CENTER FOR TROPICAL AND SUBTROPICAL AQUACULTURE

Regional e-Notes ~ March 2024 ~ Volume 16, Issue 3

Letter from the Director

Aloha,

As you are likely aware, March is Women's History Month and we here at CTSA like to celebrate this occasion each year. Our small program staff of three consists of two women (and myself), and some of our region's most influential aquaculture researchers and stakeholders are women. This includes our CTSA friend Lita Weidenbach of Hawaii Fish Company, featured in this video, as well as several female technicians in Palau and Majuro who play key roles in the development of aquaculture. When I started in aquaculture, it was a predominantly male industry; I am very happy to see this changing. According to the FAO, women now make up half of the overall workforce throughout the fisheries and aquaculture value chains. Click here to read the FAO article on advancing gender equality in fisheries and aquaculture.

More women getting involved in aquaculture research and production is helping the industry grow across the globe, which in turn is getting more people to eat seafood. Sustainably increasing seafood consumption to improve diets in our region is one of our primary goals. At the recent Honolulu Festival, I excitedly observed the way the chef from Japan utilized unique seafood products to engage people in healthy eating. He used fish from Japan that were raised on feeds containing orange peels and herbs (pictured) to alter the flavor profile. This practice also converts agriculture by-products with little or no value to food, thereby reducing the end cost to consumers. This is similar to work that CTSA has been doing to expand the flavor profiles of tilapia and nenue. Seafood is an essential part of a healthy diet, and I am a firm believer that we need to eat food as medicine instead of eating medicine as food. Any way that we can engage people in our region to eat more seafood is positive. To this end, CTSA is hosting an interactive listening session on April 10 and we invite you to attend and share your thoughts on the priority areas that CTSA should support. More information is included in the newsletter announcement below. It is my goal for this meeting to help us get a comprehensive understanding of what support our industry needs to expand regional capacity for aquaculture.

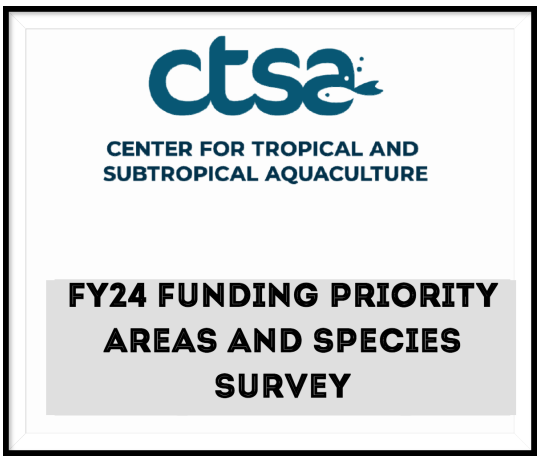
In order to move aquaculture forward, we need to work together. Every key element of aquaculture development is equally important. I recently learned about a private company in China that plans to help increase seafood supply in Angola by investing USD$1billion in aquaculture, seafood processing, and feed production facilities to support each 'building block' that will, together, form a successful aquaculture industry. I look forward to seeing the impacts of their work. This stuck with me as a great example for our own region. We often hear people talking about focusing on one 'building block' such as hatchery work, or feed development, or workforce development-- the reality is that we need to invest in all of the 'building blocks' to reach true success. This is not an easy task in our region, but if each 'block' takes responsibility and we all work together, I believe we can create a stronger regional industry with unique products and offerings.

I am very happy to see so many people working to move aquaculture forward locally, nationally, and globally. It is my greatest hope that it will happen.

Mahalo,
Dr. Cheng-Sheng Lee
Executive Director, CTSA

Share Your Input on Regional Aquaculture Development!

Join CTSA at our April 10 Listening Session and take the FY24 Priority Areas Survey



CTSA is gathering input on regional aquaculture development and would like to hear from you, our valued industry stakeholders!

Each Spring, CTSA releases a Request for Pre-Proposals based on industry input. We traditionally receive this input through an annual priorities survey, and this year we are looking to expand our reach and hear from more stakeholders.

