

# **MIDDLE COLUMBIA WILD ADULT STEELHEAD TRIBUTARY BYPASS WORKSHOP**

**November 19, 2014**

Water and Environment Center, 500 Tausick Way, Walla Walla, Washington

## **MEETING OVERVIEW**

### **Introduction:**

The Middle Columbia Steering Committee (MC SC) sponsored a workshop on November 19, 2014. The meeting convened at 9:00 am in the main conference room in the Water and Environment Center, 500 Tausick Way, Walla Walla, Washington. There were approximately 90 people in attendance, either in person or on the phone.

The MC SC determined to hold this workshop due to (1) the observed phenomenon of significant numbers of returning adult steelhead bypassing their natal streams and (2) the fact that a number of federal, state, tribal, and academic organizations were studying this occurrence generally independent of each other. The overall purpose of the workshop was to bring these researchers together to share their methods and findings.

The Workshop Goals were as follows:

- Discuss current data and critical uncertainties regarding Middle Columbia River and Snake River wild adult steelhead tributary bypass
- Identify hypotheses regarding causal factors for this phenomena, effects on bypassing adults, and resulting viability implications for Mid-C and Snake River steelhead populations
- Identify RM&E objectives and potential management strategies to address this limiting factor and advance recovery of the Middle Columbia River and Snake River Steelhead DPSs
- Identify opportunities for future, multi-agency RM&E and management action coordination

Presentations were organized by MPG, beginning with the mainstem and moving upriver to the Lower Snake River and Clearwater MPGs. Presenters were asked to orient their presentations on the following:

- Current state of knowledge
- Critical uncertainties
- Proposed RME to address critical uncertainties
- Management implications
- Proposed items for future coordination

This document summarizes the workshop organization, sequence of presentations, and discussion notes.

**Opening Comments:**

The workshop was facilitated by Rick Mogren and Nancy Schifferdecker, courtesy of the Columbia River Basin Federal Caucus. Rick opened the workshop by reviewing the meeting purpose and agenda and explaining Middle Columbia River Recovery nomenclature.

**Presentations:**

There were 16 presentations in all, each accompanied by detailed PowerPoint materials. Most presenters composed an accompanying abstract as well. Additionally, there were several articles and white papers made available prior to the workshop, which range in geographic scope and emphases. All workshop materials were posted to the MC steelhead recovery website, maintained courtesy of ODFW, and available at: [http://www.dfw.state.or.us/fish/CRP/mid\\_columbia\\_river\\_plan\\_WASTB\\_workshop.asp](http://www.dfw.state.or.us/fish/CRP/mid_columbia_river_plan_WASTB_workshop.asp) Readers are encouraged to refer to the meeting materials for the substance of each presentation.

**Mainstem Research**

- USACE: Brad Trumbo
- USACE: Chris Pinney
- University of Idaho: Chris Caudill
- NOAA Fisheries: Blane Bellerud

**Cascade / Eastern Slope Tributaries MPG**

- ODFW: Derrek Faber
- WDFW: Dan Rawding
- USGS: Brady Allen
- Yakama Nation: Joe Zendt

**Yakima MPG**

- Yakama Nation: Chris Frederiksen

**John Day MPG**

- University of Idaho: Chris Caudill
- ODFW: Jim Ruzycki

**Umatilla / Walla Walla MPG**

- ODFW: Jim Ruzycski
- CTUIR: Rey Weldert

**Lower Snake / Clearwater MPGs**

- WDFW: Joe Bumgarner
- NPT: Rick Orme

**Summary of Genetic Stock Information**

- CRITFC: Jon Hess

**Roundtable Discussion:**

The workshop concluded with an open roundtable discussion intended to synthesize the information presented and brainstorm next steps. The results of this discussion are captured in Attachments 1 and 2. Attachment 1, transcribed by Rosemary Furfey, documents questions and dialogue regarding trends, data gaps, future opportunities, next steps, and research strategies. Attachment 2 presents proposed trends and next steps (as captured during the meeting on the front white board by Alex Conley) and differences between DPS steelhead issues in the various Snake River and Middle Columbia tributaries (as captured at the rear white board by Steve Martin).

