Kodiak Regional Aquaculture Association

2024 annual report

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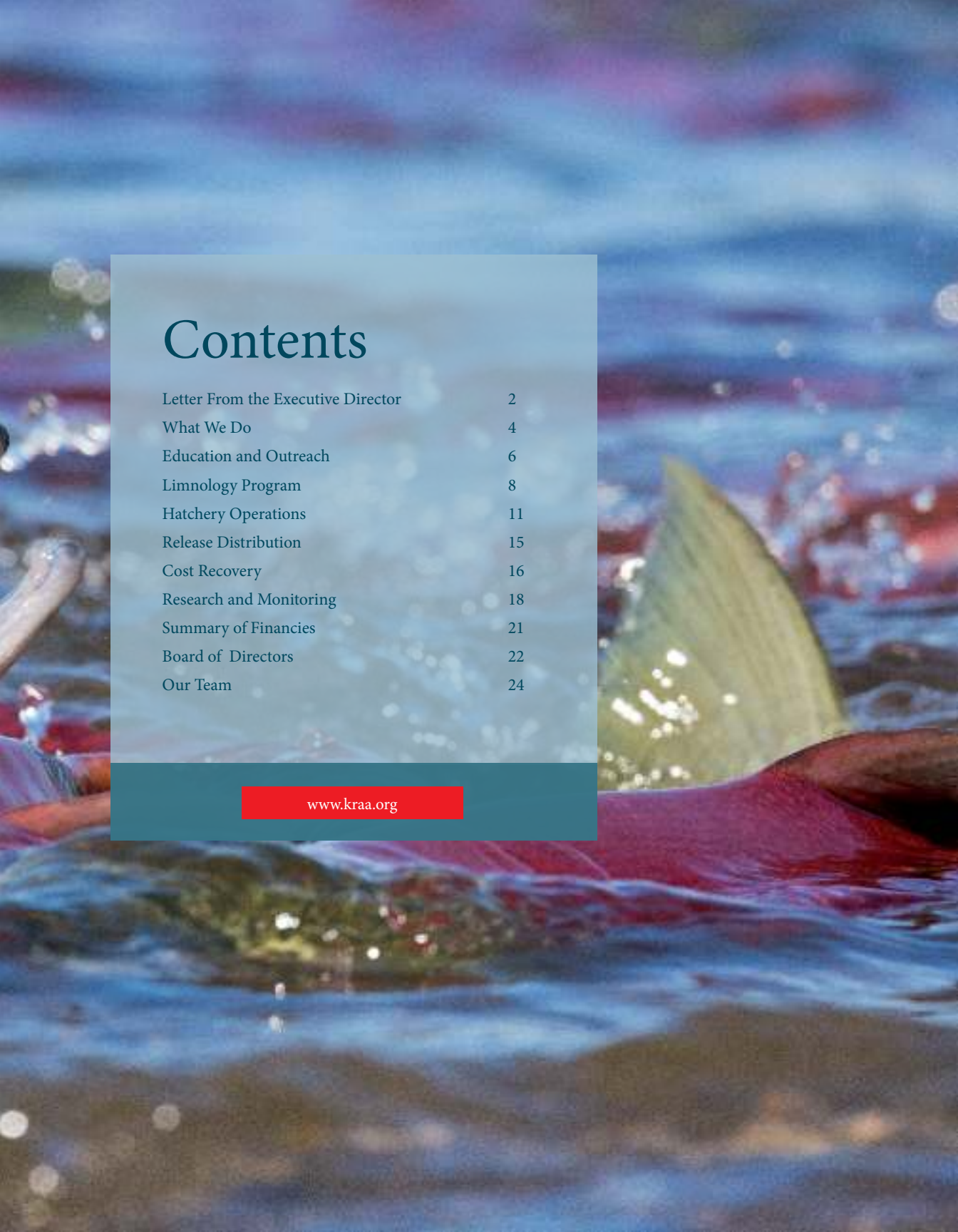
KRAA was founded in 1983 as Kodiak's regional aquaculture association. The Association is dedicated to salmon fisheries development in the Area K Management Area for the benefit of all common property users — subsistence, sport, and commercial — through research and management efforts, habitat monitoring and protection, stocking, enhancement and rehabilitation projects. KRAA further promotes respect for Kodiak Area salmon resources through science, education, and partnership programs.



