

Before you is the Salmon Habitat Plan for the Green/Duwamish and Central Puget Sound Watershed (Water Resource Inventory Area 9 [WRIA 9]). This Plan is the culmination of a tremendous amount of work at both the scientific (assessment) level and at the policy (planning) level. Dozens of people from the watershed have devoted countless hours to develop the science and policy that have been distilled in these pages. However, even as the final document in the WRIA 9 planning process, the Habitat Plan is expected to be a living document that will be modified over time to reflect ever greater scientific understanding and to respond to changing policy opportunities and constraints.

2.1 PURPOSE

The purpose of this Habitat Plan is to restore habitat used by Chinook salmon, bull trout, and other salmonids in the Green/Duwamish and Central Puget Sound Watershed.

Native-origin Chinook salmon in the Green/Duwamish and Central Puget Sound Watershed could become extinct within our lifetime. Approximately 106 wild salmon stocks in the Pacific Northwest are now extinct, 214 are at high or moderate risk of extinction, and many are or are being reviewed for listing under the Endangered Species Act. Puget Sound Chinook salmon and bull trout are included among those considered to be at moderate risk of extinction (“threatened”). The focus of this Plan is therefore on habitat restoration in the mainstem of the Green/Duwamish River and in the Central Puget Sound marine nearshore, the habitat most critical for these species. Although tributaries to the Green/Duwamish system are important, particularly as sources of cold, clear water, Chinook salmon typically use only the lower few miles of tributaries. Should we be working to restore habitat and improve water quality in tributaries? The answer is an emphatic yes. However, this Habitat Plan focuses its efforts on the mainstem and marine nearshore because that is where the most difference will be made, especially over this plan’s 10 year timeframe.

In brief, this Habitat Plan:

- Is based on the science of the Strategic Assessment (King County Department of Natural Resources and Parks et al. 2004), the WRIA 9 Habitat Limiting Factors and Reconnaissance Assessment (Kerwin and Nelson [Eds.] 2000), and other efforts to understand how salmonids use the watershed and the historic and current conditions of this watershed;
- Reflects input gathered in 2004 and 2005 from members of the Steering Committee; staff from local, state, and federal agencies; representatives of other businesses and environmental groups; and members of the public; and
- Represents a key step by the governments, organizations, and individuals of this watershed toward overall recovery of Chinook salmon and bull trout in Puget Sound and improved habitat benefiting other salmonids.

2.2 PLAN FRAMEWORK

The framework for this Habitat Plan is based on three organizing strategies as follows:

- 1) **Scientific Framework:** The first strategy establishes the scientific framework that guides the evaluation of actions and implementation of the Plan. Beginning with watershed scale data that address the viable salmonid population parameters, the scientific framework then developed conservation hypotheses for each subwatershed and the management strategies that lead to specific on-the-ground project and programmatic actions. This logical sequence of evaluating what is required to achieve recovery in the watershed is supported by the extensive technical work discussed in Chapters 4 and 5 (which are based to a large extent on the Strategic Assessment and the Ecological Synthesis Approach described in the Strategic Assessment (King County Department of Natural Resources and Parks et al. 2004)) and is the cornerstone of future action evaluations and Plan implementation.

Because of this scientific framework we know that:

- The Duwamish Estuary transition zone in the vicinity of river miles 5.5 to 7.0 is key to Chinook recovery insofar as there is a likely limiting habitat;¹
- Spawning and rearing habitat in the Middle Green River, Lower Green River, Duwamish Estuary, and Marine Nearshore Subwatersheds is essential; and
- The Upper Green River Subwatershed habitat is essential to increasing abundance, diversity, and spatial structure.

2) **Project Evaluation:** The second strategy establishes a science-based approach for evaluating habitat projects contributing to the recovery of Chinook salmon in the Green/Duwamish and Central Puget Sound Watershed. Specifically, the WRIA 9 Steering Committee approved the creation of a science panel in November 2004 to develop criteria for the scientific evaluation of habitat restoration projects. Meanwhile, draft actions were developed primarily during subwatershed meetings held in October and November 2004 and attended by members of the WRIA 9 Steering Committee, Technical Committee, Planning Work Group, and other interested individuals. Applying the criteria to the draft projects, the Science Panel evaluated and scored proposed on-the-ground projects. A separate set of evaluation criteria was developed for scoring habitat protection actions within the Marine Nearshore and Middle Green River Subwatersheds.

The Steering Committee also authorized the creation of feasibility and effectiveness criteria as a socioeconomic/political screen for evaluating actions. WRIA 9 Watershed Coordination Services staff applied the criteria to those actions the Science Panel scored in the top two tiers (the most beneficial projects), and also considered tier 3 actions for inclusion on a case-by-case basis. Programmatic actions developed primarily through the subwatershed action identification meetings also were evaluated using just the feasibility and effectiveness criteria. (Programmatic actions were not evaluated by the Science

Panel due to the unsuitability of the project-focused evaluation criteria.)

