Hey, to all you fish enthusiasts out there! Whether you're an avid angler or just curious about fish, we'd like to welcome you to Fish of the Week!, your audio almanac of all the fish. It's Monday, November 14 2022. This year we're excited to take you on a week-by-week tour of fish across the country with guests from all walks of life. I'm Katrina Liebich with the US Fish and Wildlife Service in Alaska.

I'm Guy Eroh. This week we're getting back to a fish of the week favorite, talking about a species that can get a little green in its gills. We're talking about the Sockeye Salmon.

We are very happy to welcome two guests, we have Quinn Aboudara who's the stewardship coordinator with Shaan Seet Incorporated's Natural Resources Division. Quinn's also the field coordinator for the Klawok Indigenous Stewards Forest Partnership. And we have Andy Stevens who's a fish and wildlife biologist with our Southern Alaska Field Office Habitat Branch. Very warm welcome to you two and we're looking forward to this conversation.

Thank you.

So Guy mentioned we've talked about Sockeye before on the show, mostly from the Bristol Bay region. We've had guests like Orville Lind, Daniel Schindler, Maria Dosal. For this episode, we're headed to Prince of Wales Island. And what's neat is we could probably keep covering Sockeye Salmon or any fish for that matter with different guests who bring different perspectives and experiences and it would never get old. That said, I'd like to kick it to you, Quinn, to take us to Prince of Wales Island, which happens to be the second biggest island here in Alaska behind Kodiak. And just kind of help us get situated with where this is exactly on the map. Maybe a few landscape features or waters that really stand out to you.

Yeah, second largest island in Alaska. I've called it home for the better part of 40 years now. Prince of Wales Island. It's just a magical place for me. I've traveled the world and been many different places and lived in many different places. But always come home, it's pretty much well known for some of the best fishing in the world. The real backbone of Prince of Wales Island is sockeye salmon. We have multiple lakes on Prince of Wales Island that support sockeye salmon runs. They're deeply ingrained in the local culture. It's like the lifeblood of the island really.

I just want to ask a real quick follow up question about sort of the place. This island. I've never been there before. But have you ever played any of those like geo guessing games where I'll drop you on like a street view of a Google Maps or something and try and figure out where you are? I'm down here in Georgia, by the way. And if I get placed like down into the coastal plain, I'm looking around, I can see that you got all these all the Spanish moss growing on the street signs and cypress knees popping up, like okay, I know exactly where I am. What would it be like if I was up there? How would you know that you're on Prince of Wales Island or that part of the country.

Awesome.

Prince of Wales Island has had a long history of logging on the island. So that's probably one of the first things that you'll notice. We have an extensive road system. And that usually goes through historical logging units and active logging units now. But when you get out into the old growth, you're surrounded by trees that are hundreds of years old. They're giant, monolithic red cedars and yellow cedars and spruce and hemlock. And you've got a healthy understory of berries in different trugs if you're driving along our roads, you're most likely gonna see deer, Sitka black tailed deer, and bear right across the roads. Occasionally a wolf or two we are right in wildlife, like, you open up your back door and the forest is there. The streams are there. The water is there.

It's a rainforest there, right? Like it's rainy, mossy...

Yeah, it's a temperate rainforest. So lots of moss. And if you don't like being wet, this probably isn't the place for you.

Nice.

If I were to have a sockeye salmon in my hands, it's returned from the ocean where it used to be that bright silver color. I've got it in my hands, it's returned to spawn. What exactly do these fish look like? I think they're super cool looking.

Yeah, no Sockeye are really really unique looking, if they get the bright red color, and when they're in their spawning form, they get that kind of a deeper humped shape to their back and, and just a really bright green head, kype jaw. And they're just a beautiful looking fish. I always called them like fire engine red. It's just super charismatic to see them in the streams. That color is just so bright.

I must remind me like a Christmas tree or something.

