



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

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October 6, 2008

Ms. Agnes Lut
Oregon Department of Environmental Quality
811 SW 6th Avenue
Portland, Oregon 97204

Mr. Andrew Kolosseus
Washington Department of Ecology
Water Quality Program
P.O. Box 47600
Olympia, Washington 98504

**RE: Comments on Adaptive Management Team Draft Synthesis Paper:
 Evaluation of the 115 percent Total Dissolved Gas Forebay Requirement**

Dear Ms. Lut and Mr. Kolosseus:

The Columbia River Inter-Tribal Fish Commission (CRITFC)¹ was created by the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes and Bands of the Yakama Indian Nation and the Nez Perce Tribe. These four tribes possess rights reserved by treaties with the United States to take fish destined to pass the tribes' usual and accustomed fishing places. Among these fish are the anadromous species originating in the Columbia River and its tributaries. Protection of these fish as they pass hydroelectric dams, both downstream and upstream, are paramount issues in assuring that the tribes' treaty fisheries resources are fulfilled. These same fish are important cultural beneficial uses that are also protected under the Clean Water Act.

CRITFC appreciates this opportunity to comment to the September 4, 2008, Adaptive Management Team Draft Synthesis Paper: Evaluation of the 115 percent Total Dissolved Gas Forebay Requirement. We appreciate the time and effort that DEQ and Ecology have taken to complete the draft synthesis paper and believe that in general, the paper provides a fair portrayal of the issues presented and discussed during the Adaptive Management Team (AMT) process.

¹ The CRITFC was formed in 1977 per formal resolution of the four tribes' governing bodies. The Commission is comprised of elected and appointed tribal officials who are members of the respective tribal fish and wildlife committees. The Commission has technical and legal resources that provide assistance to the tribes in protecting and enhancing their federally reserved trust resources.

We are pleased that Ecology and DEQ have adopted a weight of evidence approach as an information and decision making tool in this process. However, while the draft paper summarizes well the issues and analysis in the process, the final part of the paper does not appear to use the weight of evidence approach to offer definitive conclusions regarding the hypotheses and arguments for and against eliminating the 115% TDG forebay requirement for protection of the beneficial fisheries use. This includes but is not limited to the information presented to the AMT describing the role of spill in juvenile and adult fish survival, the impacts of TDG on biota based on gas bubble trauma monitoring conducted over the past decade, the accuracy of forebay monitors with respect to upstream dam TDG generation and predicted outcomes based on different modeling approaches. This is a critical point that needs to be addressed in the final synthesis paper.

We have concerns that the analysis of spill volumes and salmon survival offered by the federal agencies (NOAA Fisheries, BPA and the Corps) is limited to the 2008 Biological Opinion spill. Recently the Independent Scientific Advisory Board of the Northwest Power and Conservation Council reached the conclusion that Court ordered spill, which is considerably higher than 2008 Biological Opinion spill in the Snake River during May, continue at least until smolt-to-adult survivals for juveniles afforded Court spill can be analyzed (ISAB 2008-5; Attachment). Because the COMPASS model uses fish survival data before the Court ordered spill was implemented, as we and others have stated, the model results do not reflect the status quo Court ordered spill levels. This has resulted in the COMPASS model predicting higher steelhead survivals with less spill, since in COMPASS, steelhead survival from transportation is higher than in spill/in-river migration. This may result in a spill change to the 2008 Biological Opinion that is important to consider with and without the 115% TDG requirement.

Thus, we recommend that Ecology and DEQ review spill scenarios with and without the 115% TDG requirement that include the Court ordered spill levels to best determine potential effects to the fisheries beneficial use. This could be of assistance in comparing the different analytical methods, (FPC, SYSTDG, HYSIM) as the same starting assumption (i.e. court ordered spill levels) could be utilized. This could be useful for comparing, for instance, overgeneration spill.

We note that Ecology and DEQ asked the USFWS if they could model the estimated changes in spill volumes to generate the expected juvenile survival under the different scenarios. The following are the summaries of model runs requested using the data and analyses presented to the AMT from the FPC and USFWS:

The CSS study quantified the effects of spill on juvenile yearling Chinook and steelhead in the Snake River (Lower Granite to McNary dams) and on yearling Chinook in the lower Columbia River (McNary to Bonneville dams). However, spill effects for steelhead in the Lower Columbia were not identified in the CSS, likely due to the low sample sizes. As can be seen in the Table 1 below, the CSS analyses predict that the absolute increase in juvenile yearling Chinook survival from Lower Granite Dam to McNary Dam would range from 0% to 4%, dependent on the spill scenario and flow year chosen (see Fish Passage Center February 6, 2008 memo, AMT document 303, for a complete description of flow years and spill programs used) and would range from 1% to 9% for steelhead. This contrasts with the 0.2% for yearling Chinook, and

0.1% for Steelhead, estimated by COMPASS and presented by the Action Agencies for the same river reach. The CSS analyses also predict an increase of 0% to 5% for yearling Chinook in the Lower Columbia in contrast to no increase simulated by COMPASS.