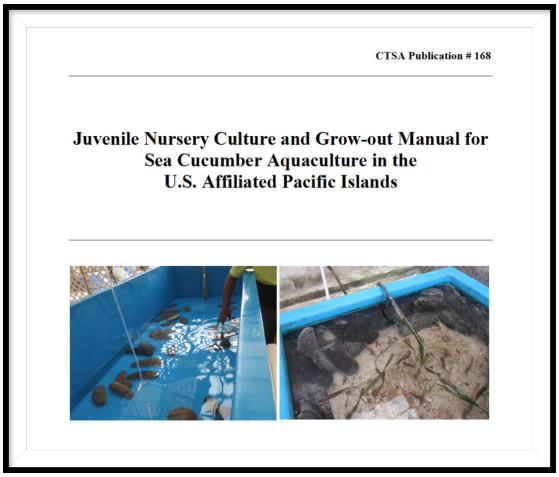
We invite you to join our interactive learning session on April 10 to discuss the critical funding priorities and species for aquaculture in our region; we will also share more information about upcoming funding opportunities. Details for the virtual session are being finalized and **will be available at this link**.

As a precursor to the learning session --or if you are unable to attend-- we request that you please **click here to take our FY2024 Priority Areas and Species survey.**

This survey lists the priority areas included in our FY23 'Request for Pre-Proposals,' released last year, and requests that participants indicate whether or not each area remains a priority for regional aquaculture development and funding support. There is an option to write in new priority areas that were not identified in FY23.

Please complete the survey by April 15; it should only take a couple of minutes to complete. Please email Meredith Brooks at mbrooks@ctsa.org with any questions or other suggestions. We will release the FY2024 Request for Pre-Proposals in next month's issue of e-Notes, and are developing the priority areas with input from our Industry Advisory Council, Technical Committee, Board of Directors, and stakeholders like you!

New CTSA Publication: Juvenile Nursery Culture and Grow-out Manual for Sea Cucumber Aquaculture in the U.S. Affiliated Pacific Islands



CTSA is pleased to announce the release of the publication "Juvenile Nursery Culture and Grow-out Manual for Sea Cucumber Aquaculture in the U.S. Affiliated Pacific Islands."

The manual was written by Masahiro Ito as a follow-up to his 2018 CTSA publication "Hatchery Manual for Sea Cucumber Aquaculture in the U.S. Affiliated Pacific Islands." The new manual emphasizes juvenile nursery culture and grow-out for the sandfish (*Holothuria scabra*).

Click here to download the new manual

Limu Hui: Preserving Hawaii's Unique Algae Traditions

CTSA is collaborating with our Technical Committee (TC) member and limu (macroalgae) expert Vernon Sato to produce a book on the history of limu in

Hawaii. This article is an excerpt from the book - keep an eye out for the full release later this year!

“I once asked Wally Ito if he had any concerns about this work continuing when he retires. His response was enlightening. The community of hui that is growing throughout the state of Hawaii is based on a few concerned individuals who share their passions and concerns with others. The hui is made of individuals, their ohana, the community and the keiki. The kilo to maintain and pass on knowledge will continue. Some will become practitioners. Some will emerge as leaders. They will maintain kilo and hopefully see recovery in their shores.”

Limu hui* began many years ago in different communities. In many cases they began with the realization that the different limu species that were abundant in their lifetimes or the lifetimes of their kupuna were no longer available to that community in numbers that supported their cultural and culinary practices. Kūpuna could no longer pass on their knowledge to keiki by presenting the lessons of finding, picking and eating the limu while demonstrating how that resource would be preserved for the next generations. It is difficult to teach without teaching materials. It is even more difficult to demonstrate conservation techniques when those resources are disappearing. Faced with those challenges the limu gathering communities - kupuna, adults, young adults and keiki - came together for a common cause. This “hui”, the coming together of community families, formed the foundational partnership to share stories and experiences accompanied by “kilo” or observations of their shorelines in order to improve their understanding of the changes that have impacted their limu. These are the practitioners who, by their participation, pass on the knowledge and cultural heritage of limu.

For limu hui, having a mixture of generations together to share in the experiences and knowledge of what once was, what it is and what it could be may be the better approach. The community experience has the potential for exceeding the retention of knowledge that would come from lesson plans as it currently exists in most school systems. The seeds for the next generations of stakeholders, practitioners and even researchers are provided a stronger foundation for answering the questions of why and how of their limu as well as the health of their shoreline ecosystems. From this grows “malama”, the caring for these resources into the future.

There are several limu hui across Hawaii. The Limu Hui under Kuáāina Ulu ‘Auamo (KUA) began a statewide gathering of practitioners and kūpuna who shared concerns for their observations that the limu were more difficult to find and harvest along their shorelines. KUA partnered with the ʻEwa Limu Project to “gather the gatherers” in 2014. The current situation of declining limu stocks on Hawaii’s shores accompanied by the aging of kupuna is having devastating impacts on cultural practices and the spirituality that many in the Hawaiian communities share with nature. This co-extinction has already been realized in other aspects of our limu….and in reality other aspects of Hawaiian culture.

