

FISH RAP

Change Service Requested

Vol 36 No. 1
May 2018

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

A prolonged downturn in marine survival and reductions in Chinook abundance will have a big impact on the troll fleet in 2018.



Inside

Hatchery Reports	2
General Manager Notes	2
Board Member Profile	4
Market Outlook	5
New Chinook Broodstock	6
Gunnuk / Port Malmesbury	7
Staff Profile	8
NSRAA FY19 Budget	8

Southeast Chinook Stocks in Crisis?

After two years of record low Chinook returns, Southeast Alaska is bracing for another dismal Chinook season, but NSRAA staff and salmon experts aren't letting the numbers get them down. They continue to work with their eyes on the future and with faith that Chinook will rebound.

On the decline since 2007, wild chinook returns in Southeast Alaska took a sharp drop in 2016 and 2017. Of the 34 wild stocks in Southeast, 11 are monitored as indicator stocks. The annual returns for those indicator stocks have dropped from an average of 100,000 per year to an alarming 30,000 or so in 2017.

Hatchery-raised Chinook returns have mirrored those of wild Chinook and the outlook for the upcoming year or two isn't pretty – those returns may be even worse.

"We expect this will eventually turn around," says NSRAA General Manager, Steve Reifenhuth. "We are not changing our program. We're still producing the same number of smolts and hoping this will pass, so once it does, we will have large numbers of smolts out in the ocean."

A look back in time shows that Chinook have recovered from poor returns in the past.

"Escapements (and presumably total returns) were poor for many systems from the 1970s through the mid-1980s," explains NSRAA Data Analyst, Chip Blair. "This was followed by a period of over 20 years of improved conditions and high returns. I hope we are nearing the bottom of the current down cycle and will see an upswing. Only time will tell."

"I'm confident this will cycle back the other direction – I just don't know when," says Ed Jones, a Chinook research biologist with the Alaska Department of Fish & Game.

He is among the scientists out in the field, monitoring factors such as freshwater spawning, fry and smolt abundance, numbers, age, weight and sex of returning Chinook each year.

There are two possible explanations for the recent poor returns: poor freshwater production (either a result of insufficient spawning adults or poor freshwater life cycle) or poor marine survival. Studies indicate there have been enough adult returns to the streams and enough smolt produced for the Chinook returns to recover quickly if and when the marine survival rebounds.

"The freshwater abundance has been about or a little above average," Ed explains. "There have been a few dips, but certainly nothing alarming. It appears the freshwater is doing just fine."

"That is good news," says Steve. "Our habitat is in good condition and we are getting enough adults back to the streams to produce an adequate number of smolts."

This leads experts to believe the mortality occurs once the fish head out into the ocean. Marine survival can be affected by near shore mortality as the smolts head out into the ocean, or once they have reached open waters. Scientists believe the loss is occurring during those first few months.

Known as the 'far North migrators', some Southeast Alaska Chinook leave the coast and swim north into the Gulf of Alaska, the Aleutian Islands and the Bering Sea before they begin the return to their spawning grounds. Many Chinook spawned further south in British Columbia, Washington, Oregon and California also make the long trek to those northern waters.

"But the Columbia River fish (returns) have been phenomenal in the recent brood years," Ed explains. "It's been the opposite of what we've been seeing, yet their juveniles go to the same area. So, by process of elimination, we know it's probably happening near shore, in the first few months at sea. All the evidence points to that."

Though ups and downs are a natural part of the Chinook cycle, it's no doubt the latest trend is alarming. The marine survival for Juneau's local Taku River stock, for example, has dropped from an average of about 3 percent to half a percent. That's only one Chinook returning for every 200 smolts leaving the rivers.

"Survival has really plummeted," Ed says. "We're at the level now where we have to get every spawner we can on the spawning grounds. We've pulled the reins back on every practical aspect of the Southeast fisheries to pass as many fish on to the spawning grounds as possible."

"There is a worse scenario, where the marine survival is so bad we don't get enough fish back to the streams," Steve explains. "If we get down below a threshold that would produce enough smolts for the stream, then we're in a real downward spiral. We have not hit that yet and, of course, we hope we don't. So that's a bit of good news."

While healthy freshwater populations hold promise for the future, it doesn't soften the financial blow to fishermen (Chip estimates an approximate loss of \$2.5 million to trollers alone) and others dependent on income from Chinook in the next year or two. The limited Chinook opportunities may even affect tourism in Southeast Alaska.

"It's tough," Ed says. "You've got to feel for the fishermen."

Of course, limited supply tends to drive prices up and this season is no different. While coho returns have also been down in recent years, chum have presented good opportunities for all fleets, and may offer the

cont. on back page



Find the net pens! Medvejie Chinook are reared at the Halibut Point Marine dock. Shown here on a busy cruise ship day.

General Manager's Notes

Cause for Pessimism, Reason for Optimism

Difficult times can manifest our best and worst selves, but more important is how we chose to act. Pessimism can be ponderous and tends to sink due to negative buoyancy. On the other hand, optimism is conducive to resilience and lightness; much like a survival-suit can stretch time and allow for problem solving and alternative ways of thinking. In fact, it has been proven that a 'glass half full' weighs less than the same glass 'half empty', at least that is what optimists tell me.



Southeast Chinook stocks are under stress, as they were in the late 70s and early 80s. This is further complicated by poor chinook and pink salmon forecasts in 2018. Alaska hatchery chinook are also experiencing a severe downturn in marine survival, while coho and chum returns are expected to show average survivals. The current salmon situation is dire and threatens fishermen's livelihoods and their families. How we react to our current hardships is important and reveals something about our nature.

