

# FISH RAP

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

Change Service Requested

Vol. 35 No. 1

May 2017

*Spring releases are happening!*

*Ryan Schuman pushes coho net pens for release near Kasnyku Bay.*



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## NSRAA Acquires Gunnuk Creek Hatchery

After three frustrating years of reviews, negotiations, offers and refusals, NSRAA is now the owner of Gunnuk Creek Hatchery. It is the organizations latest and most challenging project.

“It’s been a long, drawn out process to get to where we are now,” says NSRAA Operations Manager, Scott Wagner.

Kake Nonprofit Fisheries Corporation filed bankruptcy and closed operations at Gunnuk Creek Hatchery, on the northwest coast of Kupreanof Island, in the spring of 2014. NSRAA began a cooperative release project with the hatchery in Southeast Cove two years prior to the closure in an effort to help boost salmon returns to the hatchery.

As the area’s regional aquaculture association, NSRAA was given first right of refusal when Gunnuk Creek shut its doors. The potential to take over the failed hatchery was both an intriguing and daunting proposition. Though it would require about \$2.5 million in capital improvements to update the facility and an estimated \$600,000 - \$900,000 in annual operational costs, the NSRAA board gave General Manager, Steve Reifentstahl, its approval to purchase Gunnuk Creek.

But the state refused NSRAA’s purchase offer and put the property up for public auction instead. The purchase – whether through a formal process or public auction – came with a number of complications beyond the negotiations with the state. It also necessitated an agreement with Southeast Alaska Land Trust (which limited use of the land) and an easement with the City of Kake for water access.

“I had to work on several fronts at one time to make sure all these things were agreed to and acceptable to NSRAA before we paid for the property, but we finally got it,” says Steve. “I have to give a lot of credit to Deputy Commissioner Fred Parady; he was dogged in his determination to make this deal work, but it took a lot of wrangling to get where we could finally purchase it. Now the hard work begins.”

Ultimately, NSRAA plans to incubate 65 million chum eggs at Gunnuk Creek each year, but the road to resurrect the hatchery is long. Most of the buildings at the hatchery are dilapidated and unusable in their current condition. The water system is in disrepair. Because the hatchery has been fallow for three years, few fish return there now.

“I feel both excited and challenged,” Steve says. “I know it is a big job – particularly for Mike Pountney and Scott Wagner – but I love challenge and I love meeting challenges. That’s our work culture here. I think

we see that there’s going to be more work and there’s going to be difficulties, but that we can renovate the facility and create an asset. With the staff we have at NSRAA, I feel that we can meet that challenge and, in four years, we’re going to have a good facility that gives us another option for broodstock collection. It’s going to be a great thing for NSRAA and, ultimately, fishermen.”

NSRAA will complete the renovation work in three stages, explains Scott, who now oversees the project. The first phase, which will require significant renovations, will be to get the facility up and running.

Though the site was evaluated several years ago as NSRAA determined whether or not it would proceed with a purchase offer, it must be reassessed to get an updated work estimate and a loan. Scott hopes the evaluation and loan can be completed in time to begin work in June. He expects it will take about a year of renovations before the facility is ready to incubate eggs. Ideally, it will be ready to incubate 5-10 million eggs from NSRAA’s Hidden Falls hatchery in July 2018. NSRAA plans to release approximately 200,000 Chinook smolt from Hidden Falls outside Gunnuk Creek hatchery next spring. Chum should begin to return to the hatchery in 2022.

For phase two of the project, a new water recirculation system at Gunnuk Creek must be up and running so the hatchery can build its production to 30 million, Scott explains. He hopes to get to this stage in 2019, but it will take several years afterwards to increase the recirculation system and work out any kinks before it is ready for the third and final phase: maximum production of 65 million.

Water issues at Gunnuk Creek limit NSRAA’s fish rearing capabilities there. At this time, only chum are planned for the facility and the hatchery will only have fish for six months each year.

“There’s not much water available,” explains Scott. (This may have been the leading problem for Gunnuk Creek’s failure.) NSRAA will begin incubation at the hatchery each July, after eggtakes, and staff will move fish to saltwater in February.

If all goes well, Gunnuk Creek will be up to maximum production by 2022, but complications could lengthen the timeline.

“There’s a lot to do – I can tell you that,” says Scott. “It will be a long process.”

*cont. on back page*

## Medvejie Continues Broodstock Experimentation

Without broodstock, NSRAA wouldn't be able to do what it does. There are years when fish return in plentiful numbers and broodstock goals are easy to meet. Other years, however, staff at NSRAA must scramble to find enough broodstock to get the eggs it needs to operate at its potential.

In an effort to be proactive and ready for unexpected run failures, the staff at Medvejie has been experimenting with alternative methods of broodstock collection.

Last summer, the experiment was prompted when it appeared the Hidden Falls Hatchery would not have enough broodstock for its chum eggtake. Sensing an emergency situation, the staff at Medvejie prepared to offer backup. At the time, there were about 4,000 chum already in net pens in Deep Inlet. Medvejie Hatchery Manager, Adam Olson, and his crew towed those chum to its broodstock holding area, by the facility's fish ladder. They were uncertain whether the fish would ascend the ladder

or turn around and swim back to Deep Inlet where they were released.

The fish did, in fact, swim up the fish ladder at Medvejie, giving the staff hope that it could do this again if there were a broodstock emergency in the future. This year, the staff plans to continue its experimentation with broodstock collection.

"We want to be proactive, not reactive," says Adam.

This year's plan is two-fold. One, the staff will allow any stray fish Hidden Falls stock fish that return to Bear Cove, like last year, to ascend the fish ladder. Two, the staff is experimenting with an eggtake and spawning barge.

