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REAUTHORIZATION OF THE MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

OVERSIGHT HEARING

BEFORE THE

COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

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OVERSIGHT HEARING ON "THE REAUTHORIZATION OF THE MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT."

Wednesday, September 11, 2013
U.S. House of Representatives
Committee on Natural Resources
Washington, D.C.

The Committee met, pursuant to call, at 10:03 a.m., in room 1324, Longworth House Office Building, Hon. Doc Hastings [Chairman of the Committee] presiding.

Present: Representatives Hastings, Young, Wittman, Fleming, McClintock, Tipton, DeFazio, Pallone, Bordallo, Costa, Cárdenas, Huffman, Lowenthal, Garcia, and Tierney.

The CHAIRMAN. The Committee will come to order.

The Chairman notes the presence of a quorum, which under rule 3(e) is a couple of Members. The Committee on Natural Resources is meeting today to hear testimony on an oversight hearing on the reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act.

Under rule 4(f), opening statements are limited to the Chairman and the Ranking Member of the Committee. However, I ask unanimous consent that if any Member wishes to have a statement that he hand the statement to the clerk of Committee prior to the close of business today.

Without objection, so ordered.

I will now recognize myself for my opening statement.

STATEMENT OF THE HON. DOC HASTINGS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON

The CHAIRMAN. This is the fourth oversight hearing we have held this Congress on the reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act, the primary statute governing the harvests of U.S. fisheries. This Act governs both the recreational and commercial harvests of fisheries in Federal waters, and the Act significantly affects many coastal communities. It requires that fishery managers balance the biological needs of the fish with the economic needs of the fishermen. The Act also requires that fishery managers base the management decisions on science.

Over the last 3 years legitimate questions have been raised about whether the data being used to make management decisions is sound. Further, many are concerned that the balance between fish and fishermen has shifted. At a time when fisheries jobs and the economic activity they create are critical to keeping our coastal communities alive, it is important that we ensure the laws and regulations that govern these activities are not unnecessarily rigid.

Last week the Ocean Studies Board of the National Academies of Science released a report titled, "Evaluating the Effectiveness of Fish Stocking Rebuilding Plans in the United States." This is not the first time the Ocean Studies Board has weighed in on fisheries management issues. Congress and NOAA have asked the board to study tough issues on a number of occasions. The most recent report comes at a perfect time. While I don't want to preempt the testimony of the report's cochair, I believe the report tracks what we have been hearing both during congressional hearings and at our Managing Our Nation's Fisheries Conference.

Generally, the report correctly finds that while the 2006–2007 amendments were well intentioned, some modifications should be considered to give fishery managers additional flexibility to deal with the complexities of fisheries. In particular, we have heard testimony that the Act's rebuilding provisions are too rigid and are causing unnecessary economic hardship during rebuilding periods. The Ocean Studies Board report examined this aspect of the Act, and today, we will hear from Dr. Patrick Sullivan, the cochair of the committee, who has spent a lot of time and effort examining the effectiveness of the rebuilding provisions and will offer some recommendations on whether Congress should consider additional flexibility in these provisions.

Since we last met to discuss the Magnuson-Stevens Act, a number of things have occurred, which are not necessarily the direct topic of today's hearing but are issues that are on the Members' minds and relate to the reauthorization of the Act. The first issue relates to the topic of our last hearing on the management of the red snapper in the Gulf of Mexico. Last week, the State of Louisiana announced it no longer had confidence in the Federal recreational data collection program and that it would no longer participate in that program.

I hesitate to ask the National Academy of Science to take on another task, but it appears that the recreational data collection recommendations that you issued in 2006 have not been adequately implemented by NOAA, and perhaps a fresh look at the data needs in the Gulf of Mexico is warranted. Seven years after Congress told NOAA to create a better recreational data collection program, based on the National Academy's recommendations, little has changed since 2006. Recreational fishermen doubt the data and managers continue to be forced to make decisions without adequate or real time data. Management cannot happen without sound data, and fishermen must trust the science for management measures to be effective.

And second, at a time when we are asking fishery managers to increase the amount and types of data they collect, concerns have been raised about how proprietary and sensitive information is protected by these managers. This is a delicate balancing act and I hope that NOAA will proceed with caution.

And with that, I will yield back my time and recognize the Ranking Member, Mr. DeFazio.

[The prepared statement of Mr. Hastings follows:]

Statement of The Honorable Doc Hastings, Chairman, Committee on Natural Resources

This is the fourth oversight hearing we have held this Congress on the reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act—the primary statute governing the harvest of U.S. fisheries.

This Act governs both the recreational and commercial harvest of fisheries in Federal waters and the Act significantly affects many coastal communities. It requires that fishery managers balance the biological needs of the fish with the economic needs of fishermen. The Act also requires that fishery managers base the management decisions on science.

Over the last 3 years, legitimate questions have been raised about whether the data being used to make management decisions is sound. Further, many are concerned that the balance between fish and fishermen has shifted. At a time when fisheries jobs and the economic activity they create are critical to keeping our coastal communities alive, it is important that we ensure the laws and regulations that govern these activities are not unnecessarily rigid.

Last week, the Ocean Studies Board of the National Academies of Sciences released a report titled *"Evaluating the Effectiveness of Fish Stock Rebuilding Plans in the United States."* This is not the first time the Ocean Studies Board has weighed in on fisheries management issues. Congress and NOAA have asked the Board to study tough issues on a number of occasions. This most recent report comes at a perfect time.

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Second, at a time when we are asking fishery managers to increase the amount and types of data they collect, concerns have been raised about how proprietary and sensitive information is protected by those managers. This is delicate balancing act and I hope NOAA will proceed with caution.

With that, I look forward to hearing from today's witnesses.

STATEMENT OF PETER A. DEFAZIO A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. DEFAZIO. Thank you, Mr. Chairman.

Mr. Chairman, I represent about half of the Oregon coast and a number of fishing communities. I actually grew up on the East Coast and am very familiar with the issues, particularly as it re-

lates to Georgia's banks and Cape Cod from my early life, so I have a long association with the ocean and ocean resources.

Magnuson-Stevens has made some tremendous progress, but I agree with you that the law, as currently written, particularly some of the amendments in 2006, have had some unintended consequences, and it does need review and potential revision by this community. There is a balance to be struck here. No one wants to see that we are having a race to catch the last fish or to crash a stock that just won't ever come back.

But, on the other hand, we are dealing with people's lives and livelihoods here, and many are multigenerational families who have fished. We are dealing with a food of choice for many Americans, a renewable sustainable resource. And we have to be good stewards of it, but we also have to be cognizant of the impacts as we regulate it.

I share concerns about the data, and we have to find ways to better integrate the scientists with those who actually are on the water and doing the fishing. I know there are issues here in terms of budgetary constraints, but we have to find a way to do that better. That will give people more confidence, and it may give us some different data sets and give us more confidence in the data.

I want to look at where we set hard targets for recovery. If we begin to make progress in recovery, it is kind of ironic; on the way down, essentially we don't regulate and you can overfish until you get to the point where we have to declare a stock depleted and then put in place a 10-year plan. On the way up, there is very little flexibility. I would suggest that we want to look at these plans and see whether if you reach certain points during recovery, that you could then perhaps allow a little bit more enhanced fishing and maybe, at some point, even say, OK, recovery is going well, what we have done is working, but now we are going to take a little longer window than 10 years to get there. And we are going to relieve some of the pressure in the interim on the economic hardships.

So my intent here is not to overexploit the resource but my intent is that we develop something that works both for the resource and for those who are dependent upon it for a living and those who prefer it on a dietary basis. It is a large and important industry, not only in my district but for the Nation, and we have to both use it wisely and husband it for the future.

So, thank you, Mr. Chairman. I don't have all the answers, and that is why I am here today.

[The prepared statement of Mr. DeFazio follows:]

Statement of The Honorable Peter A. DeFazio, Ranking Member, Committee on Natural Resources

During the first 20 years of federal fisheries management under the Magnuson-Stevens Act we saw boom and bust cycles, dangerous derby fishing, and harvest rates that could sustain neither coastal economies nor ocean ecosystems in the long run. By the time we realized that there were too many people fishing for too few fish, we had allowed—and in some cases promoted—massive investments in boats, gear, and shoreside infrastructure that sometimes proved to be more than the supply of fish could support. Contraction, though painful, was inevitable.

We did learn from this mistake that the only path to expansion of a domestic fishery is through rebuilding of depleted stocks. NOAA projects that fully rebuilding all of our domestic fisheries could generate $31 billion for our economy and provide em-

ployment for half a million Americans. Even at this early stage, revenue generated from stocks subject to rebuilding plans has increased more than 50 percent—$565 million—since before rebuilding began. This is in large part due to the changes to the Magnuson-Stevens Act brought about by bipartisan reauthorizations in 1996 and 2006. The decisions to require an end to overfishing, establish science-based annual catch limits, set rebuilding deadlines, and inject accountability into the management process have put us on the brink of achieving the type of fisheries restoration success that many thought impossible.

Unfortunately, the benefits of rebuilding have accrued unevenly across fisheries. Some stocks like Pacific whiting and Atlantic sea scallop have bounced back and helped fuel local economies. Others like Atlantic cod have continued to limp along at levels far below what we once saw as an endless bounty. That some of these failures have happened in some of our most storied fishing communities, especially in New England, has made the situation even more frustrating.

In its recent report, the National Research Council explores the ways in which rebuilding under Magnuson has succeeded, and how it might be improved to secure the desired management outcomes at a lower short term cost to fishing communities. Their findings will surely spark a lively discussion here today, and I look forward to hearing more about the repot from Dr. Sullivan. However, I would like to point out a few things that caught my eye.

First, the report points out that the current rebuilding approach has generally performed well in identifying overfished stocks, decreasing fishing mortality, and increasing stock biomass, leading to numerous rebuilding successes. The 1996 and 2006 Magnuson amendments required managers to make tough choices, rather than continuing to kick the can down the road, and many fisheries are now reaping the benefits. For those that have not rebounded, reexamining the rebuilding framework is necessary and appropriate, but we should not throw the baby out with the bathwater.

Second, we lack the scientific understanding necessary to account for the effects of climate change, food web interactions, habitat degradation and other environmental factors on rebuilding fish stocks. The report states clearly that better science and more frequent assessments can lead to minor adjustments rather than extreme swings in allowable harvest levels. We desperately need to develop the tools to apply an ecosystem approach to fisheries management.

Third, the report notes that gradually reducing harvest before a stock requires rebuilding is the best way to keep fisheries healthy, but restoring stocks which are already severely depleted is more challenging and can have adverse economic impacts on fishing communities. The report suggests that additional flexibility in rebuilding plans could produce the desired results with less economic harm, but notes that additional accountability measures and precautionary buffers may be necessary in exchange for greater flexibility.

Fisheries management in the United States has made significant progress after the reforms to Magnuson in 1996 and 2006, especially in the area of rebuilding depleted stocks. However, there is not much solace in that for people who have not seen their fisheries rebound. As we look toward the next round of Magnuson reauthorization, we must ensure that fishing communities can stay viable while the stocks they depend upon rebuild, but also that we do not backtrack on the progress we've made.

The CHAIRMAN. I thank the gentleman for his statement, and I look forward to obviously working on this on the reauthorization.

I want to welcome our first panel. We have Mr. Samuel Rauch, who is the Acting Assistant Administrator for fisheries for the National Marine Fisheries Service; Dr. Patrick J. Sullivan, Cochair of the Committee on Evaluating the Effectiveness of Stock Rebuilding Plans of the 2006 Fishery Conservation and Management Reauthorization Act.

You could have had a shorter title for that I would think. At any rate, from the Ocean Studies Board.

And then Mr. Richard Robins, who is the Chairman of the Mid-Atlantic Fishery Management Council.

Welcome to you all.

You were asked to present a full statement, and that will appear in the record, but you notice you have the timing clock in front of you. And the way that works, when the green light goes on, you have the start of your 5 minutes, and then when the yellow light comes on, you have 1 minute to go, and I would ask you to try to wrap it up in that timeframe, and when the red light goes on, boy, well, anyway, we just won't go there. But if you would, keep your oral arguments within the 5 minutes so we can have time to have an interchange.

And so, with that, Mr. Rauch, we will recognize you first. You are recognized for 5 minutes.

STATEMENT OF SAMUEL D. RAUCH III, ACTING ASSISTANT ADMINISTRATOR FOR FISHERIES, NATIONAL MARINE FISHERIES SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Mr. RAUCH. Thank you. Good morning, Mr. Chairman, Ranking Member DeFazio, and members of the Committee. Thank you for the opportunity to testify before you today. My name is Samuel Rauch, and I am the assistant, Acting Assistant Administrator for NOAA's National Marine Fisheries Service.

Our most recent economic estimates show how economically important marine fisheries are. In 2011, U.S. commercial fisheries landed 9.9 billion pounds of seafood valued at $5.3 billion. This represents the highest landings volume since 1997 and the highest value in nominal terms ever recorded. In 2011, the seafood industry generated $129 billion in sales and $37 billion in income impacts and supported 1.2 million jobs. Recreational fishing generated $70 billion in sales impact, $20 billion in income impacts, and supported 455,000 jobs in 2011. That was a 40 percent increase in jobs over 2010.

This success is a product of hard work and ingenuity by the industry, the fishery management councils, and the entire Federal fishery management system that is effectively rebuilding U.S. fisheries, putting them on a sustainable basis.

Since its initial passage in 1976, the Magnuson-Stevens Act has charted a groundbreaking course for sustainable fisheries. Today the law requires rebuilding plans for overfished stocks and annual catch limits and accountability measures to prevent overfishing. Under the Act, if a stock is determined to be overfished, the council has 2 years to develop and implement a rebuilding plan. By statute, the period to rebuild a stock may not exceed 10 years except in cases where the biology of the fish stock and international agreement or other environmental conditions dictate otherwise. However, because a stock must be rebuilt in a time period that is as short as possible, rebuilding cannot extend beyond the 10 years and may be even less than the 10 years if it is possible to rebuild in that time.

Of the 43 active rebuilding plans with a target time to rebuild, 23 of them are set longer than 10 years. For example, the Pacific yelloweye rockfish has a rebuilding timeline of 71 years, and red snapper in the Gulf of Mexico is 32 years. The remaining 20 rebuilding plans are set for 10 years or less. Flexibility does exist under the Act to adjust these rebuilding plans when a stock is fail-

ing to make adequate progress or when our understanding of the population dynamics of the stock change. In these situations, the council can amend the plan with revised conservation measures and, as we said, can amend the timeline.

To successfully rebuild, though, under any of these plans we must end overfishing. Annual catch limits are a powerful tool to accomplish this. Prior to implementation of annual catch limits, a number of rebuilding plans experienced difficulty in ending overfishing and achieving the fishing mortality rate called for in the plan. As a result, rebuilding was delayed and the plans had trouble meeting their targets. Since the implementation of ACLs and accountability measures, we expect the number of stocks on the overfishing list to continue to decrease and to see further declines in the number of overfished stocks and to see increases in the number of rebuilt stocks, and we are, in fact, seeing the success. The number of stocks subject to overfishing was the highest in 2000 when 48 stocks were on the overfishing list. At present, 28 stocks are listed as subject to overfishing, and 40 stocks are overfished, both all-time lows. Since 2000, 33 stocks have been rebuilt.

Ending overfishing and rebuilding depleted fisheries brings significant biological, economic, and social benefit. Of the 26 rebuilt stocks for which information is available, half of them now produce at least 50 percent more revenue than they did when they were overfished, but doing so takes time, persistence, and sacrifice, and adherence to scientific information.

While significant progress has been made, we recognize that this progress has not come without a cost. Fishermen, fishing communities, and the councils have had to make difficult decisions, and many areas have had to absorb the cost of conservation and investment in order to secure the long-term economic and biological sustainability goals. That is why NMFS is committed to generating the best fisheries science and research in support of the goals of the Magnuson Act.

In 2011, in response to concerns raised by stakeholders and Members of Congress, we supported the 10-year study that you are going to hear about from Dr. Sullivan in order to look at the rebuilding timeframe. The results of that study are going to fit well within our current administrative process to revisit the guidelines that we have put forth that are called the National Standard 1 Guidelines. These are the guidelines that we adopt to implement the statutory goals. We have announced and we are in the process of revisiting those, and the results of the report are going to feed well into that process. As we look to the future, we must also look for opportunities to build on the success we are seeing now. We need to approach the challenges we are facing in our fisheries in a holistic, deliberative, and thoughtful way that includes input from the wide range of stakeholders who care deeply about these issues. Thank you again for inviting me to testify before the Committee today, and I will be happy to answer any questions.

The CHAIRMAN. Thank you very much, Mr. Rauch.

[The prepared statement of Mr. Rauch follows:]

Statement of Samuel D. Rauch III, Acting Assistant Administrator, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce

Introduction

Good afternoon, Mr. Chairman and Members of the Committee. Thank you for the opportunity to testify before you today. My name is Samuel D. Rauch and I am the Acting Assistant Administrator for the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) in the Department of Commerce. NMFS is dedicated to the stewardship of living marine resources through science-based conservation and management. Much of this work occurs under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), which sets forth standards for conservation, management, and sustainable use of our Nation's fisheries resources.

Marine fish and fisheries—such as salmon in the Pacific Northwest, cod in New England, red snapper in the Gulf of Mexico, and pollock in Alaska—have been vital to the prosperity and cultural identity of coastal communities in the United States (U.S.). U.S. fisheries play an enormous role in the Nation's economy. Commercial fishing supports fishermen and fishing communities, and it provides Americans with a sustainable, healthy food source. Recreational fishing is an important social activity for individuals, families, and communities; and it is a critical economic driver of, and contributor to, local and regional economies, as well as the national economy. Subsistence fishing provides an essential food source, and it is culturally significant for many people.

Our most recent estimates show that the amount landed and the value of commercial U.S. wild-caught fisheries was up in 2011 while recreational catch remained stable. U.S. commercial fishermen landed 9.9 billion pounds of seafood valued at $5.3 billion in 2011, which reflects an increase of 1.6 billion pounds (20 percent) and $829 million (18 percent) over 2010 figures. 2011 saw the highest landings volume since 1997 and highest value in nominal terms ever recorded.[1]

The seafood industry—harvesters, seafood processors and dealers, seafood wholesalers and seafood retailers, including imports and multiplier effects—generated $129 billion in sales impacts and $37 billion in income impacts, and supported 1.2 million jobs in 2011. Recreational fishing generated $70 billion in sales impacts, $20 billion in income impacts, and supported 455,000 jobs in 2011. Jobs supported by commercial businesses held steady from the previous year, while jobs generated by the recreational fishing industry represented a 40 percent increase over 2010.[2]

We all share the common goal of healthy fisheries that can be sustained for generations. Without clear, science-based rules, fair enforcement, and a shared commitment to sustainable management, short-term pressures can easily undermine progress toward restoring the social, economic, and environmental benefits of a healthy fishery. Although challenges remain in some fisheries, the benefits for the resource, the industries it supports, and the economy are beginning to be seen as fish populations grow and catch limits increase.

My testimony today will focus on the progress we have made, together with our partners, in implementing the Magnuson-Stevens Act's key domestic provisions, particularly the success of the requirement to rebuild overfished fish stocks.

Progress in Ending Overfishing and Rebuilding Fish Stocks Under the Magnuson-Stevens Act

Ending Overfishing and Rebuilding Fisheries

The federal fishery management system is effectively ending overfishing and rebuilding overfished fisheries. We continue to make progress toward long-term biological and economic sustainability and stability. Since its initial passage in 1976, the Magnuson-Stevens Act has charted a groundbreaking course for sustainable fisheries. When reauthorized in 2007, the Act gave the eight Regional Fishery Management Councils and NMFS a very clear charge and some new tools to support improved science and management. We are now seeing the results of those tools. In 2012, six stocks were determined to be rebuilt, and there were decreases in both the numbers and percentages of fish stocks listed as overfished or experiencing overfishing.

At present, only 28 stocks (10 percent) with a known status are listed as subject to overfishing, and 40 stocks (18 percent) are overfished—both all-time lows. The

[1] *See* NOAA Fisheries Annual Commercial Fisheries Landings Database available at http://www.st.nmfs.noaa.gov/commercial-fisheries/commercial-landings/annual-landings/index.

[2] *See* Fisheries Economics of the U.S. 2011. NMFS Office of Science and Technology, available at: http://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries_economics_2011.

number of stocks subject to overfishing was highest in 2000, when 48 stocks were on the overfishing list. In 2002, 55 stocks were overfished. Since 2000, 33 stocks have been rebuilt.[3] We expect the number of stocks on the overfishing list to continue to decrease as a result of management under annual catch limits. Ending overfishing allows stocks to increase in abundance, so we expect to see further declines in the number of overfished stocks and increases in the number of rebuilt stocks.[4]

Benefits of Annual Catch Limits

One of the most significant management provisions of the 2007 reauthorization of the Magnuson-Stevens Act is the mandate to implement annual catch limits, including measures to ensure accountability and to end and prevent overfishing in federally managed fisheries. An annual catch limit is an amount of fish that can be caught in a year so that overfishing does not occur. Accountability measures are management controls to prevent the limits from being exceeded and to correct or mitigate overages of the limits if they occur. This is an important move away from a management system that could only be corrected by going back through the full Council process in order to amend Fishery Management Plans—often taking years to accomplish, all while overfishing continued.

Now, when developing a fishery management plan or amendment, the Councils must consider, in advance, the actions that will occur if a fishery does not meet its performance objectives. As of June 30, 2013, we have confirmed that overfishing has ended for 22 (58 percent) of the 38 domestic U.S. stocks that were subject to overfishing in 2007 when the Magnuson-Stevens Act was reauthorized.[5] Annual catch limits designed to prevent overfishing are in place for all stocks that need them. Preliminary data show that annual catch limits have been effective in limiting catch and preventing overfishing for the majority of stocks. Fisheries have successfully stayed within their annual catch limit for over 90 percent of the stocks for which we have catch data.

Successes and Challenges

The Magnuson-Stevens Act created broad goals for U.S. fisheries management and a unique, highly participatory management structure centered on the eight Councils. This structure ensures that input and decisions about how to manage U.S. fisheries develops through a bottom-up process that includes fishermen, other fishery stakeholders, affected states, tribal governments, and the Federal Government. By working together with the Councils, states, tribes, and fishermen—under the standards set in the Magnuson-Stevens Act—we have made great strides in ending overfishing, rebuilding stocks, and building a sustainable future for our fishing-dependent communities.

This success has come with the new requirements of the reauthorized Magnuson-Stevens Act to end overfishing, implement annual catch limits, and rebuild overfished fisheries. Despite being in a national economic downturn, the fishing industry as a whole has seen great economic gains, both in terms of revenues and landings, particularly in the past 2 years.

While significant progress has been made since the last reauthorization, we recognize that this progress has not come without cost and, even with national successes we are still seeing challenges regionally. Fishermen, fishing communities, and the Councils have had to make difficult decisions and, in many areas, have had to absorb the cost of conservation and investment in long-term economic and biological sustainability. In some instances where quotas have been cut, stocks are not rebounding as we would have expected, and we are working with the Councils, academia, the states, and fishermen to examine how environmental factors outside of fishing mortality may be influencing the ability of these stocks to rebuild. We need to approach these challenges in a holistic, deliberative, and thoughtful way that includes input from the wide range of stakeholders who care deeply about these issues.

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[3] The recently-released National Academy of Sciences study notes that the most recent assessment for some rebuilt stocks indicates they were not overfished at the time they were placed in rebuilding plans. However, the best scientific information available at the time indicated the stock was overfished, and the rebuilding plan was successful in increasing the size of the stock to support higher sustainable yields.

[4] These statistics were compiled from the quarterly stock status reports at: http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm.

[5] Ibid.

Flexibility Is Inherent in the Act's Rebuilding Requirements

Rebuilding Requirements and Timelines

Rebuilding plans are required when a stock is determined to be overfished. Each stock has a minimum stock size threshold that has been established by the Council based on the best scientific information available—this represents the size of the stock below which its ability to produce maximum sustainable yield is impaired. If a stock assessment finds that the biomass is below the stock's minimum stock size threshold, the stock is determined to be overfished and the Council has two years to develop and implement a rebuilding plan.

The Magnuson-Stevens Act requires that the period to rebuild a stock not exceed 10 years, but it permits a longer time period in certain cases where the biology of the fish stock, management measures under an international agreement in which the United States participates, or other environmental conditions dictate otherwise, although this period still must be as short as possible. Current rebuilding time periods for stocks with active rebuilding plans range from four years to more than 100 years. Of the 43 active rebuilding plans with a target time to rebuild, 23 of them (53 percent) are set longer than 10 years due to the biology of the stock (slow reproducing, long lived species) or environmental conditions. For example, Pacific yelloweye rockfish has a rebuilding timeline of 71 years. The remaining 20 rebuilding plans are set for 10 years or less. Of the 33 stocks rebuilt since 2000, 18 stocks were rebuilt within 10 years. Two additional stocks in 10-year plans were rebuilt within 12 years.

Rebuilding Successes and Benefits

Rebuilding fisheries brings significant biological, economic, and social benefits, but doing so takes time, persistence, sacrifice, and adherence to scientific information. Of 26 rebuilt stocks for which information is available, half of them now produce at least 50 percent more revenue than they did when they were overfished. Seven stocks have current revenue levels that are more than 100 percent higher than the lowest revenue point of the overfished stock.

Atlantic sea scallops provide one example of rebuilding success. In the early 1990s, the abundance of Atlantic sea scallops was near record lows and the fishing mortality rate was at a record high. Fishery managers implemented a number of measures to allow the stock to recover, including an innovative area management system. The stock was declared rebuilt in 2001. Revenues increased five-fold as the fishery rebuilt, from $44 million in 1998 to $353 million in 2011, making New Bedford the Nation's top port by value of landings since 2000.

Another example of rebuilding success can be seen with Bering Sea snow crab. In 1999, scientists found that Bering Sea snow crab was overfished. In response, managers reduced harvests to a level that would allow the stock to rebuild, and the stock was declared rebuilt in 2011. In the 2011–2012 fishing year, managers were able to increase the harvest limit by 64 percent to nearly 90 million pounds. By 2012, revenue from the fishery had increased to almost 400 percent of the 2006 revenue (the low point during the rebuilding period).

Ending Overfishing in a Rebuilding Plan

Ending overfishing is the first step in rebuilding. Prior to the implementation of annual catch limits, a number of rebuilding plans experienced difficulty in ending overfishing and achieving the fishing mortality rate called for in the plan. As a result, rebuilding was delayed. Conversely, stocks where overfishing has ended quickly have seen their stock size increase and rebuild more quickly. For example, Widow rockfish in the Pacific was declared overfished in 2001. Fishing mortality on Widow rockfish was immediately substantially reduced resulting in a corresponding increase in stock size. The stock was declared rebuilt in 2011, ahead of the rebuilding deadline. The 10-year rebuilding timeframe itself does not typically constrain catch for a rebuilding stock.

Most major reductions in allowable catch experienced by fishermen when stocks enter rebuilding plans are predominantly from the requirement to prevent overfishing—which is now required through annual catch limits for all stocks, not just those determined to be overfished. When unsustainably large catches have occurred due to high levels of overfishing on a depleted stock, large reductions in catch will be needed to end overfishing, and the stock must rebuild in abundance before catches will increase.

Because ending overfishing is essential to rebuilding, annual catch limits are a powerful tool to address prior problems in achieving rebuilding. Nine of the 20 stocks currently in 10-year (or less) rebuilding plans had failed to end overfishing as of their last stock assessment. Annual catch limits, which are now in place as a mechanism to control catch to the level specified in the rebuilding plan, are work-

ing and we anticipate the next stock assessments for these species to confirm that overfishing has ended. With that result, we will begin to see stronger rebuilding for these stocks. The next quarterly status update (for the period ending September 30, 2013) will show that overfishing has ended for five additional stocks in rebuilding plans of 10 years or less—Gulf of Mexico gag, Gulf of Mexico gray triggerfish, Gulf of Mexico greater amberjack, South Atlantic black sea bass, and South Atlantic red grouper. In addition, preliminary data on the performance of annual catch limits have shown that fisheries have successfully stayed within their annual catch limits for at least 78 percent of the stocks currently in rebuilding plans.

Flexibility in Rebuilding Plans

The Magnuson-Stevens Act provides flexibility to adjust rebuilding plans when a stock is failing to make adequate progress toward rebuilding. In these situations, the Councils can amend the rebuilding plan with revised conservation and management measures. The Act requires that the revised plan be implemented within two years and that it end overfishing (if overfishing is occurring) immediately upon implementation.

Rebuilding plans are also adaptable when new scientific information indicates changing conditions. For example, the target time to rebuild Pacific ocean perch off the Pacific Coast was recently lengthened based on information within a new stock assessment. The assessment, conducted in 2011, revised our understanding of the Pacific ocean perch stock status and productivity and showed that, even in the absence of fishing, the time it would take to rebuild the stock would be longer than the previously established target time to rebuild. Given this information, NMFS worked with the Pacific Fishery Management Council in 2012 to modify the rebuilding plan and extend the target time for stock rebuilding from 2017 to 2020.

Rebuilding timelines can also be shortened based on new information. As one example, the original rebuilding plan for cowcod, a Pacific Coast groundfish, was 95 years. The rebuilding time has been modified based on updated scientific information, and is currently 67 years.

Stakeholder Input and Concerns

The Managing Our Nation's Fisheries 3 conference, held this past May in Washington, DC, provided us an exciting opportunity to engage with a variety of stakeholders on the Magnuson-Stevens Act, and the topic of rebuilding was discussed extensively at the first session on Improving Fishery Management Essentials. We heard from conference participants about adjustments they would like to see regarding rebuilding time requirements. We heard their concerns, and we are taking a hard look at the recommendations they provided in the context of how we and the Councils do business. We are also engaged in conversations with the Councils, constituents, and Congress on the next reauthorization of the Magnuson-Stevens Act, and we will look carefully at any recommendations regarding rebuilding timeframe flexibility.

National Academy of Sciences Report on Rebuilding

We've heard concerns from stakeholders that the 10-year rebuilding timeline may be arbitrary and too restrictive. In response to these concerns and similar concerns expressed by Members of Congress, in 2011 NOAA commissioned the National Academy of Sciences' National Research Council (NRC) to conduct a comprehensive evaluation of success in stock rebuilding and identification of changes made to fisheries management in response to rebuilding requirements. NOAA asked the NRC to study seven topics related to rebuilding to help us and the Councils better construct efficient and effective rebuilding plans.

The NRC rebuilding study was released on September 5, 2013. We are thankful for the in-depth and forward-looking review provided by the NRC, and at present we are carefully analyzing the report's details. The timing of the report fits nicely with our work to revise National Standard 1 Guidelines. Since the guidelines were last updated in 2009, a number of issues regarding the application of the guidelines have been identified by stakeholders and managers, and these issues may warrant revisions. An Advanced Notice of Proposed Rulemaking was published on May 3, 2012 to solicit public input, and several report findings reflect possible revisions to the guidelines similar to those currently being considered by NMFS. At this time, NMFS would like to acknowledge a few aspects of the report:

- From the NRC's assembly of technical results from all rebuilding plans, we are pleased to see that rebuilding plans are effective at increasing stock abundance, especially when fishing mortality is quickly reduced below overfishing levels.
- The report identifies several challenges with implementation of rebuilding plans that are based upon specific biomass targets and rebuilding timeframes.

They note that more flexible rebuilding plans could be based on strict requirements to keep fishing mortality rates at about 75 percent of the overfishing limit.

- The report notes that some rebuilding plans have had large social and economic consequences in order to rebuild to specific biomass levels in fixed time frames but that the economic consequences had rebuilding not occurred are difficult to determine. Continued investments in social and economic data collection and analysis will inform the process of developing future rebuilding plans.
- The report's investigation of ecosystem factors includes a general finding about the complexity of ecosystems and the challenges of making specific forecasts, especially over longer-term time frames. NMFS is keenly interested in increasing the linkage between ecosystem/environmental factors and fish stock assessments and forecasts. The FY 2014 President's Budget Request includes a $10 million increase for NOAA to fund research on the impacts of climate on fisheries with a focus on the Northeast groundfish region and NOAA has a variety of activities underway to understand climate impacts on marine ecosystems and increase the use of this information in management of fisheries resources.

Conclusion

The Magnuson-Stevens Act has galvanized the United States' efforts to end overfishing in federally managed fisheries, rebuild stocks, and ensure conservation and sustainable use of our marine fisheries. Fishery harvests in the United States are scientifically monitored, regionally managed, and legally enforced under 10 strict national standards of sustainability. But we did not get here overnight. Our Nation's journey toward sustainable fisheries has evolved over the course of over 35 years.

In 2007, Congress gave NOAA and the Councils a clear mandate, new authority, and new tools to achieve the goal of sustainable fisheries within measurable timeframes. Notable among these were the requirements for annual catch limits and accountability measures to prevent, respond to, and end overfishing.

We are seeing progress in our effort to end overfishing and rebuild stocks. Both the number of stocks subject to overfishing and the number of stocks that are overfished are at an all-time low. This progress has been due to the collaborative involvement of our U.S. commercial and recreational fishing fleets and their commitment to science-based management, improving gear technologies, and application of best-stewardship practices. These rebuilt fish stocks have often resulted in improved revenues, helping sustain fishing communities.

While we are seeing progress and realizing benefits in some fisheries, we recognize that challenges remain. Looking ahead, we must continue to increase the quality and quantity of scientific data, continue progress made to address overfishing and rebuild stocks, and better address the difficult transitions that can come with management changes leading to more biologically and economically sustainable fishery resources. It is also increasingly important that we better understand ecosystem and habitat factors, including climate change, and incorporate them into our stock assessments and management decisions, because resilient ecosystems and habitat form the foundation for robust fisheries and robust economies.

