



## COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

729 N.E. Oregon, Suite 200, Portland, Oregon 97232

Telephone (503) 238-0667

Fax (503) 235-4228

www.critfc.org

TO: Technical Management Team (TMT)  
FROM: Kyle Martin, *Mainstem Hydrologist*, CRITFC Hydro Program  
DATE: December 18<sup>th</sup>, 2002  
  
SUBJECT: **CRITFC's post-season review of 2002 FCRPS operations**

### General Comments

On March 14<sup>th</sup>, 2002, Columbia River Inter-Tribal Fish Commission (CRITFC) presented its *2002 River Operations Plan* to the federal operators<sup>1</sup> and NOAA Fisheries at TMT and requested formal review of the *Plan*. No written comments on the *Plan* were received from the federal agencies. A key purpose of the plan was CRITFC's intent to give the federal operators a Tribal perspective of how river operations could be carried out in 2002. As in 1999, 2000, and 2001, the majority of the CRITFC and tribal river operations requests, consistent with the *2002 Plan*, were not implemented.

The CRITFC *2002 River Operations Plan* addressed FCRPS operations and structural modifications for all basin anadromous fish stocks (including non-ESA listed stocks), including Pacific Lamprey. However, the TMT focused on implementation of the river operation components of the 2000 NOAA Fisheries (NMFS) FCRPS Biological Opinion. The subjective nature of the Government's interpretation of the Biological Opinion's Reasonable and Prudent Alternatives (RPAs) regarding river operations allows for substantial deviations in river operations, such as missing 2002 spring and summer target flows in a close to average runoff year. The anadromous fish resource suffers the consequences for these deviations from the RPAs. This approach to river operations and structural modifications continues to place unlisted stocks at risk and delays recovery of ESA-listed stocks.

Under several topics, river operations advocated by the *2002 River Operations Plan* and subsequent CRITFC system operations requests were not implemented in 2002. If these major principles of the Tribal plan had been implemented, stocks basin-wide would have benefited in increased survival and productivity. These topics include:

---

1. The federal operators include the US Army Corps of Engineers (COE), Bonneville Power Administration, and the Bureau of Reclamation.

- Improved Flood Control Management.** In 2002, Corps' conservative flood control management forced the early excavation of reservoir storage that could have been used for spring salmon migrants (Figure 1). January-April system-wide drafts were 2 to 3 MaF greater than the Corps' flood control plan (see tables below) and 3 to 5 MaF greater than CRITFC's Altered Flood Control plan. This management style jeopardized the probability that summer flow goals would be met. The Tribal Plan would have excavated less water during winter using a GENESYS modeled altered flood control regime. Earlier refill in May and inflow passed in June would have created more of a natural peaking hydrograph and increasing the probability of meeting summer flow targets.

2002 FCRPS Flood Control Operations					
Upper Rule Curve	GCL	DWR	HGH	LIB	Net change
January Forecast (ft.)	1290.0	1536.0	3548.0	2389.8	
Observed Elev. (1-31)	1272.5	1532.5	3516.9	2392.8	
Difference (KaF)	-1354	-48	-669	93	-1,978
Upper Rule Curve	GCL	DWR	HGH	LIB	Net change
February Forecast (ft.)	1290.0	1513.7	3537.7	2375.6	
Observed Elev. (2-28)	1256.9	1514.0	3512.6	2376.1	
Difference (KaF)	-2445	3	-519	14	-2,947
Upper Rule Curve	GCL	DWR	HGH	LIB	Net change
March Forecast (ft.)	1279.8	1505.7	3531.6	2375.0	
Observed Elev. (3-31)	1261.8	1515.5	3509.2	2370.7	
Difference (KaF)	-1304	120	-455	-118	-1,757
Upper Rule Curve	GCL	DWR	HGH	LIB	Net change
April Forecast (ft.)	1244.9	1486.5	3516.2	2362.6	
Observed Elev. (4-30)	1245.7	1513.6	3515.2	2378.8	
Difference (KaF)	67	-48	-19	432	432
2002 CRITFC Altered Flood Control recommendations					
Upper Rule Curve	GCL	DWR	HGH	LIB	Net change
January CRITFC (ft.)	1290.0	1582.5	3544.1	2411.9	
Observed Elev. (1-31)	1272.5	1532.5	3516.9	2392.8	
Difference (KaF)	-1354	-748	-580	-641	-3,323
Upper Rule Curve	GCL	DWR	HGH	LIB	Net change
February CRITFC (ft.)	1290.0	1575.5	3537.3	2408.2	
Observed Elev. (2-28)	1256.9	1514.0	3512.6	2376.1	
Difference (KaF)	-2445	-866	-511	-992	-4,814
Upper Rule Curve	GCL	DWR	HGH	LIB	Net change
March CRITFC (ft.)	1287.6	1587.3	3531.5	2422.2	
Observed Elev. (3-31)	1261.8	1515.5	3509.2	2370.7	
Difference (KaF)	-1915	-1056	-453	-1663	-5,087
Upper Rule Curve	GCL	DWR	HGH	LIB	Net change
April CRITFC (ft.)	1272.5	1582.5	3523.9	2423.4	
Observed Elev. (4-30)	1245.7	1513.6	3515.2	2378.8	
Difference (KaF)	-1829	-996	-175	-1488	-4,488

