FY2024 Saltonstall-Kennedy Grant Recommended Project Summaries

Priority #1: Promotion and Marketing

Proposal #: 24AKR610-001

Project Title: *Development and Marketing of an Alaska Seafood Pet Food Brand*

Applicant: Alaska Seafood Marketing Institute

Priority Addressed Priority #1 – Promotion and Marketing

Principal Investigator: John Burrows, ASMI Seafood Technical Director, jburrows@alaskaseafood.org

Amount: $500,000

Abstract: Created in 1981 by the Alaska state legislature, the Alaska Seafood Marketing Institute (ASMI) is a non-profit agency of the State of Alaska within the state Department of Community and Economic Development. The agency serves as a generic Alaska seafood marketing commission for both domestic and export markets, working cooperatively with private industry. ASMI represents 100% of the fishermen and processors involved in the Alaska seafood industry. ASMI's primary goal is to increase the value of the Alaska seafood resource. In 2022 the ASMI board of directors formally identified the strong potential for Alaska seafood products in the pet food market and passed a motion to allow ASMI to promote in the pet food market. US pet food manufacturers purchased $893 million in fisheries products for use in cat and dog food. However, total agricultural products purchased for the sector reached $6.9 billion, meaning the seafood sector only holds a fraction of the market share in a highly lucrative market. ASMI currently lacks resources to create a strategic marketing program geared toward the pet food sector. This project would allow ASMI to create resources for the Alaska seafood industry to use in order to target the valuable pet food sector. ASMI has over 40 years of experience creating marketing assets for the Alaska seafood industry's use and has identified marketing collateral items most important to establishing a brand: buyers guides and quality specs, a brand logo with maximum consumer impact, digital assets such as photography and video available in an online library, and sales sheets that explain the importance of using brand differentiators.

Summary of potential benefits to the fishing community of the project results: The benefits of this project will be realized differently across the sector, with the beneficiaries generally falling into four categories: Large seafood processors, small and medium sized processors, established independent Alaskan treat or pet food manufactures currently using Alaska seafood, and new Alaskan treat or pet food companies.

Large processors who have already entered the market will see a rise in value for their raw material due to marketing efforts and access to new customers at ASMI sponsored trade shows. While many large processors already produce oil and meal, the majority produce for commodity market, which primarily ships to China and is controlled by global market forces. Shifting to production for the pet food market would add value.

Smaller processors or species groups that have not yet entered the pet food market, such as herring, will be able to properly assess market potential, understand quality handling and food safety requirements for this sector, address production costs by introduction to targeted customers who can pay more for high quality ingredients rather than bulk products, and use marketing collateral to help enter this market.

Current independent treat and pet food manufacturers who primarily use Alaska seafood products will benefit from increased awareness of the value of Alaska seafood as an ingredient, ability to use the logo and digital assets and see increased sales from ASMI's generic advertising and PR efforts.

With better access to the market and industry specs and regulations, new independent Alaska companies will enter the treat and pet food market, increasing the value of the resource and jobs in coastal Alaska.

In addition, coastal communities in which Alaska seafood is processed will realize broad benefits. An estimated 87 shoreside facilities in Alaska process at least 100,000 pounds of seafood annually and at least 70 facilities handle more than a million pounds each year. Roughly 10 floating processors operate in various locations throughout Alaska. In addition to thousands of jobs directly supported by processing activity, the inshore processing sector provides markets to tens of thousands of Alaska fishermen. Hundreds of millions of dollars are spent each year in Alaska communities on support services such as shipping and construction, along with fuel, groceries, and other supplies. Processing activity supports vital infrastructure such as docks and utilities while generating millions in tax revenue for local communities and the State of Alaska annually. By providing additional markets, shoulder season work and higher value for by-products, benefits from this project will be seen throughout coastal Alaska.

