

**PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
SOUTH ATLANTIC STATE/FEDERAL FISHERIES
MANAGEMENT BOARD**

**Hyatt Regency Hotel
Newport, Rhode Island
November 5, 2009**

Board Approved February 3, 2010

TABLE OF CONTENTS

CALL TO ORDER.....	1
APPROVAL OF AGENDA.....	1
APPROVAL OF PROCEEDINGS	1
PUBLIC COMMENT	1
OMNIBUS AMENDMENT PUBLIC INFORMATION DOCUMENT	1
RED DRUM BENCHMARK STOCK ASSESSMENT.....	3
PRESENTATION OF STOCK ASSESSMENT REPORT	3
PRESENTATION OF REVIEW PANEL REPORT	10
DISCUSSION OF STOCK ASSESSMENT	12
RED DRUM FISHERY MANAGEMENT PLAN REVIEW.....	14
SPOT FISHERY MANAGEMENT PLAN REVIEW	15

INDEX OF MOTIONS

1. **Approval of Agenda by Consent** (Page 1).
2. **Approval of Proceedings of August 20, 2009 by Consent** (Page 1).
3. **Move to approve the Omnibus Amendment Public Information Document for public comment** (Page 3). Motion by Louis Daniel; second by Spud Woodward. Motion carried (Page 3).
4. **Move to accept the 2009 Red Drum Benchmark Stock Assessment** (Page 10). Motion by Louis Daniel; second by David Cupka. Motion carried (Page 10).
5. **Move to accept New Jersey and Delaware's *de minimis* request** (Page 15). Motion by Louis Daniel; second by Spud Woodward. Motion carried (Page 15).
6. **Move to approve the Red Drum FMP Review as amended with Dr. Daniel's corrections** (Page 15). Motion by A.C. Carpenter; second by David Cupka. Motion carried (Page 15).
7. **Move to approve the Spot FMP Review** (Page 16). Motion by Louis Daniel; second by Jessica McCawley. Motion carried (Page 16)
8. **Adjourn by Consent** (Page 16).

ATTENDANCE

Board Members

Peter Himchak, NJ, proxy for D. Chanda (AA)	Malcolm Rhodes, SC (GA)
Roy Miller, DE (GA)	Robert H. Boyles, Jr., SC (LA)
Craig Shirey, DE, proxy for P. Emory (AA)	Spud Woodward, GA (AA)
Bernie Pankowski, DE, proxy for Sen. Venables (LA)	Rep. Bob Lane, GA (LA)
Bill Goldsborough, MD (GA)	Jessica McCawley, FL (AA)
Tom O'Connell, MD (AA)	Bill Orndorf, FL (GA)
Catherine Davenport, VA (GA)	Bob Sadler, NMFS
J.T. Holland, VA, proxy for Del. Lewis (LA)	Steve Meyers, NOAA
Louis Daniel, NC (AA)	Wilson Laney, USFWS
Mike Johnson, NC, proxy for Rep. Wainwright (LA)	David Cupka, SAFMC
Fentress Munden, NC, proxy for B. Cole (GA)	A.C. Carpenter, PRFC
John Frampton, SC (AA)	

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

Ex-Officio Members

Lee Paramore, Technical Committee Chair (Red Drum)	Mike Murphy, South Atl. Species Chair (Red Drum)
---	---

Staff

Vince O'Shea	Nichola Meserve
Bob Beal	Brad Spear

Guests

Matt Cieri, ME DMR	Ben Chittland, VIMS-NEAMAP
Dave Simpson, CT DEP	Chris Bonzek, VIMS
Russell Brown, NOAA	Patrick Geer, GA DNR
Chip Lynch, NOAA	Harold Mears, NMFS
Bob Bowes, PRFC	

CALL TO ORDER

CHAIRMAN ROBERT H. BOYLES, JR.: Good morning, everyone. My name is Robert Boyles; I'm Chair of the South Atlantic State/Federal Fisheries Management Board. I would like to call this meeting to order; with a tip of the hat to an old friend, a guy who is no stranger to this board, David Cupka, is here for Bob Mahood. David, it's always nice to see; welcome back.

APPROVAL OF AGENDA

The first item on the agenda is I need consent for both the agenda and the proceedings from our last meeting. Are there any changes to the agenda or additions? Seeing none, the agenda will stand approved by consent.

APPROVAL OF PROCEEDINGS

The Proceedings from August 20, 2009, our last meeting, which were included in briefing CD. Any suggested changes to those minutes? Seeing none, any objection to the approval of those minutes? Seeing none, those minutes will stand as approved.

PUBLIC COMMENT

Item 3, there is always an opportunity before the board to provide public comment for those items that are not on the agenda. Is there anyone from the public who wishes to address the board at this time? All right, seeing none, we will roll on down to Item Number 4, the Omnibus Amendment, and I'll turn that over to Nichola.

OMNIBUS AMENDMENT PUBLIC INFORMATION DOCUMENT

MS. NICHOLA MESERVE: I'm going to provide an overview of the public information document for an Omnibus Amendment for Spanish Mackerel, Spot, and Spotted Seatrout. Staff is passing out a copy of the document. It just became available on Friday, so you might not have had a chance to look at it yet. However, it is based on the white paper that was developed for the board, so a lot of the language and the content is similar to that white paper that you reviewed at the last board meeting.

You will remember that the board initially initiated an amendment just for Spanish mackerel in October of 2008, and this was to address three issues: state/federal consistency, compliance measures and

consistency with commission standards for fishery management plans.

In May of 2009, when the board reviewed the public information document for the Spanish Mackerel Amendment, the discussion about spot and spotted seatrout also lacking the compliance measures and the standards and procedures for FMPs came up and so the idea of an Omnibus Amendment for these three species was brought forward, and the board requested the white paper to look more into the logistics of an Omnibus Amendment. In August of 2009 the board initiated the Omnibus Amendment, and the public information document was revised to also include spot and spotted seatrout in it.

The public information document discusses why the action is being proposed. It also describes the amendment process and timeline and the purpose of the public information document. It then provides an overview of the three general issues that are being addressed. It provides the background information on the resource, the fisheries stock status and management. Then possibly most importantly is it lists a number of questions to help draw out public comments on these three species' management plans.

I'll just go through those three issues as a reminder as to why we're undertaking or have initiated this Omnibus Amendment and then also review the questions that are proposed to the public. The first issue is consistency with the Atlantic Coastal Fisheries Cooperative Management Act. The statement of the problem is that the current FMPs for these three species were approved prior to the enactment of the Act.

Therefore, no states are obliged to promulgate any management or monitoring measures in the plans. These three FMPs are the only commission FMPs that have not been updated to include the provisions of the Act. The objective is to develop management programs in which states are obliged to promulgate management measures necessary for the conservation of the resources.

If any of these species does not currently require conservation measures, updating the plans with the provisions of the Act will permit more timely adoption of conservation measures in the event that they become necessary. The second issue is consistency with the Interstate Fisheries Management Program's Charter. Again, these three FMPs were enacted prior to the adoption of the Charter and thus are not consistent with the standards and procedures for commission FMPs.

For example, each commission FMP should identify the measures that are compliance requirements, what the *de minimis* criteria would be and what states exempted from if they're *de minimis* and whether conservation equivalency should be a tool for the states to use. The objective is to develop management programs for these three species that are consistent with the charter, standards and procedures and that it provides clearer direction to the states for implementing the management program.

