

4 MINUTE READ

Duwamish River People's Park



from **Engineering With Nature: An Atlas, Volume 3.**

by US Army Engineer Research and Development Center



Seattle, Washington, United States

Restoring a legacy industrial Superfund site. Over two decades ago, the Port of Seattle initiated the largest Duwamish River shoreline restoration project in a generation. A property known as Terminal 117 was transformed from a legacy industrial site with armored shorelines and contaminated soils to an approximately six-hectare habitat site with public shoreline access known as the Duwamish River People's Park and Shoreline Habitat (DRPP). DRPP represents the collaborative power among Duwamish Valley residents, government agencies, and tribes. The project had three critical goals: clean up a highly contaminated site, stabilize the shoreline and restore resilient habitat, and create river access in an environmental-justice neighborhood. A century of industrialization had dramatically reshaped the river and community, and nearly all wetlands and natural resources were lost. At the restored site, critical salt-marsh habitat has increased by 40%, with an encouraging number of juvenile salmon counted. Residents are also enjoying public access. Cleanup removed pavement, structures, and 54,431 tonnes of soil and sediment. Afterward, over 40,000 native plants, a viewpoint pier, trails, art, treaty-fishing piling, and a boat launch were

installed. The restored habitat site also serves as a learning lab for youth seeking hands-on experience. As the DRPP flourishes, it will remain a park "for the people."

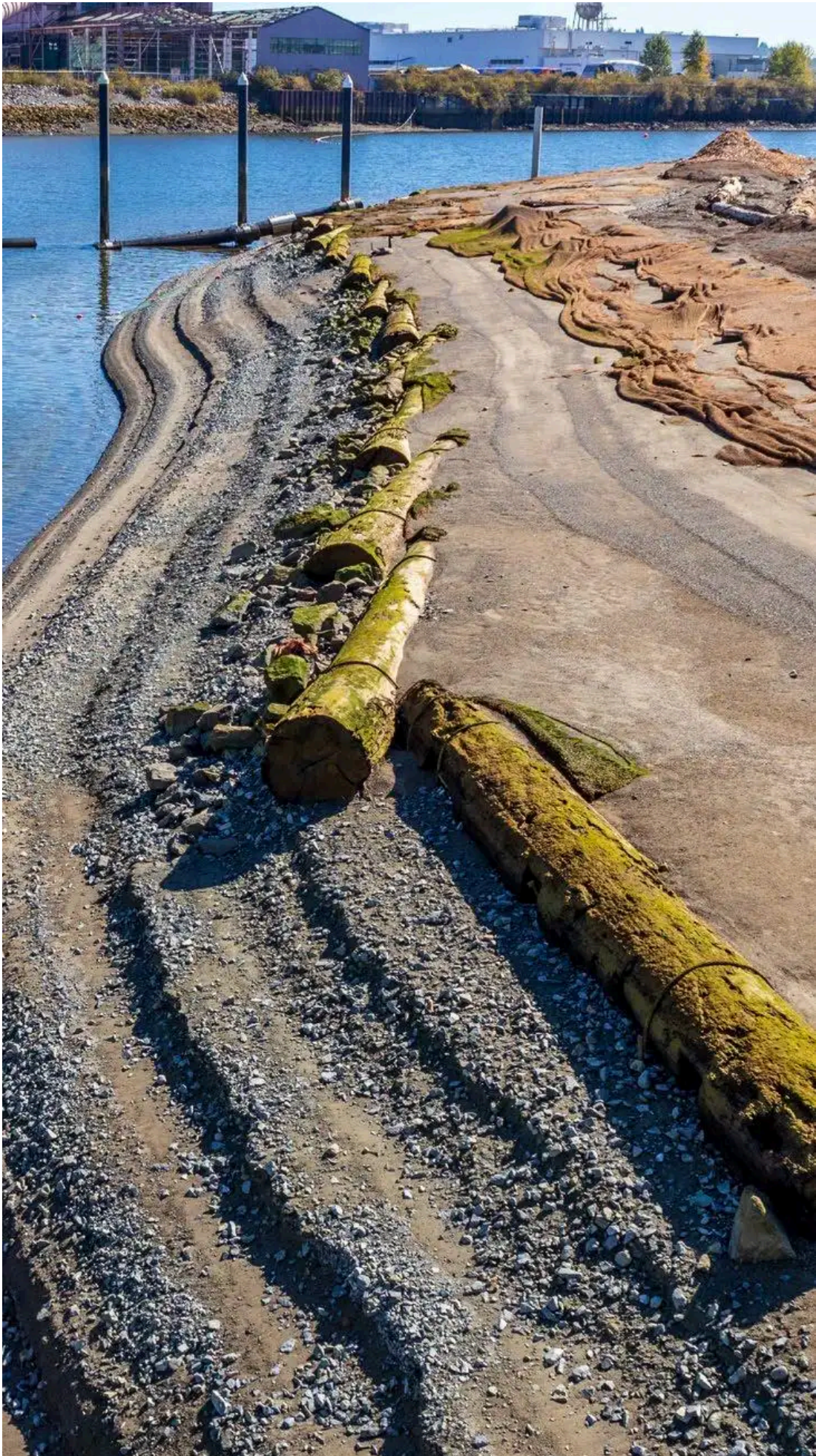
Article Cover: Duwamish River People's Park and Shoreline Habitat (DRPP) shoreline habitat shortly after construction, featuring use of large wood to stabilize the shoreline, with Mount Rainier in the background. (Photo by Port of Seattle)

