

May 23, 2014

Mayor and Councilmembers
City of Bellevue

Re: Bellevue DRAFT Shoreline Master Program Update

Dear Mayor and Councilmembers:

Protecting water quality and salmon habitat in Lake Sammamish requires a properly functioning lake riparian zone. The purpose of a Shoreline Plan is to ensure that the ecological resources are protected. In the 2005 WRIA 8 Chinook Conservation Plan that the City of Bellevue participated in developing and accepted, there were several recommendations on how to protect and recover the ESA listed chinook runs. Several of the issues identified as impacting these threatened salmon are also addressed in the proposed Bellevue Shoreline Plan. Unfortunately, several of the proposals in Bellevue's proposed plan do not take into account the findings of the report and in several instances suggest activities and policies that would make protection and recovery of the listed chinook much more difficult.

The majority of the Lake Sammamish shoreline is privately owned, mostly for residential uses. As with Lake Washington, much of the shoreline of the lake is armored and many docks and piers have been constructed to support recreation. Lake Sammamish is used as a migration corridor by the Issaquah Creek Chinook population. Juvenile Chinook in the Issaquah system out-migrate through Lake Sammamish and the Sammamish River to Lake Washington, the Ship Canal, and Puget Sound nearshore. Restoration of each of these areas would benefit Issaquah Chinook, but the greatest restoration potential exists in Lake Sammamish (2005 WRIA 8 Chinook Recovery Plan).

Based on the EDT habitat modeling used to develop the recovery plan, it is hypothesized that juvenile Chinook migrants would benefit from actions that reduce predation and the efficiency of predator species such as cutthroat and residualized coho. The abundance and efficiency of predation appears to be driven primarily by conditions that limit cover for Chinook and increase exposure to predators, such as bank hardening, steep slopes, and a lack of woody debris and shoreline vegetation. Proposal to reduce this habitat should not be part of Bellevue's Shoreline Plan.

A primary tool to recover the chinook populations was to, 'Collaborate on Shoreline Master Program updates, and other regulatory and policy revisions, using the WRIA 8 conservation strategy as part of Best Available Science. Shoreline Plans are intended to help in priority setting and coordination across jurisdictions and between public and private partners. The proposed Bellevue Plan does not take into account the best available science and proposes environmental rollbacks that will result in water quality and habitat degradation and contribute to the loss of this protected salmon run.

The proposed loosening of requirements for bulkheads and the curious attempt to characterize lawns as appropriate shoreline vegetation in the proposed draft Shoreline Plan work against the protection of out migrating juvenile salmon. If implemented, these exemptions will make recovery of the Chinook salmon in this watershed extremely difficult. The currently proposed shoreline plan would greatly accelerate the loss of this critical habitat. To promote lawn to the water's edge and permit the elimination of native riparian vegetation will accelerate the

eutrophication of the lake. The expected result of this proposal will be lawn covered with goose feces and the shallows of the lake covered with filamentous green algae.

One of the major recommendations from the Chinook Recovery Plan stated, ' Although the Lake Sammamish shoreline is highly developed, the remaining areas with habitat characteristics likely to reduce predator abundance and efficiency (sandy shallow-water habitat, overhanging vegetation, LWD) should be protected and maintained. The intent of a Shoreline Plan is to protect resources for the citizens of the State of Washington, the citizens of King County, the City of Bellevue and for the lakeshore property owners. It is not intended to institutionalize the ability of the lakefront property owner to degrade the State's habitat and resources to fit their individual view of desirable landscape. The lakefront property owners in Bellevue have both the opportunity and the responsibility to protect and enhance the quality of Lake Sammamish.

In Lake Sammamish, juvenile chinook likely use shallow areas with gentle slopes, similar to fish in Lake Washington. As with other WRIA 8 smolts, those from the Issaquah population pass through the Ship Canal and Locks to reach Puget Sound during May, June and July, and then rear in Puget Sound before reaching the ocean. There is similarity in habitat conditions and habitat use by Chinook between Lake Washington and Lake Sammamish. The shoreline habitat conditions of Lake Sammamish are important for juvenile Chinook (Tabor and Piaskowski 2002; Tabor et al. 2003) from the Issaquah population. Shoreline armoring negatively affects the quality and quantity of riparian vegetation and woody debris. Overwater structures affect both prey resources and migration behavior of Chinook salmon. These alterations have reduced the amount and quality of shallow water habitat.

