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THE MAGNUSON-STEVENS ACT AT 40: SUCCESSES, CHALLENGES, AND THE PATH FORWARD

HEARING

BEFORE THE

SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES, AND COAST GUARD

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

ONE HUNDRED FOURTEENTH CONGRESS

SECOND SESSION

FEBRUARY 23, 2016

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THE MAGNUSON-STEVENS ACT AT 40: SUCCESSES, CHALLENGES, AND THE PATH FORWARD

TUESDAY, FEBRUARY 23, 2016

U.S. SENATE,
SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES, AND COAST GUARD,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:36 p.m. in room SR–253, Russell Senate Office Building, Hon. Dan Sullivan, presiding.

Present: Senators Sullivan [presiding], Wicker, Ayotte, Nelson, Booker, Cantwell, Blumenthal, Markey, Schatz, and Peters.

OPENING STATEMENT OF HON. DAN SULLIVAN, U.S. SENATOR FROM ALASKA

Senator SULLIVAN. The Subcommittee on Oceans, Atmosphere, Fisheries, and the Coast Guard will now come to order. Good afternoon.

The purpose of today's hearing is to recognize the 40th anniversary of the enactment of what is known as the Magnuson-Stevens Fishery Conservation and Management Act, the MSA, as we call it in Alaska, and to examine this law's impacts on managing our Nation's fisheries, its successes, and possible areas of improvement.

As I have mentioned at this committee many times before, Alaska's fisheries are by far the largest in the Nation. I know my colleague from Massachusetts was just here. We refer to ourselves as the superpower of seafood. Almost 60 percent of all landings in America come from the shores of Alaska or Alaskan waters.

But this was not always the case. Before President Ford signed the MSA legislation on April 13, 1976, residents in many of Alaska's coastal communities could see a wall of lights off their shores emanating from the large foreign ships that were catching Alaska's fish, America's fish, and taking our economic potential as a state and as a country back home with them.

The MSA has successfully Americanized our fisheries and built the fishing industry in the United States that today is one of our largest employers certainly in Alaska and in many other States throughout the country.

Through the MSA's guiding principles, the 10 National Standards as applied by the eight regional fishery management Councils who manage the fisheries off America's coasts in a science-based

and open and transparent stakeholder-driven process, the MSA has resulted in the world's best managed fisheries, particularly in Alaska where we have no overfished stocks resulting from fishing.

Nationally the impacts have been similar. Today the Council and NMFS manage 469 stocks through 46 fishery management plans and only a small fraction of these are impacted by overfishing, fewer than ever before. The value derived from harvesting these species in our country is near an all-time high.

Bottom line, today's hearing is about a good news story. Congress recognized a problem, studied it, focused on balancing economic and sustainability issues, and acted in a bipartisan long-term way that has dramatically and positively impacted our Nation.

Today maintaining economics without jeopardizing conservation is the great charge that Congress has assigned to NMFS and all of the councils, and it is a requirement that can obviously be a strained balancing act. But we must ensure that our Nation's fisheries management system supports a stable food supply, recreational opportunities, and plentiful fishing and processing jobs for vibrant coastal communities.

Conservation and management must go hand in hand, and we cannot allow a desire for preservation to replace a productive domestic seafood industry. Already today under the law, the North Pacific and other Councils are managing with conservation in mind, considering habitat protections, ecosystems management, and time, area, and gear closures to protect other fisheries and protected species. While some regions have had better and more abundant science than others and some Councils function more effectively than others, separating fish politics from science and allowing those closest to the fisheries to make decisions rather than someone back in Washington, D.C. is a true hallmark of the MSA. And it is Congress' job to provide the tools and resources to get this job done.

The MSA has gone through two major reauthorizations, one in 1996 and another in 2006. And like anything else, from time to time, it may be appropriate and necessary for updates to respond to current conditions. Last year, the House of Representatives did just that with its MSA Reauthorization Act.

Similarly, NMFS has proposed rules to update the National Standards guidelines, but the National Standards guidelines are not law and only serve as guidance to the councils. It is also worth mentioning that NMFS updates track similar issues as what is proposed in the House bill.

At the same time, I have heard from Alaska's fishermen that our role as the steward of the MSA should largely be that of a doctor practicing the mantra "first do no harm." And that is a great testament to the vision and hard work of those who crafted the act 40 years ago, including the dozens of Alaskans that camped out in the offices of Don Young and Ted Stevens back in the 1970s as they and others like Congressman Gary Studds of Massachusetts and Senator Warren Magnuson of Washington crafted the law that would manage our Nation's fisheries for future generations. And as Congressman Young is fond of saying, the Young-Studds Act has a much better ring to it than the Magnuson-Stevens Act.

[Laughter.]

Senator SULLIVAN. But we did not call it that.

Finally, this past year, this committee proved that we can do very important work on fisheries that is bipartisan and brings together support from industry and the environmental community as well. After almost a decade, we passed legislation, comprehensive legislation, to curb illegal, unreported, and unregulated fishing, the IUU fishing problem that the President signed a few months ago.

With that, I would like to thank our witness, Mr. Sam Rauch, the Deputy Administrator for NMFS, for being here and recognize now my good friend and ranking member for any opening statement that he may have.

STATEMENT OF HON. CORY BOOKER, U.S. SENATOR FROM NEW JERSEY

Senator BOOKER. I am really, really grateful to Chairman Sullivan for having this hearing and for his leadership on this subject and for always looking for a way to bring Senators together on issues of this kind of importance.

The success of the Magnuson-Stevens Fishery Conservation and Management Act has been considerable to date, and I am happy that we are here to see how we can make the act even better and stronger moving forward.

I would like to welcome our witness, Mr. Rauch. And am I pronouncing that right?

Mr. RAUCH. Yes.

Senator BOOKER. Thank you very much. And thank him for his testimony today.

The Magnuson-Stevens Act seeks to prevent overfishing and to rebuild overfished stocks. On both fronts, again, the MSA has been successful. NOAA's most recent status of U.S. fisheries report to Congress shows that the number of domestic fish stocks listed as overfished or subject to overfishing has dropped to an all-time low. As of December 31, 2015, 91 percent of stocks for which we have assessments are not subject to overfishing, and for our rebuilt stocks, we are seeing many of them generate substantially more revenue now than they did when they were being overfished.

The commercial fishing industry nationally employs more than one million people. Recreational fishing adds an additional 327,000 jobs. A recent report by the National Ocean Economics Program found that the ocean economy shows overall growth in the United States of America, actually outpacing our national economy. So continuing to build on the success of the MSA is critical not only for the health of our fisheries but also to the health of our great American economy.

Ocean fish have inherent value beyond fishing and seafood, though. Fish populations are an integral part of a larger marine ecosystem, which includes corals, seabirds, marine mammals, and sea turtles, important living resources that provide ecological benefits, as well as economic value, for activities such as tourism.

But our oceans and our fisheries currently face many, many threats. One threat is bycatch. Bycatch results in the death of millions of fish, sea turtles, whales, dolphins, and other marine mammals each and every year, wasting important food resources, dam-

aging the economic success of our fisheries, and threatening the future of inherently vulnerable, though valuable, marine species.

Another threat is climate change. Climate change is causing our oceans to warm and become more and more acidic. Numerous climate studies have shown that the oceans are warming. A new study, released just last week, demonstrates how warming waters have increased the prevalence of diseases that are killing lobsters by burrowing under their shells and causing lesions. According to the study, the outbreaks are so lethal that the lobster fishery, already decimated in southern New England, may soon be threatened in Maine as well.

Thirty percent of carbon dioxide released into the atmosphere ends up in oceans, leading to acidification, which is harming shell-forming organisms such as coral, sea urchins, mussels, clams, and plankton, all of which depend on balanced chemical conditions within our waters to form their structures. These species are critical to the future health of our fisheries because they serve as food, and corals provide a critical habitat.

Last year, in order to protect sensitive areas of deep sea corals, the Mid-Atlantic Council moved to designate over 38,000 square miles of Federal waters off limits to bottom tending fishing gear. The Council relied on authority included in the last reauthorization of the MSA and provides Councils the discretion to protect deep sea coral habitat, provisions championed by the late Senator Lautenberg. Just last week in a fitting tribute, the Council named the area for Senator Lautenberg, whose multiyear efforts to protect cold water corals culminated in the enactment of this important MSA authority.

Important MSA provisions such as these must be preserved and strengthened as we move forward. Mr. Chairman and my friend, the MSA Act has a long history of bipartisan cooperation. I appreciate the sentiment with which you are advancing the cause, and I look forward to working with you on these issues and hope to hear some really important things from our witness. Thank you.

Senator SULLIVAN. Thank you, Senator Booker.

I now want to welcome our main witness, Sam Rauch, the Deputy Assistant Administrator——

Senator BOOKER. Mr. Chairman, if I may ask if it is possible to let the Ranking Member from Florida maybe have some——

Senator SULLIVAN. Absolutely. No problem.

STATEMENT OF HON. BILL NELSON, U.S. SENATOR FROM FLORIDA

Senator NELSON. Just to what you gentlemen have said, it was Maggie and Ted in 1976 that passed this, signed into law by President Ford. It has been so important, and we have got to rebuild on it to make sure that we save the fish.

Thank you.

Senator SULLIVAN. Thank you, Senator Nelson. And I think you will see here the interest of this issue already with a strong bipartisan group of Senators.

So without further ado, our main witness will have 5 minutes to deliver his oral statement, and I believe a longer written statement will be included in the record.

STATEMENT OF HON. SAMUEL D. RAUCH III, DEPUTY ASSISTANT ADMINISTRATOR FOR REGULATORY PROGRAMS, NATIONAL MARINE FISHERIES SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE

Mr. RAUCH. Thank you and good afternoon, Chairman Sullivan, Ranking Member Booker, members of the Subcommittee. Thank you for the opportunity to testify today. My name is Sam Rauch. I am the Deputy Director of NOAA's National Marine Fisheries Service.

And I echo everything that you both said about the success of the Magnuson-Stevens Act. We have been at this for 40 years. Congress laid down an important structure that has been preserved for us today. It is the strength of the structure, the dedicated nature of the participants that have led to the success.

Currently the United States fisheries are among the world's largest and they are the most sustainable. For 40 years, the Magnuson-Stevens structure that Congress put in place has taught us that dynamic, science-based management process, transparent stakeholder engagement is fundamental for managing fisheries to be sustainable.

This is not something that the National Marine Fisheries Service does alone. The bulk of the work is done through the fishery management councils. They are the key linchpin to all the successes that we have done. The states participate through the Council process. The states are a key partner in every facet from data collection to policy setting. The stakeholders are present. It is an open and transparent and science-based process, and it is because of that process that we have achieved the success that we have.

I do want to echo some of the great things. Every year we do set near records, either records or near records, in recent years in terms of landings, in terms of economic value from the fisheries, in terms of jobs from the commercial and recreational sector of the fisheries. There is over $100 billion in revenue generated by the commercial and recreational fishery, around two million jobs generated by those two sectors. And at the same time, as was indicated, we continue to meet standards for ending overfishing, for rebuilding stocks. We have rebuilt a record number of stocks since the early 2000s.

My testimony today will focus on the progress we have made toward implementing the key provisions and talk about the National Standard guidelines.

One of the things that we have done that I wanted to focus on is rebuilding. We take stocks that have been overfished or, for whatever reason, are depleted, and through the partnership that I mentioned, we have achieved success. One of them is the Atlantic sea scallops. In the early 1990s, the abundance of sea scallops was near record lows, and the fishery mortality rate was at a record high. Working through the Council process, we implemented a number of measures to allow the stock to recover, including an innovative management system which allowed the fishermen to rotate where they fish. Through this process, the stock was declared rebuilt in 2001, and in real terms, the gross revenues in New Eng-

land increased almost sevenfold from 44 million in 1998 to 298 million in 2014.

Another example is the Bering Sea snow crab. In 1999, scientists found that the snow crab was overfished. In response, the managers reduced harvests to a level that would allow the stock to rebuild, and the stock was declared rebuilt in 2011. And in subsequent fishing years, managers have been able to actually increase that limit by 65 percent, to nearly 66,000 metric tons, such that in 2013 revenue from the fishery was at $236 million, an almost threefold increase from its low in 2005 before being rebuilt.

As part of the process, we periodically host a large meeting called Managing Our Nation's Fisheries in which we canvas our partners, the States, the NGO communities, the fishermen to find out how we are doing in terms of the Magnuson Act, whether things need to be changed. We hosted one several years ago. Traditionally this is a venue for people to argue for congressional changes. We were very pleased that at the last meeting, the vast, overriding sentiment was that the Magnuson Act was working, the structure was inherently good. There are certain fisheries in certain parts of the country that experience difficulties. I am sure we will talk about some of those. But in general, the fishery nationwide is a success and it should be preserved.

There were some things that people suggested that we change. We looked at the numbers of suggestions. Most of them could be done through regulation, which was the genesis for why we decided to go through what we call National Standard 1 and provide guidance to the Councils on different ways that they could do—different things that they could do to help promote more stability and more flexibility while at the same time preserving those critical pieces that led to the success that we have. We were absolutely adamant that we will continue to end overfishing. We will not allow it to occur. We will rebuild stocks. That is the basis for which everything is based on, and we will continue to do that.

So that rule was out for comment. We are hoping to finalize it in the coming months, and I look forward to continuing to work with Congress as it decides what it wants to do on the remaining issues in front of us today.

Thank you.

[The prepared statement of Mr. Rauch follows:]

PREPARED STATEMENT OF SAMUEL D. RAUCH III, DEPUTY ASSISTANT ADMINISTRATOR FOR REGULATORY PROGRAMS, NATIONAL MARINE FISHERIES SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE

Introduction

Good afternoon, Chairman Rubio, Ranking Member Booker, and Members of the Subcommittee. I appreciate the opportunity to speak with you today about the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and proposed revisions to the Act's National Standard 1 guidelines. My name is Samuel D. Rauch and I am the Deputy Assistant Administrator for the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) in the Department of Commerce. From daily weather forecasts, severe storm warnings, and climate monitoring to fishery management, coastal restoration, and supporting marine commerce, NOAA's products and services support economic vitality and affect more than one-third of America's gross domestic product. NOAA's dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers, and other decision makers with reliable information they need when they need it. Today, I will describe our work under

the Magnuson-Stevens Act, which sets forth standards for conservation, management, and sustainable use of our Nation's fisheries resources.

The Magnuson-Stevens Act has been a success. U.S. fisheries are among the world's largest and most sustainable. For forty years, Magnuson-Stevens has taught us that a dynamic science-based management process is fundamental for managing fisheries to be sustainable. The goal of fisheries management is to achieve fisheries that are both environmentally sustainable and economically important. In partnership with the regional fishery management councils, interstate fishery commissions, and our stakeholders, and driven by the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the agency has ended overfishing and made significant progress rebuilding domestic fish stocks. By preventing overfishing and rebuilding stocks, we are strengthening the value of fisheries to the economy and communities, and also ensuring that marine ecosystems are able to provide a sustainable supply of seafood for the Nation in the future.

Marine fish and fisheries—such as tropical tunas in the Western and Central Pacific, salmon in the Pacific Northwest, halibut in Alaska, cod in New England and red snapper in the Gulf of Mexico—are vital to the prosperity and cultural identity of coastal communities in the United States. U.S. fisheries play an enormous role in the U.S. economy. Commercial fishing supports fishermen, contributes to coastal communities and businesses, and provides Americans with a valuable source of local, sustainable, and healthy food. Non-commercial and recreational fishing provides food for many individuals, families, and communities; is an important social activity; and is a critical economic driver of local and regional economies, as well as a major contributor to the national economy. Subsistence and ceremonial fishing provides an essential food source and has deep cultural significance for indigenous peoples in the Pacific Islands and Alaska and for many Tribes on the West Coast.

Our most recent data show that after adjusting for inflation the landed volume and the value of commercial U.S. wild-caught fisheries remained near the high levels posted in 2011. U.S. commercial fishermen landed 9.4 billion pounds of seafood valued at $5.5 billion in 2014, the third highest landings value over the past decade and in nominal terms, the second highest landings value on record.[1] The seafood industry—harvesters, seafood processors and dealers, seafood wholesalers and seafood retailers, including imports and multiplier effects—generated an estimated $142 billion in sales impacts and $40 billion in income impacts, and supported 1.4 million jobs in 2013, the most recent year economic impact numbers are available. Jobs supported by commercial businesses increased 6 percent from the previous year.[2]

At the same time, recreational catch remained stable. Recreational fishing generated an estimated $52 billion in sales impacts and $18 billion in income impacts, and supported 370,000 jobs in 2013. Jobs generated by the recreational fishing industry represented a 13 percent increase over 2010.[3]

The advancement of our science and management tools has resulted in improved sustainability of fisheries and greater stability for industry. Key requirements in the 2007 reauthorization mandated the use of science-based annual catch limits and accountability measures to better prevent and end overfishing. The reauthorization provided more explicitly for market-based fishery management through Limited Access Privilege Programs, and addressed the need to improve the science used to inform fisheries management.

The U.S. has many effective tools to apply in marine fisheries management. Yet, as we look to the future, we must continue looking for opportunities to further improve our management system. While significant progress has been made since the 2007 reauthorization, progress has not come without a cost to some. Challenges remain. Fishermen, fishing communities, and the Councils have had to make difficult decisions and absorb the near-term cost of conservation and investment in long-term economic and biological sustainability.

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

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[1] See NOAA 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. 2013. NMFS Office of Science & Technology, available at: *http://www.st.nmfs.noaa.gov/economics/publications/feus/FEUS–2013/fisheries_economics_2013*

[3] See Fisheries Economics of the U.S. 2013. NMFS Office of Science & Technology, available at: *http://www.st.nmfs.noaa.gov/economics/publications/feus/FEUS-2013/fisheries_economics_2013*

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 NMFS' progress in implementing the Magnuson-Stevens Act's key domestic provisions, how our proposed revisions to the National Standard 1 guidelines could further facilitate, provide additional flexibility, and improve compliance with the Act, and some thoughts about the future.

Progress in Implementation

Working together, NMFS, the Councils, coastal states and territories, treaty fishing tribes, and a wide range of industry groups and other stakeholders have made significant progress in implementing key provisions of this legislation.

Ending Overfishing and Rebuilding Fisheries

U.S. fisheries are producing sustainable U.S. seafood. The Federal fishery management system has effectively ended overfishing and is 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. As of December 31, 2015, 91 percent of stocks for which we have assessments are not subject to overfishing, and 84 percent are not overfished. The number of stocks subject to overfishing was highest in 2000, when 47 stocks were on the overfishing list. In 2002, 55 stocks were overfished. Nationally, we have rebuilt 39 stocks since 2000.[4]

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.

Flexibility is inherent in the Magnuson-Stevens Act's rebuilding requirements. The 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 36 active rebuilding plans with a target time to rebuild, 22 of them (61 percent) are set longer than 10 years due to the biology of the stock (slow-growing, late-reproducing, long lived species) or environmental conditions. For example, Pacific yelloweye rockfish has a rebuilding timeline of 71 years. The remaining 14 rebuilding plans are set for 10 years or less. Of the 39 stocks rebuilt since 2000, 35 stocks were rebuilt within 10 years or less.

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 lengthened based on information within a rebuilding analysis. The rebuilding analysis, 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 2051.

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.

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

[4] These statistics were compiled from the quarterly stock status reports at: *http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/status_updates.html*

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 when the stock was overfished.

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. In real terms, gross revenues in New England increased almost seven-fold from $44 million in 1998 to $298 million in 2014, 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 65 percent to nearly 66 thousand metric tons. In 2013, revenue from the fishery was $236 million, an almost three-fold increase from its low in 2005 prior to being fully rebuilt.[5,6]

Benefits of Annual Catch Limits

One of the most significant management provisions of the 2007 reauthorization of the Magnuson-Stevens Act was the mandate to implement annual catch limits, including measures to ensure accountability and to end and prevent overfishing in federally managed fisheries by 2011 (an annual catch limit is an amount of fish that can be caught in a year such that overfishing does not occur; accountability measures are management controls to prevent annual catch 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 December 31, 2015, overfishing had ended for 70 percent of the 33 domestic U.S. stocks that were subject to overfishing in 2007 when the Magnuson-Stevens Act was reauthorized.[7]

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.

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. Overfishing has ended for nine of the 14 stocks currently in 10-year (or less) rebuilding plans. Annual catch limits, which are now in place as a mechanism to control catch to the level specified in the rebuilding plan, are working 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. In addition, preliminary data show that annual catch limits have been effective in limiting catch and

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[5] Garber-Yonts, B., and J. Lee., 2014. Stock Assessment and Fishery Evaluation Report for King and Tanner Crab Fisheries of the Bering Sea and Aleutian Islands Regions: Economic Status of the BSAI Crab Fisheries, 2014. P. 79.

[6] North Pacific Fishery Management Council. 2015. Stock Assessment and Fishery Evaluation Report for King and Tanner Crab Fisheries of the Bering Sea and Aleutian Islands Regions: 2015 Final Crab SAFE. P. 12

[7] See Fish Stock Sustainability Index. This report was the source for the underlying data, but the numbers presented here were compiled specifically for this hearing. The report is available at: *http://www.nmfs.noaa.gov/sfa/statusoffisheries/2012/fourth/Q4%202012%20FSSI%20Summary%20Changes.pdf*

preventing overfishing for the majority of stocks. Fisheries have successfully stayed within their annual catch limit for 89 percent of the stocks for which we have catch data.

Ensuring Transparency and Stakeholder Engagement

The Magnuson-Stevens Act created broad goals for U.S. fisheries management and a unique, highly participatory management structure centered on the Councils. This structure ensures that input and decisions about how to manage U.S. fisheries develop 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.

The Magnuson-Stevens Act guides fisheries conservation and management through 10 National Standards. These standards, which have their roots in the original 1976 Act, provide a yardstick against which all fishery management plans and actions developed by the Councils are measured. National Standard 1 requires that conservation and management measures prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery, which is the average amount of harvest that will provide the greatest overall ecological, economic, and social benefits to the Nation, particularly by providing seafood and recreational opportunities while affording protection to marine ecosystems.

The Councils can choose from a variety of approaches and tools to manage fish stocks to meet this mandate—e.g., catch shares, area closures, and gear restrictions—and, when necessary, also determine how to allocate fish among user groups. These measures are submitted to the U.S. Secretary of Commerce for approval and are implemented by NMFS. Thus, the Councils, in developing their plans, must carefully balance the need for stable fishing jobs, ecological conservation, and societal interests to create holistically sustainable fisheries. A key aspect of this effort is to ensure that overfishing is prevented, and if it occurs, to end it quickly and rebuild any stock that becomes overfished. Other National Standards mandate that conservation and management measures be based upon the best scientific information available, not discriminate between residents of different states, take into account variations in fisheries and catches, minimize bycatch, and promote the safety of human life at sea.

Effects on fishing communities are central to many Council decisions. Fishing communities rely on fishing-related jobs, as well as the non-commercial and cultural benefits derived from these resources. Marine fisheries are the lifeblood of many coastal communities in the Pacific Islands and West Coast regions and around our Nation. Communities, fishermen, and fishing industries rely not only on today's catch, but also on the predictability of future catches. The need to provide stable domestic fishing and processing jobs is paramount to fulfilling one of the Magnuson-Stevens Act's goals—to provide the Nation with sources of domestic seafood. This objective has even greater purpose now than when the Act was passed, as today U.S. consumers are seeking—more than ever—options for healthy, safe, sustainable, and local seafood. Under the standards set in the Magnuson-Stevens Act—and together with the Councils, states, tribes, territories, and fishermen—we have made great strides in maintaining more stocks at biologically sustainable levels, ending overfishing, rebuilding overfished stocks, building a sustainable future for our fishing-dependent communities, and providing more domestic options for U.S. seafood consumers in a market dominated by imports. Thanks in large part to the strengthened Magnuson-Stevens Act and the sacrifices and investment in conservation by fishing communities across the country, the condition of many of our most economically important fish stocks has improved steadily over the past decade.