The main memory that stands out to me of my first time climbing into a stream on Prince of Wales, it's just like, you're greeted with this impenetrable understory of salmon berry bushes, and then you machete your way through that, you get to the water, just everywhere you look, are fish backs sticking out of the water. Fish backs as far as you can see, it's like something out of Nat Geo.

There really does seem to be something about that particular species that when people imagine salmon in Alaska, it just goes to those big shots of those. Just gin clear rivers with all these hundreds and 1000s of red fish. The kings are cool, the pinks, they got some pretty colors on to some cool spots, but it just seems like the sockeye is the salmon that people think about. And I think part of it's just keying into that really strong red color.

I'm curious when Quinn was describing the place the island there that's so big and has these lakes on it? Are those lakes important to this fish at all? Does it need those? Or is that irrelevant?

Yeah, that's a really important part of the sockeye salmon lifecycle is utilizing those lakes to spawn and then have the juveniles to rear end before they leave for the ocean that's really, really keying on that lake habitat for those fish. In this case, Klawock Lake is the main water body that these fish are trying to

make it to that they can go upstream above the lake and in spot and that's where the juveniles are going to hang out before they eventually go complete the rest of the lifecycle in the ocean.

How big of a lake are we talking here?

I believe Klawock Lake is seven miles long at its longest and two miles across at its widest point.

I'm curious about these lakes because, you know, again, down here, we don't get tons of natural lakes. So these just carved out glacially and are they like really deep then? I guess they're on rivers? And what's that, like? Does that prevent the salmon from getting up? Because we've talked about dams and reservoirs and issues with fish passage, but assuming that these are natural, there's still going to be some issue with the fish trying to get up in there. I'm just curious how these lakes are constructed and how they work.

Klawock Lake is a low land glacier-created lake. It's got its deep parts, but for the most part, it's shallow lake, the river system, Klawock River, it's one that's shorter systems that leads up to the lake. I think that's only a mile and a half long. It's been modified slightly throughout about the past 100 years, but there are no natural obstructions preventing passage except during like low water events. But for the most part, it's pretty passable. And the one man-made obstruction at this point is a hatchery operated fish weir right before the lake. It's an area we call it the "upper falls" and then the hatchery with the weir is just down from that. So the hatchery staff during spawning season they man that weir every day and pass sockeye through so that it's not as much of an obstruction for the sockeye.

Could you get into a little bit more in terms of how people are connected to sockeyes on the island, like you grew up there? You've obviously probably been fishing for these fish. What are the some of the ways you interact with these fish in terms of like eating them or culturally or anything along those lines?

Sockeye are the lifeblood of the island. The traditional people of Klawock, the Indigenous peoples, have been settled in this area for approximately 10,000 to 12,000 years. And one of the major reasons why they chose Klawock as a permanent camp versus a seasonal camp is because of the sockeye. The sockeye runs historically have been some of the strongest in the worlds and most dependable since about the 1930s and 1940s. There were estimates of escapement...so the number of sockeye that returned from the ocean that are able to battle through bears and fishermen and eagles and get up into the lake to actually spawn. The estimates are anywhere between 35,000 to 40,000 sockeye season. Yeah, it's just always been a very healthy run. And we've seen a lot of changes in modern years. We have had abysmal returns, whether that's commercial fishing, subsistence fishing, timber harvesting, environmental impacts to the lakes and rivers and the ocean. It's never gonna be a single silver bullet answer. It's more of a shotgun blast. Issues within the Klawock Lake watershed, they're affecting the sockeye salmon. And that decline in those returns, it hits the communities in a way that it's very difficult to describe to people outside of those communities. But when we interviewed elders in the community several years back from 2016 till 2018, we did community interviews, a number of the elders described the feeling of the decline of sockeye as impending starvation. And mentally, logically, they know that they can walk down to the grocery store and buy a pound of ground beef. It's not like they're going to die of starvation. However, the feeling of impending starvation, because they're so connected with that

salmon, that single species of fish that to see it declining, it's terrifying for community members, and it deeply affects our cultural way of life. Yeah, sockeye are ingrained into the local culture and the communities that they provide for.

