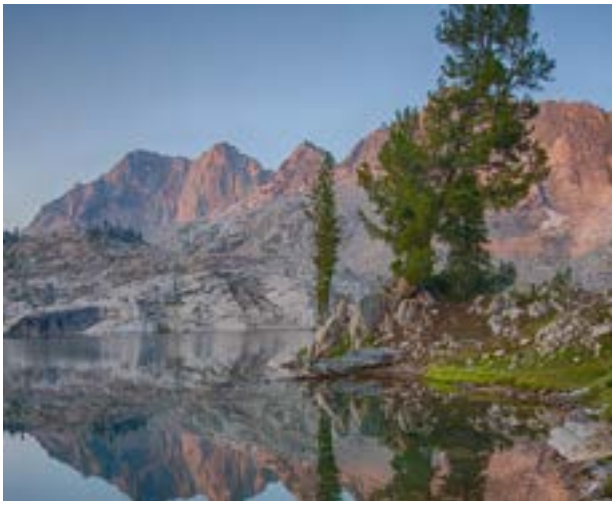
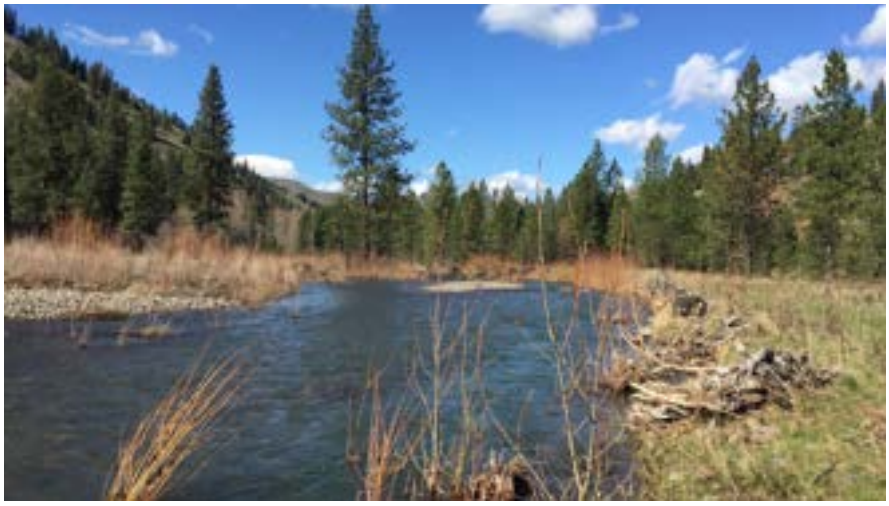
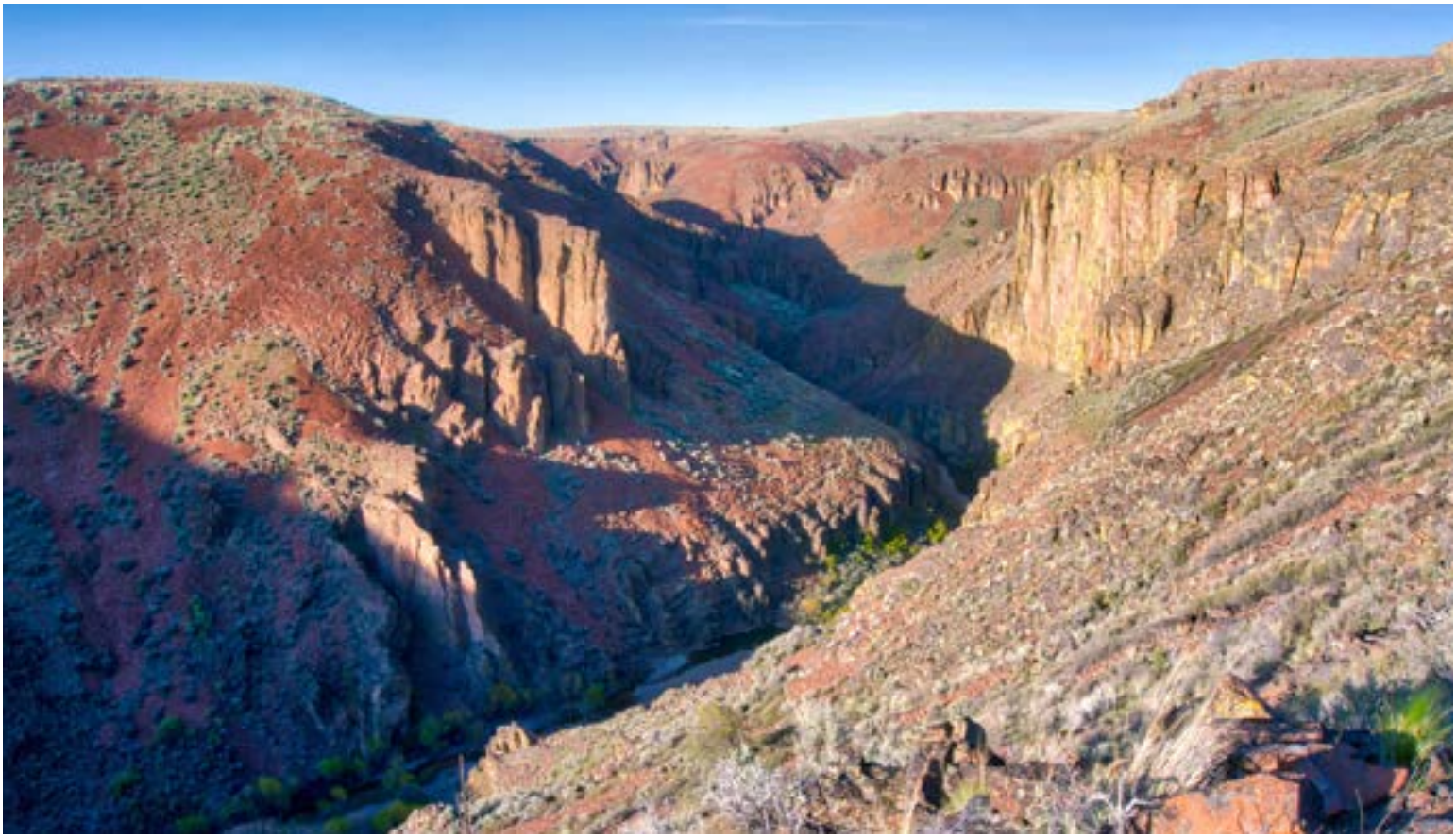




