MINUTES

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

RED DRUM MANAGEMENT COMMITTEE

PANAMA CITY BEACH, FLORIDA

TUESDAY, MAY 15, 2001

ATTENDANCE:

Members

Karen Foote, Chairman
Alex Jernigan, Vice Chair
Maumus Claverie
Douglas Horn
Hal Osburn
Larry Simpson

Staff

Anne Alford
Steven Atran
Peter Hood
Richard Leard
Michael McLemore
Cathy Readinger
Wayne Swingle

Others

Pete Aparicio
Irby Basco
Karen Bell
Roy Crabtree
David Fiedler
Thomas McIlwain
Jim Weaver
Roy Williams

The meeting of the Red Drum Management Committee (Committee) was called to order by Chairman Karen Foote at 8:05 a.m. on Tuesday, May 15, 2001 at the Edgewater Beach Resort in Panama City Beach, Florida.

- **Adoption of Agenda**

  The agenda was adopted as written.

- **Approval of Minutes**

  The minutes of the Red Drum Management Committee meeting held Tuesday, September 12, 2000 at the Adam's Mark Hotel in Mobile, Alabama were approved as written.

- **Red Drum Stock Assessment Panel Recommendations**

Red Drum Stock Assessment Panel Stock Assessment Workshop Summary

Mr. Hood made this presentation (Tab I, No. 3). The workshop was held on April 10th. This meeting began with a presentation by Mr. David Nieland of Louisiana State University (LSU) on the results of a MARFIN-funded study that had been co-authored by Dr. Charles Wilson and entitled "Variation of year class strength and annual reproductive output of red drum *Scianops ocellatus* from the Northern Gulf of Mexico." These fish were collected in 1997 and 1998 from National Marine Fisheries Service (NMFS) purse seine collections that were part of a tag and recapture study. Most of the fish that they examined were between ages 5 and 8 years; however fish ranged in age from 2 to 42 years. The distribution of cohorts was distinctly multi-modal, with maxima occurring for the 1990, 1987, 1979, 1972, and 1965 year classes. When comparing lengths at age of 4-6 year-old fish, Mr. Nieland noted that the average length-at-age for fish caught in the 1990s was 91.2-93.3 percent of the length for similar aged fish caught in the 1980s. Dr. Wilson had suggested that this may be a density-dependent growth response possibly caused by increased competition for resources as the number of juvenile red drum had increased. However, several members of the Red Drum Stock Assessment Panel (RDSAP) cautioned against jumping to conclusions as other factors, such as depth of capture, location of capture, and the sex ratio of fish examined could influence the length-at-age data. Estimates of instantaneous rates of mortality, annual mortality rate, and annual survival showed a small decrease in mortality for the 1990s fish when compared to the 1980s fish. Mr. Nieland and Dr. Wilson had limited success examining the reproductive biology of red drum. Unfortunately, no ripe females were captured in the study, so batch fecundities could not be estimated. Estimates of spawning frequency indicated that spawning occurred about every 8 days, though low sample sizes left some uncertainty about this value.

In the discussion that followed Mr. Nieland's presentation, Mr. Murphy asked if the main sampling source for fish used in the aging portion of the study would continue. Mr. Nieland replied negatively. Dr. Porch pointed out that one of the problems with the data was that the fish used in the study came from only a few schools. Because schools seemed to stratify by size, this reduced the power of the data. Randomly sampling a few fish from many schools would improve the data quality.

The RDSAP then addressed shrimp-trawl bycatch mortality data sets. Mr. Murphy indicated that there might be some information in a study done on bait trawl bycatch in Florida and that he would forward this information to Dr. Porch. Mr. Shepard indicated that species composition of fishery independent survey six foot trawl data from Louisiana could be examined as an indication of bycatch patterns. Also, historical trip interview program (TIP) data should list red drum landed and sold by the shrimp fishery when this practice was legal. While these data sets should be examined, the RDSAP indicated that they did not feel that red drum was a common shrimp bycatch species in state waters, based on their knowledge of state fisheries and what they had found out from searching the data sets.