It is important to take time to reflect on where we have been to understand where we are. The Magnuson-Stevens Act provides flexibility in adapting management plans to the life history differences among species and nuances of particular fisheries, as well as to the unique regional and operational differences among fisheries and in the fishing communities they support. NOAA supports the collaborative and transparent process embodied in the Councils, as authorized in the Magnuson-Stevens Act, and strongly believes that all viable management tools should continue to be available as options for the Councils to consider when developing management programs. Together with our partners, we continue to explore alternative approaches that will produce the best available information to incorporate into management. We had productive discussions at the recent Managing Our Nation's Fisheries 3 Conference, and we will continue to engage with our stakeholders. We are also thankful for having the new National Academy of Sciences study on rebuilding and will be reviewing it carefully.

Thank you again for the opportunity to discuss implementation progress of the *Magnuson-Stevens Act* and future efforts of reauthorization. We look forward to the discussions that will take place and will work with Congress on efforts to reauthorize the *Magnuson-Stevens Act.*

The CHAIRMAN. Dr. Sullivan, you are recognized for 5 minutes.

STATEMENT OF PATRICK J. SULLIVAN, PH.D., CO-CHAIR, COMMITTEE ON EVALUATING THE EFFECTIVENESS OF STOCK REBUILDING PLANS OF THE 2006 FISHERY CONSERVATION AND MANAGEMENT REAUTHORIZATION ACT OCEAN STUDIES BOARD, THE NATIONAL ACADEMIES

Dr. SULLIVAN. Great. Thank you. Good morning, Mr. Chairman and members of the Committee.

My name is Patrick Sullivan. I am an Associate Professor in the Department of Natural Resources at Cornell University. My colleague, Dr. Ana Parma, and I co-chair the Committee on Evaluating the Effectiveness of Stock Rebuilding Plans. In 2010, Senator Olympia Snowe and Representative Barney Frank requested NOAA fund a study by the National Academy of Sciences. The committee reviewed the technical specifications that underlie the current set of federally implemented rebuilding plans, the outcomes of those plans in terms of trends in fishing mortality and stock size, and changes in stock status with respect to fisheries management reference points.

Fish stock rebuilding plans have proven successful in reducing fishing pressure on many overfished stocks, and stock sizes have generally increased. However, in some cases, fisheries have not rebuilt as quickly as the plans projected, due to factors such as overestimation of the sizes of the stocks and incidental catch by fisheries targeting other species. Even when fishing is reduced appropriately for the actual size, the rate at which rebuilding occurs will depend on ecological and other environmental conditions. Because of all of these factors, it is difficult to make accurate predictions of the time it will take stocks to rebuild. Therefore, rebuilding plans focus more on meeting selected fishing mortality targets rather than on adhering to strict schedules for achieving rebuilding may be more robust to assessment uncertainties, environmental variability, and the effects of ecological interactions. Well managed productive fisheries provide a livelihood, a nutritious source of food, and recreational activity for coastal communities around the country. However, if overfishing takes place and stocks experience serious declines, the loss of productivity affects the fishing industry and the communities that depend on fishing and raises concern about the overall health of the associated marine ecosystem.

To meet these provisions, rebuilding plans have required substantial reductions in catch for many fisheries, resulting in social and economic impacts to fishing communities and industry. This report reviews the technical specifications that underlie current federally implemented rebuilding plans and the outcomes of those plans. The National Marine Fisheries Service evaluates the status of U.S. fish stocks to determine which stocks are overfished. That is which stocks are too small in size to sustain productive fisheries. Once a stock is classified as overfished, the appropriate regional Fishery Management Council selects and implements the rebuilding plan.

Rebuilding plans are simple in theory. Annual catch limits are set to reduce fishing, which allows the stock to grow and recover. However, in order to design a rebuilding plan, fisheries managers

need to anticipate how the stock may respond to different levels of fishing pressure. Currently rebuilding plans use a concept called maximum sustainable yield, MSY for short, to determine when a stock is overfished and to set annual catch limits and rebuilding targets for stock sizes.

The concept of maximum sustainable yield can be useful in establishing population sizes and harvest rates that a population can sustain. Rebuilding plans based on MSY have proven successful for many stocks. As we mentioned maybe earlier already, 85 stocks declared overfished are approaching an overfished state between 1997 and 2012. Forty-one are no longer classified as overfished. Of these, 11 are rebuilding and 30 are rebuilt. However, a further 41 stocks have not yet rebuilt and are still classified as overfished.

Because it is not possible to count every fish in the stock, scientists rely on a variety of statistical sampling procedures. The accuracy of population estimates and the projections depend on this data. The frequency of stock assessments can vary widely, both within and among regions from stocks that are assessed annually to those that have never been assessed. The challenge here, of course, is that climate, environmental conditions, and ecosystem interactions have significant effects on the rate at which a stock rebuilds. Although these factors affect the time it takes for a stock to rebuild, it is not currently possible to incorporate them into models to improve projections to a degree of accuracy useful for management.

In terms of mixed stocks, when one stock is within a mixed stock fishery and declared overfished, reduction in fishing required rebuilding plans that affect all the stocks in the fishery. This leads to a loss of yield and income. The management of mixed stock fisheries is complex and a contentious issue, one that needs to be looked at.

We also outline a number of other things, including gradually reducing the catch instead of waiting until rebuilding plan kicks in, using fishing mortality reference points instead of biomass-based reference points, setting F limits below FMSY and also make some comments on data-poor stocks. Half of the stocks that the National Marine Fisheries Service manages are data poor and are in need of something there.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Dr. Sullivan.

[The prepared statement of Dr. Sullivan follows:]

Statement of Patrick J. Sullivan, Ph.D., Department of Natural Resources, Cornell University, and Co-Chair, Committee on Evaluating the Effectiveness of Stock Rebuilding Plans of the 2006 Fishery Conservation and Management Reauthorization Act, Ocean Studies Board, Division on Earth and Life Studies, National Research Council, The National Academies

Good morning, Mr. Chairman and members of the Committee. My name is Patrick Sullivan. I am an Associate Professor in the Department of Natural Resources at Cornell University. My colleague Dr. Ana Parma and I co-chaired the Committee on Evaluating the Effectiveness of Stock Rebuilding Plans of the 2006 Fishery Conservation and Management Reauthorization Act.

In 2010, U.S. Senator Olympia Snowe and U.S. Representative Barney Frank requested that NOAA fund a study by the National Academy of Sciences' National Research Council regarding the Magnuson-Stevens Fishery Conservation and Management Act's rebuilding requirements.

The committee reviewed the technical specifications that underlie the current set of federally-implemented rebuilding plans, the outcomes of those plans in terms of trends in fishing mortality and stock size, and changes in stock status with respect to fishery management reference points.

Fish stock rebuilding plans have proven successful in reducing fishing pressure on many overfished stocks and stock sizes have generally increased. However, in some cases fisheries have not rebuilt as quickly as the plans projected, due to factors such as overestimation of the size of stocks and incidental catch by fisheries targeting other species. Even when fishing is reduced appropriately for the actual stock size, the rate at which rebuilding occurs will depend on ecological and other environmental conditions. Because of all these factors, it is difficult to make accurate predictions of the time it will take stocks to rebuild. Therefore, rebuilding plans that focus more on meeting selected fishing mortality targets than on adhering to strict schedules for achieving rebuilding may be more robust to assessment uncertainties, environmental variability, and the effect of ecological interactions.

Well-managed, productive fisheries provide a livelihood, a nutritious source of food, and recreational activity for coastal communities around the country. However, if overfishing takes place and stocks experience serious declines, the lost productivity affects the fishing industry and communities that depend on fishing, and raises concerns about the overall health of the associated marine ecosystem. In the United States, the 1976 Magnuson-Stevens Fishery Conservation and Management Act was the first piece of major legislation to regulate federal fisheries. Although the Act contained language to "prevent overfishing," it focused on developing the domestic fishing industry. Major declines in the productivity of several important fisheries led Congress to amend the Act in 1996. The amendment, the Sustainable Fisheries Act, more clearly defined overfishing and required rebuilding of overfished stocks within a specified time limit. In 2006, Congress made additional mandates for conserving and rebuilding fish stocks and strengthening the role of scientific advice in fisheries management. The Act now includes regulatory provisions such as ending overfishing immediately, annual catch limits and accountability measures.

To meet these provisions, rebuilding plans have required substantial reductions in catch for many fisheries, resulting in social and economic impacts to fishing communities and industry. This report reviews the technical specifications that underlie current federally-implemented rebuilding plans, and the outcomes of those plans.

Implementing Rebuilding Plans

The National Marine Fishery Service evaluates the status of U.S. fish stocks to determine which stocks are overfished; that is, which stocks are too small in size to sustain continued productive fisheries. Once a stock is classified as overfished, the appropriate Regional Fishery Management Council selects and implements a rebuilding plan.

Rebuilding plans are simple in theory; annual catch limits are set to reduce fishing, which allows the stock to grow and recover. However, in order to design a rebuilding plan, fishery managers need to anticipate how the stock may respond to different levels of fishing pressure. Currently, rebuilding plans use a concept called Maximum Sustainable Yield (MSY) to determine when a stock is overfished, and to set annual catch limits and rebuilding targets for stock size.

The Challenges of Rebuilding Plans

The concept of Maximum Sustainable Yield can be useful in establishing population size and harvest rates that a population can sustain. Rebuilding plans based on MSY have proven successful for many stocks: of the 85 stocks declared overfished or approaching an overfished state between 1997 and 2012, 41 are no longer classified as overfished (of these, 11 are rebuilding and 30 are rebuilt). However, a further 41 stocks have not rebuilt yet, and are still classified as overfished. The committee identified several challenges associated with current rebuilding plans.

MSY Reference Points

A major challenge comes from the fact that current rebuilding plans use a static metric of MSY, which in theory represents average conditions. In reality, ecosystems are dynamic and as a consequence MSY varies with factors such as changes in environmental conditions and ecological interactions. Generating reliable estimates of MSY depends on having extensive information about the biology of the species and its abundance in the years before it was overfished. This wealth of information is only available for a relatively few stocks, hence there is considerable uncertainty in the MSY estimates for most stocks. Although the MSY approach has been successful for some fisheries, management based on MSY can fall short in addressing ecosystem complexity and variability and in accounting for uncertainty in the estimates of reference points.

Uncertainty in Stock Assessments

Because it is not possible to count every individual fish in a stock, scientists rely on a variety of sampling and statistical methods to estimate abundance. These estimates are used in models to project trends in future stock size. The accuracy of the population estimates and the projections depends on the quality and amount of data available and the ability of models to reproduce the primary determinants of the species' population growth. The frequency of stock assessments can vary widely, both within and among regions, from stocks that are assessed annually to stocks that have never been assessed. As more data are collected and new models and assessment methods become available, past estimates of the status of fish stocks can change substantially. For example, some stocks that were previously classified as overfished (and put under rebuilding plans) would not have been considered overfished based on the most recent assessments. The inverse may also have occurred, with overfished stocks misclassified as not overfished.

Climate, environmental conditions, and ecosystem interactions can have significant effects on the rate at which a stock rebuilds. Although these factors affect the time it takes for a stock to rebuild, it is not currently possible to incorporate them into models to improve projections to a degree of accuracy that is useful for management.

Mixed Stock Fisheries

Fish do not live in isolation—each stock is part of a community of species that live in the same waters. For example, when a fishing net is cast into the ocean, it can capture several different fish species. This is called a mixed-stock fishery.

When one stock within a mixed-stock fishery is declared overfished, reductions in fishing required by the rebuilding plans affect all the stocks in the fishery, leading to a loss of yield and income. For example, juvenile red snapper in the Gulf of Mexico are incidentally caught during shrimp trawl fishing, driving the red snapper to overfished status. Devices were installed in shrimp nets to reduce bycatch, but were not sufficient to end overfishing. Subsequent rebuilding plans included a shrimp trawl fishing threshold, in addition to fishing limits for red snapper.

The management of mixed-stock fisheries is a complex and contentious issue, but the problem will need to be addressed to allow more practical guidance on the balance of fisheries harvest across stocks, subject to assurances that the less productive species are not driven to unacceptably low abundance.

Alternative Management Strategies

Current rebuilding plans rely on a prescriptive approach, which has had demonstrated successes in identifying and rebuilding some fish stocks. However, the plans' focus on achieving rebuilding targets within set timeframes forces reliance on forecasts and estimates of MSY-based reference points, which often carry a high level of uncertainty. Rebuilding plans that focus on meeting selected fishing mortality targets may be more effective than a plan with an exact time period for rebuilding. The report makes several suggestions for alternative management strategies for rebuilding fish stocks.

Gradual Reductions in Annual Catch

Delaying reductions in annual catch until the stock biomass has declined to overfished status means that fishery managers must then make immediate and substantial decreases in fishing. Alternative management actions, such as harvest control rules that promptly but gradually reduce fishing as estimated stock size falls would result in a lower likelihood of a stock becoming overfished.

Fishing Mortality Reference Points

Fishing mortality reference points seem to be more robust to uncertainty than biomass reference points, both in the context of rebuilding and more generally. Estimates of biomass are expected to change, and hopefully improve, as stocks rebuild—but predicting these changes is difficult as it requires predicting average future recruitment of juvenile fish to the adult population. In contrast, setting reference points based on fishing mortality requires comparatively less information.

Environmental Considerations

Most fisheries select for the largest fish, and by doing so, reduce the average age of the fished population. A rebuilding strategy based on maintaining reduced fishing mortality for an extended period—longer than the mean generation time of the stock—would help restore the stock's age structure (i.e., increase the average age) and would be more robust to changing environmental conditions than strategies that require rebuilding to pre-specified biomass targets by a given time limit.

Setting Fishing Limits Below F_{MSY}

The Magnuson-Stevens Act specifies that stocks designated as overfished must rebuild within a maximum time period (usually 10 years). This strategy means rebuilding usually occurs quickly once a stock is designated overfished. However, if rebuilding is slower on average than expected when the plan was adopted—for example, due to unfavorable environmental conditions that affect recruitment of juveniles—ever more severe controls on fishing must be applied to try to keep rebuilding "on schedule". These reductions in fishing can have significant economic and social impacts to the fishing industry and community. Maintaining fishing at some constant level below F_{MSY} may help achieve rebuilding goals on a schedule that accommodates natural variability in stock productivity.

Data-Poor Stocks

Analytical assessments are not available for many of the stocks classified as overfished because there are not enough data and information to build the required models and to estimate MSY reference points. Without these data, catch limits are difficult to establish. In these cases, empirical rebuilding strategies that rely on input controls to reduce fishing—for example, reductions in fishing operations, or closing fishing areas—may be more effective and defensible than strategies based on annual catch limits and biomass (B_{MSY}) targets.

Socio-Economic Impacts of Rebuilding Plans

It is clear that reducing fishing to meet rebuilding targets can have severe social and economic impacts on fishing communities and the fishing industry. However, socio-economic information is not readily available to evaluate the broader and long-term impacts of rebuilding plans. Retrospective reviews of the socio-economic impacts of rebuilding plans would help in refining rebuilding plans and objectives, thus improving the consequences of future plans.

Thank you, Mr. Chairman, for inviting me to testify before the Committee today. I am happy to answer any questions you may have.

The CHAIRMAN. And last and certainly not least, Mr. Richard Robins, you are recognized for 5 minutes.

STATEMENT OF RICHARD B. ROBINS, JR., CHAIRMAN, MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

Mr. ROBINS. Good morning, Mr. Chairman, Ranking Member DeFazio, and members of the Committee. I am Rick Robins, Chairman of the Mid-Atlantic Fishery Management Council. I appreciate the opportunity to testify before you today regarding the reauthorization of the Magnuson-Stevens Act. My testimony today will reflect my own experience in the Mid-Atlantic, and I will also touch on concerns that have been identified by the other seven councils in the U.S.

The Magnuson-Stevens Act laid the foundation for the U.S. to develop one of the strongest and most successful fishery management systems in the world. Consequently, any amendments to the Act should be limited in their scope. Historically, one of the greatest strengths of the system is that it does not require us to apply a one-size-fits-all management approach to our 446 federally managed stocks and stock complexes and allows councils to develop management solutions at a regional level.

However, over time, amendments have rendered the Act increasingly prescriptive and focused more narrowly on biological accounting. While some of these changes have been necessary to end overfishing in certain fisheries, they have limited the ability of the councils to effectively manage data-poor fisheries; they have resulted in a lack of stability in some fisheries; and they have limited our ability to balance important social and economic considerations in certain circumstances. Successful conservation and management

of U.S. fisheries should not be defined exclusively in biological terms. Rather, the Act should enable the councils to manage fisheries for biological, ecological, social, and economic success.

My testimony will focus on areas of the Act where adding targeted flexibility would enable more effective management of our Nation's fisheries and enhance their stability without compromising the integrity of our management system. Although my written testimony outlines a much broader range of issues, my oral comments today will focus on four issues that have relevance nationally, including stock rebuilding, ending overfishing, ACLs and AMs in data-poor fisheries, and ecosystem considerations.

With respect to stock rebuilding, councils are charged with managing U.S. Fisheries for the greatest overall benefit of the Nation. This responsibility is not limited to data-rich stocks or stocks that are in great shape. It applies to every fishery we manage. Achieving this mandate while rebuilding stocks and designing an optimal rebuilding plan requires an effective evaluation of tradeoffs. The 10-year maximum rebuilding timeline often precludes any meaningful evaluation of tradeoffs during rebuilding and marginalizes social and economic considerations. Stocks that can be rebuilt in 10 years must be rebuilt within 10 years whereas stocks that can be rebuilt within 11 years have a maximum rebuilding timeline of 11 years plus one mean generation time. This is an inconsistent treatment of our fisheries, and this inconsistency can be resolved by replacing the 10-year timeline with a new TMAX of TMIN plus one generation time.

Overfished stocks often do not become that way solely as a result of excessive fishing effort. Habitat modification, pollution, climate change, and other factors beyond the control of councils can contribute to stock depletion. The term "overfished" should be replaced with depleted to reflect the fact that fishing effort is not the sole cause of stock depletion. Once a depleted stock is in a rebuilding plan, the council can control fishing mortality on that stock, but rebuilding can be affected by other factors that the council has very limited ability to either predict or control. The MSA and NS1 guidelines both should allow rebuilding dates and rates to be adjusted when environmental factors limit rebuilding. In some cases, councils have even been required to continue rebuilding stocks after a new assessment indicated that the stock was never overfished. The MSA should include clear criteria for superseding a rebuilding plan in a timely way under these circumstances.

In terms of ending overfishing, the requirement to end overfishing immediately has destabilized some U.S. fisheries, red snapper being one example. Overfishing is a transient condition that can occur on both depleted and healthy stocks with different implications. The council should have the ability in certain circumstances to eliminate overfishing over a multiyear period through phased reduction fishing rates. This may be particularly important in situations where stock assessments change dramatically.

Turning to ACLs and AMs and data-poor stocks, the new system of ACLs and AMs works very well in fisheries with adequate stock assessments. For some data-poor stocks, however, it has resulted in a loss of stability and a lack of confidence in the quota setting proc-

ess. ACLs and AMs may not be the best tools for managing incidental or small-scale data-poor fisheries. In each situation councils should have the discretion to determine alternative control mechanisms for data-poor stocks.

With respect to ecosystem considerations, we do need to strengthen our management of ecological aspects of our marine fisheries. The management of mixed species fisheries may not be optimized by applying single stock principles. Stocks in a complex vary in abundance over time, and it is unlikely that all will be at high abundances at the same time. Managing complexes or trophy guilds for system-level optimum yield would result in a better approach but may require changes to the mixed stock exception in those fisheries. More broadly, though, the ecological references and ecosystem considerations in the Act would benefit from additional clarity as they relate to the management of species interactions, foraged stocks, the importance of ecosystem structure and function, and the current definition of optimum yield.

In conclusion, the next reauthorization should build on the past success of the Act by making minor improvements in order to position our fisheries for sustainable future in terms that extend beyond simply preventing overfishing. The Act should enable the councils to manage all of our fisheries for the greatest overall benefit of the Nation. I sincerely appreciate the opportunity to testify and look forward to your questions.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you. Thank you very much, Mr. Robins, for your testimony.

[The prepared statement of Mr. Robins follows:]

Statement of Richard B. Robins, Jr., Chairman, Mid-Atlantic Fishery Management Council

Chairman Hastings, ranking member DeFazio, and members of the Committee, thank you for the opportunity to testify before you today regarding the Reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act, MSA, or the Act). I am Richard B. Robins, Jr. and I serve as the Chairman of the Mid-Atlantic Fishery Management Council. The Mid-Atlantic Council has primary management authority for 12 species of fish and shellfish in federal waters off the coast of North Carolina through New York. In 2014 I will also serve as the Chairman of the Council Coordination Committee (CCC), which comprises the Chairs, Vice-Chairs, and Executive Directors of the eight regional councils.

I appreciate the opportunity to testify before the Committee on Natural Resources about the regional councils' perspectives on the reauthorization of the MSA. My testimony will reflect my own experience in the Mid-Atlantic region. I will also summarize several common themes of the concerns that have been identified by the other U.S. regional fishery management councils. While these concerns do not represent formal positions from the councils, they are relevant to your Committee's ongoing reauthorization work. The individual councils and the CCC look forward to continued discussions and opportunities to provide input into the reauthorization process in the months ahead.

The United States has one of the strongest federal fishery management systems in the world. The Magnuson-Stevens Fishery Conservation and Management Act established a framework for sustainable fishery management which has contributed to the rebuilding of many depleted U.S. fisheries. The underlying goal of the Act is to conserve and manage U.S. fisheries for the greatest overall benefit of the nation. This same goal is central to the oath of office that every appointed Council member takes at the beginning of their term.

As we reflect on the experience of the 2006 reauthorization and look forward to this reauthorization, I think it is important to ensure that the Act and its requirements will position the regional fishery management councils (RFMCs or councils)

to manage fisheries for the greatest overall benefit of the nation, across the full spectrum of stock assessment characteristics, stock conditions, and dynamic environmental conditions.

One of the greatest strengths of our fishery management system is that it does not require us to apply a one-size-fits-all management approach to our 446 federally managed stocks and stock complexes. Instead, the Act delegates a portion of decision-making authority to the individuals on councils who are most familiar with each region's fisheries. As such, this allows management plans to be tailored to the specific characteristics of each fishery. However, over the past year in discussions about reauthorization of the MSA, it has become apparent that the councils' need more flexibility to make the decisions that are best for each fishery.

The next reauthorization should build on the past success of the Act in order to position our fisheries for a sustainable future in terms that extend beyond simply preventing overfishing. Successful conservation and management of U.S. fisheries should not be defined exclusively in biological terms; rather, the Act should enable the councils to manage fisheries for biological, ecological, social, and economic success. Changes should be undertaken very carefully and should not compromise the integrity or ambition of the U.S. fishery management standards. My testimony today will outline several critical areas where small, targeted changes in the Act can have a major impact without jeopardizing the sustainability of our nation's fisheries.

Rebuilding Requirements

Rebuilding Timeframes

Provide the councils flexibility to consider a range of rebuilding plans and timeframes.

The councils recognize that a short rebuilding time period may be desirable because healthy stocks provide higher catch levels than stocks that are overfished, thus providing greater long-term socio-economic benefits. However, there are always tradeoffs between biological, social, and economic outcomes, and the councils need flexibility to evaluate the tradeoffs associated with a wider range of timelines. Rebuilding requirements could be made more flexible by allowing councils to rebuild stocks to their biomass targets as quickly as practicable and in a manner that protects an overfished stock from further decline. This would allow the councils to tailor each rebuilding plan to the life history of the stock, the socioeconomic characteristics of the fishery, and the statistical characteristics of the data used to inform management decisions.

Replace the 10-year rebuilding target with biologically-derived maximum rebuilding times for all species.

The current 10-year rebuilding timeframe results in inconsistent management approaches depending on the life history of the stock. For example, a stock that is expected to rebuild in slightly less than 10 years in the absence of fishing mortality could require much more restrictive management than a stock that is expected to rebuild in slightly more than ten years. This results from the fact that the maximum rebuilding timeframe (T_{MAX}) for a stock that cannot be rebuilt within 10 years is the minimum time that it would take to rebuild the stock in the absence of fishing plus one mean generation time.

In the Mid-Atlantic, the rebuilding plan for the spiny dogfish fishery fell within the 10-year rebuilding timeframe. As a result, the fishery, which was landing over 60 million pounds annually in the mid-1990's, changed abruptly to an "exit-fishery" mode for one year before a 600-pound trip limit was implemented in the fishery. This effectively eliminated directed fishing in federal waters.

In some cases, including spiny dogfish, the requirement to rebuild stocks within a fixed 10-year time frame precludes the councils from effectively considering social, economic, and ecological tradeoffs. As a result, some of our rebuilding successes have been successful in biological terms but have resulted in Pyrrhic victories that have come at unnecessarily high short-term and cumulative costs to our fishing communities. Amending the Act to replace the arbitrary 10-year rebuilding requirement with a biologically derived metric for T_{MAX} (e.g., T_{MIN} plus one mean generation time) would result in more consistent management for all fisheries and would give the councils flexibility to minimize the adverse economic impacts of rebuilding.

Address inherent uncertainties related to environmental, ecological, and anthropogenic factors and other conditions that can affect a fishery's rebuilding progress.

Overfished stocks, as defined by the current Act, often do not become that way solely as a result of excessive fishing effort. Environmental factors and changing stock assessment methodology can also play a significant role in the status determination of a fishery. The Act should be amended to use the term "depleted" instead

of "overfished" to reflect the fact that a fishery's status is typically influenced by multiple factors.

Rebuilding requirements should also accommodate variability in environmental conditions once a stock is being managed under a rebuilding plan. The councils have limited ability to predict, and no ability to control, many of the factors other than fishing mortality that affect the rebuilding process. For example, Pribilof blue king crab, managed by the North Pacific Fishery Management Council, has failed to rebuild even in the absence of fishing pressure. The Act should be amended to allow the councils to manage contingencies when stock rebuilding is precluded by environmental factors.

As a result of these uncertainties, the New England Council has recommended focusing on ending overfishing and controlling fishing mortality during stock rebuilding, rather than focusing on fixed rebuilding timelines.

Include clear guidance for responding to changes in stock status associated with updated stock assessments.

The Act requires that management decisions be based on the best available data. In some instances, such as Widow rockfish, managed by the Pacific Fishery Management Council, the councils have been required to continue rebuilding to a biomass target after new stock assessments indicate that the stock was never overfished. Rebuilding plans should not be this inflexible, and councils should be able to set Annual Catch Limits (ACLs) derived from their Scientific and Statistical Committee's (SSC) catch recommendations based on current stock assessment results.

Economic Impacts of Rebuilding

Prioritize the minimization of adverse economic impacts in the development of rebuilding plans.

It is difficult to separate economic impacts due to poor stock conditions in some regions from the impacts of statutory requirements, but it is apparent that rebuilding a depleted fishery can have severe and long-lasting adverse impacts on fishing communities. By nature of reducing total catch, all rebuilding plans contribute to negative short-term economic impacts. However, the councils are optimally positioned to develop strategies that will mitigate some of the social and economic consequences of rebuilding without jeopardizing the ability of a stock to rebuild to its biomass target.

Rebuilding Data-Poor Stocks

Provide distinct provisions for rebuilding data-poor stocks.

Despite ongoing efforts to improve stock assessments and catch estimates, data-poor stocks continue to pose a range of challenges for the councils. Congress strengthened the Act by placing a greater emphasis on science-based decision-making through the 1996 and 2006 amendments, but for some of our fisheries, councils simply do not have the information necessary to support this process. This becomes particularly clear when rebuilding data-poor fisheries. Given the highly uncertain nature of these fisheries, it does not make sense to use the same set of requirements for data-poor and data-rich species. Stock rebuilding targets and schedules for data-poor species may imply a level of assessment certainty that does not exist. The Act should be amended to include clearer guidance on the determination of an overfished or depleted status for a data-poor stock and on the development of a rebuilding plan for that stock.

Other Issues

Mixed-Species Fisheries

Include distinct provisions for managing and rebuilding multi-species complexes.

Single-species moratoria are impractical, unrealistic and result in unnecessary impacts on healthy stocks in a multi-species complex. Implementing measures to immediately end overfishing on a single component stock of a complex may unnecessarily adversely impact other species in the complex. South Atlantic red snapper and Southern New England/Mid-Atlantic winter flounder are examples of fisheries that were closed due to the single-species rebuilding requirements of the Act, despite the fact that these species are components in mixed stocks and fisheries. In the South Atlantic region, moratoria on 4 stocks have precluded new assessments on those stocks because the harvest moratoria eliminated the only available data source for those species.

Mixed-species fisheries cannot be adequately managed by applying single-stock principles. Stocks in a complex will vary in abundance over time, and it is unlikely that all will be at high abundances at the same time. Rather than expecting all

stocks in a multi-species complex to be at Maximum Sustainable Yield (MSY) levels simultaneously, a desirable fishery yield should be specified for an overall complex allowing individual stocks more normal variability.

ACLs/AMs and Overfishing Determinations

Annual Catch Limits (ACLs) and Accountability Measures (AMs) have the potential to be powerfully effective management tools, but their utility depends on the quality of the data used to assess stock size and set appropriate catch limits.

Allow ACL/AM exemptions for a broader range of fisheries.

Many fisheries are appropriately managed with ACLs (quotas) but there are instances when ACLs are not the optimal management strategy and there are no clear benefits achieved by establishing them. A first step in this direction would be for Congress to maintain the overall language for ACLs but to give the councils limited discretion to apply ACLs where practicable.

Councils should have the ability to decide when implementing ACLs for data poor stocks may not be appropriate based on current management and monitoring programs. For example, ACLs may not be the best management strategy for small-scale, subsistence fisheries in the Western Pacific region. Another difficulty with the ACL requirements is that many species are considered incidental or rarely encountered components of actively managed target species. For large multi-species targeted fisheries, the mandate to establish ACLs for incidental species can lead to closures that cause unnecessary economic losses relative to the harvest of the targeted species and result in minimal biological gain for either the targeted or incidental species. In other instances, it may be very important to control incidental fishing mortality on a stock in a mixed fishery and the councils should have the ability to distinguish between and among these situations in order to achieve their management objectives.

Extend the timeline for ending overfishing in non-overfished stocks.

Overfishing should be managed as a transient condition (i.e., a rate) that can occur on both overfished stocks and stocks that are not overfished. Temporary or short-term overfishing on a non-overfished stock, which can often be corrected in a relatively short period of time, does not jeopardize the long-term ability of a stock to achieve MSY or Optimum Yield (OY) on a continuing basis. By comparison, an overfished stock is the result of years of overfishing or environmental changes that can typically only be corrected over a longer time period.

The current requirement to end overfishing immediately, regardless of whether the fishery is actually overfished, has likely caused undue and severe economic impacts in U.S. fisheries. Providing for a multi-year reduction in fishing rates to eliminate transient overfishing conditions, particularly in cases where the stock is healthy, would enhance regulatory stability.

For long-lived species, consider basing the overfishing limit on recruitment overfishing instead of MSY.

In the context of rebuilding long lived species, such as South Atlantic red snapper, some councils have suggested that recruitment overfishing and growth overfishing pose different risks to the long-term health of the stock and should be treated differently. In cases such as South Atlantic Red snapper, some transient growth overfishing could be tolerated during stock rebuilding without jeopardizing the stock's ability to recover. As a result, the South Atlantic has suggested that the limit of exploitation (the OFL) should be based on recruitment overfishing rather than MSY for this species. Basing OFL on recruitment overfishing could provide a more meaningful standard if overfishing must be eliminated immediately. The fishing public can understand the need to fish at or below a rate that allows a population to replace itself. However, problems occur when their fisheries are forced to endure the very low exploitation rates that are often necessary to achieve MSY on a long-lived, slow growing stock.

Include provisions which allow councils to end overfishing over a multi-year period to avoid severe social and economic impacts.

The requirement of the Act to end overfishing immediately has destabilized some U.S. fisheries. The Red snapper fishery and New England groundfish are examples of fisheries that have been dramatically impacted by this requirement. Quotas must ultimately be aligned with stock assessments, so some adverse outcomes are unavoidable in certain fisheries that may have experienced chronic overfishing and overcapacity. However, specific flexibility to eliminate overfishing under certain circumstances over a multi-year period would allow the councils to substantially mitigate short-term social and economic dislocation in our managed fisheries. Examples

of stocks that were rebuilt prior under these types of approaches prior to the 2006 reauthorization include King mackerel and Spanish mackerel in the South Atlantic, which were rebuilt within a generation time and still allowed a viable fishery to operate.

Include specific provisions for setting ACLs or AMs for data-poor stocks.

The new system of ACLs and AMs has worked well in fisheries that have moderate to high levels of data and stock assessments upon which to establish an appropriate ACL, but such a prescriptive approach of often challenging in data-poor fisheries. These fisheries often lack the catch data or life history information (e.g., age and growth, size at reproductive maturity, and reproductive potential) that are needed to manage effectively with ACLs and AMs. Octopus in the North Pacific, black sea bass in the Mid-Atlantic, and reef fish in the Caribbean are examples of data-poor stocks that have been difficult to manage under the new ACL requirements. The councils need some limited flexibility to more effectively manage small scale, incidental, or data-poor fisheries that may be managed more effectively using management tools other than ACLs and AMs. Councils should have more discretion in setting ACLs for data-poor stocks. This discretion could be established by making the SSC catch advice on data-poor stocks advisory rather than binding, if certain conditions are met.

