



King County

Water and Land Resources Division

Department of Natural Resources and Parks

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Cedar River Council DRAFT Meeting Notes

January 26, 2021 – 6:30 pm to 8:30 pm (scheduled)
Meeting/Video Conference Call via Zoom (King County account)

I) **Call to Order / Welcome:** Chair Max Prinsen called the meeting to order at 6:36 pm. Nathan Brown, King County staff for the CRC, reviewed Zoom meeting general “housekeeping” guidelines.

II) **General CRC Announcements / Information (Open to All):** There were no comments during this period.

III) **Cedar River/Lake Washington Sockeye Management & Recovery Panel – led by Jim Scott, WDFW**

Panelists:

Isabel Tinoco, Fisheries Director, Muckleshoot Indian Tribe

Dr. Dave Beauchamp, Chief – Ecology Section, Western Fisheries Research Center, USGS

Dr. Lauren Urgenson, Technical Coordinator, WRIA 8

Jason Mulvihill-Kuntz, Salmon Recovery Manager, WRIA 8

David St. John, Policy Advisor, King County DNRP

A) Panel Discussion

Nathan Brown introduced Mr. Scott, a Special Assistant at WDFW, and tonight’s discussion panelists.

Mr. Scott said sockeye spawners in the Cedar River last year numbered just 2,000, the lowest in over 50 years. The CRC sent a letter to Governor Inslee stressing urgency in protecting this species and asking to convene a group to assess the problem and what can be done. The group started last July, led by WDFW and includes scientists from Seattle Public Utilities (SPU), King County, the Muckleshoot tribe, USGS, and others; they hope to complete work this summer. Governor Inslee replied that he supports the CRC proposals and is anxious to see the group’s results.

Ms. Tinoco spoke on the Muckleshoot perspective on this issue. She said the tribe’s goal is to preserve its cultural history and resources. A threat for the tribe is to preserve harvestable fish, for the tribe and the state. She said there are many stressors on salmon from the urban nature of the Puget Sound region, especially artificial light pollution at night (ALAN) and a lack of shadows during the day, which affect predation of Chinook and sockeye salmon.

Dr. Beauchamp elaborated on key sockeye stressors in the Lake Washington basin. There is a “bottleneck” in the lake, with only 3% of sockeye surviving while most other populations see 25% survival. Much of the difference comes from additional predation in the lake, mainly from northern pikeminnow and cutthroat trout. Bass and perch are also a concern, mostly preying on migrating nearshore smolts.

He spoke on climate and ALAN trends strongly influencing predation, and the thermal barrier affecting adult salmon migration. Warming climate increases predation via a longer overlap period of pikeminnow with salmon in warmer high-feeding months. Pikeminnow were confined to warmer waters in the lake in the 1970s-80s, but high surface temperatures in recent decades are forcing them into and below the thermocline and increasing predation during twilight/night periods. ALAN has exacerbated this. It can be reflected many kilometers away, and clouds can cause even stronger skyglow due to reflectivity. Dr. Beauchamp explained ALAN creates a perpetual twilight period at night, which for most predators – who hunt by sight – dramatically increases their feeding period.

Dr. Beauchamp listed some options to reduce predation mortality:

- Reduce predator population and/or size structure, by direct harvest or suppression netting;
- Reduce predator efficacy by reducing ability to find prey during effective predation periods:
 - Reduce ALAN (doing so by 50% would reduce predation risk to 25% of current levels); and
 - Exploit phytoplankton and sediment blooms; enhance turbidity.

He noted light-based predation varies considerably within the Ship Canal and shoreline habitats, due to varying depths and distances and effects of localized light sources.

Mr. Scott agreed changes in temperatures, the lake, and light levels tie into increased predation by pikeminnow on juvenile sockeye, whose survival rates in Lake Washington are low compared to other lakes. He said the coming report will tackle solutions to this problem in more detail.

