

Citizens for a Clean Columbia

Our mission: to advocate for a clean Columbia River ecosystem
NEWSLETTER JANUARY 2023

Who are we?

Citizens for a Clean Columbia (CCC) is a volunteer organization focused on advocating for the health of the Upper Columbia River (UCR) and Lake Roosevelt. Visit us on our website <https://citizensforacleancolumbia.org> or on Facebook <https://www.facebook.com/groups/315230442457913/> or contact us at citizensforacleancolumbia@gmail.com.

News in Brief

Human Health Risk Assessment RMAOs

- EPA drafted preliminary remedial action objectives (RAOs) to assist in identifying and evaluating potential remedial alternatives that address human health risks identified in the final site-wide Human Health Risk Assessment (HHRA). The RAOs were distributed to CCC and the participating parties for comments in November 2022.

Sediment Transport Study (no accompanying article)

- A phased sediment transport study to evaluate erosion and deposition of sediment is planned to support the UCR RI/FS. EPA is working with Teck American Incorporated (TAI) to plan and conduct the study. Current discussions include refinement of hydrodynamic modelling and development of other tools to predict movement of sediment in the system.

Northport Residential Soil Cleanup (no accompanying article)

- EPA returned to Northport in August 2022 and completed cleanup of contaminated soil at 14 residential properties and one common-use area.

White Sturgeon Recovery Plan

- The assessment of risk to white sturgeon is a key part of the upcoming Aquatic Baseline Ecological

Risk Assessment (Aquatic BERA). EPA is working with DOI and fishery personnel from the Colville Confederated Tribes and the Spokane Tribe to develop a conceptual site model for exposure of white sturgeon to contaminants in the UCR. This exposure model will serve as a guide for that part of the aquatic BERA.

Air Monitoring Dilemma

- Jamie Paparich presents her concerns about the EPA conclusion that additional air monitoring of Northport would not be necessary as part of the UCR final site-wide HHRA.

Protecting the Columbia River Watershed

- Our watershed has multiple tributary rivers and creeks. This article reviews several vital programs working to improve the condition of these tributaries.

Columbia River Treaty Update

- Round 14 of the negotiations between the U.S. and Canada, conducted in October 2022, leads to identification of areas of common ground on aspects of flood risk management, hydropower coordination, ecosystem cooperation, and increased Canadian operational flexibility.
- The U.S. NGO Treaty Caucus is a relatively new group working for a modernized treaty.
- The North American Youth Parliament for Water has a grant to run a series of round tables to amplify youth voices in the Columbia River Basin.

Technical Advisor Update

- Joe focused over the past six months on reviews of the draft BERA and RI Reports for the upland portion of the UCR Site, planning for the sediment transport study, review of the HHRA RMAOs, development of the sturgeon conceptual site model, and oversight of Soil Amendment Technology Evaluation Study (SATES) sampling.

HHRA Remedial Management Action Objectives

EPA drafted preliminary remedial action objectives (RAOs) for human health risks and distributed them as a memo to CCC and the participating parties for comments in Nov 2022.

RAOs are developed to clarify the goals of any actions that may need to be taken to reduce identified risks to acceptable levels at the site. RAOs are intended to help to inform the scope of potential remedial action alternatives that may be evaluated in the site Feasibility Study. The memo provided preliminary recommendations related to upland human health risks that were identified through the Upper Columbia River Site-Wide HHRA.

The 4 objectives were:

- Reduce exposure of residents to lead and arsenic in soil and sediment to levels that do not result in unacceptable site-related risks. Prevent unacceptable site-related risk from exposure to methylmercury, dioxins and dioxin-like PCBs in fish harvested from the UCR.
- Reduce exposure of tribal communities to lead and arsenic in soil, sediment and plants to levels that do not result in unacceptable site-related risks. Prevent unacceptable site-related risk from exposure to methylmercury, dioxins and dioxin-like PCBs in fish harvested from the UCR.
- Prevent unacceptable risk to outdoor workers from exposures to lead and arsenic in UCR beach soil, surface, and subsurface sediment at public beaches.
- Prevent unacceptable site-related risks to recreational visitors who use the UCR for beach day trips, boating, camping, swimming, and fishing from lead and arsenic in surface sediment and beach soil at public beaches and relict floodplains, and to methylmercury, dioxins, and

dioxin-like PCBs to levels that do not result in unacceptable site-related risks.

The format of these objectives is intended to be general to avoid unnecessary restriction of remedial alternatives that may be considered. For the purposes of this document, unacceptable lead exposure was defined as having no more than a 5% probability having a blood lead level of 5 µg/dL; for non-cancer risks a hazard index of no more than 1; or a cancer risk of no more than 10⁻⁴.

