

Green/Duwamish and Central Puget Sound Watersheds 2009 Three-Year Work Plan

Watershed Questions to Answer for Three-Year Work Programs

What are the actions and/or suites of actions needed for the next three years to implement your salmon recovery chapter as part of the regional recovery effort?

- Please see the attached spreadsheet.
- Policy MS-1 in the WRIA 9 habitat plan recommends distributing funding to 40% in the transition zone, 30% for rearing habitat, and 30% for spawning habitats. Rearing habitat is provided in the Middle Green River, Lower Green River, Duwamish River and Marine Nearshore. Spawning habitat is provided in the Middle Green River and upper Lower Green River.
- Efforts in the transition zone are focused on North Wind's Weir (construction 2009), and Duwamish Gardens (acquisition recently completed, preparing for design phase).
- Projects previously begun in the lower Green as acquisition or feasibility are being supported through design, permitting and construction (e.g., Riverview Park, Downey Farmstead, Mill Creek).
- An evaluation of previous efforts determined that there had been a lack of effort in the nearshore. Recent efforts have been to increase the amount of protection and acquisition in the nearshore for juvenile rearing and spawning fish foraging. An update to the previous 3-year workplan is the addition of four projects in Des Moines and Federal Way. The project proponents are moving forward with the projects and these have been added to the workplan in order to coordinate and support the projects.
- Three projects currently being designed and constructed through the King County Flood Control Zone District are included, although the project is completely funded through the district. Coordination with WRIA 9 staff is ensuring that the projects include benefits to salmon.
- Recent flood events and concerns about Howard Hansen dam have accelerated levee setback and repair projects, particularly within Auburn, Kent, Renton and Tukwila. The Upper Russell Road project was added to this year's workplan in response to concerns about the certification of the levee. This is an Ecosystem Restoration Project in cooperation with the U.S. Army Corps of Engineers.
- Our goal is to develop a strategy for monitoring project effectiveness for the mainstem river and nearshore projects. Once this strategy is reviewed and adopted by the Implementation Technical Committee and Forum, monitoring will be coordinated with other organizations and funding pursued.

What is the status of actions underway per your recovery plan chapter? Is this on pace with the goals of your recovery plan?

We are behind our 3 year benchmark for implementing transition zone projects. This is primarily due to: lack of funding, property expense and availability, and inability to compete against private sector offers. Otherwise, efforts have made and are making progress on main stem levee setback projects, and marine nearshore acquisition and restoration projects. Major projects in the upper watershed sponsored by Tacoma Public Utilities (TPU) and the Army Corp of Engineers (ACOE) are also making progress. These projects include construction of the ACOE fish ladder facility, the TPU fish haul facility, ACOE gravel and wood supplementation programs immediately below the TPU headworks dam, and removal of some fish barriers in the upper watershed.

What is the general status of implementation towards your habitat restoration, habitat protection, harvest management, and hatchery management goals? Progress can be tracked in terms of 'not started, little progress, some progress or complete' or in more detail if you chose.

Habitat Restoration and Protection

The WRIA 9 3 Year Work Schedule has been paired down to those projects that are likely to be started or completed within the 3-year window. We have adopted a project prioritization and sequencing methodology that was used to evaluate all of the WRIA 9 priority projects. The highest priority projects from this effort will be the focus of future restoration and acquisition efforts.

H-Integration Status in WRIA 9

The WRIA 9 Forum of Local Governments approved the creation of an Implementation Technical Committee (ITC) in January 2007. Importantly, the ITC includes representatives from both co-managers (Washington State Department of Fish and Wildlife and the Muckleshoot Indian Tribe), as well Tacoma Public Utilities. All four "H's" are therefore represented at the WRIA 9 table for the first time since work began on developing an ecosystem approach to recovering Chinook salmon in the Green-Duwamish system. A sub group of the ITC has been engaged since October 2007 in addressing H-integration, specifically the "6-Steps" and the H-integration tables. At this point (May 2009) drafts of the first 3 steps of H-integration have been completed for WRIA 9. A significant ITC Work Program task for 2008 is developing an H-integration strategy for WRIA 9. Consistent with the Puget Sound regional H-integration approach, WRIA 9 will address goals, objectives, and steps for advancing H-integration as follows:

Goals of H-Integration Process

- Develop integrated strategies and suites of actions among the H-sectors that are consistent with predictions of moving salmon populations towards short, moderate, and long-term recovery goals
- Help decision-makers clearly see the interaction and cumulative effects of actions among the H-sectors

Six Steps in Advancing H-Integration...

