Northwest **Power** and **Conservation** Council

December 5, 2017

MEMORANDUM

TO: **Fish and Wildlife Committee Members**

FROM: **Council Staff**

SUBJECT: **Habitat monitoring and evaluation strategy: progress and status.**

BACKGROUND:

Presenters: Leslie Bach, senior program manager
Nancy Leonard, fish, wildlife and ecosystem M&E manager
Mark Fritsch, project implementation manager

Summary: Council staff will provide an overview of the efforts to date to develop a program habitat monitoring and evaluation strategy. This will include a report on the collaboration with BPA and the fish and wildlife managers through meetings, conference calls and an in-person workshop, and the outcomes of those efforts. An overview of the draft approach, which has been refined based on the meeting outcomes, will also be provided. An updated timeline for finalizing the strategy will be discussed.

Relevance: This work focuses on implementing the Council's 2013 Conditions and recommendations for ensuring a cost-effective approach to tributary habitat monitoring and evaluation for informing effectiveness of program measures. It addresses Programmatic Issue #2 (i.e., *Habitat effectiveness monitoring and evaluation*) from the 2010-11 review of RME and AP Category of projects.

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Background: In 2013 the Council requested that Bonneville provide a comprehensive review of the three tributary habitat monitoring projects, ISEMP, CHaMP and BPA AEM. Information requested included how these projects meet the Program's needs for assessing the benefits of habitat actions, and how they provide guidance for managers implementing habitat actions. Included in this request was for Bonneville to provide an analytical framework for overall evaluation of tributary habitat actions. Although some products and updates have been provided, the comprehensive review has not occurred.

As requested at the February 2017 and March 2017 Council meetings, staff reviewed current tributary habitat monitoring actions and the role of the ISEMP, CHaMP, and AEM projects. This included conducting discussion meetings with co-managers and sponsors. The results of that review were presented and discussed at the June 2017 Committee meeting and the July 2017 Council meeting. Based on this review, the Council directed staff to work with the region's fish and wildlife managers and BPA to develop a tributary habitat monitoring strategy.

Discussion: Based on the direction from the July meeting, staff formed a technical Workgroup consisting of individuals from all fish and wildlife entities across the region. All workshop meeting materials are available on the Council's Habitat M&E Technical Workgroup page. To kick off the Workgroup, a conference call/webinar was held on September 18, 2017. As outcomes from that webinar, managers requested that Council staff develop a document that describes the general principles and process for the Workgroup, and a draft description of key components of the monitoring strategy.

A day-long technical workshop was held on October 19. The workshop consisted of 35 individuals that attended in person, and 19 individuals that participated by conference call/webinar. Using the draft strategy components, the workshop explored options for habitat monitoring, discussing issues including potential indicators and metrics, scale and frequency of data collection, methods of synthesizing and reporting on the performance of habitat actions, and approaches for assessing habitat conditions and prioritizing on-the-ground actions.

At the workshop, the Workgroup determined that:

- NOAA's Ecological Concerns sub-categories (sub-ECs) would provide the most logical menu of potential environmental indicators, with some modifications. Using the sub- ECs will support consistent reporting across the region, and these are already included with BPA project information.

- For projects/reaches, the selection of which sub-ECs to use as indicators should be linked to environmental factors constraining fish in these reaches.
- The specific metrics (data) collected to evaluate the change in indicators will be determined for the individual projects or collection of projects, with review from the ISRP
- Measureable objectives need to be identified for the selected indicators to be able to track progress over time.
- The strategy should include general guidance for assessing conditions and prioritizing actions.
- Given that there are many approaches currently used to assess conditions and prioritize actions, there should be a follow-up Webinar in which various entities share their assessment and prioritization approaches. That webinar is targeted for February, 2018.

Staff are currently refining the habitat monitoring and evaluation strategy. A draft strategy will be completed in mid-December, and sent to the Workgroup participants for review and comment. The strategy will include guidance on indicators, metrics and objectives; scale and frequency of data collection; synthesis and reporting; and assessment and action prioritization. Staff will provide a summary of the approach at the Committee meeting.