Can I ask you to describe a little bit more magnitude and the timeline on which we've seen some of these more recent declines?

Yeah, for about the past 20 years, I'd say that we have been noticing a sharp decrease at about 90% declined from their original runs. I think there was one year one or two years where we only had triple digit returns a 900. So yeah, it's pretty dramatic. This year was an exceptionally high return of sockeye. Last count, I think I saw about 17,000 returning this year, which is great. That's an amazing return. And hopefully it keeps on that upward trend. But in my lifetime, as a child, when I was old enough to start fishing on the beach scene, we could make a single set on sockeye salmon and catch 200 sockeye in a single set. Nowadays, you can go all day and maybe catch 20.

Okay, what are some of the ways that folks are coming together to try to help this run, maybe get back to some of the older days when it was a little bit bigger? What are you guys doing in the streams? How are you working together? And what are some of the partnerships that have been forming recently?

One of the main action items is back in 2020, Klawock Lake Salmon Action Plan was published. And that's really the main document that all the partners in this watershed are rallying around. Really, that plan was developed after a ton of discussions with local landowners and stakeholders and residents who can all collectively have a vision and are interested in improving sockeye salmon back to some form of a sustainable state in this Klawock Lake watershed. I'd say the main outcome of that plan was the list of significant restoration actions and the can take place in the watershed to try to get to that goal of improved sockeye numbers. And really, I'd say that plan has led to a significant amount of restoration were led by Quinn, and the field crew, US Forest Service, and then the Southeast Alaska Watershed Coalition.

I'd love to hear how you guys are getting your hands wet and what you're doing.

Yeah. You government people, yeah, they're rallying around a document. I have a tough time imagining what that means. And I get it. But I want to hear what people are actually doing to rally.

Yeah, it's really not all that exciting to say that's our rallying call. But really, the rallying call has been made the past 40 years and even before that. When the hatchery was first constructed, there was huge outcry against it. It's only hatchery that is an operation on a stream with wild salmon in Alaska. So it has had high opposition with the commercial and sport fishing industry and their management practices because people see a decline. They feel like their way of life is being threatened. And so it started with with them starting to ask more questions like, why is it declining? What's going on here? And so in 2016, The Nature Conservancy and Kai Environmental and the Klawock Cooperative Association put together some funds to start addressing some of those questions. And we worked with the local landowners, Klawock Heenya Corporation, and Shaan Seet Incorporated, and started going out conducting predation studies doing stream assessments, looking at our riparian forests, and their

general health. All of those questions and the answers that we're getting back, started sparking more questions. And so we really went out of our way to not just sit down with resource managers and biologists and stuff, but really to pull in our community members. So that ended up forming the Klawock Lake Sockeye Salmon Action Plan. And through that, we did tier two stream surveys and started identifying streams that have been negatively impacted, their habitats been degraded. And so we identified those for in stream restoration work. We did riparian restoration and wildlife enhancement work in the Klawock Lake Watershed along a number of identified streams. And we started doing the in stream restoration all as a team.

What does that look like exactly? So what's...your gonna gear up and your three layers of rain gear and your wool socks and you're going out to do this work? What's a typical day look like when you're out there?

And to build upon that question, what's wrong with the streams in the first place that you're doing this work for?

I liked the term I think Rob Cadmus said the term "bowling alley" when he was describing what the streams look like. Just as a result of all the logging and impact on the streams and the riparian areas, you're just left with these featureless, you know, over widened, habitatless areas of stream that they don't have much going on for them.

And fish really like wood in the water. Right? So when you say featureless, like a normal stream that's healthy would have like trees down and like holes and diversity.

We need more sinuosity.

