

CORPS OF ENGINEERS, NORTH PACIFIC DIVISION
REPORT FOR APRIL 2000 CRWMG MEETING

Libby.

Lake Koocanusa was at elevation 2338.3' on March 1. Libby outflows averaged 5.5 kcfs in March. The actual end of March elevation was 2337.01'. Libby inflow in March was 4 kcfs, 110% of normal. Inflows October – March were 153% of normal. Precipitation in the Kootenai Division for the month was 2.31 inches, 135% of normal for the month. Precipitation for the October – March time frame was 115% of normal. The project is on minimum flow (4 kcfs) and is expecting to remain here until sturgeon augmentation flows are requested in May or June. The April final volume forecast is 6866 kaf, 107.7% of normal for April - August .

Albeni Falls.

Lake Pend Oreille started it's winter drawdown on 17 September and by the beginning of October had drafted to near elevation 2060 feet. On October 8 the Corps decided to evacuate Lake Pend Oreille to elevation 2051 feet for the 1999-2000 winter. The evacuation was temporarily stopped on October 19 at elevation 2055 feet. On November 1 the Corps reached a final decision to evacuate Lake Pend Oreille to elevation 2053 feet in 1999-2000. The lake was within the 2053.0 to 2053.5 foot range by November 10 and was operated in this range through the end of December. The current operating range is 2053' – 2054 as it is assumed all kokanee spawning activity is over. The Corps expects to operate in this range through April and start refill in May. Average monthly outflow in March was 17.5 kcfs. March unregulated inflow was 13.4 kcfs, 79% of average.

Dworshak.

The reservoir began March at elevation 1524.3 feet. Dworshak outflows averaged 7.3 kcfs in March. The inflow to Dworshak in March was 6,9 kcfs, 110% of average. The end of month elevation was 1522.2 feet. The Salmon Managers requested a flood control shift of from Dworshak to Grand Coulee by the end of March. A shift of approximately 60 kaf was accomplished. Precipitation in March in the Clearwater Division was 2.27 inches, 77% of normal. The April final volume forecast is 2798 kaf, 103.6% of normal for April - July. The end of April target elevation is 1510'. The project is currently releasing 15.8 kcfs, which includes 5.1 kcfs spill which is approximately 110% dissolved gas.

Lower Snake Projects.

Lower Granite March unregulated inflow was 51.4 kcfs, 93% of average. Lower Granite outflows ranged between 44 and 62 kcfs during the month of March and averaged 53.6 kcfs. All Lower Snake projects went to minimum pool operations (MOP) between 5 and 10 April. They are all operating in their lowest foot operation to attempt to increase the velocity in the river to facilitate juvenile fish passage downstream. All projects started night time spill for fish passage between 4 and 10 April. Ice Harbor also started day time spill on 4 April.

Willamette Basin Projects.

January-March

Inflows for the month of January were above normal. The historical January monthly average for Salem is 48.5 kcfs. The January average for this year at Salem was approximately 50.5 kcfs (104 percent of normal). The early part of January was unseasonably dry with inflows even lower than the monthly average. A storm hit the basin on 11 January with the smaller southern basins (Coast Fork, Row, and Long Tom) experiencing

the brunt of the storm. Cottage Grove, Dorena, and Fern Ridge filled to 75, 75, and 56 percent respectively. The northern basins, Santiam and McKenzie, did not experience much in the way of high inflows. Stored flood waters were evacuated over the next several weeks.

The Willamette Projects started to fill beginning 1 February. Inflows for February have been well above average (125 to 140 percent) for the Willamette Projects. All projects were at or above the rule curve for the month and on schedule to refill. Flows at Salem averaged approximately 34 kcfs for the month.

Inflows for the month of March have varied widely. Coastal basins such as Dorena, Cottage Grove and Fern Ridge inflows have averaged from 80 to 90 percent. Only the Hills Creek, Lookout Point, and Detroit have inflows above average. The rest of the basin inflows were between 90 – 100 percent. Flows at Salem average 34.4 kcfs which is 104 percent of average.

Inflows for the first part of April continue to run below average across the board for all projects due to unseasonable dry weather. Additionally, flow objectives of 18.5 kcfs for fish migration by the National Marine Fisheries Service have required drafting of Lookout Point, Blue River, Cougar and Green Peter reservoirs thereby delaying or possibly not filling these reservoirs. Fern Ridge reservoir is currently 11 percent below the rule curve. The rest of the projects should fill on schedule. As the flow objective at Salem is 18.5 kcfs for the month of April using best efforts.

CORPS OF ENGINEERS, NORTH PACIFIC DIVISION
REPORT FOR MARCH 2000 CRWMG MEETING

Libby.

Lake Koocanusa was at elevation 2370.74' on February 1. Libby outflows averaged 16.7 kcfs in February. The actual end of February elevation was 2354.38'. Libby inflow in February was 2.3 kcfs, 132% of normal. Inflows October – February were 161% of normal. Precipitation in the Kootenai Division for the month was 2.00 inches, 99% of normal for the month. Precipitation for the October – February time frame was 112% of normal. Outflows for the month averaged 16.7 kcfs. Based on the February final volume forecast, the target February flood control elevation was 2338.3'. The actual end of February elevation was 2341.1'. The Corps is targeting the 95 percent confidence of refill curve elevation of 2335' on 15 April.

