

Kodiak Seafood and Marine Science Center

University of Alaska Fairbanks

College of Fisheries and Ocean Sciences

Annual Report
FY2019 (July 1, 2018–June 30, 2019)



Prepared by Quentin Fong (Coordinator, Kodiak Seafood and Marine Science Center) and the faculty and staff based at the Kodiak Seafood and Marine Science Center, University of Alaska Fairbanks

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Kodiak Seafood and Marine Science Center University of Alaska Fairbanks

Annual Activities Report FY2019 (July 1, 2018–June 30, 2019)

Executive Summary

Introduction

The Kodiak Seafood and Marine Science Center (KSMSC) is a unique facility including classrooms, laboratories, a test kitchen and a pilot seafood processing plant that enables the University of Alaska Fairbanks (UAF) to provide a statewide program of research, technical assistance, workforce training and education. KSMSC is Alaska's only workforce development and applied research center focused on the seafood processing/fishing industry, as designated by the Alaska State Legislature in 1983. KSMSC also serves the Kodiak Island communities as a regional marine research and education center.

UAF personnel working at KSMSC currently consist of four faculty members (three Alaska Sea Grant Marine Advisory and one Fisheries) and four staff members all within the UAF College of Fisheries and Ocean Sciences (CFOS). In addition, the UAF Cooperative Extension Service's 4-H coordinator works at KSMSC. Graduate students and visiting UA faculty use the Center and a number of community groups make use of the space for meetings during the year.

Kodiak is the fourth largest seafood port in the nation and has a large resident seafood processing and fishing workforce, with plants operating 11 months a year. Statewide, the waters off Alaska produce over 60% of the nation's seafood valued at \$4.2B in first wholesale value and the seafood industry is the state's largest private employer with over 56,000 jobs. Kodiak Island also has a number of smaller outlying villages that have a strong subsistence economies based on marine resources, whose residents also use the services at KSMSC.

The Kodiak Seafood and Marine Science Center is a hub of applied research, training, and technical assistance for a statewide seafood industry audience. It supports food safety in Alaska and is recognized as a food process authority by the Alaska Department of Environmental Conservation.

The Alaska Research Consortium (ARC), a community and industry 501(c)(3) non-profit, formed in 2016 with the goal of supporting KSMSC's mission as defined in Alaska statute, worked closely with the University of Alaska Fairbanks in FY18. At the end of FY18, UAF committed to continued operation of KSMSC with ARC committing to providing ongoing support and input into the future programming at the Center.

KSMSC's Activities in FY2019

FY2019 was a busy and active year for the Kodiak Seafood and Marine Science Center. KSMSC hosted a meeting, training, class or event almost daily during the year with over 500 people using

the building (including the classrooms, pilot processing plant and labs) for classes, meetings, training, seminars or events during the year.

One hundred and thirty-two participants received workforce development training in 12 seafood processing/fishing industry classes offered by Alaska Sea Grant at KSMSC and in two additional coastal communities and via online. Training classes generated over \$25,330 in fees in FY2019.

Two UAF undergraduate fisheries classes were taught from KSMSC this year, serving 10 undergraduate students. Twelve workshops and seminars were also delivered to Kodiak and state wide audiences.

Twelve research projects were conducted by all faculty members in the areas of seafood science, product development, fisheries, climate change, harmful algal blooms and safe subsistence harvest of shellfish. Nine peer reviewed publications and reports were produced by the Marine Advisory and Fisheries faculty based at KSMSC.

Technical assistance and information was provided on an ongoing basis throughout the year by all faculty members, who engaged with 30 different seafood businesses and individual food producers as well as with state and federal agencies, tribal representatives and nonprofit groups. Numerous outreach and marine education projects took place in the building, ranging from ComFish Alaska forums, paralytic shellfish poisoning PSP community sampling and testing studies, and K-12 marine education events. Marine Advisory faculty and 4-H staff at KSMSC engaged with over 700 local youth during the year in marine science classes, labs, personal projects, and field trips.

External funding for faculty and staff in FY2019 based at KSMSC came from Twelve funders. Funders included Alaska Sea Grant, NOAA, Pollock Conservation Cooperative Research Center (PCCRC), UA Technical Vocational Education Program (TVEP), North Pacific Research Board, Alaska Seafood Marketing Institute, Alaska Native Tribal Health Consortium, Kodiak Area Native Association, National Science Foundation, Matson Inc., USCG Spouse Association of Kodiak, USDA and the Southwest Alaska Municipal Conference (SWAMC).