NSRAA will retrofit a chum project barge so staff can do eggtake processing within the barge. If it is successful, this offers NSRAA an option for eggtake at remote locations in the future, but there are many hurdles to overcome first. Among them, are the process of broodstock collection and holding, segregation of mature fish for processing, plus the transport of the eggs from the barge to one of the main incubation facilities – Medvejie or Sawmill Creek.

The goal of this year's pilot program is to address these issues and find efficient solutions so that an eggtake and spawning barge would be a viable tool for the future.

"NSRAA continues to face some challenges with marine survival and adult returns, as do many other hatchery organizations," Adam explains. "The key to survival through tough return years is diversification. We continue to diversify our programs with new rearing locations and strategies. I see this as just another step toward diversification – a tool that could allow NSRAA staff flexibility and options to reach its eggtake goals."

## General Manager's Notes

NSRAA added the Gunnuk Creek Hatchery to our portfolio this year, which also happens to be our 40th anniversary of operations. We now have four hatcheries, a major lake stocking program, and nine release sites in our quiver; many of these programs were added in the past five years and comprise 35 percent production growth. NSRAA has arrived at this place in our history for one primary reason: Fishermen!

I would like to congratulate the founding members of NSRAA, two of whom are currently on the NSRAA board, all present and former board members, and the 2,500 salmon limited entry fishermen who have supported past and present development of NSRAA through their 3 percent salmon enhancement taxes (SET). On average, 25 percent of fishermen's salmon income derives from their enhancement program. Perhaps in hindsight, the decision to establish NSRAA looks self-evident, but back in the mid-70s – during the most significant slump in salmon harvest since the early 1900s – it took visionaries and serious capital risk to get to where we are today. The early years had challenges to the legality of the SET tax and therefore payroll and program development were difficult, but after the second successful vote on the salmon tax, it has been steady progress, notwithstanding the many hurdles along the way.



Salmon and Mother Nature are not linear or one-dimensional. Challenges are a constant. Fishermen and aquaculture biologists are surely cut from same cloth and understand that perturbations are part of the game; it is not so much that curve balls are avoidable, but rather having the right mindset to recognize the problem and define a possible solution (and then have a couple of backup plans).

NSRAA's most significant bugaboo has certainly been Hidden Falls Hatchery, once the premier chum facility in the state. Whales, Pollock, cod or other predator? You have heard the story. We believe we may have hit upon an innovation strategy consisting of several components: 1) Reduce biomass released at Hidden Falls without decreasing production. We added Thomas Bay as a Hidden Fall remote release site for up to 40 million fry. 2) Produce 75 million 2-gram and 4-gram chum at Kasnyku Bay, but release only half that production onsite while transporting the remaining half to East Chatham. Strategies one and two reduce the effective biomass at Kasnyku by 65 percent. 3) Create new Hidden Falls broodstock options at Medvejie and Gunnuk Creek Hatcheries. Fortunately, we have secured the permits and begin implementation this year. Just today, I spoke to the whale biologist conducting research in the Hidden Falls area, and she conveyed that the decrease in fry biomass may be having the desired effect, diminished feeding behavior. We shall see.

Congratulations on 40 years of success. It is my great pleasure to be a small part of this creative and innovative effort.

Have a safe and productive salmon season.

### Northern Southeast Regional Aquaculture Association

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Vol. 35 No. 1  
May 2017

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*Point Gardner was a familiar sight to chum fry transfer boats this spring. Over 70 million fry were moved from Hidden Falls to Southeast Cove and Thomas Bay.*



*Project leader Duncan Coltharp feeds fry at Southeast Cove.*



*Ice greets the setup crew at Thomas Bay.*



*Emily Pearce counts Chinook smolt this spring at Hidden Falls.*



*Chum fry are sampled prior to release. These fish are close to 4 grams.*



*A calm morning at the Crawfish Inlet rearing site.*

## Hidden Falls Works to Streamline Eggtakes

NSRAA has tackled a number of large construction projects at its Hidden Falls Hatchery over the past few years. The latest on tap: a rebuild of the hatchery's eggtake building and upgrade of its raceways.

The staff at NSRAA has been incubating eggs and rearing fish at Hidden Falls for about 30 years now, but the buildings have a longer history. The hatchery was originally built by the state in the late 1970s. The spawning building dates back to those first days.

"It's one of the oldest buildings on site," says Hatchery Manager, Jon Pearce.

It might be one of the most critical buildings, too, if you consider that it is where staff collect and fertilize eggs – the first step in its work to raise fish to release for the fleets. In the past 40 years, eggtakes there have increased from some 20 million a year to 180 million.

Plans are in the works to tear down the old building and replace it. The raceways will remain, but a cover and walls will be added to prevent predation from birds and bears. Though there is little room at the Hidden Falls site to build a larger building, the updated building will have an added cutting station, which will help speed up the processing of eggtakes.

During eggtakes, salmon enter the raceways, waiting. Staff stun the fish before pulling them out of the water to separate by sex. The females go to the cutting stations, where they are opened and their eggs removed. Originally, there were only two cutting stations. A third was added over the years, but it still is not enough.

"We can't go any faster than the females we process," explains Jon.

The staff needs a ratio of five females for every three males for the fertilization process. If the staff doesn't work quick enough, the fish waiting in the raceways begin to deteriorate and the eggs will go bad before they're collected.

The new building will have four cutting stations, to help the efficiency of the eggtake process. The only problem is how to tear down the old building and replace it without affecting work at the hatchery.

"Logistically, the hard part is finding the right time of year, when we don't have eggtakes," Jon says. "Most likely, this project won't happen until late fall or winter."

