Future Monitoring Needs in the Columbia River

Vision for a Long-Term, River-Wide, Fish Tissue Contaminant Trend Monitoring Program

May 7, 2019

Overview

- Background
- Monitoring Vision
  - Goals and Objectives
  - Spatial and Temporal Coverage
  - Analysis and Fish Species
- Next Steps

Background

- ***"Is it better or worse?"*** - Yakama Leadership
- Along the US portion of the Columbia River, effects of pollution have contributed to
  - declines in fish runs
  - ≥70% of mainstem Columbia has fish consumption advisories
  - Multiple CWA 303(d) listings throughout basin

2009 State of the River, EPA – with updates in yellow

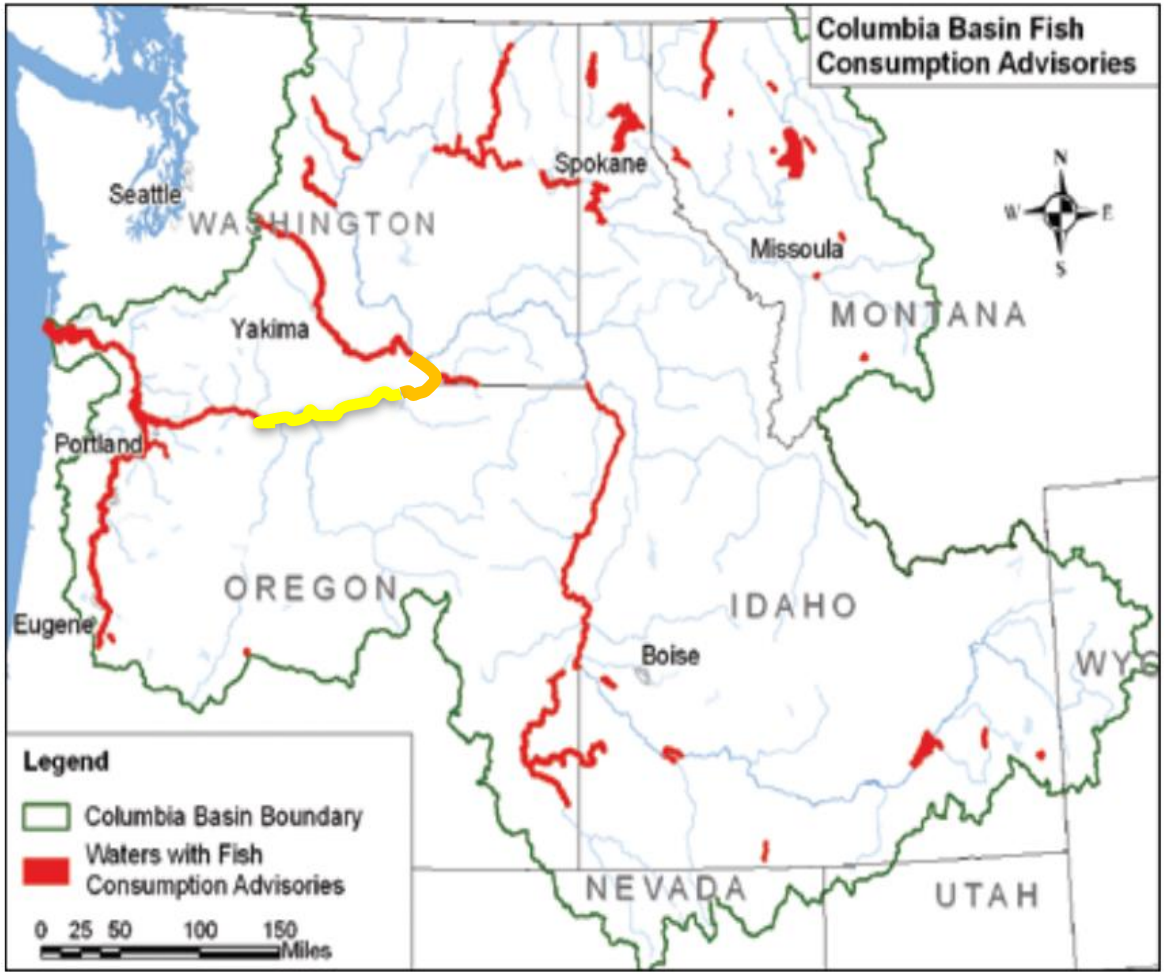
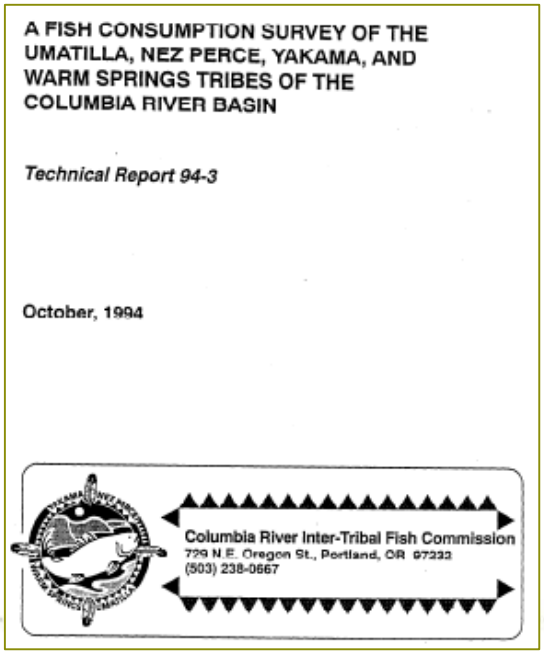


