

Columbia River Steelhead feat. Nate Wiese

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! It's Monday, July 26 2021. And we're excited to talk about all the fish. I'm Katrina Liebich with the US Fish and Wildlife Service in Alaska.

And I'm Guy Eroh, a well-dressed fisherman.

Today, we're really happy to have Nate Wiese with us. Nate's the lower Snake River Compensation Plan Coordinator for the US Fish and Wildlife Service and we're planning to dig in the Columbia River steelhead today. We're also gonna weave in a special topic in addition to the usual fish talk, and that topic is temperature since we've been seeing some record high temps this summer, and temperature is actually a pretty big deal for fish. So welcome, Nate.

Thanks for the intro Katrina.

So first question, your job titles kind of a mouthful there. Can you just give us a super quick like 20,000 foot view of what you do and what that job title means?

Yeah, I'm like a fish herder. Herder of fish and people. I work out of the out of Boise and we manage 26 projects that are mitigating for the Snake River dams. So there's four lower Snake River dams put in for mostly hydroelectric power and also flood control. And so when they put those in and the early planning was in the 60s, put them in early 70s, and they decided we need to mitigate for loss salmon that can't migrate around these dams. And so hence the lower snake or compensation plan program invests about \$30 million a year into salmon and steelhead recovery

Great. And Snake River kind of in relation to Columbia. what's the what's the deal with how these systems are connected?

When you look at the Columbia River system, of course, we blocked off about give or take 50% of the available fish habitat for anadromous fish that are coming out of the ocean up to the rivers of that the snake represents a pretty big proportion of spawning habitat for the whole Columbia that's left intact. And so I don't have an exact percentage but we're a significant player in the Columbia River system for spawning habitat for salmon and steelhead

So steelhead to give a name for coastal rainbow trout and spend part of their life at sea. Can you paint a picture for the folks listening? Basically about what these fish look like? What they're doing this time of year naturally?

Yeah, absolutely. steelhead are pretty neat. Um, you know, I think they are just a coastal version of rainbow trout. So same scientific name *Oncorhynchus mykiss* I believe still. But they have that advantage of be going to the ocean and then you go to the ocean, just like any salmon stocks, you're gonna grow a lot larger. Though in ocean, there's really not a huge commercial fishery for steelhead, or sport fishery, they kind of disappeared out there, but they are chrome silver, just like a salmon. When they return back up, they'll start exhibiting those classic spawning colors or what you'd normally think of

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a rainbow trout with a crimson stripe down the side, kind of get olive on the back and the spotting and really a beautiful looking fish. Also notorious for being very hard fighting on the rod and just a great sport fish for people to catch. Where are they right now? We call these stock in a sneaker stock stealer summer steelhead, and so they are just starting the nose up the Columbia and we just had some tags past the dam this week. And we'll see more and more about historically probably in the one to 5% of the run range. So one to 5% of them are coming up this time of the year they'll continue building here as the summer progresses.

Seemingly everyone knows that dams like this can prevent salmon from migrating up to spawning grounds, but they also create these large lakes of slow moving water and I gotta imagine that probably affects the temperature and the habitat that these fish are living in. Is that correct?

Yeah, absolutely, Guy, you know, when we put in the dams, we came up with fish ladders so adults could jump up we came up with transportation strategies for small smolts to get around but we're still stuck with this pool effect where water is now backed up and that water heats up and so right now it's real timely we're seeing record temperatures across Pacific Northwest. Boise is not left out. We just missed our all time record we had 90 straight 100 degrees.

Oh man

That's not letting up. So we're seeing a nice reservoir in the in the water backed up behind the dams. water temperatures are starting to get up above 70 degrees which is considered a basically a thermal block, a lethal temperature where the salmon will hit that they just will not nose into it and they'll turn around look for something else. And unfortunately, in these conditions, there isn't a whole lotta places to go.

You mentioned that they are really hard fighting fish and I can attest to that. The few steelhead I've caught have put up an impressive fight. But fighting like that. I imagine it really uses up oxygen. And when we have these warm temperatures like this like he's super high temperatures, the water can't hold as much oxygen so as their concerns that anglers if they're trying to catch fish that they might want to release, that it might be dangerous to do that?

