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I'm really delighted to be here with all of you. It's my first time attending such a summit. I really appreciate and value the opportunity to get to know you better and hear more about your perspectives, so thanks very much. As Dawn alluded to in her introduction, I've had some prior chances to learn a good bit and see the kind of change that's occurred in fisheries and fisheries management over the past 25 years. My stint as NOAA Chief Scientist gave me a good opportunity to take a close look at the science underlying this field and the challenges that we face here. And then, several years later, I had my first exposure to the opportunities and challenges of aquaculture when I headed up the aquaculture panel on the PEW Oceans Commission. So I am delighted to be here today, and I'd like to talk about a couple of things: about building resiliency in our oceans and our fishing communities; about building healthy and sustainable fisheries to support societal, economic, and ecological resilience; the steps we're taking to combat illegal fishing and seafood fraud and level the playing field for U.S. fishermen; and the role that aquaculture can play and needs to play in our collective future.

Let me start with a little bit of a discussion about NOAA as an agency, and our role in all of this. NOAA is America's environmental intelligence agency. We provide the timely, actionable, and reliable science-based information that citizens, communities, and businesses need to make smart decisions that can protect lives and livelihoods. NOAA's environmental intelligence provides us with situational awareness, with powerful insight and perspectives about the conditions in the environment around us. I see environmental intelligence in action every day - and so do 320 million Americans and partners around the globe - from our daily weather forecasts to seasonal outlooks on drought conditions or data and information to tell us about the health of our oceans and our coasts.

The cornerstone of our work at NOAA is prediction. And it is prediction that provides the most powerful dimension of all in environmental intelligence, and that is the dimension of foresight.

The ability to look ahead, to have advanced understanding of conditions that are coming our way, to think ahead, plan ahead, consider alternative courses of action.

NOAA's environmental intelligence comes in many, many forms. The offshore, coastal, and tropical forecasts and warnings you rely on for safety at sea; the tide and current tables that give you the daily high and low current speeds and directions; the digitized tide table that gives you 6-minute and hourly tide and water-level predictions; the satellite images that let us map ocean color, primary productivity, and sea surface temperature; the scientific research that helps us understand how changes to our oceans impact fish stocks; and the stock assessments that fisheries managers use to set catch limits and determine the health of fish stocks and fishery populations.

Demand for this kind of information continues to grow as communities and businesses around the country – and indeed around the world – look to become more resilient, both to natural disasters and to longer-term changes in the environment that they deal with. NOAA's products and services are used by decision makers to better understand these changes and help them prepare for the future. Our commitment and our mission is to help people, communities, businesses, and governments make smart decisions that directly impact the future of society, the viability of our economy, and the sustainability and resiliency of our environment.

We're working on three priorities at NOAA. One is to invest in observational infrastructure – from satellites, to buoys, to radars, to tide gauges – all of the instrumentation that lets us keep a pulse on the planet – that provides the data, the measurements, that are the foundation of our environmental intelligence. Observations are the essential ingredient needed to inform our building of resilient communities. NOAA's global observing systems underpin the environmental intelligence we provide.

We are focused on evolving the National Weather Service so as to build a weather ready nation. And this means taking those measurements – that pulse of the planet – and transforming them

into consistent national products and services, and enabling and encouraging change and innovation that will move the United States National Weather Service into the 21st century.

The third priority – and the one I'll emphasize the most today – is to provide the information and services that help communities become more resilient. Equipping our communities with information, products, services, technical assistance, and tools – decision support tools – that allow them to become more resilient. And when we say resilience at NOAA in this goal or in any other context we recognize and always hold in the forefront that this means societal, economic, and ecological dimensions of resilience. Those are always present; they must always be present in our thinking and planning. They are intertwined inextricably.

Our nation's fisheries and the aquaculture industry are central to NOAA's resilience priority, crucial as they are to both global food security and ocean sustainability. And this intertwining of the ecological, economic, and societal dimensions of resilience is vividly apparent in this arena. The Fisheries Economics [of the United States Report] statistics for 2013 illustrate part of that story. Landings for commercial fisheries in the United States totaled 9.9 billion pounds; that's up 2.5% from 2012. And they were valued at \$5.5 billion dollars, which is a 7.6% increase above 2012's figures. Louisiana alone landed 1.1 billion pounds of fish valued at \$402 million dollars. And in the Gulf [of Mexico] eleven million anglers made more than 71 million marine recreational fishing trips and landed 239 million pounds of fish.

