

SUMMARY REPORTS:

- 1) Salmon and Climate Initiative Planning Meeting
- 2) The Washington State Salmon Recovery Conference

Prepared for:

The Chinook Recovery and Rebuilding Initiative,
Fraser Salmon Management Council

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EXECUTIVE SUMMARY

This report has been prepared for the Chinook Recovery and Rebuilding Initiative (CRRRI) to summarize key points from two workshops that were held in Washington in April 2023:

1. The Salmon and Climate Initiative Planning Meeting – held on April 17th, 2023
2. The Salmon Recovery Conference – held on April 18th-19th, 2023.

Building off the Salmon Action Dialogue Work, an invitation to join the Pacific Salmon Foundation for the Washington State Salmon Recovery Conference was sent to the Chinook Recovery and Rebuilding Initiative's Project Coordinator, Marcel Shepert. Nicole Frederickson, Fraser Salmon Management Council/CRRRI Marine Approach Technical representative attended on CRRRI's behalf.

Table of Contents

1. The Salmon and Climate Initiative (SCI) Planning Meeting.....	3
Background	3
What is the SCI?	3
SCI Structure/Approach	3
April 2023 Meeting Objectives:	4
Summary of Key Points from the April Meeting.....	4
How does this work integrate/align with CRRl	5
Recommendations for CRRl’s consideration	6
Next Steps	7
2. The Salmon Recovery Conference	8
Background	8
Summary of Workshop Presentations	9
Relevance to CRRl	17
Next Steps	17

List of Appendices

Appendix 1. Salmon and Climate Initiative April 2023 Planning Meeting Report	18
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List of Tables

Table 1. Summary of relevant workshop presentation titles, presenters, key lessons learned and suggested recommendations for CRRl’s consideration.	9
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1. The Salmon and Climate Initiative (SCI) Planning Meeting

Background

The SCI Planning meeting, held on April 17th 2023, prior to the Washington Salmon Recovery Conference was intended to bring together leading salmon recovery managers, thought leaders and experts from the Pacific northwest to assess the state of salmon and climate knowledge; identify gaps in understanding; and find opportunities for immediately actionable solutions. This planning meeting was intended to set the stage for a broader “Scoping Workshop” to be held later in 2023 and determine if there is interest for stronger transboundary coordination on salmon rebuilding as it pertains to climate change.

A detailed meeting summary prepared by Long Live the Kings (member of the Core Team and lead workshop organizer) is provided in Appendix 1.

What is the SCI?

The Salmon and Climate Initiative (SCI) is a collaborative, transboundary effort, led by Long Live the Kings (LLTK), the Pacific Salmon Foundation (PSF), Salmon Defense (tribal organization), the Washington State Governor’s Salmon Recovery office, and faculty at the University of Washington, to bring leading scientists, managers, policy makers and Indigenous organizations from the western U.S. and Canada together to help “launch and grow major climate adaptation actions, and ensure that salmon and the communities who depend on them can thrive.”

The SCI intends to provide a venue to collectively examine climate impacts on salmon from Alaska to California, share information and collaborate across boundaries, consider proven solutions that are working to rebuild salmon and identify where more effort is needed to increase salmon resilience.

The vision is that this would be a collaborative, multi-disciplinary team of salmon recovery leaders across Tribes, First Nations, government, academia, NGO’s, and industry to establish a minimum decade-long initiative to prioritize, fund, and implement actionable solutions for salmon.

SCI Structure/Approach

Currently, “there is no region-wide, transboundary, coordinated approach to climate change”. The SCI seeks to co-create a framework for salmon recovery within the context of climate change.

Under the SCI, three initial themes have been identified:

1. Identify critical data or knowledge gaps for salmon and climate that need to be better understood to manage the interaction effectively.
2. Identify some “no-brainer” actions that must be taken to address climate impacts on salmon and collectively leverage resources or work together to breakdown societal road blocks.
3. Identify novel approaches/mitigation actions to support as a set of applied experiments.

To address the work identified under the three initial themes, the group is proposing a “phased approach”.

Phase 1: A scoping workshop to bring together 80+ of the Pacific regions leading salmon recovery managers, thought leaders, and experts to assess the state of salmon and climate knowledge, identify gaps in understanding and find opportunities for immediately actionable solutions.

This will include building partnerships and establishing shared goals, timelines and funding strategies, as well as tackling joint fundraising and communication efforts.

Phase 2: Full-scale salmon adaptation research, planning and early actions to address information gaps and implement immediate already-proven solutions.

The SCI intends to develop “action-oriented solutions based on sound science and traditional knowledge and will provide a place to identify the best ideas and share these solutions widely”.

April 2023 Meeting Objectives:

- The April meeting was intended to be a planning meeting and to set the stage for a larger ‘Scoping Workshop’ to be held later in 2023.
- The objective of this planning meeting was to establish shared goals for a scoping workshop and outline the main activities of that workshop.
- Identify potential presenters and panelists and establish a Workshop Steering Committee.

Summary of Key Points from the April Meeting

1. This was an initial scoping/planning workshop to: see if there is broader interest in bringing groups (including international groups like the Pacific Salmon Commission, State and Tribal Government groups, as well as NGO's from Alaska down to California and even Idaho) together to launch a broader program related to salmon recovery and climate change.

2. The meeting consisted of a number of breakout groups. Long Live the Kings was the organizer (with support by Pacific Salmon Foundation) and has finalized a workshop report (Appendix 1) summarizing detailed meeting discussions and findings. **Key themes or messages from group breakout discussions included:**

- The need to collaborate across entities and borders to address the broad-scale issue of climate change on salmon – particularly since salmon and climate impacts do not adhere to jurisdictional boundaries.
- There is a gap between what scientists, managers, and knowledge holders know we must do for salmon, and what political leaders are currently willing to fund and act upon.
- Currently there is no approach connecting salmon and climate efforts from the grassroots to the international level.
- Acknowledgment of a lack of communication between salmon management and salmon recovery and conservation.
- Better data sharing efforts across borders and entities is needed.
- The need for a comprehensive inventory of salmon recovery projects and existing work at the grassroots level, up to the international level.

- There are a number of outstanding research needs that remain to be addressed and contribute to large uncertainty around climate impacts on salmon.
- For the initiative to be successful, it must be inclusive and include a diverse range of voices, including more Indigenous representation, youth, experts from beyond Washington and British Columbia, and possibly even social scientists.

3. The Overarching Goal of the SCI: is to develop a Pacific coast-wide Strategic Action Plan from California to Alaska that includes everyone – recognizing that First Nations/Tribal involvement is critical. This will be a phased approach wherein:

Phase 1 - Planning:

- Develop a Core Team and a Workshop Steering Committee (the goal is to have a third of the Steering Committee made up of First Nations/Tribes/Indigenous Organizations).
- Hold an additional scoping workshop to hold a bilateral meeting in the Winter of 2023 to bring folks together and showcase work being done on both sides of the border. Outputs of this will be a Workshop Report and a Strategic Action Plan.

Phase 2- Take Action:

- Establish a Core Team to drive the Action Plan
- Establish a Coordinating Committee AND Technical Team(s)
- Identify Science -> Connect to Action --> connect to Policy (at ALL levels, including international and local).

4. The overall messaging from meeting participants was recognition for the need to collaborate across borders and across entities. It was clear that there is currently no successful mechanism that is connecting salmon rebuilding efforts from the grassroots to the international level, and this is urgently needed.

How does this work integrate/align with CRR

The SCI and CRR share several overlapping roles and tasks. This project aligns with the following objectives and tasks of the CRR:

- Provide resources and supports that promote a stronger technical role for Indigenous groups in all aspects of planning delivery and evaluation of work that advances Fraser Chinook rebuilding.
- Serve as a convener, facilitator, coordinator, and technical resource to support Indigenous efforts and aspirations to lead Chinook rebuilding.
- Integrate, complement, and support other work at the local, sub-regional and provincial levels.
- Serve as a bridge between Indigenous groups and between Indigenous and other interests and initiatives for Chinook rebuilding.
- Lay the groundwork for a new model that advances a strong ongoing First Nations leadership role in Chinook rebuilding.

Similarly, The SCI intends to provide a venue to collectively examine what is occurring from Alaska to California, share information and collaborate across boundaries, and consider proven solutions that are working to increase salmon resilience.

