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SOUTH ATLANTIC STATE/FEDERAL FISHERIES MANAGEMENT BOARD

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Proceedings of the South Atlantic State/Federal Fisheries Management Board Meeting
February 2015

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ATTENDANCE

Board Members

Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)
Russ Allen, NJ, proxy for D. Chanda (AA)
John Clark, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Tom O'Connell, MD (AA)
Bill Goldsborough, MD (GA)
Joe Grist, VA, proxy for J. Bull (AA)
Kyle Schick, VA, proxy for Sen. Stuart (LA)
Louis Daniel, NC (AA)
Robert Boyles, Jr., SC (AA)
Dr. Malcolm Rhodes, SC (GA)
Patrick Geer, GA, proxy for Rep. Burns (LA)
Spud Woodward, GA (AA)
Jim Estes, FL, proxy for J. McCawley (AA)
Martin Gary, PRFC
Wilson Laney, USFWS
Steve Meyers, NMFS

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

Ex-Officio Members

Staff

Bob Beal
Kirby Rootes-Murdy
Jeff Kipp
Melissa Yuen
Toni Kerns

Guests

Tom Fote, NJ (GA)

Proceedings of the South Atlantic State/Federal Fisheries Management Board Meeting
February 2015

The South Atlantic State/Federal Fisheries Management Board of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, February 4, 2015, and was called to order at 1:30 o'clock p.m. by Chairman Patrick Geer.

CALL TO ORDER

CHAIRMAN PATRICK GEER: My name is Pat Geer and I am chairman of the South Atlantic Board.

APPROVAL OF PROCEEDINGS

CHAIRMAN GEER: I'm going to switch things around a little bit on the agenda. I want to approve the minutes from the August meeting. Any changes; any modifications? Hearing none; I will consider them approved.

APPROVAL OF AGENDA

CHAIRMAN GEER: We have a couple of changes to the agenda. There have been a few versions of it floating around; so I want to make sure we have things right. We're not going to discuss the 2014 FMP Review and State Compliance Reports for spot, spotted seatrout, and Spanish mackerel just for time constraints.

We are going to add a brief discussion on the end about Spanish mackerel and changes related to Amendment 20B from the National Marine Fisheries Service and how this may impact us all. Kirby will do that. Those are the changes to the agenda. Do I see any additions to the agenda that aren't listed or mentioned already? We will consider that approved.

PUBLIC COMMENT

CHAIRMAN GEER: Is there anybody from the general public who would like to make a statement? I don't have anything from anybody. Seeing none; we will move on.

2015 BLACK DRUM BENCHMARK STOCK ASSESSMENT

CHAIRMAN GEER: The major topic for this meeting is to discuss the black drum benchmark stock assessment. We are going to start off with Jeff Kipp and then Dr. Cynthia Jones from Old Dominion will give the peer review from that.

MR. JEFF KIPP: To outline my presentation, I'm going to start by over the data that went into the assessment. Then I will move on to the methods that were used in the assessment, go over the reference points and the stock status, and I will wrap up with research recommendations. This figure shows the coast-wide harvest. As you can see, the harvest has been primarily from recreational fisheries.

Going to the commercial landings' data, the data was obtained from archived U.S. Fish Commission Reports from 1887 to 1944; the National Marine Fisheries Service from 1945 to 1949; and was pulled from the ACCSP Data Warehouse from 1950 to 2012. The commercial landings by state; historically most of the black drum have been landed in Virginia and Florida.

Following some regulations implemented in the Florida in the 1980's and the gill net ban in the 1990's, most black drum recently have been landed in Virginia and North Carolina. The commercial landings' size data, there is some size data available from Delaware, Virginia, North Carolina and the Southeast Fisheries Science Center Trip Interview Program.

Of note, only the North Carolina DMF Sampling Program has averaged more than 65 length samples a year, overall gears and month; so there is limited length data available from the commercial fisheries. The available length data does indicate primarily harvest of immature fish in the South Atlantic and primarily mature in the Mid-Atlantic.

This table shows the coast-wide age samples from all the data sources that we have with length ends going down the table and year from 1985 to 2012 going across the table. Highlighted in red are year and size/bin combinations where there were less than five age samples. Highlighted in yellow are where there were to five to nine age samples; and highlighted in green are where there were more nine samples.

As you can, there has been limited age sampling especially for the larger, older fish, but there has been some increased sampling in the most recent years. Some caveats, biases and uncertainty to point out for the commercial landings; the historical landings especially from those old U.S. Fish Commission Reports are highly uncertain.

The NMFS landings that precede required trip ticket programs are likely underreported. There is limited gear information in early years; no reliable commercial discard data. There are some issues with species' identification and reporting. For example, fish landed as drum and not identified to species' level were not included in the landings' data.

Also one other note; in Florida some black drum are possibly landed as miscellaneous or industrial fish; and those landings also were not included. This is the harvest estimates from MRFSS and MRIP. On the top figure are the harvest estimates in pounds; and on the bottom figure are harvests in numbers. You can see in the 2000's there has been a noticeable increase in harvest.

These are proportional standard errors, which provide a measure of precision for the harvest estimates from the MRFSS and MRIP. PSEs greater than 50 indicate a very imprecise estimate. On this table you've got your years going down the table and states from the southernmost, Florida, up to the northernmost, New Jersey.

