



King County

Water & Land Resources Division
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MEETING NOTES

CEDAR RIVER COUNCIL

April 23rd, 2019 – 7:00 PM - 9:00 PM

Red Lion Hotel

1 S. Grady Way, Renton, WA 98057

The meeting was called to order at 7:00 pm.

Call to Order/Welcome & Introductions

Chair Max Prinsen explained the purpose of this meeting is to communicate goings-on in the Cedar River basin today, mainly in regards to sockeye. Presentations will be followed by Q & A periods with the presenters, one each for CRC members and the public.

CR Sockeye: Introduction, Past & Present Production & Lake Washington Fisheries – Aaron Bosworth, WDFW

Mr. Bosworth is a fish biologist for WDFW's Region 4 (Mill Creek). He reviewed a history of the Cedar River basin, and impacts to its fish populations over time. 17,000 years ago the region was covered by glaciers, whose retreat left north-south oriented depressions which rivers got stuck in. All rivers in the south end of the region were once part of the Green River system. The Cedar did not flow into Lake Washington, but into the former Black River. Early records indicate a possible presence of sockeye, trout, and kokanee, the latter of which was preferred by the Duwamish tribe.

In the early 1900s, the Ship Canal was dug, and the Cedar was diverted into Lake Washington, a project completed in 1916. This lowered the lake by nine feet, diverted the watershed, and dried up the Black River. Once the Cedar flowed into the lake, planting fish in the rivers began. Efforts to plant sockeye stock took place in the 1930s-40s. It is believed the new geography of the basin improved conditions for sockeye to take hold here. However, consistent fish counts did not begin until the 1960s. At this point the sockeye counts were at about 400,000. In 1972, fish counts began at the Ballard Locks to track how many fish were coming into the basin. However, Lake Washington/Cedar River sockeye counts have now dropped to near nothing, and the most recent sockeye sport fishery in the lake was in 2006.

One theory for the decline is that increased clarity of lake water over time has made juvenile sockeye in particular more visible, and vulnerable, to predators. In the 1960s, when sockeye populations were thriving, the sewage dumped into Lake Washington resulted in poor water quality and blue-green algae blooms. Water quality improved with building of sewer treatment plants, which halted sewage discharge into the lake fully by 1968. Primary native predators for sockeye include northern pikeminnow and cutthroat trout. Non-native predators have also been introduced to the basin, though they are not believed to be the main predation problem. The sockeye population has continued in a downward trend, and may likely become functionally extinct in the next 40-50 years.

CR Watershed Habitat Conservation Plan, Components, & Fish Programs – Amy LaBarge, Seattle Public Utilities

Ms. LaBarge is a natural resources section manager for SPU. She reviewed the Habitat Conservation Plan (HCP), developed by City of Seattle in the 1990s in anticipation of the Endangered Species Act's listing of Puget Sound Chinook salmon. An HCP is developed by a landowner in tandem with federal agencies to allow the landowner to conduct activities, even if threatened or endangered species are present. This HCP is a 50-year plan approved in 2000, involving agreements with state/federal agencies, and a \$108 million commitment. Seattle developed the HCP because it manages stream flows and so has potential to harm fish. The plan scope covers 83 fish and wildlife species on 91,000 acres of watershed land owned by the city. The plan includes over 80 projects and programs under three broad areas:

- **Watershed Management:** This covers programs addressing issues for roads, forests, and streams in the watershed. Also part of this is the Watershed Education Center by Rattlesnake Lake, which has tours and information.
- **Instream Flows:** This stems from the original purpose of the land acquisition in 1889, for Seattle's water supply. The purpose of managing instream flow is to protect this supply and any species present. This topic area includes guaranteed flow regimes, limits on annual water diversions, flexibility in river-dedicated water management, research and monitoring, funding for facility and habitat improvements, and implementing the interagency Cedar River Instream Flow Commission.