Just a few considerations in doing this will be what measures are mandatory and what are recommended; will the recommended measures from the three FMPs become mandatory measures; will new management measures be added; what will the *de minimis* criteria be; and possibly could there be reference points for all of these three species.

The last issue is state/federal consistency, and this is just for Spanish mackerel, which also has federal management in addition to the commission's plan. The commission's Interstate FMP established a tracking mechanism where it was supposed to track the federal plan. However, this tracking mechanism has largely been unused, and the FMP that we have for Spanish mackerel is still the original document from 1990.

The statement of the problem is that the mechanism for tracking federal Spanish mackerel regulations and revising state requirements for consistency is vague and ineffective. The objective is to develop a management program that can respond to changes in federal regulations in a timely and efficient manner and which clearly records resulting revisions to state requirements.

A couple of considerations are that the federal Spanish mackerel regulations may be changed in the future. A new federal amendment is under development which will respond to new Magnuson-Stevens Act requirements and also to the most recent stock assessment for Spanish mackerel that went through the SEDAR 17 process.

Another is whether the board would want to track the federal regulations through adaptive management using addenda to revise the plan or through a specification process where the board could do so through just board action. The document then lists some questions for the public to draw out their input and asks for the public's perception of the health of these stocks, what issues they're seeing in the

fisheries. It asks what management should be aiming for.

It looks for input on the biological reference points and whether there should be targets and thresholds and which of these should prompt management action from the board. It asks for what fishery regulations the public would like to see for these species, which should be mandatory, which should be required, should they be on a coast-wide basis or state by state, and what should the penalty be if a state is late to implement a required measure.

It also asks for input on *de minimis* criteria and what the states should be exempt from if they qualify for *de minimis* status, whether conservation equivalency should be included, what monitoring measures should be required or recommended to do; and for Spanish mackerel, whether the commission's plan should continue to track the federal plan or whether there be more flexibility and also asks for public input on a habitat issue for these three species.

Again, this is the public information document. Each of these issues, after receiving the initial public comment, would be developed more fully and then included in a draft amendment should the board approve this document for public comment.

CHAIRMAN BOYLES: Nichola, thank you. Questions or comments for Nichola from the board? Louis.

DR. LOUIS DANIEL: Just a couple of clarifications. I like this is well done. North Carolina is in the process of developing a speckled trout plan right now; just FYI. We have already gone to 14 inches as of a couple of weeks ago. We're up now to a 14-inch minimum size limit. Some of the measures that we're considering implementing is the reduction in the bag limit to six and a trip limit on the commercial fishery.

Right now it looks about 200 pounds is what is necessary in order for us to end overfishing and try to get to the 20 percent SPR. Now, based on looking at some other states – and I'm sure you guys will correct me if I'm wrong – a lot of us, except for Florida, I think, are below the 20 percent.

We're all hovering around – the Georgia/South Carolina crowd, I think you are hovering around 16 to 18 percent. We're down around 9. The only caution I heard is that if we put that 20 percent as being a mandatory measure to achieve, three of may be in a scrape and have to do more than we may need to. That's just as a point of information for you that

you may want to consider. Otherwise, I think this a good thing that we should move forward with.

CHAIRMAN BOYLES: Thanks, Louis, for that. Any other questions or comments? A.C.

MR. A.C. CARPENTER: When you speak of *de minimis*, I read it very quickly but you really don't spell out what *de minimis* for the different species. Is there any additional text going in that or will that come as we develop the plan?

MS. MESERVE: Specific options for the *de minimis* criteria would be included in the draft amendment.

MR. CARPENTER: Looking at Table 1 on Page 11, under Spanish mackerel, Item Number 7, it says consider requiring commercial and charterboat permits. Can you explain that a little bit?

MS. MESERVE: I can try. The current FMP for Spanish mackerel lists this as one of the recommended measures. I believe in federal waters vessels are required to have permits, and so there was a recommendation in the FMP to also have them in state waters, but right now it's just a recommendation based on consistency with the federal plan.

CHAIRMAN BOYLES: Further questions for Nichola? Comments from the board? Louis, did I hear you were about to make a motion a moment ago?

DR. DANIEL: That's what I said. I would make that in the form of a motion.

CHAIRMAN BOYLES: **All right, motion by Dr. Daniel; second by Mr. Woodward. Any discussion? Any opposition to moving this forward? Seeing none, the document will stand approved and ready to go out for public comment.**

MS. MESERVE: Could I just ask for a show of hands for which states would like a public hearing on this document. Thank you.

MR. SPUD WOODWARD: Actually, I was just going to say that we plan to have some information on meetings on some other things, and we can probably just count that, but we probably don't need any staff to come down there. We can handle it.

DR. DANIEL: I'll probably run it through my commission at their meeting and handle it that way like we did striped bass and weakfish to avoid staff having to travel anymore than they already do.

MR. ROBERT E. BEAL: Since is the first step for an amendment, I think we're actually obligated to have four public hearings on this, but I think some of the meetings such as Louis was talking about count as a public hearing. We just need to make sure we check all the boxes of a public process as we're moving forward.

CHAIRMAN BOYLES: And the timing of that, Nichola, I understand from the draft outline, it looks like fall and winter; is that correct, for public hearing?

MS. MESERVE; We could look to start having the hearings in December or into January, depending on the state schedules and when that matches up with hearings you're already planning.

RED DRUM BENCHMARK STOCK ASSESSMENT

CHAIRMAN BOYLES: Okay, terrific! The next item on the agenda is the Red Drum Benchmark Stock Assessment. We're joined by several folks, Lee Paramore, Mike Murphy and Matt Cieri. They're each going to give presentations. Lee, are you starting?

PRESENTATION OF STOCK ASSESSMENT REPORT

MR. LEE PARAMORE: Okay, we're going to sort of tag team this thing. The plan right now is I'm going to give some basic life history information and data inputs that went into the model and then turn it over to Mike, and he's actually going to give the model results and the stock status for both the north and south stocks of red drum on the Atlantic Coast.

Just some basic decisions that were made on the stock definition and description – the last assessment was done I believe back in 2000, and it included data through 1998. It was done by Vaughan and Carmichael. At that time they created this north/south split where we had a north stock and a south stock that was assessed separately.

There are several reasons why this was done, and the current assessment was done in the same manner. I'll explain some the justification as to why we did that. There are different life history characters in the north and the south. For instance, in the north fish live up to age 62 years of age. In the south they only live up to age 38 as a maximum age. We see differences in the growth rates.

Then there has been pretty extensive tagging data in both North Carolina and South Carolina that sort of justified the break as that being the area where there is not a lot of missing between the north and south. There has also been some other secondary reasons, I guess, in that the north still allows a lot of commercial fishing where the south doesn't allow commercial fishing, but really it's the life history things is the justification for this break in the stock structure.

Just to give you an example of the differences in the growth rate between the north and the south, the north is the blue line that you see. You can see that the fish attain a larger size at age, and they also attain a larger maximum age, up to age 62 versus age 38 for the south. This results in different in growth curves for these two different populations, and that's way it was modeled with different growth curves.

The resulting natural mortality estimates that we came up with for both the north and the south – first of all, just for a little background we used the Hoenig Method based on the maximum age. It's obvious the longer the fish lives the lower the natural mortality it's going to have in order to live that long. Fish in the northern stocks have lower natural mortality than fish in the southern stocks.

