

# FISH RAP

Change Service Requested

Highlighting releases, returns, policy and legislation affecting the Southeast Alaska salmon fisheries

Vol. 39 No.2  
December 2021

*St. Teresa in West  
Crawfish doing  
Cost Recovery  
Harvest*



## Inside

<i>Hatchery Reports</i>	2
<i>General Manager Notes</i>	2
<i>2022 Forecast</i>	5
<i>HF Predator Study</i>	5
<i>Board Member Profile</i>	6
<i>Employee Changes</i>	6
<i>Little Port Walter Update</i>	7
<i>Chip Blair Retires</i>	8

## Market Rebounds in 2021

Improved returns and record prices for salmon this season led NSRAA to one of its highest financial commercial contributions, bringing a collective sigh of relief within the industry after the uncertainty and disappointment of 2020.

“It was a huge rebound from last year, which was a rather historic low,” says Ben Adams, NSRAA Research and Evaluation Manager.

“It was a much better year than last year – for all of Southeast, not just NSRAA,” agrees NSRAA General Manager, Scott Wagner. “Last year, we had terrible prices and terrible numbers. This year was the opposite. There were record prices across all species and all gear groups.”

There was so much uncertainty entering the season last year with COVID and related quarantines and restrictions. Would there be a salmon season? Would the fishermen be able to hire enough employees? Would the processors be able to run their plants? Would they be able to get their product to the market?

“You had market uncertainty worldwide and then you had the worst salmon season in many years – the worst in decades,” Scott explains.

While the number of fish returning this season did not break records (in general, the numbers were closer to average), salmon prices were twice what they were last year, bringing NSRAA’s total commercial contribution to \$17.5 million – among its top five contributions on record.

What drove up the price of salmon this year?

Last year’s poor showing of salmon likely contributed to the jump of prices this season. The demand for canned and frozen food, including salmon, was extraordinarily high during the pandemic. That, combined with poor salmon returns led to depleted inventories which, in turn, increased the demand and drove up prices this season.

“You had better competition for the fish because all the processors wanted more product,” Scott says.

This year’s high prices contributed to a record-breaking year for the troll fleet. In fact, the troll fleet, which consistently falls below its allocated catch, succeeded in catching 27 percent of NSRAA’s salmon – just within its allocation range.

“They caught a record number of chum salmon and received a record price for that salmon,” Scott says.

NSRAA was surprised when a record number of three-year-old chum returned to NSRAA’s Bear Cove this season. Bear Cove is the brood site for Medvejie, and the salmon released there are generally intended for broodstock so the organization can collect enough eggs for future releases.

“Because of that, the salmon did not go into Deep Inlet,” Ben explains. “We’ve never seen the Bear Cove component so large. It shifted the historical migration pattern which allowed for more troll access than in the past.”

The total value of the chum catch at Deep Inlet (including Bear Cove and Sitka Sound) and Crawfish Inlet came to a record \$4.7 million.

“The value difference between 2020 and 2021 for chum troll in all of Southeast – this is the most striking change – was a 1,600 percent increase from last year,” Ben says. “We had a very good return in terms of numbers of fish caught by the trollers, but the value also was very high.”

This year’s record salmon prices were a relief to the industry, but will the strong prices carry into next year?

“Is it one of those freaky things from the pandemic that just happens one year, or will we have a sustained higher value moving forward?” Scott wonders.

Unfortunately, forecasting chum returns has become increasingly difficult in the past several years, as three-year-olds have returned in a significantly higher ratio than seen historically. Until recently, four-year-olds represented the largest age group for chum returns and forecasters estimated returns based on the marine survivals of the three-year-olds. But this recent trend of three-year-olds returning as the largest age group has skewed historic numbers and forecasting methods.

Experts can’t explain the sudden shift in age groups. What first appeared to be an anomaly has become a trend. Is it a short-term trend or is this the new normal? No one knows yet, but it’s made the job of forecasting very difficult.

“Our traditional methods of forecasting are becoming obsolete,” Ben says. “It’s challenging. We just have to use our best judgement as we select the data to estimate the next year’s forecasts. It doesn’t give us a lot of confidence in our forecasts.”

Along with the higher ratio of three-year-olds returning, the fish are returning increasingly smaller, Ben says. “The three-year-olds this year were small, very small, but the salmon for all age classes were the smallest we’ve seen. It was definitely an outlier year for that.”

NSRAA Troll Value: \$5.7 million (top single year contribution)  
NSRAA Commercial Value (not including cost recovery): \$17.5 million  
NSRAA Total Value: \$25.2 million (second to 2018)



## Record Survival for Chinook Fry at Medvejie

An unforeseen challenge this summer at Medvejie Hatchery turned into a fortuitous advantage.

Each summer, the staff at Medvejie transfer approximately 1.5 million Chinook fry from the hatchery to Green Lake, a lake located several miles east of Medvejie. The Chinook are reared there in ten net pens for several months – typically, from June through early October.