Photo Credit: Jayne Gorham

Kodiak Seafood and Marine Science Center

University of Alaska Fairbanks

FY19 Annual Report

Background

The University of Alaska Fairbanks Kodiak Seafood and Marine Science Center (KSMSC) is a 20,000 square foot, seafood processing and marine research and training/education facility serving a statewide role of research, technical assistance, education and workforce development training. KSMSC also serves the Kodiak Island communities as a regional marine research and education center.

The Kodiak Seafood and Marine Science Center's (formerly FITC) purpose is directed in AS.52.020. "The center shall create employment opportunities in the state's fishing industry and other benefits to the state by:

- (1) providing training opportunities to citizens of the state on the most efficient and appropriate technologies for the harvesting, processing, and conservation of the fishery resources of the state;
- (2) providing information and technical assistance on the adaptation of existing and new technologies to the users of the fishery resources of the state;
- (3) providing research and development activities to adapt existing technologies to enhance the economic viability of the industry;
- (4) providing research and development activities to create new technologies that will enhance the effectiveness of the industry, and provide economic benefits to state citizens; and
- (5) encouraging joint projects between industry and government in order to use industrial experience and government programs to enhance the productivity of the industry."

KSMSC is an important asset in the implementation of the Alaska Maritime Workforce Development Plan, endorsed by the Alaska State Legislature, the UA Board of Regents, the Alaska Department of Labor and Workforce Development, the Alaska Workforce Investment Board and the industry group Maritime Works.

The Alaska Research Consortium (ARC), a community and industry 501(c)(3) non-profit, formed in 2016 with the goal of supporting KSMSC's mission as defined in Alaska statute, worked closely with the University of Alaska Fairbanks in FY19.

Teaching and Training, FY19

Seafood Processing and Fisheries Workforce Development Training Classes

One hundred and thirty-two people were trained in 10 seafood processing/fishing industry workforce development trainings offered by Alaska Sea Grant Marine Advisory faculty at KSMSC and in two additional coastal communities, generating \$25,330 in program income from training fees. Classes are offered as non-credit intensives, meeting the training needs of a year-round industry. Descriptions of each class can be found on the Alaska Sea Grant website <https://seagrant.uaf.edu/map/workshops/seafood-processing/index.php>

September

- **HACCP (Hazard Analysis Critical Control Point)**, Anchorage, 2 day, 16 hour class. Certified by the Association of Food and Drug Officials (AFDO). 12 participants, Sannito, course fee \$200.
- **Commercial Fishing Drill Conductor (2 classes)** Coast Guard required training for commercial fishermen, 4 days, 25 hours. 26 participants, Matweyou.
- **Commercial Fishing Drill Conductor**, Coast Guard required training for commercial Fishermen delivered to USCG dockside examiners (by invitation) 1 day, 10 hours. 14 participants, Matweyou.

October

- **Smoked Seafood School**, smoking seafood practices, safety, operational issues for commercial producers. 3 days, 24 hour class, 20 participants, Sannito, course fee \$270.
- November
- **Seafood Processing Quality Control Training**, to broaden skills and knowledge in the areas of seafood safety, regulatory requirements, sanitation, sensory analysis and other topics for seafood professionals. 8 participants, Sannito, course fee \$480

February

- **Better Process Control School**, Anchorage, principles of thermal processing, equipment requirements, container closure evaluation, and record keeping for glass jars and cans. 2 days, 16 hours. 9 participants, Sannito, course fee \$510

March

- **HACCP**, Anchorage, 5 participants, Sannito, course fee \$200.
- **Commercial Seafood Smoking**, Dillingham, 2 days 16 hours, 19 participants, Sannito/Dunham, course fee \$270

May

- **Commercial Fishing Drill Conductor** , 2 days, 14 hours, 19 participants, Matweyou.

UAF Fisheries Undergraduate and Graduate Credit Classes

Two classes were taught by KSMSC-based UAF faculty members to students across the state. FISH 261, Introduction to Fish Utilization is a requirement for the College of Fisheries and Ocean Sciences undergraduate Fisheries program. FISH 340, Seafood Business is offered through the undergraduate Bachelor of Arts in Fisheries program.