Of a total of 167 actions evaluated using the feasibility and effectiveness screen, 162 were included in the Plan. Of these actions, 75 are on-the-ground restoration projects that were first evaluated by the Science Panel (of which 56 are priority actions that implement Policy MS1), 57 are habitat protection efforts (including 50 on Vashon/Maury Island and seven King County-proposed “Last Best Places Middle Green” acquisitions), and 30 are programs (16 watershed-wide and 14 subwatershed). (A list of additional projects for future consideration is found in Appendix G of Volume II.)

3) **Plan Implementation:** The third strategy is Plan implementation, which includes on-going monitoring and adaptive management. A key component of this Plan, monitoring and adaptive management provides a scientific approach to evaluating actions that are being implemented for their success in recovering Chinook as well as a way to test hypotheses regarding expected outcomes from specific actions. This third strategy also ties back to the action evaluation tools developed by the science panel and the feasibility and effectiveness criteria. With these tools, future actions can be evaluated regularly and on-going Plan refinement can occur.

2.3 PURPOSE OF VOLUME II OF THE HABITAT PLAN

The purpose of Volume II of the Habitat Plan is to:

- Provide easy access to additional detail and background information in support of the Habitat Plan recommendations. This includes background on the scientific basis for the Habitat Plan as well as information on how the Plan was developed; and
- List projects for further consideration during the second 10 years of the Habitat Plan (2016-2025). Although the projects described in Chapter 7 (Proposed Actions and Policies to Achieve a Viable Salmonid Population) of the Habitat Plan are

1. Preliminary findings at the time of publication of the Habitat Plan indicate that the transition zone may extend from river mile 6.5 to river mile 4.7 during the critically important time of juvenile salmon migration. Confirmation of this information will lead to adjustments in Plan actions recommended to improve transition zone habitat.

priorities for implementation during the first 10 year of the plan, projects in Appendix G could be considered for implementation during 2006-2015 if opportunities to conduct them arise and would be lost if not acted on. It is expected that adaptive management will provide information that allows a re-evaluation of potential projects listed in Appendix G.

2.4 LEGAL FOUNDATION FOR WRIA 9 WATERSHED PLANNING

The State of Washington passed several laws in 1998-99 directing planning efforts to address issues of habitat degradation in fresh and salt water through watershed planning. House Bills 2514 and 2496, and Senate Bill 5595 identified geographic areas, organizational structures, and funding mechanisms to develop and implement watershed plans throughout the state. House Bill 2514 was primarily focused on in-stream flow issues, whereas House Bill 2496 and Senate Bill 5595 were focused primarily on addressing habitat limiting factors.

The geographic areas identified for these planning efforts are called Water Resource Inventory Areas (WRIAs). The WRIAs were originally designed as stream inventory areas by the state. Washington State is divided into 62 WRIAs. The Green/Duwamish and Central Puget Sound Watershed is WRIA 9.

Under House Bill 2496 (and reasserted by Senate Bill 5595), the State Conservation Commission was tasked with developing a Limiting Factors Report for each of the Water Resource Inventory Areas in Washington. This legislation also called for lead entities in each of the WRIAs to establish a Steering Committee and Technical Committee to identify funding priorities for salmon conservation and to develop a strategy or plan for addressing salmon habitat limiting factors.

The WRIA 9 salmon habitat planning effort was advanced by the Tri-County Model Conservation Planning Program. Beginning in 1998, the Tri-County initiative brought together local governments, environmental groups, and businesses in Snohomish, King, and Pierce Counties to address the habitat-related factors of salmonid decline. Watershed (WRIA)-based habitat plans were among the six “planks” identified as part of habitat-focused recovery efforts. It is noteworthy that while not all local governments in King County

embraced the other five “planks,” the watershed-planning plank did receive nearly universal support. In WRIA 9, all 16 local governments – 15 cities and King County – in the watershed (plus Tacoma Public Utilities) provided financial support for the planning process and the majority participated in the developing the Habitat Plan.

2.5 WRIA 9 ORGANIZATIONAL STRUCTURE

Watershed-focused salmon habitat planning began in 1998 with the creation of the WRIA 9 Steering Committee. King County was nominated by WRIA 9 governments as the “lead entity” in the Green/Duwamish and Central Puget Sound Watershed. King County Executive Ron Sims invited representatives of a variety of interests to participate on a citizen-stakeholder steering committee for WRIA 9. The Steering Committee was established later in 1998 and consists of representatives from local, state, and federal governments, the environmental community, businesses, and other interests (a complete list of past and present Steering Committee participants is provided at the beginning of the Plan). The Muckleshoot Indian Tribe was invited to participate but did not do so. Although not active at the policy level, the Tribe and WRIA 9 participants have shared salmon habitat information over the years.

The purpose of the Steering Committee as described in the interlocal agreement among all WRIA 9 local governments signed in 2000 is to:

Work cooperatively to address long-term planning and watershed conservation, and develop WRIA-based watershed plans that address watershed protection, restoration and salmon recovery.

