Salmon and Climate Initiative: Scoping Workshop

Summary Report

December 6 and 7, 2023
Cedarbrook Lodge
18525 36th Avenue South, Seattle WA 98188

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ACKNOWLEDGEMENTS

We are grateful for the SCI Scoping Workshop participants and the Workshop Advisory Committee who took time to share their extensive knowledge and experience. The workshop was sponsored by Horizons Foundation of Washington, Alida and Christopher Latham, Long Live the Kings, MJF Foundation, Pacific Salmon Foundation, Puget Sound Partnership, Satterberg Foundation, Squaxin Island Tribe, The Suquamish Tribe, and Washington Sea Grant.

EXECUTIVE SUMMARY

Salmon are crucial to the environmental, cultural, and economic health of Western North America from California to the Arctic. Robust and resilient Pacific salmon populations that support thriving ecosystems, Indigenous rights and cultures, and local economies require effective and ongoing stewardship. However, many salmon fisheries and salmon populations are in crisis. Our communities are working hard toward salmon recovery but need additional assistance to achieve recovery and support salmon resiliency. At the same time, rapid climate change is making our path to success more difficult.

We are at a crossroads. At this point, we haven't acted quickly enough or on a broad enough scale, and we need to change our approach. To address the added challenges of climate change, we need dramatically more funding and a rapid increase in strategic actions. This will require an unprecedented expansion in efforts to catalyze improved outcomes for salmon and the communities who rely on them.

Western North America's population is growing, and our economy is thriving, but this growth and economic activity comes at a cost, with impacts to salmon populations and the ecosystems that support them. This region's combined economic output would qualify it as the third largest economy in the world, but the relative scale of the current level of spending for salmon recovery is wholly inadequate to compensate for development impacts and to improve our trajectory.

We suggest a Salmon and Climate Initiative (SCI) can be a "New Deal" for Pacific salmon in North America by implementing work to restore prosperity to salmon and the people and ecosystems who rely on them. Using climate change as a lens, we have a chance to adopt bold new solutions that break down silos within the natural resource community and put salmon on a real path toward resilience. Stewardship is a responsibility shared by everyone who is part of a salmon landscape, and whose activities affect the environment. Collaboration and investment must go beyond isolated work at the local, state/provincial, or federal level. Salmon cross many jurisdictions and ecosystems, and it is well beyond the scope of any single authority to track and address climate impacts across such a vast geographic area. This initiative is not intended to replace important local watershed- or basin-level climate resilience and restoration work. Instead, it will allow us to articulate a broader vision for salmon in the face of climate change, leverage the on-the-ground, local-level groups that have already identified essential salmon recovery actions, and elevate their work through collective attention and action.

Scoping Workshop

In December 2023, Long Live the Kings (LLTK), the Pacific Salmon Foundation (PSF), and a core group of partners convened 70 traditional and Western knowledge, rights, and stake holders, fisheries managers, and policy experts representing over 52 organizations from western North America to talk about the big picture of what we can and should meaningfully do for salmon. The Scoping Workshop was intended as an opportunity to develop a sense of shared purpose and community, gather pieces to build an initiative, and generate ideas for collaborative actions. There was consensus among the participants that we need an initiative to take an innovative and bold approach, going beyond what has been applied before. Participants expressed a shared concern about the current trajectory of salmon recovery and agreed that we need to come together immediately at a broad scale to identify the problems and support urgent action. We asked participants to think boldly and consider what actions we could take collectively that would change the trajectory of salmon as they face climate change and other pressures.

Participants reviewed a draft vision statement and shared their input on the desired future state for salmon (Appendix I). Participants also provided feedback on themes intended to be categories for brainstorming collaborative actions. We used six themes for the small group discussions on the second day: 1) Life history, diversity, adaptive capacity, 2) Habitat and Water Stewardship, 3) Marine Conditions, 4) Species Interactions, 5) Coordination and 6) Communications. Through a series of small group discussions, participants brainstormed, developed, and refined a broad list of potential collaborative actions under these themes. Examples of potential collaborative actions included watershed-scale restoration strategies that could be relevant across the broad region, building a region-wide database to characterize life history strategies across the range of salmon and identify strategies that are successful and not successful in the current climate, and developing common talking points to further overall messaging around salmon and climate. Effective inclusion of traditional ecological knowledges (TEK) and Indigenous leadership emerged often as an overall action. The resulting list of over 470 actions and ideas across the six themes demonstrates that participants saw considerable potential in working collaboratively to address salmon resilience at this broad, regional scale.

Next Steps

Beyond the workshop, we intend to engage more broadly with prospective partners and decision-makers to continue scoping conversations. Before we start the strategic planning process for the initiative, we will:

- Host listening sessions across the SCI region to identify what is needed in terms of actions, resources, cooperation, and research, and begin

establishing networks and communities of practice to leverage success and knowledge.

- Co-create a "Problem Description" outlining the core challenges faced by salmon under a changing climate to inform the initiative's direction.
- Map the region's enabling conditions (external factors that increase the likelihood of achieving the SCI vision and goals) and authorizing environments (relevant authority structures and policies).
- Use forums and methods that braid together Western science and perspectives with Indigenous knowledges, cultures, and sovereignty, and emphasize a holistic and long-term worldview.
- Build an effective and representative group of champions who seek funding to support the development and implementation of the Salmon and Climate Initiative's strategic plan.

We will channel the momentum generated at the scoping workshop to develop and finalize a strategic plan by the end of 2024, with implementation in 2025. Work in 2025 will focus around developing a five-year Action Plan, with a portfolio of activities and actions that we can begin to implement in fourth quarter 2025.

SALMON AND CLIMATE INITIATIVE BACKGROUND

Long Live the Kings (LLTK) and the Pacific Salmon Foundation (PSF) are working together with partners to develop a Salmon and Climate Initiative (SCI) - a collaborative initiative that includes traditional knowledge holders, scientists, resource managers, rights holders, and policy makers. The SCI will serve as a climate-resilient path toward improving protection and restoration of salmon and support the environmental, cultural, and economic benefits throughout the current and historic geographic range of Pacific salmon in North American watersheds. The SCI will provide a space to collectively examine what is occurring in western North America from California to Alaska, share information and collaborate across boundaries, consider which solutions are working, where more effort and funding are needed to increase salmon resilience, and identify strategies to significantly accelerate action.

In 2022, Long Live the Kings, Salmon Defense, and faculty from the University of Washington first came together to leverage their diverse backgrounds in fisheries science, natural resource policy, evolutionary biology, and Indigenous knowledge and values to plan a Salmon and Climate Workshop. This group formed a Core Team (Table 1), which expanded to include additional perspectives, most notably with Pacific Salmon Foundation of Canada joining the effort. The Core Team hosted a planning meeting in April 2023 that was intended to set the stage for a more intensive Scoping Workshop. At the planning meeting, participants expressed a shared sense of crisis and described an urgent need to engage the entire Pacific salmon community to address the broad-scale climate change problem. While there are numerous disconnected initiatives, it was clear there is nothing currently connecting salmon and climate efforts from the grassroots to the international level, which is a barrier to our collective success. The Core Team used the feedback from the planning session when collaborating with a Workshop Advisory Committee (Table 2) to develop the two-day SCI Scoping Workshop, and to initiate co-creation of the framework for the Salmon and Climate Initiative.

In coordination with the Core Team, LLTK hired Cascadia Consulting Group (CCG) and Kauffman and Associates, Inc. (KAI) in late summer and fall 2023, respectively, as a facilitation team to support development of the Scoping Workshop facilitation approach and draft SCI materials. In developing the workshop, the facilitation team engaged the Core Team and Advisory Committee to co-develop the workshop program and materials. Through the collaborative development, the facilitation team sought to generate support and shared ownership of the draft SCI materials within the Core Team and Advisory Committee, as key partners to advance the SCI in the long term.

The facilitation team engaged with the Core Team and Advisory Committee monthly between August and November. Over the course of the Core Team meetings, the facilitation team and Core Team confirmed the scoping workshop goals and workshop structure and approach, discussed the workshop invitation list, and developed the draft SCI materials to support the workshop, including the draft vision statement, draft SCI goals, and draft SCI themes. During Advisory Committee meetings, the facilitation team, Core Team, and Advisory Committee discussed the purpose of the workshop and its approach and reviewed and discussed the proposed SCI materials to support the workshop.

Table 1. Salmon and Climate Initiative Core Team

Erik Neatherlin	Washington Governor's Salmon Recovery Office
Jacques White	Long Live the Kings
Jason Hwang	Pacific Salmon Foundation
Julie Raymond	Idaho State University and Independent Researcher
Kerry Naish	University of Washington
Lisa Seeb	University of Washington
Nancy Leonard	Pacific States Marine Fisheries Commission
Peggen Frank	Salmon Defense
Shaara Ainsley	Long Live the Kings

Table 2. Scoping Workshop Advisory Committee

Astrid Niemann-Zajac	First Nations Fisheries Council of British Columbia
Cory Lagasse	Fisheries and Oceans Canada
Daniel Schindler	University of Washington
Jared Connoy	University of British Columbia
Jennifer Watkins	Washington Department of Natural Resources
Jeremy Cram	Washington Department of Fish and Wildlife
Katie Howard	Alaska Department of Fish and Game
Laura Robinson	Upper Columbia United Tribes
Mike Crewson	The Tulalip Tribes
Mike Edmondson	Idaho Governor's Office of Species Conservation
Nate Mantua	NOAA Southwest Fisheries Science Center
Rebecca Wardle	B. C. Ministry of Water, Land and Resource Stewardship
Shaun Clements	Oregon Department of Fish and Wildlife

WORKSHOP SUMMARY

The SCI Scoping Workshop occurred on December 6 and December 7, 2023, at the Cedarbrook Lodge (Seattle, WA). Seventy participants attended the two-day workshop, representing over 52 organizations. See Appendix II for the full list of workshop participants and organizations.

The Scoping Workshop aimed to accomplish the following goals:

1. Develop a sense of shared purpose and community.
2. Gather pieces to build a detailed strategy and work plan.
3. Generate ideas for collaborative actions.

Through the workshop summary, we hope to share an overview of the workshop activities and what we heard during the discussions. Please note that this is not a comprehensive document of all input received during the workshop, as there will be further analysis of the workshop input to build out Phase Two of the SCI.

For reference, the draft SCI materials are available in Appendix I.

Workshop Day One

Day One of the Scoping Workshop focused on the first workshop goal of developing a sense of shared purpose and community through the foundation-setting panel discussion and through discussion of the vision statement. The group also worked to achieve the second goal of gathering the pieces of a strategy and work plan through the discussion of the vision statement and proposed SCI themes.

During the morning of Day One, participants heard from Jacques White, Executive Director of Long Live the Kings, about the state of salmon across the region and the purpose of the Salmon and Climate Initiative. To inform the foundation for the SCI, Mike Hudson, Regional Climate Change Coordinator with the U.S. Fish and Wildlife Service, shared about the Resist, Accept, Direct (RAD) Framework for how to respond to ecosystem transformations occurring due to human activities, including climate change.

To continue building on the foundation of understanding for the salmon and climate change across the broader SCI region, the facilitation team welcomed a panel discussion moderated by Debra Lekanoff (KAI), including:

- Cory Lagasse, Recovery Planner with Fisheries and Oceans Canada
- David Troutt, Natural Resources Director with Nisqually Indian Tribe
- Jeremy Cram, Salmon Recovery Policy Lead with Washington State Department of Fish and Wildlife
- Murray Ned, Executive Director with Lower Fraser Fisheries Alliance

- Mike Hudson, Regional Climate Change Coordinator with the U.S. Fish and Wildlife Service

Debra Lekanoff guided the discussion with the five panelists to gain insights on the importance of salmon recovery throughout the region and started to build connections across the varied approaches and experiences of the panel members and the workshop participants. Panelists described the value of salmon as a cultural identity among Indigenous people, and also to non-Indigenous people living in the Pacific Northwest. Recovery of salmon is a necessity and a common interest, and this can unite people. For Tribes and First Nations, there is not a disconnect between salmon and other interests, but for non-Indigenous entities there can be silos among sectors and priorities that complicate holistic management. Additional collaboration and existing partnerships could be leveraged through an initiative to overcome these barriers.