Include provisions for addressing dramatic changes in the perception of stock status.

The requirement to end overfishing immediately would benefit from a narrowly-defined exception when there is a dramatic change in the perception of stock status. Gulf of Maine Cod is the most recent example of a fishery that was dramatically impacted by the results of a new stock assessment. Changes to the Act or to the National Standard 1 guidelines could provide for a tempered management response in cases where there is both a significant change in the perceived status of a stock as well as considerable uncertainty in the assessment.

Consider ACL/AM provisions for transboundary stocks that are not subject to international treaties or transboundary resource sharing agreements.

In cases where a transboundary stock is not subject to an international resource sharing agreement, such as Atlantic mackerel, U.S. fisheries may be disadvantaged by the ACL/AM requirements. In the mackerel example, the Mid-Atlantic Council is required to account for projected Canadian catch when it sets the U.S. ACL. If the anticipated Canadian catch approaches the overall Acceptable Biological Catch (ABC) for the stock, the U.S. fishery could be closed. Unfortunately, there is little incentive for other nations to enter into our more restrictive management framework, and U.S. councils should have more flexibility in these situations when setting ACLs in U.S. waters.

Fishery Data and Funding

Ensure that science-based requirements of the Act are adequately funded.

The 2006 ACL requirements have increased the demand for assessment products from the regional science centers. As previously described, the effectiveness of the regional councils is integrally linked with the availability of quality fishery data at adequate frequencies. In particular, additional scientific resources are needed to bring data-poor stocks up to an adequate assessment level.

Expand cooperative research programs and establish dedicated sources of long-term funding.

Cooperative research programs provide a means to improve the accuracy of stock assessments while engaging stakeholders in the research process. Despite the importance of these programs, many of them face inadequate or uncertain funding from year to year. The Mid-Atlantic Council has funded the Northeast Area Monitoring and Assessment Program (NEAMAP) through its Research Set-Aside (RSA) program for the past 6 years, but the allocation of these funds solely to NEAMAP prevents us from funding other projects that address our annual research priorities. NEAMAP has become a core monitoring program in the Mid-Atlantic and its funding should be secured through the next reauthorization, using Saltonstall-Kennedy funds or other dedicated funding sources to ensure its future. The reauthorization should include provisions for funding of cooperative research programs around the country.

Include explicit authority for the funding of monitoring and observer programs.

The councils depend on having effective monitoring and reporting systems in place to help inform catch and bycatch estimates and to detect potential problems in a fishery as early as possible. Not only do these programs require adequate funding

to operate, but they require consistent funding from one year to the next. Given the critical nature of these programs, an amendment to the Act should include specific provisions securing long-term funding for necessary monitoring and reporting programs. Amendment 5 to the New England Fishery Management Council's herring management plan included innovative cost-sharing mechanisms to support observer coverage that were disapproved by NMFS. Councils should have a broader range of options for funding observer coverage to ensure that U.S. fisheries are adequately monitored, including fisheries that are not managed under Limited Access Privilege Programs (LAPPs). The reauthorization should include cost-sharing options for observer coverage.

Ensure that all mandates are sufficiently funded.

Congress should avoid adding any new unfunded mandates and should ensure that appropriate funds are available for the councils to meet the existing requirements of the Act. Continued investment in stock assessment capacity is of paramount concern in this reauthorization process.

Social and Economic Stability

Allow the councils greater flexibility to consider social and economic factors in the development of management measures.

Although the councils have always incorporated socioeconomic information into their decision-making processes, the use of such information has been limited largely to describing the likely impacts of potentially restrictive management measures on revenues or participation, rather than being used to improve participants' socioeconomic well-being. The Act should be amended to include specific social and economic objectives that would encourage proactive analysis of socioeconomic impacts.

Establish and fund a national seafood certification for U.S. fisheries managed under MSA.

The U.S. has one of the strongest fishery management programs in the world, and several councils have voted to support establishing a U.S. fisheries sustainability certification in the next reauthorization This issue deserves to be addressed—U.S. fishermen fishing under today's Magnuson Act should be standing tall among their international peers. In a market transformed by globalization, the sustainability of U.S. fisheries needs to be affirmed, and U.S. fishermen and processors should be able to identify and label their products as fish that were harvested responsibly and sustainably under the gold standards of the Magnuson-Stevens Act. A public affirmation of the core strengths of the U.S. management system would be an important step to facilitate education, awareness, and marketing for the benefit of U.S. fisheries.

Data Confidentiality

Revise data confidentiality requirements to facilitate informed decision making.

Several councils have experienced significant problems associated with the issue of data confidentiality. In some cases in the South Atlantic, it is preventing the Council from being able to conduct accurate stock assessments. In other case, it prevents councils from making informed management decisions. Mid-Atlantic tilefish allocations were made without the benefit of knowing what the allocations would be within each tier due to the confidentiality provisions, and New England has encountered similar obstacles. In some cases, such as the Mid-Atlantic's effort to protect deep-sea corals, the best available information is coming directly from fishermen, and the councils should be able to use this voluntarily supplied data as long as it is presented without direct attribution to individuals.

Referendum Requirements

Clarify referendum requirements.

The Gulf Council indicates that Section 407 would benefit from revisions to streamline and clarify the referendum requirements for Red snapper Individual Fishery Quota (IFQ) program and provide a consistent set of requirements for referenda across Gulf of Mexico IFQ programs.

Safety at Sea

Allow the U.S. Coast Guard to access data from Vessel Monitoring Systems (VMS) for search and rescue efforts.

Section 402(b)(1)(H) states that fisheries information submitted to the Secretary can only be shared with the Coast Guard in support of fisheries enforcement and homeland and national security missions. Safety at sea is a concern of great na-

tional importance and the Act should be amended to allow the U.S. Coast Guard to access VMS data for search and rescue efforts.

Governance and Representation

Allow Council liaisons in the Northeast Region to vote and make motions.

It was clear from our Council's port meetings in southern New England that fishermen in those states desire some form of representation on the Mid-Atlantic Council. Similarly, the Mid-Atlantic lands over $200 million of sea scallops annually, and our representation is limited to participation on the New England Scallop Oversight Committee.

This issue is expected to be exacerbated by ongoing and substantial shifts in fisheries populations in response to changing ocean temperatures. I submit that vesting the liaisons of both councils with motion-making and voting rights in this reauthorization would resolve this issue in the interest of both councils.

Recreational and Subsistence Fisheries Management

Revise ACL/AM requirements to accommodate catch estimate uncertainty in recreational fisheries.

The 2006 reauthorization required ACLs and AMs for commercial and recreational fisheries. The implementation of recreational AMs, including paybacks for overages, has been difficult in some regions. The Mid-Atlantic Council recently completed an Omnibus Amendment that involved a comprehensive review and overhaul of our recreational AMs. Our recommendations were designed to enhance stability of recreational fisheries by improving alignment of our management strategies with the statistical characteristics of the recreational catch estimates. Councils should not be required to manage their recreational fisheries beyond the limitations of their available catch data, and the Act should support recreational AMs that are reasonable relative to the data.

Add explicit definitions of recreational and subsistence fisheries.

The Western Pacific Fishery Management Council recently endorsed the following definitions recommended by its SSC:

RECREATIONAL FISHING—Fishing undertaken for sport and pleasure, in which the fish harvested, in whole or in part, do not enter commerce or enter commerce through sale or barter or trade.

SUBSISTENCE FISHING—Fishing undertaken by members of a fishing community in waters customarily fished by that community in which fish harvested are used for the purposes of direct consumption or distribution in the community through sharing in ways that contribute to food security and cultural sustainability of the fishing community. For this purpose, the term "sharing in the community" shall be defined regionally by the RFMCs.

State Waters' Catch

Promote consistency in the management of interjurisdictional fisheries.

Managing state waters' catch poses unique challenges around the country under the new ACL requirements. In the Mid-Atlantic region, most fisheries that have significant state waters' catch components are managed jointly with the ASMFC. The challenge in these plans is the fact that the enabling legislation for the ASMFC, the Atlantic Coastal Fisheries Conservation and Management Act, does not have the same requirements, standards, or provisions for review. However, in recent years, the ASMFC and the Mid-Atlantic Council have been able to reach consensus on quotas and associated management measures through our joint meetings.

Similar challenges exist in other regions, and the councils should not be forced to disadvantage their federal fisheries if management in state waters results in an ACL overage. Effective state involvement is essential to successful interjurisdictional management, and resources should be made available to the councils and the states to achieve coordinated management outcomes.

Ecosystem-Based Fishery Management

Address possible conflicts between requirements of the MSA and the implementation of ecosystem-based management.

The Mid-Atlantic Council has taken several significant steps toward a more ecosystem-based approach to fisheries management since the last reauthorization. Our Council is pursuing an incremental, evolutionary strategy to incorporate species interactions, environmental conditions, and habitat associations into our management decisions. The process should ultimately enhance the ecological sustainability of our managed fisheries, but it may be necessary to fish some species at levels

above MSY and other species well below MSY in order to achieve ecosystem level objectives. The act should be clear on these issues and the ecological objectives in the Act as they relate to the definition of OY.

I sincerely appreciate the opportunity to testify before your committee, and I look forward to your questions.

The CHAIRMAN. As a programming note, we are going to have a ceremony at 11 a.m., which is a half hour from now. It is not 4 p.m. as that clock says back there. I don't know what happened, so we anticipate with the number of Members here, we will probably go through the questioning period of this panel and probably, depending on the time, will probably break right after that, so just to keep Members apprised.

I will recognize myself, and I just have a couple questions, and it is a question to all of you. In all of your testimony, you somewhat alluded to this, but I just want to ask this question for the record. We will start with you, Dr. Sullivan, and go down the line.

Do you believe that the current Magnuson-Stevens Act works? Yes or no?

Dr. SULLIVAN. Yes, I think it is doing a good job.

The CHAIRMAN. Mr. Rauch?

Mr. RAUCH. Yes, I think the economic numbers represented indicate that it is working nationally.

The CHAIRMAN. OK. Mr. Robins?

Mr. ROBINS. Yes, sir, I think it is the strongest system in the world, and I think it can be improved.

The CHAIRMAN. I thought you said that in your opening comments, so I just wanted to reiterate here.

Another question. Do you support, then, a change in the Magnuson-Stevens Act to allow councils more flexibility in rebuilding overfished fisheries or "overdepleted." Might be a pretty good word?

Again, Dr. Sullivan, we will start with you.

Dr. SULLIVAN. If the flexibility is strategic, yes.

The CHAIRMAN. You say it is a key part?

Dr. SULLIVAN. If it is strategic.

The CHAIRMAN. If it is strategic, OK. Yes. Mr. Rauch?

Mr. RAUCH. The Administration has not taken a position on whether or not the Act should be changed. We are looking through our own regulatory processes to see if we can use the regulations to increase some of the flexibility inherent in the Act, and we are certainly open to discussing the issue about whether tests should be changed with this Committee, but we have not taken a formal position yet.

The CHAIRMAN. Mr. Robins?

Mr. ROBINS. Yes, sir, I think the discontinuity at the 10-year mark in the rebuilding requirements need to be resolved. I think some very carefully targeted flexibility would facilitate better decision making and a better and more full evaluation of social and economic tradeoff associated with different rebuilding options.

The CHAIRMAN. This kind of follows on that question. Then I will just ask Dr. Sullivan and Mr. Robins. Would both of you believe that you can make some modifications without, in your mind, jeopardizing what the success of the Magnuson-Stevens Act has been?

You believe that we can make those modifications? We will start with you, Dr. Sullivan.

Dr. SULLIVAN. Yes, I would say so. In fact, in our report, I think we outline some things that are easy to do and then there are some other things a little bit harder to do that would take longer term.

The CHAIRMAN. OK, Mr. Robins?

Mr. ROBINS. Yes, I believe they could, and in my opinion, you don't want to take the ambition out of the Act. I mean, I don't think we should set aside stock rebuilding as an objective. On the contrary, it should remain an objective, but the way we go about it I think should more fully incorporate the evaluation of the social, economic, ecological, biological aspects in the decisionmaking process, and I think some degree of flexibility is needed to better incorporate those things.

The CHAIRMAN. And the last question that I want to have again for the record, and I mentioned this in my opening statement about the—I won't say controversy or discussion about the rebuilding stocks. Do you believe that we should make modifications in the rebuilding provisions within the Act? Dr. Sullivan?

Dr. SULLIVAN. Yes, I think we should. I think the focus on fishing mortality as opposed to biomass is a key one.

The CHAIRMAN. OK.

Mr. Rauch?

Mr. RAUCH. We have not taken a position on that, but I do believe that as we said there are a number of regulatory changes that may be useful to take, and we would certainly welcome that discussion about whether or not the statute should be amended.

The CHAIRMAN. Mr. Robins?

Mr. ROBINS. Yes, I believe the maximum timeline could be modified, and I think that change is fairly evident as an opportunity. What is less clear I think is what sort of control rules you might put in place during stock rebuilding if you are going to focus more on the rebuilding rates rather than the targets. I think at the outset of a rebuilding plan you still have to have targets for the stock size, but it seems that there could be more flexibility to deal with environmental contingencies and the biological characteristics of the stock as you go forward. Where we have had a lot of problems has been when you are 5 or 6 years into a plan and suddenly the performance departs from what was projected, and then you have to crank down or ratchet down fishing mortality. I think there ought to be more opportunity as environmental conditions change or in response to the biological forms of the stock to reevaluate the fishing rates and the schedule by which you are rebuilding the stock.

The CHAIRMAN. Dr. Sullivan, just to follow up, I think you, when I asked you about the flexibility in the rebuilding, you said strategically as part of your response, just elaborate on that for a moment if you would.

Dr. SULLIVAN. Yes, I wouldn't throw the baby out with the bath water. I mean, I think there is a lot of good things in the plan, and I think the report suggests a couple different things that might be adjusted, so focusing on rates rather than on biomass I think is an important one, and I think a lot of those things might allow one to avoid the problems. Ten-year plan may be some issues associ-

ated with that. I think there could be some minor adjustments that could be helpful there.

The CHAIRMAN. OK. If you want to add more to that or if that is part of your report, then obviously, we will have that as part of the record. Thank you very much.

I recognize the distinguished Ranking Member, Mr. DeFazio.

Mr. DEFAZIO. At this point, Mr. Chairman, I would yield to Mr. Pallone.

The CHAIRMAN. I will recognize Mr. Pallone then.

Mr. PALLONE. Thank you, Mr. Chairman.

I have a question initially for Dr. Sullivan. As many on this Committee know, since the 2006 amendments to the Magnuson-Stevens Act were adopted, I have been advocating for flexibility to be incorporated into the Act, and I have called the 10-year rebuilding timeframe too rigid and arbitrary.

So, Dr. Sullivan, your report states, and I quote, that the requirement to rebuild within 10 years if biologically possible eliminates certain management options from consideration that could lead to greater social and economic benefits while still supporting stock recovery in the long run.

So I just had two questions. First, could you explain what the report means when it says "if biologically possible" and then also if you could describe to what extent you found that the current rebuilding timeframe, if at all, allows fisheries managers to adjust if it becomes clear that a stock cannot be rebuilt in 10 years or if rebuilding in that timeframe means severe social and economic damage to coastal communities?

Dr. SULLIVAN. I will give that a try. It is quite a question. So in terms of biological, obviously, there are other constraints besides fishing on whether stocks can recover, so climate is one and recruitment and so forth are another. So, even though we might do all in our capacity to, let's say, reduce fishing or do other kinds of ameliorating actions, it may still not be biologically possible for the stock to recover.

Your second question was——

Mr. PALLONE. Well, basically if you describe to what extent you found that the current rebuilding timeframe, if at all, allows fisheries managers to adjust if it becomes clear that a stock can't be rebuilt in 10 years or if rebuilding in that timeframe means severe social and economic damage to coastal communities.

Dr. SULLIVAN. Right. So, currently there are some provisions that allow that, which is good. Part of the things that we outline in the report suggest that there may be ways to avoid having to do rebuilding altogether if we can. Not in all circumstances, and certainly if we can reduce fishing rates to a point where we avoid having to do a rebuilding plan, that is really good. Certainly some areas of the country are doing that already; other areas not so much. And what happens is when you kick into the rebuilding phase, suddenly, really draconian actions need to take place.

More broadly, in terms of economics, currently the plan is focused on biology, which I think is probably a good thing, but there are some economic options that could be looked at to give alternative mechanisms for allowing rebuilding other than, let's say, a fixed schedule. So that is where that comes in.

Mr. PALLONE. All right, thank you so much. Let me ask Rick Robins, as the Chairman of the Mid-Atlantic Council, do you agree with the NRC report's findings that the 10-year timeframe eliminates your ability to pursue management measures that will support the health and rebuilding of stocks while also leading to greater social and economic benefits? And then I guess if Congress were to add—well, why don't you answer that and then I will go to the flexibility issue.

Mr. ROBINS. Thank you. I believe it does limit our ability to consider an adequate range of options. If we have a stock, for example, that can be rebuilt within 9 years, there is really no contrast among the options there, and so eliminating that I think would allow for maybe a broader consideration of those other factors, and then again there is a discontinuity of the 10-year mark that is highlighted by the report. I think that can be fairly easily resolved.

Mr. PALLONE. OK. So if Congress were to add flexibility into the law, which is obviously what I advocate, are there problems created by the 10-year rebuilding requirement that you would be better equipped to address?

Mr. ROBINS. I think the 10-year rebuilding requirement should be superseded by a better set of metrics. So we had discussed this before, I think, through the Managing Our Nation's Fisheries discussion, and that is also referenced in the report, but the idea of changing the maximum rebuilding timeline to what is essentially the minimum rebuilding timeline plus a mean generation would at least better consider the biological characteristics than what we have now.

Mr. PALLONE. OK, thanks so much.

Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman.

I recognize the gentleman from Louisiana, Dr. Fleming.

Dr. FLEMING. Thank you, Mr. Chairman.

In listening to your testimony today from the panel, I hear a consensus that the Magnuson-Stevens Act is good, it is working, but that it tends to be a bit too centralized, maybe too calcified, lacks some of the more dynamic parameters necessary for measurement and maybe upon which to take action, and certainly that is illustrated by a question I am going to ask here.

Fishermen in the Gulf are getting whiplash from all of the changes in stocks and seasons. The latest we hear is that NOAA is approving a 14-day fall season for recreational fishermen. This is certainly welcome, but it goes back to two basic questions: How many fish are out there, and how many are being caught? NOAA has been consistently failing to answer those questions. Earlier this year, NOAA revised their quota from 8.5 million pounds to 13 million pounds. Now, NOAA is claiming that recreational fishermen have exceeded their quota significantly, all thanks to the estimates provided by NOAA's new model.

So, Mr. Rauch, management of gulf and red snapper this year has been a disaster for all Gulf States, with each State having different needs and fishing patterns. Do you have a plan that would properly manage recreational fishing of red snapper in the Gulf of Mexico?

Mr. RAUCH. Thank you for the question. I think the answer to that question is as complex as the question. The Gulf Council is currently working on a plan that would support regional management, which would allow the States a degree of flexibility within an overall Federal construct to meet their individual State needs, and we are very supportive of that plan being developed. The Gulf Council is scheduled to discuss this in October, and if they take final action in October, it is possible we could put such a plan into place for next year. I completely agree with the opening premise that the fishery is being hampered by a lack of stability. We collectively need to find a way to provide, at least on the recreational side, better certainty as to the seasons and the catch so that we are not constantly in a position where the fishermen don't know how many days they are going to fish or when they are going to fish. Particularly with the charter fishery, you need advance notice so you can plan and advocate your trip. So I think that we all believe in the same goal.

Dr. FLEMING. And if I could add to that, when you talk to the charter fishermen, you are talking about as much as 6- or 12-month advance notice in terms of booking hotels. I mean, this of course is a seasonal annual type of business, and you can't go by a 2-week notice or a 1-month notice. You may open it up, but you have no customers to go out there for recreational fishing. So we definitely need transparency, continuity, and plenty of advance notice.

Mr. RAUCH. I agree, and that is our shared goal. I think the States also have that goal. We need to get a more stable management regime in place. I am very hopeful that the council will take final action on this regional plan.

Dr. FLEMING. Well, let me ask you this question because I am going to run out of time. If you would describe how NOAA goes about measuring the stocks in the landings.

Mr. RAUCH. So the way that we measure the stocks for red snapper in general is we work with the States to come up with an assessment technology both in terms of sampling design and in terms of how you deal with the answer. So it is a collaborative effort. On the recreational side, the biggest issue here has been on the recreational side, estimating the recreational catch. We have had a lot of difficulty doing that. Recreational catch is much harder to estimate than commercial catch. Congress in its last reauthorization required us to revise the way that we did that. We are in the process of doing so. That continues to be a work in progress as we continue to discover biases that were inherent in the prior old sampling regime.

Dr. FLEMING. So are you open, then, to some of the suggestions here today that we go after other approaches or additional parameters and more flexibility on a regional basis?

Mr. RAUCH. I think we are certainly open to more flexibility in the interest of trying to provide a stable fishing opportunity. We have focused on overfishing for a long time. Now that overfishing is largely solved, we need to start focusing on getting the economic opportunity, the economic development out of that, and there is a lot of ways to do that, and I am happy to work on ways, whether

that is more flexibility, more data collection, any of those opportunities. I think that is where we need to focus next.

Dr. FLEMING. Thank you.

I yield back.

The CHAIRMAN. I thank the gentleman, and his time has expired and I recognize the Ranking Member, Mr. DeFazio.

Mr. DEFAZIO. Mr. Rauch, could you tell me, how could we get better data? I mean, we have sort of a set of scientific data, we have a set of experiential data from those who fish, but they often don't seem to be integrated optimally. How could we do that?

Mr. RAUCH. On one hand, the data collection is a budget issue. If you have——

Mr. DEFAZIO. It is what?

Mr. RAUCH. It is a budget issue. If you have more ship time, you have more scientists, you have more surveys, you can get better data. Both the Administration and Congress has supported, even through declining budget cycles more stock assessments. So every year Congress has approved and the Administration has asked for more funds for stock assessments. That helps with the better data. We are also looking at better data platforms. One of the biggest concerns right now is the ability to link environmental parameters, such as changing temperature and acidification in the ocean to fish response. We believe that in the Northeast, that is one of the factors that is impacting the cod fishery up there, and it is very difficult to get a handle on with changing environmental parameters, how are the fish going to respond, so we are working with our other partners at NOAA and in academia to try to get those better connections, and we are looking at better sampling technologies so that maybe we don't have to go out and catch every fish, can we look at unmanned underwater vehicles, sonar techniques and other kinds of things to better get a sense as to how many fish are out there. It is a difficult question, there are not quick answers, but we are working on all those fronts to get better data.

Mr. DEFAZIO. OK. In the Pacific Northwest, testimony that we will get later from Mr. Moore, and I would just ask this panel about it, it goes to Mr. Pallone's points about flexibility, our Ninth Circuit Court made a judgment saying that the time period must be as short as possible, although the agency may take into account the status and biology of the overfished species and the needs of the fishing community. It seems to me that the interpretation of the court, if accurate, makes this very inflexible. Must be as short as possible, and it gives an example of one species where it could have been rebuilt in the same year by estimates, but a few months later, and therefore, because of the court decision, we were bound to go for the as short as possible option, which significantly constrained fishing that could have gone forward and had declared recovery the same year. Wouldn't you admit that does need a little bit of perhaps statutory change?

Mr. RAUCH. Well, the government lost that court decision.

Mr. DEFAZIO. What is that?

Mr. RAUCH. The government lost that court decision, so we were advocating for a broader, more flexible approach to interpreting that language.

Mr. DEFAZIO. OK. So, But earlier when you were asked I believe by the Chairman, I mean, you said the Administration didn't have a position on statutory changes. It seems that we are now pointing toward a needed statutory change because your own opinion has been found wanting by a court.

Mr. RAUCH. As I indicated, we did not take a position on statutory changes. I will say that provision has been very difficult to apply. It is very hard to determine. The standard is, as soon as possible, taking into account these things. The Ninth Circuit seems to suggest that one way to do that is to have a bicatch-only fishery. I know that the testimony from Mr. Moore suggests that you allow just a few fish over the level that would have devastating commercial community impacts. I don't think we want to manage that close to the edge, nor do I think realistically we can manage that close to the edge. Our data is not sufficient to just get over the level of community impacts. So it has been difficult to address. We have addressed it. I am not prepared to say that it should be a statutory change, but I will agree with you that it is a difficult provision to implement.

Mr. DEFAZIO. OK. So how about as short as practicable?

Mr. RAUCH. That would provide more flexibility.

Mr. DEFAZIO. That is as close as I am going to get to support I think. Just one other quick question. In the National Academy of Sciences study, they did come up with a couple of examples where stocks were placed in overfished status, and then it turned out that they weren't, but they do go on to say, Well, then they became even more abundant, and I think that goes back to the data issue. Yes?

Mr. RAUCH. Yes, I think that it does indicate that fisheries science is good, in the U.S., it is the best in the world, but there are still a lot of uncertainties, particularly when you have environmental parameters like temperature change in the ocean or acidification in the ocean, which we have trouble as fishery managers predicting and controlling. So many times we find out that there was a different impact on the fishery than what we thought. I do think that that argues for us being as flexible as we can to try to recognize that when we set biological targets 10 years ago, today our understanding may be completely different as to what is the appropriate target.

Mr. DEFAZIO. OK, thank you.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank the gentleman.

The chair recognizes the gentleman from Colorado, Mr. Tipton.

Mr. TIPTON. I have no questions, Mr. Chairman.

The CHAIRMAN. Mr. Huffman.

Mr. HUFFMAN. Thank you, Mr. Chair, and my thanks to our panel today.

I want to ask Mr. Rauch about one species, one of the many species that are addressed by the Magnuson-Stevens Act, and that is sharks. We have a Federal Shark Conservation Act separately that permits removal of shark fins at sea. California and many other States, as you know, have passed State laws that prohibit the sale and trade of detached shark fins. We believe, the State of California believes, that its law is complementary to Magnuson-Stevens and to Federal law. There has been some litigation recently on that

and the Ninth Circuit recently reaffirmed, but there is no conflict between California's shark fin ban and the Magnuson-Stevens Act. And yet your agency has previously rolled out a draft regulation that would assert Federal preemption of all State shark fin bans, including States like Illinois that don't even have shark fisheries, so very hard to imagine that there could really be a conflict there. I know that you have said that the Federal position is under reconsideration, that you are taking comment. We now have a Ninth Circuit ruling rejecting the Federal preemption argument. Can you give me an update on where that stands, please?

Mr. RAUCH. Yes, thank you for the question. The Magnuson-Stevens Act does assert statutorily exclusive Federal authority over fishing and sovereign rights to fishing but does allow the States to regulate under certain limited circumstances, and the way that we interpret that is as long as there is not a direct conflict, those can work, and so it is a factual question with any of the 11 jurisdictions that have restrictions on possession of a type of fish product whether there is an actual conflict. We are also required by an Executive Order before we take final action in a rule to consult with those States to try to avoid it because nobody, neither the Federal Government nor the State government, wants to be debating this issue in court, and we would much rather have an interpretation where we are consistent and trying to achieve the same objectives. So I have been in discussions personally and with the NOAA general counsel, with the State of California Attorney General's offices, and with the Attorney Generals' Offices for 10 of the other 11 jurisdictions. I have yet to reach out to Illinois. Our goal is to try to find an interpretation in which we would determine that there is no need to raise any preemption arguments, and I am hopeful with California that, although those discussions are still preliminary, that we will end up with such a case.

The statute does not assert that it preempts all of those State laws. It asserts that preemption is a possibility, and it is a factual discussion, and so what I would like to do is assuming that I can find a scenario in which we can say that the United States is not concerned about preemption issues with any of these States, we could put that as guidance in the regulation so that we could avoid this situation in the future. I am hopeful that we will find a resolution which would allow both the State laws and the Federal laws to be looked at compatibly, and we are still working on that.

Mr. HUFFMAN. I appreciate that very much, and I will thank you for your answer.

The CHAIRMAN. Does the gentleman yield back his time? The gentleman from Virginia, Mr. Wittman.

Mr. WITTMAN. Thank you, Mr. Chairman.

Gentlemen, thank you so much for joining us today. Rick, I want to begin with you. You and I have talked a lot about data-poor stocks and the challenges that they face for our fisheries managers. Tell me, in your perspective and looking at Magnuson-Stevens reauthorization, how through the reauthorization can we help improve the quality of science and address these data-poor stocks? Can you give us a little more on your perspective on that?

Mr. ROBINS. Certainly, Mr. Wittman. I think first and foremost the goal should be to move these data-poor stocks into a situation

where they have an adequate quality stock assessments, and doing that in our region I think can be done strategically, but I think, in the long run, we need to do that by enhancing cooperative research. We have some species that are data poor because they are model resistant, and so you have to get out of some of these multispecies surveys and do some specific work to resolve some of those outstanding scientific questions, so first and foremost I think we have to do that, and one of the data needs in our region in the Mid-Atlantic, at least, is with an E-map survey, because we have been funding that very tenuously with our research set-aside funds, and that has become a critical and ongoing piece of the monitoring program in our region. It complements the work of the Bigelow in the Northeast, and that is something I think we need to secure for the future.

But with respect to the reauthorization, as we look at the management of data-poor stocks, I think the councils do need more discretion in the management of those, in other words determining when ACLs and AMs are the most effective strategy for dealing with a data-poor stock, whether it is small scale or incidental. There are certain situations where ACLs are being imposed on data-poor stocks, and there is simply not enough data to support establishing an effective ACL or an appropriate ACL, and so you see as a result of that a lack of confidence I think in the management process within those fisheries, and just because they are small scale doesn't mean they are not important. They may be very important to Pacific communities. So this is an important area to consider through the reauthorization.

Mr. WITTMAN. I am going to pick up on your comment on stock assessments, and obviously, those being used to set ACLs and AMs. Give me your perspective. You talk a little bit about the lack of data and science affecting that. Tell me, give me an example of how that would negatively affect the element of not having a proper stock assessment, and then how does that ripple down the chain as far as decisionmaking with management decisions?

Mr. ROBINS. Well, the way the process works, the data usually go through the Northeast Fisheries Science Center in our region at least. They will go to a regional science center. They then come to the staff. You may have a plan development team that considers the data. The staff evaluates it. They make a quota recommendation through that process. That goes to the scientific and statistical committee. Now if you come through that process and you don't have an adequate stock assessment, then the SSC is left with a situation where they may be just evaluating historical catch. And frankly, some of our fisheries have catch history data that are quite lacking, and that varies around the country, but there is some fisheries that have very poor historical data, even on catch. Now that is changing, and now I think we are all moving toward the point that we have much better catch data, at least on our commercial fisheries, and obviously, there are ongoing reforms MRIP to ensure that we have better recreational catch data in the future, but when the SSC is left in those positions, often times they are making decisions on an ad hoc basis, and the result is unpredictable, and that can contribute to a loss of stability in those data-poor fisheries.

Mr. WITTMAN. I think that is a great point about the lack of catch data there or the richness of the catch data. Let me ask you this: There is a lot of discussion about how do we do all we can to collect that data, and obviously, there is other points of data out there to collect, especially with fishermen. Can you give me your perspective on what the current MSA may limit you as far as being able to gather that data from fishermen? And then what should we consider in the current reauthorization to maybe expand that and make sure we are including all the different sources of data, whether it is fishermen or other institutions or other elements that are critical to make sure we do the proper stock assessments to make the proper decisions?

Mr. ROBINS. Well, there are a couple points there, and one would be the fact that there are some provisions with respect to data confidentiality that pose some problems around the country. For example, if we wanted to go collect voluntarily supplied data from fishermen and then use that in management decisions, that may in fact be the best available data. For example, in our deep sea coral amendment, we are considering how to get that data that fishermen want to provide into the process, but data confidentiality concerns come up, and so that is one issue. The other, though, would be to more explicitly seek to bring in voluntary sources of data, so, for example, with recreational fishermen, a lot of them want to participate in providing recreational catch data, but there is not a mechanism fully for incorporating that into the Federal management process. There are a few State programs around the country that collect voluntary angler data, and self-selecting groups like that can have statistical limitations, but I think there are clearly opportunities to do more to collect data in that type of way that could be used to perhaps benchmark or ground truth some of the recreational catch estimates that we have.

Mr. WITTMAN. Very good. Thank you, Mr. Chairman, I yield back.

The CHAIRMAN. I thank the gentleman. I made an announcement earlier that because of the ceremony at 11 a.m. that we would break, but because of the interest of Members here in the issue at hand, I have decided that we will just keep going, and obviously, Members if they want to go they can.

The Chair recognizes the gentleman from California, Mr. Cárdenas.

Mr. CÁRDENAS. Thank you very much, Mr. Chairman.

Just very, very quickly. When it comes to this Act, when invasive species, is that a different environment of law that interjects with this one or does this actually take that into account primarily as well, not just overfishing, et cetera, and reduction of species, but invasive species tend to have a tremendous detrimental impact, don't they, in certain areas?

Mr. RAUCH. Yes, sir. I will take that question. The Act does not refer to invasive species, per se. We do know that as the Academy study indicating, we need to take into account more of the ecosystem considerations. When you are determining both in management regime and the stock status and what is going to happen, invasive species are one of the kinds of things that might limit a stock productivity. We have historically thought that there was a

very linear relationship. If you cut fishing, the fish populations will grow, but now there are a number of environmental factors, and invasive species being one, but the Act does not directly talk about invasive species as—it is not mentioned in the Act.

Mr. CÁRDENAS. Thank you. I yield back my time.

The CHAIRMAN. The gentleman yields back his time.

