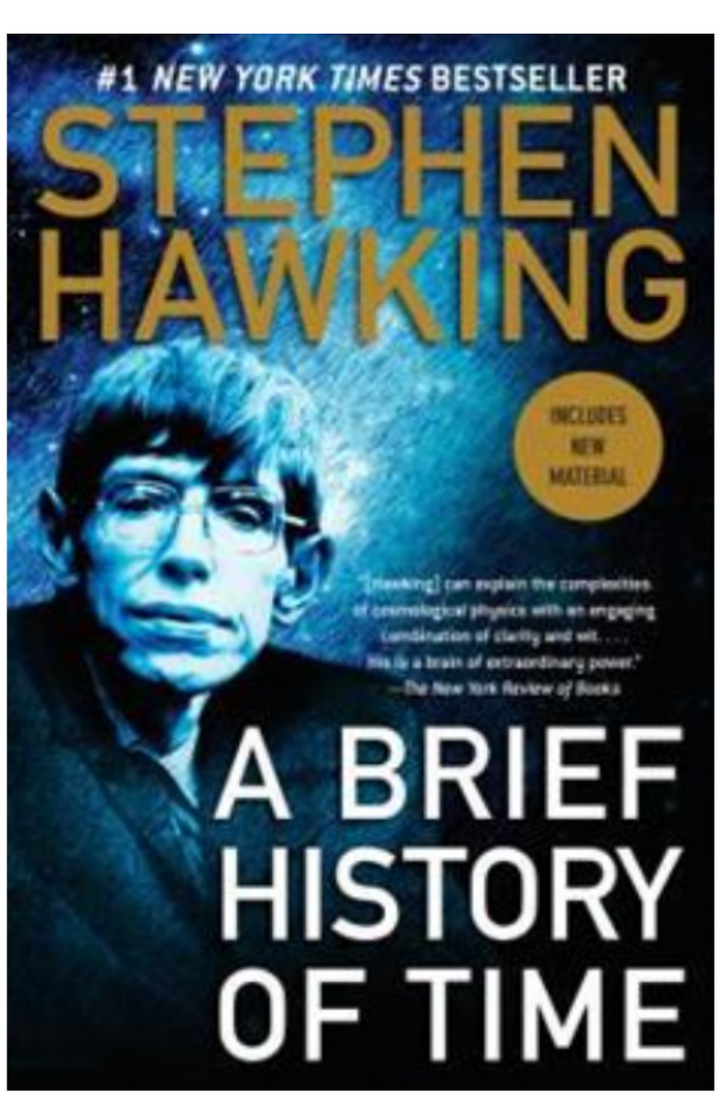

A Brief History of Monitoring Strategy Development for the Columbia River Basin (2008-2013)

Michael Cox (Retired EPA Region 10)

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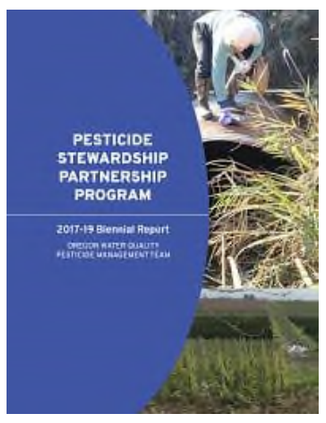
Pre-State of River Report

- 2005: Working Group Formed
- 2006: Tony Olsen - CRB Monitoring Design Alternatives.
- 2008: Formed sub-groups
  - Sources
  - Monitoring/Research
  - Reduction Actions
  - Communication/Resources
- Monitoring by many entities (EPA, USGS, States, LCREP, tribes).
- Compiled data on PCBs, mercury, DDTs, and PBDEs (1990 – 2010).



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State of River Report - Initiatives

- Expand toxics reduction activities (#1)
- **ID and inventory sources of toxics (#2)**
- **Develop a regional, multi-agency long-term:**
  - **Monitoring program (#3)**
  - **Research program (#4)**
- **Develop basin-wide data management system (#5)**
- Increase public education (#6)

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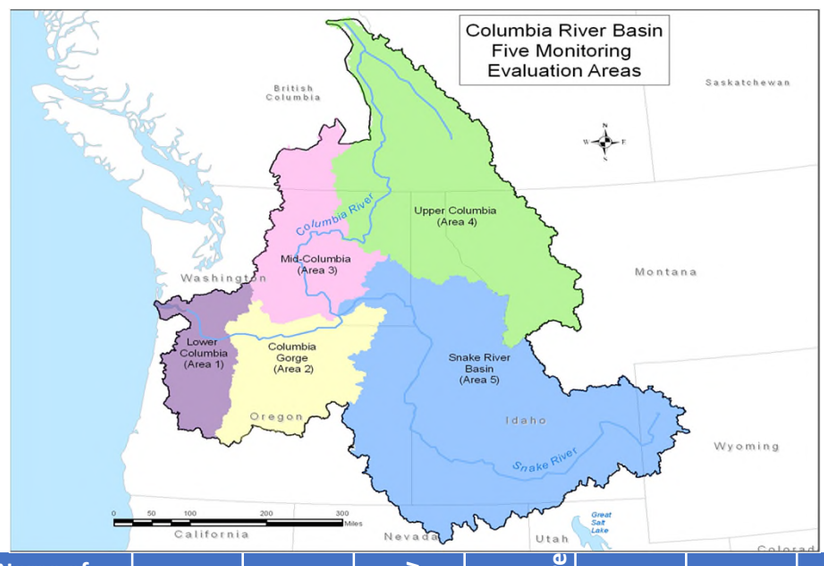
Prioritization Tool

- Developing **basin-wide monitoring plan unrealistic** given limited resources

- Developed a **prioritization process** for what/where monitoring is needed.