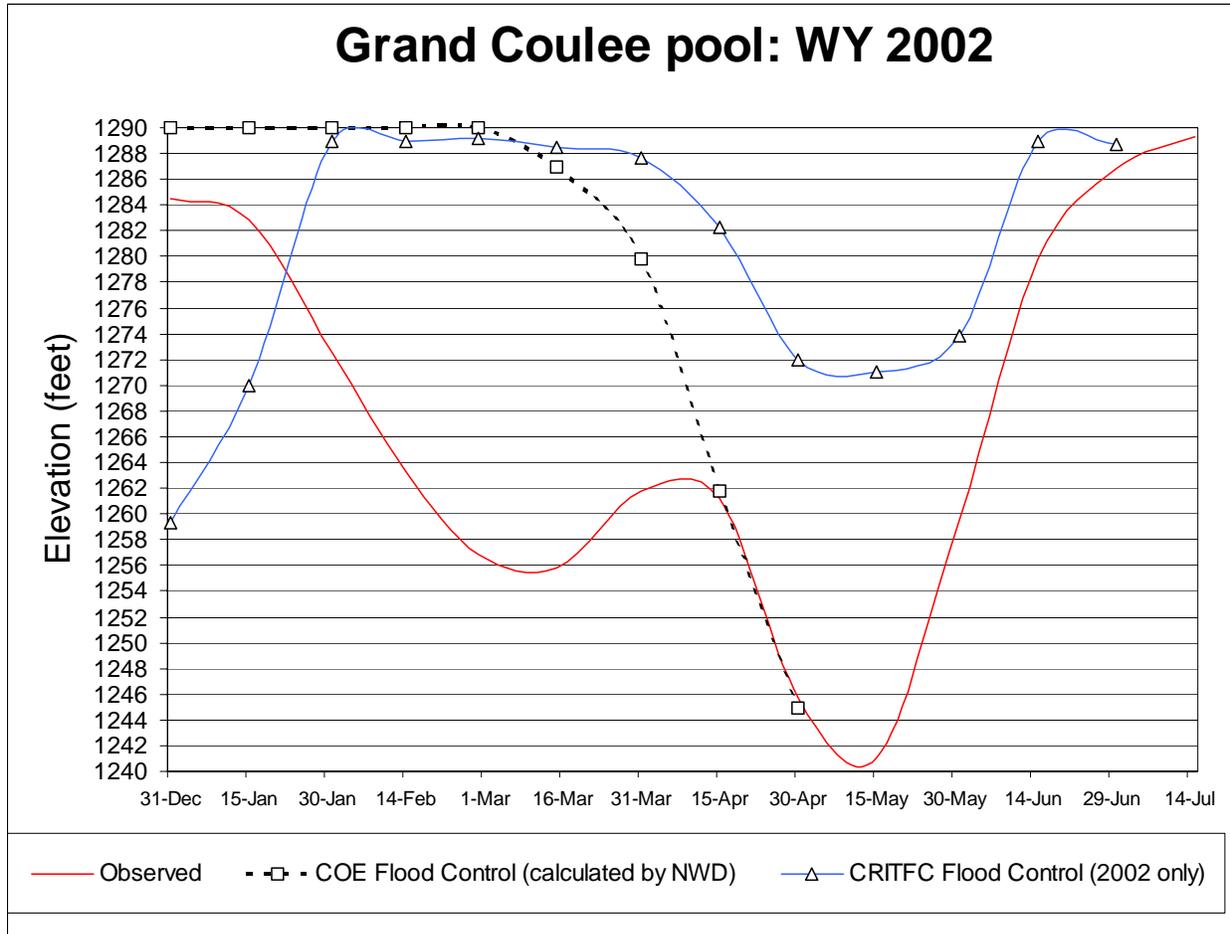


Figure 1. Effects of Corps flood control at Lake Roosevelt during Water Year 2002.