Mindy Smith, CCC secretary

White Sturgeon Recovery Plan

The assessment of risk to white sturgeon is a key part of the upcoming Aquatic BERA. As part of the planning process, EPA consulted with white sturgeon experts to develop a white sturgeon conceptual site model to serve as a guide for conducting the risk analysis. CCC had an opportunity to provide comments on the memo draft.

The memo contained a white sturgeon exposure profile developed to inform the site model. Areas of the life cycle addressed were spawning, free embryos, larvae, and juveniles. The memo concluded that white sturgeon spawn successfully in the UCR in two known locations – Northport and China Bend. The eggs hatch successfully and free embryos, a critical life stage that can be injured through exposure to metals in slag, drift downstream and disperse to favored hiding substrates. The first-feeding larvae (8-16 days post-hatch) drift and disperse, settling between China Bend and Evans; this is another critical life stage in which sturgeon may be exposed to metals related to slag. Feeding larvae (17-45 days post-hatch) and juveniles (46 days to <1-year post-hatch) are effectively absent from the UCR.

Our comments included a concern that the model did not reflect what is currently known about white

sturgeon spawning and failed to include reference to the monitoring program, initiated by the tribes, on the relationship between flows and predation on White Sturgeon eggs in the Waneta spawning area. In addition, the figure provided did not include considerations other than flow velocity (e.g., temperature sensitivity for hatching, physical hazards to egg survival, and adequate food sources). Finally, although it is true that feeding larvae and fry are “not found in UCR naturally”, it would be more accurate to say that they are “no longer found naturally in the UCR”. Survival for released fry is estimated to be approximately 28% for the first 6 months in the river.

White sturgeon are an important part of restoring ecosystem function to the Columbia River. The 2012 Upper Columbia White Sturgeon recovery plan (<https://www.nwcouncil.org/sites/default/files/uppercolsturgeonplandec2012.pdf>), based on an adaptive management approach, is a guiding document prepared by Canadian and U.S. Federal, Provincial, and State agencies, Canadian and U.S. tribes, and other stakeholders. White sturgeon, once abundant, are now threatened with extirpation from this geographic area. A main concern is the near absence of juveniles. Although major restoration efforts are handled outside the RI/FS process, the Aquatic FS document is expected to complement the restoration plan. EPA expects that the scoping period for the Aquatic BERA will include several information exchanges to define how risks to white sturgeon will be evaluated in the Aquatic BERA.

Mindy Smith, CCC secretary

Air Monitoring Dilemma

The EPA concluded that additional air monitoring of Northport would not be necessary as part of the FINAL SITE-WIDE HUMAN HEALTH RISK ASSESSMENT: UPPER COLUMBIA RIVER SITE,

because they did not believe the community was at risk, based on their evaluation and analysis of the results of the air monitoring studies Teck conducted at Sheep Creek between 1999 – 2009, as well as data from the Columbia Gardens air monitoring station from 2012-2014. The EPA provided a technical description of their analysis of Teck’s air monitoring results, specifically the results from 1999, which they used to make their decision. These were:

-
1. For arsenic, air concentration reported from the Sheep Creek monitor was 0.00421 ug/m³.
 2. For cadmium, air concentration reported from the Sheep Creek monitor was 0.00136 ug/m³

It is of note that these concentrations exceeded the Acceptable Source Impact Level (ASIL), the Risk-Based Concentration (RBC) level, and the minimal risk level (MRL, an Agency for Toxic Substances and Disease Registry screening level). These are the standards used by the EPA to evaluate the risk that chronic exposure to the toxins (arsenic and cadmium) will pose to the impacted population. *(Per EPA: ASIL is a Washington state screening level used for new source review (e.g., in the context of new minor/major air permitting actions). Exceeding an ASIL would require State to do additional review/modeling as part of the permitting process and does not necessarily equate to an unacceptable human health risk).*

Unfortunately, the actual concentrations of these heavy metals are likely much higher than Teck reported. The Washington Department of Ecology (DOE) noted that, “A comprehensive analysis of confidence in the accuracy and representativeness of all the available monitoring and emissions data compiled and reviewed as part of this evaluation is limited.” DOE conducted [4 Phases of Air](#)

[Monitoring Studies](#) in Northport between 1992 – 1999. The results from DOE’s Phase 4 1999 Air Monitoring study were:

1. For arsenic, the annual average level was 0.02 ug/m3 when analyzed by graphite furnace atomic absorption spectrophotometry and 0.03 ug/m3 when analyzed by inductively coupled plasma optical emission spectrometry. These values are 86 and 130 times higher than the ASIL.
2. For cadmium, the annual average level was 0.01 ug/m3, which is 18 times the ASIL.

