

SHORE STEWARDS NEWS

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This edition of the newsletter was written by Scott Chase, WSU Shore Stewards Coordinator, Island County.

Creosote along our Shoreline

It's difficult to walk along any beach in Puget Sound and not come into contact with creosote treated wood. Used as a wood preservative for many decades, we often see (and smell) the familiar black layer of creosote coating railroad ties and telephone poles. Along the shoreline, we see where it was used to protect piers, docks, floats, bulkheads and walkways leading to the beach. Creosote covered driftlogs and smaller pieces of driftwood are a common sight along the beach. Creosote coated pilings were once a familiar sight to those standing at the bow of a ferry as it approached the terminal, slowly moving forward while avoiding contact with the black pilings on each side of the ferry. Though some of these ferry pilings and piers have recently been replaced, many are still in use.

Originally used since the 1850s to protect railroad ties, creosote has also been used for more than 100 years as a marine wood preservative. An average marine piling contains about 61 gallons of creosote, which can contain over 300 different chemicals. In combination, these chemicals do an effective job of preventing decay and killing the wood-damaging critters that would otherwise damage our bulkheads, piers, pilings, and other structures. Years of research, though, is telling us that the toxic chemicals that do such a good job of killing organisms that are destructive to structures *also* leach out into the surrounding environment and are a danger to the health of animals and people. Evidence shows that the toxicity of creosote causes damage to the eggs of small forage fish and other organisms that are the foundation of the food web, and which are essential to salmon, birds and other wildlife. Herring eggs that have been exposed to creosote in solution have shown up to a 95% mortality rate. Exposed to ultra-violet light on a sunny day, creosote's chemicals become more toxic and are more likely to leach from pilings. Polycyclic aromatic hydrocarbons, or PAHs, are the primary chemicals of concern that make up creosote. Many of these chemicals are known to be carcinogens, and coal-tar creosote is regulated as a hazardous waste.



Now part of English Boom County Park on Camano Island, these creosote pilings, installed in the 1920s and 30s, are all that remain of log booms that once stored rafts of logs on their way to sawmills around Puget Sound. The log boom closed in 1945, but these pilings still remain.

Photo by Scott Chase

Creosote Removal around Puget Sound

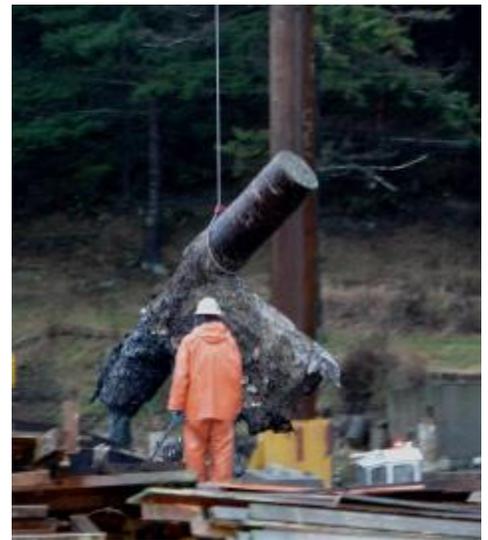
Removal of creosote from our beaches has been a priority of our state's Department of Natural Resources (DNR), Washington State Parks, the Northwest Straits Commission, and the Marine Resources Committees (MRC) in many Puget Sound counties. These agencies, along with trained work crews and volunteers in many counties, have worked together to find, quantify and remove creosote debris on the beaches. From 2004 to 2015, DNR's Creosote Removal Program removed more than 19,823 tons of creosote log piles, more than 276,000 square feet of overwater structures, and more than 3,972 tons of beach debris. Some areas have had extremely high accumulations: 100 tons of creosote-treated debris were removed along a stretch of beach at Ebey's Landing State Park on Whidbey Island. Removal can consist of creosote logs being hand carried upland, logs placed in slings and carried out by helicopters, or logs loaded on barges in the water. The waste is then transported to a hazardous waste facility in Klickitat County.

