

SMS/MTCA Cleanup Projects Update

Kathy Taylor, Supervisor
Aquatic Lands Cleanup Unit
Toxics Cleanup Program



Sediment Management Annual Review Meeting
May 7, 2014

Sediment Cleanup Sites

- 172 total state led sediment sites
- 136 in Western Washington (not including NFAs)

Major sediment cleanup areas in Puget Sound

- Bellingham Bay
- **Fidalgo & Padilla Bay**
- Port Gardner & Snohomish River Estuary
- Seattle (incl. Harbor Island and Lower Duwamish)
- Commencement Bay
- Olympia
- Port Angeles
- **Port Gamble**



WASHINGTON STATE
Department of Ecology



Bellingham

Anacortes

Port Angeles

Port Gardner

Port Gamble

Seattle Area

Tacoma and
Commencement Bay

Olympia



Bellingham

Oeser Co

Little Squalicum Park

Weldcraft Steel & Marine

Marine Services Nw

Olivine Corp Hilton Ave

I & J Waterway

Whatcom Waterway

Georgia Pacific Corporation Bellingham

R G Haley International Corp Inc

Cornwall Avenue Landfill

Maritime Contractors Inc



Bellingham

Anacortes

Port Angeles

Port Gamble

Port Gardner

Seattle Area

Tacoma and
Commencement Bay

Olympia



Anacortes

Anacortes Port Log Yard

Anacortes Port Of Q Ave & 15Th St

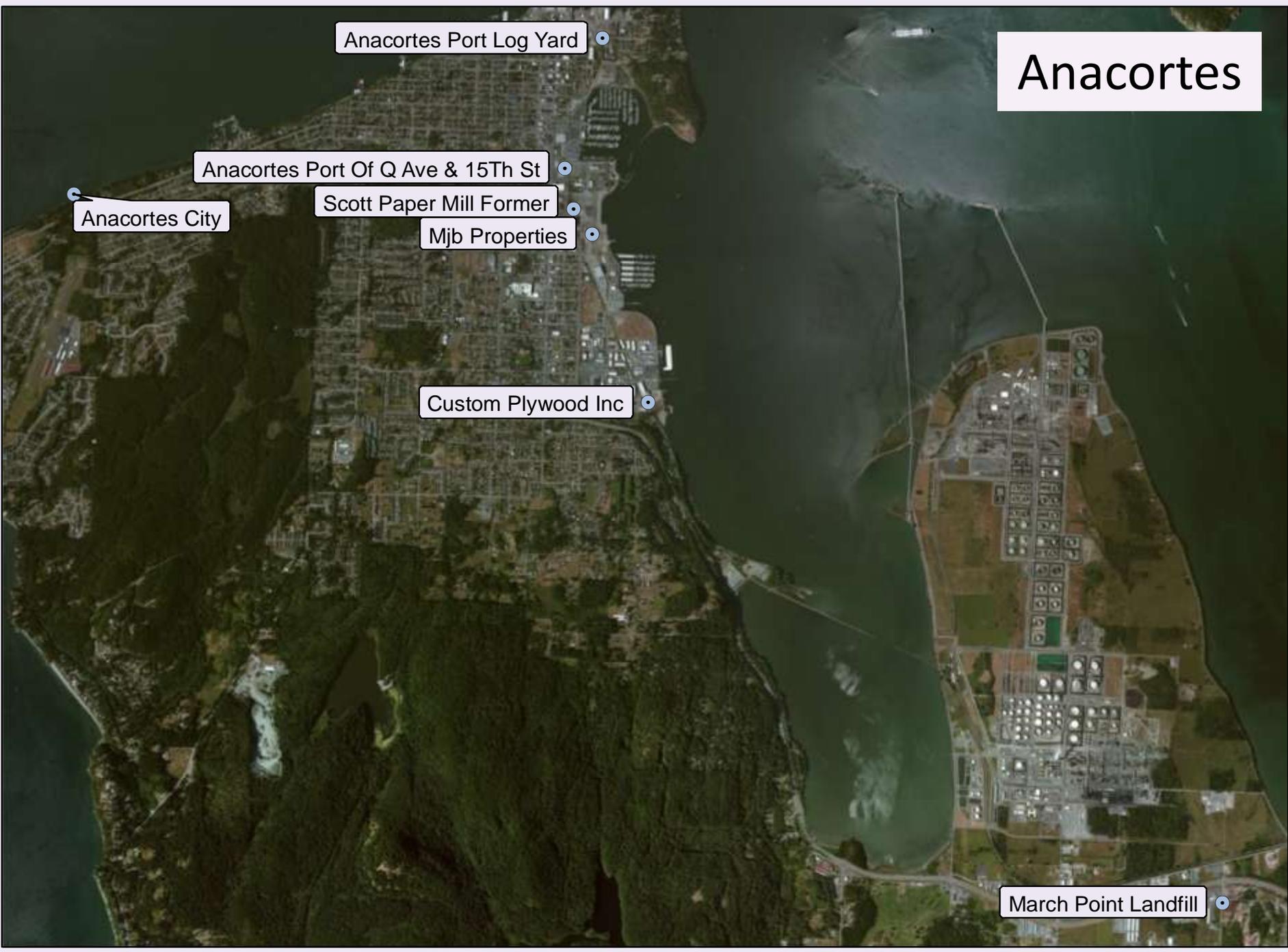
Anacortes City

Scott Paper Mill Former

Mjb Properties

Custom Plywood Inc

March Point Landfill



Anacortes

ISIS Site Name	Also known as	Causes of Contamination	Site Cleanup Status	Authority
Custom Plywood Mill	Anacortes Port of Q Ave & 15 th St Anacortes Plywood, Custom Plywood	Wood, timber, paper	Initial Investigation, Site Discovery/Report Received Completed	MTCA
March Point Landfill	Texaco PS Offsite Dump, Whitmarsh Dump Texaco PS OFFS, Whitmarsh Landfill ()	Landfill	Site Hazard Assessment Completed - Initial Investigation	CWA
MJB Properties	Scott Paper Mill Former, Port of Anacortes, City of Anacortes, Scott Paper Anacortes	Industrial	Site Hazard Assessment Completed - Initial Investigation	MTCA
Port of Anacortes Dakota Creek	Dakota Creek Industries, Dakota Creek Shipyard	Shipyard, marina, industrial	Early Notice Letter Completed	MTCA
Anacortes Port Log Yard		Wood, Timber	Early Notice Letter	

