



Apr 6th, 1:30 PM - 1:45 PM

Turning the ship: a new direction for managing wood waste in the Salish Sea of Washington State

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Turning the Ship: A new direction for managing wood waste

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Salish Sea Ecosystem Conference
April 4-6, 2018
Washington Convention Center

Goals

The background of the slide features a scenic view of a city skyline across a body of water, with a prominent snow-capped mountain in the distance. The scene is slightly hazy, suggesting a clear but bright day.

Quick look at the extent of WW sites

Note some of the challenges addressing WW

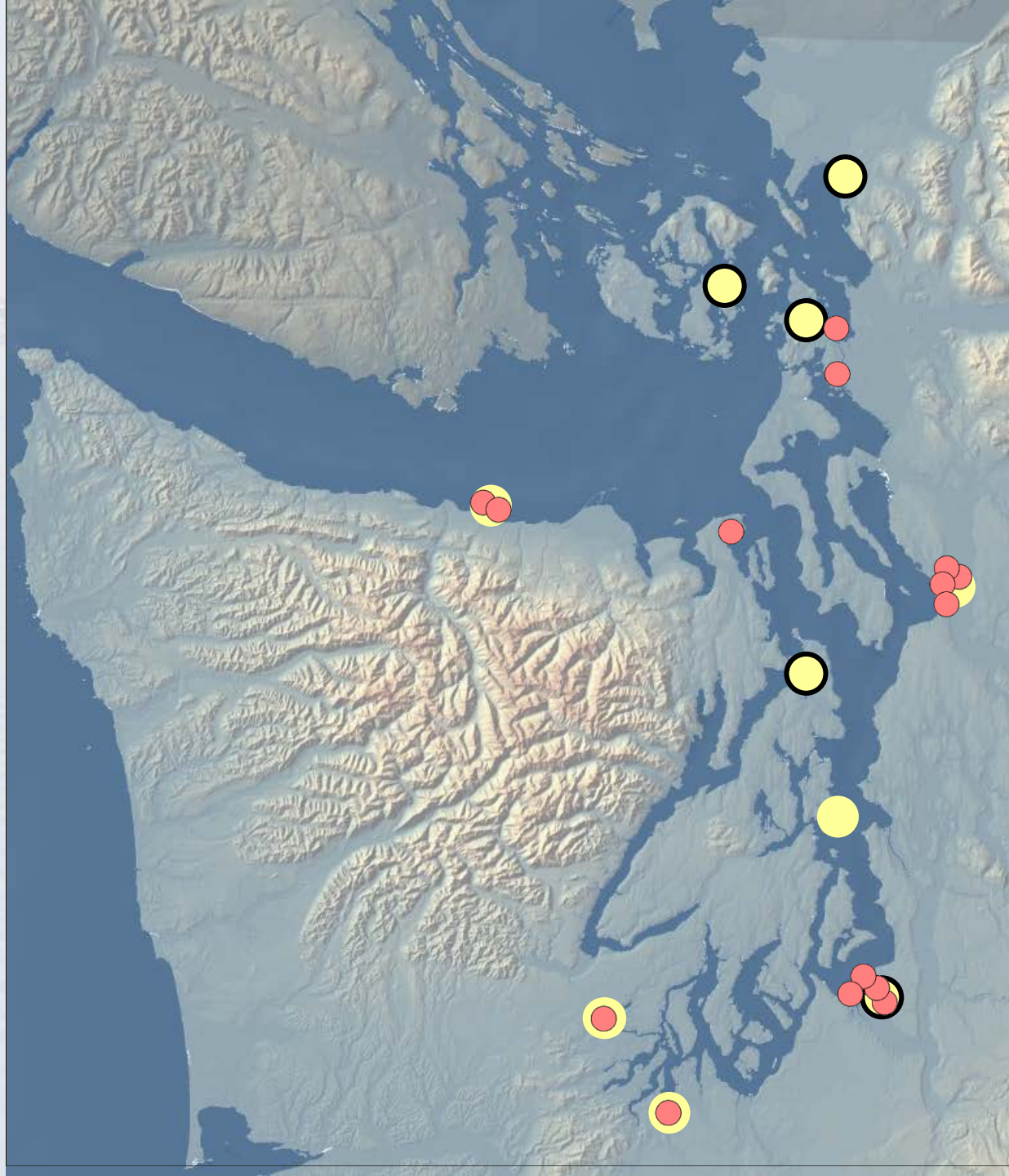
Identify regulatory and guidance tools for managing WW