Although SCI is not explicitly focusing on Chinook, or Fraser River Chinook, but rather focusing on climate impacts and resilient salmon populations across the Pacific coast, the broader impacts of climate change play a significant role in Fraser River Chinook recovery and rebuilding. So, while the SCI is focused on climate change impacts to all salmon, this is intrinsically connected to and has implications for Fraser Chinook. As we know, threats and limiting factors impacting salmon are not limited to the local and regional scale, especially given the complex life history and migration behaviour of Pacific salmon. Policy, efforts, and actions at the transboundary scale can and will have implications at the local level, so it is prudent that there is communication, involvement, and intersection at all levels (local up to national and international levels).

While CRRRI is intended to work at a local/regional scale, the SCI is intended to work at a broader, transboundary level; however salmon recovery and rebuilding at a local level is often strongly tied not only to what happens at a local scale, but also what happens at the broader national and international level. In addition, rebuilding/recovery approaches for salmon in Washington, or other areas, may also work for salmon in the Fraser River, so there is the opportunity to apply lessons learned elsewhere, to Fraser salmon.

In addition to shared roles and tasks, the SCI, like the CRRRI understands the integral role of First Nations and Tribal leadership in the recovery and rebuilding of salmon and looks to incorporate strong Indigenous leadership as a critical aspect of the initiative.

Just as CRRRI is intended to support knowledge exchange and promote new partnerships, innovation and collaborative opportunities at a local level, CRRRI's involvement at SCI could allow for information sharing at a broader, transboundary level. If CRRRI were to be actively involved in SCI, there would be an opportunity to communicate local actions, perspectives, and novel approaches at the grassroots level, up to the SCI and the international level. Alternatively, there would be the opportunity to communicate lessons learned from the SCI back out to local communities via the CRRRI's local and regional workshops. Essentially, CRRRI could act as the local/regional body to help communicate between SCI and Fraser River and marine approach First Nations.

CRRRI's involvement at SCI could potentially extend the reach, as well as the influence of CRRRI in salmon rebuilding and recovery.

Recommendations for CRRRI's consideration

Below is a list of recommendations for CRRRI to consider relevant to the transboundary Salmon Climate Initiative.

- CRRRI Representative to be involved in the SCI Workshop Steering Committee. This would require exploring funding options to do so.
 - If this recommendation moves forward, a designated CRRRI rep would need to reach out to Shaara Ainsley, Project Manager at Long Like the Kings.
- CRRRI Representative(s) to participate in the Scoping Workshop – tentatively planned for December 6-8th, 2023.
 - If this recommendation moves forward, communication from CRRRI should be sent to Shaara Ainsley to confirm participation at the workshop.

Next Steps

- Core Team members are meeting to discuss the next steps for developing a “straw dog proposal” for a Pacific Coast Salmon and Climate Initiative framework, establishing a Workshop Steering Committee, and select dates for a “Scoping Workshop”
- A tentative date for the “Scoping Workshop” has been set for December 6th-8th, 2023 in or near Seattle, WA.
- The Workshop Proceedings are provided in Appendix 1 of this report and should be distributed to CRRRI participants and representatives for review.
- Long Live the Kings to begin reaching out to folks who have identified interest in being on the Workshop Advisory committee and to provide guidance to the Core Team as they develop the Scoping Workshop Agenda and the elements of the Initiative Framework.

2. The Salmon Recovery Conference

Background

Washington's Salmon Recovery Conference was first held in 2007 and has become an important annual event for sharing information related to salmon recovery and rebuilding in Washington State, with a focus on the Four H's of salmon recovery: habitat, hydropower, hatcheries, and harvest.

The 2023 Salmon Recovery Conference was held on April 18-19th, 2023 in Vancouver Washington. There were a number of overlapping sessions held throughout the two-day conference from each of the following key themes:

- EPA Exchange Network
- Outreach and Education
- Policy and Regulations
- Water Quantity
- Climate Change
- Floodplains
- Monitoring
- Orca's
- Restoration

For the purpose of this report, only those sessions which were attended and appeared relevant to the objectives and priorities of the CRRI have been summarized herein.

Summary of Workshop Presentations

Table 1. Summary of relevant workshop presentation titles, presenters, key lessons learned and suggested recommendations for CRRI's consideration.

Presentation Title	Presenter	Lessons Learned	Recommendations for CRRI's consideration
Theme: Monitoring			
Developing a Comprehensive, Statewide, Fish Passage Strategy	Jane Atha – Washington Department of Fish and Wildlife	<ul style="list-style-type: none"> • WA state law requires all water crossing structures (i.e., culverts, bridges, etc.) to provide passage for all fish species at all life-stages. • WDFW has been inventorying fish passage barriers throughout WA. • To date, WDFW estimates that there are at least 18,000 barriers to salmon and steelhead in WA state. • To date, there is no strategic, standardized approach for dealing with barriers (removal and remediation) • WDFW is developing a “fish passage” strategy. Expect to have a Draft strategy by the end of 2024. • To do this they are following a 6-step approach: <ul style="list-style-type: none"> ○ 1. Tribal co-manager engagement ○ 2. Stakeholder interviews ○ 3. Science Panel formation ○ 4. Regional mid-process check-in ○ 5. Strategy development and review ○ 6. Stakeholder outreach and implementation workshops. 	<ul style="list-style-type: none"> • Similar research from BC by Finn et al. 2021¹ found that 85% of historic salmon habitat in the Lower Fraser River is no longer accessible due to anthropogenic barriers. • Finn plans to publish a paper on ways to prioritize which barriers to upgrade first. He has developed a process to identify areas that can be easily restored, determines how much habitat is there, and matches this with political will and funding opportunities. • May be useful to have Riley Finn come and present on his research related to salmon habitat loss in the Fraser River and methods to identify how to prioritize areas that need upgrade to improve access at the next CRRI Workshop/session. • Consider developing a list/inventory of known/potential barriers to Chinook passage on the Fraser River/tributaries. This could be a future work item for CRRI, but would require additional funding. • The Secwepemc Fisheries Commission, DFO, and the Province have formed a partnership, called the Thompson Shuswap Salmon Collaborative to address limitations to salmon survival in the Thompson watershed.

¹ Finn, R. J. R., Chalifour, L., Gergel, S. E., Hinch, S. G., Scott, D. C., and Martin, T. G.. 2021. Quantifying lost and inaccessible habitat for Pacific salmon in Canada's Lower Fraser River. *Ecosphere* 12(7):e03646. Available at: <https://esajournals.onlinelibrary.wiley.com/doi/10.1002/ecs2.3646>

Presentation Title	Presenter	Lessons Learned	Recommendations for CRRI's consideration
		<ul style="list-style-type: none"> • WA state has a number of key guiding documents that exist on fish passage barriers, etc. 	<p>Addressing culverts and other barriers to passage is a large component of the Program². Consider having someone from this Process present at the next CRRI workshop/Regional Session. Contact is Pat Matthew. For more info visit: https://www.fraserbasin.bc.ca/tssc.html#about</p> <ul style="list-style-type: none"> • Alternatively, CRRI could communicate the importance of documenting fish barriers within the watershed and encourage interested Nations or IRMA's to inventory/document known barriers within their territories. • CRRI to review WDFW fish passage strategy once completed and see if there are potential elements that could be used or applied within the Fraser River watershed. • CRRI could also work with the Province to move towards implementing a similar requirement to WA state law that requires all water crossing structures to provide passage for all life stages of salmon.
New Developments in the Data World	Brodie Cox – Washington Department of Fish and Wildlife	<ul style="list-style-type: none"> • WDFW has a Salmonid Populations Indicators (SPI) Database that was developed by WDFW and tribal co-managers. • The SPI database was intended to serve as a tool for prioritizing recovery efforts & measuring results of recovery actions statewide. • The SPI consists of: <ul style="list-style-type: none"> ○ A standardized approach to identifying and monitoring the status of WA “wild” salmon 	<ul style="list-style-type: none"> • DFO does not have any database like this. A database like this would be extremely beneficial, not only to DFO, but to Nations, particularly when it comes to prioritizing efforts and measuring results of recovery actions. • Could DFO and CRRI work together to help secure funding to develop a similar SPI database for Fraser Chinook. The strength of something like this is that it could help identify

² Pat Matthew (pers.comm)

