Columbia River Total Dissolved Gas TMDL
Adaptive Management Team (AMT) Meeting

05/13/2008
National Marine Fisheries Service
Portland, OR

Attendance: See list at end.

Action Items:

- June 2 is the deadline for comments on any material that has been presented to AMT thus far. Send comments to Andrew and Agnes by June 2.
- NOAA's Compass and BPA's HYDSIM papers will be sent to Andrew and Agnes prior to June 23. Once received they will be posted to the AMT TDG website for a 30 day review.
- Bob Heinith and Shane Scott will present at the next meeting on June 23 – please send presentations to Andrew and Agnes one week prior to the next meeting.
- The next meeting will be June 23rd, 9:30 to 12:30 at NOAA in Portland.

Meeting Notes:

Introductions, overview of meeting agenda and goal of AMT.

SYSTDG Modeling Results – Laura Hamilton, ACOE
Presentation is posted on AMT website. Three distinct flow years were modeled: 1999 high water, 2002 medium water, 2007 low water. SYSTDG uses hourly averages of TDG values to develop hourly average volumes and flows with and without the 115% TDG forebay requirements. Spill operations were then converted to monthly and bi-monthly averages for HYDSIM input. Involuntary spill was adjusted for unit outages. Spill operations controlled spill 76% of the time, while the TDG limits only controlled 12% of the time. Bonneville forebay data includes Camas-Washougal data. Majority of the dams had no change in spill volumes with and without the 115% TDG limit, except for Snake River dams, and Bonneville where there was an increase in spill due to the removal of the 115% TDG forebay limit.

ACOE has provided AMT with an updated Revised Final draft of their report on May 15. It has been posted to the TDG website for review.

HYDSIM Modeling Presentation – Roger Schiewe – BPA
Presentation is posted on AMT website. HYDSIM develops monthly average flow volumes that get entered into the COMPASS model which converts the monthly averages into daily averages for the Spring period. HYDSIM provides the data on total spill at each project for the COMPASS model. Reductions in spill based on overgeneration conditions typically altered the proportion (percentage) of spill types. This typically resulted in the percent of spill for fish decreasing, however overall volumes remained the same for fish and forced spill. Load capacity is for current 2008 needs, and is not projected for future needs.

COMPASS Modeling Results – Blaine Bellerud – NOAA
Presentation is posted on AMT website. COMPASS modeling based on current Bi-Op operations. The model does not take into account summer or pool survival. FCRPS survival

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estimates are up to the Bonneville tailrace. The LGR-LGR SAR values were pooled for system, to include both transport and spill passage fish. ACOE had concerns with the steelhead result in the Lower Snake River. FPC explained that Steelhead typically present in June and July, anything beyond is a concern and typically results in increased mortality because the fish get trapped in the forebays for an extended duration with little to no depth compensation available. Travel time is typically 2 months to get from Lower Snake River dams to Bonneville forebay.

Gary Fredricks stated that use of forebay 115% TDG limits have little influence on the fish, and the removal of these monitors will have little to no impact on survival.

Ecology questioned the "Whole population … SAR" values because they were not within the bounds of the "Composite … SAR Estimate", these tables are found within the last slides of Blaine's presentation. In an email communication on May 14, Blaine explained:
"Talked to the guys at our science center and delved a bit deeper into it. The in-river and transport SAR actually represent a different end point than the LGR-LGR SAR for the entire population, they are Bonneville to LGR SAR. This means that they only include what happens to the fish from the time they leave Bonneville tailrace, until they reach LGR as adults, whereas the LGR-LGR incorporates everything that happens to the fish from the time they pass LGR as smolts until they return as adults. So the relationship between the in-river and transport SAR and the LGR to LGR SAR is even more complex, in addition to which the proportion of fish represented by each group also changes between the two alternatives. The in-river and transport SAR were used more as "diagnostic" statistics in the BiOp analyses to help understand why "summary" values like LGR-LGR SAR changed. The statistics I presented in the first table were the "decision" statistics provided by the model. In the end it kind of circles around to the answer that I gave in the first place, it's a series of complex relationships, that's why we need a model. However, I want to be sure I know what I am doing and why so I put in the effort to track down what I hope is a more satisfactory answer to your questions."

Gas Bubble Trauma – Margaret Filardo – FPC
Presentation is posted on AMT website. Gas bubble trauma results are actual data from non-lethal visual monitoring results as observed through the Smolt Monitoring Program. The 4-6% increased juvenile survival through hydro system spill was based on SIMPASS modeling. The percent TDG values presented in the graph are of the 12 highest hours in one day values, as required by the TDG waivers. Mortality typically occurs when 60% of the fish has Gas Bubble Trauma over its body.

Literature Review – Mark Schneider
There are about 40 articles related to the effects of TDG on resident fish and invertebrates in the bibliography. Mark noted that a critical point often overlooked is that we are analyzing 115/120 TDG at the surface and most fish are not at the surface. The effect of TDG decreases by 10% for every 1 m increase in depth. Some articles claim that salmonids are most sensitive to TDG than other species. There is no observed difference in gas bubble trauma for different maturity levels of fish. TDG increases with increases in temperatures near the surface in localized areas, and that is why the TDG monitors are placed at various depths throughout the system. The goal is to place TDG monitors in well mixed waters that are outside the influence of localized effects of temperature or dissolved oxygen. Gas bubble trauma is a short term effect because if the fish sound into deeper water, the bubble will go away.

Adult Passage and Survival Presentation – Bob Heinith

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AMT received confirmation from Bob Heinith regarding his presentation the day prior to the meeting (5/12), but Bob was unable to attend or present at the May 13 AMT. His presentation was rescheduled for the June 23 TDG AMT meeting.

Next meeting: Monday, June 23, 2008 – 9:30am-12:30pm at NOAA.

TDG AMT May 13, 2008 Sign in Sheet

	Name	Organization	Phone #	email
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23	NO ONE on phone			
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