This year, however, NSRAA was unable to move the fish into the lake until August. Green Lake is one of two lakes the City of Sitka uses for hydroelectric power and the city needed to drain the lake nearly 100 feet in order to complete work in the tunnel. The construction work was anticipated to finish in June, but ran longer than expected. Medvejie's Chinook transfer was delayed as a result.

To compensate for the delay, NSRAA kept the Chinook fry at Medvejie, but space there is limited and the fish were overdensity, so the staff controlled their growth by intentionally feeding the fish less than they

would have at Green Lake. (If they grew too big for the hatchery space, it could lead to a number of issues, including mortality from bacteria, viruses and overcrowding.)

The fish were approximately 4 grams – their typical July weight – when they were finally transferred in August, with only two months left until their transfer to saltwater.

"We were questioning whether we could get them to size, or, if they were smaller, how would they do?" explains Cain DePriest, Hatchery Manager.

Normally, the Chinook are 16-20 grams when transferred to saltwater, but, this year, they were only 12.5 grams. Would they survive the transfer to saltwater at the lower weight? (Extending the transfer date beyond October risks missing their window for saltwater tolerance.)

Despite all the worry, there was little mortality with the saltwater transfer. Now Cain is wondering if the delayed transfer to the lake was, in fact, beneficial.

The Green Lake Chinook program has a history of high mortality, due to warm waters and resulting bacterial infections. This year's fry experienced one of the lowest mortality rates in the history of the program – both in the lake and upon transfer to saltwater. Was this year's success merely coincidental?

The lake's water temperatures are the warmest in June and July. While NSRAA has experimented with limiting their time in the lake by transferring the salmon to saltwater early, it has never delayed the transfer to Green Lake before. Could the lower mortality be connected to the fish avoiding the lake at its warmest?

*Medvejie Report - Continued on page 4*

## General Manager's Notes



What a difference a year makes.

In 2020, not only were the wild salmon returns to Southeast Alaska and the rest of the state the worst in decades, NSRAA had a poor common property value to commercial fishermen, with a total of only \$6.75 million. In 2021, NSRAA's value to the commercial troll fleet alone was a record \$5.74 million, with a total commercial value of \$17.5 million. The 2021 commercial value for NSRAA is fourth highest

overall, and, including cost recovery, NSRAA's total value of \$25.2 million for 2021 is second behind the record-breaking 2018 Crawfish chum return of \$42 million.

The increase in value in 2021 was a pleasant surprise after last year's terrible wild returns and poor prices. In 2021, NSRAA had a total return of 3.8 million fish, compared to 2.7 million in 2020. This is only a 37% increase in fish numbers, but a 127% increase in total value. As most of you are aware, record high prices across most species really drove the value. Without the high prices, 2021 would have been an average year for NSRAA. Keep in mind, the high value in 2021 occurred with a dismal summer chum return. A large portion of the value was from the high survival on three-year-old fall chums. Whether this year's high prices remain into next season has yet to be seen.

This past March, Chip Blair, longtime NSRAA employee, decided to retire and spend more time with his family, especially the grandkids. I want to thank Chip for dedicating his working career to NSRAA. Chip built NSRAA's computer, data, website, evaluation, and otolith programs from the ground up. The back page of this issue has an article detailing Chip's work with NSRAA. We all owe him a debt of gratitude; we have benefitted greatly from his efforts over the years.

Looking forward to next season, our forecast is similar to the 2021 return, with a total estimated return of 3.7 million fish. Last year, we forecasted 4.4 million and had an actual return of 3.8 million. For several years now, we have been overestimating our chum returns. This is primarily due to a shift to younger age classes at return. In 2021, approximately 70% of the Sitka Sound fall chum salmon returns were three-year-olds. Once again, we have had to alter our traditional forecasting model in an attempt to more accurately estimate the number of four-year-old fish that will return next year. This difficulty in forecasting also makes planning for our broodstock, cost recovery and commercial fishery management more challenging. Is this shift in age at return the new normal or an indicator of a fantastic marine survival for this brood year? Time will tell.

*Scott Wagner*

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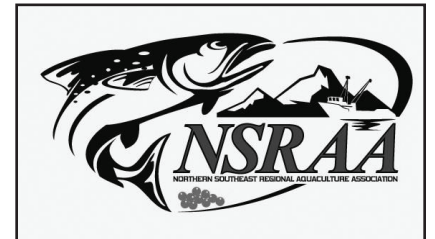
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## Gunnuk Creek: First On-Site Eggtake Completed

This year's eggtake at NSRAA's Gunnuk Creek Hatchery marks the final completion of all renovations at the organization's newest facility.

"The facility has come a full circle – it is a fully functioning hatchery," says Hatchery Manager, Ryan Schuman.

NSRAA purchased the defunct Gunnuk Creek Hatchery, located near the village of Kake on the northwest side of Kupreanof Island, from the State of Alaska in 2017. The first several years of renovations were focused on updating and/or replacing the dilapidated office and residential buildings, as well as building a new water system.

