



King County

Water and Land Resources Division

Department of Natural Resources and Parks

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Cedar River Council DRAFT Meeting Notes

April 27, 2021 – 6:30 pm to 8:30 pm (scheduled)
Meeting/Video Conference Call via Zoom (King County account)

I) Call to Order / Welcome: Nathan Brown called the meeting to order at 6:34 pm.

II) Public Comment: There was no comment during this period.

III) General CRC Announcements / Information (Open to All): Nathan Brown introduced Lauren Triplett, new King County administrative support staff who will assist with note-taking for the CRC.

IV) Restoring Lake Washington/Cedar River Sockeye – Jim Scott, WDFW & Fred Goetz, USACE

A) Presentation

Fred Goetz is the Endangered Species Act (ESA) Coordinator for the US Army Corps of Engineers (USACE) at the Ballard Locks. He is also part of a workgroup with Jim Scott of WDFW to address sockeye decline in the Cedar River basin. He spoke to the CRC on sockeye impacts at the Locks.

Mr. Goetz explained his job is to improve fish passage conditions in the Locks and the Lake Washington Ship Canal. About 40 years ago, sea lions began preying significantly on steelhead at the Locks. Multiple deterrents were attempted, including orca sounds, shark nets, and noise devices; the noises eventually rendered many of the sea lions deaf. In 1996, the Locks were designated by the Marine Mammal Protection Act as a location where state and tribal jurisdictions could more forcibly remove or even kill the predating sea lions. Harbor seals have also become an abundant predation problem year-round at the Locks, especially in summer months. They are seen as enough of a detriment to Chinook and sockeye salmon at the Locks that efforts to control them have increased.

In recent years, testing began at the Locks on a new non-lethal tool to reduce pinniped (seal and sea lion) predation there, a tool known as Targeted Acoustic Startle Technology (TAST). The testing was supported by the salmon recovery organization Long Live the Kings, with USACE's involvement strictly to provide the testing location. Estimates after deployment of one such device near the fish ladder entrance indicated that 46% more salmon were able to travel through the ladder instead of the main locks, which saved about 4,000 fish. Studies of TAST are ongoing, with funding and support from multiple organizations and jurisdictions. USACE's role is to get approval for five years' use of the device, as well as ESA consultation as the device may impact salmon migration. There are high hopes that more deployments of the device will help salmon at the Locks.

The second part of Mr. Goetz's presentation focused on history of water temperatures in the Locks and Ship Canal and actions to address them. He noted that changes to the historical landscape from the construction of the canal meant that salmon had to find a new way to Lake Washington. This was traumatic for many of them.

The University of Washington has monitored temperatures in the lake for decades. In recent years, it has been observed that Chinook salmon do not migrate upstream until the water is below 68°F (20°C). The number of days per year of temperatures above this threshold has dramatically increased; this may be affecting sockeye and Chinook migration. Water salinity is another concern. This affects dissolved oxygen levels; dissolved oxygen is key to salmon passage. Salmon will not swim through low-oxygen areas and can be harmed if they do. The Locks are a barrier from cold water entering the canal system. The warm water in the canal is from Lake Washington, which becomes heated in the summer months.

Temperature and salinity factors may be contributing to a large die-off of sockeye observed at the Locks. One year saw an estimated total of 200,000 dead sockeye there, though Mr. Goetz noted this was considered an extreme event. USACE, along with other organizations and agencies, are looking into ways to improve temperature and dissolved oxygen conditions and minimize impacts to migrating salmon. The National Weather Service is

modeling scenarios to inform the relationship between the Locks and water conditions. He said many studies would be needed to pursue the idea of pumping cold water into the canal.

WRIA 8 has synthesized studies on temperature and dissolved oxygen levels in the canal and Lake Washington, as these are critical for salmon migration. The Locks prevent saline water from entering the canal. Prior efforts to let cool water into the canal led to buildup of salt in the bottom of Lake Union, causing a disastrous die-off of life at the lake bottom. There is cool water at the bottom of Lake Union, but oxygen levels there are too low for fish.