Going across the table you can see that precision generally decreases as you move up the coast. In the last column is the coast-wide PSEs for the coast-wide harvest estimates, which all are generally better than the state and year levels. These are the recreational harvest estimates by state. You can see that Florida has been a primary contributor to recreational harvest over most of the years.

Of note, in recent years there has been increased harvest in Mid-Atlantic states; notably, New Jersey. This is just another look broken down by region. Again, as I noted in the commercial landings' data; also in the recreational data, most of the data indicates that there is a pretty clear break in the size structure of fish that are harvested and landed in the Mid-Atlantic and South Atlantic.

Historically most of the recreational harvest has been in the South Atlantic, but again a recent increase in the Mid-Atlantic states. This is the length data available from the MRFSS and MRIP. The top panel are the states in the South Atlantic; and on the lower panel are the states in the Mid-Atlantic. You've got years from 1981 to 2012 going down each panel and each wave estimate going across each panel from Wave 1 to Wave 6.

Cells that are highlighted in gray; there was no harvest estimate for that wave-and-year combination. Cells highlighted in red; there was less than ten length samples collected; and cells highlighted in green, there was at least ten length samples collected. As you can see, in Florida and North Carolina, notably, in more recent years there has been decent coverage based on these metrics; but the length sampling is sparse and very limited in the Mid-Atlantic states especially.

There are some supplemental recreational sampling programs from Delaware, Virginia and North Carolina, South Carolina and Georgia. None of these sampling programs averaged more than 73 length samples a year over all

waves and modes in the recreational fisheries. Again, the length sampling data is very limited.

The available length data does indicate the same type of harvest with primarily harvest of immature fish in the South Atlantic and mature fish in the Mid-Atlantic. These are the MRFSS and MRIP recreational released estimates in numbers from 1981 to 2012 with a generally increasing trend over the time series.

Some of the assessment methods we considered required a complete catch history. We only have MRFSS and MRIP recreational estimates back to 1981; so we used some Fish and Wildlife Service fishing license data and also the mean CPUE from the MRFSS data from 1981 to 1985 to estimate recreational harvest and releases back to 1950.

When we didn't have that Fish and Wildlife Service fishing license data, we extrapolated harvest back on expenditure regression and assumed negligible releases back to 1900, which is the date we're using for the beginning of the fishery. These are the final recreational harvest estimates from 1900 to 2012.

These are the final recreational releases estimates from 1950 to 2012. Again, we assumed negligible releases prior to 1950. On the top figure are the total releases in pounds; and on the bottom figure are assumed dead releases based on an 8 percent mortality rate. That mortality rate is from the red drum stock assessment due to the similarities in life histories and fisheries.

There are no discard mortality rate studies for black drum. Some biases and caveats for the MRFSS and MRIP data; MRFSS and MRIP note that pulse fisheries have less precise estimates, which this fishery could considered a pulse fishery especially in the Mid-Atlantic. State programs have recorded harvest in strata where MRFSS and MRIP have estimated no harvest.

There have been some reports of somewhat significant night fisheries in certain states. The technical committee and stock assessment subcommittee were concerned with this. However, the show survey in the MRFSS/MRIP should capture effort data; and as long as catch rates between night and day are similar, this wouldn't be a major issue.

If there are some differences in catch rates between night and day, that could lead to some biases in the estimates. There was minimal data in some recent nighttime biological sampling; but the results were inconclusive with that data. For fishery-independent data sources, we evaluated 28 fishery-independent data sources. Few regularly encounter black drum, especially adults.

Most data sets were excluded for developing indices of abundance because of the low number of positive observations. Only eight data sources were used for tracking abundance; and all data sets with biological data were used for life history analyses. For indices of abundance, we used a decision tree to standardize indices. None of these surveys were designed to target black drum; so there are likely variables that are leading to changes in catchability over time.

We try and standardize those changes in catchability and pull out the true index of abundance. There was one fishery-dependent data source from the MRFSS and MRIP Access Point Angler Intercept Data. Altogether we had five indices tracking young-of-year abundance; three from the Delaware Bay, one from Maryland coastal bays and one from Georgia.

We had five indices tracking primarily immature fish less than 600 millimeters in total length; one from North Carolina, one from South Carolina and then three from the Florida Seine Survey, three individual indices; and then one index tracking what we've seen in the entire exploitable stock, and that is in MRFSS and MRIP index.

This figure shows the young-of-year indices. Again, there three from the Delaware Bay, 30-foot and 16-foot trawl surveys and PSEG Seine Survey; one from the Maryland Coastal Bays and one from Georgia. This figure shows the indices tracking immature black drum with one South Carolina, one from North Carolina and three indices from Florida. This is the MRFSS and MRIP Index. You can see a generally increasing trend over the time series from 1982 to 2012.

We did some life history analysis to develop life history parameters for assessment methods used. This is just a table of the data sources that were used to develop those life history parameters; data from Delaware, the NEAMAP and ChesMMAP Surveys; Virginia, North Carolina and South Carolina.

Some of the assessment methods that were used in the assessment; we did some trend analysis, per-recruit analysis and also looked at some catch-based methods, including the depletion-corrected average catch, what we call the Catch-MSY method, and depletion-based stock reduction analysis.

