Fall/Winter Update to the 2010 Water Management Plan

December 31, 2009

Introduction

The Fall/Winter Update is an addendum to the annual Water Management Plan (WMP). This draft update is intended to supplement the WMP with more detailed information about fall and winter operations that have occurred or are scheduled to occur during the fall and winter of 2009-10.

Current Conditions

The most recent Corps of Engineers water supply forecasts for Dworshak and Libby were issued in early December and are included in Table 1. The National Weather Service and Bureau of Reclamation do not prepare official forecasts in the fall. All parties will issue their January final forecasts early in January.

Table 1.- Water supply forecasts (WSF) for Action Agency storage projects.

Project	Date of WSF	Period	Volume (MAF)	% Normal
The Dalles*	Dec 17	Apr – Aug	77.5	83 %
Lower Granite*	Dec 17	Apr – Jul	16.3	76 %
Libby**	Dec 7	Apr – Aug	6.6	103 %
Dworshak**	Dec 7	Apr – Jul	2.4	88 %
Grand Coulee*	Dec 17	Jan – Jul	54.9	87 %
Hungry Horse***	Dec 17	Jan – Jul	1.95	88 %

* Prepared by National Weather Service
** Prepared by Corps of Engineers
*** Prepared by Bureau of Reclamation

Seasonal (October 1 through December 14) precipitation was: 84 percent of normal (1971-2000) at Columbia above Grand Coulee, 79 percent of normal at the Snake River above Ice Harbor, and 87 percent of normal at Columbia above The Dalles.

The consistently highest Snow Water Equivalents (SWEs) as of 16 December are in the Washington and Northern Oregon Cascades, where the SWE is generally greater than 100% of average. SWE is generally 90 to about 120% of average in the Canadian portion of the Columbia Basin, but many areas of the U.S. Columbia basin in Idaho and western Montana currently have SWEs between 25 and 75% of normal.

Information regarding precipitation and runoff in early October is limited to an El Nino/Southern Oscillation (ENSO) forecast. This year, the October Southern Oscillation Index (SOI) was negative, and an El Nino event is forcasted for this year. During an El Nino condition, precipitation is often below average in the Columbia River Basin. The NOAA long-term forecast called for drier-than-average conditions in the Pacific Northwest during fall 2009.

Lake Pend Oreille Kokanee Operation

The Corps drafted Lake Pend Oreille to a minimum control elevation (MCE) of 2051 feet in accordance with the state of Idaho (Idaho Department of Fish and Game (IDFG)) and the U.S. Fish and Wildlife Service (USFWS) System Operation Request (SOR) presented at the September 30, 2009 TMT Lake Pend Oreille was drawn down to the requested target elevation by 03 November and has been operating in a pool range between 2051.0 and 2051.5 feet since that time.

As discussed at TMT September 30th, November 18th and December 10th, BPA has requested that the Corps operate Lake Pend Oreille within the full flood control flexibility of 2051 feet and 2056 feet. This requested operation is for the period following the end of kokanee spawning through April 1st. The Corps is still considering this request. If the request is not implemented this year, Lake Pend Oreille elevation at Hope, Idaho will be regulated between elevation 2051 feet and 2052 feet, insofar as possible, until refill starts after April 1st. If the request is implemented, Lake Pend Oreille elevation at Hope, Idaho, will be regulated between elevation 2051 feet and 2056 feet until refill starts after April 1st. Both operations would follow the existing project operating constraints.

Chum Spawning Flows and The Dalles Spillway Construction Operation

Bonneville Dam operations to accommodate chum spawning will begin in early November. As recommended in the 2008 BiOp, the target tailwater elevation below Bonneville Dam during chum spawning is 11.5 ft., with a likely range of 11.3 ft to 11.7 ft. pending TMT agreement. In addition to providing adequate tailwater for chum spawning below Bonneville Dam, the Corps is currently holding the Bonneville pool elevation as measured in The Dalles tailrace at a minimum 76.0 ft during non-construction hours and at a minimum of 76.5 feet during construction hours in order to accommodate spillwall construction at The Dalles Dam. The spillwall construction is scheduled for to be complete in late March 2010 and is proceeding on schedule. The tailwater constraint limits the typical pool operating range flexibility available to operators during November and December and depending on flows, may compromise the Action Agencies' ability to maintain the Bonneville Dam tailwater elevation criteria for chum spawning during daytime hours. Daytime tailwater elevation (to date, 16 December) have been kept within the requested 11.3 to 11.7 ft range. Pursuant to a teletype issued on 05 November allowing higher nighttime tailwater ranges (to 18.5 ft), the project on occasion has seen higher nighttime discharges to accommodate system volume.

TMT discussed the end of spawning criteria at the December 23rd TMT meeting. The Salmon Managers expressed a specific number of observed live chum as a threshold for the declaration of the end of spawning. That number was 6 fish. The survey on December 22nd observed 7 fish. On the subsequent TMT conference call on December 30th the Salmon Managers declared that chum spawning activity has ceased and the chum incubation operation could begin at 1600 hours on December 30th.

Burbot Spawning Flows (Non-BiOp Action)

Under the terms of an MOU prepared in 2005 by the Kootenai Valley Resource Initiative (KVRI) and signed by the Corps, the selective withdrawal gate system at Libby Dam has been set to release cool water in November and December, before temperature stratification limits the temperature control capability. The purpose of this operation is to provide cooler river temperatures downstream Libby Dam (closer to normative thermal conditions). This operation will likely result in November and December temperatures being slightly cooler than the existing selective withdrawal temperature rule curve. Corps staff at Libby Dam removed selective withdrawal gates incrementally during late October to assure that daily temperature change remains within 2° F per day; gates were removed systematically to slowly lower river temperature by early November (a span of about 8° F). Temperature will not be minimized this fall until isothermal conditions develop due to constraints and precautions that will be observed related to selective withdrawal crane rehabilitation that will occur over the winter, necessitating a more conservative gate removal pattern. Rather than removing all gates (resulting in withdrawal elevation of 2,222 ft.), the Corps removed all but 3 rows of gates (resulting in withdrawal elevation of 2,253 ft.).

Flood Control

Grand Coulee and all Canadian projects will be operated for standard flood control in 2009-10. Hungry Horse and Libby will be operated for Variable Q (VARQ) Flood Control. Beginning in January, the Corps calculates Upper Rule Curve elevations based on the monthly official final forecasts. Projects are operated using these elevations as an upper limit, with the objective of reaching their spring refill elevations. For detailed flood control operations see: http://www.nwd-wc.usace.army.mil/report/colsum.

Vernita Bar spawning operation (Non-BiOp Action)

Redd count surveys are underway. The initiation of spawning has not yet occurred.

Snake River Zero Generation (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 river flow 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 river flow conditions may maximize power production from the Columbia River Basin system, but zero river flow operations are not recommended at Lower Snake projects when fish are actively migrating in the Snake River.” Zero nighttime generation was discussed at the 10 December TMT meeting. Per the guidance from the Salmon Managers, developed in 2005, the criteria for dropping to zero generation has been met for this season. The criteria this season was 100 total steelhead and 35 wild steelhead passing Lower Granite Dam. On the 10th of December passage numbers were less than 35 total steelhead an less than 10 wild steelhead. The Action Agencies may utilize this option between now and February.