

**Written Testimony of
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Oversight Hearing titled “NOAA Fishery Science: Is the Lack of Basic Science Costing Jobs?”

**Before the
Subcommittee on Fisheries, Wildlife, Oceans, and Insular Affairs
United States House of Representatives**

July 26, 2011

Chairman Fleming, Ranking Member Christensen, and distinguished members of the Subcommittee, I appreciate the opportunity to speak with you today about the implementation of the Magnuson-Stevens Fishery Conservation and Management Act of 2006 (“MSA”) and the affect it has had on domestic fishery management and the industries under its authority.

My name is Gregory DiDomenico, Executive Director of the Garden State Seafood Association (GSSA). The GSSA membership is comprised of commercial fishermen, vessel owners, seafood processors and associated businesses in the State of New Jersey. GSSA and its members are involved in all aspects of the fishery management process. Our members occupy advisory panel seats on management councils, participate in cooperative research, and have a healthy respect for the ocean environment, all combined with a serious business acumen.

For today’s hearing I intend to explain how two major policy changes implemented via the 2006 MSA reauthorization are impacting the U.S. fishing industry and ultimately our coastal economies. Those two policy changes are: (1) the enhanced role of the Science and Statistical Committee (SSC); and (2) the establishment of setting annual catch limits to prevent overfishing. As a result of the reauthorization, NOAA’s NMFS revised guidance for implementing National Standard 1 and did so in February of 2009. The NS1 guidelines were revised to provide guidance to the Councils on how to implement certain provisions that are now required components of federal fishery management plans to address scientific and management uncertainty when setting quotas. The revisions were designed to prevent overfishing on the managed resources, rebuild overfished stocks, and achieve optimum yield (OY).

Unfortunately the new guidance manifested into an interpretation by some SSC members that is overly precautionous and risk averse and in the worst case, an acknowledgement that in the absence of information, we must reduce quotas. In addition, the Annual Catch Limit (ACL) and Accountability Measure (AM) requirements of the MSA created standards that are apparently beyond the capabilities of our current fisheries science program, resulting in several layers of uncertainty buffers that are reducing fishery yields and will continue to do so in the future unless our science drastically improves.

In our opinion, the situation is preventing the fishery management councils from meeting other important provisions of the NS 1 guidelines such as achieving OY from each fishery for the benefit of the Nation.

The domestic commercial fishing industry believes strongly that the ACL/ACM/SSC requirements under NS 1 are contrary to achieving OY and if this approach continues, quotas will not be based upon the best scientific information, but instead merely on what information is available which will ensure that quotas will be reduced by scientific uncertainties to compensate for avoiding overfishing at any cost and achieving rebuilding in as short a time as possible.

Clearly, we must work to reduce scientific uncertainty by increasing funding and ensuring that key stocks are assessed on a more regular basis in every single region. We must support the councils and ensure they have the necessary information so that quota decisions are accurate and precise rather than exercises in precautionary management.

My testimony includes 4 species that are critically important to our Mid Atlantic commercial fisheries. Each species is unique, biologically and each is plagued by the same management issues stemming primarily from a lack of adequate science. Those 4 species are; butterfish, monkfish, Atlantic sturgeon and Atlantic mackerel. The proper management of each of these stocks is crucial to the success of our fishermen and the economies of our fishing communities.

1) Butterfish

2004 Stock Assessment and Mandated Rebuilding Program

In 2004, a Scientific Assessment Review Committee (SARC) was convened to assess the status of the butterfish stock. The SARC is an independent panel of experts that reviews the assessment. The SARC concluded that the stock was not undergoing overfishing but was in an overfished condition. The Mid-Atlantic Fishery Management Council (MAFMC) was notified by the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) on February 11, 2005 that the butterfish stock was designated as overfished and a rebuilding plan would have to be established requiring rebuilding of the stock in a time as short as possible but not to exceed 10 years.