In addition to developing the watershed Near-Term Action Agenda (Kulzer (Ed.) 2002) and this Habitat Plan, an important task performed by the Steering Committee annually since 1999 has been to select and rank projects within the WRIA as part of the state Salmon Recovery Funding Board funding process. Steering Committee involvement in this process has contributed to the receipt of over \$7.3 million for 16 projects in the WRIA. In addition, the challenging process of evaluating the technical strengths of projects and weighing less-tangible social, economic, and political factors helped prepare Steering Commit-



The Steering Committee is the citizen-stakeholder body that developed this Habitat Plan. October 2002 photo.

tee members for the difficult task of preparing this Habitat Plan.

The Steering Committee was supported by a variety of committees that have evolved over the years since 1998 to meet the changing tasks of the Steering Committee:

A **Planning Work Group** supported the Steering Committee by framing policy questions, developing recommendations, responding to public comments, and working with the Technical Committee to craft and conduct analyses that moved science into policy.

A **Technical Committee** assisted the Steering Committee by identifying key scientific questions, guiding research, and evaluating scientific information as it became available.

The **Public Outreach Work Group** supported the planning process by promoting public involvement and education. The group advised the Steering Committee on how to best obtain citizen input and how to efficiently provide citizens the information they needed to make informed decisions during public input opportunities.

The **Green/Duwamish Ecosystem Restoration Project Management Committee** helped manage implementation of the 45-project Green/Duwamish Ecosystem Restoration Project. The Ecosystem Restoration Project

is an integral part of salmon habitat protection and restoration in the Green/Duwamish Watershed portion of WRIA 9 and relies on a partnership between the U.S. Army Corps of Engineers and local governments.

The **Project Selection and Evaluation Committee** managed the annual Steering Committee evaluation and ranking of projects proposed for funding by the Salmon Recovery Funding Board. These projects are an essential part of the WRIA 9 habitat effort.

The **Science Panel** was authorized by the Steering Committee in November 2004 to develop a technical evaluation process and reviewed proposed Habitat Plan actions for technical merit.

With the exception of the Technical Committee and Science Panel, membership on the committees was open to anyone who wished to be involved. Membership on the Technical Committee and Science Panel was limited to people with specific expertise consistent with the tasks of these groups. All committee meetings were open to the public. Membership varied over time, but in all cases, a common core of people on each subcommittee provided continuity and historical perspective.

During 1998-2000, King County provided staff support to the WRIA 9 Steering Committee and supporting committees. Several State and Federal grants and programs helped fund the planning effort during these years. However, the inability of King County to continue to pay for this work and the regional nature of watershed planning led the local governments to develop a more equitable and sustainable way to pay for watershed planning for salmon habitat recovery.²

Beginning in 2001, 16 local governments in WRIA 9 entered into an interlocal agreement regarding salmon habitat planning (later, the City of Tacoma- Tacoma Public Utilities also signed the agreement) and establishing the WRIA 9 Forum of local governments, the body responsible for executing the agreement. (The WRIA 9 Forum was not a wholly new body but rather the result of merging the predecessor Green/Duwamish Forum and a portion of the predecessor Central Puget Sound Forum.) This agreement provided a mechanism and governance structure for the joint funding, development, review, and approval of WRIA-based watershed plans. The agreement also

2. King County continues to be the “lead entity” for WRIA 9 but its responsibilities in this role are limited to managing the Salmon Recovery Funding Board proposal evaluation process.

established the responsibilities of the parties, the planning products, decision making regarding the Habitat Plan, and how staff services would be provided. Each jurisdiction made an annual financial contribution to support a small Watershed Coordination Services staff provided to the WRIA by King County. The maximum financial or resource obligation of any participating eligible jurisdiction under the agreement is limited to its share of the cost of developing plans and does not include the costs of implementation. The Watershed Coordination Services staff was responsible for working with the partner jurisdictions, the Steering Committee and its subcommittees, and the general public to develop both the Near-Term Action Agenda (Kulzer (Ed.) 2002) and this Habitat Plan.

Additional funding in support of scientific/technical work for this Plan was provided by the Salmon Recovery Funding Board and the King Conservation District. King Conservation District grant revenues have been and are expected to remain important. Every year, a portion of the assessment on most property parcels in the watershed (currently \$5 per parcel but proposed for an increase to \$10 beginning in 2006) is earmarked for high-priority activities identified by the Forum. The Forum typically recommends that these funds be spent on on-the-ground projects, property acquisition, stewardship activities, scientific assessments, and key planning steps. Forum-recommended grant applications are submitted to the King Conservation District Board of Supervisors for consideration for funding.

The interlocal agreement also set forth the approval process for the final Habitat Plan. Under the approval process, the Steering Committee is responsible for developing the Habitat Plan. The Habitat Plan will then be forwarded to the Forum of local governments, which can approve it or return it to the Steering Committee for further consideration and amendment and thereafter return it to the Forum for final approval. This maximizes the likelihood that the Habitat Plan will benefit from a range of citizen-stakeholder perspectives and yet still be embraced by the WRIA 9 local governments.

