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**HEARING ON H.R. 2010, THE NATIONAL OFFSHORE AQUACULTURE ACT
OF 2007**

**BEFORE THE
COMMITTEE ON NATURAL RESOURCES
FISHERIES, WILDLIFE AND OCEANS SUBCOMMITTEE
UNITED STATES HOUSE OF REPRESENTATIVES**

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Chairwoman Bordallo and members of the Subcommittee, good morning and thank you for the invitation to testify on behalf of the Administration on H.R. 2010, the *National Offshore Aquaculture Act of 2007*. Before I begin my testimony I would like to thank you for your leadership and for the support you have given the National Oceanic and Atmospheric Administration (NOAA). We appreciate your continued support for our programs as we work to improve our products and services for the American people.

Today I will discuss the opportunities and challenges posed by offshore aquaculture and the Federal Government's role in setting the stage for more robust commercial production of cultured seafood. This is an important issue for the Administration. On behalf of the Administration, I would like to thank the Chairwoman and Congressman Rahall, the chairman of the Natural Resources Committee for co-sponsoring H.R. 2010. We want to work with you to enact national offshore aquaculture legislation in the 110th Congress.

I also appreciate that Chairwoman Bordallo took time out from her busy schedule to address the National Marine Aquaculture Summit held in Washington, D.C. just a few weeks ago. This Summit was open to the public and brought together representatives from industry, government, academia, and non-governmental organizations to not only discuss the opportunities and challenges for marine aquaculture in the United States, but to focus on concrete actions that will help the industry to advance in an environmentally, economically, and socially responsible manner.

Summit participants agreed that there is a role for offshore aquaculture in our Nation's seafood production future, and that we need national offshore aquaculture legislation to provide regulatory certainty for those considering investing in aquaculture development in federal waters of the Exclusive Economic Zone. But we also heard a cautionary note from aquaculture businesses and potential investors that the legislation should not be so restrictive that it drives investment overseas. For example, short permit duration (less than 20 years) may deter investment by not affording a sufficient term to ensure financial returns.

I believe the Administration's bill strikes the proper balance between aquaculture development and environmental protection and that it will allow for timely permit decisions and adaptive management approaches in the regulation of this new ocean industry. It also includes provisions for research and development to support all types of marine aquaculture, not just offshore technologies.

The Need for National Offshore Aquaculture Legislation

Before I get into the specifics of the bill, let me take just a minute to put the need for national legislation in context.

Why do we need aquaculture? Study after study confirms the health benefits of eating seafood and consumers in America and abroad have gotten the message. Meanwhile, wild catch levels worldwide have tended to remain relatively stable over the last 20 years after decades of steady increases. Because wild harvests can no longer keep up with growing demand, increases in the seafood supply will come from aquaculture. We've done a good job managing America's marine resources, but even the best managed wild fisheries can't meet the growing demand for seafood. Aquaculture must fill the gap – the only question is ... whose aquaculture?

Worldwide, aquaculture is a \$70-billion-per-year enterprise, and almost half of the seafood consumed worldwide is farmed. However, U.S. aquaculture accounts for just 1.5 percent of the total global aquaculture production. Experts say we'll need another 40 million tons of seafood a year by 2030 just to meet current consumption rates. In this large and growing market, the United States remains a net importer of seafood—more than 80 percent of the seafood consumed in the United States is imported from other countries, of which 40 percent is farmed. Offshore aquaculture therefore presents tremendous opportunities for the United States.

Enactment of H.R. 2010 will allow the United States to become more self-sufficient in the production of healthy seafood by growing more of it here at home. By laying the foundation for offshore U.S. aquaculture, the bill will help create more jobs in coastal communities and help our nation reduce its \$8 billion seafood trade deficit. The United States must develop aquaculture as a complement to commercial fishing or it will be forced to import increasing amounts of farm-raised seafood from other countries.

Food safety is another issue. U.S. consumers want to know that their seafood was produced in a safe and sustainable way, and many choose to purchase local products when given a choice. Producing seafood locally allows us to test and develop new technologies, equipment, and alternative feeds. This makes us more competitive in the global market and allows us to lead by example—our sustainable production will encourage our trading partners to adopt best management practices, thereby improving the quality of all seafood reaching U.S. consumers.

