

WRIA 9 3YWP Narrative

I. Context

Question 1: Provide a brief overview of the characteristics of your Chinook Salmon Recovery area.

The Green/Duwamish and Central Puget Sound Watershed (WRIA 9), located entirely within King County, stretches from the Cascade Mountains in the east to Vashon and Maury Islands in the west. The major river is the Green River, which flows over 82 miles before becoming the 11-mile long Duwamish River. The Duwamish provides a 9-mile zone where fresh and salt water mix, serving as a transition zone for juvenile salmonids. Major tributaries include the Black River, Springbrook Creek, Mill Creek, Soos Creek, Jenkins and Covington Creeks, Newaukum Creek, and Crisp Creek. Many small streams drain directly to Puget Sound along the mainland shoreline and Vashon and Maury Islands. Green/Duwamish Chinook spawn in the watershed (along with chum, coho, and pink salmon and winter steelhead), while the juveniles of other systems use the nearshore habitats.

Howard Hanson Dam, constructed in 1961, blocks fish passage to over 45 percent of the watershed. The area above the dam, known as the Upper Green subwatershed, historically supported fall Chinook salmon and is believed to have supported a run of spring Chinook.

Question 2: Describe the process for developing your 3YWP narrative and project/activity list. Who are the stakeholders involved and what are their roles? Are harvest and hatchery managers involved in your planning group or have they had an opportunity to comment or consult on your 3YWP?

WRIA 9 developed a project prioritization and sequencing methodology that was used by the WRIA 9 Implementation Technical Committee to evaluate and rank all of the priority projects by subwatershed. The highest priority projects from this effort will be the focus of future restoration and acquisition efforts. As current projects on the 3-Year Work Plan are completed, this prioritized list is being used to draw projects for addition to the work plan. The WRIA 9 prioritization methodology has been posted on the WRIA 9 website and Habitat Work Schedule to make it accessible to the SRFB Review Panel Members, and RCO staff.

The WRIA 9 Implementation Technical Committee includes representatives from the following organizations: Tacoma Public Utilities, Washington Department of Ecology, City of Seattle, City of Auburn, City of Tukwila, EarthCorps, City of Kent, and the Washington Department of Fish and Wildlife. Other entities that engage in the process include the Puget Sound Partnership, Urban Waters Partnership, and King County.

While the Washington Department of Fish and Wildlife is involved in the development of our 3YWP, the staff that participate are not harvest or hatchery managers. Currently, the Muckleshoot Indian Tribe does not participate regularly in WRIA 9 activities, although there is regular communication among staff. The fundamental incongruities between the recently

released Soos Creek Hatchery Genetics Management Plan and the WRIA 9 Salmon Habitat Plan highlight the disadvantages of this lack of H-integration.

II. Background/Planning/Logic of the Recovery Chapter

Question 1: What are the recovery goals for your watershed for Chinook salmon? Include information on both population goals (VSP parameters) and habitat goals.

The short and long-term Chinook population goals in WRIA 9 are as follows:

Short Term (10-15 years)	Increase abundance of natural origin salmon to between 1,000 and 4,200 annually
Long Term (50-100 years)	Increase abundance of natural origin salmon to 27,000 annually
Short Term Productivity	Increase population growth rate of natural origin salmon
Long Term Productivity	Stabilize population growth rate at the equilibrium
Short Term Spatial Structure	Increase distinct spawning aggregations in the Middle Green
Long Term Spatial Structure	Achieve distinct spawning aggregations above Howard Hanson Dam
Short Term Diversity	Protect existing life history types and increase variability in age structure
Long Term Diversity	Re-establish spring population upstream of Howard Hanson Dam
	Re-establish historical run and spawn timing of existing fall population

WRIA 9's five-year and ten-year goals, and our accomplishments through 2011, are as follows:

Benchmark	Five-Year Goal	Accomplishments 2005-2011	Ten-Year Goal
NEARSHORE			
Protect shoreline	2.5 miles	3.6 miles*	4 miles
Restore shoreline	6,700 feet	1,820 feet	10,700 feet
Restore pocket estuaries	5	1	3

*Levee setbacks prior to 2005 total nearly 6,400 feet

DUWAMISH			
Restore shallow water habitat	10 acres	3.5 acres	21.5 acres
Restore shoreline bank	1.5 miles	0.75 miles	2.5 miles

LOWER GREEN RIVER			
Restore reconnected off-channel habitat, including riparian vegetation	8.3 acres	5.2 acres	13.3 acres
Complete levee setbacks	6,700 feet	0 feet**	10,700

MIDDLE GREEN RIVER			
Restore reconnected off-channel habitat, including riparian vegetation	25 acres	38.8 acres*	40 acres
Complete levee setbacks	7,500 feet	3,300 feet	12,000 feet
Tributary improvement	9 miles	5.5 miles	14.4 miles

*Five-Year Goal exceeded

Question 2: What is the current strategy to accomplish the recovery goals and what assumption(s) is this strategy based on?

WRIA 9's strategy to accomplish the recovery goals focuses on four fundamental action types:

- Protect currently functioning habitat and habitat-forming processes from degradation;
- Connect the Upper Green River by restoring access for salmon;
- Restore habitat that contributes to the survival of juvenile salmon; and
- Increase Duwamish River estuary habitat.