Historic changes from lowering the level of lakes Washington and Sammamish, as well as regulating lake levels to vary only by 2 feet, reduces shoreline habitat complexity by limiting seasonal wetland formation and other habitat-forming interactions at the water-land interface. Land development and encroachment into areas adjacent to streams has reduced the extent, composition, and integrity of riparian vegetation along all water bodies of WRIA 8.

Mature, native plant communities along Lake Sammamish, dominated by deciduous and coniferous trees, have been replaced by landscaped residential yards. In addition, riparian zones have been isolated from aquatic environments by bank armoring. As a result, riparian function has been altered. The riparian shore zone has little woody debris to contribute to the habitat of the adjacent aquatic area. Other riparian inputs, such as leaf litter and terrestrial insects, are reduced as well (Gregory et al. 1991; Morley et al. 2003; Sobocinski 2003). These riparian alterations, combined with other factors, have reduced aquatic habitat complexity and the availability of prey resources for salmonids.

In Lake Sammamish there is an absence of high-quality, shallow water habitat with small substrates, in-water wood, overhanging vegetation, and variable edges at the land-water interface. Juveniles have poor rearing habitat that does not provide areas for foraging and refuge from predators.

Lake Sammamish contains a variety of introduced aquatic species that may directly or indirectly affect juvenile salmon. For example, bass and perch are introduced fish that prey on juvenile salmonids. Shoreline alterations assist these non-native species through reducing juvenile refuge habitat and increasing bass and perch habitat (Kahler et al. 2000). Invasive aquatic plants can also increase habitat for predators (Bryan and Scarnecchia 1992).

One of the WRIA 8 guiding principles are to plan, develop, and implement management actions (for example, regulations, easements, incentives) to ensure protection of biologically important areas. The following three additional principles from NOAA Fisheries were considered in the development and application of the Conservation Strategy: 'Do no further harm to watershed processes, habitat structure, and aquatic functions important for salmon production; conserve the best remaining habitat that supports Chinook salmon spawning; conserve those areas that are understood to support high Chinook salmon use and productivity, including rearing and migration corridors. These are the activities that the Bellevue Shoreline Plan is supposed to implement, it is unfortunate that the current proposal would circumvent Bellevue's responsibilities and implement changes that will be detrimental to the recovery of the Chinook and to the water quality of Lake Sammamish.

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Issaquah Chinook Tier 1 Migratory and Rearing Areas

Chapter 4: Chinook Conservation Strategy for WRIA 8

Table 4-16: Restoration Recommendations for Issaquah Migratory and Rearing Areas

Lake Sammamish:

- Reduce bank hardening by replacing bulkheads and rip-rap with sandy beaches with gentle slopes designed to maximize littoral areas with a depth of less than 1 meter. The greatest restoration potential exists at the mouth of Issaquah Creek, followed by the head of the Sammamish River
- Reconnect and enhance small creek mouths as juvenile rearing areas. Historically these small creeks had sandy deltas at the creek mouth and were associated with wetland complexes. Protect and restore water quality in small tributaries.
- Juvenile Chinook in the NLW population are less shoreline-oriented than juveniles from the Cedar River. More information is needed about the trajectories of NLW juvenile Chinook in Lake Washington.
- The outmigration of juvenile Chinook would benefit from improved shoreline connectivity. The use of mesh dock surfaces and/or community docks would reduce the severity of predation on juvenile Chinook.
- Habitat in the smaller Lake Washington and Lake Sammamish tributaries (Tier 3 streams such as, but not limited to, Laughing Jacobs, Tibbetts, and Ebright Creeks) should be restored for coho so that production of cutthroat trout which prey on juvenile Chinook in Lake Washington is reduced.
- Consider increases in fishing limits for cutthroat trout.