- Hanford Reach Spring Operations.** High flow fluctuations from Grand Coulee (Figure 2) hindered Grant County PUD's ability to operate Priest Rapids in a manner to provide smoother flows for juvenile rearing and migration. The Bureau of Reclamation chose to ignore recommended Hanford Reach operations in CRITFC's 2002 Plan. Lessons learned: Reduced flow fluctuations provide (1) more constant rearing conditions, and (2) reduction in stranding of juvenile salmon.

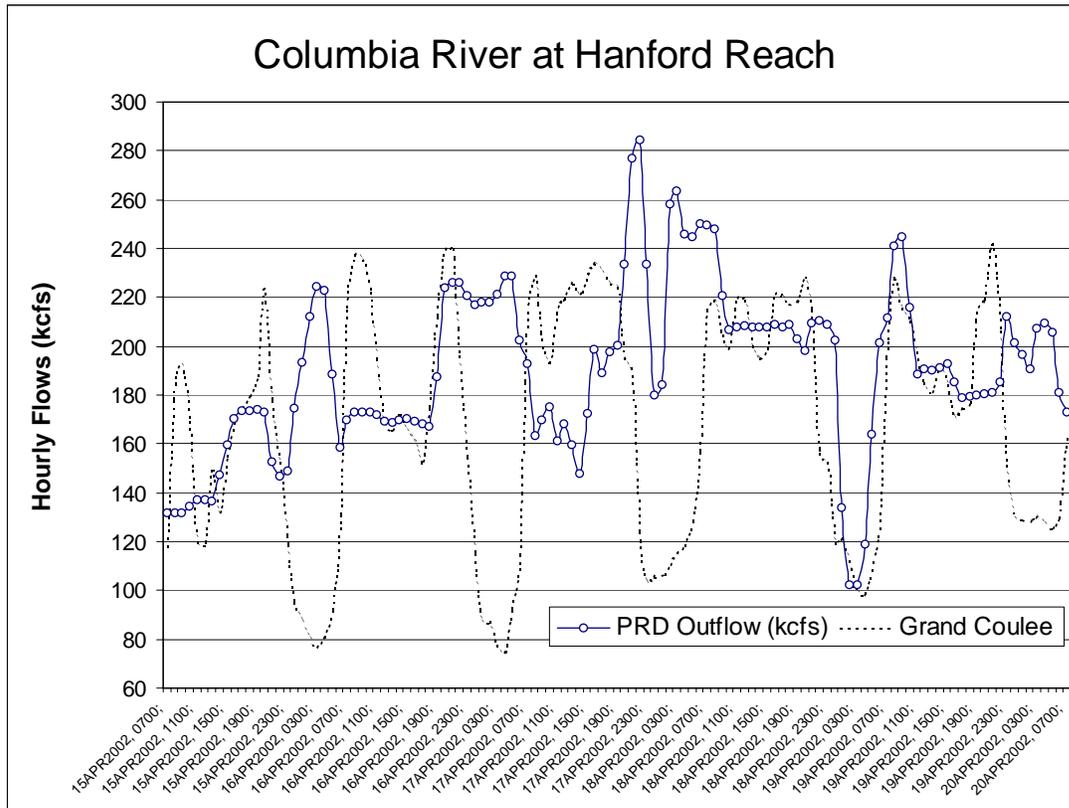


Figure 2. Hourly outflow data for Grand Coulee and Priest Rapids Dams.

- Dworshak summer operations.** In June 2002, the Nez Perce Tribe, State of Idaho, and CRITFC requested a balanced flow and temperature control management plan for Dworshak. The plan benefited both juveniles and adults by reserving 200 KcF of flow augmentation into September (Figure 3). Late spring and summer hydro-meteorological conditions plus a late spring flood control shift favored this operation. NOAA Fisheries and most Salmon Managers supported this proposed plan. Most of the NPT-ID plan was implemented including a test of 10 kcfs outflows from Dworshak during September 1-10.