Successes and Challenges

There are many examples of what fishermen, scientists, and managers can do by working together to bring back a resource that once was in trouble. In the Pacific Islands Region, NMFS, the Western Pacific Fishery Management Council, the State of Hawaii, and fishing communities have ended overfishing of the Hawaiian archipelago's deep-water bottomfish complex—a culturally significant grouping of seven species of snapper and grouper. This has enabled NMFS to increase annual catch limits for these stocks for both commercial and recreational fishermen and ensure these fish are available year-round.

On the West Coast, NMFS and the Pacific Fishery Management Council, the fishing industry, recreational anglers, and other partners have successfully rebuilt a number of once overfished stocks, including coho salmon, lingcod, Pacific whiting,

widow rockfish, canary rockfish, and petrale sole. These and other conservation gains, including implementation of the West Coast groundfish trawl rationalization program, enabled NMFS to increase catch limits for abundant West Coast groundfish species that co-occur with groundfish species in rebuilding plans.

In the Southeast Region, NOAA, the Gulf of Mexico and South Atlantic Fishery Management Councils, the fishing industries, recreational anglers and other partners have successfully rebuilt a number of once overfished stocks, including red grouper and king mackerel in the Gulf of Mexico, black sea bass in the South Atlantic, and yellowtail snapper, which is shared by both the Gulf of Mexico and South Atlantic regions. These and other conservation gains enabled NMFS to increase catch limits for six stocks or stock complexes and eliminate or reduce two fixed seasonal closures over the last year. The additional harvest opportunities attributed to rebuilding the South Atlantic black sea bass stock alone have increased 2013 gross ex-vessel revenues for commercial fishermen and annual profits for for-hire vessels by about $1 million and $15 million, respectively, relative to their low point prior to being fully rebuilt.[8]

Many fisheries in the Northeast and Mid-Atlantic are also a significant part of the national success story. Of the 39 stocks rebuilt nationally since 2000, 21, more than half, were rebuilt by NOAA, the Northeast and Mid-Atlantic Fishery Management Councils, the fishing industries, recreational anglers, and other partners on the Atlantic coast. In addition to Atlantic sea scallops, these include other important stocks such as summer flounder and Atlantic swordfish.

But meeting mandates to prevent and end overfishing and implement annual catch limits can be very challenging where data is scarce, which is the case for many of the stocks in the Pacific Islands region and the Caribbean, particularly those species being fished in the coral reef ecosystem. We also face formidable challenges managing recovering stocks to benefit both commercial and recreational user groups with fundamentally different goals and objectives.

Looking to the Future

Remaining Challenges

Amid these successes, challenges remain. It is critical that we continue meeting the mandate of the Magnuson-Stevens Act to end overfishing and rebuild overfished stocks. Annual catch limits have been an effective tool in improving the sustainability of fisheries around the Nation, but managing fisheries using annual catch limits and accountability measures was a major change for some fisheries, and the initial implementation has identified some areas where we can improve that process.

To address these issues, the agency has begun the process of revising the National Standard 1 guidelines, which were modified in 2009 to focus on implementing the requirement for annual catch limits. This was a major change in how many fisheries were managed, and we want to ensure the guidance we have in place reflects current thinking on the most effective way to meet the objectives of National Standard 1 and builds on what we, together with the Councils, have learned. In January 2015, NMFS requested public comment on a proposed rule to revise National Standard 1 guidelines (and related guidelines) to enhance their utility for managers and the public. The objective of these proposed revisions is to improve and streamline the National Standard guidelines, address concerns raised during the implementation of annual catch limits and accountability measures, and provide flexibility within current statutory limits to address fishery management issues.

The proposed rule included the following significant proposed revisions:

- A recommendation that Regional Fishery Management Councils reassess the objectives of their fisheries on a regular basis,
- Consolidated and streamlined guidance on determining which stocks are in need of conservation and management,
- Additional flexibility in rebuilding plans and managing data limited stocks,
- A recommendation on the use of indicator stocks within stock complexes,
- Guidance on the use of aggregate maximum sustainable yield and a definition for depleted stocks, and
- Revised guidance on optimum yield, accountability measures, and Acceptable Biological Catch control rules to provide additional flexibility in carrying over

[8] SAFMC (South Atlantic Fishery Management Council). 2013. Regulatory Amendment 19 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place, Ste 201, North Charleston, S.C. 29405.

unharvested catch to a subsequent year and providing more stability in catches from year to year.

The agency received a significant amount of input on our proposed rule and we are in the process of responding to the comments and developing a final rule.

We will continue to work with the Councils to achieve the best possible alignment of science and management for each fishery to attain the goals of the Magnuson-Stevens Act. We will continue to develop our science and management tools, improve our stock assessments and monitoring efforts, and create more effective annual catch limits and accountability measures. In so doing, we must continue to ensure solid, science-based determinations of stock status and better linkages to biological, socioeconomic, and ecosystem conditions.

We value the important partnerships we have formed with the states, territories, tribes, fishermen, and other interest groups in helping address these challenges. These partnerships are critical to developing successful management strategies. Together with our partners, we continue to explore alternative and innovative approaches that will produce the best available information to incorporate into management.

It is also increasingly important that we better understand ecosystem and habitat factors, such as the effects of climate change, interannual and interdecadal climate shifts, ocean acidification, and other environmental regime shifts and natural disasters, and incorporate this information into our stock assessments and management decisions. The agency has recently taken steps to further address these challenges. In August, NMFS finalized a Climate Science Strategy as part of a proactive approach to increase the production, delivery, and use of climate-related information in fulfilling our mandates.

In September 2015, we also released a draft policy, which outlines a set of principles to support implementation of Ecosystem-Based Fisheries Management at NMFS. We are currently reviewing comments and will finalize the Ecosystem-Based Fishery Management policy in the coming months. Resilient ecosystems and habitat form the foundation for robust fisheries and fishing jobs. The Magnuson-Stevens Act currently provides flexibility for bringing ecosystem considerations into fisheries management. This flexibility in the Magnuson-Stevens Act is one of the Act's strengths, allowing us to meet our responsibilities under the Act in concert with related legislation, such as the Marine Mammal Protection Act and the Endangered Species Act, to reduce bycatch of protected species to mandated levels. The alignment of measures to conserve habitat and protected species with measures to end overfishing and rebuild and manage fish stocks will be a key component of NOAA's success in implementing ecosystem-based fisheries management.

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.

Conclusion

Because of the Magnuson-Stevens Act, the United States is sustainably and responsibly managing U.S. fisheries, to ensure that stocks are maintained at healthy levels, fishing is conducted in a way that minimizes impacts on the marine ecosystem, and fishing communities' needs are considered in management decisions. Fisheries harvested in the United States are scientifically monitored, regionally managed, and enforced under 10 National Standards of sustainability. But we did not get here overnight. Under the Magnuson-Stevens Act, our Nation's journey toward sustainable fisheries has evolved over the course of 40 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—real game changers in our national journey toward sustainable fisheries that are rapidly delivering results.

This progress has been made possible by 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. We have established strong partnerships with states, tribes, Councils, and fishing industries. By working together through the highly participatory process established in the Magnuson-Stevens Act, we will continue to address management challenges in a changing environment.

To understand where we are, it is important to reflect on where we've been. We have made great progress but our achievements have not come easily, nor will they be sustained without continued attention. This is a critical time in the history of

Federal fisheries management, and we must move forward in a thoughtful and disciplined way to ensure our Nation's fisheries are able to meet the needs of both current and future generations. When final, we expect the revisions to our National Standard guidelines to address concerns raised during the implementation of annual catch limits and accountability measures and provide additional flexibility within current statutory limits to address fishery management issues. We look forward to working with Congress on fisheries management issues in a holistic, comprehensive way that builds on its success and considers the needs of the fish, fishermen, ecosystems and communities.

Thank you again for the opportunity to discuss implementation progress of the Magnuson-Stevens Act. We are available to answer any questions you may have.

Senator SULLIVAN. Great. Let me start off with a few questions.

Do you have a more specific timeline with regard to the final rule in terms of the National Standard guidelines that you were just talking about?

Mr. RAUCH. Yes, sir. It has to go to OMB for review. We hope to do that in the coming month or so. That will be for a 90-day internal review period, and we hope to have it out by June or July—the final rule.

Senator SULLIVAN. Great.

You mentioned the stakeholder model as a really key element of the success of the MSA, and I think another key element that we can all agree on is that the management decisions are based on the best available data. But as you know, in data-poor regions or data-poor stocks, sometimes that can result in artificially low annual catch limits or even closures. Is there something that Congress can do to assist in ensuring that there are robust stock surveys and assessments in all the different regions? And if there are specific regions that you think have challenges with robust data, it would be good for us to know.

Mr. RAUCH. Thank you, Mr. Chairman.

Every year, we have to allocate the fishery resources we have to try to match the survey, the science resources to the areas of the greatest need where we see either the most important commercial and recreational fisheries or the biggest conservation challenges. We do that. We are recently going through a stock assessment prioritization process where we are trying to, working with the Councils and the states, align our stock assessments to match the needs of the stakeholders and the councils.

Senator SULLIVAN. And do Councils come to you and say we are data-poor here, we need more data for our best decisions?

Mr. RAUCH. They do. Every Council has a research plan which identifies their highest research priorities. We work with them to try to meet those needs. We could always use more effort, but we think that we are largely meeting the kind of needs in response to the Councils for their highest priority actions. We work with them. For instance, in the Northeast, we meet every month—not every month, but periodically with the states, the two councils, the Atlantic States Marine Fishery Commission and try to plan out when we are going to do these stock assessments, which ones are the highest priorities. We plan our surveys along with the states. Many of our surveys are joint between the Federal Government and our State partners. And so we work with them closely on when we are going to do which surveys and how often we are going to do them. So we work very closely to do that.

We understand that not every fishery has the same amount of emphasis put on it, but we do try to give the most resources to the fisheries that are of the highest economic commercial and recreational value or present the biggest problems.

Senator SULLIVAN. And are there assurances that you can provide the Committee that the agency will not redirect funds from well managed fisheries to data-poor fisheries? Is that a challenge that you have to deal with?

Mr. RAUCH. That is often a challenge that we——

Senator SULLIVAN. How do you address that?

Mr. RAUCH. We try to be very transparent about that. I was articulating there are situations in which we have—let me back up, sir. We have just gone through with our science centers an extensive process in which we look at the science streams that are coming in and try to determine which streams are serving management purposes well and which are not. It is possible that through that process we identify data streams that we no longer need. So we would take those resources and shift them around. We do that in a very public and transparent process.

So I cannot guarantee you that the science that we are doing today we will always do, but what I can guarantee you is that we will try to be very transparent about our decisions, include all the stakeholders, and try to, with the resources that are available to us, make sure that they are maximized to meet the greatest need of the country.

Senator SULLIVAN. Let me talk about the maximum sustainable yield issue real quick as my final question. Your written testimony reported that in 2014, that was the third highest commercial landing in terms of value that we have had in the past decade. So again, I think that goes to the broader theme here of well managed fisheries based on the MSA.

Are you able to generate an estimate of what the precautionary management has cost in terms of the inability to achieve maximum yield on a continuing basis? So in other words, are we under-harvesting any stocks that are not achieving the maximum sustained yield to any significant degree particularly due to the amendments that were passed in 2006?

Mr. RAUCH. I do not know that we can provide any such numbers on a national level.

Senator SULLIVAN. Can you do it on a Council or——

Mr. RAUCH. Well, I think in Alaska they can tell you that if you make an investment in the science and you can decrease the scientific uncertainty surrounding their estimates, they can actually put a dollar figure to that so that you can—for that fishery, the Alaska pollock fishery, which is the second largest fishery in the world, they can articulate what an investment in science will give you in terms of economic return, and vice versa, what not investing in that science will mean. I have not seen us been able to do that for any other fishery of that level, but we can do it for the Alaska pollock fishery. I have seen those numbers. I do not have them with me off the top of my head, but we have made those.

Senator SULLIVAN. Thank you.

Senator Booker?

Senator BOOKER. Mr. Chairman, I appreciate that.

Mr. Rauch, as mentioned in my opening remarks, I am pleased that our region was the first to use the coral habitat protection authority to protect and preserve 38,000 square miles of Federal waters. This is critical. The Lautenberg provision in the MSA is something I think has been wonderful and has been codified in law for about 10 years.

And I guess my question is, given the importance of protecting habitat, are there opportunities to establish similar protected areas elsewhere in the United States waters? And broadly speaking, do you think we are doing enough to protect fish habitat under current law?

Mr. RAUCH. So every council, I believe, has a suite of closed areas that they have been managing for years for various purposes. For instance, much of the fishable territory in the Pacific Islands is closed to bottom trolling. You can fish on the surface, but you cannot disturb the bottom. In Alaska, there are closed areas. Those are to prevent fishing for a certain stock of fish.

The unique thing about the Mid-Atlantic canyon is nobody was fishing for them. This was a precautionary preservation to eliminate the potential that fishing could destroy these unique characteristics at the bottom.

There are potentials to do that elsewhere. Many Councils are interested in and continue to look through those kind of lenses at things. We see the Councils time and again willing to close areas that are sensitive to protect them from fishing. The Mid-Atlantic canyon is unique in terms of the size and scope and the purpose of it, but it is not unique in that it is the only fishery closed area. There are many, and the Councils have expressed willingness time and again——

Senator BOOKER. But I guess my question is do you think we could be doing more under current law.

Mr. RAUCH. I think the law is sufficient under that. I think the issue there is—we did not know 10 years ago that many of these resources existed out there. And so we survey for a lot of them. As we find them, the Councils have been very willing to protect them. But knowing where these deep water corals are is something we were not even looking for a decade ago. So this is a really new area of research, and so we are looking to find them. But as we find them, I think the law is sufficient to protect them.

Senator BOOKER. OK.

The recent proposed guidance for National Standard 1 included a proposal to remove accountability requirements for fish populations that are so dangerously low that their annual catch limit has been set at zero. I am concerned that eliminating reporting requirements on the zero catch fish populations will result in missing things like bycatch or accidental take of the most dangerously low fish populations. Can you address this at all?

Mr. RAUCH. I do not think we ever meant to eliminate any reporting requirements. Most of these are fisheries for which we have—there are only a very few fisheries in the country which are so dangerously low that we ban fishing for them entirely. For those, the accountability measures—there is nothing that the fishermen can do because they are prohibited from catching them. If they start catching them, we will have to deal with other issues.

I do not believe that we ever intended that the reporting be obviated for those. I think almost every fisherman in the country is required to report their catch in some manner. We would continue to do that for these species. The question is do we preset a management response if there is illegal fishing going on, and what we told the Councils is they did not have to presume illegal activity. If that occurs, we will deal with it through other enforcement mechanisms, but we do not necessarily need the Council to take an action and say if there is widespread illegal activity, because fishing is banned for these, then here is what happens.

Senator BOOKER. Just real quick. I am concerned about the problem of bycatch in some of our Nation's fisheries. In October, several of my Senate colleagues and I sent a letter to your agency regarding the overfishing of the dusky sharks. In that letter, we urged the agency to quickly take action and steps to halt and reverse the species' disastrous decline and asked the agency to let us know when we can expect the agency to implement strong measures, including establishing an annual catch limit and accountability measures so that the North Atlantic dusky shark population can have a chance to rebuild.

What actions does the National Marine Fisheries Service intend to take to help the dusky shark to rebuild and to prevent further bycatch?

Mr. RAUCH. So in bycatch in general, I think we share your views about the significance of bycatch. And I would encourage you that in the next week or so I think we plan to release our national bycatch strategy, the newest iteration, in which we echo some of the things that you have just articulated about bycatch. The Councils in general have been dealing with bycatch and trying to minimize those for some time.

In dusky sharks, the situation was in 2012 we implemented some measures for duskies that it remains to be seen exactly how effective they will be. We believe that although they were not directed at dusky sharks, they have had a lot of beneficial effect about limiting bycatch. Nevertheless, we continue to look at that. We know that additional measures may be warranted we hope this year—in the coming months actually—I should not say "this year"—in the coming few months to actually promulgate I think it is amendment 5B—I think that is right—which would address those concerns that you have raised for the dusky sharks.

Senator BOOKER. My time has expired. I want to be respectful of my colleagues. I just want to say if we could get a formal response to the letter that we sent with part of that strategy, I would really appreciate it.

Mr. RAUCH. Yes, sir.

Senator BOOKER. Thank you.

Senator SULLIVAN. Senator Cantwell?

STATEMENT OF HON. MARIA CANTWELL,
U.S. SENATOR FROM WASHINGTON

Senator CANTWELL. Thank you, Mr. Chairman. I think for both you and I, when it comes to fisheries management policy, there is probably no more important words than Magnuson-Stevens and

making sure that we continue the tradition of good fisheries management for both our states.

For us, the issue of salmon is particularly important, and I wanted to ask Mr. Rauch particularly about the issue of our hatcheries and making sure that we have good plans in place to review our hatchery system. So you know that we have had unbelievable requirements as it relates to both protecting wild and producing hatchery salmon. And yet, we have had something like only 52 plans reviewed. So do you think that this is a challenge and a threat if we do not have these plans reviewed by NOAA?

Mr. RAUCH. Thank you, Senator, for the question.

We are concerned about the hatcheries for many respects. A significant portion of the wild ocean harvest for salmon comes from these hatchery programs. And so the hatcheries are key to promoting economic viability, but they also, if they are not managed correctly, can pose a threat to our wild salmon. Recently there have been a lot of major improvements in the hatcheries such that they are managed correctly.

Since 2006, we have required under various different types of authorizations that the hatcheries have hatchery genetic monitoring plans, to make sure that they are operated at the highest levels so they minimize the impact. They were supposed to come in and get those approved for many years. For various reasons, those issues were delayed, and now we have got 328 plans that all came in at the same time. We have managed to clear through 50 of them, but we are having trouble clearing through all of them. We increased our staff such that we could increase the throughput to about 55 a year. The President's recent budget proposal, which just came out, asked for additional funds to increase our staff again to help clear these out. We do understand the importance of hatcheries to the region for various issues, and we do want to clear these out.

We have been working with the states and the various entities to try to prioritize which ones do you want to see us do first. So we hope to get the very important ones out first, but we are behind. And I do not expect that by the end of the year we will get all of them done, but I do expect that we will increase the throughput.

Senator CANTWELL. What are the consequences of not getting them done? And do you think that NOAA has the funds it needs to proceed in a timely manner? Because at 55 a year, that would take us another 6 years to process those.

Mr. RAUCH. We do not have the funds, which is why the President has asked for an additional—I do not remember the exact number, but there is an increase in the salmon budget to help us process through this. We did get a small increase last year, which we are going to use for processing through this. So we do not have the current resources that we need to address these.

There is some risk to the salmon, the risk that they have been facing for a while, if the plans are not approved. But the real issue is have the hatcheries actually made the changes. If the hatcheries have made the changes and are just seeking the approval of the changes, then the risk is relatively minor. If the hatcheries have not made the changes that we look for, some of these others, then the risk to the salmon could be greater.

But we have seen a number of lawsuits, not brought by us but brought by third parties, seeking to stop hatchery production. That is of concern to us. We are a co-defendant with the states on——

Senator CANTWELL. Which would bring havoc on a lot of different issues, and that is why it is important to have the funds. So I will look forward to following up with you on a question about how that budget would actually affect a timeline so that we can look at this and look at an answer.

A second related question is just on the issue of ocean acidification. My colleague, Senator Wicker, and I have been proposing legislation to make sure that ocean acidification's impact on our fisheries jobs is well understood particularly as it relates to salmon and a food source. Do you think we have all the information we need there to make assessments about how ocean acidification is going to impact the food chain?

Mr. RAUCH. I do not think we have all the—I cannot tell you right now how it will affect the food chain. I know that we are very concerned, particularly with shellfish. The shells themselves are very susceptible to ocean acidification. I think we do not have as good an idea as to how ocean acidification will affect other fish stocks.

We work with other colleagues at NOAA and throughout the Government on ocean acidification and looking at those kind of issues. I think we share the sentiment that we do not know enough about those. I do not know that the administration has a position on the bill, but this is an issue that the Fisheries Service takes seriously. We are concerned about the impacts. We have worked with industry like we worked with the Washington State shellfish industry when their shellfish reproduction was harmed by——

Senator CANTWELL. I see my time has expired. So thank you so much for that.

And I am going to submit a question about financing of fishing vessels and making sure that people do not believe that we are overcapitalized and that way we should not invest. I want to make sure that we get a financing that works. But I will submit that for the record. Thank you.

Mr. RAUCH. Thank you.

Senator SULLIVAN. Senator Ayotte?

STATEMENT OF HON. KELLY AYOTTE,
U.S. SENATOR FROM NEW HAMPSHIRE

Senator AYOTTE. Thank you.

Mr. Rauch, we have heard a lot today of discussion about the success of the MSA, but I can assure you that for my ground fishermen, it has been an unmitigated disaster. Literally as I look at what my ground fishermen have faced—and I think about putting out of business people who have often fished our waters for generations and really are so hard-working. I have had the chance to visit them personally.

But as of March 1, your agency has announced that you are not going to fund the at-sea monitoring. And just to put this into perspective, for your average ground fisherman in New Hampshire, which, for example, on cod over the last 4 years has faced a 95 percent reduction in what they can catch, on top of that, now they are

going to have to pay at-sea monitoring, which is contrary to what I think many of us believe the 2015 appropriations provided. In fact, your agency received a letter from many of us describing that.

To put it in perspective, average fisherman. I catch $1,500 worth of fish. After covering all my boat's expenses and paying my crew, I take home $300. That is not a lot, but I make a living. But then when you put an average of $710 per trip, a cost for at-sea monitoring, that they now have to put in place, 60 percent of my ground fishermen cannot make any money. They lose money. So we want to talk extinction. This is extinction of fishermen.

And so I want to ask you—I look at your budget, $5.4 billion for 2015, and you cannot find $3.78 million to fund at-sea monitoring which is consistent with what many of us have written in the 2015 appropriations bill for you. I think you have gotten a letter from myself, Senator Collins, Senator Markey on this committee, Senator Warren, Senator Reed, many of us.

As far as I can see, there are articles of the MSA that require you to think about the economic impact. I believe article 1 does.

So can you explain to me why we cannot find this small amount of money, $3.78 million, for fishermen that are going out of business that we have dramatically reduced their shares? These are not large fishermen. Talk about too big to fail. I have said this before. But this is essentially going to put the little guy out of business. So tell me why can we not fund this.

Mr. RAUCH. So we are very concerned about the declining status of the cod fishery. We believe that it is caused by many factors, including the fact that the Gulf of Maine has been the warmest it has ever been.

Senator AYOTTE. I do not have a lot of time. But why can we not fund the $3.78 million of monitoring so they do not go altogether out of business? That is what I need to know.

Mr. RAUCH. The other provision of the Magnuson Act that is relevant to this is that we have to provide for standardized bycatch reporting methodology, and we lost a court case. We have been traditionally funding this amount of money.