To realize this strategy, the watershed has adopted a funding policy that directs 40% of funding to the Duwamish Estuary Transition Zone, 30% of funding to rearing habitats, and 30% to spawning habitats.

This strategy is based on the following assumptions:

- Protection of good habitat is crucial to prevent further declines in salmon populations.
- Providing access to the Upper Green will open up 40% of the watershed's habitat to salmon for the first time in over 50 years. This reconnection will help improve spatial structure, genetic diversity, and abundance.
- The lack of good rearing habitat in the watershed generally and specifically in the Duwamish River estuary is a major limiting factor for the survival of Chinook.

Question 3: What new knowledge or information has changed your strategy, assumptions or hypotheses since your recovery chapter was written?

- Project selection has changed slightly based upon the project prioritization process. Projects previously were chosen opportunistically based upon availability; that focus has changed to select the most ecologically beneficial projects. As currently active projects are completed, projects that rated high in the process will be added to future work plans.

- Four projects currently being designed and constructed through the King County Flood Control Zone District are included, although the projects are completely funded through the district. Coordination with WRIA 9 staff is ensuring that the projects include benefits to salmon to the maximum extent possible. However, engineering requirements and safety concerns are the priority concern when designing these projects, and ecological benefits are secondary.
- King County policies regarding salmon restoration projects in the Agricultural Production Districts are impeding restoration opportunities in the Lower and Middle Green. Unless these issues can be resolved, the Habitat Plan goals for restoring off-channel habitat and levee setbacks will not be met.

Question 4: How is the sequencing and timing of actions or projects done in such a way as to implement the strategy as effectively as possible?

The project prioritization process adopted by the Implementation Technical Committee in winter 2008 allows WRIA 9 to direct its limited resources strategically. Projects were evaluated based upon a set of diagnostic questions including the program objectives, consistency with accepted standards for successful restoration, expected population response, habitat response, scale of the project, and time lag between project implementation and resulting benefits to Chinook salmon.

III. Plan and Gaps

Question 1: What are the obstacles or barriers for implementing monitoring and adaptive management? Where could you use support for development of your M&AM plans?

The *WRIA 9 Status and Trends Monitoring Report: 2005-2010* notes that due to lack of funding and capacity, WRIA 9 has not monitored the effectiveness or the implementation status of the 30 watershed-wide and sub-watershed programmatic and regulatory actions identified in the WRIA 9 Salmon Habitat Plan. In addition, the lack of Tribal participation and WDFW hatchery and harvest manager participation in WRIA 9 efforts means that H-integration has not occurred. WRIA 9 could use assistance with bringing the Muckleshoot Indian Tribe and additional WDFW staff to the table, and with funding and capacity support for development of the M&AM plan.

Question 2: Considering all actions affecting salmon recovery in the watershed, is the Chinook salmon resources likely to be closer to, or further from, the recovery goals ten years from now as it is today?

This question is difficult to answer with any certainty, especially since ten years covers only two sequential Chinook life cycles. However, several major concerns exist in WRIA 9 that indicate that the decisions made in the next ten years could have significant effects on our ability to recover this resource:

- We are implementing the Plan at roughly 10% of the levels necessary to recover Chinook. Without dedicated, sustainable funding and additional staff resources, this pace is unlikely to increase.

- Negotiations with the US Army Corps of Engineers on levee vegetation management should be completed within the next ten years. The result of these negotiations, which are not in the watershed's control, could have significant positive or negative effects on Chinook in the Green River. A new Total Maximum Daily Load temperature report for the mainstem of the Green River indicated that water temperature in the Lower Green River sub-watershed was likely to reach sub-lethal to lethal temperatures in 1 out of every 10 summers, according to the model used. Similarly, water temperature data from King County's gauges shows multiple examples of very high temperatures occurring annually. The final Corps revegetation policy will have significant effects on our ability to lower temperatures in the mainstem of the river – either for better or for worse.
- The recently released Soos Creek Hatchery Genetics Management Plan, as written, will release sub-yearling hatchery Chinook into the Green River during the time that large numbers of wild juvenile Chinook are using the estuary in May. Our data suggest that the hatchery sub-yearlings out-compete the wild juveniles in the estuary, resulting in a reduction in growth of the wild fish. Similarly, we believe WDFW takes too many natural origin Chinook off the spawning grounds each year, raising the potential for the entire population to become domesticated and to reduce productivity to levels that will make recovery almost impossible. The continued disconnect between habitat, harvest, and hatchery planning in WRIA 9 is not simply a policy matter: it is having a direct, negative effect on the growth and survival of wild Chinook salmon in the Green River.

That said, there are also many positive signs in the watershed:

- The US Army Corps of Engineers is working to develop a downstream fish passage facility at Howard Hanson Dam. However, there is currently not a schedule for completion and funding is uncertain. Once constructed, fish will be able to access over 300 square miles, or over 45% of the watershed, for the first time in more than 50 years. This reopening will have a significant positive effect on the spatial structure and genetic diversity of the Green/Duwamish Chinook population.
- The WRIA 9 Forum has exceeded two of its five-year benchmarks and has 23 projects underway and 64 projects in the pipeline. These projects are protecting and restoring habitat for Chinook.
- In most years, we have met our goal of 1,000 to 4,200 natural origin spawners annually. However, in 2009 only 207 natural origin spawners returned, and in 2011 the number was 903. We have more work to do.