We also used the method of Lorenzen where we scaled the natural mortality across the ages of the fish, so the older fish have lower natural mortality than the younger fish, which makes a lot of sense when you think about it. The younger fish are preyed upon more heavily and that sort of thing so they have higher natural mortality so we see decreasing natural mortality as the fish gets older.

We had age-specific natural mortality in the stock assessment, but we also maintained that constantly throughout the stock assessment period. This is just a brief slide here on the maturity schedule. Spawning takes place mostly in late summer and early fall. It occurs a little bit earlier as you go further north, August/September off the Carolina coast; and as late as September or October down off the Florida Coast. You can see the little graph to the right that shows the age at which the fish are mature.

Based on the model age, we get about 60 percent of the fish mature at age four and a hundred percent mature by age five. One thing about this is just to keep in mind right now we have a 27-inch maximum size limit on harvest along the Atlantic coast. The fish aren't allowed to be retained over 27 inches, so

all the harvest of fish along the Atlantic coast right now are immature fish. That's just a point to keep in mind.

One of the other issues that we dealt with at the data workshop and at the assessment workshop was what to assign the release mortality for fish that were captured hook and line and released. This component of the fishery has become a much larger component of the total removals from the population and it's sort of very important to review the literature and come up with a best estimate from the studies that have been conducted.

There were approximately eight studies that we found. You can see them here on this table. The dashed line that you see in the middle is the part that we picked out of those. It was 8 percent release mortality. This is slightly lower than was used – the last assessment was 10 percent, but as you can see 8 percent is still above most of the studies that have been conducted along the Atlantic, and this also includes some studies done on the Gulf Coast.

As a sensitivity analysis in the assessment – and Mike may talk about this a little bit – we had an upper limit of 16 percent that we used at a sensitivity analysis. On fishery removals, all the recreational data came from the Marine Recreational Fisheries Statistics Surveys. This included the length frequencies of fish that were harvested and the estimates of total numbers of fish harvested along with the estimates of total numbers of fish that were released.

One of the big missing data gaps that we had is that there is really no information on the size distribution for fish that were released alive. We get estimates of how many fish were released, but we just don't know what size those fish were, so that has become big data gap for red drum. Particularly since we've gone from larger bag limits to smaller bag limits, the proportion of fish released in the recreational fishery has become a much larger part of the catch.

In order to account for this we had to sort of come up with a proxy with what we were going to use to describe those released fish and we came up with two methods. In the northern part of the stock, we had some age-specific selectivity patterns based on tag recapture data, and we were able to use these to sort of infer what the length distribution was for released fish in the northern stock.

We also used it as a proxy in Florida because Florida has very similar size limits as North Carolina. In

South Carolina and Georgia we ended up using the age composition from fish that were released from the South Carolina Volunteer Tagging Program. These are two assumptions that we had to make. Both the assessment panel and the review panel thought this was the best use of our data. Although it's obviously not ideal, we would like to have direct estimates of those fisheries. There is just not anything that we have.

On the commercial side, the commercial harvest in terms of pounds landed was provided by ACCSP or by the individual states. Biological sampling was provided by the individual states where it was taken. During the review workshop we had originally gone to the review workshop with information from 1982-2007. However, upon further review and upon recommendations of the review panel, data from 1982-1998 was really sparse. We had to fill a lot of holes in order to generate catch at ages for these species.

The review panel made a recommendation and the assessment panel accepted that recommendation, and so all data in the assessment now starts with 1989 and carries through to 2007, and the primary reason being that it was just data poor during those early years and we couldn't describe the fisheries with any confidence.

Similar to the B-2s in the recreational fishery, there is very limited data on the commercial discards. There was some commercial discard data provided by North Carolina for the gill net fishery from 2004-2006. There was a decision made at the review workshop that we would take the ratios of these discards from 2004-2006 and extrapolate it back all the way in time from 1989-2007 using the ratio of discards to the landings that occurring during those periods. That gave us discard estimates for the entire period based on these ratios.

Some information here on the coast-wide landings; this data goes back to 1950, and I just put it in here just for some perspective. You can see that in the early period from 1950 to about 1988 Florida was a key player in the commercial landings here on the bottom, of what looks to be red on the very bottom.

North Carolina here in the purple has always been a key player. For the assessment period of 1989 forward, where this little line here is going up and down, all this purple you see here is completely North Carolina with very little landings from other states. North Carolina currently accounts for probably 95 percent plus of the annual commercial

harvest along the entire Atlantic coast, so pretty much North Carolina has the only substantial commercial fishery for red drum over the last 17 or 18 years.

In terms of removals from the stocks, this is for the southern stock. This is from 1989 to 2007, which is the assessment period. You can see here I've broken this down by recreational harvest of fish for Florida, Georgia and South Carolina and then the recreational releases for Florida, Georgia and South Carolina.

The blue, red and green are the recreational fish that were removed due to recreational harvest, and the purple and the blue at the top are fish that are assumed to die due to recreational releases. The one thing that you want to point out in slide is that you can see recreational releases were only a minor component of the total removals in the fishery in the early years, but as time has gone on they've become a much larger component of the fishery, so whatever we assume about these releases is going to have a big impact on the assessment.

The other thing to point out in this slide is that landings are quite highly variable from year to year, ranging anywhere from 200,000 fish to 600,000 fish. This is basically the same information. It just shows it a little more graphically clear. The black, the gray, and the white areas here are all the recreational harvest fisheries, but the purple shades that you see at the top here, the two purple shades, those are the recreational releases and you can just see those are increasing over time as the proportion of the total catch.

That's going to be an ongoing problem with red drum as long we have small limits and a recreational fishery where people are wanting to release fish. We're going to need get better information on these fish if we're going to improve the assessment in the future on the size of those fish.

The same thing for the northern stock, landings are highly variable. Of course, this includes some commercial fisheries and some recreational fisheries. The blue on the bottom is the recreational harvest. The red that you see is the 8 percent of the recreational releases. You see the same trend with the red becoming more substantial in the more recent years. The green on top is the commercial fishery.

Also notice that the landings are quite variable and that landings are much smaller than in the southern stocks. Here they're only ranging from about 50,000 fish to about 300,000 fish over the years. This is the same graph I showed before for the southern stock.

The values on the bottom here in the black are based on the recreation harvest. What you see here is in the white shade that gets bigger as move left to right in the more recent years.

That's the proportion of fish that are being harvested to recreational releases. The things that you see in the shades of red, those are the commercial harvest. You see that the recreational harvest has been rather steady, the recreational releases have been increasing, and the commercial removals have been decreasing over time.

Just to give you an idea of the age composition that we're seeing in the fisheries – and this is pretty true for both the north and the south stock – this is the age composition for three different periods from the northern stock when fish were removed. This is the total age composition of harvested fish.

The 1982-1991 period that you see here is basically the period before Amendment 1 to the Red Drum Fishery Management Plan had pretty liberal regulations, the minimum size limit of 14 inches and you could still keep fish over 32 inches for harvest, but you could see most of the fish, because of the small sizes that were harvested, were age ones followed by age two fish.

In 1992 we switched to a 18-inch minimum size limit and you can we shifted from an age one fish to age two and three fish primarily. That just basically gives you an idea that what we're dealing with here with these slot limits of red drum both in the north and the south region is primarily age one, two and three fish, and we're capturing very little information on the adult portion of the stocks because those fish just aren't in the catch and we don't have a lot of independent indices to capture that information.

