Issue Summary: Libby & Hungry Horse Operations

Statement of Issue

ESA listed salmon and steelhead and ESA listed resident fish (bull trout and white sturgeon) could both benefit from water stored in the Montana reservoirs of Hungry Horse and Libby. The FCRPS is responsible for addressing the needs of both resident and anadromous fish species. Analyses have shown that current operations to achieve anadromous fish flow objectives in the lower Columbia River adversely affect listed resident fish. The Action Agencies and some parties have supported changes recommended by the State of Montana and the Northwest Power and Conservation Council to better protect listed species while minimizing effects on flows for listed salmon and steelhead. Other parties have opposed these changes, contending that there would be adverse effects to salmon and steelhead, or that mitigation must be provided for these flow modifications.

Is there an operation that retains sufficient water in Montana to minimize negative impacts on the ESA-listed upstream species while not jeopardizing downstream ESA-listed salmon and steelhead?

Background

Beginning with NOAA Fisheries' 1995 Biological Opinion on the FCRPS, an RPA action required both Libby and Hungry Horse to draft 20 feet from full by the end of August to increase flow to benefit ESA-listed juvenile Snake River fall Chinook salmon as well as ESA-listed adult steelhead in the lower Columbia River. The state of Montana opposes this operation on the basis that it harms the resident fish populations, including ESA-listed bull trout and listed white sturgeon (Montana 2008a). As an alternative operation Montana has proposed that these projects be drafted 10 feet from full by the end of September in most years, and a 20' draft in the lowest 20% of flow years by the end of September. The Montana proposal shifts water releases from the July and August period into September and later periods.

Scientific Review of the Respective Operations

Peak production for Montana's ESA-listed and resident fish species occurs in July, August and September. Stable or gradually declining flows are important in order to protect bull trout critical habitat and the aquatic food resources on which these fish depend (Montana 2008a). **Montana Fish, Wildlife and Parks** is conducting a series of field experiments including biological and physical modeling and tracking of fish in the Flathead and Kootenai Rivers (Montana 2008a). The physical models indicate the flows that occur from the current 20' draft produce lesser quality habitat than would occur from the Montana proposal.

In 2003, as part of the Mainstem Amendments (NPCC 2003) to its Fish and Wildlife Program, the **Northwest Power and Conservation Council** unanimously recommended that the Montana operation be implemented, and evaluated on an experimental basis. The Council sought confirmation that the benefits to upstream resident fish would not be offset by harm to fish downriver. The Council also recommended an increased draft in the lowest twenty percent water years to aid during these lowest of flow years.

In 2004, the **Independent Scientific Advisory Board** (ISAB 2004) evaluated whether there would be a measurable effect of Montana's proposed reservoir operation (10 feet vs. 20 feet summer draft) on the lower Columbia River listed salmon populations. The ISAB's concluded that the impact was believed to be small and the existing tools were inadequate to assess whether the net effects were negative or positive during the July-September period. The ISAB also concluded that the Montana resident fish would benefit both in the reservoirs and downstream from implementing this proposal. In addition, the ISAB recognized that a large percentage of returning Snake River fall Chinook salmon adults are from juvenile fish that over-wintered in the reservoirs; thus, the life-history pattern complicates the assessment of this stock in relation to the flow proposal. The ISAB also acknowledged the benefits of lower flows to returning adults.

In 2004, **NOAA Fisheries** (NMFS 2004a) modeled the effect of Montana's proposed operation and evaluated the effect on flow, temperature, and juvenile survival (Montana 2008a). The decrease in flow was calculated to be approximately 7 kcfs decrease during a period when the flow in the river averages about 160 kcfs. The evaluation of the flow change on temperature was performed using a temperature model developed by EPA. It indicated there would be about a 1 degree increase in temperature in the lower Columbia River by reducing flows by about 7 kcfs. For the affected Snake River fall Chinook, (i.e., those juveniles migrating in the lower Columbia River primarily in July and August), the estimated affect on juvenile survival was less than a 1% relative decrease. The overall effect on the ESU is negligible. While none of the measures were positive, all of the estimates were very small and need to be considered in light of the purported negative affect of the 20' draft on upstream listed populations.

