

Columbia Basin Collaborative Science Integration Work Group

Meeting Summary

Monday, December 5, 2022, from 9:00 – 11:00am PT/ 10:00am – 12:00pm MT

Attendees

Working Group Members in Attendance: Kyle Smith (American Rivers), 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), Dennis Daw (Fort McDermitt Paiute and Shoshone/Upper Snake River Tribes Foundation), Scott Hauser (Fort McDermitt Paiute and Shoshone/Upper Snake River Tribes Foundation), John Cassinelli (Idaho Department of Fish and Game), Steve Manlow (Lower Columbia Fish Recovery Board), 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), Jay Backus (Port of Clarkston), David Doeringsfeld (Port of Lewiston), Kevin Scribner (Salmon-Safe), David Moskowitz (The Conservation Angler), Gary Marston (Trout Unlimited), Haley Ohms (Trout Unlimited), Cynthia Studebaker (US Army Corps of Engineers), Stephen Waste (US Geological Survey), Crystal Callahan (University of Idaho McClure Center), Charlene Hurst (Washington Department of Fish and Wildlife), Michael Garrity (Washington Department of Fish and Wildlife)

Observers in Attendance: Mark Martin (Idaho Outfitters and Guides Association), Stephen Pfeiffer (Idaho Rivers United), Shane Scott (Public Power Council), Stuart Crane (Yakama Nation), Heather Nicholson

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

Welcome, Agenda Review, and Updates

Liz Mack, Kearns & West, provided an overview of the agenda and meeting guidelines. The topics included: 1) Present and Discuss Draft Action Statements and 2) Confirm Next Steps and Action Items. Liz also reviewed the scope of the Science Integration Work Group (SIWG). The SIWG's current work is to identify cross-cutting actions to achieve Columbia Basin Partnership Task Force (CBPTF) goals for multiple species that are not specific to a limiting factor. In 2023, the SIWG will also evaluate identified actions from topic-specific work groups (TSWGs) for integrated impacts to inform recommendations to I/RG.

Present and Discuss Draft Action Statements

Liz recapped the process which led to the development of the draft action statements prepared by SIWG members in advance of this meeting. During the first meeting, the SIWG identified science and infrastructure gaps and needs in the Columbia River Basin. During the second meeting, the group brainstormed a list of potential actions that could address these gaps. During this meeting, the SIWG

reviewed and discussed four draft recommended actions that were developed by work group members to address some of the identified gaps. Liz noted that the group can revisit the longer list of gaps and needs to develop additional recommendations, and that the process of developing recommended actions will be iterative. The key points from the discussion related to each of the draft recommendations are included below.

Recommendation 1: Develop a Structured Decision Making Framework

This draft recommendation was developed by Haley Ohms and Gary Marston (Trout Unlimited). They shared that their draft recommendation begins by framing the problem as a lack of integration and coordination across the four H's (hydropower, hatcheries, harvest, and habitat). Within their recommendation, they identify two main actions: 1) develop a structured decision making (SDM) framework or model and 2) set up a governance and funding systems that create increased coordination between agencies and groups so that they consider other actions that are taking place when planning or implementing efforts across the H categories.

Questions and Discussion:

- Work group members expressed support for the SDM model concept and agreed that establishing a forum for integration across H's is important. Some members also expressed interest in some education to establish a better understanding of structured decision making.
- Is this recommendation intended to address coordination within or across entities?
 - Both. Agencies can be siloed within divisions and need to consider projects that work across the H's within that agency. There is also a need to coordinate with external entities across the H's.
- Is the goal of this recommendation to include other stakeholders besides fishery managers?
 - Yes, this recommendation is envisioned as an open-door effort that all affected parties should be able to participate in.
 - Work group members agreed that they could add language to the draft recommendation that makes it clear that agencies are not the only target of this action and that they should be clear whether the goal is to expand the fishery management circle or keep it the same.
- Work group members shared that there is more integration that goes on behind the scenes than many people realize because it happens informally. Conducting this integration and coordination in a more formal and transparent way requires more funding.
- One member suggested that this cross-coordination could fall under the State Environmental Policy Act (SEPA) process, which includes requirements for public review and evaluation of cumulative impacts. That could be one way to incorporate this recommendation within the existing regulatory framework.
 - This could be added to the draft recommendation as a specific example.
 - Other members did not see SEPA as a viable forum for integrating across all the H's since it is driven by specific project proposals.

