Joint Innovation Projects

Round III - 2026

With funding from the Alaska Mariculture Cluster (AMC), Alaska Fisheries Development Foundation (AFDF) is excited to announce the third cohort of applied research and development projects for the Joint Innovations Project (JIP) program. These projects are designed to partner with the private sector to accelerate innovation, address barriers to growth, and strengthen Alaska's emerging mariculture industry.

The third round of Joint Innovation Projects was established to address a recognized need for targeted product development within the mariculture industry. This round utilizes underspent funds from Cohorts I and II to support smaller, high-impact projects on shorter 8-10 month timelines with awards up to $50k. Cohort III supports innovation in shellfish and seaweed product development through:

- Development and testing of new shellfish or seaweed products
- Activities necessary to bring new products to market, including:
    - Market testing
    - Refinement of processing methods
    - Business planning
- Commercialization efforts
- Scaling or improving production methods for existing seaweed or shellfish products

Project findings are to be compiled into reports and distributed to the public, ensuring insights are available to current and future industry participants.

About the Alaska Mariculture Cluster

In September 2022, Southeast Conference (SEC) was awarded a $49 million U.S. Economic Development Administration (EDA) Build Back Better Regional Challenge (BBBRC) grant to grow Alaska's mariculture industry. SEC leads the Alaska Mariculture Cluster (AMC) grant coalition, which includes members of Alaska's mariculture industry, tribal organizations, regulatory agencies, university system, Economic Development Districts, trade organizations, and others. A Governance Body, composed of AMC coalition leaders and Tribal representatives from each of the project regions, guides the grant's work and equity metrics.

The AMC grant has seven complementary components designed to break down barriers and develop a transformational, viable, and sustainable mariculture industry for the long-term benefit of Alaska's economy, environment, and communities. More information on the AMC is available at alaskamaricultirecluster.org, including the Overarching Narrative, which explains how the grant components work together to grow the mariculture industry in an equitable and responsible manner. The full project period for the AMC BBBRC project is October 1, 2022 to September 30th, 2026.

About AFDF

Since 1978, the AFDF has broadly represented the Alaska seafood industry (harvesters, processors, and support service businesses) in the areas of research and development. Since 2014, AFDF has spearheaded the Alaska Mariculture Initiative, an effort to expedite the development of growing shellfish and seaweed in Alaska.

AFDF is a part of the AMC coalition and one of the subaward recipients. As part of its subaward, AFDF oversees a portion of the Research and Development component, and in particular, the Joint Innovation Projects.

Joint Innovation Projects Rounds I and II

See JIP Round I project summaries awarded in 2023 and due to be completed by Spring 2025.

See JIP Round II project summaries awarded in 2024 and due to be completed by Spring 2026.

Joint Innovation Projects III

Advancing Value-Added Mariculture: Development and Testing of Kelp Dumplings

Lead Entity: Alaska Ocean Farms

Project Location: Kodiak, AK
Award Amount: $21,798

PROJECT OVERVIEW

Food products containing kelp have seen limited acceptance in North American markets due to consumer unfamiliarity with the ingredient and uncertainty about its preparation. This project aims to increase kelp's accessibility and demonstrate its potential as a high-value ingredient by incorporating Alaskan farmed kelp and Alaskan seafood into pelmeni-style dumplings, a familiar, boiled (not fried) format that is simple for consumers to prepare. Kelp adds a subtle umami flavor that complements both seafood-based and vegetarian fillings, while its natural alginates improve binding and help stabilize texture during freezing, storage, and reheating. Additionally, this project will create new value-added uses for kelp grown by local farmers, supporting higher returns and diversified markets for Alaska's mariculture producers. Through coordinated product development and consumer testing, this project will assess the feasibility, sensory appeal, and market potential of kelp-integrated dumplings as an entry point for expanding consumer demand for Alaskan kelp and creating new high-value opportunities for the kelp industry.

Data-Driven Messaging for Mariculture Growth: Analyzing the Communication and Visual Strategies that Drive Engagement and Consumer Behavior

Lead Entity: Barnacle Foods

Project Location: Juneau, AK
Award Amount: $47,485

PROJECT OVERVIEW

For Alaska's mariculture industry to expand, measurable growth in consumer demand is essential. Although consumers and buyers often state that they value factors such as nutritional benefits, Alaska origin, environmental sustainability, and other product attributes, it is not clear which of these variables actually influence purchasing behavior in practice. This project will build on the work done by the Food for Climate League (FCL). Our project will establish a rigorous, data-centered research framework to quantitatively test these variables at a larger scale that FCL work, aiming to collect and share purchase behavior and engagement for over 1.5 million people over three months through controlled digital communication experiments. Using systematic A/B testing, multivariate analysis, and performance metrics across diverse audience groups, the project will determine which specific messages and visual elements generate higher engagement, conversion rates, and sustained interest among end consumers. Results will be compiled into a set of evidence-based findings and distributed to mariculture businesses, industry partners, and relevant stakeholders to support informed decision-making and help drive the growth of demand for Alaska-grown kelp.