Following a midmorning break, the facilitation team welcomed participants back for a discussion between Debra and Andrew Gobin (Treaty Rights Policy Analyst with the Tulalip Tribes) about bridging Western science and Indigenous perspectives. Debra shared some background information on traditional ecological knowledge (TEK) and noted the important context that the perspectives, experiences, values, and cultures of Canadian First Nations, Alaska Natives, and Tribes are not monolithic. She pointed out that while there are many differences between the perspectives of the often-dominant Western science knowledge and Indigenous knowledge systems, they also share common elements and qualities that are comparable and overlapping (see diagram shared from Barnhardt and Kawagley 2005[1]). Andrew and Debra explored several questions in their discussion, including the ways in which TEK underpins and informs Tribal natural resource department efforts, as well as how Tribal values for sustainable harvest are practiced.

After the discussion of TEK, the facilitation team guided the workshop participants from the foundation building into review and discussion of the draft shared vision statement for the SCI. The facilitation team provided a brief overview of the proposed SCI strategic plan structure and shared the draft SCI vision statement developed by the Core Team and Advisory Committee to help garner input from workshop participants. Workshop participants reviewed the draft vision statement and shared their input on the desired future state for salmon through a Poll EV activity (Appendix III, Figure 2). Participants also shared what resonated with them about the vision through Poll EV (Appendix III, Table 5).

Following the lunch break, the facilitation team led participants through an activity to reflect and discuss with small groups any additions or edits to the vision statement (Appendix III, Table 6). Workshop participants shared key highlights

[1] BARNHARDT, R. and OSCAR KAWAGLEY, A. (2005), Indigenous Knowledge Systems and Alaska Native Ways of Knowing. Anthropology & Education Quarterly, 36: 8-23. https://doi.org/10.1525/aeq.2005.36.1.008

from their small group discussions, identifying over 5 key phrases to remove or wordsmith from the draft vision statement and identifying 7 additions (Table 3). Workshop participants then offered 19 vision statement rewrites through Poll EV (Appendix III, Table 7). This vision statement will be reworked with this input as part of the Strategic Plan development process.

Table 3. Key highlights from workshop participants review and discussion of the draft vision statement.

Original Vision Statement	Phrases to remove or wordsmith	Additions to the vision statement
Foster resilient, diverse, and abundant salmon populations that coexist with thriving human communities across the coast of North America from California to the Arctic.	• Thriving • Co-exist • Coast • Change "Foster" to "Steward" or remove • Change "resilient and diverse" to "healthy and abundant"	• Climate • In perpetuity • As it has been since time immemorial • Achieve • As part of a human and ecosystem mosaic • Across changing systems • Ecosystem or whole system

Following a discussion of the vision statement, the facilitation team introduced the proposed themes for the SCI (see Appendix I. Original Draft Vision, Goals and Themes). The facilitation team, Core Team, and Advisory Committee intended for the themes to serve as discussion topics or "bins" to help inform the various elements that should be included for a successful and holistic approach to advancing salmon recovery in the face of climate change. Workshop participants discussed workshop themes in seven small breakout groups, ultimately aiming to help answer two overarching questions:

(1) What fosters climate resilient salmon populations?
(2) What will foster resilience among human communities who depend on salmon?

Workshop participants discussed several specific discussion questions relating to the themes:

A. Thinking about the goals of the SCI, are these the right themes to be able to generate actions within?
B. Do these themes encompass the challenges that you have observed across the geographic range of the initiative?
C. What's resonating within this theme? What's missing? Any reframes?

Participants shared valuable information and feedback on the themes, offering a wide range of input, noted in Table 4. Across the seven small breakout groups, discussions varied greatly on whether the themes provided enough context to generate actions within (Question A). Workshop participants identified several specific, recommended changes within each theme to better reflect the challenges within salmon recovery and climate change, and to encompass the geographic range that the SCI will represent (Question B). Workshop participants also identified many issues that relate to all themes, noted as crosscutting issues: communication (from a public relations perspective), collaboration and implementation, cultural and spiritual values that guide the SCI, TEK, climate change, disease, stewardship, adaptive management, and conceptual and life cycle modeling.

Table 4. The proposed themes depicted with the suggested changes and potential outcomes identified through discussion among workshop participants.

Draft Theme Text	Suggested Changes	Why?	Potential Outcome
Theme 1: Genetics and Life History Support the life history and genetic diversity of salmon to provide adaptive capacity under rapidly changing environmental conditions.	Change theme title to "life history, diversity and adaptive capacity"; simplify "related topics"; add "evolutionary ability', "population dynamics"; "support" is vague; discuss baseline of "diversity."	Participants expressed interest in either expanding or simplifying "related topics."	Tweaking the definition and "related topics" to be more inclusive.
Theme 2: Habitat and Water Develop strategies to provide salmon access to diverse and healthy watershed conditions that recognize the needs of both salmon and people while advancing sustainable solutions under changing	Change name to "Habitat and Water Stewardship"; change habitat to "habitat processes"; include toxics, sedimentation, light pollution, nearshore structures, water quality and quantity, dams and culverts, Growth Management Plans, shifts due to hydrologic regimes, and adaptive capacity of habitat in the	Depending on the audience, people interpret "habitat" differently and more definition is needed than was provided.	Updating the definition and "related topics" to be more inclusive.

environmental conditions.	related topics; estuaries are under this theme ("White caps of the mountains to the white caps of the ocean"); historic sticky points (regulatory backstops, consultations, the 4 Hs as knobs → shift to "holistic").		
Theme 3: Marine Conditions Understand the effects of changing marine conditions on salmon to promote adaptive actions throughout salmon ecosystems and life history stages.	Marine environment – to capture human effects; include vessel traffic; consider this "high seas."	No major revisions proposed; some inclined to lump with other themes.	No change.
Theme 4: Species Interactions Explore climate and human impacts on aquatic food webs and identify effective strategies to mitigate undesirable changes in species interactions.	Reframe to be role of salmon in broader ecosystem processes (ecosystem services+); clarify this is marine and freshwater; expand to include non-food web interactions with flora and fauna; capture shifts in bycatch of salmon.	Lots of interaction with other themes and a lack of clarity in the scope.	Re-frame theme but retain.

Theme 5: Coordination Establish strategic coordination between the SCI and relevant initiatives and organizations along the Pacific and Bering Sea Coasts and in the North Pacific Ocean.	Change name to "Collaboration and Implementation"; include decision-makers; establish strategic direction; build on what is working, don't reinvent the wheel; build buy-in; identify additional collaborators; include shared science and databases, acknowledge data sovereignty, transboundary coordination; conceptual models to look at theory of change.	Capture broader partnerships to deliver more impact and consider enabling conditions that allow actions to be implemented.	Expand the scope of the theme.
Theme 6: Communication Develop and communicate narratives about the inter-dependence between salmon and humans, as well as the importance of salmon in the survival of other species.	This is public relations; develop messages for different audiences; keep it visual; communicate about stewardship; focus on optimism and achievable goals (solutions); establish value proposition (co-benefits); change "inter-dependence."	Focus on the public relations aspect of communication in this theme.	Re-frame theme but retain.

Following the discussion of the proposed themes, the facilitation team summarized Day One activities and prepared workshop participants for Day Two.

Workshop Day Two

On Day Two of the Scoping Workshop, Pacific Salmon Foundation (PSF) President Mike Meneer and Vice President Jason Hwang welcomed participants and gave opening remarks. The facilitation team provided an overview of Day One activities

and the agenda for Day Two. The facilitation team reviewed the input and feedback received on the proposed themes and answered a few key questions brought forward by workshop participants on Day One:

A. Why did we not review the draft SCI Goal Statements during Day One?
    - The facilitation team, Core Team, and Advisory Committee had to be selective in how to use the brief time with workshop participants and rather than spending the full two days on vision and goals, opted to focus on gathering some potential ideas for collaborative actions for the SCI. The facilitation team welcomed asynchronous input on the workshop goals.

B. Who's missing from the workshop?
    - The facilitation team, Core Team, and Advisory Committee identified a set of recommended attendees for the Scoping Workshop, intended to cover the geographic and topical scope of the SCI. There will be additional opportunities to help scope the SCI, and the Core Team plans to engage with many more people. The facilitation team asked workshop participants to help identify who additional input should be sought from.

C. What happened to the input from Day One?
    - The facilitation team shared a recap of input on the vision statement and the six themes from Day One, and recommended changes to support Day Two discussions. The facilitation team noted that the overview was non-exhaustive and that revisions and changes to the draft SCI materials will be occurring following the workshop during the scoping and strategic planning.

Following the Day One overview, the facilitation team welcomed several presenters to share brief summaries of case studies of collaborative initiatives in the region, in the hopes that the case studies would provide some ideas, lessons learned, and perspectives to help stimulate discussion throughout Day Two.

1. Rene Henery (Trout Unlimited) – Reorienting to Salmon Recovery
2. Mike Edmonson (Idaho Office of Species Conservation) – Columbia Basin Collaborative
3. Peter Westley (University of Alaska, Fairbanks) – Arctic-Yukon-Kuskokwim (AYK) Sustainable Salmon Initiative

Following these highlights, the facilitation team introduced the activity to develop ideas for collaborative actions to help achieve the desired future state for salmon recovery in the face of climate change. Workshop participants self-selected into breakout group discussions by theme (Table 4). Over the course of two and a half hours, workshop participants rotated between themes through five breakout group discussions, which allowed people to discuss up to three different themes. Workshop participants generated over 470 action ideas across the six themes, which varied greatly in scope and scale. Please find the full list of actions shared by workshop participants in Appendix IV.

Theme 1: Life history, diversity, and adaptive capacity (formerly Genetics and Life History)

Within the life history, diversity, and adaptive capacity theme, workshop participants generated over 54 action ideas. The breakout groups discussed several ideas around the portfolio effect, in which a portfolio of more diverse life histories can convey more resilience to the effects of changing conditions and disturbance events, much like a portfolio of stocks. Breakout group participants suggested building a region-wide database to characterize the portfolio effect across the range of salmon. This process could also help to identify life history tactics that are successful and not successful in the current climate and given the available range of habitats. Among other topics, the group discussed testing experimental techniques on a small scale, which could be scaled up – for example, testing different approaches to encourage fish to re-colonize newly opened reaches or to use habitat more fully. There are clear overlaps with the Habitat and Water Stewardship theme, regarding the importance of how the available habitat supports (or limits) the historical and current life history strategies. The breakout groups also discussed the potential for using experimental hatchery programs to push adaptations (e.g., thermal tolerance).

Additionally, the breakout groups discussed the need to look beyond just physical habitat to understand the species interactions. The group noted the need to consider similar thermal and physical environments, where food availability determines usability. For example, Chinook are doing poorly coast-wide even where the habitat is pristine and not impacted. The group discussed the idea of translocation of salmon with life history traits that may be more suitable to the current habitat and conditions (e.g., higher thermal tolerance).

Theme 2: Habitat and Water Stewardship

Within the habitat and water stewardship theme, workshop participants brainstormed over 144 action ideas. Overall, the breakout groups that cycled through established five main categories of actions within habitat and water stewardship that should be considered under SCI: 1) water, 2) regulatory/policy, 3) built environment, 4) data and coordination, and 5) habitat. Of the actions discussed, the two that were focused on and improved were cultivating watershed-scale restoration strategies that could stretch across the geographic boundary of SCI and protecting salmon habitat through stream flow management. Other water quantity and habitat actions that stretched from the mountains to the sound accounted for the bulk of actions. However, breakout group participants offered many regulatory/policy ideas and built environmental actions that were too specific to apply to the whole geography of SCI and/or were clearly topics around which there was not alignment of views among participants.

