

MAFAC CBP Task Force
Potential Basin-Wide Scenarios -- Snake River Regional Meeting (January 16, 2020)
Meeting Notes (*italics* = a la carte menu; roman = meeting notes)

- Goal of all these scenarios would be to achieve the high-range goals. Some might achieve them sooner than others or might have higher certainty of achieving them.
- The biological strategies below focus on the strategies/actions during the early portion (e.g., first 25-years) of scenario implementation.

Theme	Continue existing level of effort (note wording change from template)	Moderately increase effort in all threats (Note wording change from template b/c original overemphasized habitat compared to other threats)	Frontload Maximum Effort in All Threats
Description	Continues efforts similar to current levels on all fronts in the near term. Identifies benchmarks. Results evaluated relative to benchmarks after a certain time period and if benchmarks not met, additional actions are triggered.	Moderately increases efforts in all threats in the near term. Identifies benchmarks. Results evaluated relative to benchmarks after a certain time period and if benchmarks not met, additional actions are triggered.	Maximum effort in near term on all fronts directed toward achieving goals as soon as possible.
Biological Strategies	<p>Hydro: <i>Enhanced measures to improve system survival (in river & latent) within the (large-scale) limitations of current system configuration (experimental spill program, etc.)</i></p> <p>1/16/20 notes: Continue to implement flex spill. Should flex spill be in “current” efforts or enhanced?</p> <ul style="list-style-type: none"> • Region is moving toward flex spill – don’t know what the benefits will be yet. Needs to be evaluated. • Flex spill is an interim agreement –don’t yet know what the operations going forward will be. • What would go in current if not flex spill? • Until we know what impacts of flex spill will be, should consider it an “enhanced” effort. Should wait until we understand the results of flex spill to identify further actions. <p>Dworshak: temp management benefits are being optimized under current operations.</p>	<p>Hydro: <i>Enhanced measures to improve system survival (in river & latent) within the (large-scale) limitations of current system configuration (experimental spill program, etc.)</i></p> <p>1/16/20 notes: Flex spill + evaluation of its benefits (see existing efforts column as well)</p> <ul style="list-style-type: none"> • There is latitude in the concept of flex spill and were we to move forward with this as the strategy, there could be opportunities for adjustments as we learn more. <p>Dworshak: temp management benefits are being optimized under current operations. Additional possibilities for this category:</p> <ul style="list-style-type: none"> • 125% spill 24/7. (apparently current standard varies depending on location) • Breaching one or two Lower Snake River dams instead of 4. (this could also go under frontload maximum column – whether just one or all four are breached will have similar impact on socio-economic effects) 	<p>Hydro: <i>Targeted restoration of normative river conditions and function (dam breaching, natural hydrograph, flooding, temperature).</i></p> <p>1/16/20 notes: Breach all 4 LSR dams as soon as possible</p> <ul style="list-style-type: none"> • COE has said breaching could be done in about 3 years (once the decision and funding have been settled). Have cost estimates. 2012 was last updated analysis that’s public right now. Draft EIS will be available in February 2020. However, DEIS may not capture all impacts. McNary flow target – some flow augmentation proposed for breach alternative in CRSO EIS. Breaching: \$1-3 billion. <p>Spill to 125% gas cap at all LCR dams (assuming operational constraints – e.g., erosion concerns at some dams, fish ladder fixes – were addressed). Dworshak: temp management benefits are being optimized under current operations. Synergy between SR flow augmentation and Dworsak ops with respect to needs for temperature remediation. Unclear whether flow aug requirements would change if LSR dams were breached. If LSR dams were breached, would there be flexibility to make additional adjustments/gains in LCR dams?</p>

