
*Regional e-Notes ~ September 2019 ~ Volume 11, Issue 9*

## Letter from the Director

Aloha,

I was pleased to see that the recent 'Marine Biotechnology Conference 2019' in Shizuoka City, Japan featured a session on "Algal Biotechnology." During this session, presenters revealed how algae has the potential to significantly benefit all living creatures on Earth. To start, algae helps the ocean trap more than 90% of the carbon dioxide that is released from human activities. It can also be a source of protein as well as other unique substances to fight again diseases and meet other nutritional needs. Macroalgae -- including seaweed commonly found in the grocery store-- is high in vitamins, minerals, and antioxidants, as well as essential amino acids. It is also considered the best dietary source of iodine, which is important for thyroid health.

In addition to it's growing popularity as a nutrient-dense source of food, macroalgae is a powerhouse plant when it comes to environmental remediation and mitigation. There is a growing body of research demonstrating that macroalgae can be cultivated to significantly lessen the impacts of climate change. Several studies have found that fast-growing kelp and other macroalgae species are highly efficient at storing carbon. According to a recently published paper in the journal Current Biology, "raising macroalgae in just 0.001 percent of seaweed-growing waters worldwide and then burying it at sea could offset the entire carbon emissions of the rapidly growing global aquaculture industry." Furthermore, kelp added to livestock feeds is proven to reduce methane emissions from cattle production.

CTSA is currently funding work aimed at cultivating three species of Hawaiian macroalgae, and I am looking forward to the contributions this project will make. As we have been reminded in recent weeks through the Global Climate Strike and the United Nations Climate Summit, our planet is experiencing and facing significant changes as a result of our rapidly changing climate. We need all of the solutions that we can get. As always, I welcome your comments and suggestions.

On a separate note, as some of you may already know, NIFA has moved to Kansas City as of today. With this move, the aquaculture community will miss working with Drs. Gene Kim and Max Mayeaux as our aquaculture leaders at NIFA. While we hope they will... **Read More**

## CTSA Education Project Gets Green Light as Sea Grant Announces $16M in Funding to Support Aquaculture

***Nearly $2M will support projects in the CTSA region***

Sea Grant recently announced $16 million in federal funding awards to support 42 research projects and collaborative programs aimed at advancing sustainable aquaculture in the United States. The Center for Tropical and Subtropical Aquaculture is excited to announce that we are the recipients of one of this year's awards!

The newly funded projects will focus on three areas of need identified by Sea Grant: Advanced Aquaculture Collaborative Programs, Exploring New Aquaculture Opportunities, and Social, Economic, and Behavioral Research Needs in Aquaculture. The CTSA project falls in the latter category as one of sixteen projects that will address critical gaps in social, behavioral, and economic knowledge as it relates to U.S. aquaculture and the communities impacted and served by it.

Following up on CTSA's previous education activities, our Sea Grant project "*Assessing public perceptions of aquaculture and the broader impacts of K-12 aquaculture education*" will investigate the correlations between aquaculture education and public perceptions of seafood. CTSA's Executive Director Cheng-Sheng Lee is coordinating the work along with Information Specialist Meredith Brooks --who will work together with experts to create new education materials-- and Co-PI Dr. Catherine Chan, who will conduct the assessment with students and community members.

The motives behind our project are not foreign to aquaculture industry stakeholders. The U.S. is the second largest importer of seafood products in the world-- including those from aquaculture-- yet our country only grows 5% of the seafood we consume. It is safe to say that aquaculture is not well understood by the general public, and as a result we are missing out on opportunities to improve our food security, economy, and environment. It is important to overcome the communication obstacles and, as FAO recommends, actively shape the debate on aquaculture because "a lack of information leaves room for speculation." This is especially true if we are going to meet the growing national and global demands for seafood. Furthermore, the FAO recommends investing in education to provide more fact-based information to consumers to address the various perceptions that impact the growth of the aquaculture industry.

A primary goal of this project is to increase seafood consumption via education. One key assumption for this approach is that students can influence the perception of the whole family; thus, it is important to understand what information students are currently using to convey consumption preferences to their parents (with regards to 'origin' of fish, for our purposes). In addition, consumers are becoming more health and safety conscious on how their food is grown and where it comes from. Hence, our team will assess public (including students and students' family) perceptions of aquaculture and aquaculture products before and after implementing an aquaculture education program. We hypothesize that an assessment will likely assert that education and outreach are important to filling the gaps in consumer acceptance of aquaculture.

"With our 2019 investments, we are building on investments by Sea Grant and NOAA over the last few years to fill critical gaps in information and strengthen connectivity of science to industry," said Jonathan Pennock, Director of the National Sea Grant College Program. "These investments will help advance U.S. aquaculture in sustainable, thoughtful ways using the best science and talent across the country."