Either way you look at the glass of water, it contains essential elements for our survival. Hatcheries continue to produce high quality smolts and fry, as do our wild stock systems. Southeast Alaska has pristine habitat that constitutes the whole of the freshwater phase of the salmon life cycle. Ocean waters are also of high quality, although the early marine life of salmon is significantly challenged by voracious and numerous predators (likely) or poor density and presence of prey to eat (less likely based on our work). Healthy and large smolt numbers are critical to a quick rebound, once ocean conditions are more favorable.

Nevertheless, there are positive aspects and opportunities right now. For example, salmon prices are sky-high; NSRAA is working on new production plans for the Keta Chinook stock at Hidden Falls; and we have expansion plans for coho and chum at the Sawmill Creek Hatchery. In addition, the Gunnuk Creek Hatchery will incubate its first chum eggs in October, and we are working on a plan with National Marine Fisheries Service to form a public-private partnership for the operation and expansion of Little Port Walter research facility on southeast Baranof Island.

As it did in the 1970s, the current poor marine survival will also change. It could be that the smolt leaving the streams last year were able to navigate the predator gauntlet and are now thriving at sea for their return in 2019 or 2020. The ocean is always at least half full.

Have a safe and productive salmon season.

Medvejie to Increase Troll Opportunities

Experts may be baffled at the cause of plummeting Chinook returns, but the staff at NSRAA remains hopeful the downward trend is only temporary.

NSRAA's board and staff have been working diligently over the years to create new opportunities for the fleets, such as Crawfish Inlet, with a concentrated effort to help mitigate the troll fleet's allocation imbalance. While much of those methods involve chum production, at Medvejie Hatchery, it also includes implementing new strategies to the organization's Chinook program.

Medvejie has a very large and diverse Chinook program. Each fall, the staff works to collect 4.2 million Chinook eggs with the goal of releasing 3 million smolt annually. Most Chinook are reared for 18 months prior to release, which makes them the most expensive fish to raise.

One method of rearing that can dramatically reduce costs is the zero-check technique, which involves rearing the fish only six months or so before releasing them. In addition to the cost savings, the benefits of the zero-check technique can include increased production and easier transport due to the reduced space requirements. Medvejie first experimented with raising zero-check Chinook in 2000, releasing a number of them remotely from Deep Inlet, but suspended the program when marine survivals proved it was not worthwhile.

Historically, Chinook with the best ocean survivals are those overwintered in saltwater and released at 18 months, and NSRAA continues to raise the bulk of its Chinook under this program. Three years ago,

Medvejie Report, cont. on page 3

Northern Southeast Regional Aquaculture Association

FISH RAP

Vol. 36 No. 1
May 2018

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

NSRAA
1308 Sawmill Creek Road
Sitka, Alaska 99835
Phone: (907) 747-6850
Fax: (907) 747-1470
E-mail: firstname_lastname@nsraa.org
Web: www.nsraa.org



General Manager
President
Vice President
Secretary/Treasurer

Steve Reifentstahl
Justin Peeler
Dan Pardee
Deborah Lyons

Seine
Gillnet
Crew member

Mailing List: Fish Rap is mailed free to all limited entry salmon permit holders in the Southeast Alaska gillnet, seine, and power/hand troll fisheries. Fish Rap is published biannually.

For a change of address notify:
Commercial Fisheries Entry Commission
8800-109 Glacier Highway
Juneau, Alaska 99801

Any interested party may also receive **Fish Rap** free of charge. Send your address to NSRAA.

Bert Bergman	Troll
William Bergmann	Conservation
John Blankenship	Subsistence
Maegan Bosak	Municipality
Stuart Dewitt	Gillnet
Mike Forbush	Processor
Jeremy Jensen	Seine
Carl Johnson	Interested Person
Eric Jordan	Troll
Henrich Kadake, Sr.	Native Org
Brian Massey	Sports
Charles McCullough	Seine
Tom Meiners	Seine
Dave Moore	Interested Person
James Moore	Troll
Zachary Olson	Troll
William Prisciandaro	Gillnet
Caleb Robbins	Troll
Evans Sparks	Gillnet
Lars Stangeland	Gillnet
Sven Stroosma	Seine
Karl Wolfe	Interested Person

FISH RAP STAFF:
Chip Blair - Editor chip_blair@nsraa.org
Lu Snyder - Writer www.lusnyder.com

©2018 NSRAA

Medvejie Report, cont. from page 2

the Medvejie staff began experimenting with zero-check technique again, this time transporting a portion of the fry to Crawfish Inlet for release.

Though no one knows for sure why Chinook marine survivals have been so dreadful, loss to predators shortly after release could be a contributing factor. As a new remote release site, Crawfish Inlet lacks habituated predators that may lurk at NSRAA's other release sites. The chum returns to Crawfish Inlet have been very encouraging and the staff hopes the Crawfish Inlet zero-check Chinook survivals will be promising as well.

Hatchery Manager, Adam Olson, is excited about Medvejie's latest zero-check Chinook program.

The staff continues to experiment with a variety of factors in an effort to get the maximum growth from the fish in the short time they are reared at the facility. The greatest growth potential exists once the fish enter the saltwater in the spring, prior to release.

"The challenge lies in finding a consistent way to achieve this goal," Adam explains. This latest group of zero-check Chinook will be released in mid-June, as opposed to the previous program's late-July release and he is hopeful the new techniques used with this group will lead to better marine survival.

"If this new program can prove itself, I believe the greatest benefit to trollers will be NSRAA's ability to move these fish around in the spring to its various release sites, providing for increased fishing opportunity in the Alaska hatchery-driven spring troll fishery."



Crawfish Inlet net pens. NSRAA culturists reared 27 million chum, 100,000 yearling Chinook, and 200,000 zero-check Chinook at the site this spring. This summer's return is forecast for 680,000 adults to return to the area.

Sawmill Creek at Full Production

Six years after its first coho return, Sawmill Creek finally reached full production.

The hatchery is currently rearing just over 2.1 million newly ponded brood year 2017 (BY17) coho fry. The goal is to release 1.8 million from Deep Inlet next spring. The BY17 coho would return in 2020.

