

# Duwamish Gardens Habitat Restoration Project

## *Duwamish River, Tukwila, Washington*







*Context:* The site was an old farm and residence adjacent to a commercial area along the Duwamish River. The goal was to provide public access and critical habitat for native species, particularly juvenile salmon.



***J.A. Brennan Associates, PLLC , Prime Consultant***

**Landscape Architecture / Design Lead**

**Project Management**

Client Contact, Public Involvement, Programming, Preliminary Design,  
Grading Design, Detail Design, Construction Documents,  
Team Coordination,  
JARPA Graphics, Cost estimating

***Taylor Associates/TEC, Inc.***

**Science**

Estuarine Ecology  
Fisheries Biology  
Permitting

***Shannon & Wilson***

**Engineering**

Hydraulic Engineering  
Geotechnical Engineering  
Remediation, as needed

***GHD***

**Engineering**

Civil Engineering  
Utilities

***Paragon Research Associates, WBE***

**Cultural Resources**

***Lin & Associates, MDBE***

**Surveying**

***Subconsultant: Cascade Interpretive Design, LLC,***

***Interpretive Programming***



# Duwamish Gardens

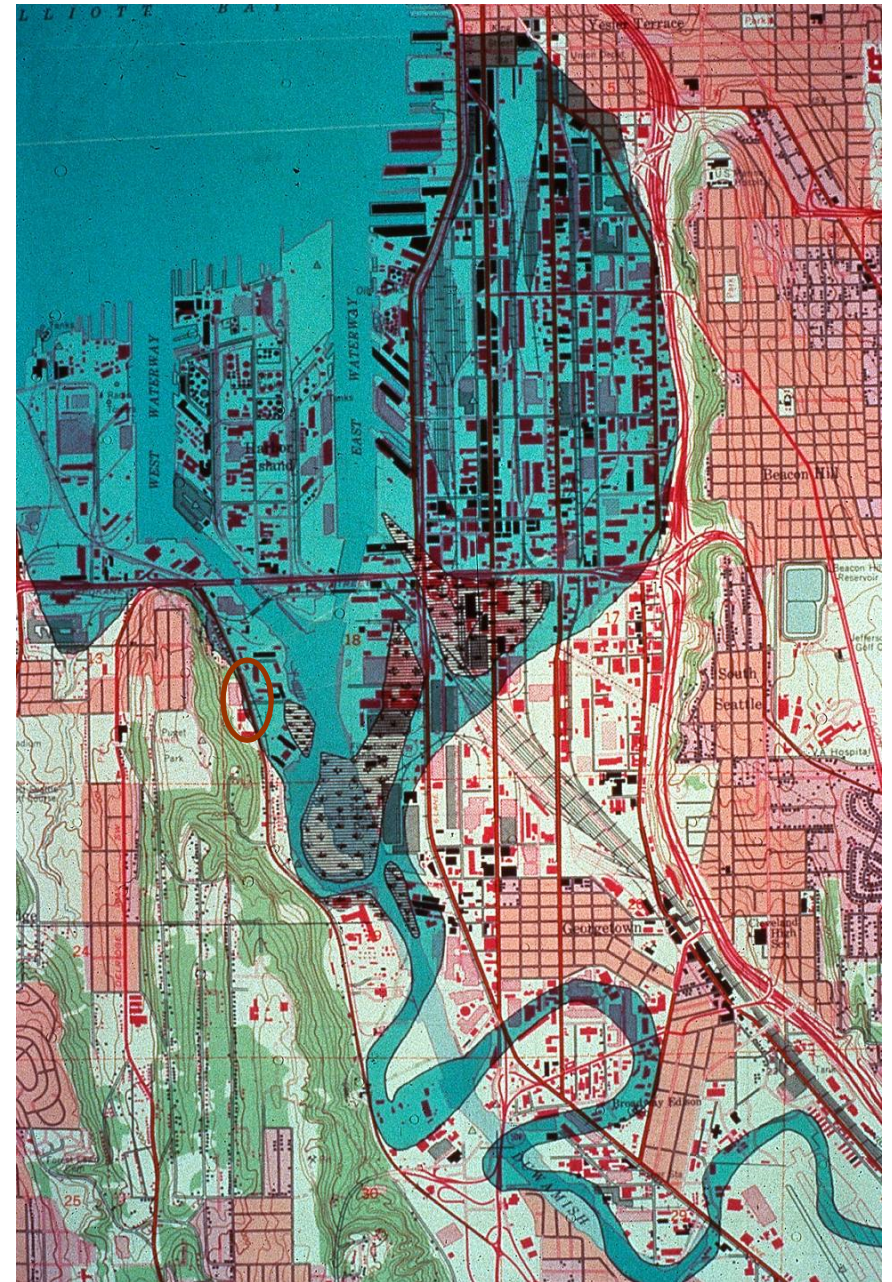








# Historical River Conditions





## Historical – 1920s





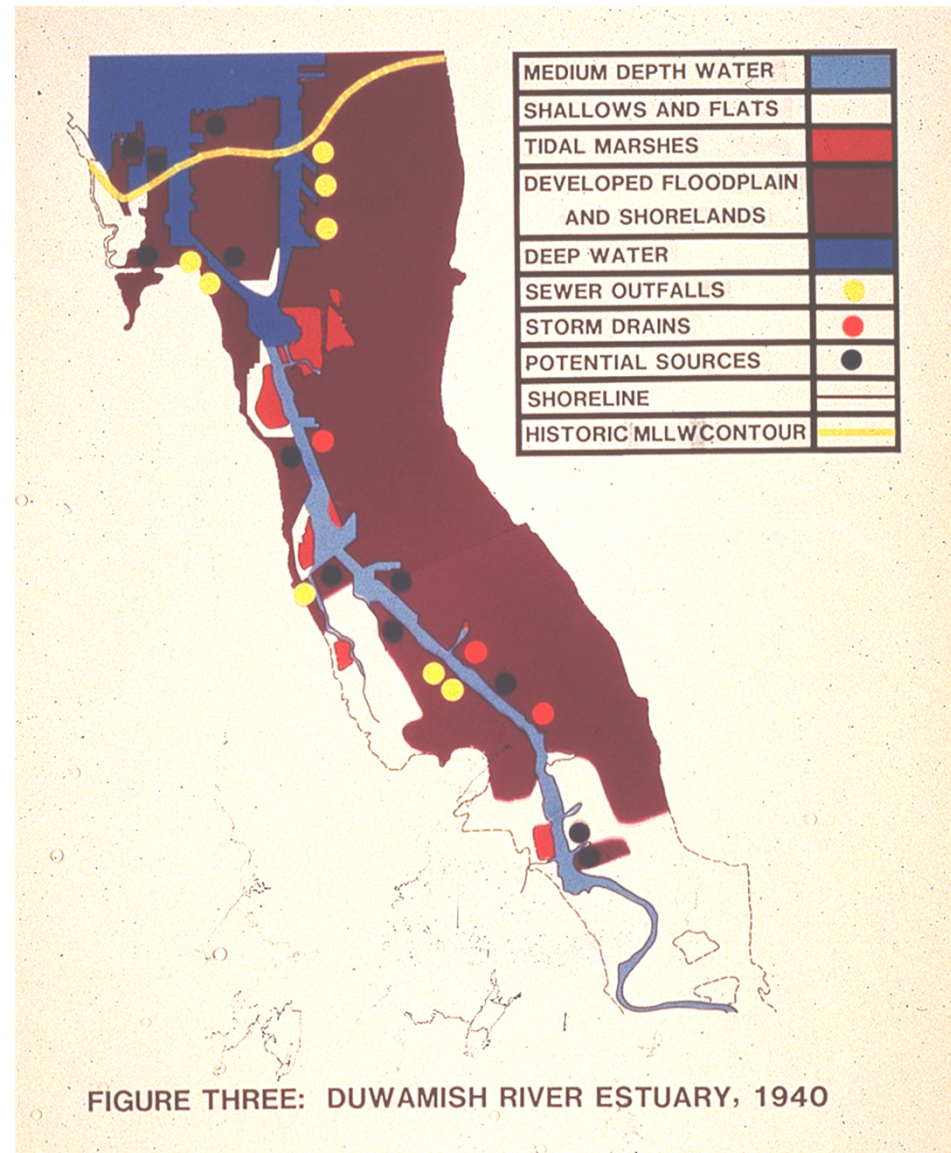
# Historical





# Historical

- Loss of marsh and mudflat by 1940
- Industrial pollution continues

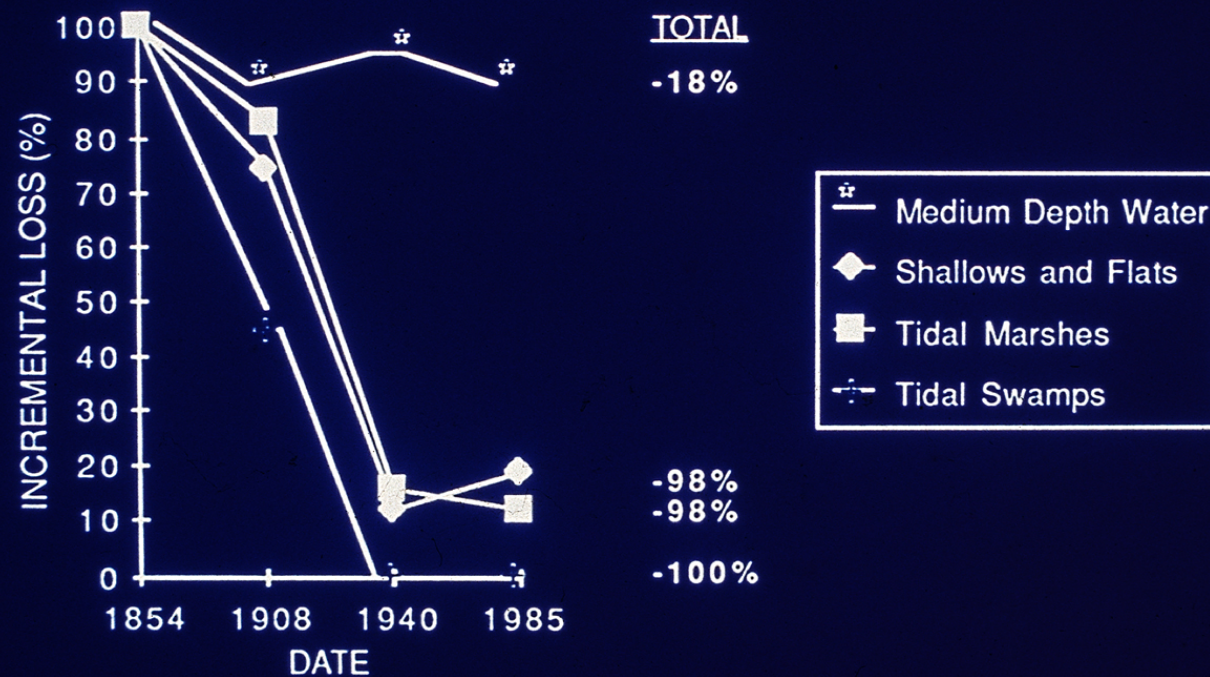




# Historical

## HISTORICAL CHANGES IN THE DUWAMISH RIVER ESTUARY, 1854-1973

### INCREMENTAL CHANGES







edge of the Lower Duwamish. The river was long ago converted to heavy industrial uses. (Steve Ringman / The Seattle Times)





*The Green River, walled off by levees, passes through industrial and retail zones of Kent between Interstate 5 and the West Valley Highway. (Steve Ringman / The Seattle Times)*



## Struggling orcas heavily rely on urban chinook from Seattle-area rivers, new analysis shows



Originally published July 24, 2018 at 6:00 am Updated July 24, 2018 at 10:03 am



**1 of 2** Southern-resident killer whales are relying on a wide variety of chinook all over the region, including chinook from urban rivers of Puget Sound, new research shows. (Photo by Andrew Hendry)

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# CHASING A MEMORY

In California, orcas and salmon have become so scarce people have forgotten what once was. Will the Northwest be next?







*Southern residents are the most urban orcas in the world, competing with the needs and wants of more than 6 million people living around the Salish Sea. These orcas swam last November between the Port of Tacoma and the Superfund site at the former Asarco smelter at Ruston. Taken under NOAA permit 21348. (Steve Ringman / The Seattle Times)*





*Levees like this one on the Lower Green River in Tukwila have a hardened rock wall along the river's edge and no big trees to cast shade. (Steve Ringman / The Seattle Times)*