***Post meeting observation:** Chris Pinney (USACE) noted in his presentation that the term “overshoot” should be used instead of “bypass,” since bypass is a term of art normally related to engineered fish structures (e.g., juvenile bypass system) associated with the FCRPS dams. This terminology shift is reflected in the roundtable discussion notes below.*

**Next Steps and Wrap Up:**

The Mid-C Steering Committee will convene to identify next steps as suggested by the workshop presentations and discussion. A meeting of the Mid-Columbia Steelhead Recovery Forum is planned for February 2015. That meeting will include the proposed follow-up to the bypass workshop.

In the meantime, the committee will continue to collect relevant materials and post them to the ODFW web page. The Steering Committee plans to utilize this site over the next several months (or longer), adding relevant information as it becomes available.

**Attachments**

1. Roundtable Discussion
2. Whiteboard Transcript
3. Meeting Participants

Attachment 1

**ROUNDTABLE DISCUSSION**  
(Recorded by Alex Conley and Rosemary Furfey)

**TRENDS:**

- In certain areas, up to 50 percent of Mid-C steelhead are not returning to their home basin – what does this mean for recovery?
- Over 20% of adults successfully return as kelts for steelhead in the Wind River and coastal populations in British Columbia. For populations from higher up the Columbia River, that rate is < 5%. The success of downstream kelt migrations and subsequent kelt returns is affected by the presence of mainstem dams.
- Improved downstream passage benefits both overshoots and kelt survival.
- Research data from University of Idaho regarding forebay residence times and fate of overshoots and kelts is forthcoming.

**DATA GAPS:**

- What are the mechanisms that are affecting survival within the system and across systems? Fish that overshoot into the Upper Columbia and return to their natal river survive at a higher rate than fish that stray into the Snake River basin. Why is this the case? Are there different management practices that affect survival?

We need to know the final place where fish die in order to identify where fish die in the Columbia River; what's happening to the fish that are not detected? Where is this mortality occurring? We need to know this about all fish crossing Bonneville. [*Post Meeting Note: Brad Trumbo (USACE) is interested in evaluating the fishery between McNary Dam and Wallula Gap. Extensive creel data with PIT tag and genetic analysis could at minimum suggest whether this fishery has an impact on the proportion of Umatilla, John Day and maybe even Deschutes fish that never return to their natal stream.*]

- There is pending research data from University of Idaho regarding reservoir conversion rates and where/why fish are dispersing that will help to answer this question.
- Increase understanding of biases and limitations of pit-tag data; be explicit about biases. Be clear about what you know, don't know, and what you don't know that you don't know.
- Are there any fisheries that are not being evaluated for PIT tags? Do we have fisheries where tags are not wanted or recorded?
- How widespread and what is the impact of poaching?

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- The Middle Columbia DPS is unique regarding genetic linkages across the DPS, unlike in the Lower Columbia or Upper Snake. The genetic data seems to be supporting the PIT-tag data in terms of steelhead straying. What are the legacy effects of this behavior and recovery implications?
- Tighten up analysis of temperature/overshoot rates correlation or cause.
- Do changes in water chemistry/water quality impact the fish's ability to find home stream and/or imprinting?
- Is there an option to identify and transport Tucannon fish from the Granite trap and truck them home?

### **OPPORTUNITIES / NEXT STEPS FOR COOPERATION**

- All presentations will be collected on the ODFW web site.
- Issue of the White Salmon being a “new river” and there is currently no sampling going on. This is a ripe opportunity to do research.
- Is anyone taking an inventory about where we are losing fish? Do we need more comprehensive data collection and fish tracking mechanisms; are all areas “wired” where we need to have monitoring detection equipment?
- This workshop is a good first step to have a comprehensive understanding of new emerging data or to address key research questions; understand the relative rates of straying between populations; understand the genetic consequences between donor and source populations. What are the acceptable levels of risk?
- We need to identify and develop a standardized research approach so that data can be compared across the Columbia Basin; apply analytic approaches to get a better sense of what is occurring everywhere; have a web based location where data can be located/housed; someone needs to figure out how to estimate fish returns; need a coordinated effort to pull together science to get local/stray ratios.
- Check with BPA to find out if they have resources and a mechanism to store data (they are bringing on new fish biologists).

### **RESEARCH STRATEGIES:**

- Methodologies and statistical analyses can be challenging; is there detection error and conclusion errors? Depending on how you do the analysis, there are different potential errors in the analysis that can lead to misleading results. Who can take on these analyses?