Anacortes

Anacortes Port Log Yard

Anacortes Port Of Q Ave & 15Th St

Anacortes City

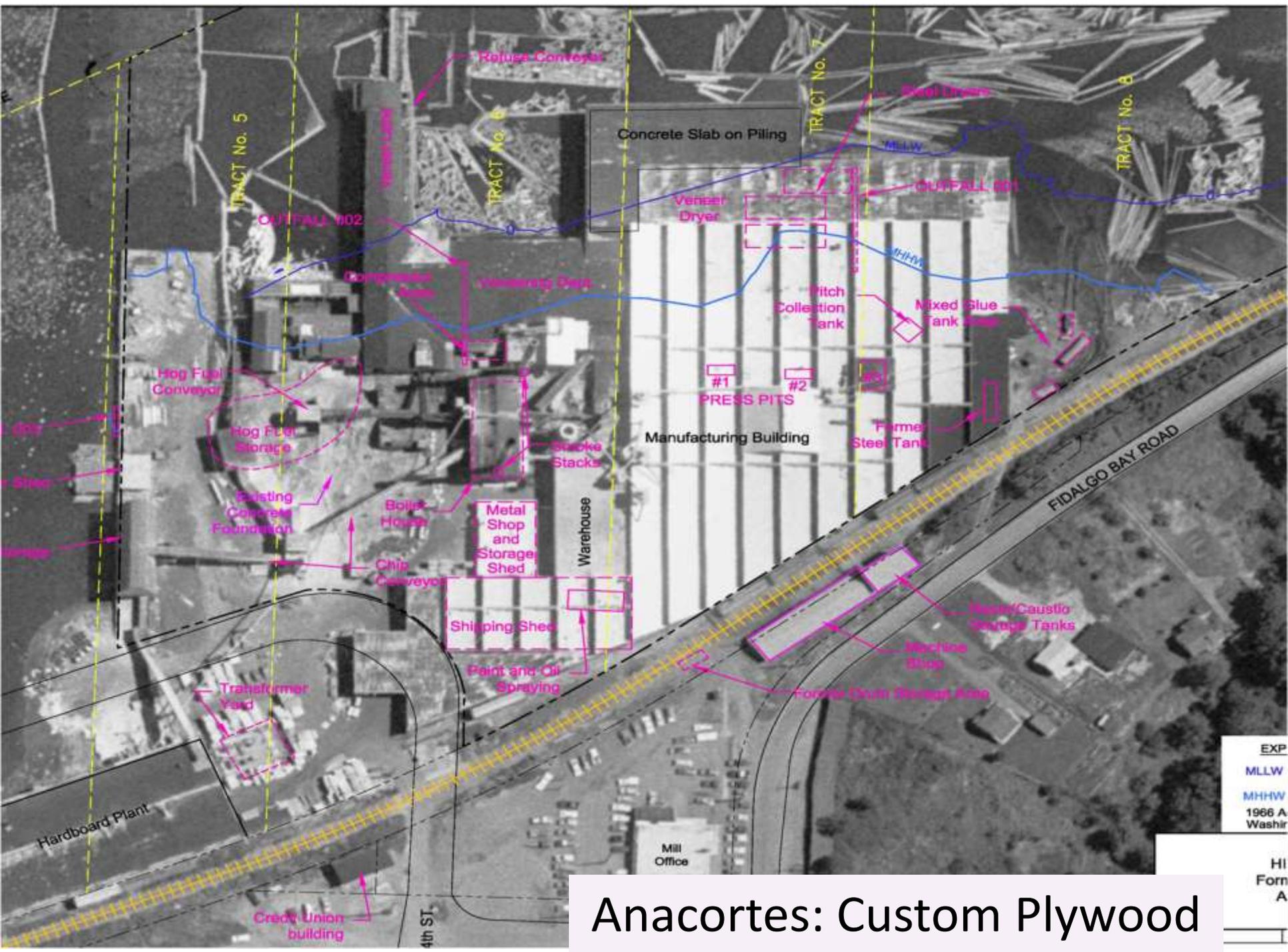
Scott Paper Mill Former

Mjb Properties

3205 V Place

Anacortes Plywood Inc

March Point Landfill



Anacortes: Custom Plywood

EXP
MLLW
MHHW
1966 A
Washir
HI
Form
A



Anacortes: Custom Plywood

In-Water Cleanup Work

- Removal of Marine Construction Debris and Pilings
- Sediment Remediation – Dioxin and Wood Waste
- Shoreline Protection & Habitat Restoration Work















Custom Plywood

Pete Adolphson (sediments) and Hun-Seak Park

The first phase cleaned up 4 upland acres contaminated with TPH and metals:

- (1) over 24,800 cubic yards of contaminated soil was removed,
- (2) 970 creosote pilings were removed,
- (3) 51,000 cubic yards of clean material was imported,
- (4) an on-site mitigation wetland was created, and
- (5) a damaged storm drain to the site area was repaired and a bioswale system was created and installed.

The second project phase completed early this year

- (1) removed over 45,000 cubic yards of contaminated materials
- (2) removed nearly 1,400 creosote pilings from the waters of Fidalgo Bay, and
- (3) imported 130,000 cubic yards of habitat friendly substrate.

