CENTER FOR TROPICAL AND SUBTROPICAL AQUACULTURE

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Letter from the Director

Aloha,

We here at CTSA hope that you have enjoyed Earth month! This annual celebration of our planet and its precious resources is a great opportunity to honor and reflect on our relationship with nature. In consideration of the positive impacts that aquaculture can have on society and the environment, CTSA is excited to release our annual Request for Pre-Proposals today (full announcement shared below).

In an effort to expand industry engagement in our priority setting process this year, CTSA incorporated new technology with our standard survey by co-hosting an interactive learning session with Sea Grant. Nearly 40 participants from across the islands shared input in real time using an online interactive presentation forum. This is an innovative tool for our program that provides valuable insights far beyond a standard survey. In addition to our list of prepared questions, participants were encouraged to share open-ended input and ask live questions. We plan to use the platform again, and look forward to having more interaction with our regional industry stakeholders.

I would like to extend a big mahalo to everyone who took the time to participate in the session. There is an article below detailing the results and data that we captured, which have also been integrated into the RFP-P. It comes as no surprise that the top industry-identified issue impacting commercial aquaculture development is permitting. While our funded projects must adhere to our specific program mission, CTSA is eager to participate in the ongoing process led by NOAA to address this critical priority; we found a way to incorporate it into this year's RFP-P along with other new priorities identified during the session.

As always, we look forward to reading your new ideas and concepts to collaboratively improve aquaculture development. Together, we can use aquaculture to make a tangible impact on regional food security while preserving our island environments.

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

CTSA FY2024 Request for Pre-Proposals - Due June 10!

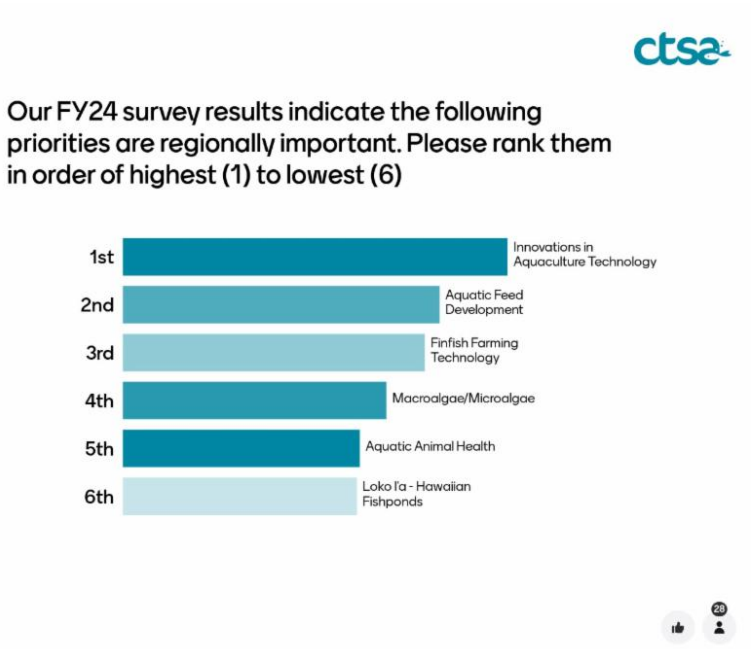
CTSA is pleased to release the **FY2024 Request for Pre-Proposals**. The Request lists the top priority areas and species as identified by industry stakeholders in Hawaii and the U.S. Affiliated Pacific Islands, as well as instructions for submitting a pre-proposal by the deadline of 5pm HST on Monday, June 10. CTSA uses a standard form for all pre-proposal submissions. Pre-proposal forms can be downloaded on the **CTSA website** or via request to mbrooks@ctsa.org.

Pre-proposals received by the deadline will be reviewed by CTSA's Industry Advisory Council (IAC) and Technical Committee (TC). Pre- proposals that receive a majority of votes will move forward with requests for a full proposal.

