



Interagency Agreement No. C1100186

Beach Creosote Cleanup in Puget Sound

2011-2013

Final Report



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

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Overview

The Washington State Department of Natural Resources (DNR) and its partners, including the Washington Conservation Corps (WCC) Puget SoundCorps, with funding from the Department of Ecology (Ecology) Model Toxics Control Account, completed nine creosote debris removal projects under Interagency Agreement No. C1100186 (DNR IAA No. 12-62). Projects varied in geographic size, habitat type, and removal method, and occurred in Clallam, Island, Jefferson, Kitsap, and San Juan counties. A total of 239.9 tons of creosote debris were removed.

Individual project costs reflect all direct expenditures as well as DNR and other in-kind support. Puget SoundCorps costs are not included in the budget total. The project budget spreadsheet breaks down expenses for each site (page 11).

Total project costs were \$154,610, of which \$133,251 were recoverable under the grant.

Permitting

DNR used its Hydraulic Project Approval (HPA) permit (No.124909-2), issued by the Washington Department of Fish and Wildlife (WDFW) in 2011 and updated in 2013, for the removal of creosote-treated debris throughout Puget Sound. A Sound-wide State Environmental Protection Act (SEPA) determination was completed in 2006 in preparation of the general HPA. Best management practices were developed at that time to ensure consistency in the methodology used and environmental protection throughout the project's geographic scope.

Each individual project went through review at the shoreline management level to determine if local permits were required. Site specific permits are noted within each project summary.

Cultural/Historical Resources Review

DNR worked with its staff archaeologist to complete historical and archaeological reviews of each project site. The archaeologist coordinated with the Department of Historic and Archaeological Preservation (DAHP) as needed to ensure protection of any known cultural resources as well as to develop plans for action should artifacts be found during the projects.

Contracting

Beach debris projects involved a variety of contract types: 1. Helicopter operations are included in the competitive bidding through the General Administration (GA) hiring process; therefore, DNR hires directly from the GA list and no other competitive bid is required; 2. Heavy equipment operators are hired under a "limited public works project" from DNR's small works roster for public works that are less than \$35,000; and 3. Disposal is handled as a fee-for-service contract with the locally required trash-hauling company.

DNR also rented equipment when a trained operator was available through the WCC; in these instances, rental fees are paid directly to the renting entity.

WCC Puget SoundCorps

In most cases, Puget SoundCorps crew costs were paid directly by Ecology. However, as of August 2012, DNR Aquatic Resources Division staff began working with Puget SoundCorps crews through the 2012 Jobs Now Act. Through this legislative appropriation, DNR was allocated approximately one week per month of time for beach debris and other restoration activities; therefore, in the case of some of the later projects, DNR used its assigned crew time for these projects.

Removal Methods

One or a combination of the following methods may be used on any given project:

Helicopter

DNR utilizes helicopters for creosote debris removal when the habitat is sensitive and cannot withstand other equipment, such as in marshes and lagoons. They are also used in areas where the distance to a staging area is too far for efficient and safe operations.

DNR used the services of Hi Line Helicopters from Darrington for all helicopter-related projects under this grant.

Typically, the Puget SoundCorps crew spends several days prepping the site prior to the helicopter arriving. Prepping consists of: locating and identifying creosote and other debris; staging the debris in a manner that allows for the placement of a choker rope around the log either by propping the log up and/or moving it to a location free of obstructions; clearing other debris from around the treated wood; and flagging the debris for easy sighting during the helicopter phase. Debris that is too small to be choked is collected and placed into large cargo bags that can also be lifted by the helicopter. Miscellaneous marine debris such as trash, tires, and foam are also placed in the bags for disposal.

DNR foresters trained as *Helicopter Crew Members* (HECM) for wildland firefighting lead the “hooking” portion of the helicopter work. They are responsible for placing the choked logs onto the helicopter’s line. The Puget SoundCorps crew works ahead of the DNR crew, choking logs and looking for additional debris that may have been missed during the staging phases.

