Port Angeles Harbor Sediments Investigation

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Ecology Staff

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• Meg Bommarito – Public Involvement
• Sally Toteff – Southwest Region Director
The Big Picture

• Puget Sound Initiative (PSI) = Governor’s initiative to restore the health of Puget Sound by 2020

• Priorities for 2007-2009 include:
  – **Cleaning up contaminated sites and sediments.**
  – Preventing toxic contamination.
  – Protecting and restoring marine and freshwater habitats.
Toxics Cleanup Program Focus

- Accelerate cleanups for sites within ½ mile of the shoreline and in water
Priority Areas

1. Port Gamble
2. Dumas Bay
3. Padilla/Fidalgo Bay
4. Port Angeles
5. Oakland Bay
6. Port Gardner/Port of Everett
7. Budd Inlet
Ecology work in Port Angeles
Rayonier-Related Work

- Rayonier Mill
- Rayonier Mill Off-Property Soil Dioxin Study
- City of Port Angeles stakeholder work

- **Port Angeles Harbor Sediments Investigation**
Investigating Sediment Contamination
Sediments Investigation

- Purpose of the Investigation
- History of Contamination
- Sampling & Analysis Plan (SAP)
- Next Steps
- Public Involvement
Purpose of the Investigation

• To determine the **nature and extent** of sediment contamination.

• To study how sediment contamination and wood waste **move through the harbor**.

• To investigate **current and historic sources** of sediment contamination in Port Angeles Harbor.

• To further characterize and potentially identify new **areas of concern**.

• To assess **human health and ecological risks**.
History of Contamination

- Historic and current sources:
  - Saw mills and plywood
  - Pulp and paper mills
  - Marine shipping, transport
  - Boat building
  - Petroleum bulk facilities
  - Commercial fishing
  - Combined sewer outfalls
  - Runoff, residential and industrial, stormwater
History of Contamination

- Harbor contaminants:
  - Wood debris, creosote, related contaminants
  - Dioxins and furans
  - Polycyclic aromatic hydrocarbons (PAHs)
  - Polychlorinated biphenyls (PCBs)
  - Heavy metals
  - Chlorinated pesticides
Wood Waste in Port Angeles Harbor
Sampling Locations

- Port Angeles Harbor areas of concern
  - Western harbor
  - Ediz Hook
  - Eastern intertidal
  - Outer harbor
- Rayonier Mill areas of concern
- Reference samples – Dungeness Bay
Harborwide Tissue Sample Locations
(Figure 4-8)
Sampling Design

• Rayonier Mill Study Area
  - Sampling 7 areas of concern.
  - Adds to information collected by Rayonier for the Study Area Marine Remedial Investigation.
  - Needed for risk assessments.
Former Rayonier Mill Study Area and Proposed Sample Locations (Figure 2-4)
Current Monitoring & Sediment Transport

Purpose:
1. Most available data is for *surface* currents
2. To help determine sources of contamination
   - Where sediments are picked up and deposited
   - How sediments are transported
   - Bottom current direction and speed
Sediment Trend Analysis Sample Locations
“Fingerprinting” Analysis

• Define *types* of sources of dioxins, furans, and PAHs (petroleum products)
  - For dioxins – define a wood waste treatment source vs. an air emissions source.
  - For PAHs – tell the difference between creosote from wood pilings, a bulk fuel spill, or a gasoline or diesel tank leak.

• Cannot always use it for specific source identification
Human health risk assessment

- Populations at potential risk of exposure:
  - Subsistence and recreational fishers
  - Residential users
  - Recreational users

- Assessment calculates risk based on:
  - Potential intake of contaminants through ingestion and dermal (skin) contact
  - Chemical toxicity (cancer or non-cancer health effects)
Ecological risk assessment

- Looks at types of wildlife that might be exposed to harbor contaminants:
  - Brant
  - Cormorant
  - Greater scaup
  - Harbor seal
  - Raccoon
  - Bald Eagle

- Looks at the potential risks to those species through food or sediment ingestion.
### Next Steps

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<thead>
<tr>
<th>Time</th>
<th>Task</th>
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<tbody>
<tr>
<td>June 2008</td>
<td>Final Sampling &amp; Analysis Plan</td>
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<tr>
<td>Summer 2008</td>
<td>Sediment sampling</td>
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<tr>
<td>Fall 2008</td>
<td>Laboratory analysis &amp; data validation</td>
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<td>Early 2009</td>
<td>Draft Sediment Investigation Report and risk assessments – available for public review</td>
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Public Involvement

• Public Participation Plan
• Public comment period until May 29 – submit comments here!
  – Information about Port Angeles Harbor history
  – Information about pollution in the harbor
  – Input about the Sampling and Analysis Plan
• Responsiveness summary
• Public review of the draft investigation report and risk assessments
Questions?