Mr. Mulvihill-Kuntz spoke briefly on WRIA 8's general salmon recovery efforts. The long-term recovery plan for the watershed focuses on Chinook, but other species including sockeye are also considered. The plan incorporates habitat protection, land use recommendations, education, and outreach. The Cedar River is their highest priority area for habitat restoration. Different species can share habitats and have overlapping areas of concern, such as predation and conditions in the Ship Canal. WRIA 8 is interested in areas of overlap between Chinook and sockeye and want to ensure recovery efforts are coordinated going forward.

Dr. Urgenson spoke on a recent synthesis of "best available science" on dissolved oxygen levels in the Ship Canal and their impacts on salmon. Temperatures and dissolved oxygen are major influences on salmon health and mortality. The report emphasizes gathering data on oxygen conditions in the canal and what is known about salmon behavior as they travel through it. A draft of this report is undergoing internal review now and will be discussed in working groups in the spring to determine solutions.

There are monitoring stations along the canal to gather data on water quality, dissolved oxygen levels, and other parameters. The data is to be overlaid with known salmon behaviors in the system. Most of the canal is just 9-10 meters deep and consists of warm surface water from Lake Washington. The only cooler areas for salmon are just upstream of the Ballard Locks and some spots in Lake Union. Sockeye pass briefly through the canal and spend most of the next few months in Lake Washington before returning to the Cedar River to spawn.

The Locks are a major issue. Salmon experience extreme changes when passing through, and can be cycled through multiple times, which exacerbates pinniped predation. The Locks block cooler oxygenated water from entering the canal. Canal water temperatures can verge on sublethal (15° Celsius) and lethal (22° Celsius), which creates a migration barrier, especially at the surface. Lake Union, while often cooler, is also a problem due to lethally low oxygen levels.

Dr. Beauchamp spoke again to discuss improving passage conditions through the canal. He said what's needed is a complete cold-water corridor connecting the Locks to Lake Washington, where fish can get to cooler water. A possible option is to pump cooler, denser water through the canal and confine it via a perforated pipe or half-pipe for fish to use. The feasibility of this has not yet been examined, but possible advantages include using the pump as a queue to move loitering fish onward, and presence of oxygenated water. These are just some ideas being considered to address climate concern; the canal is the "premiere" vulnerable area for West Coast salmon. As adults pass through, they're stuck between warm temperatures at the top and low oxygen levels at the bottom. The canal is the outlet for the whole watershed; everything happening there affects what moves through the canal.

Mr. St. John said it is important to turn Mr. Scott's group's work into action, which Mr. St. John is helping King County explore. He spoke on County efforts to save Lake Sammamish's endangered kokanee salmon, which are freshwater "kissing cousins" to sockeye. Kokanee face many similar problems to sockeye, such as: lake predation, water temperatures, disease, and passage barriers. The kokanee team and WRIA 8 are collaborating to use creative and adaptive techniques, such as captive brood stock and extended hatchery rearing, though he acknowledged not all methods are directly transferrable to sockeye. He stressed importance of new, creative thinking and inter-jurisdictional collaboration, and thinking ahead on solutions, not just waiting for Mr. Scott's report. This includes using existing County authorities and programs, and how to support actions like addressing the Locks issue, which is outside County purview. Mr. Scott agreed "old ways" of thinking aren't working for sockeye.

Ms. Tinoco agreed creative thinking and flexibility are needed, and while this effort will be costly it is worthwhile and the alternative is not an option. Mr. Scott added that fast short-term action is needed to preserve future options. He highlighted two such actions: flexibility to use extended juvenile rearing in hatcheries, and improving survival conditions between the Locks and the Cedar River. He closed the panel discussion by saying this effort will take a sustained collaboration from all to be successful, but it can be done if this sockeye run is to be preserved for future generations and continuing rich tribal traditions.

B) CRC Member & Public Comment

- **Q:** Is it an option in short-term to capture and ship sockeye from the Locks to the hatchery?
A: We're anxious to try exactly this, we do need interim solutions to work with sockeye long-term.

