Total Dissolved Gas Adaptive Management Team

Columbia and Snake Rivers

May 13, 2008
Portland, Oregon

DEQ
State of Oregon Department of Environmental Quality

WASHINGTON STATE DEPARTMENT OF ECOLOGY

www.ecy.wa.gov/programs/wq/tmdl/columbia_rvr/columbia_tdg.html

Today's Agenda

- Adult salmon passage impacts through dams (Bob Heinith)
- TDG supersaturation criterion and field investigation (Don Weitkamp)
- Wrap Up

AMT Issue #1

- The need for the 115% forebay TDG requirement.

If the 115% requirement was removed, how would it affect fish (and other aquatic life)?

Need for 115%

What are the biological impacts (GBT) of eliminating the 115% on all aquatic life?

Vs.

How many more fish will pass/survive the system if we eliminated the 115%?

- Analysis of Spill Volumes
- Importance of spill in Juvenile Hydro-system Survivals and SARs (FPC presentation)
- Comparable Survivability Study – CSS (USFW presentation)
- COMPASS (NOAA and USACE presentation)
- Adult Passage and Survival (CRITFC presentation)

How many more fish will pass/survive the system if we eliminated the 115%?

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Vs.

How many more fish will pass/survive the system if we eliminated the 115%?

What are the biological impacts (GBT) of eliminating the 115% on all aquatic life?

- GBT Program Results
- NOAA Resident Fish Review
- Ecology Literature Review
- Weitkamp Literature Review

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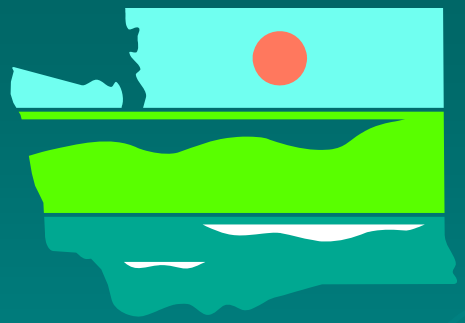

Next Steps:

- Review and analysis of materials presented at TDG AMT, including comments
- Synthesis paper development (July and August)
- Presentation of synthesis paper to TDG AMT for 30 day review (September)
- Final synthesis paper developed and staff recommendation (November)

Weight of Evidence Process

- Approach used in scientific forums as a informational and decision-making tool
- Approach to help inform the water quality agencies regarding effects of discontinued use of forebay monitors that restrict TDG to 115% with the overall goal of best protecting the beneficial fisheries use
- Include scope of AMT members that have specific expertise and data and analyses to contribute

Weight of Evidence (cont)

- Water quality agencies keep record of the discussions and information submitted for and against each hypothesis
- Water quality agencies charged with summarizing the evidence for and against each hypothesis
- These summaries are incorporated into a proceedings document
- Water quality agencies use the process to make an informed decision

Potential Hypotheses

- Juvenile survival at the concrete(dam) under different spill levels
- Juvenile reach survival under different spill levels
- SARs under different spill levels
- Delayed mortality under different spill levels
- Water particle and fish travel time under different spill levels
- Adult survival at the concrete under different spill levels

Examples of Weight of Evidence Approaches in the Columbia Basin

- PATH (Process for Analyzing and Testing Hypotheses) - examining different hydro operational hypotheses for CB salmon recovery (Carpenter et al. 1998)
- Comparative Survival Study Workshop- examining the comparative survival of juvenile salmon through different routes of dam passage (Marmorek et al. 2004)

Synthesis Paper Outline

1. Background

- Regulatory history and requirements (waivers and standards) on the 115%
- Basic information on TDG

2. Description of AMT process

3. Frame the question

- Eliminating the 115% may cause more TDG-related problems but may also help migrating salmon. We need to weigh these two issues.
- Not looking at transport, Bonneville, etc. etc.
- Not looking at management issues (i.e. how much *should* we spill next year)
- Explain other important issues such as overgeneration spill, over capacity spill, variations in flow, BiOp spill caps, etc

Synthesis Paper Outline con't

4. If 115% was eliminated, how much more spill would we get

- FPC analysis
- USACE analysis

5. Pros of eliminating 115%

- FPC "Importance of Spill" says XXX, but others have the following concerns YYY
- USFWS "Comparative Survival Study" says XXX, but others have the following concerns YYY
- USACE/NOAA "COMPASS" says XXX, but others have the following concerns YYY
- Summarize the above in terms of Bob Heinith's "Potential Hypotheses"

6. Cons of eliminating 115%

- According to the Ecology literature review, raising the TDG from 115-118(?) may affect salmon in XXX way, other fish in YYY way, and other aquatic life in ZZZ way
- According to the NOAA Fisheries resident fish review, the impact on resident fish may be XXX

7. Staff Recommendation

(Completed after the review process)