EPA

COLUMBIA RIVER BASIN
RESTORATION PROGRAM

2022 Update
Clean Water Act Section 123
Columbia River Basin Restoration Program



COLUMBIA RIVER BASIN
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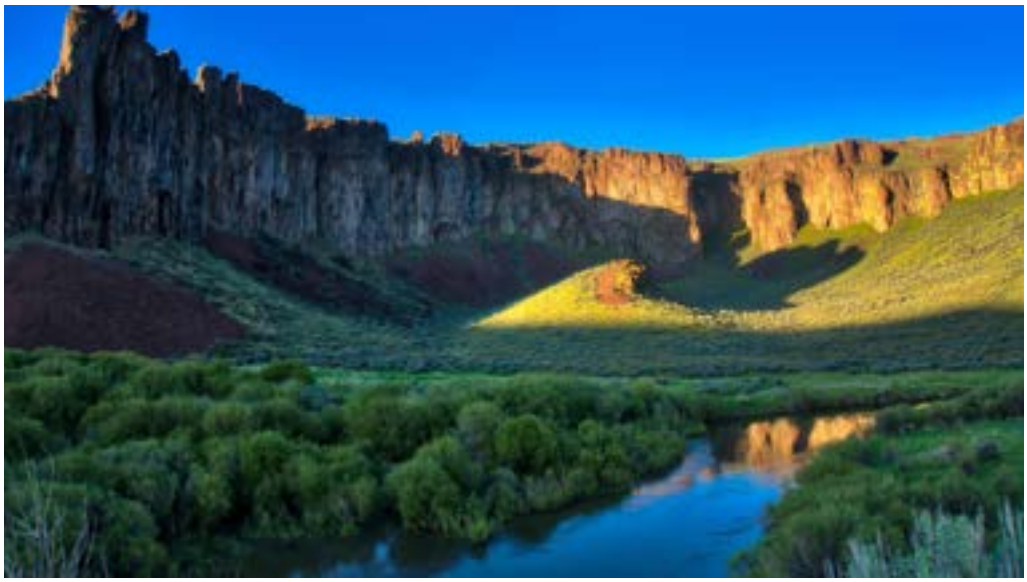

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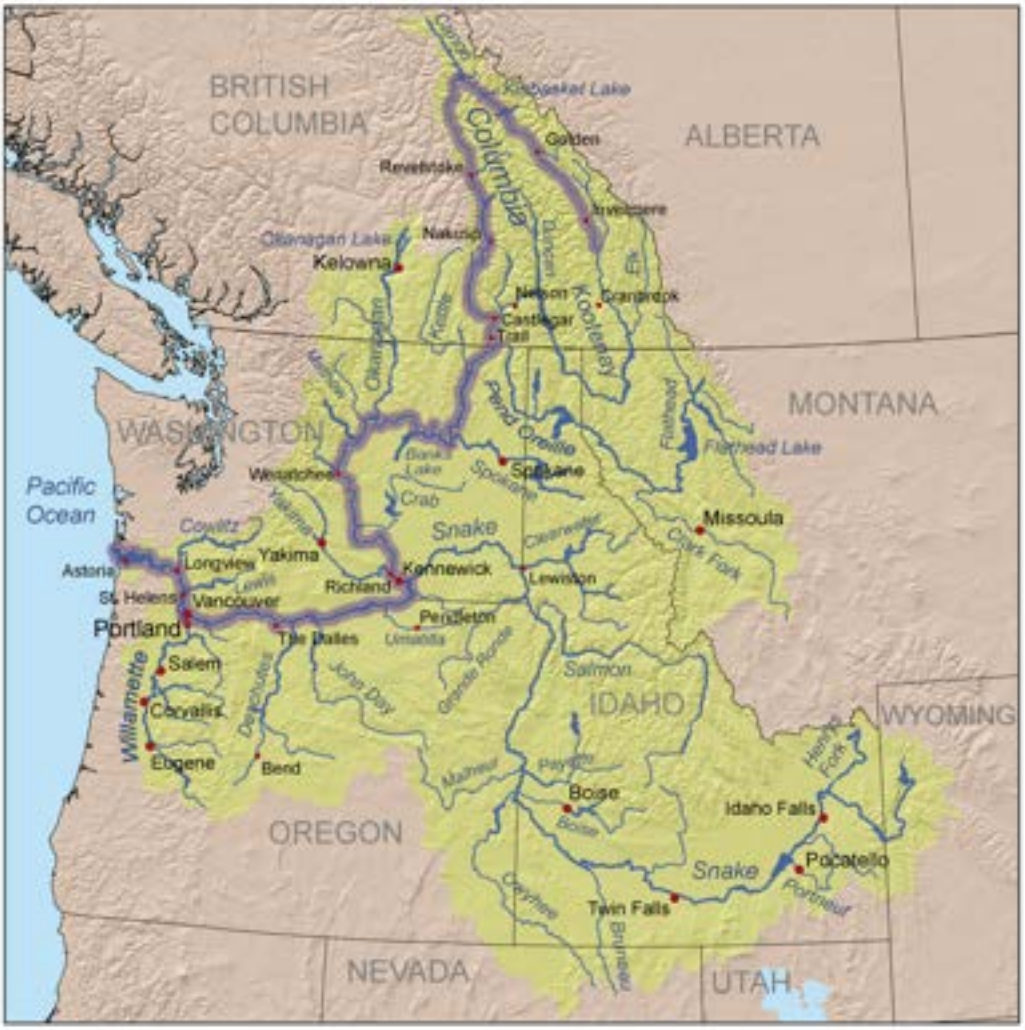
OVERVIEW