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Letter from the EXECUTIVE DIRECTOR

Steady as she goes. That's how I'd characterize KRAA's projects and long-term contributions to the Kodiak salmon fisheries. Still, 2024 held a few surprises: a near-record chum return to Kitoi Bay caught us all by surprise and provided an unexpected boon to an otherwise relatively limited early season. We also saw better than projected return to the westside Spiridon Lake stocking project and Telrod Cove smolt release project. On the other hand, hatchery pinks barely met the lower end of the forecast and coho were nearly a no-show—and a much-increased sea lion presence had their way with most of the ones that did.

Our crews continued on with hatchery returns and eggtakes, incubation and egg care, ponding and rearing as well as the work we do to monitor returns, sample fisheries, and conduct limnology and stay current on all of our administrative requirements.

In addition to our projects here at home, during 2024 and early 2025, salmon enhancement in Alaska also fought off significant threats to our sister-programs in Prince William Sound and Southeast Alaska. Aquaculture associations have banded together to demonstrate, on the record, the solid foundation of science and scientific research that supports our activities, the scope of the programs, and the current and historical research that demonstrates the defensibility of salmon enhancement in Alaska. The efforts we've put into this defense, we believe, protect not just the hatchery programs but your fisheries as well.

Helping to hold things steady is really what Salmon Aquaculture in Alaska is designed to do for Alaska Salmon fisheries, and that's what we hope to do for you here at KRAA. As in any year, we hope you will take a moment to look at this year's annual report or even to reach out to us with you questions or concerns. We're here for that, too!

"Helping to hold things steady is really what salmon aquaculture in Alaska is designed to do..."

Tina Fairbanks

Executive Director

Tina has been the Executive Director at KRAA since, 2014. She has been in the Alaskan aquaculture field for over 25 years.

Security Stainability Opportunity

What WE DO

OUTREACH & EDUCATION

We participate in programs such as the Ocean Science Discovery Lab, ComFish, Salmon Camp, Crayfish Derby with Suna'q Tribe of Kodiak, Salmon Life, and Salmon in the Classroom.

RESEARCH

We conduct fisheries monitoring, limnology, temperature monitoring, and age monitoring research to study the factors that affect salmon fisheries.

ENHANCEMENT

We operate hatcheries in Pillar Creek and Kitoi Bay to help supplement salmon production through our stocking prjects.

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Aquaculture in Kodiak

Regional aquaculture associations were originally formed in 1976 through legislative action prompted by Alaskan fishermen who lobbied for the exclusion of private enterprise from salmon fisheries development and enhancement (and the creation of the nonprofit hatchery associations—both the regional aquaculture association for each area, as well as other private nonprofit, or PNP, organizations). The ultimate goal was to give Alaskans a voice in salmon fishery enhancement decisions and a hand in actions, such as rehabilitation of weak salmon stocks or supplemental salmon production, research and educational outreach, and habitat protection and improvement.

Each association is governed by a board of directors comprised of area salmon permit holders representing each gear group as well as processing, marketing, sport fishing and other interests. The Kodiak Regional Aquaculture Association (KRAA) was officially approved by the commissioner of the Alaska Department of Fish and Game in 1983, and it has been enhancing and rehabilitating salmon runs in the Kodiak area for over 40 years. During its formative first decade, KRAA achieved much through lake enrichment projects, and, by 1994, supplemental sockeye production from stocking barren lakes had reached significant levels. Since then, KRAA's contribution to the Kodiak Area salmon harvest has continued to expand.

Education & OUTREACH

Along with producing salmon, KRAA provides dynamic educational opportunities, events, and resources that advance scientific knowledge and promote stewardship of Kodiak's salmon resource. KRAA's education and outreach efforts strive to foster two-way communication and actively involve the community.

KODIAK COMFISH

KRAA and Pillar Creek Hatchery provided a fish tank display and information booth during the Kodiak ComFish Trade Show. Guests at the trade show had the opportunity to engage with different KRAA staff to discuss KRAA projects and learn more about the Association's mission and goals.

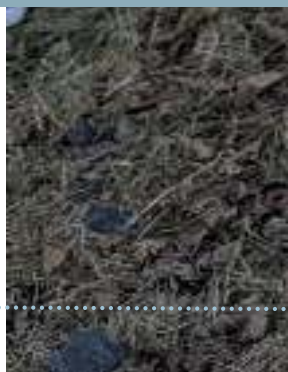
DISCOVERY LAB

Every year, all Kodiak elementary schools participate in the Ocean Science Discovery Lab where they experience various stations to learn more about our ocean's ecosystems followed by a visit to the touch tanks. KRAA team members participated by being scientists of the day educating our communities children and supporting a long running program.

