



King County

Water and Land Resources Division

Department of Natural Resources and Parks

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Cedar River Council DRAFT Meeting Notes

March 23, 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 6:35 pm.

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

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

IV) **Coho Urban Runoff Mortality Overview – Jenée Colton, Environmental Scientist, King County DNRP**

A) Presentation

Ms. Colton spoke on discovery of a chemical believed to cause high coho salmon mortality in Seattle streams. She noted she was not part of the team who identified the chemical. The chemical comes from tires, and several studies have been done on how salmon species are affected and what can be done to solve the problem.

The issue goes back at least 20 years, when people in Seattle observed many coho dying before returning to spawn. Coho mortality rates in Seattle urban streams ranged from 40 to 90%. This syndrome, called Urban Runoff Mortality Syndrome (URMS), was also identified in May and Taylor Creeks in the Cedar watershed. Symptoms include gaping mouth, fin splaying, spasming, disorientation, and retaining of silver ocean color; but these fish show no sign of disease or pathogens. The syndrome was commonly documented in urban streams, with strong correlation to fall storm events. Other salmon species in the same stream, such as chum, seemed unaffected.

Many studies by local, state, and federal entities from 2000-2014 could not identify a cause. In 2014, Dr. Ed Kolodziej of the University of Washington (UW) joined the search, using new technology to identify chemicals unique to urban runoff. Dr. Jen McIntyre at Washington State University (WSU)-Puyallup continued the toxicity angle, and found the syndrome also killed juvenile coho. Suspicions were that a tire chemical was involved, and lab-simulated tire chemicals were found to be identical to those in affected coho. Dr. Kolodziej's lab identified the main culprit: 6PPD-quinone, an additive to tires to prevent ozone degradation. It dissolves in water and when it contacts ozone, becomes quinone, which is 100 times more toxic than regular 6PPD.

Ms. Colton noted the CRC's concern about a planned asphalt plant in Maple Valley. She said anti-ozonants such as 6PPD-quinone should not be used in regular asphalt production. However, recycled asphalt does include shredded tires, though it is uncertain if more 6PPD is added in this process.

The toxic runoff problem was also discovered in Los Angeles and San Francisco. Toxicity levels in these streams and Seattle's were found to be at a level at which at least half the coho in them would die. Coho are by far the most sensitive salmon species to 6PPD-quinone, with steelhead, Chinook, chum, and sockeye being progressively less sensitive. However, full health impacts of this chemical on various species need further study, as some symptoms are not as detectable as outright mortality. Lower levels of the chemical may still be a concern.

Source control is seen as the most effective solution to this problem, more so than water quality treatment. The US Tire Manufacturers Association is aware of this study but wants it repeated before looking into an alternative way to prevent tire degradation. Ms. Colton said preventing tire degradation would be good for the environment overall, as tires contain other toxic chemicals. Another solution is to treat stormwater, specifically by filtration/bioretenion. This is very effective in removing many toxic agents from the water, to the point that no additional mortality was observed in the treated water. However, it would be a very large and costly effort to treat runoff everywhere, requiring prioritization of treatment facilities where runoff is most common.

Work on this issue continues, at King County and elsewhere. There are annual mortality surveys of Miller and Walker Creeks. There is a partnership with UW researchers to develop a standard test for 6PPD-quinone

concentrations, which should lead to faster and cheaper testing and sampling. Western Washington Stormwater Work Group (WWSWG) is starting a work group focused on URMS, meeting in April. UW and WSU researchers continue to research many questions about 6PPD-quinone and how it impacts coho and other species.

