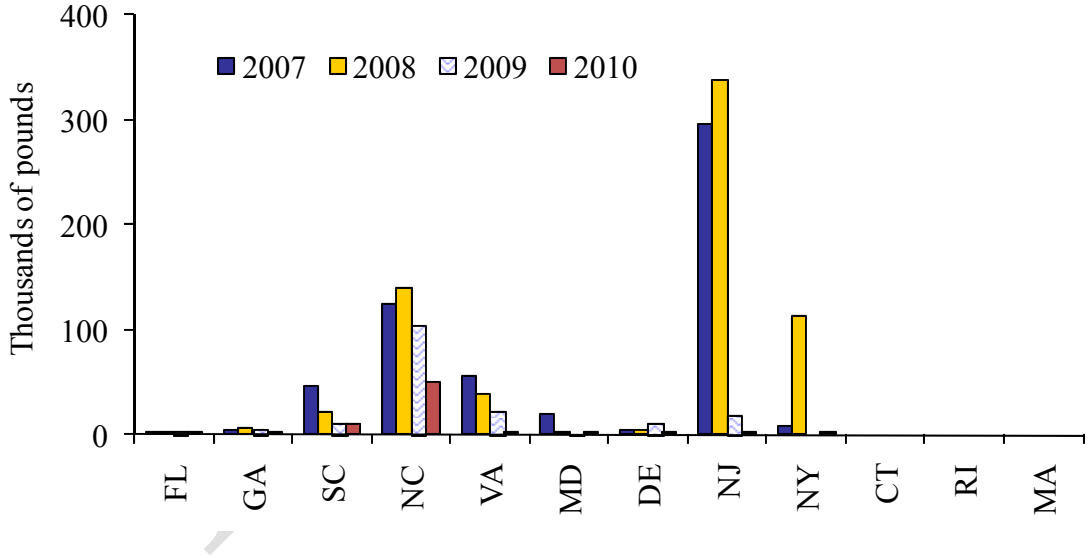


Figure 6. Recreational weakfish landings (pounds) by state, from 2007 to 2010 (See Table 4 for source information and values).



XI. Tables

Table 1. Summary of state regulations for weakfish in 2009.

State	Commercial	Recreational	Implementation Date
MA	16", open 1/1-12/31, 100 lb possession limit.	16", 1 fish	June 2010
RI	16"; open 6/1-6/30 & 8/7-11/8, 100 lb possession limit. Trawl: codend mesh size ≥ 4.5" diamond or 4.0" square. 100 lb bycatch limit & 50% bycatch rule (except hook and line: 0 lb bycatch).	16", 1 fish	April 28, 2010
CT	16"; open 1/1-12/31, 100 lb possession limit.	16", 1 fish	April 25, 2010
NY	16" (12" dressed & 10" filleted); open 4/1-6/24 & 8/28-11/15, 100 lb possession limit. Trawl: codend mesh size ≥ 4.5" diamond or 4.0" square. Gill & trammel net: mesh ≥ 3.5" stretched. 100 lb bycatch limit & 50% rule (except hook & line: 0 lb bycatch).	16" (12" dressed, 10" fillet), 1 fish	By May 1, 2010
NJ	Gill net: 13"; open 1/1-5/20 & 9/3-10/19 & 10/27-12/31, 100 lb possession limit; mesh ≥ 3.25" stretched except 2.75 - 3.25" allowed within 2nm for permitted fishermen doing monthly reporting. Otter trawl: 13"; open 1/1-7/31 & 10/13-12/31, 100 lb possession limit; mesh ≥ 3.75" diamond or 3.375 square. Pound net: 13"; open 1/1/-6/6 & 7/1-12/31, 100 lb possession limit. 100 lb bycatch limit & 50% rule. Hook & line: 13", 1 fish, open 1/1-12/31.	13", 1 fish	March 25, 2010
DE	Gill net: 12"; only nets with stretch mesh ≥ 3.125" allowed in water 4/1-6/30, none permitted weekends and legal holidays 5/10-9/30, 100 lb possession limit. Drift gill net: open 1/1-12/31 except 34 specified days of gear out of water in May and June. Anchor gill net: open 1/1-5/9 and 10/1-12/31, otherwise gear out of water. Hook & line: 13"; 100 lb possession limit 4 days/week during 5/1-10/31, 1 fish creel limit all other times.	13", 1 fish	April 11, 2010
MD	12". Ocean all gears: 100 lb bycatch limit & 50% rule. Chesapeake Bay hook & line: open 8/1-11/30, 50 lb possession limit, 0 lb bycatch. Chesapeake Bay all other gears: 50 lb bycatch limit & 50% rule. Gillnet: mesh ≥ 3.0" stretched. Trawl: mesh ≥ 3.375" square or 3.75" diamond.	13", 1 fish	June 28, 2010
PRFC	12"; open 7/28-12/31, 50 lb possession limit; 50 lb bycatch limit & 50% rule for certified pound nets with approved cull panels, and 0 lb bycatch for all other gears. Pound net: limited entry.	12”, 1 fish	January 1, 2010
VA	Gill net: 12"; open 3/16-5/13 & 10/21-12/30, 100 lb possession limit. Pound net: no minimum size; limited entry; open 4/1-4/30 & 5/23-9/12 unless exempted by license forfeit, 100 lb possession limit. Haul seine: no minimum size; open 4/16-6/10 & 8/21-9/24, 100 lb possession limit. Out of state trawl: 12" except ~~300~~ 100 undersized fish allowed; open 4/1-9/25, 100 lb possession limit; codend mesh ≥ 3.0". Hook & line: 12”; open 1/1-12/31, 100 lb possession limit. 100 lb bycatch limit (per vessel), 50% rule.	12”, 1 fish	May 1, 2010

NC	12", except 10" for long haul seines & pound nets in internal waters 4/1-11/15; open 1/1-12/31, 1,000 lb possession limit, and 10% rule. Gill net: mesh ≥ 2.875" stretch. Flynet: gear requirements & area closure south of Cape Hatteras. Gill nets and flynets that do not meet mesh requirements have 100lb bycatch limit & 10% rule. Long haul seine: culling panel requirement south of Bluff Shoal & 100 lb bycatch limit & 50% rule. BRDs in shrimp trawls. Hook & line:1 fish.	12", 1 fish	August 20, 2010
SC	12", 1 fish. BRDs in shrimp trawls.	12", 1 fish	July 1, 2010
GA	13", 1 fish. BRDs in shrimp trawls.	13", 1 fish	June 3, 2010
FL	12", 100 lb possession limit. BRDs in shrimp trawls.	12", 1 fish	July 27, 2010

Table 2. Comparison of commercial and recreational Atlantic coast weakfish landings from 1982 to 2010 (see Tables 3 and 4 for source information and state-specific landings).

Year	Recreational Landings (lbs)	Commercial Landings (lbs)	Total Landings (lbs)	% Commercial
1982	8,285,323	19,493,321	27,778,644	70%
1983	11,391,635	17,485,501	28,877,136	61%
1984	6,655,261	19,652,279	26,307,540	75%
1985	5,467,698	16,833,896	22,301,594	75%
1986	10,043,641	21,097,068	31,140,709	68%
1987	6,705,462	16,947,925	23,653,387	72%
1988	6,244,994	20,431,283	26,676,277	77%
1989	2,069,062	14,018,067	16,087,129	87%
1990	1,293,187	9,087,481	10,380,668	88%
1991	2,051,533	8,381,774	10,433,307	80%
1992	1,349,200	7,332,282	8,681,482	84%
1993	995,410	6,689,118	7,684,528	87%
1994	1,650,411	6,120,441	7,770,852	79%
1995	1,813,279	7,060,567	8,873,846	80%
1996	2,908,627	7,216,860	10,125,487	71%
1997	3,628,760	7,237,666	10,866,426	67%
1998	4,026,244	8,400,173	12,426,417	68%
1999	3,047,216	6,863,765	9,910,981	69%
2000	4,046,525	5,345,618	9,392,143	57%
2001	2,684,146	5,007,329	7,691,475	65%
2002	2,135,034	4,770,229	6,905,263	69%
2003	843,357	1,983,239	2,826,596	70%
2004	891,399	1,540,456	2,431,855	63%
2005	1,490,205	1,250,239	2,740,444	46%
2006	848,282	1,104,031	1,952,313	57%
2007	562,613	897,531	1,460,144	61%
2008	665,943	470,630	1,136,573	41%
2009	171,675	364,553	536,228	68%
2010	71,991	199,780	271,771	74%

Table 3. Commercial landings (pounds) of weakfish by state, 1982-2010 (Source: NMFS 2011, except as noted below table).

Year	FL	GA	SC	NC	VA	PRFC	MD	DE	NJ	NY	CT	RI	MA	Total
1982	176,203	596	443	12,052,232	1,856,920	307,230	249,297	1,294,500	2,073,500	1,257,100	25,600	176,800	22,900	19,493,321
1983	117,720	2,749		10,233,734	2,483,777	119,394	390,227	901,800	2,172,700	850,000	42,800	163,700	6,900	17,485,501
1984	923	862		12,990,726	2,022,123	90,166	325,279	782,400	2,751,600	484,500	31,300	167,600	4,800	19,652,279
1985	7,747	82		9,821,188	2,014,376	72,666	316,320	990,817	3,030,100	386,200	28,200	163,100	3,100	16,833,896
1986	9,162	75		14,309,372	1,886,254	116,197	337,064	723,444	3,208,600	359,900	13,700	127,600	5,700	21,097,068
1987	11,719	189		11,508,389	1,722,441	265,942	328,510	577,735	2,094,100	329,100	29,500	78,600	1,700	16,947,925
1988	13,283			15,091,878	1,383,218	96,765	832,636	530,603	2,332,800	124,500	2,400	19,400	3,800	20,431,283
1989	21,376		113	10,115,747	1,001,324	28,653	731,313	543,741	1,458,500	103,500	2,300	9,600	1,900	14,018,067
1990	17,433	33		5,802,159	1,192,321	18,510	416,130	625,006	968,318	19,924	1,281	24,646	1,720	9,087,481
1991	21,344			5,308,574	1,047,106	13,798	153,632	503,289	1,174,181	111,629	21,300	25,009	1,912	8,381,774
1992	24,655			4,862,551	532,482	19,961	384,999	362,042	940,695	168,087	3,500	30,277	3,033	7,332,282
1993	19,580			4,309,249	1,049,946	37,828	141,926	195,216	834,446	88,379	1,477	9,991	1,080	6,689,118
1994	27,835			3,489,929	1,264,263	28,958	223,288	262,263	695,280	99,470	11,000	18,155		6,120,441
1995	5,609			4,113,260	1,448,372	38,138	64,829	291,010	867,262	172,431	6,431	52,690	535	7,060,567
1996	387			3,977,633	1,487,069	99,493	97,068	317,317	822,041	365,307	6,937	43,522	86	7,216,860
1997	875			3,561,060	1,521,517	35,239	144,659	558,910	1,036,470	336,752	10,958	31,171	55	7,237,666
1998	952			3,354,008	1,796,487	81,744	221,048	552,947	1,804,618	496,403	14,482	77,074	410	8,400,173
1999	779			2,617,580	1,610,484	68,749	192,750	441,176	1,291,319	489,935	22,172	126,271	2,550	6,863,765
2000	448			1,869,042	1,311,298	68,574	145,918	328,269	1,071,428	352,832	7,920	189,362	527	5,345,618
2001	1,201			1,960,324	1,124,707	44,219	153,865	190,093	837,550	578,797	6,774	109,568	231	5,007,329
2002	394			1,828,150	1,129,158	57,818	79,734	164,064	863,088	513,977	10,223	122,781	842	4,770,229
2003	288			848,822	454,841	5,273	31,215	91,195	340,269	144,416	3,059	63,337	524	1,983,239
2004	192			685,463	325,832	1,986	50,519	48,905	204,587	178,414	6,206	38,284	68	1,540,456
2005	553			421,779	361,874	1,004	30,983	70,788	205,692	109,861	6,118	41,587		1,250,239
2006	337			363,078	261,619	689	32,417	34,429	206,450	152,867	7,012	45,133		1,104,031
2007	888			175,579	406,392	20	18,060	24,570	162,656	86,656	1,910	20,800		897,531
2008	996			170,469	171,153	74	5,815	11,185	55,949	44,275	1,012	9,702		470,630
2009	453			156,145	61,089	17	5,340	2,976	28,891	102,861	495	6,286		364,553
2010	73			106,319	57,326	80	2,148	2,339	12,053	13,105	899	5,380	58	199,780

N**otes:** FL: state-reported landings 1984-present (NMFS-reported landings limited to Nassau and Duval Counties and adjusted on the basis of the genome proportions of weakfish within the Cynoscion-complex in those counties' waters). NC: state-reported landings 1994-present. VA: NMFS-reported landings minus the PRFC-reported harvest landed in VA 1982-1992; state reported landings 1993-present (exclude Potomac River harvest). PRFC: agency-reported landings 1982-present (fish caught in Potomac River and landed in MD and VA). MD: state-reported landings 1982-present (exclude Potomac River harvest). DE: state-reported landings 1985-present. NJ: state-reported landings 2005-present. CT: state-reported landings 1995-present. RI: SAFIS landings 2005-present.

The 2008 and 2007 FMP Reviews include a 2006 estimate of 8,501 lbs in MA; these landings were misidentified as weakfish.

Table 4. Recreational landings (pounds) of weakfish by state, from 1982 to 2010 (NMFS 2011, except as noted below table).

Year	FL	GA	SC	NC	VA	MD	DE	NJ	NY	CT	RI	MA	Total
1982	48,137		14,786	276,047	2,994,879	2,127,679	1,330,769	613,223	725,194		154,609		8,285,323
1983	9,190	12,165	4,515	338,100	738,671	1,215,376	2,205,140	6,080,018	164,227	12,976	588,805	22,452	11,391,635
1984	9,719		5,150	189,031	850,169	254,962	1,279,594	3,987,542	51,464	11,358		16,272	6,655,261
1985	578	3,422	105,151	184,485	508,980	898,313	1,102,095	1,876,608	638,913	17,269	131,884		5,467,698
1986	2,661	12,621	44,185	417,470	2,032,394	2,406,643	1,598,932	3,184,095	242,217	61,281	41,142		10,043,641
1987	1,205	9,491	23,781	710,002	647,692	831,615	1,072,198	3,353,362	51,830	4,286			6,705,462
1988	2,349		1,841	359,606	1,677,694	1,679,702	1,664,477	833,198	26,127				6,244,994
1989	2,933	8,175	5,963	139,979	424,463	344,658	521,648	575,110	46,133				2,069,062
1990	1,466	961	11,186	63,420	256,690	388,662	207,131	358,457	4,317		897		1,293,187
1991	2,142	5,597	25,210	99,824	280,075	278,176	427,778	896,800	35,931				2,051,533
1992	1,350	1,014	40,459	27,363	206,710	121,403	232,204	677,811	19,824	908	20,154		1,349,200
1993	2,899	12,791	6,929	78,982	89,992	173,952	291,627	312,839	18,889	6,510			995,410
1994	3,934	783	25,163	149,159	142,265	300,831	319,491	706,206	2,579				1,650,411
1995	1,146	21,283	22,875	72,412	211,494	141,511	419,527	898,564	24,467				1,813,279
1996	454	5,060	4,980	79,317	194,485	185,074	690,121	1,730,055	19,081				2,908,627
1997	1,734	34,356	1,728	165,032	463,652	188,339	734,800	1,817,034	220,718	1,367			3,628,760
1998	508	690	11,288	192,210	839,245	377,820	616,422	1,910,868	63,298	9,808		4,087	4,026,244
1999	2,245	1,614	4,383	161,291	399,588	544,474	484,157	1,374,169	63,058	6,371	5,866		3,047,216
2000	2,943	3,503	6,312	87,926	496,205	696,662	635,339	1,916,093	164,525	35,095	1,922		4,046,525
2001	1,323	2,983		158,423	373,206	567,625	172,969	1,251,150	151,584	4,883			2,684,146
2002	1,576	683	50,141	82,747	295,397	174,064	243,156	1,213,557	58,627	11,285	3,801		2,135,034
2003	580	1,327	4,306	161,474	215,522	24,698	57,866	333,690	37,106	3,536	2,379	873	843,357
2004	948	11,153	118,352	273,683	102,629	43,576	6,726	315,101	19,231				891,399
2005	2,719	7,659	94,205	157,977	20,439	8,814	39,438	1,149,891	606		8,457		1,490,205
2006	2,075	3,305	8,014	139,392	51,749	575	19,292	571,589	13,766		38,525		848,282
2007	2,706	3,847	46,103	125,459	55,580	19,434	4,204	297,138	8,142				562,613
2008	961	5,853	21,296	139,368	39,293	2,194	4,054	338,913	114,011				665,943
2009	1,945	4,797	10,375	103,230	21,548	1,506	9,868	18,406					171,675
2010	474	2,829	10,379	49,903	3,267	1,810	46	1,989	1,294				71,991

Notes: FL: state-reported landings 1983-present (NMFS-reported estimates limited to Nassau and Duval Counties and adjusted on the basis of the genome proportions of weakfish within the Cynoscion-complex found in those counties' waters).

Table 5. Recreational landings (numbers) of weakfish by state, from 1982 to 2010 (NMFS 2011, except as noted below table).

Year	FL	GA	SC	NC	VA	MD	DE	NJ	NY	CT	RI	MA	Total
1982	40,161		17,342	200,045	715,892	440,146	217,821	104,066	88,234	11,769	18,614		1,854,090
1983	7,742	17,209	6,807	387,871	354,846	595,286	1,009,899	2,857,093	36,934	6,363	74,608	2,732	5,357,390
1984	13,026		7,836	489,468	782,848	104,057	593,107	1,026,043	20,133	1,561		2,237	3,040,316
1985	959	4,811	61,788	217,671	505,223	305,799	365,693	812,839	89,538	2,874	17,092		2,384,287
1986	3,412	18,130	78,315	611,363	2,418,046	1,947,394	914,489	2,500,622	34,582	7,315	4,595		8,538,263
1987	1,696	10,802	18,841	624,160	1,015,413	824,883	638,342	1,666,619	7,447	777			4,808,980
1988	2,521		1,834	438,148	2,297,053	1,163,766	974,712	642,032	13,215				5,533,281
1989	3,745	8,245	6,810	190,193	357,864	226,505	254,170	303,289	6,436				1,357,257
1990	1,953	2,273	8,027	91,300	286,458	370,528	179,837	216,385	3,057		407		1,160,225
1991	3,041	4,954	19,616	140,826	351,947	221,242	366,464	545,665	28,072	18,695			1,700,522
1992	1,820	1,751	23,501	35,490	265,645	137,260	100,561	311,659	5,282	434	9,624		893,027
1993	3,932	14,752	7,360	106,737	108,392	238,768	235,312	203,915	12,610	2,460			934,238
1994	5,403	718	46,858	177,965	169,740	332,846	300,211	591,571	1,872				1,627,184
1995	1,463	22,437	29,897	62,475	226,682	88,695	406,730	671,850	22,310		1,568		1,534,107
1996	944	5,413	5,695	90,704	193,861	183,408	633,920	1,104,251	16,320				2,234,516
1997	1,926	44,202	2,039	184,954	557,809	162,900	647,529	1,028,334	112,986	517	1,415		2,744,611
1998	651	718	15,838	191,181	463,525	290,051	455,603	920,558	21,392	2,183		618	2,362,318
1999	2,714	1,679	3,941	127,163	229,209	340,096	224,307	583,883	18,347	1,606	2,296		1,535,241
2000	3,276	4,181	5,585	71,247	286,752	475,348	311,553	760,279	42,406	7,342	712		1,968,681
2001	1,542	3,316		158,605	175,872	302,719	72,451	736,069	28,126	715	2,301		1,481,716
2002	1,842	852	90,245	90,170	178,110	100,467	121,884	492,876	24,962	1,796	1,420		1,104,624
2003	774	1,573	4,162	153,753	86,112	41,048	20,124	151,101	9,234	443	298	109	468,731
2004	1,195	9,815	153,589	237,395	103,181	29,645	6,967	183,649	7,596				733,032
2005	2,151	5,764	129,575	163,265	30,346	22,164	19,031	1,053,005	359		1,009		1,426,669
2006	2,272	3,501	7,123	153,696	58,814	470	11,158	417,527	9,123		3,297		666,981
2007	2,425	4,712	71,230	114,332	44,624	10,316	4,182	209,310	7,120				468,251
2008	997	5,909	25,794	137,564	29,016	2,590	4,212	269,858	30,543				506,483
2009	2,056	8,664	10,952	81,643	18,090	2,314	5,431	10,688					139,838
2010	587	3,113	9,672	50,932	5,325	2,833	83	3,302	2,682				78,529

Notes: FL: state-reported landings 1983-present (NMFS-reported estimates limited to Nassau and Duval Counties and adjusted on the basis of the genome proportions of weakfish within the Cynoscion-complex found in those counties' waters).

Table 6. Recreational releases (numbers) of weakfish by state, from 1982 to 2010 (NMFS 2011, except as noted below table).

Year	FL	GA	SC	NC	VA	MD	DE	NJ	NY	CT	RI	MA	Total
1982	3,387			44,134	126,514	2,139	12,712	1,695					190,581
1983	567	173		10,560	45,565	15,642	8,912	155,116	15,870				252,405
1984	177		1,561	17,381	202,791	8,934	1,163	4,464			5,214		241,685
1985	212	152	3,279	2,138	82,071	12,114	2,085	246,284					348,335
1986	606		2,873	354,095	692,462	327,841	9,637	895,044	4,556				2,287,114
1987	384	89		71,659	233,441	299,172	46,064	182,019	1,266				834,094
1988	17	4,196		109,489	484,782	155,255	59,980	5,144		634			819,497
1989			1,019	34,074	52,191	53,148	13,924	22,841	1,980				179,177
1990	71			20,669	198,948	142,055	41,765	32,863	570				436,941
1991	943			11,457	361,768	40,349	65,685	238,646	33,046	2,108			754,002
1992	1,045	362	4,598	27,052	244,817	71,040	61,886	249,846	8,362		98		669,106
1993	1,493	840	267	52,468	245,211	225,510	255,968	281,450	20,995				1,084,202
1994	1,007	21,588		147,616	652,571	583,059	560,999	1,051,931	45,537	1,013			3,065,321
1995	1,355	572		154,008	939,970	178,937	1,088,353	1,613,831	81,236		98		4,058,360
1996	780	307		188,263	814,573	492,402	1,567,046	1,859,049	84,990		780		5,008,190
1997	2,958		2,938	209,122	1,404,092	323,653	897,625	975,280	90,549	1,213	163		3,907,593
1998	1,251	1,468	329	131,537	1,244,949	461,518	613,544	778,180	29,836	360	1,921		3,264,893
1999	2,818		13,616	149,377	818,959	753,266	372,479	551,283	35,459		8,436		2,705,693
2000	5,551	12,895	15,869	346,212	935,594	1,209,290	465,496	1,605,024	68,531	1,285	931		4,666,678
2001	2,541	13,537		886,943	633,443	737,240	227,214	1,064,609	69,123		358		3,635,008
2002	2,113	9,540	1,019	336,709	888,337	286,182	101,282	350,810	62,803		1,932		2,040,727
2003	1,556	21,212	1,966	153,563	504,129	180,827	39,314	631,438	7,286	1,233			1,542,524
2004	3,530	12,249	107,177	240,298	528,200	132,087	79,238	607,393	40,254	5,470	248		1,756,144
2005	3,009	29,623	56,663	241,674	266,879	55,270	110,717	1,279,930	193,556				2,237,321
2006	6,084	6,149	21,917	295,415	456,270	57,394	120,930	1,231,102	11,732				2,206,993
2007	1,794	19,890	90,224	148,938	172,068	106,308	18,811	581,435	200,574		1,574		1,341,616
2008	520	13,229	105,401	127,333	314,118	30,260	61,364	1,254,625	26,851				1,933,701
2009	755	12,438	40,292	125,649	69,274	6,700	5,243	82,282	6,038				348,671
2010	68	11,483	25,559	250,369	142,502	104,421	17,329	78,053	3,107			1,542	634,433

Notes: FL: state-reported landings 1983-present (NMFS-reported estimates limited to Nassau and Duval Counties and adjusted on the basis of the genome proportions of weakfish within the Cynoscion-complex found in those counties' waters).

Table 7. Evaluation of the Coastwide Management Trigger (Section 3.3.1 of Addendum II to Amendment 4): percent change of each state's 2010 total landings to its five-year (2005-2009) mean total landings

	FL	GA	SC	NC	VA	PRFC	MD	DE	NJ	NY	CT	RI	MA
2005-2009	2,727	5,092	35,999	390,495	290,147	361	25,028	44,161	607,115	126,609	3,309	34,098	0
2010	547	2,829	10,379	156,222	60,593	80	3,958	2,385	14,042	14,399	899	5,380	58
% change	-80%	-44%	-71%	-60%	-79%	-78%	-84%	-95%	-98%	-89%	-73%	-84%	N/A

Table 8. Biological sampling of weakfish in 2010, Massachusetts-Florida (Sampling requirements are based on Addendum I to Amendment 4 and 2010 landings data; values highlighted with red bold font do not meet sampling requirements).

	Samples Required		Samples Completed		Fisheries Sampled
	Otoliths	Lengths	Otoliths	Lengths	
MA*	0	0	0	0	NA
RI	7	15	**0**	**0**	NA
CT*	1	2	0	0	NA
NY	20	36	**4**	**8**	commercial (GN, TR, PN, H&L)
NJ	19	33	84	84	commercial (GN), additional samples available from TR survey
DE	3	6	**0**	**0**	MRFSS
MD	5	6	45	47	commercial (PN, TR)
PRFC	0	0	0	0	NA
VA	82	156	260	1147	commercial (GN, PN, HS, TR;); additional otoliths available from TR survey
NC	213	289	502	2343	commercial (HS, GN, TR, PN, BS), otolith count includes samples from recreational and GN/TR surveys
SC	14	0	16	16	recreational
GA*	4	0	0	22	recreational
FL*	1	0	0	0	commercial

* *de minimis* in 2010; not required to conduct sampling; sample numbers provided to show from what states were exempt
NA=not applicable, GN= gill net, TR=trawl, PN=pound net, H&L=hook and line, HS=haul seine, BS=beach seine

Table 9. Indices of relative weakfish abundance from 1980 to 2010 (reported in the 2011 state compliance reports).

Yr	RI Tr	CT Tr	CT Tr	NY Tr	NJ Tr	NJ Tr	DE Tr	DE Tr	DE Tr	MD Tr	MD Tr	VA Tr	NC Tr	NC Gn	GA Tr	FL Tr	FL Tr
	Coast	LIS	LIS	Coast	DE Bay	Ocean	DE Bay	Inland	DE Bay	Ches Bay	Coast	Ches Bay	Pamlico	Pamlico	Coast	Jax	IR&Jax
	YOY	YOY	1+	YOY	YOY	1+	YOY	YOY	1+	YOY	YOY	YOY	YOY	1+	0+	YOY	1+
	#/tow	GM#/tow	GM#/tow	AM#/tow	GM#/tow	GM#/tow	GM#/tow	GM#/tow	#/nm	GM#/tow	GM#/ha	GM#/tow	#/tow	#/set	#/obs hr	med/tow	med/tow
1980	17.16	*	*	*	*	*	4.15	*	*	*	*	*	*	*	*	*	*
1981	36.44	*	*	*	*	*	5.98	*	*	*	*	*	*	*	*	*	*
1982	19.55	*	*	*	*	*	11.49	*	*	*	*	*	*	*	*	*	*
1983	3.13	*	*	*	*	*	4.47	*	*	*	*	*	*	*	*	*	*
1984	5.03	1.00	0.55	*	*	*	6.67	*	*	*	*	*	*	*	*	*	*
1985	19.18	6.19	0.24	*	*	*	9.25	*	*	*	*	*	*	*	*	*	*
1986	2.00	13.17	0.24	*	*	*	12.79	1.14	*	*	*	*	*	*	*	*	*
1987	1.31	0.63	0.11	1.50	*	*	5.82	1.26	*	*	*	*	12.14	*	*	*	*
1988	10.86	2.90	0.06	0.20	*	*	4.73	0.81	*	*	*	8.13	101.50	*	*	*	*
1989	1.17	8.69	0.02	6.90	*	1.64	11.11	2.20	*	0.44	0.87	11.74	14.20	*	*	*	*
1990	25.53	5.56	0.08	2.30	*	1.19	8.73	2.95	*	0.95	1.72	4.46	50.20	*	*	*	*
1991	25.41	11.95	0.31	56.50	2.20	1.42	20.07	5.87	31.43	0.78	1.89	3.16	36.96	*	*	*	*
1992	14.51	3.03	0.18	23.40	3.40	1.39	14.72	2.51	23.83	3.24	1.81	6.78	42.71	*	*	*	*
1993	7.50	4.08	0.12	4.40	2.85	1.25	14.79	0.63	80.10	1.59	0.91	5.81	8.70	*	*	*	*
1994	15.17	11.19	0.06	70.90	2.86	2.62	11.47	1.47	206.50	2.33	1.84	2.51	68.06	*	*	*	*
1995	0.26	5.21	0.70	4.70	4.10	2.90	13.49	4.24	150.00	5.95	4.44	5.95	38.21	*	*	*	*
1996	124.67	15.23	0.56	220.40	7.39	2.30	12.13	1.18	233.80	6.40	3.18	7.26	72.07	*	*	*	*
1997	88.83	12.38	0.89	82.40	15.66	2.53	15.40	2.07	110.40	4.28	3.06	6.81	32.79	*	*	*	*
1998	13.51	5.02	0.28	4.80	6.89	0.76	11.35	1.35	102.07	5.87	2.80	7.60	70.44	*	*	*	*
1999	3.68	30.93	0.39	40.50	24.92	1.45	13.51	1.99	92.56	3.26	2.76	6.78	99.90	*	*	*	*
2000	9.38	63.31	0.30	167.10	7.10	1.86	14.14	1.64	179.12	6.54	2.34	8.35	62.99	*	*	*	*
2001	19.33	40.09	0.52	113.70	15.05	0.93	7.56	1.53	80.70	8.10	2.56	5.09	30.30	1.42	*	0.29	0.01
2002	8.40	41.35	0.16	145.20	19.70	1.84	5.96	1.31	144.98	3.92	0.61	6.93	22.00	1.40	*	0.69	0.03
2003	198.00	49.41	0.07	69.80	3.10	0.09	10.44	2.44	65.78	4.89	5.64	9.23	23.93	1.22	105.44	1.03	0.03
2004	1.88	58.98	0.21	43.90	8.42	1.58	8.39	3.32	48.88	1.62	3.39	6.66	28.75	1.32	94.42	1.63	0.04
2005	128.93	25.86	0.12	226.50	21.22	1.49	16.82	3.84	29.00	3.55	4.98	5.69	28.76	1.24	32.08	1.34	0.04
2006	0.36	1.05	0.29	55.10	12.25	0.42	5.35	1.60	106.31	2.41	1.50	6.34	39.09	0.92	79.96	0.40	0.03
2007	36.10	63.93	0.06	92.12	25.54	1.52	13.7	2.98	43.16	1.60	2.32	5.35	56.8	0.43	159.64	0.24	0.03
2008	0.55	9.07	0.08	51.5	7.86	1.57	6.74	1.02	45.94	0.79	0.23	5.77	50.3	0.49	75.55	0.79	0.02
2009	7.29	6.48	0.3	13.3	7.36	0.99	8.56	5.91	35.83	1.42	1.33	6.18	58.89	0.31	104.76	1	0.05
2010	7.95	-	-	15.3	9.03	2.61	11.98	3.49	43.57	1.68	2.16	14.11	32.45	0.48	128.48	0.37	0.08

2010 Compliance Report - Weakfish
Due Date: September 1
State: Massachusetts

1. Introduction

   The coastal waters of Massachusetts represent the northern limit of weakfish and low numbers are landed by commercial and recreational fishermen in this state. In 2010 in response to Addendum IV to Amendment 4 to the Weakfish Fishery Management Plan, Massachusetts reduced the recreational creel limit to one fish, implemented a commercial trip limit of 100 lbs per 24-hour day or trip, whichever is longer, and maintained all other existing regulations.

2. Request for *de minimis*, where applicable

   Massachusetts would like to continue with *de minimis* status, which was requested and approved by the Board in May 2007. To support this request, please note that weakfish landings in Massachusetts were 0 lbs, 0 lbs, 350 lbs, and 58 lbs from 2007-2010, respectively.

3. Previous calendar year's fishery and management program

   a. Activity and results of fishery dependent monitoring (provide general results and references to technical documentation).

      NA

   b. Activity and results of fishery independent monitoring (provide general results and references to technical documentation).

      NA

   c. Copy of regulations that were in effect, including a reference to the specific compliance criteria as mandated in the FMP.

      Massachusetts has 16-inch commercial and recreational minimum size limits, a one-fish recreational creel limit, and a commercial trip limit of 100 lbs per 24-hour day or trip, whichever is longer. The relevant section of the Code of Massachusetts Regulations is as follows:

      322 CMR 8.00: Coastal Fisheries Conservation and Management
      8.06 Minimum Size and Possession Limits
      (4) Weakfish.
      (a) It is unlawful for any person to possess weakfish less than 16 inches in total length.

(b) It is unlawful for recreational fishermen to possess more than one weakfish per day.
(c) It is unlawful for commercial fishermen to possess on board or land more than 100 pounds of weakfish per 24-hour day or trip, whichever period is longer.

d. Harvest broken down by commercial (by gear type where applicable) and recreational, and non-harvest losses (when available).

According to NMFS, there were 58 lbs (48 lbs by otter trawl; 10 lbs uncoded) of commercially landed weakfish in Massachusetts during 2010.

No recreational harvest of weakfish was recorded by the MRFSS in 2010. The MRFSS estimated that 1,542 weakfish were released alive in 2010; however, the PSE of 100 indicates the low precision associated with this estimate.

e. Review of progress in implementing habitat recommendations.

NA

4. Planned management programs for the current calendar year

a. Summarize regulations that will be in effect (copy of current regulations if different from 3c).

Same as noted above.

b. Summarize monitoring programs that will be performed.

NA

c. Highlight any changes from the previous year.

NA

Rhode Island
Department of Environmental Management

DIVISION OF FISH AND WILDLIFE

401 423-1920
FAX 401 423-1925

3 Fort Wetherill Rd
Jamestown, RI 02835

TO: Michael Waine

FROM: Nicole Travisono, Principal Biologist

DATE: August 30, 2011

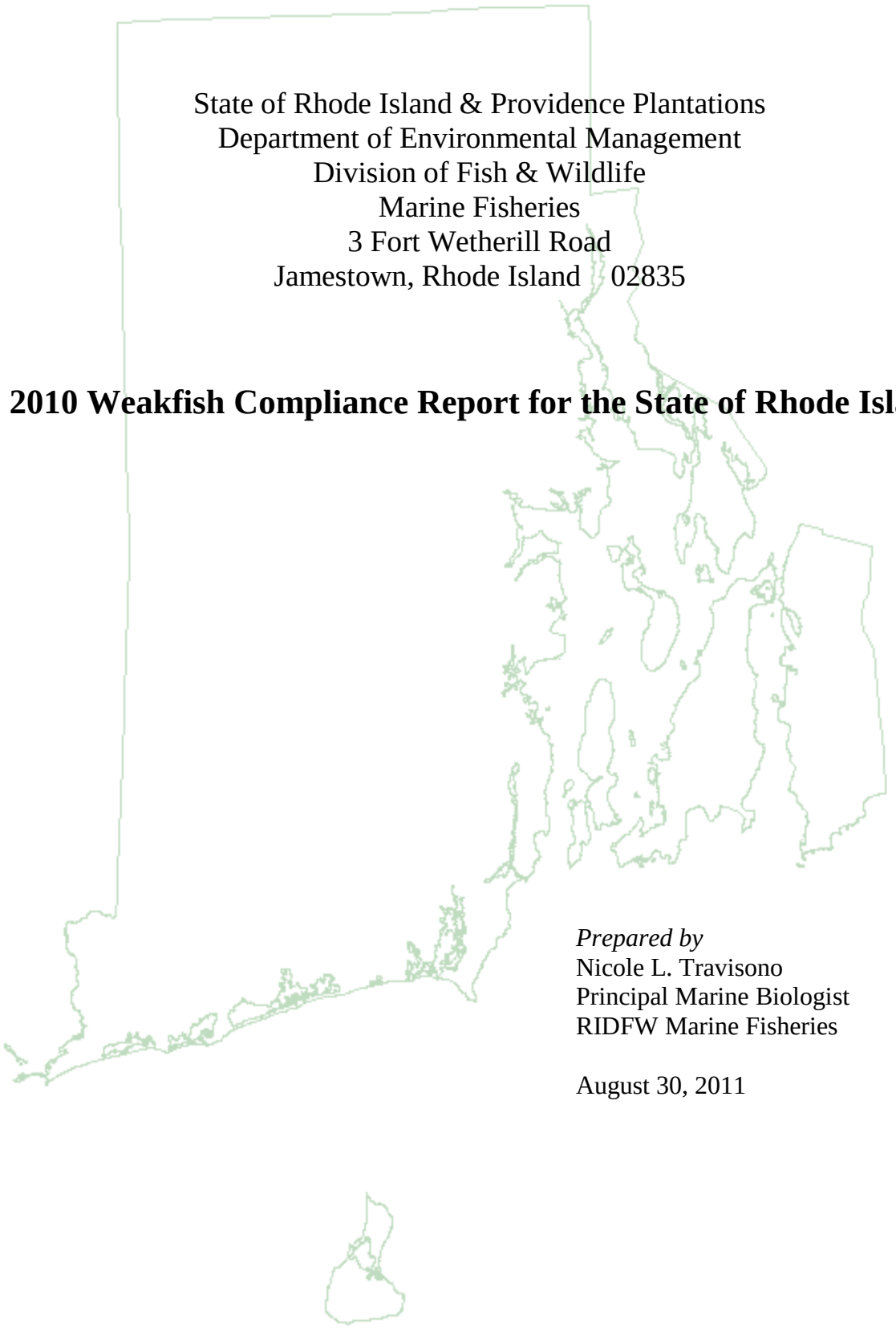
SUBJECT: Rhode Island Annual Compliance Report for Weakfish

Please find Rhode Island's 2010 annual compliance report for weakfish. If you have any questions, you may contact me at 401.423.1940.

cc: R. Ballou
M. Gibson

State of Rhode Island & Providence Plantations
Department of Environmental Management
Division of Fish & Wildlife
Marine Fisheries
3 Fort Wetherill Road
Jamestown, Rhode Island 02835

2010 Weakfish Compliance Report for the State of Rhode Island



Prepared by
Nicole L. Travisono
Principal Marine Biologist
RIDFW Marine Fisheries

August 30, 2011

Rhode Island's 2010 Annual Compliance Report for Weakfish

I. Introduction

Commercial landings for weakfish continued to decrease from 6 thousand pounds in 2009 to 5 thousand pounds in 2010. Recreational harvest of weakfish remained the same at 0 pounds in 2009 and 0 pounds in 2010. Fishery-independent monitoring suggested an increase in the relative biomass and abundance of weakfish in Rhode Island waters. Weakfish are rarely observed in the spring component of the RIDFW seasonal trawl survey, but are not uncommon in the fall. An average of 0.31 kg/tow of weakfish was observed in 2010 during the fall component of the RIDFW seasonal trawl survey, up from 0.14 kg/tow observed the previous year. Similarly, the weakfish abundance index derived from the fall data increased slightly from 7.29 fish/tow in 2009 to 7.95 fish/tow in 2010.

Rhode Island provides regulations for both the commercial and recreational weakfish fisheries. There was a minimum size limit of 16 inches for weakfish taken by participants in both the commercial and recreational sector. Effective April 28, 2010, there was a possession limit of 1 weakfish per person per day for recreational anglers. The commercial sector was limited to a daily limit of 100 pounds per vessel per calendar day June 1 – June 30 and Aug 7 – Nov 8. At all other times there was a 100 pound bycatch limit with at least an equal poundage of other species as weakfish on board the vessel.

II. Request for *de minimis*, where applicable

The state of Rhode Island does not wish to apply for *de minimus* status.

III. Previous Calendar Year's Fishery and Management Program

A. Activity and results of fishery dependent monitoring.

In 2010, despite our efforts to purchase weakfish from finfish dealers, the RIDFW was unsuccessful in collecting weakfish otoliths or lengths. According to Addendum I, the minimum sample size should have been 9 otoliths and 17 lengths.

Estimates of recreational fishery statistics for Rhode Island are obtained from the MRFSS online data query (NMFS, Fisheries Statistics and Economics Division, Silver Spring, MD, pers. comm.).

Trends in commercial and recreational harvest patterns for weakfish landed in Rhode Island are depicted in Figure 1.

B. Activity and results of fishery independent monitoring (provide general results and references to technical documentation).

The RIDFW Marine Fisheries Section operates a seasonal trawl survey to monitor finfish resources (Olszewski 2010). Weakfish are rarely observed in the spring component of this survey, but it is not uncommon to encounter this species in Rhode Island waters in the fall. Weakfish biomass and abundance indices updated for 2010 were calculated as mean number per tow and mean weight per tow, respectively. Indices were only calculated for the fall due to the infrequent occurrence of weakfish in the spring component of this survey. Estimated relative biomass of weakfish in RI for 2010 was 0.31 kg/tow, an increase from the 2009 estimate (= 0.14 kg/tow). Relative abundance also demonstrated a slight increase from the previous year with an estimate of 7.95 fish/tow for 2010 compared to 7.29 fish/tow observed in 2009.

C. Copy of regulations that were in effect, including a reference to the specific compliance criteria as mandated in the FMP.

1. Commercial

A commercial fishing license is required to take weakfish for commercial purposes from Rhode Island waters. Effective April 28, 2010 (as outlined in Addendum IV), several revisions were made to the existing management measures. Under the revised regulations, there was a 16-inch minimum size limit and a 100 pound/vessel/calendar day possession limit during the month of June and from August 7 through November 8 for the commercial fishery. A daily 100-pound bycatch limit was imposed during all other times with at least an equal poundage of other species as weakfish on board the vessel.

2. Recreational

The state of Rhode Island did require a license for marine recreational fishing in 2010. Effective January 1, 2010, all recreational anglers were required to possess one of the following licenses: a RI Recreational Saltwater Fishing License, a National Saltwater Angler Registration, or a recreational saltwater fishing license from a reciprocal state. Effective April 28, 2010 (as outlined in Addendum IV), several revisions were made to the existing management measures for weakfish. Under the revised regulations, recreational fishermen were subject to a 16-inch minimum size limit and a daily possession limit of 1 weakfish per person. There were no closed seasons during the year.

D. Harvest broken down by commercial (by gear type where applicable) and recreational, and non-harvest losses (when available).

1. Commercial

The commercial fishery sector landed 5,380 lbs of weakfish in Rhode Island in 2010. All trips where weakfish was landed commercially in 2010, were in compliance with the regulations in place at that time. Therefore, the State of Rhode Island had 100% compliance with the new regulations outlined in Addendum IV.

2. Recreational

Recreational harvest (Type A + B1) is considered as the sum of landings (Type A) and dead discards (Type B1), following MRFSS definitions. Recreational harvest of weakfish in Rhode Island for 2010 was 0 lbs. Estimates of the amount of weakfish that were released alive (Type B2) are available in terms of numbers only. In 2010, there were no B2 landings recorded for RI.

E. Review of progress in implementing habitat recommendations.
NA

IV. Planned Management Programs for the Current Calendar Year

A. Summarize regulations that will be in effect.

1. Commercial

The regulations in place for the commercial weakfish fishery effective April 28, 2010, as outlined in Addendum IV, remain unchanged for 2011. The regulations are as follows:

- 16" minimum size
- June 1 – June 30 and Aug 7 – Nov 8: 100 pound possession limit
- Jan 1 – May 31, July 1 – Aug 6, Nov 9 – Dec 31: 100 pound bycatch limit with at least an equal poundage of other species as weakfish on board the vessel
- The commercial hook and line fishery is not permitted a bycatch allowance
- Directed trawl: codend mesh size ≥ 4.5" diamond or 4.0" square (100 pound bycatch limit with at least an equal poundage of other species as weakfish on board the vessel for trawls not meeting the mesh requirement)

During the 2002 legislative session the Rhode Island General Assembly adopted the Commercial Fisheries Management Act, which implemented a new commercial fishing license system and ended the moratorium on the issuance of new commercial fishing licenses that had been in place since 1995 (RIDFW 2002). The regulations identify two endorsement categories for finfish, restricted and non-restricted. The RI Department of Environmental Management (DEM) has limited access to species listed in the restricted category to the current number of participants and currently issues new licenses to harvest species in the non-restricted category, which included weakfish in 2006. The current list of species placed in the restricted and non-restricted endorsement categories is updated annually, based on updated stock status information and fishery performance in the previous year.