- **FISH 261, Introduction to Fish Utilization**, 3 credits, Fall semester, 9 students, Fong
- **Fish 340, Seafood Business**, 3 credits, Fall semester, 1 student, Fong

A web-based asynchronous graduate class titled “**Seafood Business and Operations**” is being developed for the Blue MBA program, administered by CFOS, UAF. This course will be offered Fall, 2020.

KSMSC Summer Internship Program

Matweyou again hosted an Association of Latin Women in Alaska (ALMA) youth intern at KSMSC in July 2018 . Ninth grade student Diana Evans worked with Matweyou to complete a 40 hour marine science focused internship that included lab work and data entry.

Workshops and Seminars

Matweyou, J. 2019. Harmful algal bloom monitoring. Prepared concept lesson plan and provided equipment for undergraduate field education opportunity provided by S. Duesterloh with KEEPKODIAK. May.

Matweyou, J. and Trussell, C. 2019. Kodiak College Introduction to Microbiology for Health Science A240/A240L. PSP Abraxis Lecture & Lab. Toxin testing of local shellfish using the Abraxis ELISA. Lab/lecture dates include: February, March and April.

Schaberg, K. 2019. 4-H New Leader Trainings. Spring.

Fong, Q.S.W. 2018. Agile Business Planning. Seminar given to the Alaska Shellfish Growers Association Annual Meeting. Cordova, December.

Fong, Q.S.W. 2018. Business and Marketing sessions instruction. Starting and Operating a Direct Marketing Business workshop. Statewide, October.

Matweyou, J. 2018. Strains, Sprains, & Pains for Fish Workers Ergonomic Injury Prevention. Content delivered by Matweyou for Seafood Processor Quality Control. November.

Matweyou, J. 2018. Topic: Harmful Algal Blooms for UAF CFOS Fish 261. Invited guest lecturer for CFOS FISH 261. Delivered " Marine Toxins Part III - Paralytic Shellfish toxins on Kodiak Island". October.

Matweyou, J. 2018. Topic: Harmful Algal Blooms for UAF CFOS Fish 261. Invited guest lecturer for CFOS FISH 261. Delivered "Marine Toxins Part I and Marine Toxins Part II - Paralytic Shellfish toxins in Alaska". October.

Matweyou, J. 2018. Marine Invasive Tunicates...Have They Made It To Kodiak? Would we know? Girl Scouts Women In Science. October.

Matweyou, J. and Kibler, S. 2018. Phytoplankton and clam educational activity. Lesson provided for the Alutiiq Tribe of Old Harbor as part of NPRB1616 project outreach presentation to community. August.

Fong, Q.S.W. 2018. Seaweed Products and Markets. Workshop delivery and Panel Discussion. Seaweed Farming 101, Sitka Mermaid Festival. Sitka, August.

Fong, Q.S.W. 2018. Alaska's Seafood Value-Adding Marketing System. Talk given to Ocean Challenge Group, Unification Church. Kodiak, July.

Applied Research and Technical Assistance to Industry

In FY2019, 12 research and technical projects were conducted out of KSMSC, funded by the Saltonstall-Kennedy Program, UA Foundation/Ocean Phoenix Fund, Southwest Municipal Conference, NOAA, North Pacific Research Board, Pollock Conservation Collaborative Research Center, Salmon Connect Partnership and National Center for Ecological Analysis and Synthesis. Nine publications or reports were produced by UAF KSMSC-based faculty.

Highlights:

Understanding post-settlement survival for juvenile Pacific cod in the Gulf of Alaska

In January 2019, at the Alaska Marine Science Symposium in Anchorage, Alaska, a poster was presented by Alisa Abookire, Mike Litzow, and Ben Laurel titled, “Juvenile Pacific cod abundance and condition in the western Gulf of Alaska”. Throughout 2019, Mike Litzow and Alisa Abookire have been working on the second year of a project seeking to improve understanding of how warming temperatures affect the condition and post-settlement survival of juvenile Pacific cod. Sampling was conducted during July and August 2019 in the western Gulf of Alaska. Beach seines were the primary sampling method, and a total of 72 beach seine sets were made in 13 different bays on Kodiak Island, the Alaska Peninsula, and the Shumagin Islands.



Several age-1 Pacific cod were tagged in a pilot study aimed at improving age estimates for the stock assessment. We also retained fin clips from 144 age-0 Pacific cod for genetic analysis and conducted a baited camera survey for age-1 Pacific cod abundance consisting of 46 camera sets in 11 bays.