## Sawmill Creek Upgrades Will Maximize Use

NSRAA is preparing to increase its chum production at Sawmill Creek Hatchery by more than 60 percent.

Two years ago, NSRAA began incubating up to 30 million chum at the facility for its Crawfish Inlet project in an effort to address the troll fleet imbalance. Located on the west side of Baranof Island, Crawfish Inlet's topography makes it an ideal location for trollers.

Now, as NSRAA prepares to increase the facility's production from 30 million to 50 million, the staff prepares to make changes to accommodate for the large increase in production. (The added chum production will not be used for Crawfish. They were previously raised at Medveje for Deep Inlet.)

If you visited the hatchery in the spring, you would find an indoor rearing space with six small raceways for coho. In the fall, the room is flipped into a chum incubation room. This multi-purposed area allows the hatchery to maximize use of limited space.

The area's plumbing must be upgraded to supply the building with the additional water necessary to incubate 50 million eggs. The incubators in which fertilized salmon eggs are incubated look like stacks of trays to the average visitor. With 30 million eggs, there were 28 stacks of incubators. To increase the numbers of incubation to 50 million, the staff must add a third row for a total of 42 stacks of incubators.

These modifications will maximize the space in Sawmill Creek's incubation room but will leave little room to spare.

There is a large sump-style drain in the room, into which water from the incubators drains. The drain is designed to hold roughly 1,400-gallons of water. This water can be recirculated to the incubators in an emergency situation, but the room will need an additional pump to get water to the added incubators.

"Sawmill was initially designed as an incubation and rearing facility for coho only," says Rebecca Olson, Hatchery Manager. "NSRAA saw an opportunity to expand for chum and made it happen. Now there's an opportunity to expand further. No two years have been alike so far. Whether it be fish incubation and rearing conditions or production changes, such as this one, we try to stay flexible and adapt."

## Board Member Profile: Zachary Olson

It takes some people most of their adult years to figure out what they want to do with their life. That was not the case with Zachary Olson.

“I remember (my sister, Kristin, and I) were sitting down one day and she said, “You and I are going to live with Jacques Cousteau and we’re going to do marine biology,” he recalls. “She said it like it was a fact and it’s never really left me. So when it came time for me to go to college, I knew exactly what my degree was going to be.”

One of five children from a small, farming town in Michigan, Zachary credits his sister and brothers for their influence as a child. His sister gave him the love to travel and explore the world, one brother taught him to hunt and fish, and his other brothers shared their artistic creativity.

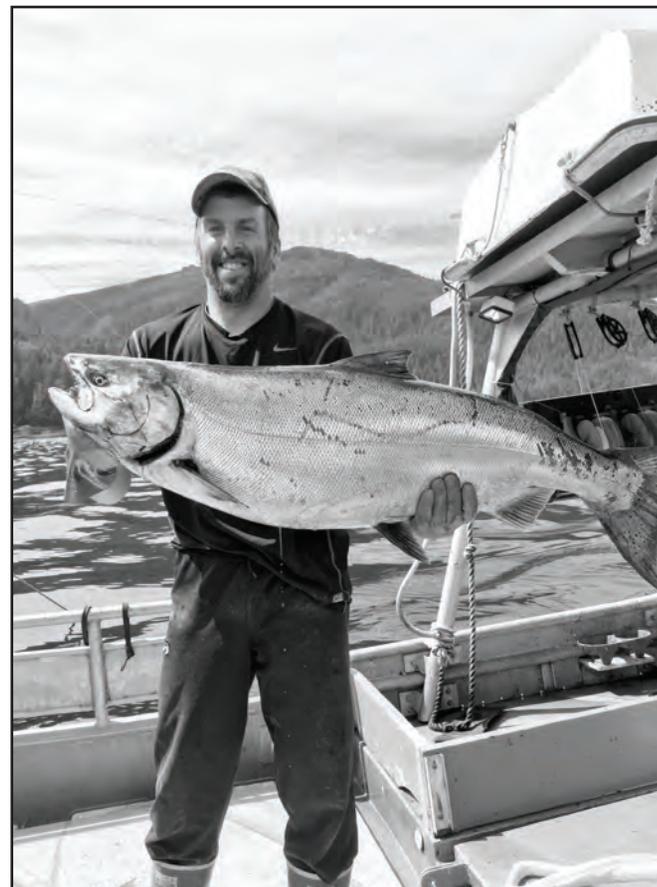
“It was a perfect upbringing for a young child,” he says.

After graduating from Michigan State with a degree in fisheries management, Zachary worked in commercial fishing – gillnetting, seining, shrimping and Dungeness crabbing – in Southeast Alaska for two years. Since then, the 51-year-old has had three major career changes that have brought him a full circle.

He moved to Idaho for a three-month internship with the Idaho Department of Fish and Game’s Chinook program and ended up staying there 10 years. Eventually, Zachary left that position to return to Alaska, and work as the assistant manager at Gunnuk Creek Hatchery.

“I just couldn’t let Alaska go, even though Idaho was a stunner, beautiful place to be,” he says.

When Gunnuk Creek Hatchery shut down, Zachary was at a crossroads: continue his work in hatcheries or return to commercial fishing? He worked on some boats before settling on trolling.



NSRAA Board member, Zachary Olson

The satisfaction he gets from trolling is similar to that of his agriculture days – raising food for human consumption, Zachary explains. He also enjoys exploring new areas.

“You pull into a remote bay and it’s all quiet and you have “Holy cow!” moments,” Zachary says. “You could see a bear walking on the beach. Or maybe there’s a whale in your little bay.”

One of his favorite memories so far is when he took Kristin, who was crewing for him, and their 85-year-old mother on a ten-day boat trip to show them some of the magical places he’s discovered while fishing.

