



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

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TO: Technical Management Team (TMT)
FROM: Kyle Martin, *Mainstem Hydrologist*, CRITFC Hydro Program
DATE: November 6th, 2002

SUBJECT: **Summary of Water Year 2002 Weather**

At the request of TMT, this memo summarizes monthly weather events that impacted basin flows and fish migrations during Water Year 2002 (October 2001 - September 2002). NOAA's National Weather Service and Northwest River Forecast Center provided the data.

The drought of 2000-2001 was broken when a series of storms passed by mid-October. The 128% to 146% precipitation totals were the best of any month of WY 2002 (Figure 1).

Autumn saw warmer than normal temperatures and near normal precipitation patterns. Precipitation totals for Columbia at The Dalles in November, December, and January were 86%, 98%, and 94%, respectively, and mean basin wide temperature departures were +3.6, +0.6, and +2.5 degree F. Many new record high temperature records and daily precipitation totals were set across the region. Snow pack accumulation was on track.

Winter saw colder than normal conditions but near normal precipitation. Record breaking warm weather did occur during this time with a 54 - 74 degree F range. Precipitation totals for Columbia at The Dalles in February and March were 82% and 108%, respectively, plus mean basin wide temperature departures were -1.6 and +5.2 degree F.

Spring was colder than normal with near normal precipitation. Many record-breaking daily low temperatures were noted. The storm tracks delivered much spring snow to the Upper Columbia. Precipitation totals for Columbia at The Dalles in April and May were 95% and 94%, respectively, plus mean basin wide temperature departures were -0.8 and -1.7 degree F.

Summer started slightly warm but then cooled by August, which benefited migrating juveniles and adults. Many record-breaking daily high temperatures were set in late June, mid-July, and mid-August. Precipitation was below normal. Precipitation totals for Columbia at The Dalles in June, July, and August were 89%, 71%, and 56%, respectively, and mean basin wide temperature departures were +1.3, +2.9, and -1.5 degree F.

It is interesting to note the storm tracks favored the Clearwater basin in unexpected ways. Mid-winter storms rapidly built the snow packs. Snow accumulation was further enhanced during March and June. The late protracted runoff helped in implementing the Nez Perce Tribe-State of Idaho summer plan for Dworshak.

The water year ended on a dry and sunny note. Precipitation total for Columbia at The Dalles in September was 85%. The mean basin wide temperature departure was +0.3 degree F.

The cumulative precipitation totals for Water Year 2002 for Columbia at The Dalles ended at 94%. Western Montana, the Idaho Panhandle, and most of the west side were at or nominally above normal precipitation (Figure 2). While most of the east side was dry, eastern Oregon and southern Idaho remained at 50% to 70% of normal precipitation.

The climate outlook for WY 2003 is not as dire as first thought. Despite the onset of *El Nino* this summer, as predicted by the Sunspot Cycle model four years ago, its effects will almost be counter-balanced by the effects of the cold-wet phase of the Pacific Decadal Oscillation (PDO). UW Climate Impacts Group researchers suggest that WY 2003 runoff will be near normal (Figure 3) with a probable (50%) January-July volume forecast of 100 MaF for The Dalles. (<http://www.ce.washington.edu/~hamleaf/DallesForecast.html>)

The NOAA-NCEP long-range climate forecasts suggest above normal temperatures and below normal precipitation. NOAA-NCEP does not account for the PDO in its forecasts, just ENSO only. NOAA-NCEP had a poor track record during the 2000-2001 Drought, where they consistently forecasted normal-to-above normal precipitation.

Attachments

cc: CRITFC Fish Management (Heinith, Matylewich, Lorz), Policy (Lothrop), PIO (Hudson)

