CENTER FOR TROPICAL AND SUBTROPICAL AQUACULTURE

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Letter from the Director

Aloha,

I am happy to begin with good news for our region. The State of Hawai‘i has put its support for aquaculture into action by hiring four new researchers to serve our community; please join me in welcoming Bethany Doescher, Bell Lin, Taylor Engle, and Kyle Rafael Marcelino. UH CTAHR has also hired a new aquaculture specialist, Dr. Kai Fox, and is recruiting a technician for the Magoon facility. We are grateful to see both the State and UH increasing their support, and we look forward to working with all of our new colleagues.

This added support comes at an important time, as weather hazards continue to be one of the major challenges in our region. KHON recently reported that Kauai Shrimp will close by the end of October after damage from Hurricane Lowell. Their closure means local customers, including Costco shoppers, will no longer have access to Kauai Shrimp's high quality, locally grown product. I ask our researchers to think about how we can build more resilient farms and technology, whether through structural design or other means. The United States imports over 2.5 million metric tons of edible seafood each year, and growing more of it locally will require farms that can withstand extreme weather. Our region holds more of the U.S. Exclusive Economic Zone than any other, and we are well positioned to play a key role in developing the blue economy.

I recently traveled to Guam and Micronesia, where I saw many opportunities to build on what already exists. The hatcheries in Guam and Pohnpei are not currently in production, but with renewed interest and commitment, these facilities could once again support local aquaculture. It was encouraging to hear that Kosrae plans to build a new hatchery to grow its industry, and I hope existing facilities across the region will be put to use as well. I was also glad to see how much Kosrae values its coral reefs, which provide habitat and protect the islands, and to learn that the government supports using aquaculture to restore them. This partnership between the public and private aquaculture sectors is a strong example of how we can work together to restore natural habitats,

Kosrae's care for its reefs reflects the value of traditional knowledge, a fitting reminder as we celebrate Hawaiian Culture Month in September. Around the world, producers are finding that traditional practices still have much to offer. In Chile, farmers are using a 2,000-year-old approach to manage aquaculture health, and in China, herbs have long been used to support animal health. Knowledge that has served communities for centuries still has a place alongside new technology, and we should continue to build on it.

As I say often in this newsletter, we all need to work together to achieve our shared goals.

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

Building a Storm-Resilient Aquaculture Industry for Island Food Security

When Hurricane Lowell knocked out power on Kaua‘i in early September, approximately 120,000 pounds of shrimp were still in the ponds at Kauai Shrimp. Those ponds require continuous aeration to keep oxygen

in the water, and the company warned that the shrimp could begin dying after about 48 hours without it, as reported by Beat of Hawaii. The storm also damaged the farm's office, mechanic shop, electrical systems, and other equipment, and within weeks, the company announced it would close its Kekaha operations by Oct. 31. After nearly 30 years, one of Hawaiʻi's most recognized local seafood producers was brought down by a storm.

Kauai Shrimp is not the only island farm to face this outcome, and it is unlikely to be the last. Research from NOAA's Geophysical Fluid Dynamics Laboratory indicates that the global proportion of tropical cyclones reaching very intense Category 4 and 5 levels is projected to increase over this century, along with tropical cyclone rainfall rates. A NOAA-supported assessment found that the most confident projection is higher storm inundation levels, a serious concern for coastal ponds and hatcheries.

Producers across the Pacific already know these risks well. After Typhoon Mawar struck in 2023, the Guam Aquaculture Development Training Center was without power for weeks and lost 95% of its valuable fish stock even with backup generators on site. A similar storm in 2015 prompted the closure of the Saipan AquaCulture Company. In Vanuatu, the National Freshwater Aquaculture Centre was severely damaged by Tropical Cyclone Pam in 2015 and had to be rehabilitated before reopening. When Category 5 Cyclone Winston hit Fiji in 2016, artisanal fisheries and aquaculture sustained the highest damage within the fisheries sector.

Each of these losses matters because island food supplies are already stretched thin. The State of Hawaiʻi estimates that 85 to 90 percent of its food is imported, which leaves the islands particularly vulnerable to natural disasters and other events that disrupt shipping. Seafood is no different. Nationally, an estimated 80 percent of the seafood Americans ate in 2023 came from imports, and in Hawaiʻi, aquaculture supplies a very small amount of the seafood that is available locally. A larger aquaculture sector would keep fresh protein on local shelves when ships are delayed due to inclement weather or other factors, create jobs close to home, and keep food dollars circulating in island economies.

Growth, however, only strengthens food security if farms can withstand the storms ahead. The encouraging news is that people are developing practical ways to reduce these losses. Submersible net pens allow farmers to lower their cages below the rough surface water during a storm. After Typhoon Haiyan destroyed fish cages, hatcheries, and ponds across the Philippines in 2013, Japanese net maker Nitto Seimo brought its submersible cage technology to affected communities, building the systems with locally available materials and labor. Ocean Era, which developed much of its technology in Hawaiʻi, uses a submersible net pen that moves beneath the surface during a hurricane. On land, the focus is often on power. Researchers in Guam are exploring ocean energy, since weather resilience is a critical design consideration for any aquaculture power system on an island regularly threatened by typhoons. At the regional level, the Pacific Community, the University of Hawaiʻi, and CSIRO are leading an alliance to build Pacific food systems that are resilient by design.

