

## Two Draft Reports Available for Public Review and Comment



*A PUGET SOUND INITIATIVE site: Reaching the goal of a healthy, sustainable Puget Sound now and forever*

Port Angeles Harbor has long been home to pulp, paper, plywood, petroleum, shipping, and other industries. Over time, these activities released contamination into the local environment. In 2008, Department of Ecology collected sediment and tissue samples from throughout the harbor to help determine:

- The nature and extent of contamination in the harbor.
- Risks to human health and the environment.
- Possible sources of contamination to the harbor.

Two reports about this sampling are ready for public review at the places listed to the right. The **Sediment Investigation Report** (page 2) describes the sampling data. The **Supplemental Data Evaluation** (page 4) analyzes the data and recommends next steps. Please send your comments by March 23, 2012.

### What did the study conclude?

Parts of the harbor have harmful levels of dioxins/furans, pesticides, metals, and other contaminants (see page 2). Some areas also have wood debris, which can produce toxic ammonia and sulfides. Protecting the harbor will likely require:

- Cleaning up sediment contamination hotspots;
- Removing wood debris; and
- Preventing future pollution.

### What are the next steps for cleanup?

Ecology is putting together the evidence needed to name Potentially Liable Persons (PLPs)—the parties responsible for cleanup. We are also doing more fingerprinting (see page 4) to learn more about the possible sources of dioxins.

Rayonier will use some of the study data to help plan its cleanup in the eastern part of the harbor. For more about the Rayonier Mill cleanup, visit: [http://www.ecy.wa.gov/programs/tcp/sites\\_brochure/rayonier/rayonier\\_hp.htm](http://www.ecy.wa.gov/programs/tcp/sites_brochure/rayonier/rayonier_hp.htm).

### Comments Accepted

February 23 to March 23, 2012

#### Submit Comments and Questions to:

Connie Groven, Project Manager  
Toxics Cleanup Program, SWRO  
P.O. Box 47775  
Olympia, WA 98504-7775  
Phone: (360) 407-6254  
E-mail: [Connie.Groven@ecy.wa.gov](mailto:Connie.Groven@ecy.wa.gov)

#### Public involvement questions:

Hannah Aoyagi  
Phone: (360) 407-6790  
E-mail: [Hannah.Aoyagi@ecy.wa.gov](mailto:Hannah.Aoyagi@ecy.wa.gov)

#### DOCUMENT REVIEW LOCATIONS

##### Port Angeles Public Library

2210 South Peabody Street  
Port Angeles, WA 98362  
Phone: (360) 417-8500

##### Peninsula College

1502 E. Lauridsen Blvd.  
Port Angeles, WA 98362  
Phone: (360) 417-6280

##### WA Department of Ecology Southwest Regional Office

300 Desmond Drive SE  
Lacey, WA 98503

By appointment only:

Contact Debbie Nelson,  
[Debbie.Nelson@ecy.wa.gov](mailto:Debbie.Nelson@ecy.wa.gov) or  
(360) 407-6365

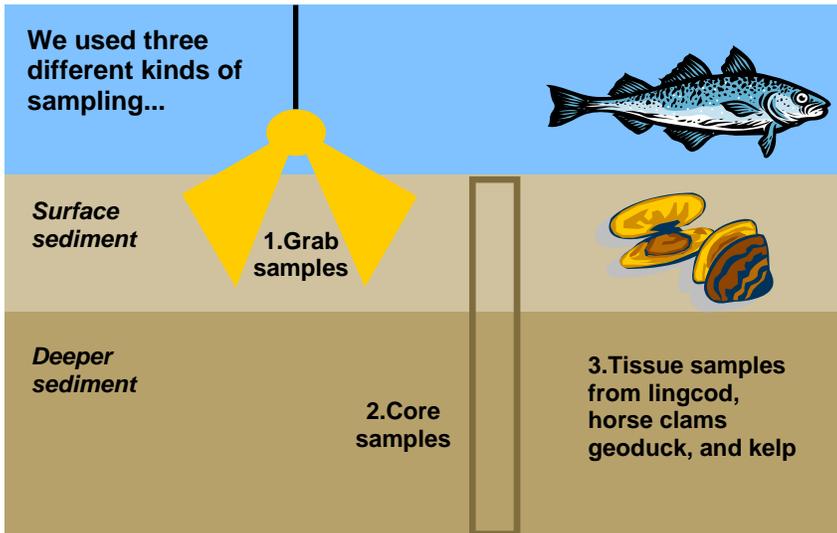
##### Ecology's Toxics Cleanup website

[http://www.ecy.wa.gov/programs/tcp/sites\\_brochure/portAngelesHarborSed/paSed\\_hp.htm](http://www.ecy.wa.gov/programs/tcp/sites_brochure/portAngelesHarborSed/paSed_hp.htm)

### Sediment Investigation Report

The Sediment Investigation Report (SIR) is a large, technical report. It describes what the data show about contamination and risk across the harbor. It also includes studies that help us understand sediment movement in the harbor. For a more detailed overview, see the four-page **Executive Summary**.