2010 Stock Assessment

The conclusion of the 2010 SARC was that the stock was not undergoing overfishing but could not determine if the stock is overfished. The unfortunate aspect of this situation is that the SARC also concluded that the results of in 2004 were inaccurate and not suitable for management decisions. So a rebuilding program was set forth for no reason and 6 years later the available data are still insufficient to determine whether butterfish is overfished.

Unknown Status will persist due to unique biological characteristics

Given the fact that butterfish has a very short lifespan (1-3 years), high natural mortality, highly uncertain and variable survey indices, and exceedingly variable catch estimates. It is possible even in 10 years we will still not have an assessment that provides much reliable information about the condition and productivity of the butterfish stock. If we did have such an assessment, it would be out of date upon completion because most of the butterfish that were alive then will be dead before final review of the assessment, and even less would be alive by the time that information worked its way through the specification process.

Exemption for the Butterfish Stock

The 2007 MSA reauthorization provided an exemption for some marine species with short life cycles. Abbreviated lifecycle characteristics limit the ability of managers to forecast abundance, set control rules, and achieve maximum sustained yield (MSY). The MSA allows for a specific exemption from ACL for species with a life cycle of approximately one year that are not overfished but requires an estimate of MSY and a catch level that does not exceed MSY. However, the application of the exemption is not clear when it comes to managing a species with an extremely high natural mortality rate (M) that essentially complete their life cycle within a year but have some residual population remaining beyond the first year of life.

A simple example of the survival of butterfish is that if 1000 butterfish are born in a given year only 41% survive to a full Age 1. Butterfish have been described to have great potential to rebuild in a relatively short period of time because some reach maturity at in their first year and nearly all are mature at Age 2.

Fishing Mortality is Not Affecting Butterfish

The available data for butterfish indicate that fishing has almost no effect on butterfish abundance and it appears that enough fish survive to maintain the reproductive potential of the stock. The fishing mortality rate (F) applied to butterfish is exceptionally low. The recent Stock Assessment Workshop (SAW) estimated that absolute fishing mortality in 2008 was $F=0.02$, a very low rate compared to other managed stocks.

Trawl Survey not Suitable to Estimate Abundance

Adding to our science problems is the difficulty of generating an accurate estimate of butterfish abundance from the survey index. The habits of butterfish make it difficult to sample accurately in the standard federal trawl survey. It is increasingly clear that the survey only partially samples the butterfish population, likely underestimating abundance thereby generating scientific and management uncertainty. These uncertainties force precautionary decision-making when it comes to setting ACL which negatively impacts fishing activities directed at other species, in particular the *Loligo* squid fishery.

Allowable Biological Catch (ABC) Reductions

During the time between the two stock assessments the butterfish ABC was reduced from 4,545 metric tons in 2004 to only 1,500 metric tons in 2010.

Annual Biological Catch, Annual Catch Limits and Accountability Measures

In 2012 the butterfish ABC is set equal to the ACL which allows for a harvest of 3,622 metric tons. To account for management uncertainty and other considerations the MAFMC applied a 10% buffer and an Annual Catch Target (ACT) of 3,260 metric tons was approved. Despite an apparent doubling of survey results, rigid uncertainty buffers continue to reduce yield from this stock when it is likely that harvest could be increased substantially on a sustainable basis.

Solutions

We recommend expanding the current short-lived species exemption in the MSA to include species with brief life cycle characteristics (not just one year) that also experience a high rate of natural mortality.

2) Monkfish

A Fishery Management Plan is developed

The directed commercial fishery for Atlantic monkfish did not begin to develop until the 1980s and landings increased substantially through the 1990s. In 1999, the New England Fishery Management Council developed the initial fishery management plan for monkfish and under pressure from NMFS, proposed to close the directed monkfish fishery permanently, citing concerns that the stock was so small it could not sustain a directed fishery.

NMFS Trawl Survey not suitable for estimating abundance

The primary problem was that the NMFS survey vessels did not catch monkfish during the spring and autumn federal trawl surveys which were the only fishery independent data sources available to managers. At issue was the type of net being deployed on federal survey vessels (not designed to catch monkfish) and the speed at which the nets were being towed. Poor results from the survey resulted in inaccurate science which forced managers to conclude that the monkfish stock was in dire condition. Unfortunately, these data were being considered the best available scientific information by the NMFS.