You're absolutely right guy. That's the biology behind it. The fish is just having trouble breathing. And so the higher we go on water temps, especially these fish, like steelhead are adapted to really high oxygen levels to perform, they'll struggle you'll you can struggle to revive them. And so something to keep an eye out for sure. Some, guidelines out there. Fortunately, some of the places we have in Idaho still, once they'll come up through these thermal block areas with the dams and that pools and stuff, they have some refugia area up in these high mountain areas where they can get some cold water. And I think you can safely do some angling without causing too much damage.

Right on.

What are some of the other native fish in the system that are coming up this time of year that might also be affected by the warming temperatures?

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Well, certainly a couple that come to mind in an anadromous world. So again, the television world, the sockeye salmon, is one that really is struggling to deal with these thermal blocks. And that is kind of a real iconic fish, especially up here in Idaho and Red Fish Lake where fish will travel almost 900 miles to spawn, so they swim up and collect in this large lake habitat that was at high elevation five to 6000 feet. And so yeah, you're seeing those fish, you know, we'll still have in place throughout the summer, they're trapped. Well, they're calling "trap and hauls". They will trap them at one of the projects, Lord grant dam, and then haul those fish here to just outside of Boise to a captive rearing center. This was done. Previously, we did it in 2015. Unfortunately, a very low water high temperature year. And we're seeing that again, as we expect to see more in the future as climate change makes these high temperature events more and more frequent.

In the Columbia River Basin. I know that there's been introductions of a lot of non native species, oftentimes warmer water species such as walleye and black bass species. What can warmer temperatures do for them? Are they gonna have a more extreme competitive advantage compared to some of these native species?

You know, I think the research isn't quite as solid as we've got for the steelhead and a salmonids is very good, a lot of tagging efforts in those, but we're definitely seeing that there. That walleye fishery is starting to really take off in the Columbia system and up the Snake. You're seeing even guided fishing trips targeting these fish now. And so as we increase these populations of just piscivorous fish, you've got these factors that are shifting the balance of a system, a Columbia River system that was so on and focused, and now it's shifting to another species, other species.

If we were to look back like 100 years, what would that native fish community look like? How would steelhead fit in? How would you know the more resident rainbow trout and maybe some of the other like redband trout kind of look, if we were to take a look back compared to today?

I think as you look back, you know what you'd see especially where red band chowder, you know, you're when you're talking about steel and red bands, you're almost you're talking about the same species. And so a component of that particular species was going to be anadromous. They were going to try, they were going to go for it, they're going to swim down the Columbia take the 850 mile gamble so that they could come back huge, put down a huge number of offspring. And really, that was their life strategy. Now a component of that group of fish would be like, yeah, I'm not, I'm not going for it. I'm not trying 900 miles, I'm gonna stick it out here. tough it out in the mountains of Idaho, probably only going to grow it to be about six or seven inches long. That's big enough, and then I'm going to spawn and I'm going to have less eggs, but I got a safer bet with less predators up here in the mountains. So really neat life history. And you see that manifests itself still today. And we found that we can influence it. So if we take a fish put it in a hatchery setting where we control a lot of the variables, if we start messing with a photo period, we can trick those fish into thinking we should just stay. So if you put lights on all night, like "man I need security lights around this facility to keep fish from you know, so I can watch them". You'll trick the fish and the thing is daylight all the time and they will not leave they're like this is a great place to stay. The second part is if you overfeed them being a hatchery fish like being a couch potato, you just sit on your couch and you throw potato chips down on top you just eat and eat and eat. You do

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that too long. The fish is like life is so good up here in the mountains, I am just going to stay and they'll never make that transition to go take that journey down. So 100 years ago, you'd still see that. Now hatchery influences and stuff you're seeing changes in action and shifting it around.

Can you give us some context like we've got what Fish and Wildlife Conservation hatcheries are their state hatcheries? What percentage of these fish these steelhead are wild versus hatchery reared and just kind of what role are hatcheries playing in this overall kind of conservation picture?

You know, a program that I work on Lower Snake Comp Program we actually provide funding sources for six different entities and that's a conglomeration of states Idaho Fish and Game, Washington, Oregon, and then also tribes so Utiia tribes, a big player Nez Perce Tribe, Shoshone-Bannock Tribes too so these are operators of these facilities, they're putting facilities I say is are a combination of hatcheries and then trapping in like facilities where we'll actually remove hatchery fish out of the system and allow wild fish to go up and spawn naturally. Unfortunately, we've seen three large drops in our wild populations. And that's the face of climate change, more predators, tougher migration route and an ocean conditions that haven't been favorable. So we're not in a place that we want to be as far as steelhead numbers.