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- **Fish Passage:** This primarily involved restoring passage to anadromous fish upstream of Landsburg Dam. The dam was modified in 2002-03, to allow the first fish passage there in a century. Fish returned to 12 miles of mainstream and tributary habitat. Ms. LaBarge noted sockeye have still not been allowed past the dam due to concerns of their spawning impacting drinking water; these fish are sent over to a hatchery.

Ms. LaBarge then spoke on SPU's sockeye hatchery. This was built in 2002 and is managed by WDFW, costing SPU about \$700,000 yearly to maintain. Hatchery survival rates for fish are much higher (97%) than naturally-occurring rates (5%). Several controversies surround the hatchery program, affecting SPU's management of it. Some of these include competition, predation, domestication, reduced fitness, disease, natural selection, and other hatchery impacts. There is concern that hatchery fish are not like "natural" fish, and that they may impact other species. An adaptive management program (AMP) was developed by experts, stakeholders, and independent voices to address public and tribal concerns, among others. This means monitoring and assessing the program, and feeding that data into how the program is run. SPU wants to ensure good hatchery management by working with partners. SPU also works with King County, Forterra, and others to restore properties downstream of Landsburg.

Lake Washington sockeye counts have been low since 2013 in particular. Ms. LaBarge noted a high proportion (47%) of females dying pre-spawning. While the hatchery's original release goal was 34 million fry, this has not been reached due to the low return numbers and high pre-spawn mortality.

CR Temporary & Permanent Sockeye Hatcheries, Past to Present – Brodie Antipa, WDFW

Mr. Antipa, a hatchery operations manager for WDFW's South Region 4, gave an overview of SPU/WDFW past and current sockeye hatcheries. Hatcheries are meant to protect the freshwater stage of a sockeye's life cycle, with Lake Washington serving as the "nursery" area to grow the fish.

An interim hatchery ran from 1991 – 2010. Over time this hatchery saw upgrades in capacity, incubators added, a new collection site in Renton, as well as the occasional presence of IHNV in incubators, a virus which can wipe out entire fish populations. Several achievements of the hatchery included: slow rate of sockeye decline, perfecting the sockeye efficacy technique, providing ample marked fish for Lake Washington studies, and sport hatcheries in the early 2000s.

A new, permanent hatchery opened in September 2011, operated by WDFW and owned/funded by SPU. The hatchery is managed under an AMP. Several goals include providing a long-term stable program for healthy Cedar River sockeye populations; reducing detriment on Cedar River populations; and ensuring success of the hatchery. A key aspect of the hatchery is a weir, where fish are manually sorted – to let Chinook pass through, and collect sockeye for broodstock. 90% of collected Cedar sockeye broodstock come from this weir, which has a capture efficiency of about 55%. Limitations of the weir include: vulnerability to high flows (requiring its removal before floods), and a requirement to be managed under Chinook protocols. SPU is working with a consultant to address these.

Pre-spawn mortality was noted as a factor here as well. Mortality rates in hatchery holding ponds in recent years have averaged in the mid-30s percentages. These rates are high in the river as well. Mr. Antipa then discussed fry production and release at the hatchery. The goal is to release 34 million fry; this has not occurred, though egg-to-fry survival rate in the hatchery each year averages over 90%. He noted there are about 3,200 eggs in each female sockeye. Despite 70 million fry migrants counted in the lake in 2012, not enough had returned by 2016 to provide a fishery. It was also noted that hatchery sockeye represent about 30-40% of the sockeye sampled at the Ballard Locks.

Research and monitoring also continues at the hatchery. This involves thermally marking all hatchery sockeye, recovering marked adults, fry production estimates, smolt evaluations, adult sockeye distribution, and age composition.

Public Comment/Q & A Periods on Agenda Items

Despite a poor prognosis reported tonight, Max Prinsen encouraged hope the sockeye may yet prevail if people make the right changes, citing the case of condors and eagles in California. Two Q & A periods followed the presentations.