Summary of View & Comments

The **State of Montana** argues that the Montana operations should prevail because of the certainty of high biological value of maintaining water in the reservoirs during the critical summer months for ESA-listed bull trout and sturgeon, and because of the uncertainty in downstream flow benefits to Snake River fall Chinook and various steelhead ESUs (Montana 2008a). In addition, Montana points out that considering their population growth rate and extinction risk probabilities, Snake River fall Chinook are in relatively better condition than any of the other Columbia Basin listed fish, and that given their tendency to over-winter in the reservoir, few Snake River fall Chinook would receive any benefit of the 20' draft.

The FCRPS Action Agencies and other regional parties support the Montana operation as a better balance between the competing needs of listed fish, consistent with the recommendations of the Northwest Power and Conservation Council. In their 2008 Memoranda of Agreement with the FCRPS Action Agencies, **the Confederated Tribes and Bands of the Yakama Nation, the Confederated Tribes of the Warm Springs Reservation, the Confederated Tribes of the Umatilla Indian Reservation and the Confederated Tribes of the Colville Reservation, the Columbia River Inter-Tribal Fish Commission (CRITFC) and the State of Idaho** have also endorsed the proposed Montana operation.

Critics of the Montana operation, including the **State of Oregon** (Oregon 2008), emphasize the importance of meeting summer flow objectives at McNary over any other operation for listed resident fish. They contend that although the benefits of flows to survival may not be practically measurable, this does not mean that survival is not increased.

The Montana operation is currently part of the *Columbia Basin Fish and Wildlife Program* adopted by the Northwest Power and Conservation Council. It was discussed within the **Remand Collaboration Hydro Workgroup** and the **Policy Work Group (PWG).** In its December 2005 Status Report (PWG 2005), the PWG stated that its goal was to seek solutions for ESA-listed salmon and steelhead which take into account impacts on other species, such as Montana's resident fish. The PWG was unable to reach consensus on a specific recommendation.

Approach in the FCRPS Biological Opinion

NOAA Fisheries believes that the current operation of a 20' draft by the end of August harms Montana's ESA-listed resident fish, and does not provide substantial benefits to Snake River fall Chinook. The Snake River fall Chinook ESU has a high population growth rate and a low extinction risk (NMFS 2008a). Modest flow reductions are unlikely to substantially affect the thermal regime of the Columbia River or the survival of the ESU. Given the life history of the species, few actively migrating juveniles are in the lower river in the late summer.

NOAA Fisheries agrees that an evaluation of an experimental draft is appropriate (see RPA Action 4). The Bonneville Power Administration (BPA) committed to fund and implement the Montana Fish, Wildlife, and Parks' (MFWP) proposal for evaluation of the biological and physical effects of this operation on the fisheries upstream and downstream of Hungry Horse and Libby dams in Montana. The study will utilize MFWP's current biological baseline data as a basis for comparison. While there are no specific studies or research planned to evaluate the effects in the lower Columbia River, implementation of the Water Quality Plan (see RPA Action 15) should enhance temperature modeling capabilities in the entire Columbia River, providing another tool for assessing the potential effects of this flow regulation operation on water temperatures as advised by the ISAB and NRC.

The MFWP's study results will be used to determine the benefits to resident fish associated with the new reservoir operations relative to the baseline. The FCRPS Action Agencies propose to continue the experimental draft into the future unless information gathered informs future policy considerations that the experimental drafts of Libby and Hungry Horse reservoir operations are biologically unsound. While no study in the lower river is planned, any new information that may become available relative to salmon will be considered.

Results of these studies will be considered and discussed through adaptive management, in consultation with the Regional Implementation Oversight Group as described by the FCRPS Action Agencies in Chapter 2 of the FCRPS Biological Assessment.