The gentleman from California, Mr. McClintock.

Mr. MCCLINTOCK. Thank you, Mr. Chairman.

My previous district included the Klamath River. When I was first invited up there to take a look at it, the Administration is pushing to tear down four perfectly good hydroelectric dams because of what they describe as a catastrophic decline of the salmon population on the Klamath, and I said, Well, that's terrible, how many are left. Well, just a few hundred. I said, That is awful, why doesn't somebody build a fish hatchery? Well, it turns out somebody did build a fish hatchery at the Iron Gate Dam. It produces 5 million salmon smolts every year; 17,000 return annually as fully grown adults to spawn. The problem is we don't include them in the population counts, and then to add insult to insanity, when they tear down the Iron Gate Dam, the Iron Gate Fish Hatchery goes with it, then you do have a catastrophic problem. Do you count hatchery fish in your population counts?

Mr. RAUCH. Thank you for the question. This is a question related to the Endangered Species Act and not the Magnuson-Stevens Act, so——

Mr. MCCLINTOCK. No, I understand, but my point is that fish hatcheries, appear to me, to play an absolutely central role in assuring abundant populations of all species, including those regulated under Magnuson-Stevens.

Mr. RAUCH. So, for Magnuson-Stevens Act purposes, when we assess the overall number of salmon in the Pacific Ocean, much of what is harvested commercially are hatchery caught or hatchery bred salmon.

Mr. MCCLINTOCK. Yes.

Mr. RAUCH. And so for Magnuson-Stevens Act purposes, there is not a distinction when we are looking at our targets, our volatile targets between hatchery and wild fish.

Mr. MCCLINTOCK. OK.

Mr. RAUCH. There is a distinction when we are talking about the Endangered Species Act and what is the population we are trying to preserve for the Endangered Species Act. The Endangered Species Act discusses that populations must be populations that are supported in the wild, and the interpretation that we have long held with the fishery service is that means that they are in the wild for the majority of their life cycles, and that means they need to be born in the wild.

So, for the stocks that have had hatchery parents that are born in the wild, those are considered part of the population, but we do not often consider hatchery fish the same fish as a wild fish.

Mr. MCCLINTOCK. Which is silly, of course, as one biologist pointed out, the principle there. The only difference between a hatchery fish and a fish born in the wild is the difference between a baby born at home and a baby born at the hospital. All right. And the same forces of natural selection act on both hatchery and wild born

fish, but the principal thrust of my question with respect to Magnuson-Stevens is what are we doing to promote hatchery production? Again, to me, this seems to be the key to assuring abundant populations of those that are regulated under Magnuson-Stevens.

Dr. SULLIVAN. If I may respond to that. So, I think you raise an important point, and there is a kind of tension that exists in the field between hatchery raised and natural systems, and I think one of the goals behind looking at the natural system is trying to work in balance with the ecosystem, as opposed to replacing the ecosystem. So if we might look at rice patties going in, just take out the ecosystem and you put in your own.

Mr. MCCLINTOCK. No, no——

Dr. SULLIVAN. In many ways, hatchery is sort of like that.

Mr. MCCLINTOCK. That would require draining the ocean, which is—as Will Rogers once pointed out, is a difficult problem doing that sort of detail, and he wasn't a detail man.

Dr. SULLIVAN. Yes.

Mr. MCCLINTOCK. Nobody is suggesting draining the ocean. What we are suggesting is supplementing the populations with hatchery born fish to assure abundant populations, and from what I am hearing if by you talking around the question is you are not doing anything on hatchery.

Dr. SULLIVAN. No, there are issues with hatchery——

Mr. MCCLINTOCK. What are you doing?

Dr. SULLIVAN [continuing]. In terms of genetics, for example. Fish tend to be pretty uniform genetically and that makes them susceptible to a lot of what like our agricultural products are likely to be susceptible to.

Mr. MCCLINTOCK. Well, again, you are not answering the question. What are you doing to promote hatchery production of fish?

Dr. SULLIVAN. I am not.

Mr. MCCLINTOCK. Then the answer I seem to be getting from you is damn near nothing.

Mr. RAUCH. Well, the Federal Government does support hatchery programs for fish stocks around the country. What the idea is that the hatchery fish can be done. The National Marine Fisheries Service does not have a hatchery program within itself, but the Interior Department runs one. Many States run hatchery programs that we support.

Mr. MCCLINTOCK. And quite successfully as well.

Mr. RAUCH. I would agree.

Mr. MCCLINTOCK. Mr. Chairman, if we do decide to reauthorize this Act, I would hope that a principal component of the reformed act would be the promotion of hatchery production of all the species regulated by the Act.

I yield back.

The CHAIRMAN. The gentleman yields back his time.

I want to thank all of the members of the first panel here. As happens frequently, sometimes another issue comes up with a Member, and they will let you know or ask you to elaborate on a question. That may or may not happen. If that happens, I hope you would respond in a very timely manner.

So, with that, I want to dismiss the first panel and while that dismissal is happening, ask the staff to prepare for the second panel.

OK. I want to thank the second panel for joining us. By way of introduction, we have Dr. Ray Hilborn, Professor of the University of Washington School of Aquatic and Fishery Sciences and went to the university that beat Boise State badly the first round, I might add. There is nobody from Idaho here, so nobody cares, I guess.

We have Mr. Rod Moore, Executive Director of the West Coast Seafood Processors Association. Mr. Vito Giacalone, Policy Director of the Northeast Seafood Coalition. Mr. Jeff Deem, Recreational Fishing Alliance. Dr. John Bruno, Professor of the Department of Biology at the University of North Carolina at Chapel Hill. And Mr. Chris Dorsett, Ecosystem Conservation Programs with the Ocean Conservancy.

I think you were all in the audience when I mentioned how the timing lights work. Your full statement will appear in the record, but I would ask you to keep your oral argument within the 5-minute window, and the way that works, for instance, when the green light goes, you are doing very well, and when the yellow light comes on, that means you have 30 seconds remaining and I hope you would wrap it up before the red light comes, and I will try to be flexible, but we do want to keep this as much on time as we can.

So, with that, Dr. Hilborn, you are recognized for 5 minutes.

STATEMENT OF DR. RAY HILBORN, PROFESSOR, UNIVERSITY OF WASHINGTON, SCHOOL OF AQUATIC AND FISHERY SCIENCES

Dr. HILBORN. Thank you very much, Mr. Chairman, Ranking Member and other members. If I could have the next slide please.

I would like to basically talk about evaluation of how well we are doing, and the gist of my presentation is that we have defined U.S. fisheries management a success almost solely in terms of rebuilding overfished stocks, and to some extent, I believe we have lost sight of the intentions of the Act, in my testimony, I go into this more in my written testimony in more detail.

But basically, I think it is pretty clear from the Act that we want to assure benefits from employment, food supply, and revenue. In order to do that, we have to maintain the biological health of the fish resources, and there is certainly a concern 20 years ago that overfishing was a major threat to the sustainability of our resources.

Next slide, please.

But I would note that, at present, the only report to Congress is on overfishing, and stopping overfishing is merely a means to an end, and no, it does not systematically report how well we are doing on delivering benefits to the United States, in particular, what is impeding us from producing more benefits.

Next slide, please.

Since 2007, an international group of scientists has formed a data base on the status of fish stocks, including the data from NOAA, and that group has produced 27 scientific papers, including 10 in science, nature, and the proceedings of the National Academy of Sciences.

Next slide, please.

Just as one way we visualize these, and I notice that the NRC panel has used this as well, is to have the biological stock size on the X axis—that is how many fish we have—and how hard we are fishing on the Y axis. And the target to produce maximum food and employment benefits is what is generally called maximum sustained yield, so think of that as the target. I am sure there is quite a few sportsmen here on the panel.

Next slide, please

In the U.S., we define regions in this space as fully exploited, underexploited, overfished and then a combination of overfished and overfishing, the upper left-hand corner where we don't want to be.

Next slide, please.

If we think about trying to achieve jobs and food benefits, we think about where we would like to see a grouping of our shots, and if we could just—the next slide, then the next slide. And that would be—if our objective was to produce jobs and revenue and food, we would expect to see a clustering of our fish stocks around there.

The next slide, please.

This is the current status of U.S. West Coast stocks. That big cross hairs is that target of maximum sustainable yield. The size of the dots is the long-term potential sustainable yield from the stocks, so you will see there are some big stocks. There are some small stocks. And I have drawn solid lines at the point where that is sort of the median between—and what you see is that we are fishing much, much lower on average than would produce maximum sustained yield. And many stocks are hardly being fished at all. In fact, we only harvest 1 percent of the groundfish on the West Coast.

Next slide, please

If we look at all regions of the U.S., we see a similar picture now. The colors represent where they are from, and we see that the big stocks are almost uniformly underfished and that the stocks of concern, primarily from New England, are in the upper left-hand corner.

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So, if we say, what happened? If we rebuilt all stocks to their maximum sustainable yield, we would increase our yield 1 to 3 percent, but if we fully utilize the underutilized species, we could increase yield by 30 to 50 percent. So, the key point is that the biggest threat to producing the maximum sustainable jobs and food from the United States is not overfishing anymore. It may have been 20 years ago. Now, it is underutilization.

Next slide, please.

One of the issues that comes up is these environmental changes in fish production. This is an example of Icelandic cod, where the X axis is the stock size and what you see is there is very little relationship between the production of the stock, that is how much it biologic produces, and its abundance.

Next slide, please.

But if we look over time, this stock exhibited a dramatic decline in productivity.

Next slide, please.

In a paper published in the proceedings of the National Academy, we showed that 69 percent of the stocks that we have data on showed these jumps in productivity.

Next slide.

What this means is that rebuilding targets to biomass targets are very problematic, and I am going to have to definitely hurry up.

Next slide.

We have solved the overfishing problem. Rebuilding targets cannot be met if we have regime shifts, and I am going to have stop right there.

Thanks very much.

The CHAIRMAN. Dr. Hilborn that was done very, very well, but your full statement, of course, is part of the record, and that is the important part.

[The prepared statement of Dr. Hilborn follows:]

Statement of Ray Hilborn, Professor, School of Aquatic and Fishery Sciences, University of Washington, Seattle, Washington

Introduction

Good morning and I want to thank the members and staff for the opportunity to address this committee. My name is Ray Hilborn, I am a Professor of Fisheries and Aquatic Sciences at the University of Washington. I have been studying fisheries management for over 40 years, both in the U.S. and in a number of other countries and international commissions. This has resulted in 250 peer reviewed journal articles, and several books including most recently "Overfishing: what everyone needs to know" published by Oxford University Press.

I am not representing any group, although I do receive research funding from a wide range of foundations, NGOs, and commercial and recreational interest groups, the National Science Foundation and NOAA.

I am not here to argue for specific changes to the Magnuson-Stevens Act, rather to provide background on our growing knowledge of how fish populations behave, and how U.S. fisheries are performing.

What are our objectives?

The text of the Act begins with "To provide for the conservation and management of the fisheries, and for other purposes", but then becomes more specific by stating that rebuilding fish stocks, ensuring conservation and protecting essential habitat are all intentions of the act. Also, the Act makes it clear that one objective is to provide for "the development of fisheries which are underutilized or not utilized . . . to assure that our citizens benefit from the employment, food supply and revenue which could be generated thereby."

In short, the objective of the Act appears to be to provide for sustainable employment, food supply, recreational opportunity and revenue, and to achieve that, conservation of fish stocks and habitats is essential. The two specifically targeted actions are to rebuild overexploited stocks and develop fisheries on underutilized species. Yet, as I will show below, while we have reduced overfishing, one consequence has been far more underutilized fish stocks and we seem to have lost sight of the actual goals of employment, food supply, recreational opportunity and revenue.

In its annual report to Congress, NOAA reports on the status of our fisheries regarding the biological status and whether the stocks are assessed. The biological status is reported as both the number of stocks that are overfished (are at low enough abundance to reduce sustainable yield), and the number of stocks that are subject to overfishing (fished at a rate harder than would produce long term maximum sustainable yield). There is no systematic scorecard of the fisheries contribution to employment, food supply, recreational opportunity or revenue with reference to the potential contribution, or is there any evaluation of underutilization. While measuring these no doubt requires specific assumptions, there appears to be a tacit assumption among policy makers that if we prevent overfishing, we will produce something like maximum food production, employment, recreational opportunity and revenue, or at least that the greatest threat to these objectives is overfishing.

The Magnuson-Stevens Act has been quite effective at reducing overfishing so that the proportion of stocks estimated to be overfished, which the Act defines as fish stocks at lower abundance levels due to environmental factors, fishing pressure, or other factors, has declined from 38 percent in 2000 to 19 percent in 2012, and the proportion subject to overfishing declined from 33 percent in 1999 to 10 percent in 2012. The decline in the number of fish stocks subject to overfishing has largely been accomplished by major reductions in fishing pressure off the west coast, east coast and Gulf of Mexico. Alaskan fisheries were never subject to major overfishing and there has been no need to reduce fishing pressure there. Fishing pressure has declined dramatically from previous peaks; a 40 percent decline in the East Coast a 48 percent decline in the Southeast and Gulf of Mexico and a 75 percent decline on the West Coast. Across all U.S. fisheries where assessments are available, the exploitation rate is about 40 percent of what would produce maximum sustainable yield. U.S. fisheries management is now extremely conservative and while almost all attention seems to be focused on the few stocks where overfishing is occurring, we seem to be ignoring the fact that exploitation rates are now, on average, so low.

The Status of Stocks

The status of fish stocks can be summarized by plots that compare the biomass of the stock to the level that would produce maximum sustainable yield (called BMSY) on the X axis, and the fishing pressure compared to the level that would produce maximum sustainable yield (called FMSY) on the Y axis. Figure 1 is such a plot for US west coast stocks status as reported in NMFS stock assessments.

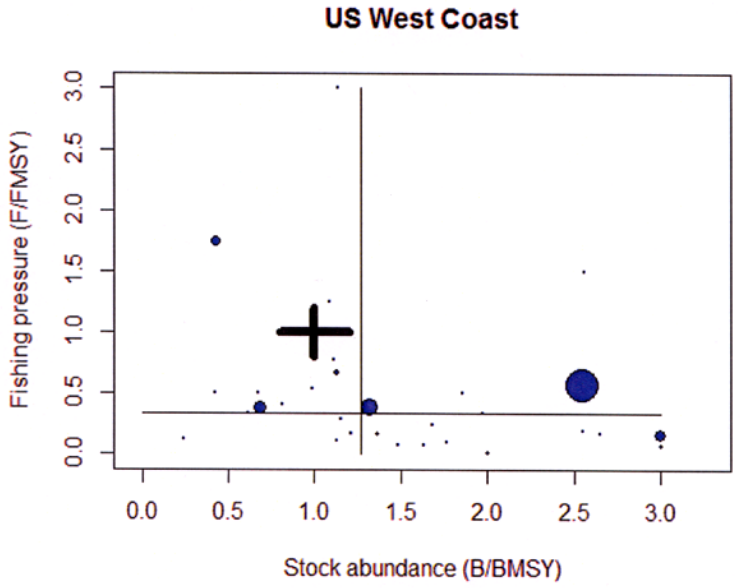

Figure 1. Stock status of US west coast stocks from most recent NOAA assessments.

Each point on the graph represents one fish stock and the size of the point is proportional to the potential maximum sustainable yield for the stock if the stock was fully rebuilt. The thick cross-hairs represent the traditional target of maximum sustainable yield. In the U.S. terminology any F greater than 1.0 on the Y axis would be classified as "overfishing" and any biomass less than 0.5 on the X axis would be classified as "overfished." The thin black lines are the median values of the x and y axes, showing that, on average U.S. west coast stocks are exploited at about 40% of the level that would produce maximum sustainable yield and biomass is, on average, about 130% of the biomass that would produce maximum sustainable yield. If our management objective is to produce maximum sustainable yield we are missing the target by quite a bit, hitting well below and to the right of the target.

If we combine all U.S. fisheries in a single plot we see a generally similar pattern in Figure 2, with blue representing the West Coast, green Alaska, yellow the Gulf

of Mexico and S.E. Atlantic, and red the mid-Atlantic and New England. We see the most overfished stocks in the northeast.

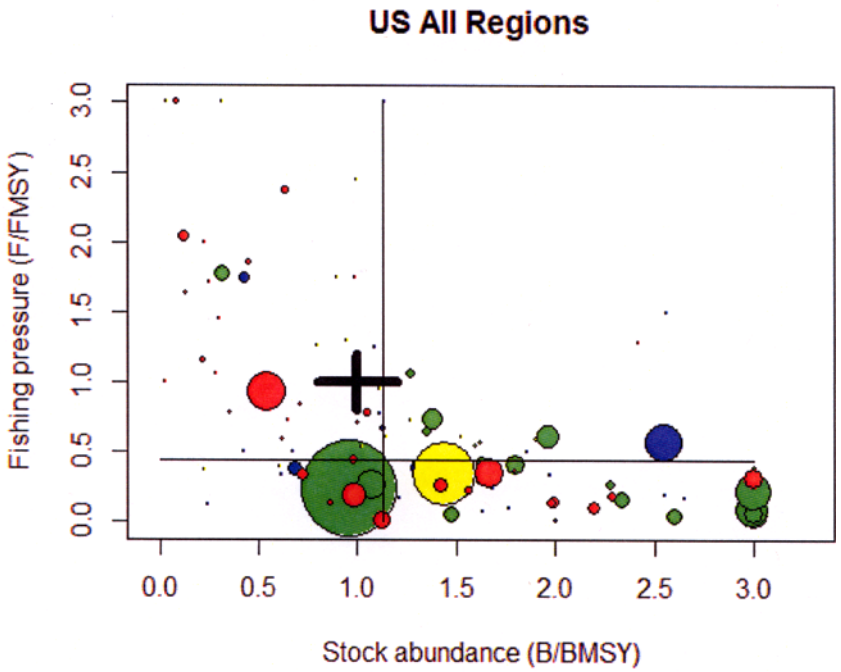

Figure 2. Status of all US stocks.

On average, the biomass of U.S. fish stocks is above the level that would produce maximum sustainable yield and fishing pressure is much lower than would produce maximum sustainable yield. Also, the overfished stocks are generally small stocks, while the large stocks are typically fished very lightly.

Behavior of Fish Stocks

The modern theory of fisheries management developed in the early 20th century and by the 1950s the basic principles had been well established around the general theory that holding a stock at or near a specific biomass, often called BMSY or the biomass that produces maximum sustainable yield, was optimal. This theory and approach was written into national regulations around the world, including the original Magnuson Act, and international agreements like the Law of the Sea.

In this theory, the average sustainable yield depends upon the biomass of the stock, and sustainable yield is maximized at an intermediate stock level, usually 35–50 percent of what it would be in the absence of fishing. Environmental variability is acknowledged as a form of year to year noise, good years and bad years come randomly.

This view of the world has dominated our management strategies, including setting target biomass and harvest rates, and in the stock rebuilding requirements. The theory asserts that if stock biomass controls productivity, then reducing fishing pressure on stocks at low abundance allows biomass to rebuild, and stock productivity will increase as the biomass increases.

In the last two decades, the evidence has become strong that this view of the world is incorrect, and most fish stocks experience sustained periods of good times and bad times. This is often called productivity regime shifts. In a paper published in 2013 a group of us showed that for 230 fish stocks where we had long term data, 69 percent showed such regime shifts, and only 18 percent of fish stocks appeared to conform to the simple theory that biomass determines productivity. The remaining 13 percent of stocks showed no relationship between biomass and productivity

or temporal regime shifts. We found that increases in productivity were slightly more common than declines.

If regime shifts, which are natural environmental fluctuations, are driving productivity, then reducing fishing pressure will increase the abundance of the stock, but productivity (and subsequent sustainable yield) will not increase until the regime changes. Rebuilding to former biomass may indeed be impossible unless productivity changes, regardless of reductions in fishing.

Figures 3 and 4 illustrate the relationship between fish stock abundance and productivity for cod in Iceland (figure 3), and the temporal pattern in productivity (Figure 4). It appears that there was a major drop in productivity for this cod stock in the mid 1980s (as there was for most cod in the Western Atlantic), and for the present Iceland must simply live with a less productive cod stock.

Accepting that regime shifts are common does not mean we do not need to regulate fisheries. We must always be careful not to harvest more than the production, and when regime shifts move systems from high to low productivity, the yield must decline.

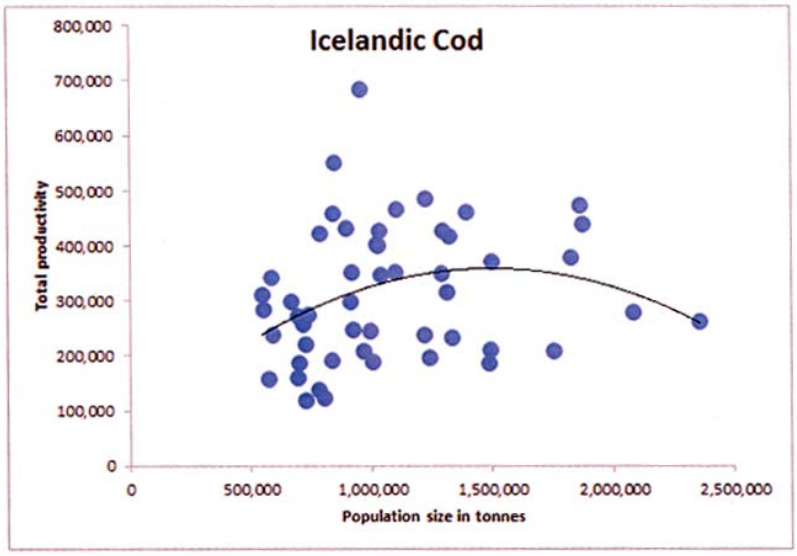

Figure 3. The relationship between stock size and productivity for Atlantic cod in Iceland.

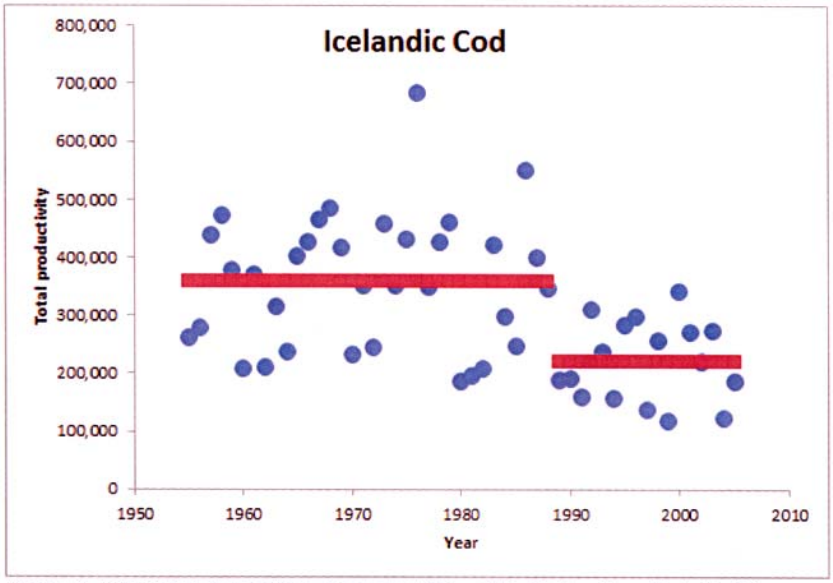

Figure 4. The temporal pattern in productivity of the Icelandic cod stock. There appears to have been a major decrease in productivity in the mid-1980s.

Lost Yield, Jobs, Recreational Opportunity and Revenue

U.S. fisheries management has been successful at largely stopping overfishing and reducing the number of overfished stocks—but since stopping overfishing is a means to an end, not an end itself, we must ask how is the U.S. doing at producing food, jobs, recreational opportunity and revenue?

We can calculate the lost food production by comparing the long term yield under current fishing pressure with the long term yield under the fishing pressure that would produce maximum sustainable yield. We lose food production (and potential jobs, recreational opportunity and revenue) in two ways, by fishing too hard or fishing too little, and the Magnuson-Stevens Act makes specific reference to both of these in its objectives. U.S. stocks for which we have assessments have a potential sustainable yield of a little over 7 million tons per year. Under current fishing pressure the stocks that are subject to overfishing (22 percent of stocks) would lose, on average, 44 percent of their potential yield, but because these are generally small stocks it only constitutes 1–3 percent of the potential yield of U.S. fisheries combined. Thus overfishing has almost no impact on the long term yield of U.S. fish stocks. In contrast, 77 percent of stocks are "underfished," that is, fished at rates less than would produce maximum sustainable yield. These stocks on average lose 55 percent of their potential yield, and because these are the larger fish stocks in the U.S. we are losing 30–48 percent of U.S. potential yield by underfishing. Further, 95 percent of this lost yield comes from stocks that are at or above the level that produces maximum sustainable yield. So we are losing almost all of our yield from underfishing abundant productive stocks.

We Lose 1–3 Percent of U.S. Potential Yield by Fishing too Hard, 30–48 Percent of Potential Yield by Fishing too Little

The major threat to sustainable jobs, food, recreational opportunity and revenue from U.S. marine fisheries is no longer overfishing, but underfishing. However, many groups, particularly some e-NGOs, are still actively pushing for less fishing pressure by giving a high priority to maintaining fish stocks at high abundance. Perhaps it is time for Congress to explicitly state the extent to which we wish to forego food, jobs, recreational opportunity and revenue in order to have more fish in the ocean either because of their intrinsic value, or as food for marine birds and mammals.

Why is fishing pressure so low? This is a question we are actively investigating but there are a number of explanations. In some cases this is due to lack of markets,

but increasingly the low fishing pressure results from the layers of precautionary regulation that have been imposed to prevent overfishing.

We do know that if our national objective were to maximize the profitability of fisheries, our management targets would be less fishing pressure than that which produces maximum sustainable yield, and if we could calculate lost profit under current U.S. fishing pressure, the loss from economic overfishing would likely be higher, and the loss from economic underfishing would be lower.

So perhaps Regional Fisheries Management Councils have explicitly reduced fishing pressure to increase profitability. Some stocks are underexploited because of lack of markets. Others are underexploited because they are subject to rebuilding plans. Many stocks are caught up in mixed stock fisheries, where healthy stocks (Georges Bank haddock) cannot be fully exploited because they are caught in conjunction with rebuilding stocks (Georges Bank cod). Finally, much of the under-exploitation comes from the layers of precaution built into the system. The fact that any stock which is fished at rates above FMSY is called "subject to overfishing" means that we are intrinsically aiming to fall below FMSY. The consequence of that is we are losing a significant fraction of our potential yield, jobs, recreational opportunity and revenue.

Some would argue that the current low fishing pressure is necessary to rebuild overfished stocks and once all stocks are rebuilt fishing pressure can rise again. Under the current management system this will never happen because some stocks are always going to be depleted due to natural fluctuations and climate change, and, as we add annual catch limits for more minor species in a mixed stock fishery, the problem will only get worse.

In summary, U.S. fisheries policy is currently very conservative, and if our objectives are jobs, food, recreational opportunity and revenue then we should focus national legislation and management guidelines on fully exploiting the underutilized species and place less emphasis on assuring that nothing is overfished.

Layers of Independent Legislation

Federal fisheries are subject to a wide range of legislation including the Magnuson-Stevens Act, the Marine Mammal Protection Act, the Endangered Species Act and the National Environmental Policy Act. Each of these imposes independent requirements that result in a set of uncoordinated regulations whose net outcome may result in a combination of lower economic benefits to the nation, and poorer conservation benefits than a coordinated management system. There is no doubt that there are trade-offs between utilization and preservation, but the current set of regulatory mandates is putting us in a position that is far from the best set of trade-offs. I address some specific recommendations in the section below on ecosystem based management.

The 10 Year Rebuilding Requirement

One of the most influential layers of regulation is the 10-year rebuilding requirement. This has the result of often ratcheting catches down as the 10 year time comes closer even though the stock size may be increasing. So long as it is not rebuilding on a timetable that will hit the 10-year mark, catches must be further reduced to try to make the timeline. Thus we can find decreasing allowable catches even though fish stock abundance is increasing.

The 10-year timeline was largely predicated on two assumptions, (1) that the greatest threat to benefits from the nation's fisheries is overfishing, and (2) that there are tipping points and stocks that are overfished are in danger of not being able to recover if pushed too low. Our research has shown both of these assumptions to be false. As I showed earlier there is little loss of benefits to U.S. from overfishing, and our research also shows no evidence for tipping points. If fishing pressure is reduced stocks will recover, and the 10-year timeline will definitely speed the recovery, but it is not necessary for recovery to occur.

Annual Catch Limits for all Species

A looming crisis is coming with requirements to set annual catch limits on all stocks. At present the management system does assessments and provides management plans for the great majority of stocks that contribute to the benefits to U.S. society, but there are many stocks that are caught in U.S. fisheries to some degree that are not a significant contribution to these benefits. We simply do not have the money and resources to collect scientific data, perform stock assessments, and manage all of these stocks. Current requirements to greatly expand the number of stocks that are assessed is resulting in highly conservative "low information" approaches that will combine with other measures such as the 10-year rebuilding requirement to make the management system even more precautionary than it is now and further reduce benefits to the nation from fisheries. I suggest that we focus federal

management on the fish stocks that are important to the nation's food, jobs and income and not subject the hundreds of small stocks to the same process, relying on other legislation such as the Endangered Species Act to protect them.

Integrating With Ecosystem Based Management

In my view, ecosystem based management has two major categories of actions. First is rather straightforward elimination or major reduction of by-catch, reducing fishing pressure to sustainable levels, and protection of sensitive habitats. The councils have done a good job of solving these problems. The second element is the underlying trade-off between utilization and preservation. This trade-off exists and different groups within society have different preferences on where along the range of possible trade-offs we should be. A current topic for such debate is in reduction of fisheries for forage fish. Preservation oriented NGO's would like to see fishing for forage fish significantly reduced or eliminated in order to provide more food for other species.

Science can provide estimates of the trade-offs between utilization and conservation, but it cannot provide policy guidance on what level of trade-off we should accept. Policy makers such as Congress or the Fishery Management Councils need to provide this guidance, and at present Congress has provided it only with respect to some species through the ESA and MMPA.

The Importance of Predictability for Recreational and Commercial Fisheries

Recreational and commercial fishing are both economic activities that provide jobs, income and profit to the nation, but also satisfaction and enjoyment to individuals engaged in these activities. As in most economic activities stability is desirable, sudden changes in regulations disrupts commercial supply and demand, and is highly disruptive for recreational fishing when seasons are abruptly closed and fishing opportunities are highly variable from year to year. Given natural variability and uncertainty in our management system, constancy of commercial and recreational opportunity is not possible.

Any harvest strategy effectively assigns some of the intrinsic variability to the harvest, and some of it to the stock abundance. As it happens the typical harvest strategy used to achieve biomass based reference points effectively assigns most of the variability to harvest, and attempts to reduce variability in biomass. Other policies, specifically using exploitation rate reference points, would shift more of the variability from harvest to stock biomass. Such policies typically provide for more social and economic benefit while not threatening conservation and sustainability goals.

Conclusions

U.S. citizens should be proud of our record of fisheries management, it is unrivaled for rebuilding of fish stocks, transparency of management, and quality of the science that goes into it. NOAA should be congratulated on the job it has done. However, there has been a loss of focus on what we are trying to achieve, and sustainable jobs, recreational opportunity, and income seem to have been lost in the focus on overfishing as the threat to fisheries benefits. The reauthorization of the Magnuson-Stevens act is a time where the management system can be fine-tuned to maintain our current healthy fish stocks, but dramatically increase the benefits the citizens of the U.S. receive from those stocks.

Mr. DEFAZIO. Mr. Chairman, I would ask unanimous consent, the gentleman from Massachusetts, Mr. Tierney, be allowed to sit on the dais and participate in the hearing.

The CHAIRMAN. Without objection, so ordered, and I will recognize Mr. Tierney in a moment, but first, we will go to Mr. Rod Moore, who is the Executive Director of the West Coast Seafood Processors Association.

Mr. Moore, you are recognized.

STATEMENT OF ROD MOORE, EXECUTIVE DIRECTOR, WEST COAST SEAFOOD PROCESSORS ASSOCIATION

Mr. MOORE. Thank you, Mr. Chairman, members of the Committee. I am not sure I can be as fast and glib as Ray, but I will try.

Just to get into the meat of this. From the Pacific Council area, we are dealing with four fishery management plans. We have over 100 species of fish in our groundfish plan alone. We deal with four State agencies, tribal fishery managers, National Marine Fishery Service, the National Ocean Sanctuary Program, five international or bilateral management measures, offshore hydropower or hydropower and rivers, offshore energy, the Endangered Species Act, the Administrative Procedures Act, the National Environmental Policy Act, and whole bunches of marine mammals eating some of those endangered species.

We need flexibility in order to be able to balance all of these things out, sustain our fish stocks and provide a living to people in our West Coast communities and provide food for the community.

The biggest issue in terms of rebuilding that affects us is something that Mr. DeFazio alluded to earlier, and I appreciate him giving my testimony for me. The way the Act is worded in conjunction with a Ninth Circuit court case, which we were part of sort of in defense of NMFS, the court essentially says you have to rebuild in as short a time as possible no matter what, and that has led to absurdities where, for example, looking at our rebuilding plan for canary rockfish, we could have rebuilt those rockfish or had a harvest level allowing for rebuilding that would rebuild them in January of a particular year or allow a slightly larger harvest level and allow them to rebuild in December of that same year. Under the court case, we had to rebuild them in January. Same is true of darkblotched rockfish that particular year.