With the combination of his education, hatchery and commercial fishing experience, Zachary thought he was well prepared to be an open-minded NSRAA board member, but the political side of it was a challenge.

“It was an awakening,” he says. Being a board member involves more than contributing your opinion. There are rules, and each member – permit holders and non-permit holders -- brings a different perspective to the table. “It’s very interesting to see how everybody thinks. Things don’t always work out in your mind how you think they should. It’s not always fun, but I sure do learn a lot.”

Zachary looks to the older troll representatives as his mentors, and enjoys discussing issues with other trollers on the docks.

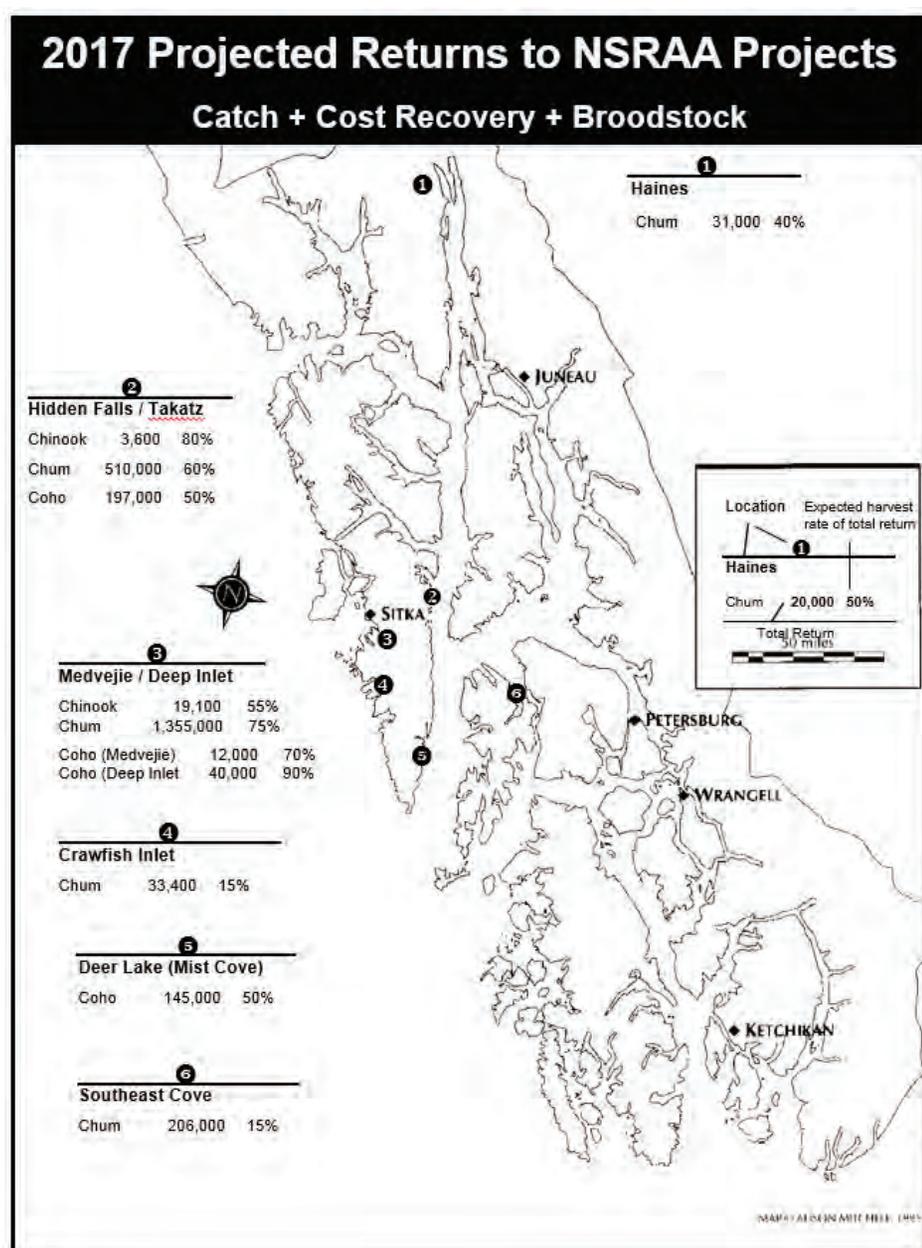
“People ask you, “Why did you guys decide to do this? Why did you do that?” I like listening to what the other trollers have to say. It’s a way to keep our fleets informed on what’s happening with NSRAA, because those fish are very important to our livelihood.”

Having a seat on the NSRAA board has given Zachary a better understanding of the strategy and complexity involved with running an organization like NSRAA.

“(NSRAA General Manager) Steve Reifentstahl is one of the most savvy people I’ve ever met,” Zachary says. “I’m sure most of the time it could be a very thankless job to steer this big ship of NSRAA and get this business done, but he really makes that work. The whole NSRAA board is such an amazing group of people.”

Like many board members, Zachary joined the board with a desire to have a voice for his fleet, but he has learned that his position as a board member involves more than that.

“You do have to fight for what you need and what you think is fair, but, at the same time, you have to be cognizant there are other groups out there and they’re trying to make money for their families, too. You have to respect that.”



# Market Report: 2017 Season Looks Promising

If there's one thing that's consistent about the salmon market, it's that it's unpredictable. So many factors affect Alaska salmon prices: farmed salmon production and prices, leftovers from last season, fish returns, consumer demand, the strength of the dollar. Even the most educated prediction can be radically off-target. But assuming there are no major surprises, salmon prices look promising this season.

