

# State, Federal and Tribal Fishery Agencies Joint Technical Staff

*Columbia River Inter-tribal Fish Commission*  
*Idaho Department of Fish and Game*  
*NOAA Fisheries*  
*Nez Perce Tribe*  
*Oregon Department of Fish and Wildlife*  
*Shoshone-Bannock Tribes*  
*US Fish and Wildlife Service*  
*Washington Department of Fish and Wildlife*

August 13, 2004

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Dear Sirs:

The multi-year development schedule for installation of removable spillway weirs (RSWs) has been discussed during the past several monthly System Configuration Team (SCT) meetings. During the May 26<sup>th</sup> meeting, in culmination to those several months of consideration on the schedule, the SCT salmon manager representatives proposed an RSW implementation schedule that was supported by all agencies represented at the meeting, with the exception of the Corps, who needed time to internally deliberate on whether or not the proposed accelerated schedule was both feasible and cost effective. The Corps' representatives requested this proposal be documented in a letter to adequately communicate the SCT interests to their management. This letter details the proposal in the following four elements and also mentions supporting rationale.

## **Overall Goal and Implementation Strategy:**

Our overall goal is to more effectively provide spillway passage when information indicates this passage route could improve juvenile salmonid in-river survival and smolt-to-adult return rates. Initial testing at Lower Granite Dam indicates RSWs have considerable promise to increase spillway passage efficiency (increased number of fish spilled for amount of water used) and survival. Because planning is further along for the remaining two lower Snake River projects,

we have prioritized installation of RSWs at these two projects. However, there is also high potential for increasing spillway efficiency with RSWs in the lower Columbia River because of great abundance of juveniles and diversity of fish stocks present and higher levels of conventional spill required. Our recommendation for installation of RSWs in the lower Snake River first should not be interpreted as indicating a lower priority for RSWs in the lower Columbia River. Because of the size and complexity of lower Columbia projects, it will likely take several years to determine how to configure RSWs, training spill and biological guidance systems to provide the desired results. It is therefore critical that feasibility studies for RSW implementation at lower Columbia River projects be initiated and accelerated so that installation can be phased in with completion of installation at the four lower Snake River projects.

### **Proposed RSW Investigation and Implementation Schedule:**

- 1) It is our preference to have one RSW installed and operable at both Lower Monumental and Little Goose spillways by April 1, 2007. We recognize that this schedule is contingent upon continued positive results of existing RSW evaluations (particularly summer evaluations), the feasibility of completing necessary planning, designs, and construction to meet this schedule, and availability of funds.

Over the past several months SCT and FFDRWG members have deliberated whether the next RSW (after Ice Harbor) should be installed at either Lower Monumental or Little Goose Dam. While SCT did not reach agreement on which project should proceed first, SCT did agree that there were potentially significant biological and spill efficiency benefits to be gained from RSW installation at both projects. This understanding expedited the salmon managers proposal, whose focus is an accelerated RSW installation schedule at both dams rather than which dam should be first. Within this proposal the Corps has the flexibility to install at either dam first or install at both on a parallel track. If the RSW at Lower Granite performs well for summer migrants, the installation of RSWs at all lower Snake dams may be critical for future operations.

- 2) Evaluation of the concept and feasibility of RSW installation at lower Columbia River projects should begin in 2005.

In recent SCT meetings there has been strong interest voiced to explore whether one or perhaps several RSWs could perform as well at lower Columbia River projects as the RSW has performed at Lower Granite dam. Given the larger powerhouses, spillways, higher river flows, and diversity of fish stocks, development of RSWs that are as efficient as in the Snake River may be more difficult and take longer to design for lower Columbia River projects. Hence, initiating the preliminary phase of RSW development at lower Columbia River projects in 2005 is timely, given the possibility of an extended development time line. We acknowledge that future passage improvements at the lower Columbia dams are as (or possibly more) important as our proposed RSW implementation schedule for the lower Snake dams; however we concur with the Corps that feasibility and other studies need to be completed to identify which configurations will meet spillway passage goals. The proposed multi-year RSW schedule for lower Columbia projects is considered a high priority "place holder" in the CRFM budget to be modified as site specific studies are conducted. The relative benefits and priorities of

passage improvements and research at all eight dams will still need to be considered on an annual basis to ensure the best use of limited CRFM funding.