Mr. Goetz said he was unsure how USACE can benefit these species on a basin-wide level, though they may be able to provide cold water in some areas. More ideas can be investigated, but many factors are outside the canal.

Jim Scott, special assistant to the director of WDFW, works with several others on the Lake Washington Sockeye Technical Workgroup to identify management actions and feasibility of rebuilding the Cedar River sockeye runs. The group began work in July 2020 and is expected to complete its work July 2021. Many potential challenges to sockeye are being considered, including predation, contaminants, disease, water temperatures, and dissolved oxygen levels. His discussion tonight focused on the specific issue of adult sockeye.

A chief problem observed with adult sockeye is a drastic difference between fish counts at the Locks and the number of adults making it to the Cedar. The conversion (survival) rate of about 60% in the 1990s decreased to about 20% by 2014-2018. He cited the WRIA 8 study compilation referenced above, which stated Chinook and sockeye are being “squeezed” between too-warm water temperatures and too-low dissolved oxygen conditions. The report concluded this “squeeze” is a critical limiting factor for sustainable salmon populations in the basin.

Observations of water temperatures and salmon mortality rates between 2008-2018 indicated a correlation between the two: adult conversion rates from the Locks to the Cedar declined as temperatures increased. Higher pre-spawn mortality at the Cedar’s sockeye hatchery was seen as well. Mr. Scott said increased temperatures factor into many explanations for the high mortality: increased pathogen vulnerability/exposure, and depletion of energy (often due to metabolic rate increases). This poses a problem for both early-arriving sockeye, who spend more time in Lake Washington, and the late arrivers, who must pass through warmer water and are also subject to immediate mortality. Environmental changes may also have led to new and increased pathogens in the waters.

WRIA 8 and Long Live the Kings are convening a roundtable discussion in the next few months to determine long-term solutions to high water temperatures and low dissolved oxygen levels. These solutions may take a long time to implement, so short-term solutions are being considered for implementation in 2021. Short-term options are considered key to moving forward in saving the sockeye runs, as their levels continue to decline rapidly. WDFW is investing a lot of energy in assessing alternatives to increase adult survival from the Locks to spawning grounds in the Cedar. These include variations in transport (barge or truck) and release location (Lake Washington, the Cedar, or the hatchery). Strong benefits to conversion rates can occur even with a small percentage of the run being transported, if their survival rates are higher than if they were in the canal and Lake Washington.

B) CRC Member & Public Comment / Q & A

- **Q:** Did noise devices at the Locks affect the salmon?
A: The impression is that salmon behavior is unchanged; they operate on a different sound range and hearing system than mammals.
- **Q:** How would you stop sea lions from getting habituated to noise devices?
A: A marine biologist would need to answer that question.
- **Q:** Any idea when the Locks will open to the public again?
A: Not for a while. Staff may be allowed back this summer.
- **Q:** Why is USACE not getting more out front of this issue?
A: USACE’s job is to run the Locks, maintain navigation, and provide fish passage. Other jurisdictions manage marine mammals; at the federal level this is the National Marine Fisheries Service (NMFS).
- **Q:** Are we focusing on grabbing as many fish as possible?
A: If a certain number of fish are transported successfully and survive at the hatchery, it would be a big advance. Options to increase transport and holding capacity for fish would be needed. The Locks are not set up to collect adults, so changes would need to be made there as well.
- **Q:** Time is short to implement transport this year. Is something going to be implemented on an emergency basis, and are we able to transport so sockeye can reestablish natural habitat and work at the hatchery?
A: WDFW and multiple agencies are pushing hard to make this happen this year. To the second question, it’s not an either/or situation on habitat restoration vs. hatcheries. Both are needed. Hatcheries may need to be used in ways we might not have thought of before. My preference would be for extended hatchery rearing.