In 2017, DOE published a report entitled “[Upper Columbia River Valley: Preliminary Review and Evaluation of Available Air Quality Monitoring Data and Consideration of Potential Present-Day Health Risks.](#)” They concluded, “*Previously interpreted air monitoring data from 2009 through 2014 suggest that current emissions from the Trail smelter continue to influence upper Columbia River valley air quality. These findings reinforce the need for current PM10 speciation monitoring in the upper Columbia River Valley near the international border and Northport area.*”

The description of the methods of the Final Site-Wide Human Health Risk Assessment: Upper Columbia River Site is “*This HHRA evaluated risks under the assumption that no additional steps are taken to remediate the environment or to reduce human contact with contaminated environmental media...The HHRA results are believed to be sound and appropriate to support remedy selection and risk management.*” The HHRA did conclude that there is unacceptable site risk, although it is primarily driven by lead and arsenic in soil.

I encourage the EPA to read the results of our [community health surveys](#) that we have

conducted over the years and reconsider air monitoring to understand and potentially mitigate continued risks.

Jamie Paparich, CCC board member

Protecting the Columbia River Watershed

The Columbia River Watershed has multiple small and large tributary rivers and creeks. Several vital programs are working to improve the condition of these tributaries including the Voluntary Stewardship Program, Floodplains by Design, and the Stevens County Conservation District.

The Voluntary Stewardship Program (VSP) is an alternative way for counties to protect critical areas such as wetlands, fish and wildlife habitat conservation areas, frequently flooded areas, areas of geological instability and aquifer recharge areas. This "opt-in" option for counties may help avoid possible constraints on agricultural imposed by the Washington Growth Management Act. The Washington Growth Management Act was enacted by the Washington legislature in 1990 to guide planning for growth and development in Washington State. The Act requires local governments in fast-growing and densely populated counties to develop and adopt comprehensive plans. VSP aims to find a balance between the environment's protection and agricultural viability through voluntary, locally-driven solutions. These solutions are site-specific and may contain "best management practices" for agricultural producers that have land that intersects with the above-mentioned critical areas. To learn more about this program, search for “VSP” at stevenscountywa.gov.

Floodplains By Design is a public-private partnership led by Puget Sound Partnership, Bonneville Environmental Foundation, and Washington Department of Ecology with the goal to reduce flood

risks to farms and communities by restoring habitat along major rivers. This will improve resiliency of the floodplains, protect communities and support Washington values such as agriculture, clean water and outdoor recreation. The funds and technical resources for floodplain restoration supports projects that are site-specific and, many times, help farmers deal with flooding and erosion issues in our watersheds. To learn more about this program go to <https://www.floodplainsbydesign.org>.

The Stevens County Conservation District's mission is to promote the wise use of renewable resources within Stevens County. This is a non-regulatory agency that provides technical and financial assistance to landowners and farmers and helps bridge the gap between local landowners and state/federal governments. Projects can range from riparian area protection to water quality to agricultural production. The conservation district employees are knowledgeable about best-management practices that may be used by agricultural producers or landowners to improve water quality, soil health or agricultural success. These practices have been determined to be effective and practical. For more information contact sccd@stevenscountywa.gov.

Eleanor Mattice, CCC board member

Columbia River Treaty (CRT) Update

The US negotiating team, led by the State Department, has remained mostly silent about their positions around the Columbia River Treaty. This is despite a deadline for responses of September 2024 and stands in stark contrast to the Canadian negotiating team that has prioritized public engagement. On October 6th 2022, Round 14 of the negotiations was concluded with identification of areas of common ground on aspects of flood risk management, hydropower coordination, ecosystem

cooperation, and increased Canadian operational flexibility (<https://www.state.gov/conclusion-of-round-14-of-negotiations-to-modernize-the-columbia-river-treaty-regime/>). Much remains to be done, and despite the rhetoric on the US side regarding their commitment to support a “healthy and prosperous Columbia River Basin”, details about the outstanding issues and where the US stands on them remain unstated.

There was a workshop conducted in conjunction with the negotiations to allow additional conversation, and First Nations were pleased with their level of participation in the process. Additional information on these discussions is not available.