You know, leaving aside whether our science is even capable of telling us whether we can rebuild in January versus December, the practical effect of it was significant restriction on sport, commercial, tribal fisheries, not because we are targeting canary rockfish—in fact, we try to take steps to avoid our overfished species—but rather those species act as a choke on the system.

Just to give you an example, last year, looking at the groundfish trawl landings, of the amount of groundfish that was available to the trawl fleet, we were able to harvest only 29 percent. That is a pretty dismal number, and that means a significant loss again to our communities, to our fishermen. You start translating that onto the sport side, you had some significant losses there as well.

So, there is a real need for some flexibility in the Act. The same is true with the annual catch limits. We support catch limits. Our council has had catch limits in effect long before they were required by the Magnuson-Stevens Act. The problem is now, we have to do catch limits every year. We have a 2-year management plan for rockfish, or for groundfish. It doesn't matter that we have a 2-year plan. We have to set annual catch limits.

So, even if we were able to juggle some of the numbers during the year to take in account market conditions, weather conditions, environmental factors, so forth and so on, we have to stay with

what is going on each and every year. So, in conclusion, my time is running out. I hope the Committee will take a look at the rest of the issues that are listed in our testimony. We appreciate you looking at all of these issues and moving forward, and we stand ready to help and assist you in your reauthorization of the Act.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much, Mr. Moore.

[The prepared statement of Mr. Moore follows:]

Statement of Rod Moore, Executive Director, West Coast Seafood Processors Association

Mr. Chairman, Members of the Committee, my name is Rod Moore and I serve as the Executive Director of the West Coast Seafood Processors Association (WCSPA). Our Association represents shore-based seafood processing companies and associated businesses that are primarily located in Oregon, Washington, and California. Collectively, our members handle the majority of Pacific groundfish landed on the west coast, along with significant amounts of Pacific sardines, albacore tuna, and Pacific salmon—all species managed under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). In addition, our members process the majority of the Pacific shrimp and much of the Dungeness crab landed in west coast states, species that are managed under state authority. Our members range from literal mom and pop operations to some of the largest seafood companies in the United States and employ thousands of workers in harvesting, processing, transporting, and distributing seafood across the country and throughout the world.

The Pacific Fishery Management Council has four fishery management plans in place that generally regulate the fisheries that occur in federal waters: Coastal Pelagic Species (primarily sardines, anchovies, squid, and mackerel); Pacific Salmon; Highly Migratory Species (albacore and other tunas, most pelagic sharks); and Pacific Groundfish (including Pacific whiting or hake). However as we all know, neither fish nor those who attempt to catch them all live in discrete jurisdictional areas. Thus for many fishery management actions, there is significant involvement with state fish and wildlife agencies, tribal fishery managers (several coastal tribes have judicially recognized tribal fishing rights that extend into portions of the exclusive economic zone), international fishery management organizations, and bilateral entities. We have five extensive National Marine Sanctuaries off our coast, which requires interaction with NOAA's National Ocean Service. While there is very little ocean hydro-carbon extraction other than in some California state waters, we have a developing marine hydrokinetic energy (wind, wave, and current) industry that potentially can compete with fish harvesters for space in the ocean. Our anadromous species are affected by competing claims to water rights and the need to balance fishing, farming, power, flood control, and navigation issues on our major rivers. We have several different ESA-listed species—marine, anadromous, and amphibious—to avoid. And we have several hundred thousand marine mammals to contend with, including those that are happily devouring some of the afore-mentioned ESA-listed species.

Add to this mix the requirements of the National Environmental Policy Act, the Administrative Procedures Act, and several federal court rulings and you can see why fisheries management on the west coast is challenging, to say the least.

That is also why it is essential that the MSFCMA provide our fisheries managers with the maximum amount of flexibility consistent with sound science and reasonably prudent conservation.

Flexibility in Rebuilding

First and foremost on the need for flexibility in the Pacific Council area is a revision of section 304(e)(4) of the MSFCMA. Since enactment of this section in 1997, ten species have been designated as overfished under the Pacific Groundfish Fishery Management Plan. Three of those species fell within the 10-year rebuilding requirement and the rest have been exceptions due to the biology of the species. Two of the short-lived and one of the long-lived species have been fully rebuilt; the rest continue to act as "choke" species that hamper the harvest of abundant fish stocks.

Aside from the arbitrary time frame allowed for rebuilding under normal circumstances—10 years is not any magic number given the vast differences in habitat, life history, and environmental conditions for fish stocks around the nation—our biggest problem results from a 9th Circuit Court opinion on how the language

in this section is to be applied. Ruling on a case contesting the harvest levels set for the 2002 groundfish fishery, the court said the following:

> "Section 1854 contains two significant mandates that constrain the Agency's options in adopting a rebuilding plan for an overfished species. First, the time period must be "*as short as possible,*" although the Agency may take into account the status and biology of the overfished species and the needs of fishing communities."

The practical effect of this ruling is that in setting catch levels for overfished species we must start with an assumption of zero fishing and incrementally add harvest amounts until we reach the point that is one step above economic devastation for fishing communities. This has led to absurdities where the Council has been forced to choose lower harvest limits even though analysis provided by its Scientific and Statistical Committee shows that a higher limit would allow rebuilding in the same year, albeit a few months later than the lower limit. In two cases involving harvest levels for 2013—canary rockfish and darkblotched rockfish—this was a difference of 30 metric tons, a considerable disparity for species that are managed along the entire coast and must be shared by commercial, sport, and tribal fishermen. To put this in context, 30 metric tons of Canary Rockfish is 75% of the entire groundfish trawl allocation for that species for 2013. While the direct landed value of those fish is not significant, the indirect value is enormous: having more incidental species available would provide additional opportunity for commercial, sport and tribal harvesters to access abundant stocks of fish that currently go unharvested due to the choke species effect.

One way to resolve this issue would be to modify the existing language in section 304(e)(4)(i) to require rebuilding in a time period that is "as short as practicable." The intent of this change is not to allow fisheries managers unfettered permission to set harvest levels wherever they choose; rather, it lets them exercise some reasonable judgment so they could—for example—allow a fish stock to be rebuilt in December rather than January, which were the choices available for canary rockfish harvest this year.

A second problem exists with NMFS' interpretation of the MSFCMA. Under the National Standard 1 guidelines, a stock is considered overfished if it is below its minimum stock size threshold (MSST). Once designated as overfished, a rebuilding plan must be put in place and that rebuilding plan must remain in effect until the stock reaches a level equivalent to maximum sustainable yield (MSY). Essentially, you assume a direct correlation between the level of harvest and stock size. While this sounds great in theory, in fact there are a whole lot of things that influence stock growth, including our inability to accurately measure stock size.

The National Standard 1 guidelines also suggest that a Council put in place a system to establish and if necessary reduce harvest levels when a stock is someplace between MSST and MSY. This is generally known as a control rule and it is designed to correct for stock size reductions when a stock declines for whatever reason. However, while we are told to use the control rule if a stock is on the way down, we are not allowed to use that same control rule once a stock dips below MSST and is designated as overfished, even if it rebuilds to a point between MSST and MSY where normally it would fall under that control rule.

Ironically, NMFS essentially ignores this disconnect when they are reporting to Congress on status of stocks. For a Council and its constituent fishermen, a stock is overfished once it dips below MSST and stays overfished (and subject to a rebuilding plan) until it hits MSY. For NMFS, once a stock gets above MSST, it is no longer overfished, it is "rebuilding." While this sounds great in the media bites, it doesn't help the fisherman or processor who is trying to make a living.

Again, if we had the flexibility to switch from a rebuilding plan to an established, scientifically recommended and legally approved control rule, we could provide some relief.

A third problem resides with the arbitrary 10 year maximum rebuilding time for species that don't meet certain exceptions. In the Pacific Council region, this has not been an overwhelming problem yet as most of our overfished species are long lived and do meet the exceptions. However, we cannot in good conscience support continued reliance on a number that was picked to apply nationally because some scientists theorized that was how long it would take George's Bank cod stocks to rebuild. And as you may have noticed, their theories were wrong.

Let me conclude my remarks on this aspect of the MSFCMA by emphasizing that we are not advocating an end to efforts to rebuild stocks nor do we suggest that catch limits on overfished—or even healthy—stocks be set as high as anyone wants. All we are suggesting is that there be some practical application of the rules and that our fisheries managers have the flexibility they need to deal with unique circumstances.

Flexibility in Annual Catch Limits

We think catch limits are an excellent idea; in fact we have used them long before they were required under the MSFCMA. While we may argue about what the level of allowable catch might be at any given time, the concept is a good one, keeping in mind that there are some very short lived species where setting a limit makes little sense if you have other rules in place to adequately protect stock productivity.

Where we believe flexibility would help is in the concept of "annual" catch limits. As required by law, a catch limit must be set for each fishing year (however that period is defined in a fishery management plan). If you have a biennial plan, you still must establish a catch limit for each of the two years, no exceptions. We believe some latitude should be provided so you could have a multiple year period in which an overall limit would be set but annual harvest could fluctuate based on fishing conditions, market conditions, weather, water temperature, and any of the multitudes of other variables that affect harvest. Obviously, such a multi-year program would require rigorous scientific analysis, sufficient survey or other data gathering capabilities, and robust stock assessments. However, if the proper scientific constraints are in place, we see no reason to specify that harvest levels must be set each and every year.

Overfished vs. Overfishing

Under section 3(34), these two terms are given the same definition. In reality, they are not the same thing and the responses to each of them should be different. Further, the inappropriate use of these terms unfairly maligns the commercial, sport, and tribal fishing sectors, especially when reported in the media.

"Overfishing" refers to how hard you are fishing. If you are overfishing, you are catching fish faster than stocks can replenish themselves. "Overfished" refers to how many fish you have in a stock relative to a number that can sustain that stock and may bear no relationship to the level or rate of harvest. For example, a stock might be subject to minimal or even zero fishing yet still become overfished due to predation, disease, changes in water temperature, or lowered ocean productivity. Yet when the public is told that a stock is overfished, it's the fisherman who gets the blame.

We recommend the MSFCMA be amended to provide separate and appropriate definitions for these two terms. Further, we suggest a more accurate term such as "depleted" be adopted to replace "overfished" as was recently recommended in a paper presented by Dr. Andre Punt of the University of Washington at the "Managing Our Nation's Fisheries" conference.

Relationship Between the MSFCMA and Other Laws

One of the biggest procedural headaches we face in the Pacific Council area is the dual and mainly redundant requirement to comply with the process requirements of the National Environmental Policy Act (NEPA) while simultaneously ensuring that the proper scientific analysis and public transparency required by the MSFCMA are followed.

How bad is the problem? While this hearing is being convened, the Pacific Council is starting its September meeting. At that meeting, the Council will begin the formal decision-making process for harvest levels and associated management measures for Pacific groundfish that will go into effect in 2015 and 2016. They will be using the most up-to-date stock assessments available, which means at best looking at data collected through 2012. In other words, by the end of 2016 we will be managing our fisheries—in the best case scenario—based on 4-year-old data. For those species where a current stock assessment is not available, the basic data will be even older.

Obviously, if we had all the money and people we needed, our data collection and analysis would be up-to-the minute on every one of the 100+ species currently covered by the Pacific groundfish fishery management plan. Nevertheless, it shouldn't take 15 months to put in place regulations for a fishery, no matter how good or bad our data may be. Unfortunately, the reason it takes so long is that we are required to meet the processes and timelines of both the MSFCMA and NEPA.

To offer another example of how bureaucratically silly this gets, several years ago the Council—with the full support of both the fishing community and environmental groups—wanted to establish a depth based management line that would expand a closed area in order to protect a sensitive stock of fish. The line would have gone into effect in the middle of a fishing year. The MSFCMA said we could do that, and in fact it encourages such conservation measures. Our fishery management plan said we could do it. But the lawyers said we couldn't. Why? Because we had not appropriately analyzed the possibility of establishing that precise depth line in the environmental impact statement that accompanied the regulations that went into

effect at the beginning of the fishing year. We could establish a deeper line offering less protection. We could establish a shallower line to protect far more water than needed and result in adverse impacts to commercial and recreational fishing. But we couldn't establish the line that would work and would make sense.

While we have now fixed that particular problem—the committee would no doubt be amazed at the number of depth lines that have been excruciatingly analyzed under NEPA—the underlying problem remains and needs to be fixed.

The MSFCMA provides for rigorous scientific analysis and documentation of decisions. Councils—both at their own meetings and through their required advisory committees—provide significant opportunities for public comment. Council material is readily available to the public and Council meetings are recorded and often live web-cast. Post-Council regulatory actions by NMFS are guided by the Administrative Procedures Act and provide for even more public participation. The Councils, their advisors, the public, and NMFS have a full set of economic and environmental data available before decisions are made, with trade-offs fully recognized. These are the same things that are required by NEPA.

In 2006, when Congress last amended the MSFCMA, an environmental review process provision was added under section 304 to conform timelines and procedures under NEPA and the MSFCMA. Seven years later, no effective process has been put in place. It's past time to fix the problem so we can go about conserving and managing fish stocks, not worrying about paperwork.

A second problem we have in the Pacific Council area regarding the relationship to other laws is the lack of clarity and disputed jurisdiction between the MSFCMA fishery management system and the National Marine Sanctuaries Act (NMSA).

As mentioned above, we have five National Marine Sanctuaries off the west coast. At issue is who controls fishing within those sanctuaries and under what process. As currently interpreted by NOAA—which is the overarching agency for both NMFS and the National Marine Sanctuary program—a Sanctuary that wishes to do something involving fishing will first invite the Council to develop regulations. If the Council doesn't do so, can't do so quickly enough because of the lengthy Council decision-making process established to ensure public participation and exacerbated by NEPA requirements, or simply does something the Sanctuary doesn't like, then the Sanctuary can go ahead and do what it wants as long as it is consistent with the NMSA and the Sanctuary's own designation documents.

To date—other than in one egregious case involving the Channel Islands National Marine Sanctuary where some brilliant legal mind decided the Council had jurisdiction over the ocean floor and possibly the surface of the ocean, but not the water column itself—we have maintained a somewhat uneasy truce with the Sanctuary program. However, many in the commercial, sport, and tribal fishing sectors would like to see the law amended to make clear that when it comes to regulations affecting fishing—including the establishment of closed areas—the MSFCMA process will be the one used. We hope the committee will strongly consider this as they move forward with a reauthorization bill.

Sustainability

Many of us in the seafood industry are becoming increasingly concerned that the only seafood products considered "sustainable" by federal agencies are those certified as such by private companies and non-governmental organizations who maintain their own criteria and often their own political agendas. A recent example is the decision by the National Park Service to require its vendors to only provide and serve seafood which carries a certification label from the Marine Stewardship Council or is approved by the Monterey Bay Aquarium's Seafood Watch program. It is ironic that visitors to Crater Lakes National Park in Oregon will be unable to eat trawl-caught Oregon rockfish because those fish meet neither criterion even though they are subject to rigorous management under the MSFCMA.

We suggest that the MSFCMA be amended to define sustainable seafood as any fish—or product produced therefrom—that has been legally harvested by a vessel of the United States under a fishery management plan approved under the MSFMCA, under an equivalent state law or regulation, or under an international agreement to which the United States is a party and which establishes conservation and management measures equivalent to those required by the MSFCMA. Further, the Secretary of Commerce should be given the authority to design and make available a label which may be used without charge to identify sustainable seafood.

Dungeness Crab Fishery

Finally, I need to make mention of a provision of the MSFCMA that affects only the three Pacific coast states and which needs renewal. Section 306 note provides specific limited authority for the states of Washington, Oregon, and California to

manage the Dungeness crab fishery in both their respective state waters and adjoining federal waters. This section was enacted in its original form in 1996 and slightly amended and renewed in 2006. It is currently set to expire in 2016.

Our Pacific coast Dungeness crab fishery is a major success story, in no small part due to the cooperative management that is enabled by the provisions of this section. While there are—and always will be—occasional minor disputes among fishermen and even state agencies, the resource overall is in good shape, the industry overall is economically healthy, we have excellent opportunities for sport harvest, and we have provisions for meeting treaty obligations to the four Washington State coastal tribes who have legally acknowledged fishing rights.

At the last meeting of the Tri-State Dungeness Crab Committee earlier this year—the umbrella committee set up through the Pacific States Marine Fisheries Commission to coordinate crab research and management—there was unanimous support among crab fishermen, crab processors, and state fish and wildlife agencies for renewal of this section of the law. I expect similar support will be expressed when the full Marine Fisheries Commission meets later this month. We join all of those groups in asking that you extend this section indefinitely or at a minimum for another 10 years.

Mr. Chairman, this concludes my testimony. We look forward to working with you, committee members, and committee staff in developing a thoughtful set of amendments to the MSFCMA that will provide our fisheries managers with the flexibility that they need to provide both fisheries harvest and appropriate science-based conservation of our fish stocks. I would be happy to answer any questions.

The CHAIRMAN. And for purposes of introduction, I recognize the gentleman from Massachusetts, Mr. Tierney.

Mr. TIERNEY. Thank you very much, Chairman Hastings, and Ranking Member DeFazio, for giving me the courtesy and this opportunity to participate in this important hearing and to introduce Vito Giacalone. He is a good friend and a Policy Director of the Northeast Seafood Coalition, which is located in Gloucester, Massachusetts, part of our district. And Vito was a third generation Gloucester fisherman and a founding board member of the Northeast Seafood Coalition. He is an active member of the community, and he also serves as the Executive Director of the Gloucester Fishing Community Preservation Fund.

Alongside fishermen and their families in Gloucester, he has witnessed firsthand the devastating effect that regulatory decisions have had on the community and the industry in the last few years.

As Vito will discuss, I am sure, in further detail, the Northeast multispecies groundfish fishery has suffered tremendously in the last several years, in no small part due to the inflexibility that has been built into the system designed to regulate an incredibly complex fishery. Fishermen in Gloucester and throughout New England are struggling to make ends meet following tremendous cuts in the groundfish stocks for this fishing year. Today's situation was foreseen by many, including the Secretary of Commerce, who declared the region's commercial fishery a disaster nearly 1 year ago.

Vito has worked tirelessly with Federal and State lawmakers to ensure the voices of fishermen are heard. He has been testifying before other Congressional Committees as well and he has been raising awareness through very effective advocacy. Through his work on the Northeast Seafood Coalition, he has played a critical role in developing solutions to pretty complex fishery problems. I have been working with my colleagues and with Vito and with other members of the community to ensure that fishermen and their family get the support that they need.

However, the current situation didn't have to transpire, and I believe that it can be avoided in the future. As Vito can attest, fishermen, above all others, have a vested interest in ensuring that the stocks remain at healthy levels. It is my hope that this hearing will make clear that the current rigid and often arbitrary regulations must be reconsidered and that the social and economic impact of fisheries management will be given equal attention to conservation measures.

I want to thank Vito for all the work that he has done in the fishing industry and for the fishermen in New England and for joining us here today, and I look forward to his testimony and that of the other members of the panel.

Again, thank you for your courtesy.

The CHAIRMAN. Very good. You forgot to mention he is from an Irish family.

Mr. TIERNEY. I was going to leave that to him.

The CHAIRMAN. Mr. Giacalone, you are recognized for 5 minutes.

STATEMENT OF VITO GIACALONE, POLICY DIRECTOR, NORTHEAST SEAFOOD COALITION

Mr. GIACALONE. Thank you, Mr. Chairman, distinguished members of the Committee. Thank you for this opportunity to share my thoughts on the reauthorization of the Magnuson-Stevens Act. As an active fisherman and a policy director for the Northeast Seafood Coalition, I have been deeply involved in the process to implement key provisions to the Act as they relate to the Northeast Multispecies Fishery. The bottom line, Mr. Chairman, is that the current statute is not working for the Northeast Multispecies Fishery. The agency's narrow interpretation of the statute has made this worse, but fundamentally, the basic management strategy set forth in the statute places demands on science that far exceed its capacity in the case of Northeast groundfish.

Mr. Chairman, we greatly appreciate the recommendations presented by Mr. Sullivan on behalf of the National Research Council Committee. In many ways, it feels like our fishery is the poster child for their findings and recommendations.

Georges Bank and Gulf of Maine ecosystems are highly dynamic and perhaps less stable an environment than was contemplated in the statute or reflected in the agency's interpretations and implementation. As noted repeatedly in the NRC report and stated throughout my written testimony, stock recruitment, individual growth, and natural mortality are biological parameters over which man has no control that are highly susceptible to environmental and ecological conditions.

As the NRC noted in their report, quote, "While the Committee attributes some of the variable of mixed performance of rebuilding plants to scientific uncertainty, this should not be interpreted as a criticism of the science. It often reflects a mismatch between policymakers' expectations for scientific precision and the inherent limits of science because of data limitations and the complex dynamics of ecosystems," unquote.

A timeframe-based rebuilding strategy depends on relative stability and thus predictability of population parameters that cannot be controlled. In our fishery, none of that stability or predictability

exists; therefore, it should not be expected that each assessment is reflective of the actual level of change occurring in nature, yet we have nothing in place currently that allows managers the flexibility to buffer management responses in either direction to account for the known volatility and assessment results.

We also have nothing in place that adequately buffers the severe social and economic cost of being wrong. The most profound cost of accepting assessment results that are known to be volatile and rife with uncertainties is the instability suffered by small businesses in the fishery.

If we are to succeed in managing these stocks to achieve a sustainable resource and a sustainable fishery, then we will need fundamental revisions of the Act as part of a longer-term strategy. In our view, section 304(e)(4), rebuilding policy, should be expanded to provide the councils with such authority to implement alternative rebuilding strategies, such as an F-based strategy. Although it may not be necessary or desirable to use an F-based strategy to rebuild and prevent overfishing a stock in all cases, it certainly may be the only realistic alternative for some stocks and fisheries. Let's add that tool to the toolbox.

One such F-based strategy is to set ACLs at or below the fishing mortality that which will achieve MSY, known as FMSY. This strategy will, by definition, prevent overfishing and will, over time, on average, achieve BMSY, which is a fully rebuilt stock. Prudent management would be to allow managers the opportunity to smooth volatility inherent in individual stock assessments by providing them with the statutory tools that can buffer management responses in both directions.

In my opinion, and from my experience, this would protect fish stocks from abrupt increases in ACLs that may later be found to be incorrect, while providing fishing businesses with the stability of more sensible and controlled downward management response mechanism. In doing so, we will provide some insurance against the cost of being wrong.

The critical point is the need for stability and so there is good cause to provide the council with the flexibility to implement alternative management strategies that are not entirely founded on traditional stock assessments. Instead, authority should be provided in the statute and/or the National Standard 1 guidelines to assess the performance of stock's biomass over history in response to various catch levels to identify a so-called sweet spot where catch levels can be maintained at relatively stable levels over time. In such case, conservation gains would be achieved by forfeiting spikes in ACLs and thus provide a conservation offset for avoiding reductions in catch limits.

Finally, Mr. Chairman, you specifically asked in your letter and invitation that I provide examples of instances where the interpretation of the Act may have created undue hardship and whether changes to the Act should be considered to address these concerns. I provided one such example in my written testimony and would be happy to answer any questions you or members of the Committee may have regarding our efforts to use interim measures on the authority for Gulf of Maine cod.

Mr. Chairman, distinguished members of this Committee, I would be remiss not to remind you of the immediate reality. All of the long-term policy improvements in the world are not going to matter much if there aren't many people left standing when they are implemented. We are in the midst of a crisis that needs immediate attention. Nothing short of an appropriation for disaster relief will rebuild the bridge sufficient to sustain the New England fishing industry. Thank you for this opportunity to address you directly. I am happy to answer any questions.

The CHAIRMAN. Thank you very much, Mr. Giacalone, for your testimony.

[The prepared statement of Mr. Giacalone follows:]

Statement of Vito Giacalone, Gloucester Fisherman, and Policy Director, Northeast Seafood Coalition

Introduction:

Mr. Chairman, distinguished Members of the Committee, thank you for the opportunity to testify at this important hearing. I am Vito Giacalone. I am a third generation fishermen from Gloucester Massachusetts and I serve as the Policy Director for the Northeast Seafood Coalition (NSC).

Approximately 361 small fishing businesses and shoreside enterprises are members of the NSC. Our fishermen belong to 12 NSC-sponsored sectors which account for approximately 67 percent of the groundfish allocations. NSC has been a leading voice in groundfish management policy since its founding in 2002.

Problem:

The current statute does not work for the Northeast (NE) multi-species (groundfish) fishery.

The agency's narrow interpretation of the statute has made this worse; but fundamentally, the basic management strategy set forth in the statute places demands on science that far exceed its capacity in the case of NE groundfish. I believe this is due in part to the inherent and perhaps increasing instability in the physical and biological elements of the ecosystems in which our fisheries operate.

As noted repeatedly in the recently released National Research Council's (NRC) Committee on Evaluating the Effectiveness of Stock Rebuilding Plans of the 2006 Fishery Conservation and Management Reauthorization Act:

> "While the Committee attributes some of the variable or mixed performance of rebuilding plans to scientific uncertainty, this should not be interpreted as a criticism of the science. It often reflects a mismatch between policy makers' expectations for scientific precision and the inherent limits of science because of data limitations and the complex dynamics of ecosystems."

Rapidly changing water temperatures and other aspects of the physical oceanography in our region are now driving a highly dynamic biological environment. Everything from primary plankton productivity to species distributions and interactions are affected at all trophic levels. We are seeing dramatic changes. But, we've seen them before and we've seen our stocks follow cycles that clearly have nothing to do with fishing mortality. It's a very dynamic place.

With respect to the Gulf of Maine (GOM) and Georges Bank (GB) ecosystems I am familiar with, it appears that recruitment, individual growth and the natural mortality rate play a far greater role in determining the future status of a groundfish stock than our regulation of the fishing mortality rate. These three biological parameters (over which man has no control) are highly susceptible to environmental and ecological conditions. And so it follows, the less stable environmental and ecological conditions are, the less stable recruitment, growth and natural mortality will be.

These known and highly variable conditions also affect system carrying capacity, facilitate regime shifts associated with inter-stock complex competitions within that variable carrying capacity, and in the case of our multi-species complex, intra-complex competitions. Yet, none of these realities are reflected adequately in the current single stock management strategy currently required by the Act.

The NRC report notes:

> "In nature, growth, maturity, and natural mortality are influenced by interactions with other species that may be competitors, predators, or prey."

The GB and GOM marine ecosystems are highly dynamic and perhaps less stable an environment than was contemplated in statute or reflected in the agency's interpretations and implementation.

And, with this instability comes unpredictability. In our case, we're talking profound unpredictability. Some managers and scientists like to dismiss this as mere 'uncertainty'. In truth, it's hard cold unpredictability.

But, the current statute is founded on predictability. It depends on the ability of science to predict future levels of recruitment, growth and natural mortality, and, worse, to predict exactly when those levels will occur.

And, then, it requires managers and industry to commit to plans to control fishing mortality spanning specific timeframes that are entirely disconnected from the natural conditions that actually drive these dominant population parameters.

For the NE groundfish complex I am now convinced it cannot be done.

Given the dynamics and complexity of the GOM and GB ecosystems and environment, I'm not sure why we ever thought that this management strategy might work—that we could ever predict with sufficient precision how NE groundfish populations would behave in discrete timeframes when we can predict and control so little of what matters.

So, why does the current statute appear to work relatively well in some other fisheries and not ours?

It is surely not because we have failed to develop and abide by a responsible management regime. Our fishery operates under what is considered by some as the most progressive style of fishery management including hard total allowable catches (TACs) and a catch share system implemented in 2010.

In the past decade we have not once exceeded our annual TACs but instead have substantially under-harvested the annual catch limits for most stocks.

Yet with each stock assessment the scientists report back to us retrospectively that their predictions of biomass and fishing mortality rates were indeed incorrect. Often, substantially so—suddenly discovering overfishing long after the fact.

Perhaps other fisheries operate in a physical and biological environment that is relatively more stable—or they target species that are less susceptible to environmental and ecological dynamics. If so, it would make the population dynamics of those fish stocks more predictable over time.

All I can say for sure is that for our fishery, it simply hasn't worked. And that is a problem.

Solutions:

About one year ago the Commerce Department declared a "commercial fishery failure" for our fishery—the Northeast Multispecies Fishery pursuant to the Magnuson-Stevens Act (MSA) and the Interjurisdictional Fisheries Act.

This was 2 years after a declaration was first requested by Massachusetts Governor Patrick (November 2010). More recently, all of the NE Governors made this request.

The disaster declaration finally came during the 2012 fishing year for which catch limits had already been drastically reduced for stocks that are the core of the economic engine that runs this fishery and our communities.

That preceded the additional and even greater reductions in this fishing year 2013 which included a 61 percent reduction in GB cod and a 78 percent reduction in GOM cod catch limits, for example.

It's been a veritable "perfect storm" of circumstances the effect of which on our fishermen—their businesses, families and communities—has been nothing less than catastrophic.

Many fishermen are not only facing the loss of their profession and the source of their income, they are also facing the loss of their homes which have been mortgaged to support their businesses.

This scientific unpredictability and dramatic swings in perceived stock abundance have completely confounded fishery management and every aspect of our fishing industry and community. We are perilously close to losing the oldest fishery in America which was at the core of our colonial economy four centuries ago and is still at the core of our communities today.

There are—or were—both short and long term solutions.

1. Short Term Mitigation

What we needed when these declines began to escalate was a relatively short term bridge to mitigate their impacts and keep the fishery afloat until longer term strategies could be put into place and/or the biological situation changed.

And so, in advance of the FY 2012 season and during the time the Commerce Department was considering the fishery disaster declaration, NSC was already work-

ing on developing management strategies based on what we felt were inherent flexibilities built into the statute by Congress to enable fishery managers to mitigate the impacts of this very kind of situation.

Among the most important of these was the application of Magnuson-Stevens Act (MSA) section 304(e)(6) authority to implement interim measures on a temporary basis to reduce overfishing rather than end it immediately.

The intent was to soften the landing from such drastic swings in estimated abundance from one stock assessment to another. In fact, the 2008 stock assessment for GOM cod indicated that the stock was well above the MSST and would likely be fully rebuilt well before the final year of the rebuilding plan. Three years later, the 2011 assessment indicated the stock was nowhere near the levels previously estimated and that in fact, the new perception of stock status was determined to be far below MSST and biologically incapable of rebuilding by the rebuilding plan deadline of 2014.

Which assessment was correct? Perhaps neither, but the reality is that under the current interpretation and implementation of the Magnuson-Stevens Reauthorization Act (MSRA) the most recent assessment is considered "best available" and the management response has been catastrophic for the industry and dependent communities.

The GOM cod stock is a prime example of why the current MSA and management implementation is untenable to sustaining fish and fishing communities simultaneously. This cod stock has been managed and monitored closely for nearly two decades. The fishery has managed within the recommended TACs since the inception of the rebuilding program which was revised in 2004. In 2010 the fishery converted to a full possession, catch share program that was monitored both at sea (up to 38 percent) and dockside (50 percent) and fishing mortality rates set far below Frebuild on GOM cod because the control rule of 75 percent of Fmsy was nearly 30 percent lower than Frebuild due to the optimistic 2008 assessment. The policy in place under the National Standard 1 Guidelines directs managers to use Frebuild or 75 percent of Fmsy, whichever is lower.

Imagine the disruption that has occurred in the Northeast region when seemingly out of the blue, after nearly a decade of strictly adhering to catch limits and being told that the stock was about to be fully rebuilt in only the 8 year of a 10 year rebuilding period, the fishery is presented with the 2011 assessment results that has prescribed 90 percent reductions over just the last 2 fishing years.

Just as no fish stock should be subjected to a 90 percent increase in fishing pressure simply because our most recent scientific "perception" of a stock seems to warrant such increased pressure, no fishing business or dependent fishery infrastructure should be subjected to abrupt and steep reductions in catch levels to the magnitude presented to our fishery over the years.

This volatility is inherent in the assessment methodologies given the limitations of scientific resources and knowledge we have today.

The volatility present in the scientific recommendations is typically not reflective of the actual level of change occurring in nature, yet we have nothing in place currently that allows managers the flexibility to buffer management responses, in either direction, to account for the known volatility in assessment results. We also have nothing in place that adequately buffers the severe social and economic costs of being wrong. The most profound costs of accepting assessment results that are known to be volatile and rife with uncertainties is the instability suffered by small businesses in our fishery.

In the case of GOM cod, the sudden drop off of catch advice and stark differences in the two assessments placed the vast majority of fishery participants in serious financial peril. We needed a bridge—some stability.

I should note Mr. Chairman that perhaps our primary goal above all—and maybe for us it is only a dream—is stability. For our fishing businesses to succeed, we need a stable fishery management regime. An interim measure would help provide this stability.

NSC developed and presented to the New England Fishery Management Council (Council) and NMFS leadership an analysis that indicated this interim measures authority could be applied to GOM cod in Fishing Year 2012—the most important stock in the Gulf of Maine.

Although unprecedented in U.S. fisheries management, both the Council and NMFS accepted and approved this approach which enabled a catch that reduced overfishing but which could help avoid a collapse of the Gulf of Maine fishery.

This action provided the crucial beginnings of a bridge and stability for 1 year. It was a major achievement of collaboration and cooperation among the agency leadership, the Council and the industry. Being that it was an NSC initiative, we were very pleased.

After that things went downhill.

Although the statute, specifically MSA section 304(e)(3), clearly contemplates a 2-year process for the Councils to prepare and implement rebuilding plans—and although a coherent, logical interpretation of MSA sections 304(e)(6) and 305(c)(3) is to provide authority for the Councils to request (and for the agency to approve) a separate, sequential interim measure for the second year of that 2 year process—the agency refused to approve the Council's request for this authority.