Yeah, fish love wood. That's, that's the statement of the day right there.

Yeah, to key off of Andy there, that riparian area. First off, Klawock Lake was one of the most heavily logged watersheds on Prince of Wales Island. At the time that they were doing the timber harvesting, there were no protections in place, most of that was done in the early to mid '80s. So a large number of the streams have been logged directly up to the bank, sometimes in the stream itself, that was followed by a practice called stream clearing or stream cleaning. And that was oftentimes your crew boss, logging boss, would come out into a unit that had been harvested, they would see the stream with a log in it and fish downstream. Probably just resting there. Probably enjoying that tree there. But, you know, if you don't know what you're looking at, it could look like you're blocking fish passage. So a lot of the times those logs were removed from the streams. They thought that they were doing something good for the fish. And it turns out that, yeah, we impacted the streams, it's caused the number of the streams to change their courses jumped their bank, so to say. And, you know, when we go in, oftentimes along the side of the streams, it's this almost impenetrable wall of second growth forest and we call it "dog hair" because it's really dense and tight together. And you can barely squeeze your way through. There's no light, there's no real understory. It's really the dark, scary forest of the Grimms fairy tales.

I think about that subject a lot. I think there's a misunderstanding amongst folks that own land or live adjacent to a stream, they see that wood and streaming they think it's a bad thing. Really that wood is exactly what the fish need to be in that stream. And I think part of that comes down to how we market that wood in the restoration community we call wood in the streams, large woody debris and you can see that maybe being a little bit confusing.

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You see that maybe being a little bit confusing if you own land if you think of wood as debris, you know, you want to clear debris from a stream. ]

That's a good point, Andy.

Cool. Now I got a professor down here. Every time he's teaching a fisheries class, he's out there he'll "wood is good" is his go to mantra every time we run into it, because anyone who's fished knows that's where you find fish. That's where the fish are. They love it.

But yeah, really, what it comes down to is you have a featureless area of stream. And it's just really satisfying to go with the help of a chainsaw and power winches, hand winches, and some good old fashioned hard work. You're pulling these trees and this wood into the stream, and you're making really nice habitat feature at the end of the day, and you really start to see us do its job. It's creating scour pools, it's creating cover, it's creating a little bit of depth to those fish, like the height end. And it's just really, yeah, it's really cool to work with these guys in the field and look back at the end of the day, and to say, Yeah, we did that, we built fish habitat.

Especially like Andy was saying, You look alongside the streams, and you see the stumps the remnants from before it was harvested. And some of these trees are 3, 4, 6 feet in diameter. That's the key wood that would have been naturally recruited into that stream that sinuosity as Guy mention, it creates that habitat, we're not putting these massive six foot diameter logs into the streams, we're putting smaller, large wood additions into streams. And that we hope will be a stop gap, a holder, so that the riparian areas around the streams can regenerate get that larger girth, get that healthy understory for future recruitment. So, you know, in another 20 years, we may actually have to go out and do another round of large wood recruitment.

So how do you get one of those trees into the stream system? That's still pretty big. From my hand standpoint, I guess.

A lot of hard work

Yeah,

Yeah, it's a lot of hard work. One of the nice things about having historical logging history is that we have a large number of skills that can shift over from logging to restoration work. So most of the crew have some experience and like the logging industry itself, so they know how to set chokers and run

cables and set up pulleys and stuff. And that's what it really comes down to we with hand tool restoration is you can cut a tree down, but sometimes you have to move it, sometimes the tree that you want is not going to be immediately on the stream bank, you know, you want to leave those for future recruitment. So you have to go back into the woods aways and drop a tree and you have to get it there somehow. So it's winches and pulleys, a lot of Red Bull and foul language. And yeah, it's wonderful

It's a whole operation.

It is.

One thing that impressed me, my first time on the ground here was just not only how hard these guys are working, you know, in their operating chainsaws and winches and pickaxes and whatnot, but just I was more impressed with their mindset and motivation behind this work. That's really inspiring. So it's been fun getting work with these guys.