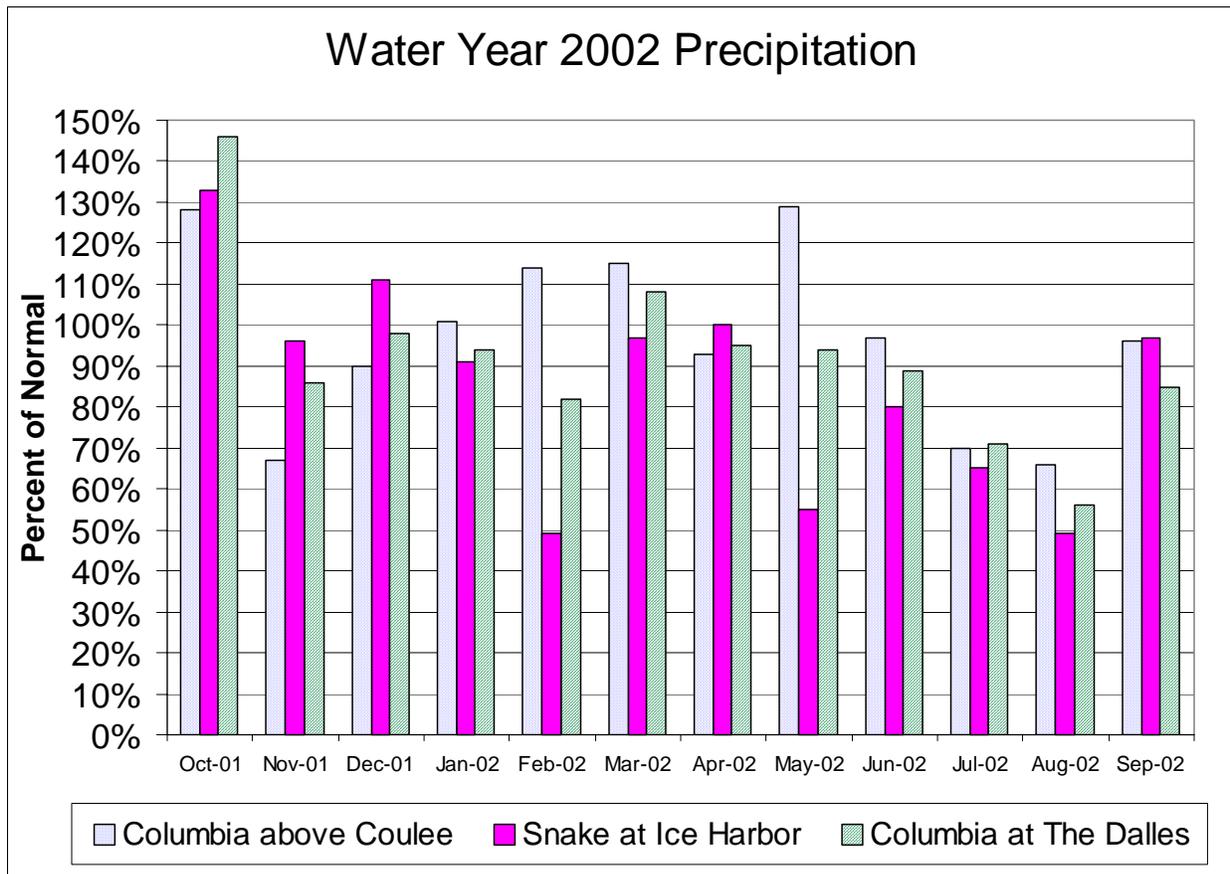


Figure 1. Water Year 2002 Division Precipitation Summary (using NWRFC data).