#### How we sampled and what we found...



The amount and type of contaminant, varied depending on the type of sample and area of the harbor. We found:

- Dioxins and furans, which remain in the environment for a long time.
- Poly-chlorinated biphenyls (PCBs).
- Pesticides.
- Semi-volatile organic compounds such as phenols and phthalates.
- Ammonia and sulfides from decomposing wood debris.
- The toxic metals arsenic, mercury, cadmium, and zinc.

**Bioassays:** We also did lab tests that expose certain species—like sand dollar larva and small crustaceans—to samples of harbor sediments. We then looked at what percent survived or developed normally. This gives us more data about how toxic the contamination is.

**Risk:** The SIR also looks at risks to human health, animals, and plants. Contaminants may increase long-term health risks for people eating fish and shellfish from the harbor. Marine plants and sediment-dwelling animals like clams and crabs are also at risk. There is a much lower risk from coming into contact with sediments.

#### Health Information for Port Angeles Harbor

##### Can I fish or collect shellfish from the harbor?

In 2007, Clallam County Health and Human Services issued a crab advisory for Dungeness and rock crab in the harbor due to poly-chlorinated biphenyls (PCBs). There is also an ongoing bivalve closure across the whole harbor due to bacterial—not chemical—contamination.

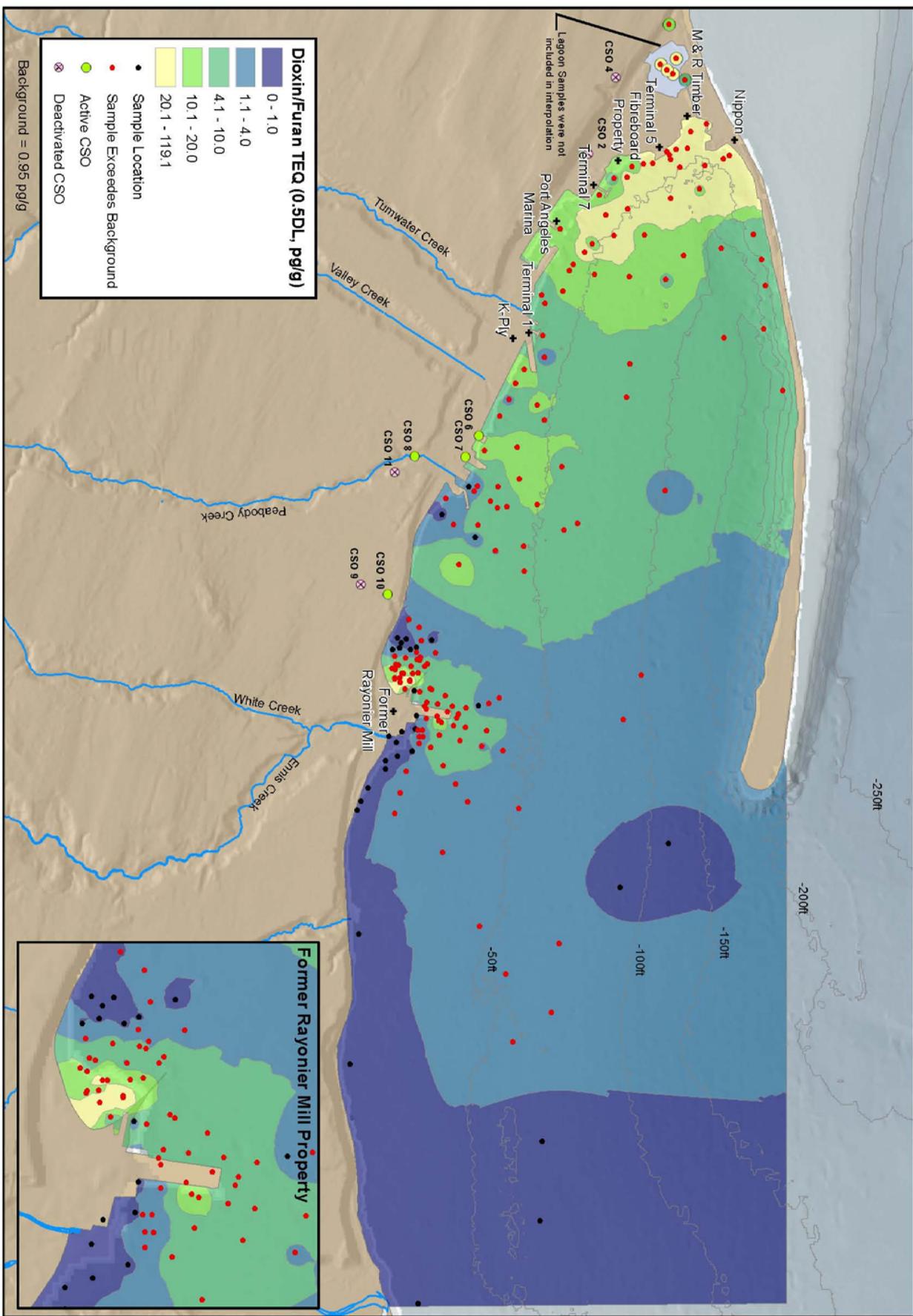
**Clallam County Health and Human Services:** (360) 417-2258