Turn attention to Source Control options

Wood Waste

We have multiple cleanup sites driven largely by wood waste

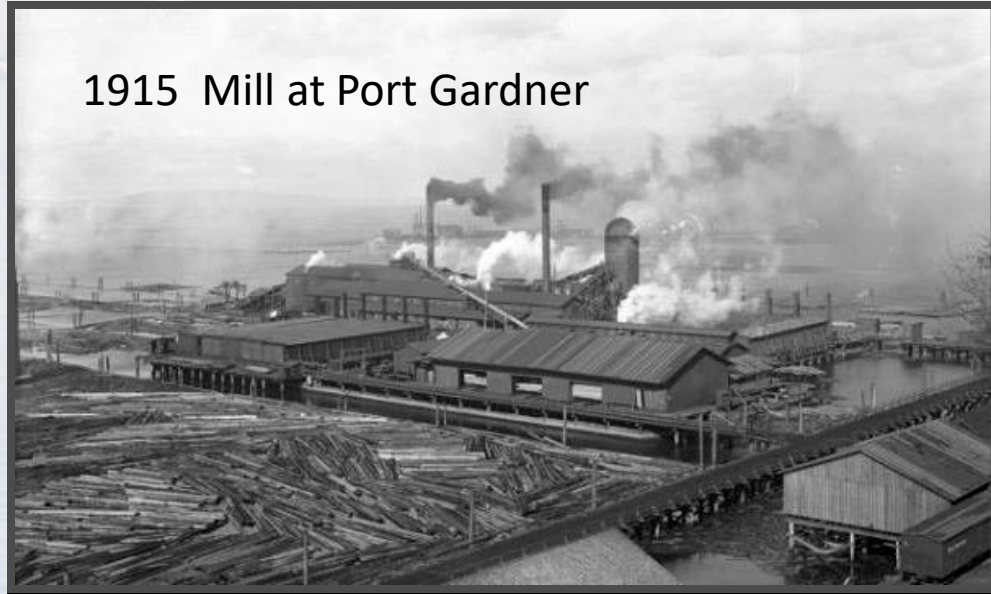
- Port Gamble
- Port Gardner
- Budd Inlet
- Oakland Bay
- Fidalgo Bay
- Port Angeles
- Others....
 - Bellingham Bay
 - Hylebos Wtrway
 - Thatcher Bay
 - Port Blakely