This report is an update on work efforts in the Columbia River Basin to identify and reduce toxic contaminants which threaten the health of people, fish, and wildlife in the Basin. This work has been led through a broad effort based on coordination and partnerships begun by the Columbia River Toxics Reduction Working Group in 2005 and more recently by the Columbia River Basin Restoration Program Working Group (Working Group). The Working Group collaborates to develop and implement toxics reduction and assessment actions including water quality monitoring, agricultural best management practices (BMPs) and performance-based certification programs, green infrastructure, safer chemistry, public education, collection and disposal of pesticides and pharmaceuticals, and contaminated site cleanups.

This report provides information about the Basin, known toxics found in waters of the Basin, Clean Water Act Section 123, the efforts of the Columbia River Basin Restoration Program, and highlights from recent efforts that are reducing or preventing discharges of toxics in the Basin.



BACKGROUND: ABOUT THE BASIN

The Columbia River Basin is a diverse and enormously productive ecosystem where over eight million people live, work, and play. The headwaters of the Columbia River originate in British Columbia, Canada. The U.S. portion of the Basin covers approximately 260,000 square miles and drains areas of Montana, Idaho, Washington, and Oregon and smaller portions of Wyoming, Nevada, and Utah, as well as 16 federally recognized tribal reservations.

The Basin provides a broad range of benefits including fisheries, agriculture, forestry, recreation, and electric power generation. However, human activities have contributed toxic contaminants to the environment that pose a risk to human health and threaten the health of important species and habitats in the Basin.

Fish populations and fisheries are particularly impacted by toxic contaminants found in the Basin. Toxics in fish are a primary concern for tribal people in the Basin because they consume significantly more fish than other residents. There are many community groups, organizations, government agencies, tribal governments, farmers, and individuals across the Basin working to protect and restore Basin watersheds and improve water quality.

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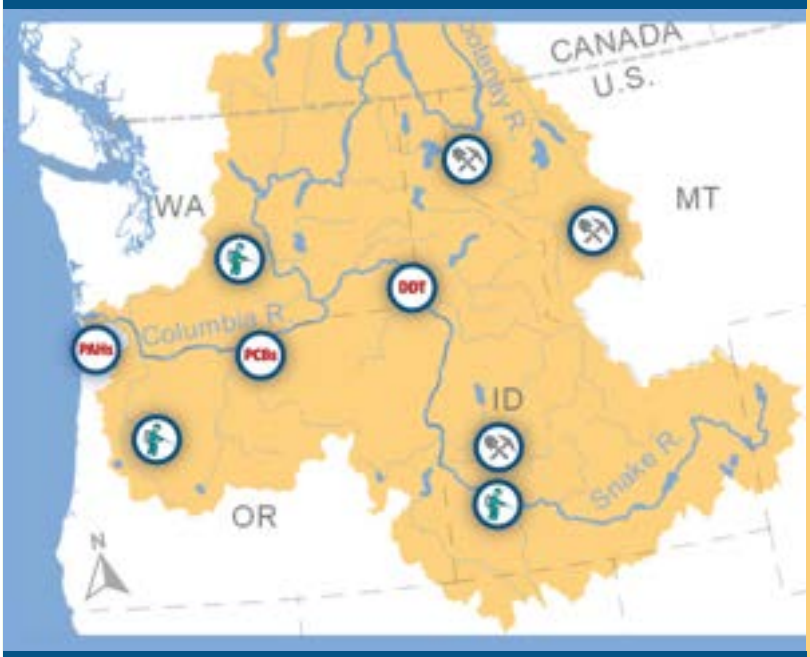

Note: Areas of pollution identified on this map are intended to show the breadth of toxics issues across the Basin, but do not represent a comprehensive inventory of all areas where pollutants exceed water quality criteria. For more detailed information on waters impaired by toxics, consult your state's 303(d) list.

MERCURY, LEAD, OR SELENIUM

What are they? Heavy metals that are naturally occurring and used historically and currently in many industrial operations, including mining activities.