Theme 3: Marine Conditions

Within the marine conditions theme, workshop participants brainstormed over 62 action ideas. Overall, the actions identified during this session revolved around

further data collection and research, as well as utilizing existing frameworks and infrastructure as data collection platforms. This included a conversation about investigating the potential impacts of offshore wind energy on salmon and the value of related monitoring. Another aspect that arose in this group conversation was a need for better storytelling, communications, and coordination on the importance of the marine environment to salmon survival, which ties in with the communications theme.

Theme 4: Species Interactions

Within the species interactions theme, workshop participants brainstormed over 70 action ideas. The species interactions breakout groups shared many questions and ideas for research questions. Within the species interactions theme, breakout group participants identified the need to better understand phenological changes with a changing climate, trophic interactions, and bycatch changes with salmon and other forage fish species. Mapping or modeling predicted changes in species distribution and the potential of an ecosystem (i.e., potential for providing high species richness or healthy food web interactions, etc.) came up in discussion multiple times, as well as information related to carrying capacity. Breakout group participants discussed increasing stock assessment programs to adjust to a changing climate, pinniped management, as well as issues with pink salmon management. Breakout group participants agreed on the need for a combined open-data platform for data on bycatch, biological monitoring, hatchery releases, and adult returns, that is accessible to everyone and in the same format to act as a one-stop-shop throughout the region.

Participants agreed on conducting research and implementing projects with species interactions and climate change in mind and establishing a collaborative data sharing platform or expanding upon current data sharing platforms. However, one participant disagreed about the role of monitoring programs, such as juvenile and forage fish monitoring programs, across the SCI region. The breakout groups also agreed on investigating marine carrying capacity, but they acknowledged that defining the carrying capacity limits to make recommendations on salmon management spans complicated and numerous jurisdictions and would need to consider the authorizing environments (i.e., the different authority structures and policies). Breakout group participants discussed the difficulty in managing invasive species across geographic boundaries and range due to the different parties and regulations.

Theme 5: Coordination

Within the coordination theme, workshop participants brainstormed over 71 action ideas. The coordination breakout groups discussed the need to include and center Indigenous perspectives and include Canadian First Nations, Alaska Natives and Tribes at every step of the process. As more ideas and suggestions were added, the breakout group began to organize ideas into overarching categories such as Process, Principles/Pillars, Governance/Structure, Information Sharing, Actors/Agents of Change, Joint Advocacy, and more. The lines between these

action categories were not clearly defined and many of the suggestions fit into more than one category. Overall, coordination breakout group participants emphasized establishing a structure and framework that could help guide individual members and partners moving forward, while still creating space for input from both large and small contributors. Coordination breakout group participants agreed that focusing on climate change and on shared interests would be useful in generating support for the SCI. Breakout group participants emphasized the importance of Indigenous leadership and standardized information sharing.

Based on breakout group contributions, the facilitators summarized the disparate ideas into nine final categories: Funding, Information Sharing, Joint Advocacy, Partners, Principles/Pillars, Relationship Building, Shared Vision, and Structure. After all attendees voted on the most important actions, it became clear that the "Coordination" topic had received far more attention than most (or possibly all) other topics. The group theorized that this was because "Coordination" could be considered an "umbrella" topic that would help guide the structure of the entire SCI. Within the topic of Coordination, the inclusion of traditional ecological knowledges (TEK) and Indigenous leadership emerged as a popular and unanimous action, including forming partnerships with under-represented groups, and using the resources of the collective to help these partners access additional sources of funding. In addition, group members emphasized that having standardized and easily accessible data from across the coalition would be very helpful, especially when it comes to identifying needs and gaps in the data.

Theme 6: Communications

Within the communications theme, workshop participants brainstormed over 70 action ideas. The communications breakout groups discussed social science as an avenue to understand our audiences and what they care about so the initiative can be more productive in our communications with them. They also considered how the SCI could use techniques such as surveys and data to better understand and communicate with intended audiences. Social science might also help inform a feedback mechanism so we can understand how audiences receive messaging. The breakout groups discussed the need to define our audience and to align with our Canadian First Nations, Alaska Native, and Tribal partners when it comes to the messaging. The communications breakout groups also brainstormed different groups of people we could engage with to help with messaging and storytelling to support the SCI. The groups included: seafood producers, hatcheries, and fishing and land-owning communities. Breakout group participants discussed the need to develop common talking points and statistics that all involved can use to further overall messaging. Breakout group participants agreed that an important part of communication is listening to each other as well as to outside voices so we can build trust, especially with those who may disagree.

Following the breakout group discussions to develop and refine collaborative actions, the facilitation team led workshop participants through an informal dot

ranking exercise to begin to identify actions that workshop participants supported, or thought might have wide applicability or impact across the SCI geography, and which action ideas necessitate more discussion or that workshop participants had concerns about. The dot ranking exercise did not include all the actions generated during brainstorming due to time constraints in synthesizing the materials, and some actions were consolidated by the facilitation team. This led some participants to express concern that the dot ranking exercise results were not reflective of the full perspective of workshop participants. The facilitation team noted that the exercise was only intended to identify actions to focus on for the next discussion.

After the informal ranking, the facilitation team guided workshop participants into breakout groups to discuss additional implementation context for the actions that rose to the top of the dot ranking as most supported. The facilitation team asked participants to consider:

1. Is there anything we need to know to implement this action?
2. Where should we seek support to advance the action?
3. What additional perspectives do we need to seek out on this action? (i.e., who is not here to provide their perspective)
4. What enabling conditions are necessary to implement this action?

Workshop participants reconvened as a full group after the breakout groups, and the facilitation team introduced Shaara Ainsley, Senior Project Manager with Long Live the Kings, to share the vision for building the SCI strategy and a coalition to advance it. Shaara shared an overview of the proposed phased approach to develop the SCI strategic plan, as well as the timeline for Phase One of the SCI process, culminating in the workshop summary report and SCI strategic plan. Shaara shared the example of the Salish Sea Marine Survival Project as a possible model for coalition building and collaboration on a boundary spanning issue. Shaara and the facilitation team discussed with workshop participants how they would like to contribute to the next steps for the SCI, and asked workshop participants to share any comparable examples of collaborative approaches that the SCI could learn from.

To close Day Two of the workshop, the facilitation team reviewed the topics discussed during the workshop, and asked workshop participants to share their one-word reflections from the workshop, resulting in a word cloud of responses (Appendix III, Figure 3). Jacques White offered workshop participants closing remarks, and the workshop adjourned.

NEXT STEPS

Since the Scoping Workshop the Core Team has evolved our thinking of the scope of the Salmon and Climate Initiative and developed this statement around our perspective of the opportunity and solution:

A future in which resilient salmon can flourish and salmon populations can support harvest and cultural traditions in the face of climate change depends on forward-looking management, innovative science, dramatically increased funding, and significantly greater collaboration and information sharing across their geographic range in North America. This will require an unprecedented expansion of coordination and effort to catalyze improved outcomes for salmon and the benefits to salmon-reliant communities.

We are calling for the creation of a 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, collaborate, and solve shared challenges. There is an urgent need to increase public support for implementing resilience measures and facilitate the exchange of solutions, new technologies, and best practices across Western North America.

Our work will focus on securing the long-term resilience of these border-defying keystone species in the face of climate change. To achieve this, we propose launching a decades-long Salmon and Climate Initiative to coordinate and activate solutions to cross-cutting climate impacts for Pacific salmon across their home range from California to Alaska. Together, leaders from Tribal, First Nations, local, state/provincial, and federal governments, academia, NGOs, and the fishing industry will identify, prioritize, fund, and implement actionable solutions for salmon in Western North America.

Additional Scoping

The Core Team acknowledges that because of the limitations of hosting a productive workshop with small group discussions, we were unable to engage the full spectrum of traditional and Western science knowledge holders, salmon managers, and policy advisors. However, the group intends to engage more broadly with prospective partners and decision-makers to continue scoping conversations. The first step will be to develop an outreach plan for this engagement informed by workshop results to gather additional perspectives ahead of the Strategic Planning effort. This will include targeted meetings with leadership-level people in the authorizing environment who can describe their

needs and limitations and provide context for the enabling conditions. Their support will be crucial to successfully accomplishing the Strategic Plan. The outreach plan will also include a process for sub-regional scoping conversations (state, provincial or major basin or ecosystem level, i.e., the Central Valley of California or Fraser River basin), to make it easier for people to contribute ideas and feedback. The Core Team can ask: 1) What is working for you in salmon recovery? 2) What are your needs and limitations and how does climate change affect these? and 3) What support are you looking for on a regional scale? The Core Team will synthesize information from both scoping approaches to inform the Strategic Plan.

Defining the Problem

Based on feedback from participants we will co-create a "Problem Description" that defines the key challenges in the water and on the land that salmon are facing due to climate change. Some participants said that a clear, agreed upon problem description was necessary to inform the planning process. There was also some dissatisfaction with the draft themes, and participants suggested using a problem description to shape the themes. The objective of this exercise will be to identify root causes of climate impacts on salmon and understand which of these have potentially actionable solutions. The problem description may include: the current state, desired state, geographic scope of issues, timeframe of issues, and how issues are affecting the whole system (salmon, humans, etc.). Since people often perceive problems differently and the issues likely vary by geography, this will be an opportunity to reveal diverse viewpoints and encourage interested participants to come to a shared position. This can serve as the basis for refining the draft themes that were presented at the workshop and potentially for converting these to strategies for the foundation of the Strategic Plan. To create this project description, the Core Team may host a one-day online workshop with technical and traditional ecological knowledge holders and gather information from other observers and impacted people.

Mapping the Initiative Environment

Another step that will inform the Strategic Plan will be an effort to map the presence (or absence) of enabling conditions and authorizing environments around salmon recovery. In this case, enabling conditions are the factors external to the initiative that increase the likelihood of achieving the SCI vision and goals. Authorizing environments are the different authority structures and policies that allow for achieving the vision and goals. Identifying these conditions and environments will allow the Core Team to understand opportunities to elevate effective processes and recognize potential challenges before launching into strategic planning.

Bridging Perspectives

The Core Team will seek additional support to co-create a Strategic Plan that centers Indigenous knowledge, culture, and sovereignty, and emphasizes a holistic worldview. There was a strong, positive response from workshop participants to the conversation about bridging TEK and Western science perspectives. During subsequent breakout conversations participants offered ideas on how to incorporate TEK into the initiative. There were suggestions to hold it as its own pillar within the initiative or to infuse it into each aspect. Ahead of the strategic planning effort, the Core Team will seek guidance from knowledge holders (academic experts on TEK, Indigenous knowledge holders, and TEK users) about how to implement best practices and safeguards around TEK into this initiative.

Communication

The Core Team heard from numerous participants that this workshop provided an opportunity to interact with new people who are outside of their typical silos, opening new lines of communication. The team will seek opportunities to continue this type of trans-disciplinary engagement as we work on the months-long process of strategic planning. Many people remarked on the positive energy and convening power of the workshop. We will strive to build on that momentum.

Fundraising

Lastly, the Core Team will refine our fundraising strategy and build an effective group of initiative champions to approach funders and seek funding to support the development and implementation of the strategic plan. Our goal is to seek support for operations of the initiative from sources that are outside of the usual salmon recovery funding circles to grow resources and avoid competition for funding. We aim to leverage the power of the group to maintain and increase funding levels to do truly significant things for salmon.

Strategic Planning

Once the pre-planning information is gathered, the Core Team will begin the Strategic Plan development. This plan will provide the framework for implementation of the Salmon and Climate Initiative starting in 2025. The Strategic Plan will likely include these elements:

- Vision statement
- Problem description
- Goals, strategies, and desired outcomes
- Organizational structure (resource needs and roles)
- Operating (non-project) budget and schedule
- Communications strategy

We will aim to have the Strategic Plan completed by the end of 2024, and we will kick off the initiative in 2025. The initial work in 2025 will be focused around developing an Action Plan for 2026-2030, with a portfolio of activities and actions that we can begin to implement in fourth quarter 2025 or first quarter 2026.

