EXPERT PANEL PROCESS 2016 UPDATE

Presentation to Expert Panel Members Convened by the Upper Columbia Salmon Recovery Board and Regional Technical Team

June 10th, 2015

2016 Expert Panel Process

- **Goals**:
  - Convene EP workshop to **capture data** on evaluating changes to habitat functions for each limiting factor/ecological concern
  - **Use Support Tools** to help panels base their decisions on an integration of qualitative professional experience and quantitative information
  - **Facilitate** an efficient and effective process that engages the panel members

2016 Expert Panel Overview

Updates:

- ✓ Background of Expert Panel Process
- ✓ Roles of watershed groups and liaisons
- ✓ Challenges to “Incorporating latest science findings”
- ✓ Contract for Coordination and PM support
- ✓ Schedules for workshop

2008 FCRPS BiOp Collaboration Habitat Work Group

- The Remand Collaboration Habitat Work Group (CHW), convened by NOAA (2006) included the Action Agencies and Pacific Northwest Sovereign states and tribes.
- The CHW recommended Expert Panels be convened for areas where salmon and steelhead were determined to be the most imperiled.
- The CHW recommended a process that would be administered by the Action Agencies and executed by the Expert Panels, which acknowledges a cause-and-effect linkage of habitat improvement actions to changes in habitat condition; and changes in habitat condition to changes in survival.

CHW Method

- Expert Panels identify limiting factors for populations; estimate the current condition of each limiting factor; estimate the potential condition of each limiting factor; and estimate change in limiting factors as a result of implementing habitat improvement actions.

- Action Agencies combine limiting factors into a single habitat condition score; combine habitat condition scores into a single habitat quality score for the population; translate habitat quality changes into survival; calculate survival using a formula developed by the CHW.

CHW Assumptions

- Limiting factors are known for each population
- Habitat actions directly affect habitat variables that limit the population
- Habitat variables can be combined to describe local habitat conditions
- Local habitat conditions can be combined to describe overall habitat quality for the entire population
- Changes in overall habitat quality are directly linked to changes in freshwater survival

2009, 2012, 2016 Panels

- The Expert Panels were formally convened in 2009 and again in 2012.
- The timing of the 2016 workshop is consequent of the 2014 FCRPS BiOp.
- The 2016, process will not change. However, we will convene the panels in two sessions, one each focused on the look back and the look forward.
- The Action Agencies have conducted meetings like this one to discuss what will happen during those sessions and the work we need to do in advance.

FCRPS BiOp and 2014 Recommendations

RPA 34
2007-2009
Progress Toward HQIs

RPA 35
2010-2018
Achieving HQIs and Survival Targets

RPA 56
Monitor Tributary Conditions and Limiting Factors

RPA 57
Evaluate Action Effectiveness

Improve Documentation

Incorporate Science Findings

Convene Panels in 2016

Overall Schedule

Process	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Tributary Habitat RPA Implémentation Cycle	2007-2009			2010-2012			2013-2015			2016-2018		
APR(due 9/30 in next calendar year)	06-07 included in 2008 APR		★	★	★	★	★	★	★	★	★	★
Expert Panels				Timeframe = 2010 - 2012 (Planning occurs in 2008 & 2009)			Timeframe = 2013 - 2015 (Planning occurs in 2011 & 2012)			Timeframe = 2016 - 2018 (Planning occurs in 2015 & 2016)		
Implementation Plan	Included in the 2007 BA			**Timeframe = 2010 - 2012**			**Timeframe = 2013 - 2015**			**Timeframe = 2016 - 2018**		
Comprehensive Evaluation	Timeframe = **2007 - 2012**						Timeframe = **2007 - 2015**			Timeframe = **2016 - 2018**		

Upper Columbia Detailed Schedule

- 2015: Planning
  - Assemble Action Lists
  - Inventory of RME Data for Expert Panel Process
  - Compile RME Data Sources into Usable/Accessible Format
- February 2016: Look Back Workshops
  - Evaluate Look Back List of Constructed Actions 2012-2015
- April 2016: Look Forward Workshops
  - Changes to AU, Limiting Factors, and Bookend Values
  - Estimate Habitat Changes of 2016-2018 Look Forward Action Lists

2016 Expert Panel Process

- EP Team with Cardno coordination / facilitation
- Compiling Project Lists
- Project Summary Information from HWS
- Biological Rationale & documentation
- Incorporating / referencing science
- Displaying results including website update
- Info roll-up for next Comprehensive Evaluation and future Consultation

2016 “Look Back” Workshop

Coordinate and Assemble: Prior to workshops, watershed groups work with Action Agencies to compile completed actions into Taurus database.