Proposal #: 24AKR604-006

Project Title: *Consumer Research and Promotion to Increase the Value of Alaska Flatfish*

Principal Investigator: Pat Shanahan, Executive Director, pat.shanahan@shanahaninc.com, 206-310-4372

Applicant: Wild Alaska Sole Association

Priority Addressed Priority #1 – Promotion and Marketing

Amount: $419,590

Abstract: This project will help to provide consumer research data, marketing tools and promotions for the first-ever marketing effort for Alaska flatfish. The Alaska flatfish fishery is the largest flatfish fishery in the world and the second largest federally-managed fishery in the state, but little marketing work has been done to realize the market potential and value of these delicious, sustainable, and nutritious fish. This project will build on WASA's existing consumer attitude, usage and messaging research in the U.S. and UK, by conducting new consumer messaging research in France, a key market for flatfish in Europe. The research will determine the best messaging to drive consumer interest in and purchase of Alaska flatfish and will also identify target audiences for that messaging. The research findings across the three key markets will be used to create messaging toolkits for use in marketing efforts for Alaska flatfish. Further, the project will utilize these messages in retail or foodservice promotions for Alaska flatfish and measure the results.

Summary of potential benefits to the fishing community of the project results: This project will build on WASA's initial marketing efforts for Alaska flatfish by providing the data and tools needed to increase awareness, positive perception and value of Alaska flatfish in the minds of consumers. Increasing the value of Alaska flatfish will directly benefit fishermen and processors, Alaska coastal communities and maritime industries, Washington maritime industries, the states of Alaska and Washington, and the nation. Over time, the resulting higher prices and market stability will allow an expansion of markets for Alaska flatfish fishermen, lessoning their dependence on China and allowing growth of secondary processing of flatfish in the United States.

Proposal #: 24PIR705-019

Project Title: *Increasing market value and presence of Hawaiian fishpond products*

Applicant: Kauai Sea Farms LLC

Priority Addressed Priority #1 – Promotion and Marketing

Principal Investigator: David Anderson, Kaua'i Sea Farms LLC: dave@kauaiseafarm.com

Amount: $100,000

Abstract: Hawaiian fishponds once served a major role for food security and livelihood during the period of the Hawaiian Kingdom. Modern efforts to restore these resources are underway, but face issues involving pollution, overfishing, and challenges of integrating extensive production systems into globalized seafood markets. Fishpond production is a multi-species model that is highly sustainable, but produces relatively low volumes of individual species. Consumers have come to expect uniformly shaped fish, cheap imported value-added products, and have largely lost connection to the source of their seafood. The proposed project will

promote fishpond production of native species by targeting replacements for commonly imported products. Harvesting and processing strategies will be investigated to maximize the value of unpredictable harvests from fishponds, and market surveys will be conducted to gauge consumer attitudes and preferences between imported seafood and fishpond products. Project findings will be compiled along with related past research in a publication outlining opportunities for promoting fishpond production. Production will focus on native species that are well-adapted to fishpond culture. This publication will be written in a comprehensible format intended for fishpond practitioners, and will include an outline of the permitting and regulatory requirements for production, harvesting, and value-added processing of products.

Summary of potential benefits to the fishing community of the project results: Fishponds traditionally offered a lifeline to fishermen when fishing was impossible or unsuccessful, and could play a similar role in modern society. Restored fishponds offer direct benefits to the fishermen who work around them, and indirect benefits in the form of serving as coastal nurseries and breeding areas for wild fish stocks. Maximizing restoration efforts and production from fishponds will require economically efficient strategies, utilizing many species that are not currently widely consumed. Promoting valuable fishpond production will offer traditional fishermen alternative jobs in the face of modern nearshore overfishing, and increase fishpond restoration throughout Hawai‘i.

Proposal #: 24WCR401-024
Project Title: *A Sea-to-School Program for the Santa Barbara Channel*

Applicant: Get Hooked Seafood LLC

Priority Addressed Priority #1 – Promotion and Marketing

Principal Investigator: Victoria Voss, Co-Founder and Chief Operations Officer of Get Hooked Seafood, victoria@gethookedseafood, 805-456-9681

Amount: $499,991

Abstract: There is no seafood on the school lunch menu currently at nearly all the K-12 schools in Ventura County (CA), like in much of the U.S. The disconnect between U.S. fisheries and K-12 schools has negative implications for both children and fishers alike. Seafood represents a sustainable, healthy option for youth consumption, and schools are a critical yet underutilized high volume market opportunity for fisheries. In order to address this issue, Get Hooked Seafood (a Community Supported Fishery) will create a successful, replicable Ventura County Sea-to-School program which will connect K-12 school children with local seafood products through their school lunch service. We will develop and school-test several affordable, kid-friendly seafood products and deliver our most successful seafood products to 40 schools within the 6 Ventura County school districts. In addition, we will create seafood preparation trainings for school food service staff and an extensive classroom curriculum that includes participation from local fishers to educate students about local fisheries and seafood. Our ultimate goal is to increase market demand for U.S. fisheries by developing strategies, value-

added seafood products, and an educational campaign that stimulates demand for local and regional seafood in educational food service settings and beyond.