With the trend analysis we looked at associations between indices; and we also used the Mann-Kendall analysis to test for either increasing or decreasing trends in the indices. Also, those analyses suggested significant positive associations between indices from different surveys; most notably the young-of-year indices in the Mid-Atlantic. That suggested that these surveys are tracking abundance reliably.

The only trend detected in any of the indices was in the MRFSS and MRIP Index; and that was an increasing trend. Of note, this contradicted other indices that were available and also contradicted the general understanding of somewhat a developing fishery over the time period of that MRFSS and MRIP Index.

For a per-recruit analysis, it is a per capita age-structured model that uses survivorship along with age schedules of size, weight, mortality, fecundity, maturity and harvest vulnerability. It estimates yield per recruit and spawning potential ratios over a range of exploitation rates and minimum size limits.

This was not endorsed by the stock assessment subcommittee due to the lack of information on selectivity in the fisheries and fishing mortality. Primary methods we looked at in the assessment were catch-based methods. These require removal history, which we had available. They do not require an index of abundance. There are some meta-analyses and data available to inform the required input parameters for these methods.

It is good practice to compare several of these methods. They are somewhat similar. We evaluated three methods; and as I mentioned, depletion-corrected average catch or DCAC; catch-MSY and depletion-based stock reduction analysis or DB-SRA. Some of advantages of these catch-based methods; performance of the methods relative to the data-rich methods has been evaluated and found fairly robust given the assumptions are correct.

These methods provide a good alternative to estimate reference points for data-poor stocks that lack information on size composition and abundance but do have information on life history and removals. Some limitations; these methods were developed to estimate catch reference points and not necessarily to make stock status determination.

They are conditional on subjective depletion assumptions and they do not fit estimates to any abundance data. Uncertainty can be incorporated with these methods by specifying distributions for input parameters and data, running a number of model iterations with parameters drawn from those distributions and then calculating reference points from accepted iterations to develop probability distributions.

Uncertainty can also be explored with sensitivity analyses.

Of the three catch-based methods, the stock assessment subcommittee and technical committee chose DB-SRA as the preferred method. This was based on several reasons. The DCAC does not incorporate a population dynamics model. It is just a slightly modified average catch; so the DB-SRA is slightly more complex than that DCAC method.

Catch-MSY is not robust for lightly exploited stocks. The life history and productivity parameters required for DB-SRA are better defined in meta-analyses that were available. DB-SRA was more robust in sensitivity analysis and projections. Some background on the DB-SRA method; the method essentially estimates what carrying capacity must be if a stock is at a recent biomass level given a time series of removals.

The observed time series of removals is assumed to start at unfished stock conditions. The biomass in that first year, which I mentioned, was 1900 is assumed equal to your carrying capacity. Select life history and stock condition parameters from distributions and project biomass forward with a production model and the removal history. Then you iteratively solve for the carrying capacity based on that assumed depletion in a current year.

These were the results of the DB-SRA base run. The overfishing limit or OFL; the median estimate was 4.12 million pounds; and for the maximum sustainable yield, the median estimate was 2.12 million pounds. You can see the distribution of those estimates in the figure below. These are the biomass estimates projected with the production model.

The biomass estimates are the black lines and the Bmsy reference point is the red lines with the solid lines being the median and the dashed lines being the inter-quartile range around the median estimate. You can see here biomass has been estimated to decline slightly and steadily but never falls below the Bmsy level. This is the exploitation estimated with DB-SRA.

The exploitation are the black lines and the exploitation at maximum sustainable yield are the red lines; again with the solid lines being the median estimate and the dashed lines being the inter-quartile range around those median estimates. You can see the only year that exploitation exceeded the exploitation at maximum sustainable yield was in 2008 when there was a big peak in harvest in recreational harvest.

At the recommendation of the peer review, we did some projections with this method. For this projection here we used the removals equal to average removals from 2010 to 2012, which was 1.56 million pounds, and projected that catch forward as the catch for the next 20 years. You can see that biomass remains steady over those two years in this projection.

Another projection was studying the removals projected forward equal to the DB-SRA median MSY estimate of 2.12 million pounds, which shows a slight decrease in biomass over the time series of the projection. We did some sensitivity analysis looking at changes to the depletion parameters, input parameters and removals' time series.

We found that it is sensitive to depletion assumptions; and based on the recommendation of the peer review panel for that depletion parameter that we used in this method, we assumed a broad uniform distribution to capture some of that uncertainty. This is a comparison of the sustainable yield estimates from each of the catch-based methods.

With the DCAC median, sustainable yield being the green line that is the lowest; the DB-SRA median MSY being the orange line; and the catch-MSY median MSY is the blue line; and the removals' history is the black dotted line. Of

note, the sustainable yield estimated DCAC is not equivalent to MSY. It is a slightly more precautionary yield estimate that is not likely to exceed MSY; so as expected, it is lower than the other methods.

The reference points from the DB-SRA; for a catch target, the median DB-SRA MSY estimate is recommended of 2.12 million pounds. For a catch threshold, the median DB-SRA OFL estimate of 4.21 million pounds is recommended. The OFL is a product of current biomass and maximum sustainable exploitation. It indicates a threshold for overfishing.

