

OFFSHORE AQUACULTURE AND THE MAGNUSON- STEVENS ACT

Webinar
June 28, 2013

SEMINAR SUMMARY

Aquaculture is an increasingly important component of the world food supply; at the same time, it may cause a variety of environmental impacts, such as discharge of excess feed and wastes, fish escapes, and impacts on local habitats and native species. Because the United States has not enacted laws specifically addressing aquaculture development in federal ocean waters, the government is using existing laws, including the Magnuson-Stevens Fishery Conservation and Management Act (MSA), to regulate offshore aquaculture.

The National Oceanic and Atmospheric Administration (NOAA) implements the MSA and is applying it to aquaculture in federal ocean waters. NOAA issued a national Marine Aquaculture Policy in 2011 and a special permit for a small-scale, short-term offshore aquaculture project in waters off Hawaii, and is now moving forward with rulemaking to implement a Fishery Management Plan for offshore marine aquaculture in the Gulf of Mexico. NOAA Office of Aquaculture leadership has indicated that it will use the Gulf FMP as a national model. However, not all stakeholders agree that the MSA authorizes NOAA to manage offshore aquaculture or that the statute is a good fit for this purpose.

This webinar brought together experts from NOAA, nongovernmental organizations, and the aquaculture industry to explore questions related to the application of the MSA to aquaculture in federal waters. Visit the event website for access to speaker materials, background information, and an audio recording: http://www.eli.org/Seminars/past_event.cfm?eventid=799.

MODERATOR:

- **Read Porter**, Director, Invasive Species Program, Environmental Law Institute

PANELISTS:

- **Constance Sathre**, NOAA Office of the General Counsel
- **Neil Sims**, Kampachi Farms
- **Joe Hendrix**, Seafish Mariculture
- **Elizabeth Fetherston**, Ocean Conservancy

Ms. Sathre began her presentation by describing the importance of aquaculture in light of globally-increasing seafood demand and diminishing wild fish stocks. She explained that the consumption of farmed fish is expected to exceed caught fish by 2015, and that already approximately half of U.S. seafood consumption is farm-raised (mostly overseas). Ms. Sathre also stressed that there is a gray area between farmed and wild-caught fish, as some species are born into hatcheries and later released, while others begin their lives in the ocean and are then held in pens before being brought to market.

Next, Ms. Sathre discussed the agencies involved in regulating offshore aquaculture, which include NOAA, the Environmental Protection Agency (EPA), Army Corps of Engineers (ACOE), and the Department of Agriculture (USDA). The National Aquaculture Act of 1980 set forth a national policy to encourage aquaculture development and interagency coordination. In addition to federal oversight, coastal states have aquaculture authority in state waters, generally within 3 miles of the coastline. Almost all current aquaculture operations are governed by state law.

Ms. Sathre then provided an overview of the MSA and described how the MSA provides NOAA with its primary authority to regulate aquaculture. The MSA established eight regional Fishery Management Councils charged with developing Fishery Management Plans (FMPs) through a collaborative stakeholder process. Since 1993, NOAA has held that it can regulate the placement and operation of aquaculture facilities in federal waters, i.e. the Exclusive Economic Zone (EEZ), as identified in the MSA. First, the MSA's assertion of sovereign rights and exclusive fishery management authority over all fish in the EEZ provides textual support for NOAA's authority. Second, the MSA broadly defines fishing to include catching, taking, or harvesting of fish, or any operation in support of or in preparation for these activities. Ms. Sathre emphasized that the issue ultimately comes down to the fact that if an activity falls within the definition of fishing, the Secretary of Commerce can regulate it.

