Columbia Basin Collaborative Science Integration Work Group

October 4, 2022

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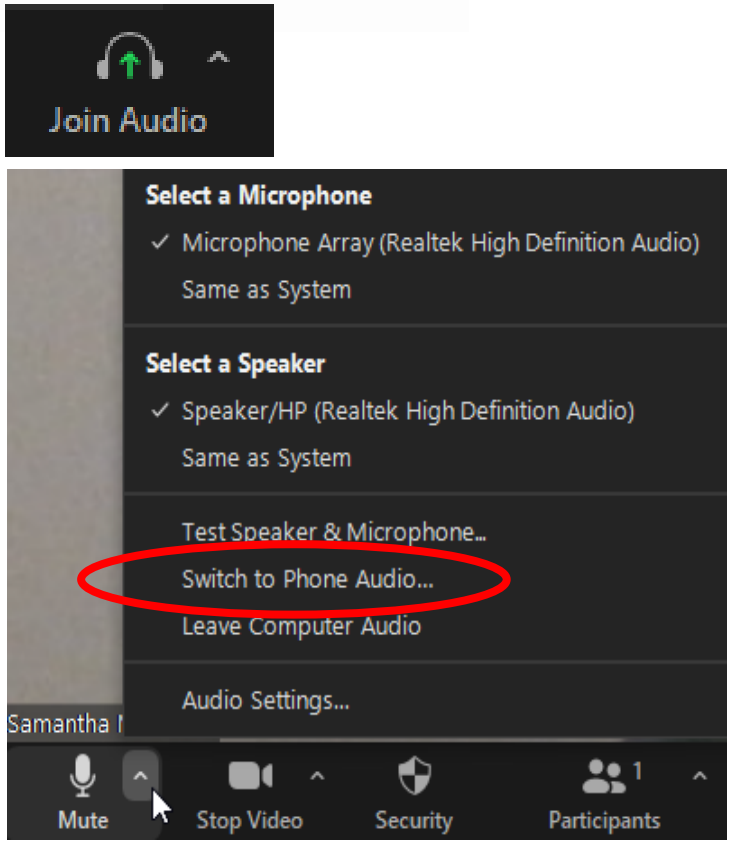

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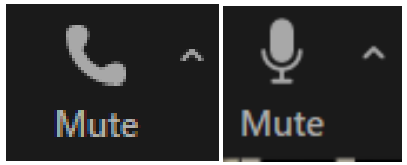

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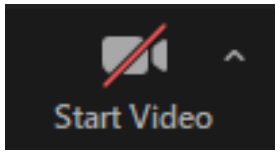

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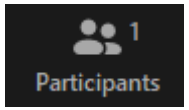

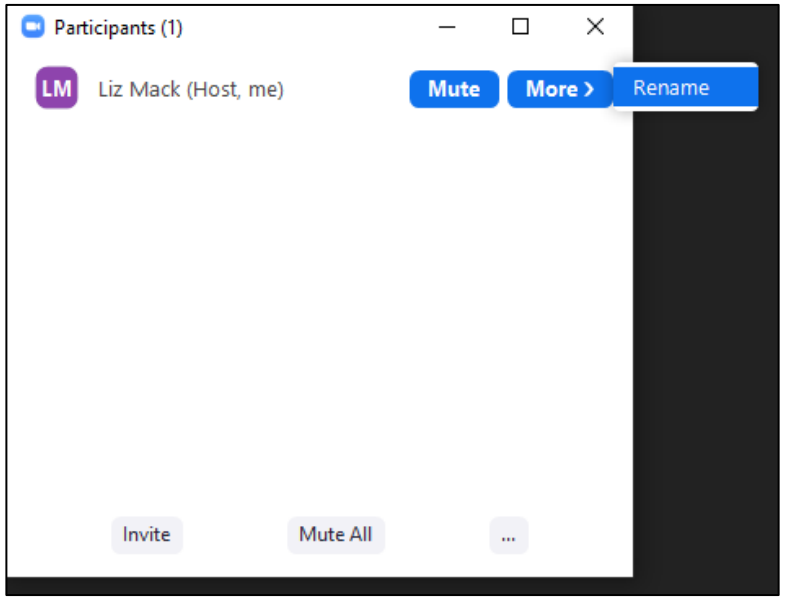

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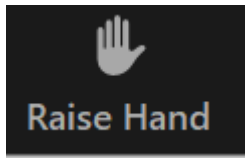