CRAYFISH DERBY

The Sun'aq Tribe of Kodiak Natural Resources Department and Kodiak Soil and Water Conservation lead Signal Crayfish removal activities from the Buskin Lake. Signal Crayfish are not native to Kodiak and have the potential to damage salmon habitat. KRAA has participated in nearly all of the derbies and assisted in the removal of many of these invasive species.

During coho egg-take activities at Pillar Creek Hatchery, KRAA staff provided an educational opportunity for local students. Following a presentation that included salmon identification, life cycle, and anatomy, KRAA staff demonstrated to students how hatchery personnel collect eggs and milt from coho salmon. Each participating class was given up to 500 coho salmon eggs to incubate in their classroom over the winter. The students tracked the development from egg to fry. In the spring, the resultant fry are released at Island Lake.



SALMON IN THE CLASSROOM

Water samples at Buskin Lake

lim·nol·o·gy

/lim'näləjē/

noun: the study of the biological, chemical, and physical features of lakes and other bodies of fresh water.

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Limnology PROGRAM

Limnology data collection from Kodiak lakes began in the early 1980's. KRAA, in a cooperative agreement with ADF&G, has provided the funding for the majority of limnology data

collection and processing since 1991.

In 2024, KRAA collected samples from over 20 lakes and contracted with ADF&G for water chemistry and zooplankton analysis. Limonological data collected at Buskin Lake is done cooperatively with the Sun'aq Tribe of Kodiak (STK).

Most lakes in the Kodiak area are accessible only by float plane. Samples collected while working off the floats include zooplankton net hauls, water samples, temperature and dissolved oxygen profiles, and light incidence measurements. In the laboratory, zooplankton is measured and enumerated under the microscope

and water samples can be analyzed for pH, alkalinity, chlorophyll a, and nutrient content.

ADF&G uses limnology data to assess lake productivity and changes in the freshwater rearing environment of sockeye salmon. From these analyses, ADF&G provides stocking recommendations to KRAA for sockeye salmon projects.

Limnology data collected on sockeye salmon nursery lakes that are not regularly stocked with salmon are archived to provide baseline information. The data is important in instances where sockeye returns begin to dwindle. The baseline limnology and zooplankton data can be used to attribute, or rule out, run failures caused by unfavorable juvenile rearing conditions.

Hatchery OPERATIONS

KRAA operates two state-owned salmon hatcheries: Kitoi Bay Hatchery (KBH) and Pillar Creek Hatchery (PCH).

Combined, KRAA's facilities produce pink, chum, sockeye, coho, and king salmon for all Kodiak users. Additionally Pillar Creek Hatchery in partnership with ADF&G releases rainbow trout for sport fishing opportunity in and around the City of Kodiak.

The two hatchery facilities operated by KRAA were designed for very different applications. Kitoi Bay Hatchery releases the bulk of its production directly into Kitoi Bay while Pillar Creek Hatchery was designed primarily as a central incubation facility with the intention that production would originate from places like Afognak and Saltery lakes and be stocked into barren lakes remote from the hatchery facility. The differing concepts behind the facilities create widely different strategies and practices in egg collection.

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Kitoi Bay Hatchery
Permitted Capacity
Pink Salmon:
215 million eggs
Chum Salmon:
36 million eggs
Coho Salmon:
2.3 million eggs
Sockeye Salmon:
850,000 eggs

Pillar Creek Hatchery
Permitted Capacity
Sockeye Salmon:
20.0 million eggs
Coho Salmon:
500,000 eggs
King Salmon:
450,000 eggs
Rainbow Trout:
200,000 eggs

The differing concepts behind the facilities (PCH and KBH) create widely different strategies and practices in egg collection.

Kitoi Bay Hatchery

Kitoi Bay Hatchery (KBH) is located on Afognak Island on the west side of Izhut Bay approximately 48 km (30 miles) north of the City of Kodiak. The hatchery infrastructure was constructed in 1954 by the US Department of the Interior, Fish and Wildlife Service, but was destroyed in the 1964 earthquake and rebuilt by the Alaska Department of Fish and Game in 1965. Today the facility is owned by the State of Alaska and located on land owened by the Afoganak Native Corporation. The state leases the land and contracts KRAA to opeate the facility.

The hatchery was initially designed as a sockeye salmon research facility. By 1976, hatchery production priorities had switched to pink salmon fisheries enhancement. The present goal of the facility is to provide enhanced common property salmon fishing opportunities for Kodiak Management Area (KMA) fishermen by increasing returns of pink, chum, coho, and sockeye salmon through broodstock development, egg takes, incubation, hatching, rearing, and releasing juvenile salmon, primarily to the Kitoi Bay area. KBH's primary contribution is to KMA commercial fisheries. Secondary user groups (in terms of the number of salmon harvested) of hatchery production include subsistence and recreational fishermen.