Habitat Monitoring and Evaluation Strategy: Progress and Status

Leslie Bach, senior program manager
Nancy Leonard, ecosystem monitoring and evaluation manager
Mark Fritsch, project implementation manager

July 2017 Council Discussion

- Current programmatic approach is not adequately meeting Fish and Wildlife Program needs
- Council expects modifications to CHaMP and ISEMP and AEM projects
- Council supports continued development of Program-focused Habitat Monitoring and Evaluation strategy for all habitat work

July 2017 Council Direction

- Work closely with co-managers and project sponsors to complete content development for Council's habitat monitoring and evaluation strategy
- Coordinate with ongoing BPA/NOAA efforts

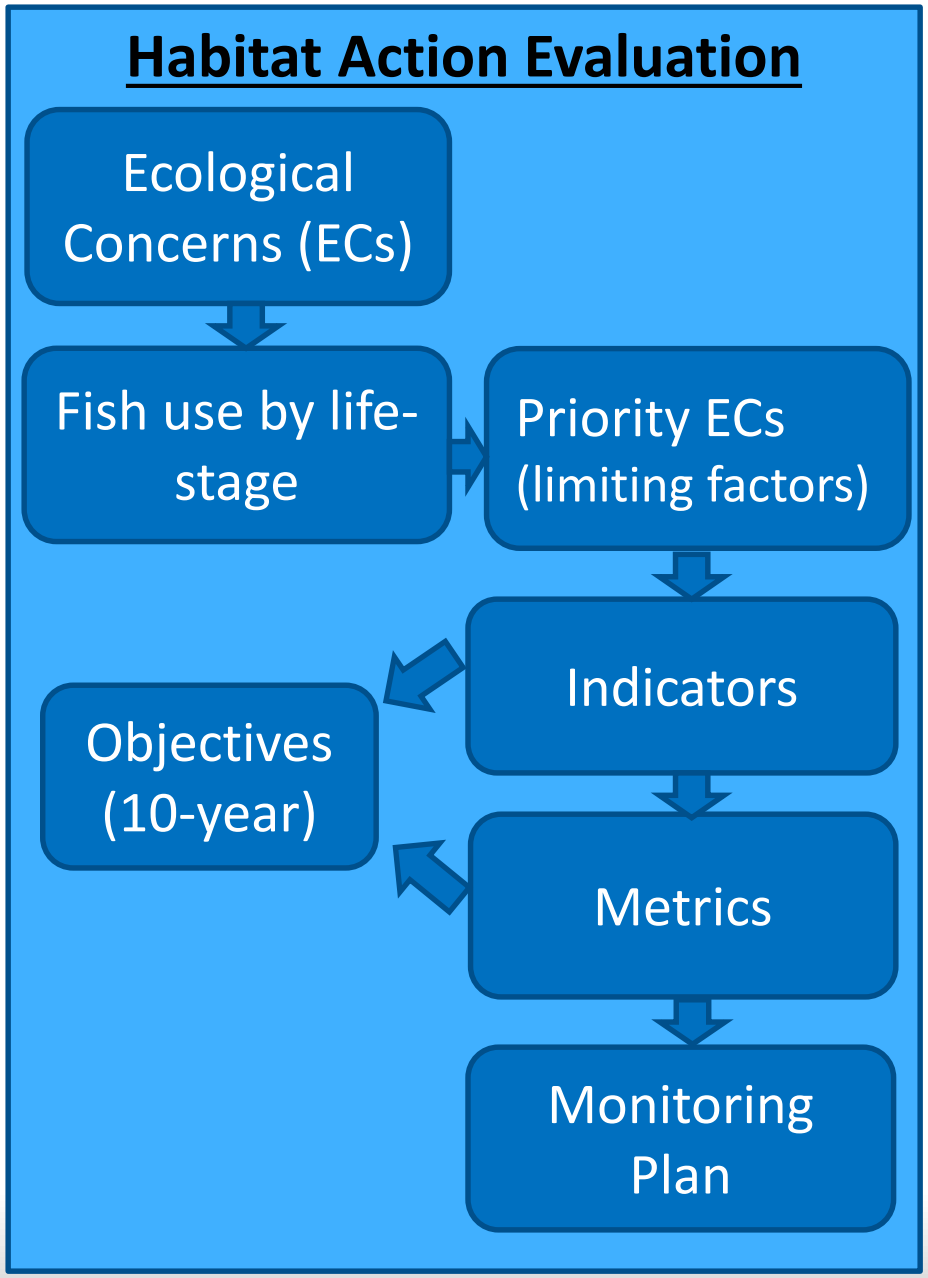
Updated Schedule

	Task
July	• Council direction for staff • Discussions with co-managers and sponsors on process
August 23rd	• Co-managers submit contact names (habitat technical specialists) to Council staff for September webinar and October work session
September	• Develop draft "process agreement" for technical work group
September	• Webinar (technical reps) discussion on habitat M&E approach • Draft M&E approach and options for indicators
October	• Portland work group session (technical reps) on details for M&E strategy
Oct-Nov	• Review of meeting outcomes; refine strategy
December	• Update to Committee on Habitat M&E strategy
January-March	• Refine monitoring strategy • Host "existing prioritization approaches" webinar • Coordinate/integrate with other efforts

Overview of Habitat Monitoring and Evaluation Strategy

Program Logic Path

Focal fish species are impacted by habitat limiting factors.
These impacts can be reduced by habitat actions.
Addressing limiting factors will contribute to protecting and enhancing focal fish species.
Ecological concerns, limiting factors and objectives for specific life-stages of fish need to be identified through watershed-scale assessments and planning documents.
Documenting habitat improvement at appropriate level-of-certainty will convey the Program's contribution to mitigation.
Fish information is needed to support identification of priority ecological concerns and fish limiting factors.



Reporting

- Progress toward objectives
- By indicators
- Summarized at assessment unit (HUC6) scale
- 5-year timeframe

