

North Wind's Weir Estuarine Habitat Creation Project, Tukwila, WA

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Project Description

The North Wind's Weir estuary substitution project is in the Green/Duwamish Watershed, Water Resource Inventory Area 9. The project is located in the heart of the transition zone in the Duwamish estuary, which comprises the lower 11 miles of the Green/Duwamish River. The purpose of the project is to improve the productivity of the watershed for Chinook salmon by increasing the quality and quantity of transition zone habitat. The Duwamish contains about 3% of the mudflat and marsh habitat it had historically and increasing this type of habitat is hypothesized as being essential to improving the overall productivity of the watershed.

The specific objectives of the project were to expand shallow water mudflat, emergent marsh, and riparian habitat to increase the space available for juvenile salmonids to feed, osmoregulate, and find refuge from high flows and predators. The project site is 2.5 acres. It is located upstream of the contaminated sediment of the Lower Duwamish and thus is not likely to experience (re)contamination. Upland soil remediation occurred in 2004, 2008, and 2009. Final project construction consisting of excavation, grading, and installation of large wood clusters occurred October – December 2009. Upland and emergent marsh plants were installed in early 2010.

Constraints and Guiding Principles

This project should be considered a habitat creation or substitution project. It is extremely difficult to implement full or partial restoration projects in the Duwamish estuary because of the following constraints:

- Howard Hanson Dam limits peak flows to the Duwamish of 12,000+ cubic feet per second and sediment and large wood sources have been greatly reduced, limiting the strength of processes to create and sustain habitat
- Intensive urbanization, high property costs, and historic contamination mean habitat projects must be shoehorned into relatively small sites that must be intensively managed to quickly create the needed habitat

These constraints meant the project was designed explicitly to create desired structure rather than rely on restored processes to create habitat. Owing to recognition of constraints from the outset, the completed project adheres closely to the initial goals. The “lessons learned” at this point relate more to administrative and budgetary challenges than the ecological outcomes.

As a consequence of the constraints above, only the following two principles guided the project:

- Principle #2: Tailor restoration actions to local potential
- Principle #4: Be explicit about expected outcomes, including recovery time

The project was a joint effort of King County, which designed and permitted the project, and the U.S. Army Corps of Engineers, which constructed it. The \$1.9 million cost of property acquisition in 2001 was funded by the Elliott Bay/Duwamish Restoration Panel, Aquatic Lands Enhancement Account, Salmon Recovery Funding Board, City of Seattle, City of Tukwila, and King County. Design,

¹ In explaining this project to the public, project sponsors use the term “restoration” for simplicity's sake.

permitting, and construction costs of \$3.7 million were funded by the Corps, ALEA, SRFB, the King Conservation District, and King County.

This project, along with a similar project upstream (Duwamish Gardens), was a catalyst for seeking the removal of one of the constraints on ecological restoration in densely urbanized areas: the effects of shifting the Shoreline Management Act 200-foot jurisdiction landward when the shoreline is moved landward. This unintended consequence of the SMA has made it difficult to develop projects in urban areas where parcels are relatively small and land values high (\$1 million/acre). Neighbors have strongly opposed restoration that, by shifting the 200 foot SMA jurisdiction landward, increased regulatory burdens on the neighboring land uses. The WRIA 9 Salmon Habitat Team worked with the Department of Ecology, the Boeing Company, People For Puget Sound, the City of Tukwila, and the City of Seattle to change the SMA in 2009. The resulting House Bill 2199 was unanimously passed by the Legislature. It changes SMA to allow shoreline setbacks *within Urban Growth Areas* without effectively shifting the SMA regulatory requirements landward onto nearby property owners.