# The Duwamish Estuary

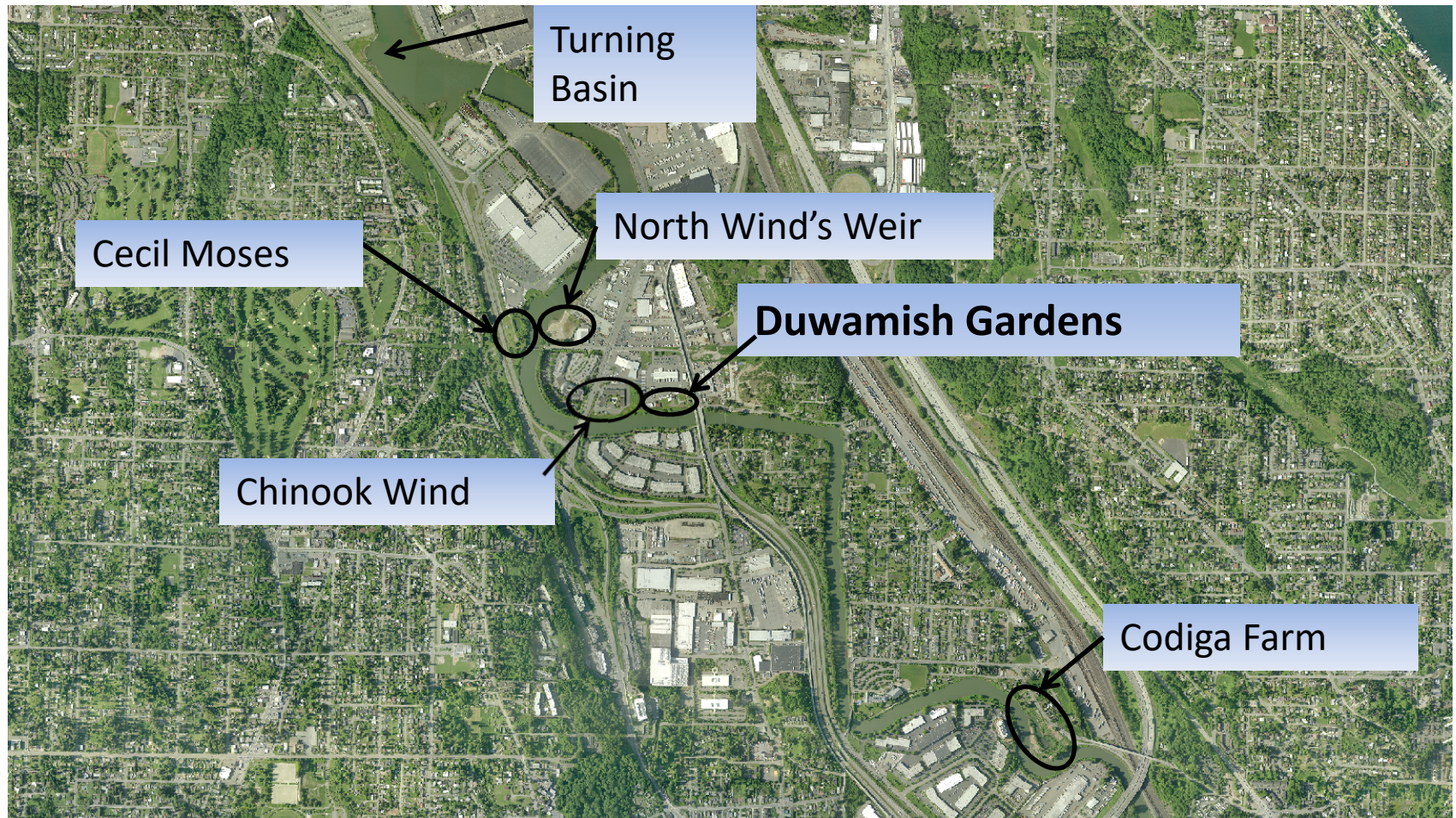
- The Duwamish Blueprint (WRIA 9)
- Conservation Hypothesis Duw-1:  
*Expanding and enhancing the Duwamish estuary, particularly vegetated shallow subtidal and intertidal habitats and brackish marshes, by restoring dredged, armored and filled areas, will enhance habitat quantity and quality and lead to greater juvenile salmon residence time, greater growth and higher survival.*



Figure 2. The Duwamish transition zone, the area most critical for migrating juvenile salmonids, is located between River Miles 1 and 10, from just downstream of Kellogg I-5 to just upstream of the I-5 crossing.