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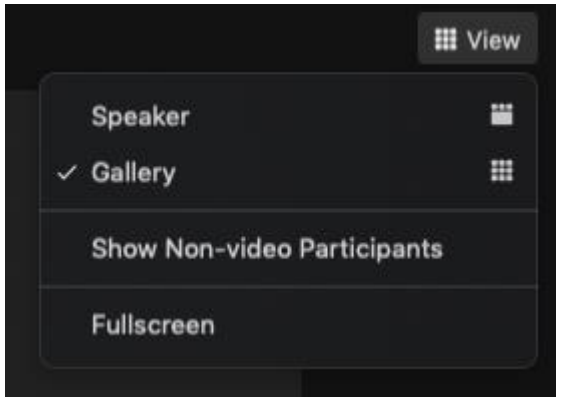

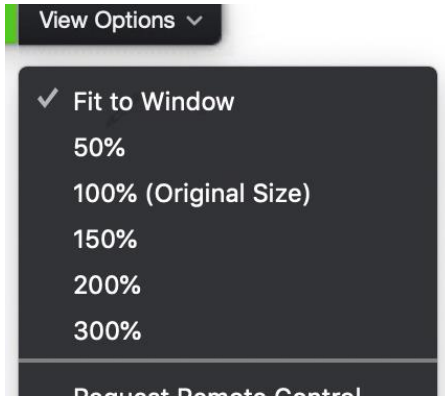

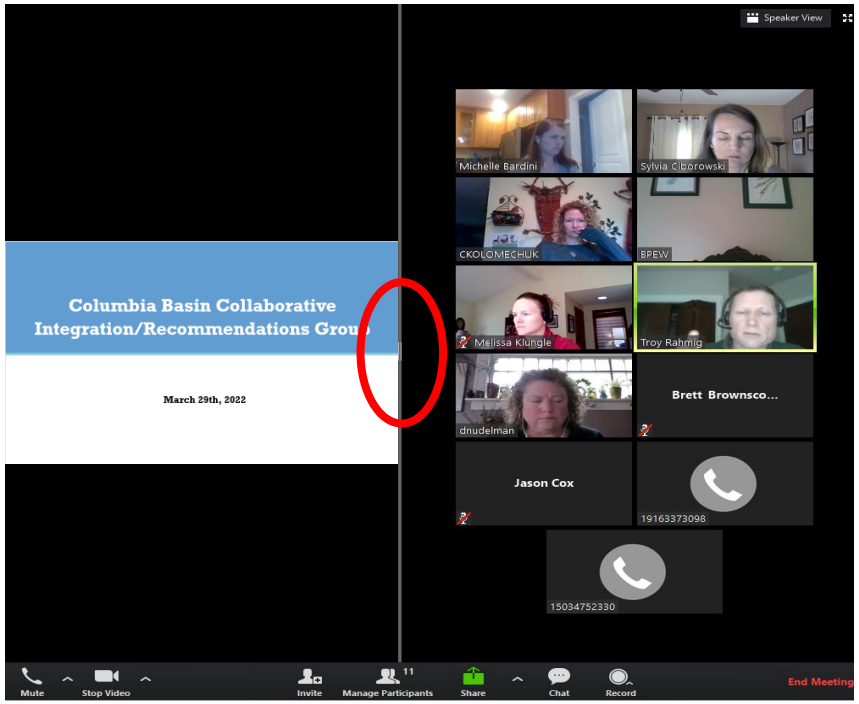

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Welcome, Opening Remarks, and Proposed Agenda

Collaboration

Focus on your interests, not positions

Positions are a particular stance,
“What I want”

Interests are the intangible motivation underlying your stance,
“Why I want what I want”

Collaboration

Invent options for mutual gain

- Work for creative solutions
- Increase the size of the pie

Collaboration

Separate the people from the problem

- Put yourself in others' shoes
- Recognize and understand others and your own emotions
- Build a working relationship
- Be hard on the problem, soft on people!

