

Governor's Toxics Reduction Initiative



Robert Duff
Governor's Policy Office
State of Washington

Water Quality Partnership
Lacey Community Center
Lacey, WA
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Overview



- Elements of Governor's proposed toxics reduction effort are outlined in July 9 clean water policy brief
- Updating the water quality rule alone does not get at majors sources of toxic chemicals
- Legislative policy proposal
 - Chemical action plans, alternatives assessments and phase out of chemicals by rule
- Toxics reduction work under existing authority
 - Support policy proposal, increase local source control efforts, partner with local governments and business, invest in solutions

Why it matters



- Wide variety of distributed sources can impact:
 - Human health
 - ✦ Direct exposure to products – phthalates, bisphenol A
 - ✦ Indirect exposure – persistent, bioaccumulative toxics (PBTs)
 - ✦ Brain development of kids
 - Environment
 - ✦ Stormwater - copper, zinc, polycyclic aromatic hydrocarbons (PAHs)
 - ✦ Wastewater – pharmaceuticals
 - ✦ Copper in brake pads

Toxic impacts to children's learning and behavior



The National Academies of Sciences suggest that 3% of brain development disorders are solely attributable to a toxic environmental exposure and another 25% result from a combination of genetic and environmental factors.

- Developing brain is very sensitive to chemicals early in life (fetal and infancy period)
- Examples: **lead**, methyl **mercury**, tobacco smoke, **PCBs**, organophosphate pesticides, bisphenol A, **PBDE flame retardants**

Burden of disease in Washington State children



	~Rate	Estimated children affected	Population of children included in survey
Learning disability <i>(ever had)</i>	1 in 10	137,500	3-17 years old
ADD or ADHD	1 in 14	98,000	2-17 years old

Source: 2011-12 National Survey of Children's Health (parent survey of health and well being of children). Conducted by the National Center of Health Statistics Centers for Disease Control and Prevention (CDC) . Childhealthdata.org

Reducing Copper in Brake Pads



- Solid evidence for both impacts to salmon and brake pads as a major source
 - Aquatic toxicity well known
 - More recent evidence on low level effects on salmon
 - Brakes contribute up to half of total copper releases in urban areas
- California provided the groundwork
 - ✦ Science and draft legislation
- Stakeholder input
- Safe alternative

Legislative Proposal Elements



Prioritizing Chemicals

- Ecology develops a list of priority chemicals.
- Build on existing lists from the Children's Safe Products Act (CSPA), water quality standards and the persistent, bioaccumulative toxics (PBT) rule
- Ability to add or remove chemicals from the list through rule-making.

Legislative Proposal Elements



Selecting Chemicals for Action Plans

- Identify four priority chemicals for Chemical Action Plan (CAP) development per biennium
- Criteria based on previous laws and rules (CSPA, PBT rule), biomonitoring, environmental monitoring and Department of Health priorities

Legislative Proposal Elements



Chemical Action Plans

- Ecology has experience developing CAPs
 - Mercury, PBDEs, lead, PAHs, PCBs
- Advisory committee engaged in each CAP
- Full suite of recommendations are considered
 - Alternatives assessment/ban, use reduction, green chemistry research, outreach and education, monitoring, product stewardship, environmentally preferred state purchasing
- Ban recommendation won't go forward without alternatives assessment
 - Existing or required by agency

Legislative Proposal Elements



Alternatives Assessment

- Alternatives assessment required if recommended in the CAP
- Alternative assessment can focus on chemical or a specific use of a chemical
- Minimum requirements of alternatives assessment would be outlined in rule

Legislative Proposal Elements



Authority to Prohibit Sale, Distribution, or Use

- Only recommended if alternatives assessment determines that a safer and feasible alternative exists
- Rule process would be required
- If no safer alternative is available, Ecology would not propose a ban
- Other CAP recommendations would be implemented

Other Elements of the Package



Advancing Safer Products

- Ecology will conduct alternatives assessments on chemicals where concern is already established
 - Polychlorinated biphenyls (PCBs) in pigments and dyes
 - Phthalate plasticizers

Other Elements of the Package



Green Chemistry

A process to design chemicals/products that work while minimizing hazard and waste

- A competitive process to fund green chemistry innovations
- Develop and integrate green chemistry curricula and materials into college-level chemistry programs
- Increase consumer awareness and availability of green branded products under EPA's Design for Environment program.