# Building the Blueprint







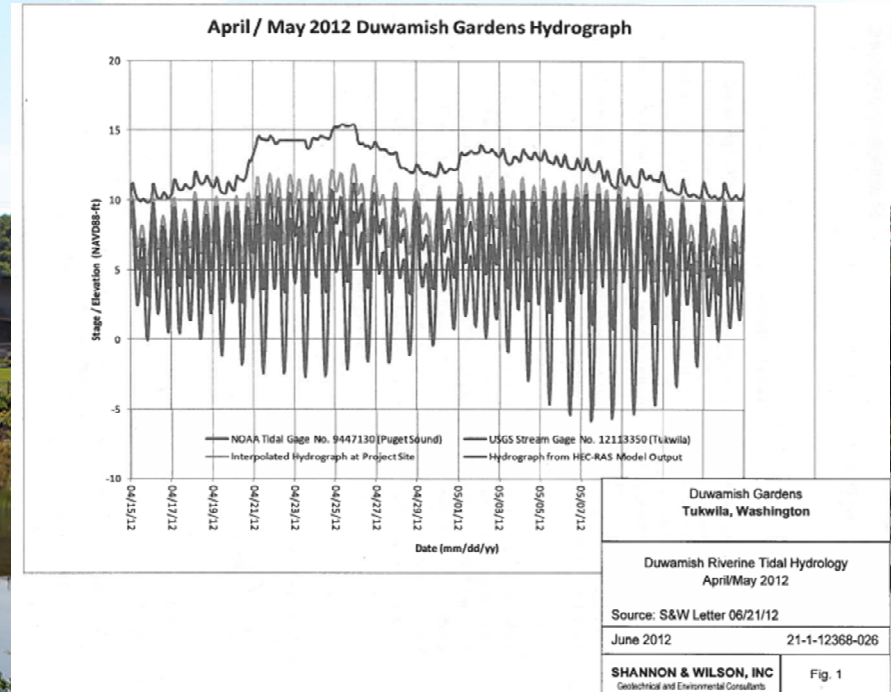
*Context:* Invasive plants obscured views and blocked access to the river.





*Context:* View from the across the Duwamish River after restoration.





*Technical challenges:* The site required the design of slopes and plant communities for complex estuarine hydrology.





*Technical challenges:* An existing barn structure was carefully salvaged for reuse of historic building materials.





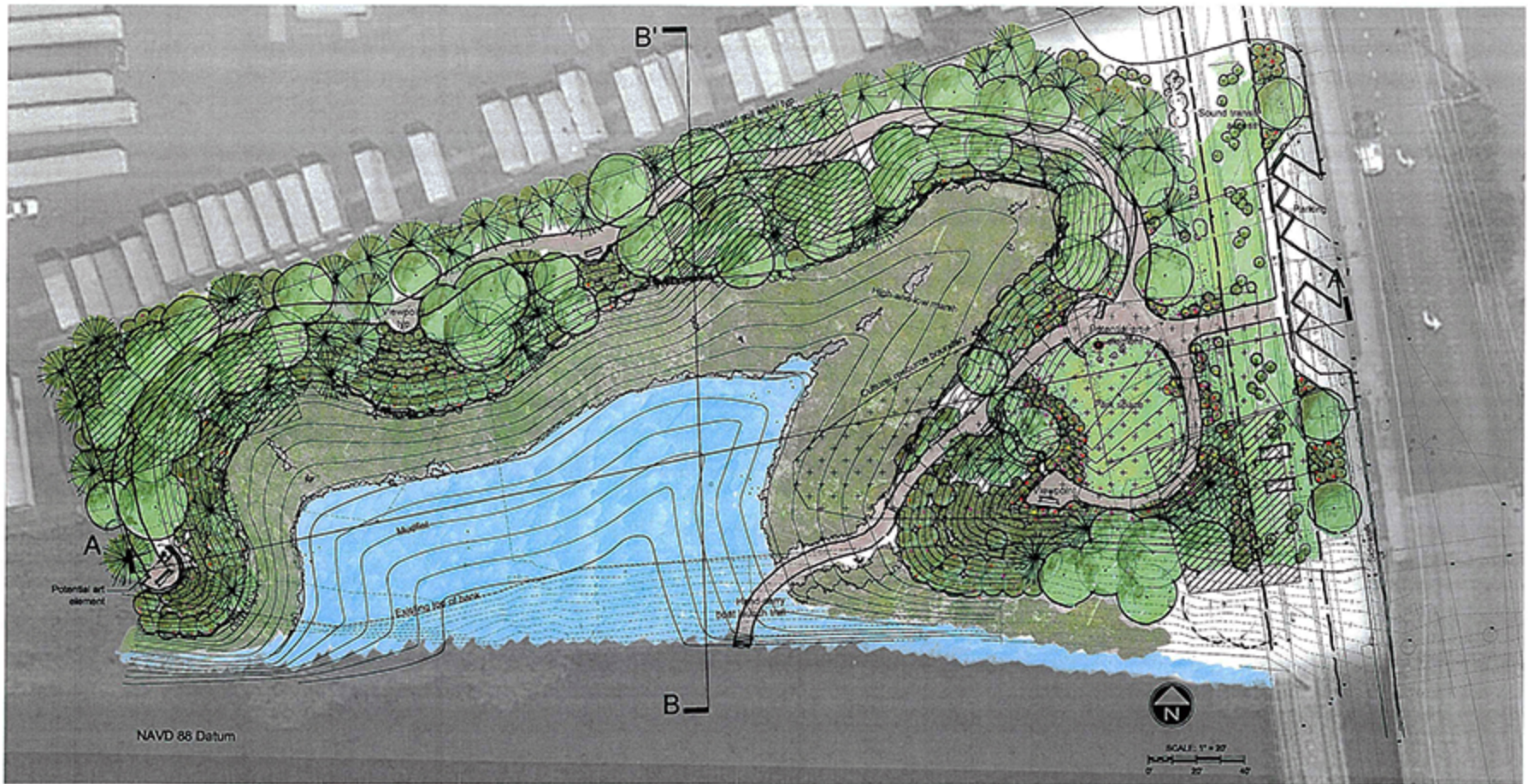
*Technical challenges:* Pre-settlement and historic use of the site required careful investigation and construction; responsive design and mitigation