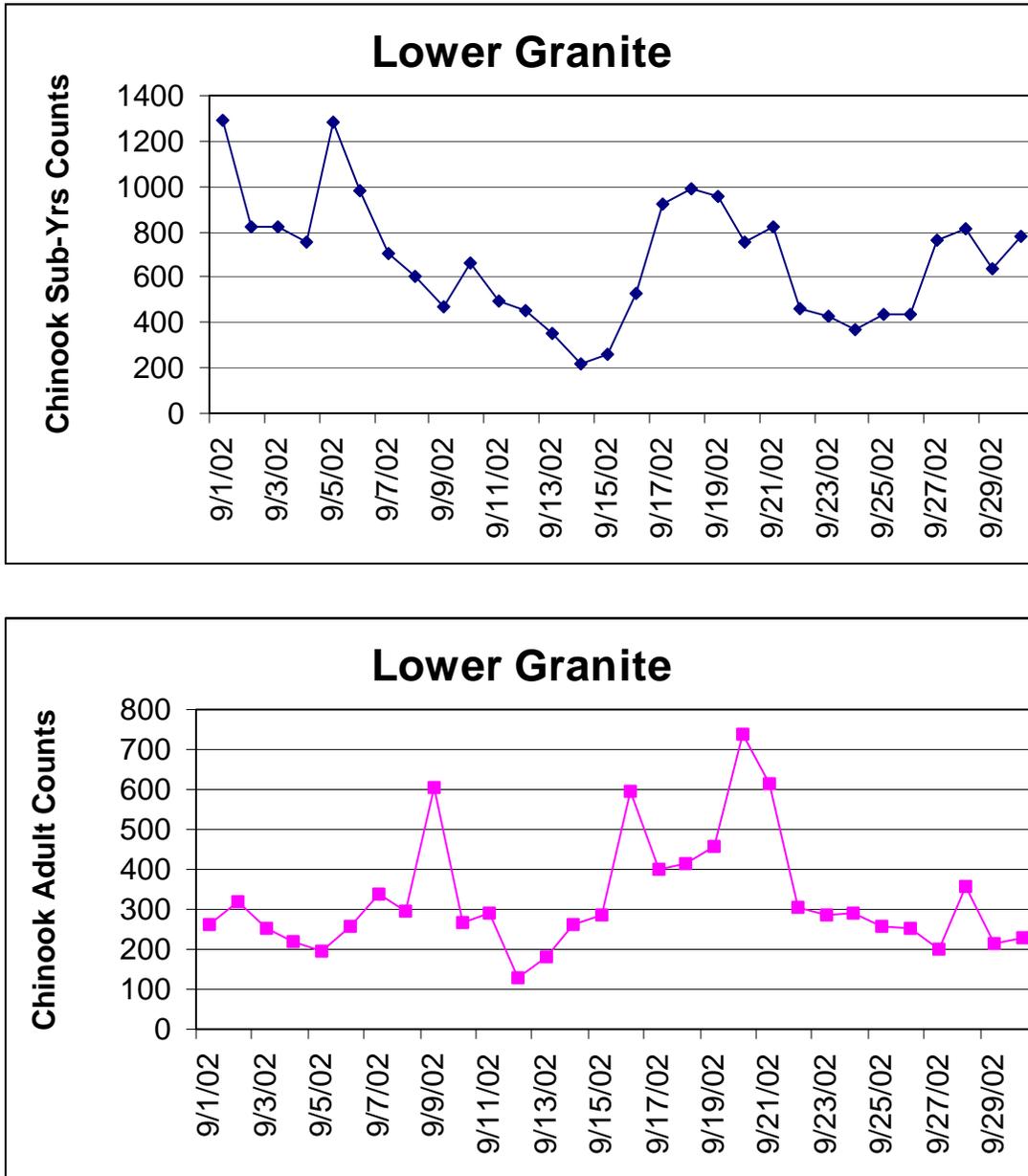


Figure 3. Effects of Nez Perce Tribe-State of Idaho Plan for fish during September 1-10, 2002.