Use Support Tools: To assist the Expert Panel by using a set of tools (i.e., GIS, project summaries, etc.) to help with the decisions making process.

Evaluate Projects:

- Panelists update habitat functions based on improved area/extent of completed projects
- Based on metrics of completed actions 2012-2015 for each AU
- Updated scoring recorded in Taurus database
- Document biological rationale for decision

Expert Panel Overview

- Data – TAURUS cbfish.org database
  - Habitat Actions (listed by AU, limiting factor & species)
  - Habitat Functions (2012-15 estimates for "look back")

- Support Tools
  - GIS Map displays
  - Project Summaries
  - Pie Maps / Charts
  - Metric Guidelines
  - RME Support
    - CHaMP & Regional Info
    - Local Monitoring Info

Tyee Habitat Restoration Project

Structure Summary

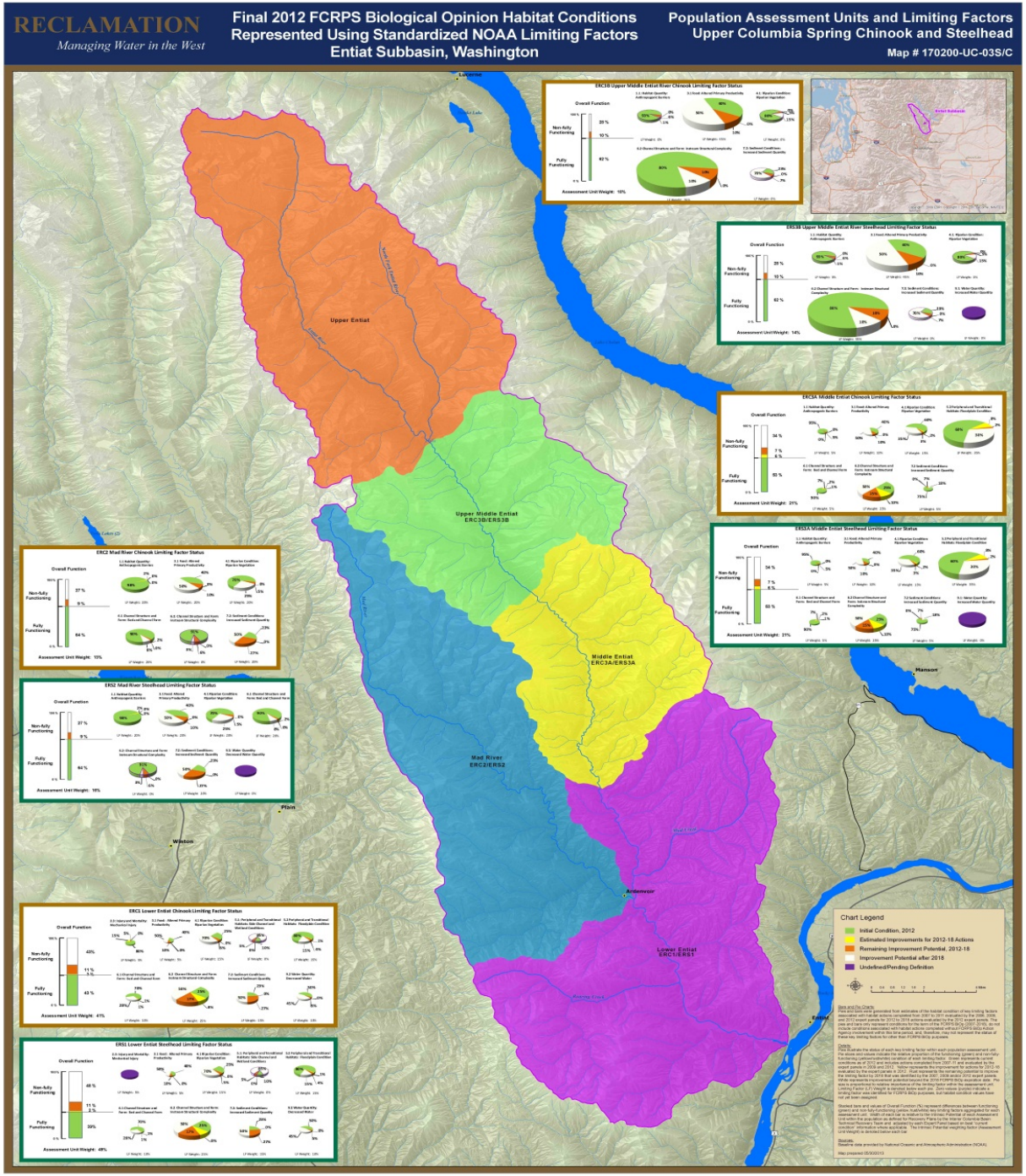
River Mile 22.26 (Element 6-7): Floodplain Connection ELJ