APPENDICES

Appendix I. Original Draft Vision, Goals and Themes

Draft of SCI Vision Statement

This draft vision statement will serve as the overarching, broadly compelling, desired future state for the Salmon and Climate Initiative:

Foster resilient, diverse, and abundant salmon populations that coexist with thriving human communities across the coast of North America from California to the Arctic.

Draft of SCI Goal Statements

This draft of the SCI goal statements will offer an ambitious commitment to address the resilience of salmon in the face of climate change.

The Pacific Coast Salmon and Climate Initiative will:

1. Explore approaches and solutions to salmon recovery in the face of climate change from California to Alaska.
2. Evaluate the state of knowledge, share information, and collaborate across boundaries.
3. Consider which current salmon recovery approaches are effective, and where more effort and funding are needed to recognize and build support for local actions.
4. Inform priorities, expedite actions, and identify research needs to increase resilience to climate change for salmon and the communities who rely on them.

In achieving our goals, we will create a highly collaborative environment aimed at sharing data, knowledge, and strategies across jurisdictional boundaries along the Northeast Pacific and Bering Sea.

Draft of SCI Scoping Workshop Discussion Themes

These themes will inform the 'ingredients' we must consider for a successful, holistic recipe for resilient salmon-oriented communities on a coastwide scale. We

will utilize these themes to focus our discussions during the workshop and to help guide the development of our future actions. Ideally, proposed actions will fall under the umbrella of a theme. These discussion themes will help us answer the

following overarching questions:

1. What fosters climate resilient salmon populations?
2. What will foster resilience among human communities who depend on salmon?

THEME 1: GENETICS AND LIFE HISTORY

Support the life history and genetic diversity of salmon to provide adaptive capacity under rapidly changing environmental conditions.

Note: This includes the adaptive capacity of both hatchery and wild populations.

Related topics: Portfolios of salmon populations, salmon population diversity, life history diversity, genomic diversity, population size, metapopulation connectivity, straying and migration, and gene flow

THEME 2: HABITAT AND WATER

Develop strategies to provide salmon access to diverse and healthy watershed conditions that recognize the needs of both salmon and people while advancing sustainable solutions under changing environmental conditions.

Note: This describes a 'trees to seas' approach (inland and nearshore conditions), which includes freshwater quality and quantity.

Related topics: Barriers to migration, connectivity, physical habitat, river flows and temperature, and watershed condition

THEME 3: MARINE CONDITIONS

Understand the effects of changing marine conditions on salmon to promote adaptive actions throughout salmon ecosystems and life history stages.

Note: Includes marine systems from the river mouths to the high seas.

Related topics: Early marine survival, integrating marine impacts, and carrying capacity

THEME 4: SPECIES INTERACTIONS

Explore climate and human impacts on aquatic food-webs and identify effective strategies to mitigate undesirable changes in species interactions.

Related topics: Freshwater and marine species interactions (prey, competitors, predators), early marine survival

THEME 5: COORDINATION

Establish strategic coordination between the SCI and relevant initiatives and organizations along the Pacific and Bering Sea Coasts and in the North Pacific Ocean.

Related topics: Climate and conditions modeling, data management, communications, and funding mechanisms

THEME 6: COMMUNICATION

Develop and communicate narratives about the interdependence between salmon and humans, as well as the importance of salmon in the survival of other species.

Note: In terms of human interdependence this includes social, cultural, spiritual, and economic well-being.

Related topics: Communications

Appendix II. Final Attendee List

Salmon and Climate Initiative Scoping Workshop – Final Attendee List

December 6 and 7, 2023 at Cedarbrook Lodge, Seatle, WA

Attendee Names and Affiliations

Full Name	Affiliation
Aaron Jones	The Tulalip Tribes of Washington
Abbie Abramovich	Idaho Conservation League
Adrian Spidle	Northwest Indian Fisheries Commission
Amy Grondin	Duna Fisheries
Andrew Gobin	The Tulalip Tribes
Barry Berejikian	NOAA Fisheries, NWFSC
Barry Thom	Pacific States Marine Fisheries Commission
Billy Joe Kieffer	Spokane Tribe of Indians
Brenda Campbell	The Pew Charitable Trusts
Brent Nichols	Spokane Tribe of Indians
Brian Wells	NOAA, SWFSC
Cory Lagasse	Fisheries and Oceans Canada
Daniel Schindler	University of Washington
Dave Beauchamp	U.S. Geological Survey, Western Fisheries Research Center
David Troutt	Nisqually Indian Tribe/Puget Sound Salmon Recovery Council
Edward George Neal	Alaska Hydroscience

Elaine Harvey	Columbia River Inter-Tribal Fish Commission
Elaine Placido	Lower Columbia Estuary Partnership
Eliza Ghitis	Northwest Indian Fisheries Commission
Elizabeth BJ MacDonald	Yukon First Nation Salmon Stewardship Alliance/Council of Yukon First Nations
Emily Howe	The Nature Conservancy
Erik Neatherlin	Washington Governor's Salmon Recovery Office
Femke Freiberg	National Fish & Wildlife Foundation
Harriet Morgan	Washington Department of Fish and Wildlife
Isobel Pearsall	Pacific Salmon Foundation
Jacques White	Long Live the Kings
James Kraft	Washington Water Trust
Jared Connoy	University of British Columbia, Centre for Indigenous Fisheries
Jason Hwang	Pacific Salmon Foundation
Jeff Farvour	Alaska Longline Fishermen's Association
Jen Watkins	Washington Department of Natural Resources
Jeremy Cram	Washington Department of Fish and Wildlife
Jim Seeb	University of Washington
Joel Kawahara	Coastal Trollers Association
John Field	Pacific Salmon Commission
Jonathan Hart	Wild Salmon Center
Joseph Y Oatman	Nez Perce Tribe Fisheries Department
Julie Raymond	Port Gamble S'Klallam Tribe & Independent Researcher
Kerry Naish	University of Washington
Kristy D Clement	Alaska Fisheries Development Foundation
Laura Robinson	Upper Columbia United Tribes
Laurie Weitkamp	NOAA Fisheries, NWFSC
Lisa Chang	U.S. Environmental Protection Agency
Lisa Crozier	NOAA Fisheries, NWFSC
Lisa Seeb	University of Washington
Lukas DeFilippo	NOAA Fisheries, Alaska Fisheries Science Center
Mara Zimmerman	Coast Salmon Partnership & Foundation
Marc Porter	Pacific Salmon Foundation
Marcel Shepert	Fraser Salmon Management Council
Mark Saunders	Basin Scale Events to Coastal Impacts (BECI)
Megan Kernan	Washington Department of Fish and Wildlife
Melissa Speeg	Puget Sound Partnership

Michael Crewson	The Tulalip Tribes
Michael Devany	Long Live the Kings - Board Member
Michael Hudson	U.S. Fish and Wildlife Service
Michael Meneer	Pacific Salmon Foundation
Mike Edmondson	Idaho Governor's Office of Species Conservation
Murray Ned	Lower Fraser Fisheries Alliance
Nancy Leonard	Pacific States Marine Fisheries Commission
Nicholas Bond	University of Washington
Patty O'Toole	Northwest Power and Conservation Council
Peggen Frank	Salmon Defense
Peter Dygert	Retired - NOAA/US Rep on Southern Fund
Peter Westley	University of Alaska Fairbanks
Rebecca Wardle	BC Ministry of Water Land and Resource Stewardship
Rene Henery	Trout Unlimited
Robert Sanderson	Tlingit & Haida Indian Tribes of Alaska
Shawn Narum	Columbia River Inter-Tribal Fish Commission
Tim Copeland	Idaho Department of Fish & Game
Wes Larson	NOAA Fisheries, Alaska Fisheries Science Center

Facilitation Team and Supporting Staff:

Desiree Taylor	Long Live the Kings
Jayde Essex	Long Live the Kings
Joy Lee	Long Live the Kings
Keith Estes	Long Live the Kings
Lisa Terry	Long Live the Kings
Liz Duffy	Long Live the Kings
Lucas Hall	Long Live the Kings
Lynn Baker	Long Live the Kings
Scott Jenkins	Long Live the Kings
Shaara Ainsley	Long Live the Kings
Trevor Laugen	Long Live the Kings
Debra Lekanoff	Kauffman & Associates, Inc.
Alexandra Doty	Cascadia Consulting Group
Gretchen Muller	Cascadia Consulting Group
Jay Carhart	Cascadia Consulting Group
Rachel Fricke	Cascadia Consulting Group

Organizations Represented:

Organizations Represented
Alaska Fisheries Development Foundation
Alaska Hydroscience
Alaska Longline Fishermen's Association
Basin Scale Events to Coastal Impacts (BECI)
BC Ministry of Water Land and Resource Stewardship
Coast Salmon Partnership & Foundation
Coastal Trollers Association
Columbia River Inter-Tribal Fish Commission
Duna Fisheries
Fisheries and Oceans Canada
Fraser Salmon Management Council
Idaho Conservation League
Idaho Department of Fish & Game
Idaho Governor's Office of Species Conservation
Long Live the Kings
Lower Columbia Estuary Partnership
Lower Fraser Fisheries Alliance
National Fish & Wildlife Foundation
Nez Perce Tribe Fisheries Department
Nisqually Indian Tribe/Puget Sound Salmon Recovery Council
NOAA Fisheries, Alaska Fisheries Science Center
NOAA Fisheries, NWFSC
NOAA, SWFSC
Northwest Indian Fisheries Commission
Northwest Power and Conservation Council
Pacific Salmon Commission
Pacific Salmon Foundation
Pacific States Marine Fisheries Commission
Port Gamble S'Klallam Tribe
Puget Sound Partnership
Salmon Defense
Spokane Tribe of Indians
The Nature Conservancy
The Pew Charitable Trusts
The Tulalip Tribes

Tlingit & Haida Indian Tribes of Alaska
Trout Unlimited
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Geological Survey, Western Fisheries Research Center
University of Alaska Fairbanks
University of British Columbia, Centre for Indigenous Fisheries
University of Washington
Upper Columbia United Tribes
Washington Department of Fish and Wildlife
Washington Department of Natural Resources
Washington Governor's Salmon Recovery Office
Washington Water Trust
Wild Salmon Center
Yukon First Nation Salmon Stewardship Alliance/Council of Yukon First Nations

Appendix III. Poll Responses

During the two-day Scoping Workshop, the facilitation team asked a series of questions through a program called Poll EV, that enabled participants to provide their input electronically and anonymously through their phones.

Figure 1. A word cloud depicting the icebreaker responses shared by workshop participants on Day One of the workshop. The prompt was: in one word, please share your favorite thing about salmon.

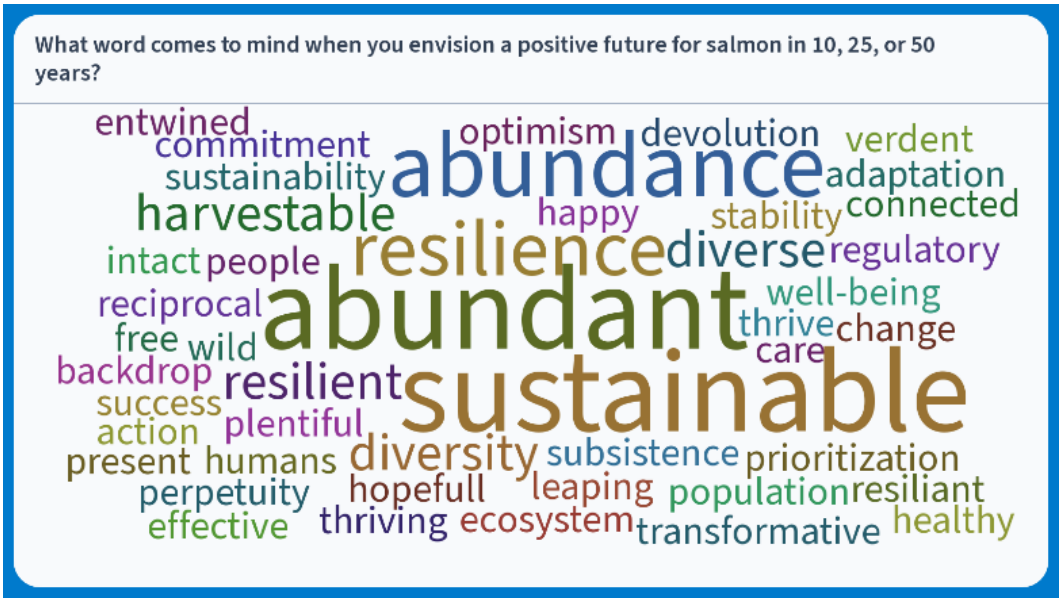

Figure 2. A word cloud showing the responses shared by participants during the discussion of the draft vision statement. The prompt was: What word comes to mind when you envision a positive future for salmon in 10, 25, or 50 years?