Novel Processing of Five Kelp Species for Cosmetic and Nutraceutical Products

Lead Entity: Noble Ocean Farms

Project Location: Cordova, AK
Award Amount: $50,000

PROJECT OVERVIEW

This project is led by Noble Ocean Farms (NOF) in Cordova, Alaska with technical support from Marine Biologics to develop and validate a scalable processing pathway for value-added kelp ingredients: cosmetics and nutraceuticals. Building on PWSEDD's AMC equipment funding for kelp processing operations in Cordova, the project will study fermentation, screw-press liquid/solid separation, and drying as core process steps to achieve value-add seaweed ingredients with unique market potential. Five cultivated species (Giant, Sugar, Bull, Ribbon, and Split kelp) will be used to provide liquid (cosmetic) and solid (nutraceutical) products. To support cosmetic applications, the liquid fraction will be stabilized using common preservatives (e.g., sodium benzoate, potassium sorbate, citric acid), have the shelf stability assessed, and preliminary bioactivity measured in targeted cosmetic studies. The solid fractions will be characterized for fiber and bioactives to target nutraceutical and animal health markets. Success will be demonstrated through a structured testing program (chemical, biological, and application testing) and a formal Marine Biologics food safety site audit, generating decision-ready data and SOP-ready learnings to support Cordova's commercial kelp farming businesses. Upon completion, NOF will provide a community presentation about the project in Cordova and invite Native Village of Eyak Tribal members, Cordova community members to attend.

Establishing an Alaska Broodstock Program for the Pacific Oyster

Lead Entity: Pacific Hybreed

Project Location: Bainbridge Island, WA
Award Amount: $50,000

PROJECT OVERVIEW

Genetic breeding is a well-established methodology for enhancing the yield of mariculture species. Since 2023, Pacific Hybreed has conducted crossbreeding work and on-farm trials to select strains of the Pacific oyster specifically optimized for the unique environmental conditions in Alaska. The breeding approach capitalizes on hybrid vigor, which is achieved by crossing previously developed within-species inbred lines. The empirical findings, from field trials involving two cohorts of 41 genetic lines in Alaska waters, demonstrate substantial potential for genetically-based yield improvement and reveal the necessity for multi-year trials to identify top-performing hybrid lines. A two-year field trial focusing on Cohort I oysters identified specific hybrid crosses exhibiting superior yields; subsequent findings emerging for Cohort II oysters corroborate the identification of these high-yield hybrids. Building on these results, we propose the scaled-up production of these hybrid lines for validation across a broader range of farms utilizing existing floating nursery facilities in Alaska. This proposed work will, for the first time, deliver top-performing hybrid seed selected from two years of family evaluations into the hands of farmers across the state. Alongside this, the proposal continues to advance the Alaska breeding program with a new cohort of hybrid seed (Cohort III) for direct outplanting and on-farm evaluation. The integration of these seed studies with the ongoing monitoring and grow-out of three different cohorts will furnish the multi-year yield data on genetic lines of the Pacific oyster for the development of a broodstock program to support the growth of the shellfish aquaculture industry in Alaska.

Alaskan Kelp Boost: Biostimulant Validation and Go-to Market

Lead Entity: Pacific Kelp Co.

Project Location: Ketchikan, AK
Award Amount: $50,000

PROJECT OVERVIEW

Pacific Kelp Company (PKC) will partner with two industry-leading crop consulting and farm-advisory organizations — Agrellus and Hubbard AgriScience — to conduct high-quality field trials across multiple high-value crops and geographies. These independent trials address the most critical barrier facing new agricultural products: credibility and adoption driven by trusted, third-party agronomists and crop consultants. The project will test PKC's kelp-based biostimulant in at least 4-5 targeted crop types, generate rigorous agronomic performance data, and broadly disseminate validated results across each partner's extensive farmer network. This approach strategically accelerates demand creation for Alaska-farmed kelp inputs and ensures new products enter the market with strong technical backing, industry trust, and a pathway to scalable sales. Key industry partners like Agrellus and Hubbard have dedicated decades developing relationships and credibility with farmers and agricultural players to bring new products to market and their existing networks will only help to accelerate adoption of Alaskan kelp biostimulants.

