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# Out of sight, not out of mind

Responsible Seafood Advocate logo

4 December 2015 James Wright

## Offshore aquaculture entrepreneur forges ahead despite inertia among investors, regulators


Donna Lanzetta, founder of Manna Fish Farms, stands on an automatic feeder buoy developed by the University of New Hampshire. Lanzetta hopes to deploy the buoy for a striped bass farming operation 16.2 miles off the coast of Long Island, N.Y.

Looking out into the Atlantic Ocean from the shore of Long Island, N.Y., Donna Lanzetta sees a bright future in those dark waters. In two years' time, hopefully, her offshore striped bass farm will be fully operational — just much further out to sea than she originally anticipated.

Skeptics say finfish aquaculture deep in federal waters, as Lanzetta is planning to do, doesn't stand much of a chance. It's too far from shore, they say, making operational logistics expensive. Too many regulatory hurdles to clear, with local, state and federal agencies all at the table. Too risky, due to rougher ocean conditions and, quite frankly, the limits of conventional thinking about aquaculture in general.

What Lanzetta thinks is that Manna Fish Farm will prove the doubters wrong. The lifelong Long Island resident knows the labyrinthine permitting process for aquaculture can and will cause delays — she would know, as her venture is already five years, countless appointments with regulators and $100,000 in the making. In November Lanzetta had an important meeting with the U.S. Army Corps of Engineers, one of the many local, state and federal agencies overseeing the project. That meeting put her on track to secure the needed permits to ultimately put fish in the water, pending the completion of pre-site studies and other related paperwork.

Oh, the paperwork: The U.S. Coast Guard, the National Oceanic and Atmospheric Administration (NOAA) and New York's fisheries management and environmental conservation departments are all involved, with some overlapping jurisdiction, all of which is being hammered out bit by bit. Lanzetta feels all associated are hopeful for the integrated multitrophic farm's success (Manna plans to grow scallops, kelp and mussels as well). But to satisfy

the concerns of all agencies and other interests, the operating site for Manna had to be moved from three miles offshore to six — and then again to 16.2 miles from the coastline of Hampton Bays, N.Y.

“Based on recommendations from our scientific advisors, we moved out. Way out,” Lanzetta said. “It’s more difficult, more of a challenge. But the bottom line is we want to do what is right for the ocean, with no impact on the environment.”

It’s an economic engine that, when done responsibly, can produce jobs and great-tasting seafood.

Manna Fish Farm’s striped bass will be grown out in Aquapods, the spherical, submersible ocean cages invented by Ocean Farm Technology, which merged in early 2015 with OceanSpar to form InnovaSea Systems. Connected to a sophisticated anchoring system, the pods will not only be located 16.2 miles from shore, but also submerged 60 feet beneath the surface in 155-foot-deep waters. Lanzetta said the distance and the depth optimize strong ocean currents that will efficiently flush effluent from the farm, one of the key concerns for aquaculture planning (and perhaps the greatest advantage of moving offshore).

Make no mistake, though: The location was also carefully selected to remain in the good graces of regional stakeholders, including commercial fishermen, who Lanzetta was sure to consult with. She said they liked her plan.

“They liked it when I went out to 16.2 miles,” Lanzetta added with a laugh. “You try to tuck yourself out of the way and be a good neighbor. We’re committed to coordinating our harvests the best we can with when they’re not fishing, like in December. We don’t have to flood the market with the same fish at the same time.”

## Siting and scaling

Lanzetta’s collaborations during these crucial planning stages extend into academia — Stony Brook University professor and marine ecologist Konstantine Rountos is an advisor to the project — and also to those who ventured before her into the great unknown of operating an aquaculture farm in federal waters (officially 3 miles to 200 miles offshore, the boundary of the common national exclusive economic zone, or EEZ).

A stock image of the Aquapod, a submersible spherical ocean net pen for rearing fish in offshore waters.

It’s these offshore waters, particularly those within U.S. jurisdiction, that are ideal for numerous commercially viable species, Rountos said, due in part to the wide spectrum of water temperatures. It’s one reason why he finds

the lack of aquaculture activity astounding.

“When you get down to it, there are a lot of things that are slowing down development significantly,” he said. There is a need to streamline the permitting process, establish smoother interagency coordination and remove duplicate costs, he said. Leaders within NOAA, at the very top of the regulatory chain in the United States, recognize the process can be entangling, Rountos added, despite actively promoting aquaculture as an economic engine. Indeed, the U.S. government launched its National Strategic Plan for Federal Aquaculture Research, and estimated that aquaculture in the United States generates only $1.3 billion in annual sales, a small dent in the $82.6 billion that Americans spent on seafood in 2012.

“There’s a lot of support but the paperwork is not to the point where it reflects what they’re saying,” Rountos said.