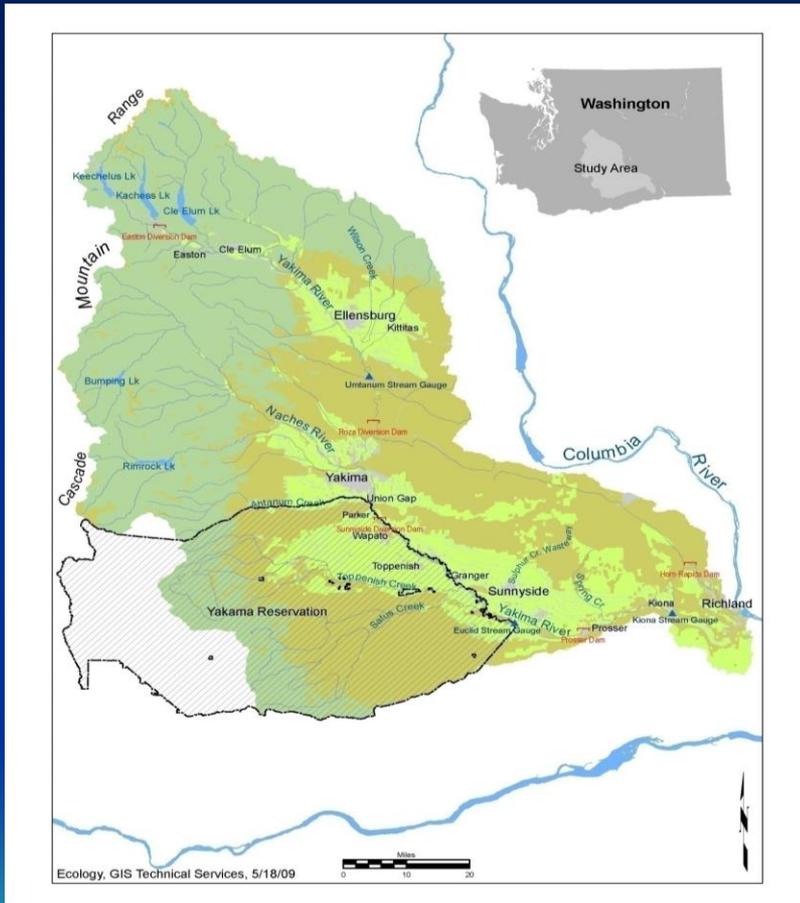
Other Elements of the Package



Water Quality Improvement in Watersheds

- Water bodies in Washington are already impaired
- Accelerate actions to bring impaired water bodies into compliance
- Develop control programs for permitted and non-permitted dischargers
- Conduct effectiveness monitoring to measure the success of implemented actions
- Examples: [Yakima](#), Duwamish, Spokane

Yakima River



- Flows from Cascade Range over 200+ miles to the Columbia River
- Lower Yakima one of the most intensely irrigated and agriculturally diverse farming areas in US
- DDT widely used in basin until banned in 1972
- In 1985, DDT levels up to 3,000 ppb (Johnson et.al., 1988)
- Fish consumption advisory issued in 1993

Yakima River

Control Strategy for DDT

- Primarily agricultural sources
 - Erosion of soils (300 tons of sediment during irrigation season)
- TMDL established reduction targets
 - Inexpensive surrogate measure (turbidity) for TSS and DDT (implementation began in 1998)
- Irrigation districts lead implementation
 - Set specific on-farm turbidity targets
 - Converted irrigation practices from rill and furrow to sprinkler and drip irrigation