NSRAA began releasing fry from Gunnuk Creek four years ago, but those fish were either transferred from Hidden Falls as fry or, last year, as gametes for incubation. Three-year-old chum returned to the hatchery in 2020 – the first since NSRAA took over operations – but the facility was not yet ready to collect eggs at the site.

"We had a completely new system installed," Ryan explains. "The new eggtake facility is a big improvement over what was here at the hatchery previously, and it worked flawlessly."

The new system is similar to the one used at NSRAA's Hidden Falls Hatchery. The automated lift system helps reduce the physical strain on the staff as it moves the fish from the raceways, through the shock box and sorting table to where the eggs and milt are expressed.

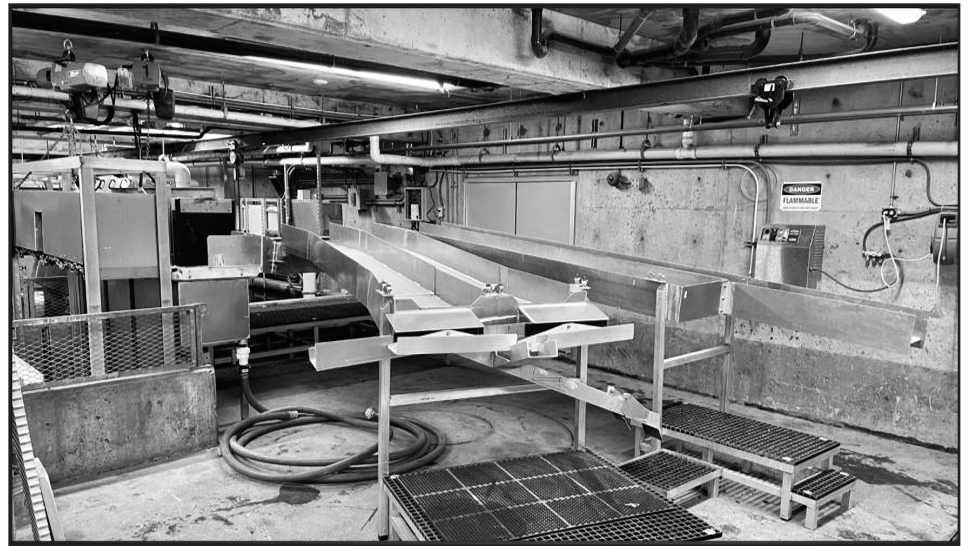
Staff was able to collect 17.5 million eggs – about 2.5 million short of the goal. The stream to the weir is long and shallow, and warm temperatures this summer made it difficult for some of the salmon to make it up to the weir in time.

"The remaining fish had a really hard time making it up the creek

before they were either forced to make their redds further downstream, or they died before they spawned," Ryan says. The higher ratio of males that returned this year (68 percent vs. 32 percent females) also contributed to the challenge of meeting the goal.

"We set a fairly ambitious goal for our first eggtake," Ryan admits. "I'm happy we came as close as we did. I wish we had made the full goal, but I wouldn't consider it a failure by any stretch of the imagination."

NSRAA was able to make up the gap with eggs transferred as gametes from the Hidden Falls Hatchery.



*Spawning setup at Gunnuk Creek Hatchery*

## Sawmill Creek: Expansion Work Continues

Work continues toward the expansion of NSRAA's Sawmill Creek Hatchery, with excavation and infrastructure work completed this summer.

Sawmill Creek is a 5,000-square-foot incubation and fresh water rearing facility in Sitka, originally designed to rear 2 million coho smolt annually for remote release. NSRAA has since added 50 million chum to the facility's production – with 30 million of those permitted to be released at Crawfish Inlet, and the remaining at Deep Inlet. The expansion will increase the hatchery's capacity to 100 million

chum, and allow for a new Chinook program, rearing 2 million Chinook annually.

The expansion will more than double the size of the hatchery buildings to 11,000-square-feet.

Since the construction this summer required that the hatchery's water be shut down, all fish at the hatchery this spring had to be moved elsewhere. Hatchery staff moved more than 2.1 million brood year 2020 (BY20) coho fry to Medvejie Hatchery in early May. Hatchery water was shut down on May 15 after the remaining BY19 coho were moved to Deep Inlet for short-term saltwater rearing and eventual release.

Excavation work began mid-June. This included the installation of a new water supply line to the hatchery and a full repair to the bulk line that cracked last winter. All work and water testing was completed by mid-July and the BY20 coho were moved back to the hatchery. The BY19 coho were released this spring.

This latest phase toward expansion was funded from Pacific Salmon Treaty (PST) mitigation monies. NSRAA has secured funding for the next two phases of expansion, which includes the remaining water supply projects and the additional drain and outfall system. Construction for those phases should be complete by the summer of 2023. NSRAA will now work toward funding the final design and construction of the new building.