- **Spill Summary.** The COE only provided 3 days of spill ranging from 47 to 100 kcfs for the March Spring Creek Release. The CRITFC operation requested 10 days starting at 75 kcfs spill at a minimum depending on Total Dissolved Gas levels measured downstream.
- The CRITFC plan had recommended summer spill for Lower Granite, Little Goose and McNary dams for the 2002 season. The COE did not provide summer spill and does not plan for an evaluation until 2004, at the earliest, depending on transmission line upgrades.
- The CRITFC plan recommended providing daytime spill at John Day, McNary, and the Lower Snake dams.
  - 1) Lower Granite had three study blocks for spill: BiOp night-time only spill to the gas cap and two 24 hour blocks of spill at either ~14 kcfs or 22 kcfs, depending on the amount a training spill that was used in conjunction with the RSW.
  - 2) Little Goose only had night-time spill to the Gas Cap.
  - 3) Lower Monumental had no spill other than forced spill due to concerns about potential increase in erosion in the stilling basin. CRITFC had requested spill be provided under a monitoring plan to provide spill without impacting and increasing the erosion in the stilling basin.
  - 4) Daytime spill was provided 24 hours a day at Ice Harbor with 40 kcfs during the day and ~100 kcfs at night.
  - 5) McNary only provide day spill during times of forced spill from flows over hydraulic capacity, and spill from lack of generation.
  - 6) John Day had one spill block of zero daytime spill with ~50 kcfs night-time spill versus, 30 kcfs, 24 hours a day.

An issue concerns specific project operations meeting the spill targets and maintaining the Total Dissolved Gas (TDG) Standard at the designated monitoring sites. Due to atmospheric conditions in conjunction with temperature effects, which would greatly influence the monitoring sites, spill levels were ramped up and down, depending on the TDG monitoring sites. The issue is that these changes in spill levels were made and then left for several hours and then they would have to be readjusted since they were either exceeding the standard or were significantly under the standard and thus not providing the amount spill volumes planned upon in the 2000 BiOp. Discussions in the in the Water Quality group have been raised to deal with this issue. CRITFC believes that this in-season management tool to ramp the spill levels up and down is impacting the passage goals. The total dissolved gas levels at Bonneville's tailwater location can have large fluctuations, which impact the spill operations of not only Bonneville but at The Dalles dam and to a lesser degree even John Day. These reductions can reduce the number of migrants using the spillway and force them to use other less beneficial routes of passage at these projects. Recent risk analyses indicate that TDG levels up to 125% are safe for salmon.

A protocol has been set up for ramping down spill when monitoring sites are above the TDG standard. However, a protocol has not been created for ramping up spill when monitoring sites are under the TDG standard and the spill level is lower than intended in the BiOp. This is an

important project operational guideline that needs to be reviewed by the region to insure the best possible operation for juvenile migrants. We strongly encourage that this protocol be completed, discussed, and approved by the region, before implementation of hourly spill ramping.

- **Tribal fall fishery.** During August and September, CRITFC requested that the federal operators to keep Bonneville, The Dalles, and John Day reservoirs within one-foot of full pool and stable during the treaty fishing season. The CRITFC requests also asked for specific elevations to assist boat ramp access (criterion #1) and stable pool elevations to minimize damage to fishing gear (criterion #2).

Criterion #1 asked to operate the pools within a one-foot specified elevation range. The Corps countered with a commitment for a 1.5-foot range, and then only in Bonneville pool, as they have done so since 1996 (according to the Corps' interpretation of the "Ted Strong agreement"). The Corps identifies the top operating limit at the Bonneville pool as 76.5 feet, and not 77 feet (full pool) as outlined in the CRITFC request. The Corps will not exceed that upper limit except for an emergency. Figure 4 shows the hourly compliance of CRITFC's elevation range criteria during the fall treaty fishery. The Bonneville pool complied 8% of the time. The Celilo pool complied 61% of the time. The John Day pool complied 64% of the time.

Figure 5 shows the hourly compliance of the elevation criteria if the 75.5 to 76.5 foot range at Bonneville is used. The Bonneville pool complied 96% of the time. This result suggests that a much higher compliance by the Corps may result if the 76.5-foot limit is used, which coincides with the Corps normal operating range. Figure 6 shows compliance using the Corps' 1.5-foot criteria, generally 60% to 100%.

If Criterion #2 asked to limit fluctuations to one foot or less, irrespective to any absolute elevation criteria, then the Bonneville pool (which stayed to near 0.5 foot) complied 100% of the time. The Celilo pool complied 80% of the time. The John Day pool complied 100% of the time. The Corps seems to be reducing the absolute pool fluctuations, even if they are not in full compliance with the elevation criteria.