CTSA also congratulates our colleagues at Hawai'i Sea Grant on the successful submission of multiple projects, including "*Establishing a Hawai'i-Pacific Aquaculture Consortium: A Revitalization and Expansion of the Aquaculture Development Program*," which was awarded nearly $1.2 million under the Collaborative Program category. The aim of this... **Read More**

## USDA NIFA Looks to Replace Aquaculture Staff As Existing Experts Forego Move to Kansas

Amidst the National Institute of Food and Agriculture (NIFA) move to Kansas City, the USDA headquarters released the following statement:

United States Department of Agriculture
National Institute of Food and Agriculture

*Although the current aquaculture staff is not moving to Kansas City, aquaculture will remain an important component of NIFA investments and we are aggressively recruiting staff with aquaculture expertise. In the meantime, should you have any questions or need assistance, please contact Dr. Mark Mirando, National Science Liaison, onmark.mirando@usda.gov or 202-401-4336.*

In addition, former Aquaculture Program Leader Gene Kim announced that he will be taking on a position with USDA Natural Resources Conservation Service (NRCS) in Washington, DC. He will be working within the Policy Branch of their Financial Assistance Programs Division on Farm Bill implementation of NRCS Conservation Programs.

**As a NIFA-funded program, CTSA has built longstanding relationships with many of the aquaculture staff in D.C., from accountants and managers to program leaders. We are deeply saddened to lose their institutional knowledge on our team, but are understanding of their decisions under the circumstances. We express our sincerest gratitude for their decades of service to the USDA and the Regional Aquaculture Center program, and wish them the best in their new endeavors!**

## University of Idaho is Seeking a Director for the Aquaculture Research Institute

University of Idaho
Aquaculture Research Institute (ARI)

The Aquaculture Research Institute (ARI), a Level III Institute at the University of Idaho, is seeking a new Director. The ARI supports undergraduate and graduate student education and research, is engaged in outreach activities in aquaculture, and conducts basic and applied research.

The ARI works across colleges and with scientists from other universities, agencies, Native American tribes and the aquaculture industry. Although research studies mainly focus on rainbow trout, the ARI also conducts research in its laboratories on other native and non-native species, such as cutthroat trout, redband trout, sturgeon, burbot, tilapia, catfish and freshwater ornamental species, including zebrafish. Through collaboration with partners, the ARI's research extends to marine fish species, shrimp and other important farmed species. The research focus areas of the ARI are fish population genetics, selective breeding, nutrition and feeding of fish, engineering of aquaculture systems, and fish health and disease. Physiological and biochemical techniques, coupled with advanced genomics and proteomics, are used in ARI research projects.

Reporting to the Vice President for Research and Economic Development, the Director of the ARI provides leadership by promoting, organizing and coordinating interdisciplinary efforts in aquaculture research. The Director will manage personnel, budgets, and facilities including the Hagerman Fish Culture Experiment Station and the ARI facilities located on the Moscow campus. The Director is expected to represent the ARI by attending seminars and invited lectures at local, national, and international meetings and conferences. The Director will travel frequently between the Moscow and Hagerman ARI locations. Upon hire, the incumbent and the department will determine an office location. **Click here for more information**.

## AquaClip: The Battle Over Fish Farming In The Open Ocean Heats Up, As EPA Permit Looms

The biggest potential home for aquaculture, federally controlled ocean waters, has so far been off limits. States control up to three miles offshore from their coastlines, but between three and 200 miles falls under federal control. Attempts to introduce aquaculture in federal waters have so far been stymied by concerns about aquaculture's impact on ocean ecosystems and wild fisheries. Now the tide could be turning.

On Aug. 30, EPA issued a draft permit for a pilot aquaculture project in the Gulf of Mexico off the coast of Florida. The project, despite its small scale, would be a watershed moment in the debate surrounding ocean aquaculture, which has divided environmental groups and pitted fishermen who catch wild fish against those who farm. It is also the latest chapter in a long battle about which agency should regulate ocean aquaculture.

The pilot project would allow Kampachi Farms, a veteran aquaculture company, to raise 20,000 Almaco jack fish in a net pen in the ocean 45 miles southwest of Sarasota. Kampachi Farms previously established aquaculture pens in state-controlled waters off the coast of Hawaii and in Mexico's Gulf of California. Kampachi CEO Neil Anthony Sims says the Gulf of Mexico pilot project is essential to helping aquaculture's critics understand the many upsides of bringing open ocean fish farming to the U.S.

"First and foremost, we want to be able to demonstrate to the Florida fishing and boating community that offshore aquaculture can be a real positive benefit," says Sims. "The handwringing and fear-mongering about the negative impacts has been vastly overblown."

But the many groups that have aligned against offshore aquaculture disagree. They see this project as a precedent-setting act by federal regulators that will move the country closer to opening the oceans, a public resource, to farming.

Rosanna Marie Neil, a policy consultant with the Northwest Atlantic Marine Alliance (NAMA), says the project will "benefit Kampachi Farms and the aquaculture industry at the expense of the health of the ocean and the rights of people along the coast of the Gulf of Mexico who are going to have to deal with the repercussions."

One of those repercussions could be a threat to wild fish stocks, whether by the spread of disease or escaped farmed fish competing for food. Aquaculture operations at full scale also produce an enormous amount of waste, which can result in higher nitrogen and phosphorus concentrations in the water. Those nutrients can cause algae blooms, which choke aquatic environments of oxygen and can lead to higher fish mortality.

EPA's assessment of the proposed Kamapachi Farms pilot project found that it wouldn't create significant waste problems in the surrounding waters. But Neil says that the project's small size means that it may not adequately illustrate the potential damage of an aquaculture operation that was scaled for commercial production...

Source: National Public Radio (NPR) / **Read Article**