With returns coming directly to the hatchery and releases in close proximity, production from Kitoi Bay Hatchery can be relatively consistent on an annual basis—provided broodstock is available. However, diminished returns of sockeye salmon to Little Kitoi Lake have led to more Kitoi Bay Hatchery egg takes at Saltery Lake.

Pillar Creek Hatchery

Pillar Creek Hatchery (PCH) was constructed in 1990 as a cooperative project between ADF&G and KRAA. PCH is owned by the State of Alaska and is located on Kodiak Island Borough land that is leased to the State. KRAA operates the facility under an agreement with the State through ADF&G similar to the agreeement for KBH.

PCH was designed as a central incubation facility where salmon eggs needed for production are collected from brood sources located at sites remote from PCH and transported to the facility for incubation, hatching, and rearing of resulting juvenile fish. Most juvenile fish are then transported to and released at stocking sites remote from PCH.

On the other hand, egg collections at Pillar Creek Hatchery tend to have more variability. The 2024 sockeye salmon egg-take goals were based on the recommended 2025 juvenile release figures for each lake stocking project. Some of the recommended stocking figures are based on an in-season assessment of each lake's zooplankton population. As zooplankton levels vary, so do stocking recommendations.

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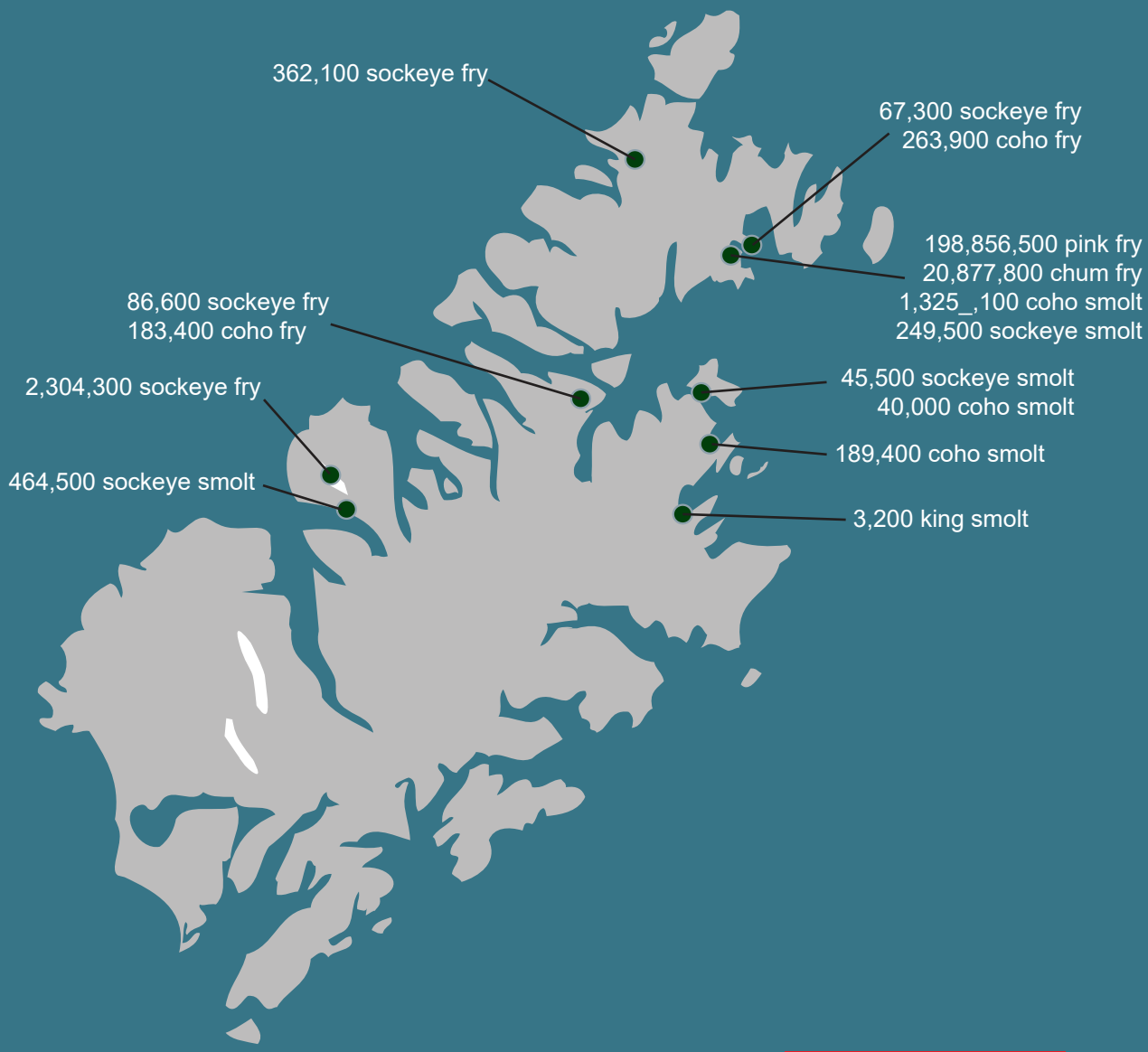
Kitoi Bay Hatchery