Meeting Guidelines

- Honor the agenda
- Listen to understand and ask questions to clarify
- Balance speaking time
- Don’t pile on
- Be hard on the problems, soft on the people
- Seek alignment and common ground wherever possible
- Be present

Agenda Review

Time (PT)	Topic	Presenter
3:00 – 3:15 pm	Welcome, Opening Remarks, and Agenda	Liz Mack, Kearns & West
3:15 – 3:40 pm	Overview and Context • Role and Responsibility • Columbia Basin Partnership Data	Michael Garrity, WDFW
3:40 – 4:40 pm	Work Plan • Science and Infrastructure Gaps • Criteria for Actions	Liz Mack, Kearns & West
4:40 – 4:50 pm	Prep for Next Meeting: Short-term Actions that Impact Multiple Topics	Liz Mack Kearns & West
4:50 – 5:00 pm	Confirm Next Steps, Upcoming Meeting Topics, and Summary	Liz Mack Kearns & West

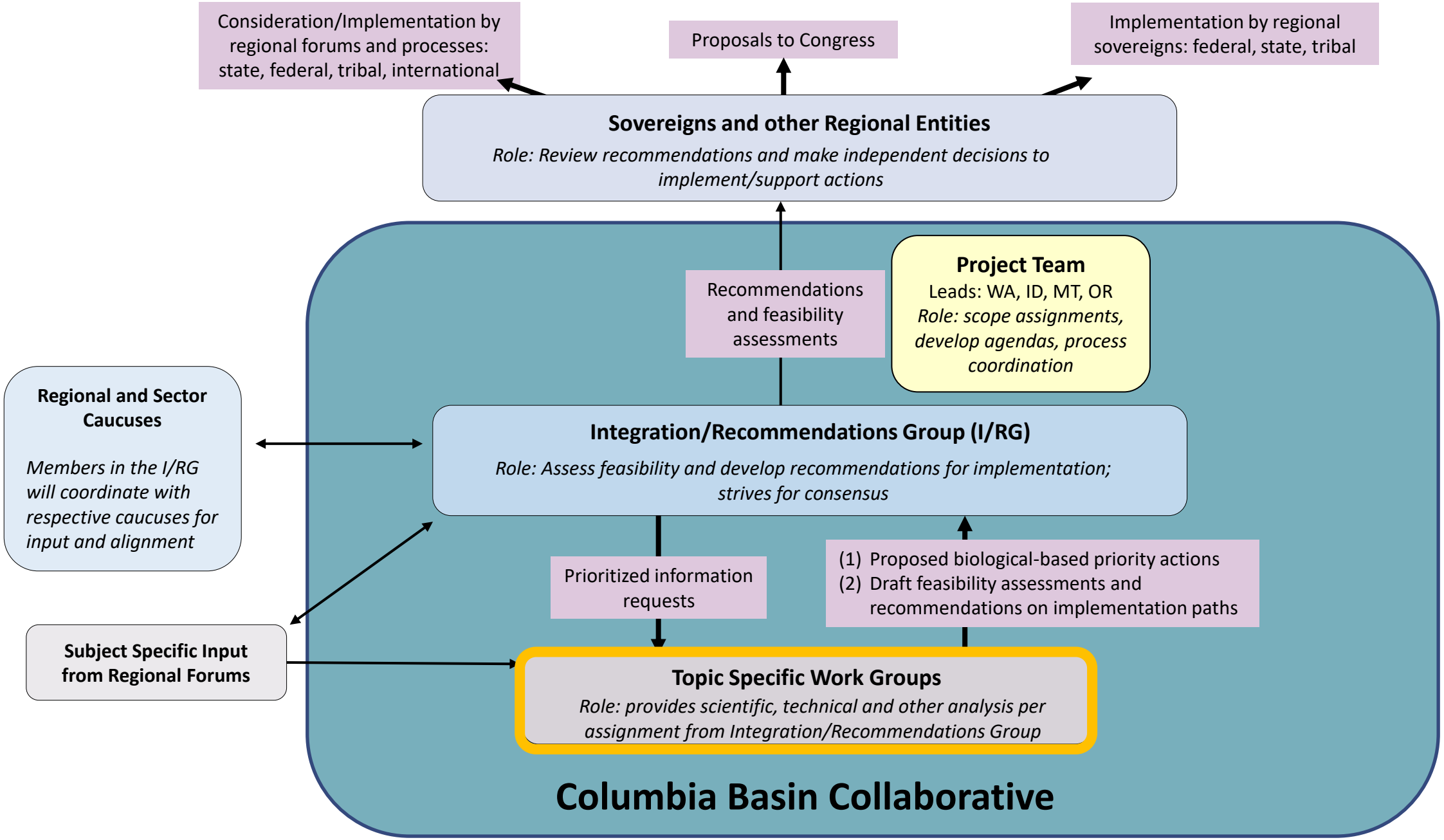
Introductions

- Name
- Affiliation

On the Jamboard share what you hope to accomplish through the work group

Overview and Context
Columbia Basin Collaborative

A regional approach to achieving the Columbia Basin Partnership goals



The Integration/Recommendations Group

I/RG Role

- **Monitor the overall progress** of the CBC to achieve the CBPTF goals
- **Review recommendations** for projects and actions in the region
- **Seek consensus and promote recommendations** to decision-makers
- **Provide a clearing-house forum** for understanding, promoting and acting on short and long-term opportunities
- **Mobilize and motivate people** across the basin to support salmon rebuilding and achieve the CBP goals
- **Engage decision-makers** to monitor and follow-up on implementation of recommendations

I/RG Membership

Tribe
Burns Paiute Tribe
Coeur d'Alene Tribe
Confederated Tribes of the Colville Reservation
Confederated Tribes of the Grand Ronde
Confederated Tribes of the Umatilla Indian Reservation
Confederated Tribes of Warm Springs
Cowlitz Indian Tribe
Fort McDermitt Paiute and Shoshone Tribe
Nez Perce Tribe
Shoshone-Paiute Tribes
Spokane Tribe of Indians
Yakama Nation

Federal entity
NOAA National Marine Fisheries
Federal action agencies: BPA, Army Corps, and/or Bureau of Reclamation
Columbia Basin Federal Caucus

States
State of Idaho
State of Montana
State of Oregon
State of Washington

Sector	Primary Representative	Alternate Representative
Utilities	Seattle City Light	Western Montana G&T
Utilities	Benton PUD	Idaho Consumer-Owned Utilities Association
Non-tribal fisheries	Coastal Trollers Association	Commercial Salmon Fisherman
Non-tribal fisheries	Northwest Sportfishing Industry Association	Idaho Wildlife Federation