We are following the six step H-integration process and are almost complete with the fifth step of documenting the rationale, implementation steps and expected outcomes. This step is expected to

be completed in January 2010 when the WRIA 9 Implementation Technical Committee meets again. Step 6, building and implementing a verification, effectiveness and accountability system is dependent upon additional funding.

What are the top implementation priorities in your recovery plan in terms of specific actions or theme/suites of actions? How are these top priorities being sequenced in the next three years? What do you need to be successful in implementing these priorities?

- The top implementation priorities in our recovery plan is focusing our efforts at the appropriate ecological scale. For the riverine environment, we are attempting to coordinate efforts at a larger scale in order to work at a scale to improve the habitat conditions. In the nearshore environment, the drift cell is being used as the appropriate unit for work.
- We are working with project sponsors to identify projects that are within our priority project list and then assisting them with developing a funding strategy so that the appropriate grants can be pursued. This ensures that projects move rapidly towards completion and do not risk losing existing grants while the required match is being sought.

Do these top priorities reflect a change in any way from the previous three-year work program? Have there been any significant changes in the strategy or approach for salmon recovery in your watershed? If so, how and why?

- Our focus has changed slightly based upon the project prioritization process by the Implementation Technical Committee in winter 2008. As currently active projects are completed, projects that rated high in the process will be added to future workplans.
- Three projects currently being designed and constructed through the King County Flood Control Zone District are included, although the project is completely funded through the district. Coordination with WRIA 9 staff is ensuring that the projects include benefits to salmon.
- Recent flood events and concerns about Howard Hansen dam have accelerated levee setback and repair projects, particularly within Auburn, Kent, Renton and Tukwila. The Upper Russell Road project was added to this year's workplan in response to concerns about the certification of the levee. This is an Ecosystem Restoration Project in cooperation with the U.S. Army Corps of Engineers.

What is the status or trends of habitat and salmon populations in your watershed?

Based upon WDFW adult return-estimates of the Green River (Duwamish) Chinook spawning population, the recent total escapement appears to be consistent with estimates dating back to 1986. The total escapement for recent years is estimated to be 4,089 in 2005, 10,157 in 2006, and

7,186 in 2007. The range from 1986 to present is 1,840 (1982) to 21,402 (2001). See: http://wdfw.wa.gov/webmaps/salmonscape/sasi/full_stock_rpts/1160.pdf.

Are there new challenges associated with implementing salmon recovery actions that need additional support? If so, what are they?

- The continuing challenge of the lack of funding and capacity, for both the lead entity and project sponsors, continues to limit salmon habitat recovery efforts in the region. In addition, there is very limited funding for monitoring efforts, which is the key to adaptive management.
- As a practical matter, few capital restoration projects can be started and completed in 3 years. The projects listed in the Three Year Work Schedule include those that can be started within 3 years but may not be completed in 3 years, as well as those in progress.