Summary of potential benefits to the fishing community of the project results: This project will benefit fishers by opening a high-volume market (primary and secondary schools) for California groundfish, Oregon Pink Shrimp, Dover Sole, and Alaskan Salmon. Our recipes and educational materials will be disseminated publicly to catalyze uptake of U.S. seafood by schools nationwide, supporting economic opportunity for fishers by promoting seafood to the next generation of consumers. We also aim to foster youth's interest in seafood careers through classroom visits by local fishers. Furthermore, this project supports the growth of a women-owned and fishing family-owned Community Supported Fishery, Get Hooked Seafood, by improving its processing efficiencies and market access.

Proposal #: 24WCR412-001

Project Title: *A groundfish consumer packaged goods start-up accelerator program designed to incentivize product innovation, expand the industry and grow demand for West Coast groundfish.*

Applicant: Positively Groundfish

Priority Addressed Priority #1 – Promotion and Marketing

Principal Investigator: Jana Hennig (jana@positivelygroundfish.org), PG Executive Director

Amount: $497,641

Abstract: The West Coast groundfish fishery has experienced a remarkable ecological recovery since its collapse in 2000. However, the fishery is now struggling with low market demand which causes the fishery to be underutilized and undervalued. To unlock the full economic potential of this fishery, we need to grow harvest volumes while also increasing average prices, and strengthen groundfish's presence in retail, which can all be achieved simultaneously by developing more value-added branded products. Positively Groundfish thus proposes to run a start-up accelerator program that entices US-domestic entrepreneurs to this fishery and directly incentivizes them to develop innovative value-added products using West Coast groundfish, and that supports these entrepreneurs with financial, educational, and promotional resources to meaningfully boost their chances of success. The 20-month long project breaks down into three sequential work tracks: 1) accelerator program development and recruitment campaign; 2) a 6-month accelerator program for 5 select start-ups; 3) a post-accelerator marketing support program.

Priority #2: Development, Infrastructure, and Capacity Building

Proposal #: 24AKR613-013

Project Title: *Increasing Utilization and Value of Alaska Seafood Through High Value Side-stream Production, Re-Shoring of Value-Added Processing, and Neutral Storage Facilities*

Applicant: Alaska Seafood Marketing Institute

Priority Addressed Priority #2 – Development, Infrastructure, and Capacity Building

Principal Investigator: John Burrows, ASMI Seafood Technical Director, jburrows@alaskaseafood.org

Amount: $500,000

Abstract: ASMI, the Alaska Fisheries Development Foundation (AFDF), the McKinley Research Group (MRG), the Iceland Ocean Cluster (IOC), and University of Alaska-Fairbanks' Alaska Blue Economy Center (ABEC) will collaborate to evaluate existing value-added processing methodologies currently active in the Iceland Ocean Cluster and determine which could be applied to Alaska seafood processes and species. The framework developed in Iceland for full utilization of seafood, known as the 100% fish initiative. A model that has been successfully applied domestically in Iceland, and adapted for novel contexts (e.g. 100% Great Lakes project). We will build upon the previous Specialty Product Report with updated information and provide next steps for industry diversification, giving industry the ability to make more informed decisions as they seek to enhance the value of their products through feasibility analysis from both a scientific and business lens. Existing reports and information are insufficient for most industry members to determine what products they could produce, what challenges (and relevant solutions) may exist, and how best to implement them. We intend to provide information to enhance value, reduce waste, and create new potential markets

Summary of potential benefits to the fishing community of the project results: Creation of social innovation through diversification, making new markets accessible and allowing potential for increase in availability of attractive employment related to and enabled by this diversity (e.g. cosmetic and fashion are new avenues to support value creation, inclusion and accessibility to the fisheries economy as in Iceland). • Attraction of technical specialists, new technologies, and infrastructure to fishing communities. • Bring additional expertise and capital to processing areas and allow greater value for the volume of harvest. Stimulation of the local innovation ecosystem and economy for successful products. • Creation of additional value from produced from the same volume of caught fish.