Cooperative Efforts Yields Best Available Science

In 1999, compelled by a pending permanent closure of the directed fishery, the fishing industry approached NMFS requesting funding for a pilot project to conduct a monkfish-specific cooperative trawl survey using federal scientists onboard industry vessels working with monkfish fishermen towing the appropriate nets at the correct speed.

The Agency agreed to a small scale NMFS-Industry cooperative pilot project which proved successful. Based on the experience of the pilot project a federally-funded coast-wide cooperative monkfish bottom trawl survey was completed in 2001. The swept area biomass estimate calculated from that survey proved that the monkfish stock was 2 times larger than the estimate being used by NMFS to justify closing the directed fishery. Based on the results of the cooperative research and to NMFS and the New England Fishery Management Council's credit, the directed fishery was not closed and the fishery management plan was implemented with provisions that included a directed fishery.

Data Poor Status Persists

Despite monkfish becoming one of the top three most valuable finfish species on entire the East Coast, ex-vessel value reported by NMFS as high as \$44M in some years during 1995-2004; and \$17M in 2009, the stock still remains on the Agency's "data poor" list. It is inconceivable that a core stock of such value continues to suffer from a lack of reliable scientific information.

Despite the success of the 2001 cooperative survey, NMFS was not supportive of the monkfish survey and would not commit to a triennial survey, even though it was scientifically sound. The position of the NMFS was that a survey dedicated to monkfish was too expensive (approximate cost is \$1.5M every third year) and consumed excessive staff time for data on just a single species.

In light of NMFS's disinterest in continuing the monkfish survey the fishing industry was forced to seek earmarks from Congress to fund subsequent cooperative trawl surveys and try to improve the level of scientific understanding. Thankfully, Congress also recognized the value of the data generated by the monkfish survey and funded two additional surveys in 2004 and 2009 from the "National Cooperative Research" line item in the NOAA/NMFS budget.

Inconsistent Quotas Resulting from Inconclusive Assessments

Due to the poor understanding of monkfish it has been difficult to determine if and when the stock was overfished and if overfishing was occurring. Annual quotas were set for the first 7 years of management using catches from the unreliable federal autumn trawl survey as the primary data input. Because the trawl survey was not suitable to estimate abundance, the result was fluctuating quotas and inconsistent fishing opportunities throughout the past decade.

For example, the days available for fishermen to target monkfish in the directed fishery in the Southern Management Area (SMA), which covers New Jersey to North Carolina whipsawed from 40 days a year in 2000 down to 28 in 2004, back to 39 in 2005, and down to a low of only 12 days allowed in 2006. Fishing days were increased to 23 per year starting in 2007 and is set at 28 days for the current fishing season 2010-2011.

The monkfish quota fluctuated similarly since it was also linked to effort and autumn trawl survey data. In the SMA, the quota was reduced from a high of 21,325,318 pounds in 2005 to a low of 8,084,353 pounds in 2006 – a precipitous near 40% decrease in one year due solely to a lack of reliable science and subsequent precautionary decision-making. In 2010-2011 the quota was set at 11,243,562 pounds.

Best Available Scientific Information

Today, monkfish remains a data poor stock and no cooperative trawl survey is being planned by NMFS. Sadly, NOAA requested the “National Cooperative Research” line item contained in the FY2012 NOAA budget request be parsed into funding for other programs (e.g. to fund research in catch share fisheries and to develop eco-friendly fishing gear) thereby reducing survey funding opportunities and highlighting the agency’s lack of commitment to improve monkfish assessment science. Despite this, industry efforts continue in 2011 to seek funding for a fourth and final monkfish survey to be conducted in spring 2012 but the current earmark situation has effectively undermined those efforts.