There is a lot of good news in those numbers, for fishermen and fishing communities. And that's thanks to the responsible management practice that they've embraced, with our fishery management councils, aimed at being both more sustainable and more profitable. But there are plenty of rough spots as well. So let me talk a bit more about the status and challenges ahead to making our fishing and our aquaculture communities more resilient.

The 2007 reauthorization of the landmark Magnuson-Stevens Act – the pivotal underpinning and foundation of fisheries management in the United States – gave teeth to our science-based

process, by requiring the use of science-based annual catch limits, accompanied by accountability measures and fair enforcement for all United States managed fisheries. Through the public-private partnership of our regional fishery management council process, NOAA has worked with many of you to ensure that U.S. seafood is harvested responsibly and grown under a strong regime of monitoring, management, and enforcement.

And it's under this transparent, public, responsive, and enforced process that we have made enormous progress in ending overfishing and rebuilding our nation's fish stocks. Right here in the Gulf of Mexico, NOAA, working alongside fishermen, and our state and Gulf of Mexico Fishery Management Council partners, has made significant progress in ending overfishing. NOAA's Status of the Stocks report for 2013 underscores the progress. In 2013, seven stocks came off the overfishing list, and four stocks were confirmed to no longer be at an overfished biomass. Overall, the effectiveness of our science and management is evident—37 stocks rebuilt since 2000; no stocks added to the overfished list in 2014. Overfishing levels of effort and overfished stocks are both at all-time lows, with only 17 percent of stocks on the overfished list – that's down another two percent since 2012 – and just 26 stocks determined to be experiencing overfishing.

Managing fishing effort sustainably is one vital dimension of the challenge we face together. But other factors are involved, as we all know. Two big ones are the effects of climate change on both fish stocks and the ocean ecosystems they depend on, and habitat loss. NOAA's environmental intelligence is critical to helping communities tackle these challenges as well. And a third challenge, a third very large one, is the simple fact that the global abundance of human beings is rising, but the global abundance of wild fish stocks is not. It's been flat for a very long time.

So let's take a closer look at the numbers involved there: The world's population today is 7 billion. Twenty-five years from now, it will stand at nearly 9 billion – an increase of 28%. According to the United Nations Food and Agriculture Organization, and I quote here, "With

capture fisheries production stagnating, major increases in fish food production are forecast to come from aquaculture. Taking into account the population forecast, an additional 27 million tons of production will be needed to maintain the present level of per capita consumption in 2030.”

In many parts of the world aquaculture has already helped improve nutrition and food security. Global seafood consumption reached 143 million metric tons in 2009, which is an increase of more than 20 million tons in just 10 years. Today over half of that seafood comes from aquaculture, and in the United States the picture is similar. Half of the seafood we eat here comes from aquaculture, but most of it – as you all know – is imported.

Our own United States aquaculture industry was valued at \$1.3 billion in 2011. That compares to \$5.1 billion for the commercial catch that year. It's very clear that U.S. aquaculture is a job creator in coastal communities and throughout the seafood supply chain. And it's clear that it can, and it should, play a larger role in United States fisheries. Aquaculture is a bright spot and one that we need to continue to nurture, both for the food supply that it provides and for the fact that it provides year-round, living wage jobs centered in coastal and rural communities. Marine aquaculture operations support working waterfronts and the same infrastructure as capture fisheries, such as docks, boat yards, and processing plants. NOAA invests in U.S. aquaculture through world class research and programmatic support. We updated our National Policy several years ago, and that helped launch the National Shellfish Initiative which, in turn, spawned a hugely successful shellfish initiative in Washington State. Now other states are following their lead and mounting similar programs. And, last year, NOAA Fisheries released a proposed rule to implement the first regional fishery management plan for environmentally sound and economically sustainable aquaculture in the Gulf of Mexico. The Gulf Aquaculture Plan would allow up to 20 offshore aquaculture operations to be permitted in federal waters of the Gulf over a 10-year period.

The economic impact of the aquaculture industry extends well beyond benefits to the farming companies. Industries that supply aquaculture production include agriculture, hatcheries, feed manufacturers, equipment manufacturers, and veterinary services. And industries supplied by aquaculture – in turn – include processors, wholesalers, retailers, transportation, and food services.