2.6 HIGHLIGHTS OF CURRENT WRIA 9 SALMON CONSERVATION ACTIONS

Much work focused on protecting and restoring salmon habitat already has occurred in the Green/Duwamish and Central Puget Sound Watershed (WRIA 9). Those actions that are WRIA-wide are summarized here to create a backdrop for the actions that are recommended in Chapter 7, Proposed Actions and Policies to Achieve a Viable Salmonid Population. In addition, smaller-scale, more limited efforts also are contributing to improvements in the watershed and several are summarized here to provide a more complete picture.

A more detailed list of accomplishments in recent years can be found in the following documents available at the WRIA 9 website (<http://dnr.metrokc.gov/Wrias/9/index.htm>):

- Near-Term Action Agenda for Salmon Habitat Conservation: Green/Duwamish and Central Puget Sound Watershed – Water Resource Inventory Area 9 (May 2002), which summarizes much of the progress through 2001 (Kulzer (Ed.) 2002);
- 2002 Implementation Progress Report for the Near-Term Action Agenda (WRIA 9 2003); and
- 2003 Implementation Progress Report for the Near-Term Action Agenda (WRIA 9 2004).

At the grassroots level, there are thousands of motivated, informed citizens making a positive difference every day. The watershed is home to countless private property landowners whose concern for their land, its resources, and impacts on people living downstream propel them to be good stewards of land and water. These people variously practice natural yard care, maintain their septic systems, dispose of hazardous wastes appropriately, control noxious and non-native invasive weeds, practice sustainable forestry, and leave a portion of their land “wild” where it can provide an on-going stream of ecosystem goods and services for themselves and the broader community.

Although a comprehensive examination of all current efforts is beyond the scope of this Plan, a look at what has been done in recent years by just one community – agriculture – provides a vignette of the range and depth of efforts underway. Unlike many other economic activities, agriculture is confined to areas with good soils, which usually coincide with the flood-

plains of salmon-bearing rivers and streams. Consequently, finding ways for farmers and fish to coexist has been a priority for King County. Through individual actions and in cooperation with the King County Department of Natural Resources and Parks, the King Conservation District, the Natural Resource Conservation Service, Washington State University Cooperative Extension, Horses for Clean Water, and the King County Agriculture Commission, farmers along the Green River and the Enumclaw Plateau have expended considerable effort to reduce the impacts of farming on salmon even in the midst of intense development pressures and the economic uncertainty that characterizes agriculture.



King Conservation District staff work with farmers to develop farm stewardship plans to protect water quality and habitat. Photo courtesy of King Conservation District.

Every dairy in WRIA 9 now has a Washington State Department of Agriculture Dairy Nutrient Management Plan. Many farms have developed farm management plans, which help protect soils, habitat, and water quality. King County's passage of the Livestock Management Ordinance in 1993 has resulted in fencing of streams to keep livestock out. Cooperation between farmers and King County produced the Agricultural Drainage Assistance Program, which assists farmers in implementing best management practices that protect fish and water quality as they maintain drainage ditches. A 1979 voter initiative has funded the purchase of development rights for thousands of acres of agricultural land under the Farmland Preservation Program, which guarantees streamside rural land stays in agriculture and prevents urban development that has far greater impacts on fish habitat. Because of the relatively healthier salmon

habitat associated with farmlands, farmers were the early focus of salmon habitat protection efforts. These efforts have required a lot of energy and money from farmers that have yielded benefits for all residents of the watershed.

Likewise, there are non-agricultural businesses that have dedicated energy and resources to protecting environmental health. Many of these businesses have been recognized with EnviroStars certification and can be found in the King County Green Business Directory. The Master Builders Association of King and Snohomish Counties has worked with local governments and environmental groups to identify and promote BuiltGreen™, a voluntary program that recognizes construction that reduces environmental impact, including reduced water consumption and stormwater.

The people of the watershed have spawned a diverse array of community, environmental, and educational groups/programs that create on-the-ground improvements for salmon, water quality, and environmental protection in general. Some of these groups work on projects or programs across the watershed while others focus on stewarding streams in their own backyard. Some groups consist of a few dedicated souls while others involve hundreds and have paid staff. In addition to on-the-ground efforts to protect and restore habitat, these groups and programs help make salmon conservation relevant to the broader public.