Objective	• Increase the complexity at the outlet of the backchannel on river right • Maintain the hydraulic connection between the backchannel and the river • Recruit additional wood
Design Notes	• Intended to function during annual snowmelt runoff through peak flow events, may provide limited habitat at low summer flow • 2, 60' long key members placed at grade • Piles buried 6' below grade • Cabled rocks and native backfill used as ballast

Project Summary Example

Pie Maps

Action Agencies developed Pie Maps to enhance the panel's ability to view, discuss, and evaluate the effect of habitat actions on limiting factors.



Process and Framework for Incorporating Science

Action Agencies are improving the Expert Panel process based on the recommendations in the 2014 BiOp Supplement.

Research, Monitoring and Evaluation (RM&E)
Habitat Information Resources
for
Upper Columbia Spring Chinook

Presented for
The FCRPS 2015 Expert Panel
Review Process

By
Bonneville Power Administration
&
United States Bureau of Reclamation

Wenatchee MPG

Assessment Unit Code	Assessment Unit Names	Assessment Unit Weight (%)	2013-2018 Planned Restoration Actions
WEC1	Chiwawa	27.3	0
WEC2	Chumstick	4.0	1
WEC3	Icicle	2.4	1
WEC4	Little Wenatchee	6.5	0
WEC5	Lower Wenatchee	5.9	4
WEC6	Mission	2.6	0
WEC7	Nason	14.0	14
WEC8	Peshastin	5.6	2
WEC9A	Middle Wenatchee	1.5	0
WEC9B	Upper Wenatchee	16.1	18
WEC10	White	14.1	1
	Total	**100.0**	**41**

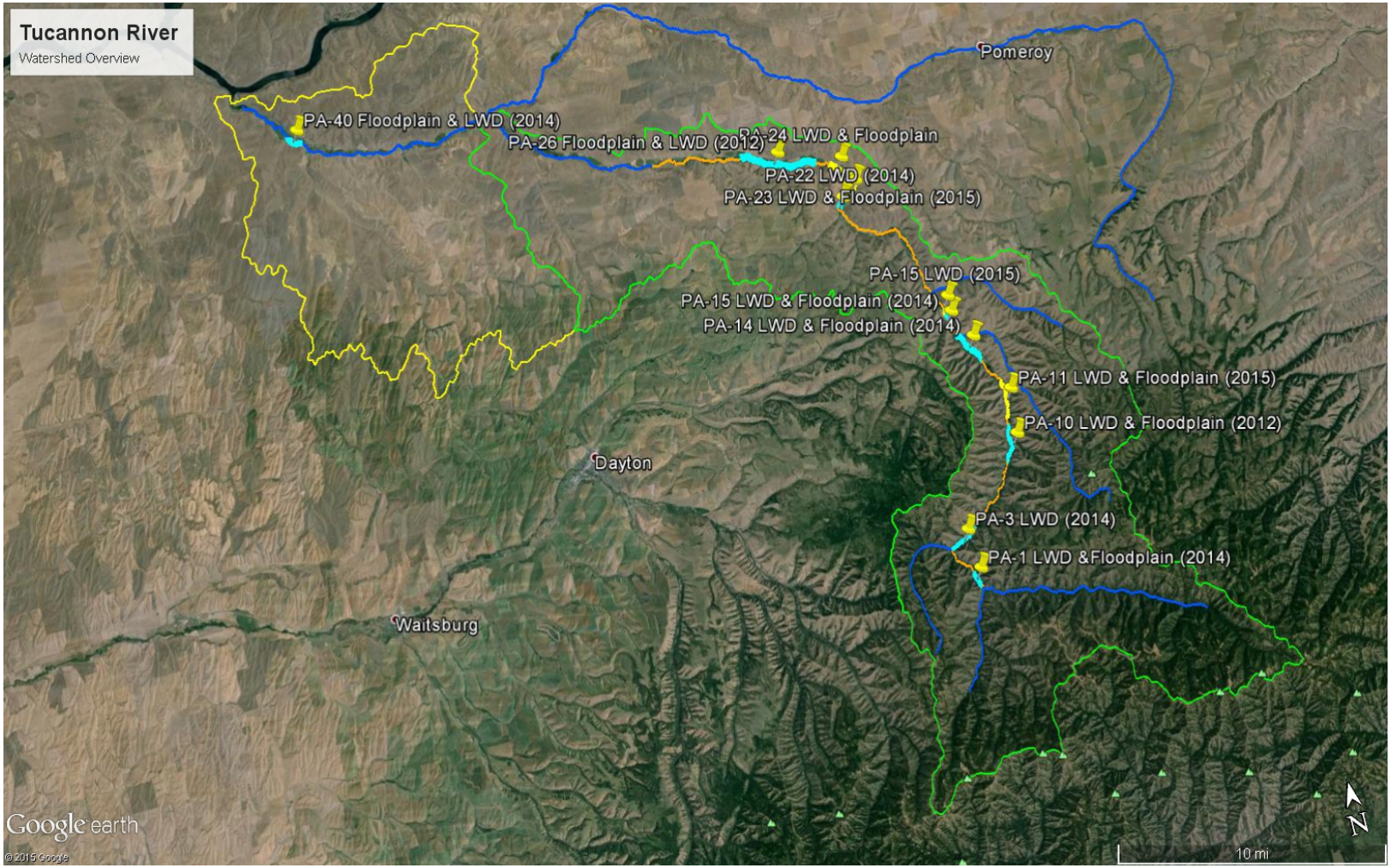
The Wenatchee spring Chinook population contains 11 AUs with 41 planned habitat improvement actions (2012 Look Forward list) in seven Aus. The priority for assembling existing RM&E resource needs for the expert panel follows the intersection of planned actions with limiting factors that will be addressed in 14 assessment units.