River Economies	Idaho Water Users	Kittitas Reclamation District
River Economies	Port of Lewiston	Wheat Farmer
Conservation	Salmon Safe	American Rivers
Conservation	Trout Unlimited	Northwest Energy Coalition

Topic Specific and Science Integration Work Groups

Purpose of Work Groups

- **Develop draft recommendations** for actions, and assist the I/RG in feasibility assessments of those actions
- **Work collaboratively** to clarify and assess subject-specific issues and potential actions and solutions
- **Leverage existing data and studies** to support their assessments
- **Coordinate and collaborate** across other Work Groups for complementary analyses and solutions

Structure of Work Groups

- Made up of regional experts, sector leaders, and advisors
- The I/RG agreed on the membership
- The duration and pace of the WG will vary and depends on the topic and assignment from the I/RG
- I/RG members can also participate

Work Groups

- Estuary/Tributary Habitat
- Hatcheries/Harvest
- Hydrosystem (mainstem and blocked areas)
- Predation
- **Science Integration Work Group**

6-23-22 DRAFT - Completed and Recommended Steps for Sequential Science-Based CBPTF --> CBC Process

Action Type	Steps	Description	Status/Schedule	Responsible Group	Deliverable
CBPTF Technical Planning	1) Define Fish Goals	ESTABLISH GOALS Identify current status and L, M & H goals by species and by sub-region based on historic data and available habitat	Completed in 2019 as part of CBPTF Ph I	Developed by CBPTF consultant and sub-region tech teams and agreed upon by Task Force members	CBPTF Phase 1 Report
	2) Define Current Fish Mortalities	IDENTIFY FISH LOSSES Quantify anthropogenic fish mortality factors throughout life history by species and by sub-region (summarized on "heat map")	Completed in 2020 as part of CBPTF Ph II	Developed by CBPTF consultant and sub-region tech teams and agreed upon by Task Force members	CBPTF Phase 2 Report
	3) Develop Salmon Analyzer Predictive Model	CONSTRUCT "SLIDER" MODEL Develop model with variable restoration components and levels to predict fish restoration action responses and level of goal achievement by species	Completed in 2020 as part of CBPTF Ph II	Developed by CBPTF consultant and sub-region tech teams and agreed upon by Task Force members	Salmon Analyzer Predictive Model
CBC Technical Planning	4) Confirm science-based approach for working groups	CONFIRM BIOLOGICAL FOUNDATION Review and confirm matrices that use the data from the CBPTF to serve as the foundation of the working groups	April 2022- June 2022	Biological Sub-group	- Biological Matrices - Approach for TSWGs