2. Recreational

The regulations in place for the recreational weakfish fishery effective April 28, 2010, as outlined in Addendum IV, remain unchanged for 2011. The regulations are as follows:

- 16" minimum size
- Open all year
- 1 fish bag limit

Additionally, beginning January 1, 2010, the state of Rhode Island does require a license for marine recreational fishing. Details regarding the new RI recreational saltwater fishing license can be found at www.saltwater.ri.gov.

B. Summarize monitoring programs that will be performed.

1. Commercial

For 2011, the RIDFW Marine Fisheries Section is required to collect 7 otoliths and 15 lengths from weakfish. So far this year, a total of 9 otoliths and 9 lengths have been sampled. The RIDFW will continue efforts to collect additional samples throughout the rest of 2011. All otoliths collected in 2011 will be used for aging purposes and the data included in the 2011 Weakfish Compliance Report.

2. Recreational

Rhode Island recreational fishery statistics will continue to be collected and managed through the MRFSS program. Information characterizing the catch of weakfish from Rhode Island waters by recreational anglers will be obtained via the MRFSS online data query.

C. Highlight any changes from the previous year.

Effective April 28, 2010, the commercial and recreational regulations for Weakfish in RI were changed according to Addendum IV. See section IV-A above.

V. Plan Specific Requirements

No plan specific requirements for weakfish

VI. Law Enforcement Reporting Requirements

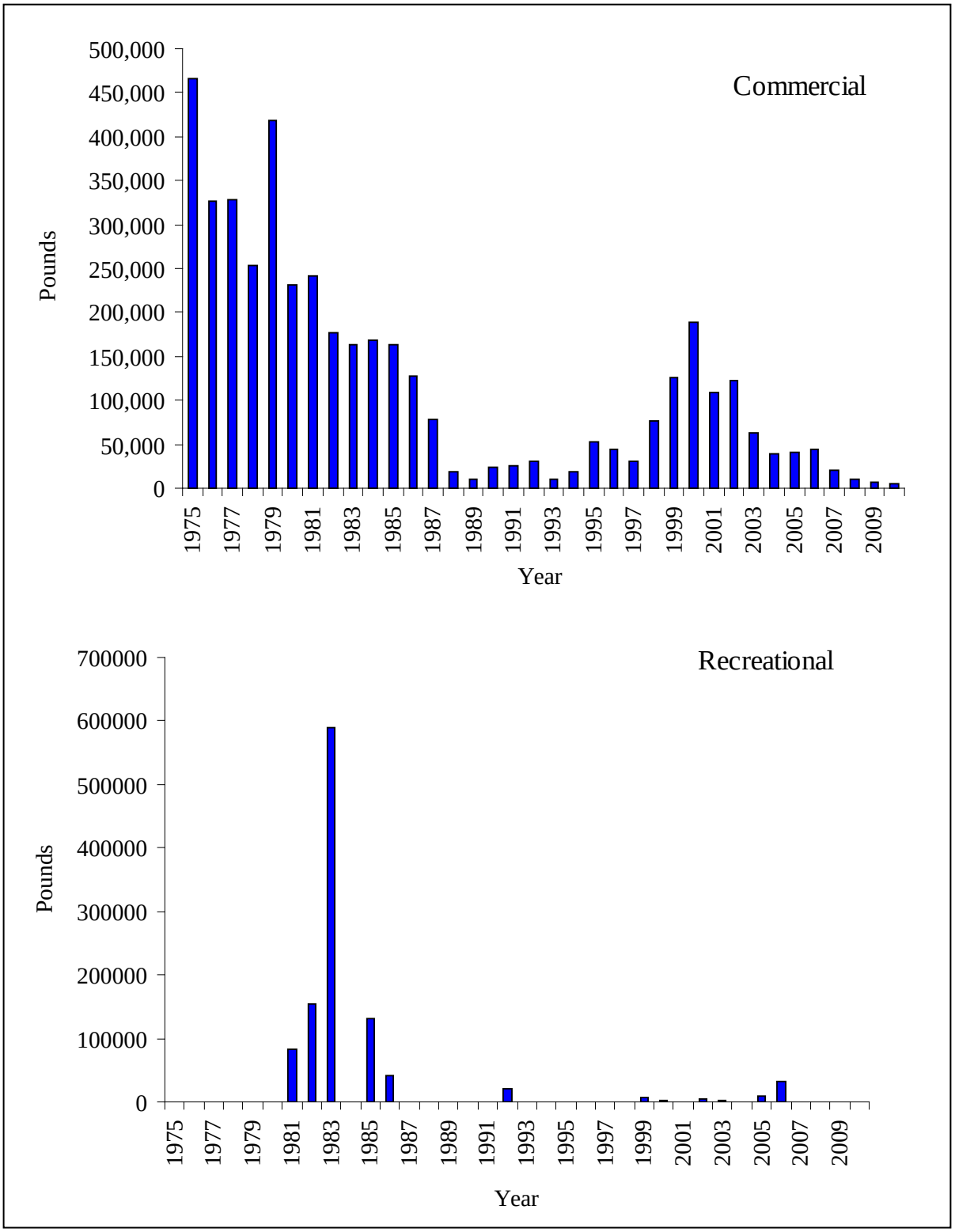
No law enforcement reporting requirements for weakfish

VII. References

Olszewski, S. 2010. Assessment of Recreationally Important Finfish Stocks in Rhode Island Waters. Rhode Island Division of Fish and Wildlife Coastal Fishery Resource Assessment Trawl Survey 2010.

RIDFW. 2002. Management Plan for the Finfish Fishery Sector. RI Dept. Env. Mgmt., Div. Fish and Wildlife, Marine Fisheries (3 December 2002) 25 pp.

Figure 1. Annual harvest of weakfish from Rhode Island commercial and recreational fisheries, 1975 - 2010.



State of Connecticut
Compliance Report for Weakfish
September 1, 2011

I. Introduction

The Atlantic States Marine Fisheries Commission requires States to submit an annual report to include: 1) current (2010) weakfish commercial and recreational regulations, 2) commercial and recreational landings by gear and area and, 3) fishery independent indices of abundance. This 2010 report includes weakfish commercial and recreational landings for 2010. Because of an engine breakdown on the Connecticut DEP research vessel in late May 2010, there was no trawl survey made in Long Island Sound during the fall 2010. As a result, there are no weakfish age 0 and age 1+ indices for 2010.

Summary of the year highlighting any significant changes in monitoring, regulations or harvest.

There were no significant changes in monitoring and in commercial regulations in 2010. The minimum size is 16 inches and the daily creel limit on the 2009 recreational fishery is 1 fish/day.

II. Request for de minimus, where applicable.

The weakfish commercial fishery in Connecticut is at de minimus status since 2003.

III. Previous calendar year's fishery and management program.

Activity and results of fisheries independent monitoring.

Relative abundance (mean catch/tow) of weakfish in Connecticut waters has been monitored annually from 1984 to 2009 based on the Sound-wide CTDEP fall (September-October) trawl surveys. Abundance indices (mean number/tow) of weakfish young-of-the-year (ages 0) from Long Island Sound (LIS) varied without trend from 1984 to 1998 (Table 1), but age 0 indices from 1999 to 2005 rose abruptly and remained relatively high thereafter. Although the 2005 age 0 index (25.86 fish/tow) was the seventh highest in the time series (Table 1), the 2005 juvenile index was much higher than the pre-1999 indices. The 2006 juvenile index (1.05 fish/tow) was the second lowest

juvenile index in the time series (1984-2007), whereas the 2007 juvenile index (63.93 fish/tow) was the highest in the time series. The 2008 (9.07 fish/tow) and 2009 juvenile indices (6.48 fish/tow) are well below the long-term (1984-2007) average juvenile index (20.05 fish/tow). Adult weakfish (ages 1+) relative abundance was low and relatively stable from 1984 to 1994, then relative abundance rose about threefold from 1995 to 2001 (Table 1). Recent age 1+ indices (2002 to 2009), however, have fallen back to the pre-1995 abundance levels (Table 1).

Activity and results of fishery dependent monitoring.

The 2010 commercial weakfish landings were compiled, as in previous years, from the Connecticut logbook reporting system. The 2010 weakfish recreational catch and harvest are expressed by the arithmetic mean estimate (Mean +/
SE) from the Marine Recreational Fisheries Statistics Survey (MRFSS).

Commercial landings of weakfish in 2010 totaled 899 lbs. from both ocean and coastal fisheries as compared to 495 lbs. in 2009.

The total estimated 2010 recreational catch of weakfish (A, B1, B2) in Connecticut was zero. According to the MRFSS, there was no harvest (zero harvest) of weakfish in the 2010 Connecticut recreational fishery.

Copy of regulations that were in effect, including a reference to the specific compliance criteria as mandated in the FMP.

Current regulations are summarized under IV.a

d. Aggregate commercial harvest and recreational, and non-harvest losses (when available).

Otter trawls accounted for 92.3% of the landings. The remaining (7.7%) was harvested by gillnets, pound nets and hook and line. Non-harvest losses were not estimated from commercial and recreational fisheries.

IV. Planned management programs for the current calendar year.

Summarize regulations that will be in effect during this year and next year.

The weakfish commercial fishery in Connecticut during 2010 and 2011 is the same as

that for 2009. The 2010/2011 commercial fishery will be regulated by a 16" minimum size limit with no seasonal restrictions. The Connecticut recreational fishery will also be regulated by a 16" minimum size limit and a 1 fish /day creel limit in 2010 and 2011.

Summarize monitoring programs that will be performed.

Both fishery-dependent and fishery-independent monitoring programs as described in III a and II b will be continued in 2011.

Highlight any changes from the previous year.

None.

V. Plan specific requirements.

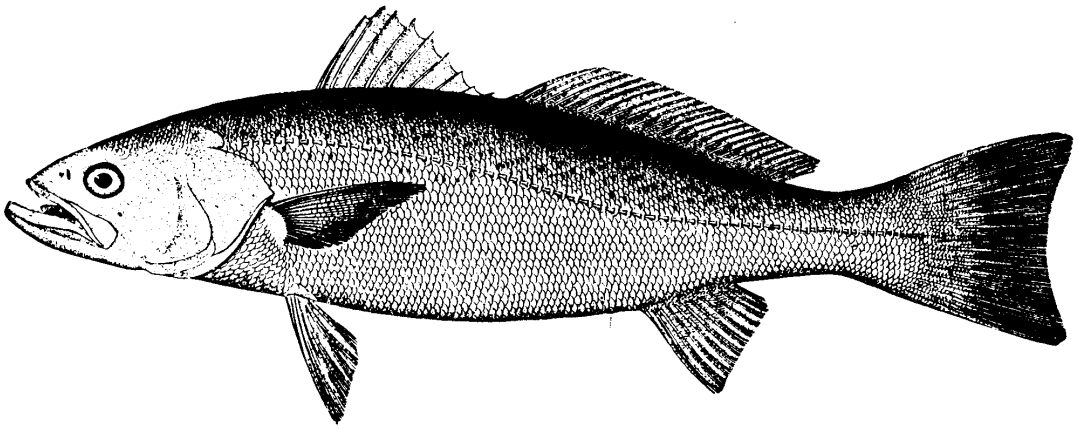
None.

Table 1. Relative abundance (geometric mean number/tow) of young of the year (age 0) and adult (ages 1+) weakfish based on the Connecticut fall trawl surveys in Long Island Sound from 1984 to 2009. Note that about 95% of the ages 1+ fish are age 1.

Year	Age 0 Indices	Ages 1+ Indices
1984	1.00	0.55
1985	6.19	0.24
1986	13.17	0.24
1987	0.63	0.11
1988	2.90	0.06
1989	8.69	0.02
1990	5.56	0.08
1991	11.95	0.31
1992	3.03	0.18
1993	4.08	0.12
1994	11.19	0.06
1995	5.21	0.70
1996	15.23	0.56
1997	12.38	0.89
1998	5.02	0.28
1999	30.93	0.39
2000	63.31	0.30
2001	40.09	0.52
2002	41.35	0.16
2003	49.41	0.07
2004	58.98	0.21
2005	25.86	0.12
2006	1.05	0.29
2007	63.93	0.06
2008	9.07	0.08
2009	6.48	0.30
2010**	-	-

** There was no multi-species trawl survey conducted during the fall of 2010 due to engine breakdown of the Connecticut DEP research vessel.

New York=s Annual Report to the ASMFC On Weakfish for 2010



September 2011

New York State Department of Environmental Conservation
Bureau of Marine Resources
205 North Belle Mead Road, Suite 1
East Setauket, New York, 11733

New York=s Annual Report to the ASMFC on Weakfish for 2010

I. Introduction

Amendment four to the Atlantic States Marine Fisheries Commission=s Fishery Management Plan for Weakfish requires each state to file an annual report summarizing its weakfish fisheries and management programs.

II. Request for *de minimis* – None

III. 2010 Weakfish Fishery and Management Program

a) Fishery Dependent Monitoring

NMFS Marine Recreational Fishery Statistics Survey (MRFSS) landing=s data for 2010 indicates that 2,682 weakfishes were landed by the recreational fishery in New York for (Table 1, Figure 1). Recreational fishers released a total of 3,107 weakfishes in 2010.

New York=s commercial landings of weakfish for 2010 as reported by NMFS indicate that 101,448 pounds of weakfish were landed in New York. This is over a fifty percent increase from the prior year (Table 1, Figure 1). However, it is well below the long term average of 815,192 pounds harvested commercially in the years 1970-1995.

New York collected 8 weakfish length samples of which 4 were also sampled for age from NY's commercial fishery. The lengths ranged from 414 - 662 mm, with an average length of 493 mm.

b) Fishery Independent Monitoring

Since 1985, New York State has conducted an ongoing trawl survey program to monitor the abundance and recruitment of young of the year finfish in our local waters, although for the purpose of this report only 1987 and beyond is reported on. Young of the year (yoy) weakfish are taken by survey gear from July through October. The 2010 yoy index of abundance was 15.3 (Figure 2). This is slightly higher than 2009, however it is the ninth lowest documented year class in the twenty four years that the survey has been conducted. It should be noted that the index of abundance is calculated using only the months of July and August.

c) New York=s 2009 Regulations for Weakfish

New York=s regulations included a 16-inch total length minimum size limit for both the recreational and commercial fishery as well as minimum fillet (10") and dressed (12") length requirements for both recreational and

commercial fisheries. Fish below this length may not be taken or possessed, nor bought, sold, or offered for sale in New York. For recreational fishermen there was also a one fish daily possession limit. There is a one hundred pound trip limit in effect all year for the commercial fishery. There was no closed season for recreational fishermen, while for all commercial gears there was a split closed season that extended from June 25th through August 27th and November 16th through March 31. During the commercial closure periods, there was a 100 pound by catch allowance for net fisheries only. For directed weakfish trawl fisheries (defined as any trawl vessel with 150 or more pounds of weakfish on board), there is a minimum cod end mesh size of at least four and one-half inches diamond, or four inches square mesh, inside measure. For directed gill or trammel net fisheries (defined as any gill net vessel with 150 or more pounds of weakfish on board), there is a three and one-half inch minimum stretched mesh requirement throughout the net. In addition, there is a prohibition on the sale of weakfish taken aboard party or charter vessels while carrying passengers for hire.

The following are excerpts from 6NYCRR for 2010, which includes all of New York=s marine finfish regulations specific to weakfish fisheries:

6NYCRR Part 40 Marine Finfish Regulations

Part 40.1 (d) It is unlawful to take or possess bluefish, scup, black sea bass, striped bass, summer flounder, tautog, weakfish, or winter flounder for commercial purposes on any charter vessel, or party boat or any other vessel while carrying passengers for hire. No person fishing on any charter vessel or party boat or any vessel, while such vessel or boat is carrying passengers for hire, including persons who hold a license pursuant to Section 13-0335 of the ECL, may take or possess more than the recreational possession limit for bluefish, scup, black sea bass, striped bass, summer flounder, tautog, weakfish, or winter flounder nor take or possess any species of fish during any recreational closed season or in excess of any recreational possession limit or smaller than any recreational size limit (See Table A - Recreational Fishing).

f) Table A - Recreational Fishing.

Species	*Open Season*	*Minimum Length*	*Possession Limit*
Weakfish	All year	16" TL 10" Fillet length+ 12" Dressed length**	1

(I) Table B - Commercial Fishing.

Species	*Open Season*	*Minimum Length*	*Trip Limit*
Weakfish	Hook and Line April 1 - June 24 and August 28 - Nov.15 All other gears April 1 - June 24 and Aug 28 - Nov. 15 June 25 - Aug 27 and Nov 16 - Mar 31	16" TL 10"fillet length** 12" dressed length##	100 100 100 pounds, per vessel, in the round***, and provided that at least an equal poundage of other foodfish species caught during the same trip is on board the vessel

`* Total length is the longest straight line measurement from the tip of the snout, with the mouth closed, to the longest lobe on the caudal fin (tail), with the lobes squeezed together, laid flat on the measuring devise.

** The fillet length is the longest straight line measurement from end to end of any fleshy side portion of the fish cut lengthwise away from the backbone, which must have the skin intact, laid flat on the measuring device.

The dressed length is the longest straight line measurement from the most anterior portion of the fish, with the head removed, to the longest lobe of the caudal fin (tail), with the caudal fin intact and with the lobes squeezed together, laid flat on the measuring device.

(q) Weakfish commercial fishing - special regulations.

((1) Except as provided in (2) below weakfish may only be sold, traded, bartered, offered for sale or transported in New York during the open season, or within two weeks following the close of the season.

(2) Persons authorized by Table B may sell during any period where there is a closure for weakfish lawfully taken and landed provided that the fish are in boxes closed and sealed and the boxes are marked with a tag at least two inches wide and four inches long of substantial, water resistant material. Such tag must indicate clearly the state of origin, the shippers name, location landed, and the date landed. Weakfish lawfully taken and landed in other states may be shipped into New York for trade, or sale during any closure, provided that they meet the tagging requirements above and that:

(i) such weakfish meet the minimum total length, fillet or dressed length requirement for this species; and

(ii) such state authorizes reciprocal privileges within its borders for weakfish taken in New York.

(3) Nothing in this subdivision shall prohibit the lawful transportation through the state of weakfish lawfully taken from waters outside the state to other states, provided that such fish are in their original unopened container and written documentation of their origin and destination accompanies such container.

(4) Except during the open season, it is unlawful for any person to land or possess on the waters of the marine district, weakfish from which the head or tail have been removed or that have been otherwise cleaned, cut, filleted, or skinned so that the total length or identity cannot be determined.

(5) The use of pair trawls, two boat trawls or paranzella nets for the taking of weakfish is prohibited. The landing of weakfish from any vessel having aboard a pair trawl, two boat trawl or paranzella net is also prohibited.

1) Except as provided in (2) below weakfish may only be sold, traded, bartered, offered

d) Weakfish, trawls and gill nets.

(d) *Weakfish, trawls and gill nets.*

(1) Trawls. Effective January 1, 1998. Only nets having a minimum cod end mesh size of at least four and one-half inches diamond mesh, or four inches square mesh, inside measure, may be used in a directed trawl fishery for weakfish. Any trawl vessel that has on board more than 150 pounds of weakfish will be presumed to be engaged in a directed fishery for weakfish.

(2) It is unlawful for operators of trawl vessels that have on board more than 150 pounds of weakfish to use or have available for immediate use any net, or any piece of net, that does not meet the minimum mesh regulations contained in subdivision (d) (1) on board.

(3) It is unlawful to use or have available for immediate use any combination of mesh or liners on board a vessel engaged in a directed trawl fishery that effectively decreases the mesh below the minimum size.

(4) All weakfish on vessels fishing with a net mesh smaller than the legal minimum size must be kept separate from other fish.

(5) Gill nets. Effective January 1, 1998. Only gill or trammel nets having a minimum mesh size of at least three and one half inches stretched mesh, inside measure, throughout the net, may be used in a directed gill net or trammel net fishery for weakfish. Any gill net or trammel net vessel that has on board more than 150 pounds of weakfish will be presumed to be engaged in a directed fishery for weakfish.

(6) Operators of gill or trammel net vessels that have on board more than 150 pounds of weakfish may not have any net, or any piece of net that does not meet the minimum mesh requirement contained in paragraph (5) of this subdivision on board.

(7) All weakfish on vessels fishing with a net mesh smaller than the legal minimum size must be kept separate from other fish.

d) Recreational and Commercial Harvest by Gear; Non-harvest Losses.

In 2010, New York=s recreational fishers harvested 2,682 weakfish (A+B1). Wave 4 accounted for the all of the weakfish harvested in NY which were taken by private/rental anglers in the inland waters. A total of 3,107 weakfishes were encountered and released (B 2) by recreational fishers in 2010. Waves 4 (54%) and 5 (43%) accounted for the majority of released weakfishes by private/rental anglers in the inland waters, with the remainder taken beyond 3 miles by partyboat/charter anglers during wave 5.

New York=s commercial landings of weakfish for 2010 as reported by NMFS indicate that 13,105 pounds of weakfish were landed in New York. The majority of coded (41% were not coded) weakfish harvested were taken by otter trawl (33%) followed by gill nets (15%). Weakfish were landed by commercial fishers all months of the year with the majority of weakfish harvest occurred in the months of September, October and November (49%). Commercial landings of weakfish continue to be well below the long term average of 815,192 pounds harvested in between 1970-1995.

III. Planned Management Programs for 2011

a) 2010 Weakfish Regulations

All the requirements of Addendum IV to Amendment 4 of the FMP have been implemented for 2010.

b) 2011 Monitoring Programs

The trawl survey monitoring of year class recruitment is ongoing for 2011. New York will continue to collect commercial age and length samples as required by the FMP.

c) Changes from prior year

None.

Table 1 NYS Weakfish Commercial and Recreational Landings

Year	Commercial Landings (Pounds)	Recreational Landings (Pounds) (A+B1)	Recreational Landings (Number) (A+B1)	Recreational Released Catch (Number) (B2)
1979	1511500	-	-	-
1980	1593600	-	-	-
1981	1357800	1570407	275120	22524
1982	1257100	725194	88234	0
1983	850000	164227	36934	15870
1984	484500	51464	20133	0
1985	386200	638913	89538	0
1986	359900	242217	34582	4556
1987	329100	51830	7447	1266
1988	124500	26127	13215	0
1989	103500	46133	6436	1980
1990	19924	4317	3057	570
1991	111629	35931	28072	33046
1992	168087	19824	5282	8362
1993	88379	18889	12610	20995
1994	99470	2579	1872	45537
1995	172431	24467	22310	81236
1996	365307	199081	16320	84990
1997	336752	220718	112986	90549
1998	496403	63298	21392	29836
1999	489935	63058	18347	35459
2000	352832	164525	42406	68631
2001	578797	151584	28126	69123
2002	513977	58627	24962	62803
2003	144416	37106	9234	7286
2004	178414	19231	7559	40254
2005	109861	606	356	193556
2006	152867	13926	9159	11732
2007	86656	8141	7120	200574
2008	44275	114011	30543	26851
2009	101448	0	0	6083
2010	13105	1,294	2682	3107

Figure 1

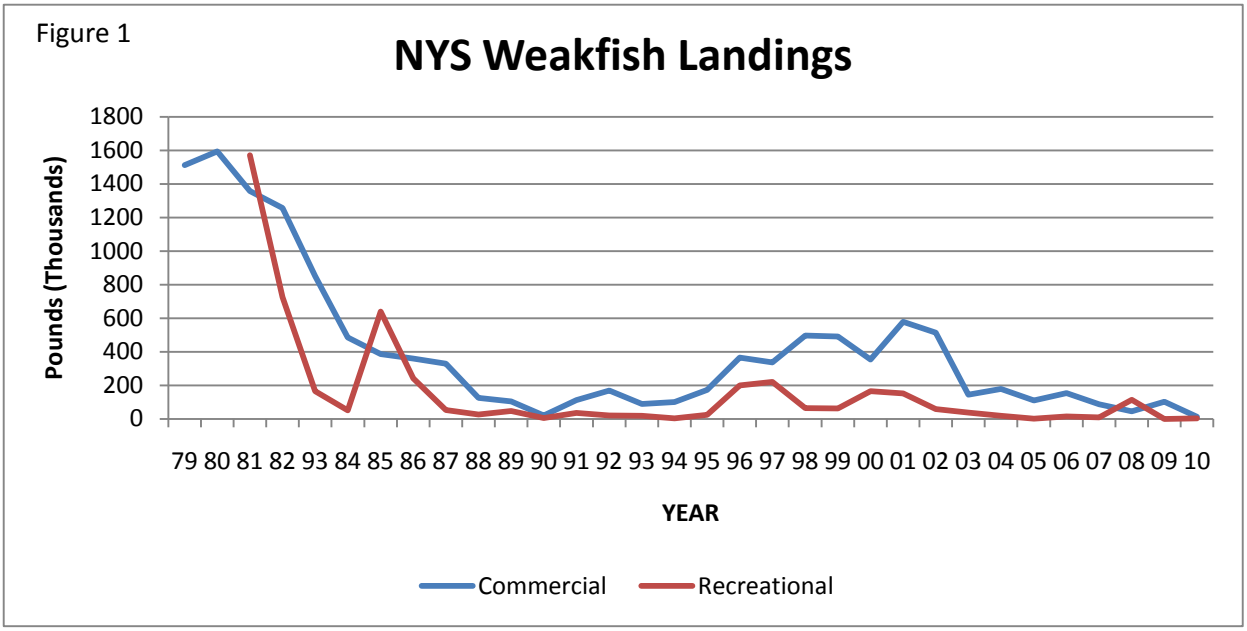
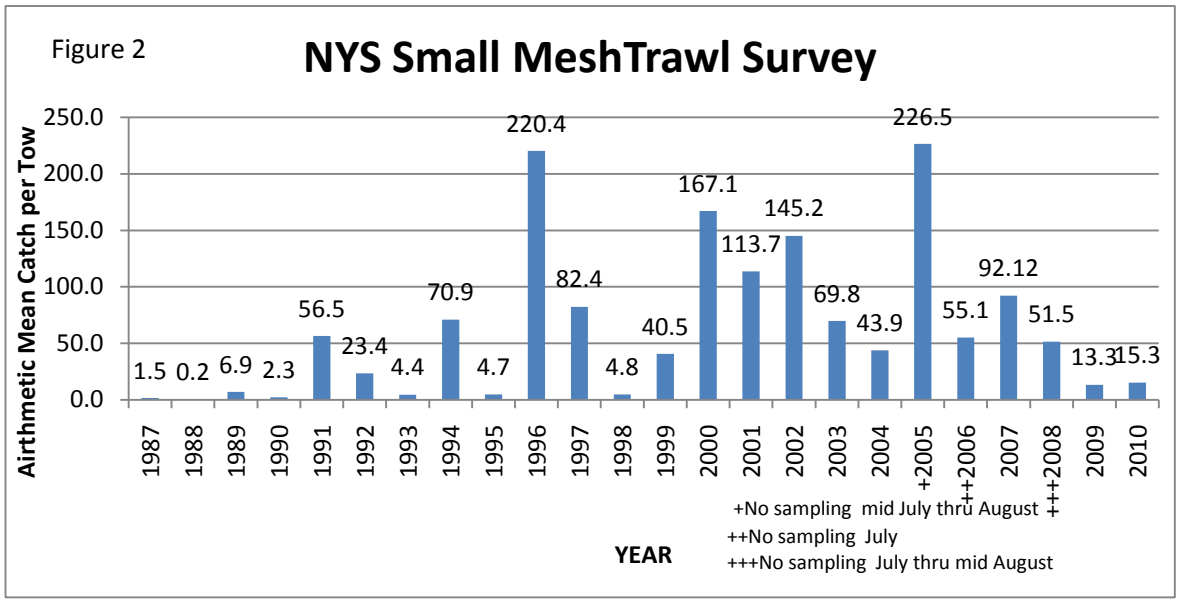


Figure 2



State of New Jersey
DEPARTMENT OF
ENVIRONMENTAL PROTECTION

DIVISION OF FISH AND WILDLIFE

Annual State Report for Weakfish for 2010 and Fishery Summary for 2011

August 2011

Report By: Jennifer Pyle
Russell Allen

Submitted to the Atlantic States Marine Fisheries Commission as a Requirement of Amendment 4 to the Interstate Fisheries Management Plan for Weakfish

Table of Contents

List of Tables

List of Figures

In accordance with Amendment 4 of the Interstate Fisheries Management Plan for Weakfish (Plan), the State of New Jersey herein submits its annual report on weakfish fisheries conducted within state waters during 2010. This report covers New Jersey's management programs for commercial and recreational fisheries as well as all fishery independent monitoring.

I. Harvest and Losses

A. Commercial Fishery

1. Characterization of Fishery

General regulations for the commercial weakfish fishery can be found in Table 1. Gill net fishers have had a 13-inch size limit on weakfish since March of 1992. For 2010, the minimum mesh size for gill nets was 3.25 inches stretched mesh with the following exception: gill nets with a mesh size between 2.75 inches and 3.25 inches stretched mesh could be fished within two nautical miles of the mean high water line provided fishers obtained a permit and submitted monthly reports.

The gill net season was closed from May 21 through September 2 and October 20-26. This closed season yields a 31.9% reduction as required under the Board's directive to use the corrected Evaluation Manual with respect to fishing after April 1, 1995.

The size limit for the trawl fishery was 13 inches from January 1 through August 31. Most weakfish taken during this period are bycatch from other fisheries. The minimum length of weakfish taken by otter trawl between September 1 and December 31, 2010 was changed to 13 inches from 12 inches. The minimum mesh size of any otter trawl used in a directed fishery for weakfish was 3.75 inches stretched diamond mesh or 3.375 inches stretched square mesh, inside measurement.

The season for the otter trawl fishery was closed from August 1 through October 12. This resulted in a 32.4% reduction as required with a minimum size of 12 inches and the corresponding L_{25} for a 12-inch fish.

The pound net fishery in New Jersey historically contributed up to two percent of the weakfish catch. In recent years, the percentage has increased somewhat due to the severe decrease in landings from the trawl and gill net fisheries. The season was closed June 7 through June 30.

Anglers can land and sell weakfish legally taken by hook and line. The imposition in March 1992 of a ten fish bag limit initially reduced this fishery more than 70 percent. Hook and line commercial landings began increasing in 1995, probably due to the increase in the bag limit to 14 weakfish but decreased again in recent years with the drop in the bag limit.

On March 25, 2010, New Jersey implemented a commercial daily possession limit of 100 pounds during the open commercial weakfish season, and 100 pounds of weakfish during the closed commercial season. During the closed season, the 100 pound possession limit may only be kept if it does not exceed 50 percent, by weight, of the total weight of all species landed and sold.

2. Characterization of Catch and Harvest

a. Landings and method of estimation

New Jersey's commercial weakfish landings from 1950 to 2010 are found in Table 2 while the 2010 weakfish landings for all gear types are found in Table 3. The 2010 landings, at 12,053 pounds, were the lowest recorded landings of the time series and continue a downward trend in commercial landings since 1998 and a longer downward trend since 1979 (Figure 1).

Trawl landings accounted for 46.7% (5,631 pounds) of New Jersey's 2010 weakfish landings, while gill net (33.7%, 4,067 pounds) and pound net fisheries (7.9%, 950 pounds) and made up the majority of the remaining landings. The percent of trawl landings increased for 2010. In addition, 11.7% (1,405 pounds) were landed by other or unknown gear types. With the decline in weakfish hook and line catches, the sale of these fish has also declined with none reported in 2010. Additional gears vary through time with no significant landings recorded in recent years.

b. Catch composition

The Atlantic States Marine Fisheries Commission (ASMFC) requires the State of New Jersey to comply with the sampling protocols set forth in Addendum 1 to the Plan. The New Jersey Division of Fish and Wildlife developed a sampling program in 2009 that was approved by the Weakfish Plan Review Team. The program was based on commercial and recreational landings data and the projected sampling requirements from ASMFC in March 2009. New Jersey landed 21.5 metric tons of weakfish during 2009 resulting in the need to collect an estimated 78 lengths and 64 ages for 2010.

The number of samples was adjusted during the year due to actual landings data obtained through a cooperative agreement with the major port facilities throughout the state.

The State of New Jersey collected 572 samples from coastal fisheries and fisheries independent surveys for age analysis during 2010. Mean length was calculated by gear and season (Table 4) for all samples collected. All samples were utilized for age determination (Table 5). All of the samples were aged at less than five years of age. Beginning in 2010, weakfish samples were collected from New Jersey's Delaware Bay Trawl Survey. This is a blue crab based survey, which also catches a large number of finfish, including weakfish. Due to the availability of samples, New Jersey began collecting weakfish from this survey in order to supplement the samples collected from the commercial fishery. Of the 360 weakfish at age zero, 352 (97.8%) were caught in this trawl survey. Sampling will continue in subsequent years.

A summary of mean length and age by gear type since 1995 is presented in Table 6. Combined with the length samples collected in the Gill Net Mesh Exemption Program (below), the total number of length samples collected in 2010 was 846.

c. Biological monitoring assessment

Based on landings for 2009, New Jersey was expected to collect 78 length and 64 age samples for 2010. Actual otolith samples were collected from 572 weakfish including 84 from commercial fisheries for 2010. This was more than the estimated total samples that New Jersey was required to collect.

A comparison of 2010 landings versus actual samples by area, gear type and time can be found in Table 7. The areas for the comparison are not exact and there may be some overlap of the different regions. It was apparent that sampling for 2010 was adequate for compliance with the

Plan. All fisheries were adequately sampled although additional samples for the early period (Jan-Mar) would have been useful. New Jersey will continue to monitor all aspects of these fisheries in the future to ensure sufficient sampling.

3. Characterization of Other Losses (poaching, bycatch, etc.)

The Gill Net Mesh Exemption Program for 2010 allowed non-directed fishers to possess no more than 150 pounds of weakfish in the small mesh gill net fishery through March 25. From March 25 to December 31, the allowable harvest was 100 pounds. Under the program, gill net fishers may apply for a permit to fish gill nets with a mesh of at least 2.75 inches and less than 3.25 inches within two nautical miles of the mean high water line. The program was instituted to allow continuation of a traditional multi-species fishery that was eliminated in 1992 when the minimum gill net mesh size of 3.25 inches was implemented in keeping with the L_{25} retention for a 13-inch weakfish.

The primary species targeted by this fishery are Atlantic menhaden, white perch, butterfish, northern kingfish, and spot. There are also incidental landings of other species, such as Atlantic croaker, river herring and bluefish. In 2010, 19 individuals applied for and were issued permits. Eight fishers reported no activity for the year. Nine species, other than weakfish, with a total weight of 122,452 pounds were landed (Table 8). Atlantic menhaden and perch accounted for 88.1 percent of the total.

During 2010, 310 weakfish were caught and 196 were measured in the small mesh gill net fishery (Table 9). Seasonally, the weakfish were evenly distributed with 46.8% caught during March-June and 53.2% caught from July through September. They ranged in size from 9 to 30 inches with peaks at 13-15 inches and again at 25 inches. Of those fish measured, 21.4% were less than 13 inches. No attempts have been made to confirm reports of weakfish lengths or actual dead versus live weakfish but reporting forms were changed in 2009 in order to obtain additional information. Since all fishermen did not utilize the new forms in 2010, the update on dead versus live fish will be available in 2011.

B. Recreational Fishery

1. Characterization of Fishery

The possession limit of six fish at a minimum length of 13 inches was in effect from January 1 through March 25, 2010. The possession limit of one fish at a minimum length of 13 inches was in effect from March 25 through December 31, 2010.

2. Characterization of Directed Harvest

The Marine Recreational Fisheries Statistical Survey (MRFSS) data for 2010, queried August 4, 2011, show that New Jersey anglers caught 81,355 weakfish with a harvest of 3,302 fish weighing 1,989 pounds (Table 10, Figure 2). These are the lowest values of the time series. Mean weight per harvested fish, 0.60 pounds, was the lowest in the time series, and well below the series mean. Figure 3 highlights the trends of the recreational and commercial landings since the mid 1980s.

3. Characterization of Other Losses

Previous discussions at ASMFC regarding recreational discards have led the Technical Committee to decide on a discard mortality of 10% of the weakfish releases as estimated by MRFSS. New Jersey's releases for 2010 were 78,053 fish resulting in a discard mortality estimated at 7,805 fish. Recreational discards increased dramatically in the mid 1990s due to

regulatory changes but varied without trend through 2008 (Figure 4). Similar to 2009, the 2010 estimate is extremely low due, in part, to the low number of fish caught.

II. Fishery Independent Monitoring

Abundance indices for weakfish in New Jersey are measured in three fishery independent surveys. Two surveys are conducted in the Delaware Estuary while the third collects data along the New Jersey coast. None of the surveys are mandated by ASMFC, however they are reported here for assessment purposes.

A. Delaware Bay Trawl Survey

The Delaware Bay Trawl Survey is a nearshore fixed station trawl survey conducted from April through November since 1991 using a 16-foot otter trawl at eleven stations. For weakfish, only the June through August trawls are used to develop a juvenile abundance index (JAI).

The 2010 JAI for the Delaware Bay trawl was below average at 9.03 and ranked 8th in the time-series (Table11, Figure 5). The 2010 index was higher than the previous two years. Other high year classes occurred in 1999, 2005 and 2007. The proportion of positive tows (PPT) was also calculated for this survey. The PPT closely follows the geometric mean for most years including 2010. Both measures of abundance show an increase in recruitment from the mid-1990s until 2002 and again through 2007 for the mean and 2008 for the positive tows.

Length frequency data for weakfish is also collected during this survey. During this survey, weakfish lengths are measured by total length. Regardless, weakfish mean length decreased from 1995 to 1999 but generally increased from 2001 through 2010 (Figure 6).

B. Delaware River Seine Survey

The second survey utilizes a bagged, 100-foot long by 6-foot deep by ¼-inch mesh beach seine conducted for striped bass young-of-year in the Delaware River since 1980. The survey consists of seining 32 stations twice a month from August through October. For weakfish, the JAI is calculated for the lower 24 stations within the Delaware River.

Only one weakfish was collected in 2010 continuing poor recruitment for this area of the estuary since 1986, except for a good year in 1995 (Figure 7). Additional analysis will be performed on this data set to determine if it is useful for future stock assessments.

C. Ocean Trawl Survey

The New Jersey Ocean Trawl Survey is a multispecies survey that started in August 1988 and samples the near shore waters from the entrance of New York Harbor south, to the entrance of the Delaware Bay five times a year (January, April, June, August and October). There are 15 strata, with five (5) strata assigned to three (3) different depth regimes; inshore (3 to 5 fathoms), mid-shore (5 to 10 fathoms), and off-shore (10 to 15 fathoms). Station allocation and location is random and stratified by strata size.

The survey net is a two-seam trawl with forward netting of 4.7 inch stretch mesh and rear netting of 3.1 inches stretch mesh. The cod end is 3.0 inches stretch mesh and is lined with a 0.25 inch bar mesh liner. Each trawl is 20 minutes long and at the end of each tow, the total weight of each species is measured in kg and the length of all individuals, or a representative sample by weight for large catches, is measured to the nearest cm. A series of water quality parameters, such as surface and bottom salinity, temperature and dissolved oxygen, are also recorded at the start of each tow. Data for weakfish has been thoroughly analyzed during past assessments so that only

data for the month of August are used for calculating the geometric mean, PPT and length frequencies.

During the 2010 August survey, there were 9,241 weakfish caught resulting in a geometric mean of 2.61 (Table 12, Figure 8). This was above average for the time-series. The proportion of positive tows (PPT) for August was also calculated for this survey and used in the current assessment. The PPT correlates well with the geometric mean throughout the time-series (R-square = 0.601). The 2010 figure of 0.256 was below average which continues to be a reason for concern.

Length frequency data is also collected during this survey. Figure 9 shows the mean percent length frequency throughout the time-series with the 2010 data being found in Figure 10. It is obvious that the length structure has contracted and older, larger fish are not as readily available in recent years.

III. 2011 New Jersey Weakfish Regulations and Monitoring

A. Recreational and Commercial Regulations

A possession limit of one (1) fish at a minimum length of 13 inches will remain in effect for 2011.

B. Commercial Fishery

There are no planned changes to the current regulations for the harvest of weakfish in New Jersey waters. See Section 1A1 and Table 1 for the current regulations.

C. Research and Monitoring

The State of New Jersey will continue to develop methods to achieve the sampling protocols set forth in Addendum 1 to Amendment 4 of the Plan, through biological sampling of weakfish during existing programs as well as the recreational fishery. A long term sampling protocol was developed and approved by ACCSP with an implementation date in September 2006. This program will continue in 2011.

Harvest data will be obtained from individuals participating in the small mesh gill net fishery described above and from data collected by NMFS port agents and/or SAFIS for commercial fisheries while harvest and catch data for recreational fisheries will be collected through MRFSS.

Table 1. New Jersey's directed commercial regulations for the harvest of weakfish: 2010

Gear	Size Limit	Season Closure	Other Restrictions
Gill	13-inches	May 21 to Sep 2 and Oct 20 to 26	*Net not less than 3.25 inch stretch mesh Limited entry; Additional gear restrictions in defined areas
Trawl	13-inches	Aug 1 to Oct 12	Net not less than 3.75 inch inside stretch diamond or 3.375 inside stretch square mesh measurement; Additional gear restrictions in defined areas
Pound	13-inches	Jun 7 to Jun 30	Max length: 750 feet including leader and hearts; Additional gear restrictions in defined areas

A vessel shall not land and a dealer shall not accept more than 100 pounds of weakfish in any one day taken by any gear type not listed above or by the gear types listed above. In addition, for any vessel landing weakfish during the closed season, the amount of weakfish landed shall not exceed 50 percent, by weight, of the total weight of all species landed and sold.

*Anyone fishing gill nets less than 3.25 inches stretched mesh in the Atlantic Ocean or Delaware Bay within two nautical miles of the mean high water line after February 29, must possess a Gill Net Mesh Exemption Permit. All permit holders must submit monthly reports on harvest and effort.

Table 2. New Jersey's commercial weakfish landings, 1950-2010

Year	Pounds		Year	Pounds
1950	1,082,400		1981	3,750,300
1951	1,965,000		1982	2,073,500
1952	2,176,500		1983	2,172,700
1953	2,162,200		1984	2,751,600
1954	2,002,600		1985	3,030,100
1955	1,876,900		1986	3,208,600
1956	2,001,800		1987	2,094,100
1957	2,025,000		1988	2,332,800
1958	546,200		1989	1,458,500
1959	372,300		1990	968,318
1960	526,100		1991	1,174,181
1961	418,000		1992	940,695
1962	649,900		1993	834,446
1963	333,000		1994	695,280
1964	545,100		1995	867,262
1965	596,300		1996	822,041
1966	344,300		1997	1,036,470
1967	455,600		1998	1,804,618
1968	532,000		1999	1,291,319
1969	1,862,500		2000	1,071,428
1970	1,961,200		2001	837,550
1971	3,099,000		2002	863,088
1972	3,178,600		2003	340,269
1973	2,562,300		2004	204,587
1974	2,686,400		2005	205,692
1975	4,370,300		2006	206,626
1976	5,709,300		2007	164,506
1977	3,221,500		2008	56,884
1978	3,865,600		2009	30,082
1979	6,518,900		2010	12,053
1980	4,896,000		**Mean**	**1,669,547**

Table 3. New Jersey's commercial weakfish landings, by month and gear: 2010

Month	Trawl	Gill	Pound	Other*	Total
Jan	1,341	-	290	20	1,651
Feb	536	-	39	20	595
Mar	864	-	8	59	931
Apr	584	393	121	22	1,120
May	8	1	50	7	66
Jun	-	-	97	-	97
Jul	-	-	95	-	95
Aug	4	10	11	-	25
Sep	22	174	136	66	398
Oct	897	2,515	36	1,084	4,532
Nov	1,034	819	67	107	2,027
Dec	341	155	-	20	516
Total	**5,631**	**4,067**	**950**	**1,405**	**12,053**

*Other refers to any other or unknown gear types

Table 4. Mean length (TL) of weakfish collected in New Jersey, by gear type and season: 2010

				*Mean Length	
Gear	Data Type	# Samples	Period	TL max, mm	TL rel, mm
Gill	Commercial	10	Apr	597.5	
Trawl - Ocean	Research	82	Jun-Oct		263.12
Trawl - Delaware Bay	Research	406	Jul-Sept	96.42	
Gill	Commercial	74	Oct	391.51	
All		572		151.21	263.12

*TL max is bending of tail while TL rel is the longest length while flat

Table 5. New Jersey's weakfish age data for 2010

Age	# at Age	% at Age	Mean TL (mm)	Mean Wt (lbs)
0	360	62.94	90.87	0.01
1	67	11.71	180.33	0.10
2	116	20.28	326.66	0.63
3	26	4.55	432.58	1.17
4	2	0.35	539.50	1.59
5	1	0.17	655.00	2.88
	572		156.04	0.195

.