A total of 28,577 individuals of 39 fish species were captured, with Pacific sand

lance and Pacific herring being the most common species. There was a marked reduction in the year class strength of Pacific cod, with 2019 age-0 abundance being only 1% of the 2018 catch. Laboratory analysis to measure Pacific cod condition has been completed, and stomach analyses are currently underway at KSMSC.

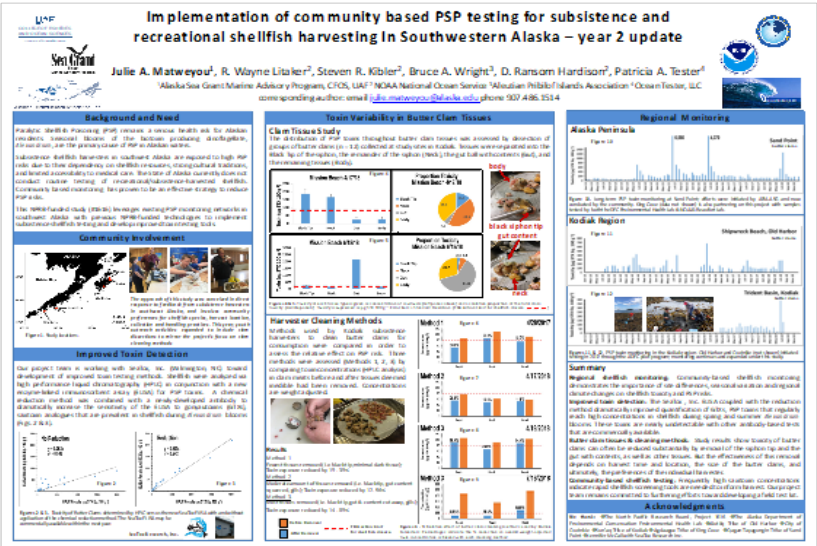
Is Nearshore habitat essential to overwintering YOY Pacific cod?

Mike Litzow and Alisa Abookire have been working on a project to investigate if the nearshore water temperature provides essential habitat for overwintering Pacific cod around Kodiak Island. Because the thermal history of a fish can be traced with stable isotope signatures in the otolith, they are working with colleagues at NOAA to determine the otolith $\delta^{18}\text{O}$ signatures on juvenile cod captured nearshore at Long Island, 5 nm from Kodiak. Winter jigging for nearshore age-1 Pacific cod occurred from December 2018 to February 2019, along with monthly beach seines from May to September. Fish condition and stomach fullness was measured measured in the KSMSC laboratory when the otoliths were removed. The $\delta^{18}\text{O}$ stable isotope analysis is underway through NOAA colleagues in Seattle. Additionally, lipid samples from the liver and muscle tissue are currently being dissected to test for the seasonal allocation of energy in age-0 Pacific cod. This work is in collaboration with NOAA colleagues at the Hatfield Behavioral Laboratory in Newport, Oregon.

PSP studies in the Kodiak region

Julie Matweyou is completing work on the North Pacific Research Board study funded in 2016. This study focuses on the development of a new field PSP test kit and addresses shellfish harvest and consumption practices in Western Alaska. Project partners include Sun'aq Tribe, Alutiiq Tribe of Old Harbor, City of Ouzinkie locally; Bruce Wright with the Aleutian Pribilof Island Association with the communities of King Cove and Sand Point; and national experts from the NOAA Beaufort NC lab. The Beaufort lab analyzes all Kodiak samples using high performance liquid chromatography (HPLC) test which provides data on the various congeners that comprise saxitoxin. This detailed information is informing seasonal toxicity patterns and the development of the field test kit. One component of the study addresses local clam cleaning methods. Butter clam tissues were segregated and tested to determine patterns of toxicity and to inform better processing and cleaning methods to reduce the risk of PSP with personal shellfish harvest. Preliminary analysis by the team demonstrates toxin storage and seasonal distribution of toxins within tissues.

Preliminary results of the butter clam tissue study were shared orally at the Alaska Marine Science Symposium and the Alaska Forum on the Environment. Overall project progress was shared as a poster session at AMSS. This project is winding down and data are being prepared for manuscript publication.



Manufacturing Extension Partnership renewed with Alaska Sea Grant The Alaska Sea Grant Marine Advisory Program continues to be a collaborator in the Hollings Manufacture Extension Partnership (MEP) 5-year federal grant renewed in the state of Alaska, now administered by the Business Enterprise Institute, University of Alaska Anchorage. The MEP in each state provides manufacturing companies with services and resources to enhance growth,

improve productivity, reduce costs, and expand capacity. Seafood harvesting and processing are the focus of the Alaska MEP, and Marine Advisory faculty based at KSMSC are providing seafood processing training and technical assistance. The PIs are Fong and Sannito.