LOCATION	SPECIES	GREEN
Kitoi Bay	Chum	34,500,000
Kitoi Bay	Pink	215,200,000
Saltery Lake	Sockeye*	847,000
Kitoi Bay	Coho	207,400

Pillar Creek Hatchery

LOCATION	SPECIES	GREEN
Afognak Lake	Sockeye	515,300
Monashka	King	23,500
Saltery Lake	Sockeye	4,400,000
Pillar Creek	Coho	85,100

*eggs collected by PCH and transferred to KBH


362,100 sockeye fry
67,300 sockeye fry
263,900 coho fry
198,856,500 pink fry
20,877,800 chum fry
1,325_,100 coho smolt
249,500 sockeye smolt
86,600 sockeye fry
183,400 coho fry
45,500 sockeye smolt
40,000 coho smolt
2,304,300 sockeye fry
189,400 coho smolt
464,500 sockeye smolt
3,200 king smolt

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Release DISTRIBUTION

KRAA rears and releases all five species of Pacific salmon. The size and life stage at release varies among each species and is dependant on life history, permit requirements, and project goals.

Fry

Timing: Immediately after hatching and absorbing the yolk sac.

Size: Very small, usually less than 2-3 cm long.

Diet: Begin to feed on small invertebrates and plankton.

Activity: Mostly found in shallow water near vegetation or spawning beds

Fingerling

Timing: Develop from fry and reach a length of about 2-3 cm to 6-15 cm.

Size: About the size of a human finger, hence the name.

Diet: Eat a variety of small aquatic invertebrates and algae.

Activity: More active and can move around more than fry

Smolt

Timing: Specific stage in the life cycle of certain fish, like salmon and trout, preparing for migration to the ocean.

Size: Generally 5-7 inches (13-18 cm) in length.

Diet: Eat voraciously while in estuaries to store energy for the migration.

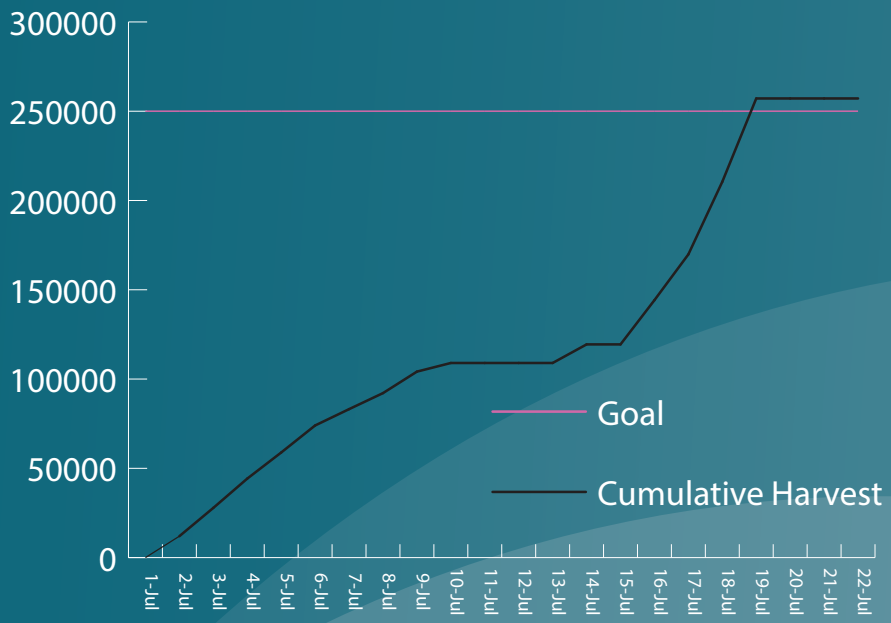
Activity: Begin to migrate downstream into the ocean

Cost RECOVERY

Prior to the fishing season, the KRAA Board of Directors establishes cost recovery goals designed, in part, to reach funding objectives while minimizing impact on the common property fishery. Cost recovery efforts are permitted in special harvest areas (SHA) designated by the state.