The RDSAP then went on to examine historical length composition data. Mr. Murphy reminded the RDSAP that the data sets that may not have been used in previous NMFS assessments may now be valuable because assessment methodology had changed. Mr. Shepard indicated that Dr. Porch had received the Louisiana TIP data and that there really was not very much more information. He added that the gill net and trammel net data from the initial years of TIP sampling probably reflected selectivities from the 1960s to early 1980s. Mr. Van Hoose indicated that most of the red drum landed in the 1980s was landed in Bayou La Batre, Alabama. These data had been summarized in a study from Auburn University, and Dr. Porch had indicated that length at age data from this study had been used in the stock assessment. Mr. Van Hoose indicated that, if it was preferable, he could give Dr. Porch the raw data sets.

The next item of business was a discussion of the development of a standardized stock assessment methodology that can accept area (state) specific data and work with these within the context of a Gulf stock assessment. The main focus of the discussion was if and how the stocks mixed. Mixing rates can range from no mixing to Gulf-wide mixing. Dr. Porch suggested that two mixing hypotheses be considered. The first was the 'overlapping home range' hypothesis where fish may mix freely prior to spawning. But when spawning occurs, fish return to their natal spawning area (high site fidelity) and only spawn with fish spawned in that same area. This behavior has been shown in weakfish, another drum species. The second hypothesis is the 'diffusion' hypothesis. In this case, if a fish mixes with another population, it stays with that new population and behaves as an individual of that population (including spawning). These hypotheses should be considered endpoints across a range of possibilities. When working with these hypotheses in the assessment model, Dr. Porch suggested that the model assume that mixing occurs offshore (not inshore). Mixing would then be compartmentalized using high and low diffusion rates. Dr. Porch has used this technique in tuna stock assessments.

The RDSAP discussed ways to measure mixing between stocks. Studies by Dr. John Gold of Texas A&M of red drum genetics suggests that populations adjacent to each other are more similar to each to each other than populations more distant from each other. This suggests that there is some mixing between adjacent populations, but is limited enough to allow for unique genetic differences to be maintained. Other methods discussed to examine mixing between populations included otolith micro-chemistry and using high-tech tags.

In order to minimize the number of compartments in the assessment model, Dr. Porch suggested that the stock be divided into three inshore and three offshore areas. The linkages in the model would be from the inshore to offshore areas, juvenile fish moving the offshore adult stock, then from the offshore to offshore areas. The RDSAP then discussed how the Gulf stocks should be divided. Ecologically, the break points between stocks should be at Galveston, Texas and Cape San Blas, Florida. This would separate the stock into western, northern, and eastern groups. However, political boundaries may make more sense because of state-run data collection programs and different state regulations. Therefore, the break point would be at the Texas-Louisiana and Alabama-Florida borders. The importance of mixing with Mexican fish was discussed, but the RDSAP felt that this effect was probably negligible.

One desirable feature about the compartmentalized model discussed above is that it makes the Gulf-wide assessment more comparable to the state assessments. For example, the greatest

apparent differences in assessment outcomes from the Gulf-wide assessment are with the Louisiana assessment. Using the above approach, features from the northern Gulf compartment could be compared to the Louisiana assessment and better explain any discrepancies between these assessments.

While the above ideas may help refine the stock assessment model, the RDSAP discussed if there were any means possible to bypass the major obstacles of the current red drum data sets. These two obstacles are lack of estimates of adult abundance and limited adult age-structure data. Mr. Shepard wondered if juvenile disappearance rates from fishery independent monitoring programs could be used to scale estimates of the adult stocks. The RDSAP members felt that there were some sampling programs that could be used in this manner, but not for all of the states. Dr. Porch indicated that, while this information can be used in this manner, he was uncertain that it was appropriate to use these data in the manner suggested. To use it, one must assume that there is no error in the index and that the selectivity does not change through the year; however, Dr. Porch indicated that he would take this idea under advisement.

The last item that was discussed in the meeting was where should the assessment go from here. While the data sets and the assessment methodology discussed above may improve the assessment, the RDSAP did not feel that these would do much to diminish the uncertainty associated with the assessment results. What was needed was better data on the offshore stock. Red drum were an important resource for both states and the federal government. States are providing information on red drum in inshore waters and are providing escapement rates. However, the states rely on the federal government to get the offshore data. Unfortunately, this critical data needed for the assessment is not being collected.