Not every solution needs to be new. Long before modern aquaculture, Native Hawaiians built loko iʻa, highly engineered fishponds designed to sustain entire ahupuaʻa. Nearly 500 once existed across the islands, together producing nearly 2 million pounds of fish each year. By 1994, only six remained in operation. Today, communities across the islands are restoring these ponds, and with them a proven model of local food production.

That restoration is also teaching practitioners how to adapt. At Heʻeia Fishpond in Kāneʻohe, large swells in 2017 left the pond walls under four inches of ocean water. Caretakers across the islands are responding by building walls higher (pictured), adding channels to keep a healthy balance of salt and fresh water, and considering new ponds farther inland. The traditional design also has built-in advantages. A University of Hawaiʻi study found that fish populations inside loko iʻa were more resilient to rising water temperatures than those in the surrounding estuary, because freshwater inputs help keep the ponds cooler.

The lesson reaches well beyond Hawaiʻi. Across the Pacific, knowledge of reefs, tides, and seasons has sustained island communities for generations. The farms most likely to endure will combine that knowledge with modern engineering, reliable power, and careful planning, so they can recover quickly and keep producing food when supply chains are disrupted.

For island communities, local aquaculture is more than an industry. It is a source of food that does not depend on long shipping routes, and it provides jobs and knowledge that can be passed to the next generation. Growing that industry, and building it to last, is one of the most direct ways to strengthen food security across the Pacific. Protecting that future will require engineers, biologists, energy specialists,

cultural practitioners, and farmers working side by side. CTSA encourages researchers and industry partners with ideas for storm-resilient aquaculture to reach out and share their work.

REMINDER: JWAS Publication on Feasibility of a Local Feed Mill in Hawaii in a Circular Zero-Waste Economy Environment

CTSA would again like to highlight a recent JWAS publication by Drs. Tony Ostrowski and Cheng-Sheng Lee, developed through Sea Grant support and informed by a series of CTSA stakeholder meetings, that evaluates the feasibility of establishing a local aquaculture feed mill in Hawai‘i within a zero-waste, circular-economy framework. Central to this effort is Diamond Head Seafood's state-supported pilot mill, which is now converting its own seafood-processing waste into high-quality fishmeal — demonstrating how industry leadership can transform local by-products into valuable feed ingredients while reducing landfill burdens. This work directly supports CTSA's priority to reduce production costs for farmers, strengthen regional food resilience, and advance the State of Hawai‘i's legislative commitment to a circular economy by keeping resources in use and minimizing waste. We encourage readers to explore the full article here.

Regional Aquaculture Announcements

Now Hiring! Algae and Shellfish Research Hatchery Technician – Pacific Hybreed

Pacific Hybreed is hiring two hatchery technicians for their Kona, Hawaii hatchery, with flexible start dates from now through Jan 2027. Interested candidates can email melissa@pacifichybreed.com.

Now Hiring! Assistant Farm Manager at Kupu Aquaponics

Kupu Place is hiring a full-time Assistant Farm Manager to support daily food production across its aquaponics and hydroponics, microgreens, and edible flower nursery systems. The position leads daily work crews, interns, and volunteers, maintains farm infrastructure, and keeps production and food safety records. Candidates should have 2 to 5 years of farm production experience. View the full position description here.

USDA Disaster Assistance Available for Producers Impacted by Hurricane Lowell

The U.S. Department of Agriculture (USDA) has technical and financial assistance available to help Hawai‘i farmers, ranchers, and aquaculture producers recover from Hurricane Lowell. Of particular interest to our industry, the Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish Program (ELAP) may cover losses of purchased or produced feed intended for eligible farm-raised fish, along with physical inventory losses of the fish themselves. Producers must submit a notice of loss and payment application to their local Farm Service Agency (FSA) office by March 1, 2027, for 2026 losses. Producers with Noninsured Crop Disaster Assistance Program (NAP) coverage must file a notice of loss within 15 days of the loss becoming apparent, and those with federal crop insurance should contact their agent within 72 hours of discovering damage. FSA also offers low-interest emergency loans in designated disaster counties to help replace essential property, purchase inputs such as feed and equipment, and refinance farm debts. USDA encourages impacted producers to report all losses to their local USDA Service Center as soon as possible and to gather farm records, inventory, receipts, and photos of the damage.

NOAA Fisheries Industry Outreach Event on Trade and Market Access, October 7 in Honolulu

NOAA Fisheries will host an industry outreach event on Wednesday, October 7, 2026, beginning at 10:00 am at the Honolulu Service Center at Pier 38 (1139 N. Nimitz Hwy, Suite 220). Alexa Cole, Director of the

Office of International Affairs, Trade, and Commerce (IATC), and other IATC leadership will share updates on the office's activities and programs, as well as recent developments in trade and the competitiveness of U.S. seafood abroad. Attendees will have the opportunity to ask questions about market access and other trade issues, and the IATC Director and staff will be available for one-on-one meetings at the end of the event. Please arrive 15 minutes early to register, and note that parking is only available in the designated main lot near Nimitz Highway. Click here to register.