Some Examples of DNR Creosote Removal Projects

DNR has taken part in many recent creosote removal projects, funded in part by a \$1,000,000 allocation by the state for two years of piling removal projects. Over 13,000 pilings have been removed as of 2014. This money comes from money DNR receives by leasing state-owned land. Early in 2015, restoration crews from DNR, working with Puget Sound Conservation Corps members, removed over 50 tons of creosote treated wood from public and private beaches on Lopez, Orcas and San Juan Islands. DNR will be taking part in other creosote removal projects in San Juan County over the next year.

In November of last year, DNR removed pilings at Camp Sealth, a Camp Fire facility on Vashon Island that used to be a busy resort with 17 cabins, a post office, and docks used by the Mosquito Fleet. In all, this project was slated to remove 170 pilings from several locations around Vashon and Maury Islands. 50 of those were in Quartermaster Harbor, a state aquatic reserve.

Creosote pilings and footing removed from Secret Harbor dock on Cypress Island (Photo courtesy DNR.)



DNR is always seeking contact from property owners who have in-water creosote-treated wood that they are interested in having removed, including unused pilings, bulkheads, and derelict docks. These include all lands around Puget Sound, excluding property currently under lease by DNR. To find out if your structure is eligible for this free, voluntary program, contact Chris Robertson of DNR at (360) 854-2808.

Washington State Ferries Takes Part in Creosote Removal Projects

Since 2000, Washington State Ferries has replaced over 15 million board-feet of creosote timbers as part of a large-scale project to replace all creosote timbers in the ferry system. Several ferry terminals around the region are being replaced or updated to take care of seismic concerns, and in doing so the old creosote pilings are being removed. One project currently under review is replacement of the Colman Dock in Seattle, the busiest terminal in the system. In 2014, this dock served over 9.3 million riders,

including 5.1 million foot passengers. This is being done as a cooperative effort of Washington State Ferries, the Federal Highway Administration, and the Federal Transit Administration. With construction currently scheduled for completion by 2023, this project will include removal of 7,400 tons of creosote-treated timbers from Puget Sound.

This year, Washington State Ferries began removing the 60-year old Mukilteo Tank Farm Pier to make way for the new Mukilteo ferry terminal. This work includes removing 7,000 creosote-treated timber piles, equal to 4 percent of the remaining creosote treated wood in Puget Sound! This has been of concern to many who live in Mukilteo, who have been subject to the strong creosote odors created by the removal project.



Creosote soaked timber piles at Mukilteo Tank Farm Pier (Photo: Washington DOT)

Creosote Removal for a Natural Shoreline

In 2012, crews began removing more than 800 feet of creosote bulkheads at Cornet Bay, part of Deception Pass State Park on Whidbey Island, in an effort to give the beach a more natural look. This is a project of the Northwest Straits Foundation, Island County Marine Resources Committee, and Washington State Parks. The bulkheads were installed about 40 years ago, separating the beach from the parking lot area next to the boat ramp. Wave action over the years had scoured the beach in front of the bulkhead, and the black logs were a stark, unattractive barrier that prevented easy access to the beach area. After the bulkhead was removed, workers leveled the beach and native plants were placed along the shoreline. This provided easy access from the parking lot to the beach and a much more attractive appearance, enhancing the recreational experience. The grassy lawn area was also removed, discouraging geese and the messy poop they'd leave behind. It is hoped that the strategically placed logs along the new beach, and other drift logs that accumulate over time, will enhance the survivability of surf smelt eggs and improve the insect food sources for juvenile salmon. Eventually, this restoration project should encompass a 1,600 foot section of the beach, with funding through grant dollars from the United States Department of Fish and Wildlife Coastal Program, the Salmon Recovery Funding Board, the Washington state Department of Natural Resources Aquatic Restoration Program and from the city of Oak Harbor, which provided money to mitigate a recent marina project.