When Mike gives his presentation, you'll see that most of the information that we had that we feel confident about is the exploitation and the fishing mortality rates on the age one, two and three fish without a lot of information on the adult stock. Abundance indices, there are several. I just put them up here with the time series.

Some of the time series are quite short because some of these surveys have been started in recent years. In North Carolina we have an age one and age two index from our gill net survey. We have a fairly long time series from juvenile abundance index that captures early age one fish. Then we have a dependent survey which is called the MRFSS Angler Total Catch Rate, which basically is the catch rate per

angler over time of people who either targeted red drum or captured red drum on a trip. This is the age aggregated at one to three because those are the ages of fish that people are primarily catching.

In the south we have several surveys. We have several age one surveys, one from Florida and one from Georgia and South Carolina. Florida has a haul seine survey that gives us an age two and age three index. South Carolina has a fairly long-term trammel net survey for age two fish. We have the same MRFSS Angler Total Catch Rate for age one to threes in the south as we do in the north. The only adult survey that we have is for the South Carolina Longline Survey.

Just to give you quick look at some of the trends in these surveys, at the top up here we have the North Carolina JAI Index as the early age ones. You could see it's highly variable from year to year. It looks like it has a slight decrease in trend, but there is really no apparent pattern over time. Then a fairly new independent gill net survey here; this is for age ones in the blue and age twos in the red.

Actually, if you lag these one year back for the age twos, that they match up with the same cohort. They line up pretty well and they seem to tracking cohorts fairly well, but it's really hard to discern if there is a pattern there with such a short time series. The longest time series we have is for the MRFSS Catch Rate Survey over time since 1991, and it seems to have a positive trend in the catch rates from the Marine Recreational Survey.

Southern Abundance Indices, there are quite a few. All the age ones are up on the far left-hand corner here. One trend that you see is in the blue here you see the Florida Seine quite a positive trend. Georgia and South Carolina tend to have somewhat of a negative trend. If you look at the age two surveys here in the Florida Haul Seine and South Carolina Trammel Net, once again the Florida Survey seems to have – it's sort of sporadic but it has somewhat of a positive trend, and the South Carolina Trammel Net has a negative trend over time.

The age three surveys that are available are the Florida Haul Seine, and it seems to have a somewhat flat, maybe a slightly positive trend; and then similar to the MRFSS Angler Catch Survey in the south, where the north had a somewhat of a positive trend, this one seems to be a little more flat and not quite so positive.

It's sort of a mixed bag of surveys in the south. We're getting some different signals. Some of that could be just the differences in the, I guess, latitudinal areas where these surveys have taken out there – they're sort of regional surveys and they're not taken over a big broad area, so you may be getting some different signals based on recruitment in certain spots up and down the coast.

This last one here is the South Carolina Longline Survey. It is a relatively short survey considering how long red drum lives. It's hard to say what the trend is, but certainly over the last three or four years it has been downward trend, but I guess if you were to start it three or four years ago you thought things were looking really good. It's probably going to need several more years of data before you can really see any sort of trend out of this survey.

One of the last things that I have to go over as far as inputs of data, North Carolina did quite a bit of analysis on some tagging data using the Browning Model. We had about 25 years or so of tagging data, about 50,000 or more fish that were tagged. We had some researchers at NC State and they went through and they conducted these studies and they came up with some age-dependent estimates of F from our tagging data.

Essentially what we did was we took those age-dependent estimates of F and we provided them into model as inputs. This information was put in sort of like a tuning index to help tune the model to the – I guess it's the F produced by the model so we could tune it to the F produced by the tagging data. This information was made available to the model, also. I think that covers most of the inputs as far as what went into the model. I can take some questions now or I can go ahead and let Mike give his presentation and we can answer questions later.

CHAIRMAN BOYLES: What is the pleasure of the committee; any questions for Lee at this point? Okay, Lee, thank you. Mike, we'll turn it over to you.

MR. MIKE MURPHY: I'm going to go over the assessment and very briefly some of the fits to the observed data you've seen Lee present and then the findings and, of course, the status of the stock measurements. The formulation of the stock assessment analysis began in June of this year and continued – the assessment was revised and improved throughout the period leading to and including the review workshop that was held in late August.

A large number of people were involved in this, including most all of the members of the Atlantic States Marine Fisheries Commission's Technical Committee on Red Drum. The choice of the assessment methodology was influenced by the current overfishing definition for these stocks defining terms of the static spawning potential ratio, which for just a quick review is the calculated female spawning stock biomass per recruit under fished conditions divided by that same estimate under no fishing.

An age-specific model was necessary to account for the age-related processes of growth, sexual maturation and the resulting age-specific differences in fishing mortality. The chosen model was structured as a region-specific statistical catch-at-age analysis for ages one through seven-plus. The final runs made were for the years 1989-2007.

There were some special features of the analysis that had to be included to reflect the need to emulate some unique red drum ecology and to deal with the lack of some of the data, and Lee has gone over this. Essentially it's clear that red drum are most available to fishermen in their estuarine stage and then begin to mill around in nearshore waters where they're much less available, so we had a dome selectivity, or the force of fishing showed a decline after ages two or three.

Also, with the limited data we've had to infer the age structure of the releases from the tagging information. Now, to set the stage for the model results that I'll get to real quickly here, I'm going to briefly show the observed trends and the model fits for total annual kill, some of the indices, examples of the age-specific proportions of the annual kill and the northern tag fishing mortality.

This is the total catch of red drum pulled across fleets showing annual amounts and their 95 percent confidence bands and then the model-predicted values in the heavier line there. You can see that these were closely followed by the model predictions. The annual number of red drum killed in the northern region was generally less than that in the southern region, showing peaks in catch during 1998 and 1999 of about 300,000 fish and showing an increasing trend during 2005-2007.

The southern total catch has been more variable but has generally increased after 1996, reaching about half a million fish in 2003. While there were several indices that Lee has just pointed out, I'll give an example of the fits to some of the longer timeframes.

There was a general increase – if we look at the northern region, which is the top row, for ages one to three and for age one, there was a general increase in age one to three abundance during 1991 through 1999 with recruitment fluctuating and showing a high level in 1998 and 1999, which can be seen in the abundance of age one through three year olds also.

In the southern region there were numerous short-term indices, but for these two long-term indices I show here, there was generally a slow decrease in abundance from '91 through 1999 and then the trend flattened out after that. Now here are examples of the observed proportion at age, and really what I'm trying to get across here is the shift from the presence of age one fish in the total kill of red drum towards the increased presence of age two fish.

In the northern region there was a rapid and strong shift away from age one fish towards age two fish after 1991. In the southern region the shift is not apparent in the data from 1989 through 2007, but probably occurred earlier during the mid-eighties based on the limited age composition data that we looked at in the early versions of the data workup.

Regardless, there is still evidence of a slow shift away from age ones to age twos over the timeframe included in the current model. In the northern region important information was gathered by the tag-based estimates of age-specific fishing mortality provided by North Carolina. These indicated a strong decline in fishing mortality from '89 to 1991 followed by consistently low F_s through 2004, the end of the tagging study estimates.

Now just to recap those important observations before I move to the model interpretation of these data in terms of exploitation and abundance, I summarize here pretty much what I just said, so I'm going to move to the next slide. The important model findings include estimates of abundance and exploitation, and the graph shows the estimated beginning-of-the-year abundance for the pooled ages of one through three from 1989 through 2007.