The U.S. NGO Treaty Caucus is a relatively new group made up of Northwest-based civic, faith, energy, and conservation organizations including the Center for Environmental Law and Policy, Earth Ministry/Washington Interfaith Power & Light, League of Women Voters of Washington, Natural Resources Defense Council, Northwest Energy Coalition, Save Our wild Salmon Coalition, Sierra Club and WaterWatch of Oregon (<https://columbiarivertreaty.org>). This group is working for a modernized CRT with an emphasis on ecosystem function to serve the diverse needs of the region now and into the future. The group is urging others to write to the Biden administration to work with Northwest people to modernize the treaty and engage in a transparent and inclusive manner with those most effected. They provide a sample letter and access to updated information about the treaty.

Also, on our last call with the Columbia Round Table, I learned about the North American Youth Parliament for Water from two leads, Kate Brown and Henry Pitts from UBC Okanogan (<https://youthforwater.org/parliament/north-american-youth-parliament-for-water/>).

The group was awarded a grant to run a series of round tables to amplify youth voices in the Columbia River Basin around water issues and the CRT. They plan to have experts for plenaries and are looking at what would be ideal for protecting the watershed. The sessions will be held on Feb 11-12, 2023 and will be recorded. They plan to bring a summary of this effort to the UN Water Conference in March.

Mindy Smith, CCC secretary

Technical Advisor Report

My efforts over the past six months focused on the baseline ecological risk assessment remedial investigation (BERA RI), the sediment transport study, the human health risk assessment remedial action objectives (HHRA RAOs), the sturgeon conceptual site model (CSM) and the soil amendment technology evaluation (SATES) study. Several of these projects involved reviewing Power Point presentations by TAI and EPA.

I reviewed EPA's August 2022 comments on TAI's July 2022 response to the EPA comments on TAI's April 2022 draft interim partial upland RI. I had no additional comments.

I reviewed TAI's hydrodynamic modeling Power Point slide deck from the September 14, 2022 EPA/TAI meeting. I found it challenging to fully evaluate the slides without the verbal commentary typically provided by the presenter. I suggested that inclusion of a map with river miles and reaches would benefit the audience. I also requested a list of EPA-recommended models and the appropriate situations for the models. The presentation mentioned 3-dimensional capability, but only 2-dimensional modeling was presented. I also requested clarification on how water levels and velocities will be used for model calibration.

I reviewed EPA's comments on the TAI hydrodynamic modeling Power Point slide deck from

the November 11, 2022 EPA/TAI meeting. I had no additional comments.

I reviewed TAI's model bathymetry overview Power Point slide deck from the October 21, 2022 EPA/TAI meeting. I suggested addition of a discussion of potential reasons for and impact of the major differences between the Bureau of Reclamation and TAI data. I also suggested addition of a y-axis scale and an insert expanding low y-axis values for several slides.

I reviewed the draft HHRA RAOs and had only one minor editorial comment. This is the first EPA document to present a target blood lead level of 5 micrograms per deciliter ($\mu\text{g}/\text{dL}$) for children. This level roughly equates to a 200 parts per million (ppm) soil lead level target, slightly lower than the Washington State Department of Ecology cleanup level of 250 ppm.

I observed SATES soil sampling in October 2022. All sampling was performed by the same team, resulting in consistent soil sampling in all plots and subplots. The impact of soluble phosphate application was less noticeable than in previous sampling events. The subplots that received soluble phosphate were only slightly greener than the other subplots. The biochar has blended into the surroundings and was not apparent without looking for it. The perlite from the compost application was still quite visible. The data summary report for 2022 soil sampling is expected in the first quarter of 2023.

The sturgeon CSM was developed over three drafts during the last quarter of 2022. The process included published information and personal communications from the tribal and state fisheries. The document will be used to guide assessment of risks to sturgeon in the Aquatic BERA.

Joe Wichmann, PhD; CCC Technical Advisor

Want to be More Involved?

CCC welcomes new members. Our next General Member Meeting will be in the fall. Please join us. We will post updated information on Facebook (<https://www.facebook.com/groups/315230442457913/>). We also have new CCC T-shirts available that can be obtained from Hilary Ohm (hilary@highwaterfilters.com).



With questions for the EPA project managers, contact Robert Tan for information on Human Health Risk Assessment or Soil Amendment Technology Evaluation Study (SATES) at Tan.Robert@epa.gov and Bonnie Arthur for information on ecological studies at Arthur.Bonnie@epa.gov. Concerns may also be directed to the EPA Region 10 Deputy Regional Administrator Michelle Pirzadeh (Pirzadeh.Michelle@epa.gov) or regional administrator Casey Sixkiller (Sixkiller.Casey@epa.gov).