

Columbia Basin Collaborative Science Integration Work Group

Meeting Summary

Friday, January 6, 2022, from 1:00 – 3:00pm PT/ 2:00 – 4:00pm MT

Attendees

Working Group Members in Attendance: Bob Lessard (Columbia River Inter-Tribal Fish Commission), Casey Baldwin (Confederated Tribes of the Colville Reservation), Gary James (Confederated Tribes of the Umatilla Indian Reservation), Scott Hauser (Fort McDermitt Paiute and Shoshone/Upper Snake River Tribes Foundation), John Cassinelli (Idaho Department of Fish and Game), Jay Hesse (Nez Perce Tribe), Patty Dornbusch (National Oceanic and Atmospheric Administration), Michelle Rub (National Oceanic and Atmospheric Administration), David Bain (Orca Conservancy), Tucker Jones (Oregon Department of Fish and Wildlife), Art Martin (Oregon Department of Fish and Wildlife), Ed Bowles (Oregon Department of Fish and Wildlife), Jay Backus (Port of Clarkston), David Doeringsfeld (Port of Lewiston), Kevin Scribner (Salmon-Safe), Conor Giorgi (Spokane Tribe of Indians), David Moskowitz (The Conservation Angler), Jennifer Riddle (Tidewater Transportation and Terminals), Gary Marston (Trout Unlimited), Haley Ohms (Trout Unlimited), Katherine Himes (University of Idaho McClure Center), Cynthia Studebaker (US Army Corps of Engineers), Claire McGrath (US Bureau of Reclamation), Stephen Waste (US Geological Survey), Tom Tebb (Washington Department of Ecology), Charlene Hurst (Washington Department of Fish and Wildlife)

Observers in Attendance: Dennis Rohr (D. Rohr & Associates, Inc.), Paul Arrington (Idaho Water Users), Mark Martin (Idaho Outfitters and Guides Association), Glen Spain (Pacific Coast Federation of Fishermen's Associations), Shane Scott (Public Power Council), Jeff Fisher (Seattle City Light), Stuart Crane (Yakama Nation), Heather Nicholson, Kevin Malone

Facilitation Team: Liz Mack (Kearns & West), Angela Hessenius (Kearns & West)

Welcome, Agenda Review, and Updates

Liz Mack, Kearns & West, provided an overview of the agenda and meeting guidelines. The topics included: 1) Further Discuss Draft Action Statements and 2) Confirm Next Steps and Action Items. Liz also shared that a preview of the group's draft recommended actions will be provided at the upcoming Integration/Recommendations Group (I/RG) meeting on Thursday, January 26.

Further Discuss and Edit Draft Action Statements

Liz recapped the draft recommended action statements that were drafted by work group members and introduced during the previous SIWG meeting. The group discussed each of the three draft recommendations, including reviewing the comments that work group members added to the shared document between meetings and using the recommended action form to help identify additional information needed. The key points from the discussion related to each of the draft recommendations are included below.

Recommendation 1: Develop a Structured Decision-Making Framework

Questions and Discussion:

Action 1: Develop a structured decision-making (SDM) framework to make integrated, multi-factor salmon recovery planning a reality. The SDM framework would provide a science-based, transparent approach for identifying actions across limiting factors that could be sequenced and bundled to achieve major gains in abundance, productivity, diversity, and fish distribution and fully realize the benefits of past and future habitat actions throughout the basin.