These are cheap projects. So I'm curious where the initial funding for everything that you've mentioned actually comes from.

This program, we're gonna invest about \$31 million a year into this into the Snake programs to mostly supplement hatchery fish, also study them, make sure we've got tagging on those. Every single fish that we're going to put out, it's gonna have an adipose clip. And then we'll talk about later on, we talk about fishing and how you know, which is the fish you can keep. But the funding ultimately all starts with Bonneville Power Association. So Bonneville Power Association manages all the dams on the Columbia River system, and they're selling the hydro power to electric companies. As part of those sales, they're responsible to fund these mitigation programs to make up for the loss of the salmon and steelhead in the system. So you don't see any what we would call general tax dollars. So your income tax dollars don't come here. But when you pay your power bill in the northwest, you're paying for these programs.

You know, you mentioned adipose fins. Which fish can you fish for, uh, you know, are some of the populations threatened? What's kind of the angling situation currently, and then I'd be interested in hearing a little bit more about the historical fishing as well if you have that knowledge.

So the adipose fin's that fin between the tail and the dorsal fin on the top, it's a very small fin. And what we've noticed over the years, if you remove it, two things are great about it. One it doesn't regenerate, to it doesn't seem to affect the fish performance. So we've got data where we've tagged fish both says it just doesn't seem to affect them that much. So when you're way down river, for the most part, you're only going to be allowed to catch and keep fish without an adipose fin. Some of the upper spots where we have steelhead in Idaho. And this is the longest migration we have in the Columbia it's about 850 900 miles. So you can imagine you've got all those river miles are freshwater fish, you don't see a ton of harvest in the ocean, but you will see fishing immediately on steelhead. They're relatively fun fish to

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catch. But the very intriguing part, if you go back a ways is now before there's kind of this big Western migration and you had more of the tribes here just fishing. The neat thing about the Columbia Basin is you have so many runs of salmon and steelhead that it was basically a year round supply, there is fish coming up and utilizing this habitat and coming through the corners year round. And what's interesting about steelhead is they'll actually come up and they're going to come always up the river. And a lot of times, especially in this warm water, they're going to seek some thermal refugia. So they're going to seek out some cold water spots where they can hang. Those are tremendous spots to go fishing for them. And then as the water cools in the fall, they're going to continue their migration up. So that's where you're going to be looking for when you're fishing too.

Okay, so you mentioned these adipose fin clips and catching and keeping those fish. Say you catch when that doesn't have a clip. What are some best like practices in terms of handling the fish to reduce stress and release it, you know, into the wild again, where it can continue on its journey?

I think somebody even starts like before we even have the fish you know, before you even out there fishing and one is just gear selection. And a lot of regulations are gonna limit you. But you know, a lot of times we ask is let's use single hooks, let's use barbless hooks. So if we're trying to put that hook out in the mouth area and not down in the gills, we're going to damage those gills. And then I tell people like you know, I love fishing, catch, release and like light lines, everything but find a happy medium where you don't want to be playing this fish forever. So pick a line weight, it's in that 15 pound range, maybe 20 pound range. You're dealing with a big fish potentially

What are like lure choice? How are you displaying the lower in the water? What are some just like actual techniques that you recommend for folks to use to be successful?

Yeah, the clear water basin's a great place, the Salmon River when we're up and these kind of higher order streams are not that deep. So you're going to be wade fishing on so you're gonna need a good set of waders and a stout wading pole because these things are swift and fast. And then you got two options. One go the fly route option more traditional style or a spinning rod. So let's get on the fly route option. You'll see you're going to want a pretty legit rod. A lot of times if we're going to do a speed casting setup where this is where we're going to try to run a lot of line off the fast water it's going to be 11-12 foot rod and that 8/9/10 weight range. We're going to be dealing with a fish that could be in that 15-20 I mean the state records ceiling It was 30 pounds.

Dang.

These are legit fish and when you hook them they still got a lot of anger left in him for being an ocean. And then once you get that set up, we're gonna put on it you can put on traditional salmon flies or even a muddler minnow, we're looking for someone that size and that 2/3/4/5 pretty big looking offering and a little bit of lead to get it down. We're just gonna drift through these fast runs. These fish are gonna be working their way up, they're gonna be resting a little bit but a lot of fish we're catching are working between holes coming up the river, and we're gonna cast across the current let that thing drift down or cast across the current and let it drift down over and over and over and over. Repeat, repeat, repeat, repeat, repeat.