I want to get out there and help too now. What keeps people motivated like in the rain doing all this hard work? Like what are you guys thinking about the future? What's keeping you motivated to do that?

Red Bull and nicotine I'm not saying that we're promoting a healthy lifestyle here. But most of it, our crew is all local older members myself, John Carl, Travis, Wade Holstein, we grew up watching the declines. We watched the forests get cut down, we watched the salmon declining. But that's what really leads our work is we think about the way we grew up. And what we believe is important for us, our connection with to fish, and we want our children, our grandchildren and their grandchildren. We want this lifestyle to be able to be practiced for the rest of time, you know, for as long as we can. And so, we often describe our work as legacy work a large amount of what we're doing today. We may see some changes in our lifetimes. But I think that in our children's in our grandchildren's lifetimes that will be really the telling point. Did we do this right? Did this work? We're probably not gonna know, fully for 40, 50 years, the impacts of it, again, just watching what I've seen in my lifetime, my early 20s. I started seeing the changes, but not understanding it. My 30s have been spent studying those impacts and trying to find answers. And now my 40s are trying to do the best that we can to preserve what we have. And hopefully what we've got.

Yeah, these are some big timescales in terms of the length of time people have been on the island, and then the decline happening over decades and then prepping to do this work. It seems like conservation work always takes a lot of time and a lot of players. Andy you mentioned the documents being written, then I mean, there's a whole lot that goes into it and returning something to, to what it was, it does seem like a big effort.

Now, this is a bright note, you know, the work that you're doing, but I'd love to end on something a little bit more optimistic than talking about salmon declines. It sounds like it was a great year, a banner year, well, not necessarily banner in the greater context, but you know, relatively speaking a local peak. Hopefully you guys got your hands on some of those salmon. Have you been able to eat some of them? Have you prepared them?

Oh, Quinn made me the best smoked fish I've ever had in my life.

You got a smokehouse Quinn?

Yeah, we call it Fish Camp. Growing up, during the summer, our house was always filled with people. We would have my grandmother and my aunts and my uncles and just all sorts of cousins. And we will be laid out on the living room floor and blankets and sleeping bags, just side by side had to tell because we were bringing in the fish. It'd be processed hung in the smokehouse, jarred frozen, distributed out again into the community. Our family has our own little, I guess you could say formula for how we harvest and distribute fish and anything really. But for sockeye we call it 60-20-20. And what that means is, if you catch 100 Sockeye automatically first thing, like I said, you pull into the shore, you pull up to the dock 60% of that catch goes immediately into your community. So it's going to elders to families in need to the senior centers, the schools. So if you caught 100 fish, 60 of them go immediately into the community. Then you take the other 40 and you process it. So you smoke it, you freeze, you package it and 20% of that goes into your immediate household. The other 20% is held in reserve. So that is for if there's a big community event, like a wedding, or a funeral or something like a totem pole raising or something of that nature or your community has a tragedy, there's a house fire, so you have that 20% stocked up in reserve. That way you can tap into it in those times of need, so that you can distribute back into the community. And that's kind of how we do it.

Okay, get out there and enjoy all the fish, especially the sockeye salmon and let's all do some forward looking and hard work for fish so the next generation can enjoy fish in the future. Thanks, guys.

Thanks for listening the Fish of the Week! My name is Katrina Liebich. And my co host is Guy Eroh. Our production partner for the series is Citizen Racecar. Produced and story edited by Tasha AF Limley. Production Management by Gabriela Montequin. Post production by Alex Brower. Fish of the Week! is a production of the US Fish and Wildlife Service, Alaska Regional Office of External Affairs. We honor thank and celebrate the whole community, individual tribes states, our sister agencies, fish enthusiast, scientists and others who have elevated our understanding and love as people and professionals of all the fish.