Estimated abundance of age four and above were relatively uninformative, as noted in the review panel report, so I'm only going to go through showing the pooled age one through three abundance or exploitation. In the northern region there was an increase in abundance as indicated in the indices with age two and three increasing age one being relatively stable

In the southern region what we see is estimated abundance of age one to three year olds increase to peak in the early nineties and then decline through the late 1990s. The trends after 1991 follow the trends seen in the indices, which both show that decline from '91 through the late nineties. The trend after 1991 follows those indices, but before that the low abundance estimates were driven mostly by the lower observed harvest that occurred in '89 and 1990.

This is a graph of the estimated exploitation for the pooled age one to three age groups. That means that's the total kill of age one through three divided by the pooled beginning-of-the-year abundances of those age groups. Exploitation for ages one through three dropped rapidly from 1989 through 1992 in the northern region when active manipulation of regulations occurred. This was driven to a great extent by the observed tag-based estimates of fishing mortality that were well fit by the model, as I just pointed out except for this late jump in exploitation at the end of the period, that was in response to the increase in observed landings.

In the southern region, in red, that has been a slight decline in the early years before 1993, mostly after several large management changes, and then a slow increase through the late 1990s to the 2000s. This is a slide of the management metric, the static spawning potential ratio. Using the estimated age-specific fishing mortality estimates for each year and their maturation schedule, these annual static potential ratio values were estimated.

Here I also show the 95 percent confidence bands for these annual estimates. Since SPR is an inverse function of the fishing mortality, you can see that there is a dramatic increase in static SPR in the northern region, which reflects the drop in exploitation I just showed. The slow decline in SPR in the south, in the bottom graph, is a reflection of the slow increase in exploitation that we've just saw in that region that occurred during the late 1990's into the 2000's.

Note the level of uncertainty in the south is much greater than that in the north, and this uncertainty difference was especially evident in the sensitivity runs and the retrospective analysis which I will go through real briefly in the next slide. Because of the uncertainty in some of the model structure or data input, we looked at different selectivities for whether selectivity was estimated for ages one through five – in the base model it's estimated for ages one through three and as common estimates for ages four and five.

We looked at a range of natural mortality rates within each region being a low rate and a higher rate and also that higher end release mortality for the angler hooking mortality. What I've coded here is if it's in green the numbers indicate it's above the target 40 percent static spawning potential ratio. If it's in blue it's below the target but above the threshold which is 30 percent spawning potential ration. If it's in red it's below the 30 percent threshold.

In the northern region annual SPR was fairly insensitive to all of the changes, remaining above 40 percent in 2005 and 2006 and near 30 percent in 2007 for all the sensitivities except where the release mortality was assumed to be 16 percent rather than 8 percent. Another northern region sensitivity run that's not shown here was to drop the tag-based estimates of fishing mortality from the analysis.

This generally showed illogically high estimates of abundance and very high estimates of SPR, but it was pointed out in certainly the review report that this indicated how important and sensitive the northern analysis was to the inclusion of these estimates of fishing mortality from the tagging model.

In the southern region the results are much more sensitive, showing very low static spawning potential ratios when you tried to estimate the selectivities from ages one through five. They were also lower when the natural mortality rate was assumed to be on the low range that we've included in the sensitivities. Higher SPRs were associated with higher estimates or higher inclusion of higher natural mortality rates and when the release rate was assumed to be higher. On the bottom I just briefly show the retrospective analysis. That's where a year of data is removed from the analysis and the analysis is rerun to see how the inclusion of new data upgrades past estimates. You can see that there is very little evidence of a retrospective pattern in the northern region. That's the graph to the left there.

The graph to the right is the southern region and that shows a strong retrospective pattern, although the pattern tends to indicate that with updating more information the past estimates of SPR are actually revised upward. The final findings from this assessment simply show that – well, let me back up.

The final results appear to show that overfishing is not occurring in either region. Here I've accepted the review panel's recommendation of use of a three-year static spawning potential average to base these statements on. Essentially the three-year average

static SPR in the northern region likely exceeds the 40 percent target SPR, and in the southern region it probably exceeds the 30 percent threshold though the estimates are much more highly uncertain. That's all I have on that.

CHAIRMAN BOYLES: Mike, thank you. Questions for Mike? Spud.

MR. WOODWARD: Thank you, Mike, and thank you, Lee; that was a lot of hard work that went into this, you know, hours and hours, and we certainly appreciate it. My question is in essence the north region assessment is driven by one state, North Carolina; whereas in the state we have composited together data from three states with widely varying management regimes.

Do you think that perhaps in a state like Georgia, which has the most liberal possession limits in that south region, that if there were something different going on, would it be masked by what is happening to the north and the south, because that's a question that I've already been asked by fishermen. They've already ceded the fact that you've got a one-fish limit to the south and the three-fish limit to the north. What is your and Lee's opinion on that?

MR. MURPHY: I think it's exactly what you're getting at. There is some smoothing affects based on the inclusion of different stocks that are under maybe very local levels of exploitation, so you're going to get a composite. Generally the problem with that is if you have a stock that has lower productivity, it could be fished down much more than other stocks under those conditions.

In the review report there were certainly recommendations to look more into the local dynamics, especially in the southern region, and that came out and what Lee pointed out you could see very different trends in some of the indices that were throughout the southern region. I think that's a good question and it probably begs some further work on trying to ferret out those very local differences.

MR. WOODWARD: Thanks. We knew going into this that that was going to be a challenge because we don't have standardization of management and we obviously don't have equal sophistication of our independent indices. If you look at that list, Georgia was by far in the minority of the indices. Well, thanks for that answer and thanks again for the hard work.

CHAIRMAN BOYLES: Other questions for Mike or Lee from the board. Louis.

DR. DANIEL: I echo Spud's sentiments for an excellent job from both of you. I guess, though, the take-home message here is that we've essentially achieved the escapement rates that we were hoping for. At least we're real close if we're not exceeding them in both regions, and there is really no need for us to do anything because the escapement rates don't necessarily reflect the adult population biomass. With 38 and 62 year longevities, it's going to still take time to rebuild that adult spawning stock biomass; is that a fair assessment of the outcome?

MR. PARAMORE: Yes, it is.

CHAIRMAN BOYLES: Other questions for Mike or Lee? Both of you, again let me echo Spud and Louis' comments. Louis.

DR. DANIEL: **Do you need a motion to accept the assessment? If you do that, I make that as a motion.**

CHAIRMAN BOYLES: Motion by Dr. Daniel; second by Mr. Cupka. Any discussion? Any opposition to the motion? **Seeing none, that motion carries.** Next we will have Dr. Cieri who was on the review panel for the stock assessment.

PRESENTATION OF REVIEW PANEL REPORT

DR. MATT CIERI: Thank you very much. I'm going to go over the peer review's assessment report. This is the Review Assessment Workshop for Atlantic Red Drum, what Mike just presented. This is all part of the SEDAR 18 process. The review was in Atlanta from August 24th through 28th.

The reviewers included Dr. Robert Boyle, myself, Ken Stokes, Norm Paul, and Jaime Gibson with the assessment team of Mike Murphy, Lee Paramore and Joe Grist. Those guys did an amazing job with this assessment. This assessment was probably one of the most thorough I've ever been on.