Presentation Title	Presenter	Lessons Learned	Recommendations for CRRI's consideration
		<p>populations/the official list of salmonid populations recognized by WDFW and tribal co-managers.</p> <ul style="list-style-type: none"> ○ Population status monitoring information and supporting metadata relevant to the constituent populations. ○ Expandable capacity to include new population high level indicators as they are developed. ● WDFW also have a Fish Traps and Survey database, which holds fish survey data from a variety of sampling methods. 	<p>who is doing what, where and allow for a more integrated, strategic approach to rehabilitation/restoration.</p>
<p>Do Juvenile Chinook Salmon Face a Predation Gauntlet in the Chehalis River?</p>	<p>Marisa Litz- Research Scientist, Washington Department of Fish & Wildlife</p>	<ul style="list-style-type: none"> ● Spring Chinook salmon abundance in the Chehalis River basin generally has declined in the past two decades, leading to concerns about the species' status. ● New findings from a WDFW study suggest that ocean-going juvenile spring Chinook may be dying in the Chehalis River because of increasing stream temperatures and multiple predators. 	<ul style="list-style-type: none"> ● CRRI could consider if any similar research has been conducted recently in the Fraser River basin. If so, consider having a presentation on the topic shared at the next CRRI workshop/regional session.
<p>Theme: Outreach and Education</p>			
<p>Salmon Recovery at your Fingertips</p>	<p>Chantell Krider – Washington State Recreation and Conservation Office</p>	<ul style="list-style-type: none"> ● The Salmon Recovery Portal is an online database that displays information about salmon recovery actions throughout Washington. ● Link to the database: Salmon Recovery Portal (wa.gov) ● The portal supports the lead entity process by providing tools for planning and reporting to ensure habitat projects are implemented in a logical and sequential manner. 	<ul style="list-style-type: none"> ● Future work for CRRI could be to submit a funding proposal to develop a similar database for the Fraser River, that would show salmon recovery and rebuilding actions/projects throughout the watershed.
<p>Theme: Climate Change</p>			
<p>A Climate Resiliency Lens to Salmon Habitat</p>	<p>Grace Adams – Coast Salmon Partnership</p>	<ul style="list-style-type: none"> ● Climate Adaptation Framework developed to better understand climate change impacts into 	<ul style="list-style-type: none"> ● CRRI Biologist to review the Climate Adaptation Framework to identify if there is anything

Presentation Title	Presenter	Lessons Learned	Recommendations for CRRI's consideration
<p>Protection and Restoration on the Washington Coast</p>		<p>region and identify actions to mitigate climate change impacts.</p> <ul style="list-style-type: none"> • Climate adaptation = a management strategy that prepares for expected climate change with the goal of maintaining ecological function and supporting biodiversity by: increasing a system's resilience to change and/or accepting baseline conditions are going to change and plan accordingly. • Climate Adaptation Framework has two phases: 1. Future proof habitat protection and restoration projects. 2. Identify opportunities to improve climate resiliency of salmon (completed through a decisions support tool). • Phase 1 resulted in the development of specific products: <ul style="list-style-type: none"> ○ 1. Reference Guide with project recommendations ○ 2. Companion web map with climate impacts and fish distributions • Phase 1 identifies 4 overarching climate impacts: increasing summer stream temperatures, decreasing summer low flows, increasing winter high flows, increasing sea level rise. • The Framework further identifies climate impacts on salmonids at different life cycles. Overall, the 4 identified overarching climate impacts affected the freshwater phases of salmon, particularly egg incubation, juvenile rearing, adult migration & holding, and spawning. • For Chinook, winter high flows associated with climate change impact the egg incubation and a portion of the juvenile rearing stages. 	<p>within the Framework that could be applied to Fraser Chinook.</p> <ul style="list-style-type: none"> • Particularly, review the Reference guide within the framework to identify potential habitat restoration or protection actions that could be applied to Fraser Chinook to assist rebuilding.

Presentation Title	Presenter	Lessons Learned	Recommendations for CRRI's consideration
		<ul style="list-style-type: none"> • Summer low flows and summer stream temperature changes because of climate change were estimated to impact Chinook juvenile rearing and adult migration and holding stages. • Reference guide within the Framework provides a detailed table of habitat restoration or protection actions for each climate impact. • Phase 2 is currently underway and aims to develop a climate resiliency index across the region that identifies the best opportunity to improve climate resiliency of salmon through habitat protection and restoration. • Associated products include: <ul style="list-style-type: none"> ○ A climate resiliency index ○ An interactive web map that shows the index by sub-watershed ○ A paper that describes the index and its possible applications. 	
<p>Mill Creek Water Plan: An Innovative Approach to In-stream Flow Restoration and Municipal Water Supply Resiliency</p>	<p>Ethan Lockwood- Project Manager, Washington Water Trust</p>	<ul style="list-style-type: none"> • This presentation showcased a specific example in the Walla Walla basin in southern Washington. • The Walla Walla is predicted to experience one of the largest declines in snowpack in the Pacific Northwest. Projections estimate an expected decrease by up to 66% by the 2040s and as much as 89% by the 2080s. 	<ul style="list-style-type: none"> • CRRI technical staff to explore potential of ASR within B.C., particularly in the Fraser watershed. • This could be explored as a potential novel approach to help deal with water withdrawal and impacts during low flow periods within the Fraser basin. • There is a report prepared by the Province of BC³ that could be reviewed by CRRI Technical

³ Ministry of Environment and Climate Change Strategy, 2021. Assessment of Managed Aquifer Recharge (MAR) and Aquifer Storage and Recovery (ASR) Potential in British Columbia: Regional Opportunities and Regulatory Approaches. Water Science Series WSS2021-05, Province of British Columbia, Victoria. Available at: [ASR-MAR Report 1617839275859 EE90558032.pdf \(gov.bc.ca\)](#)

Presentation Title	Presenter	Lessons Learned	Recommendations for CRRI's consideration
		<ul style="list-style-type: none"> • Mill Creek, a tributary to the Walla Walla Basin, was identified to potentially produce approximately five times the current flow levels and help improve channel conditions in the lower creek. • The City of Walla Walla diverts water from Mill Creek for Municipal water. • In late summer the city withdrawals typically 50% of instream flow, leaving approximately 2-3 cubic feet/second at the confluence of Mill Creek and Walla Walla. • In 2016, the City received a permit to use Aquifer Storage and Recovery (ASR) to store water during higher flow periods and reduce the need to withdraw water during low flow periods. • Basically, ASR systems use injection wells to artificially recharge surplus water into a confined natural aquifer system and then use that stored water from the same well during periods of high-water demand (usually coinciding with low flow conditions). 	<p>staff to help identify the potential of using ASR in the Fraser basin.</p>
Theme: Floodplains			
<p>Decolonizing the Floodplain – Acquiring Land for Chinook Recovery</p>	<p>Jason Griffith – Environmental Program Manager, Stillaguamish Tribe of Indians</p> <p>Brett Shattuck – Restoration Scientist, Tulalip Tribes</p>	<ul style="list-style-type: none"> • The Stillaguamish and Tulalip Tribes have developed strategies for acquiring land needed for recovery efforts. They determined that buying the land is the most durable solution. They have dubbed this approach “Decolonization of the floodplain.” • The Snohomish and Stillaguamish developed a GIS tool to help identify and prioritize key areas along the floodplain to purchase, restore and protect. • The prioritization tool incorporates different metrics related to: importance, feasibility 	<ul style="list-style-type: none"> • Recommend inviting Jason and Brett to present on this concept “Decolonizing the Floodplain” at a future CRRI workshop.

Presentation Title	Presenter	Lessons Learned	Recommendations for CRRI's consideration
		<p>and degradation metrics and then comes up with a “total score”, which is then used by the Tribes to prioritize specific areas to purchase.</p> <ul style="list-style-type: none"> • To date, Tulalip Tribes have acquired over 400 acres, with several resulting restoration projects underway. • Stillaguamish Tribe has acquired over 2000 acres and protected 18 miles of shoreline. 	
Theme: Restoration			
Implementing a Restoration Plan for One of Washington’s Largest River Basins	Andrew Mealor – Environmental Planner, Washington Department of Fish and Wildlife	<ul style="list-style-type: none"> • The Chehalis Basin’s Aquatic Species Restoration Plan (ASRP) is the largest watershed restoration plan ever proposed in Washington. • The plan’s success relies on collaborative partnerships with landowners to solve local problems that add up to landscape-scale change. These actions, coupled with a science-based sequencing of actions, allows the plan to enact basin-wide watershed restoration in efficient, cost-effective ways that has the greatest chance of restoring the resiliency of aquatic species and their habitats in the face of climate change. • The ASRP aims to improve habitat by using process-based restoration techniques: barrier removal, reach scale river restoration, acquisition/protection, wetland restoration, planting and invasive control. 	<ul style="list-style-type: none"> • The CRRI biologist/technical staff could review the Chehalis Basin ASRP to identify lessons learned or elements/approaches that may be able to be applied to the Fraser River.
Theme: Biological Threats			
Steller Sea Lion Consumption of Chinook Salmon Along Washington’s Coast	Zoe K Lewis – Western Washington University	<ul style="list-style-type: none"> • Increased predation on Chinook salmon from Stellar sea lions along coastal Washington is of particular concern, as this region provides crucial habitat to multiple Chinook salmon stocks year-round, including populations 	<ul style="list-style-type: none"> • While there is conflicting science around the impacts of sea lions on Chinook salmon, it is an important consideration that should not be overlooked.