<p>Trib habitat: <i>Continue current level of investment to implement small-scale restoration and protection prioritized based on a basic understanding of limiting factors. Where possible, protect and restore priority areas selected based on best available science to a high level of function.</i></p> <p>1/16/20 notes: Current efforts are generally localized to project-specific opportunities. Opportunities are more constrained in watersheds with higher levels of existing development and less constrained in other areas. Different approaches needed in different areas, depending on existing land use/development. Many projects in the past were opportunistic but effort is underway to move toward more strategic approaches. Many watershed/tributary assessments have been done but there is a need for more. Marine-derived nutrients – not being addressed explicitly in quantitative CBP impact assessment because of uncertain magnitude of synergistic effect. Benefits of habitat work: Yankee Fork -- extremely degraded but not seeing enhanced returns yet (efforts to do are creating a foundation to realize benefits of further improvement); Lemhi: seeing increased returns in response to habitat improvement efforts. (Check Jordan LCM results in Upper Salmon and Cooney LCM results in Grande Ronde-- Adrienne will follow up with some info from GR/CC. John Foltz will follow up with some info on Tucannon/Asotin; <i>can also check on RME results—several syntheses exist; I’ve pasted in some info from the Jordan and Cooney models below, at the bottom of the document, in case it’s useful</i>). Potential to improve habitat: ID has done evaluations on small scales of potential to improve habitat. Can we extrapolate from where we have such info to areas where we don’t? Could set crude low end/high end metrics for everywhere in basin. Could we use the FCRPS expert panel results in the same way the UCR</p>	<p>Trib habitat: <i>Substantially enhanced resources and large-scale, process-based restoration and protection of habitat function sufficient to demonstrably and significantly improve abundance and productivity at population scale.</i></p> <p>1/16/20 notes: Did not specifically discuss tributary habitat strategies for this scenario theme.</p>	<p>Trib habitat: <i>Substantially enhanced resources and large-scale, process-based restoration and protection of habitat function sufficient to demonstrably and significantly improve abundance and productivity at population scale.</i></p> <p>1/16/20 notes: Move more toward landscape scale projects that restore ecological processes at a watershed scale. Based in intrinsic productivity values, areas where most work is being done at present have highest potential (e.g., Lemhi, Pahsimeroi). If all areas restored to pristine condition, would still be well below goals absent other improvements in out-of-subbasin survival. Achieving the goals for accessible areas might end up being dependent on blocked areas. (NOTE: The Task Force identified goals for accessible areas and blocked areas separately, so their original intent was the goals for accessible areas be achieved in those areas. Need to evaluate hypothesis that tributary habitat restoration actions lead to increases in population-level spawner abundance.</p>
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	<p>did? (Don't have expert panels for all subbasins in the Snake.)</p> <p>Current investment: \$10 million/year now in the Snake (\$ that comes through state) + \$3.8 million per year (through tribes). (NOTE: these numbers have not been fact-checked and would need to be if included in any final documentation of the meeting.)</p> <p>Would have the capacity to do additional work if there were additional resources.</p> <ul style="list-style-type: none"> • For example, in Lemhi, work focused initially on connectivity. Now that connectivity is improved, need to look at complexity, water quality, etc. In terms of potential to improve complexity in Lemhi, we're maybe 10% there. • Could explore potential to improve habitat in the Middle Fork Salmon. Not all is in wilderness area. Could be potential to improve habitat. • Funding for tributary habitat work increased in 2008 (doubled to tripled). At that time, it took about 2 years to ramp up the institutional and other capacity to spend the funds. With additional funding, there would still be an additional ramp-up period, but we have capacity to do more. There are substantial opportunities to get more projects on the ground with additional funding. • There is a need for additional watershed/tributary assessments. Need to compile expert/local knowledge. Build relationships. If we were to start over, how would we do things differently to maximize outcomes? <p>Look at overlap between private lands and habitat. Do we have habitat capacity that's not currently being used? (example in Yankee Fork – some areas where we're not seeing dispersal, although this coincided with timing of when population declined.)</p> <p>Sp/Su Chinook behaving differently from steelhead. In some tribes, fish are staying lower in tribes and not using available habitat higher up.</p>		
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	<p>What's main message back to Partnership re. benefits of enhanced investment in habitat?</p> <ul style="list-style-type: none"> Continuing with existing efforts won't get us to the goals. (ISAB paper) Improvements in habitat necessary but not sufficient. 		
	<p>Estuary habitat: <i>Protection and small-scale restoration prioritized based on a basic understanding of limiting habitats. Where possible, protect and restore priority areas selected based on best available science to a high level of function.</i></p> <p>1/16/20 notes: Did not discuss estuary.</p>	<p>Estuary habitat: <i>Substantially enhanced resources and large-scale, process-based restoration and protection of habitat function sufficient to demonstrably and significantly improve survival.</i></p> <p>1/16/20 notes: Did not discuss estuary.</p>	<p>Estuary habitat: <i>Substantially enhanced resources and large-scale, process-based restoration and protection of habitat function sufficient to demonstrably and significantly improve survival.</i></p> <p>1/16/20 notes: Did not discuss estuary.</p>
	<p>Blocked areas: <i>Resident fish substitution in areas of the historical anadromous distribution which are currently not currently accessible.</i></p> <p>1/16/20 notes: Goal of continuing current levels of effort would be to re-establish anadromous fisheries on unlisted, hatchery origin spring/summer Chinook salmon and/or steelhead in select tributaries to provide subsistence, cultural, and recreational harvest opportunities (consistent with goal 1 from USRT 2018).</p> <ul style="list-style-type: none"> Currently there is some effort at trap and haul – provides tribal ceremonial harvest opportunities. Some research and monitoring underway. Need more discussion about scale of this effort. Under the terms of the HCC settlement agreement (which is still pending so not guaranteed to be implemented) OR/ID cannot consider fish passage for 20 years after the license is signed. But other parties could work on agreements regarding 	<p>Blocked areas: <i>Limited adult releases in currently blocked historical production areas to provide fishing opportunities and assess natural production potential of current habitats. Experimental reintroduction with interim hatchery supplementation concurrent with evaluation of passage potential.</i></p> <p>1/16/20 notes: Goals with enhanced effort would be to:</p> <ul style="list-style-type: none"> Restore naturally reproducing unlisted populations of salmon and steelhead within select tributaries upstream of the HCC to meet harvest, cultural, and ecological needs. Restore fall Chinook salmon in the mainstem Snake River (as a long-term goal - likely 20-30 years after license issuance), dependent, in part, upon restoration of mainstem habitat (i.e., mainstem water quality improvements) and effectiveness of mainstem collection measures. (consistent with USRT 2018) <p>Achieving these goals would take place in a slightly longer timeframe (20-50 years). This timeframe also coincides with when the BOR Upper Snake Projects would need to go through ESA consultation again, providing additional</p>	<p>Blocked areas: <i>Restore effective adult and juvenile passage consistent with high levels of self-sustaining natural abundance and production in historical ranges.</i></p> <p>1/16/20 notes: A longer-term vision of maximum effort for the HCC dams includes not just achieving the goals laid out in the USRT 2018 Fisheries Resource Management Plan, but a future where the HCC dams have been removed. This is a future that could be realized after the upcoming HCC license has expired.</p> <p>Dams have a lifespan and a general maximum effort related to blocked areas could be to understand the capacity of habitat in blocked areas and establish a process to think systematically about what to do with blocked habitat throughout the basin.</p> <p>Max effort vision for blocked areas in the Snake Basin also needs to include the N. Fork Clearwater and Wallowa Lake (the latter for sockeye), not just the upper Snake.</p>