Yakima River

Suspended Sediment Reductions

Tributaries

Sulphur Creek 1997

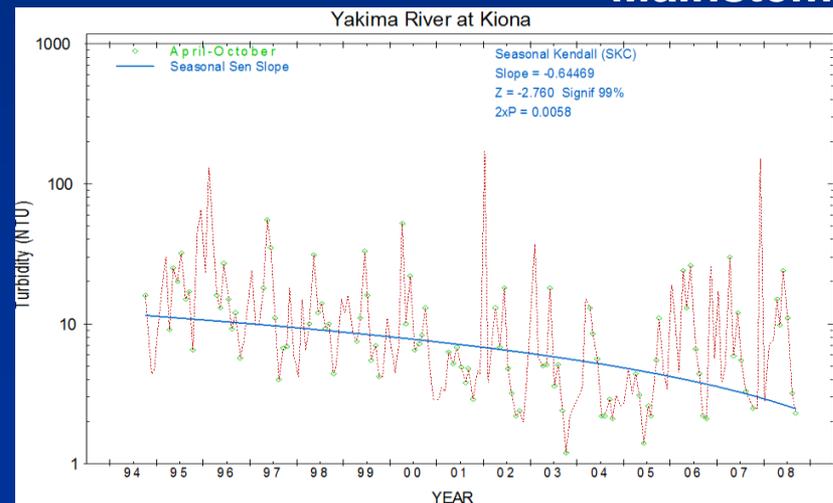


Sulphur Creek 2000



Mainstem

Total suspended solids in mainstem decreased by 50 to 70% (2003)



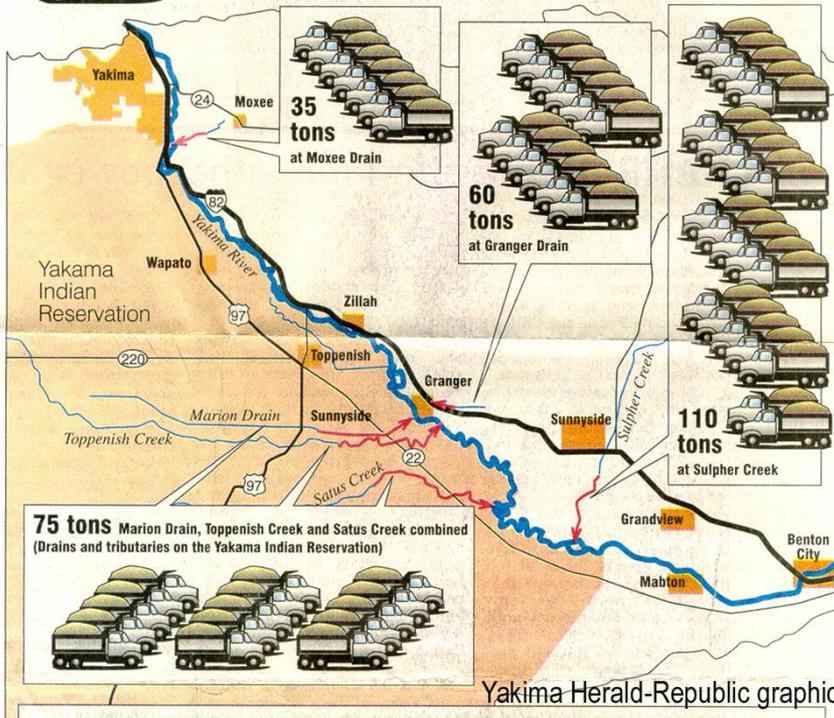
Yakima River

Sediment deposits

Total suspended sediment (TSS) loading balance at selected irrigation drains and tributaries in the lower Yakima River Basin during 1995 irrigation season



Indicates 5 tons of sediment contributed on average per day to Yakima River during later part of irrigation season.