Presentation Title	Presenter	Lessons Learned	Recommendations for CRRRI's consideration
		<p>originating from the Columbia River and the Salish Sea.</p> <ul style="list-style-type: none"> • Previous biomass models suggest that harbor seals are the pinniped that consume the most juvenile Chinook in the Salish Sea. However, the predation impact of Steller sea lions on Chinook salmon is less understood. • This study quantified the biomass of Chinook salmon consumed by Steller sea lions along the northwest coast of Washington during December 2020 - August 2021 using diet proportions obtained from DNA metabarcoding from scats and compare it with studies conducted from 2010 through 2013. • Study results indicate that since 2013, both diet proportion, as well as total biomass of Chinook salmon consumed by Steller sea lions in this region has increased. • The study model estimates that 2.7 million age-0 Chinook salmon were consumed within the study period, and argues that Steller sea lion predation may contribute to the decrease of early marine-phase survival of Chinook salmon in the region. 	<ul style="list-style-type: none"> • Consider communicating the potential impacts of sea lion predation to Nations. It may be worth CRRRI technical staff looking into relevant research from B.C. or the Fraser River to explore the potential impacts of sea lions on Fraser Chinook.

Relevance to CRR

As CRR is intended to bring together and build on existing scientific research, Indigenous knowledge and capacity, while supporting knowledge exchange and promoting new partnerships, innovation and collaboration opportunities, there may be some recovery actions or strategies that have been applied in Washington state that may work in the Fraser River. The relevance to CRR is that this information and lessons learned can be shared more broadly with signatory and non-signatory Nations to help assist recovery efforts in the Fraser River. By considering techniques and approaches that have been tried, tested, and proven to be successful in Washington State, Fraser River Nations may be able to implement these similar strategies to assist with Fraser Chinook rebuilding within their territories. At a minimum, implementing some of the Washington State approaches reduces the need to re-invent the wheel and reduces the costs associated with initial project development. Rather than trying a novel approach, which may or may not work, it is much more efficient to utilize approaches that have already been tried and tested elsewhere – provided the key elements are similar.

Next Steps

There are a number of recommendations and next steps identified in Table 1 for potential CRR future work and consideration. These recommendations should be reviewed by the CRR Steering Committee to identify which/if any should be actioned to move forward on.

APPENDIX 1 – Salmon and Climate Initiative April 2023 Planning Meeting Report

Salmon and Climate Initiative

April 2023 Planning Meeting Report

Prepared by the Salmon and Climate Initiative Core Team

June 2023

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Executive Summary

The environmental, cultural, and economic health of the Pacific Coast of North America is inextricably tied to the health of its salmon populations. Unfortunately, climate change impacts are accelerating, stressing threatened and endangered Pacific salmon populations, and calling into question the future viability of salmon runs and fisheries across the region from California to Alaska. A future in which resilient salmon can flourish in the face of climate change depends on forward looking management, innovative science, stronger collaboration and information sharing across their geographic range, and significantly increased investment. To set this stage, Long Live the Kings (LLTK), the Pacific Salmon Foundation (PSF), Salmon Defense, the Washington State Governor's Salmon Recovery Office, and leading faculty at University of Washington will convene scientists, managers, and policy makers through a multidisciplinary and multi-scale Salmon and Climate Initiative (SCI). The SCI will provide a space to collectively examine climate impacts on salmon from California to Alaska, share information and collaborate across boundaries, consider which solutions are working and determine where more effort is needed to increase salmon resilience.

LLTK and partners hosted a planning session on April 17th, 2023, at the Lower Columbia Fish Recovery Board in Vancouver, WA, to hear from potential initiative participants on whether they see similar opportunities for collaboration. The meeting was intended to set the stage for a larger "Scoping Workshop" slated to be held in Fall 2023. During the discussions participants expressed a shared sense of crisis and described an urgent need to produce better outcomes and engage the entire Pacific Coast salmon community. A consistent theme emerged – migratory salmonids, like climate impacts, do not adhere to jurisdictional boundaries and we need to collaborate across entities to address this broad-scale problem. While there are numerous disconnected initiatives, it is clear there is nothing currently connecting salmon and climate efforts from the grassroots to the international level. The proposed initiative must be bold to match the unprecedented challenge in front of us, but to be successful in the face of dramatic change, we need a level of focus, effort, and coordination we have lacked until now. Based on the feedback provided at this planning session, the core team of partners is now planning a Fall Scoping Workshop that will result in a detailed framework, workplan including a budget, and timelines for the initiative.

Background

Decades of rapid population growth, intensive land and water use, and inability to fully account for climate impacts on fisheries and hatchery management have left Pacific salmon populations depleted and vulnerable to rapid environmental change. Despite the enormous risks, there is no region-wide, transboundary coordinated response to climate change. While there are many valuable climate adaptation efforts underway at the watershed level, we have not stepped back

to look collectively at impacts on salmon across their natural range: south to north and from trees to seas. As a result, we are missing critical opportunities to identify, get ahead of, and solve shared challenges; increase public support for implementing resilience measures; and facilitate the exchange of solutions, new technologies and best practices across the Pacific coast. Through the Salmon and Climate Initiative, we seek to co-create a framework for salmon recovery within the context of climate change that generates new approaches, greater urgency, and increased funding to advance critically important actions we already know will work.

We are proposing that this effort would begin with a scoping workshop to bring together around 90 of the region's leading salmon recovery managers, thought leaders, and experts to assess the state of salmon and climate knowledge, identify gaps in understanding, and find opportunities for immediately actionable solutions based on sound science and traditional knowledge. We also want to provide a place to collectively examine what is occurring now and what is likely to occur soon from California to Alaska. We will share findings, organize information, identify needs, and work to advance short-, medium- and long-term solutions.

Benefits of Coming Together

We see numerous opportunities to collaborate, communicate, and coordinate work to benefit salmon in the face of climate change.

Collaborate

State, federal, Tribal, and First Nations governmental agencies, NGOs, academic institutions, and the fishing industry are all looking at how to factor climate change into their efforts to recover salmon populations. Despite the reality that climate change continues to challenge our recovery efforts along the Pacific Coast, there are few established channels to learn about and share what is being done across the region.

Communicate

We aim to create a coastwide, international framework to highlight and advance critical climate-related efforts, identify barriers, and leverage significantly more resources to benefit those working to address salmon resiliency in their watersheds and regions.

Coordinate

SCI offers the additive benefits of coming together to identify broader, shared themes, rapidly advance critically important work, systematically test new approaches, and address some of the bigger questions and uncertainties across the entire landscape.

What We Believe SCI Can Accomplish

A Pacific Coast initiative can unlock options for addressing climate impacts on salmon that are difficult to accomplish at smaller geographic scales. There are many ongoing efforts at the local

levels, therefore this initiative is focused on the value of transboundary and intersectional dialogue, resources, and solutions, such as:

- 1) Known priorities or actions that already have broad understanding or agreement but have barriers to implementation. These barriers include lacking resources, awareness, or authorities to enact.
- 2) Untested but promising priorities or actions that should be explored through a set of applied experiments. Determining the opportunities and appetite for coordinated and replicated demonstration projects in this arena.
- 3) Constraining organizational structures or barriers, and how we currently interact both within and across those entities, that prevent broader dialogues or solutions. Defining what they are and how we begin to address them.
- 4) Effectively sharing and elevating opportunities and actions related to salmon and climate in ways that facilitate knowledge transfer, collaboration, and innovation across organizations. Discovering opportunities for generating and sharing new and existing information to advance progress across sectors for salmon and climate action.