CBC Technical Planning	5) Identify Needs for: - Tributary Habitat - Mainstem Hydro - Blocked Areas - Estuary Habitat - Predation - Hatcheries - Harvest - Integration across threat categories	**IDENTIFY ACTIONS/PROJECTS BY TOPIC** - Using CBPTF tools and data, identify priority restoration actions/programs that address impact reduction need for each respective mortality factor and collaborate with existing forums (for example, regional recovery organizations) and the IRG as needed - Consider recommendations, actions, and shovel-ready projects from existing forums (for example the CBPTF P2 report) - Consider actions that benefit multiple stocks and regions/watershed populations - Estimate mortality magnitude, source, and location - Acknowledging tribal and treaty rights and legal constraints	Ongoing starting July 2022	Topic Specific work groups	List of actions to address needs
		IDENTIFY ACTIONS/PROJECTS INTEGRATED PACKAGES Using CBPTF tools and data as well as additional information to look across threat categories to identify cross-cutting actions to achieve L/M/H goals by multiple species that can be integrated with recommendations from the Topic Specific Work Groups. - Consider packages of actions as well. Focus on optimal actions to be taken. - Do analysis on DPS/ESU level. - Can have others help support the technical work. - Make recommendations to the IRG on project/program actions - Acknowledging tribal and treaty rights and legal constraints	Ongoing starting July 2022	Science Integration work group	List of actions to address needs

	6) Identify Responsible Management Entities for: - Tributary Habitat - Mainstem Hydro - Blocked Areas - Estuary Habitat - Predation - Hatcheries - Harvest - Geographic specific management authorities	**IDENTIFY WHO & HOW MUCH** - Identify entities having management authorities or responsibilities that effect fish survival by threat category and by region - Align remedial actions/approaches with responsible entities - Rank effectiveness and urgency actions by entity	Ongoing starting July 2022	Topic Specific work groups	List of management entities and existing forums
	7) Evaluate actions and packages for comprehensive benefits and to assist in developing recommendations	**EVALUATE ACTIONS** - Evaluate identified Actions/Projects for integrated impacts to inform recommendations - Make recommendations to the I/RG on project/program actions - Conduct annual assessment of the work of the CBC	Ongoing starting July 2022	Science Integration work group	Evaluation of actions
CBC Policy Recommendations	8) Develop Integrated Restoration Recommendations	**RECOMMEND PROJECTS/ACTIONS** Integration/Recommendations Group (IRG) receive & integrate work group products from steps 4-7 above and recommend to responsible entities, the actions/approaches necessary to meet fish restoration goals	Fall 2022 - 2023	CBC Integration/Recommendations Group	Recommendations to implementing entities

Columbia Basin Partnership Data

TABLE 8. Aggregate stock-specific abundance values for natural-origin escapement under current and historical conditions, and low, medium, and high goal ranges.