In 2014 over 30 traditional limu practitioners from six of the Hawaiian Islands gathered together for four days to learn, share, document their knowledge and discuss. Their shared goals have provided the impetus for other individuals and communities to become involved. What was once an activity for families to live, survive and share with their community has now come to include scheduled events. The success of this first “limu convention” strengthened the existing limu hui in their communities. It further created a realization that lone practitioners could come together with others to expand their reach within the community. New lines of communication were now established with other practitioners.

The ʻEwa Limu Project started in the 1990’s as the ʻEwa Beach Limu Project with attempts to restore limu that were once abundant along ʻEwa Beach. As Wally Ito and I both remember ʻEwa Beach was once considered to be “the place” to collect one’s favorite limu. Many of them turned up on the shores at the right time of the year. This Project seeks to keep those visions in the minds of those who will come to enjoy the same beaches. ʻIke kūpuna, the knowledge from ancestors, is to be preserved and taught along with the need to care for this land. “Uncle Henry” Chang Wo, Jr. was one of the original founders of the project. He grew up in the ʻEwa moku. He collected limu with his grandmother, mother and aunty as was the tradition. Later in life he organized gatherings with other kupuna in the 1990’s to introduce others to the limu and traditional knowledge.

In 2014 the ʻEwa Limu Project hosted the first gathering of limu practitioners from around the State. The event was organized with the help of The Limu Hui and members of KUA. “Uncle Henry” passed away in 2015. He got to see that his vision was shared by many other individuals and communities. That event inspired others to become more formally organized and to incorporate the longer vision for the work ahead. A few lucky individuals, like Wally Ito, got to spend one-on-one time with “Uncle Henry” and were especially fortunate to share in his knowledge.

Other limu hui across Hawaii include the ***Molokai Gorilla Ogo Hui***, currently focused on habitat restoration;

Waiheʻe Limu Restoration on Maui, focused on programs to teach students just as “Aunty Napua” Alyson Barrows learned from her grandmother, and gather at events to share their kilo with students and the community around Waiheʻe, Maui; ***Lānaʻi Limu Restoration Project***; and ***The Waimānalo Limu Hui***, which seeks to restore the limu that were once abundant in Waimānalo Bay. A part of their focus has been on planting spore-rich limu that are capable of setting on the reefs again to restore limu. The community of participants has grown with practitioners from other areas coming to share their knowledge. They will do this with more species of limu as they become available in order to establish a balance to the shores.

** The Oxford language dictionary defines “hui” as a club or group. Pukui and Elbert (1971) describe “hui” as the association of people as an activity to unite, to join, to form a partnership, to form joint ownership.*

USDA Update Regarding the User Fees Required for Live Animal Export Facility Inspection Packages

USDA Animal and Plant Health Inspection Service (APHIS) charges user fees in accordance with Title 9, *Code of Federal Regulations* (9 CFR 130) to ensure the agency recovers the full cost for services rendered to stakeholders, and routinely reviews user fee processes for consistency and regulatory compliance. APHIS recently identified gaps in user fee charging methods for export facility inspection packages and revised its operational guidance to ensure consistency and continuity in how user fees are charged.

Effective May 6, 2024, VS will charge user fees for the full time required to complete export facility inspection packages including inspection, Veterinary Export Trade Services review, and/or Live Animal Export Unit (Headquarters Office) review which APHIS Veterinary Services had previously been only partially charging. This change enhances APHIS operational consistency.

We encourage stakeholders to begin the renewal or listing approval process, including scheduling inspections and associated paperwork, at least 90 days prior to their last valid inspection date expiration to allow adequate time for completion of all steps.

For further information regarding authorized user fees, inspections and the review process, or service center operating hours, please contact the Service Center for your area, which can be found here. For questions about the User Fees that will be charged by the Live Animal Export Unit (Headquarters Office) to review and approve export facility packages, please contact Dr. Amber Headen for terrestrial animal facility

inquiries (amber.l.headen@usda.gov) and Dr. Alicia Marston for aquatic animal facility inquiries (alicia.r.marston@usda.gov).

New tests for Tilapia Lake Virus are now available

Tilapia lake virus (TiLV) is a virus that infects tilapia in South America, Asia, and the Middle East. It is a foreign animal disease, which means that is not endemic in the United States. TiLV can cause significant disease and mortality in tilapia, which is why it is of concern to fish health regulators.