In addition, the CSS analyses predict that the juvenile yearling Chinook travel time from Lower Granite Dam to McNary Dam would decrease by 0.2 to 1.9 days, dependent on the spill scenario and flow year chosen, and would decrease by 0.1 to 0.8 days for steelhead. The CSS analyses also predict a decrease of 0.2 to 2.2 days for yearling Chinook in the Lower Columbia.

The CSS results illustrate that the benefits to juvenile, and subsequently adult, salmonid survival are a function of the assumption made regarding spill level. The DOE and DEQ, when developing the Agencies' recommendation, must consider the full range of potential benefit to salmon from changes in the 115% forebay and 120% tailrace total dissolved gas management. In summary, it is apparent that the narrow scope of the assumption used for spill program implementation affected the simulated results obtained from the COMPASS model. Other analyses (e.g., the CSS) indicate substantial improvements in yearling Chinook and steelhead survival with increases in the percentage of spill.

		Absolute increase in survival (%) from base case		
		FBRestricted	120 limited	120 Unlimited
		Lower Granite to McNary		
2003	Steelhead	0%	3%	8%
2005	Steelhead	0%	2%	5%
2006	Steelhead	1%	2%	6%
2007	Steelhead	2%	4%	17%
AVG		1%	3%	9%
		wild		
2003	Yearling Chinook	0%	1%	3%
2005	Yearling Chinook	0%	1%	3%
2006	Yearling Chinook	0%	1%	2%
2007	Yearling Chinook	1%	2%	7%
AVG		0%	1%	4%
		hatchery		
2003	Yearling Chinook	0%	1%	3%
2005	Yearling Chinook	0%	1%	3%
2006	Yearling Chinook	0%	1%	3%
2007	Yearling Chinook	1%	2%	7%
AVG		0%	1%	4%
		McNary to Bonneville		
2003	Yearling Chinook	0%	1%	5%
2005	Yearling Chinook	0%	2%	7%
2006	Yearling Chinook	0%	1%	2%
2007	Yearling Chinook	0%	1%	4%
AVG		0%	1%	5%

Table 1. Absolute percentage increase in juvenile survival expected under different spill scenarios. Spill scenarios as described in Fish Passage Center AMT presentation on December 13, 2007. (Note: no planned spill occurred at Lower Granite, Little Goose and Lower Monumental dams during the spring of 2005.)

Absolute decrease in fish travel time (days) from base case				
			120	120
		FBRestricted	limited	Unlimited
Lower Granite to McNary				
2003	Steelhead	0.0	0.3	0.7
2005	Steelhead	0.0	0.2	0.6
2006	Steelhead	0.1	0.2	0.5
2007	Steelhead	0.2	0.4	1.5
AVG		0.1	0.3	0.8
wild				
2003	Yearling Chinook	0.1	0.7	1.6
2005	Yearling Chinook	0.0	0.6	1.6
2006	Yearling Chinook	0.2	0.5	1.3
2007	Yearling Chinook	0.5	0.8	3.2
AVG		0.2	0.7	1.9
hatchery				
2003	Yearling Chinook	0.1	0.7	1.8
2005	Yearling Chinook	0.1	0.7	1.8
2006	Yearling Chinook	0.2	0.7	1.7
2007	Yearling Chinook	0.6	1.0	3.6
AVG		0.2	0.8	2.2
McNary to Bonneville				
2003	Yearling Chinook	0.1	0.2	1.2
2005	Yearling Chinook	0.0	0.4	1.5
2006	Yearling Chinook	0.1	0.2	0.4
2007	Yearling Chinook	0.0	0.1	0.9
AVG		0.1	0.2	1.0

Table 2. Absolute decrease in fish travel time under different spill scenarios. Spill scenarios as described in Fish Passage Center AMT presentation on December 13, 2007. (Note: no planned spill occurred at Lower Granite, Little Goose and Lower Monumental dams during the spring of 2005.)

The Ecology literature review appears to indicate that for several laboratory and shallow water and lentic studies, 120% TDG levels may be harmful to fish and invertebrates. However, these studies are not likely representative of conditions in the lotic, Columbia River. It is likely that gas levels would dissipate below dams in the thalweg areas before concentrating in shallow water environments. In a weight of evidence appraisal, it is important that Ecology and DEQ consider the actual dynamic river environment before considering transferring lab and shallow water studies to the Columbia River.

In conclusion, we thank Ecology and DEQ for their efforts in addressing the 115% TDG forebay monitoring issue as captured in the draft synthesis paper in the AMT process. We encourage the water quality agencies to consider additional modeling analyses with Court ordered spill and to consummate a weight of evidence approach, developing conclusions from the findings of the information presented to the AMT.

Sincerely,

/s/

Robert Heinith
Hydro Program Coordinator

Attachment: ISAB 2008-5