How do they get into water? Primarily through erosion and runoff of contaminated soils and through atmospheric deposition. Often found in basins with lakes with large surface areas that receive them through deposition.

Why are they a problem in water? They bioaccumulate in people, fish, and wildlife and can adversely affect human health.

Example Solutions: Soil erosion prevention and control and outreach to known user groups (e.g., dentists, school labs) can reduce levels in surface waters.

CHLORPYRIFOS AND MALATHION

What are they? Organophosphate insecticide used since the 1960s for certain agricultural crops and, historically, for urban insect control.

How do they get into water? Pesticide spray drift and runoff to streams.

Why are they a problem in water? They are acutely toxic to aquatic life at very low levels.

Example Solutions: Pesticide Stewardship Partnerships and technical assistance to agricultural partners on practices that reduce impacts to water.

DDT AND ITS BREAKDOWN PRODUCTS

What are they? Organochlorine insecticides widely used to control insect-borne diseases and to control agricultural and urban pests from the 1940s through early 1970s.

How do they get into water? Soil erosion and runoff of contaminated soils.

Why are they a problem in water? They persist in soil and water for decades, bioaccumulate in people, fish, and wildlife, and can adversely affect human health in multiple ways.

Example Solutions: Erosion prevention and control and collection of legacy pesticides keeps them out of water environments.

PCBS (POLYCHLORINATED BIPHENYLS)

What are they? Historically used in oils and other fluids for heat resistance in electrical equipment, as well as many other industrial uses (e.g., paints, caulking). Still inadvertently produced as a by-product of certain manufacturing processes (e.g., inks).

How do they get into water? Soil erosion and runoff of contaminated soils, historical spills and industrial discharges to water, and atmospheric deposition.

Why are they a problem in water? They persist in soil and water for decades, bioaccumulate in people, fish, and wildlife, can adversely affect human health in multiple ways, and have acute and chronic effects on aquatic life.

Example Solution: Cleanup activities (e.g., Bonneville Dam) are effective at removing PCBs and other toxics.

PAHS (POLYCYCLIC AROMATIC HYDROCARBONS)

What are they? Fuel combustion by-products and petroleum constituents.

How do they get into water? Soil erosion and runoff of contaminated soils, petroleum spills, and atmospheric deposition.

Why are they a problem in water? They can bioaccumulate in people, fish, and wildlife, can adversely affect human health in multiple ways, and can have acute and chronic effects on aquatic life.

Example Solutions: Removing or capping sites with PAHs prevents them from entering waterways, and reducing fuel combustion and preventing oil spills reduce contamination.

PRESENCE OF TOXIC CONTAMINANTS IN THE BASIN

Historic and ongoing activities in the Basin have contributed to impaired water quality that can affect people's health and threaten fish and wildlife species survival. In many of the Basin's water bodies, fish species have accumulated levels of contaminants that are harmful to both people and wildlife predators. Toxics in the Basin include chemicals and metals that are known to negatively affect fish, wildlife, and human health, such as:

- metals,
- legacy and current-use pesticides,
- polychlorinated biphenyls (PCBs),
- dioxins/furans,
- runoff from hazardous waste and mining sites,
- flame retardants, and
- pharmaceuticals and personal care products.

EPA has been working in the Basin to reduce pollution from toxic contaminants and improve the health of the Basin's ecosystem for humans and wildlife. Foundational efforts include the 2009 State of the River Report and the 2010 Columbia River Toxics Reduction Action Plan, which are continuing to inform the Columbia River Basin Restoration Program.

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CLEAN WATER ACT SECTION 123 – FEDERAL ACTION TO RESTORE THE BASIN

Congress amended the Clean Water Act (CWA) in 2016, which directed EPA to establish a Columbia River Basin Restoration Program with a voluntary, competitive grant program for eligible entities to fund environmental protection and restoration efforts throughout the Basin. Eligible entities include state, tribal, and local governments; regional water pollution control organizations, nongovernmental organizations, and soil and water conservation districts. Funded work must be for the purpose of environmental protection and restoration activities within the Columbia River Basin and may include programs, projects, and studies. EPA funded 14 projects in the 2020 inaugural round of CWA Section 123 grants that address the following four priorities:

1. *Increase monitoring and increase access to data from monitoring.*
2. *Reduce stormwater and agricultural runoff.*
3. *Reduce toxics through small scale cleanup of non-CERCLA contaminated sites.*
4. *Promote community engagement, education, and involvement to increase pollution prevention actions.*

The Act also directed EPA to establish the Columbia River Basin Restoration Working Group, comprised of representatives from tribal governments, states, industry, non-governmental organizations, and others. The Act recognizes the importance of an ecosystem focus, supported by local collaboration and leadership, to reduce toxics and improve water quality for a healthier watershed for future generations.

EPA'S COMMITMENT TO TRIBAL HEALTH PROTECTION, ENVIRONMENTAL JUSTICE, AND CLIMATE CHANGE

The Columbia River Basin Restoration Program was was founded with the the goal to reduce toxics in the Basin to better protect the health of high fish consumers, especially tribal fish consumers. EPA's commitment to tribal health is part of the Agency's ongoing trust responsibility to tribal governments. The Columbia River Basin Restoration Program strives to engage tribal and other environmental justice communities in efforts to identify and reduce threats to their environment and community health.