Research at KSMSC FY2019

- **Measuring the strength of ocean-atmosphere coupling to predict climate forcing of northeast Pacific ecosystems**, Litzow (co-PI with seven others), NOAA Fisheries and the Environment program, 2018-2020.
- **Development of Value-added Market Opportunities for Pollock Co-products**, Fong, Pollock Conservation Cooperative Research Center (co-PI with C. Dewitt, M. Kohan), 2017 to 2020
- **Understanding post-settlement survival in juvenile Pacific cod**, Litzow, NOAA Cooperative Research Program (Co-PI with B. Laurel, A. Abookire), 2018-2019
- **Is nearshore habitat essential to overwintering young of the year Pacific cod?** Litzow (co-PI with five others), NOAA Essential Fish Habitat program, 2018-2019.
- **Developing Alternative Product Forms for Pollock Roe**, Fong, Pollock Conservation Cooperative Research Center (co-PI with C. Sannito, B. Smith), 2016 to 2019.
- **Juvenile cod research in Kodiak**. Litzow, UA Foundation / Ocean Phoenix Research Fund, 2017-2018
- **Implementation of Community Based PSP Testing for Subsistence and Recreational Shellfish Harvesting in Southwestern Alaska**, Matweyou, (co-PI with P. Tester, S. Kibler), NPRB, ongoing
- **Cooperative Training and Research for Alaska Fisheries Science**. Litzow and Abookire. NOAA Broad Agency Announcement 2019-2020.
- **Assessing the potential for pollock growth and productivity in the northern Bering Sea**. Litzow, (co-PI with F. Mueter), Pollock Conservation Cooperative Research Center, 2019-2020.
- **Ecological controls of Alaskan pollock size at age under rapid environmental change**. Litzow, (co-PI with F. Mueter), NOAA Saltonstall-Kennedy Program 2018-2020.
- **Indigenizing Salmon Science and Management**. Ringer. (co-PIs: C. Carothers, J. Black and R. Donkersloot). Salmon Connect Partnership.
- **State of Alaska's Salmon and People: Social and Cultural Dimensions of Well-Being in Alaska's Salmon Systems**. Ringer. (co-PIs: C. Carothers, J. Black and R. Donkersloot). University of California, Santa Barbara, National Center for Ecological Analysis and Synthesis.

Seafood Business Assistance

- Technical assistance was provided in areas listed below:
- Tunnel Freezer calibration
- Water activity measurement of food products
- Assist in mold inhibitor development
- Assist in developing crab cooking protocols
- Transfer research findings of fish skin extrusion project
- Run temperature trials of crab cookers
- Dried seaweed product development assistance

- Disseminate freezing, water usage and packaging options for octopus processing
- Seal oil HACCP plan
- Jam filling equipment consultations
- Peroxide testing in fish oil information
- Information on registering with FDA
- Seafood contamination analysis
- Flow proportional wastewater sampling procedures
- Heat distribution studies for cookers
- Assist in recall plan development
- Sensory analysis of frozen products
- Dried food commercialization product regulatory requirements
- Refine HACCP and SSOP plans
- Develop safe process for juice production
- Provide process authority letters
- Equipment selection for new processing enterprise
- Assist with five log reduction process
- Seafood processing facility planning and development
- Seafood product texture and appearance improvement
- Business plan development
- Marketing opportunities

Sample of companies, agencies and groups seeking assistance from KSMSC included:

- Blue Evolution
- Copper River Seafoods
- Norton Sound Seafoods
- Ocean Beauty Seafoods
- Tamales R US
- Alaska Seafood Company,
- Alaska Coastal Seaweed
- Community of Levelock
- Cooperative Extension Service
- Timber City Ginger Beer
- Kemin Industries
- Alaska Berry Company
- Sitka Wild Seafoods
- Oceanside Farms
- International Seafoods of Alaska
- Barnacle Foods
- Homer Brewing Company
- Moosetard
- Heather's Choice
- Kodiak Fishmeal Company
- Sunrise Salmon
- 60 North seafoods