Through consensus, the RDSAP had two recommendations for the Council. The first was that the RDSAP was encouraged by the above discussions on ways to improve the stock assessment and felt that NMFS should provide time, possibly this summer, for Dr. Porch to investigate these ideas. The RDSAP was very interested in what the remodeling will show. Secondly, the RDSAP wanted to emphasize that the main drawback to the red drum assessment is the need for better data on the offshore stock. Adult fish need to be randomly sampled for ages and estimates of adult biomass are critical. Methods for obtaining this data have been discussed in previous meetings of the RDSAP and provided to the Council. However, these data needs do not seem to have a high priority in Gulf fisheries management. If the federal government was not going to make collecting these data a priority, then it might be up to the individual states to experimentally manipulate their management schemes so that these data can be collected in their respective territorial areas.

Mr. Osburn referred to a comment that Mr. Murphy had made, reminding the RDSAP that data sets that may not have been used in previous NMFS assessments might now be valuable because assessment methods had changed. He asked Mr. Hood whether he could follow up on what the RDSAP had been suggesting and how much potential this offered. Mr. Hood replied that this was basically just that one of the RDSAP members had asked why they needed to review this material and he had included Mr. Murphy's comments to indicate that assessment models changed and that there may be information that might be useful.

Dr. Claverie stated that he was trying to figure out the difference in sizes based on age, over different years. There seemed to be spikes in year classes, and they had assumed that the 1989 freeze had killed many of the red drum in Louisiana marshland. He questioned why 1990 showed an increase in population when red drum spawned in 1987 should have been killed in the 1989 freeze because they would still be in inshore waters. Mr. Hood replied that the fish that were spawned in 1990 would not show up in the fishery until 1992-1993. Dr. Claverie maintained that this would be contrary to the generally accepted theory that juvenile red drum remained inshore; they could only have escaped freezing by moving into offshore waters. He asked if this had been discussed during the workshop. Mr. Hood responded negatively. Dr. Claverie also asked whether, if the states were achieving their goal of a 30 percent escapement rate, why was it not assumed that escapement was working and then proceed from there. Ms. Foote commented that changes in personnel might contribute to this dilemma, since Dr. Porch had not been the original person assigned to this task. She noted that the concern was to get the offshore data in order to be able to move forward on this issue. Dr. Claverie remarked that the states were initially asked to adopt management measures that would produce a 20 percent escapement rate. The theory was that eventually the offshore spawning stock would reach that percentage. Originally, they had requested 20 percent, but then had declared that there was a 10 percent 'slippage' and increased the requirement to 30 percent escapement rate. This would vary from year to year, depending upon inshore conditions, such as freezes. He asked if this was still the concept of the criteria; if so, then how they counted the escapement in each state did not seem very important. As he recalled, the original computer models predicted that 1992 would produce the lowest recruitment because the offshore stock on the computer would reach a 'bottom out' at that year, and the new escapement (total biomass) should have reached a low level. The amount of recruitment from then on should have been increasing because the spawning stock would be increasing. He asked if there were sampling methods that could be used in an economical way. Mr. Swingle pointed out that the goal was to produce 30 percent escapement of the stocks after they had been in the estuaries from two to four years, depending on the salinity of the estuaries.

Mr. Simpson stated the Dr. Claverie had remained fairly on target in his statements. He agreed that it was very important to discover the status of the offshore red drum stock. He remarked that the states were achieving or exceeding the escapement rates that had been set by the Council.

Mr. Jernigan asked if the issue of the offshore stocks was the same as had been presented to the Council by the NMFS Southeast Fisheries Science Center (SEFSC). They had informed the Council that, after they had spent a great deal of money on the offshore study they did not believe that this research had resulted in useful data. His point was, if they were going to make any recommendations regarding the offshore stocks, someone who was capable needed to analyze the methodology to be used. This would prevent the wasting of further funding. Dr. Weaver stated that a high priority assignment had been made within the SEFSC to Ms. Karen Mitchell at the Pascagoula Laboratory to take the existing database (the tag/recapture information and the aerial surveys) and arrange this information in a publishable form. He believed that this would supply more information for use in planning management measures. Ms. Foote asked when this document would be published. Dr. Weaver replied that he did not know what the time-frame for

publication would be. His understanding was the it would be Ms. Mitchell's highest priority. This should develop fairly rapidly; she would have to examine the data, make some judgments, do the required analyses, and arrange these data in a publishable form. They would be glad to report to the Red Drum Committee and to the Council on the progress of this report.