Planning Meeting Objective

LLTK hosted a planning session on April 17th, 2023, at the Lower Columbia Fish Recovery Board in Vancouver, WA, to hear from potential initiative participants on whether they see similar opportunities for collaboration. The meeting was intended to set the stage for a larger “Scoping Workshop” slated to be held in Fall 2023. This planning meeting was a first chance for a select group to discuss and vet the idea for a West Coast initiative focused on salmon and climate, and to outline the approach for hosting a larger scoping workshop focused on building a detailed framework, workplan, and timelines for the initiative.

Meeting Summary

The one-day planning meeting began with a brief introduction by Jacques White (Executive Director, LLTK), who provided background information about the initiative. The rest of the day was spent in large and small group discussions. During lunch, Mark Saunders (North Pacific Anadromous Fish Commission) provided a briefing about the International Year of the Salmon’s 2022 Pan-Pacific Winter High Seas Expedition and the Basin-scale Events to Coastal Impacts (BECI) United Nations project. The 2022 Expedition and BECI are examples of joint international efforts designed to understand salmon and their marine ecosystems. Along with the recently completed Salish Sea Marine Survival Project (SSMSP), these initiatives provide a template for

cooperative work designed to identify and address important factors that both drive and limit productivity in a changing environment, and demonstrate what's possible with SCI.

Large Group Discussion

What are the benefits of coming together at broad scales for salmon and climate?

The entire group focused on understanding what they saw as the potential benefits of coming together at broad scales. Many explained they are concerned about the current trajectory of salmon and the impacts of a changing climate. They see the benefits of a potential collaboration and want to learn more about what that collaboration could look like.

A consistent theme emerged – migratory salmonids, like climate impacts, **do not adhere to jurisdictional boundaries** and we need to collaborate across entities to address this broad-scale problem.

- Current salmon management and science is “bureaucratically fractured.” Big bureaucratic efforts can be disconnected from the grassroots, local efforts. Participants hope that a broad-scale initiative can cross bureaucratic boundaries.
- It is not just about bridging between science and management, or across jurisdictional boundaries. It is also about western management perspectives (short-term harvest and resource management) and indigenous perspectives (conserving for the next seven generations).
- There is also a benefit to thinking at different temporal scales. While planning for a future based on climate scenarios (e.g., 2070) is important, we also need to be planning for the immediate climate-related concerns (e.g., next multi-year drought in California) as we are already losing populations.

Participants believe that sound science and effective actions are happening up and down the Pacific Coast, but **we need to collaborate across boundaries** to quickly learn more about activities in other regions. Salmon recovery is not just about taking individual actions, but about the alignment of these efforts.

There is also a **gap between what scientists and managers know we must do for salmon, and what our political leaders are currently willing to fund**. Coming together allows us to bring a more unified voice to strategic planning and budget priorities. Framing salmon in the context of climate can provide an impetus to drive harder, secure more resources, and make change happen on the ground at rates and scales needed by salmon today.

Small Group Discussion

Identifying existing initiatives, and current gaps in understanding, coordination and collaboration that could be filled by the initiative

The participants found that they could create a long list of salmon and climate related activities and initiatives, but most of these were either smaller, local watershed efforts, or they were not efforts that focused specifically on salmon and climate. Examples of regional organizations that may be good models, but that are not specifically focused on salmon and climate:

- [Alaska Climate Integrated Modeling project \(ACLIM\)](#) by NOAA Fisheries and partners
- [Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative](#)
- [Columbia Basin Collaborative](#)
- [Basin-scale Events to Coastal Impacts \(BECI\)](#)
- [Chinook Recovery and Rebuilding Initiative](#) (First Nations-led collaborative project of the Fraser Salmon Management Council)

While there are numerous disconnected initiatives, it is clear **there is nothing currently connecting salmon and climate efforts from the grassroots to the international level.** Climate adaptation is acknowledged to be a part of salmon recovery and restoration in almost every initiative throughout the Pacific Coast, but none of it is explicitly connected.

One conclusion from this discussion was that the **siloiing of groups makes it difficult to identify gaps that could be filled by this new initiative.** An inventory was suggested to identify all the different entities that are working on issues related to salmon and climate. Once we can properly identify exactly what is being done, then we can find the gaps. This could be done through an online survey prior to the scoping workshop to shape the event's discussions.

Participants did identify some current gaps that could be filled by a new, broad-scale initiative, particularly when it comes to communication. A **lack of communication between salmon management (hatchery and harvest) and salmon conservation and recovery** was acknowledged. A further gap occurs between salmon conservation as a whole and other tangentially related groups that are focused on climate change, like agriculture or transportation. Other considerations included:

- Opportunities to coordinate with agriculture, forestry, urban development, and utility districts on new solutions for water use, or opportunities to link with carbon mitigation efforts.
- Possibilities for scientists and managers to more clearly and cohesively communicate to legislators and appropriators, as well as the public, about what actions could benefit salmon.
- In many cases, people know what actions they could take to help but there is no system in place to facilitate this. The bottom line: there are changes to salmon management that need to happen now regardless of climate change.

Within the realm of salmon and climate science, **better data sharing efforts (with good metadata) would allow access to make meaningful comparisons across regions** and could provide a venue for sharing successes and challenges across geographic regions. Participants wondered whether a new initiative could put information all in one place to help with communicating how climate affects salmon across their suite of habitats. This platform could also offer an opportunity to organize and coordinate methodology (e.g., best methods for salmon climate adaptation) and even conduct joint monitoring and assessment efforts across different jurisdictions. If there is not already a comprehensive “state of knowledge” for climate change impacts on Pacific salmon, it was suggested that this could also be prepared ahead of the Fall workshop.

Other specific knowledge gaps identified:

- Systems where salmon are doing well and what can we learn from them.
- Extent of remaining life history diversity and an understanding of how this condition limits or directs our recovery efforts in the context of climate change.
- Approaches to reconciling hatchery impacts on natural population recovery in the face of climate change with the need to make hatcheries resilient to maintain treaty rights, culture, and ecosystem services.
- Hydrogeography in the context of climate change and of salmon recovery.
- A better understanding of what is going on in the ocean to bridge the ocean-freshwater divide in knowledge and management.

Small Group Discussion

Identifying broad themes to address at the Scoping Workshop

Participants were invited to share ideas for key themes that could be addressed at the Scoping Workshop. They worked with facilitators to group these into overall categories to consider as broad themes, which were also categorized by some groups under process groupings:

- Need to know (research)
- Already doing (identifying and communicating existing work)
- Need to do (future actions to take)
- How to do it (collaboration and communication)

These process groupings could be communicated out in the Scoping Workshop outputs:

- Workshop summary report (need to know and already doing)
- Strategic Action Plan (future actions, collaboration and communication)

Participants also considered whether there were topics that could pose challenges to ongoing discussion. One group suggested that a list of topics could be developed where the Scoping

Workshop participants have high, medium, and low alignment (agreement). This could encourage the initiative to prioritize focus in spaces where there is higher alignment and make sure that there is some cohesion on the key initiative themes. A sub-committee or facilitation team could be tasked with examining all the actions and sorting through them and proposing some potential collective priorities where the action is possible for the initiative.

Some themes discussed that could be addressed at the Scoping Workshop are described below. These themes touch on all subjects that fall under salmonid recovery and management, indicating that participants see intersections between climate change and nearly all aspects of the salmon life cycle.

Information Inventory

The need for a better approach to information cataloging and sharing came up in several groups. An initiative could provide an inventory of salmon and climate related work (with an associated map), which could allow participants to:

- Determine the status of various initiatives, avoid duplication, and identify gaps.
- Find potential partners.
- Learn about successful climate adaptation strategies, including indigenous adaptation efforts.
- Create syntheses of climate impacts.

It would be beneficial to create an inventory with a map of relevant existing work and efforts ahead of the Scoping Workshop. This inventory would allow a viewer to sort by project type, such as monitoring. There was also a suggestion to create a process chart for salmon recovery actions (from identifying the problem to fixing the problem) so that the inventory can categorize existing activities along a spectrum that communicates in a common language and that can be included in the map.

There were numerous recommendations for a theme of data sharing and data standardization. Participants across the board made calls for standardization of data collection, data recording and data reporting, mechanisms for data sharing and visualization and data synthesis. However, some participants also thought that data standardization would be an area of low alignment among participants as it is hard to convince everyone to use the same system and it is important to recognize indigenous data sovereignty.