Lake Washington, Sammamish River, Ship Canal, Ballard Locks, and Nearshore /Estuary:

See Table 4-10 NLW Chinook Recommendations

Focus of Actions:

Lake Washington and Lake Sammamish

- Restore shallow water habitats and creek mouths for juvenile rearing and migration

Nearshore/Estuary

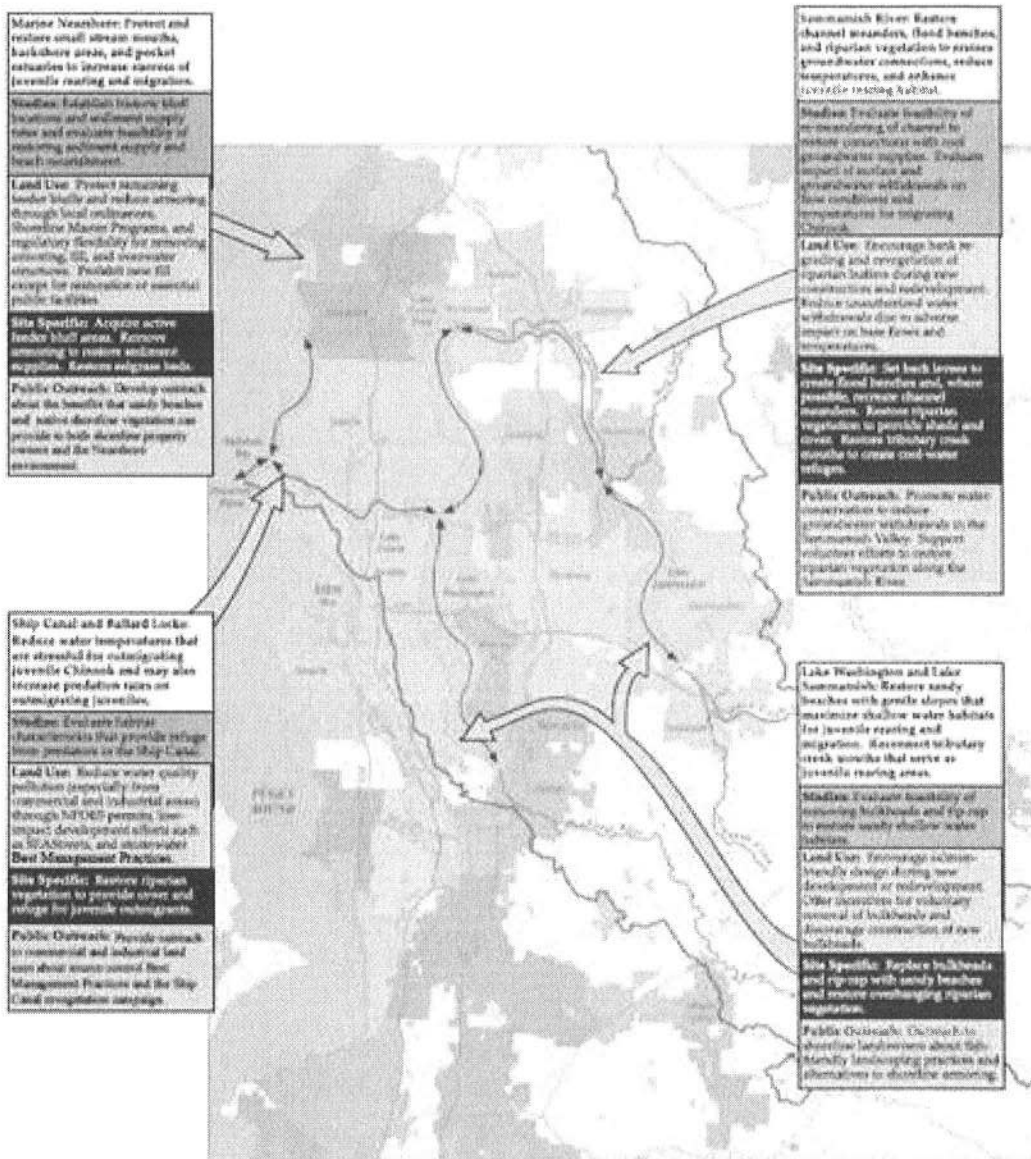
- Restore feeder bluffs
- Restore stream “pocket” estuaries
- Remove armoring
- Restore marine riparian vegetation
- Restore riparian vegetation and freshwater mixing zone to provide cover and refuge to Chinook downstream of the Locks