For stock status, the black drum stock is not overfished and overfishing is not occurring. This is based on the results of the catch-based methods, the life history of the species and indices of abundance that were available. These are the research recommendations that the technical committee and stock assessment subcommittee came up with.

The high priority research recommendations are to age otoliths that have been collected and archived; collect information to characterize the size composition of fish discarded in recreational fisheries; collect information on the magnitude and sizes of commercial discards; increase biological sampling in commercial fisheries to better characterize the size and age composition of commercial fisheries by state and gear.

Increase biological sampling in recreational fisheries to better characterize the size and age composition by state and wave; obtain estimates of selectivity at age for commercial fisheries by gear, recreational harvest and recreational discards; continue all current fishery-independent surveys and collect biological samples for black drum on all surveys; develop a fishery-independent adult survey; consider longline and purse seine surveys; collect age samples especially in states where maximum size regulations preclude the collection of adequate adult ages.

Moderate research recommendations: conduct reproductive studies including age and size-specific fecundity; spawning frequencies; spawning behaviors by region; and movement and site fidelity of spawning adults; conduct a high reward tagging programs to improve return rate estimates; continue to expand current tagging programs and obtain mortality and growth information and movement at-size data.

Improve sampling of nighttime fisheries; conduct studies to estimate catch-and-release mortality in recreational fisheries; collect genetic material over a long time span to obtain information on movement and population structure and potentially estimate population size; obtain better estimates of harvest from the black drum recreational fishery, especially in states with short seasons. That concludes my presentation. If there are any questions, I'd be glad to take them.

CHAIRMAN GEER: Are there any specific questions for Jeff at this time? All right, hearing none; I guess we will move on to the Peer Review Report. It is my honor to introduce Dr. Cynthia Jones from Old Dominion University; and she will give us the peer review.

PEER REVIEW PANEL REPORT

DR. CYNTHIA JONES: Jeff covered a great deal and so I can be brief. The information in the external peer review is available. The Peer Review Panel was held from November 11th through the 14th. The panel consisted of me as chair, Dr. Nelson, Dr. Jiao and Dr. Cope. All of those people have expertise in data-poor methods.

The stock assessment was accepted. The stock is not overfished and overfishing was not occurring in 2015. The panel found that the stock assessment was acceptable for management use. We also commended the stock assessment team on the true high quality of work that they did. Our first term of

reference was to evaluate the thoroughness of data collection and the presentation and treatment of fishery-dependent and fishery-independent data in the assessment.

Our finding was that age could be adequately read from otolith annuli and that the size at age is reliable. However, the recreational catch data were obtained from MRFSS/MRIP. The CPUE estimates were not consistent over time; and that is because of the infrequency of intercepts. This tends to be a seasonal fishery, a pulse fishery and in specific locations.

Because of that, MRFSS selects the most commonly used sites and so some of the black drum sites are included infrequently or with low probability. This is exacerbated by a short-season fishery and sporadic availability of intercepts due to the migratory behavior especially in the northern part of the range.

You saw that in Jeff's presentation of the imprecision and the lack of data accumulation for the stock. Coverage of the commercial fishery's landings came from disparate sources over the catch history with inconsistencies in coverage and gears. There is no fishery-independent surveys to monitor black drum.

Eight indices in total were used in the assessment and standardized either with the Delta Method in combination with the lognormal distribution or with a binomial JLM. The panel considered that a credible analysis of the available data. The second term of reference is that the methods and models used to estimate the population parameters and biological reference points included but not limited to evaluation of the choice and justification of the preferred model.

If multiple models were considered, evaluate the analyst's explanation for any difference in the results and evaluate model parameterization and specification. The panel looked at the four models that were presented to us for candidate stock assessment. They rely only on catch and life history information; and those, as Jeff said, were the trends in per-recruit analysis, catch-MSY, DCAC and DB-SRA.

For the per-recruit analysis, it is an equilibrium approach; and the drawback to it was the lack of knowledge of selectivity, as Jeff has already said. The reference points were within the 95 percent credibility indices of the DB-SRA. The catch-MSY model used a Pella-Tomlinson Surplus Production Model; but when we asked the team to do further projections, it showed that that model in fact was unstable in projecting forward.

The Depletion-Corrected Average Catch does not use a model of population dynamics, which is preferred. It adjusts the average catch based on assumptions about depletions and is sensitive to that; and it only gives a static yield calculation, which again is not preferable. The DB-SRA used a flexible production model with a Monte Carlos resampling of inputs.

It included uncertainty in the catch history, which is advisable. It was the most transparent of the models that presented to the panel. It also used the full time series of catches. However, it did have a high sensitive to the biomass assumptions. The panel felt this was the preferred model to use for the stock assessment.

We were asked to evaluate the diagnostics performed. For yield per recruit and SPR, there is no sensitivity diagnostic for the catch-MSY. It was robust across a wide range of R and K values, but it was relatively sensitive to the depletion in the terminal year. The sample retention for this method was also very low. Out of 10,000 sample inputs, only 5 percent were kept.