Stock	Current	Historical	Low goal	Med goal	High goal	High as % of historical
L Col R Spring Chinook	2,240	101,700	9,800	21,550	33,300	33%
L Col R Fall (tule) Chinook	12,329	169,700	28,050	54,100	82,000	48%
L Col R Late Fall (bright) Chinook	10,800	33,000	11,100	16,700	22,200	67%
L Col R Fall (bright) Chinook	11,000	0	11,000	11,000	11,000	-
L Col R Coho	31,524	301,900	67,925	129,550	191,400	63%
Col R Chum	11,762	461,300	16,500	33,000	49,500	11%
SW WA Winter Steelhead	3,252	19,100	4,650	5,850	6,950	36%
L Col R Winter Steelhead	5,989	41,900	19,000	27,900	36,400	87%
L Col R Summer Steelhead	10,594	61,200	21,100	29,800	38,100	62%
M Col R Spring Chinook	11,600	246,500	17,750	40,425	114,500	46%
M Col R Summer/Fall Chinook	11,500	17,000	4,000	13,000	16,000	94%
M Col R Coho	6,324	75,000	5,300	11,600	19,900	27%
M Col Sockeye	1,036	230,000	7,500	45,000	107,500	47%
M Col R Summer Steelhead	18,155	132,800	21,500	43,850	69,150	52%
U Col R Spring Chinook	1,430	259,450	11,500	19,840	30,135	12%
U Col R Summer Chinook	16,920	733,500	9,000	78,350	131,300	18%
U Col R Fall Chinook	92,400	680,000	9,200	62,215	87,835	13%
U Col R Coho	392	44,500	7,500	15,000	26,000	58%
U Col R Sockeye	79,511	1,800,000	31,500	580,000	1,235,000	69%
U Col R Summer Steelhead	1,480	1,121,400	7,500	31,000	47,000	4%
Snake R Spring/Summer Chinook	6,988	1,000,000	33,500	98,750	159,500	16%
Snake R Fall Chinook	8,360	500,000	4,200	10,780	23,360	5%
Snake R Coho	100	200,000	8,900	26,600	44,100	22%
Snake R Sockeye	100	84,000	5,500	15,750	26,000	31%
Snake R Summer Steelhead	28,000	600,000	22,500	75,000	131,500	22%
U Will R Spring Chinook	4,278	312,170	28,900	47,850	66,800	21%
U Will R Winter Steelhead	2,816	220,000	16,290	27,805	39,320	18%
Totals	**352,119**	**9,446,120**	**441,165**	**1,572,265**	**2,845,750**	**30%**

FIGURE 13. Heat map of impacts of limiting factors by stock and region, including ranges reflecting uncertainties where appropriate. Units are percentage reductions in equilibrium abundance (generally equivalent to mortality rates).

	Stock	Tributary Habitat	Estuary Habitat	Hydro (mainstem)	Hydro (latent)	Hydro (blocked)	Predation	Fishery	Hatchery
Lower Columbia	Spr Chinook	85	17	0	0 (0-0)	30	14	17	29 (4-54)
	Fall (tule) Chinook	70	21	0	0 (0-0)	15	11	33	25 (3-47)
	Fall (bright) Chinook	10	21	0	0 (0-0)	40	11	47	0 (0-0)
	Chum	95	50	5	0 (0-0)	0	2	1	10 (1-18)
	Coho	80	11	0	0 (0-0)	5	13	17	22 (3-42)
	Sumr Steelhead	65	28	4	0 (0-0)	40	19	5	8 (1-15)
	Win Steelhead SWW	60	28	0	0 (0-0)	0	19	5	17 (2-33)
	Win Steelhead LCR	65	28	0	0 (0-0)	10	19	5	9 (1-16)
Willamette	Spr Chinook	85	20	0	0 (0-0)	50	19	13	25 (3-46)
	Win Steelhead	80	28	0	0 (0-0)	20	32	3	2 (0-4)
Middle Columbia	Spr Chinook	85	17	23	14 (3-25)	25	25	15	24 (3-45)
	Fall Chinook	20	27	13	9 (2-17)	5	10	55	0 (0-0)
	Coho	NA	11	30	19 (5-33)	0	17	22	NA
	Sockeye	0	17	19	9 (2-17)	95	8	3	NA
	Sumr Steelhead	80	28	11	14 (3-25)	20	33	10	17 (2-33)
Upper Columbia	Spr Chinook	45	18	49	38 (9-67)	75	29	15	32 (5-59)
	Summer Chinook	50	27	49	38 (9-67)	50	13	61	27 (4-51)
	Fall Chinook	25	27	65	19 (5-33)	5	13	61	10 (1-18)
	Sockeye	50	17	38	38 (9-67)	80	24	12	10 (1-18)
	Sumr Steelhead	40	31	30	38 (9-67)	95	52	10	24 (3-45)
Snake	Spr Chinook	50	16	39	38 (9-67)	30	29	14	15 (2-28)
	Fall Chinook	25	27	62	38 (9-67)	80	13	45	NA
	Sockeye	10	17	47	38 (9-67)	70	24	6	NA
	Sumr Steelhead	45	27	30	38 (9-67)	40	43	25	24 (3-45)