It made no sense. Essentially, the agency said that it was OK to build a bridge half way across the harbor but then we had to jump to our deaths instead of finishing the bridge. This for a fishery they had just declared as a disaster.

To add insult to injury, the agency refused to provide us with their legal rationale—their interpretation of the statute—by asserting attorney client privilege as a means to avoid a serious explanation or accountability for their decision.

Given the magnitude of the consequences, we still find both their rejection of the Council's request and the refusal to share their legal justification simply incredible.

Mr. Chairman, you specifically asked in your letter of invitation that I provide examples of "instances where the interpretation of the Act may have created undue hardship and whether changes to the Act should be considered to address these concerns".

This is precisely one such an example. And, while it is probably too late now for the affected fishermen, it may be worth clarifying in legislation that a second, sequential interim measure can be implemented under MSA 305(c)(3) for the purpose of implementing the MSA section 304(e)(6) authority should this be needed in the future.

In addition, and perhaps more far reaching would be for Congress to expressly prohibit the agency from hiding behind attorney client privilege when disapproving a Council request for interim measures—or any other Council action for that matter. It had been our understanding that Congress had already made clear its intent for the agency to fully explain the legal basis for disapproving a Council action under the MSA (see section 304(a)(3)). Maybe this needs further clarification.

Mr. Chairman, the GOM cod situation provides a perfect example of how existing flexibility in the statute was not used by the agency to the great detriment of our industry.

However, the fact remains that our fishery disaster is the product of steeply reduced Annual Catch Limits (ACL) on a long list of stocks affecting every component of the NE fishery. Due to the stringent qualification requirements of Section 304(e), only GOM cod met the criteria to be eligible for interim measures to temporarily reduce rather than end overfishing immediately. For our fishery, GB yellowtail flounder received a 90 percent and four other key stocks received ACL reductions in excess of 50 percent. Currently, there exists no flexibility in the Act to address the severe costs of allowing management responses to mirror assessment results instantaneously.

Prudent management would be to allow managers the opportunity to smooth the volatility inherent in individual stock assessments by providing them with statutory tools that can buffer management responses in both directions. In my opinion and from my experience, this would protect fish stocks from abrupt increases in ACL that may later be found to be incorrect, while providing fishing businesses with the stability of a more sensible and controlled downward management response mechanism. In doing so, we will provide some insurance against the costs of being wrong.

If we are to succeed in managing these stocks to achieve a sustainable resource and a sustainable fishery then we will need fundamental revisions of the Act as part of a longer term strategy.

2. Long Term Strategies

The fishery management community and policy makers have long expressed the need for additional tools in the tool box to give the Councils the ability to tailor their management strategies to the peculiar realities of their region and fisheries. However, with respect to a rebuilding strategy, the statute today only provides one tool in the toolbox. This sole strategy is based on trying to do whatever necessary to rebuild a stock to a pre-determined biomass within a specified timeframe.

However, a timeframe-based rebuilding strategy depends on relative stability and, thus, predictability of population parameters including recruitment, growth and natural mortality that cannot be controlled. In our fishery, none of that stability or predictability exists. As stable as other ecosystems and as predictable as other stocks may be, ours are not. While a timeframe-based rebuilding strategy has worked for many stocks across the nation, it simply has not worked for our fishery. We do not think that strategy should be eliminated from the statute as some have suggested, but we do think Congress should provide additional authority for the Council to im-

plement alternative strategies for achieving the fundamental goals of preventing overfishing and rebuilding overfished stocks.

One such strategy is to set ACLs at or below the fishing mortality rate that will achieve MSY (Fmsy). This strategy will, by definition, prevent overfishing and will over time on average achieve Bmsy—a rebuilt stock. But, it will achieve that rebuilding according to the timeframe and to a biomass that reflects the prevailing ecological and environmental conditions. Man cannot dictate those conditions and so cannot reliably predict much less dictate when a stock will rebuild, particularly when there is great instability in those conditions.

In our view, section 304(e)(4) rebuilding policy should be expanded to provide the Council with such authority to implement alternative rebuilding strategies—perhaps if and when certain conditions or circumstances exist. It may not be necessary or desirable to use an F-based strategy to rebuild and prevent overfishing a stock in all cases, but it certainly maybe the only realistic alternative for some stocks and fisheries. Let's add that tool to the toolbox.

Another alternative interpretation or desirable modification of the statute might be to allow for multi-year evaluations of "overfishing" and perhaps even the "overfished" threshold as those terms are defined in section 3(34) of the Act. Could a 3-year rolling average of the fishing mortality rate replace the current one-year approach for evaluating whether overfishing is occurring? Would that approach "jeopardize the capacity of a fishery to produce MSY on a continuing basis"? This may be a very important source of flexibility that already exists in the Act but for the Agency's interpretation now set forth in the National Standard 1 Guidelines.

Similarly, is it always necessary and desirable to trigger a full-blown rebuilding plan response when a stock biomass falls below the overfished threshold in one single year? Would a multi-year evaluation of stock biomass "jeopardize" the fishery?

Such multi-year evaluations coupled with a moderated management response to stock performance would go a long way towards achieving the "holy grail" for NE groundfish—stability. These were among the concepts NSC included in its comments on the National Standard 1 Guidelines revision now under consideration by the Agency.

Further to this need for stability, there is good cause to provide the Council with the flexibility to implement alternative management strategies that are not entirely founded on traditional stock assessments. Such assessments are often based on statistical models that can provide reliable estimates of relative abundance and a trend in the status of a stock, but can be very poor in supporting specific, point-in-time quantitative estimates of abundance and the resulting setting of catch limits. This is precisely our experience for many critical NE groundfish stocks.

Instead, authority should be provided in the statute (and/or the National Standard 1 Guidelines) to assess the performance of a stock's biomass over history in response to various catch levels to identify a so-called "sweet spot" where catch levels can be maintained at relatively stable levels over time. In such case, conservation gains would be achieved by sacrificing catch levels associated with dramatic highs in stock abundance and thus provide a conservation "offset" for avoiding severe reductions in catch limits when the stock biomass swings to a low level. Again, our experience with such seminal stocks as GOM cod and GB yellowtail flounder would have been much different had the Council utilized such an approach.

Summary:

Mr. Chairman, we believe there are existing flexibilities in the statute that could be taken advantage of including through the revision of the National Standard 1 Guidelines. We also believe there are other sources of flexibility that need to be incorporated into the statute through your reauthorization process. We are certainly committed to working with you, the Committee and your staff to pursue long term alternative management strategies that are consistent with and responsive to what may be the unique realities of NE groundfish stocks and ecosystem. We want to see NE groundfish management work, but we can't see how under the current statutory framework.

Having said that, our immediate reality is that all of the long term policy improvements in the world aren't going to matter much if there aren't any of us still standing when they are implemented. We are in the midst of a crisis that needs immediate attention.

And so, while I realize this is outside of the scope of this Committee's jurisdiction, I must ask all of the Members of the Committee and the full House for their support of measures such as those included in the Senate FY 2014 appropriations to provide fisheries disaster assistance funding.

To say that the future of our fishery is in your hands is an understatement. We need disaster assistance. It's the last hope for a bridge for the future of our fishery.

The CHAIRMAN. I recognize Mr. Jeff Deem, who is with the Recreational Fishing Alliance. The gentleman is recognized for 5 minutes.

STATEMENT OF JEFF DEEM, RECREATIONAL FISHING ALLIANCE

Mr. DEEM. Good morning, Mr. Chairman, and members of the Committee. Thank you for the opportunity to present this testimony on the need for flexibility and the reauthorization of the MSA. I am Jeff Deem, and although I have the honor of being one of Virginia's representatives on the Mid-Atlantic Fishery Management Council and on serving on various State level committees, I am here today to speak on behalf of the Recreational Fishing Alliance.

We have been informed of the National Research Council's criticism of specific rebuilding time periods. I think that is very timely, and quite frankly, an understatement because our oceans are changing, especially in the Mid-Atlantic, in ways that we will not really understand for many years to come. Any attempt to set specific rebuilding time periods in the near future will be based on our current knowledgeof the ocean, which may have little to do with the ocean we are creating.

I believe three of the most pressing examples of pending changes are, increasing ocean temperature. Whether this is caused by mankind or not, the fact is that fishermen and scientists are also telling us that the ocean temperatures are rising, and we are seeing the northerly movement of some species as they apparently search for cooler water temperatures. What effect this relocation will have on the status of any particular stock is unclear.

Ocean acidification: Although global warming may ignite some vigorous debates, it is difficult to deny mankind's responsibility for the increasing carbon dioxide in the atmosphere and the resulting increase in ocean acidification. Although there are some studies under way, we are just beginning to analyze what effects these will have on any particular species' spawning, recruitment, reproductive capability or even the abundance of the species they rely on for forage.

Offshore energy: The Bureau of Ocean Energy Management is projecting the installation of 20 gigawatts of wind turbines by 2020 and 54 gigawatts by 2030. At 7 megawatts per turbine, that is 1,400 turbines by 2020 and 7,700 by 2030. We add to that oil and gas platforms, liquified natural gas terminals, piping, cabling, construction and support traffic, we are talking about significant physical changes in the ocean environment. We do not have the experience to know all of the questions these changes will raise, much less the answers.

I have included five other substantial changes that are coming to our oceans in my written testimony for your consideration. These address protected species, ecosystem management, species we don't manage, invasive species, and then natural cycles of the fish stocks.

One more point about flexibility, if I may. I believe the rigid timelines in the 1996 reauthorization resulted in the loss of hundreds, if not thousands, of jobs. It would have been far worse with-

out the critical extension that Congress granted with the summer flounder fisheries. This flexibility not only kept people working but provided time for the science to improve. The original target stock size, excuse me, for this fishery set in 1996 was 338 million pounds. The numerous benchmark assessments performed over the 13-year period resulted in a determination that the stock could only support 42 percent of the original stock target. As we witnessed, the science improved, but it is irresponsible to assume it is accurate enough to justify the socioeconomic damage that can be inflicted through mandatory deadlines.

In closing, in the near future, now more than ever before, it appears that there will be far too many variables for us to make the finite long-term projections about what will or will not happen to any particular species. I would ask that you consider regulations which focus on turning around any fishery that is in decline and monitoring its progress. We need the flexibility to address whatever issues arise that impede that progress, whether the issues be one of those I have listed or one of the many this new ocean has yet to reveal. I have no doubt there will be many surprises in the midst of these changes. Thank you for your time and effort. If I can be of further assistance, please do not hesitate to ask.

The CHAIRMAN. Thank you, Mr. Deem, for your testimony.

[The prepared statement of Mr. Deem follows:]

Statement of Jeff Deem, on Behalf of the Recreational Fishing Alliance

Introduction

Good morning Mr. Chairman and Members of the Committee.

Thank you for the opportunity to present testimony this morning on the need for flexibility in the re-authorization of the Magnuson-Stevens Fishery Conservation and Management Act. I am Jeff Deem and although I have the honor of being one of Virginia's representatives on the Mid Atlantic Fisheries Management Council and various state level committees, I am here to speak on behalf of the Recreational Fishing Alliance. In these capacities, I have a responsibility to represent fishermen from my state while working to achieve balance between conservation goals mandated by the Magnuson Act and the needs of the fishing community.

The premise that balance can be achieved between these two needs is reasonable and should be a defining principle of successful fisheries management. Yet, during my tenure on the Council, I have seen the implementation of some MSA mandates cause significant socioeconomic harm on the recreational fishing community while producing no conservation benefit. An example can been illustrated through the application of accountability measures and annual catch limits on the recreational fishing sector. The application of these management tools demands a timely, accurate and reliable data collection program. Even with improvements to MRFSS and the partial roll out of MRIP, no program currently exists which can responsibly or fairly enforce the accountability measures and annual catch limits on recreational anglers.

Management objectives must be in line with the limitations of the data collection at the time and when there is a disconnect, the impacts on the recreational sector can be severe, i.e., red snapper, black sea bass, etc. That said, the Council just recently took action to address this shortcoming with the passage of the Omnibus Recreational Accountability Measure Amendment which will allow recreational catch limits to be evaluated in 3-year periods to account for the limitations of MRIP which is primarily designed to capture and estimate trends of recreational catch and harvest. Recreational fishing seasons will no longer be cut short through emergency action based on projected landings derived from preliminary estimates. Also, the amendment would take into account the status of the stock when applying accountability measures to the recreational sector. These are measures that will ultimately improve the management of recreational fisheries under Council jurisdiction and move federal management more toward achieving the balance mentioned above. It is my hope that the members of the Committee look to this recent action by the Mid Atlantic Fishery Management Council as you develop reauthorization priorities

in the coming months and use this example to draft pragmatic revisions to sections in MSA that deal with the application of annual catch limits and accountability measures on the recreational fishing community.

I believe it is critical that flexibility be part of the reauthorized MSA because our oceans are changing, especially in the Mid-Atlantic, in ways that we will not really understand for many years to come. It may be impossible to predict the long term effects of the pending changes on any particular species.

I believe the most pressing examples are;

1. Increasing Ocean Temperatures:

Whether this is caused by mankind or not is really not an issue in the discussion of flexibility. The fact is that fishermen and scientists are telling us that the ocean temperatures are rising and we are seeing the northerly movement of certain species as they apparently search for cooler water temperatures. What effect this relocation will have on the status of any particular stock is unclear. Adding to the uncertainty are other, less obvious, potential changes such as the timing of plankton blooms and juvenile production which currently coincide to some extent. Because many juvenile species rely on plankton as their first forage, the ability of juvenile fish to survive and stocks to flourish may be negatively effected if rising temperatures separate these two occurrences.

2. Ocean Acidification:

While global warming may ignite some vigorous debates, it is much more difficult to deny mankind's responsibility for the increase in carbon dioxide in the atmosphere and the resulting increase in ocean acidification. Although there are some studies underway, we are just beginning to analyze what effect it will have on any particular species' spawning, recruitment, maturity or even the abundance of the species they rely on for forage.

3. Ecosystem Management Strategies:

Most experts will agree that not all species can be at their peak at the same time. It is generally accepted that as we move into ecosystem management, we will be forced to decide which particular species are favored over others and then maintained at their peak abundance. As we begin to manage under an ecosystem model, what will we learn about species interactions and how will our potential management of those interactions affect our ability to set mandates and schedules for the growth of an individual stock? The only thing we can really be sure of is that the fish and other sea life will not always follow our schedules.

4. Protected Species:

As we take measures to further protect mammals such as dolphins and whales, and numerous species of sharks such as great whites, how will we calculate the effect of their increasing abundance on a particular species we are trying to manage? The average dolphin weighs around 450 lbs. and consumes 20 to 40 lbs. of forage a day. A 200 ton blue whale consumes 4 to 6 tons of forage a day. A great white shark may weigh up to 5,000 lbs. and consume 150 to 500 lbs. per day. If you can think of the ocean as an aquarium, how much confidence can you have in your projections of stock growth for other species when you are increasing the number of large predators?

5. Species Not Managed:

For example, there has been a noticeable increase in the number of skates or rays in recent years. Some scientist tell me that the bycatch reduction steps we are taking to avoid taking protected species in nets and other gears also allow skates to escape. These and other un-managed species may compete with and feed upon the species we are trying to rebuild.

6. Invasive Species:

Unfortunately, my home State of Virginia has two prime examples of the damage invasive and transplanted species can cause. Snakeheads and Mississippi catfish are having a substantial negative effect on the natural balance in our tidal rivers. These catfish are surprising even the experts with their ability to thrive in brackish waters where they devour crabs, small flounder and other native species. I would expect that they also consume a substantial portion of the herring and other species that inhabit our tidal rivers during their spawning migrations. How can our projections for any particular species account for these relatively new competitors and any others introduced during a fixed rebuilding time frame?

7. Natural Cycles of Fish Stocks:

Last fall we witnessed a huge increase in the number of small red drum in the Chesapeake Bay, on Virginia's eastern shore and throughout much of the mid-Atlantic. This is great if red drum happens to be the species you are trying to rebuild, but if such a species rebuilds faster than expected and competes with or consumes other species we are trying to rebuild, how do we account for that without flexibility in our plans?

8. Offshore Energy:

The Bureau of Ocean Energy Management is projecting the installation of 20 gigawatts of wind turbines by 2020 and 54 gigawatts by 2030. At 7 megawatts per turbine, that's 1,400 turbines by 2020 and 7,700 by 2030. Add to that oil and gas platforms, liquified natural gas terminals, piping, cabling, construction and support traffic and we are talking about significant physical changes in the ocean environment. We do not yet have the experience to know:

Which species will benefit and which will suffer?

Will there be an increase in top level predators?

Will the electrical fields generated by submerged power lines affect spawning or migration?

How will the changes in wind flows affect the turning of the water at different depths and what effect will that have on our fish stocks?

In the near future, more than ever before, it appears that there will be far too many variables for us to make finite, long term projections about what will or will not happen to any particular species.

My testimony thus far has illustrated that the ocean and the marine resources within are extremely variable and influenced by many more uncontrollable factors than just fishing pressure. It is unrealistic to assume that fish stocks can be rebuilt or maintained without acknowledging these factors. Language included in the 1996 reauthorization of MSA mandated very strict adherence to rebuilding timeframes and did not give fishery managers the ability to account for biological and environmental variable that may impact the speed at which a stock can rebuild. The scenario played out in the summer flounder fishery which was under a 10-year rebuilding timeframe. Tremendous progress had been made and the stock had reached historic levels of abundance. The rate of increase slowed during the final years of the rebuilding plan and the lack of flexibility forced managers to set fishing quotas so low that it was unlikely that directed fishing for summer flounder would be possible. In the final hours of the reauthorization, Congress allowed a 3-year extension to the summer flounder rebuilding timeframe which allowed the fishermen to retain reasonable access to the fishery. Ultimately the summer flounder stock was rebuilt on schedule and the rebuilding timeframe extension did not have any negative impact on the stock. This successful example illustrates that limited flexibility is a useful tool that should be afforded to all federally managed species.

This extension was a success from the scientific perspective as well. This "buffer" not only kept people working but provided time for the science to improve. The original target stock size for this fishery set in 1996 was 338 million pounds of total stock biomass. The numerous benchmark assessments performed over this 13 year period resulted in a determination that the stock could only support a population of 132.4 million pounds of spawning stock biomass, which equates to about 143 million pounds of total stock biomass. That is 42 percent of the original stock target. As we witnessed, the science is improving, but it is irresponsible to assume that it is accurate enough to justify the socioeconomic damage that can be inflicted through mandatory deadlines.

In closing, I urge the members of the committee to incorporate limited flexibility in rebuilding fish stocks when deemed appropriate and when not a detriment to the overall conservation of the stock in question. Experience has shown that management flexibility can have both a positive impact on the fishing community and rebuilding objectives. In addition, the Committee needs to acknowledge that the limitations of recreational data collection programs and the failure of NOAA to fully implement section 401(g) of the 2006 reauthorization make it impossible to apply annual catch limits and accountability measures on the recreational sector in a fair and responsible manner. Currently, the recreational fishing community is being disadvantaged due to this inconsistent enforcement of MSA. I believe that H.R. 6350 the Transparent and Science-based Fishery Management Act of 2012 is a very good starting point as the Committee undertakes MSA reauthorization in the 2013 Congress.

Thank your for this opportunity and the time and effort you and your staff have dedicated to protecting our resources and the citizens that rely upon them. If I can be of further assistance, please do not hesitate to contact me through the RFA.

The CHAIRMAN. And I will recognize now Dr. John Bruno, professor of the Department of Biology at University of North Carolina.

You are recognized for 5 minutes.

STATEMENT OF JOHN F. BRUNO, PH.D., PROFESSOR, DEPARTMENT OF BIOLOGY, UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Dr. BRUNO. Chairman Hastings, Ranking Member DeFazio, my name is John Bruno. I am a marine community ecologist and professor at the University of North Carolina at Chapel Hill. I appreciate the invitation to talk with you today about fishing and how it affects and is affected by the health of our oceans, and I thought I would offer a somewhat broader perspective.

As you heard in other hearings and from other panelists and probably read in the recent National Research Council report, the Magnuson-Stevens Act is working and is helping to rebuild our highly depleted fisheries. It is an exaggeration to declare that overfishing has ended in America, but we are moving in the right direction. Yet the changes ahead of us present an even bigger challenge. Let's not squander the sacrifices that got us here by ignoring these growing problems.

First, the loss of coastal habitats, including salt marshes, seagrass beds, and mangroves is profoundly affecting fisheries. Many fish depend on these habitats as nurseries and as adult feeding grounds, yet they are disappearing faster than rain forests. In North Carolina, we lost over 90 percent of our oyster reefs, and this has had a big impact on our fishes, like our flounder and our red drum.

Second, we have learned that ocean warming due to greenhouse gas emissions is having a huge impact on fisheries. Ocean warming is depressing fish populations by killing their living habitats, like corral reefs in places like Hawaii and Puerto Rico and the Northern Mariana Islands, and is also causing fish to shift their geographic ranges to higher latitudes by nearly 200 miles per decade, so that is almost 20 miles a year.

Fisheries' productivity hot spots are moving, and fish composition is changing. We will be catching very different fish off Gloucester in 50 years than what we are catching there today. Ocean acidification will also challenge or outright destroy many fisheries, such as some of our most productive shellfish.

Third, the dependence of most fisheries management on the theoretical concept of maximum sustainable yield is the underlying cause of overfishing, not the solution to it. Estimates of MSY are usually based on oceanographic conditions that don't even exist anymore. Restoring fish populations to MSY does not restore ecological function or maximize profits and is a highly risky strategy in a changing world. MSY also ignores critical interactions among species, which is a fundamental reason it has caused so many unanticipated problems. In short, maintaining fish populations at roughly one-third their natural density, which is what MSY prescribes and is also the current threshold for overfished, undercuts the social, ecological, and economic value of fish.

To secure our hard-won gains, we need to invest in strategies that will stabilize fish populations for the long term. Critically, we need to ensure that we conserve very large females, the ones that produce the most and the healthiest offspring. Fully restoring fish populations in natural population structure would maximize profit, greatly reduce the effort and risk that goes into commercial fishing. It would improve opportunities for recreational fishermen. They would be catching more and much larger fish, and it would buy us insurance against warming and acidifying oceans.

I think the MSA has done enormous good and should be reauthorized, but it is time to move beyond MSY and start managing fish based on their real value and in a whole ecosystem context. Climate change, habitat loss, and other factors that influence fish populations need to be considered explicitly in the Magnuson-Stevens Act. And fisheries management must recognize that the oceans are changing. We should be mitigating this change directly, tackling it head on and also building the resilience of our fishing communities and our marine ecosystems to it. Thank you very much.

The CHAIRMAN. Thank you very much, Dr. Bruno.

[The prepared statement of Dr. Bruno follows:]

Statement of John F. Bruno, PhD, Professor, Department of Biology, The University of North Carolina at Chapel Hill

Chairman Hastings and Ranking Member DeFazio,

My name is John Bruno and I am a marine community ecologist and Professor of Biology at The University of North Carolina at Chapel Hill.

I appreciate the invitation to talk with you today about fishing and how it affects and is affected by the heath of our oceans and I thought I'd offer a somewhat broader perspective.

As you have heard in other hearings and from other panelists and probably read in the recent report from the National Research Council, the Magnuson-Stevens Act is working and is helping to rebuild our highly depleted fish stocks. It is an exaggeration to declare that overfishing has ended in America, but we are moving in the right direction. Yet the changes ahead of us present an even bigger challenge. Let's not squander the sacrifices that got us here by ignoring these growing problems.

First, the loss of coastal habitats including salt marshes, seagrass beds, and mangroves is profoundly affecting fisheries. Many fish depend on these habitats as nurseries and as adult feeding grounds yet they are disappearing faster than rain forests. In North Carolina we've lost over 90 percent of our oyster reefs and much of our coastal marshland. This has greatly impacted our fish like our flounder and red drum.

Second, we've learned that ocean warming due to greenhouse gas emissions is having a huge impact on fisheries. Ocean warming is depressing fish populations by killing their living habitats like coral reefs. It is also causing fishes to shift their geographic ranges to higher latitudes by nearly 200 miles per decade.[1] Fisheries productivity hot spots are also moving and fish composition is changing. We'll be catching different fish off Gloucester in 50 years than we are catching today. Ocean acidification will also challenge or outright destroy many fisheries, such as some of our most productive shellfish.

Third, the dependence of most fisheries management on the theoretical concept of Maximum Sustainable Yield is the underlying cause of overfishing, not the solution to it. Estimates of MSY are usually based on oceanographic conditions that don't even exist anymore. Restoring fish populations to MSY does not restore ecological function or maximize profits and is a highly risky strategy in a changing

[1] Burrows, M. T. et al. 2011. The pace of shifting climate in marine and terrestrial ecosystems. Science 334:652–655. Poloczanska, E.S. et al. 2013. Global imprint of climate change on marine life. Nature Climate Change doi:10.1038/nclimate1958. Download PDFs here. The mean rate of expansion of the leading range edges for all marine species for which data is available is 72 km/decade (±14 SEM). For bony fishes this value was 278 km/decade (±77 SEM).

world. MSY also ignores critical interactions among species, which is a fundamental reason it has caused so many unanticipated problems.

To secure our hard-won gains, we need to invest in strategies that will stabilize fish populations for the long-term. Critically, we need to ensure that we conserve very large females—the ones who produce the most and healthiest offspring. Fully restoring fish populations, and natural population structure, would maximize profit and greatly reduce the effort and risk that goes into commercial fishing, it would improve opportunities for recreational fisherman—they'd be catching more and much larger fish—and it would buy us insurance against warming and acidifying oceans.

In short maintaining fish populations at roughly one third their natural density—which is what MSY prescribes and is also the current threshold for "overfished"—undercuts the social, ecological, and economic value of fish. Our fisheries would be more profitable, more sustainable, and more resilient at higher biomass levels.

I think the MSA has done enormous good and should be reauthorized. But it is time to move beyond MSY and start managing fish based on their real value and in a whole ecosystem context. Climate change, habitat loss, and other factors that influence fish populations need to be considered explicitly in the Magnuson-Stevens Act. **And fisheries management must recognize that the oceans are changing: we should be mitigating this change and also building the resilience of our coastal communities and marine ecosystems to it.**

Thank you,

The CHAIRMAN. And our last panelist is Mr. Chris Dorsett, director of the Ecosystem Conservation Programs and the Ocean Conservancy, you are recognized for 5 minutes.

STATEMENT OF CHRIS DORSETT, DIRECTOR, ECOSYSTEM CONSERVATION PROGRAMS, OCEAN CONSERVANCY

Mr. DORSETT. Chairman Hastings, Ranking Member DeFazio, and members of the House Natural Resources Committee, thank you for the invitation to testify in front of you today.

My name is Chris Dorsett, and I am the director of Ecosystem Conservation Programs for Ocean Conservancy. I have worked on fishery science and policy issues for almost two decades starting as a fishery observer in the Gulf of Mexico and more recently directing Ocean Conservancy's sustainable fisheries' work. My testimony today will focus on the current performance of the MSA in rebuilding U.S. fisheries, describe the essential elements that make this management program successful, and provide recommendations for continued progress in securing sustainable fisheries and healthy fishing communities.

Over the past decade, significant and historic progress has been made in ending overfishing and rebuilding overfished populations in the United States. Our Nation has witnessed record rebuilding of overfished fisheries for the past 2 years, and the rate of overfishing is now at an all-time low. I brought a graphic to show the rebuilding over the past or since 2001 that shows species by region that have been rebuilt and the record progress in 2011 and 2012.

This progress, important from both ecological and economic standpoints, resulted from the rebuilding requirements of the MSA, the work of fishery managers in implementing the law, and the efforts of fishermen and fishery stakeholders. Last week, the NAS report came to the same conclusion in finding demonstrated success in identifying and rebuilding overfished stocks and positive long-term net economic benefits.

Key to the success is the MSA. The MSA provides the framework for these achievements containing as central attributes for success-

ful recovery of overfished species as identified by a recent assessment of global rebuilding programs. These include well-defined objectives, finite time scales, credible, consistent, and transparent scientific monitoring of progress, predefined rules for triggering corrective management action, and substantial measurable reductions in fishing mortality at the onset of the plan.

In addition, the MSA already provides the flexibility to incorporate socioeconomic concerns. Thanks to the MSA, rebuilding and fishery depletion are becoming more and more a problem of the past.

When analyzing the performance of the MSA, it is important to consider the state of fisheries and fisheries management before the rebuilding provisions were added. As noted by the NAS report, repeated delays and the lack of accountability led to continued overfishing and fishery collapse which prompted Congress, in a bipartisan manner, to institute the rebuilding requirements in 1996 and to strengthen them in 2006.

The MSA addresses many of these faults, and as a result, our fisheries are on the road to recovery. While this progress is encouraging, challenges remain. Not all rebuilding plans have thus far been effective, and a host of stressors impacting the marine environment and our fisheries require a management approach evolves to ensure long-term success. As Congress moves forward with a reauthorization of the MSA, I would like to highlight three recommendations.

First, an ounce of prevention is worth a pound of cure. Once fish stocks are depleted, options are limited and economic pain is almost inevitable. The best option for both fish and fishermen is to avoid depleting populations in the first place. Strengthening the current system of annual catch limits, accountability measures, and rebuilding requirements with the addition of a key finding in the NAS report calling for the more widespread use of harvest control rules to take correction action sooner when stocks are starting to head in the wrong direction, rather than waiting until stocks are officially classified as overfished, can help ensure we avoid depleted fisheries and associated negative environmental, social, and economic consequences.

Second, long-term success requires broadening our perspective. Fish don't live in a vacuum, and fishery scientists and managers can't afford to look at these fisheries in isolation.

We, therefore, need the MSA to support an ecosystem-based approach to fisheries management to ensure our Nation can meet the challenges of the future.

Finally, we must be disciplined and constantly tracking our progress. The MSA currently requires a review of rebuilding plans every 2 years, but the regularity of revised stock assessment varies widely from region to region. Failure to adequately track our progress is both risky for fish stocks and unfair to fishermen.

In summary, our Nation has made significant and historic progress in restoring overfished fisheries and addressing overfishing. This progress means healthier ocean ecosystems, more prosperous fishing communities, more fresh and local seafood for consumers and enhanced fishing opportunities for marine anglers. Continued success in restoring and maintaining U.S. fisheries at

healthy and sustainable levels requires strengthening the MSA by transitioning to an ecosystem-based approach to management that ensures we are best equipped to meet the challenges of the future. Thank you.

The CHAIRMAN. Thank you, Mr. Dorsett.

[The prepared statement of Mr. Dorsett follows:]

Statement of Chris Dorsett, Director, Ecosystem Conservation Programs, Ocean Conservancy

Introduction

Over the past decade, significant progress has been made in ending overfishing and rebuilding overfished populations in the United States.[1] This progress, important from both ecological and economic standpoints, resulted from the rebuilding requirements of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the work of fishery managers in implementing the law, and the efforts of fishery stakeholders. The MSA provides an adaptable framework that includes the essential elements for success found in a global analysis of rebuilding program performance while providing flexibility for incorporating social and economic needs. The rebuilding provisions of the MSA are showing signs of success in achieving the goal of returning fisheries to levels that support healthy and sustainable fish populations and fishing communities.

The recent report from the National Academy of Sciences, *Evaluating the Effectiveness of Fish Stock Rebuilding Plans in the United States* (NAS Report), came to a similar conclusion finding "demonstrated successes in identifying and rebuilding overfished stocks."[2] For stocks that were placed under a rebuilding plan, fishing mortality has generally been reduced, and stock biomass has generally increased. The long-term net economic benefits of rebuilding have also proved generally positive.[3] The report highlights the challenges and complexities of trying to evaluate science, and make decisions about catch limits and other management measures. In the face of those challenges, the report underscores the historic progress that has been achieved under the current law in ending overfishing and rebuilding fish populations.

Overview and Analysis of the Rebuilding Requirements of the MSA

While rebuilding was mentioned in the original 1976 Act, it was the 1996 Sustainable Fisheries Act (SFA) amendments, supported by a bipartisan group of Congressional members, that developed provisions to ensure rebuilding success and established specific mandates for rebuilding overfished populations. These changes were driven, in part, by the significant depletion of key groundfish species in New England. To address this issue, major revisions that now form the basis of the federal rebuilding program include:

- An explicit requirement to rebuild overfished species;[4]
- Secretarial identification of overfished species and official notification to the Regional Fishery Management Councils (RFMCs);[5]
- A time limit for RFMCs to develop and implement a rebuilding plan once notified;[6]
- A requirement that populations are rebuilt in a short a time as possible but not to exceed 10 years, with limited exceptions;[7] and
- A requirement that conservation and management measures (including rebuilding) take into account the importance of fishery resources to fishing communities and, to the extent practicable, minimize adverse economic impacts;[8]

The law, as interpreted by the courts, includes the essential attributes for restoring overfished populations as identified by a recent assessment of global rebuilding programs. These include (in part):

1. Well defined objectives;

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[1] National Marine Fisheries Service, *2012 Report to Congress, Status of U.S. Fisheries* (May 2013).

[2] National Academy of Sciences, *Evaluating the Effectiveness of Fish Stock Rebuilding Plans in the United States,* (Sept. 2013) at 81 (hereinafter NAS Report).

[3] NAS Report at 10.

[4] 16 U.S.C. § 1853(a)(1), (10).

[5] *Id.* § 1854(e)(1), (2).

[6] *Id.* § 1854(e)(3) (modified in the 2006 MSRA amendments).

[7] *Id.* § 1854(e)(4).

[8] *Id.* § 1851(a)(8).