Proposal#: 24GAR234-079

Project Title: *Co-produced Research to Control Invasive Blue Catfish in Chesapeake Bay*

Applicant: Morgan State University

Priority Addressed Priority #2 – Development, Infrastructure, and Capacity Building

Principal Investigator: Thomas F. Ihde, Assistant Research Professor, Senior Marine Research Scientist, 10545 Mackall Road, St. Leonard, MD 20685; 443-885-5932; Thomas.Ihde@morgan.edu

Amount: $500,000

Abstract: The recent invasion of Blue Catfish (*Ictalurus furcatus*) throughout the Chesapeake Bay system presents cross-jurisdictional challenges for sustainable management of multiple commercially and recreationally important species impacted by the invader, as well as an opportunity to develop profitable fisheries for the invasive species itself. The proposed work brings stakeholders, fishery managers and scientists together in a professionally facilitated dialogue to identify jurisdiction-specific preferred management approaches likely to be most effective in controlling Blue Catfish, while also fostering the development of new, profitable fisheries. A wide range of stakeholders with sometimes opposing interests are directly affected by Blue Catfish. There is great potential to foster a new understanding of other stakeholders, of the species, its impacts, and how we, as a community, might realize an improved future for a region that now includes this aggressive species. Co-produced research is at the core of the proposed work. Stakeholder-preferred management alternatives will be explored, and the science team will visualize the likely ecological and regional economic impacts of the expanding fisheries, and the effects of Blue Catfish on other important Chesapeake species. Stakeholders will work together to identify their management preferences and will share their ideas with fishery managers of each jurisdiction.

Summary of potential benefits to the fishing community of the project results: This project provides an opportunity for stakeholders to develop a shared understanding of: (1) other stakeholder perspectives, (2) how their management ideas are likely to perform compared to alternative management strategies, (3) envision the long-term ecological effects and economic impacts from the Blue Catfish invasion with and without current USDA regulation. The final product – a consensus document – will enable jurisdictional managers to select from a suite of management options, co-designed by fishery stakeholders, that strengthen existing fisheries and benefit the fishing community, fully informed of trade-offs and stakeholder preferences for the various outcomes.

Proposal #: 24GAR219-074

Project Title: *Preparing the next ocean stewards: Fishermen's Development Training Program*

Applicant: Cape Cod Commercial Fishermen's Alliance Inc

Priority Addressed Priority #2 – Development, Infrastructure, and Capacity Building

Principal Investigator: Melissa Sanderson, Chief Operating Officer, melissa@capcodfishermen.org; 508-945-2432 x103; 1566 Main Street, Chatham, MA 02633

Amount: $128,524

Abstract: The proposed project will provide beginning and existing fishermen with free training they need to safely enter and advance in the commercial fishing industry, taught by fishing

captain partners and business skill experts. It will negotiate and secure agreements and funding for future replication of the training program, and help ensure long-term economic growth in the region. Findings and resource guides will be shared with fishing communities throughout the country. The training curriculum is based on previous pilots, partner expertise, and a robust training framework previously developed with Sea Grant funding. The specific objectives of this project include:

1. Recruit a diversity of men and women into the training program, including veterans and immigrants.
2. Educate beginning fishermen during two introductory training courses (once per year).
3. Educate existing fishermen during fourteen advanced training workshops (7 each year).
4. Retain the trainees in the fishing industry.
5. Integrate the training courses into the curriculum at Cape Cod Community College and/or Cape Cod Technical High School and/or East Farm Commercial Fisheries Center of Rhode Island.
6. Achieve long-term financial sustainability for training program.
7. Share project findings with fishing communities across the country.

Summary of potential benefits to the fishing community of the project results: During the two-year project, an additional 30 new entrants from diverse backgrounds will be trained in crew skills and maritime safety, providing a critical source of new, competent, and safe employees to Cape Cod commercial fishing businesses with less turnover. At least 60 existing fishermen will be empowered to advance their fishing career due to increased skills and knowledge. The project will also develop plans, agreements, and future funding sources to ensure these benefits can be replicated year after year with a sustainable training program. Long term, we expect to increased resiliency, inclusivity, and capacity for Cape Cod's fishing community.