We literally put them through the spin cycle numerous times every day. These guys should get a really big huge gold star on their performance evaluations for the year. They did an excellent job. I'm just going to go through each one of the terms of reference and just let you know the peer review people felt on this stuff.

We were presented a bunch of different data as well as some studies on habitat utilization, life history, tagging information, the whole gamut. The review panel agreed that while there was some mixing between the South Atlantic and the Gulf of Mexico, it's probably pretty small, and so we're looking at one or two stocks for the South Atlantic Region.

We generally agreed with the two-stock approach, you know, with one northern stock and one southern stock, with probably some mixing in between but again probably pretty small. The other thing to keep in mind is we noted the possibility of localized dynamics, meaning that these tagged fish don't move very far away from they were tagged in general, and so there may be a lot of certain among management about localized effects of fishing pressure and those types of things. That's an important thing to keep in mind.

For landings and removals, there were basically state-specific landings; which Lee told you about earlier, the discards from commercial and recreational sectors. To go further on for Term of Reference Number 1, recreational landings and removals due to live release mortalities is increasing in both stocks. Basically a large component of your fish that are dying in your system are coming from estimated recreational discards; whereas mostly your commercial removals are being pretty much on a relatively downward trend.

However, this does increase your uncertainty, as you know and as Lee went over, especially when it comes to size and age composition for those recreationally discarded fish. In general we agreed with the stock assessment subcommittee's approach after modification of how they treated some of the discard data. That is something that Lee went over and is in the report dealing with how to look at some of the commercial discard data.

Looking at the proportions at age, we took a good hard look at the model and when it started, and we suggested that the assessment team go back and not start the model until 1989. For the most part age-structured sampling priority to that pretty much sucked. There are a lot of surveys. Each one of these stocks has numerous surveys that are associated with them.

In the north and in the south, in general a lot of them are fairly short timeframe surveys, don't catch a lot of fish in general, and many of them don't agree with each other. In the north there is a little bit better data on the survey information versus the south. Nearly

all of these surveys catch one to three fish, ages one through three.

The review panel recommended the use of arithmetic versus geometric means. I don't know if you guys happen to care about that, but it's important to us. We agreed with the suite of surveys that were used in this assessment and basically told them to have at it. The tagging information was actually very, very important. There was a comprehensive tag program in the north, which, after look at it, had a few problems with, but by and large it's a really good program.

A dedicated designed tagging program would be even more useful. We noted that there are differences in natural mortality versus what was used in the model versus what was used in the tag model, and in general how the data was actually incorporated into the assessment model varied a little bit differently. There are different ways of incorporating the tag information and we recommended actually a direct input into the model versus putting it in as something called the covariate.

For biological data we examined natural mortality, growth rates, maturity schedules, all that type of stuff. On a personal note it's always nice to see age-varying mortality for stocks under assessment reviews because it certainly gets away from that standardized M is equal to blank for all ages, which we know isn't true.

However, we also suggested developing a maturity schedule in the south. Overall one maturity schedule is used for both stocks based on northern information, and that is something that needs to be really looked at by the time the next benchmark goes through. To look at the model itself and the Term Reference Number 2, Mike used the Statistical Catch-at-Age Model, and that was supported by the peer review panel.

These model approaches are fairly widely used now in the east as opposed to where they developed in the west. The fits for the models for both northern and southern stocks weren't very satisfactory. The model has a lot of residuals in it, but the review panel noted that it's probably the best information that you have available. Your surveys are noisy, your catch is fairly uncertain, and so the residuals are – it's about the best you're going to get. At least the model converged.

The large standard error seen in the southern stock model is fairly problematic. I mean, you've got static

SPRs that range from 0.2 to 0.8. That is huge. We noted that the northern model actually hinged a lot on that tagging information, and it was a very large and important part of that model in the north, and that reduced the uncertainty for the north a lot.

Having something similar in the south would help you certainly get a better handle on what is going there. Again, for the north the model appeared to be basically anchored into the tag information. The model described ages one through three fairly well. The model tends to under fit ages one through four; over fit five pluses. Therefore, the model is fairly informative for ages one through three for abundance and exploitation rates and overall SPR, but everything after age five, not so good.

Recruitment to age one has been pretty much – you know, fluctuates pretty wildly, as Mike showed you, and the age one through three abundance pretty increased until about 2000 and it has pretty been flatlined after that. Of course, there is a similar trend with SPR that goes along with year abundance.

For the south things are a little bit different. The model appears to describe ages one through three pretty well. That's where all your survey information is; that's where all your catch information is. Four through seven; not even informative – I mean, it stinks – and the idea is that the fit to age six-plus is even poorer, and I'll get to that in a summary slide.

The large confidence limits on static SPR is also of a concern. And a quote from the report, you know, these results allow for general statements on stock status. It is important to keep that in mind when looking at the figures and tables. They are relative trends. We evaluated the model's population benchmarks and stock status and all that happy stuff.

We noted there is a large problem with age seven-plus abundance and in some cases age five and fours. Most of your SSB is there. Most of your stock and its potential spawning biomass is age seven-plus, and that's pretty problematic when you can't really talk about most of your spawning stock biomass because they don't show up in your surveys or your catch.

Those fish live between 40 and 60 years, and you've only got information on it between ages and one and three, and it spawns – you know, 100 percent maturity is like age four and five, so that's fairly problematic. In general we supported the current static SPR threshold and benchmark starting at 40 percent.

The north seems to be running at an average of about 45 percent. The south, you're running at average of somewhere between 20 percent and 80 percent. It's really uncertain, but in general it's most likely above 30 percent, so you're pretty much above your threshold for your southern stock and above your target for your northern.

Therefore, the review panel came to a consensus that it was not being overfished. However, both models for northern and southern stock are highly uncertain. For the north, a lot of that uncertainty or a good portion of that uncertainty goes away by anchoring it with tag data, but the tag data has its own uncertainties associated with it, which are outlined in the report. For the south, that retrospective pattern is highly problematic and it means that there is something wrong in the model structure.

Again, there is an underestimated F and an overestimation in abundance. The lack of a tagging program in the south and the input selectivity suggests that only these trends are useful, and that's another important point. Then there was a whole other laundry list of terms of reference, which I'm just going to briefly go over.

For the most part it was ensure stock assessment results are clearly and accurately presented. All of the terms of references were met after some revision. There was a whole laundry list of research recommendations which you will find in the report. These are important. Some of them are in the short term to look at for the next benchmark, and some of them are a little bit longer term. That includes some surveys. Then the other was to prepare a consensus report.

To sort of wrap this all up into a big, nice pretty package for you folks, both stocks suffer from a lack of good data. Both stocks struggle with what we call cryptic biomass in which your surveys and your catch do not reflect your overall population abundance. Most of your spawning stocks, most of your reproductive potential is in fish that are not see by either your surveys or your catch.

The question becomes are those fish really alive and where are they because nobody has seen them. Your northern and southern stocks are not experiencing any type of overfishing. Your north is doing certainly better than your south. Your south is probably above its threshold, but the south has a large degree of uncertainty associated with that statement, and so that's something for you guys all to keep mind

when you go ahead and think about how your southern stock is doing. That's about it.

CHAIRMAN BOYLES: Matt, thank you for that. Any questions for Matt? Louis.

DR. DANIEL: Good job; I'm sorry I jumped the gun on the motion to accept the assessment. I don't think Matt's presentation changed anybody's mind. I would like to get a copy of that report from Matt. If it could be e-mailed to me or something, I would like to have a copy of that.