- Some of the comments on this recommendation noted that there is a strong habitat focus.
 - Work group members shared that they did not understand why the recommendation was framed with habitat as a starting place, since the structured decision making framework (SDM) should be focused on integrating all the H's. Instead, the focus of the recommendation should be on achieving the adult return and abundance goals identified by the Columbia Basin Partnership Task Force (CBPTF), with habitat being one of the components of achieving those goals.
 - One work group member noted that they agree with tying the recommendation to achieving the abundance goals, but do not support stating that the abundance goals should be achieved by 2050.
 - Other work group members agreed that this recommendation should be broadly applied. They added that the recommendation should include a timing component that describes how the implementing entities will be engaged in this action. For example, how should the processes embedded in this action be sequenced? Which agencies/organizations will lead, and which will be brought in later? Should some of the processes occur simultaneously?
 - Work group members discussed whether this recommendation is duplicative of any recommendations from the Habitat Work group but decided that it makes sense to take a more general approach and use the habitat perspective as an example.
 - Other work group members noted that group members should consider whether additional entities should be added to the table that lists implementing entities, such as regional NGOs or consortia.
- Some of the comments on this recommendation noted that the recommendation as written is too pointed at agencies.
 - Work group members noted that there is an opportunity for the tone to be more forward-looking, optimistic, and neutral. Adjusting the language to be more constructive and engaging would be beneficial.
- At what level will this recommendation be implemented – within or across agencies?
 - Work group members agreed that both would be ideal, and that the recommendation should be implemented across all managers.
 - A work group member suggested adding language such as "at an appropriate scale," since there are multiple scales at which coordinated decision-making will be needed. It is not appropriate for all decisions to be made at the level of the entire Columbia Basin.
- Work group members asked how Tribal managers feel about the recommendation.
 - Understanding how all the limiting factors integrate and uphold across the salmon life cycle is important, and the SDM approach has been demonstrated to do that in other areas. As the framework is developed, there will be issues regarding decision-making authority. An SDM model recommended by this group must not degrade the tribal

management authority in implementation. Members were also slightly concerned by the lack of specific Tribes listed in the current table of implementing entities.

- One work group member suggested that while the SIWG developed the recommended action form, it is likely not important with this particular action to be binding or complete every item on the form.
- Work group members asked whether the goal of the SDM framework is to prioritize actions towards maximizing salmon recovery and discussed what the outcome of this effort would be.
 - The goal is to prioritize actions across the H's to maximize salmon recovery, especially considering the synergies between actions.
- Others asked questions including who the intended user of the framework is, at what scale it should be applied, and whether the aim is to develop a framework that the CBC will use to make decisions or if the recommendation is intended to be applied more broadly.
 - While the recommendation language includes references that are more habitat-focused (e.g., Bilby et al. 2022), this recommendation could be a useful tool for other CBC work groups as well, such as the Predation Work Group. An SDM framework is a way to take empirical evidence, tabulate it, and examine which actions have worked and which have not been successful. The CBC itself would be the user of this tool, either at the scale of the I/RG or individual work groups, to help to tabulate recommendations and actions. The table of implementing entities should be used as a reference list that can be drawn from for specific recommendations; not every entity on the list will be responsible for implementing any single action.
 - Work group members pointed out that the CBC does not have authority to make other entities use the framework, so the CBC would be the user group.
 - If the framework is useful to the CBC, then one of the future recommendations could be to share it with other entities as a tool for them to consider.
 - Other work group members noted that for many agencies, using such a tool may require a rule change. They agreed that since the CBC is a recommendation-making body, it makes sense to develop the SDM framework and use it as a learning tool to demonstrate how other groups can use such a framework to make decisions efficiently.
 - One work group member recommended replacing the phrase “Decision Making” with “Recommendation Evaluation.” Since the CBC is a recommendation body and not a decision-making authority, the concept of a SDM framework may be best applied as an integration recommendation evaluation framework that allows the SIWG and/or I/RG to integrate recommendations across the H’s.

Action 2: Create structure within the management, funding, and regulatory agencies to foster integrated, multi-factor actions. This would enhance managers’ abilities to develop and implement integrated, multi-factor strategies and actions needed to recover salmon and steelhead. We recommend that management agencies create integrated work groups that have representation from each threat category to ensure that H-integration is built into recovery and management actions, and that funding agencies consider funding suites of actions (e.g., habitat and hatchery management) as part of more cohesive projects. The SDM framework we call for in Action 1 could be used by the integrated agency work groups.

- Questions on this recommendation in the document comments included how this action relates to the SDM framework and whether this a recommendation for a structure that is outside or within the CBC.