Proposal #: 24GAR209-007

Project Title: *Coastal Access Cohort: Future-Proofing Municipal Strategies to Support Commercial Fishing, Intertidal Harvesting, and Aquaculture*

Applicant: Maine Coast Fishermen's Association

Priority Addressed Priority #2 – Development, Infrastructure, and Capacity Building

Principal Investigator: Monique Coombs, Director of Community Programs, monique@mainecoastfishermen.org; 207-807-5539 93 Pleasant St. Brunswick, ME

Amount: $487,702

Abstract: The Coastal Access Cohort will support eight coastal communities in Maine as they complete working waterfront inventories and begin to incorporate results into municipal planning. This work will help communities identify critical infrastructure upon which Maine's

commercial wild capture fisheries, intertidal harvesting, and aquaculture depend. Towns gain a better sense for how development pressures and climate change increase vulnerabilities of scarce working waterfront resources and strategies to prioritize interventions to sustain coastal access for diverse seafood businesses. Building relationships across municipalities will allow for sustained peer-to-peer learning, sharing of experiences, and connections to industry, leading academic and private sector research organizations, and private sector partners. Metrics will be co-developed with cohort members to help prioritize assets and understand tradeoffs given finite resources. A Future of Maine's Working Waterfront Colloquium will be hosted to extend learning beyond the initial cohort.

Summary of potential benefits to the fishing community of the project results: The working waterfront that supports Maine's seafood economy is a severely limited resource. The project will help coastal communities build capacity to identify infrastructure investments and interventions that are needed along the coast of Maine to sustain local fishery sectors. As a result, Coastal Access Cohort participant towns will be equipped to make informed decisions in the context of uncertainty and to implement strategies that better support coastal access by commercial fishermen, intertidal harvesters, and aquaculturists. Seafood businesses will be given more of a voice in the municipal planning processes.

Proposal #: 24PIR707-009

Project Title: *Establishing a Supply & Training Program for Restorative Aquaculture Production of the HI Red Seaweed, Limu Kohu (*Asparagopsis taxiforms)

Applicant: University of Hawaii

Priority Addressed Priority #2 – Development, Infrastructure, and Capacity Building

Principal Investigator: Bradley K. Fox, Aquaculture Extension Specialist, University of Hawai'i Sea Grant College Program, bradleyf@hawaii.edu

Amount: $500,000

Abstract: Limu Kohu (*Asparagopsis taxiformis*) is a native red seaweed that is culturally significant to Hawai'i and its people. Limu (seaweed) is the third main component of the traditional Hawaiian diet, alongside raw fish and taro. Limu Kohu, directly translated as the "supreme seaweed," was one of the favorite limu for ali'i (Hawaiian royalty) and is still a favorite for many people in Hawai'i today. In recent decades, there has been a revitalization and strengthening of Hawai'i's relationship with limu, particularly through traditional seaweed practices and knowledge in response to the loss of cultural practices and the near extinction of fluent speakers of 'ōlelo Hawai'i (Hawaiian language) following colonization. Limu also serves as a critical bioindicator of coastal health and ecosystem balance. This project aims to initiate Limu Kohu restoration at selected locations across Hawai'i in partnership with community organizations involved in loko i'a (Hawaiian fishpond) and limu restoration, while also

increasing understanding and awareness of Limu Kohu's environmental and cultural significance through education outreach activities. The commercial potential of this species will also be explored through tank-based culture with partners. This limu restoration program will be the first of its kind in Hawai'i that actively restores a depleted seaweed fishery through a university-private-community partnership.

Summary of potential benefits to the fishing community of the project results: The participation of community organizations involved in limu restoration efforts will take place during all phases of the project and will be vital for effective and successful Limu Kohu restoration in Hawai'i. This project will provide these community organizations with the opportunity to actively participate in the restoration of a depleted limu fishery. The project will also examine the commercial potential of Limu Kohu which may also serve as an economic opportunity for these community organizations and industry.