An Important Opportunity for U.S. Coastal Communities

For some time, many coastal communities have suffered from overcapitalization and limited harvests in the commercial fishing industry. With a more robust domestic aquaculture industry, boats used for fishing could also service aquaculture operations, and seafood industry infrastructure could process and distribute both cultured and wild harvest fishery products. Domestic aquaculture could provide a steady, year-round source of product and, in some

locations, it could prevent processing facilities from closing down altogether due to insufficient harvest from wild fisheries.

Preliminary production estimates indicate that domestic aquaculture production of all species (both marine and freshwater) could increase from about 500,000 tons today to over 1 million tons per year by 2025. The additional production could include 760,000 tons of seafood from finfish aquaculture, 47,000 tons from crustacean production, and 245,000 tons from mollusk production.

In addition to creating new job opportunities at hatcheries and grow-out facilities, environmentally sound expansion of U.S. aquaculture will have a ripple effect on other aspects of the economy since the aquaculture industry relies on other producers and manufacturers for goods and services that support species cultivation. Those benefiting from the expansion of U.S. aquaculture include soybean and grain producers; equipment and technology providers; cold storage, transport, marketing, and food service providers; and veterinarians. In turn, these activities will strengthen the coastal communities in which the businesses operate, and provide the health benefits to seafood consumers.

Successes to date of aquaculture-related businesses demonstrate direct economic benefits from an increase in domestic aquaculture production, including offshore aquaculture. More and more communities are recognizing that environmentally sound aquaculture can present development opportunities for areas hit hard by job losses, natural disasters, and other challenges. As interest grows, these communities are beginning to integrate aquaculture into their economies. For example, in the Hawaiian Islands, the U.S. Department of Agriculture estimates the number of aquaculture enterprises has grown to over 100 farms, valued at \$28 million, supporting approximately 630 jobs in 2004. NOAA research and technology on the culture of oysters, mussels, clams, striped bass, shrimp, abalone, moi, cobia, and salmon have helped build a commercial marine aquaculture industry worth more than \$150 million a year. Stock enhancement of commercial and recreational fisheries adds to the economic benefits accruing from U.S. investment in marine aquaculture.

Provisions of the National Offshore Aquaculture Act of 2007

The National Aquaculture Act of 1980 declared aquaculture development to be in the national interest, and required federal agencies to address barriers to such development. Both the Department of Commerce (in 1999) and NOAA (in 1998) have endorsed aquaculture policies in support of the National Aquaculture Act, but additional statutory authority is needed to establish a regulatory framework for aquaculture in the U.S. Exclusive Economic Zone.

The *National Offshore Aquaculture Act of 2007* supports commitments made in the U.S. Ocean Action Plan and responds to the recommendations of the U.S. Commission on Ocean Policy to help promote the development of environmentally sound offshore aquaculture. Specifically, H.R. 2010:

- Authorizes the Secretary of Commerce to issue offshore aquaculture permits.

- Requires the Secretary of Commerce to work with appropriate federal agencies, coastal States, and regional fishery management councils to establish environmental requirements for offshore aquaculture before permits are issued.
- Requires the Secretary of Commerce to work with other federal agencies to develop and implement a coordinated permitting process for offshore aquaculture.
- Exempts permitted offshore aquaculture from fishing regulations that restrict size, season, and harvest methods.
- Authorizes a research and development program for all types of marine aquaculture.
- Authorizes funding to carry out the Act and provide for enforcement of the Act.

The Act will be implemented through a transparent public process. Relevant federal agencies and key stakeholders, including regional fishery management councils, coastal states, and the public will be provided the opportunity to contribute to the development of environmental analyses, rulemaking, and permit decisions, including details on environmental requirements and siting criteria. We will make available information on proposed projects and potential environmental impacts.