- **Tribal Spring Fishery.** CRITFC submitted four SORs in April and May 2002. Relative to the CRITFC one-foot criteria, the Bonneville pool was in compliance 63% of the time. The John Day pool was in compliance 44% of the time. The Celilo pool was in compliance 41% of the time. Compliance was highest in last two weeks of the fishery. Refer to the TMT May 22<sup>nd</sup> meeting notes for more details:  
(<http://www.nwd-wc.usace.army.mil/tmt/agendas/2002/0522critfc.pdf>)

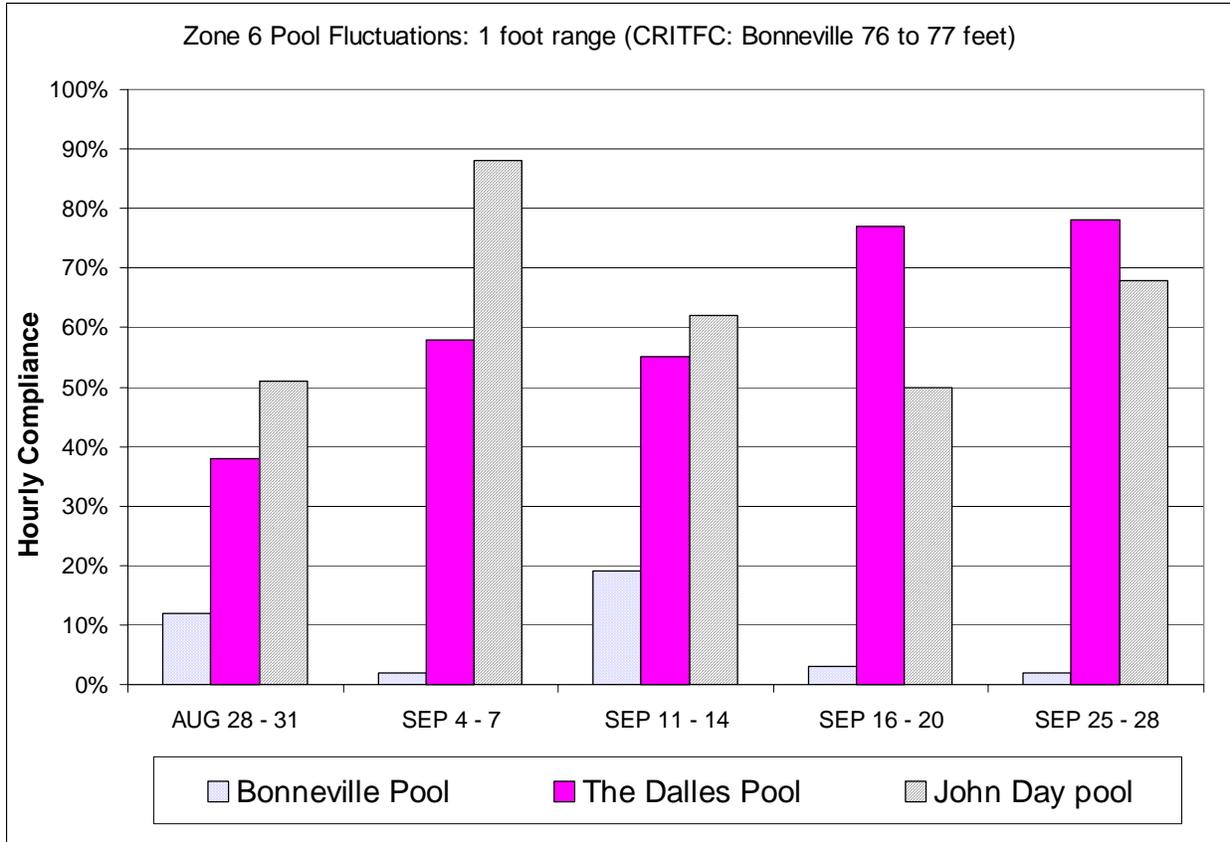


Figure 4. Compliance of Corps operation to fall treaty fishery, using CRITFC criteria (1-foot).