CTSA's mission is to support aquaculture research, development, demonstration, and extension education in order to enhance viable and profitable aquaculture in the United States. Our main focus is on funding

projects that will have immediate, positive impacts on the regional aquaculture industry. FY 2024 Strategic Areas & Priority Species include Innovations in Aquaculture Technology, Aquatic Feed Development, Finfish Farming Technology, Macroalgae/ Microalgae, Aquatic Animal Health, Hawaiian Fishponds, and others.

CTSA 'Priority Areas' Listening Session Engages Industry in Annual Development Process



In an effort to increase participation in our development process --especially from farmers-- and introduce the RAC program to regional stakeholders, CTSA co-hosted a virtual listening and learning session on April 10. The session was part of the Sea Grant seminar series 'Aquaculture Tech & Research Brown Bag,' and consisted of a brief introduction to CTSA followed by an interactive presentation where respondents were asked to answer a series of questions in real time. 24% of the approximately 40 participants represented commercial aquaculture businesses, while 52% were researchers and 20% work for the government. We had at least a few attendees who were learning about our program for the first time.

To assess interest in specific priority areas, we listed those that had been identified in this year's online priority survey and asked meeting participants to rank them in order of highest to lowest; the results are integrated into the FY24 Request for Pre-Proposal (RFPP). The highest priority identified in both the standard survey and the interactive session is Innovations in Aquaculture. It is important to mention that innovations in this context can and should include new solutions to address an existing industry problem, and not necessarily a new problem. Examples include AI to increase efficiency, innovative approaches to feed development, and much more. We also provided an opportunity for participants to add in new priority areas through an open-ended question. Many of the responses under this question correlate with the identified priority areas and have been integrated into their respective categories in the RFPP.

The priority mentioned the most in the open-ended section of both the interactive presentation and the standard survey was permitting. CTSA is excited that NOAA has made this a top priority, and we stand ready to participate where and when appropriate. While CTSA would like to see NOAA take the lead in this area, we integrated this critical priority into the 'Other' category in the RFP-P. Anyone interested in pursuing a project that incorporates this issue must take an approach in line with the CTSA mission and goals for commercial aquaculture development.

Other priorities mentioned multiple times included workforce development, increased collaboration with industry, more leveraging of CTSA funds, and aquaculture of native species. Several respondents also expressed a desire for more community and cultural / Indigenous projects, as well as projects that consider climate change and focus on restoration of ecosystems and community food security (including stock enhancement / wild population restoration as part of potential projects). CTSA is happy to see growing interest in these areas. To meet the CTSA mission of supporting economic development, projects must find a balanced way to demonstrate profitability. That said, some returns cannot be measured in dollars but are instead measured in community food security and resilience.

When it comes to the best ways to increase the impacts of CTSA funding, a majority of respondents

identified solving current issues at the top (31%), followed by proving new concepts (20%), identifying new tech and new species (17% and 14%, respectively). When posed with a question about accepting proposals from researchers outside of the region, most respondents were either unsure or not in favor of doing so. A few recommendations were made if outside proposals are accepted, including creating a mandate for any outside researcher to partner with and direct a certain portion of funds to local entities. CTSA prefers to keep our funding in the region, but there have been instances where an industry issue must be urgently solved with little to no local resources available. It is beneficial for our remote islands to have the option of going outside the region to quickly resolve the issue. This also highlights one of our critical regional issues: attracting more researchers.

We asked participants to share suggestions on ways to attract more researchers and the following are some of the responses we received coupled with our program response / resolution:

- **"Increase project budget ceiling."** CTSA recently increased the budget ceiling from $100k to $150k per year ($450k per project over three years), and will raise the issue again at the next Board of Directors meeting.
- **"Allow indirect costs."** The Regional Aquaculture Center program is working on this at the national level – stay tuned!
- **"Add new members to the IAC and TC."** CTSA is always open to onboarding new members, and we welcome / invite you to reach out with recommendations. We even met someone at the meeting who is interested in joining one of our committees.
- **"Host networking events."** The listening session was a great way for us to expand our reach to industry as well as introduce CTSA to regional researchers. We can look at other ways to get researchers and industry together at virtual and in-person events to increase collaboration on CTSA projects.
- **"Increase marketing and awareness of the RFP-P including to community colleges and national aquaculture platforms."** CTSA will share our RFP-P with more lists and groups this year than ever before, and we encourage our e-Notes readers to share with their networks.
- **"More transparency in the review process."** We are always striving to be as transparent as possible; however, we are not allowed to disclose confidential information such as reviewer names, but we do share their comments with PIs.
- **"Shorten the timeline from pre-proposal submission to release of funding."** This is an issue we have heard before and over recent years, we have tried several different timelines. We landed on the current timeline to allow adequate time for proposals to be revised to meet industry needs. The entire purpose of being an industry driven program is to have industry help craft proposals that will realistically resolve issues.