Because toxics can build up in fish exposed to contaminants, high fish consumers like tribal people and other subsistence fishers are more exposed to toxic contaminants in fish and wildlife and face increased health risks. Toxic contamination of fish and water is a significant public health issue for tribal people and other high fish-consuming populations. Tribal people are working to restore their watersheds and increase fish consumption to honor traditional tribal heritage and culture. Toxics reduction will require specific actions such as reducing stormwater pollution, increasing green infrastructure, improving and expanding use of agricultural best practices, other pollution prevention efforts, public education, and increased monitoring of toxic contaminants in the Basin. EPA is committed to focus work efforts to benefit underserved communities to ensure that toxics reduction and health protection is provided in an equitable way across the Basin.

Both the ongoing and future impacts of climate change are creating significant risks to human health, the environment, cultural resources, the economy, and quality of life. Climate change impacts are expected to create further challenges in our efforts to protect human health and welfare and the environment. Toxics reduction can provide climate resilience for people and the Columbia River Basin ecosystem by reducing these aquatic ecosystem and human health stressors in an environment stressed by severe climatic events.

COLUMBIA RIVER BASIN RESTORATION PROGRAM ACCOMPLISHMENTS

The Columbia River Basin Restoration Working Group

In 2005, EPA joined tribal, state, federal, local, industry, and nonprofit partners to form the collaborative Columbia River Toxics Reduction Working Group to share information, coordinate activities, and develop strategies to identify and reduce toxics in the Basin.

In October 2020, EPA transitioned the Columbia River Toxics Reduction Working Group into the Clean Water Act Section 123 Columbia River Basin Restoration Working Group, creating the representative collaboration group required by Act. The goal of the Working Group is to understand and reduce toxics throughout the Basin. The Working Group reflects the governmental, geographic, cultural, and economic diversity of the Basin and includes representatives from tribal governments, states, industry, utilities, non-governmental organizations, and others.

The Working Group meets two times each year, led and coordinated by EPA. During these meetings, Working Group members collaborate to:

- Exchange information on implementation of CWA Section 123, Columbia River Basin Restoration Program,
- Share relevant information on toxics reduction around the Basin,
- Learn about new science and toxics monitoring efforts,

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COLUMBIA RIVER BASIN RESTORATION WORKING GROUP MEMBERS *— OCTOBER 2021*

- City of Vancouver
- Clark County
- Clark Fork Coalition
- Columbia Insight
- Columbia Riverkeeper
- Confederated Tribes of Grand Ronde
- Eugene Water and Electric Board
- Hood River Soil and Water Conservation District
- Idaho Conservation League
- Idaho Power
- James Mc Ateer
- Ken Bailey, Orchard View Farms
- Kootenai Tribe of Idaho
- Lower Columbia Estuary Partnership
- Missoula City-County Water Quality District
- Montana Trout Unlimited
- Nez Perce Tribe
- Oregon Association of Clean Water Agencies
- Pacific Northwest Waterways Association
- Port of Portland
- Port of Vancouver
- Salmon-Safe
- State of Idaho
- State of Montana
- State of Oregon
- State of Washington
- Walla Walla Watershed Council
- Yakama Indian Nation

October 2019 Columbia River Basin Toxics Reduction Working Group Meeting Attendees (Photo Credit: Peter Murchie)

- Coordinate ongoing work across the Basin, and
- Create opportunities for cooperation and resource sharing.

Working Group meetings are open to the public, and anyone may participate. Meeting summaries and presentation materials are available on EPA's Columbia River website. The Working Group has developed a number of technical and informational products over the years (also available on EPA's website). These include:

- 2009 State of River Report,
- 2010 Columbia River Toxics Reduction Action Plan,
- 2014 Strategy for Measuring, Documenting and Reducing Chemicals of Emerging Concern,
- 2019 Status Report Update: Columbia River Basin Toxics Reduction,
- 2020 Toxic-Impaired Waterbodies on 303d Lists in the Columbia River Basin,
- 2020 Contaminants of Concern Framework, and
- 2021 Columbia River Basin Restoration Program Story Map.

EPA will continue to share information with the Working Group on the status and successes of grants funded through CWA Section 123, and future grant opportunities.

EPA invited a broad and diverse range of entities from across the Basin to participate in the Working Group, including: Governors of Oregon, Washington, Idaho, and Montana; 16 Tribal Governments; local and regional government agencies; industry and utility associations; soil and water conservation districts; non-governmental organizations; and interested private citizens. Participation in the Working Group is voluntary. As of March 2022, 28 entities have agreed to participate in the CWA Section 123 working group (listed to the left).

In addition to these members, more than 300 individuals from across the Basin are invited to attend and participate in Working Group meetings. EPA provides regular update emails to the Working Group and broader Columbia River Basin email list, which includes updates on implementation of CWA

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Section 123, funding opportunities, information on peer reviewed research, educational opportunities, and other information. Anyone is invited to be included on the Working Group email list.

EPA and USGS are co-leading a smaller, voluntary working group to discuss a Basin-wide water quality monitoring strategy. Though the goals and priorities of this group have yet to be determined, the intent is to collaborate with partners across the Basin to conduct monitoring in a way that provides the best data to the widest audience to help track and reduce toxics in the Columbia River and its tributaries.