While the following list may be incomplete, it provides a flavor of the array of organizations working to improve the health of this watershed through on-the-ground action, education, and advocacy:

- Beach Naturalist Program volunteers;
- Cascade Land Conservancy;
- Cascades Conservation Partnership;
- Duwamish River Cleanup Coalition;
- Earth Ministry;
- Environmental Coalition of South Seattle;
- Environmental Science Center of Burien;
- Friends of Des Moines Creek;
- Friends of Fauntleroy Creek/Fauntleroy Watershed Council;
- Friends of Soos Creek Park;
- Friends of the Green River;

- Green/Duwamish Watershed Alliance;
- Horses for Clean Water;
- International Marine Association Protecting Aquatic Life (I'M A PAL);
- Longfellow Creek/Roxhill Bog Community;
- Marine Science and Technology Center – Highline Community College;
- Marine Vo-Tech Center at Seahurst Park – Highline School District;
- Mid-Sound Regional Fisheries Enhancement Group;
- Middle Green River Coalition;
- Normandy Park Community Club - Miller/Walker Stream and Wetland Restoration Team;
- People for Puget Sound;
- Puget Soundkeeper Alliance;
- Save Habitat And Diversity Of Wetlands (SHADOW);
- Seattle Aquarium;
- Soos Creek Area Response;
- Trout Unlimited;
- Washington Trout;
- White Center Ponds Neighborhood;
- Vashon-Maury Island Audubon Society; and
- Vashon-Maury Island Land Trust.

The energy and talent tapped by these groups has protected high-value habitats, restored aquatic resources, and motivated people to embrace more salmon-friendly personal habits.

The 16 local governments in WRIA 9 have initiated policies, programs, and practices that manage or regulate development within their jurisdictional boundaries as well as improve their own operations to better conserve salmon habitat. Actions undertaken as of 2001 by jurisdictions, including programs, policies, practices, or studies, were summarized in Appendix A of the Near-Term Action Agenda (Kulzer, Louise (Ed.) 2002).

More recently, many of the local governments have updated their regulations to protect habitat and have applied for National Pollutant Discharge Elimination System Phase II stormwater permits, which require commitments to improved stormwater management.

Groups of local governments have teamed up to identify and solve stormwater quality, stormwater quantity, and salmon habitat issues in several of the basins that make up the WRIA 9 watershed. Basin plans have been developed for the Des Moines Creek and Miller/Walker/Salmon Creeks basins. Many of the actions in the Des Moines Creek basin plan are being carried out now. These actions will benefit salmonids other than Chinook in freshwater environments and improve water quality inputs to the marine nearshore.



Turning Basin #3 is a Port of Seattle property restored under the Elliott Bay/Duwamish Restoration Panel effort. May 2003 photo.

Serving as a resource to individuals, groups, and local jurisdictions, the King Conservation District plays a key role in promoting better stewardship of natural resources in the watershed. Its staff works with interested landowners and groups to promote conservation through demonstration projects, educational events, technical assistance, and best management practices for livestock, wildlife, and farm plans. The King Conservation District also provides \$600,000 in grants annually to high priority salmon habitat assessment and restoration projects in cooperation with the WRIA 9 Forum of local governments.

The Duwamish and Elliott Bay have been the focus of multiple efforts to restore degraded habitat. The multi-agency Elliott Bay/Duwamish Restoration Panel restored half a dozen sites during the 1990s and early 2000s. As the major land owner in this area, the Port of Seattle has restored several acres of habitat throughout the Duwamish and Elliott Bay and incorporates salmon-friendly designs into the redevelopment of its marine facilities. Another major step in the improve-



Engineered log jams and gravel were placed in the Green River at river mile 60 in 2003 by the U.S. Army Corps of Engineers. September 2004 photo courtesy of U.S. Army Corps of Engineers.

ment in the Duwamish will be made by the numerous partners involved in the Lower Duwamish Waterway Superfund cleanup. To date, this long-term cleanup effort has assessed sediment pollution in the Duwamish and begun clean up in several locations. In the years ahead, more sites will be cleaned up, reducing risks to human health and improving the estuarine ecosystem on which salmon depend. As part of the Superfund process, it is expected that a natural resources damages assessment and settlement will lead to the creation of additional habitat.

At the other end of the watershed, the U.S. Army Corps of Engineers is carrying out the Howard Hanson Dam Additional Water Storage Project. This project is designed to improve flows in the river and enable Tacoma Public Utilities to increase the amount of water it withdraws from the Green River for its water supply. Construction of a multi-million dollar state-of-the-art Downstream Fish Passage Facility at Howard Hanson Dam began in January 2004. Combined with upstream fish passage facilities constructed by Tacoma Public Utilities, it will open the Upper Green River to anadromous salmonids for the first time in nearly a century. In addition, 3,900 cubic yards of gravel were trucked in and placed in the Green River downstream of the Tacoma Headworks in summer 2003 and summer 2004. Placement of 3,900 cubic yards will continue each summer for the foreseeable future subject to funding and adaptive management. This gravel placement will provide vital spawning gravel to substitute for the sediment blocked by Howard Hanson Dam.

Meanwhile, Tacoma Public Utilities is implementing its Habitat Conservation Plan in the Upper Green and Middle Green River Subwatersheds. The Habitat Conservation Plan is a 50-year agreement between the utility and NOAA Fisheries and the U.S. Fish and Wildlife Service that covers water diversion and land management activities such as logging in the Upper Green River Subwatershed. Among its provisions are the construction (completed in 2004) and operation of an upstream fish passage facility at the Tacoma Headworks. The Habitat Conservation Plan also includes habitat projects and monitoring focused on salmon.