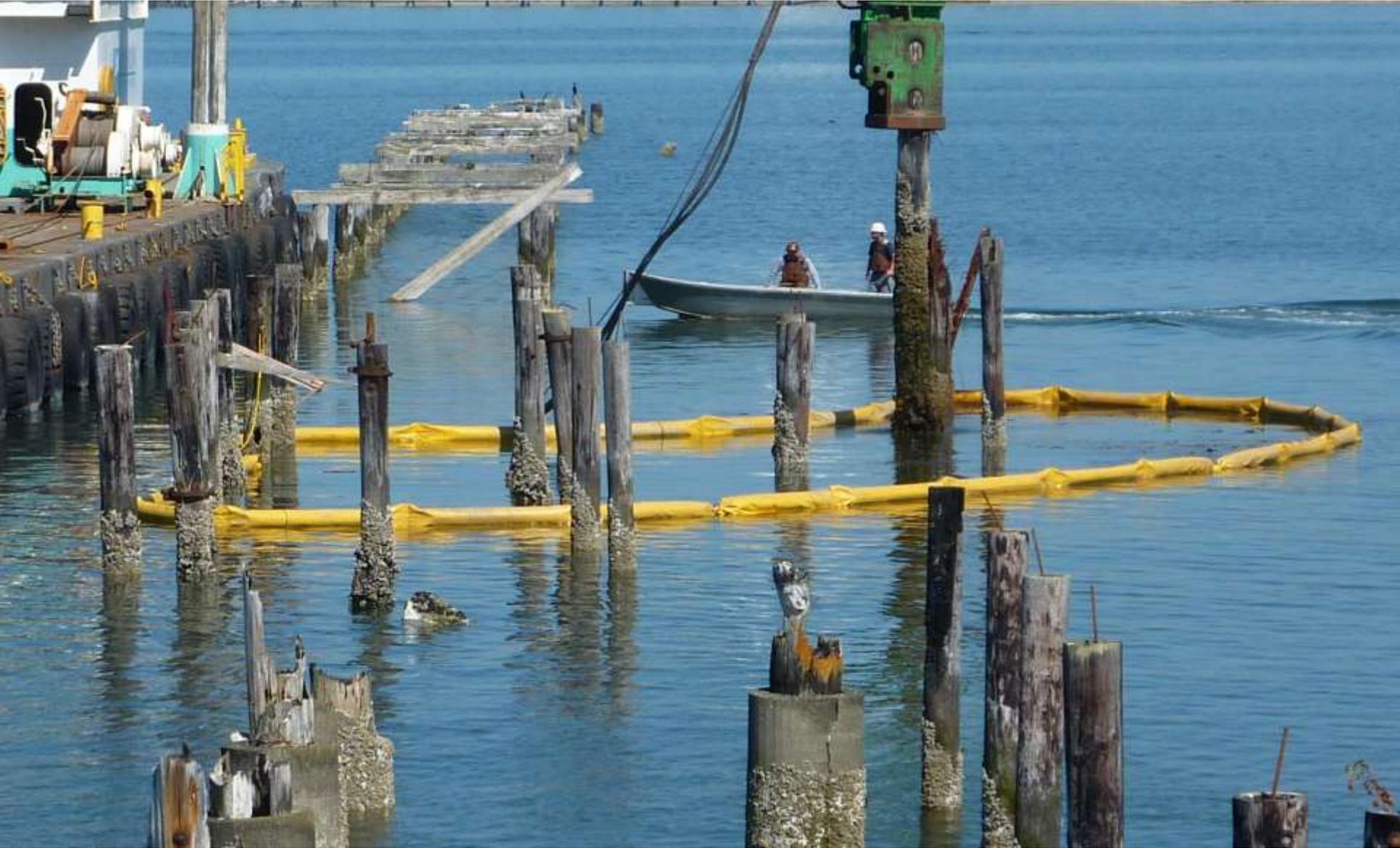
Completed on time and under budget.

Viable surf smelt spawning returned immediately on the remediated areas.

We are conducting a study at this site on thin layer sediment placement and carbon amendments in existing eelgrass beds located in areas containing lower levels of contaminated sediment.