Continuing her discussion of aquaculture regulation in the EEZ, Ms. Sathre described several examples, including the federal permitting program for aquacultured live rock in the South Atlantic and Gulf of Mexico and the development of an FMP for comprehensive aquaculture permitting in the Gulf of Mexico. The Gulf FMP was subject to a court challenge but the case was determined to be premature since NOAA regulations were not yet in place. In Hawaii, Kona Blue Water Farms requested a permit to stock, culture, and harvest fish in a cage towed by a vessel. The species involved were regulated under an FMP developed by the Western Pacific Fishery Management Council, but the gear was not preauthorized. NOAA issued a permit to allow use of the gear, and the permit was challenged. The permit was upheld in district court but is on appeal to the 9th Circuit and awaiting oral argument.

Ms. Sathre closed by emphasizing NOAA's commitment to hearing from the public. She noted that current aquaculture policies and guidance for aquaculture in federal waters can be found in NOAA's 2011 [Marine Aquaculture Policy](#). Some debate exists about future regulation yet Congress has not passed any of the bills specifically introduced for offshore aquaculture. She said NOAA is open to allowing aquaculture in the EEZ under existing regulatory authorities but also is open to options that will protect the environment while allowing development of this industry.

Following Ms. Sathre's presentation, Mr. Sims offered his views on why the MSA should be used to regulate offshore aquaculture. He first rebutted arguments against using the MSA. First, aquaculture has been presented as harmful to the ocean, yet no significant impacts have been empirically described. Second, while some argue that aquaculture is not within the MSA's scope, Mr. Sims cited precedents where policymakers have used existing legislative tools to address novel issues, including by using the Clean Air Act to regulate carbon emissions and using the Endangered Species Act to protect entire ecosystems.

Mr. Sims went on to highlight the increasing demand for seafood. In addition to importation in the United States, global demand is growing along with population size and affluence. Seafood demand cannot be met from wild stock fisheries alone, and will require the use of aquaculture production.

Next, Mr. Sims discussed how advances in technology and management can address the risks associated with aquaculture. New mesh materials have the ability to reduce or eliminate the risk of escapes or entanglement. Concerns over water quality can be abated as new modeling systems and monitoring data become available. Likewise, concerns about impacts on wild fish health can be alleviated by adaptive management strategies to minimize opportunities for parasite or disease transfer. With regard to the issue of the efficiency of feeding fish to fish, the use of products like soy or protein concentrates can reduce the “fish in, fish out” (FIFO) ratio and thus reduce aquaculture’s reliance on forage fisheries for food. The potential for conflict between aquaculture operations and other marine industries can be alleviated by marine spatial planning. Concerns about the use of exotic and mutated species are real, but this practice can be regulated as in the Gulf of Mexico FMP. Genetically modified organisms (GMOs) could be problematic, but Mr. Sims is not aware of any operations even considering the use of GMOs. Though ocean drilling and dredging can be harmful, the installation of offshore aquaculture facilities involves a one-time, minimal intrusion on the seafloor. Human health concerns like PCBs and antibiotics can be reduced by controlling the input or exposure of fish to such compounds. As for unexpected environmental harms, Mr. Sims noted the importance of risk management and prevention efforts.

Mr. Sims then suggested that applying the MSA could actually be beneficial. Locally, aquaculture farms could act as wild stock refuges or fish aggregation devices, resulting in greater fish biomass and diversity beyond the immediate farm areas. Globally, there are opportunities for marine agronomy and ocean afforestation, which involve the use of microalgae for foods, feed, and fuel, ocean acidification, and sea ranching. That industry is growing in countries like Japan, Korea, and China. Aquaculture can also absorb excess nutrients in eutrophic waters (such as the Gulf of Mexico dead zone) and could be employed to mitigate ocean acidification. Finally, if health professionals recommend moving toward seafood and away from other protein sources like beef, aquaculture can help meet protein demands in an environmentally sustainable way.

In conclusion, Mr. Sims urged the audience to reconsider negative stereotypes associated with aquaculture. He indicated that trusting the science and using the MSA in conjunction with available technologies and data will allow the full benefits of aquaculture activities to be recognized. Finally, Mr. Sims asserted that opposition to offshore aquaculture is dangerous to ocean health.