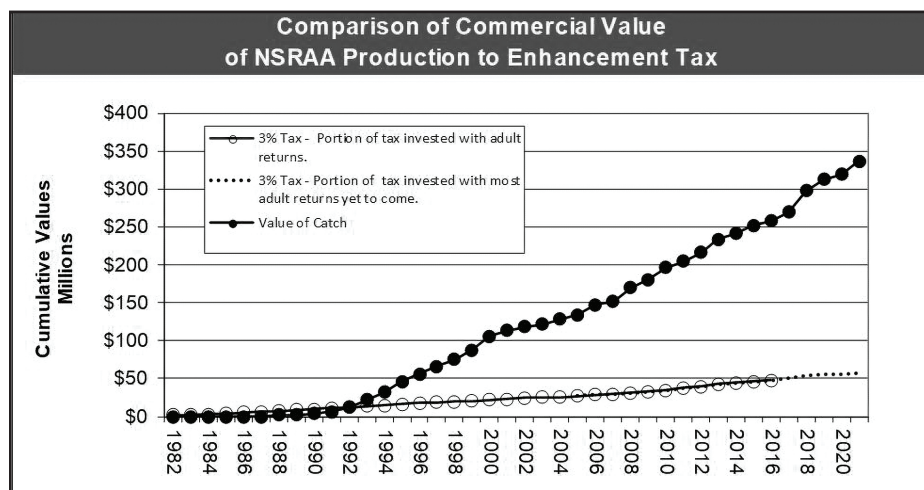
*Coho being brought back to Sawmill Creek*



*Medvejie Report (continued)*

“It was interesting,” Cain says. “In general, the warmer the temperatures, the more bacteria you have, and the more susceptible the salmon. I think it may have helped us to miss the warmest month(s) when the bacteria load is probably the heaviest.”

Cain and his staff are considering testing that theory with a trial run next year. The staff could move the majority of chinook to Green Lake in June, but hold a portion of the fry at Medvejie to transfer in August to see if this year’s good fortune was merely luck, or if the fish could benefit in the long run.



*This chart compares enhancement tax received by NSRAA and commercial value of NSRAA production*



*Green Lake in late April, at just about its maximum drawdown: 100 feet from the top of the dam*

## Hidden Falls: System Upgrades Improve Infrastructure

An upgrade to the alarm and monitoring system at Hidden Falls Hatchery this summer has increased work efficiency.

“The biggest difference with the upgrade is controlling the hydro,” says Hatchery Manager, Jon Pearce. “The monitoring side is fairly similar, just better.”

The remote facility, located in Kasnyku Bay on the east side of Baranof Island, is off-grid. The hydro on site now runs with an auto load bank setup.

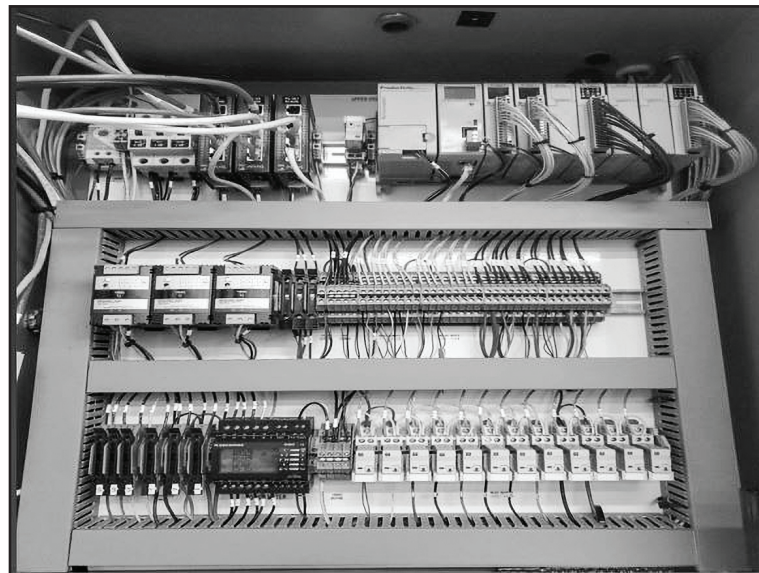
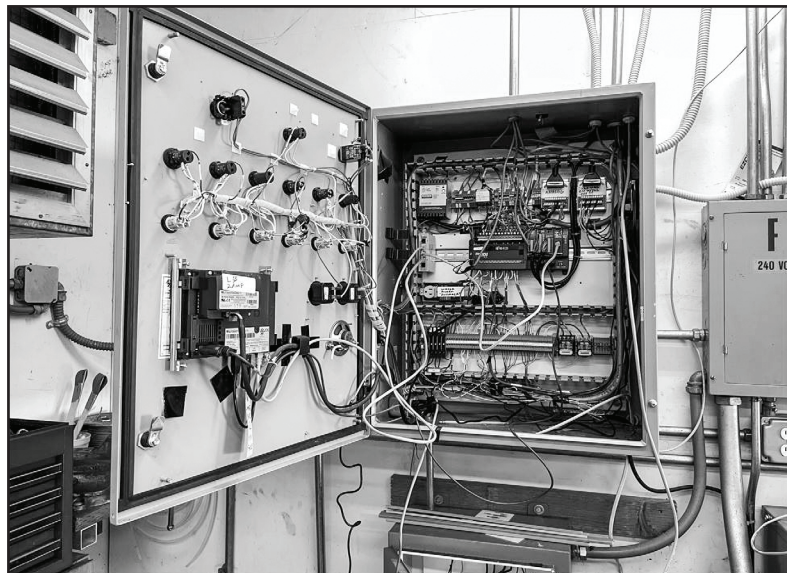
“The more electricity we produce on site the more water we pass,” Jon explains. “We use that water for the fish production. As site electrical demand goes up, the electrical load bank usage needs to be adjusted to provide the required water for the fish.”