"Up until now, all releases have been quite a bit lower – almost by half," explains Rebecca Olson, Hatchery Manager. This year's release of BY16 was the biggest to date, with just under 1.1 million. Another 200,000 were released at Medvejie for broodstock.

Though the staff has been working diligently for several years already to get up to full production, it was unable to meet its eggtake goals due to limited broodstock. Last fall was the first year sufficient broodstock returned to collect the maximum number of eggs. Those broodstock were the result of Medvejie Hatchery's first release of 200,000 of BY14 coho in 2016.

"This past spawning season, we had no problem getting the eggs we needed," she says.

The hatchery had purchased four round ponds in anticipation of full production but they were not needed before this year and have not yet been installed. The staff will install those round ponds this summer in preparation and use them this fall to decrease densities and improve rearing conditions when the fish are larger.

"Increasing the coho numbers to full production isn't actually going to be much more work, in terms of rearing, but it should make a huge difference in returns," Rebecca says. "That's the exciting part."



Sean Allen prepares nets to receive chum at Gunnuk Creek. Ten million chum and 160,000 Chinook were reared at the site this spring, marking NSRAA's first releases at the site.

Hidden Falls Hatchery Continues Upgrades

As NSRAA's largest hatchery, Hidden Falls is constantly adjusting to production changes. This summer, the staff is focused on several projects to upgrade the facility's infrastructure and optimize work efficiency.

Last year, erosion led to the fish ladder failing right before the staff was to collect eggs. It couldn't have been a worse time for the ladder to break. Fortunately, the maintenance team was able to patch it together in time for the hatchery staff to meet its eggtake, but the ladder needed to be removed this spring to regrade the gravel bed and cribbing to prevent further problems.

Other updates include the installation of a metal covering over the raceways, which should both cut down on phoma, a potentially fatal fungal infection resulting from plant spore dispersal, and predation.

The metal roof installed over the raceways will also cover the spawn shed. The spawn shed's water and electrical rooms will be separated and

a fourth spawning station added to increase productivity.

An 80-kilowatt backup hydro should be online shortly. Once the hatchery lighting is replaced with LEDs, the site's electrical consumption should be low enough that the facility could run critical operations with only the backup hydro plant, if necessary.

Until Gunnuk Creek Hatchery is up and running, the staff at Hidden Falls will collect eggs and rear the fry to eventually be transferred to Gunnuk Creek.

This will be the second summer that the staff at Hidden Falls otolith marks all chum to identify their method of release. This effort is in response to the poor returns to the hatchery. The staff hopes the marking will give them enough data to better understand the losses and determine if towing the fry away from the bay for release leads to better marine survival.

Board Member Profile: Dave Moore

Dave Moore doesn't fish for a living, but you could say he spends most days at sea.

Born in Iowa, Dave didn't even see the ocean until he was in his early teens, when his family spent a summer in Massachusetts and, then, another in Oregon. Dave was immediately captivated by the sea.

Though he had fished throughout his childhood in Iowa, in rivers, lakes and quarries, his excitement from those first summers at the ocean were not so much about fishing as it was about swimming.

"I just loved it," Dave says. "I was in it whenever I could."

He believes those summers led to his interest in the Coast Guard. Dave studied ocean sciences at the U.S. Coast Guard Academy in New London, Connecticut.

"My first assignment after graduation was on an icebreaker to Antarctica," explains Dave as he recalls how his interest turned to flying. "The icebreakers carry two helicopters with them. I was having the time of my life and making more money than I knew what to do with, and I figured the pilots had it ten times better than me."

He applied for aviation school and spent the rest of his career flying helicopters for the Coast Guard.

"Every day was different," he says. "You get to see a lot of things from the helicopter that most people don't ever see."

When Dave retired, after 27 years of active duty, he and his wife purchased a house by the water in Sitka. It was the same house they'd leased when he was stationed in Sitka in the 1990s.

"Sitka was the nicest place we'd ever lived and that house was the nicest we'd ever lived in, so when it came up for sale about the time I was going to retire, it was an easy choice to come back to live in Sitka."

Now that he's retired, Dave, 67, fishes for sport. Sometimes he'll

crew for fun. "I would call myself a recreational crewman. I don't hire out for three months at a time, but if somebody needs some help or company, I'll go out and fish with them."

He lives on land, but he loves to be at sea – *in the water*.

"I've always been a swimmer," he says. After moving back to Sitka, Dave joined the local masters swim group, the Baranof Barracudas. The group hosts an annual open water adventure swim in Sitka Sound: 57 Degrees

North, one of the northernmost open water swims, in which competitors swim solo or pair up for a distance of 1, 3, 6 or 10 kilometers. Eventually, Dave bought a wetsuit and began training for the race.

"The guys took me out and I thought, 'This is interesting. There's a lot of stuff to see,'" Dave explains. They swam through kelp. "I thought, 'This is neat. I feel like a sea lion or something. I love swimming through kelp.'"

Nowadays, Dave and a few hardy Sitka buddies swim in the ocean year-round. In the summer, they're in the ocean almost every day. In the winter, about once a week. At this point, Dave has swum every distance of the annual race and logs an annual mileage of more than 600 miles.