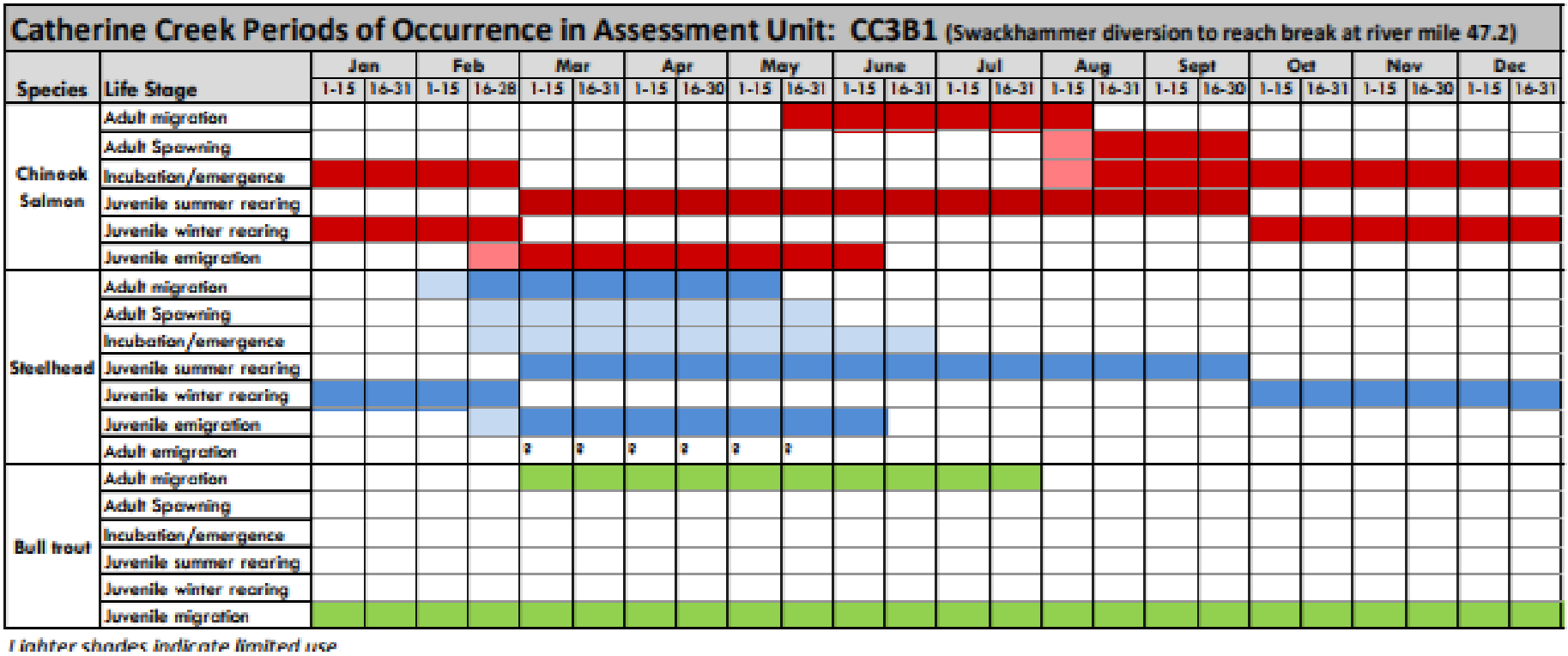
Data Management

- Publically-accessible websites
- End-user products
  - Data summaries, analysis and reporting
  - Dashboards

Ecological Concerns (Menu)

NOAA Ecological Concern	Ecological Concern Sub-Category
Habitat Quantity	• Anthropogenic barriers • Natural barriers • Competition
Water Quantity	• Surface water quantity (streamflow) • Sub-surface water quantity • Flow timing
Water Quality	• Temperature • Water chemistry • Turbidity • Toxic Contaminants
Riparian Condition	• Riparian Vegetation • LWD recruitment
Peripheral and Transitional Habitats	• Side channel and wetland conditions • Floodplain condition • Estuary condition
Channel Structure and Form	• Bed and channel form • Instream structural complexity
Sediment Conditions	• Sediment quantity • Sediment quality