Typically, the DNR crew also looks for an opportunity to train the Puget SoundCorps crew to safely assist with the hooking.

Three to four people are also located at the landing zone to pull choker ropes from the logs once they have been placed on the stack and in the containers.

Hand-Hauling

In places where a staging area is near the location of the debris, hand-hauling may be used if it can be done so efficiently. Crews carry logs as a team, using tools such as log tongs or log straps, or by hand if small enough. A small sled or small utility vehicle, such as a gator or toter, may also be used if the substrate will not be compromised by doing so, such as on sand or gravel when no forage fish spawning activity will occur. Hand-hauling is usually reserved only for small-scale projects with good access.

Use of Heavy Equipment

Hand-hauling projects may occur in conjunction with the use of a piece of heavy equipment, such as a tracked backhoe or small crawler crane. Equipment is limited to moving along one path parallel to the shore to limit impact to the area. Heavy equipment is also used to load containers for disposal.

Boat/Landing Craft

Boats or other vessels are used when access by water is the only or best option. In most cases, Puget SoundCorps crews will assist by staging debris near the water's edge for pick up by the vessel. Materials are transported to an offloading site on land and prepared for disposal.

Puget Sound Creosote Debris Removal Projects 2011-2013



Project descriptions

(Note: Projects at Neck Point and Jackson Beach are reported as one project, as are the projects at Point No Point and Kala Point. These projects each shared resources and supplies; therefore, costs were combined.)

Lopez Island Creosote Debris Removal, San Juan County

Summary

Schedule: October 17-November 4, 2011

Location: Fisherman Bay Spit Preserve: Latitude - 48.522038N;
Longitude -122.921970W
Odlin Park: Latitude - 48.557480N; Longitude -122.891456W
Weeks Wetland: Latitude - 48.521822N; Longitude -122.915358W
Fisherman Bay Tombolo: Latitude - 48.509636N; Longitude -122.933001W

Tons Removed: 69.2 tons

Total Cost: \$42,826

Method: Helicopter and hand-hauling

Number of

WCC/PSC* Days: 8

(* *Washington Conservation Corps Puget SoundCorps*)

DNR and its partners removed 69.2 tons of creosote-treated debris from several nearshore locations on Lopez Island. Local site managers from the San Juan County Land Bank, San Juan County Parks, Washington State Parks, and the Bureau of Land Management assisted with the coordination. Several private property owners also provided access to their tidelands and marshlands to allow for additional cleanup.

Debris was removed from the Fisherman Bay Spit Preserve, Weeks Wetland, Odlin County Park, Spencer Spit State Park, Watmough Bay Preserve and adjacent locations. Thirteen 30-yard containers were filled and removed.

DNR was in the process of re-applying for its general HPA at the time of this project; therefore, DNR applied for and received an individual HPA from WDFW. No other permits were required for the project.

During the week of October 17, crew members from Washington Conservation Corps (WCC) Puget SoundCorps located and staged debris at the Fisherman Bay Spit Preserve site for two days in preparation of the helicopter removal on October 19. At the end of the first week of work, this same crew headed to Weeks Wetland where they hand-carried debris from the wetland to the road edge for removal by heavy equipment.

DNR hired a local contractor (Midnight Farms) to assist with loading the containers. Midnight Farms mobilized first to the Spit Preserve following the helicopter operations, and then moved to Odlin Park and Weeks Wetland during the second week. Each container was loaded with a maximum of 7 tons of debris.

A second WCC Puget SoundCorps crew spent the week of October 31 hand-carrying debris from several sites. The first day was spent locating and moving debris from Odlin County Park, which included materials brought to the park from Shaw Island County Park, as well as Watmough Bay Preserve and Spencer Spit State Park. Parks managers from these additional sites delivered debris from their locations to Odlin Park to optimize the time of the heavy equipment operator and reduce mobilization efforts.

After completing the work at Odlin Park, the crew moved to the tombolo¹, located on the west side of Fisherman Bay. Debris was removed from the beach side of the tombolo, as well as from the marsh located at the northeast end. Access to the marsh was granted by a private property owner.