Annual Catch Limits and Accountability Measures

The Secretary of Commerce recently implemented a final rule (Amendment 5; See 76 FR 30265) to bring the monkfish fishery management plan into compliance with the ACL and AM requirements contained in the reauthorized MSA. Among these new measures are formal consideration of both scientific and management uncertainties which, in the case of monkfish, have not improved measurably since the plan was implemented in 2000. Thus, we can expect more precautionary management decisions and buffers in the future with no clear plan to address the root cause of the problem which remains the lack of reliable scientific information.

Solutions

We recommend the Agency conduct a fourth cooperative trawl survey in 2012 to ensure that the monkfish catch rates on the *R/V Bigelow*, NMFS’ new vessel being used in the autumn trawl survey, are calibrated with previous cooperative survey results. This continuation of the cooperative trawl survey will help to ensure that quotas are set based upon the best available science and will help to remove monkfish from the data poor list.

3) Atlantic Sturgeon

The Fishery and the Moratorium

Historically, there was a large commercial fishery for Atlantic sturgeon during the early to mid 1990s. This directed fishery was by far the largest source of fishing-related mortality, reaching a 90-year peak of approximately 100 metric tons before being closed by the Atlantic States Marine Fisheries Commission (ASMFC) throughout the entire range from Maine to Florida, in 1998.

The First Endangered Species Act (ESA) Debate

In September 1998, NMFS issued a ruling citing the entire suite of state and federal protective measures already in place, including those that were to be implemented, as reasons *not* to support an ESA listing of Atlantic sturgeon at that time. In fact, NMFS indicated that by 1998 all state jurisdictions within in the U.S. range of the species had implemented complete prohibitions on both harvest and possession. (See 63 FR 50189). In this same ruling, NMFS went so far as to honor the pending closure of the Exclusive Economic Zone (EEZ) as yet another critical conservation benefit that mitigated any need for an ESA listing. Consistent with the 1998 position, NMFS closed all federal waters to sturgeon fishing in 1999. The Agency stated that “the duration of the moratorium is anticipated to be approximately 41 years from its initiation.” (See 63 FR 50189).

The Present ESA Debate

Today, just 12 years into a 41 year recovery plan, NMFS is proposing to list Atlantic sturgeon under the ESA and the Agency has never ever conducted a single sturgeon stock assessment. In fact, the Agency has never produced a full population estimate for any sturgeon DPS they propose to list on the entire East Coast. Instead, the NMFS stated on January 6, 2010 that the stock has now “failed to recover in the time since a coastwise fishing moratorium was put in place in 1998” (see 75 FR 838) despite previously acknowledging 41 years would be needed to achieve full recovery. Proposing an ESA listing now, just 12 years into a 41 year plan, with no population assessment is both disingenuous and remarkably unscientific.

Poor Data Persists

To justify the proposed ESA listing of 2010 the NMFS claims that their “best available scientific data” is a single estimate of 870 adults from the Hudson River from 1986-1995. Thus, the entire East Coast Atlantic sturgeon ESA listing is based on this “best available scientific information” which is not a stock assessment at all, which incorporates data points that are 25 years old, and which contains no information on stock condition since the species was afforded full protection in 1998-99. While the Agency has admitted they “may likely underestimate current conditions” (See 75 FR 839), they are unwilling to consider the recent scientific information collected by the New Jersey fishing industry and University of Delaware scientists during 2009-2011.

Cooperative Science Yields New Data

A NOAA grant was used to fund sturgeon tagging activities in the Mid-Atlantic Bight during 2009, 2010 and 2011. The work was conducted by researchers and an experienced New Jersey commercial fisherman using gillnets designed and fished in a specific manner to catch and release sturgeon.

During 2009, researchers caught 55 individual fish in just 20 short sampling events with a single 100 meter gillnet. There were no recaptures and 54 of the fish were reported mature. The fish averaged 163 cm in length and ranged from 120-226 cm. and 12 of the fish (21.8% of the total) were larger than 200 cm

long. Of particular interest is the existence of many very large fish which NMFS considers to be exceedingly rare. The information being cited by NMFS to support an ESA listing includes the opinion that fish larger than 200 cm are rarely observed and corresponds to an age range of 11 to 20 years.