2009 - WRIA 9 Green/Duwamish and Central Puget Sound Waters																							
Project Information and How it Relates to the Recovery Plan												Project Planning						Project Cost and Sponsor					
Project Type	Plan Category	Project Name	Project Description (brief description)	Priority tier of project	Limiting Factors	Document Reference for limiting factor (Recovery Plan, Chapter 3 - Habitat Protection)	Habitat Type (HWS items - i.e. riparian, estuary river delta, nearshore, etc.)	Activity Type (HWS items - i.e. fish passage, instream flow, sediment reduction, etc.)	Project Performance (restore 30 acres of floodplain)	Primary Species Benefiting	Secondary Species Benefiting	Current Project Status (Conceptual, Feasibility completed, land acquisition completed, design completed, permitting completed, construction completed)	2009 Activity to be funded	2009 Estimated Cost	2010 Activity to be funded	2010 Estimated Cost	2011 Activity to be funded	2011 Estimated Cost	Likely End Date	Likely Sponsor	Total Cost of Project	Local share or other funding	Source of funds (PSAR, SRFB, other)
Capital Projects																							
Habitat																							
Restoration	Capital	North Wind's Weir (DUW-10)	Shallow water habitat rehabilitation at RM 6.3. Create two acres of off-channel, shallow water habitat in the transition zone	1	Reduced habitat capacity. Competition with hatchery origin juveniles		Transition zone estuary	Shallow water habitat creation, riparian	2.1 acres shallow water habitat	Chinook	Bull trout, steelhead	Construction in progress	Construction, monitoring	\$85,000					2011	King County	\$3,200,000	\$1,974,000	SRFB
		Riverbend Hill (Project DUW-6)	Reshape and revegetate the riverbank at RM 7.2 - 6.9, right bank, including relocation of S 115th Street. Setback revetment and placement of LWD	1	Reduced habitat capacity. Competition with hatchery origin juveniles		Transition zone estuary	Streambank restoration, riparian revegetation, LWD placement,	1500 feet of streambank restoration.	Chinook	Bull trout, steelhead	Feasibility	Feasibility		Design and permitting	300,000	Construction	unknown	2012	Tukwila	\$2,500,000	\$1,000,000	unknown
		Duwamish Gardens Shallow Water Habitat Creation at RM 7.0 (DUW-7)	Restore estuarine transition zone habitat to provide critical habitat for juvenile salmon in the Duwamish Transition Zone	1	Reduced habitat capacity. Competition with hatchery origin juveniles		Transition zone estuary	Shallow water habitat creation, riparian	1.5 acres shallow-water habitat creation	Chinook	Bull trout, steelhead	Feasibility		Funding provided through WDFW Engineering Assistance and PSAR 5% capacity funding	Design and permitting					Tukwila	unknown	unknown	SRFB, KCD, City of Tukwila, ALEA
		Duwamish Riverfront Revival/South Park Bank Restoration and Shallow Water Habitat Creation at RM 3.8-3.7	Rehabilitate a series of shallow-water habitats to create shallow water and riparian habitat	1	Reduced habitat capacity. Competition with hatchery origin juveniles		Transition zone estuary	Shallow water habitat creation, riparian	Two acres of shallow-water habitat	Chinook	Bull trout, steelhead	Conceptual											
		Riverton Creek Flaggate Removal and Restoration at RM 6.6 (DUW-8)	Remove flatgates and restore an open water connection Creek to the Duwamish River.	1	Reduced habitat capacity. Competition with hatchery origin juveniles		Transition zone estuary	Fish passage	Restore full fish access to over 1200' linear feet of off-channel, shallow water habitat.	Chinook	Coho	Feasibility (funded in 2008), activity on-going		Design and permitting	200,000	Construction	500,000	2012	Tukwila				
		Riverside Estates Levee Setback (LG-1) at RM 28.8	Levee setback, benching, LWD placement and revegetation	1	Altered stream flow, channel structure, complexity, riparian , LWD		Instream	Instream flow	Re-establish 1500 feet of side channel	Chinook	Bull trout, steelhead	Design	Design	Funded through King County Flood Control Zone District	Construction (levee setback)	300,000	Construction	2,500,000	2012				

		Riverview Park Restoration at RM 22.7(LG-7)	Provide summer rearing habitat and high flow winter refuge through excavation of an off-channel area combined with placement of LWD and revegetation	1	Altered stream flow, channel structure, complexity, riparian , LWD		Instream	Instream flow		Chinook	Steelhead, bull trout	Design and permitting	Design and permitting	\$350,000	Construction	2,200,000	Revegetation, Monitoring	50,000	2011				
		Downey Farmstead Restoration Project (LG-7)	A feasibility study is currently underway to determine options for modifying road, reconnecting the upland to the river and restoring riparian habitat.	1	Altered stream flow, channel structure, complexity, riparian , LWD		Instream	Instream flow		Chinook	Steelhead, bull trout	Feasibility	Funded in 2008		Design and permitting	300,000	Construction	TBD	2013	Kent			SRFB, King Conservation District, City of Kent
		Desimone Levee Phases 1-4 (LG-13)	Levee setback, benching, LWD placement and revegetation	1	Altered stream flow, channel structure, complexity, riparian , LWD		Instream	Instream flow		Chinook	Bull trout	Design			Engineering and design	898,607	Construction	1,864,976	2011	King County Flood Control Zone District (KDFCZD)			KCFCZD
		Mill Creek Floodplain Wetland and Off-Channel Habitat Rehabilitation (LG-7)	Restore lower portion of Mill Creek and adjacent segments of currently armored riverbank.	1	Altered stream flow, channel structure, complexity, riparian , LWD		Instream	Instream flow		Chinook	Steelhead, bull trout	Feasibility	Design and permitting	\$300,000	Construction	1,400,000	Monitoring	50,000	2011	Kent			SRFB, King Conservation District, City of Kent
		Mill Creek (LG-8)	Removal of invasive and non-native plant species, planting native riparian vegetation, strategic replacement of Large Woody Debris (LWD) and realignment of the stream.	1	Altered stream flow, channel structure, complexity, riparian , LWD		Instream	Instream flow		Chinook	Steelhead, bull trout	Design and permitting	Design and permitting	\$200,000	Construction	TBD	Monitoring	50,000	2012	Auburn			SRFB, King Conservation District, City of Auburn
		Briscoe Off-channel habitat rehabilitation between RM 16.1 and 15.8 (LG-12)	Remove armoring on shoreline, excavate flood refugium for juvenile salmonid rearing habitat, install large woody debris, and plant native riparian vegetation.	1	Altered stream flow, channel structure, complexity, riparian , LWD		Instream, riparian	Riparian, instream flow		Chinook	Steelhead, bull trout	Design and permitting	Design and permitting		Construction		Construction		2011	KCFCZD			KCFCZD
		Mainstem Maintenance, including Upper Russell Road (LG-10)	Habitat rehabilitation	1	Altered stream flow, channel structure, complexity, riparian , LWD		Instream	Instream flow		Chinook	Steelhead, bull trout	Design and permitting	Design and permitting	\$150,000	Construction	1,075,211	Monitoring	500,000	2012	KCFCZD			