- Kodiak Regional Aquaculture Association
- Wild Legacy Seafoods
- Trident Seafoods
- Schoolhouse Fish co.
- State of Alaska Department of Commerce, Community and Economic Development
- Alaska Shellfish Growers Association
- Alaska Fisheries Development Foundation
- OceansAlaska

Public Service and Marine Education

Bringing Field Research to Classroom

Since 2012 Julie Matweyou and Cindy Trussell (associate professor of natural sciences at Kodiak Community College) have co-instructed the Abraxis Saxitoxin ELISA lab at the Kodiak College. This partnership involves Kodiak undergraduate students in real time research and monitoring of PSP toxins using a commercially available 96 well assay. This is an advanced, multi day lab with students involved in the collection, preparation, toxin extraction and toxin testing of locally harvested shellfish. In addition to providing a robust laboratory skills training, the lesson exposes students, many of whom are pursuing nursing degrees, to the complex public health problem.

Rural village residents and youth are also introduced to research being conducted in their community. NPRB project partners Julie Matweyou and Steve Kibler (NOAA) visited Old Harbor in August 2018 and delivered a community presentation to 24 adults followed by youth activity that focused on clam anatomy and phytoplankton collection and identification with 9 students attending the afternoon event.



Comfish Alaska

Alaska Sea Grant continues to support ComFish, Alaska's annual industry tradeshow. Julie Matweyou has served on the Kodiak Chamber of Commerce ComFish planning committee since 2014 and is directly involved in the selection and development of the Forums and Events. In addition to the planning ASG routinely sponsors and/or facilitates events.

For the 2019 ComFish held in March, Julie Matweyou directly organized and moderated the Safety and Insurance session; the Fishermen's Showcase, and the Shark dissection. ASG also co-sponsored the Sea Stories Above the Harbor event and as ALMA board members, Fong and Matweyou assisted with the Fish Taco event sponsored by AMCC and catered by ALMA as a fundraising event.

Environmental Stewardship

Matweyou has been working closely with KANA environmental staff this past year. KANA is implementing Ocean Acidification and Harmful Algal bloom monitoring and organized a training session for rural participants. Matweyou presented and led discussions on PSP during this event and is supporting KANA as a topical expert and through shared laboratory space at KSMSC. An evening Environmental Forum was held at KSMSC in December 2018 with approximately 30 people attending. The event was open to the public and provided an overview of the work being conducted in our region related to OA and HABs. In addition, KANA has initiated the Kodiak Environmental Leaders and Professionals (K.E.L.P.) meetings which are held at KSMSC with support from MAP.

Cooperative Extension Service: Kodiak 4-H Youth Development Program

Alaska 4-H is one of many programs in the Cooperative Extension Service and serves as the state's premier youth development program, using research-based information and strategies. 4-H is open to all youth from kindergarten through high school.

Kodiak 4-H operated with one paid staff member (housed at KSMSC), 32 trained volunteer leaders, and countless members of the community who provided resources in terms of supplies and local knowledge. Programming by staff and leaders included topics like Archery, Rifle, Pistol, Horse and Dog projects, Small Animals, Gardening, Bread Making, Photography, Quilting and Fiber Arts. Additionally, the 4-H Kodiak program has a Therapeutic Riding program that operates in partnership with Providence Kodiak Island Medical Center to benefit youth with disabilities and special needs.

In FY19, Kodiak 4-H had 145 enrolled youth members, and reached an additional 491 youth with community events.



During this reporting period, Kodiak 4-H trained volunteers spent 1,591 hours in programming as well as prep work. They also spent 1,090 hours in group activities including National 4-H Day of Service, Harvest Festival, Memorial Day Pancake Breakfast, Summer Camps, the Kodiak Island Rodeo & State Fair, and children's fairs. Total volunteer hours in FY19 was 2,681

volunteer hours (which does not include parent volunteer time). The national rate for volunteer hours is calculated at \$24.69. Using this measure, Kodiak 4-H volunteer leaders have contributed a total value of \$66,193.89 to our community in FY19.