Producing Efficiencies

The Terminal 117 restoration project included largescale excavation to remove industrial fill material that had previously displaced estuarine aquatic area. Removal of decades-old fill materials successfully restored intertidal and shoreline elevations at the project site, reestablishing elevations critical to ensuring growth of self-sustaining intertidal marsh vegetation and providing area important for creating riparian buffer resources. Large-scale excavation and grading included installation of anchored large-wood edge logs in fractured rock bolsters along the entire waterward margin of the project. The large wood stabilizes the site while providing habitat complexity.

Using Natural Processes

To create the habitat, the site elevation was excavated approximately four vertical meters, working down from contemporary street level to the historical marsh level of the river to reexpose vital estuarine aquatic area. The goal was to create high-value fish and wildlife habitat, including improved shoreline and off-channel marsh, important for salmon and other fish species. To encourage sediment deposition, coir fabric was placed in the marsh basin. The project is anticipated to provide significant estuarine and aquatic services currently scarce in the waterway. Over 20,000 native marsh plants and almost 20,000 native riparian trees and shrubs were installed.





Use of large wood to stabilize the shoreline along the river channel.

(Photo by Port of Seattle)

Broadening Benefits

The river has always been an active cultural area for indigenous people, who continue to practice treatyfishing rights and harvest returning salmon every season. The universal public access and recreation area creates an important community connection to the river. Environmentally, the DRPP contributes to salmon recovery in the region, which can also support the endangered southern resident orca (*Orcinus orca*) population. Finally, the project applied an innovative financing model and established the Port's first mitigation banking site, enabling third parties to purchase credits to help them comply with federal regulations. Revenue will fund additional habitatrestoration projects.

Promoting Collaboration

Once the lower Duwamish Waterway was designated a Superfund cleanup site, the Port and key interested parties started a decades-long working relationship that grew to include community members and ultimately shaped the transformation of the site. The Port, the Boeing Company, the City of Seattle, and King County formed the Lower Duwamish Waterway Group, a public-private partnership to determine the extent and risks of the contamination. In addition to the planned cleanup and restoration, the community requested green space and a connection to the river, and the Port opened a local field office to collect their feedback and design input.



Port staff and partners during monitoring and sampling at the DRPP habitat site, where an osprey (*Pandion haliaetus*) nest is visible in the background. The first year of monitoring found promising results and recorded over 7,000 juvenile chum salmon (*Oncorhynchus keta*), 243 juvenile, natural-origin Chinook salmon (*Oncorhynchus tshawytscha*), 922 nonsalmonid fish, and robust marsh vegetation, including bulrush (*Scirpoides holoschoenus*), beachgrass (*Ammophila breviligulata*), and an expanding blanket of wetland emergent plants.

(Photo by Port of Seattle)

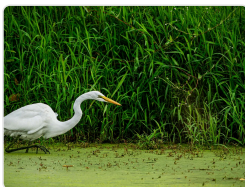


Duwamish River People's Park 2022 opening celebration.

(Photo by Port of Seattle)

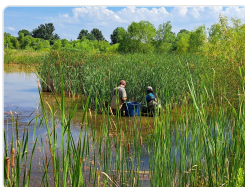


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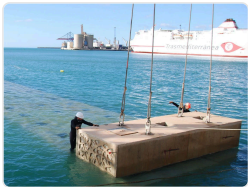


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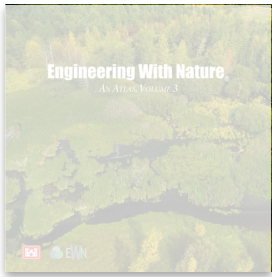
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