

SAMMAMISH RIVER CORRIDOR ACTION PLAN



FINAL REPORT

September 2002



US Army Corps
of Engineers
Seattle District



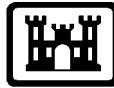
King County

Department of Natural Resources and Parks
Water and Land Resources Division

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Prepared for:



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Seattle District

In partnership with:



King County

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EXECUTIVE SUMMARY

The Sammamish River Corridor—defined in this Action Plan as the historic floodplain of the river, including tributary confluence areas—has great potential to support native fish, birds and other wildlife, and to serve the surrounding human community, much better than it currently does. Over the past century and longer, major alterations to the river corridor were made with little thought to the resulting ecological harm. This plan acknowledges that while it is virtually impossible to re-create historic conditions; it nevertheless identifies a set of actions that could significantly benefit native fish, birds and other wildlife. To help governments and others meet legal requirements based on listings under the Endangered Species Act, the plan focuses especially on the Sammamish River's role as a necessary migratory corridor for anadromous salmon in the Sammamish Watershed. Implementation of the plan, however, would benefit more than just salmon and a wide range of other wildlife; it would also enhance the river corridor's ability to serve as a place of pleasure and refuge for the surrounding human community.

The Action Plan views the Sammamish River Corridor's most important ecological role as a link between other habitats. It is primarily a link between Lakes Washington and Sammamish, but it also links major tributaries and upland habitats with each other and with the lakes. Many species other than salmon use the river as a critical migratory corridor. The fundamental goal of the Action Plan is to make the Sammamish River Corridor a strong link, rather than a weak one, in this larger ecosystem. To meet this goal, the plan recommends the following programmatic strategy:

- *Restore riparian areas throughout the river corridor* to provide shade, cover and enhanced habitat for all native fish and wildlife;
- *Create and enhance pools in the river channel* to provide cool-water refuge and cover, particularly for migrating adult salmon;
- *Explore engineered solutions to cool the river upstream of the Bear Creek confluence* to reduce thermal stress for migrating adult salmon where it is greatest;
- *Protect all major tributaries to the river*, particularly Bear Creek, as sources of cool water for the river and as habitat for other life stages of fish and wildlife using the river; and
- *Systematically apply adaptive management across jurisdictions*, monitoring projects closely compared both to each other and to baseline conditions, to identify features of greatest value to include in future projects.

This overarching strategy and more specific recommendations are discussed in detail in Chapters 3 through 5 ("Strategic Approach for Restoration," "Restoration Action Plan," and "Research, Monitoring and Adaptive Management"). This Action Plan recommends both programmatic (corridor-wide) and site-specific studies and projects for implementation. Programmatic recommendations are rated as either "core" recommendations that directly implement the above strategy and address the most critical problems in the corridor, or "non-core" recommendations which address important large scale issues, but do not immediately address the most critical problems in the corridor. Site-specific recommendations are rated as high, medium, or low priority based on their ability to address the critical problems in the corridor and other factors of decline for salmon and wildlife. A number of additional studies are also recommended, primarily to address continuing questions on where additional water temperature reductions could be gained in the tributaries and through use or supplementation of groundwater. Finally, this plan recommends an extensive monitoring and adaptive management program to be used during and after implementation of recommendations to determine effects on salmon populations and benefits to the overall recovery of salmon in the greater Lake Washington watershed.

Implementation of all recommendations in this Action Plan (including research and monitoring) would cost an estimated \$55 million (not accounting for inflation), over the next ten or more years. It would require coordinated action by local governments in the river corridor—King County, Redmond, Woodinville, Bothell, and Kenmore—together with state and federal agencies and multiple other stakeholders, including private property owners along the river and volunteers from the community. Implementation of the plan will likely be linked to other initiatives and processes, including:

- Regional efforts to respond to the listing of Puget Sound chinook salmon under the Endangered Species Act (which include development of a long-term salmon conservation plan for the Greater Lake Washington watershed [WRIA-8]).
- The Corps of Engineers' Ecosystem Restoration Study for the Greater Lake Washington watershed, which will identify priority habitat restoration projects to be constructed by the Corps under local sponsorship.
- Proposed major regional infrastructure improvements in the vicinity of the Sammamish River, such as the widening of I-405 and construction of a regional wastewater treatment plant in the vicinity of the Sammamish Corridor, which will likely require millions of dollars of environmental mitigation.
- Department of Ecology (Ecology) efforts associated with Water Cleanup Plans (or TMDLs) for waterbodies in the Sammamish River Corridor not meeting state water quality standards.
- Future improvements to the park and trail system along the river, including a pedestrian and equestrian trail King County plans opposite the existing Sammamish River Trail.
- King County's development of capacity to produce and provide reclaimed water in the Sammamish River Corridor for non-potable uses.
- Other actions along the river by individual governments, such as future stages of Redmond's RiverWalk project.
- Actions by private developers, such as shoreline improvements planned as part of the LakePointe project in Kenmore.

Implementation of this plan, in combination with other restoration and conservation actions being considered in the greater Lake Washington Watershed, should help ensure the Sammamish River Corridor continues to support naturally-spawning salmon populations at equal or greater levels and distribution as exist today, even as the region's human population grows. Under the plan, the Sammamish River would be cooler in the summer and provide higher quality cool water refuge for migrating adult salmon. Juvenile salmon would find far more preferred habitat for rearing and predator avoidance. As restored riparian areas mature, willows near the river would grow to heights of 20 to 30 feet, while Douglas fir and other trees on the banks would reach 100 feet and higher, providing shade, cover and other crucial habitat features. Birds and wildlife in the river corridor could utilize a significantly enhanced riparian corridor for migration, nesting, and feeding. In short, the Sammamish River Corridor would be a strong link in its larger ecosystem, to the lasting benefit of the fish and wildlife populations, as well as the surrounding human community.

If the plan were not fully implemented, the opportunity to create this strong link and provide habitat diversity would be lost. Clearly, the “core” and high priority projects are the most important to address the high water temperatures and provide a suitable migratory corridor for salmonids. However, if only these projects are implemented, numerous areas will still have poor habitat quality and continued degradation within the corridor will occur. The complete Action Plan addresses all of the known and probable limiting factors to fish survival and ensures that the regulatory environment in the corridor is consistent and addresses the causes of habitat degradation. Additionally, the recommended studies will ensure that further opportunities for habitat improvements are identified and evaluated for feasibility of implementation (e.g. the use of reclaimed water and groundwater for controlling high water temperatures).

INTRODUCTION

PURPOSE AND NEED FOR ACTION PLAN

The Sammamish River Corridor is a special place—dramatically changed from its historic condition, yet still performing important ecological functions while serving as a source of pleasure and refuge for the surrounding human community. The goal of this Sammamish River Corridor Action Plan (Action Plan) is to guide the conservation and enhancement of natural resources in the river corridor for at least the next five to ten years, with a particular focus on enhancing habitat and habitat-forming processes that would contribute to salmon recovery in the greater Lake Washington Watershed (Water Resource Inventory Area [WRIA] 8). This Action Plan was sponsored by King County and the U.S. Army Corps of Engineers (Corps of Engineers), and written in collaboration with the cities of Redmond, Woodinville, Bothell, and Kenmore as one piece of the region's response to current and potential future listings under the Endangered Species Act (ESA). It strives to recommend habitat improvements for salmon, birds, and other wildlife that are compatible with existing human uses of the river corridor, including recreation, agriculture, and urban development.

The Action Plan will be used for multiple purposes by many different parties as described below:

- Local governments across the greater Lake Washington Watershed will use the Action Plan to help identify and prioritize actions in the Sammamish River and sidewall tributaries as part of the regional response to the endangered species listing for salmon.
- The Corps of Engineers will use it to identify and prioritize actions it implements as part of its Ecosystem Restoration Study in the Lake Washington watershed.
- Local governments within the river corridor--King County, Redmond, Woodinville, Bothell, and Kenmore—will use it to identify and prioritize actions they undertake to enhance habitat and natural resources.
- Those same local and regional jurisdictions and state and federal regulatory agencies may use the Action Plan to identify effective mitigation for other actions in the river corridor that may adversely affect habitat, such as road widening, new development, or recreational uses of the river (i.e. personal watercraft).
- Ecology may use the data and/or actions emanating from the Action Plan for Water Cleanup Planning (or TMDL) efforts in the corridor.
- The King County Park System will use it as guidance for future improvements to its extensive park and trail system along the river.
- The King County Wastewater Treatment Division will use it to help guide development of reclaimed water projects in the river corridor.

