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Testimony on NOAA's *Fishery Science: Is the Lack of Basic Science Costing Jobs?*
July 26, 2011

Introduction

Thank you for the opportunity to speak to the Subcommittee on Fisheries, Wildlife, Oceans, and Insular Affairs. My name is Julie Morris. I reside in Sarasota Florida, and I work at New College of Florida, a public honors college within the Florida State University System. My title is Assistant Vice President for Academic Affairs, an academic administrative position.

Since 1992, I have served in a series of decision-making positions for science-based management of fish and wildlife. I have been nominated/appointed to these positions by both Republican and Democratic Governors. From 1992-1999, I served as a commissioner of the Florida Game and Freshwater Fish Commission, Florida's Constitutional agency for all wildlife and freshwater fish. In 1999, an amendment to Florida's Constitution combined marine fisheries management with freshwater and wildlife creating a new agency, the Florida Fish and Wildlife Conservation Commission (FFWCC). I served as the first Chairman of the FFWCC from 1999-2000. In 2001, I was appointed by the Secretary of Commerce to be a member of the Gulf of Mexico Fishery Management Council (GMFMC). I was reappointed twice, serving on the Council until August of 2010.

Today's testimony is based on my 18-year experience in state and federal management of fish and wildlife. As a layperson, I have worked hard to understand fisheries and wildlife science. I've gained an understanding of fisheries science, fishery economics, the applicable law, and the process of management. Commissioners and Council Members we are provided scientific and economic analyses. They also listen to a wide range of public testimony. They integrate these both into reasonable, fair, and equitable management measures for sustainable fisheries.

In my testimony, I will make the case that the 2007 MSA amendments have resulted in positive changes for fisheries management in the Gulf of Mexico. More data would be a tremendous help and I support Congressional efforts to increase funding for fisheries data and assessment. That said, the GMFMC Scientific and Statistical Committee (SSC) has developed a reasonable methodology that uses available data to comply with the 2007 MSA amendments.

I do not believe that precautionary fisheries management has resulted in a significant loss of fishery jobs in the Gulf of Mexico. Fisheries jobs have been lost, but the primary drivers have been the high cost of fuel, the great recession, the Deepwater Horizon disaster (fishing closures, actual contamination, and the misguided public perception that

Gulf fish and shellfish are tainted), competition from cheap imported seafood, hurricane damage to fisheries infrastructure, and harmful algal blooms.

I am convinced that we need better tools and better data to manage recreational fisheries in federal waters, especially in the Gulf of Mexico where recreational catches equal or exceed commercial catches in several key species.

The bedrock goal of MSA is to maintain sustainable harvests for the long-term benefit of the nation. The 2007 amendments reinforce this goal by strengthening the role of science in determining acceptable biological catches, and ending the practice of fishing at unsustainable levels. Once we end overfishing, rebuilt stocks will provide expanded opportunities for economic activity based on sustainable fishing.

How have the 2007 MSA Amendments affected domestic fishery management?

The GMFMC's management plan to set overfishing levels and the acceptable biological catch is scheduled for final adoption in August 2011. This culminates a three-year process, which included four public scoping meetings, nine public hearings, and numerous Council and SSC work sessions.

Management actions to end overfishing in four reef fish stocks were already underway prior to the 2007 MSA amendments. Between 2008- 2010, GMFMC adopted science-based catch limits and accountability measures for four overfished stocks (gag grouper, gray triggerfish, greater amberjack, and red snapper). As a result, overfishing has ended for gray triggerfish and red snapper. In anticipation of the 2007 MSA Amendments, the Council included accountability measures in these management actions.

The 2007 MSA amendments direct the Councils to set catch limits that do not exceed the advice of their SSC. This is an important change that will prevent overfishing and maintain sustainable harvests over the long term.

In response to the 2007 MSA Amendments, the GMFMC's Science and Statistical Committee (SSC) developed a consistent methodology (called the ABC Control Rule) to characterize the level of scientific uncertainty in their calculations of Overfishing Level (OFL) and Acceptable Biological Catch (ABC) for particular stocks. Estimating uncertainty is a normal practice in fisheries science.

At the same time, the Council determined that they could accept risk ranging from 10%-40% that the estimate of OFL was incorrect. For a fast reproducing species, the Council can accept a 40% risk that the OFL might be wrong. For a long-lived, slow to recover, and easily depleted species the Council wants a smaller risk. The SSC uses this risk range in their methodology to create a buffer between OFL and ABC.