- This action was meant to be separate from the SDM tool. It could be a structure at the watershed, agency, or basin-wide scale. The impetus behind the recommendation was to enhance integration across fisheries management siloes that often arise in agencies and funding entities.
- Other work group members noted that additional specificity and description of what is meant by this action would be helpful, including how a management or funding agency would implement it.
- One work group member shared that it could be an overreach of this group to suggest changes in structure to other management entities, regional forums, etc. However, if viewed through the lens of describing recommendations that come from the CBC work groups, this concept can help rationalize and justify recommendations within a logical framework by ensuring integration across threat factors and characterizing the urgency of action.
- Work group members agreed and cautioned that recommending that other entities change their internal structure would likely not be well-received. However, changing the tone and framing of this action to provide a tool or framework for integrating across threats to help achieve salmon recovery and abundance goals could be a better approach. Even if the change needs to happen within agencies, rather than suggesting a new internal bureaucratic structure, the SIWG can recommend adopting a tool or framework to help make existing programs more effective.
- One work group member expressed that they would be comfortable with changing the second action, but they do not want to lose the concept of integrating within and across agencies. One aspect of that could be recommending that a collaborative group such as the CBC continues to work in the basin. The group could also potentially recommend that agencies incorporate a similar SDM framework to that which the CBC develops and uses or recommend that entities assign an internal staff person to focus on integration.
- Other work group members agreed that they support keeping a modified version of Action 2 as part of the recommendation.
- Work group members framed this recommendation as taking an “all things considered” approach. It is important to weigh all the factors when making a decision. For example, if there is a predation problem due to a blocked area, it may be more effective to address the blocked area than implement measures focused on predation. Much of this will have habitat implications, but the group should make sure the recommendation is not limited to habitat only. The intent of this recommendation is not to substantially change the way agencies make decisions, but rather to ensure that agencies consider the predation, habitat, and blocked area implications for every decision. An SDM tool developed by the CBC could be offered as a potential resource to other agencies.
- Work group members suggested framing these actions as “1a” and “1b.” The SIWG can develop the SDM framework, and if they find it useful, offer it to specific management and funding agencies to achieve integration.
- Part of Action 2 could also become a separate, more general recommendation from the CBC that encourages management and funding agencies to integrate across all H's when making decisions.

Work group members agreed to move this recommendation forward by having several work group members volunteer as key reviewers to further edit and revise the language based on this discussion.

Recommendation 2: Understand and articulate how politics affects the various categories and their interactions

Recommended Action: To ensure all sectors are implementing actions to reduce threats to salmon and steelhead, it is imperative that each State: 1) call upon local, state and federal land use and regulatory managers to update their respective policies, incentive programs, and regulations to ensure they achieve no-net-loss of floodplain and riparian habitats and watershed functions; 2) fully fund statewide monitoring programs to evaluate effectiveness of such programs at the Evolutionarily Significant Unit (ESU) scales, and publicly and consistently report on results and adaptive management responses; and, 3) ensure alignment between active restoration work, land use programs, and all-H recovery efforts, in light of climate change.

Questions and Discussion:

- One theme from the comments was that this recommendation also has a large focus on habitat. Some suggested broadening the recommendation to address other politically challenging issues as well.
 - Work group members suggested incorporating language to clearly call out habitat as an example. It is helpful to have concrete examples in the recommendations; if they are too general, they can be difficult to understand.
 - Other work group members pointed out that this recommendation is clearly focused on a need to protect existing habitats and directs the recommendation to local, state, and federal land managers. It would take significant re-drafting to broaden the focus from habitat.
 - The Habitat Work Group has identified a similar recommendation that is a bit duplicative, though this recommendation is more developed.
 - Some actions that need to be taken in the basin are more political decisions rather than scientific ones. For habitat, there are politics involved in setting priorities, but this topic is less politically charged than others (e.g., predation, dam removal, harvest, etc.). Work group members shared that they would like to see this recommendation focused more broadly on politics and understanding how decisions are being made with habitat as one example.
- Another observation identified in the document comments is that there is a disconnect between the title and the content of the recommendation.
 - This recommendation is focused on regulatory inadequacies and preventing the loss of gains that have been made. Work group members supported the recommendation but agreed that it does not relate to understanding politics.
 - Work group members also acknowledged that every recommendation passed to the I/RG will have political implications. One work group member suggested that a general recommendation to the I/RG to be aware of the political landscape and consider how each recommendation will play out in the political arena. Others expressed that all the I/RG members likely already recognize the necessity of considering the political implications of any recommendation.
 - Other work group members agreed that political considerations are ubiquitous across all recommendations and that the SIWG should focus on integrating science across the H's.
 - One work group member added that a recommendation focused on understanding politics would be a social science rather than a biological effort involving studying how

elements such as lobbying, public input, current events, and other factors affect decision-making and create opportunities for action.