Priority #3: Science or Technology that Enhances Sustainable U.S. Fisheries

Proposal #: 24GAR220-066

Project Title: *Commercialization of "Ropeless" On-Bottom Sea Scallop Aquaculture in the Gulf of Maine: Development of Spat Collection and Growout Protocols*

Applicant: University of New Hampshire

Priority Addressed Priority #3 – Science or Technology that Enhances Sustainable U.S. Fisheries

Principal Investigator: Michael Coogan, University of New Hampshire, michael.coogan@unh.edu

Amount: $497,723

Abstract: The Atlantic sea scallop, *Placopecten magellanicus*, shows great potential as an aquaculture species in the Northeast United States. It is characterized by a fast growth rate, high price, an established market both domestically and internationally and developed aquaculture protocols in similar species abroad. The U.S. has the largest wild scallop fishery in the world, with 43 million pounds of sea scallops valued at $670 million landed in 2021. However, with a domestic market of over $1 billion USD, nearly half of scallops consumed in the U.S. are imported, contributing to the $17 billion dollar trade deficit. Demand for scallops far outstrips supply presenting a significant opportunity for aquaculture to capture a portion of this share as well as mitigate some of the harmful ecological effects of wild scallop harvesting including bycatch and destruction of benthic habitats. While commercial aquaculture has existed in the region for decades, farmers face several challenges including competition from foreign aquaculture and the domestic wild fishery, uneconomical growout methods, a lack of hatcheries to provide seed, and changing oceanic conditions, including warming temperatures and ocean acidification.

Summary of potential benefits to the fishing community of the project results: Scallops are typically grown in either bottom gear, such as oyster condos, or suspended gear, including ear hanging, lantern nets and pearl nets, each with its own advantages and disadvantages. Unlike ear hanging which has high startup costs, lantern and pearl nets have a low initial expense but become easily fouled leading to high labor costs. Suspended gear also poses a risk for marine mammal entanglement, a key issue in the Northwest Atlantic where the Northern Right Whale is critically endangered. With the availability of affordable and reliable acoustic release technologies scallops can be cultured in bottom gear in ideal conditions without vertical buoy lines thereby eliminating entanglement risk to whales and other marine organisms.

Proposal #: 24GAR225-097

Project Title: *Genomic population structure of Atlantic herring in US waters to inform sustainable fishery management*

Applicant: Commonwealth of Massachusetts

Priority Addressed Priority #3 – Science or Technology that Enhances Sustainable U.S. Fisheries

Principal Investigator: Dr. Micah Dean, Senior Fishery Biologist – micah.dean@mass.gov

Amount: $321,213

Abstract: Atlantic herring in the US are assessed as a single unit, yet fishery managers divide the annual catch limit (ACL) among four sub-areas to prevent overfishing of individual spawning components. The distribution of total ACL among these areas is based on coarse estimates of the size of each spawning component from the 1990s and some educated guesses on the seasonal mixing rate between them. The fishery management plan acknowledges that little is known about US herring population structure and migration patterns, and that these have likely changed over time. Regardless, the area-based sub-ACL percentages have remained static since the system was created. This project would partner with knowledgeable commercial fishing captains to collect samples from each of the known herring spawning grounds in the US and adjacent Canadian waters. Using low-coverage whole-genome sequencing, we will evaluate the genomic population structure among these putative spawning groups. A panel of single nucleotide polymorphisms (SNPs) will be identified that can reliably discriminate between the sub-populations. This genomic tool would allow fishery managers to set area-specific quotas that prevent unsustainable levels of fishing on each spawning component, thereby augmenting the productivity and resilience of the overall herring population and fishery.

Summary of potential commercial benefits to the fishing community of the project results: The productivity of the Atlantic herring stock has declined in recent years and in response, fishery managers have drastically reduced allocations for commercial harvest. In the short term, this project would provide significant compensation to multiple industry partners for conducting sampling trips that result in minimal utilization of scarce quota. In the longer term, this project will enable empirical observations of seasonal sub- population mixing rates, making

the area-based fishery management system more accurate and effective. Fishery yield will be optimized by minimizing the risk of overfishing to unique spawning groups, thereby augmenting the productivity and resilience of the herring stock

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Proposal #: 24PIR708-033

Project Title: *Aquaculture of native species to improve fisheries habitats and expand opportunities for fishing communities*

Applicant: University of Hawaii

Priority Addressed Priority #3 – Science or Technology that Enhances Sustainable U.S. Fisheries