Also in response to the 2007 MSA amendments, the Council added a new process for considering management uncertainty when setting catch limits. The new process will consider:

- How frequently the catch limit has been exceeded in the past 4 years

- The precision of landings data
- Whether in-season accountability measures are used.
- Overfished and overfishing status of the stock.

The GMFMC undertook a review of all of its managed species. This review led to a determination that about a third of GMFMC managed stocks no longer needed federal management. Species primarily caught in state waters will be managed by the states. Harvested stocks with annual catches below 15,000 pounds will no longer be managed. This is a useful streamlining of federal management.

Managed stocks have been organized into groups based on geographic distribution, life history, and vulnerability to fishery. Some groups include an indicator species, a species that has been addressed in a stock assessment. If catch limits for the indicator species are exceeded, there will be accountability measures for the whole group. Other groups do not include an assessed species, and accountability measures will kick in only when the catch limit for the whole group is exceeded. One data-poor, minor species will not trigger a catch limit and accountability measure for the whole group.

Is the data generated by NOAA adequate for fishery managers to comply with these new provisions?

More data and more resources for stock assessments would be very helpful. In the Gulf of Mexico, we have a great need for fisheries-independent data to understand how stocks are changing independent of the social and economic factors that affect harvests and landings. We also need observers to improve our data on bycatch and dead discards. I understand that Congress is considering adding funds for ocean-related activities, including stock assessments. I wholeheartedly support additional funds.

In addition to NOAA, fisheries data comes from many sources, including state agencies, interstate commissions, universities, and private entities. The scientific basis for fisheries management has improved dramatically since I joined the GMFMC in 2001. We are gaining more information about the life history and reproductive potential of managed species. The models we use for stock assessments are constantly improving.

Fisheries data and stock assessments are always contested, especially when valuable, highly targeted species are involved. It is very important that our stock assessments are subject to scientific peer review and equally important that assessments include a full description of assumptions and uncertainties. The 2007 MSA amendments and the new GMFMC's ABC Control Rule reinforce these good practices.

In the plan scheduled for adoption this August, the SSC will have the flexibility to determine acceptable biological catches using one of three statistically sound methods in a tiered approach depending on type of data available.

- One method will be used when there is a standard quantitative assessment that estimates MSY (OFL) and includes a probability distribution around MSY (ABC) that reflects uncertainty.

- A second method will calculate MSY (OFL) and ABC based on a data-poor assessment methodology that can provide a quantitative measure of uncertainty
- A third method will calculate OFL and ABC based on landings history if no assessment is available. The SSC will use its expert opinion and standard statistical techniques to determine ABC at a level either above the mean observed landings (if it is not necessary to constrain catches) or at or below mean observed landings (if recent landings are likely unsustainable). The Council determines how much risk it will accept in setting ABC

What about NOAA guidance for using old or stale data?

Viewed in one way, data is not stale or old or misleading. Viewed in another way, all data is out-dated as soon as it is collected, and it is not possible to have completely current data.

At the outset of a stock assessment in the Gulf of Mexico, scientists thoughtfully consider how best to use available data. Available data is evaluated by the Southeast Data Assessment and Review (SEDAR) process. Historic data are valuable for understanding long-term trends and year-to-year variability. NOAA provides useful guidance for translating data collected under earlier protocols into a form that is comparable to data collected with current protocols. For the highly targeted and valuable species in the Gulf, data is regularly updated. .

There are always time delays between the collection of data and management actions. It takes time to collect data, analyze data, run data through assessment models, and conduct rigorous peer review of the assessment results. Once an assessment is complete, the Council process of amending a management plan takes 1-2 years, even longer if the management action is controversial. This is a frustrating reality of federal fisheries management.

Is the precautionary, risk-adverse approach combined with decreased funding for fishery research and cooperative research resulting in unnecessarily depressed harvest levels affecting economy and jobs?