Table 6. Age data from weakfish collected in New Jersey waters: 1995–2010

Year	# ages	Gear	MeanTL	Mean Age
1995	82	Trawl	285.21	2.44
1996	199	Trawl	319.18	2.62
1997	31	Trawl	345.84	4.35
1998	35	Gill	582.89	4.97
2003	64	H & L	683.17	5.67
2004	4	Gill	720.75	7.75
	40	H & L	448.23	3.60
	13	Trawl	377.54	2.54
	57	All	451.23	3.65
2005	1	Gill	707.00	4.00
	12	H & L	809.08	7.67
	135	Trawl	354.53	3.13
	148	All	393.77	3.50
2006	270	Gill	435.82	3.11
	236	Pound	618.26	4.47
	30	Trawl	499.17	3.30
	536	All	519.24	3.84
2007	88	Gill	620.57	4.90
	13	H & L	399.69	3.00
	118	Pound	657.97	5.60
	324	Trawl	448.38	3.12
	543	All	520.66	3.95
2008	216	Gill	433.43	2.61
	5	Pound	795.20	7.40
	227	Trawl	358.41	2.29
	448	All	399.46	2.50
2009	141	Gill	449.04	3.18
	19	Pound	816.37	8.84
	94	Trawl	294.74	2.20
	254	All	419.41	3.24
2010	84	Gill	416.04	2.25
	488	Trawl	124.43	0.41
	572	All	167.25	0.68

Table 7. Number of weakfish samples collected in New Jersey, by area, during 2010

		Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	All
North	Trawl	-	4	10	-	14
	Gill	-	10	-	-	10
Central	Trawl	-	5	10	11	26
	Gill	-	-	-	74	74
South	Trawl	-	5	411	32	448
ALL		-	24	431	117	572

Table 8. Gill net mesh exemption landings (pounds), by month and species: 2010

	Bluefish	**Bunker**	**Butter**	**Catfish**	**Croaker**	**Herring**	**Kingfish**	**Perch**	**Spot**	**Total**
Jan						5		11		**16**
Feb		3				35		16		**54**
Mar		1,448				562		6,221		**8,231**
Apr	357	5,301	1,750	288		125		5,185		**13,006**
May	97	5,894						46		**6,037**
Jun	29	16,539				27				**16,595**
Jul	70	11,959			2		4		45	**12,080**
Aug	984	36,111	69		5		33		7,405	**44,607**
Sep		7,687	1,800		50	200		100	150	**9,987**
Oct		4,335	58		79	368		651		**5,491**
Nov		4,153						1,009		**5,162**
Dec		869						318		**1,187**
Total	**1,537**	**94,299**	**3,677**	**288**	**136**	**1,322**	**36**	**13,557**	**7,600**	**122,452**

Table 9. Reported weakfish lengths (tl, in) caught in the gill net mesh exemption program: 2010

	Alive	Dead	<13	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Mar	0	6	0	0	1	0	1	0	1	0	0	0	0	1	1	1	0	0	0	0	0
Apr	46	73	0	1	0	3	2	2	2	3	5	3	7	6	5	23	0	2	0	1	1
May	2	4	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
Jun	6	8	0	0	0	0	0	0	2	0	0	1	0	1	1	3	0	0	0	0	0
Jul	11	3	8	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Aug	87	36	34	16	16	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	13	15	0	0	12	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**165**	**145**	**42**	**18**	**29**	**28**	**4**	**2**	**5**	**3**	**6**	**5**	**7**	**8**	**8**	**27**	**0**	**2**	**0**	**1**	**1**

Note: There were 114 weakfish caught that were not measured

Table 10. New Jersey's recreational weakfish estimates (from MRFSS): 1981-2010

Year	Catch (#)	Harvest (#)	Harvest (Lbs)	Mean wt
1981	1,035,104	1,028,787	3,892,217	3.78
1982	105,761	104,066	613,223	5.89
1983	3,012,209	2,857,093	6,080,018	2.13
1984	1,030,508	1,026,043	3,987,542	3.89
1985	1,059,123	812,839	1,876,608	2.31
1986	3,395,665	2,500,622	3,184,095	1.27
1987	1,848,638	1,666,619	3,353,362	2.01
1988	647,176	642,032	833,198	1.30
1989	326,130	303,289	575,110	1.90
1990	249,248	216,385	358,457	1.66
1991	784,311	545,665	896,800	1.64
1992	561,505	311,659	677,811	2.17
1993	485,366	203,915	312,839	1.53
1994	1,643,502	591,571	706,206	1.19
1995	2,285,681	671,850	898,564	1.34
1996	2,963,300	1,104,251	1,730,055	1.57
1997	2,003,614	1,028,334	1,817,034	1.77
1998	1,698,738	920,558	1,910,868	2.08
1999	1,135,167	583,883	1,374,169	2.35
2000	2,365,304	760,279	1,916,093	2.52
2001	1,800,678	736,069	1,251,150	1.70
2002	843,686	492,876	1,213,557	2.46
2003	782,539	151,101	333,690	2.21
2004	791,042	183,649	315,101	1.72
2005	2,332,935	1,053,005	1,149,891	1.09
2006	1,648,629	417,527	571,589	1.37
2007	790,745	209,310	297,138	1.42
2008	1,524,483	269,558	338,913	1.26
2009	92,970	10,688	18,406	1.72
2010	81,355	3,302	1,989	0.60
mean (81-10)	1,310,837	713,561	1,416,190	2.00
mean (01-10)	1,068,906	352,709	549,142	1.55

Table 11. Weakfish data from New Jersey's Delaware Bay Trawl: 1991-2010

	Geo Mean	Prop pos tows	Mean Length (mm)
1991	2.20	0.615	61.19
1992	3.40	0.682	68.98
1993	2.85	0.618	66.90
1994	2.86	0.515	70.60
1995	4.10	0.697	77.26
1996	7.39	0.727	52.24
1997	15.66	0.788	51.74
1998	6.89	0.727	51.14
1999	**24.92**	0.909	43.48
2000	7.10	0.848	56.49
2001	15.05	0.848	47.90
2002	19.70	0.909	54.97
2003	3.10	0.545	83.99
2004	8.42	0.818	50.49
2005	**21.22**	0.697	70.51
2006	12.25	0.727	78.10
2007	**25.54**	0.848	78.99
2008	7.86	0.879	71.44
2009	7.36	0.667	72.56
2010	9.03	0.477	78.35
AVG	**10.34**	**0.727**	**64.37**

Table 12. Weakfish data from New Jersey's Ocean Trawl Survey: 1989-2010

	Geometric mean	Prop pos tows
1989	1.64	0.441
1990	1.19	0.350
1991	1.42	0.368
1992	1.39	0.529
1993	1.25	0.410
1994	2.62	0.667
1995	2.90	0.667
1996	2.30	0.615
1997	2.53	0.667
1998	0.76	0.282
1999	1.45	0.384
2000	1.86	0.525
2001	0.93	0.359
2002	1.84	0.410
2003	0.09	0.103
2004	1.58	0.333
2005	1.49	0.324
2006	0.42	0.167
2007	1.52	0.350
2008	1.57	0.256
2009	0.99	0.179
2010	2.61	0.256
AVG	**1.56**	**0.393**

Figure 1. New Jersey's commercial weakfish landings: 1950-2010

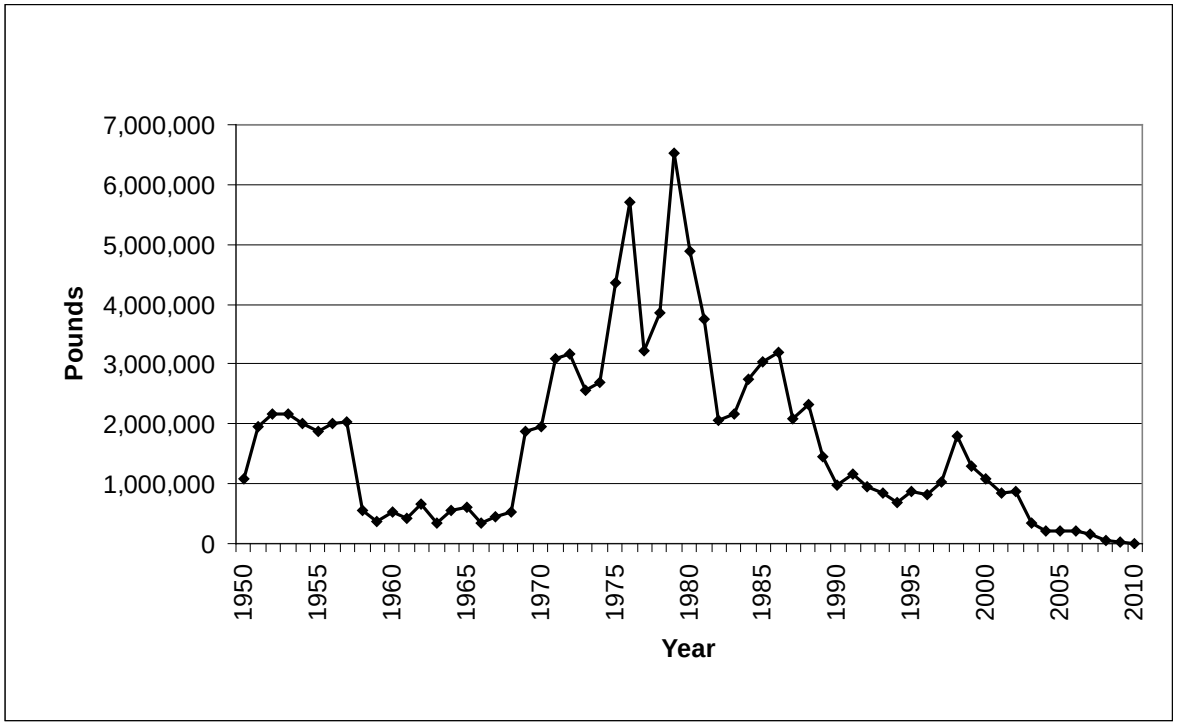


Figure 2. New Jersey's recreational weakfish estimates (from MRFSS): 1981-2010

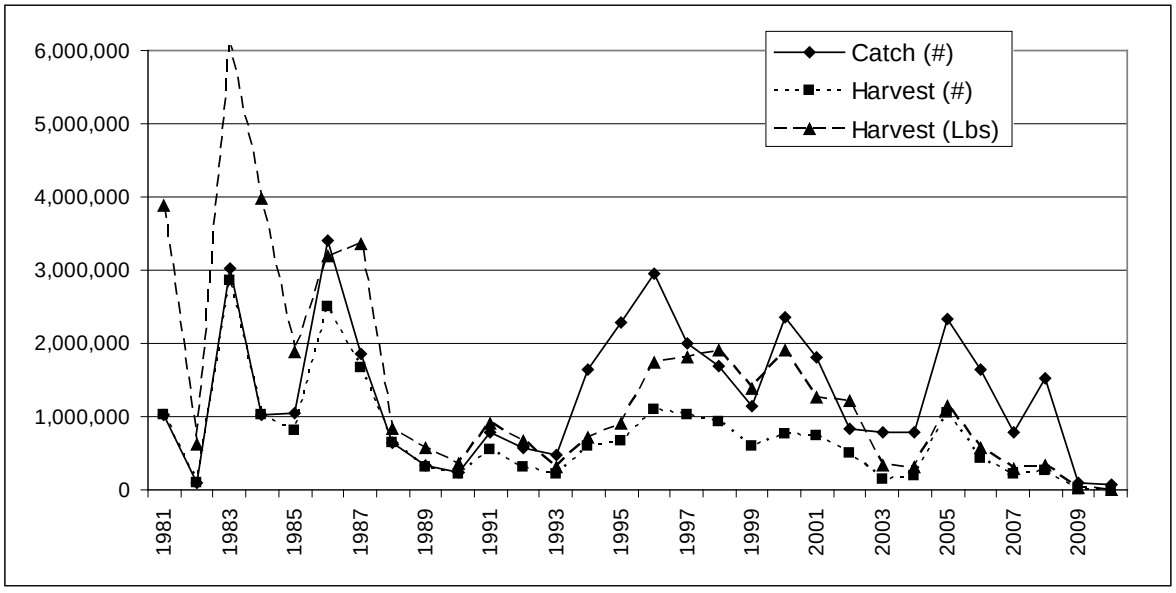


Figure 3. New Jersey's recreational and commercial weakfish landings: 1950-2010

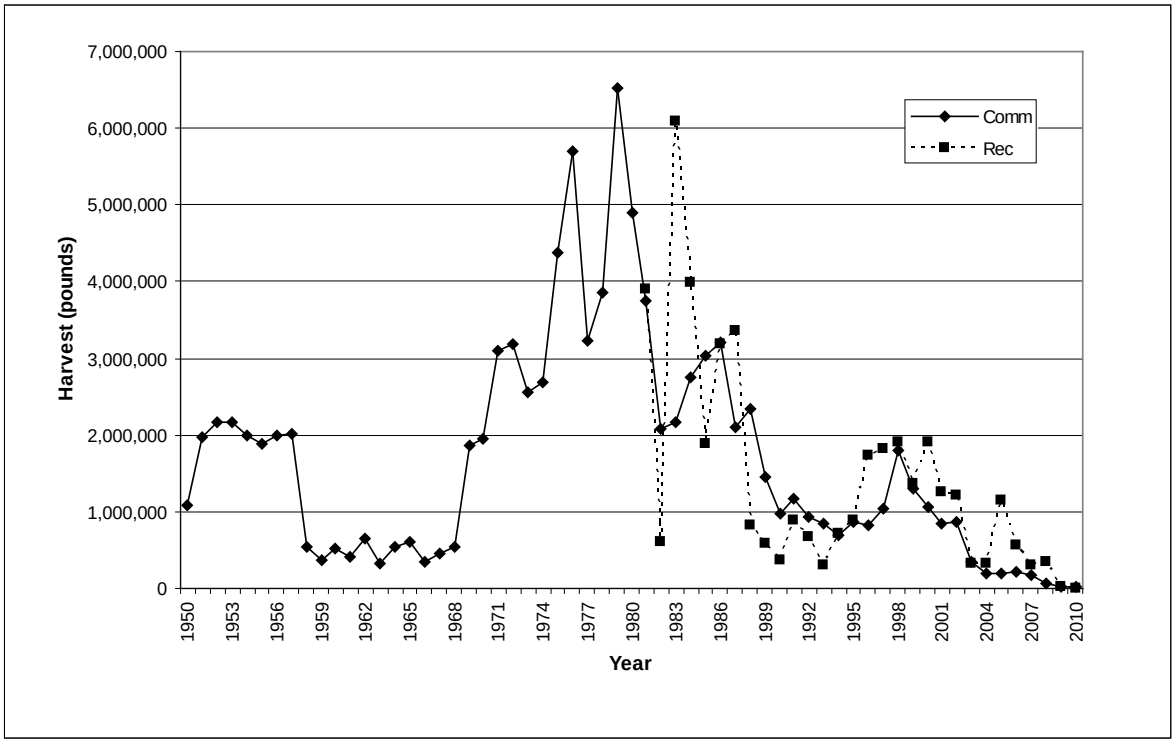


Figure 4. New Jersey recreational weakfish discard mortality: 1981-2010

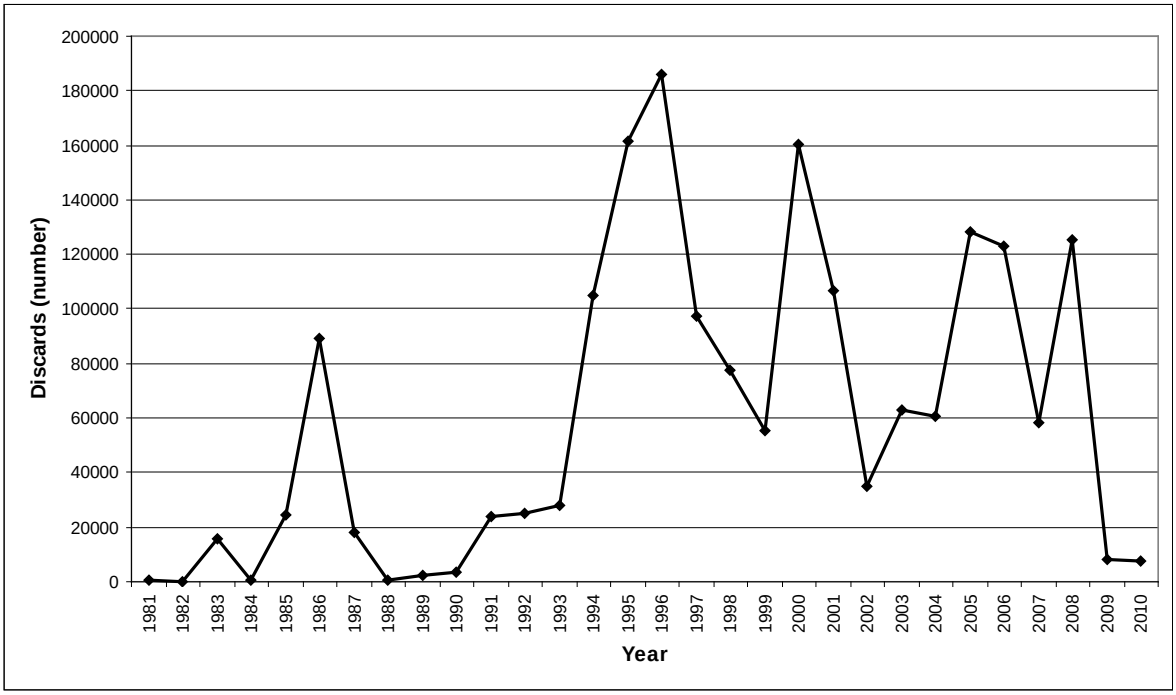


Figure 5. Weakfish data from New Jersey's Delaware Bay Trawl Survey: 1991-2010

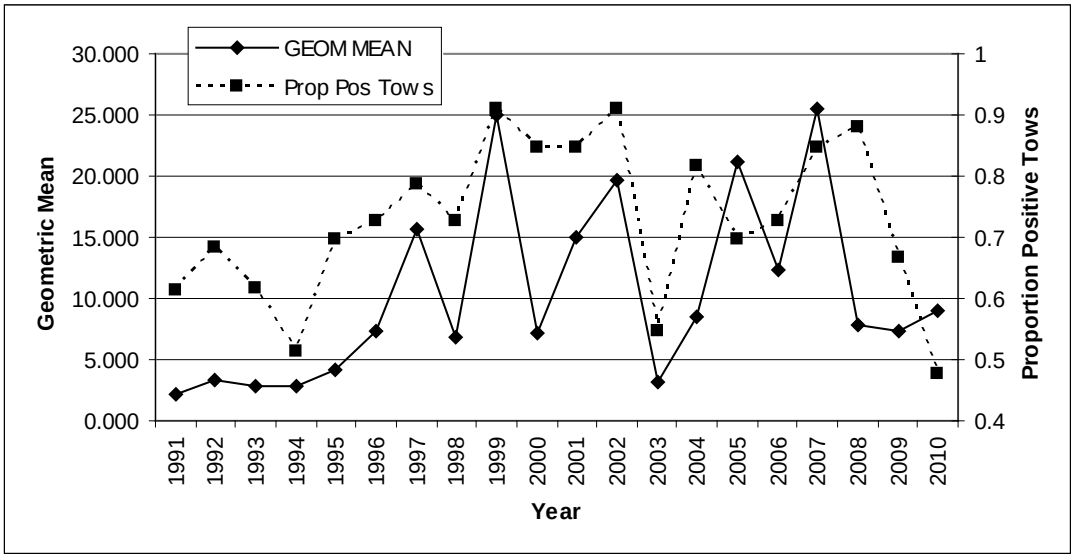


Figure 6. New Jersey's Delaware Bay Trawl Survey mean length: 1991-2010

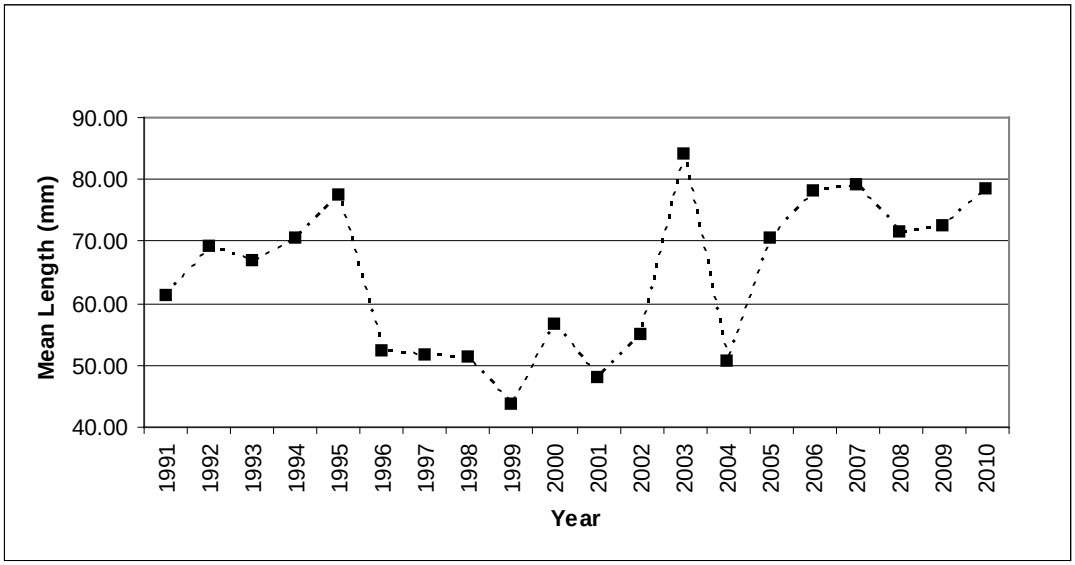


Figure 7. New Jersey's Delaware River Seine Survey geometric mean: 1980-2010

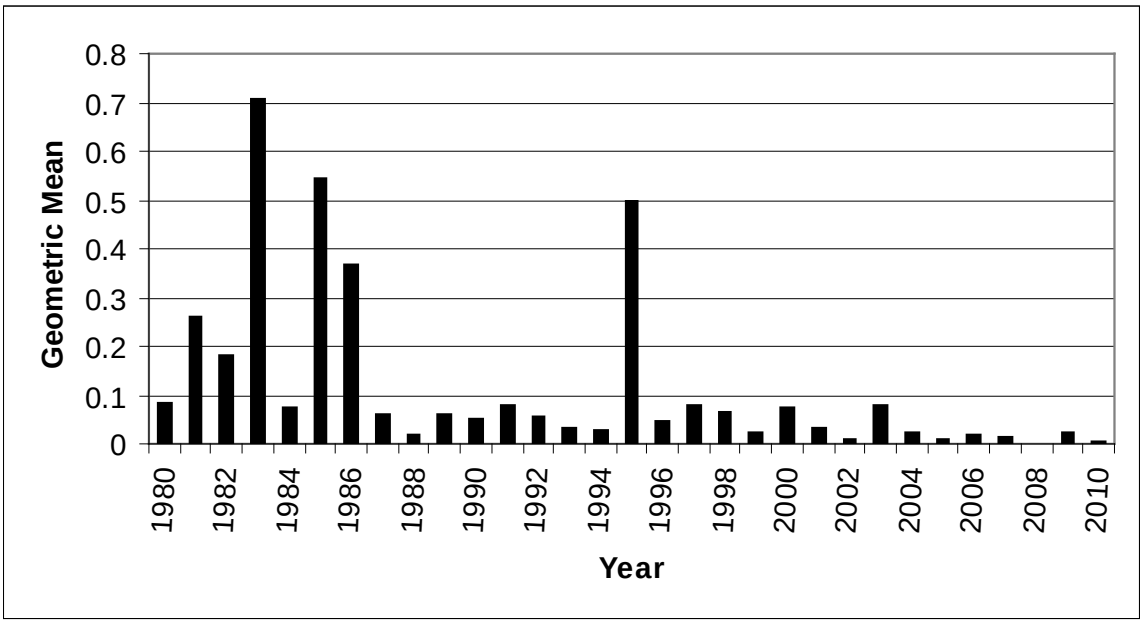


Figure 8. Weakfish data from New Jersey's Ocean Trawl Survey: 1989-2010

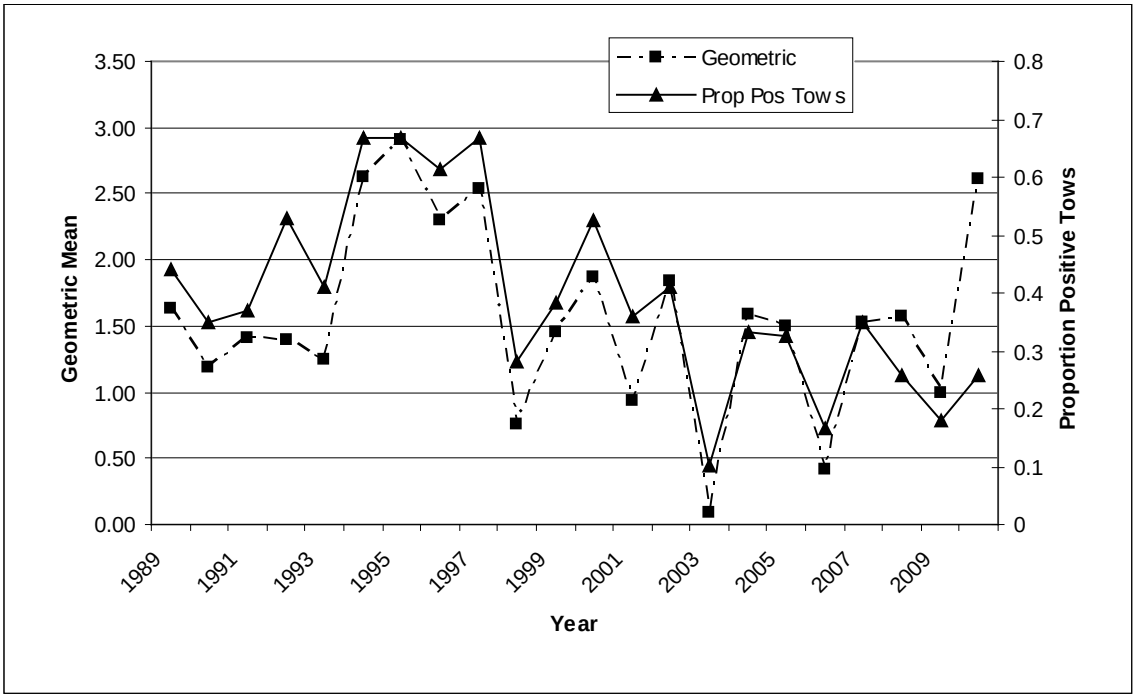


Figure 9. New Jersey's Ocean Trawl Survey weakfish percent length frequency: 1989-2010

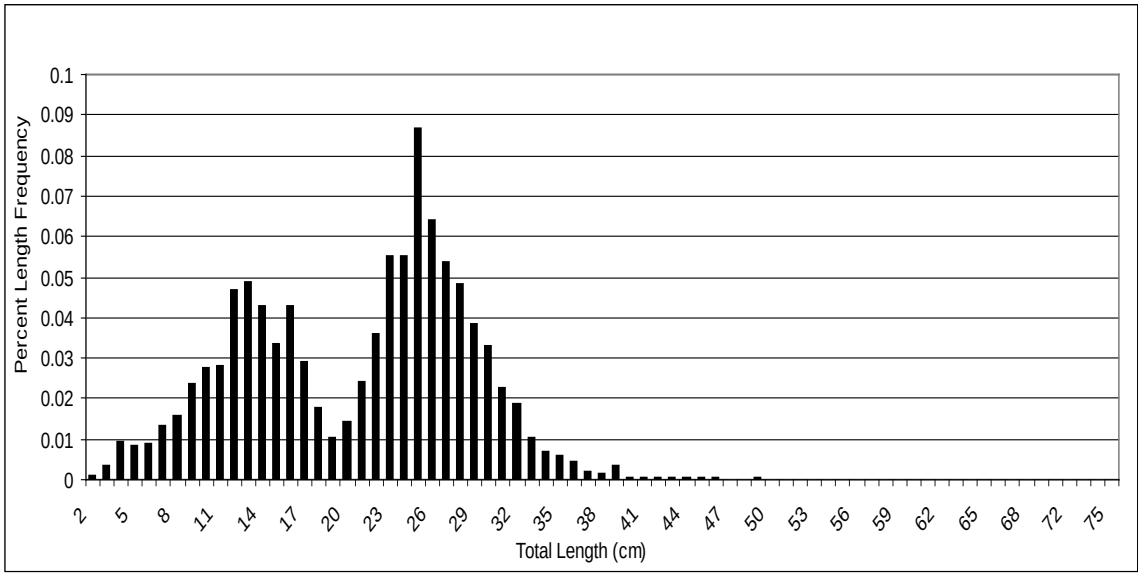
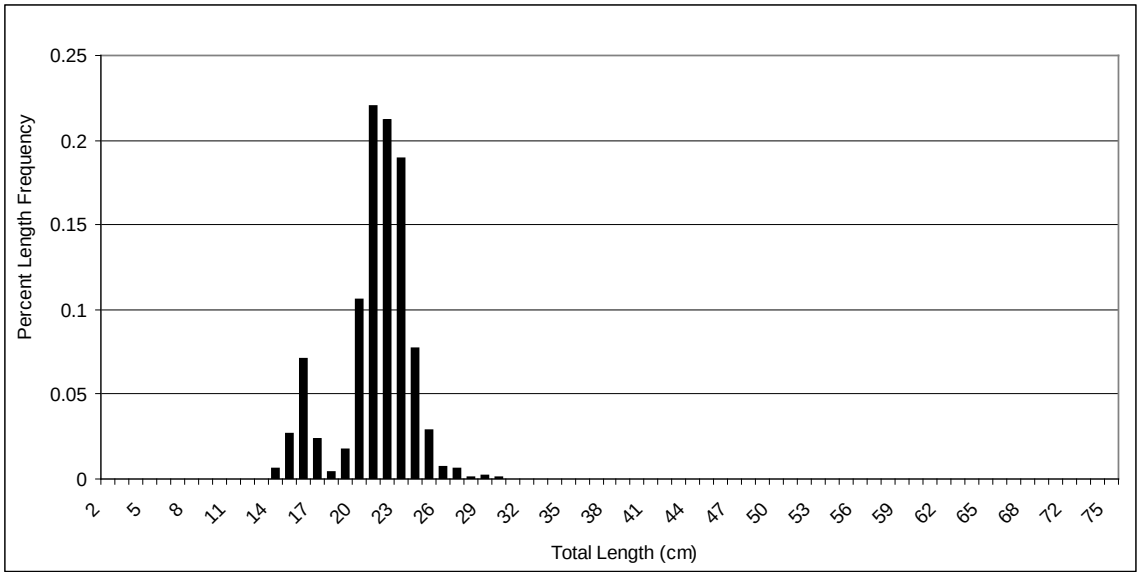


Figure 10. New Jersey's Ocean Trawl Survey weakfish percent length frequency: 2010



Annual Weakfish Report for the State of Delaware: Harvest, Monitoring and Conservation for 2010 and Management Program for 2011

Report to the
Atlantic States Marine Fisheries Commission.

By Michael Greco
Delaware Division of Fish and Wildlife
Dover DE
July 2011

I. Introduction

Both recreational and commercial weakfish landings remained extremely low in 2010. The Marine Recreational Fishery Statistics Survey (MRFSS) estimate of the number of weakfish landed by the Delaware recreational fishery was 83 fish with an estimated total weight of approximately 46 lbs; both decreases over the 2009 estimates. The MRFSS estimate of the total number caught, including those released, was 17,412 fish. Delaware Commercial landings continued to decline with a total of 2,339 lbs to the lowest level on record since mandatory reporting began in 1985.

Average weight of weakfish caught by the recreational fishery was estimated to be 0.55 lbs., a decrease from the 2009 estimate of 1.82 lbs. For the second consecutive year, there were no citation weakfish entered in the Division's Sport Fishing Tournament in 2010 (nine pound minimum qualifying weight).

In April 2010, as required under Weakfish Addendum IV to Amendment 4 of the ASMFC Weakfish Management Plan, Delaware implemented regulations that would prohibit the possession of more than 100 pounds of weakfish per vessel per day or trip whichever is the longer period of time. Recreational regulations were also amended to prohibit the possession of more than one (1) weakfish per angler.

The number of weakfish caught per nautical mile in the adult fish research trawl survey in Delaware Bay increased in 2010 relative to the previous year. The age structure remained confined to ages 0 - 3. The young-of-year index of recruitment from the juvenile fish research trawl survey in Delaware Bay increased slightly in 2010 and was above the time-series mean for the first time since 2007.

II. Request for *de minimus*, where applicable

The State of Delaware does not wish to apply for *de minimus* status.

III. Previous calendar year's fishery and management program

A. Activity and results of fishery dependent monitoring.

Historically, Delaware has monitored the commercial fishery by intercepting fishermen at local fish houses and age samples were obtained by purchasing 50-lb. boxes of weakfish. Several attempts were made to meet fishermen and obtain the needed data. However, reduced landings made it difficult to obtain the required length and age samples.

Delaware relied on the MRFSS online data query for estimates of the recreational fishery in 2010.

B. Activity and result of fishery independent monitoring.

Annual relative abundance estimates (number/nautical mile) of weakfish in Delaware are monitored through the Division's adult ground fish bottom trawl survey. This survey has been conducted annually since 1990; prior surveys were

conducted from 1966-1971 and 1979-1984. Weakfish ranked first in abundance by number and second by weight in the 2010 sampling (Michels and Greco 2011). The relative abundance of weakfish increased to 80.71 (#/nm), a 80% increase over the 2009 index, but remained below the time-series mean for the fourth consecutive and the eighth out of the last 10 years (Figure 1). A total of 501 weakfish from the trawl survey were aged via otoliths in 2010. The age structure for weakfish in the survey remained truncated in 2010, with a maximum age of three (Table 1).

The Division monitors juvenile fish abundance through a 16-ft bottom trawl survey which has been conducted annually since 1980. Separate weakfish young of the year (YOY) indices are generated for the Delaware Estuary (Bay and River) and Delaware's "Inland Bays" (Indian River and Rehoboth). YOY weakfish recruitment, 11.98 per tow (geometric mean), increased in 2010 relative to 2009 for the Delaware Estuary and was above the time series mean and median for the first time since 2007 (Table 2 and Figure 2). The Inland Bays YOY index decreased to 3.49 per tow, but remained above the time series average for the second consecutive year (Table 2, Figure 3).

C. Copy of regulations that were in effect (Attachment – 1).

1. Commercial Fishery

In April 2010, as required under Weakfish Addendum IV to Amendment 4 of the ASMFC Weakfish Management Plan, Delaware implemented the following management measures for the commercial fishery. Existing regulations were amended that would make it illegal to possess more than 100 pounds of weakfish per vessel per day or trip whichever is the longer period of time. This limit will apply to all commercial fishing gear permits including hook & line. The minimum size will remain at 12 inches or greater; 13 or greater for commercial hook and line. All previous restrictions placed on the commercial fishery to conserve weakfish and reduce by-catch will remain in place.

2. Recreational Fishery

In April 2010, as required under Weakfish Addendum IV to Amendment 4 of the ASMFC Weakfish Management Plan, Delaware implemented the following management measures for the recreational fishery. Existing regulations were amended to reduce the daily possession limit from six (6) fish to one (1) fish. The minimum size will remain at 13 inches or greater.

D. Harvest broken down by commercial and recreational.

Commercial Fishery

Weakfish commercial landings declined again to 2,339 lbs., the lowest level since mandatory reporting began in 1985 (Table 3, Figure 4). As in previous years, gill net gear dominated landings accounting for 92% of commercial landings. Drift nets remained the dominant gear for the fourth year in a row. Commercial hook

and line gear comprised 8% of the landings with 182 lbs (Table 4). Landings peaked in September (Table 5).

Recreational Fishery

The 2010 recreational landings were estimated at 83 fish and 46 lbs. by the MRFSS. These landings were the lowest estimated from the survey (Table 6, Figure 5). The estimate of the total number caught (including those released) of 17,412 fish was the second lowest since recreational estimates began in 1981 (Table 6). The mean weight of harvested weakfish was 0.55 lbs, based on MRFFS estimates (Table 6, Figure 6).

E. Review of progress in implementing habitat recommendations.

N/A

IV. Planned management programs for the current calendar year

A. Summary of regulations for current year (Attachment – 1).

3. Commercial Fishery

Delaware will continue to manage weakfish under the current requirements of Weakfish Addendum IV to Amendment 4 of the ASMFC Weakfish Management Plan (see Attachment – 1)., Delaware implemented the following management measures for the commercial fishery. Existing regulations were amended that would make it illegal to possess more than 100 pounds of weakfish per vessel per day or trip whichever is the longer period of time. This limit will apply to all commercial fishing gear permits including hook & line. The minimum size will remain at 12 inches or greater; 13 or greater for commercial hook and line. All previous restrictions placed on the commercial fishery to conserve weakfish and reduce by-catch will remain in place.

4. Recreational Fishery

In April 2010, as required under Weakfish Addendum IV to Amendment 4 of the ASMFC Weakfish Management Plan, Delaware implemented the following management measures for the recreational fishery. Existing regulations were amended to reduce the daily possession limit from six (6) fish to one (1) fish. The minimum size will remain at 13 inches or greater.

B. Summary of monitoring programs.

1. Commercial Fishery

   The Division intends on collecting weakfish caught commercially in 2011, dependent upon availability of landings, to obtain the required lengths and ages based on the requirements of Addendum 1 to Amendment 4 of the Weakfish FMP.

2. Recreational Fishery

   Delaware will rely on the Marine Recreational Fisheries Statistics Survey for the collection of data characterizing weakfish caught recreationally in Delaware waters.

3. Research Trawl Survey Samples

   Delaware will continue to obtain age-length data by removing otoliths from a subsample of the weakfish caught in our research trawl survey. This age-length data will be used to convert length frequencies from recreational, commercial and survey samples into age frequencies.

REFERENCE CITED

Michels, S. F., and M. J. Greco. 2011. Coastal Finfish Assessment Survey, Federal Aid in Fisheries Restoration Project F-42-R-22. Annual Report. Delaware Division of Fish and Wildlife, Dover.

Table 1. Weakfish catch-at-age (expressed as number per nautical mile) from 30-foot trawl sampling in the Delaware Bay.

	Age Class									
Year	**0**	**I**	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**	**Total**
1991	22.76	27.16	3.63	0.64	0.00	0.00	0.00	0.00	0.00	54.19
1992	24.77	21.15	2.61	0.04	0.03	0.00	0.00	0.00	0.00	48.60
1993	21.40	50.30	25.40	3.90	0.50	0.00	0.00	0.00	0.00	101.50
1994	8.60	113.50	68.50	23.60	0.90	0.00	0.00	0.00	0.00	214.20
1995	41.10	75.30	53.50	15.70	5.40	0.10	0.00	0.00	0.00	191.10
1996	77.30	44.00	48.30	111.20	23.80	6.40	0.10	0.00	0.00	311.10
1997	36.44	33.41	25.00	13.87	34.60	2.96	0.47	0.00	0.00	146.75
1998	31.83	23.38	24.64	20.39	11.61	20.72	1.27	0.06	0.00	133.90
1999	50.85	42.07	20.17	17.03	6.74	2.59	3.66	0.30	0.06	143.47
2000	35.13	97.85	50.38	23.64	5.74	0.66	0.38	0.47	0.09	214.34
2001	21.58	13.11	42.63	18.77	5.53	0.57	0.09	0.00	0.00	102.28
2002	35.14	89.35	23.32	27.97	3.94	0.40	0.00	0.00	0.00	180.02
2003	20.23	50.16	13.98	1.22	0.42	0.00	0.00	0.00	0.00	86.02
2004	14.34	26.36	22.41	0.11	0.00	0.00	0.00	0.00	0.00	63.22
2005	10.16	12.07	14.54	2.39	0.00	0.00	0.00	0.00	0.00	39.15
2006	20.41	58.38	37.13	10.02	0.78	0.00	0.00	0.00	0.00	126.72
2007	35.10	23.47	17.43	2.10	0.16	0.00	0.00	0.00	0.00	78.26
2008	8.52	40.98	4.40	0.56	0.00	0.00	0.00	0.00	0.00	54.46
2009	25.41	31.20	4.59	0.04	0.00	0.00	0.00	0.00	0.00	61.24
2010	37.14	40.70	2.79	0.08	0.00	0.00	0.00	0.00	0.00	80.71

Table 2. Annual YOY indices, expressed as the geometric mean of the catch per tow, for weakfish collected in Delaware Division of Fish & Wildlife 16 ft. trawl surveys, 1980-2010.

	YOY Indices	
Year	**Delaware Bay**	**Inland Bays**
1980	4.27	-
1981	5.98	-
1982	11.49	-
1983	4.47	-
1984	6.67	-
1985	9.35	-
1986	12.94	1.14
1987	5.98	1.26
1988	4.73	0.81
1989	11.11	2.2
1990	8.73	2.95
1991	20.07	5.87
1992	14.72	2.51
1993	14.79	0.63
1994	11.47	1.47
1995	13.49	4.24
1996	11.93	1.18
1997	15.4	2.07
1998	11.35	1.35
1999	13.51	1.99
2000	14.16	1.64
2001	7.57	1.53
2002	5.96	1.31
2003	10.44	2.44
2004	8.39	3.32
2005	16.84	3.84
2006	5.35	1.6
2007	13.7	2.98
2008	6.74	1.02
2009	8.56	5.91
2010	11.98	3.49
Mean 1980-2009	10.34	2.3
Median 1980-2009	10.78	1.81

Table 3. Reported commercial landings for weakfish caught in Delaware waters, 1985-2010.

Year	Pounds
1985	990,817
1986	723,444
1987	577,735
1988	530,603
1989	543,741
1990	625,006
1991	503,289
1992	362,042
1993	195,216
1994	262,263
1995	291,010
1996	317,317
1997	558,919
1998	552,947
1999	441,176
2000	328,269
2001	190,093
2002	165,191
2003	91,460
2004	48,399
2005	70,788
2006	34,401
2007	24,750
2008	11,185
2009	2,976
2010	2,339

Table 4. Reported commercial landings, by month, for weakfish caught in Delaware waters, 2010.

Month	Landings (lbs)	Percent
January	0	0.00%
February	0	0.00%
March	8	0.34%
April	193	8.25%
May	82	3.51%
June	5	0.21%
July	104	4.45%
August	420	17.96%
September	1045	44.68%
October	449	19.20%
November	33	1.41%
December	0	0.00%
TOTAL	2,339	100.00%

Table 5. Reported commercial landings, by gear, for weakfish caught in Delaware waters, 2010.

Gear	Landings (Lbs.)	Percent
Fixed Gill Net	91	3.89%
Drift Gill Net	2,066	88.33%
Hook & Line	182	7.78%
Total	2,339	100%

Table 6. Recreational harvest, total catch and hook and release mortality for Delaware 1990-2010. Source: MRFSS, NMFS. Catch includes both landed and released fish. Hook and release mortality is estimated to be 10% of released fish. Total loss is the sum of harvest and fish killed by hook and release mortality.