Certification Testing: For producers moving fish interstate or internationally, fish health regulators may require certification testing for TiLV following methodology from the Aquatic Manual of the World Organization for Animal Health (formerly known as the OIE). This test method uses cell culture to screen fish tissues (such as kidney/spleen pools) for the virus. WADDLs Aquatic Health Laboratory Section offers cell culture testing for TiLV. Certification testing with cell culture takes 29 days to complete, so producers should schedule sample collection and submission with this timeframe in mind.

PCR Testing: WADDL also offers a PCR test for TiLV. This test can be used for diagnostic cases, where there is a suspicion of TiLV infection in sick tilapia, or as a confirmatory test if cell culture results are positive.

WADDL has fish veterinarians with production, clinical, diagnostic, and research experience on staff available to answer veterinarians and producers questions about diagnostic testing for fish, including for TiLV. For more information about testing aquatic species at WADDL, please contact us at 509-335-9696.

Farm Bill Advocacy Update from National Aquaculture Association

The National Aquaculture Association (NAA) released a fact sheet in the Soy Aquaculture Alliance newsletter containing NAA's priorities for the 2024 Federal Farm Bill. Click here to read.

Aquaculture Operations and Jobs at NELHA

Check out these videos, entry level positions, and internships at NELHA HOST Park = Natural Energy Laboratory of Hawai‘i Authority Hawai‘i Ocean Science & Technology Park:

Blue Ocean Barns
- Video
- Algae Technician
- Algae Processing Technician
- College Internship
- High School Internship
- See all open positions at Blue Ocean Barns

Blue Ocean Mariculture
- Video
- Facility Assistant/Driver
- Internship Hatchery Technician
- See all open positions at Blue Ocean Mariculture

Cyanotech
- Video
- Extraction Operator (swing)
- Harvest Processor
- See all open positions at Cyanotech

NELHA Host Park
- Video
- Internship Program

Ocean Era
- Video
- Research Technician, Finfish

Symbrosia
- Video
- Processing Technician I
- Outdoor Macroalgae Technician
- Analytical Chemistry Internship
- See all open positions at Symbrosia

Video: What is Aquaculture?

Apply directly to the companies above. Check out more aquaculture careers on theJobs page of hiaquacollab.org and contact isip@hawaii.edu for more info.

AquaClip: Six ways to make your aquaculture operations more climate-resilient

Most fish and shrimp farms are heavily dependent on environmental conditions, especially the provision of clean water at a stable temperature, and this makes them especially vulnerable to the impacts of a changing climate.

The main climate stressors that affect aquaculture are temperature fluctuations, changes in rainfall patterns that cause floods or droughts, and increased storm variability and severity. Marine aquaculture is also affected by ocean acidification and the increased occurrence of harmful algal blooms (HABs). Impacts differ, depending on the farmed species, the farm environment, the type of farming system and the geographical location. Impacts can occur in a very short time (i.e. heavy rainfall), while other are long-term trends, with change happening gradually over time (i.e. ocean acidification).

Ninety percent of aquaculture operations face risks from environmental change. Some of the countries with the highest climate risks – mostly in Asia, Latin America and Africa – have the lowest capacity to adapt to the changes in climate.

Effects of climate change are highly unpredictable and extremely localised, complicating things further. While some areas will experience more rainfall, others are impacted by more severe droughts or more frequent and bigger storms. Therefore, adaptation measures should be adjusted to suit local circumstances, as different threats need different adaptation options. In principle, the goal is that all adaptation measures should be designed to reduce vulnerability and effectively adapt to the climate impact. Selection of effective adaptation measures also depends on community acceptance, the urgency of implementation, technical feasibility, ease of implementation and the costs required to implement the measures.

In this article we provide general tips for small-scale farmers to follow when starting an aquaculture farm or when adapting their farm to the changing climate. Doris Soto, who has worked for the United Nation's Food and Agricultural Organization (FAO) for 12 years, leading the aquaculture team on environmental issues and climate change, adds her insights to our own expertise from working on small-scale aquaculture in Southeast Asia, the Middle East, and Africa for the past 20 years..

Source: The Fish Site // Read Full Article

This newsletter is written and prepared by the CTSA Information Specialist Meredith Brooks.
The Center for Tropical and Subtropical Aquaculture (CTSA) is one of five regional aquaculture centers in the United States established and funded by the U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA) under active grants 2020-38500-32559 and 2022-38500-38099. The regional aquaculture centers integrate individual and institutional expertise and resources in support of commercial aquaculture development.
CTSA was established in 1986 and is administered by the University of Hawaii.

Center for Tropical and Subtropical Aquaculture | University of Hawaii at Manoa, 1955 East West Road, Ag. Sci. 216, Honolulu, HI 96822

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