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For like eight to 11 hours? [laughs]

Yeah. I'll throw this out there. I know some people who like to fish like the Deschutes River. Now that's further down in the drainage but they'll have a big old stone fly hatch coming off in the summer. Well, these guys ever hit top water dry flies or anything or is that rare?

It's rare, but I think those are the ones people always talk about getting steelhead to come up on the top water is definitely something to have in your fly box when you're out there. It's not out of the question. Once you've got the fish on, you know that we have catch and keep seasons too then and we encourage people to harvest those fish especially that because we've marked them as hatchery fish, and they're in surplus of what we need. So they're definitely a great table fare to take home. But if you if you're seeing that you can see it's a wild fish try to get that fish as quickly as possible use a net or tail the fish so you're not dragging a fish up on the bank and just get that hook out as quickly as possible and give them a little chance to revive. Get them pointed back upstream where they can take off on their own and they should do just fine.

You have any recommendations on how to take a photo with a fish that you plan to release that's really stressful for the fish.

Get in the water with a fish you know those are real nice photos and get your camera person ready so that you can just lift a fish up and quickly snap a couple photos or take these photos that are half in the water I think do just fine. You know the things you want to avoid are dragging a fish on the bank, grabbing them with wool gloves. You know rubbing that slime layer off. We can see handprints on fish for people and grab that fish with gloves. We can see right here you did that because you took the slime off then that becomes the spot where fungus will start. It'll take that spot. You can literally see handprints on fish.

So say you catch one, it's got that clip, you're gonna keep it what do you do next? How do you What's your you know, what are some recommendations on how to prepare these fish, how to keep them good until you get them to where you're going to fillet um, how do you consume these awesome fish

I always recommend you know don't let the fish suffer, we're going to knock it out, we're gonna club it over the head with a nice stick, knock it out. Then I take and slice the gill arches. We're gonna bleed the fish out and make some nice quality filet. It's pretty common with salmon or steelhead. And then we want to get the fish cold as quickly as possible so you can bleed the fish out in the river. Generally river temperatures are going to be cold enough for that but then immediately as soon as within about five to 10 minutes I get that fish right on ice. Gut them out if you want you don't need to get the fish is cool down they'll be fine for as much time to get back to camp. Once you get back out a couple options. I like to fillet them. My favorite recipe is smoke steelhead quality is a little bit less than when you're out the ocean if you're up river so do a dry brine one part brown sugar one part salt layer that layer on top of fish and more fish keep layering that and then put an alder smoke on that for ideally a cold smoke for four to six hours and finish it off to about 120 130 degrees. Now you got a great product you can make a smoke steelhead fettuccine, if you want all that you can make smoked salmon dip out I put some sour

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cream onions, garlic together and then dip on crackers or just eat it straight after you vacuum seal it. A really neat product to have

Sounds awesome. What is the fillet look like compared to say like a sockeye salmon that's really red. What's the coloration of these fishes fillets?

Yeah, so what so what you'll see is, which is really neat. Once these fish get way up river, most of their energy, that real orange color as you would have saw from Alaska or you'll see any steelhead winter downriver has now migrated to two places. One if you're a female into the eggs, and they've put a lot of energy and all that beta carotene has now gone and given those eggs, that real orange color, and the males will go into the skin generally and get that bright red crimson stripe across them. So really nice. So you're full a quality color is going to decline. It's going to go to this almost white color at the very end. And again, that's why I recommend smoking and you're going to get a little bit better product out of smokiness me a little softer than it would have been lower fat content is allows nutrients I've gone down to the eggs or to the spawning colors.

Oh, cool Nate. It's been great having you today.

Well, thanks so much for the opportunity and yeah, get out there and enjoy some fish and lower 48 too and we've got steelhead coming up so it should be another good year.

Get out there and enjoy all the fish everybody. Thanks for listening to Fish of the Week! My name is Katrina Liebich and my co host is Guy Eroh. Our production partner for this series is Citizen Racecar. Produced and story edited by Charlotte Moore, production management by Gabrielle Montequin. Post production by Alex Brower, Fish of the Week is a production of the US Fish and Wildlife Service Alaska Region Office of External Affairs. As the service reflects on 150 years of fisheries conservation, we honor think and celebrate the whole community, individuals, tribes, the state of Alaska, our sister agencies, fish enthusiasts, scientists and others who have elevated our understanding and love as people and professionals of all the fish.