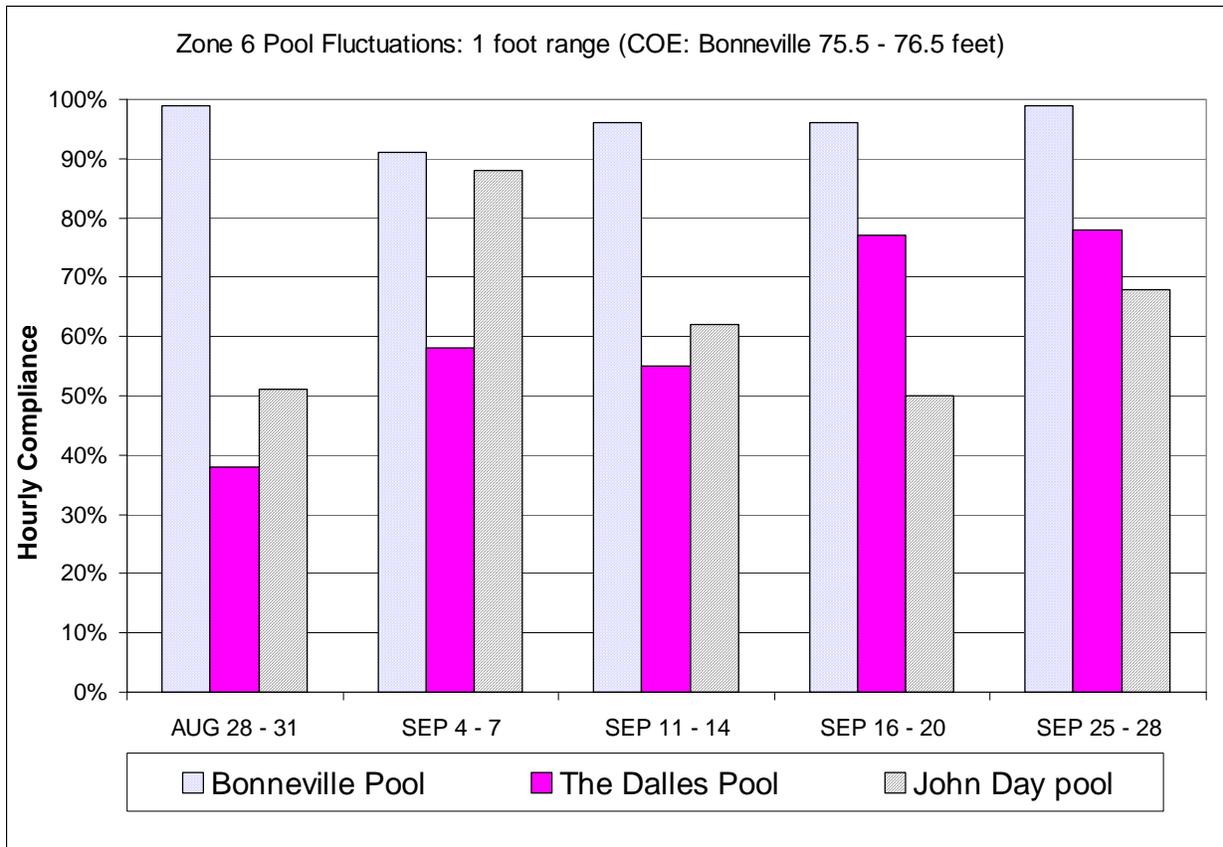


Figure 5. Compliance of Corps operation to fall treaty fishery, using CRITFC criteria, but using Corps definition of upper operating limit at Bonneville dam.