Figure 3.4: State-issued fish consumption advisories are in effect throughout the Columbia River Basin for certain contaminants and species. Not all waters have been tested, so the absence of an advisory does not necessarily mean it is safe to consume unlimited quantities of fish from untested waters.

Background

"Is it better or worse?" – Significant monitoring efforts have been implemented.

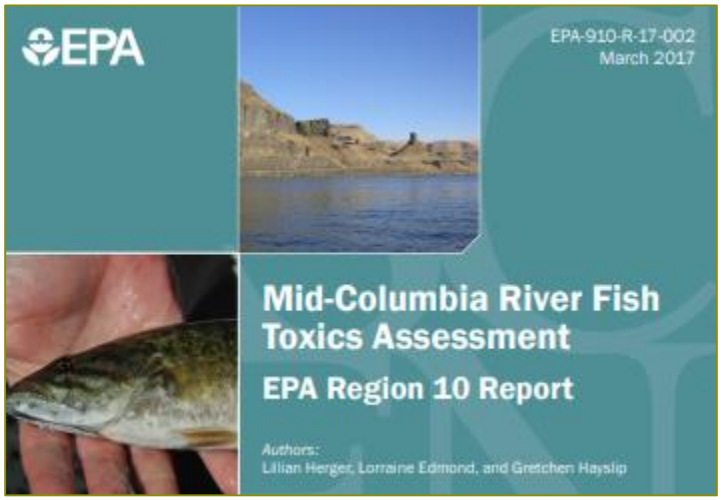
- Investment of decades of collaborative work to improve toxicity issues along the Columbia River
- Numerous studies to understand toxicity


A FISH CONSUMPTION SURVEY OF THE UMATILLA, NEZ PERCE, YAKAMA, AND WARM SPRINGS TRIBES OF THE COLUMBIA RIVER BASIN

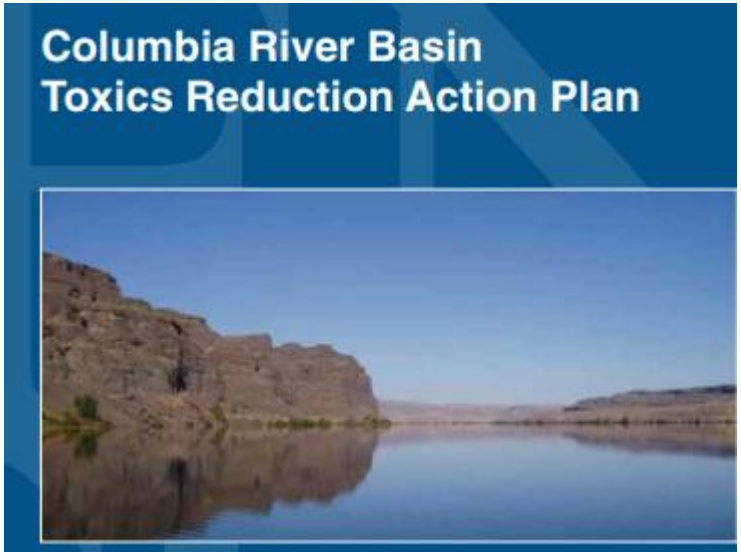
Technical Report 94-3

October, 1994

Columbia River Inter-Tribal Fish Commission
729 N.E. Oregon St., Portland, OR 97232
(503) 238-0667



Background



EPA, 2010.