Columbia River Basin Restoration Funding Assistance Program

In 2020, EPA announced 14 projects awarded with the inaugural round of Clean Water Act Section 123 funding assistance. EPA awarded a total of $2,053,903 in grant funding to projects that address one or more of the seven categories outlined by Section 123.

In 2021, success stories were published for 10 of the 14 projects with more results coming in each month:

- The Confederated Tribes and Bands of the Yakama Nation has drafted the Vision, Mission, Goals, and Objectives of the Columbia River Mainstem Fish Tissue and Water Quality Monitoring Framework. Work began on the community outreach plan that will guide this multi-year project to establish a long-term monitoring program that tracks the trends of toxics in fish, water, and sediment in the 600-mile mainstem Columbia River from the Canadian border to Bonneville Dam.
- University of Idaho's Water Resources Research Institute has completed seven official sampling events in the Spokane River Basin and the Boise River Basin and analyzed over 350 crayfish for the presence of mercury, and developed partnerships in the Basin that resulted in additional sample collection events.
- University of Montana's Flathead Lake Biological Station and the Confederated Salish and Kootenai Tribes of the Flathead Reservation have collected and analyzed 100 fish samples from Flathead Lake, and completed five sampling trips to collect zooplankton and shrimp as part of the monitoring program. Information from this study will be used to advise tribal communities on fish consumption.
- The Center for Urban Waters completed all of its water quality sampling events and started data analysis to work towards their goal of monitoring previously unmonitored contaminants in the Columbia River from the Portland metro area to Wauna, Oregon.
- Cascade Pacific Resources Conservation & Development worked towards addressing pollutants found in urban stormwater by establishing the Urban Waters & Wildlife Partnership framework, developing a marketing strategy for the program, adding 70 businesses to have their stormwater systems retrofitted, and conducted five business site visits to begin their project feasibility study. The project will also work to reduce peak stormwater runoff volumes within the Upper Willamette Metro Area, including the Cities of Eugene, Springfield, and Glenwood.
- Washington State Department of Ecology developed pollution prevention assistance outreach materials that were distributed by the City of Vancouver, prepared 30 Spill Preparedness Kits, began technical assistance visits to businesses, and held a workshop on Safe Pest Control. The work will support partners in Clark and Spokane Counties as well.
- Pacific Northwest Pollution Prevention Resource Center (PPRC) expanded support to the EcoBiz Program and Safer Chemical Alternatives Training Program, which focus on providing pollution prevention resources to the landscaping and automotive sectors. In the first year of the grant, PPRC conducted outreach to over 100 businesses in the greater Portland, Oregon metro area, offered technical assistance and training, and completed six EcoBiz evaluations.

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COLUMBIA RIVER BASIN RESTORATION PROGRAM VISION STATEMENT

"The EPA Columbia River Basin Restoration Program—through the implementation of CWA Section 123—will be a catalyst for Basin wide toxics reduction work efforts, enabling communities to access unimpaired watersheds with healthy fish and wildlife and quantifiable toxics reductions in fish, wildlife and water."

- Multnomah County/Clean Rivers Coalition hosted a Community-Based Social Marketing (CBSM) workshop, facilitated a focus group and listening session to better understand Latinx communities and barriers to reducing pesticide use, and held a forum to select pilot test CBSM strategies. The project will promote citizen engagement and knowledge through new video and social media content, digital advertising, and targeted outreach to Latinx communities in the Willamette, Hood, and Deschutes River watersheds, and areas in southwest Washington.
- Salmon-Safe was able was able to formalize commitments to pesticide-reduction measures with more than 19 farms and vineyards in the Basin, and created partnerships with other nonprofits and organizations in Oregon, north, central, and eastern Washington, and eastern Idaho.
- Columbia Riverkeeper launched four pollution prevention curriculum modules, two bilingual radio shows, created and distributed two bilingual pollution prevention fact sheets, and completed two community education webinars reaching Hood River, Wasco, and Klickitat Counties. Online-based materials will reach communities throughout the Columbia River Basin.

Results are still coming in on the remaining four FY20 projects:

- Washington State Department of Agriculture is conducting a sampling and monitoring effort within the Palouse and Yakima River watersheds. These sampling efforts are looking for more than 150 legacy and currently used pesticides in this agricultural region that is located upstream from critical habitat for Endangered Species Act listed species.
- Nez Perce Tribe Water Resources Division has partnered with the University of Idaho, the Idaho State Department of Agriculture, and the U.S. Fish and Wildlife Service to monitor toxics, metal, and nutrient levels in the Clearwater River watershed. Additionally, this project is conducting a small study to look for the presence of microplastics in sediment and fish tissue.
- Lower Columbia Estuary Partnership (LCEP) is working to improve water quality by using Grattix boxes (low-tech raingardens that reduce contaminants in stormwater runoff) to reduce zinc and copper discharges. The LCEP is partnering with the Port of Vancouver and Oregon State University to build and deliver Grattix boxes to industrial areas in both Washington and Oregon, roughly between the Portland/Vancouver metro areas to Longview, Washington.
- City of Vancouver Public Works Department is leading a study to conduct water quality sampling at six locations within the Columbia Slope sub-watershed in the greater Vancouver metro area to better understand how stormwater influences water quality. Water samples will be tested for temperature, pH, dissolved oxygen, metals, and nutrients to better drive decisions about how and where to make water quality improvements.