SPIRIDON BAY SHA

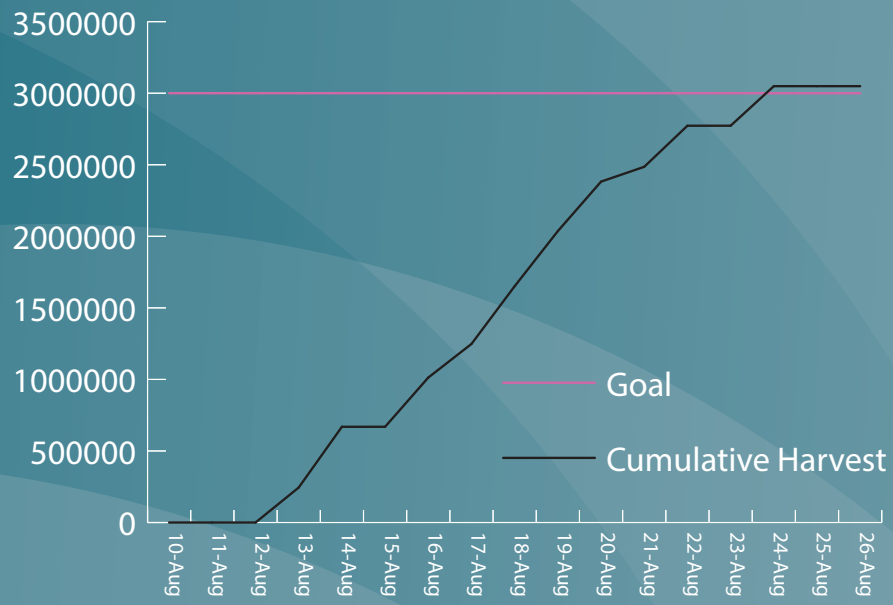
The 2024 Telrod Cove cost recovery goal was set at 250,000 pounds of sockeye salmon resulting from Spiridon Lake and Telrod Cove stocking projects. The Telrod Cove cost recovery harvest began on July 2, 2024 and concluded on July 22, 2024 A total of 257,000 pounds of sockeye salmon, averaging approximately 4.45 pounds per fish were harvested during the cost recovery fishery.



Cost Recovery goals at both Telrod Cove and Kitoi Bay were achieved in 2024.

KITOI BAY SHA

The Kitoi Bay cost recovery goal for 2024 was set at 3.0 million pounds of Kitoi Bay Hatchery pink salmon. Cost recovery efforts began on August 13, 2023 and concluded on August 24, 2024 when a total of approximately 3,049,000 pounds of pink salmon, averaging 3.44 pounds per fish, were harvested.



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Research & MONITORING

Spiridon Lake/Telrod Cove

Annual sockeye salmon smolt emigrations from Spiridon Lake are enumerated and sampled for age and size to assess growth, juvenile survival and smolt-to-adult survival. Additionally, sockeye salmon harvested in the Spiridon Bay Special Harvest Area (SBSHA), located at Telrod Cove, are monitored by KRAA staff from mid-June to early August. Monitoring duties include estimating the build-up of returning sockeye salmon, estimating and sampling the sockeye salmon harvest, and estimating the incidental harvest.

KRAA also collects otoliths from sockeye harvested inside Telrod Cove and sockeye harvested in adjacent statistical areas. These collections will continue over the next several years and will allow KRAA to evaluate the success of the sockeye smolt net pen project as well the overall contribution of the Spiridon Lake fry release.

Hidden Lake/Foul Bay

Sockeye salmon returning to Foul Bay are harvested in the Foul Bay Special Harvest Area (FBSHA). Through KRAA funding, ADF&G annually monitors the commercial harvest and collects scale samples. Lake limnology data is collected to evaluate the response of the lake's zooplankton community to predation by stocked juvenile salmon and to determine stocking levels. Additionally, freshwater growth and fry-to-adult survival data are collected and evaluated.

Saltery River

KRAA provides funding to ADF&G to install and operate the weir at Saltery Lake on an annual basis. Once escapement goals are met, KRAA can utilize adult sockeye salmon for Pillar Creek Hatchery broodstock. Saltery sockeye are targeted by subsistence, sport and commercial fishermen.