Limiting Factors x Assessment Unit

Table 1. Limiting factors identified by an "X" for ecological sub-categories in assessment units of the Wenatchee MPG. Assessment units in gray have no planned restoration action for the 2013-2018 expert panel cycle.

Assessment Unit		Habitat Quantity			Injury and Mortality				Food			Riparian Condition		Peripheral and Transitional Habitats				Channel Structure and Form		Sediment Conditions		Water Quality							Water Quantity			Population Level Effects			
		Anthropogenic Barriers	Natural Barriers	HQ-Competition	Predation	Pathogens	Mechanical Injury	Contaminated Food	Altered Primary Prod.	Food-Competition	Alt. Prey Sp. Comp. & Div.	Riparian Condition	LWD Recruitment	S. Chan. & Wetland Cond.	Floodplain Condition	Estuary Conditions	Nearshore Conditions	Bed and Channel Form	Instream Structural Comp.	Decreased Sed. Quantity	Increased Sed. Quantity	Temperature	Oxygen	Gas Saturation	Turbidity	pH	Salinity	Toxic Contaminants	Increased Water Quantity	Decreased Water Quantity	Altered Flow Timing	Red. Genetic Adaptiveness	Small Population Effects	Demographic Changes	Life History Changes
Code	Name	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	3.2	3.3	4.1	4.2	5.1	5.2	5.3	5.4	6.1	6.2	7.1	7.2	8.1	8.2	8.3	8.4	8.5	8.6	8.7	9.1	9.2	9.3	10.1	10.2	10.3	10.4
WEC1	Chiwawa	X							X			X			X				X		X													
WEC2	Chumstick	X										X		X					X		X	X								X				
WEC3	Icicle	X					X					X							X		X									X				
WEC4	Little Wenatchee								X			X			X				X		X													
WEC5	Lower Wenatchee	X										X		X				X	X			X								X				
WEC6	Mission	X										X		X				X	X		X	X								X				
WEC7	Nason	X							X			X		X				X	X		X	X												
WEC8	Peshastin	X										X		X				X	X			X								X				
WEC9A	Middle Wenatchee	X																X	X															
WEC9B	Upper Wenatchee	X										X		X					X															
WEC10	White								X			X		X					X															
	Total:	9	0	0	0	0	1	0	4	0	0	10	0	7	2	0	0	5	11	0	6	5	0	0	0	0	0	0	0	5	0	0	0	0	0

