

Welcome

6PPD Legislative Report

Science Updates

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6PPD Legislative Report Focus

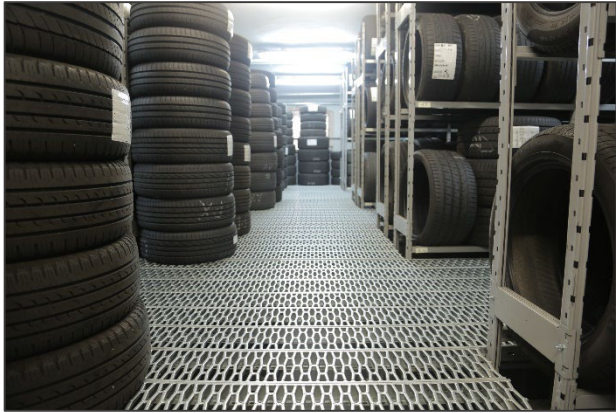
(Not an endpoint, just the beginning of our road trip)

1. **Contaminant of Interest**
 - 6PPD and Transformation Products (6PPD-Quinone)
2. **Source of contaminant**
 - Tire rubber
3. **Transport of contaminant**
 - Surface water over roads and parking areas (stormwater)
4. **Species of interest**
 - Species most sensitive to 6PPD-Quinone toxicity
5. **Proposed Scale of interest for future spatial efforts**
 - Road runoff to vulnerable aquatic habitats
6. **Spatial extent**
 - State of Washington
7. **Waters of interest**
 - Vulnerable aquatic habitats where 6PPD-Quinone is found in toxic amounts

Best Professional Judgement Synthesis

1. Develop **communication** platforms to effectively share **6PPD information** with partner organizations and governments for a State-Wide, multi-disciplinary effort.
2. **Gather and summarize information** on tire contaminants, roads, toxic loading and salmon distribution to **identify vulnerable aquatic systems**.
3. Evaluate **6PPD Best Management Practices** based on chemical and structural characteristics