Chapter 5: Actions to Achieve Our Goals

Area	Draft Conservation Hypothesis	Sample Action from Start list (see Chapter 9 for more information)	Viable Salmonid Population Parameters				Comments
			Abundance	Productivity	Diversity	Spatial Distribution	
South Lake Washington	Reduce bank hardening by replacing bulkheads and riprap with gently sloped, sandy beaches.	C27-C29, C275-C276, C729-C730	✓	✓✓			Unprotected banks allow natural processes which create habitat complexity and enhanced productivity.
	Reconnect and enhance small creek mouths as rearing areas.	C39, C267-C268, C719, C721	✓	✓	✓	✓✓	Opening up new spawning and rearing habitat is a key to enhancing spatial distribution and diversity, leading to increased productivity.
	Restore overhanging riparian vegetation.	C27-C29, C269-C270, C272, C729-C730, C736, C738	✓	✓✓			Enhanced overhanging vegetation enhances food supply and cools water, both important to enhanced productivity.
	Reduce impact of docks to promote safe juvenile salmon migration and deter the aggregation of predators.	C27-C29, C32-C33, C734-C735	✓	✓✓			Reduced predation increases early life stage survival and productivity.
	Address predation effects at the mouth of the Cedar River and backwater area in lower Cedar River.	C38, C269-C270	✓	✓✓			Reduced predation increases early life stage survival and productivity.
	Reduce pollution and contamination inputs from marinas and industrial areas.	C39, C729-C730	✓	✓✓			Clean sediments and water contribute to enhanced productivity and survival.
North Lake Washington Tributaries	Reduce pollution and contaminant inputs.	N18, N21-N23, N202, N236, N289, N702, N713, N720-N721	✓	✓✓			Clean sediments and water contribute to enhanced productivity and survival.
	Reduce sediment inputs from bed scouring high flows.	N18, N23, N208, N211, N235, N242, N702, N704, N731	✓	✓✓			Controlling bed scouring flows prevents destruction of spawning habitat and enhances productivity.

Area	Draft Conservation Hypothesis	Sample Action from Start list (see Chapter 9 for more information)	Viable Salmonid Population Parameters				Comments
			Abundance	Productivity	Diversity	Spatial Distribution	
	Restore riparian areas to provide future sources of LWD that can improve channel stability and contribute to pool habitat creation, and reduce peak water temperatures.	N12, N206, N276, N703, N707-N709, N714, N721	✓	✓✓			Enhanced food supply and habitat complexity support high productivity.
	Protect groundwater recharge sources to Cold Creek and their connection to Cottage Lake Creek and Lower Bear Creek.	N1, N6-N7, N10, N91-N93, N224, N256, N277, N719-N724	✓	✓✓			Clean, cold water and adequate flow support enhanced productivity.
	Address channel confinement in Cottage Lake Creek and Lower Bear Creek.	N15, N201, N208, N211, N268, N272, N708	✓	✓✓			Unrestrained channels allow natural processes which create habitat complexity and enhanced productivity.
	Protect water quality to prevent adverse impacts to key life stages from fine sediments, metals (both in sediments and in water), and high temperatures.	N18-N19, N21-N23, N202, N702, N713, N720-N721, N731	✓	✓✓			Clean sediments and water contribute to enhanced productivity and survival.

Integration of Habitat Actions to Address Process, Function, & Structure in Migratory and Rearing Corridors of WRIA 8



This graphic illustrates a representative sample of actions. It does not include all proposed actions.

- Light blue denotes areas where additional research is needed to better understand the impacts of specific threats to habitat quality or to understand the potential effectiveness of specific restoration actions. Additional information will allow that restoration efforts are successful and cost effective.
- Green denotes land use actions across the watershed or in the immediate vicinity of water or key habitats (e.g., wetlands) where regulatory conditions coupled with public education can protect or restore water quality or quantity and habitat conditions. In the short- and long-term, land use actions in these areas have a major effect on aquatic habitat conditions and the processes that create and maintain that habitat.
- Blue denotes areas along water bodies where site-specific actions are proposed to protect or restore specific stream reaches. Such actions may protect or restore habitat functions, or address symptoms of degraded habitat functions. These actions are supported by land use and public education actions that protect habitat processes and structures throughout the watershed.
- Grey denotes areas where broader public outreach actions are proposed throughout the watershed. Appropriate land ownership and low support development pattern and maintain natural flow regimes and water quality.

WRIA 8 Boundary
 Migratory Corridor
 Major Transportation Route
 Water Body

N King County
Department of Natural Resources and Environmental Services
 Watershed Land Management Division

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