Senator AYOTTE. So no other place in this agency you can find this money so that these fishermen do not go out of business. And by the way, I think we have written you the letter saying that that should not be prioritized based on the appropriations bill over at-sea monitoring.

Mr. RAUCH. I understand that, Senator, but——

Senator AYOTTE. So are you telling me there is no other place in this agency we can find $3.7 million so fishermen do not cease to exist in my community?

Mr. RAUCH. The court found that we have to spend the money on other priorities before we spend it on at-sea monitoring.

Senator AYOTTE. But anywhere else in your budget, you cannot find $3.78 million to keep fishermen in place because otherwise I say the Magnuson-Stevens Act is an absolute failure in this regard.

Mr. RAUCH. As I said, the court said we have to fund other priorities.

Senator AYOTTE. So just the question, yes or no, there is no place else in this budget you can find that.

Mr. RAUCH. Not that we are allowed to fund.

Senator AYOTTE. OK. Well, please submit for the record what language we need to put in to give you the authority to make sure that these people have the at-sea monitoring funded because I cannot believe that we would have a system where we are going to put iconic fishermen out of business, no longer in business. The large folks—they are going to be fine. The small fishermen—they are done. Seven hundred bucks is more than they make after this. So I would ask for a follow-up on that.

And I have a number of follow-up questions. I would like to know with regard to the reauthorization, what specific language is necessary to ensure that National Standard 1 and National Standard 8 are considered with equal importance.

Mr. RAUCH. If you are asking for technical drafting assistance, I would imagine——

Senator AYOTTE. Well, there are two provisions, National Standard 1 and National Standard 8. And as far as I can see for the fishermen that I represent, they are not being weighted equally. And when it comes to the economic impact on our fishermen, if you combine the dramatic cut in shares, if you combine the concerns they have about the science, if you combine the fact that they now have to fund this at-sea monitoring system themselves, I do not see how their economic vitality is being taken into consideration at all here.

Mr. RAUCH. So it is clear that National Standard 8 is subordinate to National Standard 1 based on the terms of it. If you would like us to provide you language that would alter that, I think we could do that.

Senator AYOTTE. I think that it would be reasonable for this committee, as we look at this reauthorization, to put forward language that does not put every small ground fisherman in my state and the New England States out of business because that would be doing a real disservice to the fishery as a whole. So thank you.

I have some additional questions that I am going to submit for the record.

Senator SULLIVAN. Thank you, Senator Ayotte, and I share your concerns on the monitoring and the balance between the different National Standards. So I appreciate that line of questioning.

Senator Schatz?

STATEMENT OF HON. BRIAN SCHATZ,
U.S. SENATOR FROM HAWAII

Senator SCHATZ. Thank you, Mr. Chairman.

I wanted to ask about National Standard 1, which we all know is essentially to prevent overfishing and achieve optimum yield. And I want to understand how you see aquaculture fitting into that because on a sort of common sense level, to the degree and extent that recognizing that different regions have different concerns regarding aquaculture, that this seems to be a strategy that could achieve optimum yield and prevent overfishing. And I am wondering how we might pursue amendments to MSA in the future that would enable aquaculture to flourish where the FMPs and where the different regions think that is a good strategy.

Mr. RAUCH. Thank you, Senator.

We have just worked through this issue in the Gulf of Mexico where we did the first-ever large-scale commercial aquaculture per-

mit in Federal waters. We do believe that aquaculture is fishing. So it is part of the Magnuson-Stevens Act purview to regulate. We did have to set optimum yield for aquaculture. It is a little bit awkward to do that because usually you set optimum yield trying to determine how much of the fishery you can take out of the otherwise wild population. Aquaculture is not really that same metric. You take a little bit out of the wild population and then you sort of create another population.

But we did work through that. We set an overall cap on the amount of fishing, 20 large-scale operations in the entire Gulf of Mexico, with the understanding that if we actually achieve that limit, you go back to the Council, we might increase it.

So we have been able to work through that issue. It was not without some difficulty trying to conceptualize it, but we do think within the Magnuson Act, as it is currently written, you can regulate aquaculture. You can do things like setting optimum yield. It is important to the country to continue to do that.

Senator SCHATZ. Do you need any clarification from the Congress in terms of this optimum or maximum yield question when it comes to aquaculture? Because I guess it seems to me a little bit of a square peg in a round hole.

And then the other question is do you feel like it is settled that aquaculture is fishing rather than farming.

Mr. RAUCH. For us, it is settled. There are a number of fishery management plans going back 2 decades or so that include aquaculture, that authorize aquaculture, nothing on the scale of the Gulf. But as the Senator may be aware, we are subject to a lawsuit that challenges that very principle. And I am not aware, other than some very preliminary rulings, that we have had any court uphold us. From our perspective, though, it is a position we have had for well over a decade, and we think it is settled.

We do think, as I said, it works well within the Magnuson Act, that there is no need to change the statute to give us that, but if Congress would like to work with us, I am sure it could be clearer.

Senator SCHATZ. OK, thank you.

The second question I have is regarding coastal habitats. As you know, they face increasing pressure from growing populations and environmental damage. As coastal habitat degrades, fisheries suffer. But on the positive side, obviously, maintaining healthy coastal habitats will help fisheries to be more productive.

So how can MSA reward stewardship, and what other agencies need to be involved in this conversation?

Mr. RAUCH. We do know that there is a close link between habitat and fishery production. We have an entire habitat division within the Fisheries Service that is designed toward protecting coastal habitat with the aim towards increasing fishery production.

Currently the Magnuson Act includes an authorization for the community-based restoration programs so that we can work with local communities to do that. It also includes essential fish habitat provisions such that we can work with other agencies, agencies like the Corps in terms of their Clean Water Act dredge and fill permits. As they try to assess the amount of modification that is allowable, they come and consult with us so that we make sure that the fishery impacts are working well.

So we work well with a number of agencies. It is the agencies that you would expect, the Corps, the military, those folks that work on the coastal development. And we have a really good working relationship with them to make sure that as they authorize projects, they are taking into account the fishery needs.

Senator SCHATZ. Thank you.

Senator SULLIVAN. Senator Blumenthal?

STATEMENT OF HON. RICHARD BLUMENTHAL,
U.S. SENATOR FROM CONNECTICUT

Senator BLUMENTHAL. Thanks, Mr. Chairman.

This hearing is vitally important to Connecticut and our country, particularly so because the Magnuson-Stevens Act can be effective only if the latest science is brought to bear on decisions that are made and only if the people who are affected by this law have representation so they can bring a real-world sense of what is happening to bear on these decisions.

I have met often over the past years, when I served as Attorney General and most recently as Senator—last week with our Connecticut fishing community, I met with them in a town hall in Stonington and heard their perspectives and concern as they relate to the Magnuson-Stevens Act. And frankly, I strongly believe that the goals of conserving and rebuilding fish populations and promoting the growth of the fishing industry are two goals that should be and are compatible, not mutually exclusive.

But unless the best science is brought to bear and unless the views of that fishing industry have some say, the system will run amok. And right now, it is running amok in their view. And I think their views are very persuasive and convincing.

They tell me that the sea bass and flounder, among other species, have migrated north, are available in much greater abundance than ever before because of the effects of warming. And so the system that gives primary say in determining the catch numbers permissible to the Mid-Atlantic Council and management organization is not only inequitable but ineffective. And their industry is under extreme economic stress, and that matters to the entire state of Connecticut. The commercial and recreational fishing industries involve 6,600 jobs in my state and has an economic output of $763 million. These are numbers that are approximate, but even if they are off by a little bit, the magnitude of the effect is certainly significant.

So my hope is that we can have smarter, more efficient targeting of resources in these programs and greater effort to take into account the effects of climate change and shifting fish populations and other environmental issues and we can make this system work well for fishermen and protect and rebuild vulnerable species at the same time.

So my question to you is, what can be done to take account of those moving fish populations? I know I am probably stating it in imprecise layman terms, but the sea bass and the flounder do not speak our language anyway. They are just going to do what they are going to do based on water temperatures, and those water temperatures are driving more of them north.

And here is the really egregious and unacceptable outcome. These fishermen are throwing overboard tons of fish that are dead when they hit the water. So they are of no use to anyone, least of all people who are hungry, literally hungry in Connecticut and around the country, who could benefit by having those fish available. So there is extraordinary unnecessary waste in this system right now, and I want your view about what we can do about it.

Mr. RAUCH. So there are two aspects of that question.

One is on the science side, all the science that we work with in this instance is done through the Northeast Fisheries Science Center which serves both Connecticut, the Mid-Atlantic. So there is some uniformity there so we can make sure that the science views are not influenced by the technical geography, which Council is managing it.

In terms of the Council, the actual management advice—as you know, the Council boundaries are set by statute. There are some provisions—and you are absolutely correct that the stocks appear to be moving north. There are some other ones that are moving south. The fish are moving, and we are not sure why. We suspect it is climate change. That is going to create over time—this may be the first of many of these kind of issues in which you have fish showing up where they traditionally were not, and we have to set appropriate management measures. And these are issues that both the Councils work with.

Under the Magnuson Act, we have two main tools to do that. The Council of jurisdiction—as I said, it is not something that we can change, but we can make sure that the New England and the Mid-Atlantic Council are working together. They do have liaisons. We have traditionally designated a lead council. In this case, it is the Mid-Atlantic. There is always opportunity to change the lead council. I am not sure that would be advisable here. But occasionally we also require joint management plans. This happens a lot in the Keys where the fish do not care particularly whether they are in the north or south, whether they are being regulated by the Gulf Council or the South Atlantic. And we have a number of joint plans where we have asked the Councils to work together on those kind of things.

So all of those are options that are available as this continues, and my suspicion is this is not the only instance in which this is going to occur. The stocks are moving all over the country, and we will see this happen more and more.

Senator BLUMENTHAL. But you would agree with me that the system right now has really run amuck and needs to be set right.

Mr. RAUCH. I do not know how long-term this is. I do know that there are issues with new fishing opportunities in old fishing grounds and we have to deal with those. We are working through the Council process. I think the tools are there. But it is an issue that all the Councils have to start facing.

Senator BLUMENTHAL. And the fishing opportunities, to use your euphemism, which means to me there are fish to be caught, they are being thrown overboard, they are hitting the water dead, they are wasted, and fishermen are deprived of their livelihoods and people's lives are diminished because they go unnecessarily hungry—would you disagree with that summary?

Mr. RAUCH. I do not know that that is what is happening with summer flounder or black sea bass. I know that is one of the reasons we are very concerned about bycatch issues in general, that we would like to avoid those kind of wasted situations. And we are required to minimize bycatch. I would rather minimize it by increasing fishing opportunities for those. I mean, if they are going to be dead anyway, we might as well look for opportunities to catch them.

Senator BLUMENTHAL. In other words, increase the catch quotas.

Mr. RAUCH. If that scientifically can be done. These are thorny issues in terms of what the implications for increasing catch quotas might mean for others. You cannot just increase catch quotas without there being consequences. It is often a zero sum game. Somebody would have to decrease somewhere. And that is an issue traditionally that we work out through the Council process, often where two Councils meet together and try to reach an agreement on what should happen.

Senator BLUMENTHAL. Well, I would just emphasize for what it is worth as a message to take back to NOAA and to all the agencies that have authority here that science has a very important role to play. These decisions ought to be fact-based and founded in good science, but clearly in the real world what is happening is unacceptable because fishermen are losing livelihoods and people are losing food that otherwise could be extraordinarily nourishing and healthy. And I want to make sure that we in no way compromise the goal of preserving and enhancing the populations of fish, consistent with good environmental science, but common sense dictates a change here.

So thank you.

Senator SULLIVAN. Senator Markey?

STATEMENT OF HON. EDWARD MARKEY,
U.S. SENATOR FROM MASSACHUSETTS

Senator MARKEY. Thank you, Chairman Sullivan, very much. And thank you for mentioning Massachusetts, along with Alaska, as the seafood superpowers in the United States.

Senator SULLIVAN. I will note that next time. Oh, I did.

Senator MARKEY. You complimented Massachusetts.

Senator SULLIVAN. Absolutely. No doubt about it.

Senator MARKEY. He went to Harvard. So maybe he is subconsciously doing it and then forgetting that he did it. But in your opening statement, Alaska and Massachusetts were mentioned.

Senator BLUMENTHAL. Should I get in the middle here?

Senator MARKEY. A Yale man in the middle.

[Laughter.]

Senator MARKEY. And the truth is that my mother is a Sullivan. You are a Sullivan. We were probably fishing in Ireland. Then we went to the two states.

Senator SULLIVAN. Probably, once the potatoes ran out.

[Laughter.]

Senator MARKEY. And then we went to the two states that are the seafood superpowers.

So our story, though, is one of the declining seafood, and we have to basically try to do our best to figure out the issue because the

namesake of the iconic arm of Massachusetts is the cod that is found just off of the Cape's coast. Cape Cod and the rest of Massachusetts have a strong and a rich history of fishing and science. The Magnuson-Stevens Fishery Conservation and Management Act brings together these two subjects to support healthy fisheries and the fishermen and coastal communities that depend upon them.

We have seen how fishermen, managers, and scientists have worked together to revive the Atlantic sea scallop fishery. Due to their success, New Bedford continues to be the leading U.S. fishing port based on dollar amount of fish and seafood landed. And I hope that this model of collaboration can extend to the other fisheries that are struggling in New England and support a vibrant seafood industry in Massachusetts in the 21st century and beyond.

But given the immense challenges we face with the ever-growing effects of climate change and ocean acidification, today we must begin to acknowledge that we cannot solely plan on what happened in the past. Cod, which used to be so plentiful, is less so now. There is an ever-important need to focus on science and provide fisheries managers with the proper data to make well informed management decisions.

There are many challenges, though. Carbon dioxide levels in the atmosphere are the highest in recorded history. We have reached over 400 parts per million. The last time carbon dioxide levels were this high, the world was a very different place. The earth is warming and our oceans are too. Not only are our oceans taking up some of the global warming, but carbon dioxide dissolving in our oceans is causing them to acidify. Study after study details the changes occurring in our climate in the Gulf of Maine in New England and are looking at some of the most adverse changes in the near future. Without action to reduce carbon pollution, we could face a New England without lobsters and a Cape without cod.

But there is hope. Our fishermen have made it through many past challenges, and the hearing today is exploring ways that we can ensure a strong, vibrant fishing industry and healthy oceans for generations to come.

So, Mr. Rauch, as you know, New England ground fishermen have faced significant economic challenges in recent years, and Senator Ayotte raised the cost of at-sea monitoring earlier. Can NOAA prioritize certain fisheries for standard bycatch reporting methodology coverage at a higher rate?

Mr. RAUCH. Thank you, Senator.

In New England, we set the priority for standardized bycatch reporting methodology through the system laid out by the Council in their fishery management plan amendment. So they have articulated—we are required by statute to establish a standardized bycatch reporting methodology for the fisheries in New England. We do not believe it has to be the same for every fishery, but it does have to be standardized.

Senator MARKEY. Would you need changes to Magnuson-Stevens to enable the agency to prioritize certain fisheries for SBRM coverage?

Mr. RAUCH. I do not believe you would need it to—you might. I do not know the answer to that question. I do know that the answer—given the court cases up there, if we wanted to prioritize at-

sea monitoring over SBRM, we would need that. I do not know that we would need that to prioritize SBRM funding, but it would take at this point Council action because we do have a Council amendment that dictates how we were going to do that.

Senator MARKEY. And what criteria would NOAA use to identify priority fisheries?

Mr. RAUCH. I think we would look at—you would look at which fisheries have a history of bycatch, which fisheries is the bycatch that you are concerned about. There are some stocks that are healthy that you would be less concerned about bycatch and some stocks that, if you catch them, you would be very concerned. So you would make an assessment about the different fisheries, if you had limited bycatch monitoring resources, which we do, and decide which ones you want to allocate those resources to. So those are the kinds of criteria that we would look at, but it would be largely with the Councils that we would be doing that.

Senator MARKEY. Well, the New England fisheries are already feeling the effects of climate change. The Gulf of Maine sea surface temperature is rising faster than almost anywhere in the entire world. And these changes pose significant challenges to our fisheries.

How does NOAA plan to allow for adaptation of management strategies to changes in ocean conditions due to climate change?

Mr. RAUCH. We just put out a report which echoes much of what you just said and which indicates that certain stocks are perhaps more susceptible than others. And we were very concerned that the economic driver behind New Bedford is the scallop fishery. They have calcium carbonate shells, and so they are potentially very vulnerable to climate change.

So we have articulated which ones are perhaps the most vulnerable. I think it is imperative there—the Fisheries Service does not control climate change, but we can work with the fishermen to try to diversify portfolios to try to make sure that they account for potential downturns if they are going to be in those fisheries.

Senator MARKEY. Well, the cod and lobster—they need cold water.

Mr. RAUCH. Exactly.

Senator MARKEY. And the lobster are voting with their claws as they move northward, and the cod are voting with their fins as they move northward. And so as they chase the colder water, as our water becomes warmer, it becomes a real issue economically for our region.

So what additional or new data would NOAA require to help understand the different causes of changing fish populations?

Mr. RAUCH. We have invested a lot of money recently. I think last year we invested about $3 million in Northeast climate science to try to get at that exact question. By virtue of the Fisheries Service placed within NOAA, we have a lot of access to our partners who do the environmental monitoring that can monitor temperature and other conditions. We are integrating all that now.

I think it is hard to determine why a fish stock reacts the way it does, but we are investing a significant amount of resources now and we will continue to do so trying to improve our understanding

about the way that these stocks may react to various climate scenarios.

Senator MARKEY. Mr. Chairman, can I have an additional two minutes, if you do not mind?

Senator SULLIVAN. Absolutely. Take as many as you want.

Senator MARKEY. Thank you, Mr. Chairman.

Researchers at the University of Massachusetts at Dartmouth are working on a new video system that will count cod to improve the accuracy of the scientific assessment. This is just one example of technological innovation with implications for fisheries management.

Can you speak to how technological innovation, such as the one I mentioned, can improve stock assessments not just in New England but around the country?

Mr. RAUCH. We think it is very important to work with third parties that develop these new systems like that one to work them into the science enterprise. It is important for trust. It is also important to have a transparent system, so we need to be open to this kind of new information.

We have a study fleet where we have employed the fishermen. They put cameras on the study fleet that look at where—we tell them go catch fish where you think the fish are. And then they will take the environmental conditions and reports and we will incorporate that into our data set. All that is very important. So we invest a lot of money in our partners to do these. Even if we did not fund the initial research, we try very hard to incorporate that data into our assessment of the stocks. Sometimes it takes a while to incorporate the data into the stocks. Sometimes it is very easy to do that. And we work very well with the state of Massachusetts and the various institutions there to do those kind of things.

Senator MARKEY. So it is important for fishermen and women and the fisheries management people to have the information——

Mr. RAUCH. Absolutely.

Senator MARKEY.—so they can make timely decisions about the future.

And finally—thank you, Mr. Chairman—illegal, unreported, and unregulated fishing may account for up to $23 billion per year loss to the global fishing industry. This directly affects the fishermen of Massachusetts. However, seafood fraud affects every State. Alaska and Massachusetts, of course, would be at the top of the list just because of how massive our fishing industries are.

In order to protect American consumers and fishermen, are there specific provisions of the Magnuson-Stevens Act that can be enhanced to combat illegal, unreported, and unregulated fishing?

Mr. RAUCH. There are. And we are currently using the Magnuson-Stevens, as you may be aware, to create a traceability system for both foreign imports. We have a wonderful traceability system in the United States. We can as the government agency. It is not publicly available. But as regulators work with our states, we basically know where the fish was caught, when it was caught up to the point of entry into the market. Using the Magnuson Act, we are imposing similar requirements on foreign imports to level the playing field. Our fishermen should not be at a disadvantage to that.

The Magnuson Act right now is not a particularly good tool for the seafood fraud part. We have other tools. We are working with our enforcement agencies. That is mainly economic fraud that is going on, and we work with States and local governments to help prosecute that. We have some tools available. We are very concerned about that.

Senator MARKEY. Do you need additional regulatory authority that the Magnuson Act can provide?

Mr. RAUCH. We have indicated that if we are fully going to achieve the vision of enforcing against illegal fish and fraud, that additional enforcement authorities that would allow us to enforce beyond the point of entry—we can do a very good job enforcing at the docks. That is where the NOAA fisheries enforcement agents go. Once it leaves the docks and enters in the chain of commerce domestically, we have very few tools to deal with that.

Senator SULLIVAN. Does the IUU legislation that I mentioned in my opening statement, recently signed by the President—does that provide you enough authority?

Mr. RAUCH. It helps us with certain things. It does not provide that authority from the point of entry, once it is into the United States, to guard against market fraud that might happen at a local distributor. It does not do that. It is a very powerful tool protecting us up to the borders and making sure that what is coming into the United States is good and sustainable. But the Fisheries Service at least would have to rely on our State and Federal partners for that enforcement beyond the chain. We do not have any authority right now to do that.

Senator MARKEY. And I have been working with Senator Wicker on this issue trying to find a bipartisan way in which perhaps, Mr. Chairman, we could work together as we are going forward.

Senator SULLIVAN. Great.

Senator MARKEY. So I thank you.

And can I ask a question? My mother's family is from County Kerry. Where are your Sullivans from?

Senator SULLIVAN. That is County Kerry as well. So maybe we were fishing together.

Senator MARKEY. Maybe we are cousins.

[Laughter.]

Senator MARKEY. Maybe destiny has brought us here to work together.

Senator SULLIVAN. Well, I look forward to working with Senator Markey as we did last year on an amendment that was signed into law just recently by the President with regard to helping move forward the fisheries in Alaska, in Massachusetts, and throughout the country. In all seriousness, I think we had a lot of work.

Senator MARKEY. I agree with you. My mother always said the Sullivans are a very intelligent people. So this is just further proof of that as we work together in the future on new amendments.

[Laughter.]

Senator MARKEY. Thank you, Mr. Chairman.

Senator SULLIVAN. So, Mr. Rauch, I just have a few more questions, if that is all right, since I have you hostage here.

I am going to follow up on a couple questions Senator Markey talked about, that Senator Ayotte talked about. The first one re-

lates to Senator Ayotte's questions on the ranking of the different National Standards.

Is National Standard 1 ranked above all others, and if so, how does that position allow you to achieve balance?

Mr. RAUCH. Thank you, Senator.

There have been a number of judicial interpretations of the various National Standards. Some of them are explicitly subject to the overarching conservation rationales and others. National Standard 8 is one of those that by its own terms—and I do not have it in front of me—refers to the conservation objectives of the Magnuson Act, and so the courts have interpreted that to be subordinate to National Standard 1. National Standard 1 says we are to prevent overfishing while achieving the optimum yield. There is a lot of material in there. We are supposed to be conservation-minded but, at the same time, achieve the maximum benefit that we can while making sure we do not cross over the conservation objectives.

Other ones are not so subordinate like the requirement to use the best available science. That is not subordinate.

Senator SULLIVAN. How about the economic impact?

Mr. RAUCH. The economic one, which is in National Standard——

Senator SULLIVAN. Because you are seeing that among the Committee members. It is a concern.

Mr. RAUCH. The current wording of National Standard 8 does make it—you consider the economic—economic flexibility—you consider it once you have made sure that you have not allowed overfishing. And so it has been viewed and the Fisheries Service would view it now as subordinate to the requirement to make sure that you do not allow overfishing.