2. Finite time scales;
3. Rebuilding plan established in an open and transparent process;
4. Credible, consistent and transparent scientific monitoring of progress;
5. Simple and easily understood metrics of status and success;
6. Predefined rules for triggering corrective management action; and
7. Substantial, measurable reductions in fishing mortality at the onset of the plan.[9]

In recognizing the demonstrated success in identifying and rebuilding overfished stocks, the NAS Report concludes that:

> The strong legal and prescriptive nature of rebuilding forces difficult decisions to be made, ensures a relatively high level of tractability, and can help prevent protracted debate over whether and how stocks should be rebuilt.[10]

While the NAS Report describes "inefficiencies" of this management framework, it is important to remember why these provisions were enacted and strengthened by Congress. Repeated delays and weak action are precisely what prompted Congress to institute the rebuilding requirements in 1996, and to tighten them in 2006. As noted by the NAS Report in citing a 1993 paper,

> U.S. fisheries management was problematic because of "continued overfishing of some stocks; lack of coordination between councils and the NOAA/National Marine Fisheries Service in setting research agendas; conflicts among users; the vulnerability of the fishery management process to delays and political influence; lack of accountability; inconsistency in state and federal management measures; and adoption of unenforceable management measures."[11]

Since then, as the NAS Report and National Oceanic and Atmospheric Administration (NOAA) Status of the Stocks reports have found, the track record of rebuilding in the U.S. has been positive with record rebuilding of overfished populations over the past 2 years and overfishing at an all-time low.[12] Due to the MSA's rebuilding mandate, rebuilding is more and more a problem of the past, as the annual catch limit (ACL) and rebuilding system continues to work to prevent overfishing and depletion.

To address these challenges and ensure the long-term health for our ocean, the prosperity of our nation's fishing industries and associated businesses, and the opportunities for world-class recreational fishing, we offer a number of recommendations described in further detail below: First, build on the successful legal framework provided by the MSA by ensuring the proper application of ACLs and accountability provisions to avoid the need for rebuilding programs in the first place. Second, set criteria for when a population is considered overfished in a manner that avoids significantly depleted populations and lengthy rebuilding timelines. Third, use management procedure and management strategy evaluation (known as MSE) to improve management. Fourth, take an ecosystem approach to rebuilding. Finally, implement a monitoring, observation and research program for our nation's large marine ecosystems to provide additional information for successful management.

Benefits of the MSA Rebuilding Requirements

There are significant economic, social and ecological reasons for fully restoring overfished populations. From an economic standpoint, while a full accounting of increased profitability for commercial and recreational fisheries does not exist, rebuilding is estimated to at least triple the net economic value of many U.S. fisheries.[13] NMFS estimates that rebuilding U.S. stocks would increase the current ex-vessel value by an estimated $2.2 billion (54 percent) annually, from $4.1 billion to $6.3 billion annually. Rebuilding would generate an additional $31 billion in sales and support an additional 500,000 jobs.[14] From an ecological standpoint, benefits of rebuilding include helping to restore ecosystem structure, function and resilience. These improvements ensure continued production of ecosystem goods and services

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[9] Murawski, S.A. 2010. Rebuilding depleted fish stocks: the good, the bad, and, mostly, the ugly. *ICES Journal of Marine Science,* 67:1830–1840.

[10] NAS Report at 185.

[11] *Id.* at 24 (citing Parsons 1993).

[12] National Marine Fisheries Service, *2012 Report to Congress, Status of U.S. Fisheries* (May 2013).

[13] Ussif Rashid Sumaila, *et al.* "Fish Economics: The Benefits of Rebuilding U.S. Ocean Fish Populations," Fisheries Economics Research Unit, October 2005.

[14] Testimony of Steven A. Murawski, Ph.D. Director, Scientific Programs and Chief Science Advisor, National Marine Fisheries Service, on Implementation of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act before the House Subcommittee on Insular Affairs, Oceans, and Wildlife, Washington, D.C. (October 27, 2009).

beyond just fisheries benefits. As described below, the ecosystem benefits of rebuilding could be increased if a broader view of rebuilding is adopted.

Unprecedented Progress in Restoring U.S. Fish Populations

The MSA rebuilding requirements are achieving the stated goals of recovery for the benefit of the environment and coastal economies. In recent years, unprecedented progress has been made in ending overfishing and rebuilding overfished species. According to the recent NAS Report, of the 85 stocks declared overfished since 1997, 42 are no longer classified as overfished: 31 have been designated as rebuilt, and 11 are rebuilding.[15] Furthermore, a recent evaluation of all 44 stocks subject to rebuilding plans to comply with the 1996 Sustainable Fishery Act amendments and with sufficient information to assess progress under the plans found that 64 percent had been rebuilt or had made significant rebuilding progress (defined as achieving at least 50 percent of the rebuilding target and at least a 25 percent increase in abundance) since implementation of the rebuilding plan.[16]

Attachment 1 shows the decline in the percentage of managed stocks subject to overfishing and in an overfished condition from 1997–2011. Rebuilding success stories include Atlantic sea scallops in New England, bluefish in the Mid-Atlantic; lingcod in the Pacific and blue king crab in the North Pacific. The addition of science-based ACLs and accountability measures to the law in 2007 [17] strengthens the management framework to achieve not only continued success in rebuilding overfished species but also significant safeguards against future fishing-related depletion.

Avoiding the Perils of Depleted Fish Populations

The MSA rebuilding framework is essential to the health of our ocean and the economic and social well-being of our nation's coastal communities. Aside from the obvious loss of yield and accompanying socio-economic benefits that cannot be realized from a depleted population, maintaining fish populations at low abundance levels poses significant risks, in particular to fishery stability. Fishing generally alters the age and size structure of a population by removing the older, larger individuals from the population.[18] Depleted populations are often made up predominantly of younger fish with population dynamics dominated by recruitment variability that is largely influenced by environmental factors. This leads to greater fluctuations in biomass and fishery yield, instability and unpredictability in the fishery.[19] Increased variability combined with low population size is a factor in increased extinction risk.[20]

An additional peril of delayed rebuilding is that the likelihood of fishing-induced regime shifts increases when key populations are highly depleted. A regime shift in marine ecosystems occurs when ecological systems and the services they provide are transformed from one stable state to an alternative state. Examples of this can be found in several North Atlantic large marine ecosystems where trophic cascades due to fishing-induced changes in top predator abundance (most notably cod) have led to an increased abundance of lower trophic species.[21] The best way to prevent such sudden and catastrophic ecosystem changes is to maintain ecosystem resilience by maintaining large, stable populations and maintaining biodiversity.[22]

Ample Flexibility To Incorporate Social and Economic Considerations

A popular criticism of the MSA is that it provides little flexibility to managers for incorporating socio-economic concerns into rebuilding programs. A key part of

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[15] NAS Report at 59.

[16] Natural Resources Defense Council (NRDC), *Bringing Back the Fish: An Evaluation of U.S. Fisheries Rebuilding Under the Magnuson-Stevens Fishery Conservation and Management Act* (2013).

[17] 16 U.S.C. § 1853(a)(15).

[18] Berkeley, S.A., et al. 2004. Fisheries sustainability via protection of age structure and spatial distribution of fish populations. *Fisheries* 29:23–32.

[19] Hsieh, C,. et al. 2006. Fishing elevates variability in the abundance of exploited species. *Nature* 443:859–862; Shelton, A.O. and Mangel, M. 2011. Fluctuations of fish populations and the magnifying effects of fishing. *Proceedings of the National Academy of Sciences* 108:7075–7080; and Brunel, T and GerJan, J. 2013. Is age structure a relevant criterion for the health of fish stocks? *ICES Journal of Marine Science* 70:270–283. *See also,* NAS Report at 133.

[20] Johst, K and Wissel, C. 1997. Extinction risk in a temporally correlated fluctuating environment. *Theoretical Population Biology* 52: 91–100. *See also,* NAS Report at 133.

[21] See, for example, Frank, K.T., et al. 2005. Trophic cascades in a formerly cod-dominated ecosystem. *Science* 308(5728)1621–1623; and Osterblom, H., et al. 2007. Human-induced trophic cascades and the ecological regime shifts in the Baltic Sea. *Ecosystems* 10:877–889.

[22] Folke, C,. et al. 2004. Regime shifts, resilience, and biodiversity in ecosystem management. *Annual Review of Ecology, Evolution, and Systematics* 35:557–581; Scheffer, M., et al. 2001 Catastrophic shifts in ecosystems. *Nature* 413:591–596.

this criticism is aimed at the selection of a ten year rebuilding limit (with limited exceptions) which is considered by some to be arbitrary. *U.S. Ocean Fish Recovery: Staying the Course* published in *Science* in 2005 found that the 10 year limit is reasonable and beneficial. It noted that the drafters of the 1996 SFA amendments to the MSA balanced the advice of population dynamics experts that many depleted marine organisms were capable of rebuilding to target levels within about 5 years in the absence of fishing, socio-economic concerns and the desire for successful rebuilding and sustainable fisheries in deciding upon a 10 year limit.[23] The article notes that "[t]his optimizing balance was deliberate and compassionate, not arbitrary."[24]

The other key part of the criticism is that this 10 year rebuilding limit does not allow for adequate incorporate of socio-economic concerns. In reviewing rebuilding plans from 1997–2011, the NAS Report found that the 10 year limit on rebuilding determined the target year for 31 of the 70 stocks for which rebuilding plans with a defined timeframe were implemented. Thus, the MSA and NS1 guidelines provide ample flexibility to incorporate socio-economic concerns.[25]

In March 2013, Ocean Conservancy analyzed rebuilding timelines of the 65 stocks currently subject to rebuilding plans which were included in the *2011 Status of Stocks Report to Congress* "Fish Stocks in Rebuilding Plans" trend analysis in order to determine what level of flexibility is afforded to the regional fishery management councils (RFMCs) and National Marine Fisheries Service (NMFS).[26] Overall, our analysis (Attachment 2) shows that the RFMCs and NMFS have interpreted and applied the MSA's rebuilding requirements with ample flexibility in establishing target rebuilding dates upon which to base annual catch limits. In only 1 of the 19 rebuilding plans in our analysis for which T_{MIN} information was available did the T_{MIN} estimate actually come close to the 10-year rebuilding limit (Pribilof Island blue king crab managed by the North Pacific Fishery Management Council (NPFMC)).[27] In five of the nine stocks to which the 10-year rule applied, RFMCs set target rebuilding timelines at the maximum legally permissible limit, even though shorter rebuilding timelines were possible.

In summary, the drafters of the 10 year rebuilding requirement of the MSA carefully considered the tradeoffs associated with action forcing provisions to restore the health of U.S. fisheries and the need to consider important socio-economic concerns in rebuilding programs. Our analysis shows that the RFMCs and NMFS have utilized the flexibility of the law and NS1 guidelines in setting recovery dates for overfished species.

Future Considerations and Recommendations

While the overall rebuilding trend is positive, challenges remain. The NAS Report found that poor performance for some stocks could be attributed to the combined effects of delays in implementing rebuilding plans and difficulties implementing reduced target fishing mortalities.[28] In other cases, the failure of rebuilding plans to end overfishing has been due to difficulties to reduce overall fishing mortality when a species is caught as bycatch of a different fishery.[29] To address these challenges and to deliver on the sustainable fishery goals of the MSA, we recommend that any future changes to the law, national or regional policies either build upon or improve implementation of the current legal framework for successful rebuilding as described below.

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[23] Safina et. al., Science, Vol 309, at 707 (July 29, 2005).

[24] *Id.*

[25] NAS Report at 81.

[26] NMFS, Fish Stocks in Rebuilding Plans: A Trend Analysis (2011), *available at* http://www.nmfs.noaa.gov/sfa/statusoffisheries/2011/RTC/2011_RTC_TrendAnalysis.pdf. (We analyzed all stocks reviewed by NMFS in the analysis except those 1) that have been rebuilt, 2) for which a formal rebuilding program had not been submitted under the MSA (Atlantic salmon), 3) for which a rebuilding plan was not required (South Atlantic pink shrimp), 4) that did not have reliable estimates of biomass and/or fishing mortality (all Caribbean and Western Pacific complexes and species identified as overfished), and 5) that are highly migratory species. We also did not include West Coast salmon rebuilding plans. For the remaining thirty-seven plans, we requested T_{MIN} (the rebuilding timeframe in the absence of all fishing), T_{MAX} (the maximum amount of time allowable for rebuilding under the protocol set forth in the national standard guidelines) and T_{TARGET} (the target date chosen for rebuilding) information from NMFS and the RFMCs in order to assess the amount of flexibility used in setting rebuilding targets.)

[27] As noted in the NAS Report at pg. 131, it appears that regimes in the Bering Sea and Gulf of Alaska have shifted to a state less conducive for crab productivity. As such, even in the absence of fishing mortality for over a decade, the population has not recovered.

[28] NAS Report at 69.

[29] *Id.* at 71.

The NAS Report makes a strong case that the best option is to avoid depleting populations in the first place and calls for taking corrective action sooner—when stocks are heading in the wrong direction—rather than waiting until they are officially classified as "overfished." Once fish stocks are depleted there are limited options for minimizing the reductions in fishing necessary to rebuild the population.

The addition of requirements for setting science-based ACLs and accountability measures (AMs)[30] in the MSA in 2006 has profoundly impacted rebuilding success and the future need for rebuilding plans in a positive way. With ACLs and AMs now in place for all managed species, NMFS recently declared that the United States has turned the corner on ending overfishing.[31] A review of the past NOAA *Status of the Stocks* reports shows that indeed RFMCs with a history of science-based catch limits that are monitored closely against actual catch and bycatch have fewer species classified as subject to overfishing. These new management requirements, if implemented properly, should end the serial depletion of fisheries by preventing overfishing and by achieving established management targets, thus negating the need for rebuilding.

Importance of Proper Catch Accounting and Monitoring of Stock Recovery

One important aspect of success is ensuring that catch accounts for all types of mortality—both directed landing and bycatch mortality—given the significant role that bycatch mortality can play in overfishing. As interpreted by the NS1 Guidelines, ACLs and AMs must account for "the total quantity of fish . . . taken in commercial, recreational, subsistence, tribal, and other fisheries . . . *as well as mortality of fish that are discarded.*"[32] The MSA provision requiring a standardized bycatch reporting methodology to assess the amount and type of bycatch occurring in the fishery[33] is also a critical component of long-term success. For those RFMCs lacking an adequate methodology, factoring management uncertainty into the catch-setting process becomes especially important.

Another important aspect of success is carefully tracking progress in preventing overfishing and recovery of overfished species. The review requirements of the law and NS1 Guidelines, which focused on assessing adequate progress and incorporating new information into rebuilding trajectories,[34] are important provisions that must be fully embraced in the regions to ensure rebuilding success. As noted by the NAS Report, the MSA requires review of the progress of rebuilding plans every 2 years but the frequency of updated, qualitative stock assessments varies widely both within and among regions. The report concludes that more frequent assessments might lead to more frequent but less extreme changes in rebuilding plans and closer adherence to fishery management providing greater long term stability for fishing communities.[35] Furthermore, more frequent stock assessments can help better refine estimates of long term biomass associated with management benchmarks like maximum sustainable yield to ensure recovery is achieved.

Recommendations: Better implementation of the MSA focused on revising processes for setting annual catch limits and accountability measures consistent with the "one in four rule" contained in the NS1 Guidelines as needed; ensuring that annual catch limits adequately address bycatch; establishing adequate standardized bycatch reporting methodologies; and ensuring that Secretary of Commerce review of rebuilding plans is conducted to assess progress, incorporate new information, and guide plan modifications.

Proper Setting of Criteria for When a Population is Overfished

Minimum Stock Size Threshold (MSST) is a key benchmark used by RFMCs to determine when a fish population is overfished and requires a rebuilding plan. The Technical Guidance on the Use of Precautionary Approaches to Implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act (Technical Guidance) offers a number of suggestions for setting MSST correctly. In order to avoid perceived conflicts with the MSA's 10-year rebuilding limit, MSST must be set in a manner that best ensures a short rebuilding timeline. This kind

[30] 16 U.S.C. § 1853(a)(15).

[31] NOAA Press Release, "U.S. 'Turning a Corner' in Ending Overfishing (March 8, 2011), *available at* http://www.noaanews.noaa.gov/stories2011/20110308_endingoverfishing.html.

[32] 50 C.F.R. § 600.310(f)(2)(i) (defining "catch") (emphasis added); *Oceana, Inc. v. Locke,* 831 F. Supp. 2d 95, 115–16 ("Since the 'catch' limited by [annual catch limits] includes both fish that are retained (landed) and bycatch that are discarded at sea, *see* 50 CFR § 600.310(f)(2)(i), the [annual catch limits for the stocks at issue] may be exceeded by accumulation of bycatch alone.").

[33] 16 U.S.C. § 1853(a)(11).

[34] Id. at § 1854(e)(7); 50 CFR Part 600.310(j)(3)(ii).

[35] NAS Report at 5.

of thinking is already incorporated into the existing Technical Guidance in the recommendation that natural mortality be taken into account when setting MSST.[36] Following this recommendation means that species with low natural mortality rates, or that exhibit evidence of depensatory natural mortality (such as cod, haddock and Alaskan walleye Pollock),[37] which generally take longer to recover from an overfished status, will have MSSTs set closer to the biomass level at MSY (B_{MSY}) than species with higher resilience.

In cases where the acceptable biological catch (ABC) is set such that fishing mortality declines when biomass falls below B_{MSY}, it is somewhat less critical to properly define MSST, as those management procedures, in theory, are self-correcting. However, not every region employs such a control rule. We therefore support the finding of the NAS Report related to better use of harvest control rules to promptly but gradually reduce fishing mortality rates once a population falls below MSY based thresholds in order to prevent populations from becoming overfished and in need of a rebuilding plan.[38]

Recommendation: Better implementation of the MSA via use of existing information like life history, catch and bycatch to set MSST at a level that will avoid lengthy rebuilding timelines. For species with low resilience or in cases where information is lacking, set MSST close to MSY to rebuild more quickly and buffer against uncertainty. Furthermore, more widespread use of harvest control rules that require prompt but gradual reductions in fishing mortality rates to avoid fish populations from becoming overfished and in need of rebuilding plans.

Rebuilding Directly to Biomass at Optimum Yield

Optimum yield (OY), as defined by the MSA, is the maximum sustainable yield (MSY) as reduced by economic, social, and ecological factors.[39] This means the biomass at optimum yield levels (B_{OY}) is greater than B_{MSY} to incorporate important social, ecological or economic considerations. These considerations include desired management targets (for example, a focus on larger fish as opposed to maximizing total pounds landed for recreational fisheries) and ecosystem health and resiliency (managing population levels above those at MSY to best fulfill roles in the ecosystem). There is currently an inconsistency in MSA objectives with regard to fish population levels, depending on whether or not stocks are in an overfished condition. For the management of stocks that are not overfished the goal is OY, which occurs at $B_{OY,}$ and is greater than B_{MSY}.[40] However, the goal for overfished stocks is to rebuild to B_{MSY}.[41] Thus, MSY is treated as both a limit and a target, depending on whether or not a stock is overfished. Given that the goal of NS1 is to achieve optimum yield on a continuing basis, the goal of a rebuilding plan should also be to rebuild directly to a population level supporting OY, as opposed to rebuilding to B_{MSY} and then having to take subsequent management action to achieve B_{OY}.

Recommendation: Amend the MSA to specify that the rebuilding biomass target is the biomass at optimum yield, where OY occurs at some level below MSY and consequently at a biomass level above B_{MSY}.

Use of Management Strategy Evaluation/Management Procedure Approach

We strongly agree with the recommendation of the NAS Report to advance the use of management strategy evaluation (MSE) to entertain a broader spectrum of ecosystem dynamics and possible outcomes than is typically considered in single-species rebuilding projections.[42] The "traditional" approach to managing fisheries consists of evaluating the status of the resource via the stock assessment process. Scientists' advice to managers about current stock status and allowable future catches, including rebuilding trajectories, is usually based on a "best" model run, chosen to be the most likely representation of reality from a number of possible configurations of one or more model families. There are a number of problems with this approach that can lead to poor performance of the fishery management system and failed rebuilding plans. First is the variability in catch level advice that can result

[36] Restrepo, V., et al. 1998. Technical Guidance on the Use of Precautionary Approaches to Implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act. NOAA Technical Memorandum NMFS–F/SPO–40.

[37] Keith, D.M. and Hutchings, J.A., 2012. Population dynamics of marine fishes at low abundance. *Canadian Journal of Fisheries and Aquatic Sciences* 69:1150–1163.

[38] NAS Report at 2 and 5.

[39] 16 U.S.C. § 1802(33)(B).

[40] National Standard One, 16 U.S.C. § 1851(a)(1) ("Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.").

[41] 16 U.S.C. § 1802(33)(C).

[42] NAS Report at 138.

from one assessment to the next due to the addition of new data, change of modeling environment or change of model configuration. These types of assessment changes can also lead to significant changes in rebuilding targets which can throw off rebuilding progress. Second is an inability to properly evaluate long-term trade-offs among alternative rebuilding strategies, including proper consideration of risk, which directly impacts rebuilding success. Third is the political haggling that arises over setting management benchmarks such as ABC that provide the upper limit for ACLs. In the absence of a proper risk policy that determines acceptable risk of overfishing in light of all the proper trade-offs, RFMCs have the ability to reject their scientific advisers' ABC recommendations on the basis that they would like a different risk level.[43]

Management strategy evaluation (MSE) or the management procedure (MP) approach present alternative ways to manage a fishery.[44] MSE and MP are able to deal with the above issues inherent in the "traditional" approach and therefore have the potential to result in increased success of rebuilding plans. These methods employ catch control rules that specify how ABC is calculated from available data on an annual basis, but unlike the traditional approach, these catch control rules are thoroughly evaluated against alternative options via simulation testing before they are implemented. The simulations determine which of the alternative catch control rules perform best in terms of achieving management goals (such as rebuilding by T_{TARGET} with a certain probability) while avoiding undesirable outcomes (such as falling below a minimum biomass threshold or exceeding some pre-specified socioeconomic limit reference point). Candidate control rules or rebuilding strategies are tested against factors like observation error, model misspecification, management uncertainty, and environmental variability. Where the MSE/MP approach has been applied successfully, there has been a more thorough evaluation of risk, less interannual catch variability, and less scientific and management debate about catch limits. MSE and MP also allow evaluation of simpler ABC-setting methods that are not necessarily model-based, which can save time and resources in the long-run. Although these methods may take time to develop initially, the benefits of implementing the resulting more robust management and rebuilding strategy generally outweigh the cost of the initial investment in the long run.

Recommendation: NMFS, RFMCs and Scientific and Statistical Committees (SSCs) should make better use of MSE and MP in making management decisions, including specification of biological reference points and evaluation of alternative rebuilding strategies against management goals in rebuilding plans.

Taking an Ecosystem Approach to Rebuilding

In a world of increasing environmental variability, we face greater uncertainty today about how fish populations and ecosystems respond to human activities, including rebuilding measures. In addition, fishing itself has broad ecosystem impacts that can compromise the health of natural populations, the fishery that depends on them, and the services ecosystems provide. Fishery models that rely on the single-species theory of fishing, and do not take into account ecosystem factors when trying to explain trends in population biomass and dynamics, may predict stock recovery rates that are much higher than subsequently observed in the fishery. The classic example of this phenomenon is Atlantic cod.[45] Similarly, rebuilding strategies that focus solely on attaining single-species fishing mortality and biomass goals fail to recognize the importance of rebuilding ecosystem structure, diversity, and processes which are crucial to maintaining or rebuilding resilience of ecosystems and the coastal communities that rely on revenue from fish stocks and ecosystem services.[46]

An ecosystem based approach that accounts for the uncertainty of changing environmental conditions and the broader impacts of fishing will be critical to rebuilding

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[43] An example for this can be found in the current Gulf of Mexico ABC Control Rule which gives the Council the ability to set risk on an *ad hoc* basis: "The indicated default risk of exceeding overfishing limit for Tier 2, or default acceptable biological catch buffer levels for Tier 3a and 3b, are to be used unless specified otherwise by the Council on a stock by stock basis." GMFMC. 2011. Final Generic Annual Catch Limits/Accountability Measures Amendment for the Gulf of Mexico Fishery Management Council's Red Drum, Reef Fish, Shrimp, Coral and Coral Reefs, Fishery Management Plans.

[44] Butterworth, D. 2007. Why a management procedure approach? Some positives and negatives. *ICES Journal of Marine Science* 64:613–617.

[45] Murawski, S.A., et al. 2001. Impacts of demographic variation in spawning characteristics on reference points for fishery management. *ICES Journal of Marine Science* 58:1002–1014 and Murawski, SA. 2010. Rebuilding depleted fish stocks: the good, the bad, and, mostly, the ugly. *ICES Journal of Marine Science* 67:1830–1840.

[46] Pitcher, TJ and Pauly, D. 1998. Rebuilding ecosystems, not sustainability, as the proper goal of fisheries management. In: *Reinventing Fisheries Management* (ed T Pitcher, D Pauly, and P Hart). Chapman & Hall Fish and Fisheries Series. p 311–325.

success for U.S. fisheries. This approach will likely require the development of new rebuilding metrics and management reference points that go beyond the traditional biomass and fishing mortality thresholds and address other factors vital to proper fisheries management such as population demographics, ecosystem characteristics and services, and socio-economics. One reference point that should be further evaluated is fishery selectivity pattern, which determines population age and size structure on the single-stock scale and community properties such as the size-spectrum slope on an ecosystem level.[47]

Recommendation: The MSA should be strengthened in a manner that supports an ecosystem based approach to management, including rebuilding overfished species. This includes improving the law by better incorporating ecosystem considerations into management through the development of fishery ecosystem plans and strengthening current implementation of the rebuilding requirements of the law to include aspects of ecosystem rebuilding and resiliency to changing environmental conditions such as restoring population demography, habitat, ecosystem structure and diversity, and coastal communities.

Establish Monitoring, Observation and Research Programs for our Nation's Large Marine Ecosystems

Given the significant stressors facing our nation's large marine ecosystems and the longstanding call to transition fisheries to an ecosystem-based management approach, the RFMCs and NMFS can greatly benefit from reliable and timely information on existing and changing environmental conditions in order to manage fisheries sustainably, including recovery under rebuilding plans. Investments in regional monitoring, observation and research programs for each of the nation's large marine ecosystems (LMEs) can help provide fishery managers and the public with information necessary to make better informed decisions. The resulting data can also help ensure that other uses of marine resources are compatible with fishing, fisheries management, and the community benefits that come from resilient ecosystems and robust fish populations.

Recommendation: Establish monitoring, observation and research programs for our nation's large marine ecosystems to provide additional information for management.

Response to the NAS Reports Treatment of the Mixed Stock Exception

The NAS Report suggests that greater use of the "mixed stock exception" could reduce the impact of rebuilding on the catch of healthy fish stocks. It proposes that the operational feasibility of the mixed stock exception could be modified to expand the range of situations to which it can be applied, subject to assurances that the less productive species are not driven to unacceptably low levels. Unfortunately, while the Report seems to imply that a greater level of risk is appropriate, it provides no additional guidance as to what constitutes adequate "assurances" or "unacceptably low levels" beyond what is currently in the NS1 Guidelines. As the report acknowledges, stocks at depleted levels are at risk for increased variability and are more susceptible to environmental changes, which could negatively impact future rebuilding efforts.[48] Furthermore, the report fails explain how RMFCs should go about choosing one stock over another when conflicts inevitably arise. In this regard, the NAS Report falls short of addressing the problem with operationalizing the mixed stock exception to date: that it would allow overfishing to continue. Allowing overfishing on any stock violates both the spirit and the letter of the MSA by permitting overfishing on a stock within a stock complex in order to achieve optimum yield for another stock. We have made substantial progress toward ending overfishing and rebuilding U.S. fish stocks. Allowing overfishing on some stocks is shortsighted and could undo the long-term progress we are making. Finally, one species viewed as limiting the catch of healthier populations by one fishery or group of fishermen could be of significant value to another fishery.

Conclusion

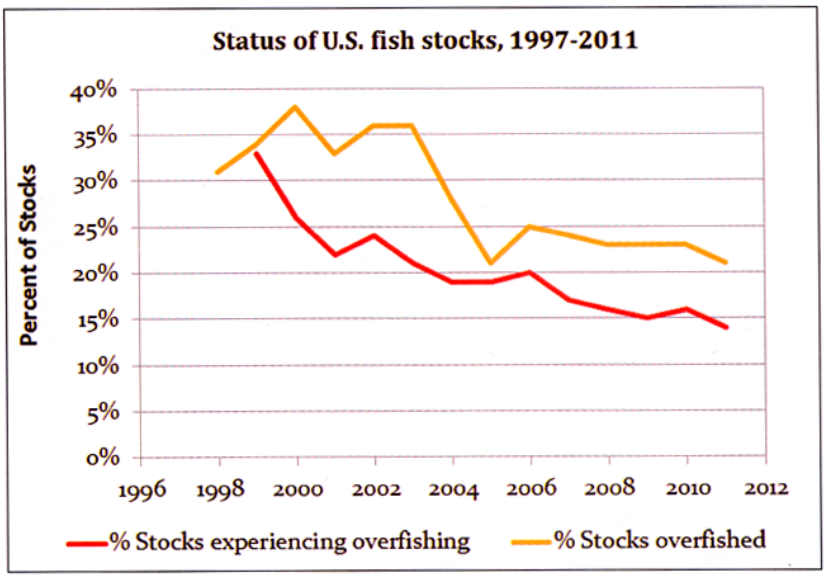
Over the past decade, significant progress has been made in ending overfishing and rebuilding overfished populations in the United States. While the NAS Report highlights the challenges and complexities of trying to evaluate science, and make decisions about catch limits and other management measures, it underscores the historic progress that has been achieved under the current law in ending overfishing and rebuilding fish populations. For stocks that were placed under a rebuilding

[47] Brunel, T and GerJan, J. 2013. Is age structure a relevant criterion for the health of fish stocks? *ICES Journal of Marine Science* 70:270–283; and Garcia, SM, et al. 2012. Reconsidering the consequences of selective fisheries. *Science* 335:1045–1047.

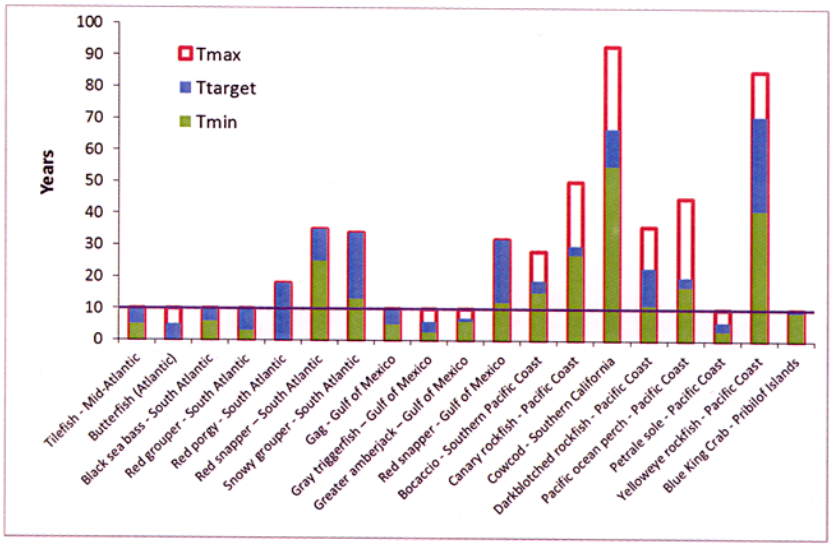
[48] NAS Report at 133.

plan, fishing mortality has generally been reduced, and stock biomass has generally increased. Moving forward, the NAS Report is the latest report to highlight the need to move to a management system that does not look at fish stocks in a vacuum, but takes into account the rest of the ecosystem in which they live and the impacts of changing environmental conditions. Building upon the successful rebuilding approaches of the MSA will ensure healthy oceans and fishing communities for present and future generations.

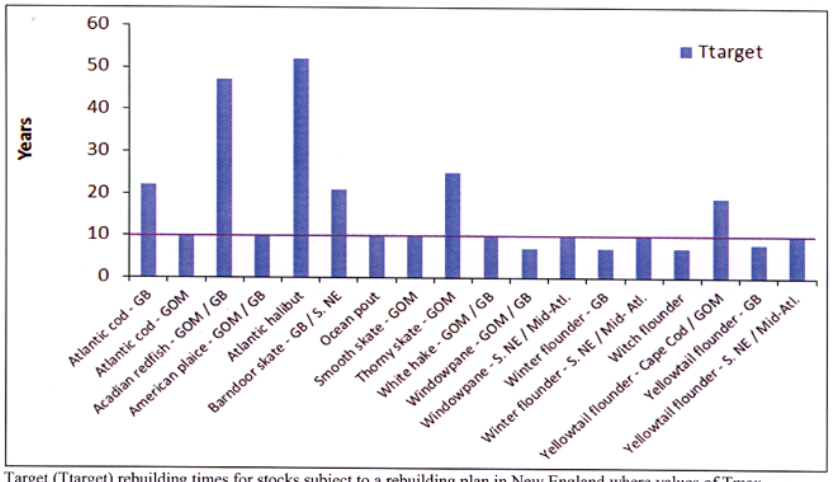
Attachment 1: Status of U.S. fish stocks, 1997-2011. Source*: 2011 Report to Congress. Status of U.S. Fisheries. National Marine Fisheries Service. May 2012.*



Attachment 2: Rebuilding Timelines for Stocks Subject to a Rebuilding Plan in the 2012 Status of the Stocks Report



Minimum (Tmin), maximum (Tmax) and target (Ttarget) rebuilding times for stocks currently subject to a rebuilding plan, where values of Tmin and Tmax were available. The horizontal line marks the ten-year rebuilding deadline.