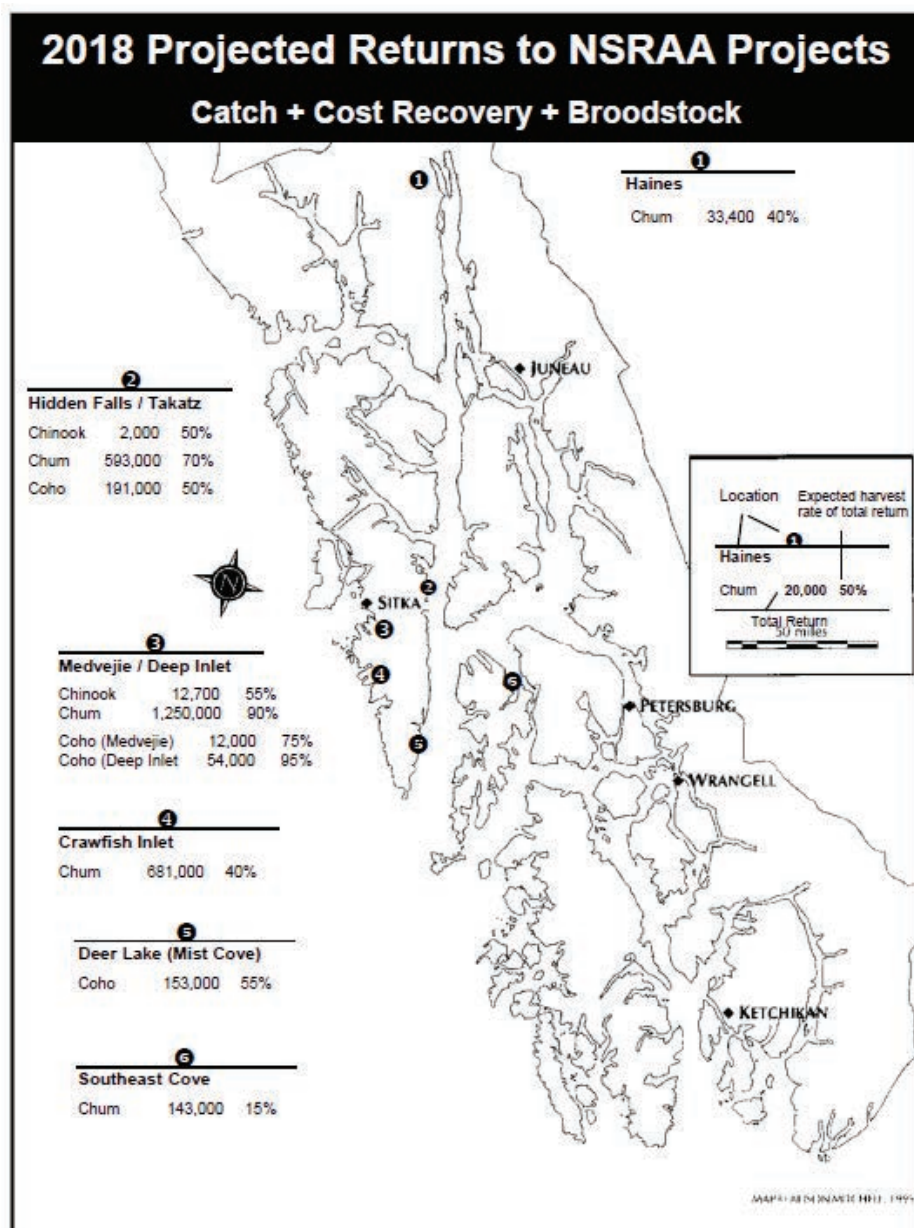
"This year, I'll do the 6k but I'm going to do it without a wetsuit," he says. "It's not about time anymore; it's about conquering the cold. Last year, I swam a month without a wetsuit and did okay. A lot of it is mental, I think."

Dave became interested in NSRAA after he volunteered to help with spawning one year. In an effort to learn more about NSRAA's work and the business side of fisheries, he became a board member.

"It's amazing to me how dedicated the staff and the folks at the hatcheries are – they are working hard to take the best care possible of the eggs and the fry," he says. "They have quite a dedicated staff."



NSRAA Board member, Dave Moore



Dave Moore in an open-water race.

Salmon Market: Low Supply Pushes Up Prices

The forecast for Chinook returns is dismal. The numbers for coho are down. Pinks are expected to have an unusually poor showing – even for an off year. It may seem like a gloomy start to Southeast Alaska’s salmon season, but then why are some folks feeling so encouraged?

Even before Copper River opened the Alaska salmon season in mid-May, the word on the docks in Southeast Alaska indicated strong optimism – if not straight up excitement – for salmon prices this year.

“What I’m hearing are some of the highest prices I’ve seen for salmon – ever,” says NSRAA General Manager, Steve Reifenhuth. “Our market is extremely strong right now.”

It’s not just word of mouth. If the bids NSRAA received for its cost recovery this year are any indication, prices are strong. “This year’s bids were the highest we’ve ever received,” Steve explains.

True, forecasts for salmon in Southeast Alaska this season are not promising.

After several years of dismal Chinook returns, the area is bracing for even lower numbers this year – to the point the majority of fish will be needed for spawning to ensure adequate fry for future generations. But that shortage is driving up prices.

“Chinook salmon are demanding a premium price for that reason,” says Steve.

The Alaska Department of Fish and Game (ADF&G) forecast for pink salmon typically incorporates a juvenile pink salmon index provided by the National Oceanic and Atmospheric Administration’s annual trawl surveys in upper Chatham and Icy straits. Because the 2017 juvenile index from these surveys was the lowest ever recorded, ADF&G instead used a simpler method, based entirely on trends in harvests, explains Andy Piston, pink and chum research biologist with the ADF&G in Ketchikan.

Pink returns are expected to be low, but how low? No one knows.

“That’s a wild card this year,” Andy says.

While pink salmon returns in northern Southeast inside waters have had a very strong odd-year dominant pattern in recent years, the returns in the southern part of the region have not always followed that pattern.

“For southern Southeast, in the last four years, our two even years have been higher than our two odd years,” Andy explains. “Recent history and the 2017 NOAA juvenile pink salmon index strongly suggest pink salmon returns to northern Southeast inside waters will be very poor, but the trawl surveys do not correlate as well with returns to the southern half of the region, which is why ADF&G did not incorporate the record low index into the forecast for 2018. There’s certainly a fair amount of evidence there’s going to be a poor year (for pinks), but we’re not totally certain that will hold true for southern Southeast.”