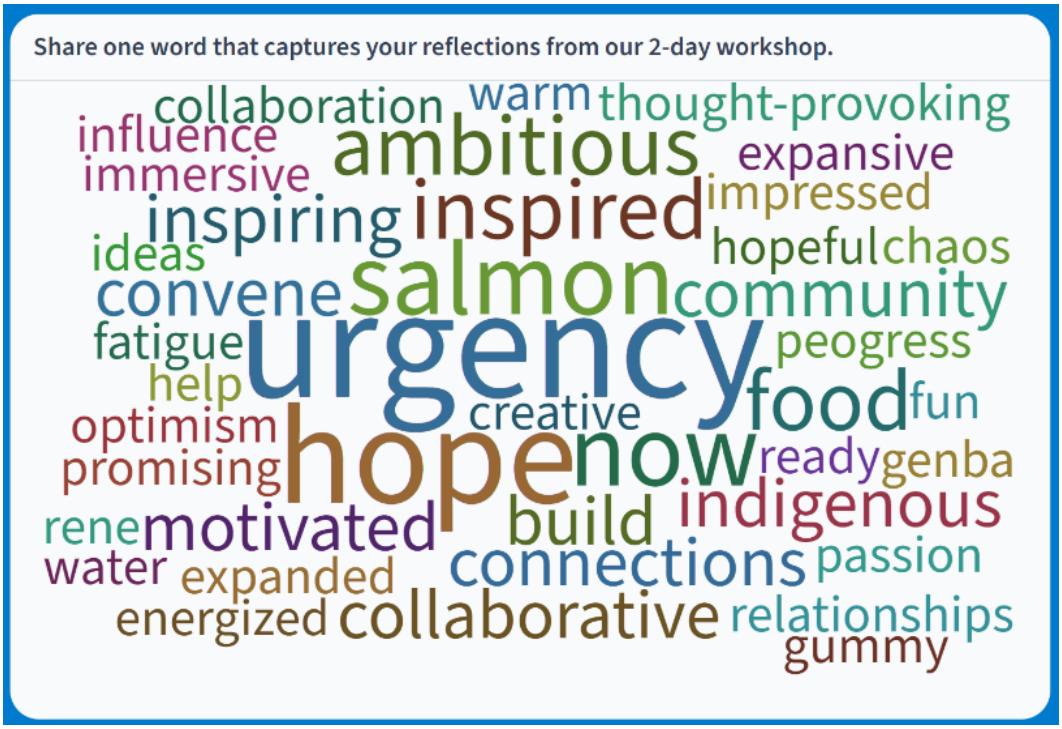

Figure 3. A word cloud showing the responses to the prompt asked at the end of Day Two: Share one word that captures your reflections from our two-day workshop.

Table 5. Poll EV results to the question: What resonates with you about the vision statement?

What resonates with you about the vision statement?	
Resilient, diverse, and abundant are good choices	Emphasis on resilient and diverse, and abundant salmon populations.
Optimistic. What is thriving human communities? Is it possible across the coast vs. strongholds to maintain what strengths exist	Large spatial scale
Does not include the interior regions. Columbia River Basin	Coexist with humans
I like the balance of foster the resource and the people.	Clear
Coexisting is a good word to have as part of it	Coexist
I agree with the descriptions used in this statement: resiliency, diversity, and abundance	Resilience and coexistence
It is positive and inclusive	Resilience
Good vision but it needs to consider "ecosystem" in the vision. It is not just for	Landscape scale

What resonates with you about the vision statement?	
salmon and people but also for the ecosystem (bears, plants, etc.).	
It is positive, hopeful, and the right kind of target.	The dual focus on resilient populations and human communities that depend on them.
The focus on both salmon and human communities and how they are co-dependent.	Abundant salmon populations with vibrant communities
Shared Earth worldview.	Good geographic scope, could say "healthy and abundant" to make it simpler.
Highlights the need to still have thriving human communities.	Coexisting with thriving communities. You can't have one without the other. There must be balance.
Reliance as the first key attribute, relates to longer term persistence.	It includes the human element.
Abundance	That thriving human communities are part of the vision.
Adaptability	Thriving human communities =+
It's geographic scope that speaks to abundance of fish.	Resiliency across the pacific rim is key.
Coexist should mean that salmon are fully integrated in our daily lives and where we live. No more segregation between salmon and us.	Coexistence with humans
Abundant salmon populations	Salmon populations
Resilient, diverse, and abundant salmon populations. Glad this comes first and includes all three aspects.	I appreciate that the human element is part of this vision.
"Coexisting with thriving human populations"	Like that biological diversity is reflected.
Full geographic range	To narrowly focused
Connections between salmon and humans	Abundance and diversity are connected
Like how broad the scope and geographic area is. Really appreciate the "thriving human communities."	Resilience and diversity are recognized
Resilient coexistence	Tight statement
Reflects more than just abundance of salmon	Reference to abundance
It is short, honest, and comprehensive.	Broad, relatively comprehensive, geographic explicit

What resonates with you about the vision statement?	
Diverse. I think maintaining diversity is key to promoting resilience and stability.	That it includes both salmon and people
Inclusive and optimistic, it provides a broad vision that all groups can support.	Thriving salmon and people
Coexist	Broad
Prioritizing diversity and resiliency of wild salmon populations	Geographic scope
Captures both plentiful salmon and thriving communities, looking holistically.	People-centered
Optimistic and assumes responsibility of input to foster	Balance
Educate our youth	Inclusive
Resilient	

Table 6. Poll EV responses to the question: What's missing from the vision statement?

What's missing from the vision statement?
If it is a leading statement for an elevator speech, why is this initiative different? We don't say why this needs funding when there are so many things going on
Add climate, remove thriving people, implies non-indigenous population growth which is incompatible with valuing salmon), expand coast, California to Arctic sounds absurdly over ambitious
Remove the word coast; add something about reciprocity as opposed to coexist; get rid of "foster"; add perpetuity and time immemorial so that future timeline and past efforts are acknowledged.
Connection between salmon and the economies they sustain, and as essential food source.
Remove 'coexist," add "part of a productive ecosystem", add "climate change"
Add "ecosystem" in place of "thriving human communities"
Shorten. Do not define geographical boundaries.
Needs a more ecosystem-wide perspective (other animals other than humans also depend on salmon to thrive). Better word to replace "coexist."
Remove "thriving human communities."
Be wary of "Arctic" as straying of salmon there is a trigger for native char communities.
Include "ecosystem," "coast" is too restrictive geographically,
Climate change, climate impacts. Broad habitat to support whole lifecycle of salmon populations.
Needs to be truly new; currently very similar to other initiatives that clearly have not obtained their lofty goals.

What's missing from the vision statement?
More of a Life Cycle Approach should be considered. What happens in FE links directly to success in a highly variable ocean.
Make it a vision for the environmental outcome, not a vision for the initiative, which is how it is currently written.
Ecosystems, FN/Tribal acknowledgement, climate change, and salmon section has to take up equal space as the human part of the sentence (including human boundaries), need drop "coast"
Add "harvestable" abundance; add something like "mutually supporting" rather than "coexisting"; "the coast of North America" phrase could be deleted with no loss of content.
Climate. Change "foster" and "coexist" to center on salmon instead of humans. Add ecosystems into the mix.
Key wordsmithing elements as discussed in the previous session.
A paradigm shift is needed across all systems (human, social, technological, institutional, and ecological) in order to achieve this vision.
Remove word "foster" and remove "exist"- exist does not reflect anything except being in the same place at same time.
In the face of climate change
Recognition of the challenges of climate change and the paradigm shift required to address these challenges.
Reference to climate change. Broader than coastal. More than just "foster."
Climate
Balance between the salmon initiative and community (human) initiative.
Define "thriving."
Needs a climate lens; "foster" is not an action-oriented verb; needs to acknowledge that salmon populations in the future will look different than they have historically; how are we defining "thrive," kind of a status quo statement
Interwoven relationship
Reference to inland and ocean conditions— move beyond coast. Perhaps use "watersheds."
Include climate change. Needs to be more action-oriented.
All historic ranges of pacific salmon. There is no mention of interior regions of historical salmon utilization.
Action and inspirational
Salmon health
Coexist is problematic: reflect a harmonious relationship, mutual benefit…
More emphasis on relationship between human communities and salmon populations, ecosystems.
Inclusion of inland geographic coverage. Focus on changing climate.
We need to communicate that salmon habitat is more than just the coast, include rivers, headwaters, etc.
Simplify

What's missing from the vision statement?
What's missing is the embrace that humans need to steward the responsibility to help salmon communities thrive meaningfully
Climate change and larger geographic scope
Ocean component
Time component - e.g., "In perpetuity"
Include a watershed/ecosystem-wide approach
Suggest: Coastal and inland areas from California to Alaska and the Arctic.
Climate change itself is not the issue. Mortality is the result of interacting with food (bottom up) and being preyed upon (top down). So, the question should be framed around ecological restructuring due to bottom-up and top-down factors.
Climate change; removing "thriving"
Mention climate change somehow; otherwise, this echoes language from salmon plans from 40 years ago.
Interdependency of communities of salmon, their ecosystems, and human populations
Reference to climate change.
Climate is missing. Suggest Climate-resilient salmon populations.
Thinking about folks outside the room; avoid terms with negative connotations to them.
Broader geographic area (inland/marine environments)
Change to outcome statement, whole systems, climate
RAD principles somehow… things will change
Not human-centric, salmon-centric. Include climate change and ecosystem. Spatially include more than just the coast.
Mention of the precolonial era. Ecosystems and paradigm shift
The ocean or entire life cycle
Climate is missing.
Educate our youth.
Clarify the geographic scope; include the inland watersheds.
Good general comments are puns the room. Need to define whatever key words are decided on.
Geographic range should reflect whole North American (historic) range
A reference to climate would be helpful and potentially replacing thriving with healthy.
Watershed-uplands to marine environment.
Ecosystem
Something about salmon supporting communities and ecosystems. Something about climate.
Ecosystems and indigenous peoples.
Broader ecosystem/landscape
Creativity
Climate

What's missing from the vision statement?
Climate is missing.

Table 7. Poll EV responses to the prompt: If your group has any rewrites to the vision statement, please share that here.