Sources of 6PPD



Andrea Piacquadio



Elaine Thompson



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Magda Ehlers

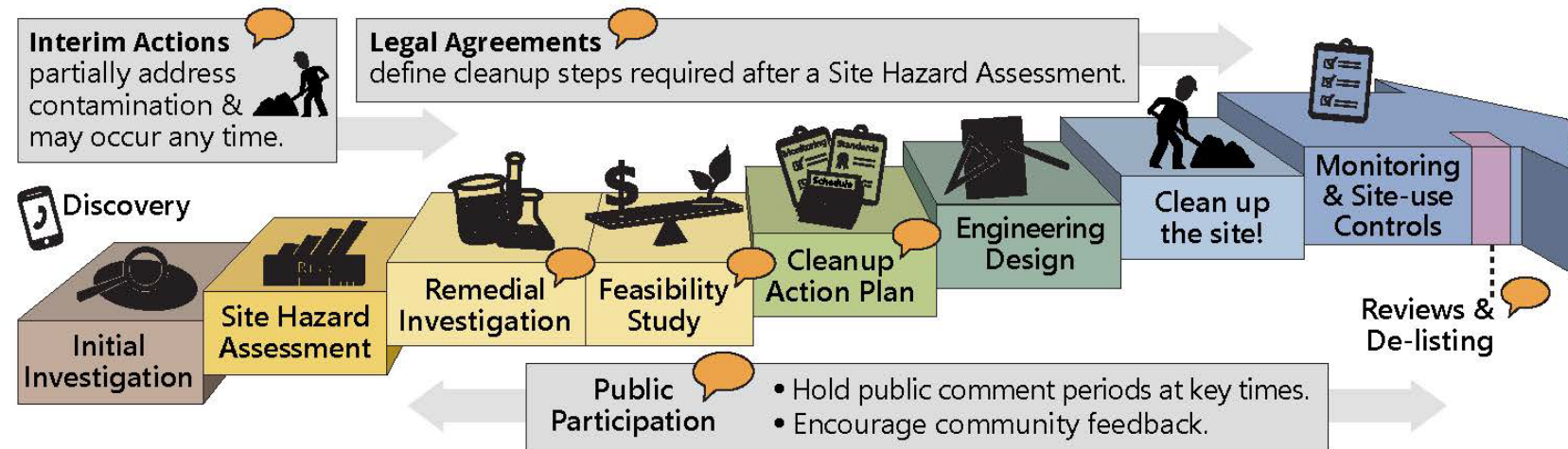


Bellingham Herald

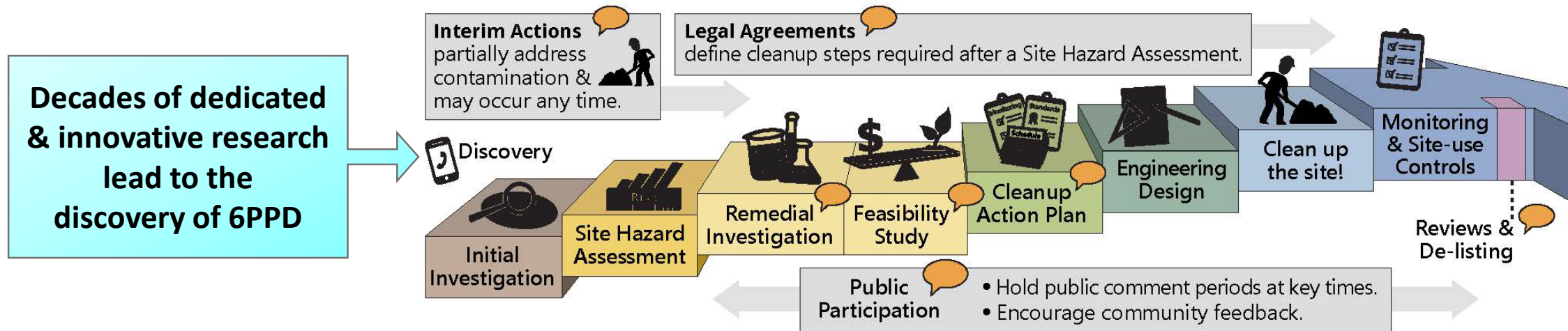


Blake Feist, NOAA

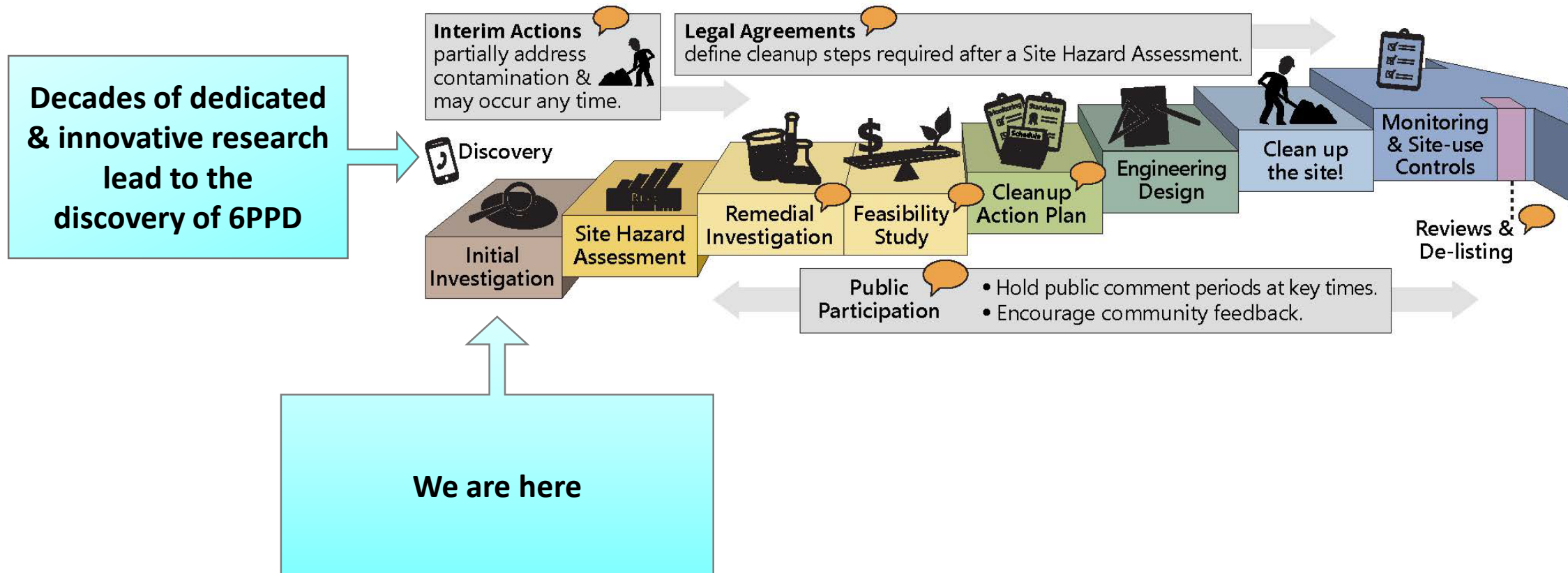
Typical Toxic Search and Cleanup Process