But that still gives an awful lot of flexibility to try to create economic opportunity. So I do not want to leave the impression that it is meaningless. It is quite powerful. We are in the Commerce Department. We take it seriously that we are trying to achieve the most economic value we can and the least economic harm to our coastal communities in everything that we do. It is just that there is a line about overfishing that we will not cross.

Senator SULLIVAN. Let me turn to the issue of the monitoring system. And you know, it is a big issue. Obviously, Senator Ayotte was very strong and forceful in her comments to you. You know, in Alaska, we actually have a bit of a different issue, but in some ways it is similar where the monitoring situation—and I have seen this with our fishermen. The requirement of a human observer particularly for small-boat fishermen—so for some of the smallest vessels, there is a huge burden. Right? I mean, literally just space in terms of the burden that we have. I do not believe anyone in our fishing fleet gets subsidized or has been subsidized by the Federal Government on monitoring. So there is a bit of an equity issue that I will not go into right now. But as you know, different monitoring programs have been treated differently in terms of the way the Federal Government has actually helped pay for those. We have never been paid for at all. So there is a fairness issue there I believe.

But also in terms of electronic monitoring, I know that you have been working for years to develop that kind of program, but I will

tell you there is just a real strong interest in Alaska for you to get to a point where we can deploy electronic monitoring. No one is trying to avoid monitoring, but as I mentioned, it is a real burden when you have to have human observers particularly on small vessels.

Where are we on that, and can I tell my constituents that we are getting to a spot where we can have electronic monitoring sometime not in the far, distant future?

Mr. RAUCH. So you are absolutely right that we are struggling with the small boat fleet up there. The Council has determined that we need to start—that fleet had been unmonitored for a long time, and there needs to be some sort of monitoring. And the initial technology is a human observer, which creates all these space issues. And we have struggled for years with that fishery because, as you said, there is only a limited number of spaces, and in order to have a bunk space for an observer, you might have to have a crewman sleeping on deck, which is not a good solution.

Senator SULLIVAN. And that happens, as you know.

Mr. RAUCH. Yes.

So we worked for a while on various mechanisms. At the moment, we are offering an experimental arrangement where if they agree to take a camera in lieu of an observer, they do not have to take the observer. We have got, I think, 59 boats signed up for that process right now, give or take a few. We hope to get up to 90 next year before the system is fully operational in 2018. Our long-term vision is exactly the same. I would much rather have this fishery observed with cameras——

Senator SULLIVAN. Yes.

Mr. RAUCH.—than with human observers.

Senator SULLIVAN. So would we.

Mr. RAUCH. And I think they are working through the technology, but right now, my understanding is if you sign up for this program, you can take a camera instead of a human observer. And many of the folks have done that. There are some people that are still not part of that system, and we continue to work with that segment of industry.

Senator SULLIVAN. Well, if you can commit here to continuing to focus on accelerating that, I think that goes to some of the burdens that we have been talking about, certainly a burden on the industry in Alaska.

Mr. RAUCH. Senator Ayotte is no longer here, but we are continuing to work to develop a camera system in New England similar to that in Alaska to decrease some of the costs that she identified.

Senator SULLIVAN. Good.

Let me turn to eco-based fisheries management. In your testimony, you talked about that being used in concert with protected species conservation. And I believe you are familiar with the experience we have had in Alaska with regard to the stellar sea lion and Alaska fisheries. And it seems to me that a risk-averse ecosystem policy in certain cases could possibly make things worse for fishing communities in my state, given that example.

Do you agree with that or do you disagree and why?

Mr. RAUCH. I think it is important to recognize the role of the fish stock that the fishermen fish for in the ecosystem, as the Council has done, as the fishing industry has done. I have talked to many of the fishermen in Alaska, and they are conservationists at heart, many of them.

Senator SULLIVAN. Absolutely, they are. That is for sure.

Mr. RAUCH. And they are willing to make certain sacrifices if they believe the science is there, and they have done so. The Council—our latest iteration on the stellar sea lion was to approve the Council's proposal, which the fishermen supported to address that.

But like many things, there is often only so many fish to go around. And so you do have to weigh the balances between the fish that we remove versus the fish that you allow to stay.

My experience has been that once the Councils in general embrace this idea, they are perfectly willing, if they can understand the science behind it, to set aside what the ecosystem may need because in that case, we are talking about stellar sea lions, but in other cases we are talking about fisheries that may grow bigger and feed another segment of the fishery. So you are not setting it aside. You are setting it aside for other fishermen. And so these are kinds of ecosystem considerations, how removing the stock from one part of the ecosystem affects another one, that the Councils have been very willing to address and in general have been willing to work through these issues. And it is not always that we are setting it aside for a native species. Many times we are setting it aside for other fishermen down the line.

Senator SULLIVAN. Let me ask another question that has caused a lot of concern or potential concern with regard to the President's authorities under the Antiquities Act. And as you probably know, when the President uses the Antiquities Act, there is no requirement to consult with any stakeholders that are adversely affected, including States, including Members of Congress, including even NMFS. And as you also know, that is completely different than the structure, the MSA, where it is a robust and transparent public process that develops the fisheries management plans including, as you just mentioned, conservation measures.

Do you think the Antiquities Act could benefit from similar requirements to be modeled in some ways where there is more input? There are a lot of concerns that certain areas of the North Pacific region are going to have a unilateral, unbeknownst to anybody, especially the stakeholders, antiquities designation by the time the President leaves. And that really cuts against the entire structure of the MSA which has been stakeholder-driven, transparency-driven, and stakeholder-approved.

Mr. RAUCH. So the Marine Fisheries Service does not implement the Antiquities Act.

Senator SULLIVAN. You do not even get consulted either.

Mr. RAUCH. I do not have a view on the Antiquities Act.

But I will say in terms of preserving land and presenting harm to large sections of the ocean from fisheries impacts, the Magnuson Act has been a wonderful tool to that.

Senator SULLIVAN. Exactly.

Mr. RAUCH. We heard about the Mid-Atlantic Council, which was a very open and transparent stakeholder process. The one limita-

tion there is that—and the Councils sometimes express frustration—it is limited to fishing impacts. We can close an area to fishing. We can regulate fishing in areas, and that is all that the Fisheries Service really can do.

Senator SULLIVAN. Well, let me ask a favor, as I wrap up here. And I appreciate you taking the time to answer additional questions. But as this Antiquities Act issue starts to maybe rear its head, if you can weigh in with the other Federal agencies and say, look, we have an act where it is open, it is transparent, where the conservation of the stakeholders is undeniably clear when they have the information. And a blind-side antiquities designation certainly is not going to help or get a lot of buy-in in my region, but I think in most other regions. And I think if agencies like yours can remind the other agencies or the White House about this that things are working on a conservation objective right now, that that could be helpful.

Mr. RAUCH. So I think we continue to discuss with our partners in the administration and with the administration as a whole the value of the Magnuson Act, the value of the structure, the transparency, and the strengths of the structure throughout the system.

Senator SULLIVAN. Well, I appreciate that. If you can continue to do this in the final year of this administration, that would be helpful.

Let me ask one final question. In the North Pacific region, many have expressed support for a NEPA sufficiency process within the MSA to reduce redundancy and the programmatic burden. Does the agency have a position on such a provision?

Mr. RAUCH. The Council chairs at one point developed a proposal led in part by the North Pacific Council. The agency did not take a position itself on that one, although I personally have pointed out some of the, I think, difficulties in working through that system.

We did take a position on the NEPA language in the House bill, which we opposed. We thought it was unnecessary. We think that the Councils have largely made NEPA work, that many of the supposed ills that they cite are not actually true. They cite a lengthy EIS process from the mid-2000s that we have never done since. We do not anticipate doing again. NEPA has not been an impediment to the Councils to do their job. In fact, it has provided important environmental analytical capabilities that are very similar to the Magnuson Act. Most of the Council documents now are integrated NEPA fishery management plan objectives. You cannot tell where NEPA stops and the fishery management begins. They have integrated them very well. And so we think it is unnecessary to have sufficiency language, and that is why we opposed the House bill. But we did not any particular official position on the Council Chairs' position.

Senator SULLIVAN. Well, listen, I want to thank you again. I think you presented us outstanding testimony. And obviously, a lot of members on both sides of the aisle are very interested in this issue. We look forward to working with you and the agencies as we look at the importance of this issue with regard to the MSA. Again, I want to thank you for your patience and very thorough answers to everybody's questions.

This hearing is adjourned.
[Whereupon, at 3:58 p.m., the hearing was adjourned.]

A P P E N D I X

PREPARED STATEMENT OF HON. MARCO RUBIO, U.S. SENATOR FROM FLORIDA

The Magnuson-Stevens Act (MSA) set ten principles, called National Standards, for fishery management and conservation. Today, we analyze National Standard 1, which stipulates our fishing "measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield (OY) from each fishery for the U.S. fishing industry." It is in the national interest to prevent overfishing while producing an optimal yield. However, the underpinning of this goal can only be accomplished with sound science. All can agree that timely and accurate data benefits both the recreational and commercial sectors. Together, they contribute significantly to the national economy, employing millions of Americans and providing sustenance to all fifty states and abroad. It is because of their importance that I led a bipartisan congressional request to the Government Accountability Office (GAO) to examine current data practices used in determining stock assessments. The report found that the National Marine Fisheries Service (NMFS) "does not have a comprehensive strategy to guide the implementation of its various efforts. . .Moreover, without clearly communicating the strategy to its stakeholders, NMFS may find it difficult to build trust, potentially limiting its ability to effectively implement MRIP improvement initiatives that rely on data collection partners." On December 14, 2015, I wrote to Secretary of Commerce Penny Pritzker urging the Department of Commerce use the necessary resources to implement GAO's recommended changes as soon as possible and to begin to rebuild the trust with key stakeholders. I remain hopeful the department will take tangible actions to address these issues.

As I have stated before, it is because of the charter, commercial and recreational industries' importance that fisheries elicit strong emotions. Our nation has a solid foundation of fishermen. Livelihoods and favorite past times are spent on the water and whether it's supplying seafood to our restaurants or to our families' dinner tables, decisions affecting our fisheries must be made by taking all sectors into account. Just last year, this committee reported the Florida Fisheries Improvement Act, legislation I authored that would strike a balance and improve fisheries management in the Gulf of Mexico and South Atlantic regions. The bill would amend the Magnuson-Stevens Act to give the Regional Management Councils greater flexibility in setting rebuilding timelines, require the Secretary of Commerce to create a stock assessment plan to better prioritize stock assessments and report to Congress on how to improve data collection from stakeholders. It would also increase the availability of funding for stock assessments, surveys and data collection efforts. Should the committee move forward with an MSA reauthorization bill, I urge the inclusion of this vital bill.

I thank Senator Sullivan for chairing this important hearing.

WRITTEN TESTIMONY ON BEHALF OF THE ALASKA LONGLINE FISHERMEN'S ASSOCIATION (ALFA), THE ALASKA MARINE CONSERVATION COUNCIL (AMCC), THE CENTRAL BERING SEA FISHERMEN'S ASSOCIATION (CBSFA), THE CITY OF SAINT PAUL ISLAND, AK, (THE CITY), AND THE HALIBUT ASSOCIATION OF NORTH AMERICA (HANA)

Mr. Chair, Ranking Member, and members of the Subcommittee, thank you for the opportunity to submit comments on the Magnuson-Stevens Act at 40.

These comments are submitted on behalf of the Alaska Longline Fishermen's Association (ALFA), the Alaska Marine Conservation Council (AMCC), the Central Bering Sea Fishermen's Association (CBSFA), the City of Saint Paul Island, AK, (the City), and the Halibut Association of North America (HANA). Together these associations, organizations, community development quota (CDQ) groups, and local governments represent a diverse group of halibut users including commercial, recreational, and subsistence fishermen, and halibut dependent communities—from the

Bering Sea, to the Gulf of Alaska to Southeast Alaska—that are concerned with the conservation and management of the North Pacific halibut resource.

The primary strength of the Magnuson-Stevens Act (MSA) is its commitment to long- term conservation of marine fisheries and resources. While achieving optimal yield from the fisheries is clearly important, managers "must give priority to conservation measures." [1] The signatories to this letter share this priority and oppose any action that weakens this long-term commitment to resource conservation and sustainable fisheries.

That said, legal and policy frameworks must evolve to reflect changed conditions, participation, and uses over time. The Magnuson-Stevens Act (MSA) is no different. While the MSA through the balancing of the National Standards has clearly had many successes in its forty years of existence that have resulted in improved management, conservation, and participation by stakeholders in the nation's fisheries, our comments will be focused on areas that require recalibrating or rebalancing. These comments are based on recent challenges in the conservation and management of the North Pacific halibut fishery, which exemplify the shortcomings of current National Standards, as well as the need for additional guidance—either through Agency input or Congressional reauthorization—on how regional councils are to apply the ten National Standards.

I. The North Pacific Halibut Fishery

Halibut is considered one of the world's premium whitefish. It is popular with consumers and seafood restaurants throughout the United States and around the world. Along with red king crab and salmon, it is emblematic of Alaska's wild fisheries and a key

commercial, recreational, and subsistence fishery in communities from Alaska through British Columbia, to California. Since 1923, the U.S.-Canada International Halibut Commission (IPHC) has managed the North Pacific's halibut stocks, a testament to its historic and commercial importance to communities throughout its international range.

There are currently 2,714 halibut Individual Fishing Quota (IFQ) holders in the United States—and 1,965 of the IFQ holders are Alaskans, who employ other Alaskans. In addition, there are a total of 1,157 vessels in the halibut IFQ and CDQ fleets. The CDQ fleet is based out of 39 Western Alaska villages. The directed halibut fishing vessels made IFQ landings in 32 different community ports in 2014. There are 77 distinct registered buyers that purchase halibut in these ports.

In addition, halibut is a key subsistence fishery. Residents of 118 rural Alaskan communities and areas, and members of 123 tribes, are eligible to participate in the federal subsistence fishery. In 2011, 4,705 individuals subsistence fished for halibut. Those individuals harvested an estimated 38,000 halibut, comprising 700,000 pounds—a vital source of food and a critical cultural component for dependent villages and individuals, which must be protected. This is particularly important in areas where salmon has been all but removed from the traditional subsistence diet in an effort to conserve Chinook.

II. A Distorted Use of the Halibut Resource

Over the last 15 years, the IPHC has steadily reduced directed halibut catch limits as a necessary conservation measure in response to a declining available halibut resource. This has resulted in the directed halibut fishermen undergoing extreme cuts in their quotas. Meanwhile, until last year, the bycatch users in the Bering Sea groundfish fisheries have been permitted by regulation to catch and discard halibut up to the limit set more than 20 years ago, when the halibut resource was double what it is now. In effect, a dramatic reallocation of halibut from the directed halibut fisheries to bycatch users has taken place in recent years.

The impact of BSAI halibut bycatch is felt throughout the range of this great fish, but in particular by the directed halibut fishermen in the commercial, recreational, and subsistence sectors. These fishermen are primarily based in coastal, and economically less-diversified, Alaskan communities. IPHC studies reveal that halibut undertake lifelong migrations from nursery areas in the Eastern Bering Sea to the Gulf of Alaska and beyond. Of the under 26-inch—or juvenile—halibut tagged in the Bering Sea, 10–30% of the recovered tagged fish were recovered in the Bering Sea, while 70–90% were recovered in the Gulf of Alaska.

The current Bering Sea/Aleutian Islands (BSAI) halibut bycatch limit of 3,515 Metric Tons (round weight, or weight of the entire fish) legally allows up to 5.81 million pounds of halibut (net weight, without heads and entrails) to be caught and discarded overboard as bycatch mortality in groundfish fisheries. Meanwhile, this

[1] *Natural Res. Def. Council, Inc.* v. *Daley,* 209 F.3d 747, 753 (D.C. Cir. 2000)

year, directed commercial halibut fishermen in the BSAI are limited to 4.19 million pounds (net weight). In 2015, BSAI trawl fisheries caught and discarded nearly 7 times more halibut than the directed fishery landed in the BSAI. BSAI trawl bycatch mortality was 3.99 million pounds—at an estimated average net weight of 3.675 pounds/fish, a total of 1,088,000 halibut.[2] The directed fishery landed 3.57 million pounds—at an average weight of 21.7 pounds/fish, a total of 164,000 halibut.[3]

Please note the differences in average weight between bycaught halibut and those landed by the directed fishery. The longline fleet is constrained from catching halibut less than 32-inches long. Trawl fisheries have no such constraint. Of all halibut bycatch in Area 4CDE, 76% is less than 32-inches. These are two to seven-year-old halibut that have not yet spawned. These small fish are the future of the halibut stock, and must be protected.

III. Halibut Bycatch Reduction and the National Standards

In June of 2015, the North Pacific Fishery Management Council (NPFMC), which manages the groundfish fisheries and the associated Prohibited Species Catch (PSC) or bycatch, took action to reduce overall halibut PSC limits by 21%. This reduced actual bycatch by only 1%. Nevertheless, the National Marine Fisheries Service (NMFS) recently approved the action and will be issuing a final rule in the spring of 2016.

Collectively, the NPFMC action and the corresponding NMFS approval of that action, demonstrate some of the current limitations of the National Standards, as interpreted and applied by the NPFMC and NMFS. A more detailed discussion follows.

a. The NPFMC and NMFS placed too much emphasis on the economics of the groundfish fishery when applying the National Standards

i. National Standard 1

National Standard 1 requires that the NPFMC and NMFS establish harvest limits that prevent overfishing while ensuring, on a continuing basis, the optimum yield from each fishery.[4] The analysis and deliberations from the June meeting continuously mentioned the need to balance bycatch reduction with the mandate to achieving optimum yield on "a continuing basis." Both the MSA and the National Standard 1 Guidelines make clear that optimum yield is a blend of factors. The MSA defines "optimum," with respect to the yield from a fishery, as the amount of fish that "will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems"; and "is prescribed as such on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor."[5] The National Standard 1 Guidelines also provide a non-exhaustive list of potential considerations, which include social, economic, and ecological factors.[6] Yet, both the NPFMC and NMFS largely limited their optimum yield analyses to the financial needs of the groundfish fleet.[7] In doing so, they failed to consider optimum yield within the full context of MSA requirements.

Economic considerations in the groundfish fishery cannot override other priorities in the MSA. While achieving optimum yield is an important objective, nowhere does the MSA suggest that optimum yield should be prioritized over bycatch minimization measures that are otherwise feasible. Rather, the MSA is conservation focused, and conservation standards should be prioritized when applying the National Standards.[8] NMFS "must give priority to conservation measures. It is only when two dif-

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[2] INT'L PAC. HALIBUT COMM'N, 2015 REPORT OF ASSESSMENT AND RESEARCH ACTIVITIES, 251, 323

[3] INT'L PAC. HALIBUT COMM'N, 2015 REPORT OF ASSESSMENT AND RESEARCH ACTIVITIES, 34, 96

[4] 16 U.S.C. § 1851(a)(1).

[5] 16 U.S.C. § 1802(33).

[6] 50 C.F.R. § 600.310(c)(3)(iv).

[7] *See, e.g.,* N. PAC. FISHERY MGMT. COUNCIL, FISHERY MANAGEMENT PLAN FOR GROUNDFISH OF THE BERING SEA AND ALEUTIAN ISLANDS MANAGEMENT AREA 56 (2015) (explaining that the Council rejected "reductions in excess of [the Preferred Alternative] level [as] no longer be practicable as they would seriously affect jobs and revenue") [hereinafter EA/IRFA].

[8] *See Natural Res. Def. Council, Inc.* v. *NMFS,* 421 F.3d 872, 879 (9th Cir. 2005) ("The purpose of the Act is clearly to give conservation of fisheries priority over short-term economic interests."); *Natural Res. Def. Council, Inc.* v. *Daley,* 209 F.3d 747, 753 (D.C. Cir. 2000).

ferent plans achieve similar conservation measures that the Service takes into consideration adverse economic consequences."[9]

Similarly, neither the NPFMC nor NMFS acknowledged that optimum yield is fluid concept—the average of "a long-term series of catches."[10] By assuming that optimum yield is a fixed amount, the NPFMC and NMFS at least implicitly give National Standard 1 priority over the other National Standards.[11]

ii. National Standard 4

National Standard 4 mandates that allocative measures must not discriminate between residents of different states and must reflect consideration of other factors, including present participant and coastal community dependence and recreational fishing opportunities.[12] The NPFMC and NMFS' analysis of the bycatch reduction action fails to account for the *de facto* reallocation that had been occurring for the past 10 years under the existing regulations thus skewing its analysis of economic effects of bycatch reduction. In 2014, for example, halibut PSC accounted for 77% of all BSAI halibut removals.[13] This allocation disproportionately benefited Washington residents at the expense of Alaskan residents: Washington State residents own 89% of the trawl catcher processors and 75% of the catcher vessels in the BSAI groundfish fishery.[14] Washington State also received the vast sum of revenues from the trawl sectors—the largest recipient of PSC allocation.[15]

iii. National Standard 8

National Standard 8 requires the NPFMC and NMFS to establish harvest limits that account for the importance of fishery resources to local fishing communities by providing for the sustained participation of local fishing communities, and that fishery management decisions be tailored to minimize the economic impacts on communities that depend on fishery resources.[16] NMFS and the NPFMC improperly applied this standard. Under the National Standard 8 Guidelines, NMFS and the NPFMC should have prioritized the sustained participation of Area 4CDE and other halibut dependent communities.[17]

Instead, they overestimated the economic dependency of Seattle, by treating the large metropolitan area as a fishery dependent community (despite the fact that the analysis acknowledged that Seattle's community dependence on fisheries is not even a "salient issue"[18]). This is contrary to the National Standard 8 Guidelines, which define a "fishing community" as one "that is substantially dependent on or substantially engaged in the harvest or process of fishery resources to meet social and economic needs."[19]

By contrast, the NPFMC and NMFS undervalued the dependence of halibut-dependent communities in the Bering Sea by failing to consider "direct or indirect community impacts that may have already occurred due to changes in the status of halibut," and underestimating "the number of communities [that are] dependent

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[9] *Natural Res. Def. Council, Inc.* v. *Daley,* 209 F.3d 747, 753 (D.C. Cir. 2000)

[10] *See* 50 C.F.R. § 600.310(f)(3)(i)(B) ("In [National Standard 1], use of the phrase "achieving, on a continuing basis, the optimum yield from each fishery" means producing, from each stock, stock complex, or fishery: a long-term series of catches such that the average catch is equal to the OY. . . .").

[11] It is also worth noting that BSAI groundfish optimum yield is statutorily capped at 2 million metric tons each year, which is generally well below the sum of acceptable biological catches for the groundfish species (i.e., where the NPFMC could set the optimum yield). For example, in 2015, the sum of acceptable biological catches was equal to 2.85 million metric tons, while the NPFMC set total allowable catch quotas well below the ABC levels due to optimum yield constraints.[11] Thus, the NPFMC never considered the fact that Optimum yield can still be achieved because of the 2 million metric ton cap on optimum yield in the BSAI. OY of the groundfish harvest is *never* achieved because of this cap. The NPFMC and NMFS could increase other target species to account for reduced groundfish harvest.

[12] 16 U.S.C. § 1851(a)(4); 50 C.F.R. § 600.325(c)(3)(iv). *See also* 16 U.S.C. § 303(a)(15)(when conservation measures are necessary, NMFS must consider the economic impact of harvest restrictions and recovery benefits for each sector, and allocate the costs or benefits "fairly and equitably among the commercial, recreational and charter fishing sectors.").

[13] INT'L PAC. HALIBUT COMM'N, 2015 ANNUAL MEETING HANDOUT (BLUEBOOK) APPX IV 240 (2015).