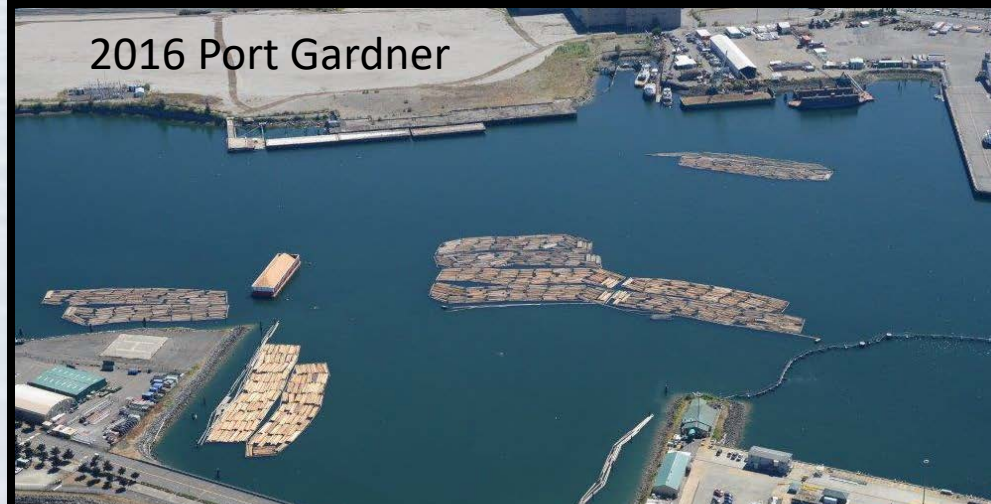
Wood Waste - Many Sources

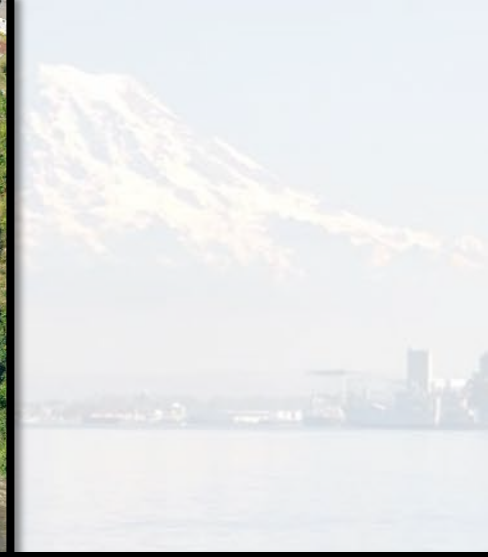
- Legacy sources: Over 160 years of lumber and logging activities
 - Sawmills
 - Paper mills
 - Chip (Barge) loading/handling
 - Log rafting and storage
 - Transfer facilities (log dumps)
 - Log transport
- Current sources:
 - Chip/Barge loading facilities
 - Transfer facilities
 - Log rafting and storage
 - Log transport

