



FISH PASSAGE CENTER

1827 NE 44th Ave., Suite 240, Portland, OR 97213

Phone: (503) 230-4099 Fax: (503) 230-7559

<http://www.fpc.org/>

e-mail us at fpcstaff@fpc.org

MEMORANDUM

TO: Peter Jensen

Michele DeHart

FROM: Michele DeHart

DATE: February 7, 2008

RE: Grand Coulee Draft

Following is the FPC response to your recent email and telephone data request regarding the NOAA Biological Opinion flow targets and the affects of the specific operation at Grand Coulee.

I was wondering if you could figure out for me how much water would be in the river after Reclamation drafted Grand Coulee an extra foot in a regular year and an extra foot and a half in a low flow year? How much this increase would flows for fish if 1/3 of this volume was provided for fish migration and 2/3 provided for irrigation?

At the present time (and for the past two years) the Federal Columbia River Hydropower system is operated under the auspices of a federal court supervised operations agreement. In regard to Grand Coulee the reservoir is operated according to the NOAA Fisheries 2000 Biological Opinion. The objective is to fill Grand Coulee to elevation 1290 by June 30 each year. In the lowest 20% of the historical water years Grand Coulee drafts to elevation 1278 by August 31 to provide migration flow for juvenile salmon. In 80% of the historical water years Grand Coulee drafts to elevation 1280 by August 31. Keep in mind that these drafts also generate electricity all the way through the mainstem dams.

If Grand Coulee were drafted to 1279 feet instead of 1280 feet this would be an additional draft of 75.8 thousand acre feet (KAF). If one third were used for salmon flows and the other two thirds for additional irrigation withdrawals from Banks Lake that would increase flow augmentation for salmon by 25.3 KAF. Spreading this out over the 62 day summer migration period would increase daily flows by 0.21 Kcfs.

In low flow years if Grand Coulee were drafted to 1276.5 feet instead of 1278 feet that would be an extra 112.3 KAF if water drafted from Grand Coulee. If one third of the volume was provided for salmon migration and two thirds were provided for additional irrigation withdrawals that would be a 37.4 KAF of additional flow augmentation and 74.8 KAF for additional irrigation withdrawals. The 37.4 KAF would increase daily flow through the 62 day summer migration period by 0.30 Kcfs.

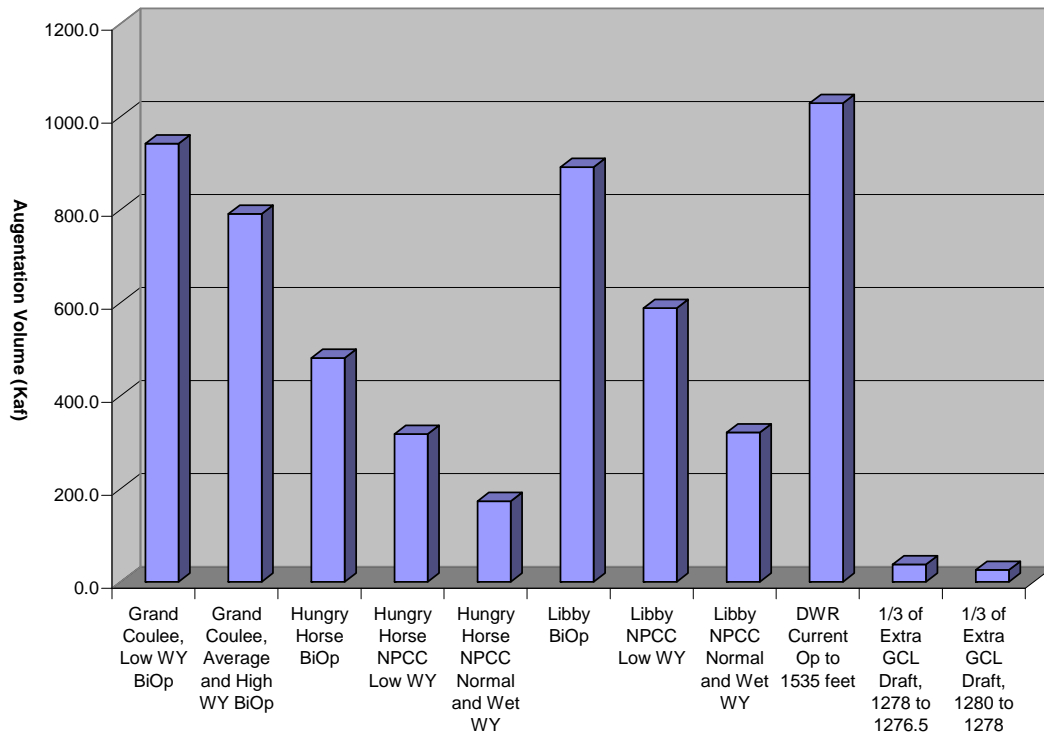
I was also hoping to find out how this affects flows for salmon, and if this extra water would help Reclamation meet its summer flow targets required by the NOAA Biop?

The Biological Opinion establishes the Columbia River summer flow target as 200 Kcfs at McNary Dam. The summer migration season is defined as July 1 through August 31. The NOAA Biological Opinion includes limited reservoir drafts from Dworshak reservoir on the Clearwater River a tributary of the Snake River, Hungry Horse, and Libby reservoirs in the upper Columbia, and Grand Coulee reservoir in the Columbia. The Northwest Power and Conservation Council have adopted a measure that decreases the summer draft of the reservoirs from the NOAA Biological Opinion requirement at Libby and Hungry Horse Dams. The first graph shows the volume released from each reservoir to augment summer migration flows compared to the additional draft scenario you described. The second graph shows the increase in daily flow that is provided by each draft compared to the additional draft you described. The following table shows the flow target, the actual flow that occurred and the maximum and minimum flow that occurred for the summer migration season from 1996 through 2007 at McNary Dam. The table shows that in 9 out of 12 years the summer flow target was not met. The table and graphs show that summer flow targets for salmon and steelhead migration are not met most of the time. In addition the graphs show that any additional draft from reservoirs will add to summer flow and that any reduction in draft will reduce summer flow.

Table 1 Summer seasonal average flow at McNary relative to the flow target

	McNary Summer Flow	McNary Actual	McNary Actual	McNary Actual
	BiOp Objective (Kcfs)	Average Outflow	Maximum Outflow	Minimum Outflow
Year	(July1 -August 31)	July 1-August 31, Kcfs	July 1-August 31, Kcfs	July 1-August 31, Kcfs
1996	200	214.5	284.5	139.9
1997	200	236.5	317.1	162.3
1998	200	169.7	262.9	104.7
1999	200	228.2	295.5	157.2
2000	200	153.6	212.2	82.0
2001	200	90.9	128.5	66.9
2002	200	189.1	332.1	122.1
2003	200	135.5	170.3	95.3
2004	200	133.7	189.8	74.3
2005	200	165.1	230.1	113.7
2006	200	166.5	231.1	96.7
2007	200	163.3	215.2	116.7

Flow Augmentation Volumes for Summer Migrants (July1-August 31)



Daily Flow from Summer Flow Augmentation Volume for Summer Migrants (July1-August 31)