[14] N. PAC. FISHERY MGMT. COUNCIL, APPENDIX C PROPOSED BERING SEA/ALEUTIAN ISLANDS HALIBUT PROHIBITED SPECIES CATCH LIMIT REVISIONS: COMMUNITY ANALYSIS 14–15 (2015).

[15] *See id.* at 11, 15.

[16] 16 U.S.C. § 1851(a)(8).

[17] 50 C.F.R. § 60.345(c)(4)("any particular management measure may economically benefit some communities while adversely affecting others"); 50 C.F.R. § 600.345(b)(4)("sustained participation means continued access to the resource within the constraints of the conditions of the resource").

[18] EA/IFRA at 55, 57.

[19] 50 C.F.R. § 600.345(b)(3).

on halibut and those levels of dependency."[20] The Science and Statistical Committee (SSC) noted that the analysis treated the PSC and halibut user groups unevenly, using metrics that failed to fully capture the level of engagement among Alaskan communities.[21] With respect to subsistence use, the SSC stated that the treatment of subsistence use of halibut in the analysis "remains insufficient and likely underestimated" the potential impacts"[22]

NMFS and the NPFMC also treated the National Standard 8 requirement that it "provide for the sustained participation of [fishing] communities"[23] as if it were qualified by "to the extent practicable" and therefore subordinate to National Standard 1. The maker of the NPFMC's amended motion, for example, explicitly acknowledged that the bycatch reductions he was proposing would not get the fishing communities of the Bering Sea where they needed to be for sustained participation in the fishery. This is contrary to the plain language of the statute and begs for further clarification by the agency.

iv. National Standard 9

National Standard 9 provides that NMFS and the NPFMC "shall, to the extent practicable, minimize bycatch."[24] The recent halibut bycatch action highlights the difficulties that regional councils and NMFS have in applying National Standard 9.

The term "practicable" is inherently ambiguous, and, in light of that ambiguity, it has become an industry driven standard that places more weight on the economic costs of bycatch reduction than any other factors. For example, the scenarios modeled in the NPFMC's analysis predicted that bycatch could not be reduced without closing groundfish fisheries—an assumption the NPFMC's SSC identified as an "unrealistic characterization" because the model does not reflect likely behavior changes in the groundfish fishery. NMFS similarly states more stringent PSC reductions are not practicable because of the foregone harvests and revenues in the groundfish fishery.[25] This interpretation that the groundfish fleet's revenue set the boundary of practicability does not comport with the MSA. As an Alaskan representative on the NPFMC said in voting against the minimal bycatch reductions, "[National Standard 9] doesn't mandate bycatch reduction at all cost, but it also doesn't mandate bycatch reduction at no cost."

b. The NPFMC and NMFS did not take a comprehensive approach to balancing the National Standards

Both the NPFMC and NMFS noted "[a]n inherent tradeoff in this type of action is between National Standard 1 and National Standard 9, where the [NPFMC] and NMFS use management tools such as halibut PSC mortality limits to minimize bycatch in the groundfish fisheries to the extent practicable, while achieving, on a continuing basis, the optimum yield from the groundfish fisheries."[26] The analysis also found tension "between National Standard 8, which requires provision for the sustained participation of and minimized adverse economic impacts on fishing communities, and National Standard 4, which states that management measures shall not discriminate between residents of different states, and requires allocations of fishing privileges to be fair and equitable to all fishery participants."[27]

While it is true that any fishery management action requires the NPFMC and NMFS to find balance between the National Standards, the approach taken by the agency here improperly restricts that balancing test (e.g., the need to only find balance between National Standards 1 and 9). What should also be required, and clarified by Congress when the MSA is reauthorized, is for NMFS and the NPFMC to explicitly take a holistic view at how the National Standards interrelate. In this case, the National Standards 4, 8, and 9 all weigh heavily in favor of more stringent reductions to halibut PSC limits in the BSAI groundfish fishery; however, because of the way NMFS and the NPFMC structured their balancing test, this did not come out in the analysis or rationale.

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[20] Report of the Scientific and Statistical Committee, June 1–3, 2015, at 9.
[21] *Id.* at 9–10.
[22] *Id.* at 9.
[23] 16 U.S.C. § 1851(a)(8).
[24] 16 U.S.C. § 1851(a)(9).
[25] Fisheries of the Exclusive Economic Zone Off Alaska; Bering Sea and Aleutian Islands Management Area; American Fisheries Act; Amendment 111, 80 Fed. Reg. 71,650, 71,668 (proposed Nov. 16, 2015).
[26] ER/IRFA at 376.
[27] *Id.*

V. Recommendations

It is clear from this experience, that a recalibration, clarification, or rebalancing of how the National Standards are weighted is required in order to conserve the resource and restore balance among the various stakeholders and user groups. Specifically, we recommend that:

- NMFS produce guidance on how the regional councils and agency are to balance the relationship between National Standard 1 and the other National Standards.
  - National Standard 1 Guidelines already do this, but the guidance is focused on the how the requirement to prevent overfishing and rebuild overfished stocks relates to the other standards. As demonstrated above, NMFS and the NPFMC place continuous achievement of optimum yield as the priority. Additional guidance is needed to determine how that priority fits with the other standards.
- NMFS and the regional councils be more explicit in how they factor social, economic, and ecological factors into its National Standard 1 calculation.
- National Standard 8 be given more weight when sustained participation of fishery dependent communities is threatened due to bycatch in other fisheries.
- NMFS provide additional guidance as to how practicality is determined with respect to bycatch reduction. Consistent with the MSA, this guidance should include more than economic factors. Reducing bycatch to the maximum extent practicable should involve consideration of a suite of alternative options such as prioritizing catch for gear types with low bycatch or modifying the behavior of the fisheries with high bycatch.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JOHN THUNE TO HON. SAMUEL D. RAUCH III

Cooperative Management

Question 1. Cooperative management tries to achieve more effective and equitable systems of resource management. With respect to fishery cooperative management, representatives of user groups, the scientific community, and government agencies may share knowledge, power, and responsibility of the fishery. What legislative and/or administrative barriers exist to implementation of cooperative management strategies under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)?

Answer. For several years, NOAA Fisheries has carried out cooperative management and cooperative research under several statutes including MSA. NOAA Fisheries recently completed a White Paper on this issue that can be found here:

http://www.nmfs.noaa.gov/op/docs/cooperative_research_and_mgmt.pdf

NOAA Fisheries determined that successful cooperative management and cooperative research activities have several key attributes. These include:

- A clear legal framework.
- An organized stakeholder group, with leadership.
- Clear roles for partners, stakeholders, and NOAA Fisheries personnel.
- Clear goals.
- Buy-in of partners and stakeholders.
- Trust between stakeholders and NOAA Fisheries personnel.
- Transparent and clearly understood decision-making process.
- Strong and regular communication.
- Matching the scale of the cooperative management system with the distribution and mobility of the managed species.
- Use of results to make fishery management decisions.
- Funding.

NOAA Fisheries is currently implementing the recommendations in this White Paper.

Electronic Monitoring

Question 2. The National Observer Program (established in 1999) is composed of 11 regional observer programs that use a combination of trained biologists and at-

sea monitors to collect catch data, document fishing gear, conduct safety inspections, and monitor fishing efforts. The data collected through the program aids fishery managers in conducting stock assessments, reducing bycatch, and obtaining necessary information for many other decisions. Since the establishment of the program, the cost to collect fishery-dependent data has risen dramatically and the number of fisheries to observe has increased. Disproportionate growth between cost and the number of fisheries observed has led some stakeholders to call for alternatives to the traditional observer program such as electronic monitoring (EM). In the United States, there are five active EM programs—four in the Alaska groundfish fisheries that are funded by the fishing industry, and one for the Atlantic Highly Migratory Species that is funded by NOAA Fisheries. What legislative and/or administrative barriers exist to a more complete or full implementation of EM under the MSFCMA?

Answer. NOAA Fisheries doesn't believe significant legislative or administrative barriers exist that are preventing electronic monitoring (EM) implementation. Expansion to other regions of the fee authorities in Section 313 of the MSA could simplify implementation of EM programs however, it is not absolutely necessary. Developing thoughtful solutions to the cross-cutting issues and numerous fishery-specific challenges requires planning, which is why NOAA Fisheries and the Regional Fishery Management Councils are taking a systematic and regional approach toward adopting these new technologies. We have implemented EM in five fisheries, and planned for implementation in six more, which would bring total EM programs to as many as 11 fisheries by 2018. Some of the outstanding issues affecting the pace of EM implementation include: (1) efficiently transferring and storing the large quantities of EM data involved, (2) determining costs associated with different EM program designs, (3) determining who is responsible for paying the costs of EM programs, (4) gaining acceptance of EM by the fishing industry, and (5) developing new technologies such as automatic image recognition systems to allow automated fish counts and weight estimation for catch and bycatch accounting.

Overlap with the National Environmental Policy Act

Question 3. H.R. 1335 would add provisions to change the relationship between MSFCMA and other environmental laws such as the National Environmental Policy Act (NEPA). The bill would require councils to develop fishery management plans and amendments, which would satisfy and replace NEPA requirements. In what ways can NOAA help reduce the duplicative NEPA and Fishery Management Plan requirements?

Answer. As outlined in the May 19, 2015 Statement of Administration Policy, the agency strongly opposes provisions in H.R. 1335 that would change how the MSA interacts with other important statutes. NOAA has worked closely with the councils to integrate the processes and analyses required by other statutes such as the National Environmental Policy Act (NEPA) into an overall framework that is both timely and effective. Section 7 of the bill would incorporate some aspects of this statute into the MSA and could potentially alter the manner in which they apply to fishery management actions. Specifically, the bill would establish a new set of standards for environmental analysis that are similar to the requirements under NEPA. We believe this provision is unnecessary because it is unclear what substantive problem specifically related to NEPA the language seeks to solve.

On February 23, 2016, the agency issued final NEPA Procedures for MSA Actions (MSA NEPA Procedures) which clarify roles and responsibilities of the National Marine Fisheries Service (NMFS) and the Regional Fishery Management Councils (Councils), explain timing and procedural linkages, provide guidance on documentation needs, and foster partnerships and cooperation between NMFS and Councils on NEPA compliance. The MSA NEPA Procedures represent a very successful collaboration between NMFS, the Council on Environmental Quality, and the Councils that resulted in a consensus document that has broad support from many of our constituents. The agency believes these MSA NEPA Procedures represent the appropriate mechanism for integrating NEPA requirements into the MSA fishery management process. You can find more information about these Procedures at *http://www.nmfs.noaa.gov/sfa/laws__policies/msa/nepa.html.*

Lionfish

Question 4. Two lionfish species (Pterois volitans and Pterois miles) represent the first non-native marine finfish to become established in Atlantic waters of the United States, including the Gulf of Mexico and Caribbean. During the course of their nearly three-decade invasion, lionfish have demonstrated how challenging a marine invasive can be to control once it becomes established. Lionfish are proficient opportunistic predators, consuming a wide variety of prey which has led to drastic

declines in the abundance and richness of native reef fish species. Should lionfish be regulated by MSFCMA, and if so, how?

Answer. NOAA Fisheries does not believe it is appropriate to regulate invasive lionfish through the Magnuson-Stevens Act (MSA). One of the central purposes of the MSA is to "achieve and maintain, on a continuing basis, the optimum yield from each fishery." If lionfish were to be regulated under the MSA, NOAA Fisheries would be required to maintain a fishable population of lionfish rather than act to eradicate the species.

Fisheries Buyback Program

Question 5. My staff has inquired as to what statutory authorities NOAA requires to make and refinance buyback loans in their Fishing Capacity Reduction Programs. Their initial inquiry was in January of 2015. My staff has followed up several times. Please provide the reason that you have not been responsive to my staff's questions as well as when I can expect you to provide a response to them.

Answer. (Note: NOAA will also follow-up the response below with a buyback loan brief which provides additional details.)

The Magnuson-Stevens Fisheries Conservation Act and the fishing capacity reduction framework regulations authorize NOAA to implement an industry funded capacity reduction program. The Merchant Marine Act, 46 U.S.C. Chapter 537, allows the Secretary to make a loan for a capacity reduction program.

Neither the Magnuson-Stevens Act nor the Merchant Marine Act authorizes the refinancing of existing buyback loans. This would require explicit Congressional authorization and appropriations language that includes loan limits, subsidy costs, and the cost to refinance.

Section 312 (b)–(e) of the Magnuson-Stevens Fisheries Conservation Act (P.L. 94–265, as amended by P.L. 109–479) (Magnuson-Stevens Act) and the fishing capacity reduction framework regulations, originally published in 2000 and revised in 2010 (50 CFR Part 600, Subpart L), provide authority to implement a buyback program.

Civil Penalties for Gulf Red Snapper

Question 6. Senator Thune along with Senators Wicker, Sessions, Cassidy, and Cornyn submitted a letter to Dr. Sullivan dated January 19, 2016 inquiring about NOAA's position to not issue civil penalties for Mexican fisherman caught illegally fishing for red snapper in U.S. waters. This letter builds on prior staff inquires that first began over 7 months ago. The Committee has still not been informed of the justification for the decision to not pursue civil penalties, and whether NOAA will reverse this position. Please follow up with the information requested in our letter, or a timeline for when we can expect to be informed of NOAA's position.

Answer. The letter is in the final stage of clearance and will be sent shortly.

Violation of Federal regulations in New England

Question 7. Last month, Carlos Rafael, the owner of one of the largest commercial fishing businesses in the northeastern U.S. was arrested on charges of conspiracy and submitting falsified records to the Federal Government to evade Federal fishing quotas. Northeast fisheries managers believe that the case has singlehandedly impacted the resource, and the lack of monitoring and enforcement it highlights are a threat to the future of fishing in the Northeast. Currently NOAA is monitoring very few New England fishing boats. The switch to more cost-effective electronic monitoring would increase confidence among fishermen that everyone is playing by the same rules. What impacts on Northeast fishery stock assessments does NOAA see as a result of the Rafael case, and does this case highlight the need for increased electronic monitoring outside of pilot programs in New England? Also, please provide the total amount of Federal fishing disaster funds that Carlos Rafael has received.

Answer. The case involving Carlos Rafael is an ongoing investigation, therefore we cannot comment on or speculate as to whether and how the allegations in the Rafael case may have impacted Northeast Multispecies stock assessments.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. ROGER F. WICKER TO HON. SAMUEL D. RAUCH III

Question 1. There seems to be a remarkable disconnect between the Integrated Coastal and Ocean Observing System ICOOS Program and the National Marine Fisheries Service. How effective has MSA been with respect to availability of monitoring and observing technologies authorized under programs such as ICOOS?

Answer. The Integrated Coastal Ocean Observation System Act (ICOOS Act), signed by President Obama in March of 2009, established the statutory authority

for development of the U.S. Integrated Ocean Observing System (IOOS). By integrating and coordinating a variety of oceanic data sources, IOOS provides public access to data streams that can contribute to the science needed for better understanding and managing the Nation's living marine resources. NOAA Fisheries utilizes these data in a variety of ways, namely in research and development to better our understanding of the oceanic processes that affect fish stock productivity. Thus, IOOS data complements NMFS' primary data collection efforts (fishery-independent surveys for estimating stock abundance and fishery-dependent programs to estimate catch and discards). Further, NOAA continues to promote partnerships for integrating long-term surveys and ocean observation systems. NOAA is routinely evaluating how best to deploy its limited days-at-sea aboard oceanographic vessels to support NOAA's survey and ocean observation requirements.

Question 2. Do you think that the observation monitoring programs and data established under ICOOS should be explicitly referenced in MSA for the purposes of fisheries management and stock assessments?

Answer. We feel that ICOOS or IOOS do not need an explicit reference in the MSA. The current statute allows the incorporation of ecosystem and environmental data into the fisheries management process, and there are numerous data sources, some of which are hosted by IOOS, that fit within this context. However, increasing total information will only improve the fisheries management process, so NOAA Fisheries supports any efforts to increase monitoring and observing of oceanic systems.

Question 3. Are there deep water species and habitats currently not included in previous MSA language regarding deep sea coral research that are potentially important to the management of living resources?

Answer. No, the MSA's broad definition of "fish" includes deep-sea sponges and sponge habitats: "The term 'fish' means finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds." In addition, the MSA section on the Deep Sea Coral Research and Technology Program provides authority "to conduct research . . . on deep sea corals *and related species,"* which also covers sponges and their deep-sea habitats.

Because these deep-sea benthic habitats potentially attract fish and their prey, they are of concern to the management of living resources. The lack of explicit mention of sponges and other deep-sea species in MSA does not prohibit NOAA and the Fishery Management Councils from managing some fishing impacts to these habitats such as bycatch, in particular, as laid out in the 2010 *NOAA Strategic Plan for Deep-Sea Coral and Sponge Ecosystems.* Regional Fishery Management Councils have made significant progress on deep-sea *coral* conservation since the 2007 reauthorization.

Question 4. What technologies or technology development programs are required to improve understanding of non-coral deep water environments, species, or habitats for fisheries management?

Answer. NOAA Fisheries believes that increased development and use of advanced technologies is key to improving our understanding and management of deep water species and the environments they inhabit. New, more capable and cost-effective technologies are needed to address the mismatch between the very small areas of deep seafloor that can currently be surveyed in detail and the relatively large deep-sea areas we manage. These environments are difficult to access, expensive to study, and conventional survey gear such as trawls cannot provide the necessary comprehensive ecological information. In addition, these gears can destroy sensitive organisms that form many deep-water habitats, such as large benthic invertebrates, including sponges, bivalves, and tube worms. Thus, we depend on remote sensing and sampling technologies to work in these areas. These technologies include:

- Acoustics, such as advanced sonars for counting fish and mapping seafloor habitat;
- Optics, such as high-resolution video and still cameras that can operate in low light or total darkness;
- Sample collections and analyses, including genetic techniques that can aid in identifying species and populations; and
- Platforms for deploying these instruments, such as autonomous underwater vehicles, remotely operated vehicles, towed bodies, and manned submersibles.

In many cases we need to use a combination of technologies. For example, we can map seafloor using sonar, and then use that information to target follow-up camera surveys in areas with characteristics that make them potentially suitable for the habitats of interest. In addition, these instruments produce extremely large volumes

of data, creating needs for improved data processing capabilities, such as automated species recognition and measurement from optical data, and improved data management to enable our scientists and the public at large to efficiently access the latest advanced data products.

NOAA Fisheries is working with partners across NOAA, other Federal agencies, and research institutions through our Deep Sea Coral Research & Technology Program to identify, coordinate and apply technologies for use in deepwater environments. This program conducts multi-year surveys to map and characterize deep-sea habitats and their associated fisheries resources in order to provide fisheries managers with information needed to conserve vulnerable biogenic habitats formed by sponges, bivalves, tube worms in addition to corals. These surveys regularly combine advanced acoustic, optical and sampling technologies deployed off a variety of vessels, as well as analyses of deepwater organisms caught as bycatch on commercial fishing trips or in NOAA Fisheries' scientific trawl surveys. This program does not, however, include resources for technology development but is well situated to apply these types of advanced technologies developed by others.

NOAA Fisheries is also actively working to advance our survey capabilities through our Advanced Sampling Technology (AST) program. Many deep-sea technologies have been developed for purposes other than fisheries, so our AST program is often working on research and development to adapt technologies to meet our needs. For example, many platforms that can operate in these environments work well for mapping seafloor habitat. However, some platforms, such as towed bodies, lack sufficient ability to avoid the obstacles that may be encountered on rough bottoms, and many platforms are far too intrusive to accurately survey fish, which may be frightened away by, or sometimes are actually attracted to, these devices. Thus, we are working on platforms that are stealthy and can avoid obstacles, and we are developing analytical methods that can account for fish behavior.

NOAA Fisheries is working as effectively as possible to address our technology research and development needs.

Question 5. Has NOAA or any other government agency developed or applied technologies that can be used in the enforcement of fishing violations on the high seas?

Answer. NOAA currently uses several systems that collect and analyze identifying information broadcasted by fishing vessels on the high seas that help determine the vessels location and possible activity. These systems collect technological information from both cooperative and non-cooperative equipment. Cooperative sensing equipment (VMS/ERS) are technologies that vessels are aware that they are broadcasting and have agreed to share their vessel information with regulating authorities. Technologies using non-cooperative sensing equipment (AIS/Radar) identify vessels without their direct knowledge. Some raw data sources include information collected from:

- Vessel Monitoring System (VMS)
- Automatic Identification System (AIS)
- Synthetic Aperture Radar (SAR)
- Coastal Radar
- Maritime Safety and Security Information System (MSSIS)
- Acoustic
- Classified Sources

It is important to note that detecting fishing activity is only one step in the enforcement process. In many areas, fishing in and of itself is not illegal, but the use of certain types of gear or fishing practices, or the retention of certain species may be prohibited. Technologies that simply confirm the location of a boat are unable to provide much value in these circumstances. In addition, there are limitations with many of these data sources that prohibit them from being able to be used in a criminal/civil trial.

Question 6. What technologies should be developed to assist agencies with reducing fishing violations on the high seas?

Answer. NOAA OLE has been using SeaVision, a Department of Defense (DOD) front-end system that consolidates multiple data sources into one display; however DoD recently let its contract with its largest provider of AIS datasets lapse, which significantly reduces its coverage of fishing vessels on the high seas. This gap in data presents us with the need for an unclassified front-end system that is able to ingest various data sources (AIS/VMS/SAR/Coastal Radar/MSSIS etc.) and run analyses on the data.

Also, most fishing vessels are not required to transmit any signals while fishing on the high seas, which presents one of our largest hurdles. The current IMO regu-

lation exempts fishing vessels from having to carry AIS, although individual nations may be able to enforce stricter regulations on vessel that sail under their flag. Recommendation 3 of the Presidential Task Force on Combating IUU Fishing and Seafood Fraud directs the Secretaries of Defense and Homeland Security to include IUU fishing threat analysis and monitoring as a component of U.S. and international efforts to increase overall maritime domain awareness.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. KELLY AYOTTE TO HON. SAMUEL D. RAUCH III

Question 1. As you know, Congress is currently considering reauthorization of the Magnuson-Stevens Act (MSA). In your written testimony, you spoke extensively about the successes of the MSA—however, we know the law is not performing as intended in many regions. As I understand it, New England groundfish fishermen have not exceeded their NOAA Fisheries-approved catch quotas in over a decade. Catch shares are destroying small boat fishing communities and my home state of New Hampshire may be entirely removed from the fishery if substantial changes to the MSA are not soon implemented. How will NOAA offer leadership in authoring changes in MSA to put more flexibility in the fishery management tool box so that regions, like New England, with multispecies fisheries can achieve Optimum Yield across the suite of species, not on a single species basis?

Answer. The Magnuson-Stevens Act (MSA) has been the driver of our success in sustainably managing our Nation's valuable commercial, recreational, and subsistence fisheries for the past forty years. The science-based, regional system outlined in the requirements of MSA is recognized as a global model for responsible fisheries management; the flexibility and adaptability built into the MSA requirements are key components to our success.

Last year, NOAA Fisheries issued a proposed rule to revise the National Standard 1 guidelines to address concerns about the implementation of annual catch limits and enhance flexibility to address fishery management challenges. The proposed rule includes revisions to expand flexibility in rebuilding plans and provide for more stable fisheries with guidance on how to phase in results of new stock assessments and carry over any unused portion of annual catch limits to subsequent years. In addition, the proposed rule offers guidance on using aggregate maximum sustainable yield estimates to account for multi-species interactions and other relevant factors. With these aggregate estimates, managers can specify fishery level optimum yield and facilitate ecosystem-based fisheries management. When final, we expect the revisions to the National Standard guidelines will provide additional flexibility in the fishery management toolbox.