GIS Maps – AUs, Project Location, Stream Length



Metric Guidelines for each Ecological Concern / Limiting Factor

ID	Ecological Concern-Sub Category	Definition	Included Categories	VSP parameter effects	Metric Assessment Guidelines
1.1	Anthropogenic Barriers	Loss of access to habitat and/or habitat sub-types due to anthropogenic activity. Includes partial or ephemeral barriers.	Access, Barriers, Flap Gates, Tidal Gates, Culverts, Obstacles, Obstructions, Passage Issues, Blocked	Compensation/Carrying Capacity/Spatial Structure and Diversity	stream miles of access
4.1	Riparian Condition	Disturbance to streamside ecological relationships, including but not limited to, loss of flora, erosion and increased light and temperatures	Bank degradation, Cover, Canopy, Inability to supply organic matter and filter sediments, Insufficient buffers, Light, Loss of natural shade	Compensation/Carrying Capacity/High Abundance Effects	stream miles and/or acres of riparian buffer
4.2	LWD Recruitment	Loss of mature streamside trees that may become instream structures and associated decline in habitat complexity	LWD supply, Mature riparian, Mature trees	Compensation/Carrying Capacity	miles of improved stream complexity and/or # of LWD's added per mile
5.1	Side Channel and Wetland Conditions	Degradation, elemination and loss of access to peripheral freshwater habitat, including side-channels and freshwater wetlands.	Side Channels, Loss of peripheral habitat, Freshwater Wetlands, Swamp, Oxbows, Ponds, Alcoves	Compensation/Spatial Structure and Diversity	miles of side channel
5.2	Floodplain Condition	Degradation, elemination and loss of access to the over or beyond bank habitat, of streams and rivers that is periodically inundated during high flows.	Floodplain, Bank condition, Overbank area, Diking	Compensation/Spatial Structure and Diversity	acres of floodplain accessed and/or stream miles
6.2	Instream Structural Complexity	Decline of the instream habitat quality. Based on the degree of habitat complexity and variety, includes the quantity and variability of stream depth and pools of varying size and depth.	LWD, Pools, Boulders, Bank overhang, Cover, Habitat structure, Instream habitat, Habitat, Stream complexity, Habitat diversity, (Key) Habitat quantity/quality, Refugia habitat, Channel conditions, Instream roughness, Poor gravel/sediment sorting, Rugosity	Compensation/Carrying Capacity	stream miles and/or increased complexity component

“Look Forward” and 2016 Work Session

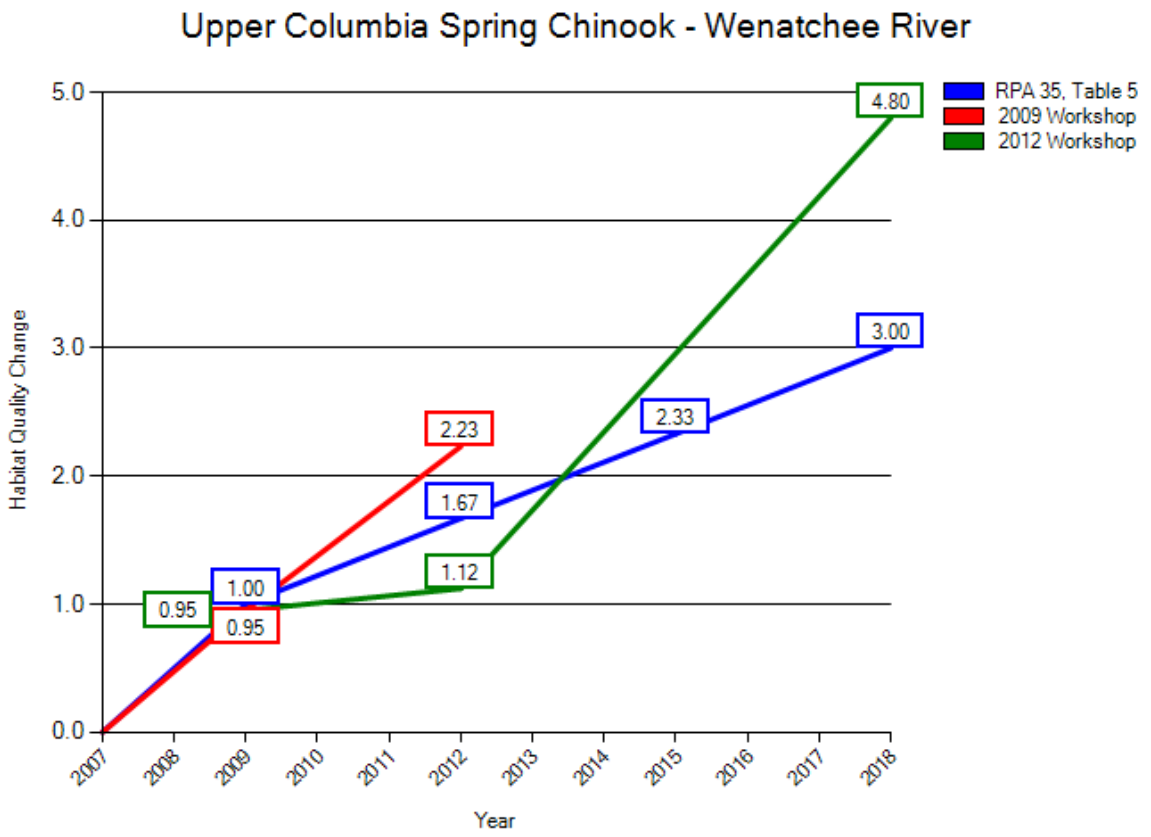
- The “look forward” examines habitat improvement actions and associated metric benefits for the next implementation cycle (2016 to 2018).
- Projects are evaluated for each limiting factor in each assessment unit and for each population.