The crew finished at Weeks Wetland and assisted the heavy equipment operator with moving debris from the road edge to the containers.

South Indian Island County Park/Fort Flagler State Park, Jefferson County

Summary

Schedule: April 2-April 12, 2012
Location: South Indian Island County Park: Latitude - 48.024683N; Longitude - 122.715000W
Fort Flagler State Park: Latitude - 48.094140N; -122.724945W
Tons Removed: 38.84 tons at South Indian Island; 1.95 tons at Fort Flagler (Total = 40.8)
Total Cost: \$26,277
Method: Helicopter and hand-hauling
Number of
WCC/PSC Days: 7

South Indian Island County Park comprises 142 acres of tidelands, salt marsh and lagoons, and upland forested habitats. The park is heavily used for recreational shellfish harvesting, as well as general beach-going activities. DNR coordinated with Jefferson County Parks to keep the park closed to the public during helicopter operations. No other permits were required for the project.

During the week of April 2, the WCC Puget SoundCorps crew located and staged debris at South Indian Island County Park as well as an adjacent private parcel across the isthmus on Marrowstone Island in preparation for the helicopter operations on April 10. Due to the large expanse of the area, the project was split into two weeks to allow enough time to stage materials for the helicopter. On the first day, crews were also assisted by volunteers from the Jefferson County Beach Watchers. Volunteers gathered beach trash and helped identify creosote debris for staging.

DNR hired a local contractor (Stewart Excavating) to assist with loading the containers at the county park. The contractor coordinated with Murray's Disposal for delivery and removal of the 30-yard containers.

¹ A landform in which an island is attached to the mainland by a narrow piece of land such as a spit or a bar.

The crew also hand carried approximately 1.95 tons from the spit located on the northeast side of Fort Flagler State Park. A separate container was staged at the park and the crews loaded it by hand.

Double Bluff County Park

Summary

Schedule: September 17-19, 2012
Location: Latitude - 47.974265N; Longitude -122.522279W
Tons Removed: 15.32 tons
Total Cost \$12,732
Method: Heavy equipment and hand-hauling
Number of
WCC/PSC Days: 2

The beach and backshore area of Double Bluff County Park are largely covered with driftwood, along with creosote and other treated debris. Treated materials are found at all elevations of the park, subject to wave action, from the mean low tide line to the furthest extent of storm deposits. This project represented the fourth time a removal project has occurred there, with diminishing amounts of debris each time.

DNR has a five-year shoreline exemption permit from Island County for creosote debris removal.

As the WCC Puget SoundCorps crew identified and located debris, local contractor, Christian Anker, used a rubber-tracked backhoe to move the debris to a designated staging area located along a fire road adjacent to the park. The contractor used this staging area to cut debris down to 6-foot lengths for placement in disposal containers supplied by Island Disposal. There are three privately owned parcels along this road; therefore, DNR contacted the landowners and obtained permission to access the property. While the contractor focused on removing large logs and debris, the crew also worked together to carry logs to the staging area.

While the crews were working at Double Bluff, we received a call from a shoreline property owner living south of the park in an area known as Sunlight Beach. This beach, which supports habitat for forage fish spawning and contains a small inlet/lagoon, is also a collecting area for creosote and other debris. After completing a quick assessment of the size and amount of material, we determined a small removal effort could also occur at this area. The second day of crew time was spent hauling creosote logs from the beach, placing them in the back of a DNR truck, and transporting them back to Double Bluff for placement in the containers.

Neck Point, Shaw Island and Jackson Beach, San Juan Island

Summary

Schedule: December 17-20, 2012
Location: Neck Point: Latitude - 48.584977N; Longitude -123.014000W
Jackson Beach: Latitude - 48.519700N; Longitude -123.011002W
Tons Removed: Neck Point: 19.26 tons
Jackson Beach: 13 tons
Total Cost: \$28,260
Method: Neck Point: Hand-hauling and boat
Jackson Beach: Hand-hauling and heavy equipment
Number of
WCC/PSC Days: 4

Between December 17 and 20, DNR removed 19.26 tons of creosote-treated debris from Neck Point Lagoon on Shaw Island, and 13 tons of debris from Jackson Beach on San Juan Island. No additional permits were required for this project.