Question 2. As you know, there are ten National Standards included in the MSA. By law, according to National Standard 8, NOAA is directed to sustain both fishing stocks and fishing communities. I remain deeply concerned about the future of New Hampshire's historic fishing industry, which is critically important to our local seacoast communities and our economy. When I talk with fishermen in New Hampshire, it seems that NOAA is prioritizing National Standard 1 and disregarding the other nine standards. What specific language will NOAA offer to make National Standard 1 and National Standard 8 of equal importance in the reauthorization of MSA for regional fishery management councils?

Answer. The Magnuson-Stevens Act's (MSA) ten National Standards embody different policy goals with which fishery management plans and implementing regulations must be consistent. 16 U.S.C. 1851(a)(1)–(10). NMFS and the Councils give serious consideration to all of the National Standards. However, the plain language of National Standard 8 clearly gives priority to conservation concerns, as numerous court cases have confirmed. For example, in *Natural Resources Defense Council, Inc.* v. *Daley,* 209 F.3d 747, 753 (D.C.Cir. 2000), the court examined National Standards 1 and 8 and stated that "[i]t is only when two different plans achieve similar conservation measures that the Service takes into consideration adverse economic consequences." National Standard 8 explicitly refers to conservation and management measures being "consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks)." 16 U.S.C. 1851(a)(8). National Standard 8 also has the caveat that measures shall minimize adverse economic impacts on communities "to the extent practicable." *Id.*

Under this construct, the Magnuson-Stevens Act has been a success. The occurrence of overfishing and status of overfished stocks in the U.S. are at historic lows—with only 17 percent of stocks determined as overfished and no new stocks added in 2014. This investment in environmental stewardship is paying off. We understand that some fishing communities are struggling economically as we work to re-

build stocks to sustainable levels. However the 2013 Fisheries Economics of the U.S. report states that overall, commercial and recreational fisheries contributed $195 billion per year to the U.S. economy and supported 1.7 million jobs. In 2013, U.S. fishermen landed 9.8 billion pounds of fish and shellfish—an increase of 245 million pounds from 2012—worth $5.5 billion, an increase of $388 million over 2012. These numbers illustrate MSA's success in balancing conservation and economics. Given this overall success, NOAA Fisheries believes the current construct of the National Standards, which give priority to conservation concerns, is appropriate.

At this time, NOAA does not plan to put forward a legislative proposal to make National Standard 1 and National Standard 8 of equal importance.

Question 3. I continue to hear from fishermen in New Hampshire regarding the serious disconnect between what they are seeing on the water and what NOAA science is reporting related to fishing stocks. Recreational and commercial fishermen alike tell me the only folks who aren't seeing fish off the coast of New England are Federal regulators. In light of the continued and enormous difference in opinion in the status of stocks, especially Gulf of Maine cod, should congress remove the money for government trawl surveys from the budget and use that money to fund industry-based surveys, as I understand is the case in other fisheries? If not, why not?

Answer. NOAA determines stock status using scientific analyses (stock assessments) that incorporate numerous sources of data, including fishery catches as well as data collected by government surveys (where available). Thus, a variety of factors influence stock status determinations, and on-the-water observations alone are not sufficient for assessing the health of a fish stock. In fact, there are several reasons why perceptions by fishermen may differ from the results of a stock assessment. For example, fish stocks may consolidate their aggregations. In other words, some fish may be readily available in specific fishing grounds but absent from other parts of their range where they were previously abundant, meaning they remain accessible to fishermen where they are fishing but their overall abundance is reduced. Also, some fishing vessels may have higher catch rates than NOAA trawl survey vessels, which may be perceived as the survey "missing fish". These lower survey catch rates do not reduce the accuracy of a stock assessment however, because assessments account for the catch efficiency of trawl surveys. In fact it is more important that a survey maintain consistent methodology over time than it is for the survey to catch fish at a high rate.

The time series of consistent trawl survey data is critical for fish stock assessments, as well as for informing other research on changes in marine ecosystems in response to climate change and other pressures. Further, NOAA ships have equipment and capabilities for research that are often not available on fishing vessels. Nevertheless, we are actively working with industry stakeholders through our recently reconvened Trawl Survey Advisory Panel and through our cooperative research Study Fleet to incorporate industry input into our surveys as well to provide more industry-collected data to our assessments and research.

NOAA places a high value on cooperative research, and in fact relies on chartered fishing vessels to conduct surveys of many stocks. However, where there is stronger reliance on chartered vessels (*e.g.,* the northwest and North Pacific), surveys were established in the 1970s when there was not sufficient time available on NOAA ships in these regions. Thus, chartered vessels can be used to fulfill requirements for limited types of data collection, but we focus on use of NOAA ships because they are configured to support large, multi-disciplinary groups of researchers with all of their specialized gear, instrumentation and data processing requirements.

Response to Written Questions Submitted by Hon. Bill Nelson to Hon. Samuel D. Rauch III

Question 1. State Management of Red Snapper in the Gulf of Mexico.—Mr. Rauch, the Gulf Council met at the end of January to consider a number of different measures, one of which was Amendment 39 to the Reef Fish Management Plan. That amendment would allow for management of the recreational red snapper fishery in Federal waters by Florida and the other four Gulf Coast states. Ultimately, because the state regulators and other voting members of the Council couldn't agree on how to allocate red snapper among the states for management purposes, the Council voted to indefinitely postpone further consideration of this amendment. Meanwhile, a few of our colleagues in the House and Senate have been pushing legislation to turn management of Gulf red snapper over to some sort of state-run red snapper management council. This begs a couple of questions that I'd appreciate your thoughts on.

If Amendment 39 can already provide the Gulf Coast states an avenue to manage red snapper in Federal waters, why would anyone think this red snapper legislation is even needed?

Answer. NOAA Fisheries agrees legislation is not required to establish a regional management system for red snapper in the Gulf of Mexico because the Magnuson-Stevens Fishery Conservation and Management Act already provides the regional fishery management councils and NOAA Fisheries authority to develop such a system. We continue to support regional management in concept as a way to resolve the current challenges created by inconsistent state regulations and better meet diverse management objectives across the Gulf, and believe the best way to develop an effective regional management strategy that withstands the test of time is through the regional fishery management council process. The Magnuson-Stevens Act established that process to ensure fishery management decisions are developed from the bottom up, stakeholder-based, transparent, and consistent with all applicable law. We believe it is a good process for working through the types of difficult decisions that regional management requires.

Question 2. If the Gulf Coast states can't agree on how to allocate red snapper among themselves under Amendment 39, why would anyone think they can agree sitting on a state-run red snapper council?

Answer. The various bills proposing state management of the Gulf of Mexico red snapper fishery are unclear as to how the red snapper quota would be allocated among the states and how such allocation decisions would be made. NOAA Fisheries believes allocation decisions are best made through the open, public Magnuson-Stevens Fishery Conservation and Management Act process which requires such decisions to be fair and equitable to affected fishermen, reasonably calculated to promote conservation, and prevent individual entities or corporations from obtaining excessive shares. NOAA Fisheries worked closely with all eight regional fishery management councils over the last several years to develop policy guidance regarding when and how to conduct allocation reviews that meet these criteria, including best practices to ensure allocations remain current and relevant.

Question 3. South Atlantic Black Sea Bass.—Mr. Rauch, when we look at the red snapper fishery in the Gulf of Mexico, we see a stock that has historically been overfished but is now rebuilding itself as the Council has imposed science-based catch restrictions in the fishery. Unfortunately, this has led to some fishermen placing pressure on the Council and Congress to increase catch limits before the stock is fully rebuilt, and that reminds me of a similar situation on our east coast of Florida just a few years ago. Black sea bass was a species in the South Atlantic that was experiencing similar levels of overfishing, from both the commercial and recreational sectors, leading to severe restrictions in harvest. As the species rebuilt itself, I remember similar pressure from some fishermen to increase catch limits. The South Atlantic Council was resolute in maintaining harvest restrictions, because although the numbers of black sea bass were increasing, they were not yet of the optimal size and maturity to produce enough juvenile fish to maintain the stock. The Council trusted the science, and as a result in 2013 the stock was declared fully rebuilt, with an allowable annual catch more than doubling from 847,000 pounds to 1,814,000 pounds, and with fisherman reporting they are catching more large black sea bass than they've ever seen in their life. What does the story about black sea bass in the South Atlantic say to you about the value in holding to the rebuilding plan for red snapper in the Gulf of Mexico?

Answer. The South Atlantic black sea bass rebuilding plan is indeed a success story. The catch increase made possible by rebuilding that species increased economic benefits to commercial and recreational fishermen by hundreds of thousands to millions of dollars. The Gulf of Mexico red snapper rebuilding plan differs from the black sea bass plan in many respects. Black sea bass are relatively short lived compared to red snapper (~9 years versus 55 years), so the black sea bass population was rebuilt on a much shorter schedule (~10 years versus 31 years). That is one reason the South Atlantic Council adopted a rebuilding strategy for black sea bass that delayed the distribution of recovery benefits until the end of the rebuilding schedule by holding catches constant as the stock rebuilt.

In contrast, the red snapper rebuilding strategy is designed to distribute rebuilding benefits throughout the rebuilding schedule by allowing catches to increase as the stock rebuilds. NOAA Fisheries has increased the combined (commercial and recreational) red snapper catch limit from 5 million pounds to about 14 million pounds since the rebuilding plan was last revised in 2007. In addition to increased catches, fishermen are encountering more and larger red snapper than many have seen in their lifetimes—and in places they have not been seen in decades—as the population expands back to its historic range. For that reason, we do not expect the

red snapper rebuilding plan to have a similar impact on catch levels at the end of the rebuilding period. However, we do expect to see a much healthier number of older larger fish in the population when the stock is rebuilt, which will make the population more resilient to both fishing pressure and environmental variables.

Question 4. South Atlantic Red Snapper.—Mr. Rauch, with so much interest and discussion concerning the red snapper fishery in the Gulf of Mexico, I want to turn some attention to the same fishery on the east coast of my home state of Florida, where fishing is closed entirely this year because red snapper catch exceeded the allowable harvest last year by roughly100,000 fish—nearly twice the allowable catch. The number of dead discards, the fish that had to be tossed overboard dead because they could not be legally kept, was 163,000 fish, nearly four times as many fish as were kept. The dead discards alone exceeded the total quota for red snapper. Do you have any thoughts on what we can do to reduce this unintentional bycatch of red snapper in these fisheries where fishermen are targeting other species that live in the same habitat?

Answer. Minimizing bycatch in multi-species fisheries, such as the South Atlantic snapper-grouper fishery, is one of our most challenging mandates. Several years ago, the South Atlantic Fishery Management Council initiated a stakeholder-driven visioning project to evaluate and refine current management goals and objectives for the snapper grouper fishery. One of the resulting recommendations was to better align fishery opening and closure dates in a way that best balances the need to minimize discards while providing fishing opportunities. We will continue to support the Council in evaluating these and other measures to reduce bycatch, and in exploring the potential uses of new technologies, like descending devices, to better minimize the mortality of bycatch that cannot be avoided.

Question 5. Billfish Conservation Act Implementation.—Mr. Rauch, back in 2012 Congress enacted the Billfish Conservation Act, which prohibits the sale of marlin and certain other billfish species. The Act made an exception to this prohibition for billfish landed in Hawaii and U.S. territories and possessions in the Pacific, in order to protect the traditional fisheries and markets there. Here we are, four years later, and the Administration still hasn't implemented the Billfish Conservation Act. Some say the delay is due to confusion about whether Congress intended for Hawaiian-landed billfish to be sold on the U.S. mainland, but commercial sale of billfish to the U.S. mainland has never been a part of Hawaii's traditional billfish fisheries or markets. Can you comment on whether there is any truth to this question of Hawaiian sale to the mainland holding up NOAA's rulemaking?

Answer. NMFS published an Advanced Notice of Proposed Rulemaking on April 4, 2013 (78 FR 20291). We received comments from academia, recreational fishing interest groups, environmental non-governmental organizations, individual citizens, industry, states and one regional fishery management council. The comments centered around six major themes: (1) whether billfish caught by U.S. fishing vessels and landed in Hawaii or Pacific Insular Areas can be sold on the mainland United States; (2) the interplay between international trade law and the BCA section 4(c)(1) exemption; (3) the impact of the BCA on recreational billfish activities; (4) the effectiveness and cost of the billfish certificate of eligibility (COE) for identification and tracking purposes; (5) the impact of the BCA on recreational versus commercial fisheries; and (6) degradation of conservation benefits of the BCA due to the exemptions from the general prohibition on sale of billfish. NMFS has been carefully considering all of these issues in preparing the proposed rule.

Question 6. When can we expect to see a final rule issued to implement the Billfish Conservation Act?

Answer. NMFS is still working to develop a proposed rule to implement the Billfish Conservation Act. Although rulemaking is ongoing, the provisions of the Act have been in effect since it was enacted in October 2012, and sale of billfish, except as specifically provided for by the statute, has been prohibited since that date.

Question 7. Preventing Overfishing.—Mr. Rauch, the Magnuson-Stevens Act clearly states in National Standard 1 that fisheries management measures "shall prevent overfishing." 16 U.S.C. 1851(a)(1). This is a cornerstone to the success of the law. U.S. fishery exports command higher prices and more respect in the global marketplace because of our firm commitment to well-managed stocks. But the agency's newly proposed guidance for how to implement National Standard 1 would allow some years of overfishing to go unaddressed, and would allow managers to make riskier decisions when managing stocks. Doesn't the proposed guidance conflict with the Act by increasing the risk that overfishing will occur, and jeopardize our international reputation for stellar management?

Answer. Under the Magnuson-Stevens Act (MSA), the U.S. has become an international leader in fisheries management and we are committed to continuing our

successful efforts to prevent overfishing and rebuild overfished fisheries. To this end, the proposed revisions to the National Standard 1 (NS1) guidelines are designed to both strengthen and clarify existing guidance on preventing overfishing.

The proposed revisions to the NS1 guidelines, if finalized, would allow managers to consider multiple years of data in order to make a more accurate determination of whether a stock is subject to overfishing. This provision would not increase the risk that overfishing will occur because it pertains strictly to reporting requirements. Furthermore, this provision, in no way, would allow overfishing to go unaddressed because the management measures such as annual catch limits must be established to prevent overfishing every year. Instead, the proposed revisions would give managers greater certainty when reporting that a stock is subject to overfishing and will help avoid the potential negative market impacts of listing a stock as subject to overfishing based on a single year of uncertain data. In developing a final rule, NOAA is carefully considering all comments on the proposed rule including those concerning whether a stock is subject to overfishing.

Question 8. Rebuilding Overfished Stocks.—Mr. Rauch, the Magnuson-Stevens Act states that the Secretary is to review rebuilding fisheries every two years, and determine if adequate progress is being made in recovering overfished stocks. 16 U.S.C. 1854(e)(7). The agency's proposed guidance for National Standard 1 seeks to define "adequate progress," but the proposed language only examines whether the plan is being implemented as intended, or if there is "unexpected" new information.

This guidance lacks any consideration of whether the health of the stock is actually improving. How does the agency defend suggesting that rebuilding plans can be making adequate progress even if no rebuilding is occurring?

Answer. The Magnuson-Stevens Act (MSA) has established a rigorous, science-based management system that successfully rebuilds overfished fisheries. Since 2000, 39 fish stocks have been fully rebuilt to sustainable population levels. Biomass is the key factor in determining if a stock is rebuilt. However, during the rebuilding plan, increases in biomass are often not steady, but are more irregular—several years of poor recruitment may yield little biomass increase, followed by a strong year or two that significantly increases the biomass. Experts, including the National Research Council in its 2013 evaluation of stock rebuilding mandated by the 2007 Magnuson-Stevens Reauthorization Act, have concluded that rebuilding plans should focus on adequate control of fishing mortality. By focusing on controlling fishing mortality, managers can avoid issues with updating rebuilding timelines that are based on biomass milestones, which are subject to uncertainty and changing environmental conditions that are outside the control of fishery managers.

Further, NMFS has found that, in most cases where biomass does not increase significantly toward rebuilding goals, fishing mortality rates have remained too high. Therefore, NMFS believes that emphasizing achievement of the rebuilding plans' fishing mortality goals is essential to ensuring adequate progress in rebuilding. In the small number of cases where fishing mortality is fully controlled to the planned level, but the stock fails to increase in biomass, the environmental conditions causing poor stock productivity need to improve before rebuilding will succeed. These cases, where a rebuilding plan is being implemented correctly, but the biomass of the stock is not responding with increased biomass, would be considered "unexpected" and under this circumstance, the proposed National Standard 1 guidance still allows NMFS to determine that the rebuilding plan is not making adequate progress towards rebuilding which would require the Council to re-evaluate the rebuilding plan. In developing final revisions to the guidelines, NOAA is carefully considering all comments on the proposed guidelines, including those concerning rebuilding plans.

Question 9. Timelines for Rebuilding Overfished Stocks.—Mr. Rauch, The Magnuson-Stevens Act says that overfished stocks are to be rebuilt in as short a time as possible. 16 U.S.C. 1854(e)(4). Proposed changes to the National Standard 1 guidelines offer new ways to calculate the maximum length of time for a rebuilding plan for those stocks that take longer than 10 years to rebuild. Under the new proposal, managers would have three different methods to calculate the maximum rebuilding time. However, the agency fails to provide any advice for how to choose between the three options. This new slate of choices allows managers to choose the most risky option, which could undermine rebuilding successes and would be counter to the requirements of the law. How does the agency intend to ensure that rebuilding is occurring in as short a time as possible under the newly proposed guidelines?

Answer. The Magnuson-Stevens Act (MSA) and National Standard 1 (NS1) Guidelines require that when a fish stock is determined to be overfished, a plan be put into place to rebuild the stock. This is accomplished through rebuilding plans that, pursuant to the MSA, must specify a target time period for rebuilding that is as

short as possible, taking into consideration certain factors, such as the biology of the stock and the needs of fishing communities. To calculate this target time period, the National Standard 1 Guidelines provide for identifying a minimum time to rebuild (*i.e.,* where there is no fishing mortality) and a maximum rebuilding time, and state that the target time period shall not exceed the maximum time period and shall be based on the statutory factors. NMFS emphasizes that management measures for rebuilding stocks are developed and implemented based on the shortest time possible in which the stock can rebuild (*i.e.,* the target rebuilding timeline), not the maximum allowable time.

Traditionally, calculating a maximum time for a stock to rebuild requires reliable information on the life history of the stock. Such information is not available in all cases, and even if available, might have a much higher level of uncertainty than other sources of available data such as fishing mortality. Thus, the proposed revisions to NS1 guidelines provided two additional scientifically supported methods to calculate a maximum allowable time to rebuild that are intended to provide Regional Fishery Management Councils and their Scientific and Statistical Committees options to use a calculation method that is based on the best scientific data available. Based on internal analyses, NMFS does not expect that the three calculation options will produce drastically different estimates. Furthermore, the selection of a calculation method must be based on what sources of data are determined to be the best scientific information available, rather than the outcome of the calculation. In developing final revisions to the guidelines, NOAA is carefully considering all comments on the proposed guidelines including those concerning rebuilding timelines.

Question 10. National Standard 1.—While the agency has proposed revising guidelines for how to achieve the goals of National Standard 1 in the Magnuson-Stevens Act, the revisions are silent on how to confront climate change and other enormous challenges that our fisheries face. How does the agency expect Councils to achieve optimum yield and ensure fisheries provide the greatest overall benefit to the Nation without revising the guidance to confront these challenges?

Answer. Climate-related changes are affecting the Nation's valuable living marine resources and the people, businesses, and communities that depend on them. However, NMFS is taking proactive steps to both produce and use climate-related information to fulfill our statutory mandates in a changing climate. The existing National Standard 1 (NS1) guidelines establish an adaptive, science-based Federal fisheries management system that allows Regional Fishery Management Councils (Councils) to respond to these environmental changes that may that inhibit their ability to achieve optimum yield (OY) on a continuing basis.

Optimum yield is prescribed on the basis of a stock's maximum sustainable yield (MSY) as reduced by ecological, economic, and social factors. The existing NS1 guidelines are designed to be responsive to changing environmental conditions and other emerging challenges in Federal fisheries management and set forth examples of how to apply ecological factors related to climate change when setting a stock's OY. In fisheries where councils are aware of climate change impacts that affect the yield available from a stock, they can, and should, reevaluate the OY specification for the fishery, consistent with the NS guidelines and the best scientific information available.

Question 11. Are the Magnuson-Stevens Act and the guidelines properly equipped to deal with climate change?

Answer. The Magnuson-Stevens Act (MSA) and the existing National Standard 1 (NS1) guidelines establish an adaptive, science-based Federal fisheries management system capable of responding to changes in environmental conditions, including changes caused by climate change. To further strengthen this system, NMFS proposed revisions to the NS1 guidelines which instruct Councils to manage their fish stocks according to the changing needs of the fishery, which would encompass necessary management adjustments in response to climate change. In developing final revisions to the guidelines, NOAA is carefully considering all comments on the proposed guidelines including those related to ensuring management responds to changing ocean conditions.

Question 12. Recently, NOAA Fisheries released a draft Ecosystem-Based Fisheries Management (EBFM) policy, under which managers weigh existing data about where fish live, what they eat, what eats them, and what impacts they face from various threats, including climate change. The draft policy intends to and repeatedly highlights EBFM's usefulness in optimizing the benefits from fishery resources, evaluating trade-offs, and making better decisions. Why wasn't this important tool included in the NS1 guideline revisions to better address climate change and other considerations into management?

Answer. NMFS supports the incorporation of ecosystem-based fisheries management (EBFM) into Federal fisheries management; the implementation of EBFM practices can occur within the current management framework and are supported by the National Standard 1 (NS1) guidelines. Further, NMFS' proposed revisions to the NS1 guidelines include several new provisions that facilitate the incorporation of EBFM into Federal fisheries management, including a provision that allows Councils to take into account multi-species interactions within their management frameworks. However, implementing EBFM, as described in the draft NMFS EBFM policy, spans multiple national standards within the MSA and the implementation of multiple statutes. While the NS1 guidelines can accommodate many specific EBFM approaches, they are not the only source of guidance for implementing a broader EBFM approach.

Question 13. Fisheries Enforcement.—Mr. Rauch, how do fisheries dependent data, such as catch history, inform the stock assessment process? If a participant in a fishery with significant catch history regularly and chronically over-reported or underreported catch of a species, or misreported one species as another species, can you describe how those actions might affect the accuracy of the stock assessment process? What kind of biases might this introduce into the process?

Answer. Stock assessments rely on accurate information about total catch over time to determine the historical effects of fishing. Thus, any misreporting or errors in the catch history can result in biases in stock assessment results. In particular, estimates of stock size and fishing mortality are most susceptible to these biases. However, the magnitude and the direction of biases cannot be generalized and can only be evaluated on a case-by-case basis. There are many factors that would affect how biased an assessment result would be, including the degree of misreporting, the time over which misreporting was occurring, stock-specific biology and productivity, and potential interacting effects of changing ecosystems and fishing strategies.