According to a recent report from Quartz digital media, problems with sea lice in Norway and Scotland have pushed salmon prices to historic highs. Salmon exports from Norway, the world's biggest farmed salmon producer, were reduced by 5 percent last year as a result of the sea lice problem and global production fell about 9 percent. The diminished supply drove up salmon prices in 2016.

That may seem too small a percentage to have an impact, but because the farmed salmon supply grows an average of 5-7 percent annually, the supply chain becomes dependent on that growth, explains Andy Wink, Seafood Research Analyst with the McDowell Group, an Alaska research and consulting firm. "So any time you have a reduction, like we did last year, that's a really substantial thing. It's not like wild salmon where they know there's going to be fluctuations each year."

Fortunately, domestic prices have remained strong despite the strong dollar.

"That's a saving grace for us, because the last time the dollar was this strong was in the early 2000s... when the salmon market fell apart for Alaska," Andy says. "Thank goodness things are so tight in the farmed salmon market. Things are trending up, pricewise."

Japan's harvest was down about 30 percent last year, which should work in favor of roe and ikura prices this year, he says.

"Roe is always a big part of the equation, especially for chum," says John Garner, President of North Pacific Seafoods. "The domestic ikura market is limited in quantity, but quite robust. It doesn't have the headwinds of high exchange rates affecting it, so I would expect to see those prices relatively firm and similar to last year."

Forecasts for Alaska pink salmon are up this year over 2016's meager returns, but lower than returns from 2015 and 2013 (pinks typically return in larger numbers on odd years), says Jeremy Woodrow of the Alaska Seafood Marketing Institute (ASMI), which should dampen downward pressure on pink prices.

"Pink roe prices were at historic highs last year because of the short-fall," John says. "I think we're likely to see them down a modest amount, but, again, supplies are relatively short."

International demand for and sales of roe and ikura, which are highly affected by exchange rates, greatly impact prices for pink and chum.

"With the volatility we have in Washington DC, who knows what could happen to exchange rates," says John. "Unforeseen events can have a big impact, so there's that overriding caveat: exchange rates will have a lot of effect on what we achieve for export sales."

As the season opens, however, the outlook is favorable for Alaska salmon. Prices for chum, Chinook and coho started off strong.

"The market for Alaska salmon, in general, is really improved this year," Andy says. "I think partly because Alaska had lower prices in 2015 and that has expanded demand – especially for sockeye."

"The coho market was in the tank in 2014/2015," John says. "Since that time, the fresh market has really rebounded and made for some

pretty robust prices for coho. King prices have been very, very good. Chum is way up there. I don't know that I would characterize it as record prices, but for good meat color chum, prices are quite good. The ikura price is good."

"Things are trending up, pricewise," agrees Andy. "With pinks coming on this year, we'll see how that continues. But I think the market is pretty tight – especially for chum and pink roe."

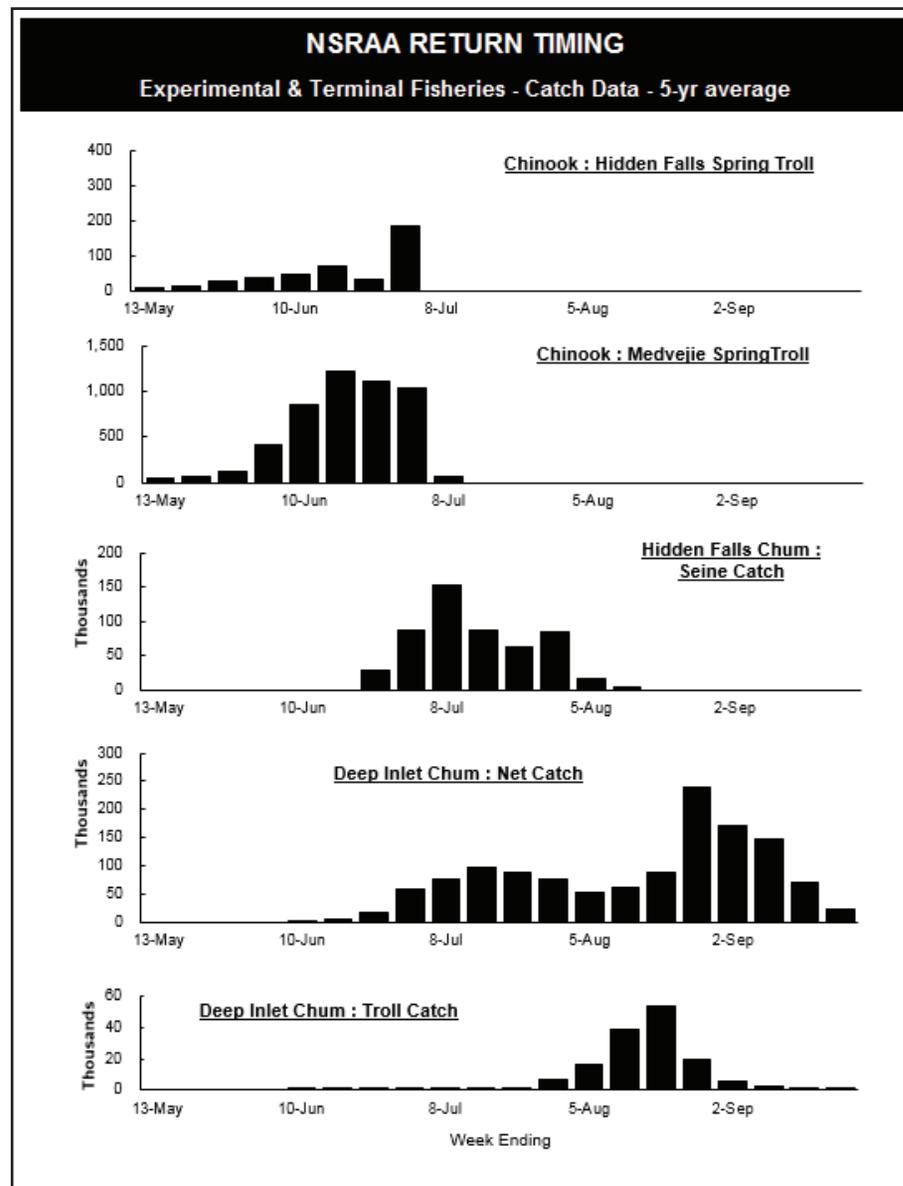
With so many factors at play, there isn't much more one can do but wait and see what happens and hope for the best. To start, as John says, "For now, we hope the fish show up."

