
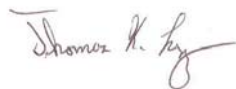


State, Federal and Tribal Fishery Agencies Joint Technical Staff Memo

*Columbia River Inter-Tribal Fish Commission
Oregon Department of Fish and Wildlife
U.S. Fish and Wildlife Service*

TO: Dan Feil, COE TMT Chair

FROM: 
David Wills, US Fish and Wildlife Service



Tom Lorz, Columbia River Inter-Tribal Fish Commission



Ron Boyce, Oregon Department of Fish and Wildlife

SUBJECT: Dworshak Operations Spring 2009

DATE: August 19, 2009

The salmon managers submitted SOR 2009-02 on May 12, 2009 to the Action Agencies which asked for outflows to be immediately increased at Dworshak to 10 Kcfs (or full powerhouse) or as needed to help achieve the spring 2009 flow objective set at 100 Kcfs at Lower Granite Dam. At the time of the SOR, Snake River flows had experienced a small peak and were in a process of decline while waiting for the bulk of the spring freshet to arrive in the lower Snake River. As SOR 2009-02 stated, "This request to increase discharge from Dworshak Dam is intended to increase flow to as close as possible to the Biological Opinion flow objective in advance of the natural runoff preventing flows from further declining during this critical passage period for spring Chinook and Steelhead."

This SOR was discussed at the May 13, 2009 Technical Management Team (TMT) Meeting. After citing potential impacts to refill at Dworshak, the COE decided to implement a compromise operation that included a multiple day step down from 7.9 Kcfs to the minimum outflow at Dworshak (7.6 Kcfs on 5-13, 5.6 Kcfs on 5-16, 4.6 Kcfs on 5-18, and 1.6 Kcfs on 5-19). Despite the clear desire of the salmon managers (reflected in the TMT minutes: <http://www.nwdwc.usace.army.mil/tmt/agendas/2009/0513min.pdf>), the COE decided on implementing their compromised operation.

Based on the COE May final runoff forecast for Dworshak (and later substantiated by the May 12, 2009 STP) the salmon managers estimated that there was sufficient water to go to a 10 Kcfs discharge for at least a week, at which time it was expected that flows at Lower Granite would be reliably above 100 Kcfs. Outflow at Dworshak could then be reduced as needed for refill purposes. This 7 day period of 8.4 Kcfs above minimum outflow at Dworshak would be approximately 116 Kaf above the minimum outflow volume for that time period. It should be pointed out that the Water Supply Forecasts issued by both the River Forecast Center and the COE were very steady over the May and June Final Forecasts. Table 1 displays the April-July May and June Final forecasts at Dworshak Dam.

Table 1. RFC and COE May and June final April-July forecasts at Dworshak Dam.

Dworshak	Dworshak Water Supply (Kaf)
RFC May Final (Apr-July)	2610
COE May Final (Apr-July)	2631
RFC June Final (Apr-July)	2590
COE June Final (Apr-July)	2597

In retrospect, between May 13, 2009 (one day after SOR-2009-02 was submitted) and June 30th, 2009, operators released 325 Kaf of water from Dworshak Dam *above* the minimum outflow of 1.6 Kcfs and were within one foot of full (1600 feet) for the last 11 days of June. In other words, the water supply at Dworshak Dam was sufficient to refill Dworshak Dam by June 30th, release the minimum outflows at Dworshak from May 13th to June 30th and have 325 Kaf of water left over to be used to augment flows below Dworshak between May 13th and June 30th.

The following figure (Figure 1) shows the daily proportion of chinook passing Lower Granite Dam between 5/1/2009 and 6/30/2009 as well as the actual outflows from both Dworshak Dam and Lower Granite Dam. Also on Figure 1 are estimated flows at Dworshak and Lower Granite dam if Dworshak would have began releasing 10 Kcfs on 5/13/2009 and continued as long as the 325 Kaf of extra water (beyond refill and minimum flows) would have lasted. For the purpose of this exercise, it was assumed that water released from Dworshak had an immediate impact on Lower Granite Dam outflows. Included in Figure 1 are dashed grey lines that bound the period between 5/13 and 5/19. This is the period that flows of 10 Kcfs were requested by the salmon managers, and through which the COE released the compromised outflows from

Dworshak as a result of SOR 2009-02. During the period between 5/13 and 5/19, over 25% of yearling chinook passed Lower Granite Dam.

