

## **FINAL MARCH 22, 2006**

### **Fall / Winter Update to the 2006 Water Management Plan**

#### ***Introduction***

The Fall / Winter Update is part of the annual Water Management Plan (WMP). It is intended to supplement the WMP with more detailed information about fall and winter operations.

#### ***Current Conditions***

- The most recent National Weather Service Precipitation Summary (data for the October 1, 2005 – March 13, 2006 period) states precipitation conditions were above average in 28 of the 30 reporting divisions in the Columbia Basin. Precipitation ranged between 92 – 162% of normal. For the major divisions Columbia River above Grand Coulee, Snake River above Ice Harbor and Columbia River above The Dalles, their precipitation was 113, 129 and 114 percent of average, respectively.
- The most recent Natural Resources Conservation Service SNOTEL Snow/Precipitation Update Report (data as of March 16) states 24 of the 28 subbasins in the Columbia Basin have a snow water equivalent at or above normal. The range of basin SWE is 92% - 139% of normal.
- The Corps March final forecast for the April – July period for Dworshak inflow was 2.612 maf, 99.4% of average.

The Corps March final forecast for the April-August period for Libby inflow was 6.35 maf, 101.6% of average.

- The Bureau of Reclamation March final forecast for the April – August period for Hungry Horse was 2.209 maf, 107% of average. The March final forecast sets the minimum flows for the rest of the calendar year. Therefore these minimum flows will be in effect until the January, 2007 forecast:  
Hungry Horse project minimum flow 900 cfs  
Columbia Falls minimum flow 3500 cfs
- The National Weather Service March final forecast for the April – July period for Lower Granite was 23.4 maf, 109% of average.
- The National Weather Service March final forecast for the April – August period for The Dalles was 91.2 maf, 98% of average.

#### ***Chum Spawning Flows***

The Action Agencies started the chum spawning operation on November 9.

The chosen operation for chum spawning was to initiate a stable tailwater elevation in the Ives and Pierce Islands area with a targeted daytime tailwater elevation of 11.3 –11.7 feet and a minimum tailwater of 11.3 feet 24 hours/day.

The USGS conducted chum spawning tests again this year. In 2004, they conducted experimental flow tests by increasing tailwater elevations from 11.5 ft to 15.1 ft and back down to 11.5 ft. The tailwater elevation steps were 2 hours long. Acoustically tagged fish that had a redd generally remained at the redd during a flow test. Although fish were not displaced by the flows they evaluated, they began to see increases in swimming activity by fish to maintain their position in the current and decreases in nest digging activity as tailwaters and velocities increased. In 2005 flow tests were conducted with tailwater elevation steps 8 hours long to see if chum salmon spawning behavior may be further altered. Study results will provide insight as to how long flows could be elevated if water needed to be moved into the daytime to reduce nighttime peaks. The USGS concentrated their efforts on evaluating tailwater elevations of 13.5 feet and 15.5 feet. Due to dry basin conditions in November, the project was not able to provide the higher tailwaters requested early in the month. Later in November when precipitation increased, higher tailwaters were obtained but spawning activity was winding down.

At the December 7 TMT, consensus was reached for the chum incubation operation. If superimposition of redds didn't occur between December 7 – 31, the project would be operated a minimum of 11.5' 24 hours/day beginning January 1, 2006. The basin experienced a large amount of precipitation at the end of December. This prevented the project from being able to maintain the 11.3' – 11.7' range December 28 – 31.

The Action Agencies will continue to coordinate with TMT regarding post-spawning operations to protect chum during the incubation and emergence phases. Decisions will be based on location and elevation of redds at the Ives/Pierce Island spawning area, the potential for below average water supply this year, and the need to refill storage reservoirs to meet flood control elevations by April 10.

### ***Burbot Spawning Flows (Non-BiOp Action)***

No specific burbot flow requests were made in fall 2005. However, SOR # 2005-FWS3 dated September 20, 2005 requested that the Corps utilize selective withdrawal structures at Libby Dam to provide the coolest water possible in November and December for burbot spawning. The Corps implemented this SOR. The Corps removed 144 of the 162 selector gates to obtain lower water temperatures. The goal of the SOR was to see if radio-tagged burbot would respond to the lower temperature. Unfortunately, only one burbot was observed and it was too small to tag. The COE will continue to monitor temperature for the rest of the year.

## ***Flood Control***

Projects will be operated for flood control in accordance with the Columbia River Treaty Flood Control Operating Plan.

An SOI forecast at Libby has been used since 2003 in November and December as guidance for in-season management. The SOI forecast at Libby was used for November and December flood control operations decisions. The Corps will use the regression forecasts (Wortman-Morrow) that have been in use since 1983 to determine operational flood control drafts in 2006. The December forecast was 106% of normal which dictated the end of December flood control elevation of 2411' at Libby.

Dworshak was operated to meet its December 15 flood control elevation of 1558 feet and was on minimum flow since the middle of September when the reservoir reached its draft limit of 1520 feet. Outflows were increased above minimum flow on January 24 to stay below the project's end of January flood control elevation. During the flood control season high discharges (up to 25 kcfs, which is channel capacity) may be released to stay on the flood control rule curve.

## ***Spring Creek Hatchery Release (Non-BiOp Action)***

The U.S. Fish and Wildlife Service released 7.6 million tule fall chinook fry on March 2 from the Spring Creek National Fish Hatchery upstream of Bonneville Dam. The Action Agencies operated Bonneville Dam with a second powerhouse priority, operated all units with fish screens in place, operated the bypass facility, and operated the second powerhouse corner collector in order to provide project passage for this hatchery release. The corner collector was closed on March 7 when the Fish Passage Index numbers estimated over 95% of the fish released had passed the project. This operation was in accordance with a 3-year agreement reached on February 26, 2004 between Greg Delwiche (BPA), Witt Anderson (COE) and Bill Shake (USFWS) on Bonneville Dam operations for the Spring Creek Hatchery Release.

## ***Vernita Bar spawning operation (Non-BiOp Action)***

The final official fall chinook redd survey was conducted on November 20, 2005. A total of 172 redds were counted (60 kcfs flow elevation and above), including 60 redds above the 70 kcfs flow elevation. Therefore, as provided in the Vernita Bar Settlement Agreement, the Critical Elevation was set at 70 kcfs. Flow will be measured at the USGS gage downstream of Priest Rapids Dam. This protection level will be in effect through emergence in spring 2006.

## ***Snake River Zero Flow (Non-BiOp Action)***

According to the Lower Snake projects operating manuals, "From December to February, "zero" minimum project discharge is permitted on a limited basis. Under an agreement between the Corps of Engineers and the fishery agencies, zero riverflow is allowed for water storage during low power demand periods (at night and on weekends) when there are few, if any, actively migrating anadromous fish present in the Snake River...Water stored under zero riverflow conditions may maximize power production from the Columbia River Basin system, but zero riverflow operations are not recommended at Lower Snake projects when fish are actively migrating in the Snake River." Nighttime zero flow was discussed at the December 7 TMT meeting, was started December 9 and ended on February 28. The consensus operation is to operate at zero flow no more than 6 hours between 2200 – 0600 hours. Generation at night may be required to provide project heating during cold weather.