SYSTEM OPERATIONAL REQUEST: #2005, FWS-1

TO:	**Brig. Gen. Grisoli**	**COE-NWD**
	William Branch	**COE-Water Management**
	Cindy Henriksen	**COE-RCC**
	Witt Anderson	**COE-P**
	Col. Debra Lewis	**COE-Seattle District**
	J. William McDonald	**USBR-Boise Regional Director**
	Steven Wright	**BPA-Administrator**
	Greg Delwiche	**BPA-PG-5**

FROM: **Susan Martin, Supervisor, Upper Columbia Fish and Wildlife Office**

DATE: **May 13, 2005**

SUBJECT: **Libby Dam Releases for Sturgeon and Bull Trout Augmentation Flows**

SPECIFICATIONS:

Based on the May final April-August volume runoff forecast of 5.189 million acre-feet we are within a tier 2 operations year for Kootenai River white sturgeon as defined in the Fish and Wildlife Service's December 2000 Biological Opinion on operations of the Federal Columbia River Power System. The minimum recommended release volume for sturgeon conservation under current circumstances is 800 thousand acre-feet, and we now recommend the following procedures for discharge of at least this minimum volume from Libby Dam:

Thursday May 19th at about 6:00 am, increase flow at Libby Dam to 15,000 cfs (Kcfs): Ascending limb of hydrograph; USGS will conduct suspended sediment sampling and ADCP on May 20 and 21 (Friday and Saturday)

Saturday May 21st at about 6:00 am, increase flow at Libby Dam to 20Kcfs: Ascending limb of hydrograph; USGS will conduct suspended sediment sampling and ADCP on May 22 and 23 (Sunday and Monday)

Monday May 23rd at about 6:00 am, increase flow at Libby Dam to 25Kcfs: Peak of hydrograph; USGS will conduct suspended sediment sampling and ADCP on May 24 and 25 (Tuesday, Wednesday), and multi-beam bathymetic mapping in the braided reach from May 24 through 28th (Tuesday through Saturday)

Saturday May 28th at about 6:00 am, reduce flow at Libby Dam to 20Kcfs: Weekend low power demand

Sunday May 29th at about 6:00 am, reduce flow at Libby Dam to 15K cfs: Weekend low power demand

Monday May 30th maintain flow at Libby Dam at 15Kcfs, Memorial Day Holiday

Tuesday May 31st at about 6:00 am, increase flow at Libby Dam to 20Kcfs: Restart the descending limb of hydrograph; USGS will conduct suspended sediment sampling and ADCP on June 1 and 2 (Wednesday and Thursday)

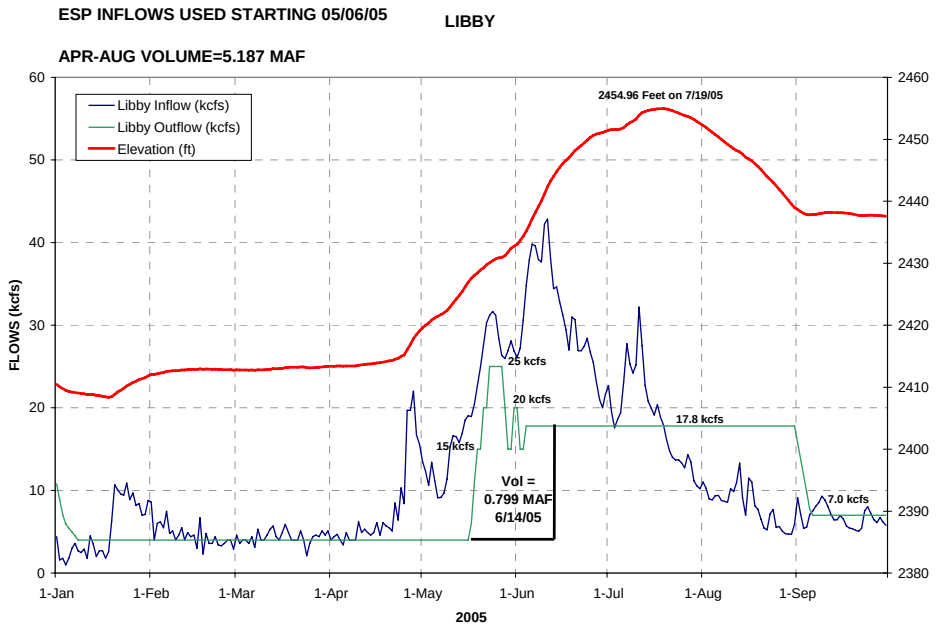
Thursday June 2nd at about 6:00 am; reduce flow at Libby Dam to 15Kcfs: Descending limb of hydrograph; USGS will conduct suspended sediment sampling and ADCP on June 3 and 4 (Friday and Saturday)