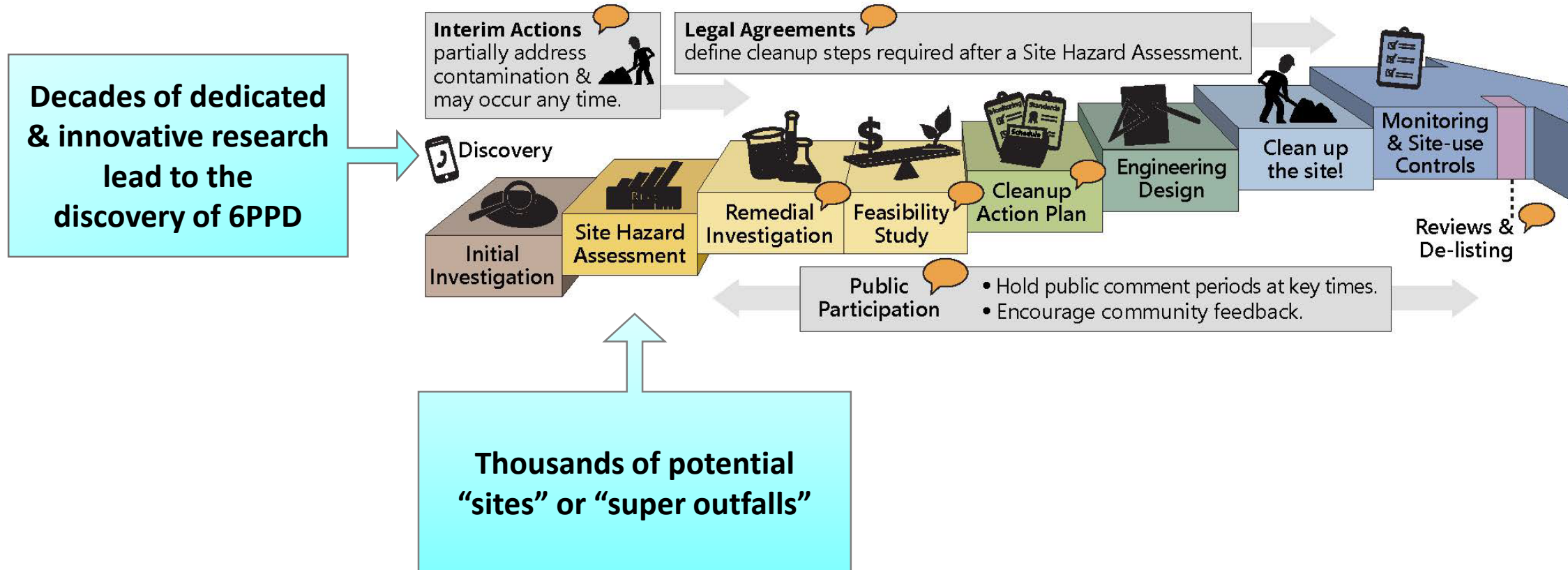
6PPD-Q Toxic Search and Cleanup Process



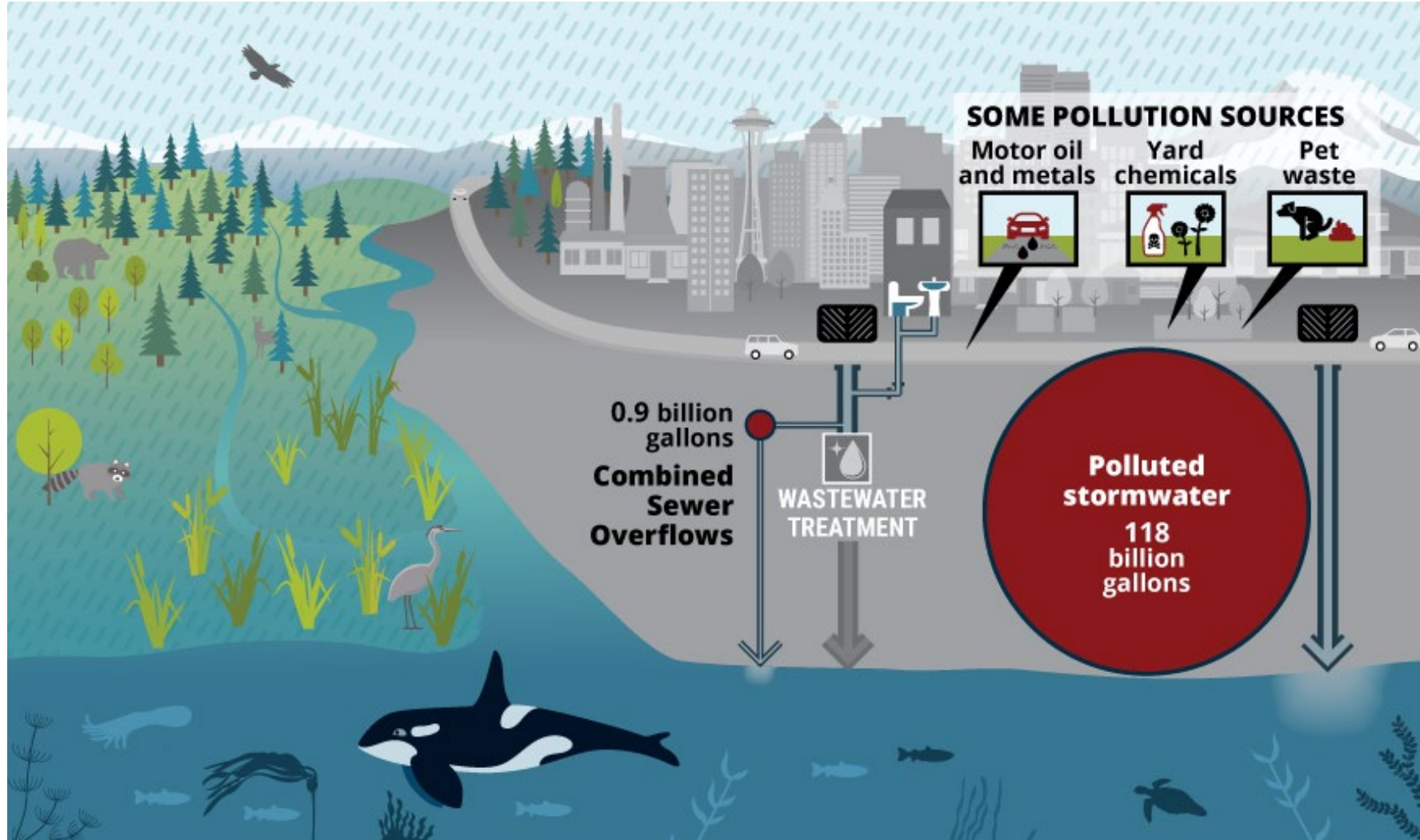
6PPD-Q Toxic Search and Cleanup Process



6PPD-Q Search and Cleanup Process



Ongoing Stormwater Search and Cleanup Process



Toxic Tires



- **6PPD**
- **6PPD-Quinone**
- Lead
- Formaldehydes
- PAHs
- Benzene
- Toluene
- Metals (Zinc, Copper, Cobalt, Cadmium, Aluminum, Iron)
- Microplastics (Tire Wear Particles)
- Additional Transformation Products

Crumb Rubber?