2022 REQUEST FOR APPLICATIONS

The second Columbia River Basin Restoration Funding Assistance Program requests for applications closed March 8, 2022. Eligible applicants were encouraged to apply. EPA plans to award approximately $6 million, depending on the quality of applications received. Applications must address at least one of the following categories: eliminating or reducing pollution; cleaning up contaminated sites; improving water quality; monitoring to evaluate trends; reducing runoff; protecting habitat; or promoting citizen engagement or knowledge.

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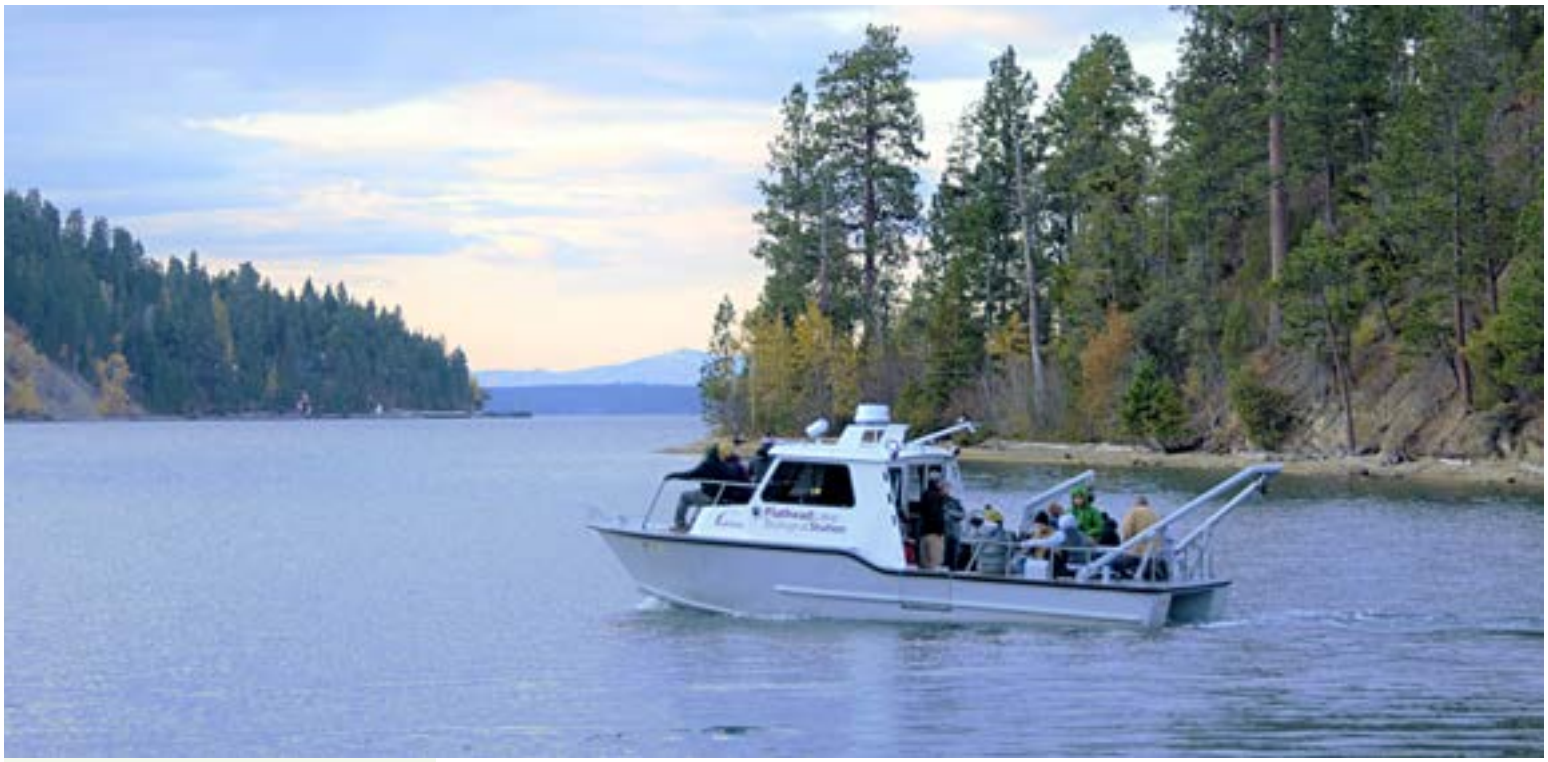
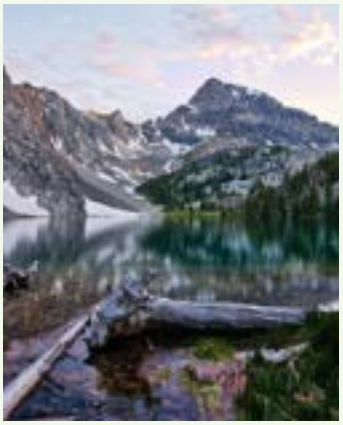


The Flathead Lake Biological Station's research vessel, the Jessie B (Photo Credit: Flathead Lake Biological Station)



FUTURE WORK/NEXT STEPS/NEEDS

The Basin contains a diversity of 16 tribal governments, seven states, varied ecosystems, and unique urban and rural communities. Much work remains to be done to build on successful toxics reduction actions completed and underway around the Basin. The Columbia River Basin Restoration Program has built a foundation of trust and cooperation from all areas of the Basin, reflecting the diverse and unique communities and people that will continue into the future.