For the 2016 workshops the look forward could involve modifying assessment units and weights and limiting factors and weights depending on their status or updated data and information.

Percent HQIs from Habitat Actions in the Tucannon Spr/Summer Chinook populations completed through 2011 and projected through 2018

Percent HQI Based on RPA Action 35 Table 5 Commitments by 2018

Source: Comprehensive Evaluation, Sec 2 Table 35).



2014 Litigaton

Achieve 2018 BiOp Targets

- Emphasis remains on “Focus Populations” in 2014 BiOp as having highest biological need
- Reasonable certainty
- Incorporation of science findings

Focus Populations:

- Upper Grande Ronde / Catherine Cr
- Entiat
- Yankee Fork
- Lochsa
- South Fork Clearwater

Questions ??

Derivation of HQIs for Analysis of Effects

- 2007 Federal Columbia River Power System Comprehensive Analysis

Appendix C: Analysis of Effects of Tributary Habitat Actions

Understanding the Habitat Workgroup Approach to Estimating Habitat Quality and Freshwater Survival

Appendix C: Comprehensive Analysis

- Calculate "weighted current limiting factor condition"— by multiplying the limiting factor weight by the current limiting factor condition (low bookend) for each limiting factor. This calculation results in the overall current status of all limiting factors in an assessment unit without additional habitat improvement actions.
- Calculate "weighted look back limiting factor condition"— by multiplying the limiting factor weight by the look back limiting factor condition associated with completed habitat improvement actions for each limiting factor. This calculation results in the overall status of all limiting factors in each assessment unit accounting for the habitat improvement actions evaluated by the Expert Panel.

Appendix C: Comprehensive Analysis

- Calculate “current assessment unit condition — by summing the weighted current assessment unit condition values within each assessment unit.
- Calculate “estimated assessment unit condition” — by summing the weighted estimated assessment unit condition values within each assessment unit.
- Calculate “current population condition — by multiplying assessment unit weight by current assessment unit condition for each assessment unit and summing the results for the population.
- Calculate “estimated population condition” — by multiplying assessment unit weight by completed assessment unit condition for each assessment unit and sum the results for the population.

Appendix C: Comprehensive Analysis

- Calculate "current habitat quality" — by multiplying the current population condition by the appropriate Chinook (0.0018) factor that converts condition to habitat quality.
- Calculate "estimated habitat quality" — by multiplying the completed population condition by the appropriate Chinook (0.0018) factor that converts condition to habitat quality.
- Calculate "percent change in habitat quality" — by dividing completed habitat quality by current habitat quality, subtract 1, and multiply by 100. The resulting HQI represents the benefits expected from implemented actions. The resulting HQI is added to the HQI projected during the prior Expert Panel and reflects the total HQI improvement from habitat improvement actions implemented to date.

Derive Survival Benefits

- There are published relationships between habitat variables and survival.
- There are functional relationships between habitat quality and survival

Chinook egg-smolt survival = 0.0018 x (HQI)

Steelhead egg-smolt survival = 0.0004 x (HQI)

Chum egg-fry survival = 0.0035 x (HQI)

Adult pre-spawn survival = 1.00 x (HQI)