Whereas the staff once had to adjust the hydro manually, the new computer monitoring system now controls the load bank which oversees the hydro. With the automatic load bank, staff can set a flat output for its water demand and the load bank will adjust according to the electricity used.

“So, if we need 160 kilowatts of power to be generated to produce the required amount of water for fish production, but we only use 120 kw of electricity, the load bank will add the 40 kw,” he says. “Now, say we turn on the crane that uses 30 kw, the system would drop 30 kw from the load bank and there would be only 10 kw left on the load bank.”

Not only does this increase the work and water efficiency at the hatchery, but it will also reduce the wear and tear on the hydro and produce much cleaner power. The upgrades have also integrated all monitoring into one, user-friendly system that also works on mobile tablets. The new system has improved monitoring capabilities and allows the staff to make adjustments easily their desk or on-site.

“Having more information is going to keep people more informed so they can make better decisions and run the hatchery more efficiently,” Jon says. “But, also, the improved monitoring system means we can be alerted of a problem before it becomes a major problem, like a fish mortality event.”



*Original System before, and now, the New HF PLC Tidy Installation by Cooper Marine Services*



# Preliminary Data For Predator Study

Are predators the main cause of the dramatically reduced salmon returns at NSRAA’s Hidden Falls Hatchery and its other projects on Chatham Strait? That is the main question behind the pilot predator study the organization initiated this year.

Hidden Falls was once NSRAA’s largest and most productive hatchery, but in the past decade salmon returns there have plummeted – resulting in an estimated loss to the fleets of \$70 million. Despite all attempts to boost salmon marine survivals in Chatham Strait, returns have not improved substantially, if at all. Now, NSRAA’s staff and board are faced with a quandary: continue chum production at Hidden Falls or invest those funds to a new location where the chum might have better marine survivals?

This prompted the board to initiate a study to gather information to shed light on the cause of the poor returns to determine what direction to take from here. At its meeting in March, the board allocated \$50,000 to initiate a pilot study that began this year. The organization also received \$140,000 from Pacific Salmon Treaty (PST) Mitigation Funds toward the study.

There are three main questions behind the study: Which species of fish, if any, are eating NSRAA’s salmon? How much of NSRAA’s fry are they consuming on an individual basis? Once those numbers are expanded, what is the impact of that consumption on NSRAA’s production?

Work toward the study began in May and ended in November. It included catching predator fish in the Hidden Falls and Chatham Strait area, testing their stomach contents for salmon fry, and their various organs and body parts for the unique signature of the hatchery fish (the fish are fed land-based proteins which are hypothesized to be easily detectable in a predator that has consumed the salmon fry), as well as acoustic studies of the area.

NSRAA has begun to receive preliminary data from this summer’s work.

Of 1,100 predators caught in the area and sampled, the most prevalent species were black and dusky rockfish (more than 50 percent were comprised of rockfish) and Pacific cod. There were a variety of other species caught as well, but none in significant amounts.

“The three species that were found to consume salmon after their release were black and dusky rockfish, and Pacific cod,” explains NSRAA Operations Manager, Adam Olson. “All other incidental predators that were caught were not documented with salmon in their stomach content.”

So, what does this mean?  
“It’s hard to know what it tells us yet,” he says. “Of the black rockfish sampled after the salmon release, about 20 percent had consumed salmon. So, you can assume maybe 20 percent (of black rockfish in the area) are feeding on salmon. Those rockfish were found to have consumed three salmon each. It’s baseline information, but if you could get a biomass estimate for the individual predator type, you can start to mathematically expand what the potential impact could be. That might not seem like much, but if 20 percent of the rockfish are consuming salmon every day, what is the impact? It’s hard to say at this point what that means, but now we have documented that (predation of the salmon fry) does occur. That was one step: does it occur and, if so, which species are consuming our salmon?”

The study also includes acoustic studies and physical sampling of predators. That data is still pending and NSRAA expects to receive the results by spring. By taking samples from various parts of each fish, including the liver, the fin and other areas, one can determine where in the body the signature of the hatchery fish is reflected and when that signature might be at its theoretical peak.