- Another member suggested that this group could also discuss Bonneville Power Administration (BPA)-US Fish and Wildlife Service (USFWS) governance and funding reforms, which could strengthen basin-wide processes. This could include the creation of a body similar to the independent science advisory board for the Northwest Power and Conservation Council (NWPCC), but that is manager-driven. This would need to be pursued both within agencies and by enhancing different managers' ability to cooperate with each other.
 - This can also be added as an example to the current recommendation and potentially developed in more detail elsewhere.
- Work groups members also discussed the fact that this group will need to make decisions in this way over the course of the next six months as they start to integrate and prioritize recommendations from the other topic-specific work groups. Developing an SDM tool or model is a time-consuming process, so this group will need to consider how they can apply this type of approach to incoming recommendations before such a tool can be developed.
 - Work group members suggested ideas including working through a case study, developing a checklist of questions to use until a quantitative model can be developed, and regional charette processes conducted through focused work sessions that leverage the knowledge of subject matter experts.
 - This group can also help inform the development of the SDM tool by identifying some of the crucial linkages across the H's and key integration processes that the tool would need to incorporate.
- Other work group members provided feedback that the language in the draft recommendation should be revised to avoid making generalized statements regarding siloes or a lack of coordination, since some people are deeply engaged in interagency coordination. It is important to specify the scales at which this group recommends increased coordination should occur and to acknowledge that there is ongoing work to coordinate efforts across the H's.
- Work group members discussed whether the Salmon Slider is sufficient to understand synergies across H's or if a new tool is needed to accomplish this.
 - The Salmon Slider does incorporate some compounding effects. It may not be a fully quantitative model, but it does prioritize the mortality factors and a significant amount of time was dedicated to developing it.
 - The SDM tool that would be developed by this action would go beyond what the Salmon Slider model was intended to do. For example, it would include the temporal aspect of actions, which are not integrated into the Slider. Compounding effects are not fully captured in the Slider tool.
 - Additionally, the Slider tool does not work at smaller scales. Another tool is needed to guide decisions on the population level.
 - Some members felt that this group should not back away from using the Salmon Slider. It is useful as a structure for analysis to assess various impact areas for stocks and could be useful in looking at recommendations from other groups. The work group would get to the level of specificity by applying the model and could provide a way of presenting final recommendations.

- Other members shared that they agree with using the Slider as a framework for developing working hypothesis, but that needs to be followed by a deeper dive to validate or modify key parameters and assumptions.
- The Slider is not an appropriate tool for validating actions. It provides a coarse-scale guide, not a final perspective.
- Other members noted that SDM is more than a mathematical model and that it also brings in qualitative information.
- The Slider tool was used in the Lower Columbia Recovery Plan to frame measures, actions, and strategies across the H's relative to the coarse-scale magnitude of impact and assigned to specific entities. The greater the impact of a certain threat according to the Slider (at a population scale), the more emphasis was placed on implementation actions. The Lower Columbia Fish Recovery Board is now revisiting the plan through an adaptive management lens to test hypotheses on anticipated responses and adjust course as needed.
- Work group members discussed who the entities are that would implement this action.
 - One challenge is that there are many entities with management responsibility and authority, but a narrow group of funding sources and implementers. There are additional entities that should be providing funding and implementing actions. Improved policies and regulations would help address this challenge.
 - This recommendation would need to cut across agencies and have input from multiple stakeholders to be effective. A single entity will not be effective in developing this kind of tool. A suite of interests needs to be represented, including involvement from key management agencies, stakeholders, tribes, and funding entities.
- Work group members also discussed the potential for this group to work through a few case studies.
 - Some members proposed developing a few case studies to present to the I/RG to demonstrate how important this integrated approach is to informing and prioritizing actions.
 - Doing a case study prior to receiving recommendations from the working groups would help the SIWG be prepared.
 - The Lower Columbia River might be a good case study. The group could pick a stock and work through it. Such a case study could be prepared within 1-2 months.
 - The Lower Columbia would not incorporate hydropower impacts, which is a significant discussion that has to occur above Bonneville Dam.
 - Depending on where you are in the basin, there is a different mix of H's to consider. When it comes to fish recovery, there is often a regional bottleneck that has basin-wide implications.
 - A case study of the entities responsible could be the Puget Sound Partnership. This group has a broad membership and produces action agendas; however, the action agendas have had little success in becoming implemented actions.