**WA Department of Health:** Len O'Garro, Lenford.O'Garro@doh.wa.gov or (360) 236-3376

##### Is it safe to play on beaches or swim in the water?

Health officials and local volunteers collect water samples for bacteria from popular Clallam County saltwater swimming beaches during the summer. To check the status of bacteria levels in the water at saltwater swimming beaches, visit: <http://www.ecy.wa.gov/programs/eap/beach/advice.html>

# Port Angeles Harbor Sediments Investigation



**Dioxin and Furan levels in Port Angeles Harbor (Figure 17 in the Supplemental Data Evaluation)**

This is one example of how we mapped the sampling results. You can see by the dots that we did not sample every area of the harbor. To get the colors to cover the whole harbor, we estimated values for a given area using the values of all the nearby data points. The Supplemental Data Evaluation has maps of other contaminants and wood waste.

## Supplemental Data Evaluation

This report digs deeper into the sampling data and brings in older data from the harbor. The goal was to find areas that may need cleanup and pinpoint past or current sources of contamination. The report begins to answer some of the following questions:

### Where is the contamination now?

**Approach:** Map levels of each contaminant across the harbor (Report Section 2)

**What we see:**

- Metals and dioxins are highest in the inner harbor.
- PCBs, dioxins, and certain organic chemicals are high around the Rayonier Mill.
- Most of the harbor has low-level dioxins (see map on page 3)

### How do things move in the harbor and where does contamination go?

**Approach:** Study how currents, waves, and other forces move sediments along the harbor bottom (Report Section 5)

**What we see (map on page 5):**

- This is a complex system.
- Under typical conditions (blue arrows on page 5 map), contaminants deposit close to their source.
- Sediments tend to get trapped in the inner harbor.
- Storms may move some contamination around the harbor (red arrows on page 5 map), but most of what we found in this study is likely from nearby sources.

### Where did contamination come from and who is responsible for cleanup?

**Approach:** “Fingerprint” dioxins to see if a sample of a contaminant matches a certain source (Report Section 4). Look at current and past activities along the shoreline that used or released the chemicals and wood debris we found (Report Section 7).