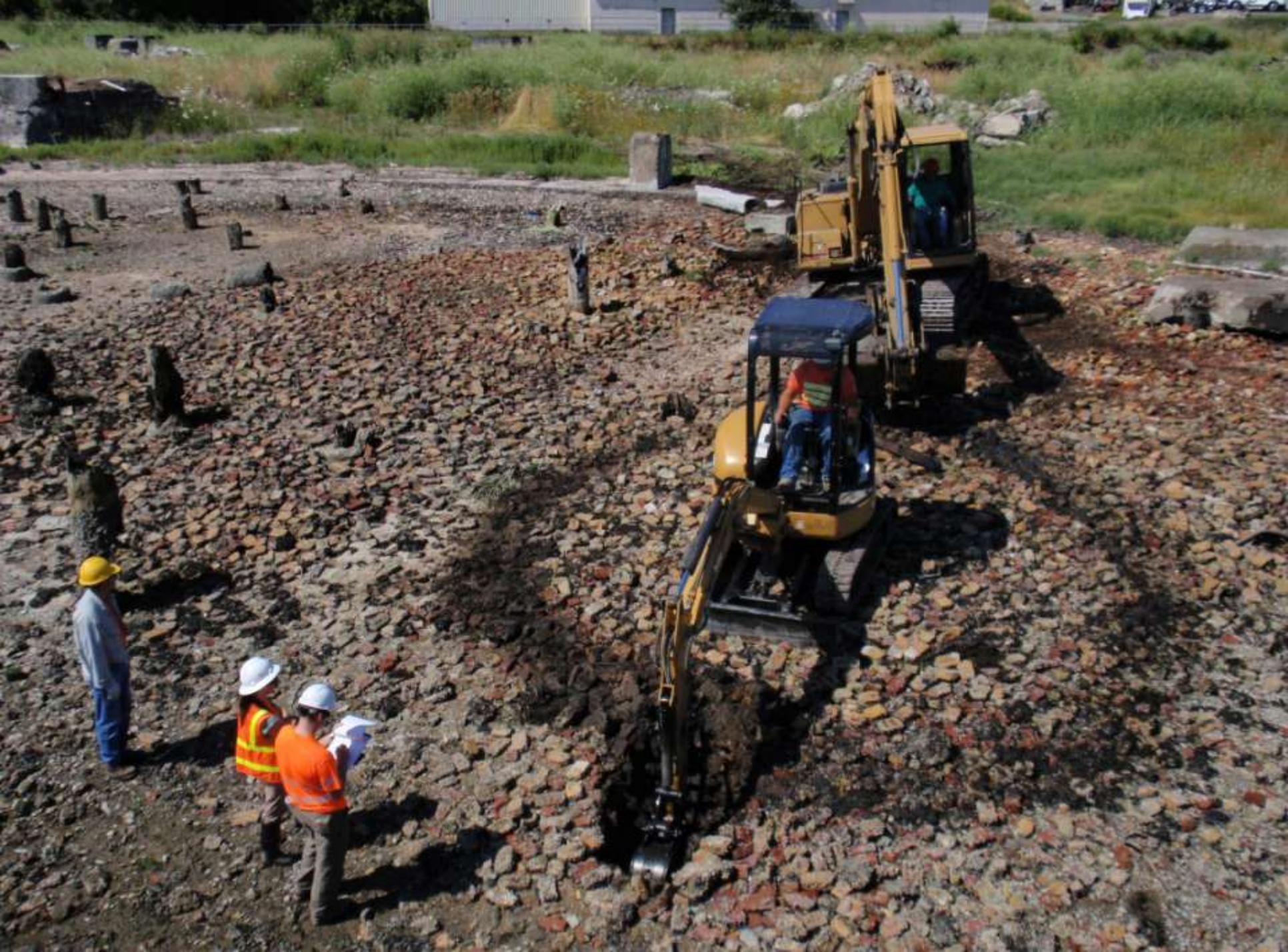








D B RAINIER



















Bellingham

Anacortes

Port Angeles

Port Gardner

Port Gamble

Seattle Area

Tacoma and
Commencement Bay

Olympia



Port Gardner

• Bay Wood Products

• JELD-WEN

• Weyerhaeuser Paper Co Everett

• 12th Street Marina

• North Marina West End

• Fishermen'S Boat Shop Inc

• North Marina Redevelopment

• Kimberly-Clark Worldwide

• East Waterway

• Weyerhaeuser Mill A Former



Bellingham

Anacortes

Port Angeles

Port Gardner

Port Gamble

Seattle Area

Tacoma and
Commencement Bay

Olympia



Seattle

Stabbert Yacht & Ship Llc

Salmon Bay Center

Er & Jr Sutter Llc

Houghton Beach Park

King Cnty Dot Metro Transit Lake Union

John Dunato & Company

Gas Works Park Wa Natural Gas

Northlake Shipyard Inc

Haug Corp Property

Lake Union Drydock Company

Lake Union Steam Plant

Coleman Creosoting Works

Unocal Seattle Market Sed

King County Denny Way Cso

Seattle Port Term 48

Central Seattle Waterfront

Terminal 46

Seattle City Harbor Ave Sw Project

Pier 1

Gatx Facility

Sw Harbor Project

Harbor Island

Harbor Island East Waterway

Lower Duwamish Waterway

Duwamish Shipyard Inc

Northwest Enviroservice 2W

Crowley Marine Services Inc 8Th Ave S

Northwest Auto Wrecking

Boeing Renton

Site Name	Also known as	Causes of Contamination	Site Cleanup Status	Authority
Lake union and Ship Canal				
Gas Works Park Natural Gas	Natural Gas ,	Petroleum, Industrial	Cleanup Operation & Maintenance In Progress	MTCA
Gas Works Park East		Industrial	RI/FS	---
Gas Works Park West		Industrial	RI/FS	---
Haug Corp Property	, Seaboard	Shipyards	Early Notice Letters Completed	MTCA
John Dunato & Co Inc	Dunato Boatyard, Dunatos Marine Svc	Industrial	Early Notice Letters Completed	MTCA
Lake Union Drydock Co		Stormwater, Refueling, Industrial	Initial Investigation, Hazard Site Listing Completed	MTCA
Lake Steam Plant		Combined Sewer Overflow, Stormwater, Industrial, Shipyards	Hazard Site Listing, Hazard Assessment Completed	MTCA
NOAA Dockside Facility		Shipyards	Initial Investigation	MTCA*
Northlake Shipyards	Marine Power & Equipment, Unimar United Marine Shipbuilding Inc, United Marine Shipyards, Woeck Family Industries	Shipyards	Remedial Investigation, Feasibility Study In Progress	MTCA
Salmon	CD Stimson Co, Honeywell Inc, Stimson Marina,	Industrial	Initial Investigation Completed	MTCA