DISCUSSION OF STOCK ASSESSMENT

CHAIRMAN BOYLES: Thanks, Louis; and point of order, I probably should have suggested we wait for Matt's report. Any other questions for Matt from the board? All right, seeing none, we have accepted the stock assessment and approved it for management use. Is there any discussion from the board on where we go from here? Silence. Louis.

DR. DANIEL: I think we're in a happy place. I don't think we need to do anymore; I think we're good. I mean, keep doing what we're doing, reassess it in five years to make sure that we're still on the proper track. You know, some of complaints in the review were that some of the time series weren't very long. They'll be longer in five years and might be more informative then. I suggest we maintain status quo.

MR. WOODWARD: Well, I'm not in a happy place, and I don't begrudge the north region being in a happy place; I'm glad for you, but this uncertainty in the south and my comments earlier just trouble me. I can't go back home and convene a group of fishermen and tell them with absolute confidence that staying the course right now is the best thing for the long term because of all this uncertainty.

But at the same time I'm not suggesting that we start an addendum or an amendment process because I don't think we have the basis for doing that. I'm kind of in a predicament here and I'll deal with it, but I do think that we've got some serious localized variation in fishing mortality, and that is what fishermen see as a result of that.

They see lots of ones and then they see considerably fewer twos and threes. The fishermen that are targeting those type of fish in catch-and-release fisheries, they'll have a difficult time reconciling this, but it is what it is. I think the main thing now is how do we improve the data for the next assessment given

the realities that we're all facing of trying to keep the lights on and the building heated.

We really don't have the resources to expand data collection programs, so I'm going to be looking to the technical committee to tell us where do we need to spend our few dollars to get the best bang out of the buck. I know periodically we'll go out and take a snapshot sample of the adult biomass off of Georgia to look at the age composition, but that really wasn't used in this assessment, but we use it as kind of a groundtruth to say, okay, are we actually adding adult fish back into the population? It has been information in that regard. We really need to know how best to improve the data so that we don't have these kinds of uncertainties.

CHAIRMAN BOYLES: Jessica, I'm going to put you on the spot; any comments from Florida?

MS. JESSICA McCRAWLEY: I have a question; when is the next assessment? Is it three years from now or is it five years from now?

MR. PARAMORE: The review panel suggested a five-year interval being the most appropriate.

MS. McCRAWLEY: We are also concerned about the uncertainty in the southern portion of the model. In addition to this SEDAR Assessment, we've actually also done a Florida-specific assessment; and from our take, it looks like our three-year average is about 44 percent, but there is some uncertainty on the Atlantic coast stocks for the Florida-specific assessment anyway. I kind of echo Spud's sentiments. I wish we had more data, but I'm not sure how we're going to get it for the next assessment. I think that this is doing the best that we can with what we have right now. I think it's a good assessment.

CHAIRMAN BOYLES: Any other comments or questions? Wilson.

DR. WILSON LANEY: Mr. Chairman, a question for Lee and Mike. I didn't see readily – at least I didn't see in here – any mention of the stocking program. Did you all give any consideration of those stocked fish and discuss how they might be contributing to the population?

MR. PARAMORE: I want to say South Carolina adjusted their indices so that those stocked fish were not included as part of the wild fish, but how much they're actually contributing to the population I don't know that we actually fully addressed that. I think a lot of their stocking is pretty localized. But for the

surveys they had that were in the river systems or the bays, where they had both wild fish and stocked fish, they adjusted those surveys so that the stocked fish were not included as part of the index.

CHAIRMAN BOYLES: Questions or comments from the board? From South Carolina's perspective, I share Spud and Jessica's concerns about the uncertainty. Let me see if I can summarize where we are as the board. We've got a good assessment. The folks in the northern regions tend to be in a happy place, and those of us in the south, contrary to where we usually are, are probably not in such a happy place.

We're meeting the threshold or likely meeting the threshold. What I'm hearing from the board is maybe not a suggestion to move forward with an addenda or amendment but some suggestion from the southern states at least that there may be some other things that we need to take care of. Is that where we are? I'm seeing heads nodding. The consensus here, then, is to not move forward with a plan amendment at this time. Louis.

DR. DANIEL: I think you summarized it. I didn't mean to be cavalier on our position with the northern stock and didn't really take into consideration the concerns you may have in the southern region, because we're usually not in that happy place, so it's nice to be there. I do have a question, though. How did we use or did we use the longline information; was that useful at all in the assessment or is that time series too low or the catch is too low or what is the status on the program?

MR. MURPHY: The longline information was in the assessment, and it helped to guide the estimated abundance of the older age groups, but there was so little catch-at-age information for those older age groups and other problems, as we've discussed, they were considered not to be realistic and informative.

CHAIRMAN BOYLES: Any other questions or comments as to where we are? I will remind those of us in the south that the states are free to be more conservative than the provisions in Amendment 2, and there may be some interest in looking at some other things in the south. Wilson.

DR. LANEY: Mr. Chairman, just a followup on Louis' longline question; are there any recommendations with regard to how that survey might be approved or how it could be made more useful; should it be continued the way it is or should changes be made?

MR. MURPHY: Well, I think Spud got into this; as a matter of time, as that survey expands temporally, I think it will become more and more useful. The collection of age composition data offshore could be beefed up and incorporated into the southern model, and I think that might help stabilize some of the stuff.

CHAIRMAN BOYLES: Any other questions or comments or are ready to move on down the agenda, then? Status quo on Amendment 2 with the recognition that we may have some work to do back home locally down south. Okay, good discussion. Before we let them slip away, I need to acknowledge again and echo what Spud and Louis mentioned both to Mike and Lee. This is Lee's last meeting as representing the technical committee as chair. He will still be on the technical committee, but, Lee, we thank you for your efforts for chairing that. It's a lot of work.

Mike will take over for him as TC Chair. Mike, thank you for your work on the stock assessment subcommittee. We appreciate your efforts. We will move on down to the next item on the agenda to FMP Review. I'll turn it over to Nichola.

RED DRUM FISHERY MANAGEMENT PLAN REVIEW

MS. MESERVE: We have two FMP Reviews to go over, red drum and spot, and I'll start with red drum. As we just discussed, Amendment 2 is the current fishery management plan for red drum. This was implemented in 2003. The PRT found that all the states have fulfilled the requirements of the amendment, and there are no amendments or addenda under development.

One point of note for 2008 was that the transfer of authority did occur and became effective October 6th. The status of the stock and assessment advice that is included in the FMP Review is from the most recent stock assessment that was just reviewed by the board. It includes the number of figures that you already saw for exploitation and SPR for those age one through three fish.

Again, the northern region is above the threshold and likely above the target whereas the southern region is likely about the threshold. For the fisheries, the total red drum landings in 2008 were 1.8 million pounds. That's a 15 percent decline from 2007, but just a 5 percent decline from the previous ten-year average.

The recreational harvest represents 87 percent of the landings in 2008. Sixty-seven percent of the landings

come from the southern region. The recreational harvest is shown here as the larger gray bars. In 2008 the recreational fishery harvested 1.6 million pounds, and the commercial fishery harvested 235,000 pounds.

This graph contrasts the recreational harvest, the dashed green line, and the recreational releases, which is the solid red line; and as Lee pointed out, the recreational releases have increased over the time series. In 2008 the releases were estimated to be 2.6 million fish. The dotted line, the black line on the bottom represents the estimated dead discards using the 8 percent release mortality rate that was used in the stock assessment.