The Act will not duplicate, supersede, or substitute for existing applicable statutes and regulations such as Environmental Protection Agency authority over effluents and pesticides or Food and Drug Administration authority over use of drugs. Similarly, NOAA is required to comply with statutory requirements under other laws such as the National Environmental Policy Act, the Marine Mammal Protection Act, the National Marine Sanctuaries Act, the Endangered Species Act, and the Magnuson-Stevens Fishery Conservation and Management Act. Specific provisions are included to clarify how offshore aquaculture permitting will be coordinated with Department of the Interior authority over facilities and areas permitted under the Outer Continental Shelf Lands Act.

Environmental Requirements for Offshore Aquaculture Development

Among its missions and stewardship responsibilities, NOAA protects and preserves the Nation's living marine resources and their habitats through scientific research, fisheries management, law enforcement, and habitat conservation. NOAA is a leading voice for the economic benefits that can be derived from sustainable use and conservation of living marine resources. In seeking to move legislation forward that will create a regulatory framework for offshore aquaculture, our goal is to work with Congress and with our stakeholders to create an opportunity for aquaculture in U.S. federal waters so we can ensure that the industry develops in a predictable, environmentally compatible, and sustainable manner that acknowledges the rights of other users of marine resources and protects human health and safety.

Aquaculture, like all human activities and all types of food production, has environmental impacts. The *National Offshore Aquaculture Act of 2007* directs the Secretary of Commerce to work with other federal agencies to minimize negative environmental impacts and ensure that aquaculture does not adversely affect wild stocks or the marine environment.

The Act incorporates many of the recommendations of outside groups, including the January 2007 report by the Woods Hole Marine Aquaculture Task Force, the American Fisheries

Society-sponsored article in the December 2006 issue of *Fisheries* magazine, and the aquaculture policy adopted by the Western Pacific Regional Fishery Management Council in March 2007.

Key environmental provisions in the Act include:

- Environmental concerns will be addressed through rulemaking and establishment of mandatory measures to minimize negative environmental impacts before any offshore aquaculture permits are issued.
- Environmental requirements will address risks to and impacts on marine species and ecosystems, including natural fish stocks and fisheries, and provide safeguards to conserve genetic resources, prevent or minimize transmission of disease or parasites, and prevent escape. Use of any species other than native species will not be permitted unless a scientific risk analysis shows that the risk of harm from escape or predation is negligible or can be effectively mitigated.
- Operations will be monitored and permit terms and conditions enforced.
- The Secretary of Commerce could modify, suspend, or revoke permits, or take emergency action in response to unanticipated impacts.
- Permit holders will be required to post a bond or other form of financial guarantee to cover unpaid fees, the cost of removing a facility at the expiration or termination of the permit, and other financial risks identified by the Secretary of Commerce.
- The Act supports research to address environmental issues.
- Offshore aquaculture development will comply with environmental requirements, all permit terms and conditions, and other requirements under existing environmental laws and regulations.
- Offshore aquaculture will not be permitted off a State where it is not wanted by that State.

NOAA and others are working to answer many of the environmental questions related to marine aquaculture. NOAA has strong stewardship responsibilities and will implement this law in a way that protects marine resources.

Research and Development

To help accomplish these objectives, the Secretary would be authorized under the *National Offshore Aquaculture Act of 2007* to establish a research and development program, which would further marine aquaculture technologies that are compatible with marine ecosystems, in consultation with other federal agencies. The Secretary of Commerce would be authorized to enter research partnerships with permit holders. The Secretary would also be required to collaborate with the Secretary of Agriculture to conduct research to reduce the use of wild fish in aquaculture feeds.

Feed – which is formulated using fishmeal and fish oil – is a major component of the cost of production in an aquaculture operation. Typically, feed accounts for over 60 percent of operating costs, so the industry has strong economic incentives to develop suitable alternative ingredients for feed formulas and become more efficient in converting feed into product. As the price of alternative ingredients drops below that of fishmeal, those ingredients will be substituted for fishmeal and fish oil.

Not only will market incentives lead to reductions in the use of fish meal in feed, NOAA has the responsibility to manage the harvest of forage species under our strong fisheries management laws. Harvest of forage fish is a fisheries management issue, not an aquaculture issue.