- Initiative #3: Conduct monitoring to identify sources and then reduce toxics
- Initiative #4: Develop a regional, multi-agency research and monitoring program

Monitoring Vision

"Is it better or worse?" Despite decades of effort, we still cannot fully answer this question.

- Past data gaps:
  - Limited large picture efforts to understand the overall health of the Columbia River
  - Numerous smaller scale studies to answer specific questions
  - Studies not always repeated over time
  - Studies are not always compatible for trend analysis
- Needs:
  - Cohesive Columbia River basin-wide monitoring vision
  - Long-term monitoring data is needed to evaluate trends with clear cleanup goals or benchmarks of progress

Monitoring Vision –
Goals & Objectives

- Goal: Establish a routine monitoring program to measure concentrations of persistent toxic substances in fish tissue from the mainstem Columbia River

- Objectives:
  - Obtain estimates of changes in persistent toxic substances in fish over time and among locations
  - Provide estimates of risks to consumers of fish from the Columbia River

- Work to date: by Yakama Nation and Washington Department of Ecology staff

Monitoring Vision

- Spatial
  - Bonneville Dam to Canadian Border (~1,050 river km)
  - 5 river segments, 5 sub-segment/segment, 1 (of 5) sub-segment per segment sampled per year
  - 10 samples/sub-segment per species
  - ≥3 fish composited per sample
  - 3-4 species
  - 150 composited samples (≥ 450 fish) per yr

Monitoring Vision

- Temporal
  - Long-term
  - 5 year sampling intervals and reporting period
  - Annual sampling rotating through 1/5 of sample locations/yr
- Analysis
  - PCBs, DDx, mercury (priority)
  - organochloride pesticides, PBDE, dioxins/furans (recommended)
- Fish species
  - 3-4 fish species sampled at each location

Next Steps

- 1: Initiate vision
  - Focused discussion with partners
  - Submit proposal for developing monitoring plan
- 2: Develop monitoring plan
  - Collaborative process
  - Research lessons learned from other large watersheds
  - Permits
  - Site reconnaissance
  - Pursue/secure long-term funding
- 3: Planning, staffing, & equipment procurement
- 4: Implement monitoring program (sampling, analysis, QA/QC)

Questions

- Suggestions?
- Funding sources?
- Strategy?
- Other data needs?
- Priorities?

Extra Slides

Columbia River Toxics Reduction Action Plan, EPA, 2010.

Initiative #3: Conduct monitoring to identify sources and then reduce toxics

Current Resources

- 38. Identify the contaminants of concern to focus on in the Basin
- 39. Use the prioritization tool in one area of the River to assist in developing a monitoring plan and modify the tool based on the results of the pilot project
- 40. Assist other partners throughout Basin on using the prioritization tool to develop monitoring plans
- 41. Continue to seek and leverage resources to supplement existing monitoring by agencies, organizations, and Tribes in the Basin

Additional Resources Needed

- 42. Expand monitoring to the highest priority areas in the Basin as identified by the prioritization tool
- 43. Support watershed-based targeted monitoring efforts that link directly to reduction efforts, such as TMDLs, source assessments and Pesticide Stewardship Partnerships
- 44. Support localized monitoring efforts that will provide baseline data where habitat restoration is planned and/or ongoing; and targeted monitoring on species of concern, either ESA listed or for commercial or subsistence use
- 45. Assess sources of contamination and loadings for priority tracking and control
- 46. Establish toxic reduction efforts which include status and trends effectiveness monitoring
- 47. Identify opportunities to integrate water, land, air, sediment and biota monitoring
- 48. Develop public friendly reports to share monitoring information with the public

Columbia River Toxics Reduction Action Plan, EPA, 2010.

Initiative #4: Develop a regional, multi-agency research and monitoring program.

Current Resources

- 49. Identify and inventory in a database existing toxics research being conducted in the Basin
- 50. Using this research, convene scientists to assist in developing a Regional research plan for the Basin
- 51. Establish connections with researchers from other large aquatic ecosystems to better understand their research and its application to the Basin

Additional Resources Needed

- 52. Conduct research based on priorities identified in research plan
- 53. Develop indicators of ecosystem health
- 54. Develop new standards and criteria to protect fish, wildlife, and humans from toxics
- 55. Visit other regional centers to learn more about research programs
- 56. Conduct "Control Studies" to evaluate effectiveness of Best Management Practices, toxics reduction efforts, and emerging reduction strategies.