A) CRC Member Q & A Period:

- Q: Can we adapt the hatchery to raise fry to a later stage before release, to increase fry-to-smolt survival rate?
A: The current AMP does not allow this. But, multi-agency workgroups are discussing modifying the AMP. Experimentation is also underway in this area, with a group of test sockeye raised at the Issaquah hatchery.
- Q: Can we bring in stock from other runs, such as Fraser or Baker?
A: Landsburg mitigation agreement rules prohibit bringing in outside stock, and encourage making the local



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stock work, but this is part of an ongoing conversation.

- Q: Do new sockeye hatcheries at Baker and Skokomish use different strategies?
A: Baker is releasing larger fish; they find that longer-reared fish survive at five times the rate of the Cedar. However, unlike Lake Washington, Baker is deeper and colder with not as much predation.
- Q: Why are pre-spawn mortality rates increasing?
A: Warm water leads to higher rates of diseases, though it's still uncertain where fish are contracting them.
- Q: Mr. Bosworth presented a projection model on this topic last year – what happened with that?
A: There has been little change, however, that model was run before the even lower sockeye counts this year.
- Q: Are other runs like Fraser seeing similar declines to the Cedar?
A: Uncertain, though the sense is that Fraser is not doing well either, while Baker seems to fare less badly.
- Q: Does ocean/commercial harvesting impact these fish counts?
A: The impact to the Lake Washington run is not believed to be significant; the bulk of Juan de Fuca Strait fishing is directed at the much larger Fraser run.

B) Public Q & A Period: Frank Urabeck reminded the public their feedback will be sought later in the meeting, to advise SPU and WDFW which direction to take: give up on the sockeye, or pursue other options.

- Q: The Cedar sockeye run is not a “natural” run; why are these fish referred to as “natural” spawners?
A: “Natural” doesn’t mean “native.” These fish, while descended from Baker stock, spawn naturally in-river.
- Q: What is being done for fish entering/leaving the Ship Canal, where the water is warmer?
A: The Army Corps of Engineers is exploring several ideas, though all of them are very costly to implement.
- Q: Why are Landsburg fish passage counts not available to the public?
A: The information on SPU’s website is several years out-of-date, due a shortage of staff/time to redo the website to update it to include information about the HCP.
- Q: Could the hatchery be used to raise silvers or Chinook?
A: Not without modifications, which are constrained by existing agreements.
- Q: A *Seattle Times* article claimed the hatchery is not funded, how do we get those funds to the hatchery?
A: Not sure where that claim comes from, as the hatchery is actually fully funded.
- Q: Why are steelhead listed as “threatened”?
A: Anadromous steelhead are functionally extinct in the Cedar. “Threatened” is the US Fisheries Service label.
- Q: How do you solve high disease rates impeding sockeye spawning? Are Chinook subject to these problems?
A: Chinook do not seem to suffer the same problems, and seem heartier for some reason.
- Q: How many sockeye will the lake support?
A: It should support up to 100 million. It’s possible that juvenile sockeye aren’t getting enough plankton, but there should be enough even with all the competition there.

After the Q & As, Mr. Urabeck reiterated public influence as key in aiding stakeholder dialogue in how to proceed with the hatchery, to decide to (1) continue as is; (2) give up; or (3) tag WDFW/other stakeholders to do a feasibility assessment to determine how to recover Cedar River sockeye to fishery levels. A show of hands indicated: no votes for option 1; two votes for option 2; and the overwhelming majority favored option 3. Mr. Urabeck said he would take this information when he talks to the director of the Fisheries department in a few weeks.

Other CRC Business

- A) Charles Ruthford Resignation: Mr. Ruthford announced his resignation from the CRC, citing personal concerns. He said he may return at a future date. Nathan Brown thanked him for his service and noted he would update the CRC member roster on its website to reflect this change.
- B) Craig Sears Update: Phil Kitzes reported that former CRC member Craig Sears is recovering well following some difficult medical news, and may appreciate other CRC members contacting him.
- C) I Love the Cedar River: Mr. Brown said this meeting will likely occur in early October; venue is to be determined.

The meeting adjourned at 9:05 pm.

Next Meeting

May 28th, 2019, 7:00 pm – 9:00 pm, Spruce Room, Red Lion Hotel, Renton.