Year	Harvest Number	PSE (%)	Harvest Pounds	PSE (%)	Mean Weight (lbs)	Total Catch	PSE (%)	Number Released	Estimated Catch & Release Mortality	Total Loss
1981	122,744	18.8	382,000	22.6	3.11	127,406	18.4	4,662	466	123,210
1982	217,821	33.1	1,330,769	44.2	6.11	230,532	31.7	12,712	1,271	219,092
1983	1,009,899	19.1	2,205,140	19.4	2.18	1,018,810	18.9	8,912	891	1,010,790
1984	593,107	26	1,279,594	25.6	2.16	594,271	26	1,163	116	593,223
1985	365,693	19.2	1,102,095	20.4	3.01	367,778	19.1	2,085	209	365,902
1986	914,489	23.4	1,598,932	22.1	1.75	924,127	23.2	9,637	964	915,453
1987	638,342	17.8	1,072,198	18.3	1.68	684,407	16.8	46,064	4,606	642,948
1988	974,712	12.1	1,664,477	11.8	1.71	1,034,692	11.4	59,980	5,998	980,710
1989	254,170	15.7	521,648	15.1	2.05	268,094	15	13,924	1,392	255,562
1990	179,837	11.4	207,131	12	1.15	221,602	9.8	41,765	4,177	184,014
1991	366,464	13.1	427,783	13	1.17	432,149	11.4	65,685	6,569	373,033
1992	100,561	16.6	232,206	20.1	2.31	162,447	12.6	61,886	6,189	106,750
1993	235,312	15.1	291,630	15.4	1.24	491,280	11.3	255,968	25,597	260,909
1994	300,211	14.5	319,493	14.7	1.06	861,210	11.5	560,999	56,100	356,311
1995	406,730	12.3	419,527	12.6	1.03	1,495,083	10.2	1,088,353	108,835	515,565
1996	633,920	10.8	690,120	10.6	1.09	2,200,966	10.3	1,567,046	156,705	790,625
1997	647,529	9.7	734,800	96	1.13	1,545,154	7.8	897,625	89,763	737,292
1998	455,603	10.8	616,422	11.2	1.35	1,069,146	8.1	316,543	31,654	487,257
1999	224,307	13.1	494,031	15.5	2.20	596,787	8.3	372,480	37,248	261,555
2000	311,553	13.9	635,339	14.6	2.04	777,049	9.7	465,496	46,550	358,103
2001	72,451	27	172,969	20	2.39	299,666	13	227,215	22,722	95,173
2002	121,884	15	243,156	16	1.99	223,166	11	101,282	10,128	132,012
2003	20,124	21.6	57,866	29.5	2.88	59,437	16.3	39,313	3,931	24,055
2004	6,926	46.1	6,742	55.3	0.97	83,352	19.1	76,427	7,643	14,569
2005	18,401	22.3	37,383	32.2	2.03	123,714	16.3	105,313	10,531	28,932
2006	11,150	24.1	19,288	27.8	1.73	132,005	18	120,855	12,086	23,236
2007	4,182	36.6	4,204	37.5	1.01	22,757	20	18,575	1,858	6,040
2008	4,212	38	4,054	39.2	0.96	65,576	24.6	61,364	6,136	10,348
2009	5,431	99.4	9,868	99.5	1.82	10,674	52.5	5,243	524	5,955
2010	83	56.8	46	64.1	0.55	17,412	32	17,329	1,733	1,816
Average	**307,262**	**24**	**559,364**	**29**	**2**	**538,025**	**17**	**220,863**	**22,086**	**329,348**

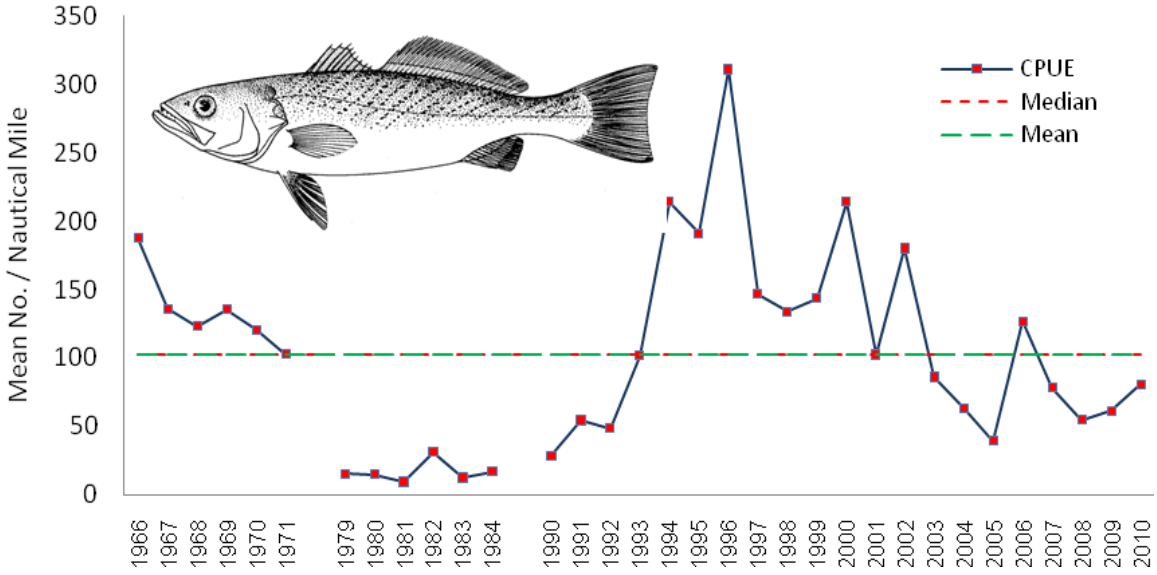


Figure 1. Weakfish relative abundance (mean number per nautical mile), time series (1966 – 2009) mean and median as measured in 30-foot trawl sampling in the Delaware Bay.

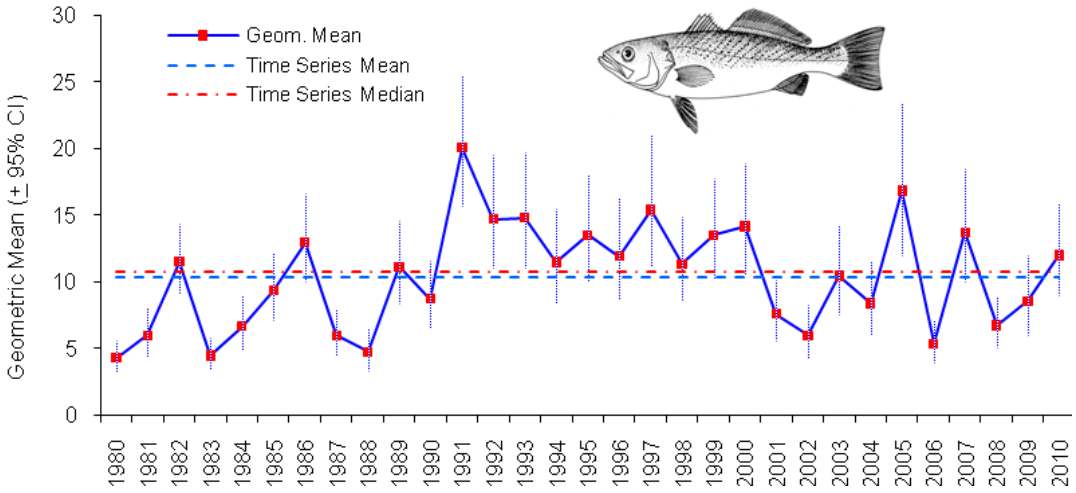


Figure 2. Index of young-of-the-year weakfish abundance, time series mean (1990 – 2009) and time series median as measured by 16-foot trawl sampling in the Delaware estuary.

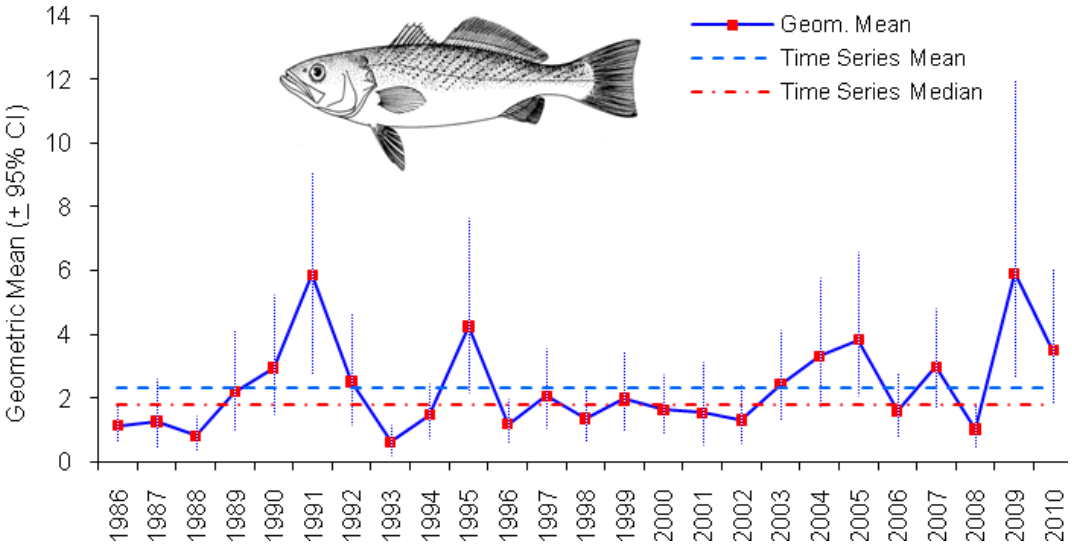


Figure 3. Index of young-of-the-year weakfish abundance, time series mean (1986 – 2009) and time series median as measured by 16-foot trawl sampling in Delaware's Inland Bays.

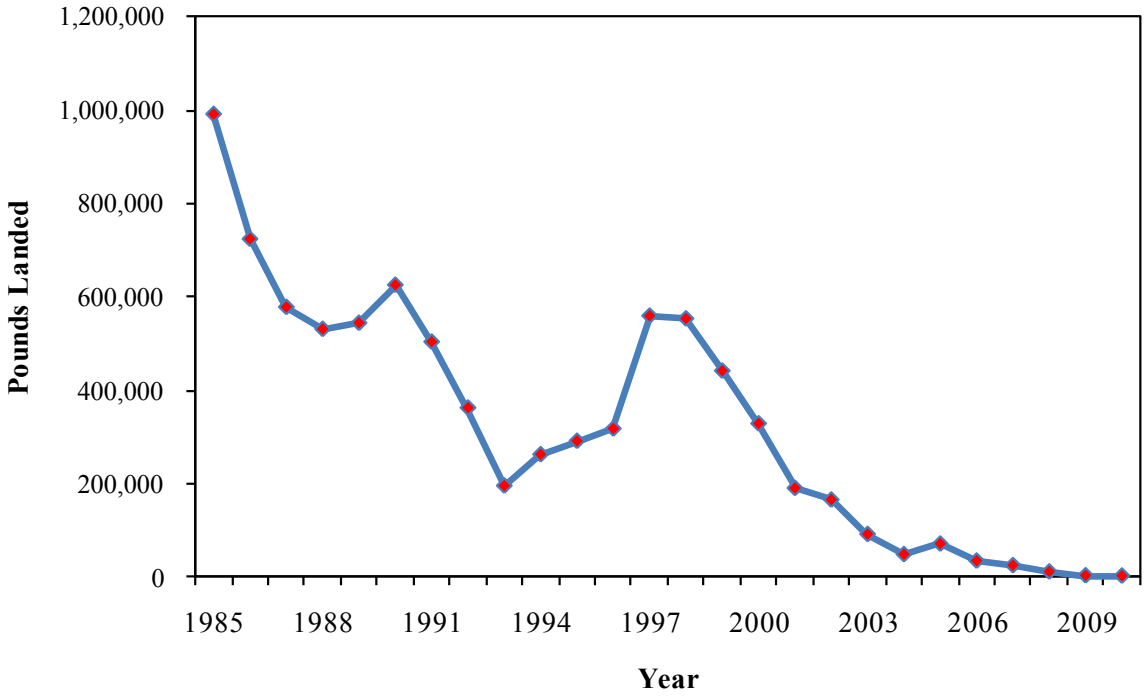


Figure 4. Delaware's commercial weakfish landings, 1985-2010.

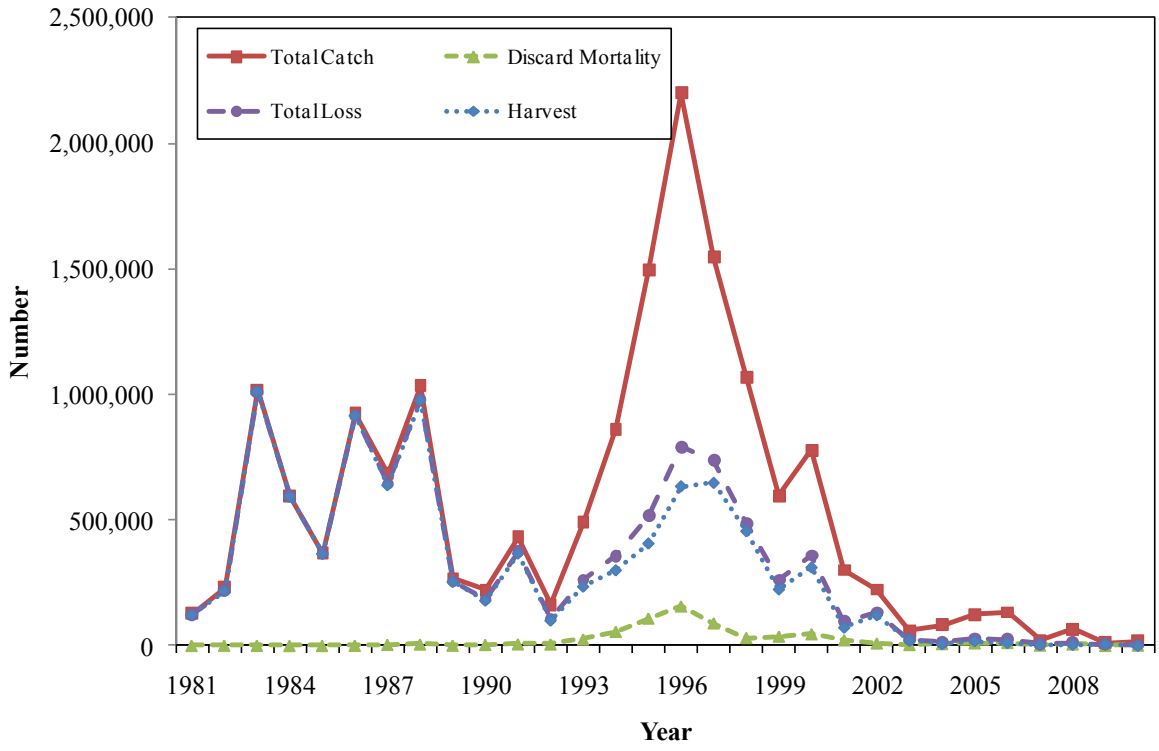


Figure 5. Delaware recreational weakfish estimates, 1990-2010.

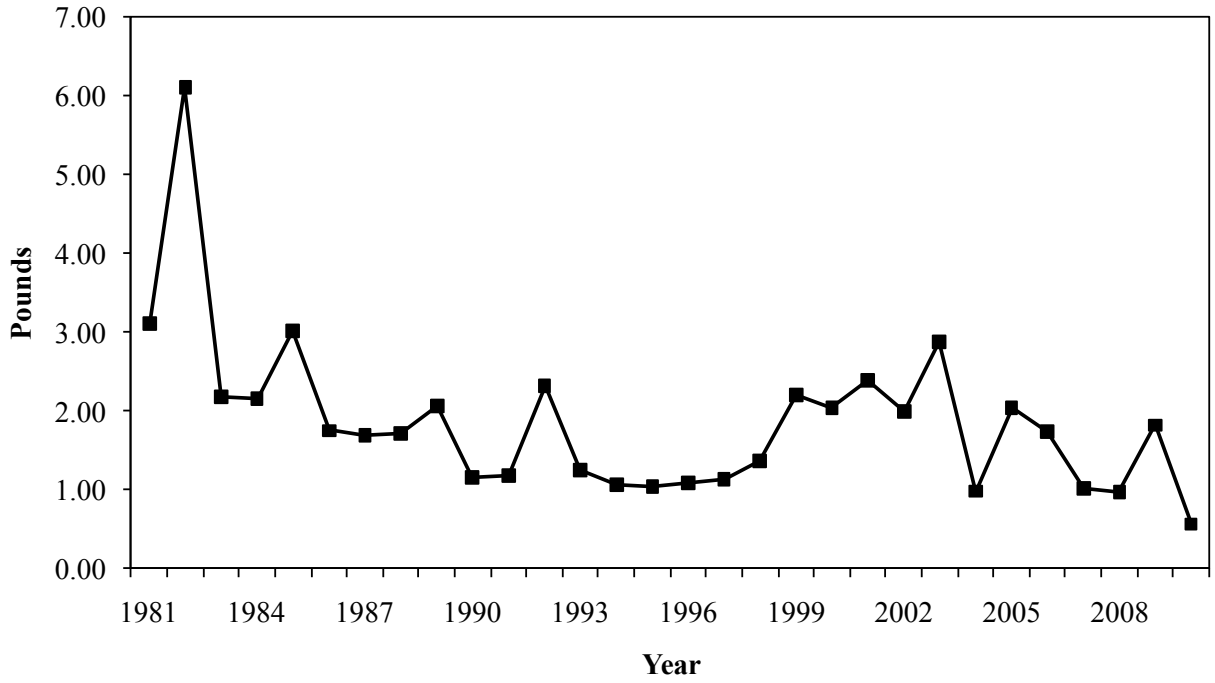


Figure 6. Average weight of weakfish harvested in the Delaware recreational fishery, 1990-2010.

Attachment – 1

Copy of the weakfish regulations in effect for the 2010 & 2011 fishing seasons.

3500 Tidal Finfish

3500 Tidal Finfish

Authenticated PDF Version

Weakfish and Spotted Sea Trout

3521 Weakfish Size Limits; Possession Limits; Seasons.

(Penalty Section 7 Del.C. §936(b)(2))

1.0 It shall be unlawful for any person to possess weakfish, *Cynoscion regalis,* taken with a hook and line, that measure less than thirteen (13) inches, total length.

2.0 It shall be unlawful for any person to whom the Department has issued a commercial food fishing license and a food fishing equipment permit for hook and line to have more than one (1) weakfish in possession during the period beginning at 12:01 AM on May 1 and ending at midnight on October 31 except on four specific days of the week as indicated by the Department on said person's food fishing equipment permit for hook and line.

3.0 It shall be unlawful for any person, who has been issued a valid commercial food fishing license and a valid food fishing equipment permit for fishing equipment other than a hook and line to possess weakfish, lawfully taken by use of such permitted food fishing equipment, that measure less than twelve (12) inches, total length.

3.1 It shall be unlawful for any person, who has been issued a valid commercial food fishing license and a valid food fishing equipment permit to possess more than one hundred pounds (100 lbs) of weakfish per vessel per day (a day being 24 hours) or trip, whichever is the longer period of time.

13 DE Reg. 1354 (04/01/10)

4.0 It shall be unlawful for any person, except a person with a valid commercial food fishing license, to have in possession more than one (1) weakfish, not to include weakfish in one's personal abode or temporary or transient place of lodging. A person may have weakfish in possession that measure no less than twelve (12) inches, total length, and in excess of one (1) if said person has a valid bill-of-sale or receipt for said weakfish that indicates the date said weakfish were received, the number of said weakfish received and the name, address and signature of the commercial food fisherman who legally caught said weakfish or a bill-of-sale or receipt from a person who is a licensed retailer and legally obtained said weakfish for resale.

11 DE Reg. 514 (10/01/07)

13 DE Reg. 1354 (04/01/10)

5.0 It shall be unlawful for any person to fish with any gill net in the Delaware Bay or Atlantic Ocean or to take and reduce to possession any weakfish from the Delaware Bay or the Atlantic Ocean with any fishing equipment other than a hook and line during the following periods of time:

Every weekend day (defined as 12:01 AM on Friday through midnight Sunday) in both May and June, plus contiguous weekdays (defined as 12:01 AM Monday through midnight Thursday) at the beginning of May and the end of June, such that the total number of closure days add up to thirty four (34) days. The exact dates of closures each year shall be mailed in advance to the affected public and published annually in the Delaware Fishing Guide.

6.0 The Department shall indicate on a person's food fishing equipment permit for hook and line four (4) specific days of the week during the period May 1 through October 31, selected by said person when applying for said permit, as to when said permit is valid to take in excess of one (1) weakfish but not more than 100 pounds per day. These four days of the week shall not be changed at any time during the remainder of the calendar year.

11 DE Reg. 514 (10/01/07)

13 DE Reg. 1354 (04/01/10)

7.0 It shall be unlawful for any person with a food fishing equipment permit for hook and line to possess more than one (1) weakfish while on the same vessel with another person who also has a food fishing equipment permit for hook and line unless each person's food fishing equipment permit for hook and line specifies the same day of the week in question for taking in excess of one (1) weakfish.

1 DE Reg 1770 (5/1/98)

2 DE Reg 1904 (4/1/99)

3 DE Reg 1088 (2/1/00)

4 DE Reg 1552 (3/1/01)

5 DE Reg. 2142 (5/1/02)

6 DE Reg. 1512 (5/1/03)

11 DE Reg. 514 (10/01/07)

13 DE Reg. 1354 (04/01/10)

MARYLAND DEPARTMENT OF NATURAL RESOURCES

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Joseph P. Gill, Deputy Secretary

Maryland Weakfish (*Cynoscion regalis*) Compliance Report to The Atlantic States Marine Fisheries Commission – 2010

Prepared by

Harry W. Rickabaugh Jr.

Fisheries Service
Maryland Department of Natural Resources

August 2011

Matapeake Terminal 301 Marine Academy Drive Stevensville, MD 21666
(410) 643 - 6776 extension 2109 • www.dnr.maryland.gov • TTY users call via Maryland Relay

I. Introduction

Weakfish (*Cynoscion regalis*) are found in Maryland's offshore waters, throughout the coastal bays, and in Chesapeake Bay. Adult weakfish are most frequently encountered along Maryland's Atlantic coast (within 10 miles) and in the southern reaches of Chesapeake Bay. Maryland's coastal bays and Chesapeake Bay provide extensive juvenile weakfish habitat.

In 2010 Maryland adopted new regulations to comply with the requirements of Addendum 4 of Amendment 4 to the weakfish management plan. Maryland reduced the recreational bag limit to one fish and set commercial bycatch limits of 100 and 50 pounds per trip or day (whichever is longer) for the Atlantic Ocean and Chesapeake Bay fisheries, respectively. The commercial hook and line fishery is limited to keeping the 50 pounds per trip or day limit during August 1 through September 30 in the Chesapeake Bay and its tributaries, and is not allowed to harvest bycatch the remainder of the year. Hook-and-line harvest is not allowed at any time in the Atlantic Ocean or its Coastal Bays and their tributaries.

In 2010, Maryland's total commercial landings decreased to the time series low of 2,148 pounds. This was well below the average harvest of 635,665 pounds per year from 1929 – 2009. Maryland's estimated 2010 recreational harvest was 2,833 weakfish, the fourth lowest in the 1981 – 2010 time series.

II. Request for *de minimis* status

N/A

III. 2010 Fishery and Management Programs.

a. Fishery dependent monitoring

MD DNR fisheries biologists sampled commercial pound nets bi-weekly in Maryland's portion of the Chesapeake Bay from May 25 through September 14, 2010. All weakfish captured were measured to the nearest millimeter total length (TL). Otolith samples were taken from a sub-sample of weakfish collected from the onboard sampling project and each fish was measured to the nearest mm TL, weighed to the nearest gram and sex was determined. Seafood dealer sampling, initiated in 2009, was conducted on June 7 and June 21: weakfish were not encountered in2010.

A total of 47 weakfish were sampled during the onboard pound net sampling in 2010. The mean length of weakfish in Chesapeake Bay pound nets during 2010 was 253 mm TL. This mean was the lowest of the 18 year time series (Table 1). Only 3 of the 47 sampled fish in 2010 were of legal size (305 mm TL). Otoliths were taken from 45 of the Chesapeake Bay pound net fish, but ages were not available for this report. The mean weight of the 45 sub-sampled fish was 164 g.

Total length, weight and otoliths were also taken from 116 weakfish collected from Maryland's ocean trawl fishery during October and November of 2010. Weakfish sampled for age from this fishery had a mean length and weight of 330 mm TL and 365 g, respectively. All samples were obtained from a single fish house located in Ocean City, Maryland. Otoliths had not been aged in time for inclusion in this report.

Addendum I to Amendment IV of the Weakfish FMP enacted sampling requirements of 6 lengths per metric ton of commercial landings and 3 ages per metric ton of combined landings. Maryland's 2010 preliminary landings are 1.0 metric tons commercial and 1.8 metric tons combined, requiring 6 length and 5 age samples to be taken in 2010. MD DNR collected 163 lengths and 161otoliths from weakfish in 2010.

b. **Fishery independent monitoring**

A 4.9-m semi-balloon otter trawl, comprised of a 25 mm stretch mesh body with a 13 mm stretch mesh cod end liner, has been used to sample for juvenile weakfish in Maryland's Atlantic coastal bays since 1972 (Bolinger et al. 2007). Since 1989, 20 fixed stations have been trawled for six minutes at monthly intervals from April-October. Prior to 1989, monthly effort and locations sampled varied considerably, although some of the fixed stations were sampled during all years.

The geometric mean (GM) catch per hectare was used as a standardized index of juvenile abundance for the coastal bays survey, and was only calculated for the standardized years, 1989-2010. The 2010 GM from the coastal bays was 2.16 juvenile weakfish per hectare, an increase from the 2009 abundance estimate of 1.33 (Figure 1), the second year of increase following the time series low. The 2010 GM approached the time series mean of 2.44 fish per hectare.

The Maryland Fisheries Service surveys blue crabs and finfish in areas of Chesapeake Bay with an otter trawl with the same dimensions and construction as the coastal bays trawl. However, the body of the netting was changed from nylon to sapphire twine in 2007. Comparison tows have been made, but analysis comparing catch composition between gears has not been completed. In this survey six fixed stations in Chesapeake Bay tributaries were sampled once a month from May through October: the Chester River, Eastern Bay, Choptank River and Patuxent River (six stations each), Tangier Sound (five stations) and Pocomoke Sound (eight stations). The trawl was towed for 6 minutes at 2.0-3.0 knots at each site. Juvenile finfish data was collected by this survey since 1980 (Davis et al.1995). There were some inconsistencies in recording fish in the electronic data base prior to 1989 and only years after 1988 were included for juvenile weakfish analysis.

Chesapeake Bay juvenile weakfish indices were calculated as the GM catch per tow. Since juvenile weakfish have been consistently caught only in Tangier Sound and Pocomoke Sound, only these areas were analyzed to minimize zero hauls that may represent unsuitable habitat rather than trends in abundance. The 2010 GM of 1.68 was a slight increase from the 2009 value of 1.42, but was still below of the time series

mean of 3.26 weakfish per tow. The Chesapeake juvenile weakfish index has leveled off after declining during 2001 to 2008 (Figure 2).

c. Weakfish regulations:

Maryland's weakfish and spotted sea trout regulation are combined in state regulations, hence the inclusion of spotted sea trout in the following text.

The following regulations were in effect from January through March of 2010. From the Code of Maryland Regulations: 08.02.05.13.13 Weakfish and Spotted Sea Trout.

A. Minimum Size.

(1) A recreational angler may not catch or possess spotted sea trout less than 14 inches in total length.

(2) A recreational angler may not catch or possess weakfish less than 13 inches in total length.

(3) A person licensed to catch fish for commercial purposes may not catch or possess weakfish or spotted sea trout less than 12 inches in total length.

B. Catch Limits.

(1) Recreational. Except for a person licensed to catch finfish for sale, a person may not catch or possess more than six weakfish and ten spotted sea trout per day.

(2) Commercial. Except during an open season specified in §D of this regulation and while using trawls, gill nets, pound nets, or haul seines, a commercial tidal fish licensee may not catch, possess, or land more than 150 pounds of weakfish per day.

C. Net Mesh Size Restrictions.

(1) Trawls. A person may not use a trawl with mesh less than 3-3/8 inches square or 3-3/4 inches diamond stretched mesh size to catch weakfish or spotted sea trout.

(2) Gill Nets. A person may not use a gill net with stretched mesh size less than 3 inches to catch weakfish or spotted sea trout.

D. Seasons. Except during one of the following open seasons or as permitted in §B(2) of this regulation, a commercial tidal fish licensee may not catch, possess while on the water, or land weakfish:

(1) For Maryland's waters of the Atlantic Ocean, its coastal bays and their tributaries:

(a) Except for trawl nets, the open commercial seasons for gill nets and other gear is April 1 through April 30 and October 1 through October 25, and

(b) Except for the limitation in §E of this regulation, the open commercial season for trawl nets is October 13 through December 10;

(2) For Maryland's waters of the Chesapeake Bay and its tributaries, the open commercial season for all gear types is August 9 through September 30.

E. General Prohibitions and Limitations on Fishing.

(1) A commercial tidal fish licensee using a trawl net may not catch or possess weakfish from Maryland's waters of the Atlantic Ocean, its coastal bays, and their tributaries on Saturday or Sunday.

(2) The Secretary:

(a) May modify, open, or close a season by publishing notice in a daily newspaper of general circulation at least 48 hours in advance, stating the effective hour and date; and

(b) Shall make a reasonable effort to disseminate public notice through various other media so that an affected person has reasonable opportunity to be informed.

Changes to regulations:

MD DNR Fisheries Service modified the weakfish regulation in April of 2010 to comply with the requirements of Addendum 4 of Amendment 4 to the weakfish management plan. Maryland decided to take slightly more restrictive management measures than required by the addendum, as indicated by the adopted regulations listed below:

From the Code of Maryland Regulations: 08.02.05.13.13 Weakfish and Spotted Sea Trout.

A. Minimum Size.

(1) A recreational angler may not catch or possess spotted sea trout less than 14 inches in total length.

(2) A recreational angler may not catch or possess weakfish less than 13 inches in total length.

(3) A person licensed to catch fish for commercial purposes may not catch or possess weakfish or spotted sea trout less than 12 inches in total length.

B. Recreational Catch Limits. Except for a person licensed to catch finfish for sale, a person may not catch or possess more than one weakfish and ten spotted sea trout per day.

C. Commercial.

(1) Atlantic Ocean, Its Coastal Bays, and Their Tidal Tributaries.

(a) A person may not catch, possess, or land more than 100 pounds of weakfish per day or trip, whichever is longer;

(b) The weight of the weakfish may not exceed the weight of the catch of the other species on board the vessel; and

(c) Harvest of weakfish with hook and line is prohibited.

(2) Chesapeake Bay and Its Tidal Tributaries.

(a) Hook and Line.

(i) The open commercial season for harvesting weakfish with hook and line is August 1 through September 30.

(ii) A person may not catch, possess, or land more than 50 pounds of weakfish per day or trip, whichever is longer.

(iii) No bycatch of weakfish is permitted outside of the open commercial season.

(b) All Other Gears.

(i) A person may not catch, possess, or land more than 50 pounds of weakfish per day or trip, whichever is longer.

D. Net Mesh Size Restrictions.

(1) Trawls. A person may not use a trawl with mesh less than 3-3/8 inches square or 3-3/4 inches diamond stretched mesh size to catch weakfish or spotted sea trout.

(2) Gill Nets. A person may not use a gill net with stretched mesh size less than 3 inches to catch weakfish or spotted sea trout.

E. Public Notice. The Secretary:

(1) May modify, open, or close a season by publishing notice in a daily newspaper of general circulation at least 48 hours in advance, stating the effective hour and date; and

(2) Shall make a reasonable effort to disseminate public notice through various other media so that an affected person has reasonable opportunity to be informed.

d. Commercial and Recreational Harvest

Commercial Harvest

Commercial harvest records submitted to MD DNR, as of August 1, 2011, indicated 2,148 pounds of weakfish were harvested statewide in 2010 (Table 2). These landings were 44% lower than those of 2009, and were the lowest in the 1929-2010 time-series (Figure 3). More restrictive regulation were put in place in 2010 that most likely impacted total landings. However, only 8.6% of weakfish harvest reports met or exceeded the current bycatch limits. Suggesting a decrease in landings may have occurred even if more liberal regulation had been in place. The percentage of the 2010 weakfish harvest by weight in Maryland by otter trawl was 59%, gill net harvested 40%, and all other gears combined (fish pots, pound nets, and hook and line) less than 1%. Eighty-six percent of the 2010 commercial landings were from the Atlantic Ocean or coastal bays, 2% from Maryland's portion of Chesapeake Bay and the reminder were not coded by area.

Beginning in 2006, all Maryland commercial fishers were required to report their catch daily by species in pounds. Weakfish bycatch was calculated for each fisher by area and day. The daily bycatch was compared to the 100 pound per day maximum bycath limit in the Atlantic Ocean and coastal bays and 50 pound per day maximum bycath limit in the Chesapeake Bay. Three violations of the bycatch regulations occurred in 2010, all in the ocean trawl fishery. Two of the violations exceeded the bycatch limit by 50 pounds, which would make for a daily catch of 150 pounds, Maryland's bycatch limit in 2009. The third exceeded the bycatch limit by 100 pounds. The total disallowed bycatch in 2010 was 200 pounds accounting for 9.3% of total landings (Table 3). There were 81 weakfish harvest reports in 2010; therefore, 3.7% of trips were not in compliance of Maryland's bycatch limits.

Recreational Harvest

All NMFS estimates referred to below were acquired on August 3, 2011 prior to the change in estimation procedures by the NMFS, and 2010 estimates are preliminary. Maryland recreational anglers harvested an estimated 2,833 weakfish (PSE = 68%) during 2010 totaling 1,810 pounds (PSE = 70%; NMFS Fisheries Statistics and Economics Division 2011, Figure 4). The 2010 estimate was similar to the past two years, and was the 4th lowest of the 30 year time series. However, the high PSE values of these estimates indicate very high uncertainty in the estimated values, which is expected as weakfish continue to decline. Maryland anglers released an estimated 104,421 weakfish (PSE = 31%) in 2010, a dramatic increase compared to 2009 (6,700, PSE = 42%). During 2010, mean weight of weakfish was 0.64 pounds. Mean weight averaged 1.2 and 1.9 pounds during 2006 and 2007, respectively. Mean weight decreased to 0.85 and 0.65 pounds in 2008 and2009 respectively.

Maryland issued sport-fishing citations for weakfish caught in Chesapeake Bay exceeding 10 pounds from 1965 through 1995 (Figure 5). During the 30 year period,

citations rose steadily from 1965 through 1980 but then declined dramatically. No citations were issued between 1991 and 1997, indicating an absence of trophy-sized fish during this period (Figure 5). After 1995, the program was modified to award citations based on length rather than weight. A length-weight conversion was used to estimate whether the fish registered would have weighed ten pounds or more (740 mm or 29 in. TL) if a weight was not submitted. A total of 16 such citations were issued in 2003, but dropped to only six in 2004 and two in 2005. The number of citation issued in 2006 increased to seven but has been zero since 2007.

Since 1993, Maryland has required charter boat captains to submit log books indicating the number of trips, number of anglers per trip and number of fish harvested and released by species. Trips in which a species was targeted but not caught could not be distinguished in the log books, since no indication of target species is given. A Chesapeake Bay charter boat geometric mean harvest per angler index was derived for weakfish from 1993-2010. Maryland charter boat captains reported harvesting between 2,122 and 75,154 weakfish from 1993 – 2010 (Figure 6), with a dramatic decline occurring in 2003. The reported charter boat harvest was significantly correlated to both the reported commercial harvest ($R^2 = 0.68$, $P < 0.001$) and the statewide MRFSS estimate ($R^2 = 0.80$, $P < 0.001$). The geometric mean catch per angler has declined significantly from 1993 – 2010 (Figure 7), but has been fairly stable at a low level in recent years.

e. **Habitat requirements**

There were no habitat requirements in Amendment 4.

IV. Planned Management for 2011.

MD DNR will continue all monitoring projects in 2011, and does not anticipate any changes to our sampling plan.

No regulation changes are planned for 2011.

V. Plan Specific Requirements

None

VI. Law enforcement requirements

None.

References

Bolinger, A., S. Doctor, A. Luettel, M. Luisi, and G. Tyler. 2007. Investigation of Maryland's CoastalBays and Atlantic Ocean Finfish Stocks. Federal Aid Project Report No. F-50-R-15. Maryland Department of Natural Resources. Annapolis, Maryland.

Davis, G. R., B. K. Daugherty, and J. F. Casey. 1995. Analysis of blue crab, *Callinectes sapidus*, stocks in the Maryland portion of the Chesapeake Bay from summer trawl data. Maryland Department of Natural Resources, Annapolis, Maryland.

Table 1. Mean length (mm TL) and number of weakfish measured from Chesapeake Bay commercial onboard pound net sampling, 1993 – 2010.

Year	Mean Length (mm)	Number Measured
1993	278	496
1994	291	642
1995	306	565
1996	293	1432
1997	297	755
1998	337	1234
1999	333	851
2000	360	333
2001	334	77
2002	324	196
2003	325	129
2004	273	326
2005	278	304
2006	290	62
2007	275	61
2008	276	41
2009	262	23
2010	253	47

Table 2. Maryland's 2010 commercial weakfish landings by area, gear and month.

Chesapeake Bay weakfish landings

Gear	Month	Landings (Pounds)	Total Landings By Gear (pounds)
Gill Net	**10**	34	34
Hook and Line	**9**	2	2
Pound Net	**5**	2	
Pound Net	**9**	2	4
Total			40

Atlantic Ocean weakfish landings

Gear	Month	Landings (Pounds)	Total Landings By Gear (pounds)
Gill Net	**3**	6	
Gill Net	**4**	30	
Gill Net	**8**	60	
Gill Net	**9**	102	
Gill Net	**10**	222	
Gill Net	**11**	143	563
Pots	**12**	15	15
Trawl	**4**	25	
Trawl	**9**	10	
Trawl	**10**	752	
Trawl	**11**	470	
Trawl	**12**	2	1259
Total			1837

Area Unkown (not reported)

Gear	Month	Landings (Pounds)	Total Landings By Gear (pounds)
Gill Net	**7**	54	
Gill Net	**8**	217	271

Chesapeake and Ocean combined Total **2148**

Table 3. Pounds and percent of Maryland weakfish bycatch landed in 2010.

	Pounds Landed	**Percent of Total Landings**
Allowable bycatch	1,948	90.7%
Disallowed bycatch	200	9.3%
Total bycatch	2,148	

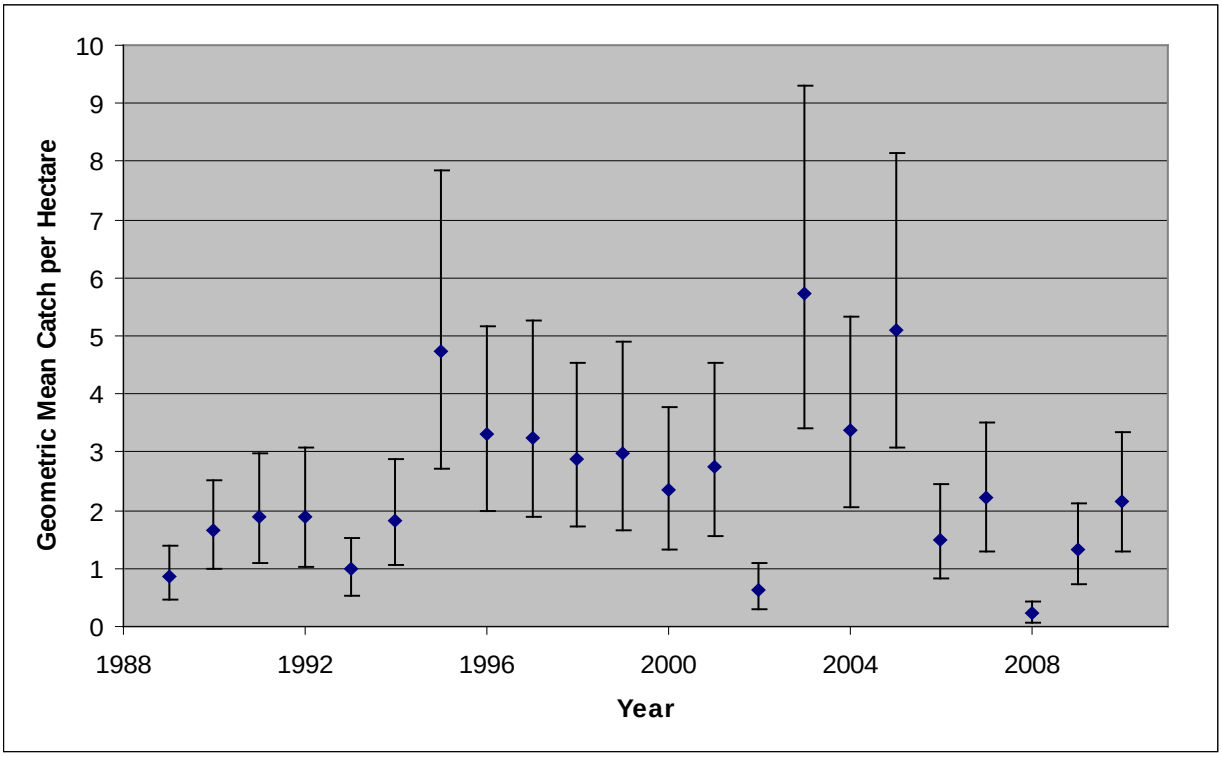


Figure 1. Maryland juvenile weakfish geometric mean catch per hectare and 95% confidence intervals for Atlantic coastal bays, 1989-2010.

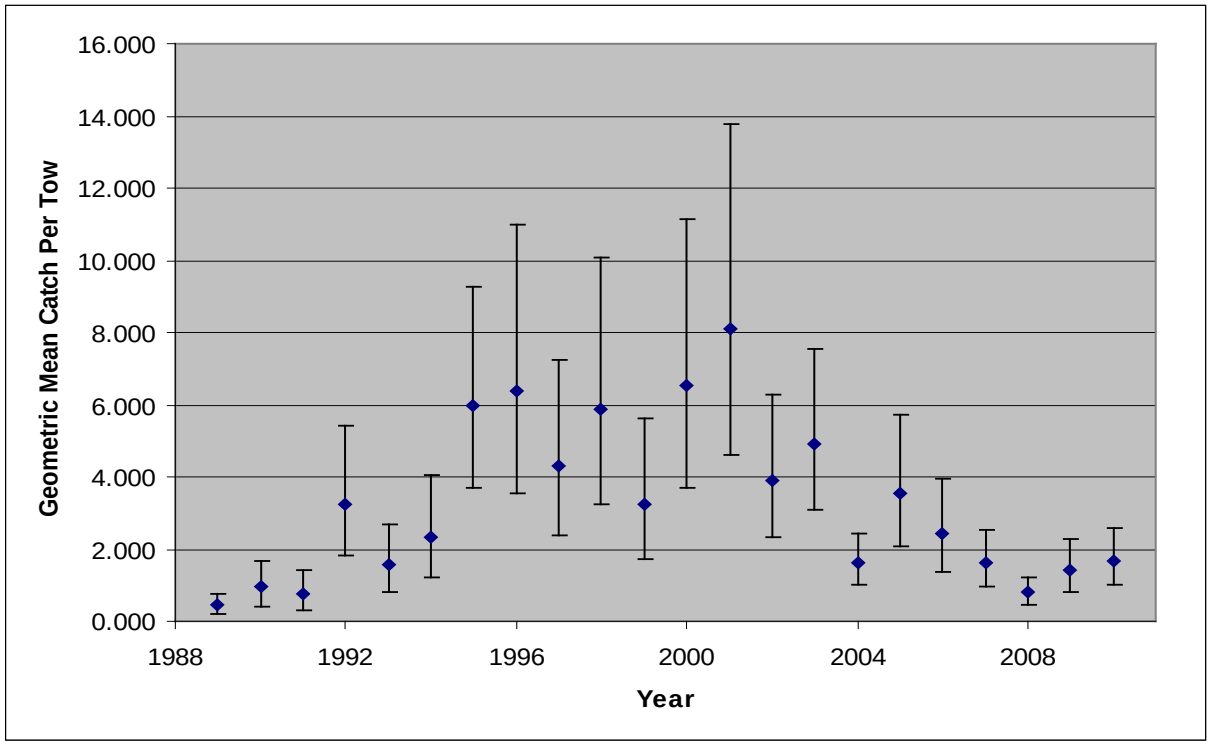


Figure 2. Maryland juvenile weakfish geometric mean catch per trawl and 95% confidence intervals for Maryland's lower Chesapeake Bay, 1989 – 2010.

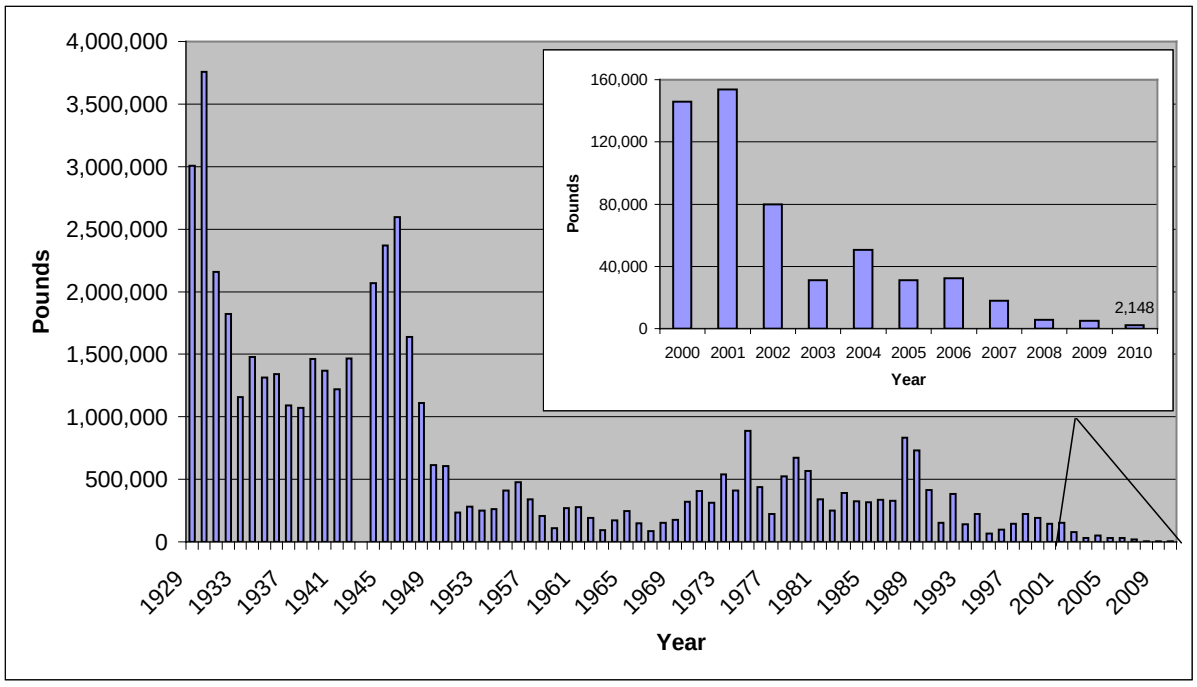


Figure 3. Maryland total commercial weakfish landings 1929-2010. Inset provides detail of landings since 2000.