“If it shows up in the liver right away, but in the flesh of the fish six months later... we might not have to sample for predators at the time of release, but could instead pick a time of the year to do a subset sample,” Adam explains. It also might mean that instead of sampling predators for stomach content or other tissues that would require a lethal take, NSRAA could simply catch predator fish at strategic times or locations, and release them after taking a small clip of the fin to be tested. Another potential option is to develop a sampling program that takes advantage of commercial harvest of the species of concern in nearby existing fisheries.

“These are just preliminary results,” Adam says. “What we’re looking for is to expand this work over a longer period of time to see if there is a change in predators, whether the composition or amount of predators changes with ocean temperature, etc.”

Though dependent on funding, the study should continue for several more years.



Technicians observing their catch

2022 Preliminary Chum Forecast			
Early Runs		Late Runs	
Hidden Falls	302,000	Deep Inlet (Medvejie stock)	1,467,000
Southeast Cove	112,000	Crawfish Inlet	1,482,000
Gunnuk Creek	11,000		
Thomas Bay	85,000		
Deep Inlet (Hidden Falls stock)	93,000		
Early Run Total	603,000	Late Run Total	2,949,000
Grand Total		3,552,000	

NSRAA Contribution to Southeast Alaska Commercial Fisheries Number of Fish 2020-2021								
	Gillnet		Seine		Troll		All Gear	
	2020	2021	2020	2021	2020	2021	2020	2021
Chinook	3,652	3,676	2,339	2,599	3,002	5,203	8,993	11,478
Chum	221,937	393,667	1,624,061	1,567,369	72,679	674,741	1,918,677	2,635,777
Coho	2,046	638	1,842	3,572	46,742	32,871	50,630	37,081
All	228,000	398,000	1,628,000	1,574,000	122,000	713,000	1,978,000	2,684,000





*Unuk Chinook Transfer at Sitka Airport*

## New Hires and Promotions

NSRAA welcomed the following to its full-time, year-round hatchery staff this year:

Gunnuk Creek:

- Stan Rice, Fish Culturist

Hidden Falls:

- Simon Yoder, Maintenance Engineer
- Steve Sanderson, Assistant Maintenance Engineer
- Nick Sinks, Fish Culturist
- Madison Vitale, Fish Culturist

Medvejie:

- Courtnie Ghery, Fish Culturist

## Board Member Profile: Bill Davidson

Bill Davidson found the inspiration for his fisheries career underwater. A medical technologist at the time, Bill became fascinated with the marine environment when he began scuba diving as a hobby.

“The ocean environment was always a draw, but it became even more so for me as a scuba diver,” he explains. “I knew that was an area I wanted to follow up on as a profession.”

Bill earned his Master’s degree from Oregon State University just as the state of Alaska turned over its hatchery operations to private nonprofits. With his graduate studies focused on fish hatcheries and the technology associated with them, Bill jumped at the opportunity when he was offered a job at Sheldon Jackson College in Sitka.

Originally from California, Bill had never been to Alaska before. He packed his car and drove to Seattle to catch the ferry. It was a beautiful, sunny day when the boat arrived in Sitka.

“I thought I had landed in heaven – it was incredibly beautiful,” he remembers.

At Sheldon Jackson, Bill worked both on the faculty and as the hatchery manager. The college hatchery was in its early stages, developing broodstock for pink, chum, coho and king.

“It was a total immersion in the aquaculture world,” recalls Bill, who worked closely with the staff at NSRAA during that time. In addition to developing broodstock and teaching hatchery practices, Bill managed cost recovery harvests and developed hatchery infrastructure.

After 11 years with Sheldon Jackson, Bill took a position as assistant management biologist with the Alaska Department of Fish and Game (ADFG). As part of regional efforts to develop new fisheries, like sea cucumber, sea urchins and shrimp, Bill’s job was to develop stock assessment programs and regulatory framework to ensure that those resources were sustainably harvested. His work counting populations took him high in the air, out on the ocean, and even underwater.

“My job was to make sure the harvests were sustainable, to make sure we always had surplus fish that could provide for an ongoing income for the fishermen and contribute to the economy,” Bill explains.

It was the beginning of 23 years with the agency. Eventually, Bill was promoted to oversee the Sitka management area (about one quarter of Southeast) and finally, as Regional Management Coordinator he oversaw management of salmon, herring, shrimp and invertebrate fisheries in Southeast Alaska, from Ketchikan to Yakutat.

Now retired, Bill and his wife, Nancy, enjoy exploring the U.S. with their camper and spending time with their family and grandchildren. Bill recently joined NSRAA’s Board of Directors and brings with him a wealth

of experience.

“Through working in a hatchery, I understand what it takes to work in a hatchery setting, the kind of problems that come up, and the creativity it takes to solve those problems,” he says. “I understand the regulatory framework between NSRAA and the state, and I understand commercial fisheries management from the perspective of the management of wild stock.”

The NSRAA board includes representatives from each gear group, processors, municipality, sport and subsistence fisheries and Native organizations. Bill has filled one of two Interested Persons seats.