Principal Investigator: Maria Haws, Ph.D., Professor, Aquaculture. Pacific Aquaculture and Coastal Resources Center, 1079 Kalanianaole St., University of Hawaii Hilo, Hilo, HI 96729. Phone (808) 333-2529. Email: haws@hawaii.edu

Amount: $500,000

Abstract: Molluscan and seaweed aquaculture offer significant untapped potential for economic and environmental benefits for Hawai‘i and the U.S.-Affiliated Pacific Islands, but technical and business models are required to realize this potential. This work builds on the initial twelve years of efforts to establish bivalve grow-out in Hawai‘i by developing new species and building capacity for the first aquaculture cooperative in Hawai‘i. The near absence of native seaweed aquaculture will also be addressed through development of culture methods for high-value species at the “Limu Ark” (seaweed repository). Key activities include:

● developing operational protocols for the Hilo Aquaculture Pilot Site (HAPS), the first open-water shellfish/seaweed aquaculture farm in the state;

● build business and managerial capacity for the Hilo Aquaculture Cooperative (HAC);

● conduct marketing studies for the species cultured by the HAC/PACRC teams at the HAPS;

● develop high-value native bivalve and seaweed species;

● lessen potential impacts of non-native bivalve species through polyploid creation; and;

● acquire key data needed to scale up restorative aquaculture.

The work will strengthen three facilities and build capacity for at least ten stakeholder groups. Equally important, this work makes progress towards implementing restorative aquaculture for direct benefits to fishers and working waterfronts.

Summary of potential benefits to the fishing community of the project results: This work lays the foundation to expand molluscan and seaweed aquaculture which represent untapped economic potential for existing and new producers, including fishing communities. Operational

and economic models will be developed that can be replicated. These species are also the most feasible candidates for restorative aquaculture, rendering multiple benefits such as fisheries habitat provision, stock enhancement, and water quality mitigation. Technical support to the first aquaculture cooperative in the state enables direct participation by fishers and provides a model for others. Critical research and training facilities will be expanded and made sustainable. Capacity building will enable stakeholders to begin mariculture.

Proposal #: 24SER309-036

Project Title: *A FARMS Approach to Address Oyster Mortality and Improve Production in the South's Emergent Off-bottom Oyster Aquaculture Industry*

Applicant: Oyster South Company

Priority Addressed Priority #3 – Science or Technology that Enhances Sustainable U.S. Fisheries

Principal Investigator: Bethany Walton, Executive Director, beth@oystersouth.com

Amount: $499,198

Abstract: This project addresses Priority #3, Science or Technology that Enhances Sustainable U.S. Fisheries by assessing sudden spring/summer unusual unexplained oyster mortalities (S3 U2 Ms events) through a coordinated network of collaborative research with twenty commercial oyster farmers in the southern US across nine states: Farms for Aquaculture Research and Monitoring of Shellfish (FARMS). Through collaborative, on-farm research, we will test the effect of ploidy (diploid and triploid) on oyster performance across a range of environmental conditions and different cultivation practices over a complete production cycle. We hypothesize that by implementing a monitoring and assessment plan at multiple commercial farm sites, important relationships between key environmental factors and the survival and health of cultured oysters will be better understood and lead to solutions promoting more reliable oyster production.

Working with industry partners, this project will develop an industry-wide network to 1) monitor, assess, and understand environmental, biological, and management factors that can drive production successes and failures, 2) refine management practices that may mitigate environmental and handling stressors, and 3) provide tools and baseline data to allow growers to make informed management decisions and share results with the southern oyster aquaculture community.

Summary of potential benefits to the fishing community of the project results: One of the most pressing challenges to the growing off-bottom oyster aquaculture industry in the southern US is the ongoing issue of sudden spring/summer unexplained unusual mortalities (SUMs). The project results will provide the most comprehensive study across this region of this problem and provide potential methods for growers to reduce the likelihood of these

mortalities. In addition, this project will create a formal network of 20 commercial oyster farmers across the southern US that will enhance communication amongst these growers and establish a platform that could potentially host other research projects.