By 2005, the Action Plan may in part be superseded by a comprehensive plan the region is developing to support salmon recovery and ecological health across the entire Greater Lake Washington Watershed. However, the Action Plan is intended to provide the initial suite of projects and research recommended for the Sammamish Corridor within the larger watershed plan. All recommendations in this plan will be subject to future adaptive management, to be modified or even rejected as new and better information on habitat use and other parameters becomes available.

As previously discussed, many agencies and other interested parties within the greater Lake Washington Watershed are currently developing a comprehensive plan for recovery of chinook and other salmon species in response to the listing of Puget Sound chinook salmon as a threatened species under the ESA. A multi-

jurisdictional WRIA 8 recovery planning process is proceeding with the following steps: (1) Reconnaissance Assessment that summarizes existing information on salmon population/distribution and habitat conditions in the basin (Kerwin, 2001); (2) Near Term Action Agenda to recommend near-term projects, policies, research, and programs to conserve and recover salmonids in the watershed (WRIA 8 Steering Committee, draft 2002); (3) Strategic Assessment that will collect data where important gaps in knowledge have been identified in step 1; and (currently being developed, see below) (4) the final Watershed Conservation Plan for long-term salmon conservation and recovery (target date summer 2005).

As part of the technical strategic assessment the WRIA 8 Technical Committee will consider action alternatives developed as a result of this plan. The strategic assessment for WRIA 8 is currently in development. The WRIA 8 Strategic Assessment can be defined as the tools and assessment methods that will provide the scientific basis for development of the WRIA 8 Salmonid Habitat Conservation Plan. The Strategic Assessment will develop testable hypotheses that will allow the WRIA 8 Technical Committee to design research, strategies, and action alternatives toward development of the habitat conservation plan. This Action Plan will provide a valuable resource of information, data, and basis for development of conservation actions.

STUDY AREA

This report is focused on the Sammamish River Corridor, herein defined as the river from Lake Sammamish to Lake Washington, the valley floor, the lower extent of small sidewall tributaries that primarily exist in the valley floor (approximately 1,000 feet [or 300 meters]), and the confluences of major and minor tributaries to the river. Major tributary conditions will be discussed as they relate to the Sammamish River Corridor and its habitats.

The greater Lake Washington Watershed encompasses two major river systems, the Cedar and Sammamish Rivers, as well as Lakes Sammamish, Washington, and Union and numerous tributaries to each of the above water bodies. The Sammamish River begins at the outlet of Lake Sammamish, approximately 12 linear miles (19.2 km) northeast of downtown Seattle, Washington. The Sammamish River flows in a north and then westerly direction for approximately 14 miles (~22 km) to the confluence at the north end of Lake Washington. Several tributaries enter the Sammamish River including Bear, Little Bear, North, and Swamp Creeks and several smaller named and unnamed creeks (see Figure 1). The Sammamish River provides a migration corridor for both fish and wildlife species between Lakes Washington and Sammamish. The Sammamish River is the second largest tributary to Lake Washington (after the Cedar River) and contributes approximately 30 percent of the flow into the lake. The Sammamish River is fed by outflow from Lake Sammamish and tributary flows from lowland streams. Human-caused changes over the past century have dramatically changed the hydrologic regime and channel alignments within the watershed. The Lake Washington watershed is also the most populated watershed in the State of Washington.

To determine what type of habitat restoration actions would be most appropriate and effective in this system, a review of both historic and current watershed conditions and limiting factors was undertaken. Although habitat for both fish and wildlife species is assessed in this report, the motivation for most restoration planning in the watershed is salmon recovery. Therefore, aquatic habitat is generally discussed in greater detail than terrestrial habitat. However, a well functioning ecosystem that includes both aquatic and terrestrial habitats is critical to the recovery of salmonid species and their long-term viability. This report summarizes the available information on historic conditions, human-caused changes to the watershed, existing ecological conditions, and limiting factors to salmon production, and identifies and evaluates potential restoration and conservation actions for both fish and wildlife species.