Target (Ttarget) rebuilding times for stocks subject to a rebuilding plan in New England where values of Tmax (maximum) and Tmin (minimum) rebuilding times were not available. The horizontal line marks the ten-year rebuilding deadline.

The CHAIRMAN. I thank all of you for your testimony.

I will now recognize myself for questioning as we start, and I want to ask all of you essentially the same questions I asked the first panel, and we will start with Dr. Hilborn and move that way.

Do you believe that the current Magnuson-Stevens Act works?

Dr. Hilborn, start with you, yes or no?

Dr. HILBORN. Yes, with reservation.

The CHAIRMAN. Of course.

Mr. Moore.

Mr. MOORE. For the most part, yes.

The CHAIRMAN. OK. Mr. Giacalone.

Mr. GIACALONE. Yes, definitely with reservations, as Dr. Hilborn said needs to be——

The CHAIRMAN. We will explore those reservations, I am sure.

Mr. Deem?

Mr. DEEM. Yes, I do, but it needs some fine tuning based on the things we are learning as we go.

The CHAIRMAN. OK.

Dr. Bruno?

Dr. BRUNO. Yes.

The CHAIRMAN. OK.

Mr. Dorsett?

Mr. DORSETT. When it comes to overfishing and rebuilding, yes.

The CHAIRMAN. OK. Well, we got a "yes" with reservation, so now let me ask another question that follows maybe that reservation that we are talking about.

Do you support then a change in the Magnuson-Stevens Act to allow the councils to have more flexibility in rebuilding the fisheries?

Yes or no, and we will start with Dr. Hilborn.

Dr. HILBORN. Yes, if there were strategic constraints, as Dr. Sullivan mentioned.

Mr. MOORE. Yes, if properly written.

The CHAIRMAN. Very good.

Mr. Giacalone?

Mr. GIACALONE. Yes. I think it is one of the core benefits of the Magnuson-Stevens Act is the regional council process because of the localized knowledge, so absolutely yes.

The CHAIRMAN. Mr. Deem?

Mr. DEEM. Yes, as long as we can track the growth of this particular stock.

The CHAIRMAN. Good. Dr. Bruno?

Dr. BRUNO. Yes.

The CHAIRMAN. Good. Mr. Dorsett?

Mr. DORSETT. No, because I am not sure what "flexibility" means exactly in this case.

Mr. TIERNEY. Don't exactly know what now?

Mr. DORSETT. Because I don't know what "flexibility" means in this case.

The CHAIRMAN. OK. Well, talking about the reservations that some of you made and they maybe individual, and I just mentioned one of those reservations. Do you believe that some changes then, with specifically flexibility, can be done without harming the overall Magnuson-Stevens Act?

Dr. Hilborn?

Dr. HILBORN. Definitely.
The CHAIRMAN. Mr. Moore?
Mr. MOORE. Yes.
The CHAIRMAN. Good.
Mr. Giacalone?
Mr. GIACALONE. Yes, definitely.
The CHAIRMAN. Mr. Deem?
Mr. DEEM. Without a doubt. It sets up a great framework for success in fisheries management, and I think we need to continue with it.
The CHAIRMAN. Dr. Bruno?
Dr. BRUNO. Yes. Flexibility could improve it, could also gut it. It depends on how it is done.
The CHAIRMAN. And Mr. Dorsett?
Mr. DORSETT. And for that reason, I would say no.
The CHAIRMAN. OK. Well, we are getting a consensus here. Specifically on the rebuilding of stocks, because that has been kind of a common theme throughout virtually all the testimony that we have had and the hearings we have had, do you believe that Congress should make modifications to the rebuilding provisions of the Magnuson-Stevens Act? And again, yes or no.
We will start with Dr. Hilborn.
Dr. HILBORN. Yes.
The CHAIRMAN. OK.
Mr. Moore?
Mr. MOORE. Yes, as I laid out in my testimony.
The CHAIRMAN. Yes, you did.
Mr. Giacalone?
Mr. GIACALONE. Yes, I think they should be expanded to include other alternatives.
The CHAIRMAN. OK.
Mr. Deem?
Mr. DEEM. Yes.
The CHAIRMAN. OK.
Dr. Bruno?
Dr. BRUNO. Yes.
The CHAIRMAN. And Mr. Dorsett?
Mr. DORSETT. I would say if we are going to enhance them with more tools in the toolbox to address things like changing environment, et cetera.
The CHAIRMAN. Boy, if we get six yeses here, this should be an easy part of it then.
Well, thank you very much. Again, I just wanted to ask that question kind of for the record. I understand there are reservations, and it was pointed out. I know Mr. Moore put that in his testimony and we appreciate that part.
So, with that, let me recognize the Ranking Member, Mr. DeFazio.
Mr. DEFAZIO. Mr. Chairman, I defer to Mr. Pallone.
The CHAIRMAN. OK. We will do Mr. Pallone first.
Mr. PALLONE. Thank you, Mr. Chairman.
In addition to the rest of the panel, I wanted to welcome Jeff Deem from the RFA. Do you know that I work a lot with Jim Donofrio, who is the Executive Director of the RFA in reforming

Magnuson-Stevens. So I am glad to see that you are represented here today.

I wanted to ask a question of Mr. Deem, but then if anyone else wants to answer it, they can. The NRC report discussed today finds that when data is insufficient to perform analytical stock assessments or to establish important reference points with sufficient confidence that alternative paradigms should be considered, so I wanted to ask if you would discuss what types of tools or alternative paradigms can be provided to fishery managers that will allow them to accommodate for specific uncertainty but also considering the social and economic effects of rebuilding?

Mr. DEEM. Well, that is an interesting question. What we have now is we have to go by what the science and statistics committee tells us, so in order to increase their ability to give us good answers, I think we need to allow them to have more flexibility to do intake field data from fishermen and people that participate in the fishery.

At the moment, a lot of that is suspect and it has to be weighed, and it always should be weighed, of course, but it doesn't carry the weight that the science does. And the other problem, of course, is that we take or we are asked to take the science as absolute, and we know, as hard as they try, that it is not always accurate; it is not always the correct stock size, and we need a balance. We need to be allowed to balance the two together. Thank you.

Mr. PALLONE. Thank you. Would anyone else—I mean, you don't have to. Anybody else want to answer the question?

Go ahead.

Mr. MOORE. Thank you, Mr. Pallone. I am not sure I could give you a specific means of addressing rebuilding if you don't have the data, but I think it is obvious that in a lot of cases, we don't have data, as Mr. Deem pointed out. We need more of it, and when we don't have the data, while we should act cautiously, that doesn't mean we should do nothing. Either don't do rebuilding, or in the worst case, from our standpoint, don't allow any fishing.

You need to have some ability to deal with what you have and move forward in a cautious but positive manner to allow harvest up to a reasonable point, as recommended by your scientists.

Mr. PALLONE. OK. Anybody else want to take a stab at it?

Go ahead.

Mr. GIACALONE. Data-poor stocks that have no directed fishery on them, the SSC should be offered an opportunity to come up with alternative ways to set those catch advisers than forcing the science centers and SSCs to come up with some scientific methodology that shows that there is a biomass target, and we have had, in our fisheries, we have three or four nontarget species that most people don't even see and now rebuilding plans on them, so we question, without assessments, how the Magnuson-Stevens Act is sort of forcing those issues to occur, because as we march along in the 10 years, they are going to bear root into problems for us.

Mr. PALLONE. OK. I see another hand up.

Mr. DORSETT. I was really curious about that particular recommendation in this rebuilding report, and the reason is, is because in the case of species without formal stock assessments, they are primarily of unknown status, and therefore, they don't have a

rebuilding plan associated with them. I think the current system of having annual catch limits and accountability measures then as a safety net for those fisheries helps prevent serial depletion so we don't find out when it is too late and the science catches up to the reality on the water for these species that we are in a situation of significant depletion, so I think the current safety net is an incredibly important attribute in the management system that can help ensure sustainable fisheries in the future.

Mr. PALLONE. All right. That is all I have, if no one else wants to answer, I will leave it alone.

Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman and recognize the gentleman from Louisiana, Dr. Fleming.

Dr. FLEMING. Thank you, Mr. Chairman.

Dr. Hilborn, excellent, excellent presentation, an excellent 3–D view of really what happens from a data standpoint, but I am curious, you may have mentioned this but I didn't pick up on it. Is there a point after which when you rebuild a stock that the rebuilding slows down?

Given the fact that there is no fishing or limited fishing, you rebuild the stock, and it is naturally regrowing, does it begin to slow down at some point because of limitation of habitat and access to food nutrition for the fish?

Dr. HILBORN. Yes, definitely. I mean, any population in the absence of exploitation will generally increase and fluctuate often wildly about some average level. They can't grow forever. The empirical data shows very clearly that they grow much faster with much higher probability as the population is smaller and as the fishing pressure is lower, so——

Dr. FLEMING. Right.

Dr. HILBORN [continuing]. The data really support some very basic ecological theory about what is called density dependent population growth rate.

Dr. FLEMING. Right. So, obviously, if you are excessively cautious or overly conservative, that you could actually see a slowing of the rebuilding beyond a certain point, so it seems to me, if your goal is maximum production over time, whether it is for nutritional or economic purposes, I really like the idea of a sweet point, that is where there is an equilibrium between the fishing pressure and the exploitation where you get maximum yield, and so in order to achieve that, it seems to me that you need excellent survey data that stays current and you need local flexibility because, obviously, that is going to vary from one place to another. Would you agree with that, sir, or have anything to add to it?

Dr. HILBORN. Well, they certainly vary from one ecosystem to another and we have moved beyond thinking about this single species one at a time to incorporating more of the ecosystem interactions, although the single species theory definitely gets you a long way there, and it depends on what you want. There is an economic sweet spot that maximizes profits, and that is different from what would be a biomass yield sweet spot.

Dr. FLEMING. Sure.

Dr. HILBORN. But those do exist, and to a great extent, the targets that scientists, both at NOAA and elsewhere, they try to esti-

mate where those are. But I emphasize this, is that we—what is the traditional target for yield that the fishing rate maximizes long-term maximum yield has been interpreted as a limit, that is, you shall never exceed that, and many of my colleagues in the science community somehow believe that if you just go a little bit above that level, which we often called FMSY, that something terrible happens. In fact, the only thing that happens is your long-term average yield is a little bit lower, and in fact, the risks in terms of yield are very symmetric, and underfishing a little bit poses the same yield risks as overfishing a little bit.

Dr. FLEMING. So it doesn't collapse the system if you overshoot a little bit. In other words, there is no long-range value to being overly conservative, that you always—once you note that you have overfished a bit, you can always slow down the pressure and let it revive itself, rebuild itself.

Dr. HILBORN. Well, the key is reducing the fishing pressure, and make no mistake, 20 years ago, we had many stocks that were fished three or four times too hard, and NOAA has done excellent and the council has done an excellent job of reducing that, but being 20 or 30 percent over that level doesn't pose a long-term risk at all. We do want to get it down there to that level and probably, on average, below it for a bunch of other reasons.

Dr. FLEMING. All right. Thank you. And again, I would just comment before I go to my next question, the key to that obviously is not to be excessively conservative and to make sure we do plenty of good stock assessment surveys, which we are not doing. That is a big problem. We need to fix that.

Mr. Moore, can you comment on the current mandatory role of SSCs under Magnuson.

Mr. MOORE. Thank you, Congressman. In our council, the Pacific Council, the SSC provides the basic overfishing level and they allow acceptable biological catch, and within those parameters, the council then decides how much you are going to be able to harvest, keeping in mind all the rebuilding requirements, so forth and so on. The SSC at our council works very well. They meet at the same time the council does, they provide us with good information. The biggest problem we have, quite frankly, is finding enough people to be able to serve on the SSC and take the time to do the work that is necessary.

Dr. FLEMING. All right. Thank you. My time is up. I yield back.

The CHAIRMAN. I thank the gentleman and recognize the Ranking Member, Mr. DeFazio.

Mr. DEFAZIO. Thanks, Mr. Chairman.

I raised briefly in my opening remarks something I would like people to reflect on, which is when we reach a critical level, we impose a recovery plan, but obviously, there should be some way to anticipate that we are on the way to that. I mean, I realize there are annual fluctuations. We have the decade of oscillation in the Pacific, things that might lead to that, but are we doing a good job of avoidance? Because it seems to me, I mean, we are having a discussion about what could we put more flexibility in recovery plans, I think you are hearing a lot that people want to do that, but can we avoid having more recovery plans and are we doing a good enough management job to make more subtle adjustments to avoid

the necessity of reaching those points? Anybody who can explain that, yes. Yes, go right ahead.

Mr. Moore.

Well, OK, we go one right.

Dr. HILBORN. I mean, increasingly our councils are accepting formalized harvest strategies that specify the exploitation rate as a function of stock size, and as the stock size starts to drop below the target, those exploitation rates go down well below the level that would produce maximum sustained yield and if we can actually effectively implement those harvest strategies, then getting into the depleted state would be unusual and would largely be caused by environmental changes rather than fishing.

But, what you find, for instance in New England, the last with 10 years, is the science has been so volatile, our understanding that we thought was good, the next time a stock assessment comes around, we are fishing too hard, and that is a problem we face with the environmental change, and I don't think we are going to ever be able to prevent some stocks from getting depleted due to interaction between environmental change and imprecise science.

The CHAIRMAN. OK. Mr. Moore?

Mr. MOORE. Thank you, Mr. DeFazio.

In the Pacific Council, we actually have control rules, we have procedures in place if we see stocks declining or too much fishing occurring on a particular stock, so forth and so on, that we put those in place to try to prevent a stock being declared over fished.

The biggest problem we have is that by the time we get the data and can put it in place on a lot of these things, it is too late.

I cited in my testimony, right now, the council is getting ready for the 2016——

Mr. DEFAZIO. Five-year-old data essentially.

Mr. MOORE. Yes.

Mr. DEFAZIO. I read that.

Mr. MOORE. It is kind of hard to drive forward looking in your rear view mirror.

Mr. DEFAZIO. Right. So go ahead. Pull that mike over closer because I am really having a hard time——

Mr. DORSETT. Sorry. Just to reiterate one of my recommendations about an ounce of prevention is worth a pound of cure, the current system of annual catch limits and accountability measures and requirements to end overfishing is a significant safety net against this stock depletion and the need for rebuilding plan, and the councils like the Pacific have things like the 40–10 control rule that essentially is predefined ways to stop the bleeding, but that is not why it is spread across councils, and so that was my recommendation about making that more widespread and also a recommendation of the NAS report.

I would also mention, too, this issue of environmental variability and swings in populations, this gets to, in my view, Dr. Bruno's testimony about where we set our management targets and thresholds because if you set them at low levels in terms of population size relative to historic abundance, those swings are going to be more significant in terms of dropping below criteria for what we deem as overfished.

Mr. DEFAZIO. OK. Then the other quick question, if anybody has any ideas on how we are going to increase cooperative research, how are we going to get the better data. I mean, everybody has identified data as a problem. Yes? Go ahead if you have a quick——

Dr. HILBORN. Yes, as it happens, I just attended a meeting with environmental tent staff on that subject yesterday, and I think there is no question that given how many fish stocks we have and the limited resources that the only way we are going to get better data for many, many stocks is by cooperative research with the recreational and the commercial sectors, and I don't have time to go into it, but there are a lot of impediments to that right now, and——

Mr. DEFAZIO. Are those impediments we could deal with?

Dr. HILBORN. Yes, some of them are legislative.

Mr. DEFAZIO. OK. So if you would provide some recommendations in those areas, that would be of interest.

Dr. HILBORN. OK. I can work with staff on that.

Mr. DEFAZIO. That would be great. OK, anybody else quick on that? All right?

Dr. BRUNO. In many areas of marine ecology, citizen science has really stepped up to fill any kind of void. So in my—especially coral reef scientists—a lot of this data comes from surveys being done by sports enthusiasts rather than scientists.

Mr. DEFAZIO. OK. Thank you, thank you, Mr. Chairman.

The CHAIRMAN. Thank the gentleman.

Mr. Costa from California.

Mr. COSTA. Thank you very much, Mr. Chairman.

I think I am going to confine my questions to Dr. Hilborn and Mr. Moore because my familiarity and my issues deal mostly with the West Coast.

The issue of sustainability, and I know under Magnuson-Stevens, it has changed in what is optimal, and I think we have spent a lot of discussion, at least I have heard, on whether or not we have it right in terms of the allowance for both commercial and sports fishing. I would like to explore to what degree you think in terms of the population levels other multiple stress factors come into play. I am talking about specifically discharges of tertiary treatment facilities like ammonia that impact areas where smolt and other native species are trying to sustain themselves, predatory species, diversions without fish screens. I mean, we talked a lot about wetlands and other things that impact the ability to maintain the propagation of these fish populations, but to what degree do you think these other stress factors come into play on the sustainability?

Mr. MOORE. Congressman, I think there is a difference in what sort of stress factors are out there that affect anadromous species, such as salmon, versus ocean species. The species in the Pacific Council area that have been designated as overfished are all ocean species, and while there certainly is a problem with fishing pressure that had occurred in the past, which has now been pretty well taken care of, there are significant problems just with environmental factors that are out there, that are not human caused in regard to salmon.

Mr. COSTA. Right. And how good is the science? Because whether we are talking about anadromous fish or whether we are talking about marine fisheries that aren't dependent upon the other impacts, I mean, obviously the science gets better, but we learn more, right?

Mr. MOORE. Yes, sir. And if I could just answer the second half of that question regarding anadromous fish, some of the issues that you mentioned there.

Mr. COSTA. Right.

Mr. MOORE. I think things like fish screens in some of the irrigation districts and around the dams, water flows calculated at the right time of year, all of those sorts of things certainly have a positive impact on anadromous species, and to the extent that we don't do those things, it is obviously going to have a negative impact.

Mr. COSTA. Yes.

Dr. HILBORN. In general, the impact of anthropogenic impacts on fish, other than exploitation, is the greatest in freshwater, then estuaries, and as you get to the continental shelves by far the least. Now, in the West Coast, we have reasonably few species that are dependent upon near shore habitats whereas in the gulf or the East Coast, those habitats are really critical for far more species in their life history, but estuaries have been and the freshwater systems have been enormously transformed by diversions and all those things, and I would——

Mr. COSTA. Well, I mean, San Francisco Bay is an example.

Dr. HILBORN. It is a totally different place.

Mr. COSTA. Right. A third of it has been infilled.

Dr. HILBORN. Yes. And the species composition, it is basically completely exotic species. I grew up in the Bay Area, so I am familiar with that, but I think the science is actually quite good. We understand that.

Mr. COSTA. But the ability to turn the clock back, I mean, we are not going to return a third of the Bay back into wetlands.

Dr. HILBORN. No, that is right, and we just have to accept to some extent that we have made changes that are irreversible, and we are going to have to accept that we are——

Mr. COSTA. On that point, in terms of science, because my time is running out, and I heard you all opine about the impacts of climate change, I read a couple months ago where Peter Moyle, who is fairly well known on the West Coast as a biologist, thinks that, in 80 years, with snow packs moving further north in the West Coast, changes in water temperature, that the sustainability and the impacts to a lot of native species may be irreversible or impossible to maintain. Do you concur?

Dr. HILBORN. Yes, I think that is true for salmon, and I know salmon pretty well, that places that are—a lot of California——

Mr. COSTA. So they will go farther north?

Dr. HILBORN. Yes.

Mr. COSTA. So no matter what we try to do as the climate continues to change, and we know it has been changing for millions of years, how much we are impacting it I think is the key question. Then it begs the question, what should our best strategy be?

Dr. HILBORN. That is a difficult question.

The CHAIRMAN. The time of the gentleman has expired.

The gentleman from Alaska, Mr. Young.

Mr. YOUNG. Thank you, Mr. Chairman, and this is a subject I am quite interested in.

Mr. Moore, I am glad to see you, Mr. Rod Moore. He used to sit right here on—he has gone on to bigger and better things, I hope.

In your testimony, you briefly mentioned the sustainable certification process from the Marine Stewardship Council. How does this certification process work, and what costs are involved?

Mr. MOORE. Mr. Young, the decision by somebody to go with Marine Stewardship Council certification, I will say MSC for short, is really an economic one. For example, we find that to be able to sell fish in Europe, you have to have MSC certification. That is changing now, but for many years, that was what had to be done. So it was sort of, in some ways, an economic blackmail. You had to do it. Does it make for better fisheries management? I don't know about that. Is it costly? Yes, it is certainly costly.

Mr. YOUNG. Who pays for that?

Mr. MOORE. The industry pays for it, sir.

Mr. YOUNG. OK. And it is based in Britain?

Mr. MOORE. The MSC headquarters is in Great Britain. There are offices in the United States I know.

Mr. YOUNG. OK. Doctor—both of you—the reason for my interest is Wal-Mart, the famous Wal-Mart, the Chinese company.

Mr. MOORE. Oh, yes, sir. I would point to the Park Service, too, sir.

Mr. YOUNG. Oh, yes, the Park Service, that is a really outstanding American group right now. They really like to take care of people. But they are saying our salmon is unsustainable. Now, that is B-elbows. Now, this blackmail, now why don't we have our own accreditation group because I do believe the council, our North Pacific Council can certify whether it is sustainable or not?

Mr. MOORE. Mr. Chairman, Mr. Young, there are some of us in the industry who have been exploring with NMFS the concept of defining sustainability in the Magnuson-Stevens Act and stipulating that if you are a U.S. vessel and you catch fish under the terms that are defined in the Act, whether it is under Federal FMP or a State, a comparable State plan, then, by definition, you are sustainable——

Mr. YOUNG. What you are saying is we can in this Act, Mr. Chairman, I want to—the idea that I have a bunch of Brits making money off the industry telling me that my Alaskan salmon are not sustainable and Wal-Mart doesn't sell it, is dead wrong when it is sustainable and has been sustainable. Best fishery in the whole country. And so I am suggesting, Mr. Chairman, if the idea again, they can have their limey beans, I don't care, but for God sakes let us define what is sustainable and not sustainable. That should be the American way. And then Wal-Mart can say, we are not going to use Alaskan salmon, but they can't hang it on the fact that we are not going to sell nonsustainable fish by an agency outside.

Doctor, have you any comments? You are from Washington. Your outfit is affected by this.

Dr. HILBORN. I spend most of the summer in Bristol Bay, and let me tell you, I have heard a lot about it this year.

Mr. YOUNG. What is your suggestion?

Dr. HILBORN. Well, I think that—I mean, clearly, Alaska's salmon are sustainably managed, but Marine Stewardship Council certification is about more than sustainability. It has a whole lot more.

Mr. YOUNG. Like what?

Dr. HILBORN. Oh, impacts on the environment, compliance with legal frameworks. It is much more than just sustainability, and the alternatives sometimes have different levels of standard, and the MSC standard has actually crept higher and higher in the time I have been doing various work for the MSC, and what is really happening is MSC has more or less established a monopoly in the European markets, as Rod said, and in fact through some NGO's in the U.S., and the Alaska salmon industry is basically trying to break that monopoly by getting other certification schemes accepted at the same standard as MSC, and it is really a political battle, it is not really a scientific or a sustainability battle.

Mr. YOUNG. I thank you both. One of the things, again, Mr. Chairman, this is an issue we have to address. It is dead wrong what is happening here, and I am deeply offended by Wal-Mart, the Chinese-owned company. Now Sam doesn't like that, but the fact is you look at everything on their shelves, a lot of it is, in fact, produced overseas, and to have them now not buy an American product is about as un-American, Mr. Sam, as you can get, and if you are in the audience, you better be listening to me because this is dead wrong and un-American action by a corporate structure that doesn't pay their workers the appropriate salaries and, in fact, appeases to those that are in a poorer class by saying we are not buying American, we are going to buy Russian crab? Mr. Chairman, think about that a moment. I know my time is up, but Mr. Wal-Mart, you better start listening.

The CHAIRMAN. I have a feeling that this will get to Wal-Mart somehow.

Mr. YOUNG. And, by the way, they do contribute to my campaign or used to.

The CHAIRMAN. The chair recognizes the gentlelady from Guam, Mrs. Bordallo.

Ms. BORDALLO. Thank you very much, Mr. Chairman. I would just like to make a statement first before my questions. The MSA rebuilding requirements established in 1996 and 2006 have been responsible for the recovery of 33 depleted stocks. Science-based management and rebuilding timelines have helped in overfishing in the U.S. and has made the U.S. a global leader in fisheries management. So now is the time to build upon it. The majority of stocks in the western Pacific have no stock assessments, including Guam.

Now, my first question is for you, Dr. Hilborn. In your testimony, you suggest that we focus on Federal management of fish stocks that are important to the Nation's food, jobs, and income, and not subject the hundreds of small stocks to the same process. I am very concerned with your statement. I do not agree on restricting resources and management to lucrative fisheries. The ocean and the resources are important to the people of Guam. Fishing is an important part of preserving our history and our culture. As such, we need Federal resources allocated to fisheries management, so my

question is, if we stop supporting and monitoring these small stocks, how will we keep our subsistence fisheries healthy?

Dr. HILBORN. Well, I am not suggesting we don't monitor them, and in fact, I think we do need to apply more science to those stocks, but if we take the current Magnuson-Stevens approach in mixed stock fisheries and include, say, on the West Coast where we have literally a hundred species, what you would find is we would end up the only way to not overfish anything by Magnuson-Stevens definitions would be to close the fisheries because you are going to always have one choke species or two choke species. Now these may—even the current choke species are not significant contributors to jobs or employment. These are generally very, very small stocks. So if our objective was to produce food or jobs, those stocks could remain overfished, without any loss in jobs or food, and as we expand the breadth of the number of species in the Act, and there are literally a thousand species out there, you are going to find with the current way we implement the Act that it would get more and more restrictive, and we would have less and less ability to harvest the large abundant stocks of the ocean. But we should do more science, but I don't think Congress is going to pay for a double or a triple or a quadruple of our science budget, and we have to find other mechanisms, and I would suggest that cooperative management—there is actually pretty—I am working on some Guam stuff, there is some pretty good data out there. It is just nobody has had the time to really go through it.

Ms. BORDALLO. Thank you.

Mr. Dorsett, in his testimony, Dr. Hilborn stated that the regional councils have done a good job of solving the problem of fisheries bycatch. However, many fisheries still discard significant amounts of catch at sea and have trouble catching target species without harming weaker stocks. So, in your opinion, are our bycatch problems solved, and if so, then why do so many fishermen complain about choke stock? If not, what can we do to make fisheries more selective?

Mr. DORSETT. Thank you for your question. I would say that the bycatch problem has not been solved in U.S. fisheries, and indeed, the NAS report found that one of the problems still contributing to the failure to end overfishing is incidental catch of that particular species.

In terms of addressing the bycatch issue, I think we need to look at the law and strengthen it in appropriate ways that will essentially create clear objectives for what we want to see in terms of the bycatch problem. I think from that, you will find that fishermen will find ways to fish very selectively and innovate. This past year with the Pew Environment Group we published a report on the MSAs of the success of the Magnuson-Stevens Act which looked at the history of the law from 1976 until now, and in it, we profiled the number of fishermen that have been real innovators in the field in things like bycatch reduction. And in my experience, for example, working on West Coast fisheries, there was a lot of innovations in terms of decisionmaking tools, science, and by fishermen to avoid those species, so I think we can do a lot more, and with the ingenuity of fishermen a lot more can be done.

Finally, I would say that even though there has been a requirement for a standardized bycatch reporting methodology in the law since 1996, in many regions, that system is severely lacking, so we don't even have, I think, a real good handle on the extent of the bycatch problem.

Ms. BORDALLO. Thank you. Thank you.

I have one further question, real quick question. Dr. Bruno——

Mr. YOUNG [presiding]. You just use all the time you want, Sweetheart.

Ms. BORDALLO. Well, thank you. Thank you, Mr. Young. That is the nicest thing I have heard since I have been in Congress.

Mr. YOUNG. Well, we will talk about that later.

Ms. BORDALLO. Dr. Bruno, fishermen sometimes complain that fish that could be legally caught but are not are wasted fish or left on the table. In terms of long-run fisheries' productivity, profitability, and stability, is this the right way to think about things? Are there positive effects to allowing some fish to grow larger or live longer than the minimum allowable for harvest?

Dr. BRUNO. Yes, Congresswoman, absolutely. I mean, they are essentially the seed stock of the fish that are going to be caught tomorrow, are they going to produce babies to get caught in the next generation? So it is critical to keep them out there, letting them get bigger and older is fundamental. So fish, unlike people, become more reproductive, far more reproductively successful the older they get and the fatter they get, so the best thing for the fishery, it would stabilize it, it would make it more economically profitable to have a lot of big, big old fat fish out there.

Ms. BORDALLO. Thank you, and I yield back my endless time limit.

Mr. YOUNG. Thank you, my dear.

Mr. Garcia.

Mr. GARCIA. I wanted to ask a general question. Fishermen sort of bring this up, which is the division of the councils, right? I, as you can imagine, I am from Florida, and I represent the Florida Keys, which sort of is that area where you are divided between two councils, and I get a lot of reaction from my fishermen about that, that is this division the most efficient way to look at this? And so I know, at the risk of losing all my time with that first question, I just want to get your quick response on that from those of you who care to have an opinion.

I will start with you, just volunteer, go right ahead.

Mr. DEEM. All right, sir, I appreciate that. We have liaisons to the different councils. I am on the Mid-Atlantic—we have liaisons to the North Atlantic and to the South Atlantic, and I think it works pretty well. There are species that each of us manage, and we work together on some; we joint manage some. I think your fishermen can relax that it is a pretty well laid out situation.

Mr. GARCIA. OK.

Mr. DORSETT. Having spent most of my time with councils in the Gulf Council, I am aware of this particular issue, and it really, the bottom line is there needs to be good cooperation among the councils, and I would say, for example, on warming ocean temperatures leading to differences in stock distributions up and down the East Coast, this issue is becoming more and more important, so we need

to determine if we have the right governance structure in place to accommodate these shifts in stocks and ensure we have good coordination between the regional fishery management councils.

Mr. GARCIA. OK. Well, Mr. Dorsett, let me follow up with that. So a recent national research council report identified potential changes that could be made in fisheries management in response to rebuilding requirements. I have heard from fishermen in my district who have asked for additional flexibility in rebuilding timelines and actual catch limits. In your opinion, does the Magnuson-Stevens Act have that flexibility necessary to help fishing communities, while also ensuring timely rebuilding of stocks that we depend on?

Mr. DORSETT. Yes, I believe it does. If you look at the report as well as the statistics that Sam provided in his testimony from the National Marine Fisheries Service and the analysis we have done, there is ample flexibility to consider socioeconomic concerns. Over half of rebuilding plans are over the 10-year limit because that has some limited exceptions to it. One of the most contentious rebuilding programs in the Southeast region is red snapper. That is a 32-year rebuilding program that incorporates socioeconomic concerns. It has been successful. It has been successful because of strong mandates in terms of ending overfishing and rebuilding that population, and so I think it does provide ample flexibility and include action-forcing mechanisms to ensure we return fisheries to healthy levels.

Mr. GARCIA. All right. So, finally, and I will end with this, you know, I don't have to say it, but maybe some of my fishermen are watching. Obviously, Florida Keys commercial fishing industry represents the largest commercial seaport in the State of Florida. In order to protect our environment and support our economy, I am interested in what more you think can be done to ensure the regularized standardized stock assessments nationwide. Are there any plans that you could suggest that could make such assessments more thorough and consistent, for example through the use of new technologies or electronic monitoring, you know?

Last, before I got here, but I was running, there was the yellowtail incorrect assessment, and fortunately, everyone responded adequately, and government looked at it again, and the assessment was remade, but how can we avoid this? Because people's lives are sort of on the line here, too, or livelihoods.

Mr. DORSETT. Sure. You know, monitoring program potential to provide the information, to help assess the population status of fisheries and inform management, I think this panel here has recommended a number of ways we could look at, including cooperative research, better use of technology to get this information in the most cost-effective manner possible. Then we have to address the issue we have in the Southeast region, and we have one science center supporting three regional fishery management councils with a lot of stocks, and so we need to ensure there is also adequate resources in order to assess those species. One of the things that is a recommendation of ours in terms of how we invest oil spill penalties money from the BP Deepwater Horizon oil disaster is to look at ways we can make investments in our fisheries, including fishery science monitoring programs to not only track the impacts of

the BP disaster but also inform management and address these data deficiencies.

Mr. GARCIA. Mr. Chairman, I know you are not going to be as generous with the time as the gentlelady, but I just want to thank all of you for what you are doing and the fact that we are working together, and if there is probably any area where I think that both the recreational, commercial, and sports industry are working together, I think it is in this area, and I appreciate that.

Thank you, Mr. Chairman. I yield back.

Mr. YOUNG. I thank the gentleman. I am going to thank the witnesses.

I do appreciate the gentlemen, your work, you will be addressing some of the issues in this legislation coming up. We won't see any massive changes, I don't believe, but there will be some adjustments to the Magnuson-Stevens Act, and glad to have you aboard, and I want to say that the members of the Committee may ask you additional questions for the record, and if they do so, please respond in writing, and again thank you. With that, no further questions, this Committee hearing is adjourned.

[Whereupon, at 12:25 p.m., the Committee was adjourned.]

[Additional material submitted for the record follows:]

The NRDC report entitled "Bringing Back the Fish: An Evaluation of U.S. Fisheries Rebuilding Under the Magnuson-Stevens Fishery Conservation and Management Act" has been retained in the Committee's official files. It can be found at: http://www.nrdc.org/oceans/files/rebuilding-fisheries-report.pdf.

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