Site Name	Also known as	Causes of Contamination	Site Cleanup Status	Authority
Elliot Bay & Harbor Island				
Coleman Dock Sediments		Recontamination of clean cap as result of DOT activities to renovate Seattle Ferry Terminal	RI/FS Completed	MTCA
Central Seattle Waterfront	Pier 53-55, Waterfront	Industrial, Combined Sewer Overflow, Spill	Remedial Investigation/Feasibility Study In Process	SMS
Coleman Creosoting Works	EB28- Colman Dock, Pier 58, Crawford Sea Grill, Ivar's Captain's Table, US Vining & The Furnance Oil Company	Industrial, CSO, Stormwater, Spills	Early Notice Letters Completed	MTCA
Crowley Marine Services Inc	This includes sites known as parcels D and E	unknown	Initial Investigation Completed	MTCA
King Denny Way CSO	EB26 - Denny Way CSO	Combined Sewer Overflow	Monitoring	MTCA
GATX Facility	EB17 - East Waterway part of Harbor Island Superfund Site GATX Tank Storage Terminals, GATX Terminals Corp, TOSCO GATX Term Tank S	Petroleum bulk plant	Early Notice Letters Completed	MTCA
Harbor Island East Waterway	EB8 - , partial T18	Shipyards, Industrial, Combined Sewer Overflow	Record of Decision (CERCLA)	SMS
Pier 1	United Marine Shipbuilding Harbor Ave	Industrial, Combined Sewer Overflow	Site Hazard Assessment Completed, Hazardous Site Listing Completed	MTCA
Seattle City Harbor Ave SW Project		unknown	Site Discovery, Report Received Completed	SMS
Seattle Term 48	EB18 - Piers 48-52	Industrial, Combined Sewer Overflow, Spill	Initial Investigation In Progress	SMS
Seattle Terminal 46	EB27 - Piers 46-48 Terminal 46	Combined Sewer Overflow	Early Notice Letters In Progress	SMS
Seattle Harbor East Waterway	EB6 - Pacific Sound Resources	Industrial	Site Discovery, Report Received	CERCLA

Site Name	Also known as	Causes of Contamination	Site Cleanup Status	Authority
Lower Duwamish River				
Duwamish Shipyard Inc	Marine Lines, Machine Works, DR36 - Duwamish Shipyard	Shipyard	Site Hazard Assessment Completed, Hazardous Sites Listing Completed, Negotiations for AO started Feb 2008	CWA
Lower Duwamish Waterway acreage unspecified for parcels ()	Brandon ST CSO; Duwamish River Main Channel; Duwamish Shipyard; Duwamish; Diagonal CSO; Slip 3, MP&E; South Harbor Island; DR31 - Duwamish	Industrial, spill, combined sewer overflow, stormwater run-off	Remedial Investigation/Feasibility Study in process	CERCLA/SMS
Northwest Enviroservice 2W		Spill	Awaiting cleanup	MTCA
Boeing Renton		Industrial, Metals	Cleanup Started	MTCA
Northwest Auto Wrecking	Northwest Auto and Truck Wrecking		Cleanup Started	MTCA
Seattle City Light Steam Plant Georgetown	Steam Plant, Light	Unknown	Interim Action Completed. Negotiations for AO start April 2008	MTCA



Bellingham

Anacortes

Port Angeles

Port Gardner

Port Gamble

Seattle Area

Tacoma and
Commencement Bay

Olympia



Tacoma

Dickman Mill Sediments

Tacoma Silver Cloud Inn Llc

Us Army Wsmc Pier 23

Occidental Chemical Corp

Cascade Pole Mcf Sitcum

General Metals Of Tacoma

Arkema Inc

Hylebos Wood Debris Site Sediments

Tacoma Metals Site



Site	Also known as	Causes of Contamination	Site Cleanup Status	Authority
Tacoma Silver Cloud Inn LLC	Silver Cloud Inn LLC, Silver Cloud Inn	Industrial, leaking underground storage tank	Cleanup Operation & Maintenance In Process	MTCA
Cascade Pole MCF Sitcum	McFarland Sitcum, Sitcum Waterway	Industrial	Interim Action Completed	MTCA
Dickman Mill		Wood, timber, paper	Interim Action Completed	MTCA
Hylebos Wood Debris Site Sediments	Bay Superfund Site, Hylebos Waterway Problem	Industrial	Cleanup Construction In Process	MTCA
Occidental Chemical Corp	Pioneer Americas Inc, Pioneer Americas LLC, Pioneer Chlor Alkali Co Inc, Hylebos Waterway	Industrial	Remedial Investigation/Feasibility Study In Process	MTCA
US Army WSMC Pier 23	Pier 23, US Army Reserve	Industrial, Shipyard	Remedial Investigation/Feasibility Study In Process	MTCA
Arkema, Inc	ATO Chem, ATOFINA Chemicals Inc, Elf ATOCHEM 2901 Taylor Way, Elf ATOCHEM North America Tacoma, Pennwalt Corporation	unknown	Cleanup Operation & Maintenance In Process; Cleanup Action Plan	CWA
General Metals of		unknown	Cleanup Complete, periodic review	CERCLA



Bellingham

Anacortes

Port Angeles

Port Gardner

Port Gamble

Seattle Area

Tacoma and
Commencement Bay

Olympia



Port Angeles

• Western Port Angeles Harbor

• Port Of Port Angeles Marine Trades Area

• Port Angeles Rayonier Mill Site

Port Angeles

Site Name	Also known as	Causes of Contamination	Site Cleanup Status	Authority
ITT Rayonier PA Finish Rayonier Mill Site	Rayonier Mill	Wood, paper, timber	Interim Action In Process, Marine Remedial Investigation in Process	MTCA
Port of Marine Trades Area	of Log Yard, of Marine Terminal,	Wood, paper, timber	Remedial Investigation/Feasibility Study In Process	MTCA
Western Port Angeles Harbor			Remedial Investigation/Feasibility Study In Process	MTCA