“I’m not supporting any one of the gear groups – I am supporting them all, collectively,” he says. “I’ve lived in Sitka long enough to understand NSRAA’s role and how important it has become over time. I’m on the board to help ensure that NSRAA’s program is successful. I have been very impressed with the creativity and professionalism of the staff. I’m glad to be part of their program as a board member.”



*Bill Davidson with his wife, Nancy*



## NOAA Terminates Salmon Research

Work toward a cooperative agreement to continue salmon research at Little Port Walter ended abruptly this summer when the National Oceanic and Atmospheric Administration (NOAA) announced it would no longer fund salmon research. The news came as a shock to officials at NSRAA and other Southeast Alaska hatcheries, who are now working frantically to save the salmon raised at NOAA's Little Port Walter facility and the important research work completed there.

"NOAA had the funds for salmon research at Little Port Walter through September 30th of 2022, but this summer, they chose to discontinue the program," explains NSRAA General Manager, Scott Wagner.

Knowing budget cuts could impact the future of salmon research at Little Port Walter, Alaska's oldest year-round biological research station, NSRAA officials have been working for several years toward a cooperative agreement with NOAA to ensure that the facility's important work on salmon would continue. Located near the southeastern tip of Baranof Island, 110 miles south of Juneau, Little Port Walter has been the site of a variety of fisheries research projects since 1934. The research station is the primary field research facility of Auke Bay Laboratory, which operates under NOAA's Alaska Fisheries Science Center, based in Seattle.

NSRAA has utilized research from Little Port Walter over the years to improve its hatchery production. Most recently, NSRAA has been following the progress of the facility's Keta broodstock with interest.

For about five years now, researchers at Little Port Walter have been working in cooperation with Alaska Department of Fish and Game to develop a new Chinook broodstock from the Keta River, east of Ketchikan. The Keta River system naturally produces a component of zero-check smolt that has intriguing potential for NSRAA. Zero-check chinook are raised for six months before being released to saltwater, whereas hatchery chinook are traditionally raised for 18 months before release. The shortened timespan could translate to substantial savings for hatchery-reared salmon if the marine survivals are similar to or better than those achieved through traditional rearing.

The staff and board at NSRAA have been planning to eventually rear the Keta broodstock at one of its hatcheries – most likely, Hidden Falls, on the Chatham Strait where salmon returns have dropped drastically in the past decade. When it became evident funding for salmon research at Little Port Walter was in jeopardy, NSRAA began to explore a cooperative agreement with NOAA to continue salmon research at Little Port Walter. As part of that effort, NSRAA has been exploring the possibility of a new remote chum release site – potentially from nearby Big Port Walter – to help fund that work.

"NSRAA's main focus is to continue that broodstock development to the point where it could be incorporated into production releases at either our facility or any other facility in Southeast that breeds Chinook," Scott explains.



Unloading Chinook Broodstock onto Little Port Walter Pier

NOAA's decision in June to suddenly discontinue salmon funding meant all the salmon being reared at the facility would be euthanized. At the time, Little Port Walter was rearing two Chinook stocks: Unuk and Keta. With about 70,000 Keta and more than 40,000 Unuk, that was more than 100,000 Chinook that would be wasted. NSRAA and other hatcheries rushed to the rescue. NSRAA was able to move the Keta to its Hidden Falls Hatchery, but did

not have enough room for the Unuk. NSRAA helped transport those fish to the Sitka Sound Science Center where they are being reared this winter.

Initially, NSRAA planned to transport the Keta broodstock back to Little Port Walter for release in the spring. The hope was to somehow continue the Keta broodstock to eventually be reared at NSRAA, and for the Unuk broodstock to be released for the fleets.

But in early December, Scott received word from NOAA officials that the organization would not even allow the fish to be released from Little Port Walter. NOAA still has several generations of Unuk and Keta broodstock that will return to the Little Port Walter site to spawn for the next several years.

Since there hasn't been interest from hatcheries to continue the Unuk stock, those salmon could be released from another location, but doing so with the Keta broodstock means the broodstock would likely be lost entirely.

"We are now in a position where we have the fish, but where they go from here is uncertain," Scott says. "The numbers of the Keta are so few that if we release them from Hidden Falls (or another one of NSRAA's hatcheries), the few adults that return would get caught up in a chum fishery return and we would not be able to continue to develop the Keta broodstock. NOAA's decision puts the future of this broodstock in jeopardy."

Though NOAA has ceased its salmon research at Little Port Walter, the facility is still open and continues to receive funding for cod research there. For this reason, Scott is hopeful that NOAA might change its position so the development of the Keta Chinook can continue. He is hopeful, but not optimistic.

"NOAA's main focus is on federal fisheries, which is cod," he explains. "They want to devote more money to cod research."

In the past 20 years, Chinook production directly resulting from NOAA's research and development at Little Port Walter has brought \$13 million to the troll fleet.

"It helps to offset the Pacific Salmon Treaty losses to the troll fleet," Scott says. "The troll fleet has given up a significant quota and allocation over those years. Chinook production at NSRAA and other Southeast hatcheries has helped offset those losses. So, it would be a further loss to the troll fleet if they stop producing fish."



