

2022 WRIA 8 MONITORING AND ASSESSMENT REQUEST FOR PROPOSALS

Each year, the Lake Washington, Cedar, Sammamish Watershed (WRIA 8) solicits proposals for the King County Flood Control District's Cooperative Watershed Management (CWM) grant program. WRIA 8 recommends funding for projects that align with the watershed's Chinook Salmon Conservation Plan (link: [WRIA 8 2017 Plan Update](#)), advance understanding of critical limiting factors in salmon recovery, and inform science-based management actions. This document identifies the 2022 priority monitoring and assessment needs. WRIA 8 welcomes proposals that align with our funding principles and address one or more high priority monitoring and assessment needs identified in this document.

WRIA 8 Monitoring & Assessment Funding Principles

1. Prioritize projects that benefit Chinook salmon, also consider projects that benefit other salmon species and/or support improvements to overall watershed health.
2. Inform/advance recovery actions and best management practices to recover salmon in the watershed.
3. Leverage multi-agency collaboration, cooperative partnerships, in-kind resources, or other support to advance salmon recovery. We are particularly interested in encouraging new partnerships and broadening perspectives and expertise informing salmon recovery in WRIA 8.
4. Take an additive approach that aligns with existing knowledge to strengthen salmon recovery efforts and improve understanding to make better, more informed decisions. This includes proposals that support ongoing and long-term monitoring efforts, particularly instances in which a failure to implement the proposed work would result in a meaningful data gap.
5. Consider impacts of changing climate conditions, urban development, and/or interactions between multiple aspects of anthropogenic change on recovery of salmon and their habitats.
6. Communicate findings with WRIA 8 partners and other target audiences to promote awareness of salmon recovery; encourage environmental stewardship in the watershed; and/or guide integration of salmon recovery priorities into local and regional planning, regulations, and permitting.
7. Demonstrate careful planning and high likelihood of success including robust study design and data management plan to facilitate future uses and application of findings.

2022 WRIA 8 High Priority Monitoring & Assessment Needs (In No Particular Order)

Salmon Population Status

This topic is focused on evaluating salmon populations over time and in priority systems. There is also a need to supplement baseline monitoring with more targeted assessments of populations parameters including the timing and location of survival bottlenecks.

Monitoring & Assessment Needs

- Spawner surveys on Chinook bearing systems, prioritizing the Cedar River.
- Juvenile outmigrant surveys on Chinook bearing systems, prioritizing the Cedar River.
- Studies to determine juvenile habitat use and identify bottlenecks in outmigrant survivorship.
- Investigate discrepancies between counts of returning salmon at the Ballard Locks and spawning ground survey estimates. Determine if discrepancies are the result of errors in locks counts or due to fish mortality or straying and identify potential for feasible resolution.

Causal Factors Limiting Salmon Survival

We seek to better understand and address key emerging issues and limiting factors to salmon recovery in the watershed. Issues including predation, high water temperatures and low dissolved oxygen in the Lake Washington Ship Canal and Sammamish River, and artificial light at night must be better understood to inform conservation and management decision-making. Addressing these issues will likely require novel strategies and solutions. We anticipate the specific list of stressors and information needs will evolve over time.

Monitoring & Assessment Needs

- Identify and evaluate solutions to reduce impacts of high temperatures and low dissolved oxygen conditions on salmon in the Lake Washington Ship Canal. We are also interested in studies to reduce impacts of highwater temperatures on salmon survival in Lake Sammamish and the Sammamish River.
- Identify and evaluate strategies to improve salmon passage through the Ballard Locks.
- Quantify effects of artificial light at night on juvenile salmonid survival and predation rates and/or test strategies to reduce negative impacts of artificial light at night on salmon recovery.
- Provide increased understanding of nonnative warmwater fish species impacts on salmon health and survival and test mitigation strategies. We are particularly interested in projects that investigate benefits of habitat improvements to reduce predation impacts.

- Inform and develop strategies to reduce pinniped predation on adult salmon returning to the Ballard Locks.

Project Effectiveness

Assessments to determine whether restoration projects or approaches are achieving their intended outcomes for salmon and their habitats. We are particularly interested in specialized monitoring that fills key knowledge gaps and/or supports partners with otherwise limited resources needed to conduct this work. For example, when a novel approach is used or when outcomes are uncertain or not well understood.

Monitoring & Assessment Needs

- Assessments of lake shoreline or other lentic habitat restoration projects.
- Restoration project effectiveness in improving juvenile rearing and refuge (e.g., food availability, shallow-water habitats, channel complexity, floodplain connectivity).
- Advance our ability to assess the potential for green stormwater infrastructure, low-impact development, and other stormwater management improvements to mitigate changes in hydrology and/or hydraulics, resulting in water quality impacts of urbanization on salmon (i.e., to reduce stormwater peak runoff and volume, increase summer flows, reduce temperature, reduce total suspended solids, reduce toxicants), particularly cumulative effects of these measures at the catchment-scale.

Other Uncertainties or Emerging Concerns

WRIA 8 will also consider proposals that address critical uncertainties or issues of emerging concern that are not explicitly included in the topics above. Proposals must have a clear and compelling link to inform or advance salmon recovery efforts. Examples include the impacts of pathogens and diseases or synthetic chemicals on salmonid survival.