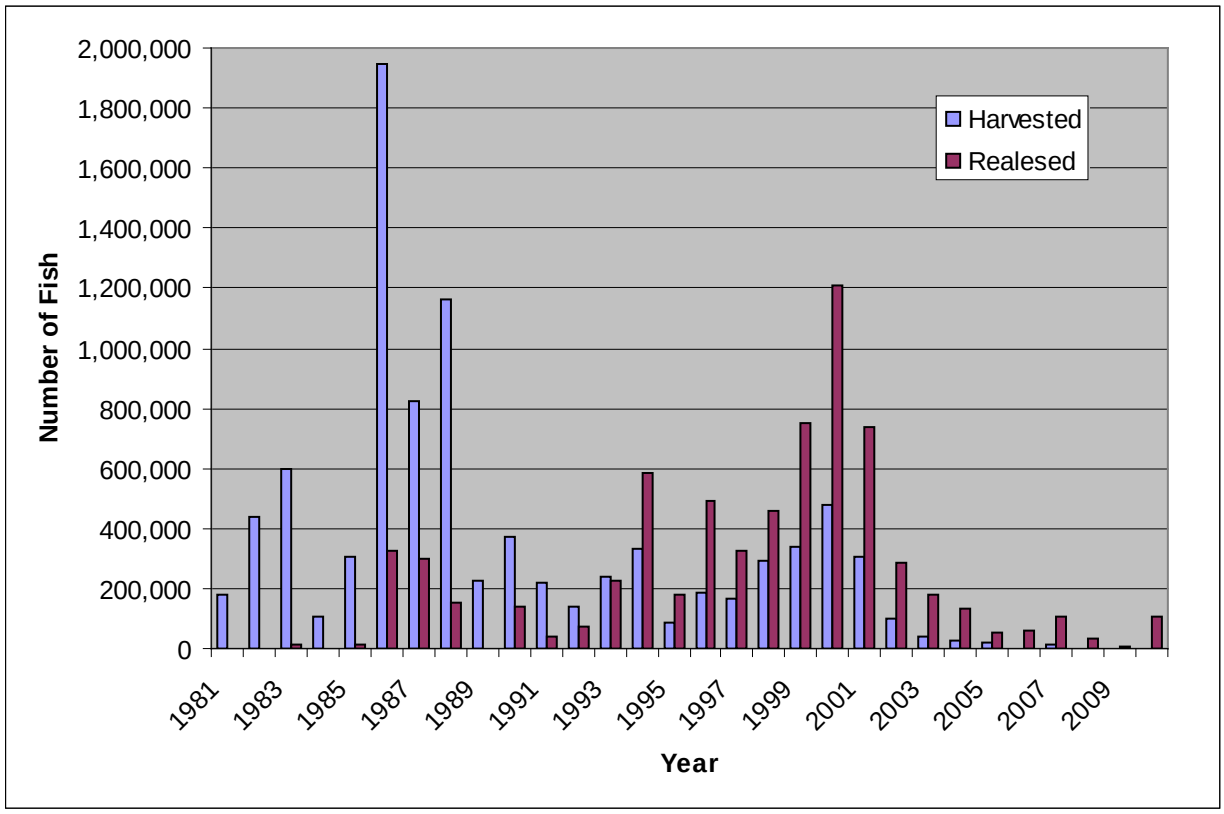


Figure 4. Maryland's recreational weakfish harvest and releases in numbers, 1981-2010.

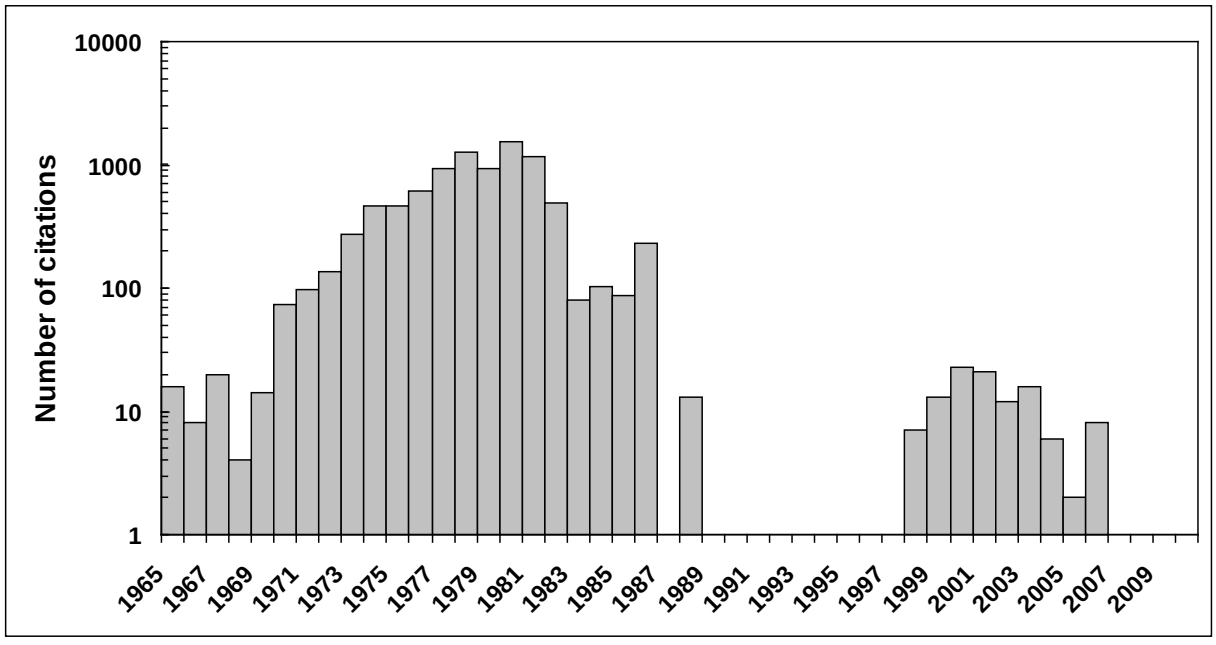


Figure 5. Number of sportfishing citations issued for weakfish 10 pounds or greater in Chesapeake Bay (1965-1994) or 29 inches or greater (1995-2010). Data for 1987 and 1989 are missing. Note log scale. Blanks indicate citation-sized weakfish were not present.

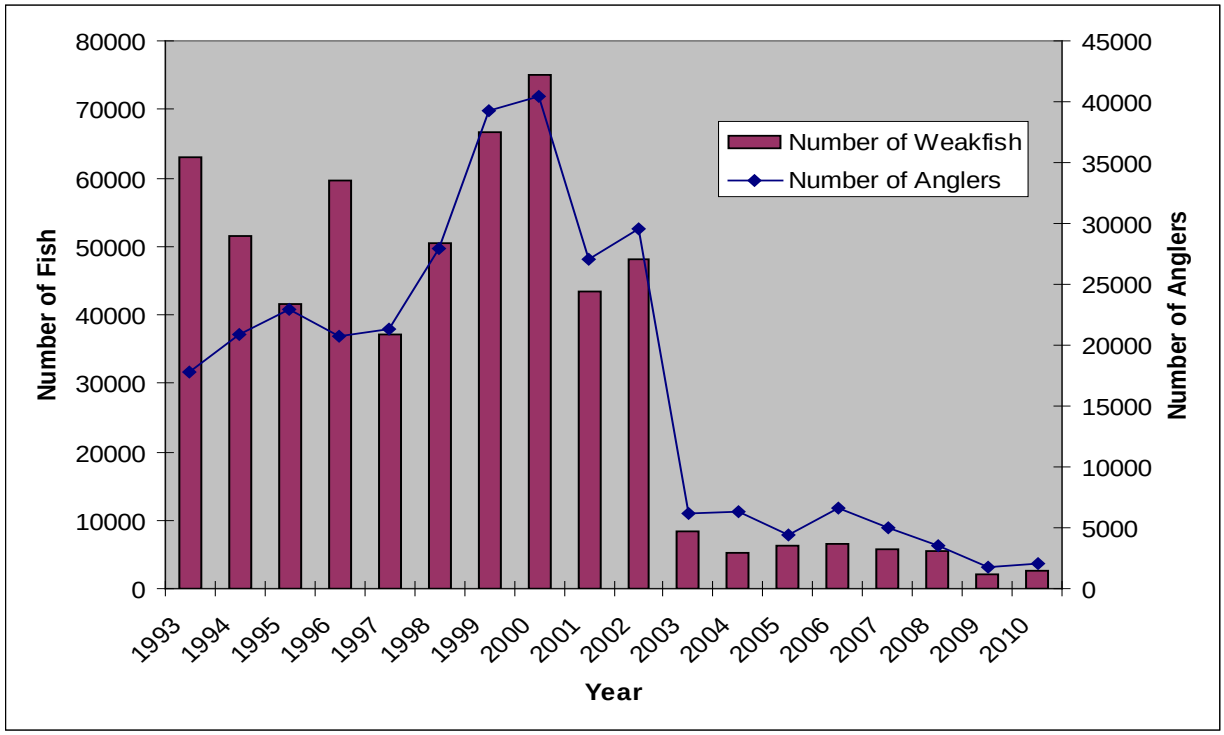


Figure 6. Logbook reports of number of weakfish harvested and number of angler trips for charter boats in Maryland, 1993-2010.

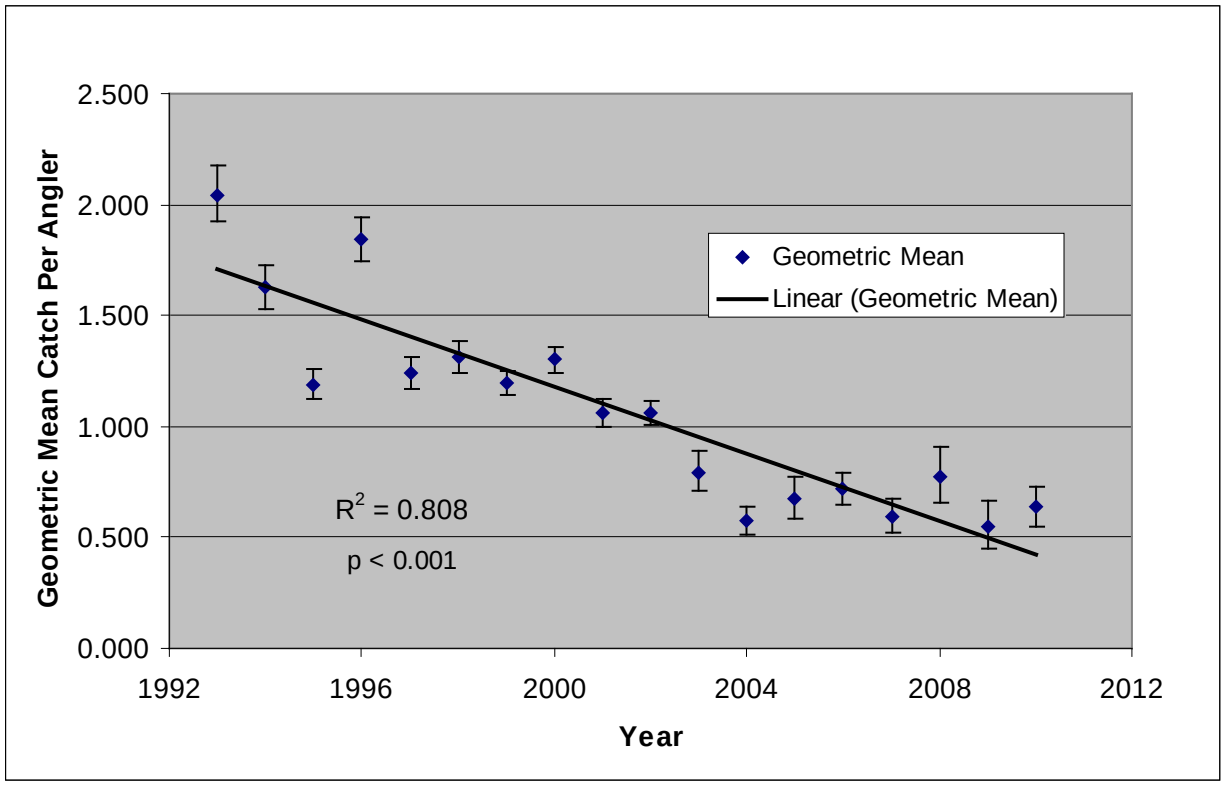


Figure 7. Geometric mean harvest per angler trip and 95% confidence intervals from Maryland charter boat logs, 1993-2010.

MARYLAND - VIRGINIA
"Potomac River Compact of 1958"
Potomac River Fisheries Commission
222 Taylor Street
P.O. BOX 9
Colonial Beach, Virginia 22443
TELEPHONE: (804) 224-7148 · (800) 266-3904 · FAX: (804) 224-2712

Weakfish
2010 Annual State Report
June 1, 2011

I. Introduction

A. Summary of the year -
The commercial harvest of weakfish from the Potomac River remained at a very low level in 2010, much like the 2009 value, which was the lowest reported harvest since our records began in 1964.

II. Request *de minimis*, where applicable - N/A

III. Previous calendar year's fishery and management program

A. Fishery Dependent Monitoring
Pound nets are the primary commercial gear for weakfish. Haul seines, hook and line, and several miscellaneous gear types can occasionally contribute to the total weakfish harvest.

B. Fishery Independent Monitoring - None

C. Regulations in Effect
The minimum commercial size limit was 12 inches with an open season of July 28 through December 31, and a by-catch limit of 50 pounds (one bushel) per day. During 2010, pound netters who installed PRFC approved fish cull panels in the prescribed manner and had the net certified by the PRFC, could possess, as by-catch, up to 50 pounds (one bushel) of legal size weakfish prior to July 28th. The allowance must be less than or equal to the poundage of other lawfully harvested species. Pound netters not using the fish cull panels and all other gear types had a zero by-catch allowance prior to July 28th. As a conservation measure, these fish cull panels allow the release of small weakfish before the nets are fished.

The recreational and charter boat weakfish regulations included a season of January 1 through December 31, a 12" minimum size limit, and a one fish per person per day creel limit.

D. Harvest

Weakfish commercial harvest in 2010 totaled 80 pounds. This estimate is from the PRFC's mandatory commercial daily harvest reporting system. The haul seine fishery effort is expressed as "hauls" and is one fishing of the haul seine. The pound net fishery effort is expressed as "PN fished days", which is one pound net fished one time.

Harvest (lbs.)	Gear	Effort
54	Haul Seine	5 hauls
26	Pound net	12 PN fished day

During this reporting year, no undersized weakfish were reported as discarded or released in the commercial fishery.

For the private recreational fishery, the PRFC 'adds-on' to the MRFSS phone survey. Results are reported and included as either MD or VA landings. Contact information is supplied to the NOAA For Hire Survey for all charter boats licensed to operate in the Potomac.

Tables and Figures:

Table 1 shows the Potomac River commercial harvest of weakfish from1964 through the reporting year.
Table 2 shows the Potomac River commercial weakfish discards from 1999 through the reporting year.
Table 3 shows the annual Potomac River Charter Boat Weakfish Catches – 1993 through the reporting year.

Figure 1 illustrates the Potomac River commercial weakfish harvest (1964 – 2010).
Figure 2 illustrates the Potomac River commercial weakfish harvest and pound net CPUE.

IV. Planned management programs for the current year

A. Summarize Regulations that will be in Effect

The pound net fishery is a limited entry fishery, with a maximum of 100 licenses on a total riverwide basis. A pound net is defined as a fixed fishing device with one head, trap or pound measuring not less than 20 feet square at the surface of the water on the channel end and only one leader or hedging not less than 300 feet in length.

New regulation effective January 1, 2011 – all pound nets in the Potomac River must have at least six PRFC approved fish cull panels properly installed in each pound net to help release undersize fish. These fish cull panels were being used by some pound netters on a voluntary basis prior to 2011. **Tests have demonstrated that these cull panel devices may allow escapement of at least 68 percent of sub-legal weakfish.**

B. Summarize Monitoring Programs that will be Performed
We will continue the mandatory harvest reporting program.

C. Highlight any Changes from the Previous Year - None

Table 1

Potomac River Commercial Harvest (lbs) for WEAKFISH by gear type

							LBS LANDED IN		
YEAR	HAUL SEINE	POUND NET	FYKE NET	GILL NET	H & L	MISC.	MARYLAND	VIRGINIA	TOTAL
1964	-	-	-	-	-	22,451	31	22,420	22,451
1965	-	-	-	-	-	35,475	205	35,270	35,475
1966	-	-	-	-	-	19,252	-	19,252	19,252
1967	-	-	-	-	-	13,949	936	13,013	13,949
1968	-	-	-	-	-	12,233	-	12,233	12,233
1969	-	-	-	-	-	4,417	178	4,239	4,417
1970	-	-	-	-	-	60,676	1,290	59,386	60,676
1971	-	-	-	-	-	46,055	2,017	44,038	46,055
1972	-	-	-	-	-	35,232	1,934	33,298	35,232
1973	-	-	-	-	-	111,304	2,559	108,745	111,304
1974	-	-	-	-	-	160,146	5,461	154,685	160,146
1975	-	-	-	-	-	181,560	3,741	177,819	181,560
1976	54	334,130	-	2,951	-	6,010	11,416	331,729	343,145
1977	3,769	569,178	-	1,988	-	463	9,236	566,162	575,398
1978	-	339,287	-	1,221	-	83,641	34,896	389,253	424,149
1979	17,933	368,792	-	4,658	-	1,091	18,485	373,989	392,474
1980	66,471	633,218	-	6,445	-	-	40,137	665,997	706,134
1981	-	495,361	-	23,868	-	-	20,278	498,951	519,229
1982	5,691	266,487	-	35,052	-	-	14,950	292,280	307,230
1983	2,007	97,373	-	18,342	-	1,672	10,271	109,123	119,394
1984	750	89,010	-	406	-	-	3,289	86,877	90,166
1985	-	71,923	-	401	-	342	4,856	67,810	72,666
1986	583	115,061	535	18	-	-	8,351	107,846	116,197
1987	20,711	244,610	-	125	-	496	25,583	240,359	265,942
1988	-	96,737	-	28	-	-	6,783	89,982	96,765
1989	162	28,483	-	-	8	-	4,777	23,876	28,653
1990	-	18,493	-	4	13	13	3,271	15,239	18,510
1991	-	13,796	-	-	2	2	1,225	12,573	13,798
1992	-	19,961	-	-	0	-	2,482	17,479	19,961
1993	-	37,828	-	-	0	-	1,959	35,869	37,828
1994	-	28,958	-	-	0	-	348	28,610	28,958

Table 1 continued

Potomac River Commercial Harvest (lbs) for **WEAKFISH** by gear type

							LBS. LANDED IN		
YEAR	HAUL SEINE	POUND NET	FYKE NET	GILL NET	H & L	MISC.	MARYLAND	VIRGINIA	TOTAL
1989	162	28,483	-	-	8	-	4,777	23,876	28,653
1990	-	18,493	-	4	13	13	3,271	15,239	18,510
1991	-	13,796	-	-	2	2	1,225	12,573	13,798
1992	-	19,961	-	-	0	-	2,482	17,479	19,961
1993	-	37,828	-	-	0	-	1,959	35,869	37,828
1994	-	28,958	-	-	0	-	348	28,610	28,958
1995	-	38,138	-	-	0	-	2,034	36,104	38,138
1996	93	99,400	-	-	0	-	8,902	90,591	99,493
1997	5	35,203	27	-	4	4	936	34,303	35,239
1998	50	81,694	-	-	0	-	8,870	72,874	81,744
1999	27	68,286	5	104	327	327	5,918	62,831	68,749
2000	393	67,840	62	-	247	279	8,016	60,558	68,574
2001	261	43,635	32	42	235	249	4,627	39,592	44,219
2002	197	57,565	-	-	55	1	3,073	54,745	57,818
2003	-	5,273	-	-	-	-	982	4,291	5,273
2004	-	1,984	-	-	-	2	18	1,968	1,986
2005	-	1,004	-	-	-	-	171	833	1,004
2006	-	689	-	-	-	-	-	689	689
2007	-	15	-	-	5	-	3	17	20
2008	-	38	-	-	36	-	5	69	74
2009	15	2	-	-	-	-	-	17	17
2010	54	26	-	-	-	-	-	80	80

Table 2

Potomac River
Commercial Weakfish Discards (pounds)

Year	# Reports	No Market	Closed Season	Undersized	Total
1999	33	10	1,905	706	2,621
2000	18	-	-	1,385	1,385
2001	4	95	-	3	98
2002	12	-	-	95	95
2003	1	-	-	5	5
2004	-	-	-	-	-
2005	-	-	-	-	-
2006	-	-	-	-	-
2007	-	-	-	-	-
2008	-	-	-	-	-
2009	-	-	-	-	-
2010	-	-	-	-	-

Table 3

Potomac River
Charter Boat Weakfish Catches

		HARVEST		RELEASED	
Year	# Trips	# Fish	Pounds	# Fish	Avg. Size (in.)
1993	12	15	21	10	6
1994	8	56	70	14	9
1995	27	284	376	39	12
1996	87	2,203	3,313	714	12
1997	33	293	470	51	12
1998	28	413	486	31	13
1999	22	104	183	45	10
2000	24	131	299	36	13
2001	19	232	458	20	13
2002	24	76	147	50	12
2003	-	-	-	-	-
2004	-	-	-	-	-

2005 - 2010 NOAA FOR HIRE SURVEY

Figure 1

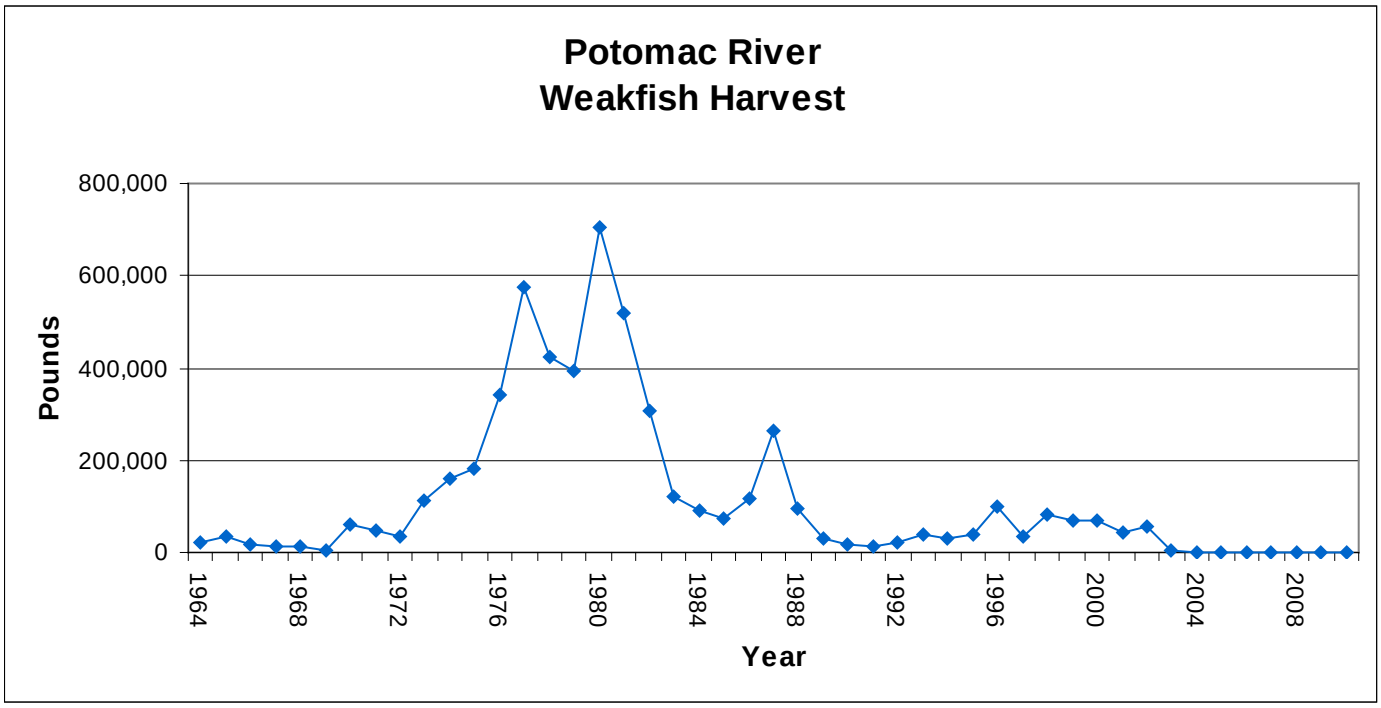
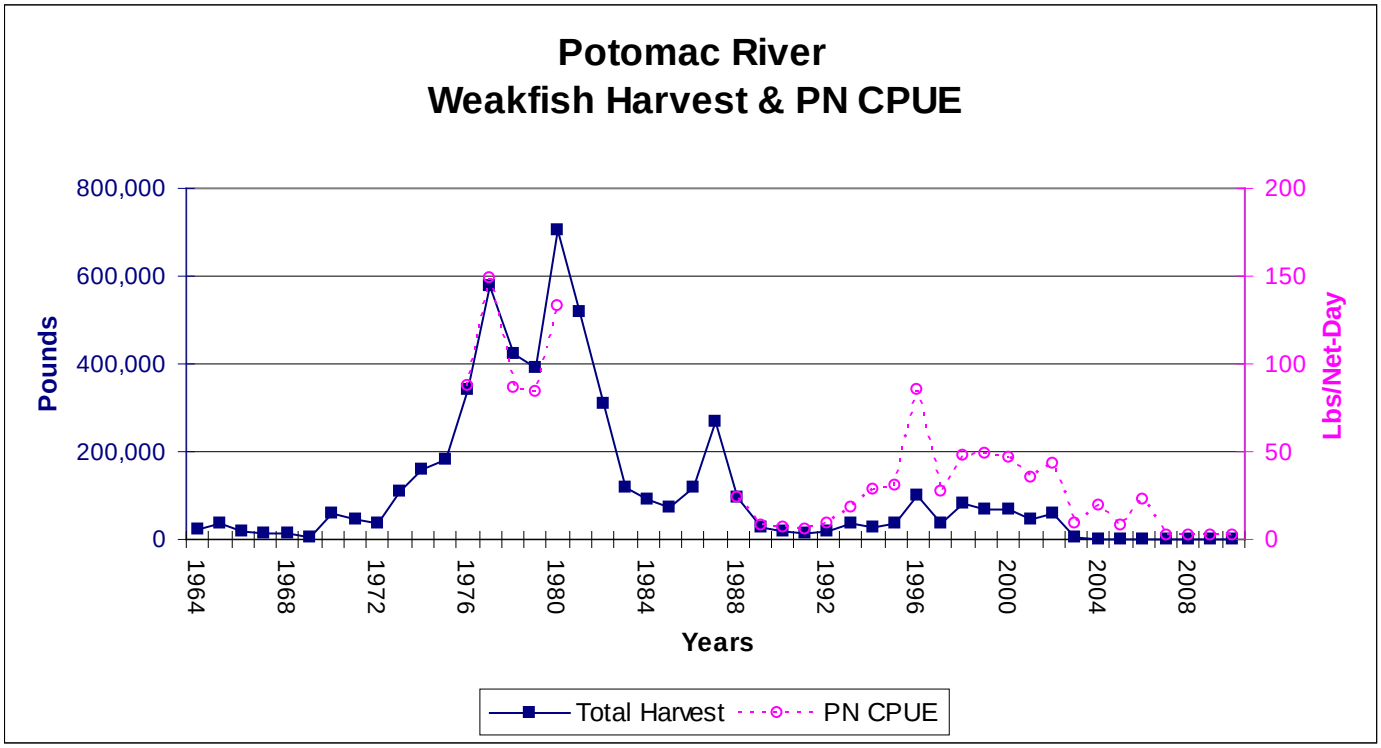


Figure 2



L:\ASMFC Annual Fish Reports\Weakfish\2010 Weakfish Annual Report on Office Letterhead.rtf

COMMONWEALTH of VIRGINIA

Marine Resources Commission

2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

Douglas W. Domenech
Secretary of Natural Resources

Steven G. Bowman
Commissioner

September 1, 2011

MEMORANDUM

TO: **Mike Waine, Weakfish FMP Coordinator**
Atlantic States Marine Fisheries Commission

FROM: **Joe Cimino, Virginia Technical Committee Representative**
Virginia Marine Resources Commission

SUBJECT: **Virginia's Report on the 2010/2011 Weakfish Fisheries Management Program**

I. Introduction

This report summarizes the 2010 Virginia weakfish landings from the commercial and recreational fisheries. Additionally, this report outlines regulatory management measures, required by the Atlantic States Marine Fisheries Commission (ASMFC) Interstate Fishery Management Plan (FMP) for weakfish that were implemented by the Virginia Marine Resources Commission (VMRC). Changes to the weakfish regulation were made effective May 1, 2010 to comply with requirements established in Addendum IV to the FMP. Commercial landings of 57,326 pounds in 2010 were the lowest in recorded history (since 1929), with the previous five years of 2005 through 2009 rounding out the six lowest years in commercial landings. Recreational harvest estimates for 2010 were 3,267 pounds, the lowest estimate by weight and the lowest by numbers (5,325) recorded by the Marine Recreational Fisheries Statistical Survey (MRFSS) for Virginia. The years 2006 through 2010 comprise the five lowest years of estimated harvest in numbers for the MRFSS, since 1981.

In accordance with Addendum I to Amendment 4 in the weakfish FMP, Virginia is required to collect six individual fish lengths for each metric ton of weakfish landed commercially, and three individual fish ages for each metric ton of total weakfish landed, with a maximum of 1,000 ages annually per state. Virginia was required to collect 156 lengths based on the 26 metric tons of weakfish landed

commercially. A total of 1,147 lengths were collected from the commercial fishery in 2010. Based on the total weakfish landed, 27.5 metric tons, Virginia was required to collect 83 ages. 379 otoliths were collected in 2010, with 260 processed for ageing. Both sampling requirements were exceeded for 2010.

II. Request for *de minimis*, if applicable.

Not applicable.

III. Previous calendar year's fishery and management program

A. Activity and results of fishery-dependent monitoring (provide general results and references to technical documentation).

As set forth in Addendum I to Amendment 4 to the ASMFC FMP for Weakfish, Virginia submitted a sampling plan, for biological sampling, for 2011 (see "VA 2011 Weakfish Sampling Plan.doc"). The sampling plan will exceed the required 6 fish lengths per metric ton of weakfish landed commercially and 3 fish ages per metric ton for weakfish landed by either fishery (recreational or commercial). In 2010 the VMRC collected 1,147 lengths. From January through June (early period), a total of 195 lengths were collected and 952 lengths were collected the remaining six months of 2010 (late period; Table 2a). There were 379 otoliths collected for 2010 (185 for the early period, 194 for the late period). All samples collected by the VMRC were from the commercial fishery and were either sampled at a fish processing house, at a dock, or at the gear itself. Of the 379 otolith samples collected by the VMRC, a total of 260 were processed and aged by Old Dominion University's Age & Growth Laboratory at the Center for Quantitative Fisheries Ecology (Table 2b). The remaining otoliths were not processed since they fell into size categories that were adequately sampled. However, otoliths were collected to ensure VA would meet the sampling requirements once the final MRFSS estimates were known. Table 3 summarizes the total samples collected by gear and season in 2010, also included are the required number of samples per Addendum 1 (using most up-to-date 2010 data from Virginia's mandatory reporting database and National Marine Fisheries Service (NMFS) MRFSS website).

B. Activity and results of fishery-independent monitoring (provide general results and references to technical documentation).

The Virginia Institute of Marine Science (VIMS) conducts an annual juvenile trawl survey in the Chesapeake Bay and its tributaries. The 2010 young of the year index was 14.11, as a weighted geometric mean. This index has shown variability from year to year, but suggests steady recruitment is occurring (see Table 18 and Figure 20 in the attached annual report for the survey, "TrawlAnnualReport_2011.pdf"). The 2010 value is the highest in over a 20 year period.

In 2002, the VIMS began the Chesapeake Bay Multispecies Monitoring and Assessment Program (ChesMMAP)—a large-mesh bottom trawl survey conducted within the main-stem of the Chesapeake Bay. The 2010 Annual Progress Report for the program provides minimum trawlable abundance estimates in numbers and biomass for weakfish age-1+ and older, as well as site specific abundance estimates for the years 2002 through 2010 (see pages 111–117). Minimum trawlable abundance estimates are defined in page six of the report as estimates that represent the smallest number (or biomass) of fish present within the sampling area that are susceptible to the sampling gear. The report also provides length-frequency and age-frequency distributions and diet composition for the

Chesapeake Bay, for the same time period. It is important to note that the otolith ages for ChesMMAP are processed by the VIMS.

C. Copy of regulations that were in effect, including a reference to the specific compliance criteria as mandated in the FMP.

New regulations went into place effective May 1, 2010 to maintain compliance with Addendum IV to Amendment IV of the weakfish FMP, the changes were as follows:

- Implementation of a 100-pound landing limit, per vessel, per day or trip (whichever is the longer period of time), for directed fisheries, with all other regulations (e.g. size limits, gear restrictions, season restrictions) maintained.
- Reduction of the bycatch limit to 100 pounds, per vessel, per day or trip (whichever is the longer period of time), for all non-directed fisheries (those harvesting weakfish during closed seasons, from closed areas, or not meeting gear restrictions. All other requirements, for landing weakfish as bycatch shall remain in effect (e.g. there must be an equal amount of other species as there is weakfish, on board any vessel, for any landing; the commercial hook and line fishery shall not be allowed a bycatch of weakfish allowance, under non-directed conditions, a 12-inch minimum size limit shall continue).
- Reduction of the finfish trawl fishery's allowance for undersized fish (less than 12 inches total length) to 100 fish.
- For the recreational fishery, the possession limit is one fish, the minimum size (12 inches) and no closed season will remain in place.

Commercial harvesters in Virginia waters are required to have a commercial license and report harvest on a monthly basis with trip level information. Licensed commercial harvesters and licensed commercial seafood buyers are required to allow biological sampling of their harvest. Below is a summary of the regulations in place, for weakfish, for 2010.

The pound net fishery operated with a closed season from January 1 through March 31, May 1 through May 22, and September 13 through December 31, unless pound net fishermen opted to forfeit a portion of their gear licenses. In order to be exempt from the closed season, pound net fishermen were allowed to forfeit licenses, as of 1995. A fisherman who holds 2 or 3 licenses has to forfeit 1 of those licenses to be exempt from closed seasons. Similarly, a fisherman who holds 4 to 6 licenses has to forfeit 2 licenses to avoid the closed season. In all cases, forfeiture extended from before May 1 through March 31 of the following year. It is important to note the VMRC continues to limit the number of active pound nets at a set limit equal to 161 nets. There is no minimum size limit for weakfish harvested by pound nets.

The gill net fishery operated with closed seasons from January 1 through March 15, May 14 through October 20, and December 31. There is a 12-inch minimum size limit, with no tolerance for undersized weakfish.

The haul seine fishery operated with closed seasons from January 1 through April 15, June 11 through August 20, and September 25 through December 31. There is no minimum size limit for weakfish harvested by haul seines.

The out-of-state trawl fishery (trawling has not been allowed in Virginia waters since 1989) operated with closed seasons from January 1 through March 31 and September 26 through December 31. Trawl vessels were not allowed to land more than 100 undersized weakfish (less than 12 inches in total length) and there is a prohibition on sale of any undersize trawl-landed weakfish. It is unlawful for any

trawl vessel to land weakfish in Virginia while possessing on board any trawl net having a cod-end mesh size of less than 3 inches, stretched measure.

Combined, these measures were initially designed to achieve a 35.59% reduction in the fishing mortality rate (F) for compliance with Amendment 4 to the FMP. Specifically the pound net closed season and license forfeiture was projected to achieve a reduction in F of 37.43%, for haul seine the reduction in F from the closed season was 31.39. The closed season, put in place March 1, 2003 and minimum size limit of 12 inches estimated a 27.34% reduction in F for the gill net fishery. The 12 inch minimum size, closed season and mesh size requirements were projected to achieve a 69.08% reduction in F for the trawl fishery.

During the closed season, pound net, gill net, haul seine, and trawl fishermen were allowed to possess up to 100 pounds of weakfish per fisherman, per day or trip, greater than or equal to 12 inches total length, provided that at least an equal poundage of other seafood species were on board the vessel of landing. For those gears that do not have a closed season, all trips were limited to no more than 100 pounds of weakfish.

For the recreational fishery, the minimum size limit was 12 inches and possession limit was one fish as of May 1, 2010. The season is open year-round. From January 1 through April 30, 2010 the possession limit was six fish. The six-fish possession limit was put in place to maintain compliance with Addendum II to Amendment 4 to the FMP that became effective October 1, 2007.

D. Harvest broken down by commercial (by gear type where applicable) and recreational, and non-harvest losses (when available).

Virginia's commercial landings, in 2010, were 57,323 pounds. This is more than 90% lower than the 2000 through 2004 base period average landings of 936,421 pounds, the Virginia cap established by Addendum II (Table 1a). The 2010 commercial landings are the lowest on record (with landings dating back to 1929). Table 1a and Figure 1 characterize the commercial landings of weakfish from 1998 forward. Gill net, pound net and haul seine are the three major gear types for weakfish landings, taking 81%, 17% and 2% of the total commercial landings respectively. Gill net has remained the dominant gear type for landings since 2006.

The MRFSS estimated Virginia harvest (A+B1) was significantly lower than in 2009 and is the lowest estimate by weight and by number of fish for Virginia in the survey's history. The estimated harvest for weakfish for 2010 was 3,267 pounds (5,325 fish; Table 3, Figure 3.). For the sixth straight year, harvest weight is below 100,000 pounds, and for the first time ever it is below 10,000 pounds.

No estimates regarding non-harvest losses are available.

IV. Planned management programs for the current calendar year.

Summarize regulations that will be in effect (copy of current regulations if different from III c). Summarize monitoring programs that will be performed.

Commercial harvest and landings of weakfish in Virginia will continue to be monitored through the VMRC mandatory reporting system. The VMRC will continue to collect biological samples as set forth in the 2011 sampling plan.

Table 1
Virginia commercial weakfish landings in 2010, compared to the 2000-2004 average landings (in pounds).
(Appendix 5 to Addendum II has the 5 year average as 871,346 pounds).

Gear Type	2010	Average (2000 - 2004)	Percent Difference
Pound net	9,695	477,572	-98.0%
Gill net	46,598	377,757	-87.7%
Haul seine	873	55,643	-98.4%
Other*	157	8,971	-98.2%
Otter trawl**	-	16,478	-100%
Totals	57,326	936,421	-93.9%

*****Other includes, hand line, fyke net, dredge, uncoded
**2010 trawl landings meet the rule of three criteria for confidential data
(NOTE: the -100% difference in trawl landings is accurate)

Table 2a. Number of total lengths (in 1-inch intervals) collected from the 2010 VA commercial weakfish fisheries, by season and gear type.(Note 14 fish measure under 8 in from Pound net)

		Inches																					
Season	**Gear**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**20**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**31**	**34**	**35**	**Totals**
Early	**Pound net**	12	49	57	29	8	1	2	2	1														164
	Haul seine																							0
	Gill net					1	1	1	5	3	3	4	1	1		1		1	2	1	1	3	2	31
Late	**Pound net**	29	101	95	41	31	20	9	1															338
	Haul seine	3	23	7	2	2	4	2	2															45
	Gill net				5	190	238	93	34	3	2	1			1		1			1				569
Grand Totals		44	173	159	77	232	264	107	44	7	5	5	1	1	1	1	1	1	2	2	1	3	2	1,147

Table 2b. Number of aged weakfish collected from the 2010 Virginia commercial fisheries, by season and gear type.

		Ages											
Season	**Gear**	**0**	**1**	**2**	**3**	**4**	**5**	**7**	**11**	**12**	**13**	**14**	**Total**
Early	**Pound net**		5	73	13								**91**
	Haul seine												
	Gill net			3	14	3	4	2	1	1	1	2	**31**
Late	**Pound net**	1	90	21	2								**114**
	Haul seine		1	1									**2**
	Gill net		13	6	3								**22**
Grand Totals		1	109	104	32	3	4	2	1	1	1	2	**260**

Note the 260 total represents aged otoliths only, 379 otoliths were collected in 2010

Table 3.
Virginia recreational landings and release estimates 1998-2010,
From MRFSS website; query run on 8/10/2011

Year	HARVEST (N)	PSE	HARVEST (lbs)	PSE	RELEASES (N)	PSE
1998	463,525	12.2	839,245	13.2	1,244,949	13.7
1999	229,209	19.1	399,588	20.9	818,959	14.7
2000	286,752	17.6	496,205	21.2	935,594	14.2
2001	175,872	13.8	373,206	17.8	633,443	10.8
2002	178,110	13.3	295,397	14.3	888,337	11.7
2003	86,112	17.2	215,522	19.3	504,129	16.6
2004	102,556	28.4	102,051	26.9	522,859	23.4
2005	30,346	28.6	20,439	32.7	266,879	22.7
2006	58,814	41	51,749	55.1	456,270	25.4
2007	44,624	39.4	55,580	30.2	172,068	23.7
2008	29,016	22.3	39,293	29.4	314,118	17.9
2009	18,090	50.6	21,549	49.6	69,274	28.1
2010	5,325	46.9	3,267	52.7	142,502	18.9

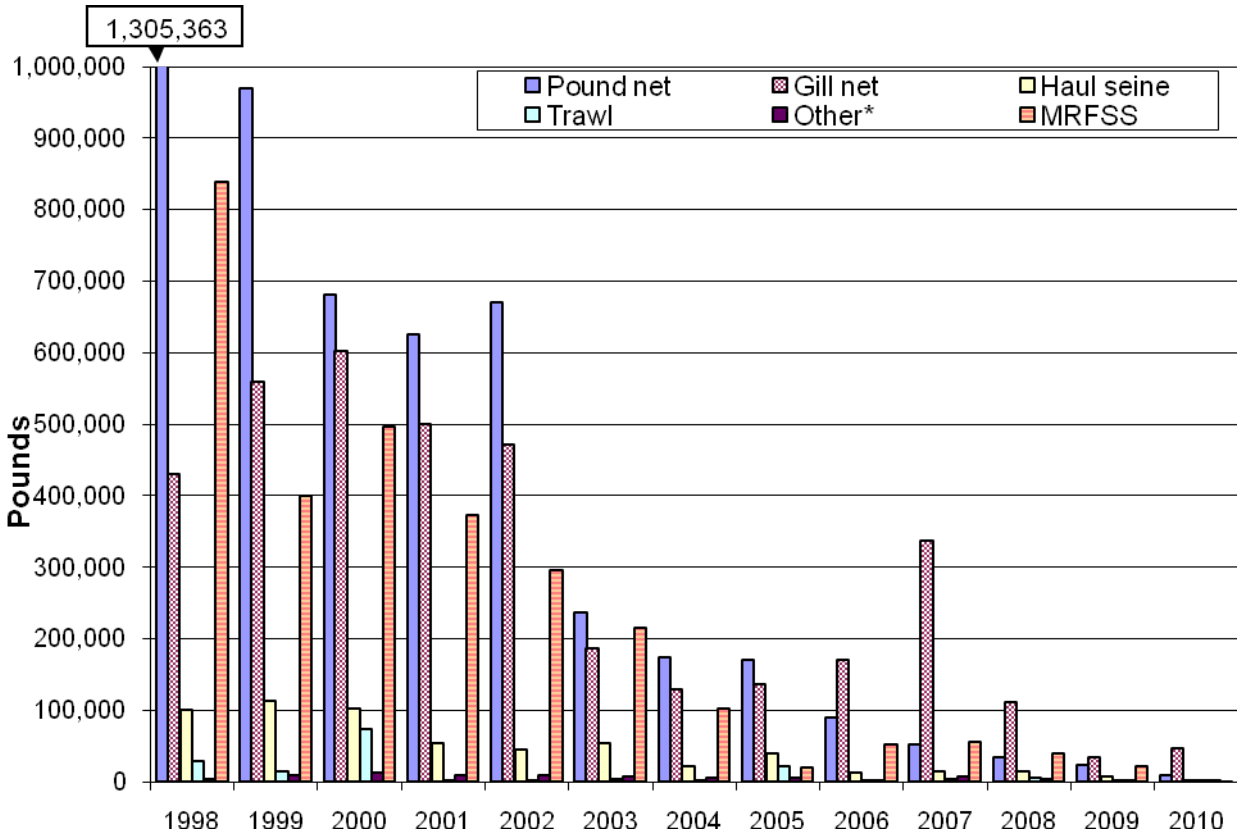


Figure 1. Virginia weakfish landings- *other includes hand line, pots, dredge and unknown.