		Flaming Geyser Floodplain Reconnection, Side Channel Connection and Habitat Restoration between RM 45.1 and RM 44.3	Excavate side channel between the wall-based side channel inlet and the mainstem, and construct logjams to reinstate channel migration	2	Channel structure/complexity		Instream, riparian	Riparian, instream flow		Chinook	Steelhead, bull trout	Feasibility and design			Design and permitting	150,000	Construction	900,000	2013	King County, King Conservation District, SRFB			
		Newaukum Creek Mouth Restoration Between Creek Miles 0.0 and 4.3, Phase II (MG-18)	Continue restoration efforts upstream of Phase I	1	Riparian areas and LWD recruitment		Instream, riparian	Riparian, instream flow		Chinook	Steelhead, bull trout	Conceptual			Design and permitting	150,000	Construction	500,000	2011				
		Fenster Levee Setback, 1B (MG-18)	Remove levees, lower the elevation of terraces and construct engineered logjams to reinstate floodplain connectivity and channel migration	1	Channel structure/complexity		Instream, riparian	Riparian, instream flow		Chinook	Chinook	Construction	Construction	500,000	Monitoring		Complete		2011	Auburn		\$75,000	Auburn, King Conservation District, SRFB
		Pautzke Levee Setback (MG-18)	Remove levees, lower the elevation of terraces and construct engineered logjams to reinstate floodplain connectivity and channel migration	1	Channel structure/complexity		Instream, riparian	Riparian, instream flow		Chinook	Steelhead, bull trout	Construction	Construction	\$500,000	Monitoring	15,000	Complete		2011	King County	1,100,000	\$255,000	King County, SRFB, King Conservation District
		Fenster Levee Setback, 2B	Remove levees, lower the elevation of terraces and construct engineered logjams to reinstate floodplain connectivity and channel migration	1	Channel structure/complexity		Instream, riparian	Riparian, instream flow		Chinook	Steelhead, bull trout	Design	Design, permitting	\$20,000	Construction	500,000	Monitoring	20,000		Auburn	650,000	\$150,000	SRFB, King Conservation District, Auburn
		Big Spring Creek Restoration (MG-7)	Construct new channel to replace ditch. Connect coldwater springs to Newaukum Creek	1	Channel structure/complexity		Streamflow patterns, high water temperature	instream, riparian		Chinook	Coho	Design completed	Construction	\$2,200,000	Construction		Monitoring			King County	\$3,200,000	\$1,000,000	SRFB, King Conservation District, King County, Enumclaw
		Functioning Nearshore Habitat Protection on Vashon/Maury Island - Piner Point (NS-17)	Creosote bulkhead removal and native plant revegetation	1	Loss of habitat		Nearshore beach	Nearshore		Chinook	Orca, forage fish	Design in progress	Design		Construction	200,000	Revegetation			King County	\$275,000	\$75,000	SRFB, King County, Conservation Futures
		Ellisport Creek Fish Passage Improvements on Vashon Island (NS-9)	Improve fish passage, beach condition and cleanup hydrocarbons	1	Altered stream flow		Instream, riparian	Fish passage		Chinook	Forage fish	Acquisition/negotiation of donation of parcel	Acquisition	\$20,000	Cleanup	500,000	Culvert removal	500,000	2012	King County	\$1,000,000		King County, King Conservation District
		Dockton Road Removal and Feeder Bluff Restoration on Vashon Island (NS-19)	Remove road and intertidal fill. Acquire upland properties if threatened by erosion.	1	Loss of habitat		Nearshore embayment	Nearshore		Chinook	Orca, forage fish	Conceptual			Feasibility								