We concluded the presentation with an open-ended question for any other suggestions or action items that CTSA should consider. A few of the suggestions are already being actioned, such as increasing the total budget of the RAC program (being worked on with the NAA) and publishing more project results in peer reviewed journals. We are working on this by encouraging our funded researchers to submit more articles, and also by seeking opportunities for CTSA admin staff to publish journal articles. Many other responses were integrated directly into the RFP-P and priority areas, and the following are a few additional suggestions that we captured:

- "Form partnerships with foreign research/AID partners from Pacific Rim countries that are interested in investing more in aquaculture regionally to leverage more funding."
- "Push our R&D uniqueness due to our proximity and climate opportunities. Position Hawaii as THE place to do research on tropical fish species."
- "Help fund a co-working/hub space on all the islands for small to independent researchers."

Overall, we found the interactive presentation software to be a valuable tool to help us determine industry priority species, technologies, and approaches-- far beyond a traditional digital survey. We look forward to using the program again for future activities, including a session on aquaculture feeds later this summer; stay tuned!

Join the new CTSA group on the Aquaculture Information Exchange Platform

CTSA is pleased to announce that we have joined the Aquaculture Information Exchange (AIE), a new online community involving individuals from both the public and private sectors with interests in U.S. aquaculture and related topics.

The AIE represents a joint effort between NOAA's National Sea Grant Office, NOAA's Fisheries Office of Aquaculture, USDA's Agricultural Research Service (ARS), USDA's National Institute of Food and Agriculture (NIFA), and Virginia Sea

Grant.

The AIE will serve as a communications platform, actively being moderated to facilitate discussions about current issues facing the industry, the latest research and developments in aquaculture, and will be a space where users from across the nation can connect with other members of the aquaculture community.

The site features subject matter work groups that can have access restricted to a small team or be open to any member of the AIE. Teams can store document files, image files, and video files but can also use built-in collaboration tools like video conferencing and group-editable documents. Groups will be led by a Working Group Chair who will manage the team's progress toward achieving project goals or creating specific deliverables.

The AIE uses an interface similar to popular social media sites. In addition to working groups, it also includes features like keyword-searchable member profiles, job postings, community discussion forums, and an events calendar.

CTSA looks forward to building out our group page and related activities on the site over time.Click here to visit the CTSA group page on AIE.

Public Listening Sessions for the Future of Aquaculture at NOAA Fisheries - May 14

NOAA is inviting growers, workers, researchers, coastal community members, and the general public to provide input and share their views on the future of aquaculture at NOAA Fisheries. The listening sessions will take place On May 14, 1:00-3:00 p.m. HST, Register to attend online or attend in person at:

- NOAA Fisheries Pier 38 office, 1139 N Nimitz Highway, Suite 220, Honolulu
- Hawai'i Island: NELHA Host Park, Hale Iako Conference Room
- See link for other Pacific island locations

Cast Your Vote for Maui Ocean Center as Best Aquarium in the Nation

USA TODAY has chosen Maui Ocean Center as a nominee for one of the best aquariums in the country. Voting is open now until Monday, May 13. Click here to vote for Maui Ocean Center!

Upcoming webinar series for NAICS Proposal Development Committee

The Aquaponics Association recently launched a new proposal development committee to create a new industry classification code for aquaponics within the North American Industry Classification System. In order to create an equal opportunity for members of the aquaponic community to share their feedback for consideration during the proposal development process, the committee is hosting a 4 part webinar series relevant to the different proposal sections required by the Economic Classification Policy Committee (ECPC).