That tends to be a problem with the catch-MSY Model. The DCAC and DB-SRA included additional assumptions on K, on the ratio between biomass in the terminal year in K and M. The DB-SRA had a sample retention of 90

percent in comparison to the catch-MSY. Term of Reference 4 was to evaluate the methods used to characterize uncertainty; and the estimated parameters ensure that the implications of uncertainty in the technical conclusions were clearly stated.

Again, no estimates for uncertainty were done for the yield per recruit or SPR, spawning potential ratio. The catch-MSY, uncertainty for MSY and management quantities was done from Monte Carlos sampling of the prior distributions. That was chosen as a uniform prior. The DB-SRA used Monte Carlos in the input parameters, and that uncertainty was able to be perpetuated into the model-derived estimates.

Term of Reference 5; the panel was asked to recommend the best estimates stock biomass abundance and exploitation from the assessment for use in management; and if possible to specify alternative methods and measures. The panel concurred that the best model was the DB-SRA with using the least informative priors.

The population biomass was shown to be declining slowly with a steady increase in harvest; and the population was not experiencing overfishing. We were asked in Term of Reference 6 to evaluate the choice of reference points and the method used to estimate them and to recommend stock status determination from the assessment and if appropriate specify alternative methods and measures.
The panel found and was unanimous in all our findings the reference point determined by yield per recruit, DCAC, DB-SRA and the Catch-MSY. The DB-SRA reference point was the MSY of 2.11 million pounds. Term of Reference 7 was review the research data collection and assessment methodology recommendations provided by the technical committee and make additional recommendations as warranted.

Clearly prioritize the activities needed to inform and maintain the current assessment and provide recommendations to improve the reliability of future assessments. The panel recommendations were specifically to develop a protocol to alert the stock assessment subcommittee to any major changes in harvest and F that could trigger a reassessment of the reference points similar to rumble strip's approach developed by the Mid-Atlantic Fishery Management Council for data-poor stocks.

With any of these data-poor stocks, you are using methods that are not quite as sensitive as a full age-structured stock assessment; and so there is a real value in looking at each year's update and seeing whether there is any change that would tend to worry you, in which case it might be of value to trigger that as a rumble strip so that you go back and look at the assessment in more detail.

We felt it was important to increase the age sampling along the coast. The reason is that black drum is a very long-lived highly productive fish in the sense that it reproduces – it grows fast, it reproduces early and it has enormous reproductive capacity. That is good because when you deplete the stock, it means it can come back; but it also is telling you that this fish lives in a very uncertain world and needs full age structure in order to be able to maintain itself at sustainable levels.

The best way to determine whether it has full age structure is to have sufficient aging data that you can see any juvenescence that would occur in the stock; and so that's what we're asking for here. Increased age sampling along the coast, the juvenescence of the population is a good indicator of overfishing in this fishery, and the availability of age data is crucial to being alerted to such changes in age structure.

Indices such as the South Carolina Trammel Net Survey could be used directly in an extended version of DB-SRA. The implementation of xDB-SRA, which is another method, could instead

specify stock status at an earlier time period and therefore allowing the most recent catches to inform population dynamics and thus stock status.

Term of Reference 8 was to recommend the timing of the next benchmark assessment and updates, if necessary, relative to the life history and current management of the species. Again, because the panel felt that because the black drum is not overfished and overfishing is not occurring; that it recommends that the next benchmark assessment take place in five years unless there is any indication with the rumble-strip methodology that you've begun juvenescing the population and it starts to be in trouble.

Overall the review panel found that the black drum are an infrequent catch in the recreational and commercial fisheries. Their rarity and migration history leads to a variable catch history. Again, in any of these data-poor methods, the driver of the value of the method is that you have a really solid catch history and that the catch is a major portion of the abundance of the stock.

Of the four data-poor models used, the DB-SRA proved to be the most reliable and provided stable estimates of biomass and MSY. Black drum is not overfished and overfishing is not occurring. The median MSY was 2.11 million pounds with a median overfishing limit of 4.13 million pounds. Nevertheless, because of the life history characteristics, in managing this stock precaution should be used. Any questions?

I guess the other thing I'd like to say is I really do want to commend the stock assessment scientists. I've been at a lot of CIE reviews and this was just a wonderful set of presentations they made to us and showed enormously dedicated work on it and really high quality work.

CHAIRMAN GEER: Are there any questions for Dr. Jones? John.

MR. JOHN CLARK: Thank you for the great presentations. I was just curious. One of the last points you brought up, Dr. Jones, about looking at the change in the age structure as a warning; is the data sensitive enough that we – how much of a change would we have to see before we'd be thinking that there was a problem with the stock?

DR. JONES: Well, one of the reasons that one of the data recommendations from the panel was that more age data be taken particularly for those older, larger fish was to establish a better basis for which to understand whether juvenescence was occurring. I know in the state of Virginia we routinely – even with small sample size, we are routinely seeing 60 year olds in the catches.

It would be nicer if we had more data coastwide so that could be assessed more readily. I would be able to then say to you, well, if I saw a truncation of 10 percent of the age distribution I'd begin to be concerned. I don't think we can say that right now. Certainly, I would be concerned if I didn't see 50 year olds. Those fish will go fast; the older ages will go quickly if you're harvesting too heavily.

CHAIRMAN GEER: Any other questions? Louis.