For management issues, there were a couple of *de minimis* requests in the compliance reports. Amendment 2 doesn't define a specific criteria to determine whether a state is *de minimis* or not, but the PRT has used the 1 percent level of the three-year average landings as the criterion in past years. Both New Jersey and Delaware requested *de minimis* and both of those states had no landings in either 2007 or 2008 and certainly qualify for *de minimis* under any criteria.

Of course, the *de minimis* status does not exempt the state from any compliance requirements at this point. There were a couple of changes to state regulations in 2008. In 2008 the board approved allowing North Carolina to base its harvest on the fishing year from December 1 – they use a fishing year of December 1 to November 30, and we will now measure their compliance with that quota on the fishing year rather than on the calendar year.

Also beginning in 2009 in the Pamlico Sound, the recreational anglers are required to use barbless circle hooks from July through September; and also if they're fishing at night using a certain hook size. The PRT continues to support a moratorium in the EEZ and asks that the board consider the request for *de minimis* from New Jersey and Delaware.

The plan review did look at the results of the stock assessment, of course, and did recommend status quo for the southern region due to that uncertainty that was discussed. The PRT noted that we are above the target for SPR, and potentially the board could look at increasing F for that reason, but the PRT strongly recommended that you consider the risk associated with any liberalization of the regulations. The PRT recommends status quo for both reasons. Are there any questions on that? There are two *de minimis*

requests, New Jersey and Delaware, and the board should also look to approve the FMP Review.

DR. DANIEL: Just for clarity, if we can go back to the changes' slide, I need to make some corrections there. The fishing year that was approved was actually September 1 through August 31st. That's our fishing year. Also, just so you'll know, we made some additional changes that perhaps we didn't let you know about.

Because of some problems that we ran into in January, the year before last, with some issues in a certain area, we now have a September 1 through April 30th, 150,000 pounds; and then for the remainder year it is a hundred thousand pounds; so that if it goes over from one sector, they're going to have to pay it back as opposed to the whole state having to it.

I had to close it for like five months, have a zero harvest, and we lost some fish. It's a resource neutral change but just so you all are in the know on how we're managing red drum. What we'll probably do is in the next amendment to our North Carolina Plan would be when we may discuss the status of the stock and whether or not our increase in SPR is adequate enough in our opinion to come back to this board and request some possible increases in F if it is appropriate and deemed so by both the state of North Carolina and the board.. **With that said, I would make a motion to accept New Jersey and Delaware's *de minimis* request.**

CHAIRMAN BOYLES: Motion by Dr. Daniel; second by Mr. Woodward. Is there any discussion on the motion? Any opposition to the motion? **Seeing none that motion passes.** A.C.

MR. CARPENTER: I just wanted to note that Tables 3 and 4, the state of Maryland caught 7,000 fish that weighed nothing. Obviously, it's a typo.

MR. MILLER: Mr. Chairman, I was wondering if you would indulge me an opportunity to ask a question of our assessment scientists while they're up there even though we've gone on past their report. Was there in the historical literature any indication of range truncation with the northern stock of red drum?

What I'm specifically referring to is anecdotally over the years I've heard reports of larger red drum being taken off of Delaware and off of New Jersey in the distant past, the seventies and earlier. Did you run into any evidence of perhaps some contraction of the

range of the northern component of the stock? Thank you.

MR. PARAMORE: I've heard historically some of those same reports off of New Jersey catching large fish. Landings do occur up there but they're pretty rare now. I mean there is a possibility, I suppose that there has been some truncation of that northern portion of the stock, but don't have a whole lot to report other than the lack of landings now.

MR. MILLER: What I'm thinking about, of course, since we all went to the slot size limit, that eliminated any legal harvest of those large fish, but I do recall back in the sixties and seventies entries in the Delaware Sportfishing Tournament for 20-plus pound red drum. Of course, I haven't seen fish like that in recent memory. Granted our evidence shows that the stock is not being overfished, the northern stock, but perhaps our frame of reference isn't as complete as it might have been prior to this range truncation. We may not be in as happy a place as Louis perceives us to be. Thank you..

CHAIRMAN BOYLES: Thanks, Roy. Any other questions or comments on the FMP Review? **I'm looking for a motion to approve the FMP Review as amended with Dr. Daniel's corrections.**

MR. CARPENTER: **So move.**

CHAIRMAN BOYLES: All right, motion by Mr. Carpenter; seconded by Mr. Cupka. Any discussion? Any opposition to the motion? **Seeing none, that motion passes.** All right, Nichola, I think we've got another FMP.

SPOT FISHERY MANAGEMENT PLAN REVIEW

MS. MESERVE: We also have the FMP Review for Spot. The management program for spot is in the original fishery management plan, which was adopted in 1987. There are no compliance requirements in this plan, and states don't submit annual compliance reports, and there is no *de minimis* request for spot.

The board previously found the plan recommendations vague and perhaps no longer valid and recommended that an amendment be prepared. As I said earlier, the Omnibus Amendment has been initiated and this will address compliance requirements for spot and trying to update the plan would be charter, standards and procedures.

There is no coast-wide assessment for spot. However, the plan review team has been monitoring the stock for the last three years using data that is available from the states. The PRT has looked at commercial harvest effort and biological samples from Maryland, Virginia and North Carolina; recreational harvest and effort data in Maryland, Virginia, North Carolina and South Carolina; also the fishery-independent data from New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina and from the SEAMAP Program.

The PRT has been using this data to look at trends in the stock and has reported some negative trends in some of the data. They also looked at the availability of data for a stock assessment in the last report provided to the board. The PRT has suggested that it's likely that there is enough data to assess the spot stock, but the life history information hadn't been compiled yet by the PRT, so the PRT asked the board to ask them essentially for another report in 2010, and so that's on the PRT's schedule.

We are expecting to report to the board in May of next year with the next monitoring report; and based on the outcome of that monitoring, the PRT might recommend switching to monitoring the stock every two or three years with the data that's available; or if the trends are negative, to possibly assess the stock.

Moving on to the status of the fishery, the total landings of spot in 2008 are estimated at 7.3 million pounds. This is a decrease of 34 percent from 2007 and a 21 percent decrease from the previous ten-year period. The recreational fishery landings are shown as the solid line here and represent 61 percent of the total landings in 2008. This is only the second year in the time series that the recreational landings have been more than the commercial landings.

The commercial landings in 2008 are estimated at 2.86 million pounds, and that is the time series low. The PRT is kind of holding off on making any management recommendations to the board at this point. The PRT plans, as I said, to report to the board in May on stock trends and might make some recommendations to the board at that point on whether to assess the stock and how to continue monitoring the spot stock. The PRT also plans to make recommendations for management measures and options that should be included in the Draft Omnibus Amendment. Are there any questions?

CHAIRMAN BOYLES: Questions for Nichola? I'm looking for a motion to approve the FMP. **Motion by Dr. Daniel; seconded by Jessica. Any**

discussion? Any opposition to the motion? Seeing none, the motion passes. Louis.

DR. DANIEL: How many states have size or a bag limit on spot? Just one; Georgia is the only state? Okay, thank you.

CHAIRMAN BOYLES: Any other business to come before the South Atlantic Board at this time? Seeing none, we will stand adjourned.