Webinar #1: Aquaponics Significance
Date: Thursday, May 9th
Time: 5:00-6:00 pm EST
Registration Link: https://us06web.zoom.us/webinar/register/WN_LwFiXZKmTXK8_-XIoMpXxQ

Webinar #2: Aquaponics as a Unique Industry
Date: Thursday, May 9th
Time: 6:00-7:00 pm EST
Registration Link: https://us06web.zoom.us/webinar/register/WN_YCJyu96MQqmgUcOvYOnFFQ

Webinar #3: Aquaponics across North America
Date: Thursday, May 14th
Time: 7:00-8:00 pm EST
Registration Link: https://us06web.zoom.us/webinar/register/WN_InSaynnOQGuT5KJVu_QCxg

Webinar #4: Aquaponics Economics
Date: Thursday, May 16th
Time: 6:00-7:00 pm EST
Registration Link: https://us06web.zoom.us/webinar/register/WN_CKOvpZSPRhS7tT6tYwn1ng

HATCH's Crest Accelerator Program Deadline is May 31

Hatch Blue is seeking mission-driven, innovative companies in aquaculture and alternative seafood seeking to revolutionize the global seafood industry: CREST now delivers concrete outputs in addition to an investment and business networking opportunities worldwide. The program's new flexible schedule offers founders and CEOs the opportunity to join Hatch in Norway, Singapore, Vietnam and Hawai'i according to the CEO's own schedule. Learn more.

In Case You Missed It: New CTSA Sea Cucumber Manual

CTSA recently released 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

AquaClip: Could Fishponds Help With Hawaii's Food Sustainability?

Indigenous aquaculture systems in Hawai'i, known as loko i'a or fishponds, can increase the amount of fish and fisheries harvested both inside and outside of the pond. This is the focus of a study published by a team of researchers at the University of Hawai'i at Mānoa Hawai'i Institute of Marine Biology (HIMB). Today, aquaculture supplies less than 1% of Hawai'i's 70 million pounds of locally available seafood, but revitalization of loko i'a has the potential to significantly increase locally available seafood.

According to historical accounts, loko i'a can create surplus fish inside the pond, but their role as a nursery ground seeding surrounding fish populations has received less attention.

"We have demonstrated the ability of Indigenous aquaculture systems to produce a surplus of fish as well as supplement fisheries in the surrounding estuary," said lead author and marine biology PhD candidate Anne Innes-Gold. "We have heard people voice the idea that historically, loko i'a provided nursery grounds that may have supplemented fish populations in the estuary. Our study is the first that we are aware of to demonstrate this idea in academic literature."

The Indigenous aquaculture systems found in Hawai'i boast a design found nowhere else in the world, and are among the most productive and diverse of their kind. Loko i'a historically yielded nearly 2 million pounds

of fish annually, and hoaʻāina (land tenants) and kiaʻi (caretakers) initially managed them with a “take what you need” mentality to ensure the resource persisted. Most loko iʻa were destroyed in the 20th century, and by 1994 only six of 500 historical loko iʻa were still operating.

“As aquaculture continues to provide a growing proportion of our seafood globally, revival of Indigenous aquaculture systems will be beneficial to sustainably maintain and increase our seafood supply,” said Innes-Gold.

One success story of loko iʻa restoration is the Heʻeia Fishpond, located in Windward Oʻahu and stewarded by Native Hawaiian nonprofit, Paepae o Heʻeia. Their mission is to link Indigenous knowledge with contemporary management to promote cultural sustainability and restore and maintain a loko iʻa for the local community. The benefits of restoring loko iʻa and related systems can help boost local food production, and provide community members with a space to nourish their bodies and minds, connect with ʻāina, practice reciprocity and promote cultural education.

This work was funded by Hawaiʻi Sea Grant, the Heʻeia National Estuarine Research Reserve, and the National Marine Fisheries Service-Sea Grant Fellowship in Population and Ecosystem Dynamics. With their foundational work complete, Innes-Gold and her team plan to simulate potential climate change impacts in a loko iʻa system.

Source: Eurasia Review // Read Original 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
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