DR. LOUIS B. DANIEL, III: Just a comment just to follow up on what Dr. Jones said as well as Jeff. I know the effort that went into this assessment. This was something that I really pushed for and I couldn't have asked for a better result in terms of the quality of the work that was done. To Jeff and to everyone that was participating in this and the peer review panel; I feel good about this.

I concur with everything from the review panel and think we've probably done what we need to do in order to maintain this and keep an eye on the age structure. It is going to be hard to

do and it is going to take a commitment from some of the states that actually see those larger, older fish, but take them in fishery-dependent sample so we don't go out and kill a bunch of 50 or 60-year-old fish just to get their otoliths.

I think that would be a useful exercise if we can get some of the northern states interested and involved. I know the southern states are going to be collecting some of the otoliths from the smaller fish, which is what we generally see, and hopefully be ready for a benchmark in five years. Again, thank you very much both Jeff and Dr. Jones.

DR. JONES: Just to comment on aging this fish, if you can't age this fish, you should be fired. (Laughter) It comes with numbers on its annuli; but you do have to count to 50.

CHAIRMAN GEER: Good point. Any other questions? Louis.

DR. DANIEL: Seeing no questions, **I would make a motion that we accept the benchmark stock assessment and peer review report of management use**. Is that what you were looking for, Mr. Chairman?

CHAIRMAN GEER: I believe it was in the hopper, yes. I guess we have to get it up there.

MR. JOE GRIST: I'll go ahead and second it while we're waiting.
CHAIRMAN GEER: The motion is move to approve the Black Drum Stock Assessment and Peer Review Report for management use. Motion by Dr. Daniel and seconded by Mr. Grist. **Hearing no opposition to that and seeing a lot of hands going up, we will consider that motion carried.**

I want to say again I appreciate the expertise and the thoroughness of Dr. Jones in her peer review and all the stock assessment biologists and technical committee members that worked on this. One of my staff worked pretty hard on this and he was in my office on a regular basis asking me questions about it. It was a very thorough job and it went very smoothly. I think we all greatly appreciate your expertise and your thoroughness on this.

DR. JONES: This is going to mark me as a nerd, but we had so much fun doing this stock assessment review.

CHAIRMAN GEER: Moving on; now we have to have a brief discussion on how we may use this information. We went through this a little bit with menhaden, but I think menhaden is a much different beast than black drum.

DISCUSSION OF NEXT STEPS FOR MANAGEMENT IN RESPONSE TO THE BENCHMARK ASSESSMENT

CHAIRMAN GEER: I want to open the floor and get suggestions and ideas on how we want to move forward with this. Louis.

DR. DANIEL: I waited for another hand to go up, Mr. Chairman, before I stuck it up again. I agree with the peer review panel's advice to monitor the age structure. I think we took some good proactive measures early on to make sure that we had some measures in place to try to protect those older fish, to try to limit the harvest and to try to at least get some of our yield per recruit up in terms of harvesting so many juvenile fish at such small sizes. I think we've been successful in that. I would suggest that we continue monitoring the population and prepare for a five-year update and take no further action at this time.

CHAIRMAN GEER: Any other comments or suggestions? I don't think we need a motion on that but just keep doing our jobs and doing it well. Everybody is in agreement with that; I see a lot of head-nodding. Okay, we will consider that we're done with that and thank you very much for the presentations.

UPDATE ON

SOUTHERN FLOUNDER MANAGEMENT

CHAIRMAN GEER: Dr. Daniel is going to come up here now and he is going to speak to us about southern flounder management in the southern states.

DR. DANIEL: The last time I did this I was on the technical committee. All right, the intent of this is really not to solicit any action. What I wanted to do is just to give you a brief history. It was four or five years ago – North Carolina does fishery management plans for various species – we attempted a stock assessment on kingfishes.

I believe we used northern kingfish as our indicator species of the complex. We did a stock assessment on that species. We sent it out for peer review and the peer review came back not usable for management purposes because these fish migrate into other jurisdictions; and we had modeled it as a closed population when indeed it was an open population.

The way we have managed southern flounder in North Carolina ever since the original fishery management plan in 2005 was a closed population. We did a North Carolina centric assessment and generated biological reference points and had reductions in harvest needed, et cetera. We actually had an update during the time series of the assessment.

We just recently did an update on our southern flounder assessment. Looking at some of the new information that has recently come out in Fishery Bulletin, it is suggesting that – I think it was a paper by Midway, Cadrin and Scharf looked at otolith microchemistry, tagging and genetic information and suggested that the population of southern flounder was an open population down to as far south as Florida.

This is a bunch of information on the actual background on southern flounder I don't need to read to you. Currently they're managed separately by each state. Once we got this information that our peer review was not accepted because, again, it is an open population as opposed to a closed population; that has created a real storm in North Carolina.

People wanted us to recover the stock; but now that we don't know what the benchmarks are, we don't whether we're overfished or overfishing; so how do you recover something if you don't even know the most basic tenets of the population. I asked staff to start looking at what was going on in the southern states, South Carolina, Georgia and Florida.

We were able to see that we are seeing some declines across the board maybe with the exception of North Carolina recreational is going up. I think the reason you're seeing that is because of the incidental take permit for the sea turtles. In North Carolina it has resulted in significant closures that I believe has left more fish in the water that are now available for recreational harvest.