After Mr. Sims, Mr. Joe Hendrix focused on the Gulf of Mexico Fishery Management Council’s process for developing the Gulf FMP. He began by noting the structure of the MSA to provide for management appropriate to each region of the country.

When the Gulf Council began crafting the FMP, it looked to New England’s past practice—Amendment 9 to the Northeast Multispecies FMP, completed in 1998. Amendment 9 created a framework adjustment process for reviewing and approving aquaculture project proposals in the EEZ that would otherwise require a full FMP amendment. NOAA’s interpretation of the Amendment 9 FMP was very similar to its ruling on the Gulf FMP; both Councils were allowed to develop aquaculture management plans.

Mr. Hendrix explained that after receiving an opinion from NOAA’s Office of General Counsel, the Gulf Council began developing the FMP in 2003. The process to create and implement the FMP has been underway for over 10 years. Mr. Hendrix stated that the Gulf Council recognized early on that the FMP is needed to achieve optimal yield from wild fisheries while maintaining the fishing economy in the Gulf of Mexico. The MSA directs the councils to manage for optimal yield, which aquaculture could help accomplish. Since new fishery regulations have reduced catch in many fisheries, Mr. Hendrix said that offshore aquaculture can supplant this loss and provide jobs that have been displaced. Mr. Hendrix

noted that aquaculture production can be significant and can operate simultaneously with other Gulf activities and groups.

The Gulf Council purposely recognized the importance of siting aquaculture operations offshore and described the site location process in the FMP. Mr. Hendrix agreed with Mr. Sims's summary of environmental impacts, i.e. that discharges from aquaculture are insignificant and can even be assets offshore, where some nutrients may be deficient. Existing operations demonstrate great potential for aquaculture.

Mr. Hendrix closed his remarks by noting that NOAA Fisheries has a set of [Frequently Asked Questions](#) (FAQs) about the Gulf FMP on its website. He identified a need to start permitting to replace the large number of imported fish and to create work for Americans. In his view, the EPA, ACOE, and NOAA can ensure that offshore aquaculture will be environmentally sustainable.

Lastly, Ms. Fetherston presented the view of Ocean Conservancy. She began her presentation by observing that North America is not a key aquaculture producer and marine fish are not the main species farmed through aquaculture. She went on to state that there are real and unavoidable consequences involved with ocean activities, including offshore aquaculture, and that these consequences should not be swept under the rug in a rush to permit offshore aquaculture operations.

Ms. Fetherston noted that Ocean Conservancy is interested in getting aquaculture right from the start and believes there should be an aquaculture-specific statutory framework. She advocated for a national approach that is orderly, protects public interests, and poses minimal risks to fisheries, marine wildlife, and the environment. Moreover, given the struggles after the *Deepwater Horizon* oil spill in the Gulf of Mexico, liability provisions are also an important element.

Ms. Fetherston noted that NOAA relies on broad definitions of fishing and harvesting to allow the MSA to cover aquaculture. The MSA contains provisions designed for capture fisheries that are incongruous when applied to open ocean aquaculture. These requirements include developing criteria for determining what is overfished, preventing overfishing, ensuring fair and equitable allocation across states and entities, and minimizing bycatch.

Ms. Fetherston called for an environmentally responsible aquaculture plan similar to the California state bill on this issue. The California measure includes a requirement for environmental impact statements (EIS), prohibited activities in some areas, assessment prior to permitting, a prohibition of non-native and GMO species, prevention of waste discharge to the maximum extent possible, animal-source feed, an option to terminate the lease if upon a determination of damage to the marine environment, public hearings and comments, efforts to avoid conflicts with fishing and other activities, citizen suit provisions, applicant liability for damages, and permits with a maximum 10 year limit with 5 year renewals.