Poor pink returns may lead to a limited chum catch, which could drive up the price for chum as well.

“If pink salmon returns are very poor, then just by the way things are managed, there’s a lot less fishing time and so it makes it more difficult to harvest those hatchery chum, at least in traditional mixed stock fisheries,” he says.

While forecasts for Alaska salmon – particularly in the Southeast – may be down, worldwide demand for wild Alaska salmon continues to increase.

“There’s great uncertainty for harvests in 2018,” says Steve. “When you get these uncertainties and low forecasts and the market is seeing limited supply, prices go up.”

Consumer anticipation was already robust at Boston’s Seafood Expo North America in March, and that demand had not waned by the time of Brussels Seafood Global Expo in May.

“We’re certainly very optimistic about the information we’re hearing from the marketplace,” says Dave Hambleton, CEO of North Pacific Seafoods, who attended both events this year. “We’re hearing good things about pink and chum demand. I suspect that pink and chum roe is going to be strong again this year. We’re bullish on the sockeye market as well.”

Low forecasts, restricted Chinook fisheries and minimal leftover pink and chum inventory may lead to a shortage of Alaska salmon this

year, creating a bit of a frenzy among consumers.

Copper River reported a lower than anticipated catch within the first few days this season, heightening demand. According to a report by fish journalist, Laine Welch, just a few days into the 2018 season, Copper River’s fish “will maintain some of the highest prices into the fall.”

“That inventory situation is feeding into a year where we’re very concerned about pink abundance, certainly king abundance and chum abundance as well,” Dave explains. “The whole world is concerned about that. We’re seeing market prices strengthening pretty much across the board with all species as a result.”

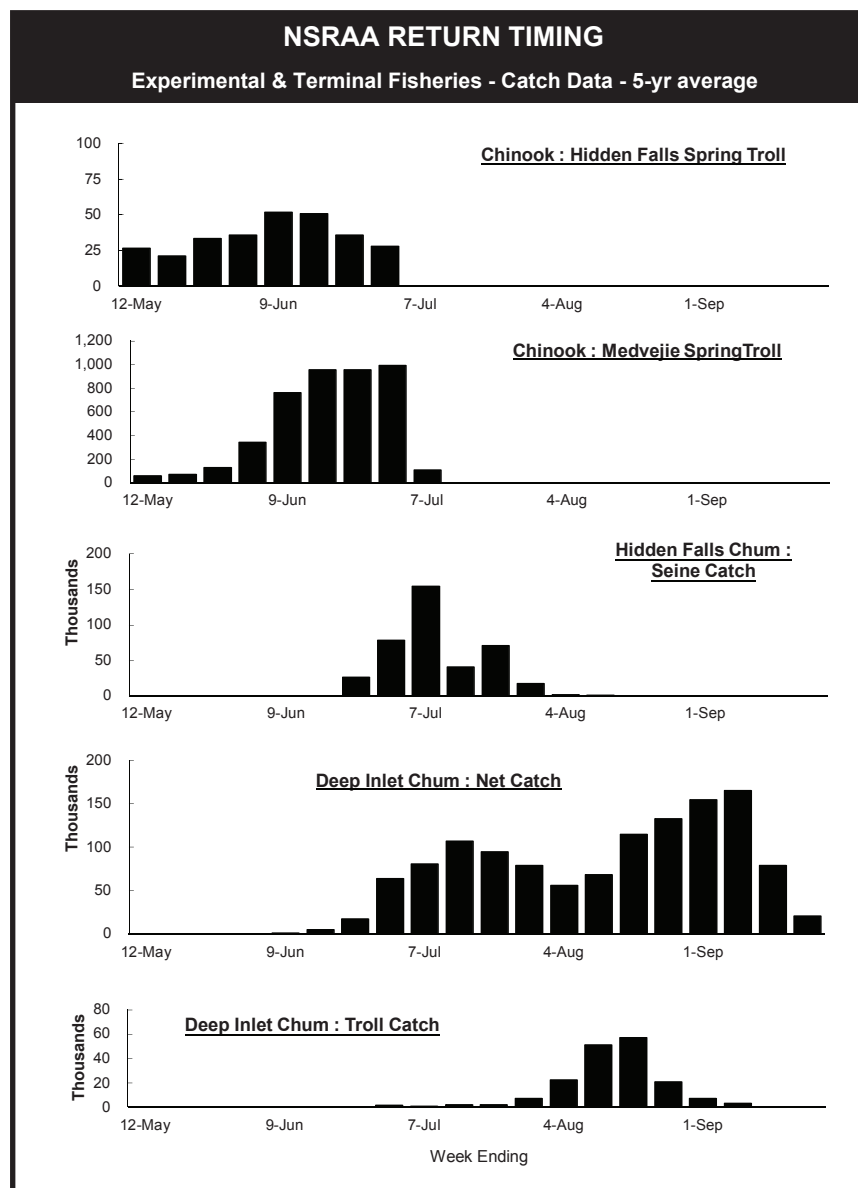
“There’s a lot of farmed salmon on the market, but there’s also a lot of demand across the board,” he continues. “Those farmed prices are up and when farmed prices are up, it tends to drag up the prices of Alaska salmon.”

The favorable euro-to-dollar exchange rate will also contribute to prices this year.

Though there is plenty of reason to be optimistic about Alaska salmon prices this year, Dave cautions about getting too excited. The trade war with China could affect those prices.

“If we were to wake up and find out we’ve got a financial tariff to move seafood into China, that could change the dynamic,” Dave says. “It’s not going to kill anything, but it would change the dynamic. Right now, I don’t have any reason to believe that’s going to happen, but we’re cautiously optimistic.”

Even with that unknown, “I’m very bullish about Alaska salmon right now,” he says. “It’s a good time to be a harvester and it’s a good time to be a seller of fish right now.” He pauses briefly. “We just need more fish.”