Fish Use by Life-stage



From: Catherine Creek and Upper Grande Ronde River Atlas Restoration Prioritization Framework

Priority Ecological Concerns = Indicators

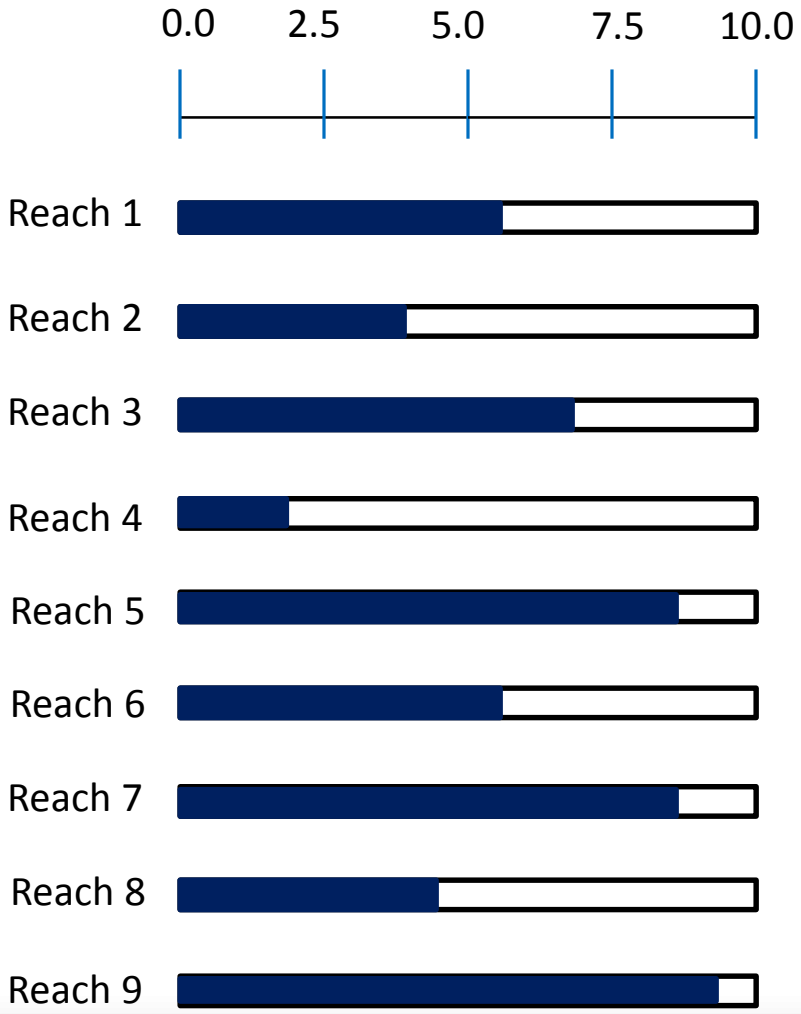
Assessment Unit (in priority order)	**Ecological Concerns (numbers are the priority)**					
	Channel Structure and Form (Instream Structural Complexity)	**Channel Structure and Form** (Bed and Channel Form)	**Peripheral and Transitional Habitat** (Side Channel and Wetland Connections)	**Peripheral and Transitional Habitat** (Floodplain Condition)	**Riparian Condition** (Riparian Condition and Large Wood Recruitment)	**… more not included in table**
Upper Methow	4	2	3		5	…
Lower Twisp	5	3	4		6	…
Upper-Middle Methow	2	1	3		4	…
Lower Chewuch	3		2		4	…
Beaver Creek		2			4	
… more not included in table	…	…	…	…	…	…