If your group has any rewrites to the vision statement, please share that here:
Spiritual connection
Communicate
Inspiration
Healthy salmon populations supporting and being stewarded by human communities throughout their range in Western North America.
In the face of a rapidly changing climate, resilient salmon populations coexist with human communities from California to the Arctic. Note that taking out "foster" and "that" turn it into an outcome statement that describes the desired future state. coexist and thriving should be replaced.
Attain healthy and abundant salmon populations that are a part of thriving human communities.
Foster, in perpetuity, resilient, diverse, and abundant salmon populations and related ecosystems that flourish with human communities from California to Alaska, as it was for time immemorial.
Add: climate change, full range of salmon from headwaters out, define whatever words are decided on, ensure fishing and fish communities are part of the human element.
In the face of climate change, attain healthy salmon populations recognizing the need for a thriving human environment.
Foster healthy Pacific salmon and human populations in the face of climate change from California to the Arctic.
Addressing climate to bring salmon back to the headwaters of North America.
Support healthy and interconnected salmon populations and human communities throughout Western North America in the face of climate warming.
Refine portion of statement as follows "...support thriving human communities and their economies...".
Collaborative stewardship of diverse and resilient salmon across changing systems from California to Alaska.
Steward healthy relationships between salmon and people across the coastal waters of North America from California to the Arctic, under a changing climate.
Foster resilient, diverse, and abundant salmon populations that are interwoven with and support human communities and ecosystems from California to Alaska.
A portfolio of salmon populations across whole and changing systems.
Resilient and harvestable abundant salmon intertwined with human communities from California to the Arctic.

If your group has any rewrites to the vision statement, please share that here:
To change the present paradigm to one of resilience, diverse and abundant, salmon populations that thrive within a healthy ecosystem across communities on the West coast.
Healthy and abundant pacific salmon populations from California to the Arctic and across the North Pacific.
Strengthen and maintain the connections between salmon, people, and place across the Pacific Rim for another 10,000+ years
My personal rewrite. Make Salmon Country Great Again.
Salmon for the win!
Resilient, diverse, and abundant salmon populations interwoven with, and supporting, thriving human communities and ecosystems from California to the Arctic.

Appendix IV. Brainstormed SCI Action Ideas

Table 8. The table contains all action ideas gathered from workshop participants during the brainstorming activity. Note they are not sorted or organized other than by the theme in which the idea was shared. Please consider that they may only reflect the views of a single participant.

Theme	Draft Action Text (sticky note)
Communications	Look at ways to link with other work e.g., PST and goals
Communications	Cross-border political influence ex. PNWER
Communications	Eat more parts of fish
Communications	The ability for co-existence - proven
Communications	Identify common messages to be communicated
Communications	US- Canada inter-parliamentary group (legislators)
Communications	Communicate science, policy, commercial, landowner, recreation, etc.
Communications	Adopt a common language to communicate value of salmon across sectors using ecosystem and "Blue Economy"
Communications	All members of salmon community
Communications	Brand/logo/style (development of website and materials look)
Communications	Broad messages

Theme	Draft Action Text (sticky note)
Communications	Build communication coalitions
Communications	Communication strategy - need to develop
Communications	Compile interest (database?) (vision, concerns, priorities?) from across parties to inform message prioritization for communications
Communications	Consider repeat "Salmon Week" for briefing legislature in Ottawa and DC
Communications	Create communications tools
Communications	Create content library
Communications	Create one page "about us"
Communications	Create outreach materials
Communications	Create partnership list that is diverse with links and info
Communications	Create the space in SCI for all perspectives and experiences to engage and be heard
Communications	Define 'recovery' so that everyone is onboard
Communications	Define communications and coordination boundaries
Communications	Define engagement
Communications	Define specific audiences: public, decision-makers...
Communications	Develop a mailing list, newsletter
Communications	Develop a standard metric(s) for assessing salmon status and communicate it coast wide
Communications	Develop coordinated broad comms campaign for salmon across the Pacific Rim issues+needs+hearts+minds
Communications	Develop feedback/listening system (stakeholders, relationships)
Communications	Develop operating guidelines
Communications	Develop success metrics
Communications	Enabling Language (Indigenous Respect)
Communications	Engage with Seafood processors to prevent waste - use what we catch
Communications	Fisheries and seafood to national interests
Communications	Focus on balance - among collaborating entities, environmental balance.
Communications	Form a communications team
Communications	Harvesters must be in the conversation
Communications	Hatcheries need to be in the conversation
Communications	History and connection to place
Communications	Identify audiences

Theme	Draft Action Text (sticky note)
Communications	Use social science to develop messages that will resonate with targeted audiences. (what do people think? how do we want to change think/behavior?)
Communications	Identify key messages needing a common voice to address conflicts/misinformation e.g., role of hatcheries, relative effect vs. need
Communications	Identify new partners to assist with communication. Think across sectors. e.g., water treatment plants, and common messages/needs with fish
Communications	Identify who and what we as a group want to communicate with
Communications	Include and listen to fishing and land-owning communities
Communications	Including TEK in messaging, toolkit for what TEK is
Communications	Increase baseline of awareness of fish nations/Tribal sovereignty, treaties, etc.
Communications	Interviews, listening sessions, storytelling with key interests
Communications	Marketing/outreach that allows people to envision how behavior changes and thriving salmon lead to better outcomes for them
Communications	Pacific Salmon Commission
Communications	Promote the reasons that protecting diversity is important - why is this important?
Communications	Promote/support Tribal led initiatives
Communications	Quantitative goals: healthy/harvestable; qualitative goals: social, cultural economics
Communications	Regular convenings (add transboundary to existing; annual gatherings of SCI)
Communications	Relationship building
Communications	Salmon as a source of optimism
Communications	Salmon Week
Communications	Science, policy, commercial, landowner, recreational, etc.
Communications	Showcase regional narratives/case studies - share our stories
Communications	Social science to understand what will lead to behavior change
Communications	Targeted messages
Communications	Tie to /build on what's been done
Communications	Understand what information is needed for someone to say yes
Communications	Unified approach(es) speaking same language

Theme	Draft Action Text (sticky note)
Communications	Using findings from social science to develop outreach programs and materials to encourage stewardship.
Communications	We're already living in Climate Change
Communications	Communication does not equal engagement
communications	Counter the negative
Communications	Find ways to utilize all parts of fish from other cultures; share knowledge
Communications	Social science as a method of better understanding people to communicate and make good strategy decisions
Coordination	Central data center (like bay-delta and strait of Georgia centers) (DATA AND PEOPLE)
Coordination	Co-led and co-developed by US + Canada, first nations, tribes, partners
Coordination	Committee with representatives from states, feds, ind. groups to discuss cross-border management issues related to salmon and climate change
Coordination	Communication with all tribes through consultation (regularly)
Coordination	Comprehensive documentation of existing plans, policies, procedures to ensure we have a shared understanding of levers/knobs that are the ways we will effect change
Coordination	Convening
Coordination	Build in continuous feedback for early identification of what's working, what's not and plan to adapt
Coordination	Coordinated data management/information exchanges
Coordination	Coordination at variety of scales. watershed to ocean basins
Coordination	Create a coalition of the willing (MOAs)
Coordination	Create a system map--what actions (big picture planning and implementation) are happening currently? Who is included or should be involved? Where are those processes happening?
Coordination	Create overarching umbrella effort that connects all of us for continual growth and change
Coordination	Create proportional funding opportunities for small to large scale restoration projects. (this service genetic and life history diversity via supporting portfolio of restoration actions needed across all watersheds and all pieces of a watershed)
Coordination	Create space for sharing ideas

Theme	Draft Action Text (sticky note)
Coordination	Create transboundary funding opportunities for science and actions (break down the artificial lines, let us easily work together) (via new treaty??)
Coordination	Cross boundary basin level collaborative planning
Coordination	Cross boundary legal protection of water
Coordination	Cross boundary research and monitoring
Coordination	Dedicate time to develop coordination structures that work really well
Coordination	Determine list of partners
Coordination	Develop a clear vision
Coordination	Develop a comprehensive list of the willing to develop a coalition with contact info
Coordination	Develop governance to support processes--governance=structure and procedures
Coordination	Development of an implementation plan that identifies 1-institutional/org. level for action implementation; 2-cost-estimates for implementation; 3- timeline for implementation
Coordination	Encourage SCI principals to form relationships with strategic, but under-represented groups, organizations, communities, entities. bring the perspectives and perhaps eventually new partners to the governance table.
Coordination	Bring together the harvest management and habitat needs as they jointly affect salmon resilience to climate change
Coordination	Establish alliance or a formed commitment with those identified entities
Coordination	Establish sub-groups/working groups based on issue areas/objectives
Coordination	Funding for FN/Tribes to implement actions, not just plan.
Coordination	Funding/admin support for coalition members
Coordination	Harmonize/leverage actions with existing plans/strategies
Coordination	Activities should recognize the need for adaptive management, which is difficult, and so we can learn from one another
Coordination	ID all the current sources of funding
Coordination	Identify and engage unlikely partners
Coordination	Identify existing efforts, their goals and objectives AND design this one to be supportive where it overlaps (as opposed to duplicative) and complimentary where it doesn't
Coordination	Create shared values, goals, objectives, and actions
Coordination	Identify key entities or influencers that should be involved to gain forward movement for SCI

Theme	Draft Action Text (sticky note)
Coordination	Identify leader/leading entity for the SCI
Coordination	Identify new partners to coordinate efforts
Coordination	Identify value-added for SCI
Coordination	Identify who is missing (gaps in coordination)
Coordination	Include decision-makers and funders in the conversation
Coordination	Include social science in the discussion and strategy development
Coordination	Incorporating new insights/information as it becomes available
Coordination	Increase coordination in funding to decrease admin on smaller governments
Coordination	Identify and strategize policy change needs
Coordination	Indigenous leadership
Coordination	Apply indigenous frameworks
Coordination	Look at what has already been agreed by US & Canada (E.g. PST, Biodiversity goals, climate, and LINK)
Coordination	Look at what is already included in existing salmon recovery plans and identify: 1-are new actions needed to address salmon resilience to climate change? 2-what has not happened and why? (lessons learned)
Coordination	Make associates values transparent and include them in the process
Coordination	Online database of initiatives, tools, and organizations focused on salmon recovery to support collaboration and information sharing
Coordination	Open invitations to collaborative meetings--who gets invited
Coordination	Analysis of policy and management issues that will emerge for salmon as a consequence of climate change
Coordination	Organize delegation trips to DC and Ottawa--joint delegation
Coordination	Overlap of actions with different drivers (e.g. water treatment plants and fish water quality)
Coordination	Prioritization of actions
Coordination	Provide funding for increased engagement from impacted committees
Coordination	Raise visibility of existing efforts
Coordination	Reduce competition--a mindset for grants--it pits groups against one another (help us help each other)

Theme	Draft Action Text (sticky note)
Coordination	Role of SCI to provide framework for coordination--identify who's doing what at a high level
Coordination	Salmon in international waters
Coordination	Share sales tax, property tax, legislative language
Coordination	Standardized databases--open access
Coordination	Stitch together existing state origin that already do this type of work outside of government (LLTK, PSF, Wild Salmon Center, Alaska???)
Coordination	Support a coast wide from Alaska to California FN Coalition building process
Coordination	Theory of change analysis to identify conditions in place to achieve our shared vision statement
Coordination	To develop a suite of conventional products to inform and educate public policy workers, public, tech etc... about PCSCI
Coordination	U.S.-Canada interparliamentary group (legislators)
Coordination	A resourced, staffed community of practice that creates space for information sharing, collaboration regarding climate informed salmon recovery
Coordination	Use a structured process (e.g. SDM) to facilitate collaboration, shared objectives, and a common story
Habitat and Water	Accessing habitat above dams
Habitat and Water	Address lack of consideration for marine vegetation in SMA/SMP
Habitat and Water	Assess loss of marsh/eelgrass/kelp and use decision-support tools to identify areas to be restored
Habitat and Water	Assessment of federal, state, and local permitting process to identify all of the steps and barriers to implementing salmon restoration
Habitat and Water	Biobank marine plants to protect thermotolerant strains (prime to create thermotolerant strains)
Habitat and Water	Broadscale education program for boaters for chemical usage, where to anchor, and for wastewater
Habitat and Water	Carbon sequestration potential
Habitat and Water	Change/alter zoning laws to protect floodplains
Habitat and Water	Alter regulations so you can no longer develop in floodplains
Habitat and Water	Climate-informed dam and reservoir management to benefit ongoing declines in summer streamflow