- Pre-spawn mortality, the massive population loss between the Locks and Cedar River, is a huge problem. Is there a way for a few months to get fish to, if not the river, Lake Washington itself? Heightened cooperation between all players is needed for a solution.
- **Q:** What about importing fish from other watersheds for hatchery brood stock? Has WDFW talked to SPU about management options for the underutilized SPU hatchery?
A: Cedar River stock are preferred as they're adapted for this journey, but outside-the-basin options are being considered. Baker River fish were brought in a few years ago. Co-managers aren't ruling out anything. Tribes are also considering this, that more holding facilities for adult fish and exploring other stocks are needed.
- Cooperation of watershed residents and lovers is key to finding solutions.
- Any action to increase number of smolt, including surplus from other stocks, is paramount to success.
- **Q:** Should there be work on getting lakeside residents to turn out lights, make docks more lake-friendly? What's one big thing the CRC should work on?
A: Everyone can help in sockeye recovery, including talking to neighbors about dock lighting. The three most urgent actions: a pilot program next year to remove northern pikeminnow; testing transport of adults to the Cedar River alive; and testing/expanding extended sockeye hatchery rearing. The CRC should raise this issue with state and local leadership to keep it a priority. Making sure public and decision makers care is important. This isn't just about the fish, but for sustainable communities and places to live.
- **Q:** Would providing cold water to the Locks themselves help?
A: Fred Goetz at USACE is in the technical group, which has discussed this very issue.
- It was suggested there be a workshop soon where people can add to Mr. Scott's group's ideas.
- A USACE consult is overdue; it is their responsibility to address marine mammal predation of salmon at the Locks. NOAA cooperation is key as well.
- As this issue moves forward, this meeting should be taken as a call to action.

IV) CRC Updates (As Needed)

- **Lakeside Industries Asphalt Plant:** There were no updates.
- **WRIA 8:** Corinne Young reported on January 21's meeting of the Salmon Recovery Council. 2021 grant rounds opened January 5, with a deadline of February 1 for notice/intent to apply for habitat recovery funding. Two letters will be sent to legislators regarding salmon recovery and urgency in asking for project funding.
- **Fish Habitat Conservation/Restoration (Sockeye):** This was addressed in tonight's panel discussion.
- **Cedar River Watershed:** SPU will present on its forestry plan at the CRC's February meeting.
- **CRC Member Updates:** There were no updates.
- **CRC 2021 Meeting Calendar:** Nathan Brown noted planned 2021 meeting dates. Most are on the fourth Tuesday of each month. The exceptions are August and December, with no meetings; and November, when the meeting is scheduled for the third Thursday, due to the Thanksgiving holiday. Dates will be posted on the CRC website.
- **CRC Membership Subcommittee:** Mr. Brown said it is time to discuss composition of the CRC and who/where to recruit members from. When no one volunteered to serve on such a committee, Max Prinsen suggested members email Mr. Brown with ideas and someone can be assigned to address them. Mr. Brown added this can also be addressed by the whole CRC in future meetings. Some positions, such as tribal representative, have been vacant for a while. Mr. Brown agreed to confer with Mr. Prinsen and affirmed this will likely be a group CRC effort.

V) Public Comment Period

Jay Mirro suggested sending a recording of this meeting to *Seattle Times'* environmental correspondent Lynda Mapes to potentially write an article and keep momentum going on the sockeye issue. Max Prinsen agreed. Nathan Brown noted CRC members can also reach out individually with this material.

Mr. Brown reported King County is partnering with the organization Uplift the Brilliance, who are applying for a grant to get at-risk youth to the outdoors and are looking for possible activity ideas. Mr. Brown suggested the CRC sponsor activities, such as a bike ride or hike down the Cedar River Trail, or a river float or cleanup. Mr. Prinsen's SHADOW organization has also been contacted for ideas. Mr. Brown can send the application to anyone interested.

VI) Closing / Adjourn: The meeting adjourned at 8:35 pm.