*"The market for Alaska salmon, in general, is really improved this year"*

- Andy Wink  
McDowell Group



NSRAA Maintenance Supervisor Mike Pountney scrapes ice during spring setup at Thomas Bay.



## Chum Trial Should Provide Answers

There's a saying: desperate times call for desperate measures. At NSRAA's Hidden Falls Hatchery, poor chum returns have dropped to such low levels that the organization is desperate to find solutions.

Returns numbers to the hatchery have slowly dropped over the past ten years or so. By last season, the marine survival for chum released from Hidden Falls and nearby Takatz Bay had plummeted to a mere 0.5 percent – well below the facility's long-term average of 2.5 percent. That drop is even more dramatic when you consider that in fish numbers, it's a difference between an annual average of 2 million adults for the fleets, down to a mere 265,000 fish each year – most of which is used for broodstock. That's a drop from a long-term average annual value of \$4.1 million to less than \$1 million per year the past two years.

The problem seems to be specific to fish released from Baranof Island's eastern shoreline in Chatham Strait. The leading theory for the losses is predation from humpback whales and other predator species at the time of release. (Humpback whales have regularly been sighted feeding on chum fry along the shoreline subsequent to the fry release over the past ten years.) Though the staff has been quick to implement a variety of changes to their release strategies in an effort to combat the problem, to date, their efforts have been to no avail.

Predation from whales, pollock, cod and other piscivorous predators is the most likely cause for the decline, based on whale research and local observations. Hidden Falls chum transferred to Deep Inlet or Southeast Cove for release have shown normal marine survival rates of 2.5 to 3 percent, indicating the problem is localized along western Chatham Strait. NSRAA has been raising chum to a larger size for the past ten years in hopes the larger size would help with marine survival. Though results mostly seem favorable, they have not been conclusive.

Which is why, this season, the staff at Hidden Falls marked two trial groups of chum prior to their release. The hatchery rears two groups of chum, known as the 2.0 and the 4.0 groups. The fry in the 2.0 group are released at a weight of approximately 2-grams, whereas the 4.0 group are kept in net pens longer, to double their weight before release.

(While it may seem obvious that fry released at a larger size would have a better chance of survival, it is not always the case. Their marine survival must be significant enough to merit the increased cost of food and care of the 4.0 group. Results have varied.)

This spring, the staff at NSRAA transferred half of each group by tender eight miles to the eastern side of Chatham Strait. NSRAA Operations Manager, Scott Wagner, acknowledges this was an arduous and risky attempt to dodge any habitual predators on Baranof's eastern shore. Transferring fish – be it by dragging net pens behind a skiff for a mile or transferring them a longer distance within the hold of a boat – is stressful for the fish and, in itself, can cause mortality. The longer the transfer, the higher the risk of mortality.

“We did this once, six years ago, with coho,” says Scott. The transfer alone killed a large portion of those fish and the risk was high that the chum in this year's release group also would suffer mortalities. “We wouldn't do this if we weren't desperate.”

Fortunately, the first transfer went smoothly, with little mortality at the time.

“The true success of the tender transport will not be known for another four years, when the adults return,” explains NSRAA General Manager, Steve Reifentuhl. “Marine survival rates will be the benchmark of success or failure.”

Port Armstrong, a hatchery on the southeastern tip of Baranof Island, which has also suffered dramatically poor returns recently, is doing a similar release trial this season. The hope is that the markings from this year's release groups will give the hatcheries data to measure the correlation (or lack thereof) between the site of release and marine survival.

“We're out of other options to try,” explains Scott. “If this isn't successful, the issue could be larger scale – something that's happening as the fish come down Chatham Strait, not something localized at Hidden Falls.”