NELHA Names Pamela Madden as Deputy Director

The Natural Energy Laboratory of Hawai‘i Authority (NELHA) has appointed Pamela Madden as its new deputy director. A marine scientist and 12-year veteran of NELHA, Madden most recently served as the authority's water quality laboratory manager, where she directed environmental compliance operations under the Comprehensive Environmental Monitoring Program. Under her leadership, the laboratory achieved 93% revenue growth, the highest in the department's history. In her new role, Madden will focus on expanding NELHA's client portfolio, building strategic partnerships, and attracting innovative companies to the Hawai‘i Ocean Science and Technology (HOST) Park in Kailua-Kona. She holds a Master of Science in biology from the University of North Carolina Wilmington and bachelor's degrees in marine science and biology from Coastal Carolina University. CTSA congratulates Pamela on her appointment and looks forward to continued collaboration with NELHA in support of Hawai‘i's blue economy. Learn more at www.nelha.hawaii.gov.

Agrifood Innovation Pitch Competition at AG2026: Submissions Due October 1!

Innovators in tropical agriculture, aquaculture, and food products and systems are invited to enter the free Agrifood Innovation Pitch Competition, hosted by Germinate and the Agricultural Leadership Foundation of Hawai‘i at the 2026 Hawai‘i Agriculture Conference. Startups, established businesses, researchers, and social entrepreneurs with an innovative agrifood concept are encouraged to apply. To enter, download the Pitch Competition Toolkit and upload a 5-minute video pitch at www.germinatehawaii.com/pitch-event by October 1. A panel of independent judges will score the submissions and advance the top three pitches to the live finals on November 10, 9:00 to 10:00 am, at the Waikoloa Beach Marriott Resort & Spa on Hawai‘i Island. First place will receive $5,000, second place $3,000, and third place $2,000. Learn more about the conference at hiagconference.org.

Save the Date: Hawai'i Agriculture Conference (AG2026) in Waikoloa

The 2026 Hawai'i Agriculture Conference will be held November 9-10 at the Waikoloa Beach Marriott Resort & Spa. Since 2002, this event has provided a place for the agricultural community to explore, learn, and network with agricultural leaders, specialists, and affiliated stakeholders. The meeting is an opportunity to make sure our sector is integrated with our State's wider food production and natural resource management sectors. Some highlights include a 1-hour aquaculture session focusing on regenerative and restorative aquaculture, organized by HAAA and industry representatives; Neil Sims (Ocean Era and Kona Limu Company) will be part of the keynote panel; and an Agrifood Innovation Pitch Competition is being organized by Jim Wyban. There are additional opportunities for exhibitors as well as posters presentations. Learn more at hiagconference.org.

AquaClip: Palau’s Giant Clam Comeback: Inside the Grassroots Project Turning a Conservation Crisis Into an Industry

In a sun-drenched aquaculture facility in Aimeliik, something quietly historic is happening. A satellite hatchery — the first ever non-government clam hatchery in Palau, Watson & Sons Aquaculture — is now producing giant clam seedlings and distributing them to community farmers across the archipelago. It is a modest building, but it represents the leading edge of a potentially transformational shift in how Palau feeds its people, earns its living, and protects its legendary reefs.

“Giant clams could be our golden egg-laying goose if we get it right,” said Tarita Holm, Palau country representative for Conservation International and consultant of the two-year Manaaki Project, which concluded this month. “We just have to overcome several barriers.”
Those barriers, it turns out, are substantial — but not insurmountable.

Palau is home to seven of the world’s twelve giant clam species, a biological distinction that doubles as an economic opportunity. Giant clams filter seawater, expel nutrients that feed coral and reef fish, and attract the divers and snorkelers who drive Palau’s multi-million-dollar tourism industry. They are, in the parlance of ecologists, a keystone species. They are also, increasingly, being eaten.

Rising demand from tourism and a higher cost of living have fueled overharvesting of wild populations. Species like Tridacna gigas — the world's largest marine bivalve — face mounting pressure. Palau's government is moving toward a ban on the commercial sale of wild-harvested giant clams, a policy shift that conservationists broadly support, but one that will most acutely impact a specific group: women gleaners, who rely on clam sales for a portion of their household income.

The Manaaki Project was designed, in part, to cushion that transition. Funded by New Zealand's Ministry of Foreign Affairs and Trade through its Manaaki Fund — a name drawn from the Māori concept of care, nurture, and hospitality — the initiative set out to help women move from wild harvesting to farming, and to lay the groundwork for a self-sustaining national aquaculture industry...

Source: Island Times // Full Article

This newsletter is written and prepared by the CTSA Information Specialist Meredith Brooks.
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CTSA was established in 1986 and is administered by the University of Hawaii.

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U.S. DEPARTMENT OF AGRICULTURE

UNIVERSITY of HAWAI'I at MĀNOA
COLLEGE OF TROPICAL AGRICULTURE AND HUMAN RESILIENCE

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