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

This draft recommendation was developed by Steve Manlow (Lower Columbia Fish Recovery Board). In providing an overview of this recommended action, Steve shared that achieving delisting targets requires dealing not only with abundance but also threats, since the NOAA recovery criteria require addressing the listing threats across all sectors for each of stock before delisting can occur. Steve also shared that habitat work is broader than active restoration work, and additional funding is required to address that gap. According to the Salmon Slider, habitat is a high or medium priority threat for two thirds of stocks. While habitat restoration efforts are occurring, the biggest gap is protecting the habitat baseline. If the habitat baseline is degraded through land use, that undermines the ability to reach recovery goals or sustain gains. Therefore, this recommended action is a call for increased effort at the local, state, federal levels for land use programs to achieve no net loss. This includes monitoring these programs to ensure they are effective and considering habitat work in the context of the other H's. This action could be implemented by the governor's offices in each of the states.

Questions and Discussion:

- What policies are active now for no net loss?
 - Every major land use program includes provisions for no net loss. However, these programs are not being monitored, so there is no data to show that no net loss is being achieved, and in many cases the data points to the opposite being true. This recommendation would ensure enforcement of current policies that are already in place.
- Who would address the second part of the recommendation? (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).
 - State legislatures allocate a finite budget across multiple agencies and departments, so is challenging to acquire funding for long-term monitoring programs.
 - This is a reason why the recommendation should be directed through the state governors' offices. The governors would work with their legislatures during the budget processes to ensure that funding for monitoring is a priority.
- Work group members added that achieving consensus by this group could help gain support for implementing actions beyond habitat restoration that also protect baseline habitat. The combined voices of the different stakeholders represented in this group might be persuasive to some actors.
- Would the third part of the recommendation (ensure alignment between active restoration work, land use programs and all-H recovery efforts, in light of climate change) be connected to the SDM recommendation that was discussed earlier?
 - Understanding and considering alignment across the H's harkens back strongly to the first draft recommended action to develop a structured decision making framework.
- Work group members shared the importance of integrating human (i.e., political, social, cultural, and economic) considerations when developing recommendations.

- Another aspect of this recommendation could include identifying key challenges to getting policy alignment within respective organizational structures and authorities.

Recommendation 3: Study carrying capacity in the Columbia

This draft recommendation was developed by David Bain (Orca Conservancy) and Gary Marston (Trout Unlimited) to study the carrying capacity of the Columbia River system. Gary and David noted that there are many wild and hatchery fish entering the system. This proposed study would focus on the estuary, which is critical for several stocks. When there are a lot of fish entering the system over a short period of time, that creates the potential to overwhelm the system's carrying capacity, so there is a need to assess what that carrying capacity is. There are also ways to potentially buffer the carrying capacity. For example, studies on sockeye salmon in Alaska in a particular lake show that because fish utilize the lake at different time periods of the year, the overall availability and abundance of food is increased. Another example is the Salish Sea Survival Project conducted in Washington and Canada, which has generated studies looking at the survival of juvenile fish based on different release timings of hatchery fish. Gary and David noted that a similar approach could be applied in the Columbia River basin. The methodology and approaches for their recommendation could include bioenergetics modeling.

Questions and Discussion:

- The US Army Corps of Engineers (USACE) and Bonneville Power Administration (BPA) have a joint estuary program, which has identified carrying capacity as potential limiting factor and done some preliminary investigation.
 - This is a challenging and complex topic, so relying on existing information collected by other groups is essential.
 - As another example, researchers at Pacific Northwest National Laboratory (PNNL) and Northwest Fisheries Science Center (NFSC) have been collecting data on insulin growth factors for years.
 - One addition to the draft recommendation would be to add these and other specific details on related existing efforts.
- Work group members noted that other research is ongoing in the Gulf of Alaska to learn more about ocean carrying capacity for the various salmon species.
- With the focus of the draft recommendation on the estuary, it is important to consider actual numbers of hatchery fish entering the estuary rather than simply looking at release numbers of hatchery fish. Often, this conversion is not done.
 - Work group members agreed that it is important to examine the actual numbers of fish entering the habitat as well as the timing of when those fish enter the habitat.
 - Hatchery-related actions can be taken that could buffer the carrying capacity of the system.
- One work group member cautioned that if this effort expands to tributary habitats, there are risks associated with establishing a low carrying capacity based on the current conditions. The prolonged reduction of marine nutrients has reduced carrying capacity in tributary habitats.