- Another work group member added that the charge of the CBC is about identifying and taking actions that are necessary to achieve the CBPTF goals for each stock. The recommended actions from this group should identify action that needs to be taken to address the needs of fish. There is also a potential need for recommendations related to governance. These are appropriate to come from the CBC if they address bottlenecks for moving forward, such as identify resource or governance actions needed to implement actions on the ground. A recommendation to consider politics may not be within the role of the SIWG, but they can identify constraints to making forward progress for restoring fish abundance and how to overcome those limitations.
- The CBC will not be responsible for implementing actions; the collaborative will be making recommendations to other agencies. It is important to avoid reaching beyond the group's mandate. The SIWG should focus on supporting recommendations with firm science and helping the I/RG to integrate across threats when moving forward recommendations developed by the topic-specific work groups.
- Others noted that if this recommendation is passed to the Habitat Work Group to develop further, it will then come back to the SIWG for a second review. There are integrated components to this recommendation, since it is seeking to achieve consistent policies that will adequately achieve recovery actions by applying consistent regulations, rules, and authorities. This will require comprehensive participation from all entities. Additionally, some rules and authorities need to be updated. For example, one limitation that has not been addressed is that the authorities of floodplain management agencies are focused on flood risk only, not restoring healthy floodplains.
- One work group member suggested this possible rewording of the recommendation title: "Seek to achieve consistent policies from all entities having management/restoration authorities in order to adequately support necessary restoration actions."

Work group members agreed to pass this recommendation to the Habitat Work Group for further development and to change the title to match the substance of the recommendation more closely.

Recommendation 3: Study carrying capacity in the Columbia

Recommended Action:

1. Juvenile growth can act as an indicator of density dependence, with slow growth periods indicating periods of prey supply limitations or competition. Growth can be assessed during existing sampling using data from tags (i.e., PIT tags) and/or by analyzing growth patterns on scales. Scales sampled from both juveniles and adults throughout their life cycle can also be used to evaluate whether size selective mortality is occurring. Size selective mortality often occurs due to competition for limited prey resources resulting in increased mortality or risk of predation for specific size classes of fish. Growth information, coupled with diet and environmental data, can also be used for bioenergetic modeling to determine the consumption rates of juvenile salmon and steelhead. This modeling can then be used to compare seasonal smolt abundance and prey supply availability to determine when and where density dependent effects are occurring. Additionally, a bioenergetic approach can be used to scale prey consumption with the overall prey availability to determine the carrying capacity of a system.

Scaling such an approach to a system such as the Columbia estuary is likely to present logistical challenges but could help improve habitat restoration and hatchery release practices.

2. Survival is another important indicator of density dependent effects, and several datasets are available to assess survival. At a reach specific scale, PIT tags can be used to assess both survival and growth, while coded-wire tags (CWTs) can be used to assess overall smolt to adult survival. Historic CWT data should be assessed to compare total regional release levels (i.e., Lower Columbia River, Snake River, etc.) with survival to determine if there is a relationship between overall release levels and survival, while also considering other covariates such as PDO, temperature, discharge, zooplankton abundance, etc. As staggered entry times into common habitats have been shown to buffer density dependent effects, the timing size and total number of fish at release or out-migration for hatchery and wild populations should also be compared with survival patterns. For hatchery populations consider implementing release timing studies to evaluate survival of fish released before and after the typical May-June timeframe. Similar studies are ongoing in the Salish Sea, which could provide a study design template and comparison.