Continue discharging at this rate through approximately June 14 to utilize the minimum tiered volume of 800 thousand acre-feet. However, this discharge rate may be continued beyond June 14 if you elect to provide sturgeon flow in addition to the minimum recommended.

When it is clarified whether Lake Kooncanusa will be drafted to elevation 2439 by the end of August or by the end of September and releases from Libby Dam beginning June 15 are defined, we may provide additional recommendations. However in the absence of this clarification, beginning approximately June 15, 2005 we recommend that at least the tiered bull trout minimum flow of 7,000 cfs from the Fish and Wildlife Service December 2000 Biological Opinion be maintained through September.

Further, since Libby operations are anticipated to be constrained by having only 4 turbines (with maximum release capacity of slightly more the 20,000 cfs) in operation for much of this spring and summer, we recommend timely releases of additional water as necessary in excess of these recommended sturgeon or bull trout minimum flows to preclude any amount of forced spill this year.

This is a tier 2 water year as defined in the December 2000 Jeopardy Biological Opinion on the operations of Libby Dam. Based on these specifications the figure below illustrates how the Fish and Wildlife Service recommends this tiered sturgeon volume of water be shaped from Libby Dam through approximately June 14. Note that this illustration also depicts potential summer operations based on the current volume runoff forecast and NOAA Fisheries' Final Remand Biological Opinion of November 2004.



JUSTIFICATION:

This operational request is intended to provide flows sufficient to allow U. S. Geological Survey (USGS) to gather basic field measurements necessary to expand their flow and sediment transport modeling throughout the "braided reach" of the Kootenai River, immediately upstream of Bonners Ferry, Idaho. Preliminary findings have indicated that this is the reach of the Kootenai River which has been most altered since the commencement of operations of Libby Dam. It is shallower for several reasons; backwater effects from Kootenay Lake operations are diminished, peak flows have been directly curtailed by operations of Libby Dam, and there is increased deposition of coarse materials. In addition, channel instability in this reach has been increased. This reach has suitable substrate for sturgeon spawning and incubation, and because of its relatively high gradient, water velocities are believed generally suitable as well. The findings of this work are important for defining both the evolving habitat strategies, and spill tests to provide for sturgeon needs. Both of these general approaches are intended to allow the sturgeon to again naturally reproduce in its habitat.

Secondly, efforts are underway to capture as many gravid female sturgeon as possible. This is both a pilot study to assess survival of sturgeon eggs and free embryos at water velocities believed to minimize predation within suitable rocky substrates, and to provide opportunity for additional sturgeon reproduction, in excess of the capacity of the hatcheries. All eggs in excess of the needs of the two hatcheries will be fertilized, and then immediately released at predetermined sites in the Kootenai River Canyon and within the braided reach.

We acknowledge that some female sturgeon may be spawned, and their eggs released during the high discharges recommended before June 4. Thus, monitoring of early life stages of these individual fish may not be feasible because of the flows recommended for the USGS studies. However, subsequent fertilized egg releases by the Kootenai Tribe will be monitored by Idaho Department of Fish and Game for production of free embryos and larvae.

Susan B. Martin