	<p>production of hatchery fish and moving them above the dams to provide additional harvest opportunities.</p> <ul style="list-style-type: none"> Note that OR is supportive of quantitative goals for blocked areas but not advocating for reintroduction for 20 years after license is signed. Studies re. passage feasibility and habitat needed in interim. For instance, one need is to identify areas of suitable habitat in blocked areas. To what extent could habitat in blocked areas contribute to achieving natural production goals? What additional habitat restoration is needed to support reintroduction? IPC agree to do habitat restoration in mainstem above HCC as part of settlement agreement. 	<p>opportunities to explore fish passage. Also presumably would coincide with the end of the 20-year period after signing of the new HCC license, so discussions of fish passage could take place in that forum.</p>	
	<p>Predation: <i>Nonlethal measures designed to discourage predation by key predators in focal problem areas. Lethal but limited removal of problem animals of key predators in specific areas or as part of redistribution efforts.</i></p> <p>1/16/20 notes: Did not discuss.</p>	<p>Predation: <i>Nonlethal measures designed to discourage predation by key predators in focal problem areas. Lethal but limited removal of problem animals of key predators in specific areas or as part of redistribution efforts.</i></p> <p>1/16/20 notes: Did not discuss.</p>	<p>Predation: <i>Predator removals which substantially reduce numbers and corresponding predation impacts.</i></p> <p>1/16/20 notes: Did not discuss.</p>
	<p>Hatcheries: <i>Continue to limit release numbers, strategically implement mitigation and supplementation programs, and incremental hatchery reforms to control impacts/risks in key natural production areas.</i></p> <p>1/16/20 notes: Did not discuss.</p>	<p>Hatcheries: <i>Continue to limit release numbers, strategically implement mitigation and supplementation programs, and incremental hatchery reforms to control impacts/risks in key natural production areas.</i></p> <p>1/16/20 notes: Did not discuss.</p>	<p>Hatcheries: <i>Curtail hatchery production except for critical conservation or reintroduction purposes.</i></p> <p>1/16/20 notes: Did not discuss.</p>
	<p>Harvest: Abundance-based management to optimize and share harvest consistent with the needs of spawning escapement and weak stock limitations.</p> <p>1/16/20 notes: Did not discuss.</p>	<p>Harvest: Curtail or eliminate directed fisheries and limit incidental impacts to <i>de minimis</i> levels which do not impede recovery.</p> <p>1/16/20 notes: Did not discuss.</p>	<p>Harvest: Close or severely limit all harvest to maximize natural spawning escapement. (Interim measure to restore natural diversity, distribution & productivity.)</p> <p>1/16/20 notes: Did not discuss.</p>
Benchmarks	<p><i>For all strategies: Identify benchmarks. After 15-25 years, evaluate results relative to benchmarks. If not met, additional actions are triggered.</i></p>	<p><i>For all strategies: Identify benchmarks. After 15-25 years, evaluate results relative to benchmarks. If not met, additional actions are triggered.</i></p>	<p><i>For all strategies: Identify benchmarks. After 15-25 years, evaluate results relative to benchmarks. If not met, evaluate needed changes in strategies.</i></p>
SCE&E Considerations and Strategies	<ul style="list-style-type: none"> All H approach. Closest to status quo SCE&E. By making some more radical decisions contingent on not meeting benchmarks, provides time for 	<ul style="list-style-type: none"> All H approach. Would require substantially increased funding for enhanced efforts. 	<ul style="list-style-type: none"> All H approach. Costly: Would require drastically increased funding for enhanced efforts.