Ultimately, she was encouraged to hear that industry is responding to environmental concerns as explained by Mr. Sims. Further, Ms. Fetherston said that aquaculture does not have to be a danger to ocean health. An opportunity exists to get aquaculture right from the start and to develop legislation more tailored to the needs of aquaculture than is the MSA.

QUESTIONS AND ANSWERS

If soy is used in lieu of wild fish protein, does it create other problems from a GMO or lifecycle analysis perspective? If it is a problem, is there a way the MSA can adapt or be used to address this?

Mr. Sims said using a 1:1 fish ratio is sustainable but not scalable and so the focus has been on finding alternative proteins and oils. He is unaware of negative environmental or human health effects from using soy or protein to feed fish. Mr. Sims considers it immoral to raise these concerns in an effort to scare people away from seafood. Non-GMO soy results have been encouraging and soybean meal is cheap and readily available in the United States. He observed that there would be even more of an incentive if actual organic certification existed, but those efforts were opposed by aquaculture opponents in the past.

Ms. Fetherston commented that scientists are increasingly concerned with the production of soy given the dead zone in the Gulf of Mexico. Moreover, downstream impacts matter.

Mr. Hendrix thought Ms. Fetherston's concerns were better categorized as soy farming issues than fishing issues. He explained that economics will dictate a move away from fish feed.

Ms. Sathre added that fishmeal products produced from fish harvested in the United States are subject to federal or state management regimes and are sustainably produced.

Does the absence of U.S. aquaculture legislation act as a deterrent for investing?

Ms. Sathre explained that people choose to invest for a number of reasons and regulatory uncertainty could be a factor at this point. NOAA is working to achieve more certainty.

Mr. Sims contended that the regulatory roadblocks have been massive disincentives. Both U.S. capital and technology have gone overseas as a result. Examples include Snapper Farm moving their operations from Puerto Rico to Panama, his company's expansion plans in Mexico and the Middle East, and many instances where Mexico is chosen instead of the United States.

What is the status of the Gulf of Mexico regulatory process?

Mr. Porter indicated that it is in pre-rulemaking status and asked Ms. Sathre to give an update on NOAA's thinking.

Ms. Sathre replied that the NOAA Fisheries Southeast region is working on a proposed rule. She is unsure when it will be published but significant work is being done. Once published in the Federal Register, it will be available for public comment.

A provision of the MSA says the Commerce Secretary can disapprove FMPs only if they are inconsistent with applicable law. What does the Secretary look for within a FMP given that none of the 10 standards deal with aquaculture?

Ms. Sathre clarified that a plan must be consistent with all applicable law, meaning not only the MSA but also the National Environmental Policy Act (NEPA), the Endangered Species Act, and the Marine Mammal Protection Act. Every FMP is different since each involves different species, areas of the

country, management provisions, and other considerations. Accordingly, every FMP approaches the National Standards of the MSA differently. NOAA provides guidelines for interpreting the MSA national standards and so they can be applied to particular contexts. NOAA reviews the FMP to ensure it is consistent with all applicable laws.

Since environmental concerns exist, should pre-permitted sites be in FMPs instead of allowing individual permits?

Mr. Hendrix responded that private investors and entrepreneurs do not want to be told where to conduct business by a regulator. Industry would prefer to do its own site selection and review.

Ms. Sathre viewed either option as legally feasible. An FMP could have established areas where aquaculture would be suitable and that could fit within marine spatial planning. Alternatively, industry could choose a site and then the evaluation could be done by NOAA. While either is possible, the Gulf FMP chose the latter.

Mr. Hendrix emphasized that there was a significant amount of discussion about site selection and the importance of staying away from sensitive areas when the Gulf FMP was designed.

Mr. Sims stated that the process will work much better if the government indicates where sensitive areas or competing interests exist so aquaculture does not move forward in unsuitable locations. But, after identifying sensitive areas to be avoided, entrepreneurs should have the choice. Because of variables, from different species to different sea conditions, a one-size fits all allotment from the government is not workable.