A number of initiatives govern forestry practices in WRIA 9. The Washington State Department of Natural Resources and Plum Creek Timber have developed Habitat Conservation Plans with NOAA Fisheries and the U.S. Fish and Wildlife Service that allow them to continue logging using practices that provide improved management of riparian areas, wildlife habitat, and roads. The Forest & Fish Agreement developed the current forest practices rules that cover private forest lands not managed under a specific habitat conservation plan.

Three Washington State agencies have regulatory and programmatic responsibilities throughout the WRIA that have a significant impact on salmon:

- The Washington State Department of Fish and Wildlife manages fishery harvests in cooperation with the Muckleshoot Indian Tribe. The department operates the century-old salmon hatchery on Soos Creek as well as rearing ponds at Palmer and Icy Creek. The agency also enforces fishing regulations in the freshwater and marine portions of WRIA 9. Finally, the agency is responsible for issuance of Hydraulic Project Approval permits, which regulate when and how construction occurs on shorelines and in water bodies, including lakes, streams, rivers, and the marine nearshore.
- The Washington State Department of Natural Resources has land management responsibilities for state trust timberlands in the Upper Green River Subwatershed and aquatic lands in the Marine Nearshore Subwatershed.
- The Washington State Department of Ecology is responsible for water quality management through management of the 303(d) list and development of Water Cleanup Plans (also known as Total Maximum Daily Loads).

In addition to its shared responsibility for managing fish harvest, the Muckleshoot Indian Tribe operates a hatchery on Crisp Creek, sponsors habitat restoration projects, and advocates for improved management and reduction in impacts to fishery habitat and resources.

The U.S. Army Corps of Engineers, in cooperation with local jurisdictions, the Muckleshoot Indian Tribe, and others, is a leader and principal funder of the Green/Duwamish Ecosystem Restoration Project. Developed in the late 1990s, this project crafted an ecosystem restoration plan covering the Green/Duwamish Watershed portion of WRIA 9 (it did not include the Marine Nearshore Subwatershed). The project seeks to:

- Enhance the physical nature of existing degraded habitats;
- Improve existing ecosystem functions and processes;
- Address factors limiting fish and wildlife productions; and
- Restore habitats for anadromous fish such as salmon and trout.

The program will construct a wide variety of habitat restoration projects and conduct studies to help guide their efforts. Most of the recommended habitat projects of the Ecosystem Restoration Project are included in this Habitat Plan. As of early 2005, the federal government had provided nearly \$2 million to begin implementing the first of the 45 projects of the Green/Duwamish Ecosystem Restoration Project.

Transcending the boundaries of WRIA 9, several agencies and programs are focused on the habitat challenges in the marine waters of Puget Sound. The Puget Sound Action Team helps coordinate efforts by Washington State and other governmental partners to protect Puget Sound. The Puget Sound Nearshore Ecosystem Restoration Project is a U.S. Army Corps of Engineers project with co-sponsorship from state and local governments. It will identify nearshore habitat acquisition and restoration projects throughout Puget Sound, including WRIA 9. As part of overall efforts to protect Puget Sound, the Washington State Department of Natural Resources designated the Maury Island State Aquatic Reserve as the first such reserve in the state in 2004.

The groups, governments, and programs above have protected and restored habitat with significant help from others. From 1999 to 2004, the state Salmon Recovery Funding Board has awarded \$7.3 million to 16 projects throughout the watershed to purchase high-value habitat, restore degraded habitat, and assess watershed conditions in support of better management. These state-federal contributions have in turn leveraged millions of dollars more from other sources. As mentioned previously, federal financial support also has been essential for the Green/Duwamish Ecosystem Restoration Project and the Howard Hanson Dam Additional Water Storage Project.

The activities and accomplishments listed above are merely a summary of most of the major efforts to protect and restore salmon habitat in WRIA 9. There are others not cataloged here due to space limitations but which are contributing to habitat recovery.

It is in this context of existing actions that the recommendations of this Habitat Plan were developed. The policies and actions listed in the following pages are intended to complement and build on the accomplishments and current initiatives listed above.

The tremendous accomplishments by the individuals, groups, and governments listed above have been improving the health of the watershed for several decades. Implicit in the ambitious recommendations of this Habitat Plan is the assumption that the good work of the past and present can be matched or exceeded in the decades ahead.



High quality marine nearshore habitat, shown here south of Point Robinson, is included in the Maury Island State Aquatic Reserve. April 2003 photo.