<5%	5-20%	21-30%	31-50%	>50%

Example Table Biological Criteria for Priority Actions

Stock Status[b] \ Impact Level[a]	Low	Medium	High	Very High
Low	Stock K	Stock I	Stock J	Stock A Stock B
Medium	Stock M	Stock L	Stock C Stock R Stock S	Stock G
High	Stock N	Stock D Stock Q	Stock E Stock T Stock U Stock V Stock W	Stock H
Very High	Stock O		Stock P Stock X Stock Y Stock Z	Stock F

Impact Level[a]
Low: less than 20%
Medium: 20-30%
High: 31-50%
Very High: greater than 50%

Stock Status[b] (based on CBP medium goal)
Low: less than 25%
Medium: 25-50%
High: 51-75%
Very High: greater than 75%

Prioritization Status
Red: Priority 1
Orange: Priority 2
Yellow: Priority 3
Blue: Priority 4
Green: Priority 5

Compiled Impacts by Stock

			Abundance			Phase II Impact Priority							
Sub- Region	Stock	Status	Current	Medium goal	Current as % of Medium Goal	Tributary Habitat	Estuary Habitat	Hydro (Mainstem)	Hydro (Latent)	Hydro (Blocked)	Predation	Harvest	Hatchery
Low-C	L Col R Spring Chinook	Threatened	2,240	21,550	10%	1	3	3	3	2	3	3	2
Low-C	L Col R Winter Steelhead	Threatened	5,989	27,900	21%	1	2	3	3	3	3	3	3
Low-C	L Col R Fall (tule) Chinook	Threatened	12,329	54,100	23%	1	2	3	3	3	3	1	2
Low-C	L Col R Coho	Threatened	31,524	129,550	24%	1	3	3	3	3	3	3	2
Low-C	L Col R Summer Steelhead	Threatened	10,594	29,800	36%	2	4	4	4	2	4	4	4
Low-C	Col R Chum	Threatened	11,762	33,000	36%	2	2	4	4	4	4	4	4
Low-C	SW WA Winter Steelhead	Threatened	3,252	5,850	56%	2	4	5	5	5	5	5	5
Low-C	L Col R Late Fall (bright) Chinook		10,800	16,700	65%								
Low-C	L Col R Fall (bright) Chinook	Threatened	11,000	11,000	100%	5	5	5	5	4	5	4	5
Mid-C	M Col Sockeye	Not Listed	1,036	45,000	2%	3	3	3	2	1	3	3	
Mid-C	M Col R Spring Chinook	Not Listed	11,600	40,425	29%	2	4	4	4	4	4	4	4
Mid-C	M Col R Summer Steelhead	Threatened	18,155	43,850	41%	2	4	4	4	4	2	4	4
Mid-C	M Col R Coho	Not Listed	6,324	11,600	55%		5	4	5	5	5	4	
Mid-C	M Col R Summer/Fall Chinook	Not Listed	11,500	13,000	88%	5	5	5	5	5	5	4	5
Up-C	U Col R Coho	Not Listed	392	15,000	3%								
Up-C	U Col R Summer Steelhead	Threatened	1480	31,000	5%	1	1	2	1	1	1	3	2
Up-C	U Col R Sockeye	Not Listed	40,850	580,000	7%	1	3	1	1	1	2	3	3
Up-C	U Col R Spring Chinook	Endangered	1430	19,840	7%	1	3	1	1	1	2	3	1
Up-C	U Col R Summer Chinook	Not Listed	16920	78,350	22%	1	2	1	1	1	3	1	2
Up-C	U Col R Fall Chinook	Not Listed	92,400	62,215	149%	5	5	4	5	5	5	4	5
Snake	Snake R Coho	Not Listed	100	26,600	0%								
Snake	Snake R Sockeye	Endangered	100	15,750	1%	3	3	1	1	1	2	3	
Snake	Snake R Spring/Summer Chinook	Threatened	6,988	98,750	7%	1	3	1	1	2	2	3	3
Snake	Snake R Summer Steelhead	Threatened	28,000	75,000	37%	2	4	4	2	2	2	4	4
Snake	Snake R Fall Chinook	Threatened	8,360	10,780	78%	5	5	4	4	4	5	4	
Willam	U Will R Spring Chinook	Threatened	4,278	47,850	9%	1	2	3	3	1	3	3	2
Willam	U Will R Winter Steelhead	Threatened	2,816	27,805	10%	1	2	3	3	3	1	3	3