Boards and Councils served by faculty at KSMSC

- ADEC Alaska Food Safety Advisory Committee
- ASMI Seafood Technical Committee
- Association of Latin Women in Alaska
- Alaska Marine Safety Education Association
- Kodiak College Vessel Repair & Maintenance Local Advisory Committee
- OceansAlaska Board of Directors
- Western Regional Aquaculture Consortium Extension Technical Committee Chair
- National Seafood HACCP Alliance Advisory Committee

Press Coverage

KMXT, Local Public Radio Coverage:

- <http://kmxt.org/2018/07/graduate-student-experiments-extending-shelf-life-safety-cooked-crab/>
- <http://kmxt.org/2018/07/uaf-invests-seaweed-industry-kodiak-facility/>
- [Kmxt.org/2019/05/Paralytic shellfish poisoning PSA](http://kmxt.org/2019/05/Paralytic-shellfish-poisoning-PSA)

Kodiak Daily Mirror, Local Newspaper Coverage:

- http://www.kodiakdailymirror.com/news/article_52627e86-cb41-11e7-ae01-bf7bff392c37.html Next Generation of Seafood Managers meet in Kodiak
- http://www.kodiakdailymirror.com/news/article_0f2953d6-57bf-11e9-95d9-7fad9b934f39.html New grant monitor toxic shellfish poisoning
- http://www.kodiakdailymirror.com/news/article_9f7afb56-773b-11e9-b88a-3fdafad8758d.html 4-H honors outstanding youth of the Emerald Isle
- http://www.kodiakdailymirror.com/news/article_9f99acc4-62c1-11e9-8a7e-8388da3676e3.html Teens shine at National 4-H Conference in D.C.

Publications and Reports

- Litaker, W., Matweyou, J., Tester, P. and Kibler, S. 2018. Implementation of Community Based PSP Testing for Subsistence and Recreational Shellfish Harvesting in Southwestern Alaska NPRB 1616 Semi-Annual Progress Report July 2018.
- Anvari, M., B. Smith, C. Sannito & Q.S.W. Fong. 2018. Characterization of rheological and physicochemical properties of Alaska walleye pollock (*Gadus chalcogrammus*) roe. *Journal of Food Science and Technology*. 55(9): 3616-3624
- Litzow, M. A., L. Ciannelli, C. Cunningham, B. Johnson, and P. Puerta. 2019. Nonstationary effects of ocean temperature on Pacific salmon survival. *Canadian Journal of Fisheries and Aquatic Sciences*. doi: 10.1139/cjfas-2019-0120
- Litzow, M. A., L. Ciannelli, P. Puerta, J. J. Wettstein, R. R. Rykaczewski, and M. Opiekun. 2019. Nonstationary environmental and community relationships in the North Pacific Ocean. *Ecology*. doi: 10.1002/ecy.2760

- Puerta, P., Ciannelli, L., Rykaczewski, R., Opiekun, M., and Litzow, M.A. 2019. Do Gulf of Alaska fish and crustacean populations show synchronous non-stationary responses to climate? Progress in Oceanography 175:161-170. doi: 10.1016/j.pocean.2019.04.002
- Ward, E. J., S. C. Anderson, L. C. Damaino, M. E. Hunsicker, and M. A. Litzow. 2019 Modeling regimes with extremes: the bayesdfa package for identifying and forecasting common trends and anomalies in multivariate time series data. R Journal, in press.
- Matweyou, J. 2019. Collection Report for ADFG Fish Resource Permit No. CF-18-064.
- Matweyou, J. 2019. Collection Report for ADFG Fish Resource Permit No. CF-18-027.

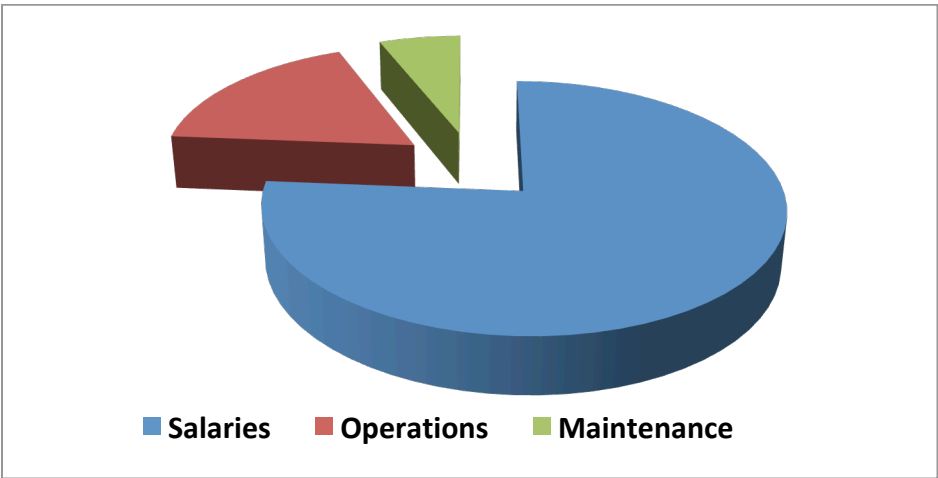
- Matweyou, J. A., Litaker, W. R., Kibler, S. R., Wright, B. A., Hardison, D. R. and Tester, P. A. (2018) Implementation of community based PSP testing for subsistence and recreational shellfish harvesting In Southwestern Alaska – year 2 update. Alaska Marine Science Symposium 2019. Poster. Jan 28-29, 2019.