NSRAA 2017 Return Projections									
Site	Projected Return	Range		Commercial	Sport	Cost Recovery	Brood Stock	2016 Return	2016 Forecast
		Low	High						
<b>Chum</b>									
<i>Hidden Falls</i>	510,000	255,000	1,421,000	320,000	-	-	190,000	271,601	1,433,000
<i>Medvejie/Deep Inlet*</i>	1,355,000	671,000	2,039,000	1,015,000	-	250,000	90,000	1,689,914	1,782,000
<i>Southeast Cove</i>	206,000	133,000	361,000	31,000	-	175,000	-	149,520	165,700
<i>Crawfish Inlet</i>	33,400	16,700	66,800	7,000	-	26,400	-	-	-
<i>Haines Projects</i>	31,000	15,500	46,500	12,400	-	-	-	29,000	29,000
	<b>2,135,400</b>	<b>1,091,200</b>	<b>3,934,300</b>	<b>1,385,400</b>	<b>-</b>	<b>451,400</b>	<b>280,000</b>	<b>2,140,035</b>	<b>3,411,700</b>
<b>Chinook</b>									
<i>Hidden Falls</i>	3,600	2,100	9,000	2,400	200	-	1,000	1,511	5,400
<i>Medvejie</i>	19,100	7,800	32,200	10,314	955	3,831	4,000	14,531	31,200
	<b>22,700</b>	<b>9,900</b>	<b>41,200</b>	<b>12,714</b>	<b>1,155</b>	<b>3,831</b>	<b>5,000</b>	<b>16,042</b>	<b>36,600</b>
<b>Coho</b>									
	<i>Marine Survival:</i>	<b>6%</b>	<b>4%</b>	<b>10%</b>					<b>0</b>
<i>Hidden Falls</i>	197,000	131,300	328,200	74,650	4,000	108,350	10,000	20,000	194,000
<i>Deer Lake</i>	145,000	96,400	241,000	77,750	2,000	65,250	-	56,891	150,000
<i>Parry Lake</i>	6,000	3,800	9,600	5,500	500	-	-	1,126	5,000
<i>Medvejie</i>	12,000	8,200	20,500	7,920	1,200	-	2,720	5,000	5,000
<i>Deep Inlet</i>	40,000	26,900	67,400	36,000	4,000	-	-	15,608	57,000
	<b>400,000</b>	<b>266,600</b>	<b>666,700</b>	<b>201,820</b>	<b>11,700</b>	<b>173,600</b>	<b>12,720</b>	<b>98,625</b>	<b>411,000</b>
<b>ALL SPECIES TOTALS:</b>	<b>2,558,100</b>	<b>1,367,700</b>	<b>4,642,200</b>	<b>1,599,934</b>	<b>12,855</b>	<b>628,831</b>	<b>297,720</b>	<b>2,254,702</b>	<b>3,859,300</b>

\* Cooperative Project with SJH

NOTE: Projections for Medvejie/Deep Inlet are for total returns (NSRAA + SJH fish).

NOTE: Chum cost recovery numbers have not yet been determined; Deep Inlet number shown is a placeholder.

Southeast Cove assumes 85% cost recovery and 15% troll.

Crawfish Inlet assumes 80% cost recovery and 20% troll.

## Thomas Bay Starts Off Strong

Thomas Bay, NSRAA's newest release site, is off to a promising start.

"It's phenomenal," says NSRAA General Manager, Steve Reifensstuhl. The growth of the chum fry reared there this spring exceeded that of those reared at both Hidden Falls and Southeast Cove. "Of course, you can't say it's going to repeat itself, but it went very, very well. We're so fortunate Thomas Bay turned out to be an excellent site for rearing the fry."

Thomas Bay was one of two permit alteration requests NSRAA submitted to the state in its effort to mitigate the unexpectedly poor marine survival experienced among the fry released from Hidden Falls and Takatz Bay over the past several years. Marine survival rates there have dropped to less than 0.5 percent – far below the facility's long-term average of 2.5 percent marine survival. In fish numbers, that represents a drop from an annual return of approximately 2 million to a mere 265,000 each year – a difference of about \$4 million.

Though the specific cause of these recent losses is still unknown, the problem seems to be localized in Chatham Strait, on the east side of Baranof Island. (Port Armstrong, a hatchery at the southeastern tip of Baranof, has reported a similar drop in returns the past few years and wild returns in the area have also reflected the poor returns.) Among the top theories for the sudden and dramatic losses is predation from whales, cod and pollock soon after fry are released along Baranof's eastern shoreline.

In an effort to reduce those losses, NSRAA requested approval to update its procedures to release a portion of its Hidden Falls stock from areas outside Chatham Strait instead. Though the change does not increase the amount of fry the organization will raise and release, staff anticipates the change in release site will lead to increased fish returns.

*"It's phenomenal. The growth of the chum fry reared there this spring exceeded that of those reared at both Hidden Falls and Southeast Cove."*

- Steve Reifensstuhl

This spring, NSRAA was approved to release up to 40 million fry from Thomas Bay, near Petersburg. These fish were previously released from Takatz Bay, which will not be used for fish rearing or release this year. NSRAA will release the remaining 20 million which were destined for Takatz from Kasnyku Bay, at Hidden Falls.

The transport of chum fry from Hidden Falls to Thomas Bay was the longest on NSRAA's record and it took five trips to transport all 22 million, but Steve says the mortality from the trip was minimal. Ten net pens were installed to hold the fry in a protected cove behind Ruth Island, in Thomas Bay.

NSRAA hired a young, newly married Petersburg couple, Dan and Robyn Cardenas, to oversee the fish. Both come from commercial fishing families and though they are new to fish rearing, they have shown a passion to learn, says Scott Wagner, NSRAA Operations Manager.

The staff and board at NSRAA feel optimistic about the selection and approval of Thomas Bay as a new release site.

"It's been such a pleasure working with the community of Petersburg," says Steve. "The support we received when we were mobilizing for Thomas Bay was just phenomenal – from the processors to the community itself. Fishing is the backbone of that community and it really shows when you work out of there."

The growth of the first generation of Thomas Bay chum this spring has exceeded expectations and Steve is hopeful the return numbers will reflect their phenomenal start.

"When we evaluate a rearing site, it's hard to know everything," he says. "We base our decision on biological criteria, site aspect, and how the site fits into the fisheries when the adults come back, but you never know until you get out there on the ground and try rearing fish. So, the big question is: will they survive well? We'll have to wait 4-5 years to find out."

### Congratulations to the 2017 NSRAA Scholarship recipients!

Annaka Brayton  
Noah Stroosma / Kelsey Taylor

### NSRAA Board Welcomes New Member

NSRAA welcomed Tom Meiners to its board this spring. He is replacing John Barry, an at-large seine representative, who served on the board for almost ten years.

Born and raised in Juneau, Tom left Alaska to study engineering physics at the University of Colorado. Though he completed his studies and earned his degree, Tom immediately returned to Alaska to fish professionally.