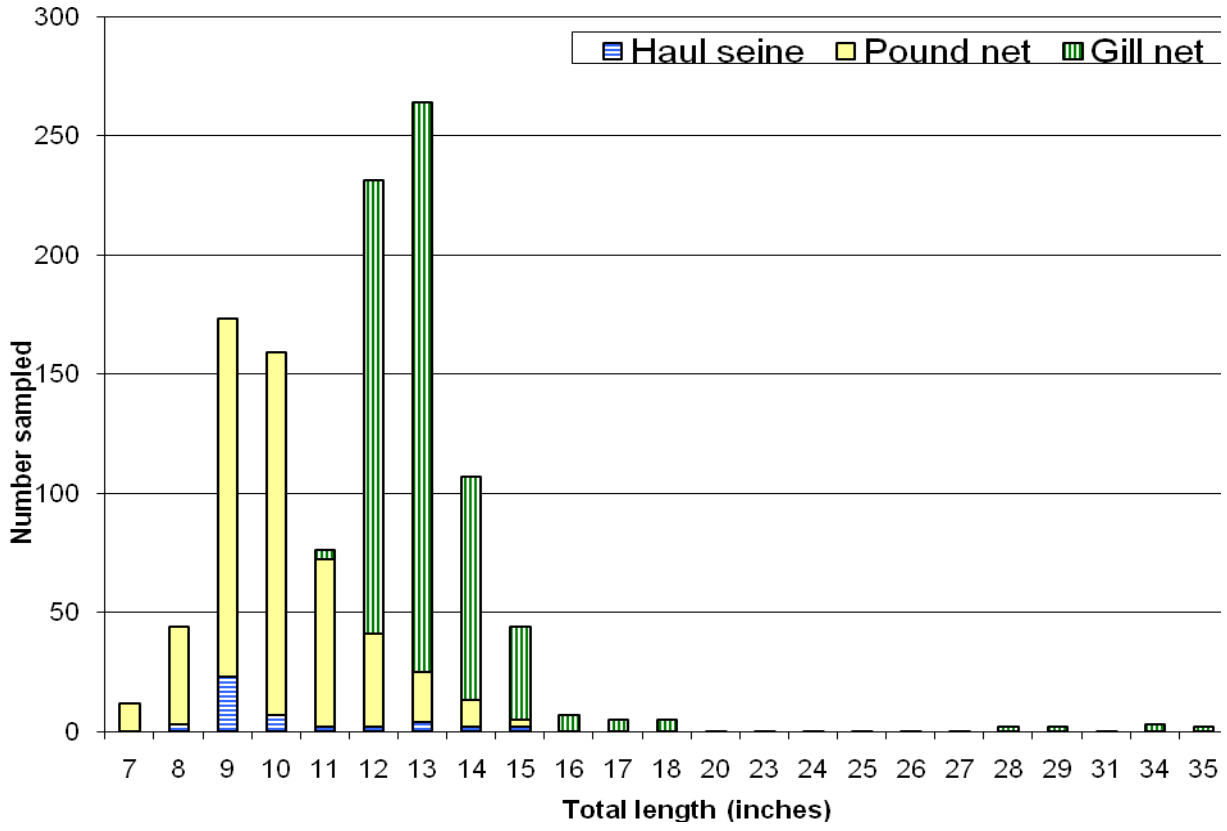


Figure 2. Weakfish length frequency from 2010 Virginia commercial fisheries sampling.

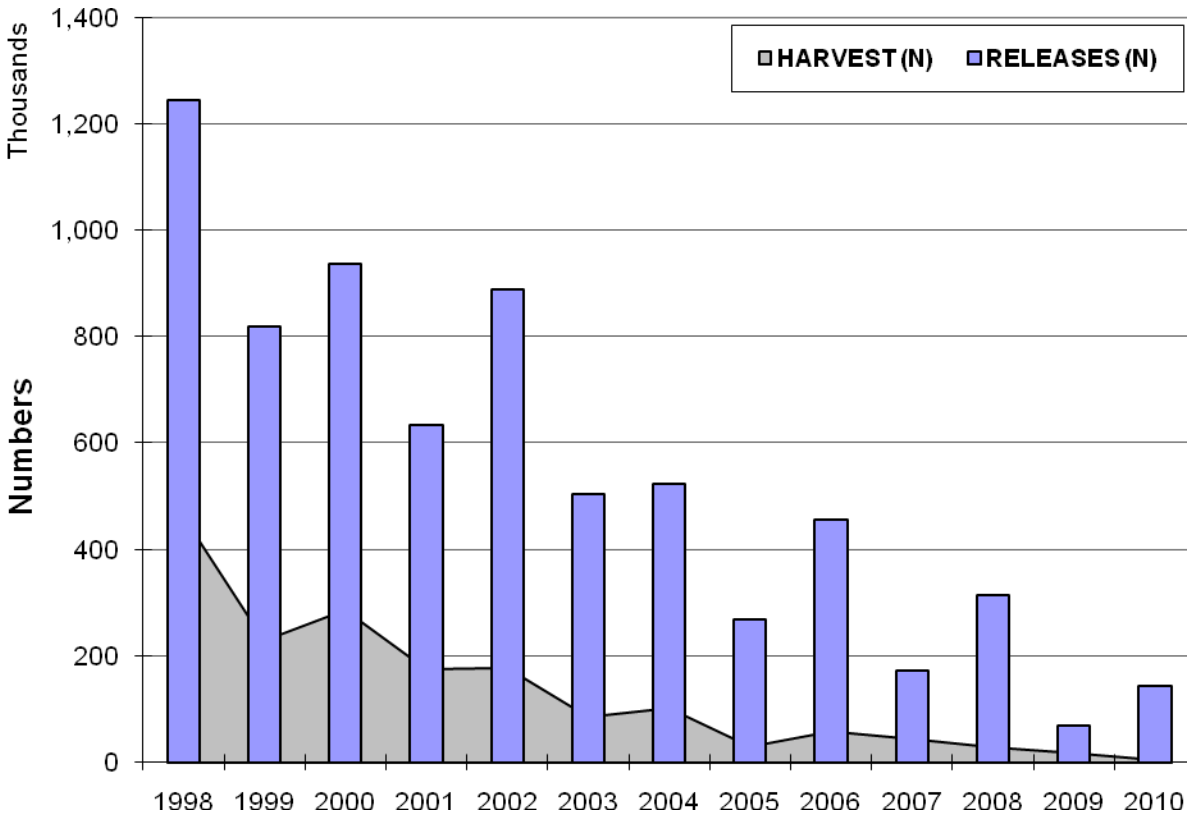


Figure 3. MRFSS estimates of weakfish recreational harvest and releases (in numbers), in Virginia, 1998-2010.

North Carolina's Weakfish Compliance Report for Fishing Year 2011

September 1, 2011

1. Introduction

During 2010, North Carolina changed management measures in response to the requirements of Addendum IV of Amendment 4 to the Weakfish FMP. Under Addendum IV, states were required to implement strict harvest measures to aid in the recovery of the severely depleted weakfish stocks. These measures include a one fish recreational creel limit, 100 pound commercial trip limit, 100 pound commercial bycatch limit, and 100 undersized fish per trip allowance for the finfish trawl fishery. Measures of Addendum IV were required to be implemented by May 1, 2010. North Carolina initially failed to implement these measures by May 1 and was temporarily found out of compliance. On May 16, 2010, North Carolina implemented the measures through proclamation authority. In August of 2010, North Carolina requested that the ASMFC Weakfish Management Board consider a conservationally equivalent management measure in lieu of the 100 pound commercial trip limit. The proposed alternative would allow North Carolina to harvest weakfish strictly as a bycatch, where weakfish could not exceed 10% of the landings of all finfish landed on a trip up to 1,000 pounds. The Board approved North Carolina's request as a conservationally equivalent management strategy and the measure was implemented August 20, 2010. All measures remain in effect.

2. Current/Previous Years Management Program

a. Activity and results of fishery dependent monitoring.

The 2010 recreational weakfish fishery in North Carolina was monitored through the Marine Recreational Fishery Statistics Survey.

The 2010 commercial weakfish landings were monitored through the North Carolina trip ticket program. Under this program licensed fishermen can only sell commercial catch to licensed NCDMF commercial fish dealers. The dealer is required to complete a trip ticket every time a licensed fishermen lands fish. Trip tickets specify gear type, area fished, species harvested and total weights of the individual species harvested. Commercial fishing activity is monitored through fishery dependent sampling conducted under Title III of the Interjurisdictional Fisheries Act and has been ongoing since 1982. Data collected in this program allow the size distribution of weakfish to be characterized by gear/fishery (Assessment of North Carolina Commercial Finfisheries, Completion Reports 1984-2009, North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries). Further sub-sampling is conducted to procure samples for age determination (sectioned otoliths), sex ratio, reproductive condition and weight (Survey of Population Parameters of Marine Recreational Fishes in North Carolina. Annual Progress Report

Project F-42, (1992-2010). North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries).

During 2010, a total of 2,343 weakfish lengths were acquired from the North Carolina commercial fishery through dependent sampling. Weakfish sampled from commercial gears included long hauls (n=810), ocean sink gill nets (n=270), winter trawls (n=404), estuarine gill nets (n=492), pound nets (n=342), and beach seines (n=25). The gears sampled accounted for >99% of North Carolina's commercial weakfish landings. Additionally, North Carolina collected 502 otoliths from various gears in the commercial and recreational fisheries, as well as, from independent sources.

b. Activity and results of fishery independent monitoring.

The Pamlico Sound Trawl Survey is a stratified random trawl survey conducted annually in the Pamlico Sound. The survey is conducted twice annually (June and September). Results of the study provide indices of juvenile abundance for weakfish in the Pamlico Sound (Pamlico Sound Cruise Reports (1990-2010). North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries). The 2010 juvenile abundance index was 32.45 individuals per tow and was below the long term average of the survey (45.16 individuals per tow; Figure 1).

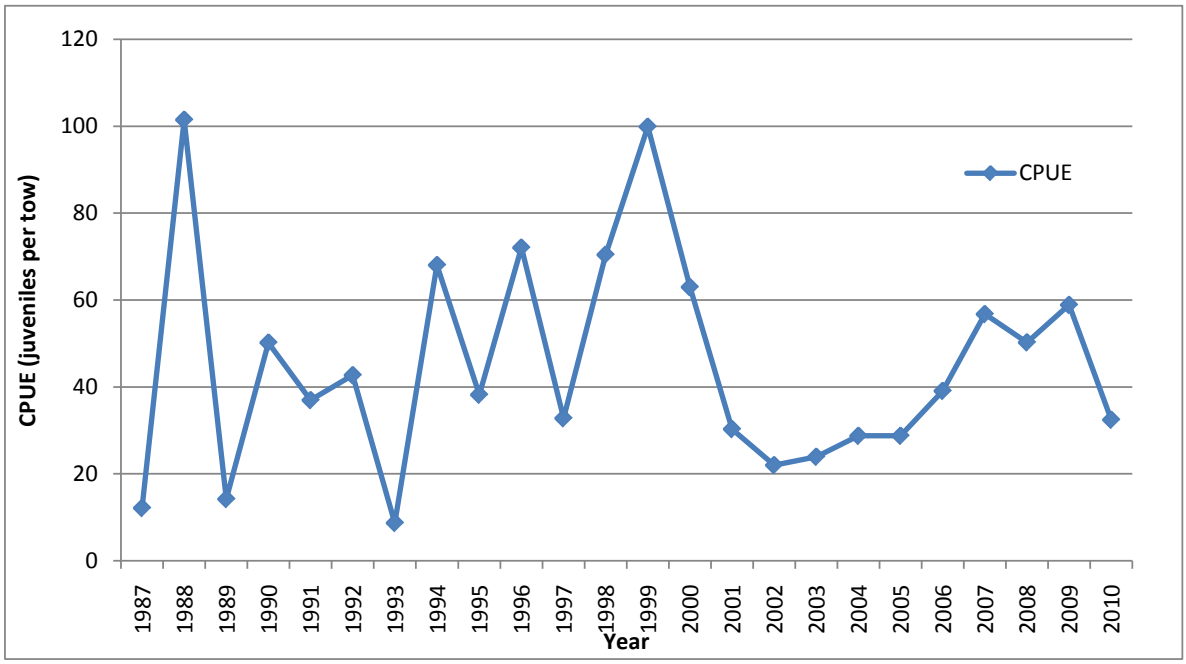


Figure 1. Juvenile index (number individuals per tow) for the Pamlico Sound Trawl Survey from 1987 to 2010.

A fishery independent gill net survey was initiated by NCDMF in May of 2001 (Pamlico Sound Independent Gill Net Survey, Annual Progress Reports for Grant F-70 (2001-2010), North Carolina Department of Environment and Natural Resources, Division of

Marine Fisheries). The survey utilizes a stratified random sampling scheme designed to characterize the size and age distribution for key estuarine species in Pamlico Sound. Data from the survey will be available to generate indices of abundance and age composition for weakfish in Pamlico Sound. During 2010, the weakfish annual weighted CPUE was 0.48 individuals per set and was near the time series low (Figure 2). Weakfish captured totaled 177 individuals, ranging in size from 159 to 479 mm FL with the average size fish being 306 mm FL.

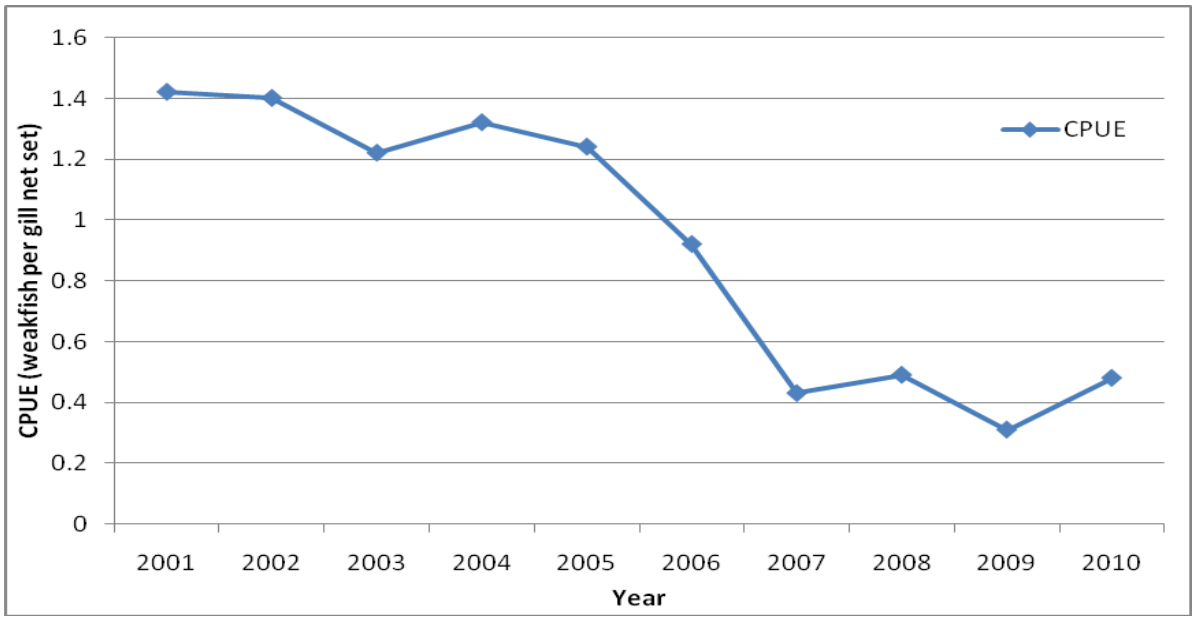


Figure 2. CPUE (number of individuals weakfish captured per set) from the Pamlico Sound Independent Gill Net Survey in North Carolina from 2001 to 2010.

c. Current Regulations in effect for North Carolina.

15A NCAC 03M .0512 COMPLIANCE WITH FISHERY MANAGEMENT PLANS

(a) In order to comply with management requirements incorporated in Federal Fishery Management Council Management Plans or Atlantic States Marine Fisheries Commission Management Plans or to implement state management measures, the Fisheries Director may, by proclamation, take any or all of the following actions for species listed in the Interjurisdictional Fisheries Management Plan:

(1) Specify size;
(2) Specify seasons;
(3) Specify areas:
(4) Specify quantity;
(5) Specify means and methods; and
(6) Require submission of statistical and biological data.

(b) Proclamations issued under this Rule shall be subject to approval, cancellation, or modification by the Marine Fisheries Commission at its next regularly scheduled meeting or an emergency meeting held pursuant to G.S. 113-221.1.

History Note: *Authority G.S. 113-134; 113-182; 113-221; 113-221.1; 143B-289.4;*
Eff. March 1, 1996;
Amended Eff. October 1, 2008.

Current harvest restrictions for weakfish have been issued under the proclamation authority stated above. Addendum IV passed by the ASMFC Weakfish Management Board on November 3, 2009 required states to implement new harvest restrictions by May 1, 2010. North Carolina initially failed to implement these measures by May 1 and was temporarily found out of compliance. On May 16, 2010, North Carolina implemented the measures through proclamation authority. In August of 2010, North Carolina requested that the ASMFC Weakfish Management Board consider a conservationally equivalent management measure in lieu of the 100 pound commercial trip limit. The proposed alternative would allow North Carolina to harvest weakfish strictly as a bycatch where weakfish could not exceed 10% of the landings of all finfish landed on a trip up to 1,000 pounds. The Board approved North Carolina's request as a conservationally equivalent management strategy and the measure was implemented August 20, 2010 and has remained in effect unchanged since that time.

Current regulations are:

Proclamation FF-54-2010 (Attachment 1)

Restrictions to the taking of weakfish for recreational purposes or by hook-and-line:

- No person may possess weakfish less than 12" total length.
- No person may possess more than one weakfish per day.

Proclamation FF-66-2010 (Attachment 2)

Restriction to commercial fishing operations, excluding hook-and-line:

- No person may take, possess, transport, buy, sell, or offer for sale weakfish less than 12 inches in length from state waters or within 200 miles of shore in the Atlantic Ocean.
- Sets an exemption allowing a 10 inch minimum size for weakfish taken in internal waters from April 1 through November 15 in long haul seines and pound nets.
- Requires that weakfish make up no more than 10% of the total weight of the combined catch for any day or trip (whichever is longer) and makes it unlawful to possess more than 1,000 lb of weakfish per day or trip (whichever is longer).
- Requires that gill nets and flynets that do not meet specified mesh requirements can only take weakfish as a bycatch provided that the weight of the weakfish shall not exceed 10% of the total weight of the combined catch up to 100 lb.
- Prohibits the possession of more than 100 pounds of weakfish taken in a shrimp or crab trawl. The weight of the weakfish shall not exceed 50% of the total weight of the combined catch up to 100 pounds.
- Prohibits the possession of more than 100 undersized weakfish per day or trip (whichever is longer) in ocean flynets or flounder trawls. No sale of undersized weakfish is allowed.

Current regulations in North Carolina's commercial fishery have been in place since August 20, 2010. As stated above, these regulations require that all harvest of weakfish occur as a bycatch where weakfish are not allowed to exceed 10% of the total weight of the combined harvest of all species landed per day or trip (whichever is longer). A report

recently provided to the ASMFC Weakfish Management Board indicated that North Carolina had a high rate of non-compliance with this regulation from September through December of 2010. During this time, 31% of the weakfish landings were non-compliant (i.e. exceeded the 10% bycatch allowance). More recently, from January through April of 2011, a much higher level of compliance has been observed with only 3% of the landings occurring as a result of non-compliance. North Carolina will continue to monitor landings of weakfish under this bycatch allowance. A Management Board update is scheduled for November of 2011.

d. Harvest by commercial (gear type), recreational, and non-harvest losses

The North Carolina commercial weakfish harvest was 106,319 pounds in 2010. This is 35% lower than landings in 2009, and is well below the 10-year average of 672,315 pounds. North Carolina's recreational landings were 49,903 pounds in 2010 and were below the 10-year average of 139,104 pounds. The total 2009 North Carolina weakfish harvest was 288,388 pounds and was 52% commercial and 48% recreational.

The following landings summary is broken down into commercial (ocean, estuarine and bycatch) and recreational fisheries.

Atlantic Ocean Commercial Fisheries
Ocean commercial fisheries landed 35,724 pounds of weakfish in 2010 (34% of NC commercial total). The sink gill net and ocean trawl fisheries dominated the ocean catches accounting for 33% of the overall commercial catch and 97% of the ocean commercial catch. All other ocean fisheries (i.e. beach seine, shrimp trawl, hook and line) accounted for 1,052 pounds combined.

Estuarine Commercial Fisheries
Estuarine fisheries landed 70,596 pounds of weakfish in 2010 (66% of NC commercial total). Landings from estuarine gill nets accounted for 54% of the overall estuarine commercial landings followed by long haul seines at 39%. Pound nets harvested 4,563 pounds. "Other" fisheries (crab trawl, hook and line, and shrimp trawl) accounted for 545 pounds. Table 1 presents a summary of the 2010 commercial weakfish landings.

Bycatch in the Commercial Fisheries
North Carolina currently does not have a closed season on the commercial harvest of weakfish. However, North Carolina does currently maintain a flynet closure in the area south of Cape Hatteras in order to meet a 32% reduction in the numbers of weakfish harvested as set out by Amendment 3 and continued in Amendment 4 to the weakfish FMP. The bycatch associated with this closure is 0 pounds as flynets are not allowed to operate in the closed area.

Since the passing of Amendment 3, gears, such as gill nets or flynets, that do not meet certain minimum mesh size requirements designed to reduce bycatch of undersized weakfish are strictly limited on the amount of weakfish that can be landed on a given trip

(see Attachment 2 for details on minimum mesh sizes by gear). For most of 2010, this included a bycatch allowance of not more than 150 pounds of weakfish. This limit was further reduced to 100 pounds to comply with Addendum IV in August of 2010. The amount of bycatch landings occurring in these gears is difficult to quantify because North Carolina does not capture mesh size or effort information through its trip ticket program. However, for some gears some of this information can be obtained through dependent intercept sampling programs. The primary source of weakfish landings occurring from gears not meeting the minimum mesh sizes occurs in the sea mullet (kingfish) gill net fishery prosecuted in nearshore coastal waters. In 2010, the NCDMF sampled 895 gill net trips where gear parameters, including mesh sizes fished were collected. Of these samples, 35 included trips where gill nets with a mesh size <2 7/8 inches stretch mesh were used. Weakfish were present in 24 of the 35 trips. The majority of these trips occurred from January through April, on trips targeting sea mullet. Of these trips, the bycatch allowance was exceeded once for a trip that landed 138 lb during the time (October) when the 100 lb harvest limit was in effect. Eighteen of the 24 trips landed less than 10 lb of weakfish. While trip ticket data does not allow the absolute magnitude of these landings to be quantified, dependent sampling indicates that in 2010, weakfish bycatch from gill nets with a mesh size <2 7/8 inches stretch mesh was not a major source of weakfish landings in North Carolina and most individual trips were well within the bycatch allowance.

Recreational Fishery
During the 2010 calendar year, recreational harvest of weakfish totaled 49,903 pounds. This is above the 10-year average of 139,104 lb.

Non-Harvest Losses
Non-harvest losses continue to be difficult to quantify with minimum size limits in place. Additionally, strict bycatch allowances and trip limits further create the potential for at-sea discards. While minimum sizes and associated mesh restrictions certainly reduce the incidence of under-sized fish in the catch, they do not eliminate bycatch mortality. As these fish are lost at sea, it is difficult to describe or estimate non-harvest losses. North Carolina has made significant advances in reducing bycatch by developing methods to actively cull live, undersized fish during fishing operations.

2010 MANAGEMENT STRATEGY

a. All regulatory changes necessary for compliance have been approved by the ASMFC Weakfish Management Board and have been implemented by NCDMF.

Current regulations are:

Recreational

- No person may possess more than one weakfish per day taken recreationally or by hook and line.

- No person may possess weakfish less than 12” total length.

Commercial

- No person may take, possess, transport, buy, sell, or offer for sale weakfish less than 12 inches in length from state waters or within 200 miles of shore in the Atlantic Ocean.
- Sets an exemption allowing a 10 inch minimum size for weakfish taken in internal waters from April 1 through November 15 in long haul seines and pound nets.
- Makes it unlawful to possess more than 1,000 lb of weakfish per day or trip (whichever is longer) and requires that weakfish make up no more than 10% of the total weight of the combined catch.
- Requires that gill nets and flynets that do not meet specified mesh requirements can only take weakfish as a bycatch provided that the weight of the weakfish shall not exceed 10% of the total weight of the combined catch up to 100 lb.
- Prohibits the possession of more than 100 pounds of weakfish taken in a shrimp or crab trawl. The weight of the weakfish shall not exceed 50% of the total weight of the combined catch up to 100 pounds.
- Prohibits the possession of more than 100 undersized weakfish per day or trip (whichever is longer) in ocean flynets or flounder trawls. No sale of undersized weakfish is allowed.

There are currently no further proposed changes to the management strategy in NC for 2010.

b. Current monitoring programs as outlined in Section 2a,b will be continued in 2010.

Table 1. Summary of all North Carolina commercial weakfish landings by gear with contribution to overall 2010 landings. Individual lengths represent biological samples taken through dependent sampling program.

	Pounds Landed (metric tons)	PERCENTAGE	Individual Lengths	Lengths per metric ton
OCEAN FISHERIES				
SINK NET	20,841 (9)	20%	270	29
WINTER TRAWL	13,831 (6)	13%	404	64
BEACH HAUL SEINE	915 (<1)	<1%	25	60
OTHER (OCEAN)	137 (<1)	<1%	0	0
ESTUARINE FISHERIES				
ESTUARINE GILL NET	38,175 (17)	36%	494	29
LONG HAUL SEINE	27,313 (12)	26%	810	65
POUND NET	4,563 (2)	4%	342	165
OTHER (ESTUARINE)	545 (<1)	<1%	0	0

ALL FISHERIES	106,319 (48)	100%	2,343	49

Attachment 1

FF-54-2010

PROCLAMATION

RE: WEAKFISH – RECREATIONAL

Dr. Louis B. Daniel III, Director, Division of Marine Fisheries, hereby announces that effective at 9:00 A.M., Sunday, May 16, 2010 the following restrictions will apply to the recreational weakfish fishery in coastal fishing waters:

I. SIZE AND CREEL LIMITS

A. It is unlawful to possess weakfish for recreational purposes less than 12 inches in total length.

B. It is unlawful to possess more than one (1) weakfish per person per day taken for recreational purposes.

III. GENERAL INFORMATION

A. This proclamation is issued under the authority of N.C.G.S. 113-170.4; 113-170.5; 113-182; 113-221.1; 143B-289.52; and N.C. Marine Fisheries Rules 15A NCAC 03H .0103 and 03M.0512.

B. It is unlawful to violate the provisions of any proclamation issued by the Director under his delegated authority pursuant to N.C. Fisheries Rule 15A NCAC 03H .0103.

C. The intent of this proclamation is to allow North Carolina to comply with the requirements of the Addendum IV to Amendment 4 of the Atlantic States Marine Fisheries Commission's Interstate Management Plan for Weakfish.

D. This proclamation supersedes Proclamation FF-8-2009, dated January 14, 2009. The bag limit has changed to one (1) fish per person per day.

May 14, 2010
9:00 A.M.
FF-54-2010

Attachment 2

FF-66-2010

PROCLAMATION

RE: WEAKFISH COMMERCIAL FISHING OPERATIONS

Dr. Louis B. Daniel III, Director, Division of Marine Fisheries, hereby announces that effective at **12:01 A.M. Friday, August 20, 2010**, the following restrictions will apply to the commercial weakfish fishery:

I. SIZE LIMITS

A. No person may take, possess, buy, sell, or offer for sale weakfish less than 12 inches total length in state waters or within 200 miles of shore in the Atlantic Ocean except:

1. From April 1 through November 15, weakfish 10 inches total length or more may lawfully be taken in North Carolina internal waters by use of long haul seines or pound nets only and possessed, transported, bought, sold, or offered for sale, and
2. Commercial flounder trawl and flynet operations are allowed to land a tolerance of no more than 100 undersized weakfish (< 12 inches) per day or trip, whichever is longer. It is unlawful to sell undersized weakfish.

II. HARVEST LIMITS

It is unlawful to take or possess more than 1000 pounds of weakfish per day or trip (whichever is longer) in state waters or within 200 miles of the shore in the Atlantic Ocean, except as specified in Section III below.
It is unlawful for the amount of commercially-caught weakfish to weigh more than 10% of the total combined finfish weight per day or trip (whichever is longer).

III. GEAR RESTRICTIONS

A. GILL NETS:
No person may possess aboard or land from, any vessel using or having on board a gill net with a mesh length less than 2 7/8 inches stretched mesh, more than 100 pounds of weakfish during any one day or on any trip, whichever is longer, in state waters or within 200 miles of the shore in the Atlantic Ocean. The weight of weakfish possessed shall not exceed 10% of the total weight of the combined catch up to 100 pounds of weakfish.

B. FLYNETS:
No person may possess aboard or land from any vessel using a flynet more than 100 pounds of weakfish during any one day or trip, whichever is longer, in state waters or within 200 miles of the shore in the Atlantic Ocean. The weight of the weakfish possessed shall not exceed 10% of the combined catch up to 100 pounds of weakfish. All flynets on board shall meet the following requirements:

1. The flynet is constructed with large mesh in the wings that measure not less than 8 inches or more than 64 inches (inside stretched mesh length);
2. The first body section (belly) of the net has 35 or more meshes that are at least 8 inches (inside stretched mesh length);
3. The mesh decreases in size throughout the body of the net to a tailbag with a minimum length of 15 feet with a minimum inside stretched mesh length of 3 1/2 inches hung on the square or 3 3/4 inches hung on a diamond; and
4. Extensions must be a minimum of 20 feet in length and constructed of webbing with a minimum inside stretched mesh length of 3 inches hung on a square, except that when the tailbag is 25 feet or greater in length, extensions may be constructed of either square or diamond meshes.

C. SHRIMP/CRAB TRAWLS:
No person may possess more than 100 pounds of weakfish (12 inches or more in total length) taken with a shrimp or crab trawl. The weight of the weakfish shall not exceed 50% of the total weight of the combined catch up to 100 pounds of weakfish. This limit does not apply to a Recreational Commercial Gear License shrimp trawl.

IV. GENERAL INFORMATION

A. This proclamation is issued under the authority of N.C.G.S. 113-170.4; 113-170.5; 113-182; 113-221.1; 143B-289.52; and N.C. Marine Fisheries Rules 15A NCAC 03H .0103 and 03M .0512.

B. It is unlawful to violate the provisions of any proclamation issued by the Fisheries Director under his delegated authority pursuant to N.C. Marine Fisheries Rule15A NCAC 03H .0103.

C. It is unlawful to use flynets south of Cape Hatteras to the North Carolina/South Carolina line according to N.C. Fisheries Rule 15A NCAC 03J .0202.

D. The intent of this proclamation is to allow North Carolina to implement a conservation equivalency measure in order to comply with Addendum IV to Amendment 4 of the Atlantic States Marine Fisheries Commission's (ASMFC) Weakfish Management Plan.

E. This proclamation supersedes Proclamation FF-55-2010(Revised), dated May 21, 2010.

August 17, 2010
1:30 P.M.
FF-66-2010

South Carolina
Weakfish Fishery and Management Program
Compliance Report for the Year 2010

23 August 2011

Prepared by: Erin Levesque
Marine Resources Research Institute
Marine Resources Division
South Carolina Department of Natural Resources

I. INTRODUCTION

South Carolina's fishery for weakfish occurs mainly from late summer through mid-fall. Although the species is widely distributed throughout the state's estuaries and coastal bays, recreational anglers fishing from small, private boats in coastal waters harvest most weakfish. The areas where weakfish congregate, especially in the fall, are the inshore live-bottom reefs[1]. The fishery in South Carolina occurs primarily in fall months, and to a lesser extent during summer months, in nearshore waters associated with live bottom and artificial reef habitat. This occurs in depths from 15 to 60 feet from locales just beyond the breakers to further offshore in the EEZ.

In the past, South Carolina has had continuous *de minimis* status for this fishery, which excused the state from instituting management and sampling plans for weakfish. However, in 2004 and 2005, then again in 2007 and 2008, the MRFSS survey of NMFS estimated dramatic increases in the number and weight of weakfish landed in SC (Table 1). These data placed South Carolina's request for *de minimis* status in doubt; therefore in 2009, South Carolina decided not to continue a request for *de minimis*. In order to become compliant with current management regulations as a non-de minimis state, a new bag limit of 1 fish per person per day was passed and signed into law. This took effect on July 1, 2010, and was a significant reduction from the previous 10 fish per angler per day bag limit (established in 2007). The minimum size for weakfish remains at 12 inches total length.

II. REQUEST FOR *de minimis* – Not Applicable

According to the guidelines, a state may apply for *de minimis* status if it's combined average commercial and recreational landings (by weight) constitute less than 1 percent of the Atlantic Coast commercial and recreational landings for the same period. South Carolina has not met this stipulation for 5 out of the last 6 years, yet the state had been granted *de minimis* status due to extreme fluctuations in recreational catch estimate and high percent standard errors (PSE) of the MRFSS survey. In anticipation that the state would once again not meet *de minimis* requirements, a plan to sample weakfish for age and growth was drafted and implemented in 2009. In 2010, South Carolina sampled the recreational catch for the first time without *de minimis* status.

1 "live bottom is a term given to patch reefs that are scattered throughout the South Atlantic Bight. These are formed when currents scour away the thin veneer of sand and expose the basement rock, largely limestone marl. Colonial invertebrates, such as sponges, bryozoans, tunicates, attach to the substrate and produce a 'reef' which attracts fishes and decapod crustaceans."

Table 1. Catch data for weakfish, *Cynoscion regalis*, harvested in South Carolina's recreational fishery. Data from the MRFSS of the National Marine Fisheries Service (http://www.st.nmfs.noaa.gov/st1/index.html). No catch data were reported for SC weakfish on the NMFS site for 2001. PSE = percent standard error, a measure of precision. FL = fork length in inches (tip of the snout to the center of the caudal fin, converted from mm).[2]

Year	***Harvest***		***Weight***		***Mean FL (in)***
	Number	PSE	Pounds	PSE	
1981	2,580	41.4	1,772	52.8	6.6
1982	17,342	38.5	14,786	47.3	10.8
1983	6,807	75.9	4,515	71.7	11.2
1984	7,836	48.7	5,150	51.7	11.8
1985	61,788	37.5	105,151	61.8	18.0
1986	78,315	35.3	44,185	27	12.9
1987	18,841	37	23,781	43.7	14.3
1988	1,834	56	1,841	60.5	14.2
1989	6,810	25.2	5,963	25.7	12.6
1990	8,027	44.6	11,186	49.9	15.0
1991	19,616	64.1	25,210	81.9	10.4
1992	23,501	31.2	40,459	32.5	15.1
1993	7,360	44.8	6,929	48	13.3
1994	46,858	77.4	25,163	77	12.6
1995	29,897	46.9	22,875	47.4	12.4
1996	5,695	99.5	4,980	99.5	13.3
1997	2,039	65.6	1,728	66.7	16.7
1998	15,838	47.9	11,288	46.5	12.6
1999	3,941	43.9	4,383	49.5	14.7
2000	5,585	86	6,312	85.2	15.0
2001	No data	No data	No data	No data	No data
2002	90,245	82.5	50,141	81.9	11.5
2003	4,162	92.9	4,306	92.6	13.6
2004	153,589	44.9	118,352	50.8	11.3
2005	129,575	34.5	94,205	35.6	12.4
2006	7,146	56.3	8,014	59.6	12.5
2007	71,230	32.9	46,103	32.7	11.6
2008	25,794	43.5	21,296	45.8	12.5
2009	10,952	46.5	10,375	50.9	14.2
2010	9,672	50.9	10,379	48.2	13.2
mean	**30,099**		**25,201**		

2 The following years had questionable values for the mean fork length (inches) of the weakfish caught in South Carolina for that period: 1985 ($\bar{x}$ = 18.0); 1990 ($\bar{x}$ = 15.1); 1992 ($\bar{x}$ = 15.1); 1997 ($\bar{x}$ = 16.7); 2000 ($\bar{x}$ = 15.0). Weakfish of these lengths are encountered in the state's waters, but they are not abundant enough to contribute to this relatively large size.

Examination of the MRFSS data showed that the estimated long-term mean annual harvest for weakfish in the South Carolina recreational fishery was 25,201 pounds; the 2010 reported recreational landings fell shy of this long-term average by approximately 15,000 pounds. The only patterns or trends in these data are the very high percent standard error values (PSE) that range from a minimum of 27.0% in 1986 to a maximum of 99.5% in 1996. The average is 56.0%, indicating that the precision of the estimates is very low.

MRFSS data for the past five years (2006 – 2010) indicated that weakfish 15 inches and larger were rare in the inspected creels, until 2008 when approximately 13% of the harvested were fish 15 inches FL (Table 2), and 2009 when 12% of the weakfish were 15 inches FL or longer. The 2010 data are unusual compared all other years, with almost 15% of the harvest between 17 – 18 inches FL. If these length data are correct, perhaps they can be explained by habitats where the weakfish were caught. For example, if there was a shift from sampling a portion of the population caught on piers versus on artificial reefs that could explain some of the increase in size distribution. Also, due to a drastic drop in bag limit from 10 fish/angler/day to 1 fish/angler/day, anglers may be more likely to retain larger weakfish and release smaller fish.

Table 2. Percent frequency distribution of harvested (MRFSS categories A+B1) weakfish in the South Carolina recreational fishery over the past 5 years (upper) and the partitioning of the catch data (numbers of fish) into the appropriate sizes using the percent at size values for each year (lower). Data from the MRFSS of the National Marine Fisheries Service (http://www.st.nmfs.noaa.gov/st1/index.html).

Inch Group (FL)	**Year**				
	2006	**2007**	**2008**	**2009**	**2010**
8		11.1			
9		0.3			
10		4.2	0.5		
11	70.2	65.0	60.8		
12		8.3	24.8		81.6
13	23.3	6.0	0.2	55.7	
14	4.4	4.6	0.7	32.1	2.7
15	1.7	0.4	13.1	8.1	0.9
16	0.2	0.1		4.1	
17					1.8
18					13.0
19					
20	0.2				
Mean FL	12.5	11.6	12.5	14.2	13.2

Inch Group (FL)	Year				
	2006	**2007**	**2008**	**2009**	**2010**
8		7,914			
9		228			
10		2,977	126		
11	5,016	46,285	15,690		
12		5,948	6,390		7,894
13	1,666	4,274	41	6,100	
14	312	3,291	178	3,517	258
15	118	270	3,369	890	86
16	17	43		445	
17					172
18					1,262
19					
20	17				
# A + B1	7,146	71,230	25,794	10,952	9,672

In the last four out of six years, the annual total contribution for South Carolina's weakfish fishery has been above the 1% limit to qualify for *de minimis* status (Table 3). In 2009, even though the pounds of weakfish harvested was below the long-term average for the state, the take still constituted greater than 1% of the total catch of the Atlantic coast due to falling catches in the northern part of the range. Although the 2010 commercial catch data were not available for the Atlantic coast at the time of this report, due to the decreasing trends in coastwide catch, and a recreational catch in South Carolina nearly identical to that of 2009, South Carolina probably accounts for greater than 1% of the catch in 2010.

Table 3. Commercial and recreational catches of weakfish in pounds for the South Carolina fishery in comparison to Atlantic coast catch by year. Percent SC is the percent of the total coastal harvest by commercial and recreational fishers accounted for by SC landings. The data in bold type are those years during which the SC catch was > 1 % of the Atlantic coast catch. Data from the National Marine Fisheries Service (http://www.st.nmfs.noaa.gov/st1/index.html).

Year	South Carolina			Atlantic Coast Total			Percent SC
	Commercial	Recreational	Annual Sum	Commercial	Recreational	Annual Sum	
1981	0	1,772	1,772	26,363,607	16,105,028	42,468,635	0.054
1982	443	14,786	15,229	19,478,274	8,285,326	27,763,600	0.054
1983	0	4,515	4,515	17,475,003	11,730,619	29,205,622	0.015
1984	0	5,140	5,140	19,773,587	7,013,781	26,787,368	0.019
1985	0	105,151	105,151	16,953,357	5,489,026	22,442,383	0.468
1986	0	44,185	44,185	21,187,973	10,141,786	31,329,759	0.141
1987	0	23,781	23,781	17,072,159	6,749,890	23,822,049	0.099
1988	0	1,841	1,841	20,526,402	6,331,649	26,858,051	0.006
1989	113	5,693	5,806	14,163,008	2,177,237	16,340,245	0.035
1990	0	11,186	11,186	9,438,260	1,347,260	10,785,520	0.103
1991	0	25,210	25,210	8,692,760	2,130,563	10,823,323	0.232

1993	0	40,459	40,459	7,453,788	1,398,980	8,852,768	0.457
1993	0	6,929	6,929	6,853,579	1,102,340	7,955,919	0.087
1994	0	25,163	25,163	6,190,501	1,795,517	7,986,018	0.315
1995	0	22,875	22,875	7,098,667	1,855,548	8,954,215	0.255
1996	0	4,980	4,980	6,940,041	2,925,392	9,865,433	0.050
1997	0	1,728	1,728	7,297,785	3,692,716	10,990,501	0.015
1998	0	11,288	11,288	8,423,108	4,044,974	12,468,082	0.090
1999	0	4,383	4,383	6,905,171	3,143,427	10,048,598	0.043
2000	0	6,312	6,312	5,400,505	4,154,794	9,555,299	0.066
2001	0	0	0	4,999,539	2,722,630	7,722,169	0
2002	0	50,141	50,141	4,773,119	2,192,607	6,965,726	0.719
2003	0	4,306	4,306	2,001,271	864,962	2,866,233	0.150
2004	0	118,352	118,352	1,523,733	926,962	2,450,695	**4.829**
2005	0	94,205	94,205	1,147,082	1,587,378	2,734,460	**3.445**
2006	0	8,027	8,027	1,061,887	919,662	1,981,549	0.405
2007	0	46,103	46,103	907,980	692,392	1,600,372	**2.881**
2008	0	21,296	21,296	470,630	700,862	1,171,492	**1.818**
2009	0	10,375	10,375	382,637	221,800	604,437	**1.716**
2010	0	10,379	10379	*Not available	84214		

Reported recreational landings in SC increased dramatically in 2004 and 2005; catches then declined in 2006, increased again in 2007, and began a decline again in 2008. The estimated weakfish harvest in 2004 was two orders of magnitude higher than that for 2003. The catch then declined by about 20% in 2005. Landings in 2006 showed a decline by two orders of magnitude from 2004. Catches since 2004 (with the exception of 2006) excluded South Carolina from the *de minimis* category as defined in the Weakfish Management Plan due to a combination of higher than average harvest for the state and decreased landing for the entire Atlantic coast. The commercial catch coastwide for the Atlantic states was not available at the time of this report, so the percentage of the total harvest (commercial+ recreational) from South Carolina could not be calculated. However, if just the recreational harvest is considered, then 12.3% of the weakfish harvested in 2010 were landed in South Carolina. South Carolina's recreational harvest for 2010 was nearly identical to the 2009 harvest; however, the total recreational harvest for the Atlantic coast decreased by approximately 62%.

Why would South Carolina experience 'a bumper crop' of weakfish during a period when the coast-wide landings declined to the lowest values seen during the previous 20+ years? Did the South Atlantic Bight experience very strong weakfish year classes in 2003 and 2004 and again in 2006 and 2007? Did all the weakfish from more northerly waters move into the South Atlantic Bight during the late summer and early fall? Was there a dramatic increase in fishing effort for this species? Below we attempt to address the viability of these various possible causes for landings in South Carolina to have risen above the *de minimus* threshold.