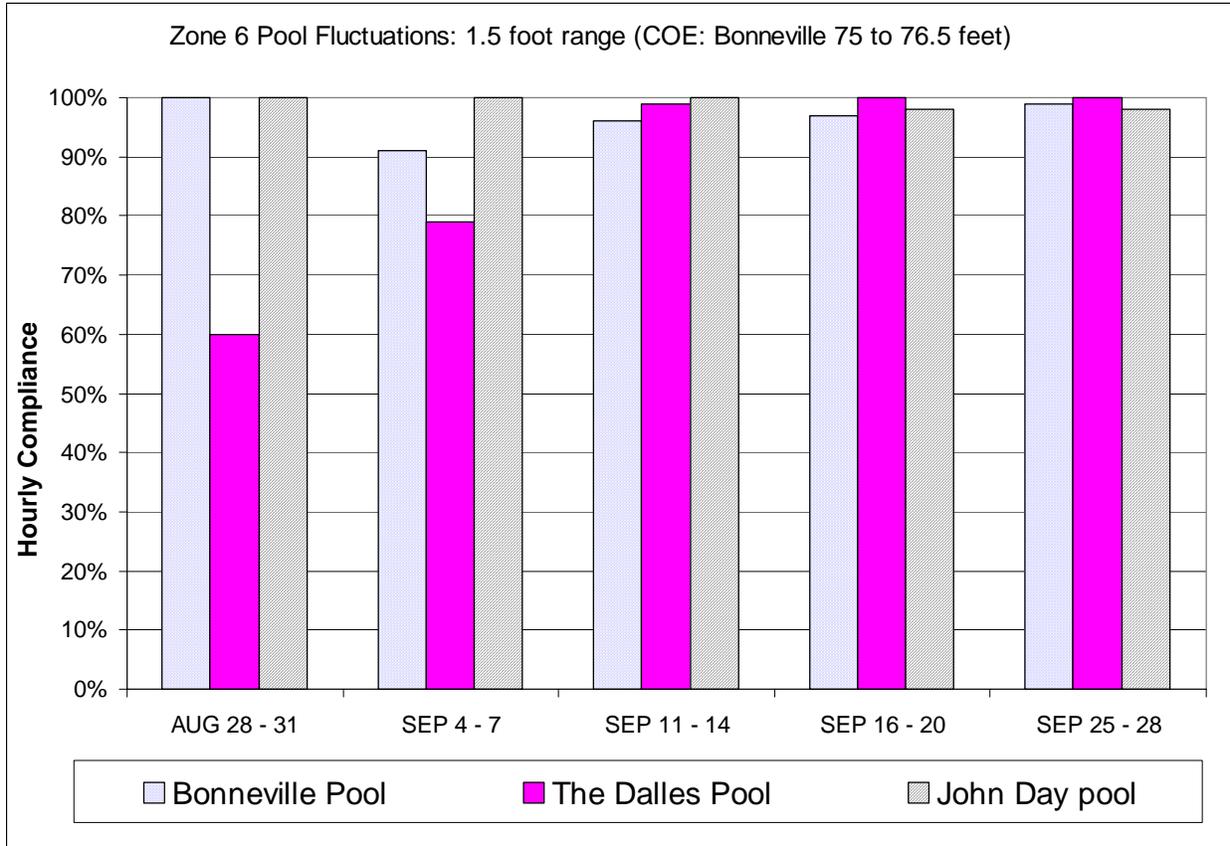


Figure 6. Compliance of Corps operation to fall treaty fishery, using Corps criteria.

## Summary and Recommendations

The TMT process is fundamentally flawed because there is no meaningful dispute resolution mechanism. Despite this major deficiency, the member tribes of CRITFC will continue to advocate for a process to adequately address differences and make technical recommendations for improved river operations to benefit all basin anadromous fish that must pass through the FCRPS. Specifically, we recommend that significant improvements be made for 2003 river operations as follows:

- CRITFC will produce its draft *2003 River Operations Plan* and release by January 2003. We will request formal review and comments by NOAA Fisheries, USFWS, and the federal operators. These actions are consistent with those required by the Secretarial Order and the President's April 29<sup>th</sup>, 1994 Memorandum for federal agencies interacting with Native American Tribal Governments.
- The Corps should consider using CRITFC's Altered Flood Control operation (modeled in GENESYS) to manage the FCRPS reservoirs, which results in more storage in upriver reservoirs while still providing reasonable flood control protection. The Corps should review flood control management to achieve flood control flexibility, which provides more storage to insure flows for spring and summer salmon migrations. The Corps should seek timely independent, scientific review of flood control management, as required in the 2000 NOAA Fisheries (NMFS) FCRPS Biological Opinion.
- The federal operators should incorporate monthly climate forecast information into long-term seasonal FCRPS operations. For example, CRITFC's new Water Supply Forecast Correction Curve procedure could help minimize the over-drafting of FCRPS reservoirs for flood control when the water supply forecast declines, as is expected in this lower than average runoff *El Nino* year. CRITFC projects 91 to 97 MaF for Water Year 2003 with 85% to 90% of normal precipitation basin-wide.
- The federal operators, NOAA Fisheries, and USFWS should consider implementation of the Nez Perce Tribe-State of Idaho Plan for summer 2003 Dworshak operations.
- The federal operators should meet the CRITFC requested pool operations criteria 100% of the time for the 2003 treaty fisheries. Meaningful policy discussions should be held with CRITFC and Corps managers to reach a common understanding of the operations necessary in order to meet Tribal needs during the fishing season.
- Mitigation from the federal operators should be implemented when river operations fail to meet FCRPS Biological Opinion requirements and other requirements for non-listed stocks. The appropriate mitigation should be developed collaboratively by the Tribes plus state and federal fisheries agencies.