Theme	Draft Action Text (sticky note)
Habitat and Water	Conservancy of riparian lands
Habitat and Water	Riparian protection and restoration
Habitat and Water	Coordinated monitoring and publicly accessible data
Habitat and Water	More streamflow monitoring, installation, and maintenance of stream gauges
Habitat and Water	Crop selection incentives to minimize water requirements
Habitat and Water	De-colonize floodplains
Habitat and Water	Develop alternatives to municipal surface water withdrawals to increase salmon resilience to decreasing summer flows
Habitat and Water	Develop and advocate for policy or policy revisions that contain growth and conserves critical areas
Habitat and Water	Develop ecological functional flow template hydrographs for all salmon bearing rivers
Habitat and Water	Develop ecologically relevant, variable riparian buffers guidelines for protection
Habitat and Water	Riparian forest protection and restoration at large site potential scale
Habitat and Water	Develop habitat targets to meet production goals for all habitat types
Habitat and Water	Leverage Klamath dam removal to encourage removal elsewhere (Eel River Dam)
Habitat and Water	Develop models to identify most fire prone areas across watershed and develop proactive landscape management plans to reduce risks to salmon habitats
Habitat and Water	Develop processes to better license water extractions, track water use, and enforce water regulations
Habitat and Water	Carry out more adjudications, enforce water rights
Habitat and Water	Develop watershed acquisition strategies needed for process-based restoration
Habitat and Water	Drought leasing
Habitat and Water	Elevate Indigenous science
Habitat and Water	Estuary restoration! Ensure ample connectivity of estuary channels

Theme	Draft Action Text (sticky note)
Habitat and Water	Ensure estuaries can migrate landward through acquisition strategy
Habitat and Water	Estuary health--how defined waster science... rank and prioritize estuaries
Habitat and Water	Essential to integrates models for temperature, flow, and physical habitat with food supply over time
Habitat and Water	Establish incentives with landowners to place land into conservation easements/protection long term to benefit cold-water refugia
Habitat and Water	Endowments and incentives for land conservation/ purchase/manage
Habitat and Water	Explore the carbon sequestration potential of estuaries and floodplains
Habitat and Water	Floodplain acquisition strategy to reconnect and de-colonize floodplains
Habitat and Water	floodplain acquisition strategy
Habitat and Water	Strategy to improve habitat to improve fishing on freshwater area that's been altered
Habitat and Water	Floodplain restoration and reconnection
Habitat and Water	Fully fund incentive programs
Habitat and Water	Effects of sea level rise on nearshore/estuary habitat and its consequences for early marine survival are poorly understood. This is a science data gap needed to prioritize and develop strategies to increase resilience of estuary and nearshore habitats
Habitat and Water	Identify & address regulatory and policy barriers like Army Corps funding prohibiting use for relocation
Habitat and Water	Identify projected reduction in stream flows due to loss of snowpack from climate change
Habitat and Water	Implement large-scale floodplain reconnection projects
Habitat and Water	Implement new funding mechanism through publicly funded capital projects
Habitat and Water	Implement NWSC's Kelp Policy recommendations
Habitat and Water	Incentives to transition hydropower based utilities to wind/solar
Habitat and Water	Increase beaver reintroductions to increase water storage/recharge on the landscape

Theme	Draft Action Text (sticky note)
Habitat and Water	Increase riparian planting to increase stream shading and work to mitigate warming stream temps
Habitat and Water	Increase stand age rotations on commercial timberlands
Habitat and Water	Increase habitat connectivity
Habitat and Water	Installation and maintenance of stream gauges
Habitat and Water	Interactive maps with priority project locations
Habitat and Water	Maintain and restore habitat diversity to maintain and promote genetic diversity
Habitat and Water	Maintain/restore habitat diversity to maintain genetic diversity
Habitat and Water	Rulemaking processes for requiring the consideration of climate change in the design of infrastructure (mandate it!)
Habitat and Water	Modify and incentivize upper watershed forestry practices to benefit streamflow on private/state/community forests
Habitat and Water	Monitor aquifer levels
Habitat and Water	More large-scale floodplain reconnection and reforestation
Habitat and Water	Net Ecological Gain with any development
Habitat and Water	Prioritize habitat restoration based on cost/habitat benefit
Habitat and Water	Programmatic NEPA coverage
Habitat and Water	Promote more flexible water markets towards maintaining healthier streams
Habitat and Water	Protect existing intact habitat from destruction and fragmentation
Habitat and Water	Quantify and map contamination sources
Habitat and Water	Temperature
Habitat and Water	Environmental flows
Habitat and Water	Replace glacial meltwater (lost when glaciers vanish)
Habitat and Water	Protect and enhance cold water refugia

Theme	Draft Action Text (sticky note)
Habitat and Water	Restore/maintain thermal refugia
Habitat and Water	Address water withdrawals for agriculture to improve spawning/rearing habitat
Habitat and Water	On-farm water conservation paired with in-stream flow dedication
Habitat and Water	Water irrigation incentives, education, research
Habitat and Water	Water purchasing
Habitat and Water	Manage forests for snowpack depth and duration
Habitat and Water	Med-large rivers--enhance regulation
Habitat and Water	Re-time flows/storage reservoirs off channel natural system storage managed aquifer recharge
Habitat and Water	Make sure adequate water is available to accommodate changes in fish arrival, distribution, and spawning
Habitat and Water	Recycle water
Habitat and Water	Use of domestic grey water instead of down the drain
Habitat and Water	Re-use 3* treated water into flow limited systems
Habitat and Water	Support water conveyance and quantity to ensure food web temporal mismatches are minimized
Habitat and Water	Quantify and monitor variation in aquatic environment (e.g. temp, flows, toxics/pollutants)
Habitat and Water	Pollutants WQs and FCRs for salmon people
Habitat and Water	Reduce toxics in salmon habitat!
Habitat and Water	Green infrastructure to intercept urban runoff
Habitat and Water	Clean water standards
Habitat and Water	Implement nature-based solutions to reduce impacts of 6ppdq
Habitat and Water	Eliminate marine water discharge of wastewater
Habitat and Water	Proportional impacts of climate change on water quantity vs. landscape degradation

Theme	Draft Action Text (sticky note)
Habitat and Water	Account for projected changes in streamflow in water-allocation decisions
Habitat and Water	Voluntary water transactions
Habitat and Water	Change how we think about water. tackle water rights
Habitat and Water	Regulated rivers and reservoirs are opportunities for innovation
Habitat and Water	Establish conservation water banks
Habitat and Water	Marine forests and meadows are critical habitat
Habitat and Water	Salmon/water 1st forestry practices implemented
Habitat and Water	Re-introduce beaver dam analogues
Habitat and Water	Prioritize dams for removal and or passage
Habitat and Water	Identification of passage impediments for salmon and prioritization of passage remediations across watersheds to maximize benefits to salmon
Habitat and Water	Recommendations for how local governments can incorporate climate considerations in their comprehensive planning processes
Habitat and Water	Incorporate restoration in infrastructure projects
Habitat and Water	Change infrastructure and transportation practices to automatically remove infrastructure or ease floodplain constrictions
Habitat and Water	Reconnect blocked habitat
Habitat and Water	Reconnect blocked habitat and protect existing intact habitat
Habitat and Water	Reintroductions to blocked habitats
Habitat and Water	Remove 4 Lower Snake River Dams
Habitat and Water	Require consideration of streamflow projections for the lifecycle of permitted instream or marine infrastructure
Habitat and Water	Require implementation of 303d BMPs

Theme	Draft Action Text (sticky note)
Habitat and Water	Restore bioenergetically critical habitats
Habitat and Water	Revisit Hirst "fix"--ensure high watershed streams are not unduly impacted by exempt wells. measure it.
Habitat and Water	Salmon and water 1st forestry practices implemented
Habitat and Water	Spatially explicit growth potential models across watersheds
Habitat and Water	Streamline funding opportunities for large scale habitat projects
Habitat and Water	Streamlining and simplifying permitting/requirements for salmon restoration
Habitat and Water	Study groundwater/surface water interactions in streams and rivers
Habitat and Water	Support portfolio of connected migration corridor habitats
Habitat and Water	Support saltwater intrusion modeling of agricultural lands to inform habitat restoration
Habitat and Water	Trucking hatchery salmon to ocean directly to skip food web issues
Habitat and Water	Understand fire effects on salmon
Habitat and Water	Fire: post and pre-fire fuels management prioritization for salmon. (Colville and California models)
Habitat and Water	Use FEMA money to move businesses and housing after flood damage NOT rebuild in the same place
Habitat and Water	Use momentum of dam removal projects across the country to build a movement of free-flowing rivers and habitats
Habitat and Water	Use nature-based solutions for shoreline restoration
Habitat and Water	Vulnerability assessment of groundwater resources across the region
Habitat and Water	Water court to adjudicate by people who understand the issues
Habitat and Water	Widespread contaminant testing
Habitat and Water	Work with farmers to find more efficient ways to irrigate and encourage drought resistant crops.
Habitat and Water	Quantity
Habitat and Water	Quality

Theme	Draft Action Text (sticky note)
Habitat and Water	Explore possibilities of impoundments for aquifer storage towards increasing summer flows
Habitat and Water	Replace gravity diversions with pressurized on-demand water systems
Habitat and Water	Map stream incision and floodplain degradation; Fix it! (helps with low flow, food webs, temperature)
Habitat and Water	Enforce trust water rights protection
Habitat and Water	Water rights
Habitat and Water	Advocate for new policy tools that re-allocate water to benefit stream flows
Habitat and Water	Advocate legislature that regulates minimum flows
Habitat and Water	Culverts
Habitat and Water	Net ecological gain
Habitat and Water	Track water rights donations
Habitat and Water	Broad scale education program for boaters re: chemical usage, where to anchor or where not to
Habitat and Water	Develop fish passage solutions
Life History, Diversity, Adaptive Capacity	Allowing more access/exposure to diversity in habitat and food sources (natural/experimental)
Life History, Diversity, Adaptive Capacity	As species shift to higher elevation, think about hatchery release in these areas that will become critical
life History, Diversity, Adaptive Capacity	Quantify past and present measures of diversity (genomic and life history)
Life History…	Atlas of life history types across species range--temporal aspect
Life History…	Capture TEK to inform historic presence of Life history traits
Life History…	Catalog genomic variation for chinook (and other species) with a focus on adaptive traits and linked to life history diversity

Theme	Draft Action Text (sticky note)
Life History…	Characterize population portfolios across range to determine how ecosystem processes influence population dynamics -- temporal
Life History…	Coast-wide catalogue of genomic variability that drives ecologically important variation to better understand risk of loss and better prioritize management actions
Life History…	Coastwide network of gene banks to preserve genetic diversity
Life History…	Conduct genetic monitoring to understand how populations are changing
Life History…	Conserve adaptive capacity, link genetic/ life history traits with populations dynamics
Life History…	Decreased fitness of hybrid population…
Life History…	Determining where preservation of genetic resources is important
Life History…	Develop an understanding of population genetic diversity
Life History…	Develop and implement VSP monitoring program
Life History…	Develop understanding of population genetic variability
Life History…	Encourage re-colonization more quickly
Life History…	Experimental reintroductions, translocations, etc. as barriers are removed higher in the watershed. to encourage greater diversity and life history
Life History…	Experimental techniques: promote fuller occupation of available and suitable habitat to encourage greater life history diversity
Life History…	Experiments around plasticity to thermal tolerance
Life History…	Genomics/q-gen approach to important life history traits that have not been identified/dormant
Life History…	Habitat diversity to maximize gene expression diversity
Life History…	Identify drivers of adaptive capacity (e.g. phenotypic plasticity and evolutionary potential)
Life History…	Identify factors limiting abundance (hatchery and wild)-- support solutions
Life History…	Identify life history strategies that are more successful in a changing climate-prioritize activities to support them
Life History…	Identify populations at risk
Life History…	Identify small/declining populations with rare/unique life history traits and prioritize them for amplification/propagation
Life History…	Identify traits of concern
Life History…	Identify where there are populations thriving or rebounding