2.7 SALMON HABITAT PLANNING IN THE PUGET SOUND REGION

Salmon habitat planning similar to that occurring in WRIA 9 is also underway in nearby WRIsAs. Individual watershed salmon habitat planning is feeding into the development of a regional recovery plan. The Puget Sound Shared Strategy, providing support to NOAA Fisheries in the recovery planning process, is creating the regional Puget Sound Salmon Recovery Plan for the Puget Sound Evolutionarily Significant Unit of Chinook salmon that ties together harvest management, hatchery practices, and habitat protection and restoration. The efforts of WRIA 9, along with those of other WRIsAs in the Puget Sound area, will inform and be informed by the Shared Strategy.

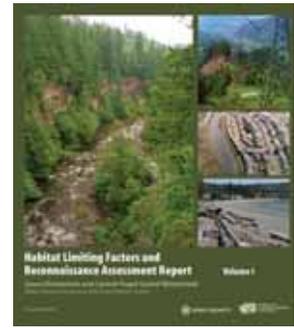
Ultimately, it is NOAA Fisheries that will decide what is the official recovery plan for Puget Sound Chinook. The recovery plan will set numeric and other goals for recovery and the criteria for success, which are aimed at “delisting” Chinook salmon as “threatened” under the Endangered Species Act. (The U.S. Fish and Wildlife Service is responsible for the recovery plan for bull trout.)

2.8 WRIA 9 HABITAT PLANNING STRATEGY

In 2000, the WRIA 9 Steering Committee developed a four-task strategy for the salmon habitat planning challenges it faced. Two tasks culminated in scientific reports and two concluded with action plans.

Habitat Limiting Factors and Reconnaissance Assessment Report (December 2000) As its first task, the Steering Committee and the Washington Conservation Commission teamed up to develop a Habitat Limiting Factors and Reconnaissance Assessment Report to begin to lay the groundwork for the future development of a habitat plan for the WRIA. Many individuals and organizations contributed information to the report. The bulk of the assembly and writing was done by staff from King County and the Washington Conservation Commission.

The Habitat Limiting Factors and Reconnaissance Assessment Report answered the question: *What do we know now about salmon and salmon habitat in our watershed?* It covered both fresh and salt water habitats for salmonids in the geographic boundaries of WRIA 9 (including Vashon/ Maury Island).



The report provided:

- A summary of what was known about current and past salmonid species and habitat conditions in the WRIA for future reference;
- Baseline information for the WRIA (based on data available at the time) for use in the development and implementation of an adaptive management approach;
- Habitat factors contributing to salmon decline, key findings, and associated data; and
- Preliminary guidance for policy makers to determine next steps, including principles to guide salmonid recovery.

Despite the reference to “limiting factors” in the title of the report, the document did not include a thorough analysis of factors limiting salmonid populations in WRIA 9 owing to lack of sufficient data. Nonetheless, the report compiled and organized a large amount of information and subsequently provided a foundation for additional technical assessment and planning efforts in WRIA 9. The report is available on-line at:

<http://dnr.metrokc.gov/Wrias/9/Recon.htm>

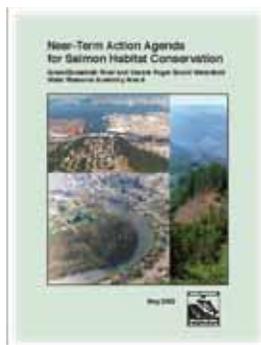
(See Chapter 10 for full reference (Kerwin and Nelson [Eds.] 2000)

A similar, complementary report, completed in mid-2001, provided more detailed information on the marine nearshore ecosystem of Puget Sound. The Reconnaissance Assessment of the State of the Nearshore Ecosystem Report is available on-line at:

<http://dnr.metrokc.gov/wlr/watersheds/puget/nearshore/sonr.htm>

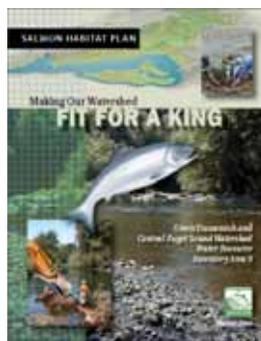
(See Chapter 10 for full reference (Brennan (Ed.) 2001)

Near-Term Action Agenda (May 2002) The Action Agenda outlined early, voluntary steps to ameliorate some of the factors that were negatively affecting salmon and salmon habitat. The Near-Term Action Agenda was a guide to actions that local governments and other implementers could take during the 2002-2005 period as resources and opportunities became available. It was an interim step that remained in effect until this Habitat Plan is completed. A number of its recommendations have been included in this Habitat Plan due to their importance and continued relevance. It also summarized existing efforts by local partners, with a focus on the actions by local governments. Two annual progress reports summarized additional actions in 2002 and 2003. (See Chapter 10 for full reference (Kulzer (Ed.) 2002))



Strategic Assessment (February 2005) The Strategic Assessment was conducted between 2002 and 2005, and built upon information in the Habitat Limiting Factors and Reconnaissance Assessment Report described above. It included research to fill important information gaps, in particular those concerning the health of Chinook salmon. It resulted in a more complete understanding of problems and opportunities in the watershed related to salmon and salmon habitat protection and restoration. The Strategic Assessment provides the majority of the scientific foundation for the Habitat Plan and is summarized in Chapter 4, Scientific Foundation. (See Chapter 10 for full references (King County Department of Natural Resources and Parks et al. 2004))