Other Monitoring Work

Through our cooperative agreement with ADF&G we also provide some support for Afognak Lake (Litnik) weir operations, Frazer Fish Pass operations, and support the Department's efforts to open and close fish passes on the north end of Afognak Island.

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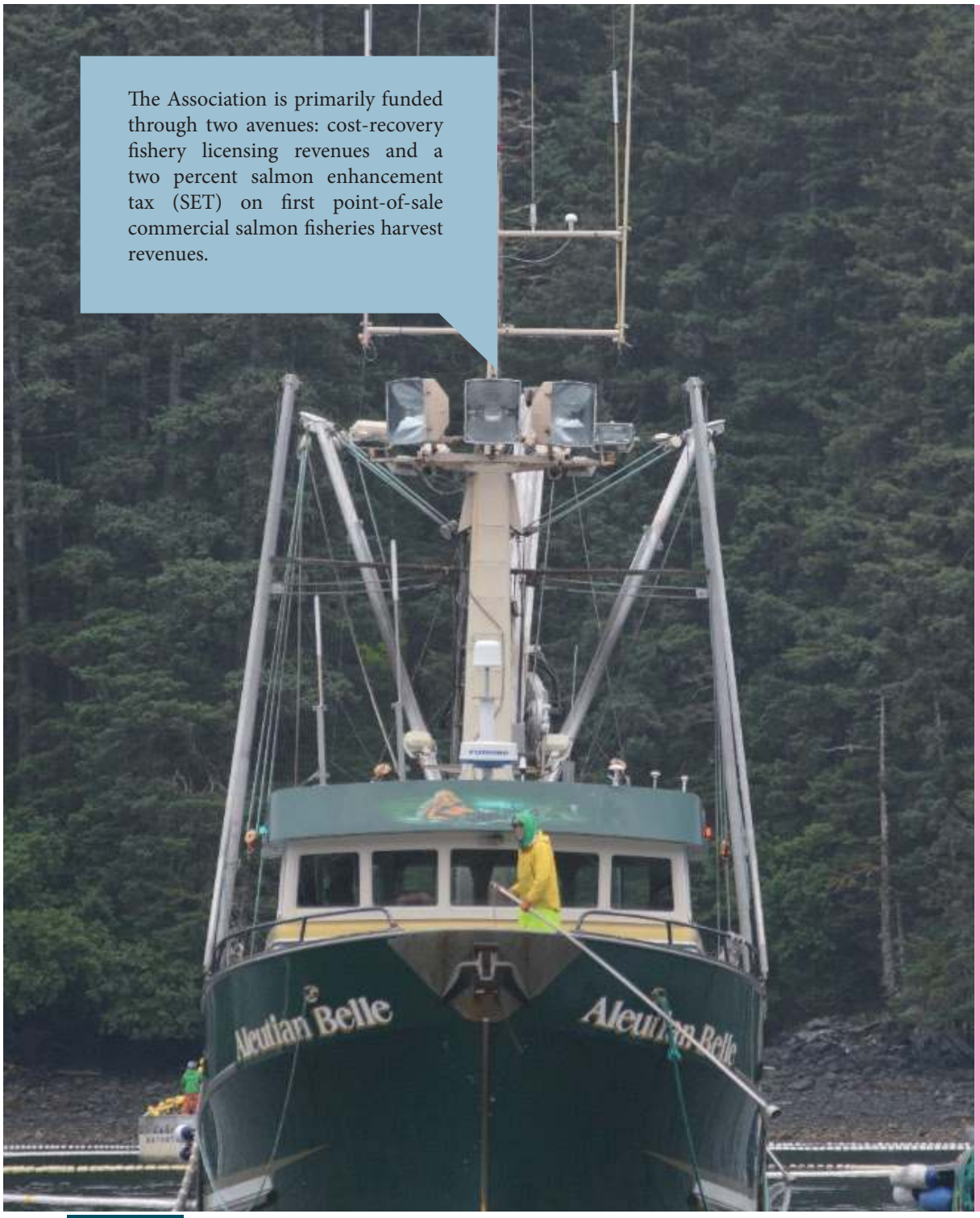
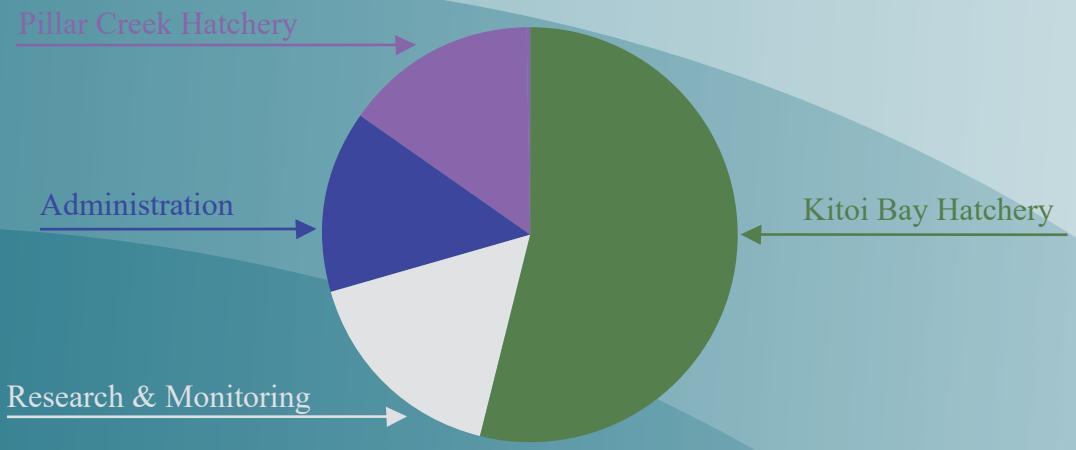
The Association is primarily funded through two avenues: cost-recovery fishery licensing revenues and a two percent salmon enhancement tax (SET) on first point-of-sale commercial salmon fisheries harvest revenues.