Bellingham

Anacortes

Port Angeles

Port Gardner

Port Gamble

Seattle Area

Tacoma and
Commencement Bay

Olympia



Port Gamble

Pope & Talbot Landfill No 4

Pope & Talbot Inc Sawmill

Port Gamble Log Storage Lease Area



Port Gamble



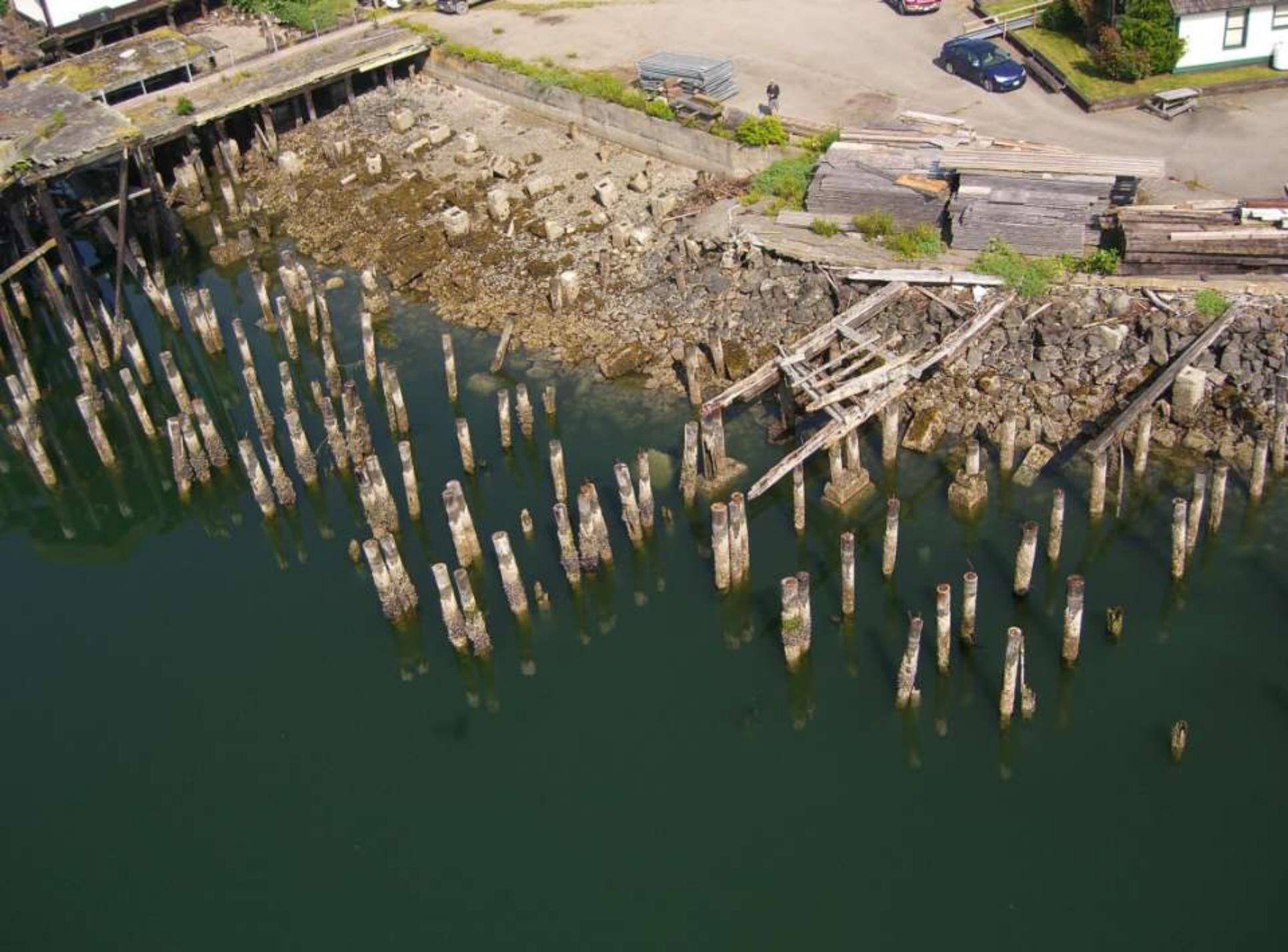
Port Gamble Bay Cleanup Actions (Russ McMillan)

51

- Remove creosoted pilings and overwater structures
- Excavate contaminated intertidal sediments (~14,000 cys)
- Remove and isolate wood waste at Mill Site
 - Dredging from shallow subtidal areas (~30,000 to 45,000 cys)
 - Capping deeper subtidal deposits and (~10 acres)
- Thin layer capping of moderate wood waste impacts (~100 acres, 6" layer)
- Long term monitoring of recovery after removing creosote sources (throughout all of Port Gamble Bay ~600 acres)