But the US industry struggles to establish and maintain a foothold in part because of regulatory uncertainty and other challenges. And as a consequence of that, we export advanced technology, feed, equipment, and other investments to producers around the world. It's time we put a stop to that. Let's start using more of this U.S.-developed technology and expertise here to help pave the way for a more robust industry in the United States, and stop exporting jobs to other countries that are more aquaculture friendly. Aquaculture provides valuable resources to people here in the United States and globally, and it will continue to grow well into the future. Together, we need to develop a strategy to increase production in U.S. waters and increase public awareness of its importance to our sustainable seafood portfolio – the one we've worked so hard together to establish.

Protecting our country's reputation as a leader in sustainable fishing is at the heart of President Obama's efforts to combat illegal, unreported, and unregulated fishing and seafood fraud around the world. Despite the strong management and sustainability of U.S. fisheries, the assault on our global oceans by IUU fishing activities undermines our stewardship investments, and the profitability and reputation of law-abiding seafood industries worldwide. Global losses attributable to IUU fishing were estimated in one study to be between \$10 billion and \$23 billion dollars annually. This fishing undermines our efforts to sustainably manage fisheries. It puts law-abiding fishermen on an unlevel playing field, and it affects our economy adversely as well. The IUU problem is compounded by seafood fraud – mislabeling, short-weighting, misbranding, or falsifying product origins – and these can occur at any point along the supply chain.

And that is why President Obama last year established the task force that I was privileged to co-chair along with Under Secretary Cathy Novelli from the Department of State. We released our report late last year, as you know, and it contains 15 recommendations. These recommendations are aimed at combating IUU fishing and seafood fraud at the international level; at strengthening enforcement tools; creating and expanding partnerships with United States state and local governments, industry, and non-governmental organizations. They also aim to identify and eliminate seafood fraud and IUU seafood in the U.S. market, and to create a risk-based traceability program. Our task force recommendations also recognize the important role played by the President's trade agenda. The Trans-Pacific Partnership, for example, includes commitments that will help combat IUU fishing and level the playing field for law abiding fishermen globally. The public comment period for the draft recommendations has just closed, and I want to thank all of you here today who provided comment or took part in our conversations about this important issue as the task force did its work.

Long-term collaboration between industry, conservation and government is going to be very important. It's going to be the *sine qua non* – unless we do it, it doesn't work – as we continue to address the global challenges associated with sustainable fisheries and ensuring a sustainable, vibrant, healthy ocean. That's why, in addition, we are submitting today a Congressionally-mandated report identifying nations whose fishing vessels engaged in IUU fishing in 2013 or 2014. Colombia, Ecuador, Mexico, Nigeria, Nicaragua, and Portugal have been identified as having fishing vessels that engaged in IUU fishing in that time frame. NOAA Fisheries will work with our colleagues at the State Department to encourage these countries to take corrective actions to address their activities for which they were identified.

Two years ago, in the previous such report, 10 nations were identified. All of these 10 nations took appropriate corrective action to remedy the activities for which they were identified, and so they will receive a positive certification in this 2015 Biennial Report.

If a nation fails to take appropriate action to address the instances of illegal fishing or the absence of adequate mechanisms for addressing bycatch of protected living marine resources or shark conservation, the provisions that are described in the Report, then that nation's fishing vessels may be denied entry into United States ports, and the imports of certain fish or fish products from that country into the United States may also be prohibited.

So we've got a lot of challenges ahead of us, it's true. We live on a dynamic planet. Human society is a complicated thing. The interactions of those two pretty well assures that life will be full of challenges. We have increasing global populations, rising strains on natural resources, a growing number and a rising intensity of stressors on our natural environment. But amid all of that, although we cannot overrule Mother Nature, there are actions that we can take, and most importantly that we can take together, to build resilient communities and support sustainable fisheries. In order to increase resiliency, we're going to have to continue our investments in providing the critical environmental intelligence that communities have come to rely upon. The health and resilience of our oceans are key pillars of NOAA's overall resilience priority, central to the mission and the purpose for which the agency was founded. And healthy and sustainable fisheries, farmed or wild-caught, are central to the societal, economic, and ecological resilience that we aim to support and foster for our nation, and indeed, the world.

You've got several busy, productive days in front of you, identifying courses of action and specific initiatives that each of you can take, and that we can take together, to advance these not only worthy but vitally important goals. I thank you for the opportunity to join you this morning and salute you in advance for what you will be doing here over the next couple days, and I look forward to hearing the outcomes of the conference. Thank you very much.