Proposal #: 24SER327-008

Project Title: *Collaborative Research and Capacity Building in the U.S. Caribbean via Investigating Queen Conch Life History and Resolving the Conch Age Conundrum*

Applicant: University of South Carolina

Priority Addressed Priority #3 – Science or Technology that Enhances Sustainable U.S. Fisheries

Principal Investigator's: Jesús Rivera Hernández, Fish/Fisheries Conservation Lab/ BIO/GEO, USCA Marine Sciences, University of South Carolina, RIVERAHE@email.sc.edu; Dr. Virginia Shervette, Fish/Fisheries Conservation Lab, Department of Biology and Geology, University of South Carolina Aiken shervette@gmail.com

Amount: $398,944

Abstract: Queen conch is indisputably critically important to commercial fisheries throughout the U.S. Caribbean yet is still considered an extremely data-poor species. In Puerto Rico (PR) and St. Croix (STX), conch ranks as the second most important commercial fishery and commands one of the highest economic yields-per-effort, averaging > $12/lb of meat. In USVI, queen conch is harvested commercially from waters of STX, but St. Thomas/St. John and STX rely on the STX fishery to supply conch for USVI territorial needs. SEDAR14 included a review of queen conch for assessment and concluded no assessment could be performed "due to a lack of adequate data." In September 2022, NOAA-Fisheries proposed to list queen conch as threatened under the Endangered Species Act. Our understanding of life history strategies of fisheries species is informed by key biological processes, such as growth, survival/mortality, recruitment, and sexual maturation, used to characterize fishery species stocks (populations). This collaborative study between conch fishers and scientists seeks to document current, region- specific life history information for queen conch from STX and PR; understanding basic life history characteristics of queen conch is critical to making informed decisions regarding sustainable harvest of this species in the U.S Caribbean.

Summary of potential benefits to the fishing community of the project results: U.S. Caribbean fishers expressed their extreme concern to NOAA personnel about listing conch as threatened. Fishers emphasized that no current, U.S. Caribbean-specific information was utilized in the process and no engagement with local fishers occurred in preparation for the listing. Fishers noted the critical need to investigate queen conch population attributes in the region and their willingness to collaborate on obtaining this information. Therefore, the focus of our collaborative study is to collect essential life history data for queen conch in STX and PR waters

to ensure that management decisions regarding sustainable harvest of this species utilize current, region-specific information.

Proposal #: 24SER322-010

Project Title: *Optimizing Atlantic Croaker Reproductive Performance for Fisheries Conservation and Aquaculture*

Applicant: Live Advantage Bait LLC

Priority Addressed Priority #3 – Science or Technology that Enhances Sustainable U.S. Fisheries

Principal Investigator: Nicole Kirchhoff, Ph.D., CEO Live Advantage Bait LLC, nkirchhoff@gmail.com

Amount: $99,697

Abstract: Atlantic Croaker, native to the Atlantic and Gulf State regions, has a high potential for multi-purpose aquaculture development, including live baitfish, food fish, and restoration. Demand for Atlantic Croaker has soared in recent years, with live bait prices exceeding $3-$5.50 each in Florida, imitating fisheries management measures. Aquaculture, not increased wild catch, is, therefore, the best method to increase market value and fulfill demand in this fishery without threatening wild stocks. While commercial quantities of spawn (eggs) can now be achieved both in and out-of-season, the percent fertilization is still very low and unpredictable. For commercial aquaculture to be economically successful, egg quantities and quality must be predictable and, if possible, year-round hatchery production achieved. This project aims to optimize fertilized egg production year-round in Atlantic Croaker through (a) altering in-tank water velocity (b) sex-ratio manipulation and (c) further describing spawning seasonality in Florida. These objectives will be trialed in tanks on a commercial aquaculture farm, with production output such as number of eggs, percent fertilization, perfect hatch, and survival to first feeing recorded. Results will be presented in numerous formats to both commercial and academic audiences with an aim to promote development and expansion of the industry.

Summary of potential benefits to the fishing community of the project results: Bait sales throughout the US account for an approximate $2.3 billion across the economy and are under increasing pressure to be managed fisheries. This project will significantly impact the effectiveness and speed which management can respond to the rapidly increasing demand for Atlantic Croaker across the Gulf and Atlantic regions. In addition, expansion of the availability of croaker as live bait can directly result in an $290 million per year expansion of the live baitfish industry and associated supply chain market. Employment opportunities would be generated in aquaculture, bait transport, retail, charter fishing and beyond.