I think there is a reason for that increase in landings in the North Carolina Sector; but for the most part a lot of the states are holding relatively steady or declining. If you look at the commercial fishery, which is primarily North Carolina and Florida, there is a pretty noticeable decline. Again, the evidence for significant stock mixing is there.

We continue to tag some of these fish but very little difference between fish in North Carolina, South Carolina, Georgia and Florida. Some of the tagging information, as you can see, sort of shows that from the circles where the fish were tagged and that general southward movement as far as Florida.

This report is available for you on the internet. Basically we're seeing some long-term declines in North Carolina and our Pamlico Sound Survey. It does that there is some declines in the trammel net survey in South Carolina. In their electro-fishing survey you can see a pretty significant decline. I don't want to speak for

South Carolina, but this is the information that we have been able to gather.

Again, there is the North Carolina Survey, the South Carolina; and then the Georgia Trawl Survey, which we received from them is showing a decline. I guess that is the Bulldog Survey showing a decline in abundance.

The bottom line; this fish forms a single population. We're seeing pretty significant fisheries in all the South Atlantic states; two with significant commercial fisheries; evidence for decline; and pretty much impossible for us to manage without a joint assessment, working together with all the South Atlantic states.

The beauty of southern flounder is that it is fairly regional. There is not a lot of overlap; and I'm not aware of – there may be one or two that have been collected in Virginia, but it is very, very rare to see a southern flounder north of North Carolina, really north of Hatteras; and they're a different population in the Gulf.

We do have some mixing in the nearshore ocean between Gulf flounder and southern flounder; and I think that probably increases as you move south. I bring this up to the board because I brought up the issue with kingfishes. We talked about doing a kingfish assessment because they are so important to the South Atlantic.

We really didn't have the data to do it; and we've really not done anything. With southern flounder, at North Carolina it is the number one flounder or the number one targeted species by recreational fishermen in our state. While we'll talk a lot this afternoon about the recreational harvest of summer flounder, southern flounder is critically important I think to all the South Atlantic states.

I wanted to provide you with this information. I'm not asking for an ASMFC Southern Flounder Plan. I'm not asking for a technical committee to be developed. I just want to make sure that the southern states have this information, have an opportunity to go back and talk to your technical people, and I think there are several options that we can consider in the future.

First we need to talk to Bob; but if there was significant interest from the South Atlantic Board to develop a Southern Flounder Plan, then that would be one option if we have the money and the staff to do so. After our executive committee meeting today, I don't know that we will. The other option would be to just work together and do like we did in the historical MARFIN projects.

MARFIN loves to see interstate cooperation and so there may be an opportunity to generate some bread for the four states to work together to try to construct a meaningful, peer-reviewable stock assessment on southern flounder; and then maybe just by working together with the southern states we could manage this fishery or at least have the assessment we need in order to properly make management recommendations. That was the intent and purpose behind my presentation here and really it was for your information and knowing how important that species is to the South Atlantic Board.

CHAIRMAN GEER: Thank you, Louis. Robert, do have a question?

MR. ROBERT H. BOYLES, JR.: Not a question; just discussion. Louis, thank you for this, and it is fitting that we just reviewed and accepted the stock assessment on black drum. I believe it was you that brought that issue to us; so I appreciate your foresight and certainly appreciate your concerns here. I will tell you I agree.

I think there is some cause for us to be collectively concerned. We have been looking at flounder for a long time in South Carolina. I will say from a regulatory management perspective we don't differentiate among the

three species. A flounder is a flounder is a flounder. There are a lot of reasons for that.

Certainly, we can, with our trammel data and some other data sets, tease that out. We are concerned about what we're seeing in terms of trends. We're concerned about a lot of different things. I'm struck by the fact that what we see in our blue crab fishery; blue crab and flounder seem to share some similar recruitment dynamics.

We think there are some things that are not necessarily fishery related at this point. In South Carolina we have a very generous bag limit; but I would also be lying if I told you that there was not a lot of political interest in flounder. There is a lot of political interest in flounder. From a recreational perspective it is particularly challenging in that I think we've been able to convince a lot of our recreational anglers about the importance of catch-and-release fishing for species like spotted seatrout and red drum.

We have not been as successful in terms of cracking that nut with recreational use of flounder. I will conclude by saying I know our staff has been in touch with your staff, Louis, about sharing some data, recognizing that this is an open resource and a shared resource. We're hoping that by cooperating we can get a better handle on a regional picture.

As I mentioned to you a few minutes ago, we have a lot of reasons to believe that particularly in the northern part of our state that we're recruiting flounder from North Carolina. I think it is helpful to keep these lines of communication open, and I appreciate you bringing this to us.

DR. DANIEL: I'm glad to have been able to do it. I think what we're seeing in North Carolina is very similar. If you will recall the MARFIN mullet result, Florida and North Carolina were particularly happy because South Carolina and Georgia basically provided a sanctuary for the mullet in the winter after they spawned; and we really didn't need to worry too much about flounder.

I think what is happening with flounder in the South Atlantic is that a lot of these fish that are coming out of the inlets in North Carolina are heading south and spawning. I think the fewer of those that come out of North Carolina and head south to spawn; that's one of the reasons why I think you're probably having some recruitment issues down there.