*Technical challenges:* Construction equipment had to be carefully navigated beneath the overhead light rail tracks.





## SITE PLAN

CITY OF TUKWILA

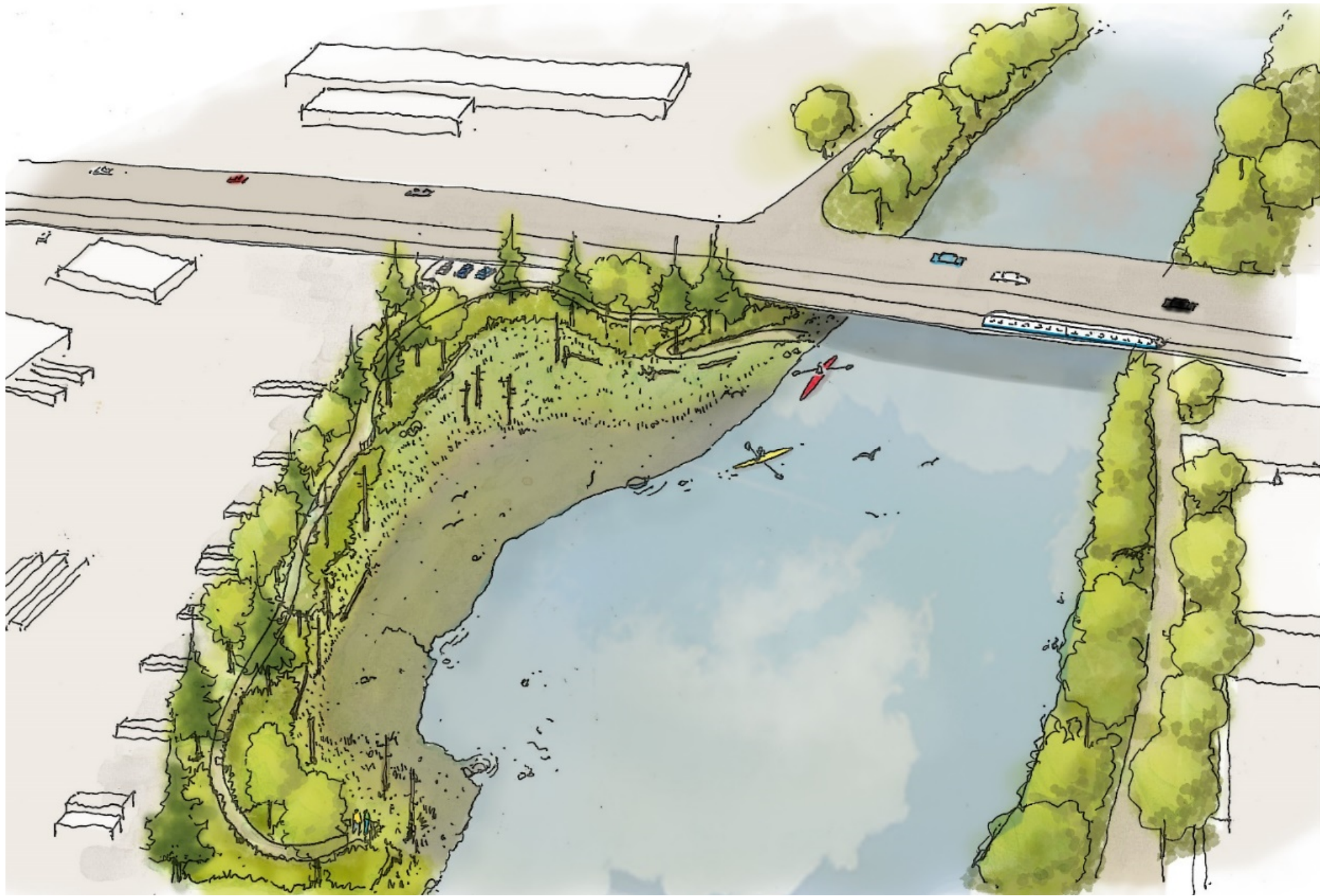
March 28, 2013

# DUWAMISH GARDENS HABITAT PROJECT

j.a. brennan associates, PLLC  
in association with  
Shannon & Wilson, Inc.  
CardnoTEC, Inc.  
Chris Webb & Associates  
CASCADE Interpretive Consulting  
ESA Paragon

*Sensitivity to Water:* A waterfront trail, three viewpoints, hand-carry boat launch, gathering space, interpretive signage and public art were thoughtfully planned for this new 3-acre park.









*Quality and Harmony of Design:* The Duwamish Gardens Habitat Restoration Project provides critical food production and shallow water refuge for juvenile salmon in a 1-acre marsh and mudflat.





*Quality and Harmony of Design:* The tidal creek provides shelter for waterfowl. At extreme low tide shorebirds peck away for the invertebrate meals below.