B) CRC Member & Public Comment / Q & A

- **Q:** Do juveniles of other salmon species track with adult sensitivity?
A: Yes, about the same concentrations affect them.
- **Q:** Do we anticipate engineered soils in treatment facilities may need to be replenished over time?
A: Yes. Bioretention facility maintenance requirements aren't well understood; those standards will be revised.
- **Q:** Do we know runoff trouble hotspots for the Cedar River?
A: Some data show Taylor and May Creeks, but there hasn't been a full characterization of the watershed yet. The County monitors some streams, I can contact you if anyone is doing coho surveys in the watershed.
- **Q:** Are there any specific plants or grasses that remove 6PPD?
A: It's worth looking at, but plants haven't been specifically looked at for this chemical.
- **Q:** Do coho swimming in the polluted Ship Canal and Lake Union face this problem?
A: Not likely from this chemical, but other pollutants. The size of these waterways dilutes many chemicals.
- **Q:** Have effects of 6PPD-quinone on sockeye been looked at?
A: Sockeye show less than a 5-10% mortality rate. But more study is needed as there can be other effects.
- **Q:** Does 6PPD-quinone have a lifespan?
A: This is being researched. Mortality is usually observed within four to six hours after a storm event and can stop as quickly as it starts. We're not sure how long it persists.
- **Q:** Is there an ETA on when more research will be available?
A: It varies by project. UW's efforts to develop a quantitative test method should wrap up in about a year and a half. Much of UW's and WSU's work is ongoing, dependent on graduate school cycles. WSU's Stormwater Center regularly posts new research findings on their website. Puget Sound Institute has a public newsletter. WWSWG also has a website hosted by Department of Ecology (DOE).
- **Q:** How can the CRC direct its attention to where impacts on resolving this would be greatest? Where can we deploy resources to make a difference?
A: There are many questions on if habitat restoration or toxic degradation is more key to salmon recovery. Looking at chemicals is important, but habitat is needed for salmon to use once toxins are removed.
- **Q:** To the extent that dollars are appropriated towards stormwater, there could be major impacts. Habitat and stormwater would be a great marriage of issues.
A: It's a question of where you prioritize habitat and not force coho to go through toxic areas to get to it. I'd be glad to come back here or put you in touch with the other researchers on this issue.
- **Q:** Are there any tires that don't use 6PPD-quinone?
A: My understanding is no. It's needed in all tires to prevent degradation.
- **Q:** We need to push science to come up with a safe alternative to 6PPD-quinone. You said state officials met with tire manufacturers?
A: DOE met with them. DOE chemists do hazard and chemical assessments to seek alternatives. They try to work with the manufacturers.
- **Q:** Coho spawn in small tributaries in the fall. Seems small tributaries near roadways should be a high priority.
A: Agreed. High coho mortality is seen more often in small flashy streams than large rivers.
- **Q:** It may be interesting to correlate data on introduction of this chemical to when coho rates started to decline.
A: Agreed, I don't think this has been done yet.
- **Q:** You mentioned affected coho do not change from their silver ocean color – do we understand why?
A: I don't think so. It's one thing we'd like to look at.

Larry Phillips commented this is a critical issue and short-term imperfect solutions should be pursued until a best solution is found. Ms. Colton replied the problem is likely that stormwater runoff is not centralized and comes from many sources, which makes it difficult for facilities to collect and treat. She said raingardens and engineered soils are inexpensive and effective as well. There is hope the stormwater work group will make progress toward investing in green stormwater infrastructure; the state has provided some funding for research and installation of these facilities.

V) CRC Updates (As Needed)

- **CRC Membership:** Nathan Brown said the consensus of the CRC is to proceed with recruiting vacant positions, and they are content with the council's current composition. He will follow up with CRC leadership.

- **Lakeside Industries Asphalt Plant:** Phil Kitzes reported he has not yet received a response to his inquiry to Fereshteh Dehkordi at Department of Local Services (DLS). Mr. Kitzes says the seeming “silence” on updates is due to the nature of the permit review process, as well as COVID-19 delays. DLS staff are now working on responses to submitted comments. Mr. Kitzes will report to the CRC as soon as he hears from DLS. Max Prinsen added that DLS Director John Taylor told him the pandemic caused an exodus of inspectors; the agency is hiring more and will hopefully be able to make more progress soon.
- **WRIA 8:** Corinne Young updated on the recent Salmon Recovery Council (SRC) meeting. The SRC discussed a service provider client survey and received an update from Abby Hook on the County’s “Clean Water, Healthy Habitat” initiative, similar to an update given to the CRC prior. The SRC’s “Diversity, Equity, and Inclusion” subcommittee voted to adopt its framework, and there was a WRIA 8 progress report for 2020.
- **Fish Habitat Conservation/Restoration (Sockeye):** Mr. Prinsen said CRC work on the sockeye plight has raised awareness for many agencies and organizations. Larry Phillips added Jim Scott of WDFW continues to lead work by co-managers at the state level, and all major players are communicating with each other. Mr. Brown hopes for Mr. Scott or a USACE representative to present to the CRC soon. Mr. Phillips said Frank Urabeck has put Mr. Scott and others at the state level “on notice” to come up with a definitive plan for immediate action. Mr. Prinsen noted Mr. Urabeck’s significant work behind the scenes on this issue.
- **Cedar River Watershed:** Jamie Thompson of Seattle Public Utilities reported that as of yesterday, the Cedar watershed is at 146% of normal snowpack levels and likely to increase, which bodes well for the water supply.
- **CRC Member Updates:** There were no updates.

VI) Public Comment Period: Max Prinsen reported his neighborhood organization, SHADOW, is seeing increased concern from residents regarding potential wildlife dangers, such as coyotes, to themselves and pets. SHADOW is creating a format where residents can ask questions; a website should be up in the next several months to provide information and direction for residents to coexist with wildlife.

VII) Closing / Adjourn:

Nathan Brown said the next CRC meeting is scheduled for April 27, 2021 and he plans to have an update from Jim Scott and the USACE.

Tonight’s meeting adjourned at 8:00 pm.