NSRAA to Develop New Chinook Broodstock

While Southeast Alaska fishermen brace for some of the worst Chinook marine survivals on record, NSRAA is taking advantage of the downturn in numbers to swap out the Chinook broodstock at its Hidden Falls Hatchery.

NSRAA is one of several facilities, including Petersburg and Douglas Island Pink and Chum (DIPAC), that have reared Andrew Creek Chinook – a broodstock that originated from Andrew Creek, a tributary of the Stikine River outside Wrangell. Though the broodstock is raised both at Medvejie and Hidden Falls, it has performed poorly at Hidden Falls over the past 15 years – even when other areas have fared better.

Meanwhile, Little Port Walter, the primary field research facility of the Auke Bay Laboratory, located a little more than 100 miles south of Juneau, has been working with the Alaska Department of Fish and Game (ADF&G) to develop a new Chinook broodstock, originally from the Keta River on the mainland south of Ketchikan. The Keta broodstock is a larger bodied fish that has shown promise for the zero-check technique (a rearing technique that requires only six months, rather than the traditional 18 months, of rearing before release).

In a moment of serendipity late this spring, NSRAA General Manager, Steve Reifensuhl, contacted Little Port Walter to inquire about the possibility of NSRAA developing the Keta broodstock at Hidden Falls. His inquiry coincided with what Little Port Walter expects to be an excess egg take this September. It was early May, after the semi-annual Regional Planning Team's spring meeting, when the two organizations came to an agreement in which Little Port Walter will transfer its excess eggs to Hidden Falls for development, but NSRAA should be able to get emergency approval from the commissioner to proceed by the time eggs are collected in August.

"I really got excited about developing this Keta stock," Steve says. "It has a zero-check component to it in the wild and Little Port Walter will continue to experiment with that portion of it. It would really be a major innovation and coup if they could figure out how to isolate that and produce zero check fish that survive well."

NSRAA has experimented with the zero-check technique with its Chinook at Hidden Falls and at Medvejie over the years, with varying

(and mostly limited) success.

"That really is a huge potential if we can get that to work," agrees NSRAA Operations Manager, Scott Wagner. "It brings production costs way down – to about a quarter of what they are now."

The change in broodstock means this spring's Chinook release from Hidden Falls was its last release of the Andrew Creek broodstock. According to policy, the organization may not mix the two broodstocks. They must be kept separate, there can be no crossing of broodstock during fertilization, and they cannot return to the same hatchery.

"It's complicated," admits Steve. "The long and short of this is we are going to stop releasing the Andrew Creek stock at Hidden Falls right away, so we can have a clean break when we start getting Keta stock coming back as adults. We're looking at five years down the road before we have adult Keta stock coming back."

NSRAA would be lucky to get 400,000 eggs from the Keta broodstock this fall and Hidden Falls usually releases approximately 600,000 Chinook smolt each year, so NSRAA will continue to collect eggs from returning Andrew Creek broodstock to make up the difference for the time being. The staff plans to raise the broodstock in separate raceways and bring the Andrew Creek smolt to Gunnuk Creek for release until the organization can bring up the Keta egg numbers.

"Our long-term plan is to continue releasing Andrew Creek Chinook at Gunnuk Creek," he continues. "The thing we really want to avoid is to have two stocks coming back (to the same place) in the same year. We don't want to cut production at Gunnuk Creek, both for the community and because it may be a better place to release fish from and trollers may benefit more. We'll do what we can to maximize our production if at all possible."

"It's a good opportunity and the timing works well," says Scott. "With the current poor Chinook survival, it will have a smaller impact on our production than it would otherwise."

"It's a big deal and I'm happy to see that Little Port Walter is interested in pursuing this," Steve says. "We'll be working with them closely on it."

NSRAA 2018 Return Projections									
Site	Projected Return	Range		Commercial	Sport	Cost Recovery	Brood Stock	2017 Return	2017 Forecast
		Low	High						
Chum									
Hidden Falls	593,000	297,000	1,452,000	403,000	-	-	190,000	433,741	510,000
Medvejie/Deep Inlet*	1,250,000	603,000	1,900,000	1,160,000	-	-	90,000	1,696,538	1,355,000
Southeast Cove	143,000	72,000	215,000	21,000	-	122,000	-	67,450	206,000
Crawfish Inlet	681,000	340,500	1,021,500	272,000	-	409,000	-	184,411	33,400
Haines Projects	33,400	16,700	50,100	13,360	-	-	-	31,000	31,000
	2,700,400	1,329,200	4,638,600	1,869,360	-	531,000	280,000	2,413,140	2,135,400
Chinook									
Hidden Falls	2,000	1,100	6,200	800	200	-	1,000	631	3,600
Medvejie	12,700	7,200	33,500	6,858	635	1,207	4,000	8,821	19,100
	14,700	8,300	39,700	7,658	835	1,207	5,000	9,452	22,700
Coho									
	<i>Marine Survival:</i>	<i>6%</i>	<i>4%</i>	<i>10%</i>					
Hidden Falls	191,000	127,100	317,700	71,950	4,000	105,050	10,000	39,406	197,000
Deer Lake	153,000	102,300	255,800	82,150	2,000	68,850	-	125,719	145,000
Cliff Lake	1,000	600	1,500	500	500	-	-	783	6,000
Medvejie	12,000	8,100	20,100	7,920	1,200	-	2,720	20,817	12,000
Deep Inlet	54,000	36,300	90,800	48,600	5,400	-	-	50,655	40,000
	411,000	274,400	685,900	211,120	13,100	173,900	12,720	237,380	400,000
ALL SPECIES TOTALS:	3,126,100	1,611,900	5,364,200	2,088,138	13,935	706,107	297,720	2,659,972	2,558,100

* 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 60% cost recovery and 40% CPH.