*Civic Contribution:* The gathering circle provides a place to share stories, relax and observe the surrounding environment.





*Civic Contribution:* Formerly the site of a residence, the gathering plaza provides a new place for people to meet.





*Civic Contribution:* Muckleshoot Tribal member, Will Bill playing a drum at the park dedication next to Tukwila Mayor, Allan Ekberg





- *Civic Contribution:*
- Boating, including Muckleshoot Tribe Canoe Blessing Ceremony, 2017
- Fishing
- Walking trails and viewpoints
- Informal play/lawn area









*Civic Contribution:* New viewpoints and access to the water with a hand-carry boat launch reunite people with the river.





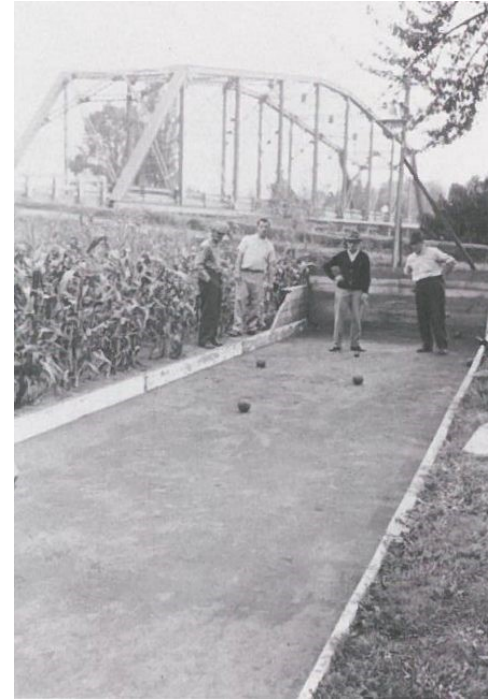
*Environmental Contribution:* Juvenile salmon use the shallow water to rest, to feed and to adapt to salt water conditions on their way out to sea





*Educational Contribution:* Interpretive signs tell the salmon story and cultural and historic use of the site.









