



Memo

To: Tracy Hillman, Chair, Rocky Reach Fish Forum
From: Steve Hemstrom and Lance Keller, Chelan PUD
Date: 27 February 2014
Re: Chelan PUD's proposal to release 5,000 juvenile white sturgeon into the Rocky Reach Project Area in 2014

The Rocky Reach Fish Forum (RRFF) has been debating the number of juvenile sturgeon to release into the Rocky Reach Project Area in 2014. To date, the RRFF has been unable to decide on whether to release 4,332 juveniles into the project area, which is based on equalized family size (addresses potential future genetic bottlenecks), or to release 6,500 juveniles, which is the maximum annual release number identified in the White Sturgeon Management Plan (WSMP). The purpose of this memo is to offer the RRFF an alternative proposal that gives weight to both the equalization of family size and the maximum number needed to address monitoring and adaptive management questions in the WSMP.

Appendix A to the Rocky Reach WSMP indicates clearly the importance of genetics in planning the supplementation/augmentation program. For example, page 3-25 in Appendix A of the WSMP states, “[t]he effect of a supplementation/augmentation program on the genetics of wild sturgeon populations is a key consideration when the program goals and operations are planned.” In addition, the Plan states, “[b]y year three of the effective date of the New License, Chelan PUD shall begin releasing up to 6,500 yearling white sturgeon into the Reservoir annually for three years.” (Section 4.1.2, page 10). Because stocking began in 2011 (BY 2010) with the release of 6,376 juvenile sturgeon, the first phase of the stocking period should have ended with the 2013 release (Table 1). However, because of an iridovirus (WSIV) outbreak in 2012, which nearly resulted in the total loss of juveniles, the Forum agreed to release 7,979 juveniles in 2013 and to extend the first phase of the stocking period into a fourth year (Table 1).

With the rationale of both proposals in mind (4,332 and 6,500) and differences yet unresolved after considerable debate, Chelan PUD proposes that the RRFF consider the release of 5,000 juvenile white sturgeon into the Rocky Reach Project Area in 2014. This proposal accepts some level of genetic risk; however, as pointed out by the outside experts, the genetic risk associated with releasing 4,332 or 6,500 is likely indistinguishable. Therefore, the release of 5,000 juveniles in 2014 should not be considered any more or less risky than releasing 4,332 or 6,500 fish. And, importantly, the proposal to release 5,000 fish in 2014 would increase the total number of fish stocked into the Project Area to a level that is commensurate with the vision of the first phase of the WSMP supplementation program; i.e., a total release of up to 19,500 juveniles. The release of 5,000 juvenile sturgeon in 2014 achieves the same overall total had 6,500 fish been stocked each year for the first three years ($3 \times 6,500/\text{Yr} = 19,500$). Additionally, a release of 5,000 PIT-tagged juveniles in 2014 would provide the number of marked fish (19,500) envisioned initially by the WSMP as necessary to begin survival, growth, and index monitoring efforts in 2014 and 2015 (Objective 2 in the WSMP).

Table 1. Number of juvenile white sturgeon released into Rocky Reach Reservoir for brood years 2010-2012, the proposed release of 5,000 fish for brood year 2013, and the number of adult crosses that produced the juveniles in each year.

Brood year	Number of Crosses	Number of Juveniles Released	Comments
Rocky Reach Project Area			
2010	8	6,376	1F x 2M wild cross; 3F x 2M captive brood cross.
2011	1	147	1F x 1M wild cross. WSIV and hyper-inflated swim bladder complications prevented the release of larger numbers of juveniles.
2012	7	7,979	3F x 1M wild cross and 1F x 4M wild cross. Excess stocking of 6,500 approved by RRFF.
2013	12	5,000 (CPUD Proposal)	3F x 3M wild cross and a 1F x 3M wild cross.
Total	-	19,502 ¹	Total number released is equal to 3 years @ 6,500/Yr

¹ If Chelan PUD’s proposal is approved, the total number of juvenile sturgeon released into Rocky Reach reservoir over the four year period, 2011-2014, will be 19,502 fish.