Yakima Herald-Republic graphic

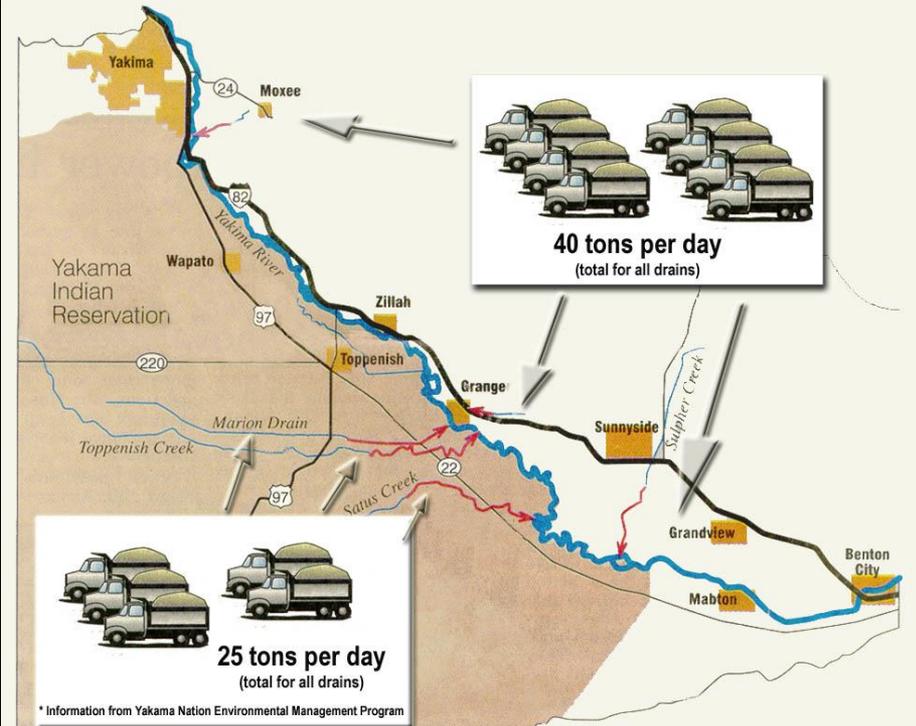
BEFORE

Sediment deposits

Total suspended sediment (TSS) loading balance at selected irrigation drains and tributaries in the lower Yakima River Basin during 2003 irrigation season



Indicates five tons of sediment contributed on average per day to the Yakima River during later part of the irrigation season.