- 3) Evaluation of RSWs effectiveness for subyearling summer and fall chinook is critically important and should begin in 2005. As additional RSWs are installed we support both spring and summer tests. However, the lack of information on the effectiveness of RSWs for summer migrants should not impede the accelerated installation schedule based on their effectiveness for spring migrants.

The demonstrated benefits of RSW operation at Lower Granite for spring migrants; high spillway survival, strong forebay attraction, reduced forebay delay, improved water quality, and increased spill effectiveness are significant. These benefits to spring migrants, along with summer migrant evaluations, qualify as justification for RSW installation at all four lower Snake River dams, and lessons learned in the Snake River will provide the basis for RSW development for the lower Columbia River projects. It is likely that RSWs designs or project operations may have to be adapted to fit the needs of summer migrating fish. This emphasizes the need for initiating a summer test in 2005 to incorporate the results in future designs.

**Supporting Rationale and Background:** Removable spillway weir installation and operation at all eight lower Snake River and Columbia River projects could substantially help meet the Columbia River Fish Mitigation Program's objective of improving anadromous fish passage survival and smolt-to-adult return rates, as well as improving the effectiveness and efficiency of the spill mitigation program.

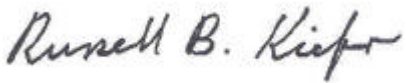
Adult returns of PIT-tagged Snake River wild spring/summer chinook salmon smolts indicate that under current conditions, smolts that pass uncollected (non detected) at the collector dams have SARs as high as transported smolts in all but very low flow years (Harza 1994, Newman 1997, Sandford and Smith 2002, Berggren et al. 2003, Williams et al. 2004, and Anderson et al. 2004). Sandford and Smith (2002) concluded, "Passage routes of non detected fish (through spill and turbines) may represent optimal passage conditions". The population of uncollected (non detected) smolts includes both spillway and turbine passage routes at each of the collector dams. Since the turbine route is known to have lower direct survival, these results suggest that smolts that migrate in-river through spillways may have the highest SARs possible with current dam configuration and operations. The May 6<sup>th</sup> NOAA Fisheries draft technical memo on the effects of the FCRPS on salmon populations concluded that transportation may not provide an adult return rate benefit vs. current in-river passage for Snake River sockeye, fall chinook, and wild spring/summer chinook. The NOAA authors of this tech memo further conclude that for wild spring/summer chinook (the group in this category with the most data available) transportation may be detrimental early in the migration season and beneficial later in the migration season.

Action 51 of the 2000 FCRPS BiOp states that if results of Snake River studies indicate that survival of juvenile salmon and steelhead collected and transported during any segment of the juvenile migration is no better than the survival of juvenile salmon that migrate in-river, the Corps and BPA, in coordination with NMFS through the annual planning process, shall identify and implement appropriate measures to optimize in-river passage at the collector dams during

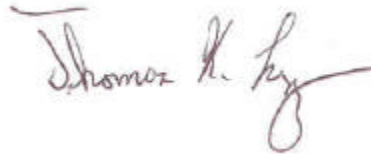
those periods. The August 4, 2004 letter from Witt Anderson (Corps) to David Wills (USFWS) indicates interest in pursuing collaboration with the Salmon Managers on a research design that would evaluate transportation versus in-river migration for summer migrants. Installation of RSWs at all eight lower Snake River and Columbia River projects could allow for the implementation of Action 51, in a more efficient manner.

**Summary:** Test results indicate that for spring migrants, the installation of RSWs allows more flexibility in providing greater spillway passage for the run-at-large and may provide improved in-river migration conditions for transportation evaluation in-river comparison groups. (However, it remains to be demonstrated that RSWs improve smolt-to-adult survival.) Depending on the results of summer migrant evaluations, we envision operating all RSWs in concert to provide both fish survival improvements and increase the efficiency of the spill mitigation program.

Sincerely,



Russ Kiefer, IDFG



Tom Lorz, CRITFC



Dave Statler, NPT



Rod Woodin, WDFW



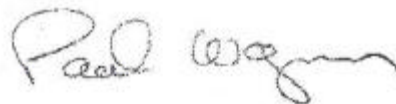
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