During 2010, researchers caught 54 individual fish in 17 short sampling events. There were no recaptures (of 2009 or 2010 tagged fish) and 50 of those fish were also reported mature. The fish averaged 163 cm in length and ranged from 119-230 cm. At least thirteen of these fish (24.1% of the total) were larger than 200 cm.

During 2011, researchers caught 214 individual fish in just 29 days of sampling effort. There were 5 recaptures of fish tagged in 1994 and no recaptures of fish tagged in 2009 or 2010. Thirty six of these fish (16.8%) measured larger than 200 cm and ranged from 71-237 cm in total length.

In just 66 sampling days during 3 brief spring seasons, scientists and one NJ fisherman caught and released 323 individual sturgeon. Genetic data indicate these fish represent approximately 16% of the NMFS estimate of the entire Hudson River adult population. The highest rate of catch recorded during the 3-year study was in 2011 when 20 individuals were caught in just a single day of fishing a 100 meter gillnet. Also caught and released were at least 140 mature fish so large (and old) they are considered to be virtually non-existent in the report used by NMFS to justify the proposed ESA listing.

Old Data or Best Available Science

Despite having no reliable stock assessment on Atlantic sturgeon and after industry has demonstrated that large fish previously thought rare are actually relatively abundant, NMFS does not appear willing to accept the results of the tagging research. The new tagging data were submitted to NMFS during the public comment process. In fact, these data may not even be considered in the peer review process of the Agency's 2011 ESA listing process for reasons we simply cannot comprehend.

ESA Impacts on Other Directed Fisheries

When commercial fishermen are harvesting Atlantic monkfish, in the Mid-Atlantic region and elsewhere along the East Coast they may inadvertently interact with Atlantic sturgeon. As sturgeon abundance increases so too does the probability that sturgeon may come in contact with fishing gear set for species other than sturgeon. Common sense and sound fisheries management scientific principles dictate that as Atlantic sturgeon benefit from full-scale management protection throughout their range they naturally will rebound and become numerically more abundant.

Our concern is that NMFS will once again gravitate toward precautionary decision-making to the detriment of the fishing industry and coastal economies. Unfortunately, this is precisely where NMFS is headed regarding Atlantic sturgeon, all directly attributed to a lack of scientific information and the lack of agency commitment to generate it.

Solutions

We recommend NMFS be required to conduct a sturgeon stock assessment immediately using the best available science to determine the coast-wide condition and abundance of the stock and to inform the ESA listing process.

4) Atlantic mackerel

The Mackerel Fishery and US Production

In 1976, the U.S. established control of the Atlantic mackerel fishery with the enactment of the Magnuson–Stevens Fishery Conservation and Management Act. In the early 1980's landings were about 3000 metric tons and increased to more than 30,000 metric tons. In an effort to Americanize the fishery and with considerable investment from U.S. shoreside companies, U.S. exports of all mackerel products totaled 55,858 mt valued at \$58.2 million in 2006. In 2007, US exports of all mackerel products totaled 30,380 mt valued at \$34.0 million. Recent catches have decreased dramatically due to lack of availability, lack of effort and other unknown causes. A “regime shift”, due perhaps to climate change, is one suspected factor since catches in Newfoundland are increasing while U.S. domestic catches are a fraction of what they once were.

The Stock Assessment Process

In January of 2006 the Scientific Assessment Review Committee (SARC) held its 42nd Northeast Stock Assessment Workshop (SAW) and assessed the health of the Atlantic mackerel resource. At the time of that assessment, the Status Stock Determination for Atlantic mackerel was the stock was not overfished and that overfishing was not occurring and that the annual total catch should not exceed 186,000 metric tons.

In 2009, due to the trans-boundary nature of the Atlantic mackerel resource in the northwest Atlantic region, the NMFS decided to conduct a joint stock assessment with the Canadian Department of Fisheries and Oceans through the Trans-boundary Resources Assessment Committee (TRAC) process, setting aside the U.S. SARC process that had been used in the past. The TRAC concluded that the status of Atlantic mackerel is unknown and also recommended that annual total catches not exceed 80,000 metric tons, for both countries, using average catches as a proxy for an overfishing level (OFL).