Research Needs

The list of topics that fell under research needs was broad and included everything from hydrology to genetics. Identified needs included:

- Critical survival factors in the North Pacific
- Drivers of marine productivity
- Ocean carrying capacity for juvenile salmon
- Transboundary collaboration and coordination on marine research
- A better understanding of freshwater-ocean connections under climate projections to improve salmon survival (a gravel-to-gravel research approach).
- Climate change impacts on nearshore marine habitat (estuarine compression, sea level rise)
- Improved understanding of the biological community and food web interactions (e.g., forage fish, predation impacts)
- Synergistic interaction of climate change

Life history fundamentals related to resilience and remaining adaptive trait diversity, management of population portfolios under changing ecosystems, and building adaptive capacity - were listed repeatedly as data gaps. Generally, we can benefit from more information on statistical downscaling of climate projection models (e.g., to a single watershed) and linking local projections to climate impacts at all life stages.

Fisheries and Enhancement Management

While some participants listed salmon management (hatcheries and harvest) as a possible theme for the Scoping Workshop, others cautioned that the topics of harvest allocation, open ocean aquaculture, and hatchery production can have very low alignment among participants and may pose a challenge for ongoing discussions. Some participants recommended a research theme around exploring how climate may influence hatchery production (release timing, rearing temperatures) and the scope for hatcheries to improve salmon resilience to climate change.

Recovery Planning

Under the theme of recovery planning, suggested topics included:

- Indicator stocks for regional trends
- Habitat restoration techniques
- Climate adaptation and mitigation efforts
- Integrated rebuilding plans
- Stock prioritization frameworks

The workshop could feature case studies for understanding management successes, failures, future opportunities, and elements of success that are sharable or transferable. Participants recommended looking to indigenous-led approaches to addressing salmon and climate issues.

Within the broader topic of habitat restoration sub-themes emerged:

- Land acquisition
- Economics and cash value of restoration
- Barrier removal (access to cooler headwaters)
- Novel approaches to salmon protection through forest, upland and agricultural practices

The initiative could offer support for addressing known or proposed development challenges (e.g., floodplain development, ground water pumping, exempt wells, green energy development) from a salmon and climate perspective. Specifically, there is concern that the solar farm development could have potentially negative impacts on salmon watersheds.

The theme of hydrology and flows falls under recovery planning, including hydropower interactions, river operations to better capture ecosystem functions, and enhancement of cold-water refuges. The recovery theme can also be an umbrella for topics covering the interactions with climate change and other relevant sectors such as land use, water use and clean energy development.

Collaboration and Communication

Given the objective of the initiative it is unsurprising that numerous topics were proposed under the theme of collaboration and communication. The Scoping Workshop could provide an opportunity to share models for collaboration and climate actions at various scales, as well as build networks, to help participants understand how to optimize collective work. There were discussions about transboundary, trans-jurisdiction, and trans-sector (agriculture, transportation, fisheries, etc.) coordination. However, participants noted that trans-boundary and trans-sector dialogue might be challenging, so it may be beneficial to keep the conversation to a higher level and emphasize that climate change will negatively impact all of them.

Regardless of what science and project themes emerge from the Scoping Workshop, it will be necessary to develop a communication approach to facilitate the coordination. To encourage innovative ideas and new solutions, we should ensure representation from diverse entities, including Tribes and First Nations. The initiative could encourage alternative funding collaborations outside of the federal funding process. It was noted that the issue of how to disperse funds in an equitable way may be a sticking point.

The Scoping Workshop will provide an opportunity to discuss the proposed governance structure of the Salmon and Climate initiative including administration, principles, funding, and priority setting. Discussions at the workshop also will need to acknowledge the policy and bureaucratic barriers that limit our ability to address the challenges facing salmon.

Looking Forward to Phase 2

Initiative Products

There is a of potential for communication tools as the initiative moves forward. Some ideas shared included:

- A regularly produced summary intended for policy makers, sharing the impacts of climate change on different aspects of salmon, broken down by geographic region, which could provide cohesive communication to governments (e.g., the Intergovernmental Panel on Climate Change (IPCC) summary reports).
- Climate adaptation guidebooks for salmon recovery offering local and regional guidance.

Small Group Discussion

Identifying who should be at the Scoping Workshop

During the third session, the brainstorming activity was intended to identify both people and organizations who may be interested in engaging in a salmon and climate initiative (see details under “Suggestions for Scoping Workshop Participants”). Many shared specific names of researchers, managers, or policy experts who would be good to invite to the Scoping Workshop in the Fall. Common categories emerged:

- Funders
- Agencies (biologists and managers)
- Tribal and First Nations entities throughout the range
- Non-governmental organizations and restoration practitioners
- International organizations, advisors, and users
- Fishing industry (indigenous and non-indigenous)
- Related industries, like transportation, agriculture, public utility districts, forestry, land managers, and private hatcheries; but avoid companies looking to benefit by ‘greenwashing’
- Academia and technical experts (climate models, hatcheries, genetics, hydrology, water use, food webs, barriers to migration)
- Youth representatives
- Innovators, big data, and artificial intelligence experts
- Hydroelectric and alternative energy sectors
- Storytellers and communications specialists
- Elected officials

- Salmon lobbyists
- Witnesses to observe the proceedings
- A visionary who inspires action (e.g., Billy Frank Jr.)

Given the broad scope of the initiative, participants acknowledged it will be hard to limit the number of workshop attendees to a reasonable size for a scoping meeting. If the workshop is too large it could end up that too much time is spent on information sharing and not enough time on scoping the initiative. Participants generally concluded that holding a scoping meeting with a group of 90 to 100 people would only work if it was strategically planned so that people who come to the scoping meeting have a reasonable clarity on what they are contributing. Participants suggested we look for invitees who are interdisciplinary, wear many hats, and who are well-connected. Lastly, participants suggested requesting an alternate representative from each organization, which could help with scheduling and capacity.

As a secondary question we asked participants if it would be helpful to have an independent panel attend the scoping meeting that could provide guidance on the initiative from an outside perspective (e.g., composed of experts from outside of the Pacific Coast region, or outside of the salmon recovery field). Some participants suggested that instead, an expert facilitation group could be helpful to provide a well-structured, well-designed, facilitated effort, and offer an outside perspective on the approach. If a panel of experts is used, they suggested the Core Team look toward other groups who have created large-scale conservation or climate initiatives such as the [Yellowstone to Yukon \(Y2Y\) Conservation Initiative](#). The Y2Y Conservation Initiative aims to set the context for regional conservation work by providing the vision for a healthy Yellowstone to Yukon landscape and achieve as a network what no one group could accomplish alone.

Small Group Discussion

Identifying funding, enabling, and coordinating conditions across the landscape

Participants discussed the funding, enabling, and coordinating conditions that would need to be considered when planning for this broader initiative and identified key funders and enablers. They determined that **to effectively coordinate a large-scale initiative the planners should consider:**

- Capacity and bandwidth of participating organizations
- Funding to support people whose organizations cannot otherwise afford to participate
- Motivation and inspiration for participation
- Authorities and coordination
- Meeting accessibility (online/hybrid/offline/in person; synchronously/asynchronously)

To attract participation and funding, it is necessary to offer a clear description of the initiative and what's in it for the audience. This description can identify where there are opportunities for shared work and interest. This information then needs to be communicated appropriately.

Participants recommended that we reach out early and often to the funders, as well as establish a list of potential funding entities. It would also help to have a well-respected cheerleader for the cause. If participants can get buy-in from the top levels of their respective organizations, then involvement in the initiative can be an organizational priority. Ideally, the five states that are supported by the Pacific Coast Salmon Recovery Fund (California, Oregon, Washington, Idaho, and Alaska) can get their governors to sign off on this initiative.

Participants expressed that the initiative will not be able to move forward without significant buy-in from the First Nations in British Columbia and the Tribes in the U.S. We need to discuss the initiative with various entities (e.g., Affiliated Tribes of Northwest Indians) and check with Tribes and First Nations who are already doing a lot of climate adaptation work to make sure we are not duplicating efforts (e.g., coastal Washington Tribes).