Sampling Broodstock Prior to Spawning





*Chip and his wife, Amy*

## Chip Blair Retires After 36 Years With NSRAA

NSRAA's longtime Data Analyst, Chip Blair, retired in March – 36 years after he began work with the organization. His is the longest employment with NSRAA on record.

Chip began working with NSRAA in 1985, when it was just a fledgling organization, not long after the state turned over its hatchery operations to private non-profits. Back then, NSRAA's staff was comprised of only about 15 people, and Medvejie and the Coho Lake Rearing program were NSRAA's main projects. The organization broke records that year when it released 6 million chum from Medvejie Hatchery. In 2021, NSRAA released 245 million salmon.

Every aspect of operations at NSRAA has changed since then, from its programs, production and rearing operations, to the hatchery and residential buildings (which then were merely shacks or tents of plywood or canvas covered in visqueen plastic), and, especially, data.

Originally from Twinsburg, Ohio, Chip never dreamed of a career in fisheries. He grew up on a horse farm and envisioned a future similar to that of his childhood, but when his wife, Amy, accepted a summer position with the U.S. Forest Service (USFS) in Alaska, the couple moved to Sitka. They've been there ever since. And what began as a temporary position with NSRAA turned into a long, evolving and fulfilling career for Chip.

Initially, Chip worked remotely with Dick Crone on NSRAA's Coho Lake Rearing program. Dick, the project supervisor, who had a PhD in Fisheries and was extremely thorough in his research, data collection and analysis, was a mentor to Chip. "He set the bar at NSRAA when it came to data collection and analysis," says Chip, who credits his work with Dick for setting his personal compass toward data collection and analysis later in his career.

Working remotely isn't for everyone, but Chip loved it. "You totally got away from everything," he says. This was before Internet or cell phones. When Chip was remote, there was a radio, but they couldn't get a radio station. The only entertainment they had back then was a battery-operated cassette player. Other than to radio a message to the USFS office in Petersburg, which could then relay a message to the USFS office in Sitka, there was no communication from camp. "Now remote sites have Internet, satellite radios, and everything. There's constant communication."

Chip stopped working remotely and began working in Sitka once his second child, his son, Ian, was born.

By then, NSRAA had purchased its first computer for the accounting department, but no one knew how to use it. "I just started playing around with it," Chip says. "I've always been mathematically-oriented, so it was natural for me. As computers evolved, there was always something new and exciting to explore. It wasn't 100 percent for the job – a lot of it was me following my interest."

At first, Chip used the computer to track return numbers. He learned how to make graphs to present information to the board at its meetings. When NSRAA got new computers, Chip learned how to network those

together.

Now working full-time in Sitka, Chip began sampling fish at the processors, and then he'd return to the office to input the data. The more data he gathered, the more questions the managers asked of him. "Can you compare these two groups? Which one is more cost effective?" Questions like these drove Chip to delve into the data and gather as much information as he could.

"Right from the beginning, it was obvious that the return data changed how we reared fish, because we could see which groups were doing better with different rearing strategies," he explains. "(Data analysis) was seen as something really important."

Chip couldn't tell you when exactly he became NSRAA's Data Analyst, though.

"It wasn't like there was a position," he explains. "It just kind of evolved. I had a knack for it, and we were a pretty small company, so I wore a lot of hats. After ten years or so, I was able to create my own position, which is pretty unique, and it eventually came together with the title of Data Analyst."

Now that the Internet has become an ingrained part of our society, it's hard to imagine what it was like to gather and track information before the Internet made it so easily accessible. "From then to now, I've been through every stage of that progression," he says. "It's remarkable how much has evolved in the 30-some years I was with NSRAA."

Six months after he left NSRAA, Chip admits the transition to retirement has been difficult, especially with the pandemic. He loved every evolution of his career with NSRAA and the many people with whom he worked – from the fishermen and the processors, to NSRAA's staff, which he says has always been dedicated, professional and passionate about raising salmon for the fleets.

"There was never a day that was the same, for the most part," Chip says. "It was always fun."

Chip and Amy have taken advantage of their newfound freedom to visit their daughter, Emily, and their three grandchildren in Helena, Montana. This time with their grandchildren is on the top of their bucket list, but Chip says the couple also looks forward to exploring more of Alaska, hiking down South (and biking where there is more than 20 miles of road!), and eventually heading to Europe.

"I'm starting to hit my stride and enjoying retirement," Chip says.

Back at NSRAA, Ben Adams took over data and research when Chip left. He previously worked as Special Projects Manager, overseeing the tagging and weir operations at Salmon Lake. Annie Causey, moved from Special Projects Assistant to Special Projects Manager to take over for Ben. Alyssa Tomczyk joined the staff in a new position, Evaluation Program Assistant. She has taken over for Chip's role for the layout of NSRAA's semi-annual newsletter, Fish Rap.