From: Crandall, Methow River Presentation

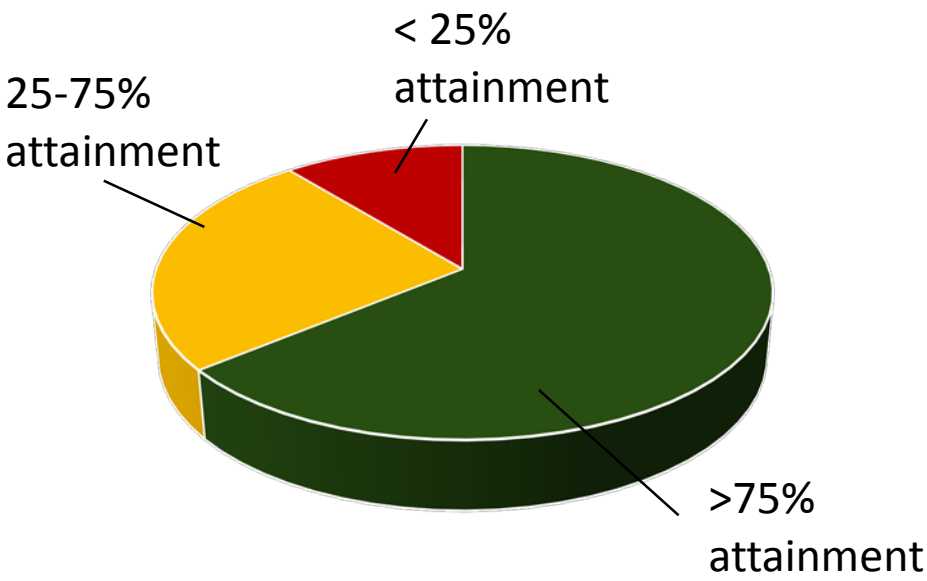
Example Metrics and Objectives

Indicator (Priority EC sub-category)	Example Metrics	Example 10-year Objective
Temperature	Maximum 7-day mean	Reduce stream temperature by 2 degrees C
Streamflow	August daily flow	Minimum August instream flow of 15 cfs
Instream structural complexity	Large wood per mile	>80 pieces of large wood per mile
Floodplain Condition	Percent and duration of inundation	30% of historic floodplain (or wetlands) inundated for 30 days during winter
Anthropogenic Barriers	Miles of reconnected channel	Reconnect/restore 20 miles of main and side channel

Reach-scale Monitoring



Assessment Unit Reporting



Next Steps

- Complete draft of Habitat M&E strategy
- Provide to co-managers and project sponsors
- Compile comments/edits and revise
- Share existing prioritization approaches through Webinar
- Integrate with developing BPA habitat strategy and monitoring framework
- Coordinate with NOAA efforts