As EPA leads the Columbia River Basin Restoration Program, the Agency will work to increase partnerships and collaboration through the Working Group—involving tribal governments, states, regional and local governments, non-governmental organizations, industrial representatives, federal agency partners, and the wider public. Leveraging these resources and expertise, EPA will:

- Increase monitoring and coordinate work efforts and information exchange across the Basin;
- Replicate and increase previously successful toxics reduction actions like green infrastructure, agricultural BMPs, pollution prevention actions, and small scale/non-CERCLA hazardous waste cleanups;
- Increase public education and engagement, especially to tribal and environmental justice communities; and
- Provide strong leadership, technology transfer, and information exchange with other EPA Geographic Programs throughout the nation.

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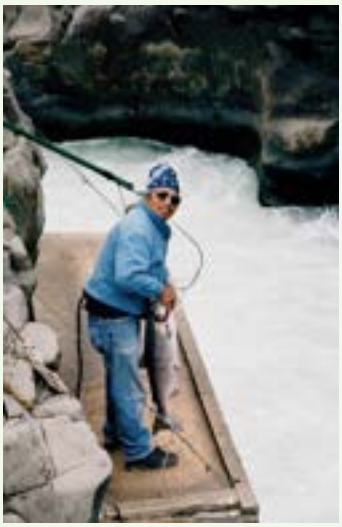

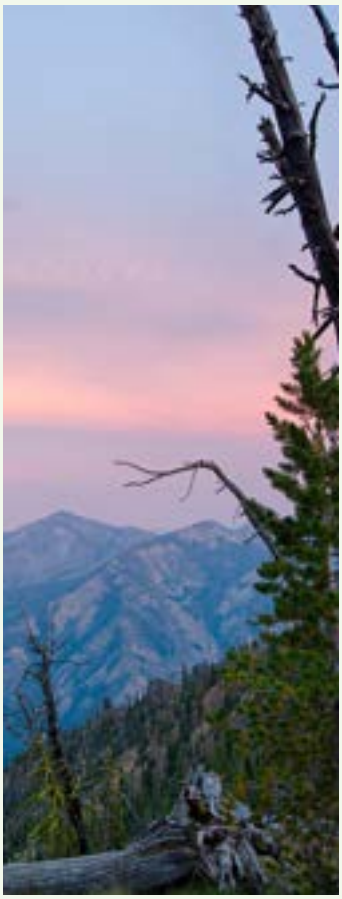

RESOURCES FOR MORE INFORMATION

- **EPA Columbia River Website** is where information about all of the Agency's work in the Basin can be found: ***https://www.epa.gov/columbiariver***
- **2007 Prioritization of Toxics in the Columbia River** was developed by the Columbia River Toxics Reduction Working Group to support their work to identify and reduce toxics in the Columbia River Basin: ***https://www.epa.gov/columbiariver/prioritization-toxics-columbia-river***
- **2009 State of the River Report for Toxics** is a summary of the science and assessment of four indicator toxic contaminants found in the Basin: ***https://www.epa.gov/columbiariver/2009-state-river-report-toxics***
- **2010 Columbia River Basin Toxics Reduction Action Plan** identified five strategies and 61 actions to help reduce toxics in the Basin: ***https://www.epa.gov/columbiariver/columbia-river-basin-toxics-reduction-action-plan***
- **2014 Columbia River Strategy for Measuring, Documenting and Reducing Chemicals of Emerging Concern** provides an outline for characterization of the biological impacts of CECs on aquatic and terrestrial wildlife and a research and monitoring strategy: ***https://www.epa.gov/columbiariver/chemicals-emerging-concern-columbia-river***
- **2019 Status Update:** Columbia River Basin Toxics Reduction provides information from Working Group partners on the most successful actions to reduce and assess toxics in the Basin to help craft a strategy for implementation of CWA Section 123 and future work efforts necessary to reduce toxics in the Basin to benefit human health and the health of fish and wildlife: ***https://www.epa.gov/columbiariver/2019-columbia-river-basin-toxics-reduction-status-update***
- **2020 Toxic-Impaired Waterbodies on 303(d) Lists** in the Columbia River Basin identified more than 50 toxic contaminants in the Basin and summarized the location of impaired waters for 10 contaminants. It is intended for use by the Columbia River Basin Restoration Working Group members: ***https://www.epa.gov/columbiariver/toxic-impaired-waterbodies-303d-lists-columbia-river-basin***
- **2020 Columbia River Basin Contaminants of Concern Framework** is intended to guide collaboration and implementation of toxics monitoring and reduction efforts across the Columbia River Basin. It is primarily intended as a reference for members of the Columbia River Basin Restoration Working Group and other entities working to assess, reduce, and/or clean up toxics in the watershed: ***https://www.epa.gov/columbiariver/columbia-river-basin-contaminants-concern-framework***
- **2021 Columbia River Cold Water Refuges Plan** is a scientific document with recommendations to protect and restore cold water refuges and protect migratory salmon populations: ***https://www.epa.gov/columbiariver/columbia-river-cold-water-refuges-plan***
- **EPA's Columbia River Basin Restoration Program Story Map** provides a comprehensive and interactive overview of toxics in the Basin and efforts underway to improve and protect the watershed: ***https://storymaps.arcgis.com/stories/24979f1fd3124cc7bb4c85147d38eedc***