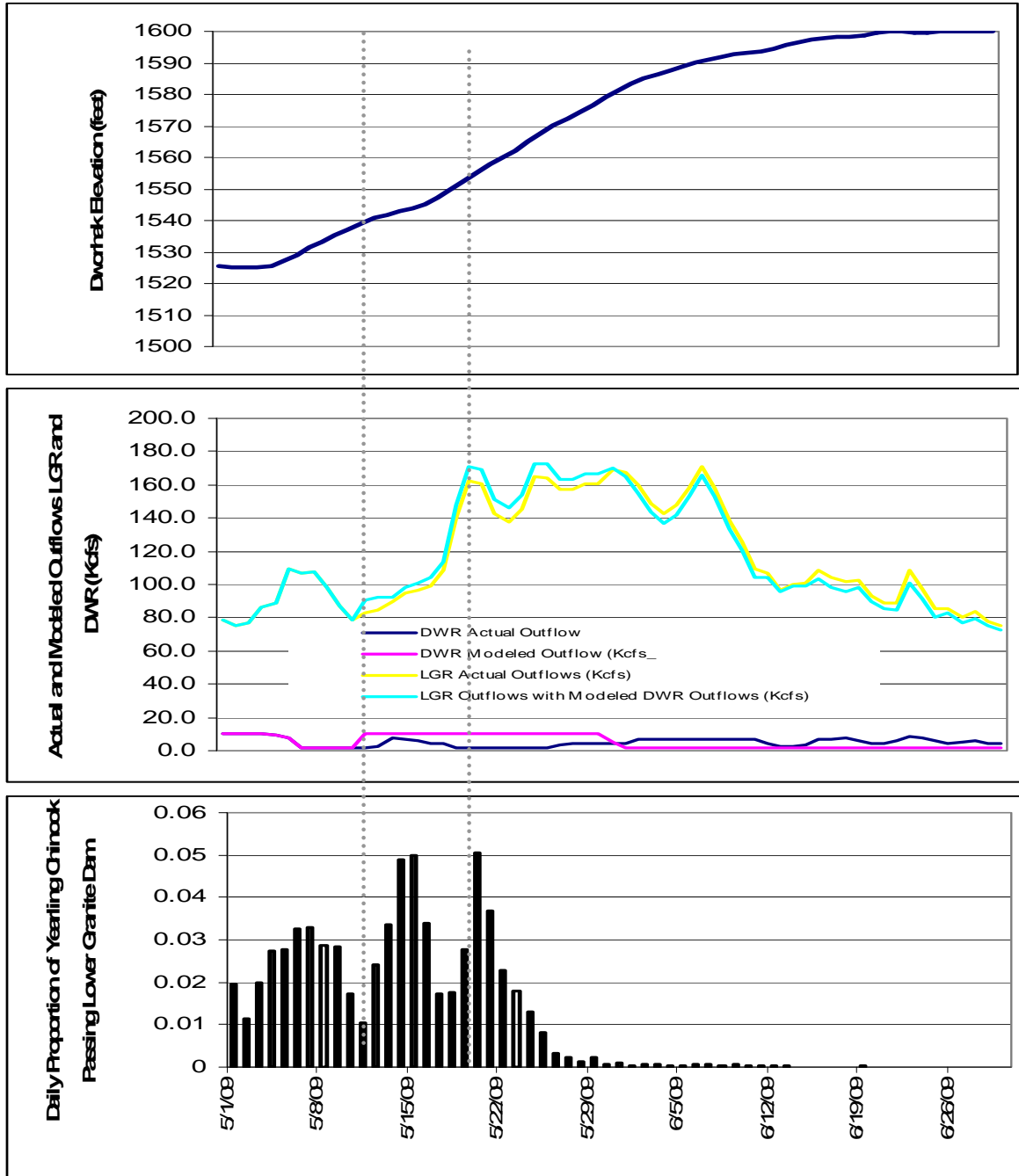


Figure 1. Daily proportion of chinook passing Lower Granite Dam between 5/1/2009 and 6/30/2009, Dworshak actual reservoir elevations, and the actual and modeled outflows from Dworshak and Lower Granite Dams.

In summary, SOR 2009-02 was rejected by the COE despite unanimous support of all state and federal anadromous fisheries managers; instead the COE implemented a compromised operation that resulted in flows that were less than desired by the fishery managers. During the period of the compromised operation, an estimated 25% of yearling chinook passed Lower Granite Dam. In retrospect, the COE forecast proved reliable and there was more than enough water to refill Dworshak Dam by June 30th and provide the flows requested by the fishery managers. This is an example of a decision making process gone awry that should be addressed at the TMT year end review and lessons learned in November 2009.