Port Gamble





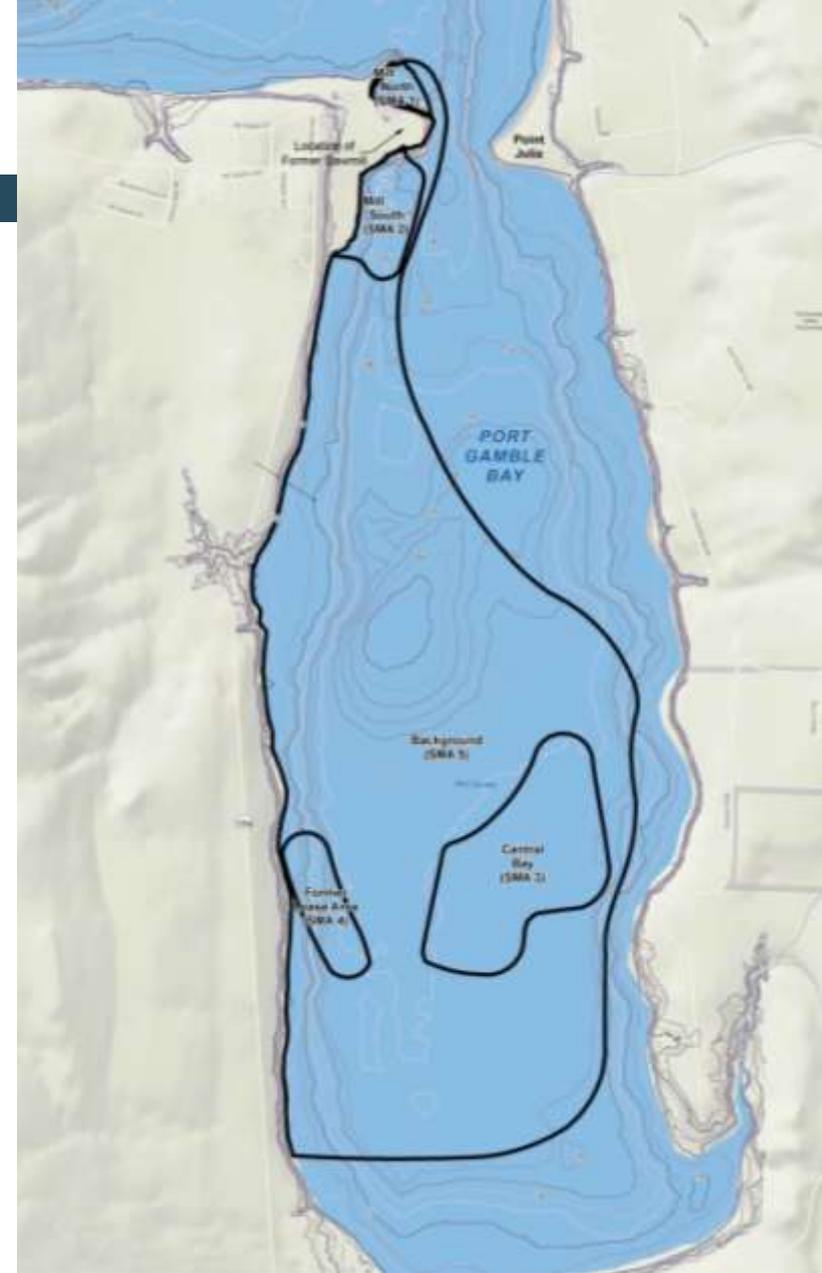


Port Gamble Bay Proposed Cleanup

55

Sediment Management Areas (SMAs)

- ❑ Mill North (6 acres)
- ❑ Mill South (19 acres)
- ❑ Central Bay (77 acres)
- ❑ Former Lease Area (19 acres)
- ❑ Background Area (602 acres)



Proposed Site Cleanup Mill Site North

56

Mill Site North Cleanup, SMA-1

- ❑ Piling and structure removal
- ❑ Intertidal excavation/backfill (5,000 cubic yards)
- ❑ Dredge wood waste (10,000 to 15,000 cubic yards)
- ❑ 1 ft Sand cap (3 acres)
- ❑ Long term monitoring



Proposed Site Cleanup Mill Site South

57

Mill Site South Cleanup, SMA-2

- ❑ Piling and structure removal
- ❑ Intertidal excavation (9,000 cubic yards)
- ❑ Dredge wood waste (20,000 to 30,000 cubic yards)
- ❑ Place 4 ft cap
- ❑ Place 6" emnr cap
- ❑ Long term monitoring



Proposed Site Cleanup Central Bay

58

Central Bay Cleanup, SMA-3

- ❑ Place 6" emnr cap (77 acres, 90,000 to 100,000 tons sand)
- ❑ Long term monitoring

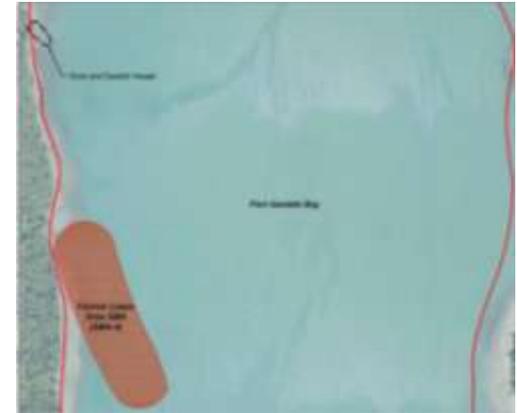


Proposed Site Cleanup Former Lease Area

59

Former Lease Area Cleanup, SMA-4

- ❑ Place 6" emnr cap (19 acres, 20,000 to 25,000 tons sand)
- ❑ Long term monitoring