Comprehensive Salmon Habitat Plan (August 2005) This Habitat Plan will guide long-term habitat protection and restoration actions in the watershed and is the final product of the WRIA 9 planning process. Because of increasing understanding of salmonid habitat restoration issues, a key component of the Habitat Plan is an approach for adaptive management that will allow decision-makers to respond to new information and opportunities for improving habitat in the WRIA. This



Habitat Plan will be included in the overall recovery plan for Chinook salmon in Puget Sound for which the federal government is ultimately responsible. The recovery plan will include hatchery and harvest measures and elements of habitat plans for other Puget Sound watersheds, complementing the recommendations of this Plan.

2.9 GENERAL SCOPE OF THE HABITAT PLAN

Overall Approach

The WRIA 9 Steering Committee refined its approach and the general scope of the Habitat Plan in the course of several meetings in 2002. The following statement captures the consensus that was reached at the September 12, 2002, meeting:

The Habitat Plan will use an ecosystem approach to watershed management, with a focus on federally listed species. The process will include evaluation of ecosystem interactions, and plan recommendations will emphasize restoration of ecosystem processes where possible.

This approach is expected to produce conditions that benefit all native aquatic species. Management of non-listed species will focus on preventing future listings and ensuring that protection of non-listed species is not put at risk.

Geographic Area of Focus

Because the Habitat Plan uses an ecosystem approach, the geographic area of focus is the aquatic ecosystems within WRIA 9 and the landscape-level processes that affect these aquatic ecosystems. Where actions address listed species (Chinook and bull trout), the geographic area of focus would be the nearshore, mainstem river, and tributaries where listed species exist or could occur in the future.

The geographic area of WRIA 9 for salmon habitat planning purposes includes the Green/Duwamish Watershed proper (divided into four subwatersheds), the marine nearshore and uplands from West Point in Seattle to the Pierce County line, and Vashon/Maury Island (Figure 1-1).

Bull Trout and Other Species

In addition to addressing the habitat needs of Chinook, this Habitat Plan will also provide habitat improvements for bull trout, listed by the U.S. Fish and Wildlife Service as threatened in November 1999. The ecosystem approach – with a focus on habitats and the processes that create those habitats – is intended to benefit all salmonid species.

Very little is known about bull trout presence and use of habitats in WRIA 9 but Appendix K of Volume II provides a matrix showing how the recommendations in this Habitat Plan address the bull trout recovery actions listed in the Draft Recovery Plan for the Coastal-Puget Sound District Population Segment of Bull Trout (U.S. Fish and Wildlife Service 2005).

Hatchery and Harvest

The Habitat Plan currently does not address hatchery and harvest practices because these are the responsibility of the co-managers (Treaty Tribes and the Washington State Department of Fish and Wildlife). As of mid-2005, the WRIA 9 partners were informed that the Washington State Department of Fish and Wildlife had committed to lead the effort to complete the integration of habitat, hatchery, and harvest recovery efforts at both the watershed level and at the regional level.

Habitat Plan Goals

The goals of the Habitat Plan are to:

- Protect and restore physical, chemical, and biological processes and the freshwater, marine, and estuarine habitats on which salmonids depend;
- Protect and restore habitat connectivity where feasible;
- Protect and improve water quality and quantity conditions to support healthy salmonid populations; and
- Provide an implementation plan that supports salmon recovery.

Watershed Partnerships: Reliable Implementation Elements

The WRIA 9 habitat planning process is both a science-based and a community-based collaborative effort. In tandem with the scientific philosophy described above, it is the philosophy of this approach that the management actions to achieve and sustain a viable Chinook salmon population and a healthy watershed ecosystem will be reliably implemented.

Reliable implementation is likely to depend on creation of necessary authorities, expression of commitments, provision for funding and staffing, effective enforcement, and a dedication to working with the people of the watershed in a cooperative manner.

Implementation of this Plan also should foster coordination and integration with other conservation efforts. Recommendations of the Green/Duwamish Ecosystem Restoration Project are actually folded into this Plan. The implementation of others, such as fish passage to and from the Upper Green River, also are considered essential to long-term salmon recovery in the watershed.

Use of Terms

In providing policy guidance for WRIA 9 recommended actions, this Plan adopts the same definitions of “should,” and “shall,” as the King County Comprehensive Plan. The use of the terms “shall,” “will,” “should,” and “may” in policies determine the level of discretion exercised in making future and specific land use, budget, development regulation, and other decisions.

“Shall” and “will” in a policy mean that it is mandatory to carry out the policy, even if a timeframe is not included. “Shall” and “will” are imperative and non-discretionary. Therefore, decisions are based on what the policy says to do.

“Should” and “may” in a policy means that it provides noncompulsory guidance. “May” and “should” in a policy means that there is discretion available in making decisions.