Question 14. Fisheries Enforcement.—Mr. Rauch, NOAA's fisheries enforcement officers, special agents, Coast Guard boarding officers, and state enforcement officers operating under a Joint Enforcement Agreement are out there, every day, doing the tough work of ensuring compliance and a level playing field for our fishermen by enforcing our complex Federal fisheries regulations, and I commend their dedication and bravery. However, since 2010 we have seen the number of NOAA law enforcement personnel steadily decline—from 187 in 2010 to just 89 today. In the Northeast Region, NOAA has issued zero Notices of Violations from 2010–2013, and only a few in the past two years, despite handling over 700 investigations in 2015. Has the decrease in fisheries law enforcement capacity in the U.S. opened opportunities for nefarious individuals to operate?

Answer. The total staff of NOAA's Office of Law Enforcement (OLE), including both sworn and non-sworn members, has gone from 234 in 2010 to 189 today. OLE is in the process of hiring 31 new enforcement officers. OLE will continue to manage its resources to enforce the Federal statutes under NOAA's purview to deter violations. OLE continues to conduct investigations of illegal activity and has a number of recent successes with both international and domestic investigations. These successes also demonstrate the level of expertise we can bring to bear with current resources.

Question 15. Are there opportunities for better strengthening relationships with partner agencies (*i.e.,* the Coast Guard and JEA partners) to better utilize existing enforcement resources?

Answer. OLE works continuously with our JEA partners to ensure we are maximizing appropriated funds provided to our State partners to help OLE meet its ever expanding mission. We recently met with all of our State partners at a joint meeting to discuss process and mission priority identification improvements in order to continue to improve the program. OLE continues to have a good cooperative and collaborative relationship with our Federal partners including the Coast Guard and the U.S. Fish and Wildlife Service.

Question 16. What is NOAA's plan for hiring new enforcement officers and placing them out into the field?

Answer. NOAA is using both the normal hiring process as well as special hiring authorities like the Veterans Recruitment Act (VRA) to speed up the process of bringing on board additional enforcement officers. OLE has recently conducted a staffing analysis that has identified the highest priority locations for new enforcement officers.

Question 17. Do NOAA OLE personnel feel they have the support and tools they need to do their job? If not, what could we do to help?

Answer. Through the Presidential Task Force on Combatting IUU and Seafood Fraud, the Administration recommended broader search and inspection authority,

detention authority, administrative subpoena authority and additional prohibitions to address trafficking in IUU fish and fish products. These authorities would help OLE combat IUU fish that has entered into the U.S. stream of commerce and that promotes unfair trade practices and directly affects and competes with lawfully harvested domestic product from the U.S. fishing industry.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. CORY BOOKER TO HON. SAMUEL D. RAUCH III

Question 1. Protecting our Waters.—Mr. Rauch, at the hearing you indicated that you believe current law is adequately protecting fish habitat. At the same time, you also said that fisheries managers are limited to only addressing impacts of fishing on such habitat. Can you explain what tools exist for Councils to impact other activities that could have adverse effects on fish habitat?

Answer. The Essential Fish Habitat Program under the Magnuson Stevens Act has successfully conserved the habitats that are the foundation of the Nation's fisheries for the past 20 years. Fishery Management Councils seize opportunities through this program by commenting on proposed Federal activities with recommendations to NOAA Fisheries and other Federal agencies to protect habitat that could be impacted by activities unrelated to fishing. Several Councils have an active interest in reviewing these activities and have procedures in place to improve coordination with NOAA Fisheries on such comments.

Fishery Management Councils also have a voting seat in the Regional Ocean Planning Bodies. These Bodies develop regional ocean plans to address healthy ocean ecosystems, sustainable ocean uses, and coordinated management. They provide an opportunity for Councils to work with scientists and other stakeholders to develop and test applications of ecosystem based management and influence decisions on ocean development.

Question 2. If a Council or NOAA Fisheries raises concerns about activities that occur under the oversight of another agency, how does that agency have to respond? Do they need to take any regulatory action?

Answer. While Federal agencies are not required to implement our advisory conservation recommendations, when they choose not to do so, they are required to send a written justification explaining why they are permitting the proposed project in a way that is inconsistent with NOAA's advice. Strong relationships between NOAA Fisheries and other Federal agencies, however, frequently result in applicants incorporating conservation measures during the pre-application, early project-planning stage, leading to efficient and effective habitat conservation. This collaborative process relieves the Federal agency from the burden of lengthy, expanded consultations, inspires smart development, and allows activities to move forward with as minimal impact to fish habitat as possible.

Question 3. Do you think there would be a benefit for our fisheries if NOAA and the Councils were given additional opportunities to participate in decisions regarding non-fishing activities, such as oil and gas exploration and development that affect fisheries and marine habitats?

Answer. Councils currently have opportunities to provide this kind of input, and many Councils have taken advantage of this. Several Councils have coordination procedures with NOAA Fisheries or explicit policy statements on non-fishing activities. For example, the North Pacific Fishery Management Council and NOAA Fisheries' Alaska Regional Office have an agreement to coordinate comments on Federal activities that could have major impacts to essential fish habitat or would conflict with fishing operations. The Mid-Atlantic and South Atlantic Fishery Management Councils have developed policy statements on various coastal and offshore development activities to guide our comment letters and to inform other Federal agencies of the Councils' habitat conservation priorities.

Question 4. Mr. Rauch, under current law, Councils are required to work with NOAA Fisheries to identify essential fish habitat (EFH) in their regions and minimize adverse effects from fishing, but only "to the extent practicable." How does this practicability caveat impact the designation and protection of EFH?

Answer. The practicability clause has no influence on EFH designations. Councils are required to identify EFH based on the best available science. Practicability must be taken into account when considering EFH protection. NOAA Fisheries and the Councils struggle to quantify the habitat conservation benefits of measures when seeking to minimize fishing impacts (*e.g.,* gear modifications), which makes it difficult to evaluate tradeoffs between habitat conservation and impacts to the fishing industry.

Question 5. Does the practicability caveat result in important fisheries habitat from not being protected?

Answer. In some cases, without quantitative data on habitat conservation benefits, the available data on the economic impact to the fishing industry may lead Councils to find habitat protection measures not practicable.

Question 6. Dusky Shark Bycatch.—What actions does the National Marine Fisheries Service intend to take to help the dusky shark to rebuild and to prevent further bycatch?

Answer. Both the commercial and recreational harvest and retention of dusky sharks has been prohibited since 2000. The stock has been under a rebuilding plan since 2008 when Amendment 2 to the 2006 Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan (FMP) was implemented. Amendment 2 modified and established regulations in the shark fishery that dramatically changed how the directed shark fishery operates and took additional measures to reduce fishing mortality on dusky and other sharks. These regulations included, but were not limited to: requiring fins remain naturally attached, reducing the commercial trip limit from 4,000 pounds (dressed weight) to 36 [1] non-sandbar large coastal sharks (LCS) per trip, and prohibiting the retention of sandbar sharks—the primary species targeted by the directed shark fishery at that time—outside a limited shark research fishery. These measures have greatly reduced dusky shark mortality in the directed shark fishery, in large part because dusky sharks are often caught in areas where sandbar sharks are caught. However, only two years of data under these regulations (2008 and 2009) were incorporated in the most recent stock assessment for dusky sharks that was finalized in 2011 through Southeast Data Assessment and Review (SEDAR) 21. That stock assessment showed that the dusky shark population was overfished and experiencing overfishing. Since the 2011 assessment, updated information and analyses conducted for an Endangered Species Act Status Review in 2014 and for the HMS Advisory Panel meeting in 2015, show positive trends in abundance of dusky sharks and reductions in fishing mortality of dusky sharks, signifying a significant improvement for the dusky shark population. An update to the stock assessment, which incorporates data through 2015, is underway and is expected to be completed in August 2016. Once stock assessment update results are finalized, NMFS will take additional action, as appropriate, to continue to rebuild the dusky shark population in Amendment 5b to the 2006 Consolidated HMS FMP.

Question 7. Recreational Fishing.—What specific, tangible changes is NOAA making in their fisheries management in line with the new recreational fisheries policy adopted last year?

Answer. NOAA Fisheries is working diligently to achieve the goals of the National Policy for Saltwater Recreational Fisheries by fulfilling commitments identified in the supporting Recreational Fisheries Implementation Plan. The National Implementation Plan identifies more than 60 specific commitments that support the objectives and goals of the Saltwater Recreational Fisheries Policy. The examples of recent progress supporting the national recreational saltwater fisheries policy cited below represent a limited portion of ongoing work. Progress includes:

- NOAA Fisheries worked closely with anglers, states, and the Pacific Fisheries Management Council to expand recreational fishing opportunities with the recent approval a new six month mid-water long-leader fishery for rockfish of the coast of Oregon.
- NOAA Fisheries and the Atlantic States Marine Fisheries Commission will jointly host a national workshop examining the potential of artificial reefs as a management tool to support or enhance sustainable recreational fisheries June 9–10, 2016 (Alexandria, VA).
- NOAA Fisheries is finalizing a new fisheries allocation policy jointly developed by the Federal Fishery Management Councils' Coordinating Committee and NOAA Fisheries (anticipated Spring 2016). Of substantial interest to recreational anglers, the policy will facilitate periodic council review of catch allocations.
- NOAA Fisheries awarded approximately $2.2 million in grants to recreationally fishery focused research projects through the Saltonstall Kennedy Grant Program in FY15.
- NOAA Fisheries released regionally tailored recreational policy implementation plans in late April 2016. These plans, developed with the input anglers, states

[1] The Final Rule for Amendment 6 to the 2006 Consolidated HMS FMP (80 FR 50073; August 8, 2015) changed the non-sandbar LCS trip limit to a default of 45 sharks per trip with a range that can be adjusted from 1 to 55 sharks.

and councils, step down the national policy and plan and facilitate identification and resolution of regionally specific recreational issues where anglers live and fish.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. RICHARD BLUMENTHAL TO HON. SAMUEL D. RAUCH III

Question 1. Black Sea Bass and Summer Flounder in New England.—Mr. Rauch: Warming ocean temperatures are having a significant impact on species distribution on the Atlantic coast. Fish that were traditionally in mid-Atlantic waters are now migrating further north as ocean temperatures climb. Two of these species that have noticeably grown in numbers in waters off of the coast of CT are black sea bass and summer flounder.

Just last week, I had the opportunity to meet with the Connecticut Seafood Council and other representatives of the fishing industry and community within my state. What fishermen in Connecticut tell me is that while the number of black sea bass and summer flounder found off the coast of Mid-Atlantic States is dwindling, New England is experiencing an increase in these species. I don't want to contradict what conservationists and NOAA's scientists and observers are telling us about the reasons for this shift. And whether the cause is due to a recovery of the species or a shift northward of species that have yet to fully recover is a separate issue. My concern is that, if there are environmental and ecological forces at play that are resulting in a different distribution of fish and in waters of a fishery that doesn't have oversight of the management of those species, does MSA adequately account for those changes.

In November of last year I led a letter to NOAA on this topic. The letter was signed by the entire Connecticut and Rhode Island delegations. The letter called for NOAA to consider ways to use its ecosystem-based fishery management practices to give the New England Fishery Management Council more of a say when population distributions shift. NOAA responded in a letter that MSA provides authority to determine when joint management between councils is necessary, but I think this issue is worth revisiting in this forum.

Despite the agency's assurances that MSA has a mechanism to allow for joint management, the fishing community in New England still feels underrepresented in the management decisions for black sea bass and summer flounder. Can you explain the process by which MSA allows for joint management?

Answer. MSA section 304(f) states that in situations where the fishery in question extends beyond the geographical area of any one Council's jurisdiction, the Secretary may either designate one Council to prepare the FMP or may require a joint FMP. The appropriate management approach for shared stocks varies depending on specific circumstances. Ideally, the associated Councils and NMFS work together to determine when joint management is appropriate or should be considered, like in the case of black sea bass and summer flounder. These species are currently jointly managed through the Mid-Atlantic Council and the Atlantic States Marine Fisheries Commission (Commission). The Mid-Atlantic Council's area of responsibility includes areas seaward of states specified in the MSA, and voting members of the Council include officials from each of those states. The Commission is made up of representatives from all Atlantic states, including the New England states; any decisions made about the management of black sea bass and summer flounder are reviewed by all members of both the Commission and Mid-Atlantic Council.

Question 2. Should this process be re-examined to allow for a quicker adoption of joint management plans if species distributions rapidly shift?

Answer. Joint management requires management measures to be approved by both Councils concerned, and thus often result in a slower and more arduous management process. MSA section 304(f) specifies that, "no jointly prepared plan or amendment may be submitted to the Secretary unless it is approved by a majority of the voting members, present and voting, of each Council concerned." Therefore, creation of a joint management plan may not be appropriate for situations that require a rapid management response, including situations where fish stocks rapidly expand or drastically alter their ranges.

Question 3. In regard to summer flounder and black sea bass, is joint management the answer to this issue? Do you have any other recommendations to make sure all parties feel adequately represented?

Answer. While summer flounder and black sea bass are not jointly managed by the New England and Mid-Atlantic Councils, these stocks are jointly managed through the Mid-Atlantic Council and the Atlantic States Marine Fisheries Commission (Commission). Given that the Commission includes representatives from all At-

lantic states, including the New England states, the current management approach allows significant input from New England states. Significant stock-wide decisions, including allocations decisions, are made by all the Commission members, including those representatives of the New England states, as well as all members of the Mid-Atlantic Council.

Through the Commission, the states implement management measures for their commercial and recreational fisheries, tailored to individual state needs. In response to an increased abundance of black sea bass off of New Hampshire and Maine, the Commission has recently added New Hampshire and Maine to the Black Sea Bass Management Board.

The Mid-Atlantic Council and Commission are currently developing a comprehensive summer flounder amendment to review the Fishery Management Plan (FMP) in its entirety. This action may result in changes to the state-by-state quotas. When established, these allocations were based exclusively on historical proportion of catch. The Commission has discussed options for updating allocations that take into account the current distribution of the stock, but are still working to determine the appropriate actions to take. All states are represented in the Commission, and as such, any decisions to adjust allocation formulas for summer flounder will be reviewed and considered by all members of the Commission.

Question 4. Structure of Fisheries Management.—Mr. Rauch, NOAA's response to my letter also mentioned that summer flounder and black sea bass are co-managed by the mid-Atlantic Fisheries Council—which governs Federal fisheries—and the Atlantic State Marine Fisheries Commission which handles state fisheries management and on which Connecticut is represented. The response letter also mentions that the New England Council has a liaison to the mid-Atlantic Council, which provides the New England region with input toward the management of mid-Atlantic species.

However, members of the Connecticut fishing community have explained to me that the Commission's authority is subordinate to that of the mid-Atlantic Council and that in areas of dispute, the Council's determination prevails. Additionally, although the New England Council has a liaison to the mid-Atlantic Council, it is one liaison for the entire region. And while we are a region that shares many issues, there are concerns and conditions specific to each New England state and its fishing industry. Can you provide more detail about the co-management relationship between the mid-Atlantic Council and the Atlantic States Commission?

Answer. The Mid-Atlantic Council and the Atlantic States Marine Fisheries Commission (Commission) have a joint fishery management plan (FMP) for summer flounder, scup, and black sea bass. For stock wide decisions, including setting catch limits, the Council and the Commission carefully consider the issues collectively and make final recommendations together. For example, in setting the overall level of catch for each species, the Mid-Atlantic Council's Scientific and Statistical Committee (SSC) makes a recommendation called the "acceptable biological catch" (ABC). Pursuant to the Magnuson-Stevens Act, the Council cannot recommend a catch level that exceeds the fishing level recommendations (*i.e.,* ABC) of its SSC, and the Commission typically votes in coordination with the Council's recommendation. Changes to the state-by-state allocations of summer flounder must be approved by both the Council and the Commission before being implemented. In the case of black sea bass, however, the Commission has sole responsibility for the state-by-state allocations. As such, any changes to that measure would only require consideration and action by the Commission.

Question 5. Can you provide more detail about the New England liaisons role to the mid-Atlantic Council?

Answer. The primary role of the New England Council liaison to the Mid-Atlantic Council is to attend Mid-Atlantic Council meetings and report on activities of interest or jurisdictional overlap to the New England Council. In some instances, including for summer flounder and black sea bass specifications and management decisions, the New England liaison participates as an equal member of the Mid-Atlantic Council with voting privileges. The New England Council liaison can also participate as a member of management boards and committees, like the Mid-Atlantic Council's Demersal Committee and Black Sea Bass Management Board.

Question 6. In instances where fish populations shift from the waters of one region to another, is the current system adequate to provide representation to each or fair representation to the region that is experiencing the influx of new species?

Answer. The MSA provides a variety of options to ensure representation of the appropriate regions when fish populations shift across Council jurisdictions. For example, as described above, MSA section 304(f) states that in situations where the fishery in question extends beyond the geographical area of any one Council's juris-

diction, the Secretary may either designate one Council to prepare the FMP or may require a joint FMP. Councils also include liaisons from adjacent Councils to ensure appropriate representation on issues of jurisdictional overlap. MSA section 302(g) provides the Councils with considerable latitude to appoint needed experts to advisory bodies and its scientific and statistical committees. Already, some Councils, particularly on the East Coast, share Science and Statistical Committee (SSC) members. This practice can be expanded as the need arises to ensure adequate representation as stocks shift.

Question 7. Environmental Impacts on Species Distribution.—Mr. Rauch, I want to again stress that we should let the best science dictate catch limits and that rebuilding stocks and vulnerable species have the ability to recover are imperative priorities. My argument is that if certain species distributions are shifting, that the new region where the species are found should be able to contribute its research, scientific findings, and expertise in determining what the proper and appropriate catch limit should be.

In NOAA's response letter to me, the agency indicated that while black sea bass appears to be recovering, uncertainty still exists as to the full recovery of the species. The agency also state that summer flounder abundance is still decreasing although the distribution may be changing. It seems that experts of New England's waters and conditions in the region could help fill out the picture of changes these species are undergoing as well as the health status of the populations. Connecticut produces tremendous research at UConn and Mystic Aquarium, among other institutes and research facilities. The fishermen in Connecticut who are experiencing these conditions daily can also provide much needed perspective and deserve to have their voices heard.

My letter was in response to NOAA's proposed ecosystem-based fishery management policy, which calls for the reliance on environmental and ecological indicators to determine management decisions.

I know that it is early in NOAA's development of the ecosystem-based fishery management policy and that the agency is still reviewing the feedback it received during the public comment period, but are there any preliminary data or findings that you can share that could be useful in guiding our MSA reauthorization process?

Answer. In our work to develop a national policy for ecosystem-based fishery management, it is increasingly apparent that a lot is already being accomplished with the authorities we have under the Magnuson-Stevens Act (MSA) and other statutes, such as Endangered Species Act and the Marine Mammal Protection Act. Fishery management councils have developed 10 Fishery Ecosystem Plans around the country and are tackling a variety of ecosystem-related issues through their regular fishery management process, including issues like deep sea coral protection, multi-stock interactions, forage fish, and the impacts of climate change.

Question 8. Are changing environmental conditions like climate change and sea temperature rise adequately provided for in MSA as it currently stands?

Answer. The Magnuson-Stevens Act (MSA) currently contains several provisions that provide mechanisms for addressing climate change impacts. For example, the Act requires that fishery management councils specify optimum yield for the fishery and defines optimum yield, in part, as being prescribed on the basis of maximum sustainable yield, as reduced by any relevant economic, social and ecological factors. Changing ocean conditions resulting from climate change is an ecological factor that could be addressed in the setting of optimum yields. The Act also includes direction (MSA section 304(f)(1)) for fisheries that cross multiple Council jurisdictions, which could help guide decisions as stocks shift due to changing ocean conditions.

Question 9. How can we improve the inclusion of expertise from new regions as those regions see a larger share of certain species?

Answer. The Magnuson-Stevens Act (MSA) section 302(g) provides the Councils with considerable latitude to appoint needed experts to advisory bodies and its scientific and statistical committees. Already, some Councils, particularly on the East Coast, share Science and Statistical Committee (SSC) members. This practice can be expanded as the need arises. Further, fisheries management operates within a public forum and we encourage stakeholder participation in that process. All data and observations are welcome for consideration in stock assessments; however, any data source (NOAA or external) is subjected to the same peer-review process to ensure its quality and that it is used appropriately.

Question 10. MSA and Aquaculture.—Mr. Rauch: The impact of aquaculture to the United States economy is enormous. However, while the United States is a major generator of research and aquaculture related innovations that contribute to the growth of the industry globally, our seafood trade deficit has ballooned to over

$11 billion annually. Half of the seafood consumed in the United States is produced through aquaculture, but only 5 percent of our seafood is produced domestically.

Despite NOAA declaring aquaculture priority for the Nation's marine economy, less than one percent of the agency's budget goes to aquaculture research. The nation's largest contributors to aquaculture research, like the NOAA Northeast Fisheries Science Center in Milford, CT are pioneering groundbreaking aquaculture techniques while falling victim to budget cuts and personnel shifting.

In 1993, through a legal interpretation, it was determined that aquaculture fell under the definition of fishing under MSA, thus giving NOAA authority over permitting and other oversight activities regarding aquaculture. Yet, aquaculture is not specifically mentioned in MSA statute. This has led to uncertainty in the permitting process, discouraging commercial investment and has allowed resources to be shifted away from aquaculture research even while NOAA is stating that aquaculture is a priority. What is NOAA's official stance on the importance of aquaculture and its role in the United States seafood and fishing industry?

Answer. The National Aquaculture Act of 1980 declared that it is "in the national interest, and it is the national policy, to encourage the development of aquaculture in the United States." NOAA's Next Generation Strategic Plan (2010) aligns with this mandate and declared that maintaining sustainable fisheries and safe marine-origin foods is a priority for NOAA and that a key component of this objective is the development and implementation of a national aquaculture policy that provides information and guidance to implement ecologically and economically sustainable aquaculture programs. NOAA's Marine Aquaculture Policy (2011) states that aquaculture is an important component of NOAA's efforts to maintain healthy and productive marine and coastal ecosystems, protect special marine areas, rebuild overfished wild stocks, restore and conserve marine and coastal habitat, and enable the production of safe and sustainable seafood.

Question 11. What does NOAA currently do to demonstrate that aquaculture is the priority that the agency claims it is?

Answer. NOAA reaffirmed its commitment to promoting sustainable aquaculture development in the United States in its Marine Aquaculture Policy (2011) and supports a number of important regulatory, research, and technology transfer activities including the following:

NOAA is implementing the first comprehensive regional regulatory program for offshore aquaculture in Federal waters under the Magnuson-Stevens Act.

- In January, NOAA published a final rule to implement an aquaculture fishery management plan developed by the Gulf of Mexico Fishery Management Council.
- NOAA Fisheries' Southeast Regional Office has developed guidance for permit applicants and is ready to accept permit applications and engage in a coordinated permit review process with other Federal regulatory agencies in the region.
- The Gulf regulatory program provides an example for other regions interested in developing a similar regulatory program.

NOAA staff, research, and grant funds support the advancement of aquaculture around the country. Examples include:

- The National Shellfish Initiative, which was launched in 2011 to get more oysters, clams, and mussels into our marine waters through shellfish farming and restoration.
    - Since 2011, industry, NGOs, and state, tribal, and Federal agencies have been working together through state initiatives in Washington, Connecticut, Alaska, Oregon, and California. Other states and regions are considering similar initiatives. Although each state effort is somewhat different, common objectives include improving regulatory efficiency, science to address ocean acidification and study ecosystem services, public education, and habitat restoration.
- The annual Milford Aquaculture Seminar (ongoing since 1975), which transfers information and technology from NOAA's Milford, Connecticut lab to the aquaculture industry, the scientific community, and the public.
- Long-standing collaboration of the Milford Laboratory with two regional aquaculture high schools, which helps train the next generation of aquaculture scientists in shellfish and finfish aquaculture.
- Federal reviews of shellfish farm permits and programmatic approaches to shellfish permitting in Washington and California (*e.g.,* Humboldt Bay).