KSMSC Operations

Budget

In FY19, faculty and staff salaries and program expenses at the Center were covered by University of Alaska Fairbanks funds, charges to nine grants, and program income. The University of Alaska Fairbanks covered operations and maintenance of the Kodiak Seafood and Marine Science Center.

Kodiak Seafood and Marine Science Center Budget, FY2019, \$1,314,742



- UAF funds: \$989,444
 - staff salaries: \$207,188
 - operations: \$232,499
 - maintenance: \$79,404
 - faculty salaries/benefits: \$470,403
- Faculty salaries charge to grants: \$240,979
- Staff salary charge to grants - CFOS: \$74,635

- Staff salary charge to grants - CES (4-H): \$9,684
- Grants charged: \$634,669.92
 - Alaska Sea Grant Omnibus
 - Southwest Alaska Municipal Conference
 - Alaska Seafood Marketing Institute
 - TVEP, Seafood Processing Training Program
 - Pollock Conservation Cooperative Research Center (PCCRC)
 - National Science Foundation
 - Cooperative Institute for Alaska Research, University of Alaska Fairbanks
 - Ocean Phoenix Fund
 - USCG Spouse Association of Kodiak
 - Matson Inc.
 - USDA
- Program income: \$25,330
- KSMSC rental revenue: \$9,908

Administration

- S. Bradley Moran, Dean, College of Fisheries and Ocean Sciences
- Quentin Fong, Marine Advisory professor, seafood marketing, is KSMSC onsite coordinator.

UAF CFOS Faculty Based at KSMSC

- Quentin Fong, seafood marketing specialist, Professor, Marine Advisory Program, KSMSC coordinator
- Julie Matweyou, Marine Advisory Program agent, Associate Professor
- Chris Sannito, seafood processing specialist, Research Assistant Professor, Marine Advisory Program
- **Mike Litzow, Research Assistant Professor, Fisheries (has since left)**

Staff

- **Astrid Rose, Marine Advisory Program Program Assistant (has since left)**
- Laurinda (“Kay”) Bodi, KSMSC Facilities Manager
- Kate Schaberg, 4-H Program Assistant, Cooperative Extension Service
- Danielle Ringer, Research Associate, College of Fisheries and Ocean Sciences

Alaska Research Consortium

The Alaska Research Consortium (ARC), is a community and industry organization formed in 2016. The ARC advocates for fisheries and marine science in the North Pacific, acting as a positive catalyst and building partnerships and collaboration to provide workforce development training, technical assistance to businesses, and applied research. ARC Board President is Jay Stinson (fisherman) and Paula Cullenberg serves as executive director. Board members include Alan Austerman (former legislator), Shannon Carroll (Trident Seafoods), Duncan Fields (fisherman, ASMI board), Pat Jacobsen (former UA regent), Michael Kohan (ASMI), Tom Lance (Sun’aq Tribe), Matt Moir (North Pacific Seafoods), Susan Saupe (Cook Inlet Regional Citizens Advisory Council), and Jeff Stephan (fisheries advisor).

One of the ARC's priorities is to "support programs and ongoing sustainability of the Kodiak Seafood and Marine Science Center." As such, ARC acts as a champion and advisor to KSMSC programs, faculty and staff. Currently, ARC is focused on workforce development for the seafood industry with the goal of more fully utilizing KSMSC.

Related to KSMSC, this year the ARC:

- Communicated its ongoing commitment to support KSMSC to President Johnsen and Chancellor White.
- Participated in interviews of three candidates applying for mariculture faculty position (position was ultimately frozen due to state budget cuts).
- Launched a project, funded in part by EDA, to review specific workforce needs of Alaska's seafood industry.
- Added new Alaska Sea Grant director as ex-officio to board (ASG director was ultimately terminated)
- Wrote letters of support for KSMSC-based faculty research projects to funders including NOAA, PCCRC, and National Sea Grant.