		Burien Seahurst Park Shoreline Restoration, Phase II (NS-19)	Continue shoreline restoration actions conducted in southern portion of Seahurst Park in Burien by removing a portion of shoreline armoring, restoring beach slopes and riparian revegetation	1	Loss of habitat		Nearshore beach	Nearshore		Chinook	Orca, forage fish	Design and permitting	Design and permitting	\$100,000	Construction	8,000,000	Monitoring	100,000	2012	Burien	\$8,250,000	\$2,500,000	SRFB, ACOE, King Conservation District, ESRP, Burien	
		Raab's Lagoon (NS-14)	Feasibility to remove all or part of bulkhead	2	Loss of habitat		Nearshore Embayment	Nearshore		Chinook	Orca, forage fish	Feasibility												
		Beaconsfield on the Sound (NS-17)	Feeder bluff restoration through bulkhead removal	1	Loss of habitat		Nearshore Beach	Nearshore		Chinook	Orca, forage fish	Acquisition/negotiation of donation of parcels	Feasibility	150,000	Construction	250,000	Monitoring	100,000	2012	Normandy Park			SRFB, King Conservation District, Normandy Park, ESRP	
		Marine View Park (NS-17)	Erosion control, noxious weed removal and revegetation with native plants	1	Loss of habitat		Nearshore beach	Nearshore		Chinook	Orca, forage fish	Design completed	Construction (revegetation)	16,000	construction (revegetation)		Maintenance		2012	Cascade Land Conservancy	400,000	15,000	King Conservation District, Community Salmon Fund	
		Massey Creek Pocket Estuary Restoration in Des Moines (NS-13)	Restore parts of Massey Creek estuary.	1	Loss of habitat		Nearshore beach	Nearshore		Chinook	Orca, forage fish	Feasibility	Design and permitting											
		Des Moines Creek Mouth	Restore parts of Des Moines Creek estuary.	1	Loss of habitat		Nearshore beach	Nearshore		Chinook	Orca, forage fish	Feasibility	Design and permitting											
		Dash Point State park Pocket Estuary Restoration in Federal Way (NS-16)	Improve stream mouth of unnamed creek that enters Puget Sound through Dash Point State Park.	1	Loss of habitat		Nearshore beach	Nearshore		Chinook	Orca, forage fish	Feasibility	Design and permitting											
		McSorley Creek Pocket Estuary Restoration in Des Moines (NS-15)	Remove rock armoring along McSorley Creek upstream from mouth	1	Loss of habitat		Nearshore beach	Nearshore		Chinook	Orca, forage fish	Feasibility	Design and permitting											
Acquisition for Restoration		Southeast Drift Cell (NS-11)	Acquisitions needed adjacent to Beaconsfield in order to complete bulkhead removal and protect feeder bluffs.	1	Loss of habitat		Nearshore beach	Nearshore		Chinook	Orca, forage fish	Conceptual			Acquisition/negotiation	2,500,000					Normandy Park	2,500,000	375,000	Conservation Futures, SRFB, King Conservation District, Normandy Park, ESRP
		Functioning Nearshore Habitat Protection on Vashon-Maury Island -Docketon (NS-17)	Acquisition needed in order to complete restoration (one parcel)	1	Loss of habitat		Nearshore beach	Nearshore		Chinook	Orca, forage fish	Conceptual			Design and permitting	150,000	Construction		2012	King County				
Acquisition for Protection		Functioning Nearshore Habitat Protection on Vashon-Maury Island -Point Hever (NS-17)	Acquisition of parcels to preserve an entire drift cell and protect marsh on Vashon-Maury Island	1	Loss of habitat		Nearshore beach	Nearshore		Chinook	Orca, forage fish	Acquisition	Acquisition	250,000	Acquisition		Acquisition		2018	King County	10,000,000	2,500,000	Conservation Futures, King Conservation District, ALEA, SRFB, ESRP	