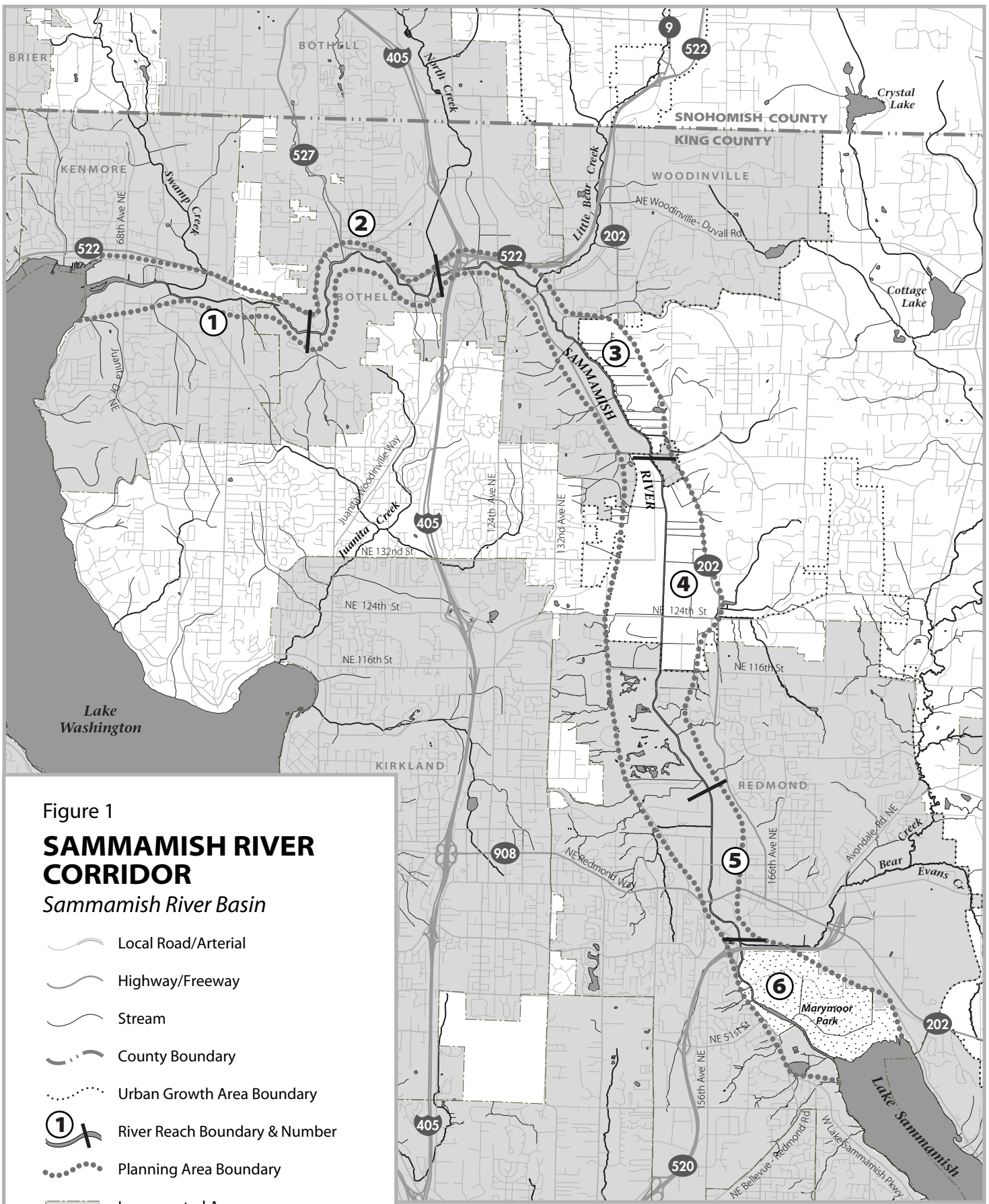








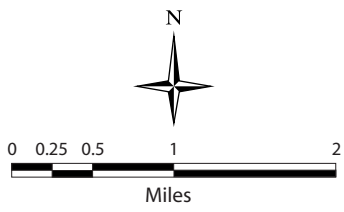


Figure 1
SAMMAMISH RIVER CORRIDOR
Sammamish River Basin

-  Local Road/Arterial
-  Highway/Freeway
-  Stream
-  County Boundary
-  Urban Growth Area Boundary
-  River Reach Boundary & Number
-  Planning Area Boundary
-  Incorporated Area

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