- Divided basin into 5 areas and subareas.

- **Lines of Evidence Approach**
  - Current Use Pesticides
  - Population Density
  - Industrial Flow
  - Total Phosphorus
  - Mine Density
  - WWTP Flow
  - Total Flow



Line number	Name of Tributary Basin or Mainstem Segment	Current Use Pesticides	Population Density	Industrial Flow	Total Phosphorus from Agriculture	Mine Density	WWTP Flow	Total of Stressors	Flow
	Evaluation Area 1 - Estuary - from Bonneville Dam to mouth at Pacific Ocean								
1	Willamette	0.50	1.00	1.00	1.00	0.911	0.295	4.71	1.000
2	Lake	0.39	1.00	0.22	0.01	0.000	1.000	2.62	0.014
	Evaluation Area 2 - Columbia Gorge - From Snake River Confluence to Bonneville Dam								
17	Walla Walla	1.00	0.85	0.00	0.94	0.012	1.000	3.80	0.109
18	Umatilla	0.45	0.48	0.00	0.48	0.009	0.929	2.34	0.089
	Evaluation Area 3 - Mid- Columbia - from Grand Coulee to the Snake River Confluence								
29	Yakima	1.00	0.69	0.00	1.00	0.235	1.000	3.93	1.000
30	Crab	0.50	0.23	1.00	0.73	0.004	0.000	2.47	0.044
	Evaluation Area 4 - Upper Columbia - from the Headwaters to Grand Coulee Dam								
40	Spokane	0.84	1.00	1.00	0.34	0.734	1.000	4.91	0.129
41	Pend Oreille	0.54	0.16	0.48	1.00	0.682	0.123	2.99	0.501

Action Plan Initiatives

- Increase political commitment (#1)

- Increase toxic reduction actions (#2)

- **Monitoring to ID sources (#3 – combined #2 and #3 from SORR)**

- **Develop research program (#4)**

- **Develop basin data management system (#5)**

Initiative #3: Monitoring/Sources

1. **ID contaminants** with greatest ecological/human risks.

2. **Complete peer review and pilot project** with prioritization tool.

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3. **Expand use** of prioritization tool.

4. **ID contaminants** of concern **by catchment**

5. **Leverage resources** for additional monitoring.

6. **Assist partners** in new monitoring data analysis.

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#3: Prioritization Process

- **Peer Review: Good start; substantial work needed**
  - Better problem definition.
  - Develop conceptual model.
  - Refine weighting factors.
  - Need other “lines of evidence”.

- **Pilot in Lower Columbia w/LCREP**
  - ID potential monitoring sites with tool and past work.
  - Developed monitoring proposal for Congress.

Lower Columbia River Estuary Partnership

- **Did not use tool; lack of resources to modify and implement.**

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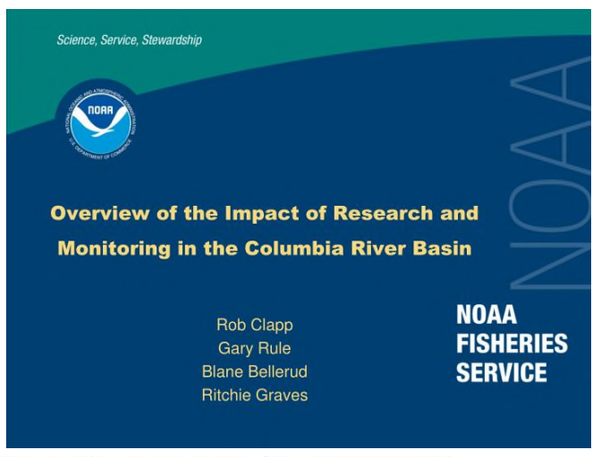
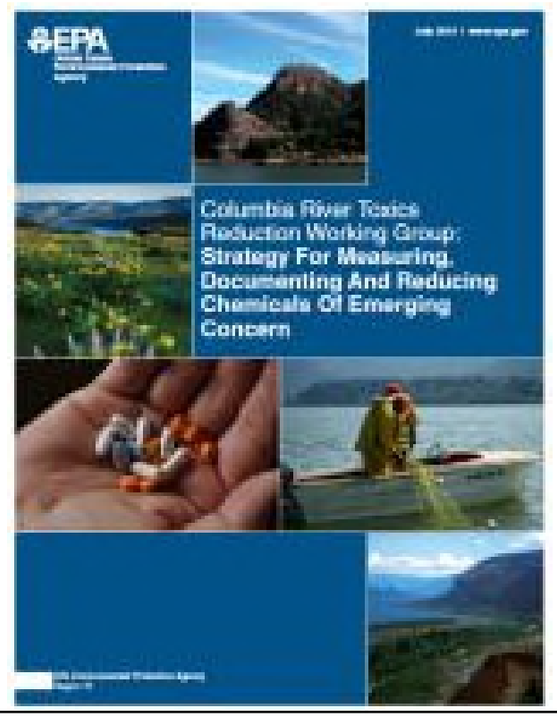
Initiative #4: Regional Research Program