Workshop Planning Considerations

Participants strongly recommended creating a 'straw dog' (temporary placeholder) of the objectives and outputs of a Salmon and Climate Initiative to present to participants ahead of the meeting. This gives them something to agree or disagree with, as it will be difficult to generate anything from scratch at the Scoping Workshop. This will need to be grounded in real-world examples. It should offer options for roles that individuals and organizations can play in the Scoping Workshop.

The Scoping Workshop would benefit from effective, professional facilitators who are engaged early to help shape the workshop. The facilitators could assist the workshop organizers in incorporating culturally relevant indigenous protocols, including an indigenous welcome.

In addition to the typical scientific meeting outputs, the organizers should consider incorporating an artist for artistic interpretations of the meeting outcomes. It would be beneficial to film the meeting and use social media to share information about the workshop.

Also, an optional field trip that is culturally relevant to connect participants with the land they are on and/or a fun activity to bring people together could help to establish stronger relationships among participants.

To encourage participation and increase the benefits of the workshop, the meeting should be held in a convenient location with good meeting rooms and food. The schedule should allow for long breaks to facilitate networking and breakout sessions that encourage interaction and participation. If there is a cost to attend, it should be on a sliding scale so that students can afford it, and provide matching funds with eligibility (e.g., honoraria). Lastly, the timing of the

workshop is crucial to avoid busy times when folks have fieldwork or important annual meetings.

Small Group Discussion

Resource needs or potential roadblocks for participation at the organization level

Resources or Conditions for Initiative Participation

Funding was top of mind for some participants when they considered what resources would be needed for their participation in an initiative, particularly for non-governmental organizations, which would require unrestricted funds. Since most funders only support projects with clear outcomes and deliverables these NGOs would need to link their participation to clear deliverables. Alternatively, a large foundation or government grant could support the staff time for NGOs to participate. Specifically, travel support may be needed for academics, and staff from NGOs, Tribes, First Nations, and some agencies.

In contrast, many non-NGO and academic participants said that funding for participation was not an issue, but it was more important to demonstrate that the initiative is a meaningful effort that directly ties to their organizations' mandates.

There needs to be a clear sense of the scope and outcomes of the initiative emerging from the scoping workshop, and clarity on what each organization's role will be. For example, it is unreasonable to expect that each state or jurisdiction would participate in all the actions. Being able to compartmentalize the experimental actions in a way that fits with each region's priorities would be essential.

Related to this need, an outcome of the workshop should be a digestible, public facing vision that details how climate change will impact salmon and what the initiative can do about it.

Listed under potential roadblocks, some participants expressed concerns over how the initiative could address climate deniers (especially decision makers) or the concerned members of the public who are immobilized by the existential crisis of climate change. For governmental agencies (both indigenous and non-indigenous) this "vision document" will be essential to motivate the public to see that actions can be taken, and to get their leadership the support they need to justify participating. More support will come for the initiative if the topic of salmon and climate is kept in the public eye. This deliverable also needs to provide a sense that this initiative will make progress and produce something better than we have now.

Participants spoke of the need to have confidence in the durability or stability of the initiative as a condition for participation. If it is more durable, people will buy into it. Even if there are participants who come and go, having a pre-defined multi-year commitment that is not tied to specific people will establish a resilient network with support capacity. A lack of confidence in

the durability has been a substantial pitfall of other initiatives. The initiative will need a compelling vision to gain people's commitment. In general, expectations and goals need to be clearly communicated to initiative participants. Another aspect of gaining participants' commitment is providing cultural support for the initiative and ensuring that there is an inclusive environment where the multitude of perspectives and work approaches are valued.

Potential Roadblocks

Given the broad geographic and topical scope of this initiative, it is not surprising that participants identified a few potential roadblocks, not the least of which is funding. While funding can be a roadblock, one benefit of this type of initiative is that it can create a strong network where participants can collaboratively incubate ideas and have them ready for when an appropriate grant opportunity arises. For government staff, this platform can be used to identify meaningful, shared priorities to inform their funding requests to the legislature or appropriators.

Staff capacity is stretched thin across all organizations working on salmon recovery and each group is going to do their own math on the costs and benefits of participating. To make it worth their time, the initiative will need to convince them that there are tangible benefits for their organization and their missions relative to salmon. There should be clear alignment of their organization goals with the initiative. The workshop and subsequent activities need to be productive and worthwhile. One suggestion to address this was to provide informative presentations, such as a presentation by an independent climatologist on what will happen throughout the Pacific Coast under different climate scenarios relevant to key factors for salmon. On the other hand, participants also cautioned against making the workshop an information sharing session that doesn't accomplish the goal of setting the stage for an action-focused effort.

Another concern expressed by participants is the need to walk the fine line of having a clear, compelling initial vision while also having the flexibility to shift as needed after the scoping workshop. Participants need to trust that their input can help create the direction of the initiative. We recognize that reaching consensus can be challenging given that salmon recovery is an emotional issue and there are sometimes incompatible ideals between NGOs, academics, industry, indigenous governments, and non-indigenous governments. The workshop facilitators will need to develop this vision in such a way that everyone feels like they are on the same team.

For indigenous groups, there could be an apprehension that non-indigenous governmental entities will see their attendance as "consultation." Also, there is a difference in communication styles with the workshop style often rooted in a Western mindset, which can be off-putting for Tribal and First Nations participants. This could be addressed with the use of expert facilitation

and cultural support. Some considerations include inviting an elder from the region to open the workshop, including witnesses as active observers of the workshop, and holding a field trip to a culturally significant site that is nearby and relevant to salmon and climate. Also, the workshop and future initiative activities can strive to avoid jargon and build a shared understanding to encourage more multidisciplinary knowledge exchanges.

Final Thoughts

At the close of the workshop the hosts asked each participant to provide a brief reflection about what they are taking away from the day's meeting. Some of their comments included:

- The group has a shared sense of crisis.
- Salmon stocks are on the brink of extirpation, and for Tribes and First Nations and others who depend on salmon, this is an existential crisis.
- There is an urgent need to produce better outcomes and engage the entire Pacific Coast salmon community.
- We can't afford a long process.
- The stakes are high, the challenges are great, and we need to come together to reach a meaningful and actionable set of solutions.
- This is an opportunity to start a collaborative process around salmon, which are an important canary for environmental health in our region, and to raise our "collective coastal consciousness."
- The conversations provided them with hope and inspiration around an otherwise daunting, anxiety-inducing topic.
- The proposed initiative is a big, bold effort. It must be bold to match the unprecedented challenge in front of us, but to be successful in the face of dramatic change, we need a level of focus, effort, and coordination we have lacked until now.

The abundance of entities, interests and rights involved in salmon recovery leads to communication disconnects and challenges that may be addressed with this bigger tent approach. The initiative has the potential to bridge the freshwater-marine divide and take a trees-to-seas approach. We also have an opportunity to think of how to bring together traditional knowledge, perspectives and values with western science in a positive productive collaboration. For the initiative to be successful we need to be inclusive and there needs to be a diverse array of voices at the upcoming workshop, including more indigenous representation, youth voices, folks from outside of Washington and British Columbia, and social scientists.

The organizers of this first meeting and the larger effort are deeply grateful for those who took a whole day of their time to join this conversation. Hopefully, this is the start of something important that yields real results for salmon, those who care about them now, and future generations of Pacific Coast residents.

Next Steps

The Core Team proposed to take the information gathered at the planning meeting, summarize it, and share it out (i.e., current report). As recommended by the planning meeting participants, the Core Team will also assemble some straw dog products to present to Scoping Workshop participants ahead of the Fall workshop so that people have something more tangible to provide feedback on. The Scoping Workshop is proposed for late Fall 2023.