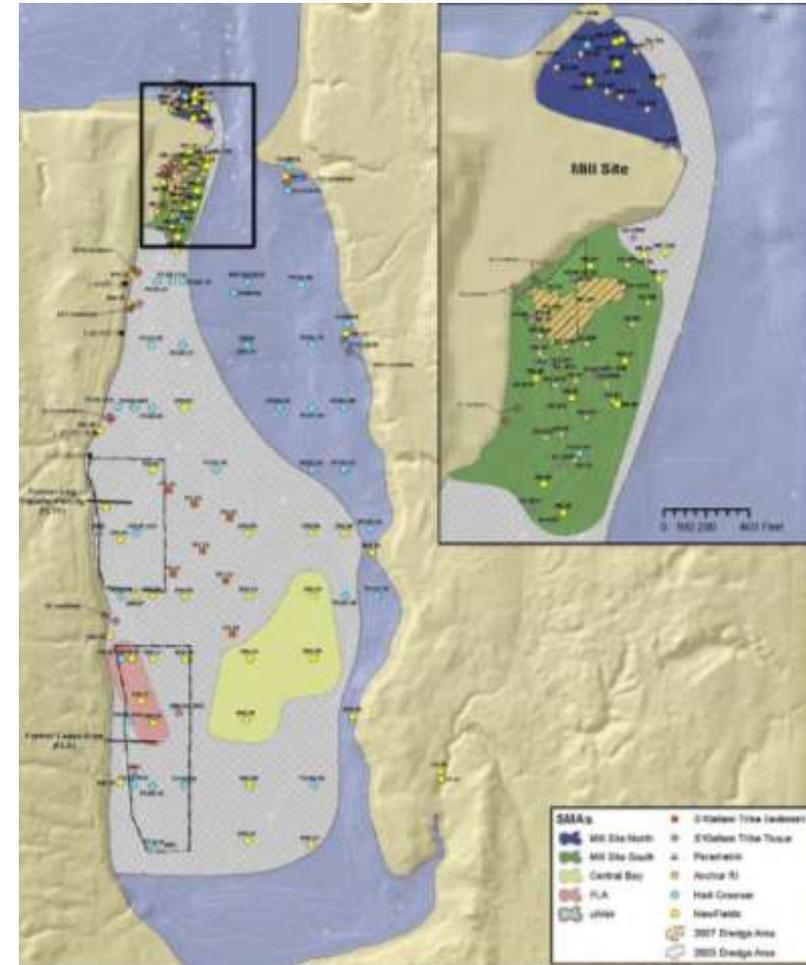


Proposed Site Cleanup Background Area

60

Background Area Cleanup, SMA-5

- ❑ Long term monitoring (602 acres)



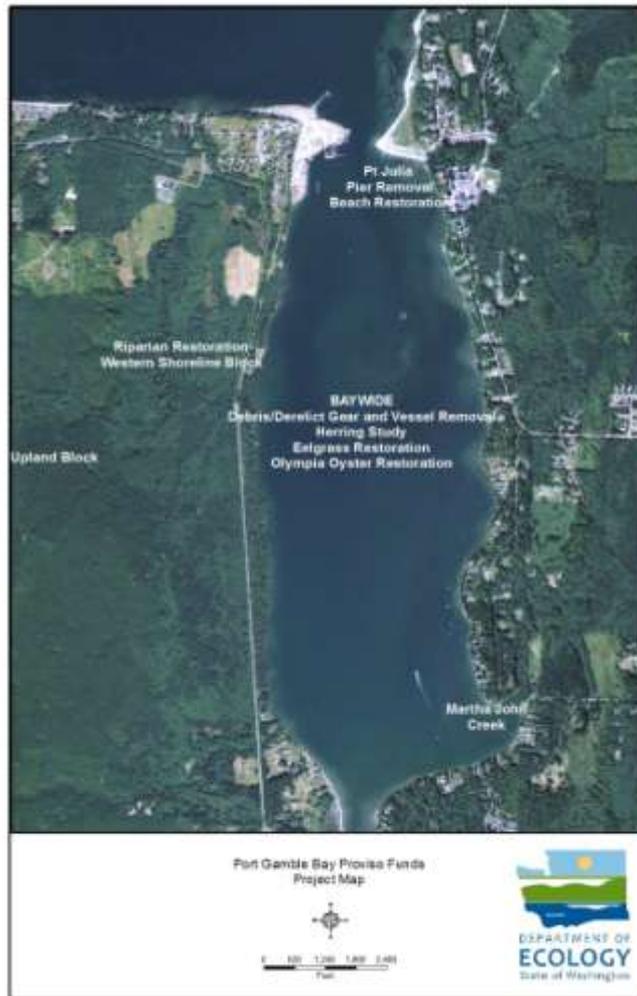
Port Gamble Bay Source Control, Habitat Preservation and Cleanup Sustainability (Celina Abercrombie)

61



Restoration and Preservation Projects and

62



Western Shoreline Block Land Acquisition

Forested Upland Block Land Acquisition

Pacific Herring Studies

Eelgrass Restoration

Olympia Oyster Enhancement

Baywide Debris and Derelict Gear and Vessel Removal

Riparian Restoration

Point Julia Pier Removal and Beach Restoration

Martha John Estuary Pile Removal (combined with debris removal)

Forage Fish Rebuilding (combined with debris removal)

Land Acquisition and Preservation

63

Western Shoreline Block

- Approx. 450 acres of upland and 70 acres of tideland
- Approx. 1.5 miles of shoreline
- Owned by Kitsap County



Eelgrass Restoration

65

- Restore over 2 acres of eelgrass beds
 - Where does potential eelgrass habitat exist?
 - Where is eelgrass vegetation currently not persistent?



Olympia Oyster Enhancement

66

- Produce 5,000,000 oyster seeds
- Enhance 10 acres of native oyster habitat whole shell and shell hash
- Spread seed over and within shell enhancement area
- Includes funding for construction of NOAA/Manchester Shellfish Restoration Lab to support this work



Debris and Derelict Gear and Vessel Removal

67

- Remove scattered intertidal debris and derelict gear and vessels throughout the Bay
- Remove remaining pilings (not removed as part of cleanup)
- Restore riparian vegetation as appropriate



Upcoming Restoration and Preservation Projects

68

Purchase Forested Upland Parcels

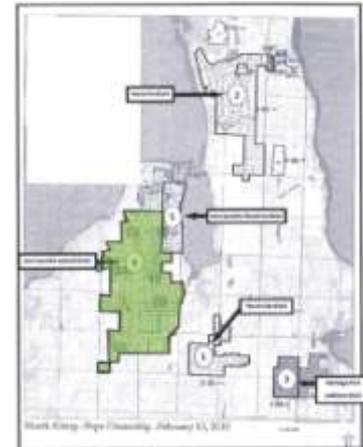
- 20-acre forested upland lots that contain wetland and stream resources

Point Julia Pier Removal and Beach Restoration

- Remove the pier and a concrete boat ramp
- Restore beach where pier and boat launch were located

Riparian Restoration on Western Shoreline Block

- Restore approximately 1.5 acres of degraded riparian habitat



Summary

- Many cleanups are underway in Puget Sound
- We are using innovative approaches, where possible, to restore and protect habitat on cleanup sites.
- Details are available in newly updated Ecology website, Toxic Cleanup Program Web Reporting <https://fortress.wa.gov/ecy/tcpwebreporting/Default.aspx> and from project managers