parentscoalitionmc.blogspot.com



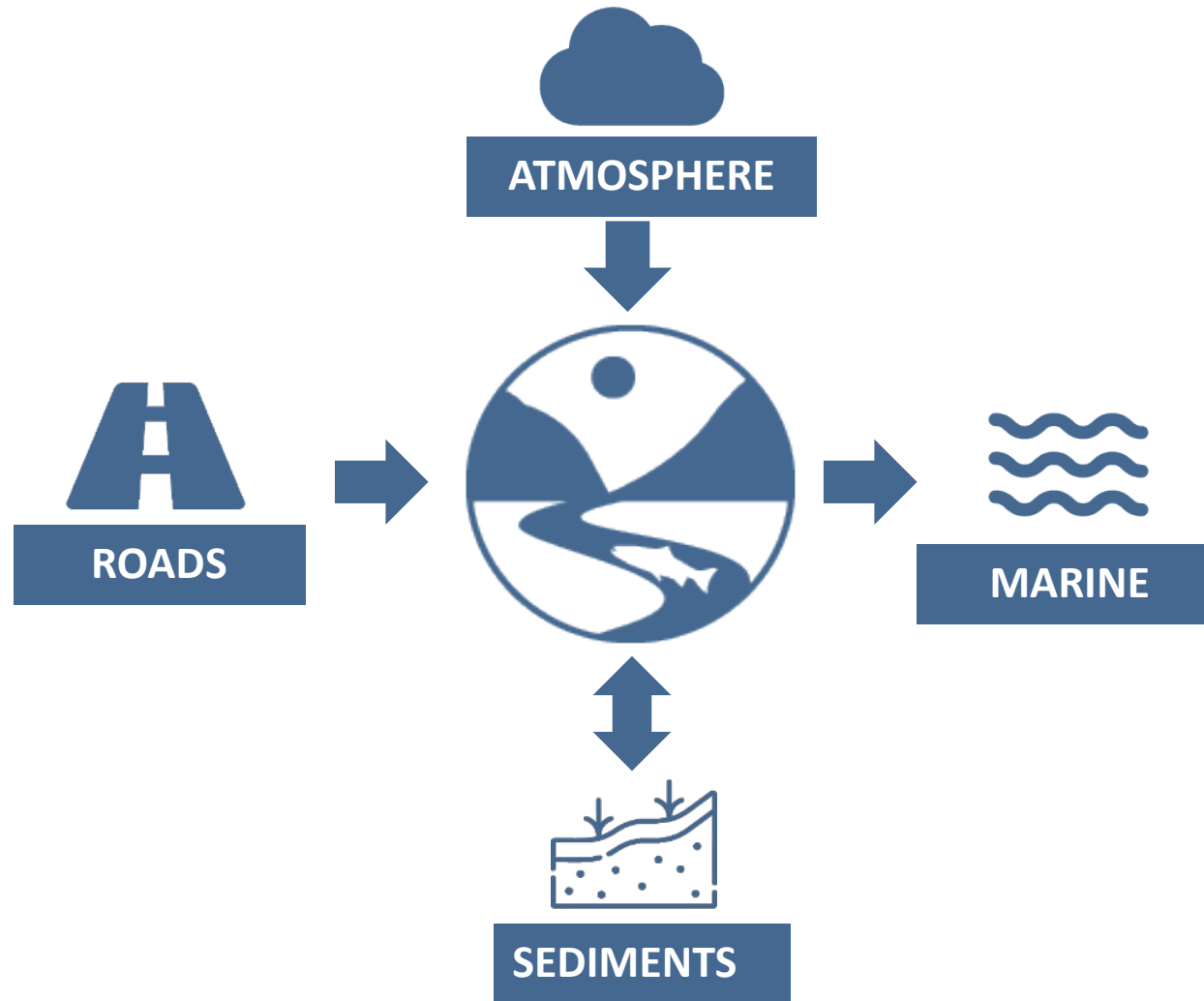
wgbh.org

**10-20 Tons of
Crumb Rubber
per Turf Field**



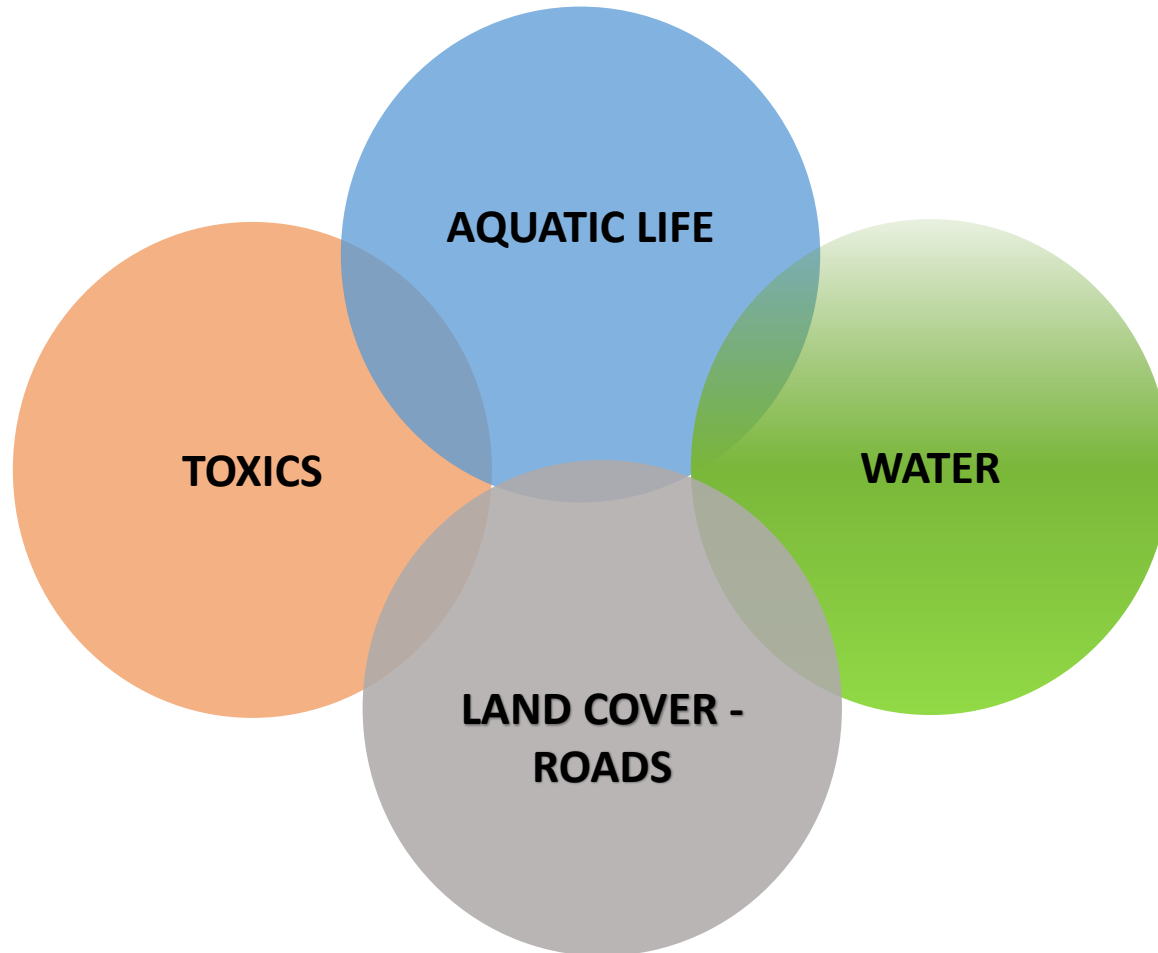
Artificial turf crumb rubber leaches environmental toxins - McGill Reporter

Data Gaps Assessment?



Multi-Disciplinary Spatial Indicator Approach

For Sampling Priority



Urban and Rural watersheds

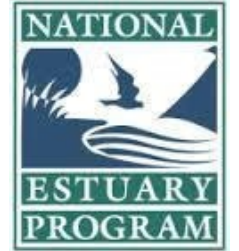
Sensitive species

High traffic corridors

Potential point sources (turf fields)

- Ongoing sampling strategy discussions
- More information will be available this summer 2022

Thank you for your participation!