Few individuals understand the icebergs blocking offshore aquaculture development — and what Lanzetta is encountering — as much as Neil Sims, co-founder and co-CEO of Kampachi Farms. From 2005 to 2009, his company Kona Blue Water Farms raised sashimi-grade yellowtail (marketed as Kona Kampachi) in waters 200 feet deep, a half-mile off the shore of Hawaii’s Big Island for the high-end foodservice market. The company’s peak year was 2008, when it produced 500 metric tons of product, worth nearly $6 million. Chefs at white-tablecloth restaurants clamored for the chance to menu kampachi, marveling at its delicate flavor and versatility in the kitchen. Rarely do new fish hit the market. Kampachi was runaway hit.

But as soon as the fish established a following, it faded from the market. Kona Blue eventually sold its hatchery offshore site, while Sims focused on advancing open ocean mariculture research and developing a kampachi hatchery and farm in La Paz, in the Sea of Cortez.

“We recognized that there’s a limited ability, because of regulatory challenges, to get to scale,” Sims said. Because the Hawaii operation couldn’t get the needed permits to expand, it could not firmly establish a robust brand and a stable market price similar to that of sashimi-grade tuna, a product of similar quality and culinary applications.

> It’s a great idea; its time has come. There is much work to be done, as we must get this right the first time, so that we can pave the way for others to follow.

Sims points to a mindset within certain divisions in NOAA that simply doesn’t understand aquaculture or is opposed to it. “They don’t get the aquaculture imperative,” he said. “It’s what I perceive as a deep resistance to farming fish in the ocean.”

But in Mexico? Sims chooses his words carefully: “The Mexican government understands the importance of aquaculture. It’s still a rigorous permitting process, but there is a permitting process. And you can get a permit. They’re keen to help this industry. It’s an economic engine that, when done responsibly, can produce jobs and great-tasting seafood. They understand all of that.”

One of Kampachi Farms’ projects stands as a clear example of the more complex process north of the border. A single drifter cage project Sims called Velella, established in 2011, grew 2,000 fish and gave him crucial information, including that it was not commercially viable at that size. When they sought to anchor the pods in 6,000 feet of water, 6 miles offshore, it took 23 months to get the permit. “What is wrong with this system?” he asked. “This was for a research permit, a single cage.”

The path for Manna Fish Farm should be smoother, Sims adds, for one simple reason: “[Striped bass] is not a federally managed species, so she doesn’t need a permit from NOAA.”

# Global potential

The United Nation’s Food and Agriculture Organization (FAO) is advocating for greater use of offshore waters to produce food. A 2013 paper by FAO consultants James McDaid Kapetsky, Jose Aguilar-Manjarrez and Jeff Jenness

concluded that offshore aquaculture (mariculture) offers significant opportunities for sustainable food production, particularly in regions where availability of land, near-shore space and freshwater are limited.

Despite the growing global demand for protein, so little of the world is active in aquaculture. The FAO paper determined that 44 percent of maritime nations, with a cumulative 0.3 million kilometers of coastline, are not yet practicing aquaculture. In examining Atlantic salmon, cobia and blue mussels as species favorable to grow-out conditions found offshore, the paper evaluated the potential of various regions for development. It found that while the potential for salmon is effectively limited to the nations already practicing salmon culture, cobia holds great growth potential due to vast ocean expanses in tropical and temperate zones. The Russian Federation, Australia, Indonesia, USA and Canada hold the greatest potential (regarding area suitable for sea cages and longlines) among nations already practicing aquaculture, the paper noted. Iran, Venezuela, Finland and Eritrea are leading candidates among nations not already practicing aquaculture.

“There is an impetus for mariculture to move to the unprotected waters of the open sea,” the authors wrote. “Issues at the local level include competition for space, water quality problems and a negative public perception of mariculture’s environmental and aesthetic impacts. At the global level, there is concern for food security with expanding population along with the conviction that the potential of the world’s oceans to supplement the food supply is vastly underutilized.”

Lanzetta is a believer in the potential of offshore aquaculture, and is putting her best foot forward. Her community believes it, too: she is armed with letters of support from town, county and state officials, Stony Brook University’s School of Marine and Atmospheric Sciences and The New School in New York.

Manna Fish Farms plans to progress in four phases marked by the number of Aquapods in the water — one, then four, then 12 and eventually 24 — each capable of growing 140,000 pounds of fish annually. Fish will be in the water in 2017, Lanzetta vows. Because of the logistical challenges of steaming vessels back and forth to the site, the operation will utilize as much automated technology as possible, including a feeding buoy developed by the University of New Hampshire. Each buoy can control feed deployment for four pods.

The project will survive, or thrive, based on the efficiencies it establishes. Not to mention the patience of its founder.

“Doing it sustainably may not be the maximum yield as far as profit is concerned. But according to my projections it’s still going to be a profitable venture,” Lanzetta said. “It’s a great idea; its time has come. There is much work to be done, as we must get this right the first time, so that we can pave the way for others to follow. Ocean farming is the future. It sounds hokey but the future is now.”

***@GAA_Advocate***

**Author**

James Wright

Editorial Manager
Global Aquaculture Alliance
Portsmouth, NH, USA

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