



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Memorandum to the File:

April 29, 2003

Earlier in the year we were not anticipating enough runoff above the Libby Project for even a minimum sturgeon augmentation flow. It now appears that there may be something near 0.8 MAF available for sturgeon while also fulfilling the needs of bull trout and anadromous fish. Because of the relatively small quantity of water, the length of the incubation period (approximately three weeks), variation in spawning timing, and the limited release capacity at Libby Dam, we are thinking that the best use of the water this year is for augmentation during the egg incubation / yolk-sac-fry stage. The dilemma is, which set of eggs / fry should be favored?

In an effort to cause sturgeon to spawn over suitable rocky substrates some sturgeon expected to spawn this spring will continue to be captured, radio tagged, and transported to the Hemlock Bar area, about 10 miles upstream of Bonners Ferry. Two males have already been transported to this area, and they have remained in the vicinity. Additional males and females will be transported soon. This area is characterized by rocky substrates and high water velocities, and it is believed suitable for sturgeon spawning / incubation. If the "net and haul" fish remain in the Hemlock Bar area, or at least over gravel substrate above Bonners Ferry and they spawn, augmentation flows would be timed to provide for incubation of their eggs / yolk-sac-fry. A specific system operation request would be timed based on the abrupt downstream movement of those transported females, an indicator that spawning has just occurred.

From past experience during a relatively low water years we can anticipate that most sturgeon in the river environment will spawn early, perhaps even during late May. While we may be able to bracket the start date based on the timing of eggs collected below Bonners Ferry, the actual request is likely to have little lead time. If we are to reliably gain advantage in terms of water velocity to exclude predation for released eggs from these radio tagged-transported females we will need to react quickly - after the first female spawns. We can expect an 18 to 20 hour lag time for enhancement flows from Libby Dam to reach the Hemlock Bar area. Further, the warmest available water from Lake Koocanusa would be requested to avoid disruption of spawning behavior by other transported sturgeon. Adjustments in the selective withdrawal system for temperature control may also be guided by evidence of spawning in the river below Bonners Ferry. This will require close in-season coordination.

If none of these net and haul female sturgeon remain to spawn over a gravel substrate above Bonners Ferry, emphasis would shift to augmenting flows for releases of large numbers of four-day-old larvae from the Kootenai Tribe's Hatchery. We would expect a delay of two to three weeks after peak spawning in the wild before hatchery larvae would become available. Thus, the augmentation flow request would be delayed two or three weeks. We estimate that hatchery spawning may occur in the last half of June with 4 day old larvae becoming available near the first of July. However, under this alternative the hatchery managers will be able to provide us with more precise advance notice of when larvae will be available.

When better information becomes available we will provide a specific system operation request based upon one of these scenarios.