At the same time I think what is spawning off of South Carolina, a lot of it is recruiting into North Carolina and down the road. I think if we're serious about managing southern flounder, we need to know what the status is, we need to know what the biomass triggers are, and we probably need to do something jointly either again through a gentleman's agreement amongst the four states, which we've done before, or through a commission action. Thank you for the time, Mr. Chairman, to bring this up.

CHAIRMAN GEER: Louis, just one last thing; the Georgia data is from our Georgia DNR Trawl Survey and not UGa. Also, we'd be more than willing to share our data. Before we got your call from your staff asking for the information, Dave Whitaker and staff in South Carolina asked for it like three months before. We're all kind of on the same page.

DR. DANIEL: Thank you so much; I appreciate the time.

PRESENTATION ON AMENDMENT 20B FOR THE COASTAL PELAGIC SPECIES

CHAIRMAN GEER: Okay, our last item on the agenda is Kirby is going to tell us about Amendment 20B for the coastal pelagic species. In the amendment there are some changes to Spanish mackerel and he is going to tell us about it.

MR. KIRBY ROOTES-MURDY: I'm going to just give you a brief presentation on Amendment 20B and what it entails. For today's purposes, this is more for information. The board does not have to take action, but it may be useful for discussion and possible action down the road. In terms of background, in 2011 the Omnibus Amendment for spot, spotted seatrout and Spanish mackerel went through.

This set up a number of management measures coastwide for Spanish mackerel. Some of the key ones were a 12-inch fork length or 14-inch total length minimum size; seasonal changing of the days and seasonal trip limits and commercial quota decreases when in a given year the total ACL is exceeded and the stock is overfished.

In terms of additional commercial measures, it prohibited purse seines and drift gill nets south of Cape Lookout, North Carolina. In terms of the annual commercial quota, it set it at approximately 3.13 million pounds annually with an adjusted quota of about 2.88 million pounds in different scenarios.

Once approximately 75 percent of the quota was hit, then the trip limits were reduced by 1,500 pounds. In 2014 Amendment 20A went into effect, which also implemented changes to the sale of fish caught in tournaments. Fish that were counted against recreational bag limits in recreational tournaments were allowed to be sold for commercial use.

In 2012 the SEDAR 28 Spanish Mackerel Stock Assessment was completed using a statistical age model, the Beaufort Assessment Model; and in doing projected that the 2011 spawning stock biomass was approximately 10.71 million pounds, which was higher than the spawning stock MSY of 7.2 million pounds; and as such, the resource was determined to be not overfished and overfishing was not occurring.

The implications of this also were linked to, as I mentioned before, the Omnibus Amendment, in that for subsequent years where commercial quota was exceeded as well as the recreational harvest limit were exceeded, there was no decrease in the following year's quota or recreational harvest limit.

Amendment 20B was published on January 27th and becomes effective in law on March 1st. What it does is change the previous Atlantic Zone of the Spanish Mackerel Management Unit. There had been a Gulf Zone and an Atlantic Zone. What it does is subdivide the Atlantic Zone. The reason for doing so is that the South Atlantic Fishery Management Council had expressed concern that the commercial quota was being filled by fishermen in one state before fish were available to other fishermen in other states.

That quota is annually monitored by the Southeast Fisheries Science Center. What the new zones indicate are that the northern zone will extend from approximately the South Carolina/North Carolina Border up through approximately Block Island of Rhode Island and will have 19.9 percent of the coast-wide commercial quota, which is approximately 662,000 pounds.

For the southern zone, which will be from the North Carolina/South Carolina Border down through the Monroe/Miami-Dade County Line. Eighty percent of the coast-wide quota will be allotted to that, which was approximately 2.67 million pounds. While these quotas will be set to these different zones, quotas can be moved between zones in consultation with the states in each of the zones and transferring.

In the meantime, NOAA Fisheries will monitor the commercial quotas separately and close federal waters in each zone when respective quotas have been met or expected to be met. I have a graph up here to just kind of show a little bit where these lines will be drawn. It essentially bumps up the Atlantic Zone of the Spanish Mackerel Migratory Group to, as I said, that Rhode Island, approximately Block Island

area, out to the EEZ; and then extends it down. There are no other elements to this I was going to present; but if there are any questions, please let me know.

MR. ADAM NOWALSKY: Kirby, are you able to comment on if those zones are somehow biology-driven based on results of tagging studies or something else that would indicate that they are somewhat separate stocks or is it just purely as a function of management use?

MR. ROOTES-MURDY: My understanding, in going through the document at this point, is that it is a function of where landings occur. The FMP Review for 2013 fishing year is yet to be completed; but in looking historically through landings, about 73 percent of the harvest has been in southern states such as Florida.

In 2012 approximately 70 percent of the harvest was in Florida and 26 percent of the harvest was in North Carolina. In going through and setting those zones, some of the reasoning behind it was the landings over the last decade or so indicated that landings have been dominated by a handful of states. My read of it is that there is an effort to divide those into different zones.

ADJOURNMENT

CHAIRMAN GEER: Any other questions or comments? Hearing none; that concludes our business unless anyone else has anything else. We are adjourned.

(Whereupon, the meeting was adjourned at 2:45 o'clock p.m., February 4, 2015.)