If a dramatic increase in the fishing effort caused the rise in the estimated harvest of weakfish in South Carolina, the trend should be visible in the MRFSS data. However, in 2006 there were more trips than any of the other years and the harvest of weakfish was one to two orders of magnitude lower than those for the two highest years (Table 4). The number of trips made in 2007 and 2008 were nearly identical, yet in 2007 the estimated harvest was more than

double that of 2008 (Table 4). There is no correlation between the harvest of weakfish by the recreational fishery and the effort expended in the fishery.

Table 4. Estimates of the total number of trips made by anglers in South Carolina's recreational fishery with the corresponding PSE value (percent standard error) and harvest in pounds for the past seven years. Data from the NMFS (http://www.st.nmfs.noaa.gov/st1/index.html).

Year	*Number of Trips*	*PSE*	*Harvest*
2000	1,339,788	6.7	6,312
2001	1,675,601	7.2	0
2002	1,254,295	7.5	50,141
2003	2,097,813	7.6	4,306
2004	2,239,474	7.5	118,352
2005	2,126,046	8.2	94,205
2006	2,660,933	8	8,027
2007	2,577,099	6.4	46,103
2008	2,576,201	6.8	21,296
2009	2,391,327	6.9	10,375
2010	2,206,755	7.9	10,379

The increase may be the result of an increased abundance of weakfish in the coastal waters of the South Atlantic Bight. If this were the case, a region-wide increase in abundance would be reflected in an upward trend in the recreation harvest from North Carolina to the east coast of Florida. Landings from the southeast did not demonstrate this to be the case (Table 5).

Table 5. Annual total weights (metric tons) of weakfish in the recreational harvest of states along the southeastern U.S. coast. Data from the NMFS (http://www.st.nmfs.noaa.gov/st1/index.html).

Year	*North Carolina*	*South Carolina*	*Georgia*	*East Florida*
2000	39.9	2.9	1.6	50.4
2001	71.9	0(none reported)	1.4	18.1
2002	37.5	22.7	0.3	26.8
2003	73.2	2.0	0.6	10.1
2004	124.1	53.7	5.1	16.6
2005	71.7	42.7	3.5	45.3
2006	63.2	3.6	1.5	33.3
2007	56.9	20.9	1.7	60.1
2008	63.2	9.7	2.7	16.3
2009	46.8	4.7	2.2	23.6
2010	22.6	4.7	1.3	5.8

Perhaps weakfish were abundant only in the coastal waters of South Carolina during those years when the recreational landings were high in 2002, 2004, 2005 and 2007. If increased harvests reflect a greater abundance, fishery independent resource surveys in the depths where weakfish occur in South Carolina should show highly significant increases for the same period. The SEAMAP trawl survey samples along the South Carolina coast during spring, summer and fall each year. Since the MRFSS data indicated that the bulk of the harvest of weakfish in South Carolina's fishery occurred in late summer through fall, catch data for tows made in South Carolina's waters during those periods were examined to determine if the fishery independent data followed the same trend as the MRFSS 2000 - 2010.

III. 2010 WEAKFISH FISHERY AND MANAGEMENT PROGRAM

A. Fishery Dependent Monitoring:

In 2009, SCDNR creel clerks began collecting weakfish otoliths from anglers' weakfish catches at fishing piers, particularly in the northern area of the South Carolina coast. Lengths were also recorded in order to describe the harvested portion of the population. In 2009, when the bag limit for weakfish in South Carolina was still 10/angler/day, eighty pairs of otoliths and corresponding lengths were collected and recorded. When the bag limit was reduced to 1/angler/day in 2010, only sixteen pairs of otoliths and lengths were collected. Ages and lengths of the sampled portion of the South Carolina recreational weakfish fishery are shown below (Table 6).

Table 6. Number of weakfish sampled by year and age and corresponding total lengths.

	2009		2010	
Age	number	TL range (in)	number	TL range (in)
1	27	11.7-15.2	4	12.5-14.6
2	53	12.1-17.9	10	13.2-17.9
3	0	-	2	19.8-19.9

In 2010, the South Carolina Marine Game Fish Tagging Program reported that no weakfish were tagged or recaptured by recreational anglers. This program has established weakfish as a priority species to be tagged by its trained, volunteer recreational anglers. (SCDNR POC: WiggersR@dnr.sc.gov).

B. Fishery Independent Monitoring:

SCDNR does not have a specific monitoring program in place for weakfish. However, weakfish data are collected through two of the Department's on-going programs: Southeast Area Monitoring and Assessment Program (SEAMAP) and South Carolina Estuarine and Coastal Assessment Program (SCECAP).

SEAMAP collects seasonal abundance, biomass, and length frequency data for weakfish in nearshore waters. In recent years this program has also begun age/growth and gut content analyses. Sampling for this program is conducted by trawl in from the coastal zone of the South Atlantic Bight between Cape Hatteras, NC and Cape Canaveral, FL (SCDNR POC: BoylanJ@dnr.sc.gov). The SEAMAP's survey data (Table 7) shows numbers of weakfish caught per tow, as well as weight in kilograms for weakfish caught along the coast of South Carolina.

Table 7. Mean catch per tow in numbers and weight (kg) for weakfish off South Carolina by season and year; data from the SEAMAP trawl survey, 2000 through 2010.

Year	***Summer***		***Fall***		***Total***	
	Number	weight	number	weight	number	Weight
2000	20.3	0.685	5.1	0.300	12.7	0.493
2001	19.2	0.711	5.4	0.338	12.3	0.524
2002	16.2	0.685	2.8	0.240	9.5	0.463
2003	14.2	1.063	3.9	0.359	9.0	0.711
2004	3.1	0.175	3.4	0.151	3.2	0.163
2005	1.8	0.168	9.4	0.755	5.6	0.462
2006	4.1	0.468	3.1	0.275	3.6	0.373
2007	11.4	0.581	18.4	1.464	14.9	1.023
2008	11.3	0.681	65.8	3.288	38.6	1.984
2009	15.3	0.685	11.9	0.860	13.6	0.773
2010	14.8	1.024	14.6	1.349	14.7	1.186

SCECAP collects abundance, biomass, and length frequency data for weakfish in SC estuarine waters. Sampling is done primarily by otter trawls in both open water and tidal creek habitats throughout the state during the summer months (POC: VandolahR@dnr.sc.gov).

In addition to the two surveys mentioned above, SCDNR recently (2010) began monitoring the finfish bycatch in its Crustacean Management Trawl Survey, which operates in near-shore state waters. Since weakfish are often captured in the trawls, we anticipate that the survey will be useful for monitoring the species' population once several years of data have been accumulated. Furthermore, hard copies of fishery-independent trawl data exist for the same sites from a trawl survey that operated over the period 1953-1969. A new electronic database is currently being developed to store and analyze these historical data so that comparisons can be made against our contemporary data.

SCDNR staff also process and compile catch, size and age data for weakfish taken during the southern leg of the fall groundfish survey conducted by the NMFS-Woods Hole Laboratory.

We also process otolith and provide age determinations for the weakfish collected by the state of Maryland each year. (POC: LevesqueE@dnr.sc.gov).

C. Weakfish Regulations in Effect:

In January 2010, Bill H.4444 (see below) was first introduced in the South Carolina House of Representatives and then introduced in the Senate in March 2010. The bill took effect on July 1, 2010. The bill states that only one weakfish may be kept per day per angler, instead of the previous creel limit of 10/day/angler. This new recreational creel limit brings South Carolina into compliance as the state no longer claims *de minimis* status. The size limit remains at a minimum of 12 inches total length.

H.4444 Weakfish Creel Limit Reduction Effective Date 7/01/2010 - Act No.169
It is unlawful for a person to take or have in possession more than one weakfish, *Cynoscion regalis,* in any one day.

SC remains in compliance with shrimp trawl bycatch reduction requirements through the use of approved bycatch reduction devices (BRDs) in any shrimp trawl with a foot-rope length greater than 16 ft. Details of the BRDs required were submitted with the 1999 compliance report.

D. Weakfish Harvest

No directed commercial fishery occurs in South Carolina for this species, and no landings were reported in 2010. Incidental catch does occur in the shrimp trawl fishery. However, the magnitude of weakfish discards taken incidentally by this fishery is unknown. The recreational weakfish fishery is seasonal, occurring primarily in the late summer and fall. There is a small, directed recreational fishery particularly in the northern part of the state. In general, marine recreational anglers often catch weakfish incidentally when fishing for other species of the drum family (Sciaenidae).

The 2010 recreational landings estimated by the MRFSS are nearly identical to reported landings in 2009 (approximately 10,000 pounds), and well below the long-term average.

E. Habitat Recommendations – Not applicable.

IV. PLANNED WEAKFISH MANAGEMENT PROGRAMS FOR 2010-11

A. Regulations in Effect for 2011-2012:

Bag limit – one (1) fish per angler per day
Minimum Size – 12 inches total length

B. Monitoring programs that will be performed:

The 2011-12 management programs will consist of monitoring weakfish landings and continuation of the mandatory use of BRDs in shrimp trawls fished in state waters. The

SEAMAP trawl survey is ageing weakfish and assessing sex and maturity as a part of their sampling protocol.

C. Changes from the Previous Year:

Effort will be focused on collecting age samples from recreationally caught weakfish in SC through creel surveys. Since the bag limit has been reduced from 10 to 1, in an effort to ensure that we collect the required number of age samples, creel clerks will sample harvested fish, as well as fish that would have been discarded by anglers. This plan was followed in 2010, however, due to the decrease in bag limit, samples did drop dramatically.

V. PLAN SPECIFIC REQUIREMENTS – Not applicable.

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

A.G. "SPUD" WOODWARD
DIRECTOR

Michael W. Waine
Weakfish Fishery Management Plan Coordinator
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200A-N
Arlington, VA 22201

29 August 2011

Michael:

Please find attached Georgia's Year 2010 Compliance Report for Weakfish. Feel free to contact me if you have questions.

Sincerely,

Patrick J. Geer
Chief, Marine Fisheries Section
Coastal Resources Division – Georgia Department of Natural Resources

cc: Kathy Knowlton
Spud Woodward

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

A.G. "SPUD" WOODWARD
DIRECTOR

Weakfish Interstate Fishery Management Plan
2010 Compliance Report - Georgia

I. Introduction

During 2010, weakfish size limits remained unchanged while creel limits were reduced from six to one fish in response to Addendum 4 to Amendment 4 of the ASMFC Weakfish Management Plan. The Georgia General Assembly enacted legislation as part of SB 474 and the regulation was signed by the Governor June 3, 2010.

Bycatch reduction requirements remained in effect for the shrimp trawl fishery, and the industry-based Bycatch Reduction Device (BRD) testing program was continued, although no tests were conducted. Several finfish monitoring programs were continued. Directed commercial and recreational weakfish fisheries were non-existent in Georgia.

II. Request for *de minimis*

Pursuant to Section 3.5.3 of Amendment 3 to the Weakfish Fishery Management Plan, Georgia is requesting a continuation of its *de minimis* status. The 2009-2010 Atlantic coast wide recreational landings averaged 153,007 pounds and the commercial landings for the 2008 - 2009 period averaged 427,922 pounds. At present, commercial landings data from 2010 are not available on the NMFS site. The combined average harvest of both time series is 580,929 pounds.

In comparison, Georgia's recreational harvest for 2009, as estimated by the NMFS marine recreational fishing surveys, was 2,829 pounds across all harvest modes. The two-year (2009-2010) recreational harvest average was 3,813 pounds. In 2009 and 2010, there were no commercial landings reported in Georgia. Typically commercial landings are very low and confidential because less than three dealers are involved. Combining both Georgia commercial and recreational harvest for 2009 (4,797 lbs) results in an approximately 0.8% Georgia contributed of the total harvest along the Atlantic Coast.

III. Review of 2010 Fishery and Management Program

a. Fishery Dependent Monitoring

Commercial Fishery

Coastal Resources Division (CRD) continued providing observers to conduct

Characterization of bycatch associated with the whelk trawl fishery and the cannonball jellyfish experimental trawl fishery during 2010. These efforts were funded through CRD's Atlantic Coastal Fisheries Cooperative Management Act (P.L. 103 - 206) project. Observers rode along on two whelk trips in 2010, and recorded bycatch information from a total of seven tows. No weakfish were recorded in these seven tows, which totaled 5.59 fishing hours. Staff also performed observer work on a single cannonball jellyfish trawl harvest trip in 2010, where they logged bycatch information from six tows. No weakfish were recorded in these six tows, which totaled 1.23 fishing hours.

Recreational Fishery

In 2010, CRD continued to monitor the catch and effort of marine recreational anglers in Georgia through participation in the NMFS marine recreational fishing surveys. CRD creel clerks conducted 1,743 intercept interviews from March through December. Fifteen (15) angler trips caught 104 weakfish of which 82 were released alive (~79%). Eight (8) trips retained 22 weakfish. Of the harvested fish, all 22 were measured, of which 3 were undersized (~14%). Of the trips in which fish were harvested, 7 of the 8 trips possessed legal bag limits (~88%).

Table 1. NMFS marine recreational fishing surveys expansions of intercept survey for Georgia weakfish.

Year	Total Catch (# of Fish)	PSE	Total Harvest (# of fish)	PSE
2008	19,137	31.5	5,909	46.2
2009	21,102	32.8	8,664	58.4
2010	14,597	40.5	3,113	42.8

Throughout 2010, CRD continued its Marine Sportfish Carcass Recovery Project (CRP), optimizing biological data collection from the recreational sector through a partnership with anglers and public marinas. Freezers placed at 14 fishing access points in coastal Georgia collected a total of 4,357 fish carcasses representing nine species. Only one weakfish carcass was donated to the CRP during 2010.

b. Fishery Independent Monitoring

During 2010, staff continued collecting data on weakfish and other marine organisms as part of the monthly Ecological Monitoring Trawl Survey conducted onboard the R/V *Anna*. During this time period, 515 tows/observations were conducted, totaling 127.27 hours of tow time. A total of 9,954 weakfish were observed, collectively weighing 184.91 kg (Table 2). Lengths ranged from 11 mm to 329 mm total length, with a mean of 129.41 mm TL (Table 2). Sixty-one percent of the 515 tows had at least a single weakfish. Weakfish abundance varied by month, though the greatest abundance continued to be observed in the summer months (June – September).

Table 2. Weakfish observed during Ecological Monitoring Surveys aboard *R/V Anna* - 2010	
Observation Date	**R/V *Anna* Monthly Assessment**
Total Weakfish (num.)	9,954
Total Weight (kg)	184.91
Frequency (Trawls with weakfish)	315
Average length (mmTL)	129.41
Minimum Length	11
Maximum Length	329
Total Trawl Time (hr)	77.48
CPUE (# per hr)	128.48
Total Finfish (num.)	205,590
Total Finfish Weight (kg)	4,188.56
Total Trawls	515
Weakfish Percent Composition (num.)	4.84
Weakfish Percent Composition (kg)	4.42

In 2010, entanglement gear surveys were conducted in the Wassaw and Altamaha River Delta estuaries (Table 3).

Table 3. 2010 Gill and Trammel net effort for Wassaw and Altamaha Sounds.		
Gear	**GILL**	**TRAMMEL**
Location	Wassaw + Altamaha	Wassaw + Altamaha
Months	Jun - Aug	Sept-Nov
Total Effort (sets)	216	150
N	1	0
CPUE (N/Total Effort)	0.005	0
Mean CL (mm)	233	-
Min CL (mm)	233	-
Max CL (mm)	233	-

c. 2010 Regulations

Size and Possession Limits

During this report period, the recreational bag limit in Georgia was reduced from six to one weakfish (June 2010), with a minimum total length remaining at 13 inches. The season is open year round. The same size and possession limits were applicable to commercial fisherman. This size and bag limit is in compliance with Addendum 4 to Amendment 4 of the ASMFC Weakfish Management Plan.

Bycatch Reduction Device (BRD) Requirements

Georgia Board of Natural Resources Rule 391-2-4-.08 requires all food shrimp trawls with a headrope length of greater than 16 feet to have a certified BRD installed. Currently, three fisheye BRDs and the eight-inch and ten-inch expanded mesh funnel BRDs are certified for use in Georgia waters.

Georgia's BRD testing procedures allow the trawl industry the opportunity to test new BRD designs under a master scientific collecting permit held by CRD. To allow the industry time to refine concepts, a two-week prototype test period is implemented prior to the more rigorous certification testing. During the prototype testing phase permittees may test the new devices without on-board observers, but they are required to keep and submit detailed records of prototype test results. During 2010, no requests to prototype test new BRD devices were received.

d. 2010 Harvest

Commercial

In 2010, there were no reported commercially harvested weakfish.

Recreational

The NMFS expanded data for Georgia reports 3,113 (PSE 42.8) weakfish (2,829 lbs) harvested in 2010 compared to 8,664 in 2009 (PSE 58.4) (4,797 lbs). During that same two-year period, the estimated total catch decreased nearly 31% from 21,102 in 2009 to 14,597 in 2010.

Non-Harvest

Non-harvest losses of weakfish are described in the summary of fishery dependent monitoring (Section III a. Commercial). Turtle Excluder Device (TED) and BRD requirements have served to reduce non-harvest losses of finfish, including weakfish, in the Georgia shrimp trawl fishery.

e. Habitat Implementation

N/A

IV. Planned Management Programs for 2010.

a. 2010 Regulations

In response to Addendum 4 to Amendment 4 of the ASMFC Weakfish Management Plan the Georgia General Assembly enacted legislation (Senate Bill 474) to reduce the

recreational and commercial bag limit from 6 fish to1 fish per angler. The minimum size remained at 13 inches and the season remained year round.

b. Monitoring Programs

Reporting

Reporting requirements for all Georgia seafood dealers and harvesters remains unchanged. Mandatory reporting requirements pursuant to Georgia law (O.C.G.A. Section 27-4-118 and Board of Natural Resources Rule 391-2-4-.09, previously submitted), requires all harvesters landing seafood in Georgia to record their harvest and to submit these records to the Department of Natural Resources.

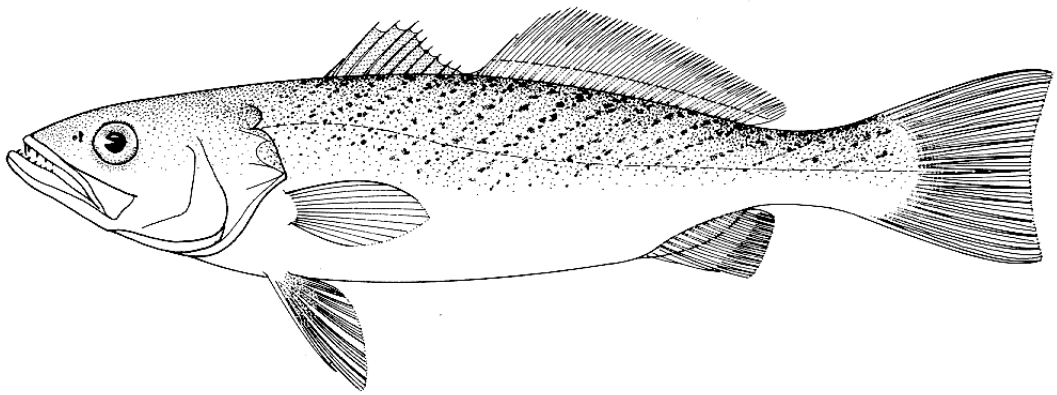
Fishery Dependent and BRD Testing

Fishery dependent monitoring programs as described in Sections III are continuing in 2010. Bycatch characterization in the whelk trawl fisheries is continuing. Further bycatch characterization in the shrimp trawl fishery will occur during any BRD testing operations as described above.

Biological data collection

Biological data collection will continue through the Marine Sportfish Carcass Recovery Project and fishery-independent sampling. NMFS marine recreational fishing surveys interviews could potentially provide biological data if more weakfish were encountered.

The 2011 Atlantic States Marine Fisheries Commission Compliance Report for weakfish, *Cynoscion regalis,* on Florida's East Coast



Joseph Munyandorero
Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
St. Petersburg, FL 33701

Executive Summary

- In 2010, estimates of Florida's weakfish total landings were 548 pounds, of which 87% came from the recreational fishery.

- Average landings of weakfish in Florida for 2009/2010 represented 0.4% of the 2009/2010 coastwide average landings. Therefore, Florida requests to be granted continued *de minimis* status.

- Commercial landings and effort for weakfish amounted to 73 pounds and 27 trips in 2010. Inland and federal waters contributed for 68% and 27% of these landings. Nearly all weakfish commercial landings were made by hook-and-lines and gillnets.

- The current status of size compliance in Florida's commercial fishery of weakfish was difficult to ascertain owing to the marginal nature of this fishery since 1995 which made the collection of adequate length measurements problematic. In 2010, only 35 weakfish-like fish were measured and all were >= 12 inches long.

- In 2010, an estimated 587 weakfish weighing 474 pounds were kept by anglers on Florida's east coast. Weakfish recreational harvests in 2010 were the lowest recorded over 1983-2010.

- In 2010, 82 % of the recreationally landed weakfish-like fish were equal to or above the minimum size limit. Compliance with the 12-inch minimum size has generally been high since 1996.

- For the period 1995-2010, about 97 % of the anglers sampled were complying with the four fish bag limit and 74% were complying with a one bag limit.

- Head boat fishery did not catch weakfish on the Atlantic coast of Florida in 2010.

- Fishery-independent indices of abundance for YOY and adult weakfish-like fish increased steadily on the east coast of Florida during 2001-2004 and 2001-2005, respectively. They declined thereafter but rebounded since 2008; YOY index dropped in 2010.

I. INTRODUCTION

A. Distribution of weakfish and fishery management regulations

Weakfish, *Cynoscion regalis,* occur along the Atlantic coast of the United States from southern Florida to Massachusetts, but are most abundant between New York and North Carolina (Mercer, 1989).

The Florida Fish and Wildlife Conservation Commission (FWC) regulates the fishing of weakfish under Chapter 68B-47, Florida Administrative Code (F.A.C), as part of the Atlantic States Marine Fisheries Commission (ASMFC)'s Fishery Management Plan (FMP, Amendment 4) for weakfish. In 1995, a minimum size limit of 12" total length for all weakfish landed in Florida and a recreational bag limit of 4 fish per day was established. Amendment 4 of the ASFMC weakfish FMP requires each member state to implement harvest reduction strategies to reduce fishing mortality on fully recruited weakfish. Amendment 4 to the management plan was completed in November 2002 and established a target fishing mortality rate of 0.31 and a threshold fishing mortality rate of 0.5 per year and spawning stock biomass threshold of 31.8 million pounds.

On the other hand, the Florida Constitutional amendment (Article X, Section 16) banned in 1995 the use of gill and entangling nets in state waters and restricted the size of other nets, such as trawls and haul seines, to 500 square feet in near-shore and inshore waters. As a result, there has been a large reduction in the commercial landings of weakfish. Since 1995, Florida has been in *de minimis* status as defined by the ASMFC weakfish FMP (Amendment 4). Thus, Florida is not required to implement the recreational or commercial fishing provisions of the weakfish FMP, except for bycatch reduction devices as stipulated under the FMP's section 4.2.8, and for implementing size (i.e., 12" TL) and recreational bag (i.e., 4-fish-per-day) limits. Furthermore, Florida is required to report annual weakfish landings in order to determine if its continued *de minimis* status is warranted. Effective July 27, 2010, Chapter 68B-47:

(1) Applies weakfish management rules only in state waters of Nassau County from the shore out to three miles off Amelia Island and the St. Marys River and its tributaries south to State Highway 200A and the Shave Bridge on the Amelia River, as well as inland waters east of Highway 17 (about 20 miles inland), which is the saltwater demarcation line.

(2) Establishes a 1-fish recreational bag limit and 100 pound commercial trip limit for all weakfish-like fish (i.e., weakfish, sand seatrout, and their hybrids) in the Nassau county weakfish management area.

This report updates the FWC and the ASMFC on the current state of the weakfish fishery and Florida's *de minimis* status. Landings reported are from Nassau and Duval counties and were adjusted using the genetic proportions of "pure" weakfish within the Cynoscion complex, as determined by Tringali et al. (2011), i.e., about 48% and about 17%, respectively. For the recreational sector, adjustment also accounted for the ratio of the number of intercepted trips to the number of (Florida) coast-wide intercepted trips directed to weakfish-like fish.

C. Total Landings

In 2010, Florida's total landings of weakfish, *Cynoscion regalis*, were 548 pounds of which 87% were from the recreational fishery. The relative contributions of recreational harvests in total landings varied without trend prior to 1995,

increased sharply since then and formed a plateau averaging 75% annually during 1999-2010 (Fig. 1, Table 1). The 2010 combined harvest represented 28% and 23% of those of 2008 and 2009, respectively.

Weakfish total landings averaged 19,650 pounds annually between 1985 and 1994, and 2425 pounds annually from 1995 onwards. The reduction of weakfish total landings during the latter period could be partly attributed to a reduced commercial fishery, as a result of the constitutional amendment banning entangling fishing gears. In 2010, the recreational landings were the lowest so far recorded in during 1982-2009.

II. REQUEST FOR *de Minimis* STATUS

To determine whether the State of Florida met the *de minimis* requirements for the weakfish fishery on the Atlantic coast, the recreational and commercial catch statistics for 2009 and 2010 by state were used. The recreational harvests in pounds (Type A+B1) came from the National Marine Fisheries Service (NMFS) website http://www.st.nmfs.gov/st1/recreational/queries/index.html.The commercial landings (pounds) for 2009 were obtained from the NMFS website http://www.st.nmfs.gov/st1/commercial/index.html and, for Florida, from the Marine Fisheries Information System or "trip tickets" (TTK). Those for 2010 were preliminary estimates and came from state fishery agencies.

The time series of commercial and recreational weakfish landings on the Florida Atlantic were from Nassau and Duval Counties, and were revised on the basis of the genome proportions of weakfish within the Cynoscion-complex found in waters of those counties. Those proportions are 48% in Nassau County and 17% in Duval County (Tringali et al. 2011). Anglers' harvest of weakfish-like fish from waters of Nassau and Duval counties were initially estimated by multiplying the (Florida) coast-wide harvest with the ratios of Nassau and Duval intercepts to coast-wide intercepts as obtained from Type 3 records. The analysis of compliance with the size and bag limits dealt with all "weakfish-like" *Cynoscion* because, in addition, sample sizes for length measurements obtained through the Trip Interview Program were too small, and the creel data have been uninformative to disentangle the genome composition within the Cynoscion complex.

The 2009-2010 coastwide average harvest of weakfish was at least 402,021 pounds. The estimate of the 2009-2010 average harvest for weakfish on the east coast of Florida was 1,609 pounds (Table 2). Based on these estimates, the harvest of weakfish on the Florida Atlantic represented 0.4% of the 2009-2010 coastwide average of available landings. Florida therefore requests to be granted continued *de minimis* status for the weakfish fishery on the Atlantic coast.

III. PREVIOUS CALENDER YEAR'S FISHERY AND MANAGEMENT PROGRAM

A. Activities and Results of Fishery Dependent Monitoring Program

Commercial Fishery

Description of 2010 Fishery

The commercial landing data used included all edited (batches 1-1103) and unedited (batches 1104-1107) TTKs received by the FWC through August 8th, 2011.

Preliminary estimates of commercial weakfish total landings and trips for 2010 were 73 pounds and 27 trips (Fig. 2; Tables 3 and 4). The 2010 commercial landings were made in Duval County and. They represented 16% of the 2009 landings and the 2010 trip returns represented 25% of the 2010 number of trips. The 2010 preliminary estimates of commercial landings and trips were the lowest during 1985-2010. Moreover, the reported annual commercial landings showed a strong positive linear correlation with the total number of fishing trips that reported weakfish landings (Fig. 3).

In 2010, 68.3% of weakfish commercial landings were taken from inland waters, where 48% of commercial trips were made; federal waters contributed 27% and 41% of landings and trips, respectively (Table 5). In 2010, monthly landings and number of trips showed erratic variations (Fig. 4). The number of primary fishers (i.e., those that landed more than 100 pounds a year) ranged between 50 and 114 from 1987 to 1995 and between 2 and 17 from 1996 onwards. The primary fishers in 2009 were few and their number is not given for confidentiality purposes. No fishers landed more than 5,000 pounds per year from 1996 onwards.

In 2010, the majority of weakfish (86%; Table 3; Fig. 5) was landed by hook-and-liners (59 %) and gillnetters (27%). Hook-and-lines and gillnets accounted for 44% and 41% of trips made in 2010, respectively (Table 4; Fig. 6).

Trip limit and Quota compliance

Florida was a *de minimis* state in 2010. As such, the State of Florida was not required to implement the commercial fishing provisions of amendment 4 relative to the interstate FMP for weakfish.

Size limits

Determining the current status of size compliance in Florida's commercial fishery on the Atlantic coast was difficult to ascertain. This was because the commercial fishing activity has become extremely marginal and collecting adequate length measurements problematic. For example, only 35 weakfish-like fish were measured by the trip interview program (TIP) in 2010 and all were legal (i.e., >= 12

inches long). In general, the proportion of legal sized fish in the commercial fishery has increased since 1996, but no consistent length measurements were done since 2002.

Recreational Fishery

Description of 2010 Fishery

The recreational fishery records were extracted from the NMFS website. The ratios of Nassau and Duval County intercepts to coast-wide intercepts (based on Type 3 records, i.e. available catch or catch type A) was assumed to be equivalent to the ratios of Nassau and Duval's weakfish-like fish harvests to coast-wide weakfish-like fish harvests. They therefore served the basis to estimate weakfish-like fish harvested in those counties. The ratios in question were 0.04 and 0.1 in 2010, respectively. The resulting estimates of weakfish-like fish were then multiplied by the county-specific genome proportion of "pure" weakfish.

In 2010, an estimated 587 weakfish weighing 474 lbs (Type A+B1) were landed by anglers on Florida's East coast (Fig. 7; Table 6). Adding 10% of release mortality (i.e., 0.1*Type B2) to the harvest estimates, about 594 fish died due to fishing in 2010 (Fig. 8). In 2010, estimates of weakfish recreational harvests were the lowest during 1983-2010.

The number of directed trips (i.e., trips during which anglers claim to primarily target weakfish) were used as indicator of recreational effort. In Duval and Nassau Counties, the number of directed trips was estimated based on the ratio of Duval and Nassau number of intercepted trips to coast-wide number of intercepted trips. In 2010, this effort amounted to 7,740 directed trips (Table 6). This effort showed multiple peak years. Apart from some outliers observed, e.g., in 1983 and 1984, annual landings and catches generally increased with increase in the number of directed trips. In general, the catch rates (harvests in number or weight and catches in number divided by the number of directed trips) of weakfish on the east coast of Florida varied without trend, but they were low in 2010 especially because targeting weakfish in Nassau and Duval Counties is prohibited (Fig. 9).

Size Limits

The recreational length frequencies of landing samples were categorized into numbers of fish less than 12 inches and those greater or equal to 12 inches (Table 7). In 2010, 82% of weakfish-like fish sampled from the recreational landings were equal to or above the minimum size limit. While compliance with the 12-inch minimum size was ≥70 % in most years since 1996, the size distribution of weakfish-like fish measured indicated that the introduction of the 12-inch minimum size in 1995 has had little effect on changing the size of fish being landed (Fig. 10). However, like in most years, the number of intercepts where weakfish-like fish were encountered in 2010 was low and the results may not be statistically significant.

Bag Limits

Concomitant to the 12-inch minimum size limit was the implementation by the FWC of a four weakfish (-like) fish per person per day recreational bag limit during 1995 – 2010. These regulations were valid on the entire east coast of Florida. Beginning in July 2010, the 12-inch minimum size limit and a one-fish per harvester per day recreational bag limit are applied in the newly created management area only. To do this, the MRFSS recreational intercepts were grouped into two time periods representing the pre- and post-regulations, i.e. 1982-1994 and 1995-2009. The standard bootstrap simulation was then run on intercepts from each of the periods. The simulation consisted of randomly selecting 200 intercepts from the creel data, calculating the reductions associated with bag limits from one to ten weakfish-like fish, and then repeating the selection and calculations 1000 times.

Tables 8a and 8b summarize the results of the analysis on bag limits. The top-tables show the data categorized by the integer number of weakfish-like fish kept per angler for each trip. For each category, the following were given: the number of years that that category appeared in the data, the total number of fishing trips, the total number of anglers participating in all of that category's trips, the average number of anglers per trip, the cumulative percentage of all anglers that were on fishing trips that had that category's number of "weakfish" kept or less, the number of "weakfish" caught and the number of "weakfish" retained on all the trips within that category, and the cumulative percentage of "weakfish" caught and "weakfish" retained on all trips that had that category's number of weakfish kept per angler or less. The bottom tables show the mean expected reduction in the number of "weakfish" harvested given different bag limits ranging from 1 to 10 "weakfish", as well as the standard deviation, the minimum and maximum of the estimated harvest reduction.

The bag limit analysis for the period prior to the implementation of the four fish bag limit indicated that the bag limit would be expected to reduce the landings by about 26% (Table 8a). The analysis run on the data from 1995-2010 indicated that a saving of 10% would be gained if everyone complied with the bag limit (Table 8b). Thus, judging by the difference, the bag limit may have reduced the harvest by about 16% during the period 1995-2010, which represented 62% of the expected reduction. For the period 1995-2010 about 97% of anglers sampled were complying with the bag limit. If a one bag limit had been applied since 1995, Table 8b indicates that 74% of anglers would have complied with this regulation during 1995-2010.

Head boat fishery

Description of 2010 Fishery

In 2010, there were no head boat catch of weakfish.

Bag limits

NA

B. Activities and Results of the Fishery Independent Monitoring (FIM) Program

The FWC-FWRI' s FIM program initiated sampling activities on estuarine, bay and coastal systems of the Florida Atlantic at northern Indian River Lagoon in 1990, southern Indian River Lagoon in 1997 and northeast Florida (Jacksonville study area) in 2001. The sampling gears commonly used were a 21.3-m center bag seine, a 6.1-m otter trawl, and a 183-m haul seine. These gears were designed to collect, respectively, juvenile and sub-adult fishes (especially young-of-the-year) in shallow areas (< 1.8 m), juvenile, sub-adult and adult fish in deep waters (1 – 7.6 m) and sub-adult and adult fish in shallow waters (< 2.5 m) along shorelines. Additional sampling methods and strata are provided in various FWC/FWRI FIM annual data summary reports.

FIM Program has collected weakfish-like fish only in northeast Florida and northern Indian River Lagoon. FIM Program lumps *Cynoscion regalis* (weakfish), *Cynoscion arenarius* (sand seatrout) as well as the different degrees of hybrids into one category referred to as collectively "*Cynoscion* complex" or *Cynoscion spp*. Below is an excerpt from the 2010 Annual Report that deals with the hybridization issue.

For the Cynoscion complex YOY indices of abundance (IOA's), only data from Jacksonville trawls were used. The 21.3-m seine only collected very few animals for the 10-year period (both labs combined) after excluding data from zones that were only sampled seasonally; so they were also excluded from the analysis. Looking at trawl data, Indian River only collected few animals for the time period and only trawled regularly in one zone (H) starting in 2003, so that data was also dropped. Jacksonville trawl data were retained because they include only those zones that were sampled for the entire time frame (zones A-D). IOA's were calculated on animals 0-100 mm SL with a recruitment window of May through October.

The adult IOA's used 183-m haul seine data from both Indian River and Jacksonville sampling areas only included zones that were sampled monthly each year during the entire 10-year time period.

The IOA's were computed using an Analysis of Covariance (ANCOVA) to reduce spatial and temporal variability between sets. Location, time, and environmental variables were treated as either classification variables (zone, year, month, gear, deployment technique, sediment type, and presence / absence of bottom vegetation) or covariates (water temperature, salinity, and percent cover of bottom vegetation) in the ANCOVA analyses. The GLM procedure was used to complete all ANCOVA analyses. In order to normalize the data, water temperature, salinity, percent bottom vegetation, and number of animals per haul were natural log transformed [ln (X+1)] prior to analysis. With the exception of year, all variables that were not significant ($P>0.05$) were dropped and the analysis was repeated. With

the ANCOVA analyses, least squares adjusted means and standard errors were calculated for each year.

Relative abundance was calculated as the median annual number of fish per haul (i.e., CPUE). Median values were determined from the least-squares adjusted means by multiplying the standard error by a random normal deviate and adding it to the least-squares mean. These data were then back-transformed. The process was repeated 500 times for each year to create a sampling distribution of back-transformed means. Summary statistics (10, 25, 75, and 90 percentiles) were then calculated.

The IOA's for YOY weakfish-like fish increased steadily on the east coast of Florida during 2001-2004, declined since then through 2007, rebounded until 2009 before declining again (Fig. 11; Table 9). IOA's for adult weakfish increased until 2005, decreased slightly during 2006-2008, and increased since then (Fig. 12; Table 9).

C. Copy of regulations that were in effect, including a reference to the specific compliance criteria as mandated in the FMP

CHAPTER 68B-47 WEAKFISH (Source: http://fac.dos.state.fl.us, p. 349; see also http://myfwc.com/RULESANDREGS/SaltwaterRules_history.htm)

68B-47.001 Definitions

As used in this chapter:

(1) "Harvest" means the catching or taking of a fish by any means whatsoever, followed by a reduction of such fish to possession. Fish that are caught but immediately returned to the water free, alive, and unharmed are not harvested. In addition, temporary possession of a fish for the purpose of measuring it to determine compliance with the minimum size requirements of this chapter shall not constitute harvesting such fish, provided that it is measured immediately after taking, and immediately returned to the water free, alive and unharmed if undersize.

(2) "Land", when used in connection with the harvest of a fish, means the physical act of bringing the harvested fish ashore.

(3) "Spearing" means the catching or taking of a fish by bow hunting, gigging, spearfishing, or by any device used to capture a fish by piercing the body. Spearing does not include the catching or taking of a fish by a hook with hook and line gear, or by snagging (snatch hooking).

(4) "Total length" means the length of a fish as measured from the tip of the snout to the tip of the tail.

(5) "Weakfish", also known as gray seatrout or yellow-mouth trout, means any fish of the species *Cynoscion regalis*, or any part thereof.

Specific Authority Art. IV, Sec. 9, Fla. Const. Law Implemented Art. IV, Sec. 9, Fla. Const. History-New 7-17-95, Amended 1-1-98, Formerly 46-47.001.

68B-47.002 Size limits

(1) No person shall harvest, with or without the waters of the state, possesses, or land any weakfish with a total length less than 12 inches.
(2) No person shall purchase, sell, or exchange any weakfish with a total length less than 12 inches.
(3) All weakfish shall be landed in whole condition. The possession, while in or on state waters, of weakfish that have been deheaded, sliced, divided, filleted, ground, scaled, or deboned is prohibited. Mere evisceration or "gutting" of weakfish, or mere removal of gills, before landing is not prohibited.

Specific Authority Art. IV, Sec. 9, Fla. Const. Law Implemented Art. IV, Sec. 9, Fla. Const. History-New 7-17-95, Formerly 46-47.002.

68B-47.003 Bag Limits

Except for a person possessing a valid saltwater products license, no person shall harvest or land more than 4 weakfish per day, nor possess more than 4 weakfish at any time while in or on the waters of the state.

Specific Authority Art. IV, Sec. 9, Fla. Const. Law Implemented Art. IV, Sec. 9, Fla. Const. History-New 7-17-95, Formerly 46-47.003.

68B-47.004 Gear Restriction

The harvest or attempted harvest of any weakfish in or from state waters by spearing is prohibited.

Specific Authority Art. IV, Sec. 9, Fla. Const. Law Implemented Art. IV, Sec. 9, Fla. Const. History-New 1-1-98, Formerly 46-47.004.

THE CONSTITUTIONAL AMENDEMENT TO LIMIT MARINE NET FISHING

ARTICLE X

SECTION 16: Limiting marine net fishing

(a) The marine resources of the State of Florida belong to all of the people of the state and should be conserved and managed for the benefit of the state, its people, and future generations. To this end the people hereby enact limitations on marine net fishing in Florida waters to protect saltwater finfish, shellfish, and other marine animals from unnecessary killing, overfishing and waste.

(b) For the purpose of catching or taking any saltwater finfish, shellfish or other marine animals in Florida waters:

(1) No gill nets or other entangling nets shall be used in any Florida waters; and

(2) In addition to the prohibition set forth in (1), no other type of net containing more than 500 square feet of mesh area shall be used in nearshore and inshore Florida waters. Additionally, no more than two such nets, which shall not be connected, shall be used from any vessel, and no person not on a vessel shall use more than one such net in nearshore and inshore Florida waters.

(c) For purposes of this section:

(1) "Gill net" means one or more walls of netting which captures saltwater finfish by ensnaring or entangling them in the meshes of the net by the gills, and "entangling net" means a drift net, trammel net, stab net, or any other net which captures saltwater finfish, shellfish, or other marine animals by causing all or part of heads, fins, legs, or other body parts to become entangled or ensnared in the meshes of the net, but a hand thrown cast net is not a gill net or an entangling net;

(2) "Mesh area" of a net means the total area of netting with the meshes open to comprise the maximum square footage. The square footage shall be calculated using standard mathematical formulas for geometric shapes. Seines and other rectangular nets shall be calculated using the maximum length and maximum width of the netting. Trawls and other bag type nets shall be calculated as a cone using the maximum circumference of the net mouth to derive the radius, and the maximum length from the net mouth to the tail end of the net to derive the slant height. Calculations for any other nets or combination type nets shall be based on the shapes of the individual components;

(3) "Coastline" means the territorial sea base line for the State of Florida established pursuant to the laws of the United States of America;

(4) "Florida waters" means the waters of the Atlantic Ocean, the Gulf of Mexico, the Straits of Florida, and any other bodies of water under the jurisdiction of the State of Florida, whether coastal, intracoastal or inland, and any part thereof; and

(5) "Nearshore and inshore Florida waters" means all Florida waters inside a line three miles seaward of the coastline along the Gulf of Mexico and inside a line one mile seaward of the coastline along the Atlantic Ocean.

(d) This section shall not apply to the use of nets for scientific research or governmental purposes.

(e) Persons violating this section shall be prosecuted and punished pursuant to the penalties provided in section 370.021(2) (a), (b), (c)6. and 7., and (e), Florida Statutes (1991), unless and until the legislature enacts more stringent penalties for violations hereof. On and after the effective date of this section, law enforcement officers in the state are authorized to enforce the provisions of this section in the same manner and authority as if a violation of this section constituted a violation of Chapter 370, Florida Statutes (1991).

(f) It is the intent of this section that implementing legislation is not required for enforcing any violations hereof, but nothing in this section prohibits the establishment by law or pursuant to law of more restrictions on the use of nets for the purpose of catching or taking any saltwater finfish, shellfish, or other marine animals.

(g) If any portion of this section is held invalid for any reason, the remaining portion of this section, to the fullest extent possible, shall be severed from the void portion and given the fullest possible force and application.

(h) This section shall take effect on the July 1 next occurring after approval hereof by vote of the electors.

D. Harvest broken down by commercial and recreational and non-harvest losses

See Table 1 for the annual harvests of weakfish on the Atlantic coast of Florida by fishery, Table 2 for the commercial and recreational landings of Atlantic coast states, Table 3 for Florida's Atlantic coast commercial weakfish landings by gear type, Table 5 for Florida's Atlantic coast commercial weakfish landings by fishing ground, Table 6 for recreational landings /catches in number and weight.

E. Review of Progress in Implementing Habitat Recommendations

N/A

IV. PLANNED MANAGEMENT PROGRAMS FOR THE CURRENT YEAR

No changes to the current management program are planned for the current year.

ACKNOWLEDGENMENT;

Russel Brodie developed the fishery-independent indices of relative abundance for young-of the-year and adult weakfish-like fish on the Atlantic coast of Florida.

V. LITTERATURE CITED

Mercer, L. P. 1989. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Mid-Atlantic) - Weakfish. U.S.F.W.S. Biological Report 82 (11.109). U.S Army Corps of Engineers, TR EL-82-4. 17 pp.

Tringali, M.D, Seyoum, S., Higham, and M, Wallace, E.M 2011.A dispersal-dependent zone of introgressive hybridization between weakfish, *Cynoscion regalis*, and sand seatrout, *C. arenarius*, (Sciaenidae) in the Florida Atlantic. Journal of Heredity 102: 416-432.

Table 1 – Estimates of annual weakfish landings (lbs) on the east coast of Florida. Estimates for 2010 are preliminary for commercial, recreational and head boat sectors. All head boat catches are assumed to be true weakfish.