Participant List

Name	Affiliation
Adrienne Grimm	Yakama Nation Fisheries
Barry Berejikian	NOAA Northwest Fisheries Science Center
Barry Thom	Pacific States Marine Fisheries Commission
Christina Czembor	Fisheries and Oceans Canada (DFO)
Dave Beauchamp	U.S. Geological Survey
Eliza Ghitis	Northwest Indian Fisheries Commission (SCI Project Advisor)
Erik Neatherlin	Governor's Salmon Recovery Office (Project Core Team)
Evan Henderson	Fisheries and Oceans Canada (DFO)
Fin Donnelly	B.C. Parliamentary Secretary for Watershed Restoration
Isobel Pearsall	Pacific Salmon Foundation
Jacques White*	Long Live the Kings (Project Core Team)
James Kraft	Washington Water Trust
Jason Hwang*	Pacific Salmon Foundation (Project Core Team)
Jeremy Cram	Washington Department of Fish and Wildlife
Jim Seeb	University of Washington
Jim Shinkewski	Pacific Salmon Foundation
JJ Gould	Long Live the Kings (Board President)
John Field	Pacific Salmon Commission
John Powell	Idaho Department of Fish and Game
Julie Raymond	Port Gamble S'Klallam Tribe
Katrina Connors	Pacific Salmon Foundation
Kerry Naish	University of Washington (Project Core Team)
Laura Blackmore	Puget Sound Partnership
Laura Gephart	Columbia River Inter-Tribal Fish Commission
Laura Robinson	Upper Columbia United Tribes
Lee Harber	Fisheries and Oceans Canada (DFO)
Lisa Seeb	University of Washington (Project Core Team)
Liz Duffy*	Long Live the Kings
Mara Zimmerman	Coastal Salmon Partnership
Mark Saunders	North Pacific Anadromous Fish Commission

Mike Edmondson	Idaho Governor’s Office of Species Conservation
Mike Meneer*	Pacific Salmon Foundation (Project Core Team)
Nate Mantua	NOAA Southwest Fisheries Science Center
Nicole Fredrickson	Fraser Salmon Management Council Chinook Recovery and Rebuilding Initiative
Phil Anderson	Pacific Salmon Commission and Pacific Fishery Management Council
Phillip North	The Tulalip Tribes
Sabrina Garcia	Alaska Department of Fish and Game
Sarah Murdoch	Fisheries and Oceans Canada (DFO)
Scott Jenkins*	Long Live the Kings
Shaara Ainsley*	Long Live the Kings (Project Core Team)
Shaun Clements	Oregon Department of Fish and Wildlife
Sonia Hall	Cascadia Partners Forum

*Small group facilitators

Suggestions for Scoping Workshop Participants

During Session 3, planning meeting participants were asked to suggest who to include in the Scoping Workshop. The tables below include the general groups and the organizations that were suggested.

General Groups
Academia (salmon and climate)
Actual politicians across levels
Agriculture and forestry
Alaska private hatcheries
All Tribes and First nations throughout the range
Alternative energy reps
Association of cities or counties
B.C. Government
Climate modelers
Columbia River Tribes
Commercial and recreational fishing reps
Commercial fisheries

Organizations
Aboriginal Aquatic Resource and Oceans Management (AAROM) Program Bodies in BC.
Alaska Department of Fish and Game (e.g., managers and scientists) (X3)
Alaska Marine Conservation Council
American Fisheries Society Senior Rep
BC Parliamentary Secretary for Fisheries
BC Salmon Enhancement and Habitat Advisory Board
Bonneville Power Administration
California Department of Fish and Wildlife (e.g., Anadromous Fish Lead) (X3)
Columbia Basin Collaborative
Columbia River Fish Commission Tribes (Warm Springs, Yakima, Umatilla, Nez Perce)
Colville Tribe
Columbia River Inter-Tribal Fish Commission (X5)

General Groups
Communications professionals
Congressional representatives (Bonamici)
County representatives
Decision makers, state/provincial, federal, Tribes, First Nations
Environmental data scientists and AI
Expertise on barriers to migration/upper watersheds
Federal agencies (regulators and scientists)
Federal level
Feds: include operational, fisheries managers and researchers from DFO and ECCC
Fisher people, non-indigenous fishing community
Fishing industry
Food Web Scientists
Forest management agencies/ministries (USFS, WDNR, ODF, FLNROD)
Former senior managers
Foundations in U.S. and Canada
Funders
Global corporations who would benefit from salmon restoration (e.g., major fish processors as presenter)
Government decisionmakers' advisors (WA Governor's Office, OR, AK, CA)
Groups who can share info about innovative projects/relationships data sources
Hatchery experts
Hydro utilities

Organizations
Department of Ecology
DFO (e.g., Salmon Enhancement Program Staff, National Headquarters and Pacific Region, Regional Directors, State of the Salmon Program) (x6)
Department of Natural Resources
EcoTrust
Environmental Protection Agency
Federal Emergency Management Agency
FMCS Representative
Fraser Salmon Mgmt. Council
Washington Governor's Salmon Recovery Office
Hakai
Idaho Conservation League
Idaho Department of Fish and Game
Island Marine Aquatic Working Group
International Year of the Salmon Staff
Klamath Tribes (Hoopa, Yurok)
LFS
Lower Fraser Fisheries Alliance
North Atlantic Salmon Conservation Organization
Nature Conservancy, etc.
Nature Trust
Nez Perce Tribe

General Groups
Hydrology-focused academics
Independent panel
Indigenous governance organizations
Indigenous leaders in U.S. and Canada
Innovators and funders (big data, venture capitalists, foundations)
International and Japanese scientists
International panel on climate
International fisheries management organizations
Journalists
Kelp working CUP?
Land managers
Land trusts
Lawmaker who could respond to constituent pressure for full initiative (e.g., Sen. Murray)
Legislators (Federal and state)
Local government reps
Media/journalists
Natural resource attorneys to guide legal pathways (presenter)
Natural resource partners (e.g., NRCS, EPA, DEQ)
NGOs: restoration practitioners working at a larger scale
Other kinds of fish people
Other objective entities (ag water management; ag practices)
People from Southern end of historic range
Philanthropic community
Province and state with jurisdictions in water, forestry land use from B.C. and Yukon)

Organizations
National Oceanic and Atmospheric Administration (e.g., Science Centers, Alaska, Northwest Regional Office, West Coast Regional Office) (x8)
North Pacific Research Board
Northwest Power Planning Commission
Northwest Power Conservation Council
North Pacific Anadromous Fish Commission
Nusia (?) Restoration Committee
NWIFC (X5)
Oceana
Oregon Department of Fish and Wildlife
Okanagan Alliance
Oregon Climate Change Research Institute
Oregon Coastal Tribes (Coquille, Siletz, Cow Creek)
Pacific Climate Impacts Consortium
Pacific Marine Conservation Caucus
Pacific Northwest National Laboratory
Pacific Salmon Commission First Nations Caucus (Canadian)
Pacific Streamkeeping Federation
Pacific Fisheries Management Council
Pacific Northwest Aquatic Monitoring Partnership
Pacific Salmon Commission (and Secretariate)
Puget Sound Salmon Recovery Council
Salmon Recovery Funding Board
Sea Change Marine Conservation Society
State of Alaska Salmon and People

General Groups
Provincial and state water managers
Public utility districts
Regulators at state, federal, provincial, territory levels
Salmon geneticists
Salmon lobbyist (X2)
Salmon recovery groups
Science expertise (university, Federal, state)
Social scientists
State global warming commissions
State, Federal, and Provincial management agencies
Storytellers (cross-disciplinary actors) (X2)
Transportation agencies (migration barriers, toxicity, artificial lighting, transportation corridors)
Tribal or First Nations consortia
Indigenous fisheries
Tribal and First Nations governments (x3)
Tribal and First Nations' technical policy and fisheries management staff
U.S. State Fish and Wildlife Reps from AK-CA
Various lead restoration community organizations (E.g., PSF, CSP)
Various watershed groups throughout Alaska
Venture capitalists, foundation funding
Visionary who inspires action (e.g., Billy Frank Jr) (X2)
Visual artists and marketing folks (X2)
Water issues in California ++
Water users and managers from California (e.g., CA Department of Water Resources)

Organizations
Tanana Chiefs Conference Representative (represents tribes in interior AK)
Upper Columbia United Tribes (X2)
UN High Seas Treaty Spokesman
Upper Snake River Tribes Foundation
US Army Corps of Engineers
US Bureau of Reclamation
U.S. Forestry Service Climate Research
USFWS Abernathy Fish Technology Center
U.S. Geological Survey (e.g., Climate Science Centers, Regional Science Centers, Washington Water Science Center) (X3)
Upper Snake River Tribes
University of Washington Climate Impacts Group (X2)
Washington State Recovery Board
Washington Department of Fish and Wildlife
West Coast Aquatic (Canada)
White House Council on Environmental Quality
Wild Salmon Center (x2)
Yakama Nations
Yakima Basin Integrated Plan
Yukon River Drainage Association
Yukon River Panel
Yukon Salmon Sub-committee
Yurok Tribe

General Groups
Witnesses (X2)
Youth (X3)
Yukon (Canada) representatives - indigenous, state and federal

Organizations