The Disadvantage of a Trans-Boundary Resource to Domestic Fisheries

While US producers' opportunity to harvest Atlantic mackerel was reduced by more than 140,000 metric tons, literally overnight, the Canadian government ignored the TRAC advice, allowing the Canadian industry to take as much as 65,000 metric tons, of the 80,000 metric tons, for themselves. Furthermore, U.S. law requires Canadian catches to be deducted from the U.S. ABC calculation and Canada's fishermen are under no current obligation to fish within U.S.-established MSA resulting in a preferred competitive position for Canada. While catches off the Newfoundland shores are increasing, the potential for this trans-boundary resource to be harvested solely by Canada is real and will harm the interests of U.S. fishermen.

A Formal Sharing Agreement is Needed

Congressional action is necessary to require the U.S. government to implement an Atlantic mackerel resource sharing agreement with Canada and begin to budget and plan for the bilateral Atlantic mackerel research program identified by the TRAC two years ago. The U.S. fishing industry has requested that the NMFS pursue and secure a resource sharing agreement with Canada which could implement a research agenda between the two countries and make it possible for an exemption from control rules that reduce potential U.S. quotas.

Science and Statistical Committee Quota Recommendation

This year, the Mid Atlantic Fishery Management Council's (MAFMC) Science and Statistical Committee (SSC) again used the 2009 TRAC results to set an Acceptable Biological Catch (ABC) of 80,000 metric tons for both nations' fisheries, as best available science for the 2012 fishing year.

Annual Biological Catch, Annual Catch Limits and Accountability Measures

Following the SSC's determination of the ABC, the MAFMC, citing additional concerns about the stock beyond those already considered by the SSC, decided to invoke a more conservative interpretation of the National Standard 1 Guidelines concerning the application of scientific uncertainty and further reduced the U.S. quota.

After considerable discussion and some confusion about where the line between management uncertainty and scientific uncertainty should be drawn, the MAFMC applied an additional 15% buffer to the commercial quota for mackerel, which had the effect of further reducing the quota to an Annual Catch Target (ACT) of 34,907 metric tons.

Due to rigid MSA requirements and confusion among fishery managers about whether or not the law requires the production of sustainable fishery yields or the application of layers of scientific uncertainty, the U.S. mackerel fishery which has *not* been declared to be overfished, has seen significant quota reductions.

Solutions

We recommend requiring the U.S. government implement the start of a research agenda with Canada and also consider the shared stock status of the Atlantic mackerel resource and implement an exemption from the MSA control rules that reduce potential U.S. quotas.

Conclusions

Our written testimony is distilled from attending 7 years of fishery management meetings regarding these species and from countless documents provided by the NMFS, NEFSC and MAFMC. We have attempted to provide the Subcommittee with the relevant information about these 4 stocks, the condition of the science, the real impacts on the management and in some cases, the impacts on our fishing activities and quotas.

The ACL and AM requirements of the MSA are creating standards that are apparently beyond the capabilities of our current fisheries science program, resulting in layers of uncertainty that are reducing fishery yields. The National Standard 1 Guidelines (NS1) have evolved to include such a level of precautionary decision-making that considers both scientific and management uncertainty, that we believe prevents the U.S. fishing industry from achieving optimum yield.

Furthermore, even for stocks not being overfished or where overfishing is not occurring, or specifically when stock assessments yield inconclusive results, we may never reach the optimum yield benchmark. This is the true weakness of U.S. fisheries management policy yet achieving optimum yields is the cornerstone objective of MSA.

The U.S. fishing industry needs strong support from Congress to increase the NMFS science budgets and require that research be of stock-assessment grade quality. Furthermore, Congress needs to require NMFS to produce the necessary information to meet its management objectives or adjust the MSA

implementation requirements to reflect a better balance consistent with the state of our knowledge . If this is not accomplished we are destined to continue this disturbing trend of quota reductions and lost economic opportunity.

Respectfully submitted,

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