- New off-bottom culture of shellfish in Mississippi and Alabama.
- The first offshore mussel farms off Massachusetts and California.
- A workshop of scientists, regulators, and shellfish farmers to examine potential whale and turtle interactions with offshore mussel farms in New England.
- Siting and water column/benthic impact models for use in permit decision making for fish farms in Hawaii and California.
- The new Kenneth Chew Center for Shellfish Research and Restoration at the Manchester Research Station in Washington, a partnership with the Puget Sound Restoration Fund to restore the native Olympia oyster in cooperation with other NGO, university, tribal, state, and Federal partners.

NOAA also engages in technology transfer, including:

- External aquaculture grant awards in 2015 through Sea Grant ($4.4 million), Saltonstall-Kennedy ($4.8 million), and two Phase 1 and one Phase 2 Small Business Innovation Research grants.
- Cooperative Research and Development Act (CRADA) agreements to transfer probiotics and algal culture techniques developed at NOAA labs to the private sector.
- An annual course in algal culture methods for shellfish hatchery technicians at the Milford, Connecticut Lab.

Question 12. What is NOAA's role in the oversight of the aquaculture industry and its management of commercial aquaculture siting and promotion of aquaculture research?

Answer. *NOAA's role in oversight and management.* Under several Federal laws, including the National Environmental Policy Act, Magnuson-Stevens Fishery Conservation and Management Act, the Marine Mammal Protection Act, the Endangered Species Act, the Coastal Zone Management Act, and the National Marine Sanctuaries Act, NOAA is responsible for considering and preventing and/or mitigating the potential adverse environmental impacts of planned and existing marine aquaculture facilities through the development of fishery management plans, sanctuary management plans, permit actions, proper siting, and consultations with other regulatory agencies at the federal, state, and local levels.

- In Federal waters of the Exclusive Economic Zone, NOAA has a direct permitting role where there is an aquaculture fishery management plan in place or if an aquaculture facility requires an exemption from harvest, size, gear, season or other restrictions under a Federal fishery management plan. NOAA also has a direct permitting role in National Marine Sanctuaries where applicable management plans do not preclude commercial aquaculture activities.
- For all aquaculture in both State and Federal marine waters, NOAA engages in consultations with other Federal permitting agencies (mainly the Corps of Engineers and the Environmental Protection Agency) under the authority of the Endangered Species Act, the Marine Mammal Protection Act, the Essential Fish Habitat provisions of the Magnuson-Stevens Fishery Conservation and Management Act, the National Environmental Policy Act, and other statutes. NOAA also works with other Federal agencies, states, tribes, and local government on coordinating permit review processes.

NOAA's aquaculture management role includes the review and approval of state coastal management programs which have aquaculture components, oversight of Federal consistency with these programs under the Coastal Zone Management Act, and development of models, tools, and analyses to assist coastal managers and regulators in identifying appropriate sites, evaluating proposed aquaculture projects, and monitoring impacts.

NOAA's role in research. NOAA is working to address the technical and scientific barriers to marine aquaculture in a number of ways including through in-house research at science centers, grants and cooperative agreements with academic and other stakeholders, and by coordinating research with other Federal agencies.

- NOAA's aquaculture science portfolio comprises complementary and coordinated efforts in three NOAA line offices. Together these efforts are critical to achieving the Administration's goal of supporting sustainable marine aquaculture. The Fisheries Service focuses on developing science-based "tools for rules" to help inform permitting and other regulatory decisions, as well as working with industry partners on a range of topics such as hatchery techniques and disease management. The Ocean Service develops coastal planning and management tools and services. The Sea Grant program at the Office of Ocean and Atmospheric

Research provides grants to external partners for industry development, as well as technology transfer and extension. These efforts and those of other Federal agencies (*e.g.,* USDA) are coordinated under the 2014 Strategic Plan for Federal Aquaculture Research, published with NOAA's assistance and leadership by the White House's Office of Science and Technology Policy.

- Two laboratories house the bulk of the Fisheries Service's aquaculture science portfolio—the Northeast Fisheries Science Center's Milford, CT lab and the Northwest Fisheries Science Center's Manchester, WA lab. Milford has traditionally been a shellfish aquaculture lab (*e.g.,* siting tools, disease management, ecosystem services) and Manchester has been a finish aquaculture lab (*e.g.,* feeds development, finfish hatchery and grow-out methods). However there is growing coordination and collaboration in certain areas such as some aspects of feeds research. Detailed information for each lab's research portfolio may be provided upon request.
- NOAA also supports aquaculture research through its competitive Small Business Innovation Research (SBIR) and Saltonstall-Kennedy grant programs. The SBIR grant program encourages small businesses to leverage Federal funds to invest in innovative technologies and next-generation products and processes that may lead to commercialization. The Saltonstall-Kennedy grant program funds as a priority research projects that encourage the development of environmentally-and economically-sound aquaculture.

Question 13. What benefits will come of incorporating aquaculture into MSA reauthorization? What recommendations do you have for this committee in terms of what that should look like?

Answer. It has been NOAA's longstanding interpretation that the Magnuson-Stevens Act provides NMFS the authority to regulate aquaculture as "fishing" and, thus, that regional fishery management councils have the authority to prepare fishery management plans covering all aspects of aquaculture in EEZ waters under their respective jurisdictions. NOAA is working within the context of current laws and regulations to address barriers to permitting of aquaculture in Federal waters.

Question 14. At-Sea Monitoring.—Mr. Rauch: I have spoken with fishermen in Connecticut who have said that the cost of the At-Sea Monitoring program, or ASM, could completely erase the total profit from a day of fishing. While it is necessary to ensure that catch limits are being adhered to and that discards and other issues are limited, the ASM program is in need of reform to be less of a financial burden on fishermen in depressed and recovering fisheries. The fishing community in Connecticut has conveyed to me that ASM is not only extremely costly, many times the monitors assigned to boats lack adequate training.

I recently joined a letter with my New England Senate and House colleagues urging NOAA to adopt the New England Council's recommendations for improving the ASM system in the New England groundfish fishery, such as a more strategic allocation of resources from areas of low by-catch to areas of higher by-catch.

The New England groundfish fishery still has disaster declaration status. It is my hope that industry cost sharing will continue to be deferred until reforms can be made to limit the financial burden on New England's fishermen. What steps is NOAA taking to reform ASM and reduce the financial burden on fishermen?

Answer. NMFS approved Framework Adjustment 55 to the Northeast Multispecies Fishery Management Plan, which became effective on May 1. This action modifies the method used to set the target coverage level for the industry-funded ASM program to addressing groundfish monitoring program objectives while making the program more cost-effective. These changes include removing ASM coverage for a subset of groundfish trips that catch little to no groundfish, using more years of data to predict the coverage level, and basing the coverage level on stocks that have the least risk tolerance for error in discard estimates.

The changes approved in Framework 55 result in a target coverage level of 14 percent for the 2016 fishing year, including coverage for the standardized bycatch reporting methodology paid in full by our Northeast Fisheries Observer Program (NEFOP). Assuming NEFOP covers 4 percent of trips as we have in recent years, this will result in sectors paying for ASM on approximately 10 percent of their vessels' trips in 2016.

Question 15. Will you give NOAA's commitment to continue to work with the New England delegation to strengthen the ASM program so that it is more efficient, effective, and less costly for fishermen and the fishing industry?

Answer. We support efforts to evaluate groundfish monitoring programs through our membership on the New England Fishery Management Council, its Groundfish Plan Development Team, and its Groundfish Oversight Committee. The Council

made evaluation of groundfish monitoring a priority for 2016, and is expected to initiate a new amendment to consider more extensive changes to the groundfish monitoring program. The Council's Plan Development Team is already working on analysis to inform this action.

We also remain committed to working directly with the fishing industry to reduce costs where possible through improved administration of the ASM program.

Question 16. By-Catch.—Mr. Rauch: In my discussions with the Connecticut fishing industry, an issue that was frequently raised was the high levels of by-catch that many of them are experiencing. Because of the discrepancy between the numbers of black sea bass and summer flounder the quota setting mid-Atlantic Council observes and the population levels that are in New England waters, fishermen in New England often end up with high levels of fish that they must discard in order to stay below the quota limit.

By-catch is a significant issue that has far-reaching consequences. By-catch disrupts the connectivity and health of entire ecosystems, slows progress in stock rebuilding, and is economically harmful to the fishing industry. What steps can be taken by NOAA or at the Council level to reduce and eliminate by-catch?

Answer. NMFS agrees that bycatch is an important issue and can be a problem in some fisheries. NMFS and the Councils have a long history of addressing bycatch with notable success over the last forty years through improved gear technology and bycatch monitoring. We acknowledge that there is more work to do. In February this year, the agency released a draft National Bycatch Reduction Strategy aimed at improvements in bycatch research, monitoring, management implementation, enforcement, evaluation and communication. The goal of the draft strategy is to coordinate NMFS' efforts under multiple mandates to reduce bycatch and bycatch mortality and increase utilization of discards to maintain sustainable fisheries and recover protected species. The draft strategy is available for public comment until June 3, 2016, and once finalized, NMFS will work with our regional stakeholders, including the Councils, to develop regionally-specific implementation plans. (*http://www.nmfs.noaa.gov/sfa/fisheries_eco/bycatch/index.html*)

Question 17. Can an increase in communication and cooperation between Councils lead to a reduction of by-catch?

Answer. Cross-Council communication can help improve efforts to address bycatch in several ways. First, Councils can learn about effective approaches and gear solutions from each other and apply those in their own fisheries as necessary. For example, in 2004, the U.S. began requiring the use of circle hooks, which are designed to reduce sea turtle and mammal bycatch, in the HI longline fishery for swordfish and the Atlantic pelagic longline fishery. Circle hooks are now widely used across the country by both commercial and recreational fishermen. Another example of the success of cross-Council communication is in New England, where scallop fishermen use an early warning system similar to an approach used in Alaska to avoid salmon bycatch in the Alaska Pollock fishery. The program uses real time communications with fishing vessels to determine the location of 'bycatch hotspots' to help fishermen more accurately target their scallop allocation without triggering bycatch closures. Similar programs in the Pacific Islands help fishermen avoid turtle hotspots. Additionally, cross-Council communication is critical when fisheries managed by different Councils are contributing to bycatch of the same stock or species.

Question 18. Seafood Fraud—Mr. Rauch: In October of last year, Oceana issued a report that revealed wide-spread salmon labeling fraud. This issue is not only limited to salmon, but occurs with other species of fish as well. Not only is this problem misleading for consumers, as they pay more for what they think is higher quality fish, it also harms fishermen and seafood sellers who are supplying fresh caught, local seafood.

I have called for additional steps to be taken to limit seafood fraud and I have encouraged consumers to ask questions and educate themselves on the origins of the seafood they are purchasing, as well as to buy fresh, locally caught seafood.

Last Congress, I cosponsored S. 520, the Safety and Fraud Enforcement for Seafood Act. That bill would have required NOAA to increase inspections of seafood shipments, strengthened coordination with sea grant colleges—like UConn—on consumer outreach activities, and established penalties under MSA for seafood fraud. What is NOAA currently doing to prevent and eliminate seafood fraud? What improvements can be made to NOAA's efforts?

Answer. The NOAA Seafood Inspection Program offers professional inspection services assuring compliance with all applicable food regulations on a fee-for-service basis, for seafood in all forms and regardless of location. The Program works in support of the mandatory Food and Drug Administration inspection activities for seafood. The Seafood Inspection Program has an active Memorandum of Understanding

with FDA to work collaboratively to cover the large area of seafood certification, plant, and product inspection. The Program focuses on the buyer-supplier relationship and as a result a main function of the inspections would be to determine if seafood fraud is present; either in simple mislabeling, species substitution, low net weights, or added water. This service was mentioned in a 2009 GAO report on seafood fraud where the use of this voluntary program was encouraged. Whenever seafood fraud is detected through Program inspection, and Program personnel cannot secure correction of the issue, the product is held and referred to the proper enforcement authority for action.

NOAA was a co-lead on the Presidential Task Force on IUU Fishing and Seafood Fraud and currently serves as co-chair of the National Ocean Council Committee on IUU fishing and seafood fraud. In this role it is responsible for, among other things, the promulgation of rulemaking to implement a risk-based program to trace seafood, both imported and domestic, from point of harvest to entry into U.S. commerce. Publication of the final rule implementing the Seafood Import Monitoring Program (NOAA already has access to the traceability data from harvest by domestic fishing vessels to entry into U.S. commerce) is expected to occur in late summer of 2016. When implemented, the Program will serve as a valuable tool in identifying fraudulently represented seafood presented for entry into the U.S.

Further, NOAA Fisheries personnel, through the Office of Law Enforcement and the Seafood Inspection Program, are working to bolster efforts of fraud detection at the border and within commerce in the United States.

Question 19. What level of consumer outreach and education is being coordinated by NOAA?

Answer. In addition to weekly e-news from NOAA Fisheries related to all agency activities, including implementation of Task Force recommendations, NOAA Fisheries established and maintains a webportal (*www.iuufishing.noaa.gov*) dedicated exclusively to implementation of Task Force recommendations for combating IUU fishing and seafood fraud. With regard to the broad spectrum of "seafood fraud" activities that can occur along the supply chain, NOAA Fisheries also maintains a public information site, FishWatch, focused on U.S. fisheries and seafood, including descriptions of the most common forms of seafood fraud (*http://www.fishwatch.gov/eating-seafood/fraud*).

Question 20. What enforcement and penalty authority does NOAA currently have in deterring seafood fraud?

Answer. The U.S. Food and Drug Administration (FDA) has primary Federal authority to prevent seafood fraud [1] under the Food, Drug and Cosmetic Act [2] (FD&CA) which, among other things, prohibits the mislabeling or adulteration of seafood.[3] FDA's authority extends to seafood imports as well as domestically-harvested seafood. In exercising its authority, FDA inspects imported seafood products, domestic and foreign seafood processors and importers, and assists state and local governments in their efforts to regulate retail establishments, including restaurants. FDA also maintains a list of acceptable market names for seafood sold in interstate commerce to assist processors and distributors with proper labeling of seafood products.

Under the Lacey Act, NOAA also has authority to address fraudulently-labeled seafood, including aquaculture products, which have entered interstate or foreign commerce. Violators are subject to civil and criminal enforcement, and fish imported in violation of the Lacey Act is subject to forfeiture. OLE conducts periodic inspections of imported fish and fish products in collaboration with Federal and state law enforcement partners to ensure compliance with the Lacey Act and other statutes administered by NOAA.

U.S. Immigration and Customs Enforcement (ICE) has authority to address seafood fraud at the time of import or export. ICE Homeland Security Investigations (HSI) special agents have authority to investigate cross-border violations including violations of Chapter 27 of Title 18,[4] and Title 19, of the U.S. Code. ICE and CBP also have authority under Title 19 to pursue seizures, penalties, and civil forfeiture. ICE has authority under the Lacey Act and frequently cooperates with OLE in Lacey Act cases. Notably, with regard to seafood fraud, a Lacey Act violation may

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[1] In this section, the term "seafood fraud" refers to the false identification of seafood by species, *e.g.,* species substitution and intentional mislabeling of seafood. Other types of fraud, including the falsification of catch documentation, trade tracking and other documents, are not addressed here.

[2] 21 U.S.C. § 301 *et seq.*

[3] 21 U.S.C. §§ 342 and 343.

[4] 18 U.S.C. § 541 *et seq.*

serve as a predicate offense for violations involving misclassification, fraudulent importation documentation, and importation or exportation contrary to law.[5]

In addition to these authorities, the NOAA Seafood Inspection Program (SIP) conducts voluntary fee-for-service inspections of seafood products and processing facilities under the Agricultural Marketing Act of 1946.[6] In the course of these inspections, SIP may identify cases of suspected seafood fraud, typically involving species substitution or incorrect net weight. Where appropriate, SIP refers cases to the FDA, OLE, or State authorities, for investigation under their respective authorities.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. GARY PETERS TO HON. SAMUEL D. RAUCH III

Question 1. The USGS Great Lakes Science Center has historically led the science program for Great Lakes fisheries. Therefore, its role is somewhat analogous to one of the six NOAA Fisheries Regional Science Centers (Alaska, Northeast, Northwest, Pacific Islands, Southeast and Caribbean, Southwest) that perform fisheries research to support marine fisheries management decisions. What is the average funding level, and the range of funding, that supports fisheries research at individual NOAA Fisheries Regional Science Centers (FY15, FY16, and proposed for FY17)?

Answer. NOAA Fisheries operates six regional science centers throughout the country to conduct the required science to prevent and eliminate overfishing, rebuild overfished stocks, support sustainable aquaculture, recover and conserve protected species, and protect and restore critical habitat. Working with government, academic and other partners, NOAA scientists provide the information needed for effective fisheries management and protected species conservation including assessments of ecosystem conditions, fish stocks, protected species populations, and socioeconomic analysis.

Please see below for the FY 2015 actual funding and FY 2016 estimated funding based on the proposed spend plan by NOAA Fisheries Science Center.

	($ in Millions)	
Science Center	FY 2015 Actual Funding	FY 2016 Estimate
Northeast	$65.7	$53.1
Southeast	$63.7	$51.6
Northwest	$60.6	$42.5
Southwest	$44.6	$39.1
Alaska	$72.6	$61.2
Pacific Islands	$29.4	$23.3
Office of Science and Technology (Headquarters)*	$38.9	$91.3

*A large portion of the funding allocated to the Headquarters Office of Science and Technology will be distributed throughout the execution year to the regions in accordance with science priorities. As seen in the FY 2015 actual funding, regional science center receive a large portion of these funds from the Office of Science and Technology, as well as other regional fishery management offices or headquarters offices.

Science center funding for the FY 2017 President's Budget Request is expected to be similar to the FY 2016 level, with the addition of the following FY 2017 science request initiatives below. The specific regional breakout of these proposed initiatives have not been determined for FY 2017.

- *Increase of $5.9 million for Ecosystem-based Solutions for Fisheries Management* for the NMFS component of this integrated, cross-disciplinary, and cross-line office (National Ocean Service) scientific initiative that will fill information gaps in habitat science and connections to fisheries management, and provide economic information that can be used to better inform decision making to benefit stewardship and resilience of inshore ecosystems and the living resources and human communities that depend on them.

[5] 18 U.S.C. §§ 541, 542, 545 and 554.
[6] 7 U.S.C. § 1621 *et seq.*

- *Increase of $0.9 million for the Distributed Biological Observatory* to expand data archiving and visualization capabilities for the Distributed Biological Observatory, a joint project among Federal agencies and international partners supporting science to improve detection of changes to Arctic marine ecosystems.
- *Increase of $1.1 million for Observers & Training* to provide accurate and timely information and analyses on the biological, economic, and social aspects of the Nation's fisheries resources. The scientific data collected by observer programs are critical inputs for fisheries stock assessments and to population assessments of threatened and endangered species, and for effective management of the Nation's fish stocks. The requested funding will provide 1,000 additional sea days of observer coverage in twelve regional fishery observer programs to increase the number of fisheries with adequate observer coverage.

Question 2. NOAA is not directly involved in Great Lakes fisheries management, because the Great Lakes fisheries are excluded from management under the Magnuson-Stevens Act. However, a strong fisheries research program is still important since it informs fisheries management in the region. How does NOAA coordinate with other entities in the Great Lakes, such as the USGS Great Lakes Science Center, to support Great Lakes fisheries research?

Answer. The Great Lakes Fishery Commission has partnered with other agencies, including NOAA, to advance the scientific understanding of the dynamic environments and the ecology of the Great Lakes in support of resource use and management decisions. Research into applicable technologies is advanced by academic partners supported, in part, by the Interjurisdictional Fisheries Act. The NOAA Great Lakes Environmental Research Laboratory (GLERL) supports environmental observing systems in partnerships with the Great Lakes Observing System (GLOS), a regional member of NOAA's Integrated Ocean Observing System (IOOS). GLERL provides a wide variety of data products that are important to fish stocks and to fishing activities. These include hydrology, climate, ice cover, algal blooms, hypoxia, and invasive species. GLERL's Great Lakes Coastal Forecasting System provides predictions on several parameters that affect fish stocks and fishing, such as water temperature, currents, and ice. GLOS and the Great Lakes Fishery Commission launched the Great Lakes Acoustic Telemetry Observing System (GLATOS) tool to answer fisheries management and ecology questions in the Great Lakes. The system can track more than 1,700 fish of four species—lake trout, walleye, sea lamprey, and lake sturgeon—tagged between 2010 and 2013. The GLOS system also provides access to a wide variety of historical and real-time environmental monitoring data.

Question 3. We must ensure that fisheries research and management adapt to future challenges, such as climate change and habitat loss. One way to achieve this is to find solutions through development of new and advanced research technologies. Are there any advanced technologies, either in use or in development for marine fisheries that you think could also be applied to fisheries research in the Great Lakes?

Answer. Technologies used in the Great Lakes are generally similar to those used in marine fisheries. These include underwater acoustics (sonar) for seafloor mapping, habitat characterization, and estimating the population of fish in the water column. In the Great Lakes, fishery trawl surveys routinely use acoustic technologies, and are conducted collaboratively between NOAA, U.S. Geological Survey, and state agencies. NOAA acoustic experts have provided assistance with multi-frequency acoustic methods to improve fish abundance estimates. The NOAA Great Lakes Environmental Research Laboratory and NOAA's Integrated Ocean Observing System support ocean observation systems (moored and unmanned platforms) to improve the understanding of the dynamic environments and ecosystems of the Great Lakes for resource use and management decisions. Fish tagging, airborne sensors, satellite remote sensing are also utilized. Acoustic seafloor mapping has also been used for documenting historical ship wrecks in the Thunder Bay National Marine Sanctuary, and acoustic telemetry technologies have been used for documenting the distribution patterns of fish.

NOAA Fisheries is developing and adapting several technologies for data collection in marine systems that could also have application in the Great Lakes. One promising example is automated image analysis, in which digital video and stereo still images of fish in their native habitats are analyzed for species identification and measurement. This approach is particularly valuable for assessing fish species that aggregate on physical structures, such as reefs. Another developing technology is unmanned platforms, which can serve as the primary system for deploying acoustic and/or cameras, or serve as "force multipliers" by augmenting surveys conducted from conventional platforms such as ships. Towed systems are particularly useful for surveying bottom-dwelling species with no or limited mobility. For example,

NOAA's Northeast Fisheries Science Center has implemented an optical survey for Atlantic scallops using a towed stereo camera system called the Habitat Mapping Camera System (HabCam V4). NOAA Fisheries is also conducting research on how towed systems affect fish behavior, which is a key step in using data from these systems for stock assessments. (Some fish are frightened away by these systems, while others are attracted to them.) Underwater Autonomous Vehicles (UAV) can augment ship-based surveys and operate in rough or very deep habitats that preclude the use of conventional gear such as trawls (these systems also affect fish behavior). Unmanned surface platforms (*e.g.,* the Waveglider) have also been investigated for expanding survey coverage both spatially and temporally, since they can operate for extended periods without human intervention.

Question 4. Can you elaborate on potential barriers to developing and deploying new fisheries research technologies?

Answer. We are constantly reviewing new technologies to determine suitability for deployment and for transitioning promising technologies into broader use. We will adopt these technologies as resources and competing priorities allow.

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