The project at Neck Point was originally planned to occur with the WCC Puget SoundCorps crews directly assisting the marine contractor. Weather issues caused delays with the boat arrival so the crews, already on Shaw, identified and staged debris from the lagoon in preparation for the contractor to hoist the debris from the lagoon. Much of the debris was located along the back and edges of the lagoon, and the crew carried the debris up the slope to land where it could be more easily loaded onto the small barge. Once the marine contractor arrived a couple of days later, other debris was pulled out of the lagoon using choker lines wrapped around the logs. The contractor also used a small machine from on board the boat to assist with mobilizing debris from land to the boat.

Following the staging at Neck Point, the crew moved over to Jackson Beach on San Juan Island. This site consisted of the WCC Puget SoundCorps crew hand-carrying most of the debris, but they were also assisted by a small excavator operated by Jay McMillen, crew supervisor. The high volume of wood at Jackson Beach made it easy for the excavator to crawl along the site with no impact to the substrate. This is the second time debris has been removed from Jackson Beach.

The weather during this project was less than favorable, with gusting wind and rain every day of the work. The crews worked hard despite the weather and seemed to revel in the challenge of beating the conditions.

Dungeness Spit/3 Crabs, Sequim, Clallam County

Summary

Schedule: January 14-17, 2013
Location: Dungeness Spit: Latitude - 48.177704N; Longitude -123.123681W
3 Crabs: Latitude - 48.151900N; Longitude -123.119768W
Tons Removed: 12.01 tons
Total Cost \$11,433
Method: Hand-hauling, small utility vehicle, landing craft
Number of
WCC/PSC Days: 4

In response to a report of creosote-treated wood debris, a removal project was designed in cooperation with the Dungeness National Wildlife Refuge and North Olympic Salmon Coalition. Extensive in-kind cooperation from the Refuge enabled the success of this project. The Refuge provided boat support, transportation, a tractor to load bins, and staff time for the project. DNR rented a mini excavator to assist the crew with the work. No additional permits were required for this project.

WCC Puget SoundCorps crews met Refuge staff each of the first three days at Dungeness Landing to mobilize to Dungeness Spit aboard the Refuge's 35-foot, high-speed landing craft. The landing craft was also used to transport the creosote debris to Dungeness Landing, which was used as the staging area where the debris would be placed into a container for disposal.

Tides on Monday were high and favorable for using the landing craft as the boat could be located immediately at the high tide mark, and crews could quickly load and unload debris onto and off the boat. The boat proved effective during high tides and less so at lower tidal elevations. On Tuesday and Wednesday, the tides were less suitable, and unloading the boat was challenging. This process involved rolling treated wood up the boat ramp because the landing craft drew too much water to reach the ramp.

On Thursday, the crew went to 3 Crabs and removed an estimated two tons of debris from the 3 Crabs area—some material remained on the beach and is under consideration for a future restoration project. The 3 Crabs site previously housed a restaurant, and the tidelands were privately owned. The site has been purchased by WDFW in cooperation with the North Olympic Salmon Coalition. This creosote-removal project was the first phase of a large-scale restoration project that will ultimately restore habitat-forming processes through the removal of large amounts of fill, thus reconnecting estuarine and salt marsh habitat.

Point No Point County Park, Kitsap County and Kala Point, Jefferson County:

Summary

Schedule: Point No Point: May 1-2, 2013
Kala Point: May 6-9, 2013

Location: Point No Point: Latitude - 47.911645N; Longitude -122.526055W
Kala Point: Latitude - 48.057861N; Longitude -122.769175W

Tons Removed: Point No Point: 10.46 tons; Kala Point: 14.3 tons

Total Cost \$8,063

Method: Hand-hauling and small utility vehicle

Number of
WCC/PSC Days: Point No Point: 2; Kala Point: 4

Point No Point County Park consists of a sandy beach and marsh bordered by wooded upland habitat. This park is heavily used by lighthouse enthusiasts as well as beach-goers and birders.