Port Malmesbury Eyed for Coho Release

NSRAA may soon add a new site to the list for coho remote releases.

Port Malmesbury, located on the south end of Kuiu Island, was among the areas NSRAA considered several years ago as it looked to expand the options for chum enhancement projects away from Sitka. In the end, the board decided it preferred Thomas Bay over Port Malmesbury.

But NSRAA recently renewed its interest in Port Malmesbury, for several reasons: poor Chinook and coho returns at Hidden Falls; a desire to increase coho production in Icy Strait; the success of troll fleet's Chinook and coho harvests along Malmesbury to the Tebenkof area; and an effort to increase diversity for trollers in a wider area, explains Steve Reifentstahl, NSRAA General Manager.

Interest in this project increased in light of the Chinook crisis and what is expected to be a difficult time for trollers as they wait for Chinook numbers to recover, he adds.

If NSRAA's permit alteration request is approved, the organization would raise the coho either at Hidden Falls or Deer Lake.

"We're evaluating whether it makes sense to send those coho directly from Hidden Falls or from Deer Lake," explains Scott Wagner, NSRAA Operations Manager. "We're evaluating both options."

Coho raised at Deer Lake have fared better in recent years than those raised at Hidden Falls.

"Coho returns to Hidden Falls have been terrible for several years in a row," explains Scott. "Deer Lake is more like 4 percent. It's been steady and consistent. Low, but not less than a percent like Hidden Falls."

Located toward the southeast end of Baranof, Deer Lake's proximity to Port Malmesbury adds to the desirability of Deer Lake as the rearing site for the project's coho.

NSRAA will submit a permit alteration request to the Regional Planning Team (RPT) at its meeting in November. The RPT would vote on the request at its spring meeting.

NSRAA Welcomes Three New Board Members

NSRAA welcomed three new members to its board at its meeting this spring: Stuart DeWitt, Maegan Bosak and Caleb Robbins.

Stuart, who has been commercial fishing for 21 years, decided to put his name in the hat when he heard of the vacated at-large gillnet seat.

"I think it's an important time for gillnetters," he explains. "We had some influential people leaving. I figured I better get out there and do something."

As Community Affairs Director for the City of Sitka, Maegan Bosak is heavily involved with discussions regarding the role of fishing in the community. She ran for NSRAA's municipal seat because she wanted to learn more about NSRAA's role in the community and how the city can help the organization meet its goals.

"I look forward to supporting NSRAA members and helping with the municipal process in any way I can," she says.

At 26, Caleb Robbins is among the youngest members on the board. Originally from Yakutat, he's been commercial fishing all his life and was only 12 when he purchased his first Yakutat set net permit. He was nominated to fill the at-large power troll seat and ran for the seat because he wanted to learn more about fisheries, hatchery management and the relationship between hatcheries and the fleets.

"It's refreshing to be on a proactive board helping the future of our fisheries," he says. "It's easy to complain on the dock about what's wrong, but it's another thing to step in and learn how we can help our fisheries and industry survive. I'm hoping to help make decisions that ensure future generations of fishermen get to continue doing what we love."

Gunnuk Creek Prepares for First Incubation

When the NSRAA board purchased the defunct Gunnuk Creek Hatchery, it knew overhauling the facility would be the organization's most risky and costly project to date. A year into ownership and renovation, the project remains daunting, but it is moving closer to the next step: incubation.

"It's going according to our plan, but until we get eggs in the building and a functioning water reuse system, we're not going to really be able to determine how productive our changes are," says NSRAA Operations Manager, Scott Wagner, who has been overseeing the project.

Previously owned and operated by Kake Nonprofit Fisheries Corporation, the Gunnuk Creek Hatchery, on the northwest coast of Kupreanof Island, experienced years of declining returns until it finally closed operations in the spring of 2014. If construction proceeds as scheduled, the refurbished facility will be ready to incubate eggs this October, but there is a lot to be done before then.

Last year, construction crews worked to revamp Gunnuk Creek's water supply system and renovate its hatchery and residential buildings. This summer, NSRAA is working with Inside Passage Electric Cooperative (IPEC), the power supplier to the community of Kake, as it builds a hydroelectric power plant on the hatchery property to bring hydroelectric power to the community of Kake.

"This is a win-win situation for both us and the community," Scott explains. "By working with them, we'll be able to have more power on-site for ourselves, which will hopefully cover most of our power needs."

Construction for the hydroelectric power plant includes the removal and replacement of sections of the hatchery's existing pipeline and regrading for a new road. The earth work is scheduled to be completed by August. NSRAA plans to bring its first generation of eggs to Gunnuk Creek for incubation in mid-October.

NSRAA also has a list of construction projects to complete by October, including the construction of a new hatchery building and the installation of recirculation pumps, filtration systems and settling ponds. The organization plans to take out another loan to cover the costs of this second phase of construction.

"The hope is that it will all be done by October and we'll be ready to start incubating eggs," he says. NSRAA plans to begin by incubating 10 million chum eggs at Gunnuk Creek this fall, to be released in the spring of 2019. It will be the first generation of eggs incubated at the facility.

The hatchery struggled with multiple issues before Kake Nonprofit Fisheries filed bankruptcy and halted operations. Likely the biggest problem was the hatchery's poor water quality. The water system is fed from Gunnuk Creek, which runs through a logged area, making it extremely susceptible to sediment build-up and dramatic temperature changes.

"We feel like we're going to be able to address all the issues, but until you're on the ground trying it, you don't know with certainty," he says. "In my mind, it's still a big unknown, but as we move forward, I'm slowly encouraged that we'll be successful."

In February, NSRAA moved 10 million chum fry from Hidden Falls to net pens at Gunnuk Creek. It is also rearing 200,000 Chinook salmon there in an effort to develop a small opportunity for commercial and sport harvesters in the Keku Strait and Frederick Sound area. Both groups of fish will be released at the end of May.