"I didn't want to be stuck in an office," says Tom, who has been fishing all his life. "I like the pace of commercial fishing. I like that I'm constantly challenged and it's a competitive environment. I like being outside."

The 27-year-old has been fishing professionally since he graduated, in 2011. He just bought his own boat this year and is excited to be a member of NSRAA's board.

"I actually rather enjoy the whole board experience," says Tom, who gained a background in fish politics while working for the Southeast Alaska Seiners Association.



*Dan and Robyn Cardenas did a great job rearing 22 million chum fry at Thomas Bay this spring. This is the initial year of chum releases at the site. Adult returns will begin in 2020.*

## Operations Manager Scott Wagner



Scott Wagner, his wife Dani and son Cody.

Not only has NSRAA Operations Manager made a career out of his fisheries degree, he's made his career at NSRAA – literally.

Scott was a fisheries student at Sheldon Jackson College in Sitka when he helped NSRAA with a chum fin clipping project at Deep Inlet during spring break. That project led to him joining NSRAA's summer Deer Lake crew and as the years passed, his commitment to and experience at NSRAA grew.

It was mere happenstance that Scott heard about Sheldon Jackson College. He was born and raised in Southern California. He grew up with a love for the outdoors – hunting, camping, fishing.

Fish captured Scott's intrigue at a young age. He always had a fish tank in his room and his grandfather took him fishing. But it took three years of junior college in California before he decided to pursue a fisheries degree. "I was on the seven year plan," Scott jokes. He'd set his sights on Humboldt State University when his sister, Debbie, visited Sheldon Jackson with a church group and suggested he look into the school.

At the time, Sheldon Jackson was one of the only schools on the West Coast that had its own hatchery, offering students a chance at hands-on

### NSRAA Acquires Gunnuk Creek

*cont. from front page*

As daunting as the work is, the staff and board at NSRAA are excited to add the hatchery to the organization's list of assets. In particular, the addition of Gunnuk Creek could help the organization's efforts to mitigate the recent failures it has experienced with fish returns at Hidden Falls.

"Having additional diversity is always important," Steve explains. "We're always running into a problem here and a problem there. Diversity has saved us in the past."

Steve said NSRAA looks forward to building a relationship with the City of Kake.

"It's been good to work with the Mayor and City of Kake," Steve says. "They were instrumental in passing the necessary ordinance and easement to allow us to operate."

It would be ideal to find former Gunnuk Creek employees and Kake locals to staff the hatchery when it's functional, he said. "There'd be nothing better than to have a hatchery manager from Kake so it would be as seamless as possible in the community. I want to do everything necessary to make Gunnuk Creek successful."

But hiring for the hatchery is a step further down the road. For now, the focus is on getting contractor bids and beginning the dirty work of tearing apart buildings in order to refurbish them.

experience. Scott visited Sitka and was immediately taken by the town's natural beauty and the outdoor opportunities there. He enrolled in Sheldon Jackson's fisheries program and has been in Sitka ever since.

In 1996, when he was hired full-time at NSRAA, Scott began work as a fish culturist at the Medveje Hatchery. He oversaw the initiation of NSRAA's Chinook program at Green Lake and was hired as the manager for the Hidden Falls Hatchery a short time later.

He loved his work – the hands-on work with fish, the challenge and reward of improving their health – and the remote lifestyle, but sacrificed that to accept the position of Operations Manager and move back to Sitka to live with his wife, Dani Snyder, and raise a family.

The couple met when Dani spent a summer volunteering at Medveje through the Student Conservation Association. The two have a four-year-old son, Cody. Dani now works as a landscape architect with the National Forest Service.

These days, Scott works closely with NSRAA General Manager, Steve Reifenstuhl. Most of his work is focused on permitting, meetings, and operations. He is in charge of the refurbishing and revival of Gunnuk Creek Hatchery. But, in the summer, his job varies and you might find him helping set net pens or in the boat for cost recovery.

"I still really enjoy when I'm able to get out and do the physical work," he says.

Now 48, Scott has been with NSRAA long enough to see the organization triple production, add two hatcheries, Sawmill Creek and Gunnuk Creek, and multiple new release sites to its operations. He's worked at each and every one of NSRAA's project sites and hatcheries as either a fish culturist or manager over the years.

"My background at NSRAA – from the time I was a temporary until now – has helped me in my current position as Operations Manager," says Scott. "From fish health concerns to site issues to job requirements, my experience has given me the in-depth understanding necessary to find solutions to any problem."

### NSRAA FY18 Budget

Projected Income - FY18		
Year	Income Source	Amount
2016	Enhancement tax	\$1,375,000
Revenue - Fish sales / Assessment tax:		
2017	- Amount required from Chum	\$1,895,612
2017	- Southeast Cove Chum	\$985,000
2017	Crawfish Chum	\$163,000
2016	- Excess HF/DI chum CR	\$10,607
2016	- SE Cove Chum	\$22,257
2016	- Chinook	\$57,122
2016	- Coho	\$326,014
2016	- Incidental species	\$6,686
2016	- Roe	\$82,722
2016	- Carcass	\$109,208
Other Revenue / Funds from Reserves		
2016	Rental Income	\$42,000
2016	Investment Earnings (net of fees)	\$100,000
2016	NSE account (DIPAC)	\$1,143,000
2016	From Unrestricted Reserves	\$1,256,000
<b>Total</b>		<b>\$7,574,228</b>
Projected Expenses - FY18		
Expense Source	Amount	
Operational Budget	\$6,704,228	
Capital Budget	\$214,000	
Loan Repayment '17	\$656,000	
<b>Total</b>		<b>\$7,574,228</b>