*Educational Contribution:* An inlaid map marks important story and cultural sites of the Salish people along the Duwamish River.





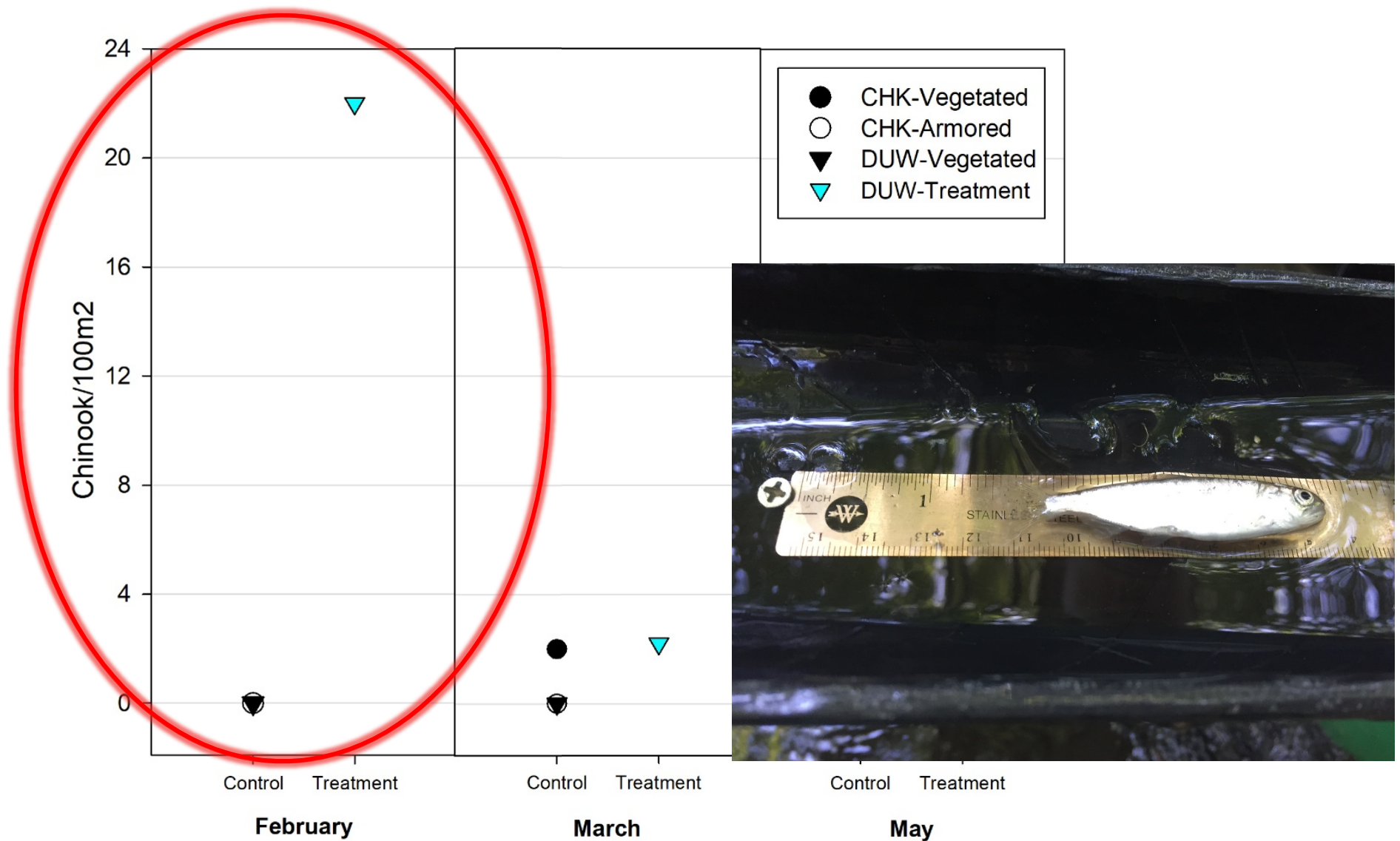
*Educational Contribution:* Herring drying racks inspire the park's interactive chime art and tell the tribal legend of the North Winds.







# Do salmon use the habitat?





















# Duwamish Gardens

- Successful fish and wildlife habitat
- Just one step towards restoration
- Lessons learned applied
- A place for people and salmon
- Cultural storytelling