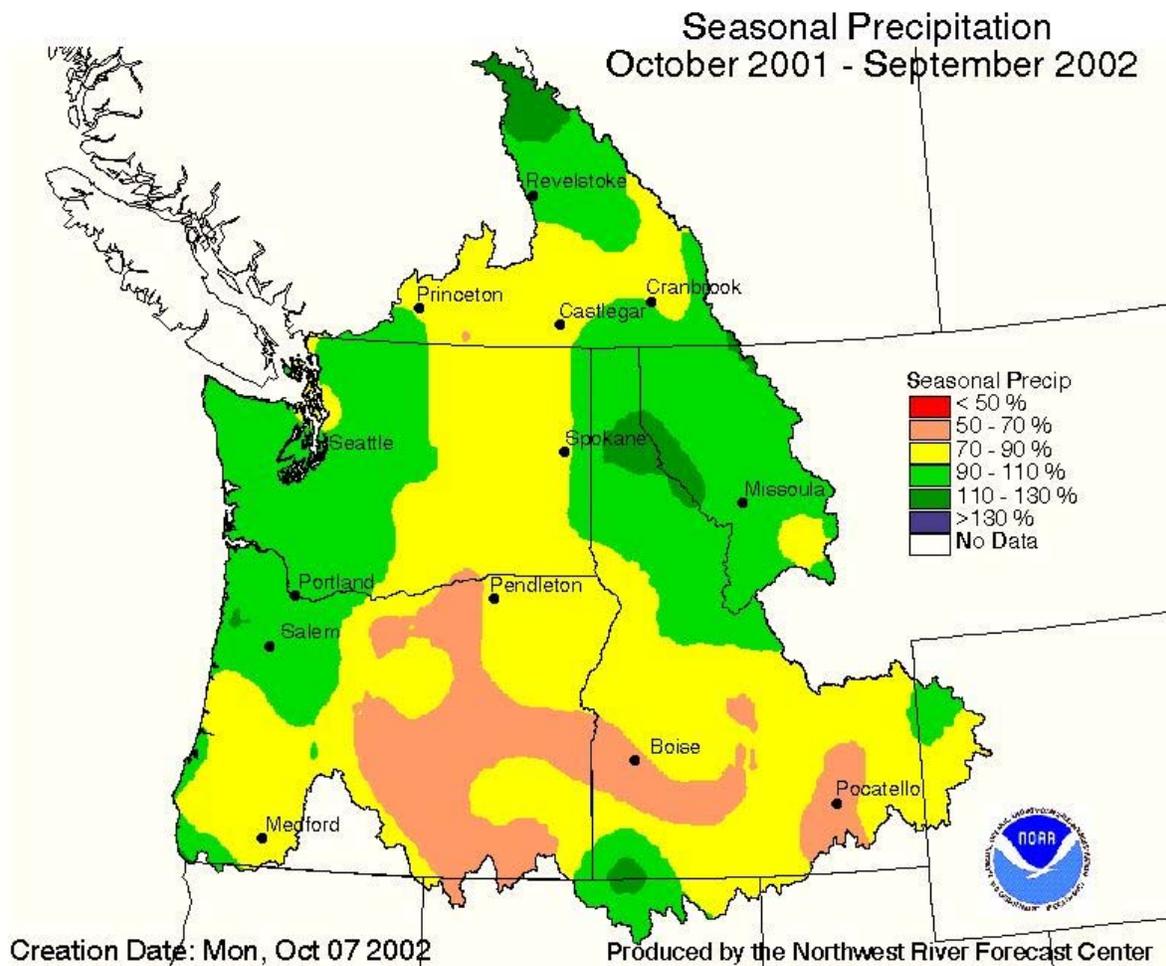


Figure 2. Water Year 2002 Columbia Basin Cumulative Seasonal Precipitation.

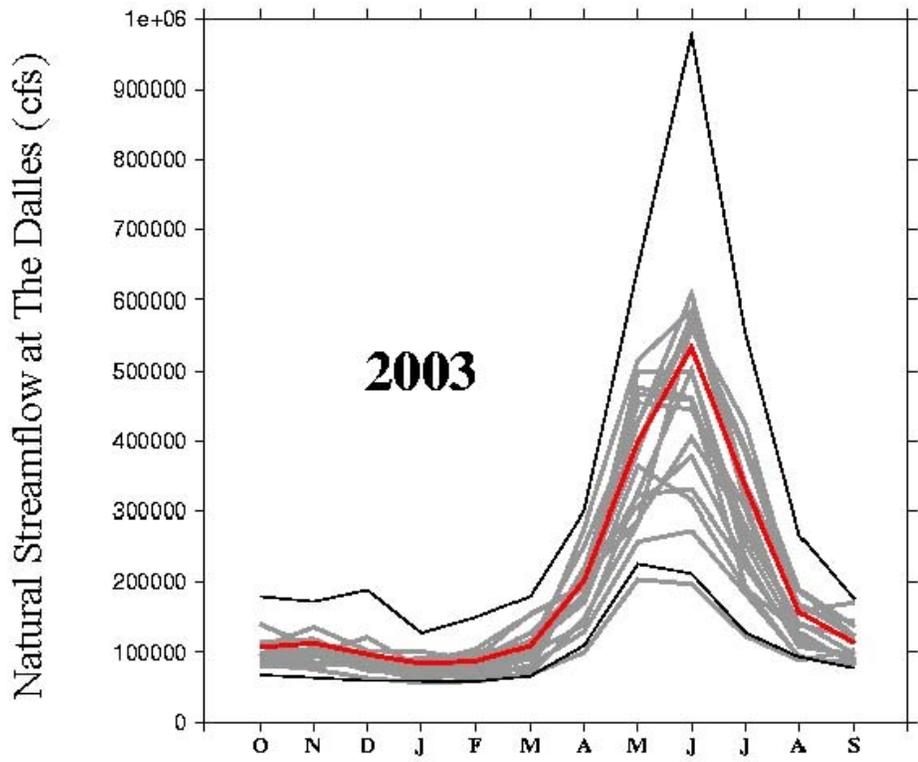


Figure 3. UW Climate Impacts Group 2003 Forecast for the Columbia River at The Dalles.