Albeni Falls.

Lake Pend Oreille started its winter drawdown on 17 September and by the beginning of October had drafted to near elevation 2060 feet. On October 8 the Corps decided to evacuate Lake Pend Oreille to elevation 2051 feet for the 1999-2000 winter. The evacuation was temporarily stopped on October 19 at elevation 2055 feet. On November 1 the Corps reached a final decision to evacuate Lake Pend Oreille to elevation 2053 feet in 1999-2000. The lake was within the 2053.0 to 2053.5 foot range by November 10 and was operated in this range through the end of December. The current operating range is 2053' – 2054' as it is assumed all kokanee spawning activity is over. Average monthly outflow was 14.2 kcfs. February unregulated inflow was 9.9 kcfs, 78% of average.

Dworshak.

The reservoir began February at elevation 1529.76 feet. Dworshak outflows averaged 5.5 kcfs in February. The inflow to Dworshak in February was 4.2 kcfs, 95% of average. The end of month elevation was 1524.3 feet. Precipitation in February in the Clearwater Division was 3.35 inches, 117% of normal. The February final volume forecast is 2719 kaf for April - July. The end of February target elevation is 1523.6'.

Lower Snake Projects.

Lower Granite February unregulated inflow was 41.5 kcfs, 97% of average. Lower Granite outflows ranged between 32 and 63 kcfs during the month of February and averaged 43.5 kcfs.

Willamette Basin Projects.

The Willamette Projects started to fill beginning 1 February. Inflows for February have been well above average (125 to 140 percent) for the Willamette Projects. All projects were at or above the rule curve for the month and on schedule to refill. Flows at Salem averaged approximately 34 kcfs for the month.

Inflows through the 23rd of March have been at or near average. All projects are currently at or above the rule curve. Flows have averaged approximately 28.5 kcfs for the month.

**CORPS OF ENGINEERS, NORTH PACIFIC DIVISION
REPORT FOR FEBRUARY 2000 CRWMG MEETING**

Libby.

Lake Koocanusa was at elevation 2408.1 feet on January 1. Libby outflows averaged 24.1 kcfs in January. The actual end of January elevation was 2370.74'. Libby inflow in January was 5.4 kcfs, 164% of normal. Precipitation in the Kootenai Division for the month was 3.45 inches, 113% above normal. The Corps had hoped to provide low flows between 6 and 12 kcfs for Idaho Fish and Game to monitor burbot movement in January. The high inflow and flood control requirement prevented this from happening. Burbot numbers are down, and one hypothesis is that winter flows from Libby for power generation and flood control impede their upstream spawning migration, as they are not strong swimmers. Idaho Fish and Game wanted low flows in January – early time frame to facilitate the burbot upstream spawning migration. The February final volume forecast for April – August is 6.80. The end of February target flood control elevation is 2338.3 feet.

Albeni Falls.

Lake Pend Oreille started its winter drawdown on 17 September and by the beginning of October had drafted to near elevation 2060 feet. On October 8 the Corps decided to evacuate Lake Pend Oreille to elevation 2051 feet for the 1999-2000 winter. The evacuation was temporarily stopped on October 19 at elevation 2055 feet. On November 1 the Corps reached a final decision to evacuate Lake Pend Oreille to elevation 2053 feet in 1999-2000. The lake was within the 2053.0 to 2053.5 foot range by November 10 and was operated in this range through the end of December. The current operating range is 2053' – 2054 as it is assumed all kokanee spawning activity is over. Average monthly outflow was 16.2 kcfs. January unregulated inflow was 8.2 kcfs, 71% of average.

Dworshak.

The reservoir began January at elevation 1537.86 feet. The project was at minimum flow 14 September through 6 January. In response to the forecast which was released on 6 January, Dworshak outflows were increased on 6 January. The inflow to Dworshak in January was 2.3 kcfs, 69% of average. Average monthly outflow in January was 4.1 kcfs. The end of month elevation was 1529.7 feet. Precipitation in January in the Clearwater Division was 3.8 inches, 96% of normal. The February final volume forecast is 2719 kaf for April - July. The end of February target elevation is 1523.6'.

Lower Snake Projects.

Lower Granite January unregulated inflow was 30.7 kcfs, 84% of average. Lower Granite outflows ranged between 21 and 44 kcfs during the month of January and averaged 34.6 kcfs.

Willamette Basin Projects.

Inflows for the month of January were above normal. The historical January monthly average for Salem is 48.5 kcfs. The January average for this year at Salem was approximately 50.5 kcfs (104 percent of normal).

The early part of January was unseasonably dry with inflows even lower than the monthly average. A storm hit the basin on 11 January with the smaller southern basins (Coast Fork, Row, and Long Tom) experiencing the brunt of the storm. Cottage Grove, Dorena, and Fern Ridge filled to 75, 75, and 56 percent respectively.

The northern basins, Santiam and McKenzie, did not experience much in the way of high inflows. Stored flood waters were evacuated over the next several weeks.

The Willamette Projects started to fill beginning 1 February. Inflows for the early part of February have been above average; and currently all projects are at or above the rule curve.