Dr. Claverie stated that one of the workshop suggestions was to experimentally manipulate management in the states so that the data that they were looking for could be collected in the state's respective territorial waters. This suggestion was made in case the federal government was not going to make collecting offshore data a priority. He felt that this recommendation would be impractical since this would be very expensive. However, it seemed to him that manipulating management schemes in the states, particularly in Louisiana, would be a political nightmare. Ms. Foote stated that this was a suggestion by one person, and had not been adopted by consensus by those attending the workshop. She stated that the RDSAP was encouraged by the discussions reflected on the map at the end of the workshop report. She asked if this was something that this committee could support.

Dr. Claverie stated that he would like to see that map more fully reviewed because it may be that the political lines may not be scientifically justified. He had always accepted that Cape San Blas, Florida was the dividing line on the Gulf ecologies. Certainly, the Mississippi delta system was an important red drum producer. Ms. Foote stated that their concern about that was that the data collection was based on the political boundary, and they fully admitted that the Cape San Blas was the more practical ecologically, but perhaps not for data management purposes. She asked Mr. Williams when Florida had begun determining where fish were caught in Florida. Mr. Williams responded that this had begun in about 1984.

Mr. Swingle stated that for many years Florida had listed landings by counties, and for an estuarine species such as red drum, this could have pretty much reflected what had come out of that general area. Port Charlotte, Florida had been an active landing area for red drum for many years.

Dr. Claverie **moved to recommend to Council to ask NMFS to provide time to Dr. Porch to remodel the red drum stock assessment incorporating ideas brought forward at the April 10, 2001 Panel workshop.**

Dr. Claverie noted that the NMFS Silver Spring, Maryland office required Dr. Porch's services on the highly migratory species.

Mr. Jernigan asked why they should tell NMFS who to designate to study this issue; he contended that NMFS should simply be asked to study it, and let them assign someone to this project.

Mr. Hood commented that, basically, the RDSAP was concerned about was that after their meeting there would be no action taken. They had suggested that NMFS be requested to provide the time to Dr. Porch to address the stock assessment needs. Mr. Jernigan reiterated that he did

not believe that they should tell NMFS who to assign to this project.

Dr. Weaver commented that there were a lot of taskmasters for scientists; they had a lot of duties, many of which, in other contexts, were very important to the Council activities. He could not speak for Dr. Porch's individual commitments; at the present time, he was completely immersed in the International Commission on Conservation of Atlantic Tunas (ICCAT) process. He did not know what his schedule commitments were after that. He suggested just asking NMFS to undertake an analysis of how to improve the stock assessment. If additional, expensive field work was needed, the committee could recommend this to the Council. They had an Operations Plan meeting each year in the NMFS Regional Office with the Council staff, and the Gulf States Marine Fisheries Commission (GSMFC) staff to discuss the activities that NMFS was being asked to undertake on behalf of the Council for the following year. This would provide the opportunity to request any additional field data that the committee would like to pursue.

Mr. Osburn offered an **amended motion to add: "or other appropriate scientist."** Dr. Claverie accepted this amendment to his motion.

The **amendment carried.**

The **motion as amended carried without objection to allow Dr. Porch, or the appropriate staff person, to remodel the red drum stock assessment incorporating ideas brought forward at the April 10, 2001 Panel workshop.**

Mr. Simpson stated that he would like to have this committee discuss an idea, and perhaps they could formulate it into a letter of request to NMFS that Dr. Porch, and other appropriate scientists, as well as the RDSAP look into whether it would be advantageous to have an offshore stock sampling like one fish per trip from charter boats, to be retained as red drum samples. He heard a lot of comment that people caught red drum in association with red snapper fishing, and must discard them when they are dead. These were large fish that could, possibly, be sampled for certain purposes. To his knowledge, there was no offshore sampling of red drum, except for the Southeast Area Monitoring and Assessment Program (SEAMAP) or when an oil rig was blown up.

Ms. Foote noted that at the August 14, 2000 meeting, the RDSAP had addressed what it would need, and had concluded this would be 200 fish from each state taken from a minimum of 20 schools per area. They ultimately decided that getting fish from the recreational fishery would be of assistance to them.

Mr. Osburn stated that this discussion had yielded some interesting ideas; however they had run 20 minutes into the time assigned for the following committee.

The committee adjourned at 8:50 a.m.

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