Science and Infrastructure Gaps

[Link to jamboard]

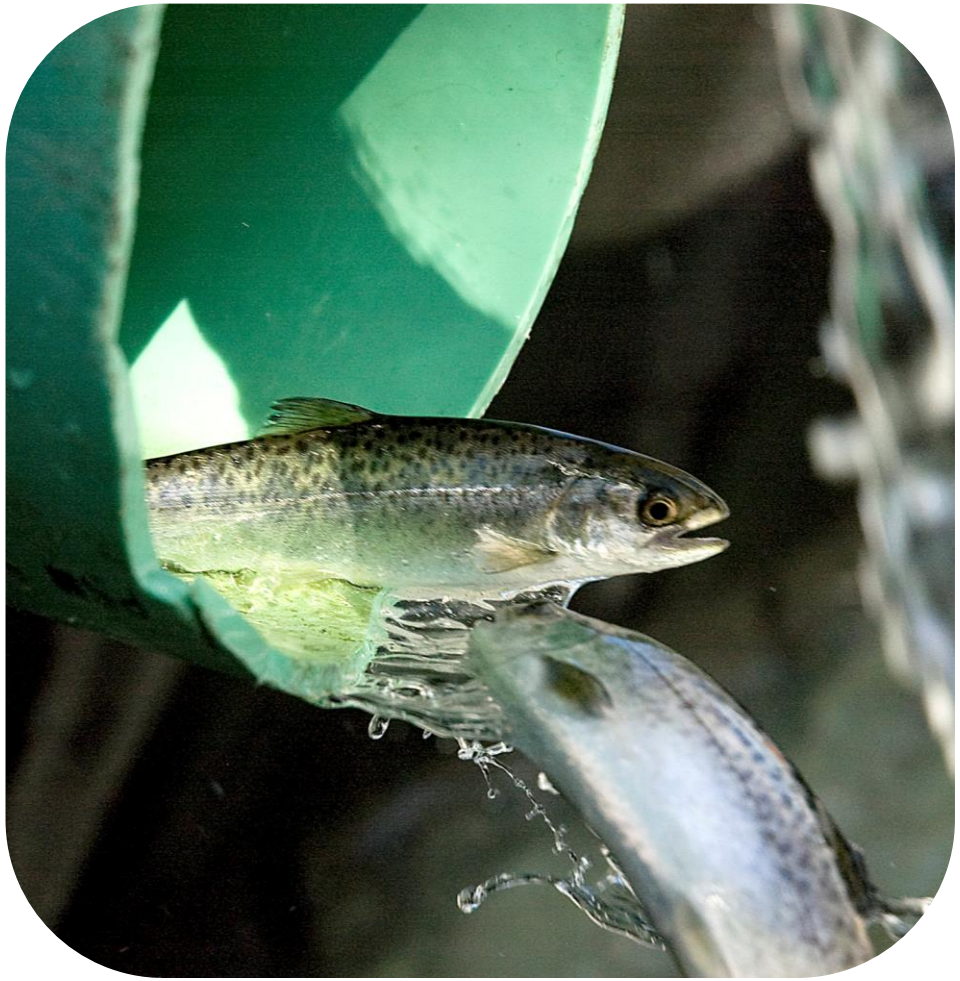
Criteria for SIWG Actions

Existing

- Cross-cutting; not specific to one threat topic
- Helps achieve L/M/H goals of the partnership
- Benefits multiple species
- Acknowledges tribal and treaty rights and legal constraints

Next Meeting

Bring ideas for short-term on-the-group or science-oriented actions that meet the criteria we discussed.



Additional Next Steps

- Share report out at Oct. 19 I/RG meeting
- Hear additional input from I/RG on next steps
- Meet again after the I/RG meeting

Thank you ~

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