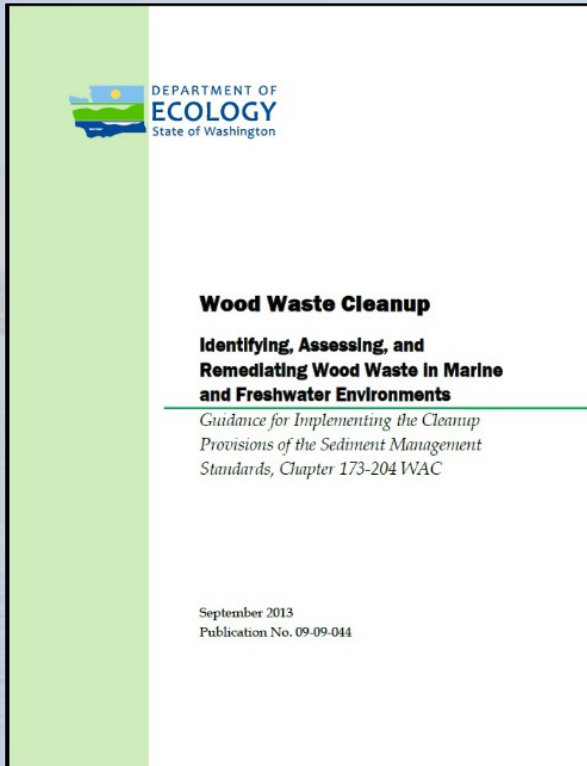
1915 Mill at Port Gardner



2016 Port Gardner

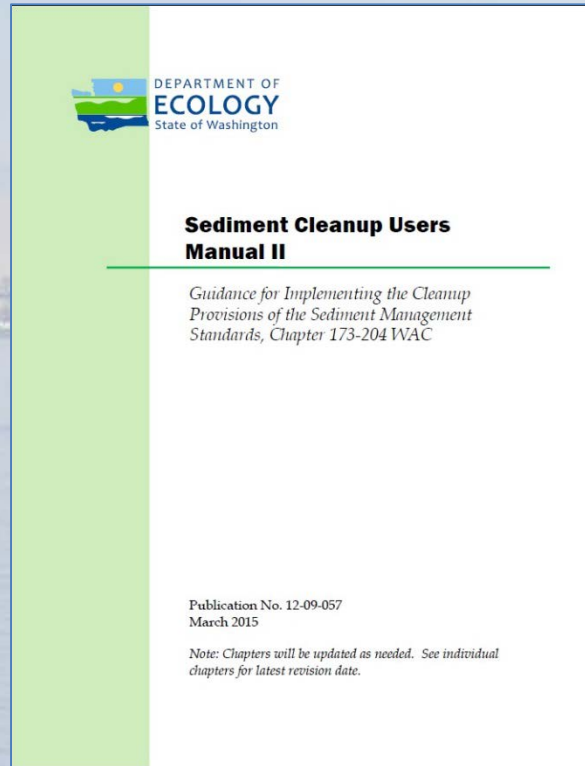






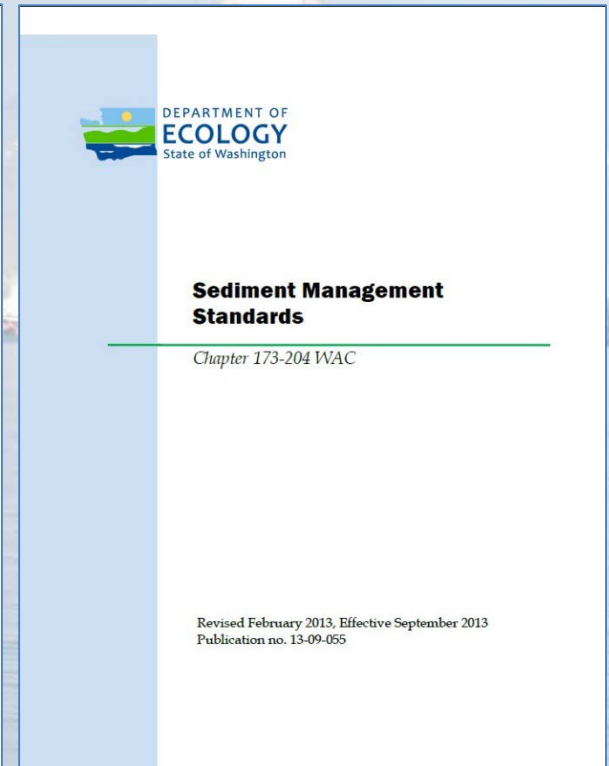
Wood Waste Cleanup
Guidance:

<https://fortress.wa.gov/ecy/publications/documents/0909044.pdf>



Sediment Cleanup Users
Manual (SCUM) II:

<https://fortress.wa.gov/ecy/publications/documents/1209057.pdf>



Sediment Management
Standards (SMS):

<https://fortress.wa.gov/ecy/publications/documents/1309055.pdf>

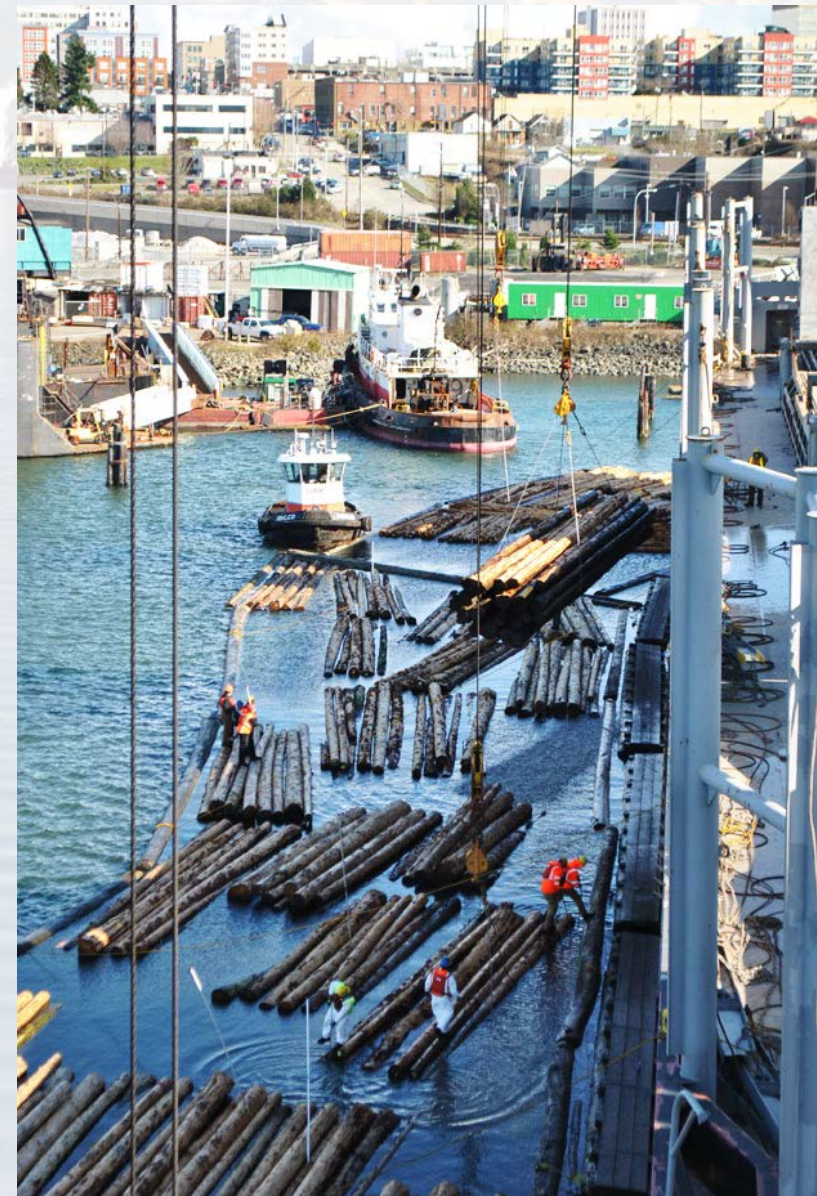
Source Control Measures

- Keep Timber out of the water
 - Is log transfer, rafting and storage the best use of our nearshore aquatic environment?
 - Dry transfer and transport, uplands storage