Further development of plant-based feeds also represents a huge opportunity for American agriculture, as the United States produces an abundance of high-quality proteins and fats that could be used in fish production. Other meals such as canola, lupine, wheat gluten, corn gluten, algae, yeasts, and various plant protein concentrates – many of them grown in the United States – have already been shown to be palatable and digestible for fish. Feed experts believe meals made from proteins and fats will be ideal for fish production, and increased production is likely based on their promise. But it will also be necessary to test the effect of these substitutions on the human health benefits of consuming seafood, in order to preserve the nutritional value consumers get from eating farm-raised fish.

It is important to note that the recently released National Science and Technology Council report *Charting the Course for Ocean Science in the Next Decade in the United States: An Ocean Research Priorities Plan and Implementation Strategy* highlights the need to carry out research to support efforts to sustain healthy marine ecosystems and to further understanding of how the oceans play a role in human health; thus research to support environmentally sound aquacultural production and to understand the benefits and impacts to humans of consuming farm raised seafood is completely compatible with the Administration's stated national priorities in ocean science.

Integration with Commercial and Recreational Marine Fisheries

Although we are convinced of the benefits that will result from H.R. 2010, we must also consider its potential impacts, including the impact on our Nation's commercial and recreational fisheries. Some have expressed concern that offshore aquaculture will hurt wild harvest in the United States. But if aquaculture is managed correctly, wild harvest should not be affected. We recognize the expertise in the Fisheries Management Councils and will consult accordingly with the Councils on the interaction of marine aquaculture with wild fisheries.

Aquaculture products, whether imported or domestic, compete with wild-caught fisheries. And this competition will exist with or without domestic aquaculture. The marketplace is global and demand for seafood products is growing. The United States cannot meet this demand through wild-caught fishing activities alone. Seafood imports and other forms of protein, such as beef and chicken, already provide significant competition. The challenge is to integrate aquaculture into domestic seafood production so that U.S. boat owners, fishermen, processors, and marketing companies can benefit directly.

Recreational and commercial fishing will also benefit from hatcheries and stock enhancement techniques developed for offshore aquaculture. Currently, U.S. hatcheries grow finfish and shellfish to enhance recreational and commercial fishing stocks with great success. For example, recreational fishermen in Southern California and at the Hubbs–SeaWorld Research Institute are cooperating on a white seabass restocking program. This successful program helped rebuild and

sustain the valuable recreational fishery for seabass in California. Rehabilitation work on oyster beds in the Chesapeake Bay, Louisiana, and elsewhere provide additional examples.

The United States needs a strong commercial fishing industry and a robust aquaculture industry to meet projected seafood demand and to enhance domestic stocks. While we look to aquaculture to help meet demand, NOAA will continue to sustain wild-capture fisheries with management programs, stock enhancement, and marketing to channel high-valued wild-capture products to premium market outlets. But we also need to supply that vast middle market that demands a year-round supply of affordable, healthy, and safe seafood. We can do this through domestic aquaculture.

Conclusion

Chairwoman Bordallo and members of the Subcommittee, the Administration looks forward to working with you, the public, the fishing and aquaculture industries, and the environmental community to craft a regulatory framework for offshore aquaculture. We are confident that offshore aquaculture facilities could operate without compromising wild stocks, environmental quality, or people's livelihoods. In the long run, U.S. fishing communities will be harmed more by foreign competition than by a robust domestic aquaculture industry. Our challenge is to find ways for the domestic fishing industry to benefit from the use of aquaculture technologies to produce more seafood – as fishermen are already doing in some parts of the United States and in other countries.

Offshore aquaculture has the potential to contribute greatly to our seafood supply and to the Nation's economy, but this potential will be realized only if we can provide the regulatory certainty for businesses to make sound investment decisions. H.R. 2010 will give NOAA the authority it needs to provide that regulatory certainty. I appreciate the opportunity to present the *National Offshore Aquaculture Act of 2007* to you today, and I will be happy to answer any questions.