

US Fish and Wildlife Service
SYSTEM OPERATIONAL REQUEST: #2004-FWS1

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

DATE: May 20, 2004

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

SPECIFICATIONS:

* Beginning when the first evidence of sturgeon spawning is observed in the Canyon reach of the Kootenai River (estimated to occur during the last week in May) target a flow of 18,000 cfs measured at the Leonia gage for four consecutive weeks. Based on ESP runs of comparable run-off years, this may be achieved by consecutive increasing releases of; 13,000 cfs during the first week; 14,000 cfs the second week; 15,000 cfs the third week; and 16,000 cfs the fourth week.

If the start date occurs during the third week of May the target would be increased to 19,000 cfs, but the actual releases from Libby Dam would remain as above. Alternatively, if the start date occurs during the first week in June the target would be 17,000 cfs at the Leonia gage, and again the actual releases from Libby Dam would remain as above.

Evidence of sturgeon spawning to trigger initiation of sturgeon flows may include either the capture of sturgeon eggs, or the abrupt and rapid downstream movement of a radio tagged female. This is a characteristic movement of a post spawning female white sturgeon.

- * A second and equal trigger to initiate augmentation flows would be capture of eggs on mats placed over gravel substrate in the immediate vicinity of Bonners Ferry.

- * The Fish and Wildlife Service will directly contact the Reservoir Control Center to request flows be ramped up for sturgeon flows immediately when any of the above triggers is to be activated.

- * In the event that neither of the above triggers is activated, there would be no request for sturgeon augmentation flows. This possibility would occur when the Fish and wildlife Service determines there are no more females remaining and expected to spawn over gravel substrates, and little likelihood remains of capturing any additional females for transport. This determination would not likely occur before the third week in June, and again the Fish and Wildlife Service will directly contact the Reservoir Control Center when this determination is made.

- * Should this latter situation (no sturgeon flow) occur, it is recommended that, after coordination with the Fish and wildlife Service, flows be immediately ramped up to meet the tiered minimum flow for bull trout identified in the 2000 Biological Opinion.

- * Otherwise, sturgeon augmentation flows should be followed by a ramp down to the tiered bull trout minimum flow. Greater flows may occur during this period depending on recommendations from NOAA Fisheries

- * If at the end of the fourth week of sturgeon augmentation flows, additional water is available without compromise to refill, we recommend splitting that additional volume equally to extend the duration of the current target sturgeon incubation flow, and to achieve a higher tiered bull trout flow through July.

JUSTIFICATION:

As recommended by the December 2000 U.S. Fish and Wildlife Service (Service) Biological Opinion for the Federal Columbia River Power System (FCRPS), the current volume run-off forecast above Libby Dam indicates we are in Tier 2 of sturgeon augmentation volumes (minimum volume 0.8 MAF), and Tier 2 of bull trout augmentation (minimum flow 7,000 cfs) .

The priority for the 2004 sturgeon augmentation flows is for incubation of naturally spawned eggs and sac fry larvae over gravel substrates upstream of Bonners Ferry. Some of the sturgeon expected to spawn this year are now being captured downstream of Bonners Ferry, radio tagged, and transported to the Hemlock Bar area of the Kootenai River, approximately 10 miles upstream of Bonners Ferry. This reach of the Kootenai

River is characterized by rocky substrates believed suitable for egg and sac fry incubation.

Montana Fish Wildlife and Parks' Instream Flow Incremental Methodology analysis of a reach of the Kootenai River near Hemlock Bar indicates that with total flow of 18,000 cfs that approximately 69% of the wetted usable area should be maintained with average water velocities equal to or greater than 1 meter per second. This velocity is believed to be sufficient to preclude or curtail efficient predation by at least one of the documented sturgeon egg predators present in the Kootenai River, northern pike minnow.

Based on current water temperatures, we are predicting sturgeon spawning and the flow augmentation start date to occur within the last week of May. However, an earlier start date would result in a slightly higher percentage of usable habitat, and a later start date would result in a slightly lower percentage of useable habitat. Usable habitat is defined as including rocky substrate and water velocities at or greater than 1.0 meter per second.

While the bull trout tiered flow minimum recommendation would be 7,000 cfs, there are incremental benefits through progressively greater wetted usable area and increased forage production in the Kootenai River below Libby Dam for increased flows up to 9,000 cfs. However, much of this incremental benefit for bull trout may be lost if the selected flow target can not be maintained through July or to the time that releases begin for anadromous fish.

We are aware that the actual run-off volume may vary from that currently projected, and accordingly, the flow and refill targets recommended above are subject to further in-season coordination and adjustment.