Source Control Measures

- Keep Bark out of the water
 - Require peeling or bark removal for any logs placed in the water



Source Control Measures

- Best Management Practices



Source Control Measures

- Best Management Practices – Controlling fugitive dust and chips
 - Filling and unloading barges
 - Conveyors and stockpiling



Questions?





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Photos courtesy

Seaspan.com

Panoramio

Pt of Everett

Pt of Pt Angeles

Mechanisms for Source Control

- **SMS Source Control Section 4 – Any waste discharge with potential to impact sediment needs**
 - All known & reasonable prevention, control and treatment (AKART)
 - Best Management Practices (BMPs)
- **Implemented in collaboration with Water Quality Program's discharge permit program**
 - Conditions of Nat'l Pollution Discharge Elimination System Permit (NPDES)
- **WA St Dept of Natural Resources (DNR) also embraces these BMPs in their Aquatic Land Leases**
 - Habitat Stewardship Measures

Woodard Bay Conventionals

Scoring Matrix

Legend

Scoring for separate parameters			Yellow = 1pt	Blue = 2pt	Red = 2pt & High Concern
Conventionals					
Total Organic Carbon (% DW)					
	>5<10	≥10			
TVS (%DW)					
	>10<15	>15			
Total Solids (%WW)					
	<50>40	<40			
Ammonia (mg-N/kg DW)					
	>30<40	>40			
Total Sulfides (mg/kgDW)					
	>200<300	>300			
Grain Size Fraction					
Gravel					
Sand					
Silt					
Clay					
Fines					
OSI					
Phenol					
	SQS	CSL			
Total Score					
	5 Low Med	6 Medium	7-10 High		

Woodard Bay Conventionals

Scoring Matrix

Station Number	WB-03-S	WB-06-S	WB-09-S	WB-12-S	WB-16-S	WB-17-S	WB-21-S	WB-22-S	WB-26-S	WB-30-S	WB-35-S	WB-36-S
Collection Date	2/27/2008	2/26/2008	2/26/2008	2/26/2008	2/26/2008	2/26/2008	2/26/2008	2/26/2008	2/26/2008	2/27/2008	2/26/2008	2/27/2008
Conventionals												
Total Organic Carbon (% DW)	2.1	5.19	2.75	2.63	2.56	1.09	3.96	0.38	1.58	9.14	8	2.97
TVS (%DW)	6.62	12.2	9.03	9.28	8.45	2.97	11.8	1.6	4.56	8.88	18.4	9.72
Total Solids %WW)	57.2	46.1	35.1	34.6	36.3	69.3	35.4	75.6	66.4	49.2	39.9	34.9
Ammonia (mg-N/kg DW)	9.1	11.7	16.6	19.9	16	4.1	16.9	4.2	8.5	46.2	26.8	22.5
Total Sulfides (mg/kg DW)	283	336	6.8	4.1	1.13	16.3	176	17	34.5	210	16.8	346
Grain Size Fraction												
Gravel	1.8	7.9	3	4.5	1.3	1.7	0.1	0.2	0	45.2	0.2	11.9
Sand	64.0	38.4	10.7	7.7	8.3	88.5	23.8	91.2	70.3	35.7	37.4	11.0
Silt	20.4	39.2	62.3	62.5	65.3	8.2	48.8	7.7	19.4	11.9	41.4	53.7
Clay	10.9	15.8	25.3	30	24.5	2.9	28.1	3	7.6	9.2	17	22.4
Fines	31.3	55	87.6	92.5	89.8	11.1	76.9	10.7	27	21.1	58.4	76.1
OSI	5	4	7	6.33	8.33	5.67	7.33	2.33	5.67	5.67	5.33	7
Phenol	530		780	1400	880					710		660
Total Score	2	5	3	4	3	0	3	0	0	6	5	5

Types of Wood Waste

Sawdust



Types of Wood Waste

Dimensional Lumber, Mill Scraps



Types of Wood Waste

Bark from Rafting