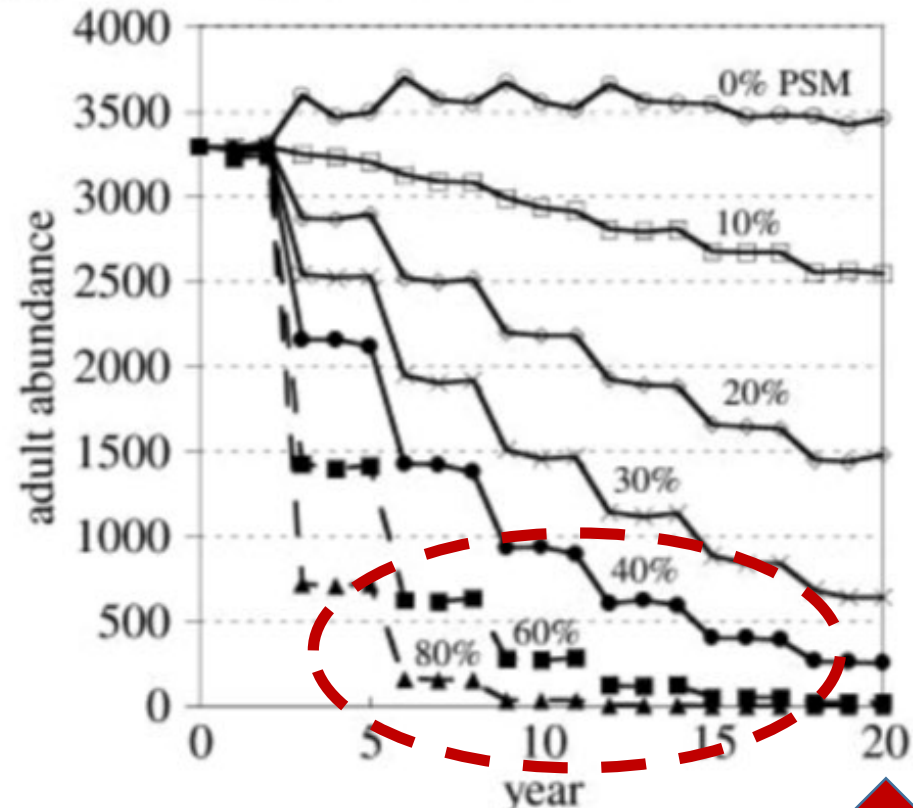
Many more and growing!

Wild Salmon habitat is co-managed with WA Tribes

- Ecology works with Tribes in a government-to-government relationship to protect and manage shared natural resources and to cooperate across jurisdictions. The unique legal status of Tribes and the presence of treaty-reserved rights and cultural interests throughout the state create a special relationship between Tribes and agencies responsible for managing and protecting the state's natural resources.
- Tribes retained about 6 million acres of reservation land and specifically retained the right to take fish in their “usual and accustomed” areas along with the privilege of hunting on “open and unclaimed lands,” among other things.
- Tribes possess property and self-government rights that are guaranteed under treaties and federal laws and each tribal reservation in the state constitutes a bordering jurisdiction subject to federal and tribal environmental laws.

Salmon are resilient, but they need our help

A Adult abundance over time



- Sadly, many streams most likely have depleted coho and steelhead stocks
- Fortunately, there are refuge populations in less impacted streams
- Strays from these remaining populations can potentially recolonize a depleted stream
- However, we need to repair the 6PPD-Q impaired streams to make it more safe for salmon

Green Infrastructure



<https://www.epa.gov/green-infrastructure/what-green-infrastructure#raingardens>

Green Infrastructure

WSDOT will receive **\$500 million** over 16 years to enhance stormwater runoff treatment from existing roads with an emphasis on **green infrastructure retrofits**. Prioritize based on benefits to salmon recovery and ecosystem health, reducing toxic pollution, addressing health disparities, and cost effectiveness.

GREEN STORMWATER TASK FORCE



Crumb Rubber

**Most studies have focused on
human health effects and
air transmission**



CanadianGolfer.com



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Courses**

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**Molded
Products**

**Playground and
Landscaping Mulch**

**Asphalt
Rubber**

Greens – Ideal for all areas of a golf course, crumb rubber will improve turf conditions, provide better drainage and aids in playability. Those who have used crumb rubber say it improves turf's wear resistance by forming a layer that protects the crown against heavy traffic. Green colored crumb rubber is available as well.

High Traffic Areas – Start using crumb rubber on your cart path scatter areas, standing areas around the tee boxes, green to tee walkways and other traffic areas for improved turf and course appearance in one season.