- **Q:** Can you provide a ballpark cost for transport this year?
A: I would have to consult with staff.
- **Q:** My understanding is that Seattle Public Utilities (SPU) is not receptive to storing fish at the hatchery? Where would you put the transported fish?
A: I've talked with SPU and would say they are interested and supportive of ways to increase sockeye survival. One storage option may be to transport them to Lake Washington and perhaps miss a big part of the water temperature and pathogen issue – or it could mean they're exposed to higher pathogen levels in the lake for a longer time. The Cedar may work, it's closer to their spawning grounds; but their life cycle is likely not programmed to spend so long in the river, so they may go back to the lake. We don't have all the answers yet.
- **Q:** Is a barge system to Lake Washington a viable option for fish transport?
A: All options are considered viable. Barges would minimize potentially damaging truck transport of fish. But WDFW would need to secure a barge. The challenge either way is capturing fish at the Locks and getting them to the trucks or barge.
- **Q:** Are you looking for volunteers to help with transport?
A: We may well need volunteers. We can connect through the CRC mailing list.
- **Q:** I'm in favor of testing as many ideas as possible now so we have more data to make a decision.
A: Agreed. And if we don't try things, we're going to lose the sockeye.
- **Q:** If not everyone agrees on all options, can we streamline approval to use one option? Who decides?
A: Co-managers would need to support the proposal, as well as agreement from USACE (since the Locks are their property) and NMFS (since this would affect Chinook, an ESA-listed species). Seems this would be what we need for barging to the Cedar.
- **Q:** I used to work in a company specializing in fish processing equipment, including an item to preserve fish in a "fresh" unharmed state. These are "fish pumps," a mild vacuum diaphragm system to pump fish from a holding tank into a receptacle. Rycos fish wet pumps are an option, products #971 and #974.
A: Mr. Scott took down this information.
- **Q:** If funding is an issue, have local corporations like Boeing been approached?
A: I feel more comfortable asking for help when I have specifics. My sense is locals generally want salmon and fishable/swimmable waters. If we have a viable proposal, I think they will support it.

V) CRC Updates (As Needed)

- **Lakeside Industries Asphalt Plant:** Corinne Young reported she sees activity on the plant site almost daily. She has asked if they have their permit but has not received a reply. Max Prinsen replied that his understanding from Phil Kitzes' last update is that the plant's permit is still in review and not issued for any specific work yet.
- **WRIA 8:** The Salmon Recovery Council meets next month. Grants are currently being reviewed.
- **Fish Habitat Conservation/Restoration (Sockeye):** This was addressed in tonight's main presentation.
- **Cedar River Watershed:** Amy LaBarge reported things are holding steady in the upper watershed, with a very large snowpack this year, currently at 150% of normal. Some has started to melt off with recent warm weather. SPU is starting the spring refill process a bit early, but a bit slow so as to have room to capture melting snowpack. They are managing flows to balance the refill with protecting downstream fish habitat. Normal maintenance activities are ongoing, as well as preparing for the field season.
- **CRC Member Updates:** Nathan Brown asked CRC members to briefly turn on their video to introduce themselves to new CRC support staff Lauren Triplett.

VI) Public Comment Period: Local resident Patrick May voiced concerns about the County's flood viewer app. He specifically voiced a desire for a more automated process to relay notifications when federal law requires SPU and Seattle City Light to open the dam on Chester Morse Lake. Currently, that data is relayed by phone call before being updated into the app. Mr. May said this manual process has caused major delays in keeping landowners informed about significant increases in river flow resulting from the dam releases, not giving landowners sufficient time to prepare. Ron Straka noted the app is set to alert changes in flood phase based on the gauges on the river, and threshold for Phase 4 on the Cedar is only about 5,000 CFS at Landsburg. Mr. Straka said there should be a special alert to check for operations changes at the dam, including those that affect river flow. He will bring it up at the next Flood Control District meeting and Nathan Brown will forward tonight's meeting notes to the Flood Warning Center.

VII) Closing / Adjourn: Max Prinsen reminded the CRC not to lose sight of the asphalt plant issue. He looked forward to a point in the future when the CRC could celebrate being outdoors together. Nathan Brown noted the next scheduled CRC meeting date, May 28th on Zoom. Tonight's meeting adjourned at 8:30 pm.