After conducting field visits and surveys, it was determined that Point No Point was a suitable candidate for a small-scale creosote removal project (single land-holder, easy access, and small concentrations of creosote debris). DNR worked with Kitsap County Parks for permission to conduct the project. On May 1 and 2, a WCC Puget Sound Corps crew, based out of Port Hadlock, removed creosote-treated debris from the shores at Point No Point. Using a small utility vehicle (a Gator) to mobilize debris, the crew carried, cut in place as needed, and hauled materials from the beach to a bin, staged in the parking area. Two bins were required, and a total of 10.46 tons of creosote was removed.

The following week, a crew from Port Angeles worked at Kala Point, which consists of a large marsh, lagoon, and a sand spit that is supplied with sediment from adjacent bluffs to the north. The marsh and lagoon are relatively low flushing collection points for large accumulations of woody debris.

Kala Point's beach access, which included an adjacent parking lot and a small trail that winds through the field near the marsh, made this project suitable for completion using hand-hauling and a small utility vehicle. Debris was cut in place as needed and mobilized to the containers which were placed near the parking area. In addition to treated logs and other timbers, a WWII era creosote-treated float was dismantled and removed. These floats have been found at many locations around the north Sound and usually require a marine contractor to remove. Historically, these floats supported a large net that spanned from Fort Flagler to Point Hudson at Port Townsend. The intent of the net that hung from these floats was to prevent enemy submarines from entering Puget Sound. This particular float was located on the edge of the marsh, making it impossible to remove any other way than by hand. Heavy equipment would have been too destructive to the vegetation, and a boat cannot access this area due to the limited tidal range of the adjacent lagoon.

Two bins were required and a total 14.3 tons of creosote debris was removed.

Oak Bay

Summary

Schedule: June 17-20, 2013
Location: Latitude - 48.022542N; Longitude -122.731989W
Tons Removed: 45.56 tons
Total Cost \$25,020
Method: Helicopter
Number of
WCC/PSC Days: 3

The final project was completed at Oak Bay County Park, immediately across the channel from South Indian Island County Park. This park is also managed by Jefferson County Parks and Recreation and similarly gets a good deal of use from recreational shellfish harvesters. A portion of the marsh, where much of the debris was located, is owned by the Jamestown S'Klallam Tribe. DNR received permission from the Tribe to conduct the work at this location.

The site consisted of two distinct areas: one marsh is located inside the jetty adjacent to the channel; the other larger marsh borders a forested upland and is more tidally influenced than the first, thus the materials were wetter. The crews spent two days locating and staging debris in preparation for the helicopter operations with the first day spent along the jetty and the second in the larger marsh. The volume of debris located in the jetty marsh closely represented what was previously found during surveys; however, the crews found nearly twice as much material in the second marsh. Each time they staged a log, another seemed to appear under the first. This area also required the crews to ensure logs were not located under the tree canopy so they also had to drag heavy logs across challenging terrain to ensure the helicopter would not be flying in the vicinity of the trees.

As with other helicopter projects, DNR's helicopter certified staff assisted with operations as the Puget SoundCorps crew led the choking of logs and landing area tasks. Three additional crew supervisors were also brought in to ensure adequate staffing throughout the project site. The weather and tides all cooperated, resulting in a successful and safe project.

DNR contracted with MJ Trucking to handle cutting and loading of the debris.

