



Restoring Sockeye Salmon to the Yakima River Basin.

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Prior to 2008, returns of sockeye salmon to the upper Columbia Basin numbered 50,000 or fewer in 14 of 22 years (Fig. 1). The First Nations in Canada worked with local governments across borders to improve habitats and water management in the upper Okanogan Basin. As a result counts at Bonneville Dam dramatically improved in recent years demonstrating the huge potential of sockeye restoration efforts.

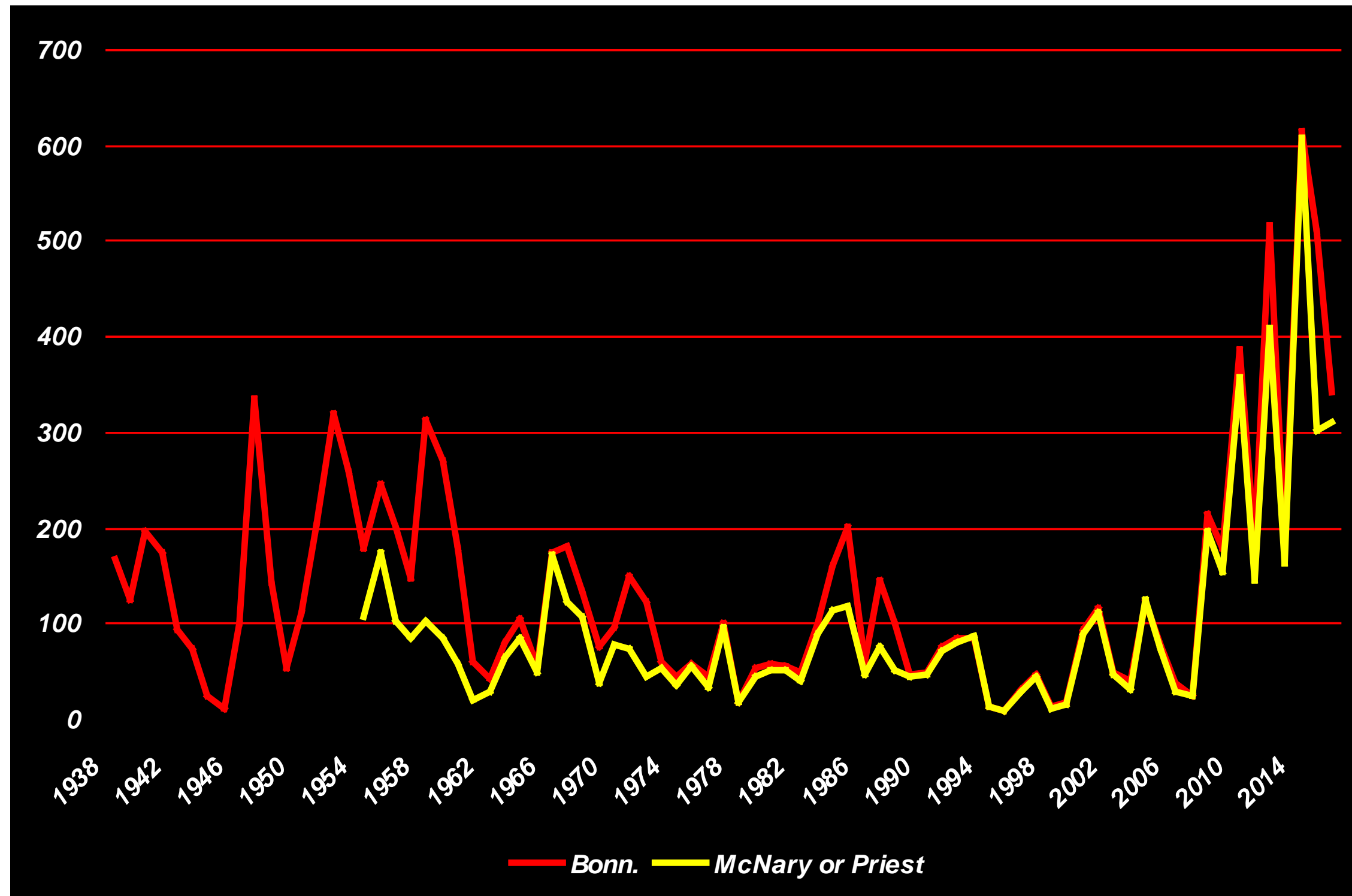


Fig 1. Adult Counts (thousands of fish) of Sockeye at Bonneville and McNary or Priest Rapids Dams, 1938 to present.

Four nursery lakes in the Yakima River Basin (Fig. 2), which historically produced an estimated annual return of about 200,000 sockeye, were removed from production in the early 1900s when irrigation storage dams were constructed without passage.