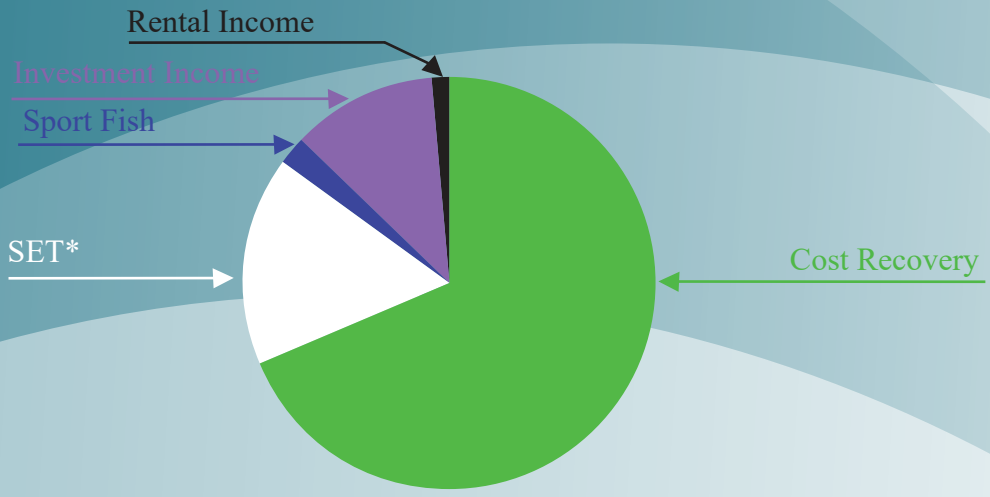


Summary of FINANCES

Expenses: $4,900,235

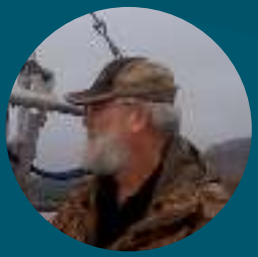


Income: $4,139,391



*Salmon Enhancement Tax:

Board of DIRECTORS



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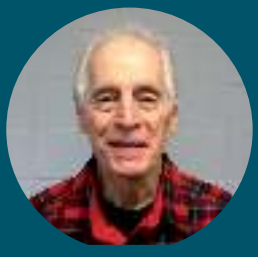

Jeff Stephan

Matt Alward

Adelia Myrick

Adam Wischer

Kevin Fisher

Nicholas Hoffman

Our TEAM

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Executive Director

Tammy Hulsey
Administrative Office Manager

Megan Holland
Administrative Assistant

Genevieve Rich
Special Projects Manager

Pillar Creek Hatchery

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Manager

Nick Allen
Assistant Manager

Destiny Ritter
Fish Culturist

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Fish Culturist

Cynthia Jones
Fish Culturist

Mike Hatten
Fish Culturist

Mike Fairbanks
Maintenance Manager

Brenden Thompson
Maintenance Assistant

KODIAK REGIONAL AQUACULTURE ASSOCIATION

The Kodiak Regional Aquaculture Association (KRAA) is a non-profit 501(c)(5) organization dedicated to salmon fishery development in the Kodiak Archipelago through research, rehabilitation, and enhancement programs.

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