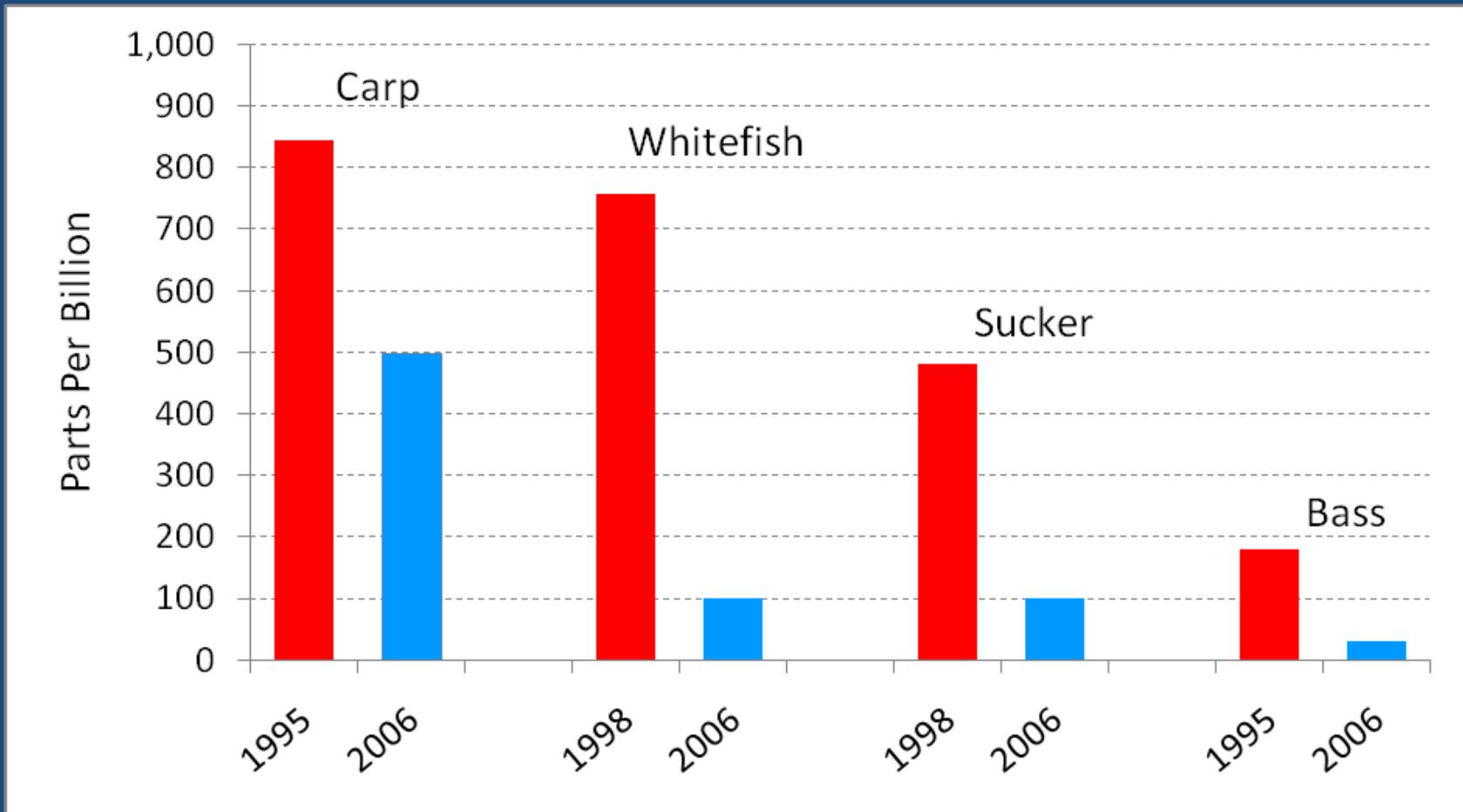


* Information from Yakama Nation Environmental Management Program

AFTER

Yakima River

DDE in Toppenish-Prosser Reach



- Fish advisory for DDT lifted in 2009 (except carp) due to drop in DDE levels
 - 1st fish advisory for DDT in nation to be lifted based on TMDL and subsequent reduction measures **NOTE:** DDE is the primary metabolite of DDT in fish

Other Elements of the Package



Expanded Local Source Control

- Source control in new areas of the state via contracts with local governments
- Source tracing efforts in 3-5 watersheds in the Columbia River
- Point of discharge sampling for comparison with future conditions to assess effectiveness

Other Elements of the Package



Lean and Green Business Assistance

- Provide financial assistance to jump start capital improvements recommended during “lean and green” consultations
- Examples
 - Accra-Fab – Liberty Lake - saved more than \$179,000 a year while increasing production capacity
 - Decagon Devices – Pullman – eliminated lead solder

Other Elements of the Package



Stormwater Center Projects

- Continue research on runoff from roofing materials
- Evaluate techniques to reduce stormwater toxicity (e.g. porous asphalt, rain gardens and bioretention facilities),
- Identify hot-spot areas where salmon die before spawning
- Evaluate whether tires play a role in producing stormwater toxicity

Other Elements of the Package



Preventing Early Life Exposure to Toxics

(Washington State Department of Health)

- Identify toxic exposures of most concern in WA and prioritize prevention efforts.
- Educate women, medical providers, policy makers on best ways to prevent harmful exposures.
- Evaluate impacts of prevention (biomonitoring).
- Identify and fill data gaps for priority chemicals.