Theme	Draft Action Text (sticky note)
Life History…	Identify factors limiting abundance (hatchery and wild) and support solutions
Life History…	Identify if traits have genetic basis
Life History…	Inform/determine the effect of diversity to.... by studying adult/juvenile in robust populations
Life History…	Look at population level ... at aggregate "CU/DU"
Life History…	Managing to conserve life history and genetic diversity and portfolios, mixed stock management
Life History…	Monitoring novel selective pressure(s)
Life History…	Multiple approaches to understand thermal response: habitat and genetics, population shifts, portfolio of habitats and portfolio of life histories
Life History…	Open blocked habitat - large scale
Life History…	Protect populations at risk
Life History…	Push adaptation in light of climate change ex: at hatcheries (UW used to have experimental hatchery) EX: thermo-tolerance, run timing, etc.
Life History…	Renewed focus on abundance + diversity of hatchery and wild salmon-- we have to work with hatchery and wild fish!
Life History…	Genetics should not be used as an excuse for inactivity
Life History…	Research re-adaptation of hatchery fish to natural habitat and selection to guide use of hatchery supplementation
Life History…	Research to improve hatchery survival and propagation
Life History…	Shared database of genomic diversity across species range--temporal aspect
Life History…	Shifting life histories: chinook staying in freshwater (no ocean residency), will it increase with climate change?
Life History…	Small scale ready-to-go, not risky survey TEK for life history variation and link to surveys of genomic variation
Life History…	Survey diversity
Life History…	TEK population structure
Life History…	Understand adaptive diversity of all species across their ranges
Life History…	Understand genetic effects of hatchery fish on adaptive potential of wild fish
Life History…	Understand genetic impacts of hatchery populations on wild stocks
Life History…	Understanding different climate impacts on different life history population segments
Marine Conditions	Actions to reduce marine mammal predation

Theme	Draft Action Text (sticky note)
Marine Conditions	Adjust and adapt hatchery production
Marine Conditions	Apply Tribal AN-FN frameworks
Marine Conditions	Assess the impacts of different forms of pollution (Noise, light, toxic chemicals, etc.)
Marine Conditions	Awareness of relevant IMO interests, activities, collaborations
Marine Conditions	Better understand predation in marine waters - who, when, why? and how influenced by ocean conditions
Marine Conditions	Collate data on water quality and contaminants - and dispersal at sea
Marine Conditions	Coordinate research to better document ocean migration patterns of salmon, CA--> AK--> Offshore
Marine Conditions	Cross-border support for marine forecasting (short-term) across basins
Marine Conditions	Cross-boundary monitoring - bio + Physical
Marine Conditions	Cross-jurisdiction review of successful predator/prey programs
Marine Conditions	Crosswalk (metadata to support linking datasets)
Marine Conditions	Data sharing
Marine Conditions	Determine how trends in PCO2 and O2 concentrations are impacting different salmon stocks (at various life stages)
Marine Conditions	Develop fisheries management frameworks that can adapt to increasing variability
Marine Conditions	Develop infographic for policymakers on linkage between marine and inland ecology
Marine Conditions	Develop partnerships w/ offshore wind energy to fund new data collection opportunities
Marine Conditions	Elevate Tribal AN/FN Science
Marine Conditions	Engage BECI Project
Marine Conditions	Enhancing existing monitoring linked to uses - fishing, shipping
Marine Conditions	Evaluate options to improve adaptation of fisheries to shifting conditions and increasing variability.
Marine Conditions	Expand broad-scale ocean condition monitoring networks (field + remote sensing based)

Theme	Draft Action Text (sticky note)
Marine Conditions	Formalize relationship with BECI project
Marine Conditions	Hatcheries need to be part of the discussion - carrying capacity
Marine Conditions	Identify cross-boundary indicators for marine forecasting
Marine Conditions	Identify large-scale experiments that could be undertaken to better understand marine processes that affect survival in the ocean
Marine Conditions	Identify limiting predator/prey interactions
Marine Conditions	Identify species specific early life history limiting factors
Marine Conditions	Impacts of shipping noise and lights and pollution
Marine Conditions	Implications of shifting distributions of salmon under climate change
Marine Conditions	Improve data collection and coordination in advance to enhance data sharing down the road
Marine Conditions	Improved biophysical models to test and generate hypotheses
Marine Conditions	Increase diversity in freshwater via hatchery practices and habitat restoration to increase salmon survival in marine waters
Marine Conditions	Increased coordination of at-sea surveys
Marine Conditions	Increased study of spatio-temporal ecosystem processes - who eats who, where, why, scales of processes basin - fine, ocean currents - large scale.
Marine Conditions	Interactions between ocean conditions (e.g., OA + increasing temp.) hypoxia on salmon health.
Marine Conditions	Leverage existing data networks to make data usable (e.g., NANOOS, W. Coast Ocean Alliance). Useful spatiotemporal scales
Marine Conditions	Link biophysical models - ecosystem models and life history models
Marine Conditions	Literature review of marine Fe fertilization
Marine Conditions	Mining existing work NOAA W. coast fleet (ocean cond.)
Marine Conditions	Monitor how different populations and life history types are using marine environment. How distributions are shifting.

Theme	Draft Action Text (sticky note)
Marine Conditions	NONOOS (Northwest Association of Networked Ocean Observation Systems) - research and funding
Marine Conditions	Plan for socio-economic variability
Marine Conditions	Quantify growth, maturation
Marine Conditions	Reduce water taxi and marine traffic intersects with herring spawn timing
Marine Conditions	Refine IUU (Illegal, Unreported, Unregulated) fishing models
Marine Conditions	Removal programs for ghost gear
Marine Conditions	Research and monitoring into ocean acidification effects on salmon behavior
Marine Conditions	Research offshore wind impacts on salmon and fisheries
Marine Conditions	Study climate impacts on human-salmon interactions (bycatch, harvest, etc.)
Marine Conditions	Take advantage of current and near-term activities such as wind energy development on the shelf to better monitor linkages between biogeochemical properties (up to zooplankton) and climate.
Marine Conditions	Understanding the impacts of IUU fishing
Marine Conditions	Understand and reduce/modify
Marine Conditions	Understand how climate change will shift productivity and affect marine habitat for salmon across the North Pacific and Coastal areas (emphasis on integrating our knowledge).
Marine Conditions	Understand how marine heat waves affect ecosystems to support salmon on coast and high seas.
Marine Conditions	Use past and present climate variations to better anticipate future trends/conditions
Marine Conditions	West Coast Alliance Research - West Coast
Marine Conditions	Work with/utilize commercial fishing vessels for research platforms to gather real-time data while commercial fishing.
Species Interactions	Alternate prey as protection .... *not readable...*
Species Interactions	Better spatiotemporal understanding of pinnipeds and pinniped predation (early/late season runs, in-river predation)

Theme	Draft Action Text (sticky note)
Species Interactions	Better understanding of nutrient cycling
Species Interactions	Bycatch technology to reduce bycatch by trawlers
Species Interactions	Carbon markets for floodplain forests
Species Interactions	Carry-over efforts of timing, size, abundance, delayed mortality
Species Interactions	carrying capacity: restore for the future, not for the current population
Species Interactions	Changes in flora (e.g. eelgrass, kelp) on ecosystem structures
Species Interactions	Collaborative ecosystem assessments for the north pacific to inform EBM approaches--indicators will come in time--need more discussion
Species Interactions	Combined sewer overflows (increases frequency with climate change) impacts of increased heavy precip. events and the strain they place on our stormwater infrastructure.
Species Interactions	Develop bioenergetic mapping potential of rivers and estuaries (with climate change. with restoration and without restoration)
Species Interactions	Different agency management of species
Species Interactions	Effects of hatchery releases on wild outmigrants
Species Interactions	Enable pinniped managed harvest
Species Interactions	Ensure habitats can produce robust prey base
Species Interactions	Establish OSP/K for seals and sea lions in Salish Sea
Species Interactions	Evaluate impacts of 2015 blob--what could we have done differently?
Species Interactions	Evaluation of impacts of all phenological harvest management/alignment
Species Interactions	Finally implement the Puget Sound Juvenile Salmon and Herring monitoring program
Species Interactions	Food web/ecosystem models to evaluate strategies
Species Interactions	Forest buffers impacts on stream productivity--sometimes it's too dark. can we support small gaps?

Theme	Draft Action Text (sticky note)
Species Interactions	How starfish and urchins affect kelp
Species Interactions	Implement more selective fishing and manage recreational impacts on wild fish (harvest, post-release mortality)
Species Interactions	Implement the SSMSP
Species Interactions	Increase complexity in estuary and nearshore rearing areas (predation shelter)
Species Interactions	Increase floodplain connection to maintain prey, timing of prey availability
Species Interactions	Interannual variation in physical and biological conditions
Species Interactions	International collaboration and data sharing
Species Interactions	Investigate density dependence for salmon throughout habitats
Species Interactions	Investment in increasing disease monitoring for new and emerging pathogens
Species Interactions	Investment in new treatments/vaccines for new/emerging diseases
Species Interactions	Kill fences on CBIP returns--source of non-native species
Species Interactions	Land based uses that impact salmon streams like farming, construction, etc.
Species Interactions	Large scale adaptive management of pink salmon enhancement in North Pacific
Species Interactions	Links to biodiversity (e.g. trees, plants)
Species Interactions	Maintain abundance ecosystem services
Species Interactions	Map extent of log booms (seal feeding platforms) (inc. seal predation)
Species Interactions	Map predicted changes in species distributions and species overlap with climate models
Species Interactions	More food web info like NOAA stoplight chart--for adaptive management
Species Interactions	Move farmed fish to on-shore facilities
Species Interactions	Natural resource economics work that quantifies the monetary value of ecosystem services

Theme	Draft Action Text (sticky note)
Species Interactions	Need to examine how we define non-native as we now species will continue to move to more northerly latitudes as the climate continues to change
Species Interactions	Non-native invasive species
Species Interactions	North Pacific and California current collaborations
Species Interactions	Open data on bycatch
Species Interactions	Pathogens--get a handle on potential impact
Species Interactions	Phenology and natal migration dynamics
Species Interactions	Protection of forage fish spawning habitats (eelgrass, beaches, etc.)
Species Interactions	Publish cookbook for seals/sea lions :)
Species Interactions	Ramp up stock assessment programs to include environmental predictors (i.e. Heat Waves) and species abundance interactions
Species Interactions	Re-establishing previous species interactions by getting people back on the land
Species Interactions	Regulate bycatch
Species Interactions	Reintroductions into historic habitats
Species Interactions	Relative importance of growth with predation and competition on juvenile salmon survival through habitats and life stages
Species Interactions	*[Something illegible about killer whales in the North Pacific]*
Species Interactions	*[Something illegible]...*to understand water flow(s) (pumps) dykes dams to understand problem areas
Species Interactions	*[Something about dams illegible]*
Species Interactions	Start herring kelp farms/hatcheries
Species Interactions	Stock assessment process: focus on best fit models; less on formal process. good models are being discarded at review stages
Species Interactions	Support from broader partners

Theme	Draft Action Text (sticky note)
Species Interactions	Track Thiamine-related mortality due to marine species range shifts and prey shifts. build research for supporting wild salmon pops.
Species Interactions	Understand changes in timing
Species Interactions	Understand forage fish dynamics/abundance as buffer for salmon predation
Species Interactions	Understand how temperature and other environmental conditions segregate or concentrate species (prey, predators, competition) to change strength of interactions
Species Interactions	Understand impacts of light pollution and noise pollution (quiet sound initiative and dark skies international)
Species Interactions	Understand marine species range shifts and impacts to salmon--California and current system...
Species Interactions	Understand the additive vs. compensatory effects will we have effect on
Species Interactions	Understanding of transboundary mining impacts--water quality
Species Interactions	Variable distribution of salmon and prey
Species Interactions	Widen appreciation of impacts on hatchery Pinks and Chum at basin scale (ocean)