Before and after photos courtesy of Sarah Schmidt

This project is just one example of many around the Puget Sound region where unattractive, creosote-soaked bulkheads are being removed and replaced by more natural shorelines. This is being done in parks and public access locations, private residences, and commercial properties. More information on natural shorelines will be covered in future editions of the newsletter.

One Man's Quest

What can just one person do to make a difference? In 2010, Ken Urstad, a Marine Resources Committee volunteer in charge of organizing creosote removal on Whidbey Island, decided he wanted to rid the beach in front of his home of all the ugly creosote logs and other treated wood that had washed up over the years. Ken had experience in doing this, having helped organize the removal of over 700 tons of creosote logs and treated lumber on Whidbey Island, but knew that his beach was low on the DNR priority list. He convinced the DNR removal coordinator that he could do so with the help of a couple of volunteers, and within a few hours they cut and loaded over 4 ½ tons into a 20 yard refuse container, which was hauled away to the hazardous waste facility at a total cost of under \$800. To read more about this effort, see the December 2010 Shore Stewards newsletter at <http://ext100.wsu.edu/island/wp-content/uploads/sites/6/2014/03/1221101.pdf>



Ken Urstad cutting logs that he had gathered from his beach. (Sawdust is toxic; do not try this at home!)

Photos by Scott Chase



What You Can Do

Creosote logs, sawdust and residue are toxic substances, and cutting or removal should be left to professionals. You do not want to risk inhaling or ingesting the poisonous sawdust, nor do you want children and pets to be exposed to the dangerous toxins. The best thing you can do as an individual is to refrain from installing or using creosote-coated wood in the first place, and to be careful when using other treated wood. Although installation of creosote bulkheads is no longer allowed, folks often buy creosote railroad ties from nurseries and building supply stores for use as steps from one elevation of the yard to a lower one, or down to the shoreline. The toxins in the ties can leach into the marine waters, and can also kill surrounding grass if used on a lawn. Do NOT use creosote treated railroad ties or other treated wood to create a raised-bed garden. The toxins can leach into the soil and be picked up by the roots of your vegetables and fruits. And though using treated dimensional wood may be okay for outdoor stair step or deck supports, you should avoid using it to build dog houses, pet enclosures or children's playground equipment. If children in your family do use playground equipment with treated wood, be sure to have them wash their hands thoroughly before eating a sandwich or other finger-foods.

Resources

1. Literature Review, Computer Model and Assessment of the Potential Environmental Risks Associated With Creosote Treated Wood Products Used in Aquatic Environments. Prepared for: Western Wood Preservers Institute, 7017 NE Highway 99, Suite 108, (360) 693-9967. Prepared by: Kenneth M. Brooks, Ph.D...
2. Creosote Removal: DNR Provides links to projects by year, some projects by county, maps of removal projects, etc., through 2013 <http://www.dnr.wa.gov/programs-and-services/aquatics/restoration/creosote-removal>
3. Brief Science of Creosote, Washington Department of Natural Resources, 2013. http://file.dnr.wa.gov/publications/aqr_cleanup_creosote_brief.pdf
4. Science behind the choices: Why DNR pulls creosote-laden wood from marine waters and beaches. <http://washingtondnr.wordpress.com/2010/10/06/science-behind-the-choices-why-dnr-pulls-creosote-laden-wood-from-marine-waters-and-beaches/>
- 5.

Support Shore Stewards in Island County! If you would like to see this program continue to make a difference in Island County, please consider making a donation to the WSU Shore Stewards Excellence Fund: <https://secure.wsu.edu/give/default.aspx?fund=496> Your tax-deductible donation will help ensure future funding for newsletters, demonstrations at local events, and to make sure that the program and educational materials continue to be free for shoreline landowners and others interested in protecting our islands. Thank you for your contribution!

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