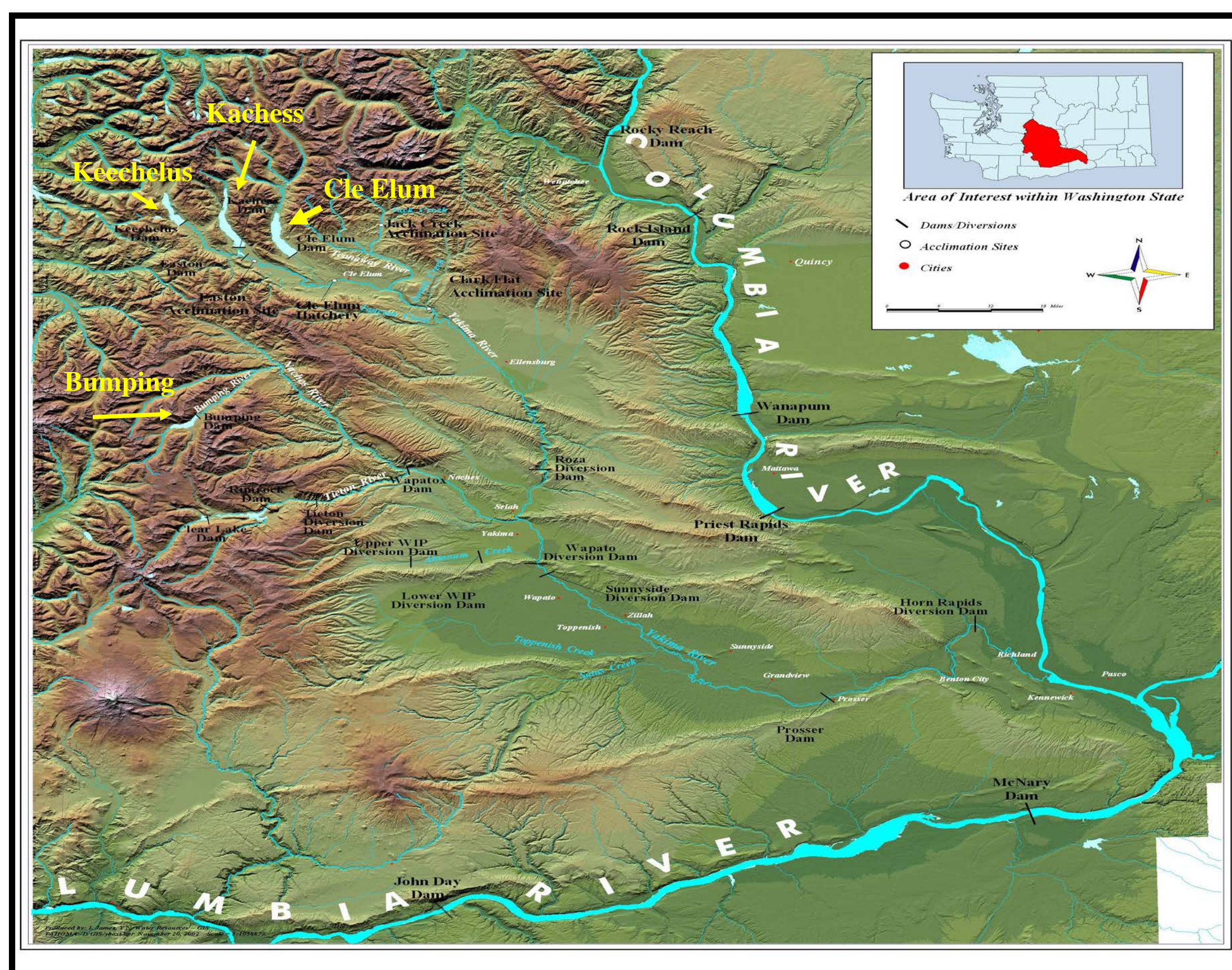


Fig 2. Location of Historic Sockeye Nursery Lakes in the Yakima River Basin.

As part of water storage improvements under Section 1206 of the 1994 Yakima River Basin Water Enhancement Project Act, Title XII of Public Law 103-434, the Yakama Nation, with the cooperation of the U.S. Bureau of Reclamation, is now actively pursuing the restoration of anadromous fish passage above Cle Elum Dam. The BOR estimated sockeye smolt production potential of 400,000 to 1.6 million fish in the Cle Elum Lake watershed (Fig. 3), with a projected return of 30,000 to 50,000 adult spawners.