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- Is genetic mixing of Middle Columbia and Snake River steelhead stable or recent? Fish scale archives could be used to determine historic genetic stock information (e.g.: Work in the Deschutes River).
- Can we improve and/or increase lost holding habitat to address straying rates?
- What does adult holding habitat look like? We need to identify where it might be located in the river. For example, we are starting to see holding behavior at the mouth of the Deschutes; however, we don't know if this is a historical norm or recent phenomena. University of Idaho has data that show mainstem wintering fish have higher survival (from a bio-energetic point of view this may be very beneficial for the fish). The cumulative bio-energetic impacts of temps/travel distance and passage issues.
- What are the patterns in the Upper Columbia? We are seeing some overshooting.

**POTENTIAL MANAGEMENT STRATEGIES:**

- Look at seasonal management practices to address issue of winter downstream passage options; highlight issues due to lack of winter downstream passage options.
- Hypotheses that modified river deltas impact homing – can habitat work/drawdowns change these trends?
- Downstream passage is needed, especially for overshoots and kelts.
- Representative PIT-tagging of hatchery and wild steelhead is needed.
- Set up tagging to be able to better evaluate downstream passage design of tagging to reduce biases; can we identify “hot spots” of where the problems are occurring geographically? Focus on geographically specific trends/hot spots.
- How should river operations change (especially in March) to improve kelt survival? We need multiple river operation management scenarios for different life stages throughout the year. How do river operations need to change to support survival? Can we focus on specific time periods?
- We need to understand the mechanisms that attract strays into different river tributaries; what are the mechanisms that attract fish into some tributaries? Don't lose track of the different limiting factors such as thermal highs and low flows which may affect straying.
- The issue of straying affects biological viability criteria (different VSP parameters); look at the VSP implications in status reviews which varies across populations.

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Attachment 2

**WHITEBOARD TRANSCRIPTS**

**OBSERVATIONS – TRENDS / NEEDS / LESSONS**

**(From back board, recorded by Steve Martin):**

- More than half are not returning to natal streams, so consider ESA
- Kelt reconditioning should be a strong consideration – 20% survival for repeat spawning
- Upper Columbia does not see nearly as much straying
- Homing of barged SR smolts
- Delta impacts / Temperature / Reservoir affects
- Adult fallback routes / improvement for overshoots and kelt
- Redundant counts
- Population delineation / Do we have fewer independent populations?
- Unaccounted mainstem losses (fisheries / poaching)
- Data gaps = passage routes / inaccurate PIT tags / unknown assumptions
- PBT as alternative to PIT tag?
- PIT tells you, but no PIT does not tell you what you don't know – redundant / refuting / conforming / independent data is important
- Water quality / pollutants reduce imprinting
- MPG pHOS goal vs population goal
- Kelt passage is more important than previously thought / understood
- Standardized analysis and reporting
- Spring spill and drawdown to expedite kelt and delta forming processes (i.e. April – May pulses when power generation is not so high)
- Kelt reconditioning: Historic genetic profile vs current Jon Hess analysis

**SNAKE RIVER DPS (from rear board – recorded by Steve Martin):**

- Grande Ronde
- Lower Snake
  - Asotin
    - ++ due to overshoot

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- Tucannon
  - \*\* due to overshoot
  - ++ receiving out-of-basin wild adults

**MIDDLE COLUMBIA DPS (from rear board – Steve Martin):**

- Yakima MPG
  - ++ minor issue
  - \*\* minor issue, but delta temperature issue
- Umatilla / Walla Walla MPG
  - Umatilla
    - ++ due to overshoot
    - \*\* due to overshoot
  - Walla Walla
  - Touchet
- John Day MPG
  - ++ due to barging Snake River hatchery smolts
  - \*\* due to losses in mainstem Columbia River (fisheries? / tribes? / other?)
- Cascade East Slope MPG
  - Klickitat
    - ++ minor issue
  - Deschutes
    - ++ due to stray Snake ???
  - Wind
    - \*\* but disappear in reservoir for unknown reasons, likely due to connectivity like Rock Creek

\*\* = issue when POP<sup>n</sup> is donation

++ = issue when POP<sup>n</sup> is receiving

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Attachment 3  
**MEETING PARTICIPANTS**

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Mid-C Wild Adult Steelhead Tributary Bypass Workshop  
Meeting Overview

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Mid-C Wild Adult Steelhead Tributary Bypass Workshop  
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