	<p><i>more public buy in and planning for addressing SCE&E impacts of those actions.</i></p>	<ul style="list-style-type: none"> • <i>Habitat efforts could have implications for private landowners and public lands management; could also create jobs.</i> • <i>By making some decisions contingent on benchmarks, provides time for more public/political buy in and planning for addressing SCE&E impacts of those actions.</i> <p>Hydro: Breaching one dam will have same economic impacts as breaching more than one.</p> <p>Blocked areas: Cultural importance to tribes of having fish above HCC.</p>	<ul style="list-style-type: none"> • <i>Habitat efforts could have implications for private landowners and public lands management; could also create jobs.</i> • <i>Do not have public consensus at this point.</i> • <i>Disruptive to power and navigation sectors and to fishery interests.</i> • <i>Current mitigation funds for habitat and hatchery production would likely be substantially reduced.</i> <p>Hydro:</p> <ul style="list-style-type: none"> • No more barge transportation into Snake River. • Need to develop strategies for keeping affected economies whole. • Look to draft EIS and other documents for specifics of impacts (although there may be some impacts not discussed). Tribal cultural values that go along with having fish in system would be enhanced. Tribes would gain back some practices that have been slipping away. • Hypothesized benefits to water quality (temp). • What do we believe will be the biological improvements from dam breaching? Need more clarity on this. • Flood control impacts: LSR dams don't provide much flood control function. Cd mitigate with how upper projects are managed.
Critical Uncertainties /Research Needs	<p>Why is relatively intact habitat not being more productive? Middle Fork: need to understand why habitat not being more productive. Impacts tribes and their ability to harvest. (e.g., why is Lemhi doing better than more pristine populations) Need for more data in terms of response to habitat improvements. Need to evaluate hypothesis that tributary habitat restoration actions lead to increases in population-level spawner abundance.</p>		<p>Need better understanding of capacity to improve tributary habitat productivity and constraints to improving.</p>
Regional Considerations			

Innovation & experimental management			
Strategic choices, sequencing considerations, early successes, stock specificity			
Climate /population considerations	<i>Protect and restore stocks and populations regardless of their vulnerability to possible climate change effects.</i>	<i>Prioritize protection and restoration efforts for stocks and populations which are least vulnerable to climate.</i>	<i>Maximum improvement effort for stocks and populations which are least vulnerable to climate and/or actions most likely to improve climate resilience. Restore access to currently-blocked areas which are least vulnerable or most resilient to effects of climate change.</i>