As long as this summer's construction is completed on schedule, NSRAA will see its first four-year-old chum returns to the Gunnuk Creek Hatchery in 2021.

Congratulations to the 2018 NSRAA Scholarship recipients!

Kasiana Mork
Casey Evens / Zofia Danielson

NSRAA Staff Profile: Shirley Womack



Shirley Womack has a birth story to beat most others: she was born in storm cellar during a Nebraska tornado on Mother's Day. Perhaps this is what laid the road for a life filled with family and adventure.

Of course, Shirley would be the first to protest and tell you her life hasn't been very interesting, let alone adventurous. Sure, she didn't climb Mt. Everest or run for President, but she moved to Alaska. That counts, doesn't it?

Neither Shirley nor her husband, James, had been to Sitka before they packed up and moved there from Oregon with their first child, in April 1963, so James could work at the Alaska Lumber & Pulp Mill.

Just getting to Sitka was an adventure back then. You had to take a prop jet to Annett Island and then a PBY to Sitka to land in the water and then a shore boat to Japonski Island. The Bureau of Indian Affairs (BIA) School and Hospital were there, but not much else. Groceries arrived by steamship every two weeks or so.

"Sitka was different," Shirley remembers. "I did the books for a small gas station and the owner would leave the pumps on so mill workers could get gas and leave money under a rock."

The road was paved from town to the pulp mill "but going to the ferry was terrible. Rocks would beat up a gas tank real fast. It was ocean on the other side of Harbor Drive. There was not a lot of housing."

The couple had four children: three boys and one girl. Some might think that raising four kids would be work enough, but the family also took in foster children – some for just a few days, others for several years. Shirley isn't sure how many children they've fostered over the years, but the number includes caring for 16 three-day-old babies (one at a time) for Edgecombe Hospital.

By the time their youngest child had graduated and left home, Shirley had been home raising children for about 30 years. She decided it was time to be in the company of adults and pulled out the classifieds. Though she probably knew most everyone in Sitka by then, Shirley hadn't heard of NSRAA when she replied to an ad for an office position there.

She jokes that she's the office go-fer, Shirley's official title is Office Facilitator. She's been working with NSRAA for 25 years now, overseeing vendor orders, purchasing supplies and gear for NSRAA's scattered staff and crew and shipping them to Hidden Falls and various remote sites. She works tirelessly behind the scenes, always taking care of people – NSRAA's den mother.

"Shirley has the kindest, sweetest disposition of anyone I know," says Steve Riefenstahl, NSRAA General Manager. "She is always helpful and welcoming to everyone."

"She's always positive and always has a story to tell," adds NSRAA Data Analyst, Chip Blair. "She always seems to have a genuine interest in people."

You might think Shirley, now 75, would be strategizing her retirement. One of her children has already retired.

"I have retirement in the back of my mind," she says. "But I'm very happy here."

Southeast Chinook Stocks in Crisis?

cont. from front page

trollers – the fleet consistently below its allocation balance and hardest hit by the Chinook restrictions – a means to lessen the impact.

By early May, talk of prices for ex-vessel net-caught chum were around 90 cents per pound, "so trollers could get as much as \$1/pound," says Steve. "If the trollers can get on the chum salmon this year, it could really make a difference. If they could catch, say, 500,000 chum (they've caught as many as one million before, between all the Southeast Alaska hatcheries) or about 8 million pounds at \$1/lb., that would be significant. That's a lot of ifs, but it has happened before and not at this high a price."

High salmon prices are good news, but experts admit Chinook's downward trend is alarming and no one is sure what the coming season will bring – will it be even worse?

"The scary thing is that the return numbers are so low that we have entered uncharted waters," Chip says.

In addition to monitoring the fish in the waters, Ed keeps a close eye on the data. Though ups and downs are inevitable, "the other thing that's alarming is the amplitude of cycles is increasing," he explains. "It looks like the peaks and valleys are much more dramatic these days. That's why I think when we cycle back, we might cycle back in a good way."

Another trend that has his attention is what appears to be smaller returning Chinook, but upon closer examination are actually younger returning Chinook. Southeast Alaska Chinook stocks return between the ages of 3 and 7, but in the last decade, in particular, fewer are returning as 6- and 7-year-olds.

"For whatever reason, these fish have shifted their age of return," Ed explains. "They're not necessarily getting smaller, there are just fewer older aged salmon coming back."

It's among the patterns that scientists, like Ed, monitor as they try to understand ocean changes and the impacts on marine life such as Chinook.

"It's unfortunate we're in a period of poor production, but I think it will cycle back," Ed says. "I'm not concerned this is a new norm. Normally, we cycle back after the south takes a dip. It looks like the southern U.S. and Canada production has taken that dip, so if history pans out, here in the next year or two, we might start to go back up."

NSRAA FY19 Budget

Projected Income - FY19		
Year	Income Source	Amount
2017	Enhancement tax	\$3,010,104
Revenue - Fish sales / Assessment tax:		
2018	- Amount required from Chum	\$0
2018	- Southeast Cove Chum	\$951,600
2017	- Excess HF/DI chum CR	\$326,453
2017	- SE Cove Chum	\$46,912
2017	- Chinook	\$22,881
2017	- Coho	\$467,733
2017	- Incidental species	\$11,386
2017	- Roe	\$81,020
2017	- Carcass	\$114,555
Other Revenue / Funds from Reserves		
2017	Rental Income	\$42,000
2017	Investment Earnings (net of fees)	\$100,000
2017	NSE account (DIPAC)	\$3,700,000
2017	From Unrestricted Reserves	\$105,000
Total		\$8,979,644
Projected Expenses - FY19		
Expense Source	Amount	
Operational Budget	\$7,396,131	
Capital Budget	\$699,500	
Loan Repayment Funding	\$884,013	
Total		\$8,979,644