- **Goal: Coordinate research** to focus on highest needs & leverage limited resources.



- **ID and inventory** existing toxics research (Not Done).



- **Convene scientists to develop a Regional research plan.**
  - **Workshop 2/2012 and Report 7/2014:** Chemicals of Emerging Concern.

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Initiative #5: Basin-Wide Data Management System

- **Goal: Develop unified database;** many databases (EPA, States, LCREP, Tribes).

- Work with **existing data management** efforts (Evaluated options).

- **Convene meeting** to discuss managing toxics data/resources needed.
  - One meeting but lead took other job.

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Executive Meeting (11/2012)

- **Sustainable Purchasing**: Develop guidance for governmental agencies.

- **Green Chemistry**: Establish a Regional Green Chemistry Center.

- **Chemicals of Emerging Concern**: Characterize the effects from CECs.

- **Pesticide Stewardship Partnership**: Expand the PSP.

- **Stormwater**: Expand stormwater technical assistance programs.

- **Resource Needs and Policy Reform**: Educate on need for sustainable funding.

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Lessons Learned

- Compelling **Reason**
- Adequate **Resources**
- Someone **Responsible**

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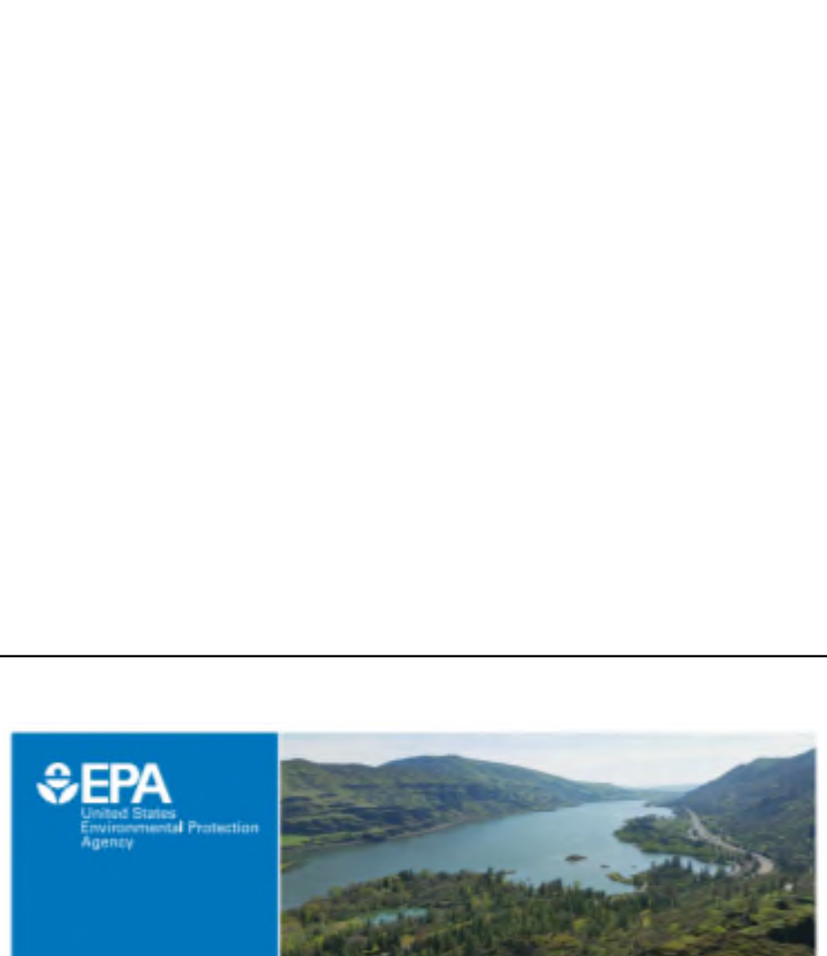
Questions

Type questions in chat box please for later responses!



- Water, sediment, and biota monitoring is critical to
  - ID toxics sources
  - Detect spatial and temporal toxics trends
  - Evaluate the efficacy of short and long term toxics reduction actions.
- Continuous, system wide monitoring for priority toxics and contaminants of emerging contaminants must be developed.
- Upper portions of the CRB affected by historic and active mining operations require monitoring of heavy metals and other toxics to ID sources and prioritize cleanups.