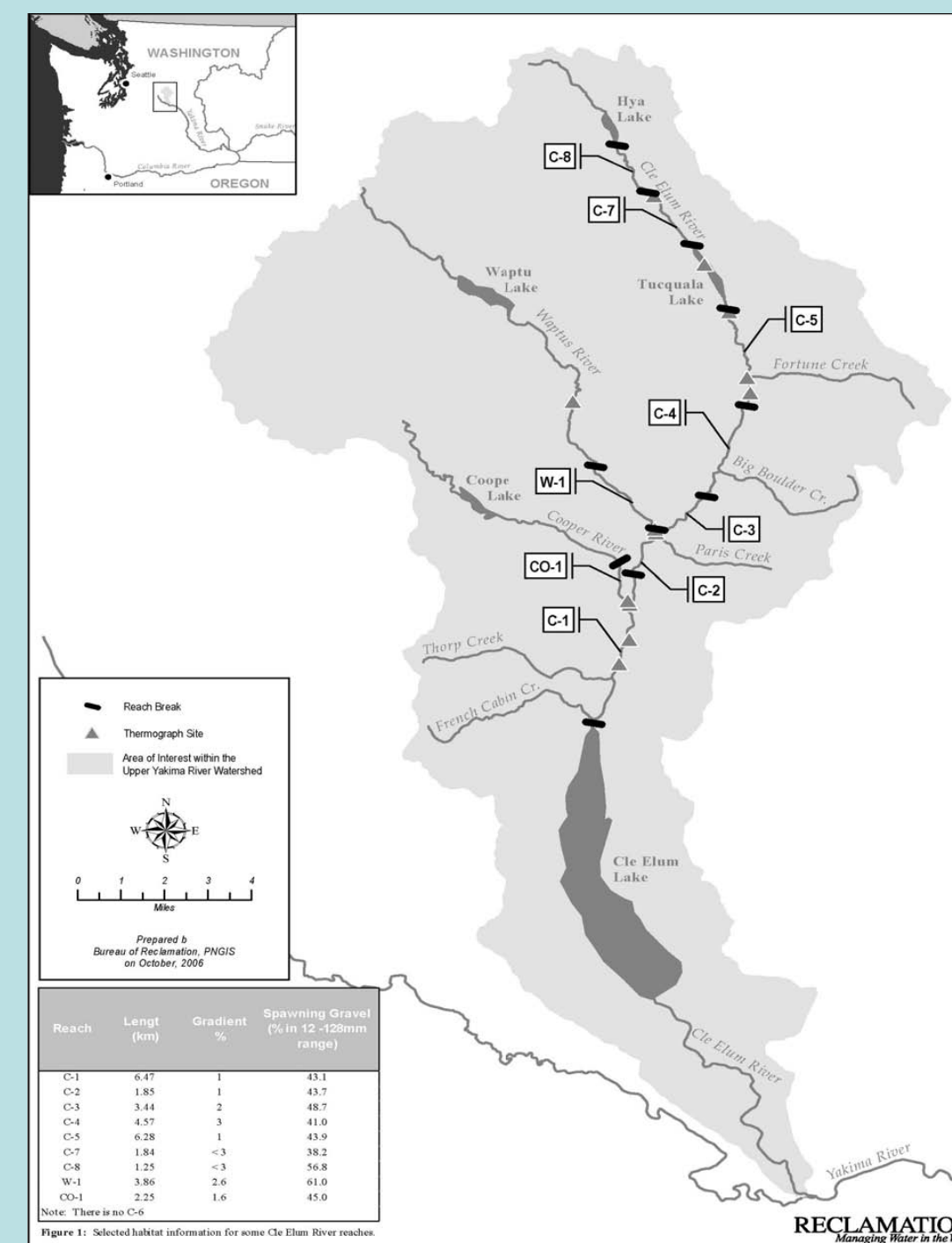


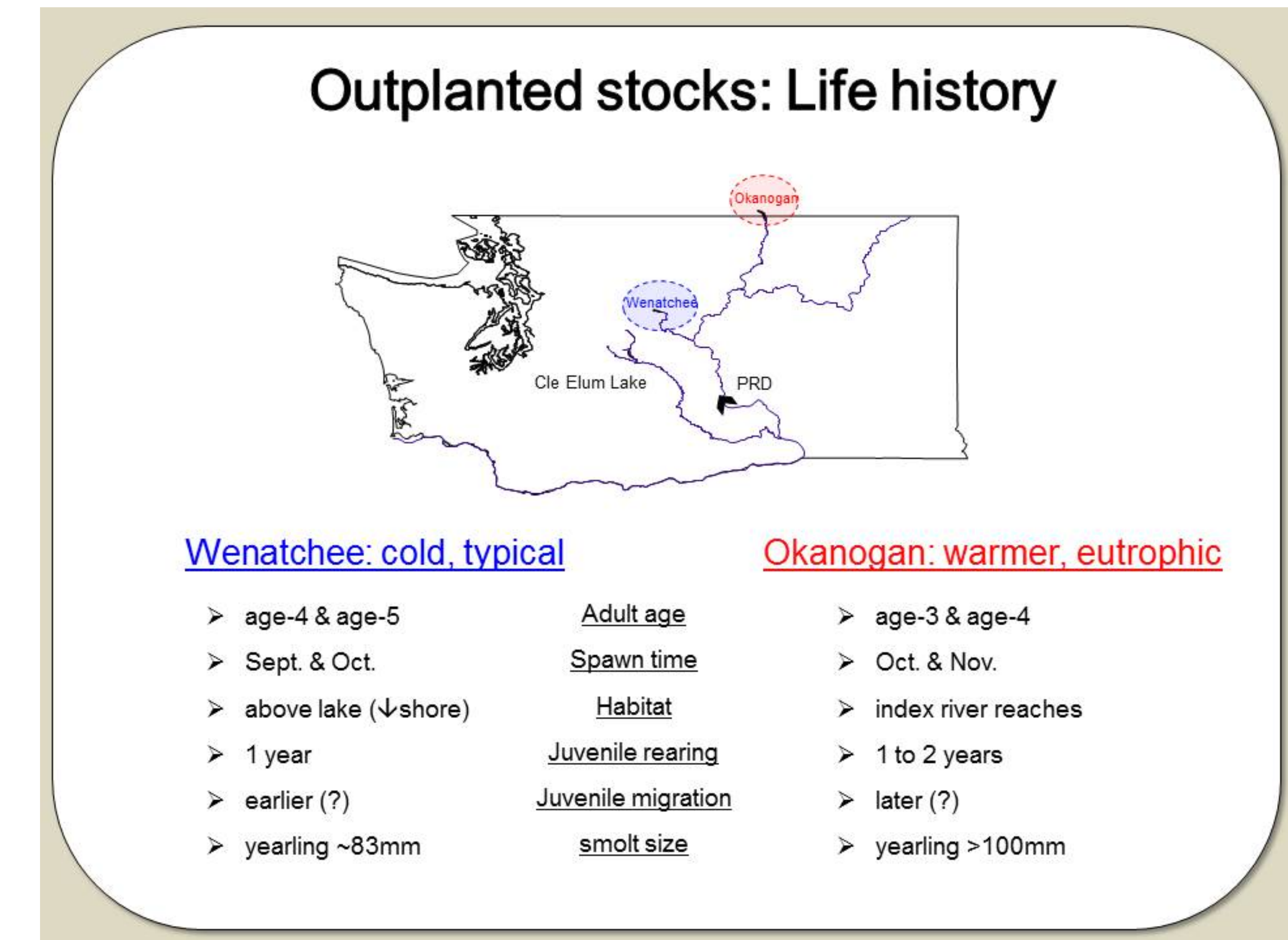
Fig 3 (L). Lake Cle Elum Watershed and Fig. 4 (above) Temporary Passage Flume.

Based on this and other feasibility work, a temporary juvenile fish passage flume (Fig. 4) was constructed at Cle Elum Dam in 2006 and proved successful. The Yakama Nation worked with co-managers to implement a sliding scale plan to collect adult sockeye (Wenatchee and Okanogan R. [Osoyoos] populations) at Priest Rapids Dam and translocate them to the Cle Elum watershed. The transfer program is producing localized, wild returning adults (Table 1). These adults are collected at Roza Dam, transported and also released above Cle Elum Dam.

Year	from Priest	from Roza
2009	1000	
2010	2500	
2011	4500	
2012	10000	
2013	4000	687
2014	10000	2576
2015	10000	340
2016	10000	3742

Table 1. Number of Sockeye translocated from Priest Rapids Dam to the Lake Cle Elum watershed. Returns in the "from Roza" column are the offspring of the 2009-12 transplants from Priest Rapids and are the first wild adult sockeye to return to the Yakima Basin in over 100 years.

Researchers believe a strategy that includes the genetic and environmental backgrounds of both upper Columbia populations offers the greatest opportunity for success in the Yakima River Basin.



The Yakama Nation is continuing work with the BOR to implement permanent juvenile and adult passage facilities at Cle Elum Dam so that this restoration effort will eventually result in a self-sustaining population.



Fig 5. Some of the first adult Sockeye to spawn in the Cle Elum R. near Cooper Lake Bridge in over 100 years.

Fig 6. A brood year 2009 Sockeye smolt migrating downstream at Roza Dam, May 10, 2011. Photo courtesy of Gordon King, Yakima Herald-Republic.