Scaling Ambient Salted Processing to Improve Supply Chains and Low-Tech Preservation Methods

Lead Entity: Prince William Sound Economic Development District

Project Location: Cordova, AK
Award Amount: $40,980

PROJECT OVERVIEW

This project will build upon Kachemak Kelp Hub's research and test the stability of salted kelp processed in Cordova and Kodiak with the purpose of extending the shelf life. The extended shelf life created by the low-tech process opens up multiple opportunities including cheap shelf stable processing methods for rural communities and a means to create an ambient supply chain to ship kelp to co-packers. Blue dot kitchen will purchase sugar kelp and bull kelp from Cordova and Kodiak growers. The kelp will be salted, testing a more scalable process using various impeller agitators to efficiently and quickly mix salt and kelp, and then shipped down to Blue Dot Kitchen where it will be stored at ambient temperatures and tested monthly for a period of 4 months to measure its stability.

Addressing Kachemak Kelp Production & Distribution Challenges to Improve the Bottom Line

Lead Entity: Saltwater Inc.

Project Location: Anchorage, AK
Award Amount: $27,380

PROJECT OVERVIEW

Kachemak Kelp Innovation Hub (Hub) and its test-marketing arm, Kachemak Kelp LLC, have successfully completed four years of proof-of-concept work in kelp processing, product development, and marketing, and are working toward implementing a sustainable biorefinery model to support mariculture on the Kenai Peninsula. This project has three integrated and interdependent components, all necessary to bolster innovations in product development at the Hub and to support longer term seaweed farming and processing in the region. First, the project team will scale up, add products, and refine branding for Kachemak Kelp's popular food and bath products lines with a goal of expanding markets and profitability and establish these lines as brand leaders and strong pillars of an integrated business model. Activities include scaling production of current products including Killer Kelp Crisp and Selkie Soak kelp bath and developing and test-marketing 1-2 new products. The project team will also seek expert advice to refine and polish branding. Second, the project team will conduct in-state markets and distribution research for the Hub's more emergent products, including Sea to Sprout liquid plant biostimulant, and three new products currently under evaluation: kelp-based animal feed, a dried kelp-based soil amendment, and 'kelp-crete' incorporating pressed kelp solids from biostimulant production. We will determine if and how these new kelp products could be profitably integrated into a diversified product business model. Third, the team will combine the first two project components with the Hub's four years of data to develop an integrated operational, financial, and organizational model joining Kachemak Kelp LLC and the Hub under one sustainable business structure, to help guide the necessary transition from grant-funded testing and experimentation to a self-sustaining business. This work will include market opportunity analysis, unit economics, revenue projections, break-even analysis, distribution costs, and scale opportunities, sensitivity analysis of all proposed product streams. Importantly, the integrated model will be designed to be applicable to other seaweed processing operations in Alaska. Deliverables will include: Scaled up production of current food and bath products and development and test marketing of 1-2 new products; in-state markets, distribution and financial analyses for existing and prototyped agricultural, animal feed and kelp-crete products; and a comprehensive high-level business plan with a path to sustainability.

Building a Standardized Pilot Processing System for Salmon/Kelp Burger

Lead Entity: Sea Quester Farms

Project Location: Juneau, AK
Award Amount: $50,000

PROJECT OVERVIEW

Sea Quester Farms seeks to design, test, and refine a pilot-scale, standardized processing system for three Alaska mariculture products: the Salmon + Kelp Burger, freeze-dried kelp fronds, and freeze-dried bull kelp rings. These products have been successfully tested through direct-to-consumer sales at the Haines Fair, Juneau Public Market, NOAA Celebration of Seafood in Washington D.C. and Sea Quester Farms' food cart, demonstrating clear consumer demand through consistent sell-through and repeat interest. In addition, multiple restaurants have expressed interest in placing wholesale orders, and food distributors have indicated readiness to distribute once consistent volume, quality, and pricing can be achieved. However, current production methods rely on slow, labor-intensive steps—particularly dewatering, mixing, bagging, and packaging—that prevent the products from reaching profitable margins at scale. In collaboration with Barnacle Foods, this project will develop efficient, food-safe processing workflows, acquire essential small equipment (under $5,000 per unit), validate pilot production runs, and establish a cost model and KPI framework to support commercial viability. The project will conclude with commercial-ready products, 4–5 letters of support from buyers, and submission to the 2025 Symphony of Seafood competition.

Reshaping the Future of Plastics

Lead Entity: WildBlue Solutions

Project Location: Cordova, AK
Award Amount: $40,132

PROJECT OVERVIEW

WildBlue Solutions proposes to help introduce Biotic Labs' (Biotic) innovative, sustainable, environmentally friendly PHBV polymer pellets for the development of Ocean Blue Horticulture Pots. WildBlue will be working in collaboration with Bloem Living to produce 1,500 x 4" fully biodegradable horticulture pots that mimic hard plastic pots currently available in the horticulture industry Biotic's PHBV polymers provide a unique plastic alternative in that they are a zero-waste, fully biodegradable polymer that can be created without the environmental impact of harmful extraction methods or the creation of microplastics. WildBlue Solutions will be testing pots for their longevity in both a commercial setting and with home gardeners.