	Comm	Rec	Headboat	Total
1985	7747	578	154	8,479
1986	9162	2,661	35	11,858
1987	11719	1,205	97	13,021
1988	13283	2,349	7	15,639
1989	21376	2,933	28	24,337
1990	17433	1,466		18,899
1991	21344	2,142	6	23,493
1992	24655	1,350	434	26,439
1993	19580	2,899	45	22,524
1994	27835	3,934		31,769
1995	5609	1,146		6,755
1996	387	454		841
1997	875	1,734	9	2,618
1998	952	508		1,460
1999	779	2,245		3,024
2000	448	2,943		3,392
2001	1201	1,323		2,524
2002	394	1,576		1,970
2003	288	580		868
2004	192	948		1,140
2005	553	2,719		3,272
2006	337	2,075		2,413
2007	888	2,706	1	3,595
2008	996	961		1,957
2009	453	1,945	19	2,417
2010	73	474		548

Table 2 – Annual recreational (Type A+B1) and commercial landings (lbs) used to determine the *de minimis* requirements for the State of Florida. Commercial catches for 2010 were preliminary. White blank cells mean "no landings"; gray blank cells correspond to landing statistics not provided by state agencies.

	2009			2010		
Sates	Recreational	Commercial	Total	Recreational	Commercial	Total
Connecticut		495	495			0
Delaware	9868	2,976	12,844	46	2,339	2,385
East Florida	1,945	453	2,398	747	73	820
Georgia	4797		4,797	2829		2,829
Maryland	1506	5,129	6,635	1810		1,810
Massachusetts		350	350			
New Jersey	18,406	28,891	47,297	1989	12,053	14,042
New York	0	101,448	101,448	1294		1,294
North Carolina	103230	163,145	266,375	49903	106,319	156,222
PRFC		17			80	80
Rhode Island		6,286	6,286		5,380	5,380
Souh Carolina	10375		10,375	10379		10,379
Virginia	21548	66,849	88,397	3267	57,820	61,087
Total	171,675	376,039	547,714	72,264	184,064	256,328
2009/2010 average coastwide landings (a)			402,021			
2009/2010 average landings for East Florida (b)			1,609	Ratio (b)/(a) =	0.40%	

Table 3 – Commercial landings (lbs) of weakfish by gear type on the east coast of Florida, 1984 -2010; landing estimates in 2010 were preliminary.

	Cast net	Gig/Spear	Gillnets	Hook and L	Other	Trammel	Trawl	Unknown	**Total**
1984								923	**923**
1985								7747	**7747**
1986								9162	**9162**
1987								11719	**11719**
1988								13283	**13283**
1989								21376	**21376**
1990								17433	**17433**
1991	9		1913	570	20	2	3282	15548	**21344**
1992	2		13737	870	2174	23	7048	801	**24655**
1993		9	7081	1052	2205	5	9164	65	**19580**
1994		14	12445	442	1313		13268	353	**27835**
1995	6		1584	1079	1609		1314	18	**5609**
1996	1		70	130			185		**387**
1997	5		241	470			158		**875**
1998	1	1	20	831			99		**952**
1999	11		6	556			177	28	**779**
2000	22		1	322	30		71	2	**448**
2001	34			469	10		687		**1201**
2002	51			248			95		**394**
2003		12		108	4		165		**288**
2004	5		9	153			25		**192**
2005	6	2	340	196			7	1	**553**
2006	4		111	218	4		1		**337**
2007	71		10	791	1		15		**888**
2008	2		55	889	2		48		**996**
2009	1		102	343	6		1		**453**
2010			20	43	4		7		**73**

Table 4 – Numbers of commercial trips by gear type reporting weakfish on the east coast of Florida, 1984 -2010; trip estimates in 2010 were preliminary.

Years	Cast net	Gig/Spear	Gillnets	Hook and L	Other	Trammel	Trawl	Unknown	**Total**
1984								111	**111**
1985								1,140	**1,140**
1986								1,230	**1,230**
1987								1,345	**1,345**
1988								1,227	**1,227**
1989								1,997	**1,997**
1990								2,171	**2,171**
1991	1		328	86	9	3	406	1540	**2373**
1992	1		1725	137	128	26	800	73	**2890**
1993		3	799	127	74	5	755	11	**1774**
1994		2	1462	77	94		1007	41	**2683**
1995	6		488	128	72		190	4	**888**
1996	1		21	64			50		**136**
1997	6		47	138			45		**236**
1998	2	1	6	85			70		**164**
1999	5		1	146			91	5	**248**
2000	6		1	111	14		39	1	**172**
2001	5			105	2		76		**188**
2002	4			65			18		**87**
2003		1	1	48	3		18		**71**
2004	7		12	41			6		**66**
2005	3	1	206	122	1		4	1	**338**
2006	2		100	81	6		3		**192**
2007	10		13	144	3		7		**177**
2008	2		19	105	3		6		**135**
2009	1		20	84	1		1		**107**
2010			11	12	3		1		**27**

Table 5 – Commercial landings (lbs) and trips for weakfish by fishing ground on the east coast of Florida, 1992-2010; 2010 estimates were preliminary.

	Fishing Grounds									
	Federal		Inland		State		Unknown		Total	
Years	Landings	Trips	Landings	Trips	Landings	Trips	Landings	Trips	Landings	Trips
1992			2,308	250	174	10	22,172	2630	24,655	2,890
1993			1,028	123	7	2	18,545	1649	19,580	1,774
1994			1,718	179	748	113	25,369	2391	27,835	2,683
1995			2,427	401	2,519	334	663	153	5,609	888
1996	70	41	294	79	23	16			387	136
1997	265	61	567	158	43	17			875	236
1998	611	12	308	138	33	14			952	164
1999	19	5	731	227	29	16			779	248
2000	11	4	380	144	58	24			448	172
2001			1,162	182	39	6			1,201	188
2002			359	86	34	1			394	87
2003	8	3	277	64	4	4			288	71
2004	16	17	174	46	3	3			192	66
2005	347	210	186	108	20	20			553	338
2006	111	103	217	78	9	11			337	192
2007	28	18	854	152	7	7			888	177
2008	60	24	934	109	2	2			996	135
2009	102	20	337	80	14	7			453	107
2010	20	11	50	13	4	3			73	27

Table 6 – Estimated recreational catches, releases, total harvests and landings in numbers and weight (lbs) for weakfish on Florida's Atlantic coast, 1983-2010. Type A = claimed fish; Type B1 = fish harvested but not seen; Type B2 = released fish alive. The table also shows the number of directed trips and of the catch rates (in number and weight).

	Type A	Type B1	Type B2	Type A + B1		Type A+B1+B2	Directed	Landing and catch rates		
	numbers	numbers	numbers	numbers	lbs	(numbers)	Trips	A+B1 (#)	A+B1 (lbs)	A+B1+B2 (#)
1983	6,974	768	567	7,742	9,190	8,309	11017	0.70	0.83	0.75
1984	12,387	640	177	13,026	9,719	13,204	3647	3.57	2.66	3.62
1985	529	430	212	959	578	1,171	4345	0.22	0.13	0.27
1986	2,762	650	606	3,412	2,661	4,018	7602	0.45	0.35	0.53
1987	1,286	410	384	1,696	1,205	2,080	6791	0.25	0.18	0.31
1988	2,265	256	17	2,521	2,349	2,538	2720	0.93	0.86	0.93
1989	3,219	526	0	3,745	2,933	3,745	5241	0.71	0.56	0.71
1990	1,447	506	71	1,953	1,466	2,024	3122	0.63	0.47	0.65
1991	1,125	1,916	943	3,041	2,142	3,984	4782	0.64	0.45	0.83
1992	1,050	770	1,045	1,820	1,350	2,865	6299	0.29	0.21	0.45
1993	3,205	727	1,493	3,932	2,899	5,425	8764	0.45	0.33	0.62
1994	4,362	1,041	1,007	5,403	3,934	6,410	10905	0.50	0.36	0.59
1995	669	794	1,355	1,463	1,146	2,818	5441	0.27	0.21	0.52
1996	899	45	780	944	454	1,724	2189	0.43	0.21	0.79
1997	1,084	842	2,958	1,926	1,734	4,884	3055	0.63	0.57	1.60
1998	599	52	1,251	651	508	1,903	2660	0.24	0.19	0.72
1999	2,353	361	2,818	2,714	2,245	5,532	9998	0.27	0.22	0.55
2000	3,216	60	5,551	3,276	2,943	8,827	10306	0.32	0.29	0.86
2001	1,418	123	2,541	1,542	1,323	4,083	8863	0.17	0.15	0.46
2002	1,420	422	2,113	1,842	1,576	3,955	6246	0.29	0.25	0.63
2003	756	18	1,556	774	580	2,331	4016	0.19	0.14	0.58
2004	1,171	24	3,530	1,195	948	4,725	5762	0.21	0.16	0.82
2005	1,869	282	3,009	2,151	2,719	5,160	5140	0.42	0.53	1.00
2006	1,824	448	6,084	2,272	2,075	8,356	5402	0.42	0.38	1.55
2007	2,382	43	1,794	2,425	2,706	4,219	6006	0.40	0.45	0.70
2008	997	0	520	997	961	1,517	2431	0.41	0.40	0.62
2009	2056	0	407	2056	1945	2,563	3869	0.53	0.50	0.66
2010	587	0	68	587	474	655	7440	0.08	0.06	0.09

Table 7 – Percentage of weakfish-like fish landed in the recreational fishery from 1982 to 2010, categorized as being less than, equal to or exceeding the size limit (12”). N = sample size.

	Percentage		
	>= 12"	< 12"	N
1982	100.0%	0.0%	2
1983	79.5%	20.5%	127
1984	57.9%	42.1%	19
1985	77.8%	22.2%	9
1986	52.4%	47.6%	82
1987	73.1%	26.9%	26
1988	87.8%	12.2%	74
1989	71.2%	28.8%	52
1990	78.4%	21.6%	37
1991	71.9%	28.1%	32
1992	36.0%	64.0%	25
1993	68.4%	31.6%	95
1994	53.3%	46.7%	120
1995	46.2%	53.8%	26
1996	65.2%	34.8%	23
1997	83.3%	16.7%	30
1998	80.8%	19.2%	26
1999	89.8%	10.2%	167
2000	80.8%	19.2%	104
2001	51.2%	48.8%	41
2002	76.9%	23.1%	52
2003	87.5%	12.5%	24
2004	82.8%	17.2%	29
2005	89.5%	10.5%	38
2006	92.0%	8.0%	50
2007	78.9%	21.1%	38
2008	62.5%	37.5%	16
2009	96.2%	3.8%	53
2010	81.8%	18.2%	11

Table 8a – Bag limits analysis for anglers that landed and kept weakfish-like fish while fishing on Florida's Atlantic coast during 1982-1994 (source: NMFS/MRFSS intercepts).

Cumlative "weakfish" kept per Angler	Number of Year	Number of trips	Number of Anglers	Average number of anglers per trip	Cumulative percentage of Anglers	**Number of "weakfish"**		**Cumulative percentage of "weakfish"**	
						Caught	Retained	Caught	Retained
0	13	120	180	1.5	26.87	193	20	11.91	1.45
1	13	140	205	1.46	57.46	187	179	23.46	14.43
2	12	72	117	1.63	74.93	245	226	38.58	30.82
3	10	37	54	1.46	82.99	163	155	48.64	42.06
4	11	21	41	1.95	89.1	168	155	59.01	53.3
5	7	15	23	1.53	92.54	110	110	65.8	61.28
6	8	14	20	1.43	95.52	121	120	73.27	69.98
7	5	6	9	1.5	96.87	66	62	77.35	74.47
8	2	2	3	1.5	97.31	23	23	78.77	76.14
10	4	4	5	1.25	98.06	52	50	81.98	79.77
12	1	1	1	1	98.21	12	12	82.72	80.64
15	2	3	3	1	98.66	53	45	85.99	83.9
17	1	1	2	2	98.96	33	33	88.02	86.29
18	1	1	1	1	99.1	18	18	89.14	87.6
20	1	1	1	1	99.25	25	20	90.68	89.05
26	1	1	2	2	99.55	51	51	93.83	92.75
33	1	1	3	3	100	100	100	100	100
Totals		440	670			1620	1379		

Expected Harvest Reductions Associated with Particular Bag Limits

Number of Intercepts per Iteration: 200

Number of Iteration: 1000

	BAG LIMITS									
	1	2	3	4	5	6	7	8	9	10
Mean	65	45	33	26	21	18	16	14	13	11
Std Dev	65.8	8.1	8.8	9	8.9	8.7	8.4	7.9	7.5	7.2
Min	55	29	15	7	4	2	1	1	0	0
Max	73	58	50	44	39	36	34	32	30	29

Table 8b – Bag limits analysis for anglers that landed and kept weakfish-like fish while fishing on Florida's Atlantic coast during 1995-2010 (source: NMFS/MFRSS intercepts).

Cumlative "weakfish" kept per Angler	Number of Year	Number of trips	Number of Anglers	Average number of anglers per trip	Cumulative percentage of Anglers	Number of "weakfish"		Cumulative percentage of "weakfish"	
						Caught	Retained	Caught	Retained
0	16	552	703	1.27	46.07	1345	35	37.84	2.13
1	16	276	427	1.55	74.05	487	354	51.55	23.69
2	15	102	166	1.63	84.93	413	306	63.17	42.33
3	14	54	89	1.65	90.76	319	253	72.14	57.73
4	13	56	93	1.66	96.85	566	362	88.07	79.78
5	7	9	17	1.89	97.97	134	80	91.84	84.65
6	3	3	4	1.33	98.23	24	24	92.52	86.11
7	3	4	11	2.75	98.95	79	76	94.74	90.74
8	2	2	3	1.5	99.15	28	23	95.53	92.14
9	1	1	2	2	99.28	17	17	96	93.18
10	4	6	8	1.33	99.8	109	79	99.07	97.99
11	1	1	2	2	99.93	21	21	99.66	99.27
12	1	1	1	1	100	12	12	100	100
Totals		1067	1526			3554	1642		

Expected Harvest Reductions Associated with Particular Bag Limits

Number of Intercepts per Iteration: 200

Number of Iteration: 1000

	BAG LIMITS									
	1	2	3	4	5	6	7	8	9	10
Mean	53	31	18	10	7	5	3	2	1	0
Std Dev	65.8	6.2	5.5	4.6	3.6	2.6	1.9	1.4	0.9	0.4
Min	43	19	10	1	0	0	0	0	0	0
Max	66	46	31	22	17	12	8	5	3	1

Table 9 - Fishery-independent catch in number, effort (number of sets) and various statistics derived while estimating the YOY (a) and adult (b) indices of relative abundance (i.e., catch rates, expressed here as median annual number of fish per haul) for weakfish-like fish on the east coast of Florida (IR = Indian River; JAX = Jacksonville) during 2001-2010.

East Coast Weakfish (JAX Only) **(a)**
6.1-m Trawls
<100-mm SL
May - October

Year	*No. animals*	*No. sets*	*Median*	*25th*	*75th*	*min*	*max*
2001	278	173	0.3114	0.1648	0.5348	-0.2347	1.3460
2002	605	174	0.7277	0.5129	0.9288	0.1054	2.3503
2003	1436	196	1.0380	0.7814	1.2976	0.0328	2.2737
2004	1455	198	1.5145	1.2201	1.8380	0.2981	3.7544
2005	829	198	1.2250	0.9706	1.5309	0.2020	3.2016
2006	364	198	0.5022	0.3430	0.6836	-0.1406	1.5724
2007	280	198	0.2857	0.1558	0.4550	-0.2351	1.3693
2008	891	198	0.9713	0.7306	1.2369	0.0526	2.5969
2009	1026	198	1.2083	0.9562	1.5084	0.0555	2.8607
2010	265	198	0.3663	0.2032	0.5808	-0.1796	1.4408
Total	**7429**	**1929**					

East Coast Weakfish (IR and JAX)
183-m Haul Seines **(b)**
>100-mm SL
January - December

Year	*No. animals*	*No. sets*	*Median*	*25th*	*75th*	*min*	*max*
2001	35	344	0.0359	0.0154	0.0589	-0.0663	0.1359
2002	35	410	0.0491	0.0262	0.0708	-0.0422	0.1715
2003	28	421	0.0557	0.0341	0.0759	-0.0547	0.1474
2004	39	422	0.0659	0.0412	0.0870	-0.0283	0.1736
2005	56	419	0.0640	0.0427	0.0867	-0.0202	0.1567
2006	39	419	0.0549	0.0330	0.0766	-0.0208	0.1692
2007	47	422	0.0534	0.0302	0.0750	-0.0498	0.1627
2008	21	415	0.0520	0.0270	0.0758	-0.0446	0.1467
2009	58	419	0.0557	0.0337	0.0837	-0.0429	0.1614
2010	102	419	0.0803	0.0552	0.1023	-0.0247	0.1729
Total	**460**	**4110**					

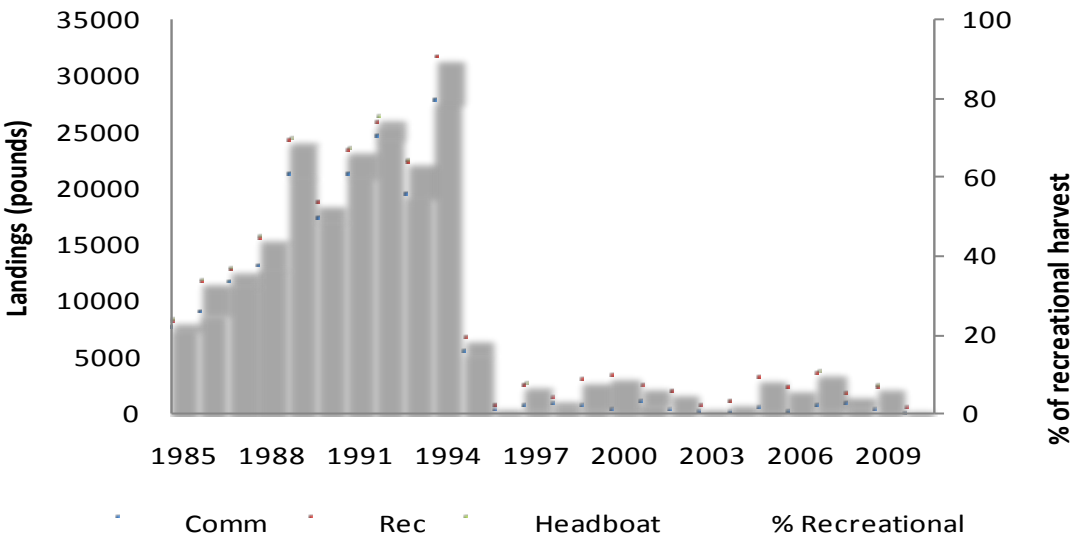


Fig 1 – Commercial, recreational (Type A+B1) and head boat landings of weakfish (lbs) and proportions of recreational harvests in total landings of weakfish on Florida's Atlantic coast, 1985-2010. Landings in 2010 were preliminary. All head boat catches were assumed to be "pure" weakfish.

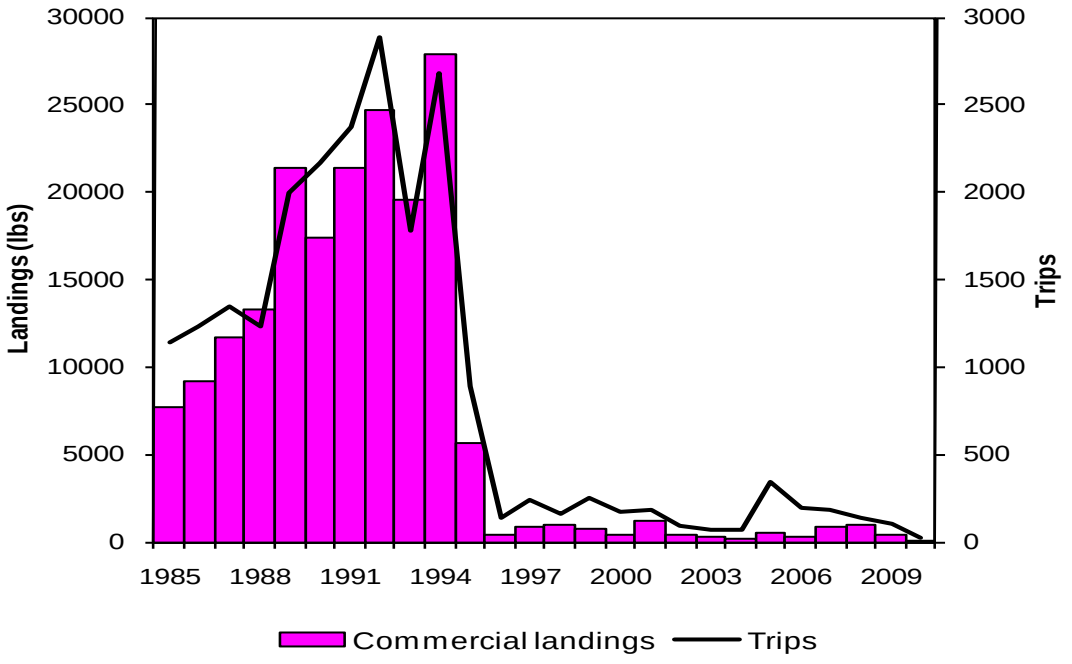


Fig. 2 – Weakfish commercial landings (lbs) and trips on Florida's Atlantic coast, 1985-2010. The 2010 estimates were preliminary.

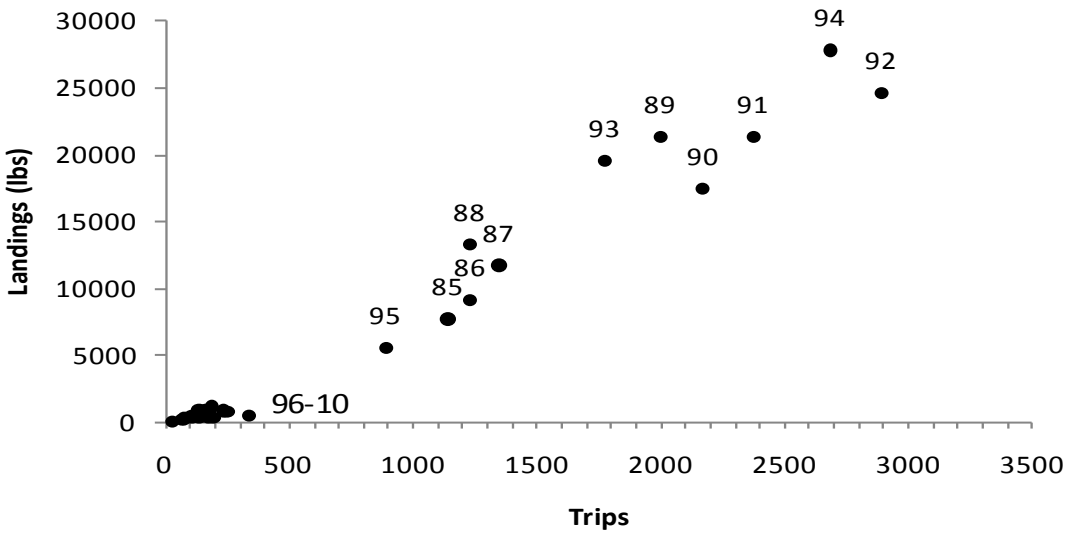


Fig. 3 – A relationship between commercial landings (lbs) of weakfish and the number of trips reporting weakfish landings on Florida's Atlantic coast, 1985-2010. The periods 1985-1995 and 1996-2010 were characterized by high numbers of trips and large landings, and low numbers of trips and low levels of landings, respectively. The 2010 estimates were preliminary and subject to change.

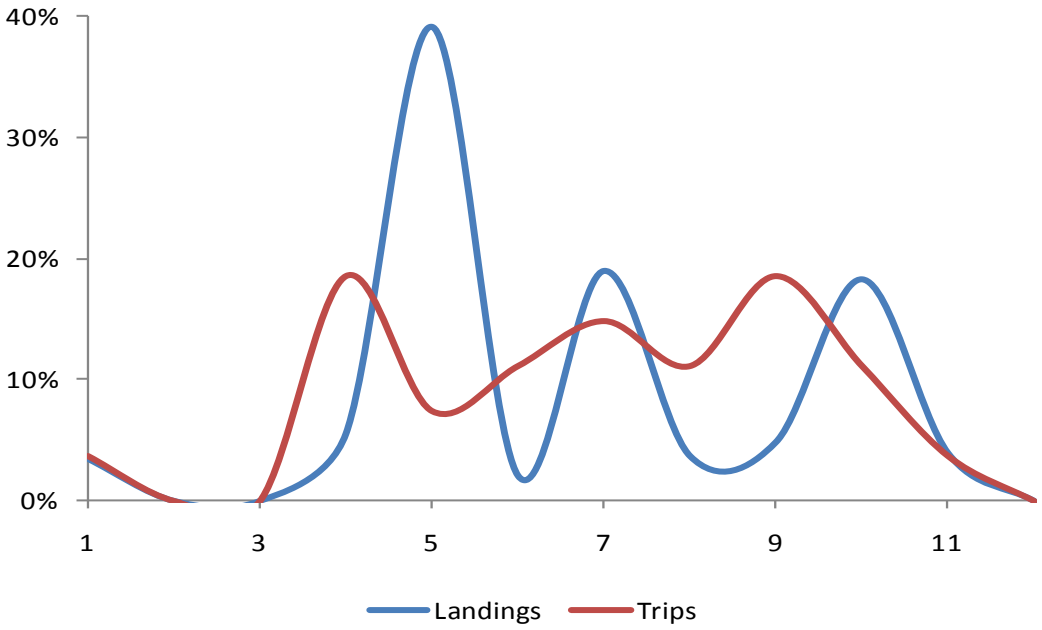


Fig. 4 – Monthly variations of relative (%) commercial landings of weakfish and relative (%) number of commercial trips landing weakfish on the Atlantic coast of Florida in 2010

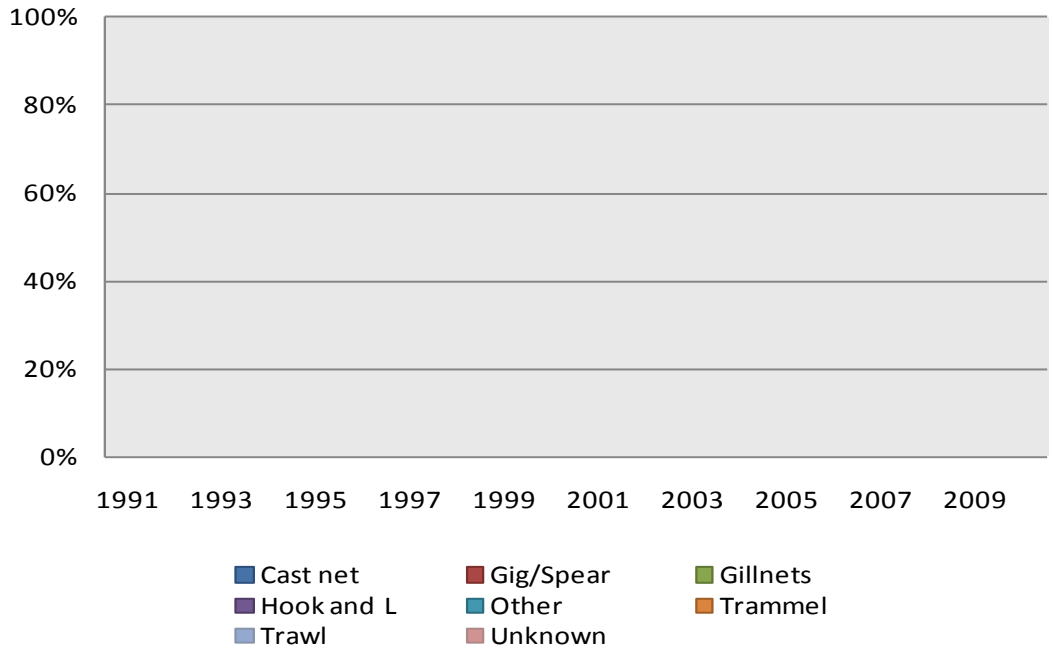


Fig. 5 – Relative composition (%) of commercial weakfish landings by gear type on the Florida's Atlantic Coast, 1991- 2010. The 2010 landings were preliminary.

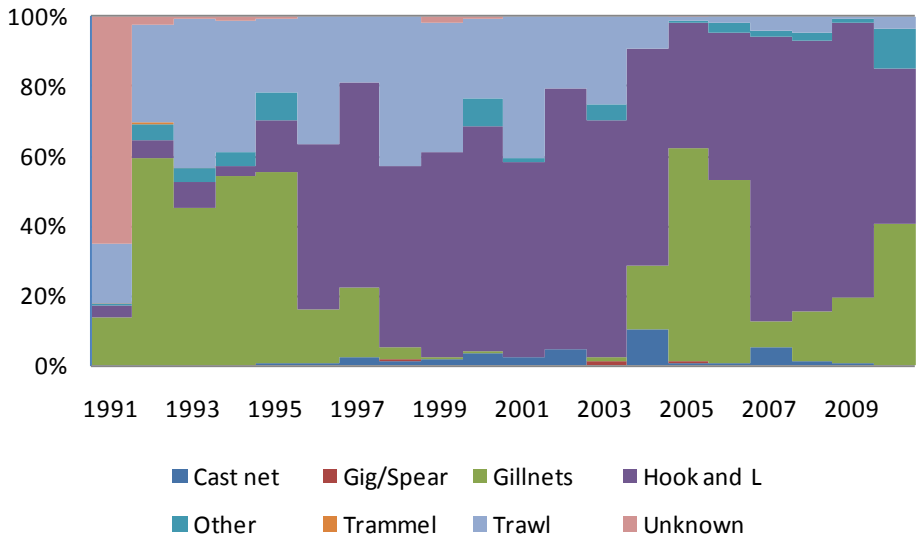


Fig. 6 – Relative contribution (%) of commercial weakfish trips by gear type on the Florida's Atlantic coast, 1991- 2010. The 2010 trips were preliminary.

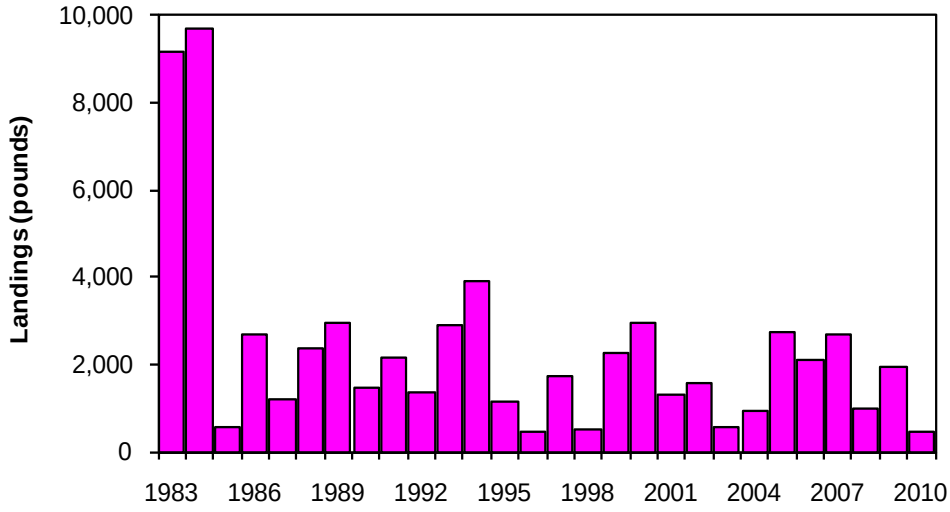


Fig. 7 – Estimates of recreational harvests (Type A+B1 in pounds) of weakfish on Florida's Atlantic coast, 1983-2010

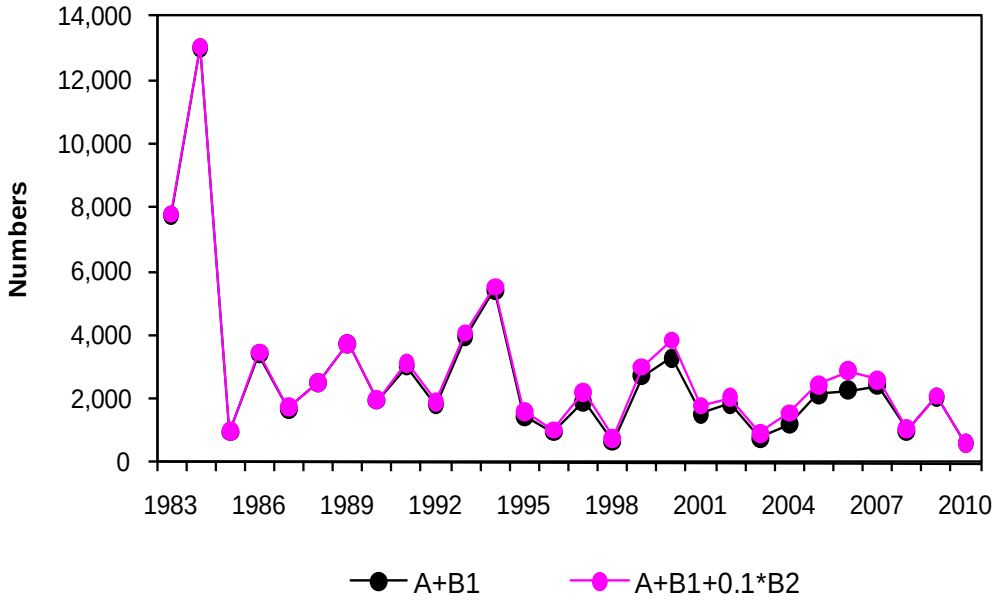


Fig. 8 - Recreational landings (numbers) of weakfish kept by anglers (Type A+B1) and estimates of the total number of fish that died due to fishing (Type A+ B1 + 10% release mortality) on Florida's Atlantic coast, 1983-2010.

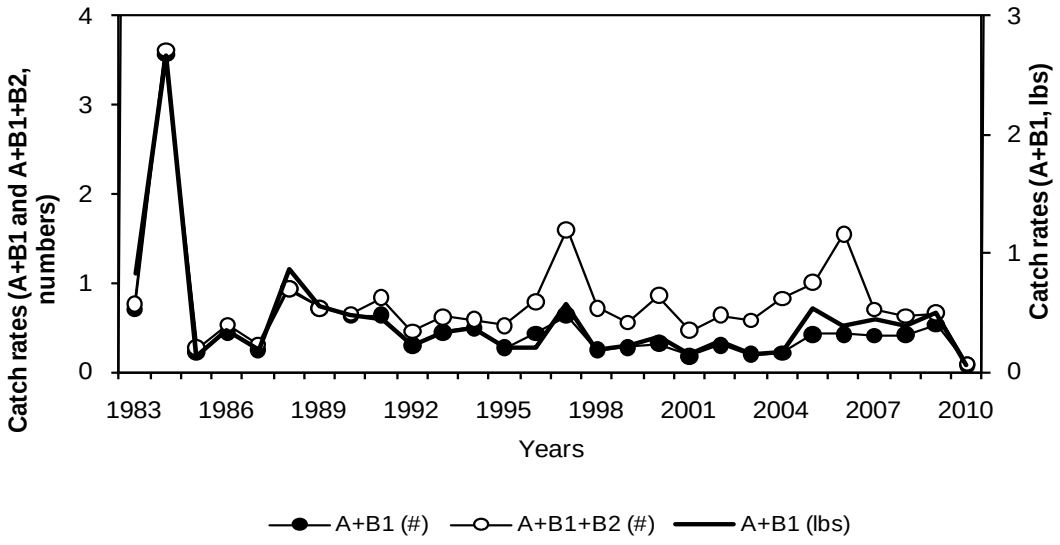


Fig. 9 – Catch rates of weakfish on the east coast of Florida, 1983-2010

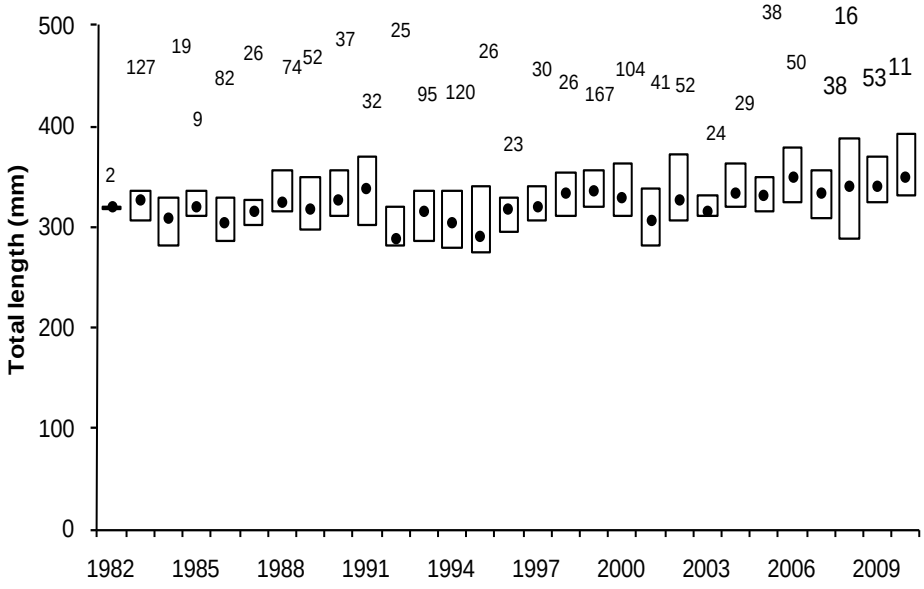


Fig. 10 - Size distributions of weakfish-like fish measured in the recreational fishery on the Atlantic coast of Florida, 1982-2010. The dark circle represents the median, the box represents the 25th-75th percentiles and the vertical whiskers extend from the 2.5th-97.5th percentiles. Numbers of fish measured are shown above the upper whiskers.

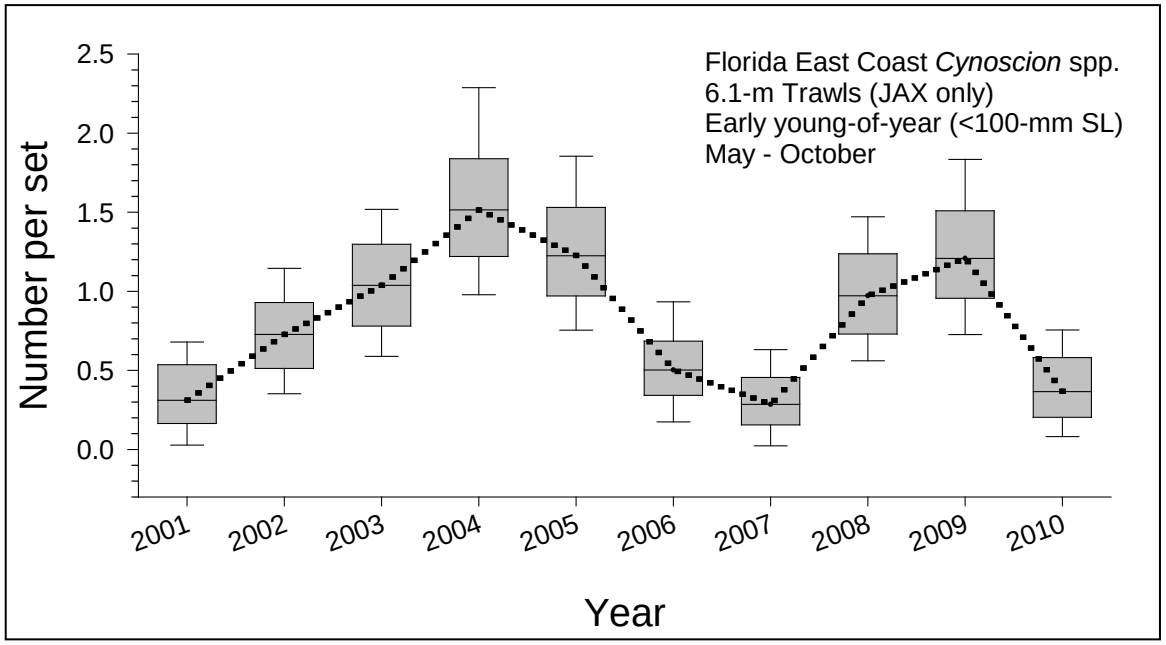


Fig. 11 – Indices of relative abundance for young-of-the year "*Cynoscion* complex" (< 100 mm SL) collected using 6.1-m otter trawl during stratified-random sampling (May-October) surveys on the east coast of Florida, 2001-2010. The box represents the 25th and 75th percentiles, the vertical line represents the 10th to 90th percentiles, and the horizontal line represents the median estimate.

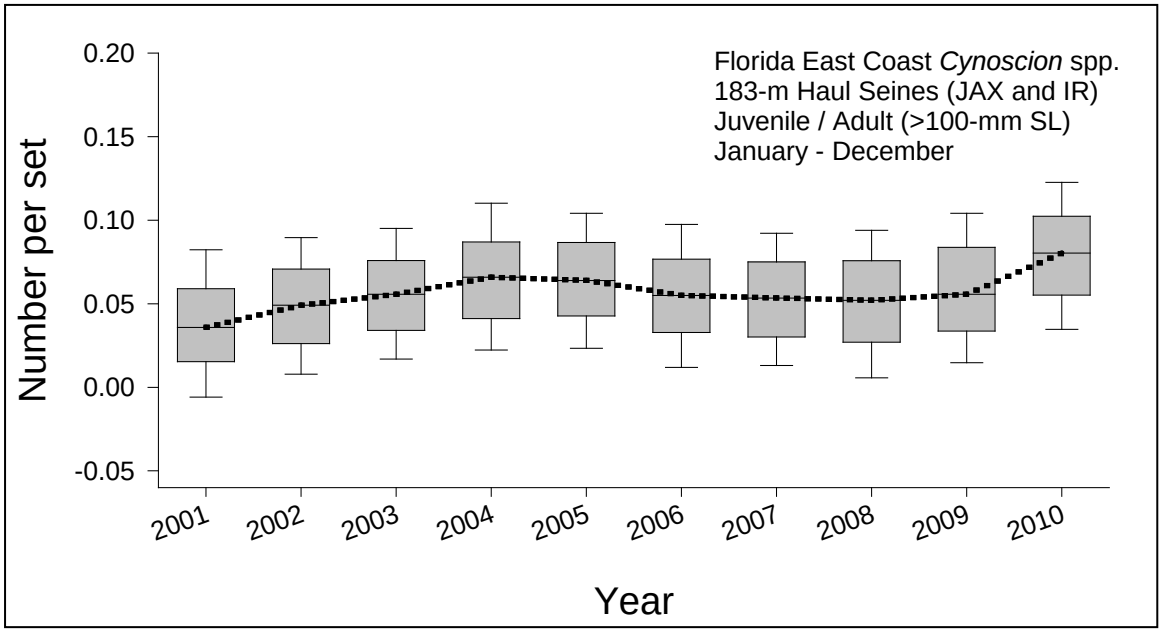


Fig. 12 – Indices of relative abundance for adults of the "*Cynoscion* complex" (> 100 mm SL) collected using 183-m Haul seines during monthly stratified-random sampling surveys on the east coast of Florida, 2001-2010. The box represents the 25th and 75th percentiles, the vertical line represents the 10th to 90th percentiles, and the horizontal line represents the median estimate.

Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmfc.org

MEMORANDUM

January 13, 2012

TO: Atlantic Menhaden Management Board; Shad and River herring Management Board; Summer flounder, Scup, Black sea bass Management Board; Weakfish Management Board

FROM: Melissa Paine, CESS Coordinator

SUBJECT: Recommendation for CESS Representatives to Plan Development Teams and Technical Committees

The Committee on Economics and Social Sciences (CESS) has recommended the following individuals be appointed as the economist or social scientist representative to the Plan Development Teams and Technical Committees for the following species.

Atlantic menhaden	Dr. Peter Schuhmann	Economist
Shad and River herring	Dr. Winnie Ryan	Social scientist
Summer flounder, Scup, Black sea bass	Dr. José L. Montañez	Economist
Weakfish	Mr. Manoj Shivlani	Social scientist

Dr. Peter Schuhmann is a Professor in the Department of Economics and Finance, at the University of North Carolina, Wilmington. His research interests are in fisheries policy analysis, recreation demand, discrete choice models for non-market valuation of environmental amenities and natural resources, welfare analysis of local and regional environmental issues, bioeconomic modeling, and natural resource damage assessment.

Dr. Winnie Ryan received her PhD from the Virginia Institute of Marine Science, College of William and Mary. Her research focuses on social impact assessment in fisheries and closed area management.

Dr. José L. Montañez is an economist on staff at the Mid-Atlantic Fishery Management Council and is the assistant coordinator for Summer flounder, Scup and Black sea bass.

Mr. Manoj Shivlani is the Program Manager at the Center for Independent Experts. He is pursuing his PhD on the impacts of non-fishery factors on the persistence of commercial fishing communities in the Florida Keys.

Curriculum vitae can be made available if desired.

M12-08