I do not believe that precautionary fisheries management has resulted in a significant loss of fishery jobs in the Gulf of Mexico. Many fisheries jobs have been lost, but the primary drivers have been the high cost of fuel, the great recession, competition from cheap imported seafood, hurricane damage to fisheries infrastructure, harmful algal blooms and the Deepwater Horizon disaster (temporarily closed fishing areas, actual contamination, lingering misguided perceptions that Gulf seafood is tainted),

Furthermore, a GMFMC staff analysis compared the current method for setting quota for grouper and tilefish with the method in the new management plan. The new method results in slightly higher quotas for these fisheries.

| REEF FISH | Million pounds gutted weight | | | |
|-----------------------------|------------------------------|---------------------|---------------|--------------|
| | Current 2012 Quota | Proposed 2012 Quota | Difference mp | Difference % |
| Stock | | | | |
| Other shallow water grouper | 0.41 | 0.524 | 0.114 | 28% |
| Deep water grouper | 1.02 | 1.13 | 0.11 | 11% |
| Tilefishes | 0.44 | 0.582 | 0.142 | 32% |

The management actions that ended overfishing of Gulf red snapper in 2008 were taken based on the MSA requirements and NOAA guidance that existed prior to new risk-adverse approaches. Ending overfishing in red snapper was not precautionary. It was consistent with the long-standing MSA requirement for harvests to be sustainable. A 2007 stock assessment indicated that unsustainable catches of red snapper in the northern Gulf were preventing the depleted stock from rebuilding. Red Snapper immediately started to rebuild once overfishing ended, with allowable catches increasing from 5 million pounds in 2009 to 7.185 million pounds in 2011.

Does the MSA requirement for use of best available scientific information in management decisions become an excuse for using incomplete or old data in management decisions rather than gathering new data?

In my experience, the requirement for use of best available scientific information has not become an excuse to avoid gathering new data.

There is a well-established legal standard that “best available scientific information” is an acceptable basis for management. The use of “best available scientific information” is essential for Councils to fulfill their responsibility to make timely management decisions. At times, fishermen oppose changes in management and urge the Council to delay action until there is a new assessment or new update in hopes that the science advice will change. This can be an additional source of delay for scientifically defensible management actions, actions that are necessary to reach sustainable harvests. During the Council process, it is not uncommon for additional analyses to be run with updated information to address questions that come up in public testimony and committee deliberations.

What are my views on new recreational data collection program, to provide better information for fishery managers, but not providing data for in-season management adjustments?

When stocks are fully recovered, annual catches will gain stability and the year-to-year uncertainty of recreational fishing season length, bag limits and size limits will be minimized.

Recreational fishermen are strong conservationists, interested in the biology of the fish, and committed to increasing the health of the fishery. They highly value the experience

of catching and eating wild, beautiful fish. It is not their fault that recreational fishing is difficult to manage.

Our tools for managing recreational fishing fall short in several ways. We need a management system that can respond quickly using timely in-season data. We need a system in which recreational fishermen can accurately report their catch and their discards and limit their catches to acceptable levels. These shortcomings in our management of recreational fishing have a significant negative impact on the health of the Gulf of Mexico reef fish fishery. It is a frustrating and uncomfortable situation for both anglers and managers.

When a recreational fishery has the capacity to catch unsustainable numbers of fish, the traditional tools of bag limits, size limits, and open and closed seasons are not adequate to manage the fishery. In the GMFMC, recreational harvest accounts for half or more of the catch in three of our most valuable fisheries (red snapper, gag grouper, and King mackerel).

We need to develop new management tools to increase accountability and management certainty for recreational fishing. Potential tools to explore (many drawn from recreational hunting models) include: fish tags, lotteries, catch shares for charterboat and headboat operators, specified catches that can be shared by members recreational fishing clubs or a particular charterboat fleet, real time electronic reporting of recreational catches, and improved estimation models and data collection methods for recreational catch and effort. I believe MRIP will greatly improve our understanding of the Charterboat and Headboat recreational catches, and will take us closer to in-season management measures in this sector of the recreational fishery.

Additional Comments

The new methodology developed by the GMFMC to determine the buffer between overfishing level and the acceptable biological catch is scientifically defensible and an improvement compared to current practice. However, it is difficult for non-scientists to understand. In the Council process, one of our goals is to help the affected public understand why we take a particular management action. The ABC control rule is a hard one to explain.

When the Council has very little data about a managed species, it is hard for our science committee to know what the right catch limit should be. In these situations, the GMFMC makes the reasonable choice of allowing current catches to continue; until there is a signal that something has changed in the fishery. Though reasonable, this approach is not really precautionary. It is an open question whether the Council process will be able to respond quickly to these signals.