That factor needs to be changed to increase the carrying capacity of the system from the current level.

- Much of what is included in this recommendation is covered within other ongoing efforts or forums (e.g., biological opinions from the National Marine Fisheries Service (NMFS) and U.S. v. Oregon litigation), which have called for the development of an ecological model that pulls in much of the same information as the second part of the draft recommendation related to survival and density-dependence.
 - There has been a call for studies to be conducted by the NFSC. There could be an opportunity to investigate what research has been conducted to help build understanding of this issue for the Columbia River system.
 - Hatchery production has been reduced significantly over the last few decades.
 - There is a lot of existing information that can be used to answer these questions.
 - How the alteration of hatchery release timing affects carrying capacity is one of the newer components of these kinds of studies. It is essential to build on existing data to investigate this topic.
 - Carrying capacity also varies depending on the the time of year, species, and different conditions year-to-year. It is important to determine which variables affecting carrying capacity humans can control and which are determined by the natural environment.

Understanding the differences between models

This draft recommendation was developed by Bob Lessard (Columbia River Inter-Tribal Fish Commission (CRITFC)). Bob share that the purpose behind this recommendation was to support this group in understanding where the sources of evidence drawn upon by various models and how to interpret the results these models and decision frameworks. Within this write-up, Bob brought attention to three models frequently mentioned in SIWG discussions: the Salmon Slider (a coarse-scale visualization tool that shows the relative magnitude of impacts and that this group has already discussed in detail), the CSS models, and the NOAA models. Bob shared that the CSS model is likely the most rigorous multi-species model with a multi-year application. This model is well-documented and can be applied and reapplied to different populations at various temporal and spatial resolutions. There are two versions of the model: the most recent CRSO-EIS includes both a life cycle model and a cohort model.

The main issue this draft attempts to address is that each of the models captures some information but misses others. Bob emphasized that there is no model that works for all situations and that the results of the different models need to be interpreted in the context of where the data supporting each model is strongest. The outputs of these models need to be interpreted in a particular way based on their relative strengths and weaknesses.

Questions and Discussion:

- Is this meant to be an internal resource, or does it need to be turned into an external action?
 - Right now, this is meant to serve as an internal resource that can help this group to analyze the evidence behind recommendations from the other topic-specific work groups and weigh them accordingly.

- Potential next steps include further developing a detailed, tabulated, list of assumptions embedded within each of the models and a provide a bit more detail on the strengths and weaknesses of the NOAA life cycle model versus the CSS life cycle model. Further developing these strengths and weaknesses will help establish whether this group shares the same assumptions about each of the models.
- The first step is to ensure that this group understands this information internally. This same information would likely benefit others as well since these models get referred to frequently. Therefore, developing a product that helps the public understand this information could be useful.
- Other work group members agreed that it would be valuable to produce an external-facing educational product that describes these models.
- Does this group anticipate times when we will be presented with “dueling models,” and can the information presented here help avoid this challenge?
 - It depends on which actions this group is examining. The biggest difference is related to mainstem juvenile up-migration survival since the CSS and NOAA models yield different results. However, the outputs of the two models are less different for broader abundance level life cycle survival.
 - There will always be extra details included in one model that are not included in another.

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 January) will focus on further refining the recommended actions and beginning to complete the recommended action form. 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:

- **All:** Review and add suggested edits to the following documents by December 31, 2022:
 - Draft Recommended Action Statements
 - Columbia Basin Salmon Models
- **K&W:** Coordinate with Steve Manlow to explore next steps for developing a case study for the SIWG to work through.
- **K&W:** Look into the idea of sharing a presentation or primer on structured decision-making to SIWG members.

Liz thanked everyone for participating and adjourned the meeting.