Project budget: Costs associated with IA No. C1100186: Beach Creosote Cleanup in Puget Sound | 2011 – 2013

	Lopez Island	S. Indian Island/Fort Flagler	Double Bluff	Neck Point/Jackson Beach	Dungeness Spit	Point No Point/Kala Point	Oak Bay	Notes
Contracted Services								
Limited Public Works Contract: Heavy Equipment	\$5,679.71	\$3,815.00	\$1,111.43	\$20,376.76			\$3,880.00	
Helicopter	\$5,846.70	\$6,865.30					\$7,869.16	
Disposal*	\$23,491.46	\$7,016.75		\$3,279.19	\$2,382.60	\$3,650.20	\$7,157.56	
Subtotal	\$35,017.87	\$17,697.05	\$11,111.43	\$23,655.95	\$2,382.60	\$3,650.20	\$18,906.72	
*Double Bluff and Neck Point contracted services include disposal costs								
Equipment Rental/Saw Maintenance/Vehicle Charges								
Saw Repair (Gary Bellows Time)	\$31.21	\$29.26						
Vehicle Use	\$183.10	\$620.40	\$162.76				\$420.89	
Equipment Rental				\$546.97	\$1,375.70	\$2,397.08		
Subtotal	\$214.31	\$649.66	\$162.76	\$546.97	\$1,375.70	\$2,397.08	\$420.89	
Supplies								
Visqueen	\$312.67	\$100.62		\$111.49		\$186.60	\$105.04	
Chainsaw chain sharpening		\$30.30	\$35.00			\$98.09	\$14.00	

	Lopez Island	S. Indian Island/Fort Flagler	Double Bluff	Neck Point/Jackson Beach	Dungeness Spit	Point No Point/Kala Point	Oak Bay	Notes
Chainsaw Chains	\$25.43					\$9.80	\$113.66	
Gloves	\$229.50		\$92.00	\$95.19				
Log Straps	\$112.56							
Wedges			\$18.93					
Project sign laminating			\$8.65				\$13.08	
Paper respirator masks			\$49.19	\$205.06				
Saw Gas/Oil						\$14.81		
Water/Gatorade for crew							\$31.55	
Subtotal	\$680.16	\$130.92	\$203.77	\$411.74		\$309.30	\$277.33	
DNR Crew								
Labor/Benefits	\$1,803.87	\$3,667.66					\$2,083.37	
Lodging	\$625.00						\$405.22	
Per Diem	\$360.00	\$506.00					\$382.00	
Ferry	\$82.10	\$48.55					\$60.70	
Subtotal	\$2,870.97	\$4,222.21					\$2,931.29	

	Lopez Island	S. Indian Island/Fort Flagler	Double Bluff	Neck Point/Jackson Beach	Dungeness Spit	Point No Point/Kala Point	Oak Bay	Notes
Project Oversight								
Lodging	\$390.89			\$293.16	\$308.12		\$333.33	
Per Diem	\$244.00	\$ 383.23		\$216.00	\$216.00		\$244.00	
Ferry	\$116.00	\$59.10		\$174.55	\$20.40		\$25.70	
Labor/Benefits (In-kind)	\$3,291.75	\$3,135.00	\$1,254.00	\$1,961.20	\$1,279.80	\$1,706.40	\$1,881.00	
Subtotal	\$4,042.64	\$3,577.33	\$1,254.00	\$2,644.91	\$1,824.32	\$1,706.40	\$2,484.03	
Travel expenses for Point No Point and Kala Point were in-kind; project was completed concurrently with other DNR projects								
Project Partner In-kind for equipment or forage fish surveys				\$1,000.00	\$5,850.00			
PROJECT TOTAL	\$42,825.95	\$26,277.17	\$12,731.96	\$28,259.57	\$11,432.62	\$8,062.98	\$25,020.26	\$ 154,610.51
Charges to Grant	\$39,534.20	\$23,142.17	\$11,477.96	\$25,298.37	\$4,302.82	\$6,356.58	\$23,139.26	\$ 133,251.36

Project photos

Lopez Island: October 17-November 4, 2011



South Indian Island County Park/ Fort Flagler State Park April 2-12, 2012



Double Bluff County Park/Sunlight Beach September 17-19, 2012



Neck Point, Shaw Island December 17-20, 2012



Jackson Beach December 17-20, 2012



Dungeness Spit / 3 Crabs January 14-17, 2013



Point No Point Park May 1-2, 2013



Kala Point May 6-9, 2013



Oak Bay County Park June 17-20, 2013