Questions and Discussion:

- Some comments on the document were related to the scope and scale of this recommendation, including whether the intention is to study the carrying capacity of the Columbia River estuary or if the suggested study applied more broadly.
 - The recommendation was drafted to focus specifically on the estuary since it is a shared habitat that is important to all stocks coming out of the Columbia River system. Evaluating the system-wide carrying capacity seemed to be too challenging, so the estuary was recommended as a starting place.
 - Other work group members noted that the SIWG should evaluate this topic on a larger scale. If the focus is solely on the estuary, that could be more appropriate for the Habitat Work Group to take on. Looking at the scale of the entire basin, the topic of carrying capacity is integrated because it includes questions related to habitat (what is the fish biomass that a habitat can support?), hatchery and natural production (what is the effect of competition and disease?), and predation (are predators being drawn to the habitat?). Each of these components could be studied separately, and the SIWG could bring them together to study and understand the impacts on smolt to adult return rate in each reach by evolutionarily significant unit (ESU).
 - While carrying capacity is complex, it is possible to break it down into smaller pieces and study this on a basin-wide scale using the right approach. The group could start at the ESU scale and break it down by threat category.
 - Others shared that it would be beneficial to understand carrying capacity on a basin-wide scale, and one way to approach this would be to look at carrying capacity separately in different regions. To look at carrying capacity systemwide, the SIWG could have separate recommendations for mainstem and tributary habitat. Breaking the analysis into smaller pieces could be helpful since these are large and complicated issues to tackle.
 - The group also clarified whether the intention is to evaluate the carrying capacity for wild versus hatchery fish or the overall biomass within a habitat. The group agreed to start with the question of how much total biomass a habitat can support.

- Other questions in the document comments included whether such a study is feasible and how it differs from other efforts (i.e., what gap would this research fill, how is it new?).
 - One work group member pointed out that one of the roles of the SIWG is to help ensure that the suite of recommendations moving forward include appropriate monitoring and evaluation and critical uncertainty research to allow effective adaptive management. Much of this has already been identified through other work and forums, so a recommendation from the SIWG at this point might be premature.
 - The benefits to knowing more about carrying capacity include gauging the responsiveness of different populations to action and predicting the relative benefits of an action. This would inform the group's expectation of how different populations will respond to various actions.
 - Work group members added that another benefit of studying carrying capacity in the basin would be an increased understanding of how different factors would influence the effectiveness of efforts to increase fish abundance. For example, understanding the carrying capacity of a downstream habitat would help predict the effectiveness of opening a blocked area to support fish populations. Knowing the carrying capacity would also help inform whether increased hatchery releases would negatively impact wild fish runs through competition. Carrying capacity can influence all of the H categories, so it would be helpful to inform recommendations that this group will evaluate.
 - It may not be feasible to capture all the information this group would want, but the group (or implementer of this recommendation) could start by examining representative tributaries, mainstem areas, and parts of the estuary. By synthesizing the best available science; over time, this effort would be able to tighten the confidence limits around the effects of various actions on salmon abundance and recovery.
- Work group members also discussed whether this recommendation is more appropriate for the SIWG or the Habitat Work Group and who would be the entity that would ultimately take on this research.
 - Some work group members mentioned that carrying capacity is ultimately tied to habitat and should be vetted through the Habitat Work Group. In many cases, the reason for limited carrying capacity is degraded habitat, so the habitat bottleneck should be addressed. While the group agreed on the importance of habitat, they determined that carrying capacity is an integrated topic that affects all the H's and decided to keep this recommendation within the SIWG.
 - Others noted that the SIWG is prioritizing recommendations for key pieces of work that should be done, but the research does not have to be conducted by this group. The SIWG would have to identify who would be responsible for implementing this recommendation.

Work group members agreed to move this recommendation forward by having several work group members volunteer as key reviewers to further edit and revise the language based on this discussion. Additionally, a work group member suggested that this group consider how all the draft recommendations fit together and connect to each other.

Confirm Next Steps and Action Items

Liz reviewed the next steps for this work group and confirmed upcoming meeting topics. The next meeting (to be scheduled for February) will focus on finalizing the recommended actions and beginning

to review recommendations from topic-specific work groups. Liz also shared that documents and files for concurrent editing will be available in a shared folder for the work group on SharePoint.

Action items from this meeting included the following:

- **K&W:** Edit the draft recommended action statements based on the meeting discussions
- **Volunteers:** Further refine the draft action statements
 - **Casey Baldwin, Bob Lessard, and David Doeringsfeld:** Recommendation #1 (Structured Decision-Making Framework)
 - **Michelle Rub, David Bain, and Gary Marston:** Recommendation #3 (Study Carrying Capacity)
- **K&W:** Pass Recommendation #2 (No net loss regulations) to the Habitat Work Group

Liz thanked everyone for participating and adjourned the meeting.