Legislation to replace the MSA has not been reintroduced to this Congress. If Congress is not able to pass legislation, what should the path be going forward?

Ms. Fetherston recognized that the probability of congressional action is low. At the same time, she does not support the fragmented approach that could come from using the MSA. A national framework is needed to achieve the important goals of sustainable fish and aquaculture. If NOAA Fishery Management Councils go forward using the MSA, the adoption of standards similar to California's state bill as a generic platform would be favorable. California's plan is very instructive so it could serve as a guide.

Mr. Sims noted that since the California bill's passing in 2006, no one has even applied for an aquaculture permit in California. He perceived the EIS prerequisite as part of the problem. Moreover, the inclusion of civilian suits is troublesome because of anti-aquaculture activists. Industry sees California as very intimidating. If permitted there, there is a substantial likelihood of a lawsuit so entrepreneurs are choosing to go to Mexico. He also identified the significant differences between Councils and says the MSA embraces these differences. Mr. Sims said it makes sense to run aquaculture through the Councils even if new legislation is proposed.

Ms. Fetherston agreed that regions are different and that different specifics will be necessary. She does not think a national approach has to be prescriptive. She also said that an EIS is not overly burdensome and may be triggered by NEPA in some instances. The reason EISs are valuable is because they allow information to be gathered before action is taken and they inform the standards that will be set. A balance needs to be struck.

Mr. Sims commented that EISs are too burdensome and perhaps Environmental Assessments (EAs) are a better route.

Mr. Hendrix disagreed with describing regional FMPs as piecemeal. The original concept for developing the Gulf FMP was that it could be a template for other councils, but there would need to be some tailoring for regional specifics. This is consistent with how the MSA was designed. There are differences in ecology, needs, and social values.

Ms. Sathre pointed out that NOAA has reevaluated its marine aquaculture policy in recent years and that it now includes an appendix with guidance for FMPs in federal waters.

Ms. Fetherston stated that these responses do not eliminate Ocean Conservancy's concerns and contends that the Gulf FMP is not an appropriate model. Again, the California state bill is better. The Gulf only meets six of the 17 California criteria and partially meets four more. She remarked that the Gulf FMP falls short of meeting the requisite transparency and environmental standards.

Where do we go from here? What is the next move? Where do you expect us to be in 5 years?

Ms. Sathre said that NOAA is moving forward with implementing regulations for the Gulf FMP. NOAA is open to discussing options that enable aquaculture to continue to develop in the EEZ while protecting the environment.

Mr. Sims mentioned ELI's white paper on [Offshore Aquaculture under the MSA](#). Despite aforementioned concerns, he stated that the MSA is NOAA's best tool on hand and he believes adequate regulation can come from using the Gulf FMP as a template moving forward. In five years' time, he hopes that there will be broad national recognition of aquaculture as an environmentally friendly industry with great products and employment opportunities. He would like to see U.S. aquaculture become a model for the rest of the world. While it might be optimistic, Mr. Sims would like U.S. policy to succeed.

Mr. Porter noted that ELI's white paper is based on the assumption that the MSA will be used to regulate offshore aquaculture.

Mr. Hendrix said the Gulf FMP needs to go forward. He would like to see the process started, applications accepted, operations reviewed, and actions taken in the Gulf of Mexico. This approach will allow policymakers and industry to identify problems but also create jobs and products.

Ms. Fetherston conceded that NOAA will likely use the Gulf FMP. Supposing it survives the litigation gamut, she desires a commitment to the public trust and a continued conversation about environmental concerns. Standards can be achieved if there is an effort for both. While she does not see aquaculture legislation within the near future, she looks forward to closing the gap between opinions.

THIS SEMINAR WAS MADE POSSIBLE BY GENEROUS SUPPORT FROM THE NAOMI AND NEHEMIAH COHEN FOUNDATION, THE CURTIS AND EDITH MUNSON FOUNDATION, AND AN ANONYMOUS DONOR.