**What we see:**

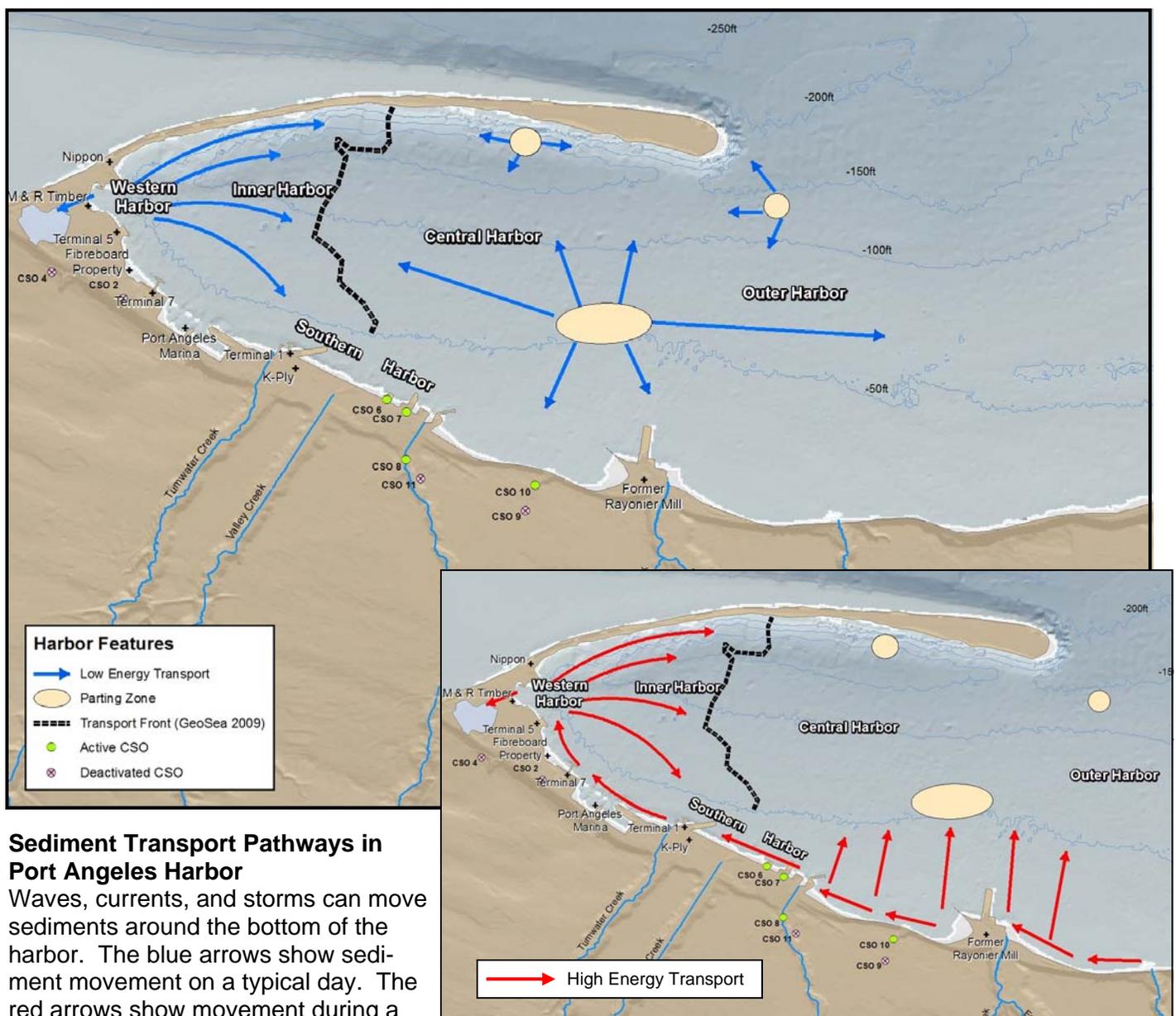
- Most of the dioxin samples had similar fingerprints, which might mean many sources are mixed together. We plan to do more analysis.
- The two major source areas of harbor contamination are the former Rayonier Mill and past—and possibly current—industrial activities in the western (inner) harbor.

## Providing Comments and How You Can Help

The reports available for comment are lengthy and technical. If you need help finding certain information, we can direct you to the right section of the report. You can hear more about the reports at the March 13th open house (see mailer page).

At the end of the comment period, Ecology will respond to general comments in a responsiveness summary. This document will be available at the locations listed on page 1.

Next, Ecology will start the process of identifying PLPs and then begin planning next steps. The PLPs will need to better understand the contamination to be able to weigh cleanup options. If you have further information about past or current pollution of Port Angeles Harbor, please contact Connie Groven at (360) 407-6254 or by e-mail at [Connie.Groven@ecy.wa.gov](mailto:Connie.Groven@ecy.wa.gov).



### Sediment Transport Pathways in Port Angeles Harbor

Waves, currents, and storms can move sediments around the bottom of the harbor. The blue arrows show sediment movement on a typical day. The red arrows show movement during a "high-energy" event like a storm.



DEPARTMENT OF  
**ECOLOGY**

State of Washington

PO Box 47775

Olympia, WA 98504-7775

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## **Port Angeles Harbor Sediments Investigation Clallam County, WA**

### **Study Results Available**

Public Comment Period:

February 23—March 23, 2012



If you need this publication in an alternative format, call reception at (360) 407-6300. Persons with hearing loss, call 711 for Washington Relay Service. Persons with speech disability call 877-833-6341.

## **Public Open House**

**March 13, 2012, 6:30—8:30 p.m.  
Olympic Medical Center, Linkletter Hall  
939 Caroline St., Port Angeles  
360-417-7000**

Project Manager Connie Groven will present the study results and answer your questions.

6:30—7:00 p.m. Open House session

7:00—8:00 p.m. Presentation

Question & answer

8:00—8:30 p.m. Open House session

Light refreshments will be served.