

Lower Snake Temperature Management

July 10, 2007

- General Observations
 - Lower Granite Pool
 - Temperature in Snake River at Lower Granite 19.4 °C (66.9 F)
 - Temperature of flow weighted inflow $T_{crit} = 18.3$ °C
 - T_{crit} dropped below 18.5 °C on July 3
 - Heat gain in LWG pool 0.9-1.3 C
 - Travel time in LWG pool 4.7 days
 - Density stratified flow / underflow reducing time of travel
 - Snake River at Anatone $Q_{5d} = 21.6$ kcf, $T_{5d} = 22.2$ °C (72.0 F)
 - Clearwater River
 - Dworshak $Q_{5d} = 11.9$ kcf, $T_{5d} = 6.4$ °C (43.5 F)
 - Orofino $Q_{5d} = 3.3$ kcf, $T_{5d} = 24.5$ °C (76.1 F)
 - Lewiston $T_{5d} = 12.6$ C (54.7 F)
 - Flow ratio $Q_{cr} / Q_{sr@lwg} = 41\%$

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- Forecasts

- Weather (NOAA)

- Very Hot Temperatures predicted for later this week at Lewiston ID

- July 11 12 13 14 15 16
 - Wed Thu Fri Sat Sun Mon
 - Highs 105 107 109 105 99 101
 - Lows 65 69 70 70 69 64

- Hourly weather data from 2006 for July 17-31

- Flows

- Clearwater River at Orofino (STP) falling from 2.9 to 2.3 kcfs by July 16
 - Snake River at Anatone (STP) falling from 21.8 to 16.4 by July 16
 - Dworshak Operations (STP inflow 1.3 kcfs Sept. 1)
 - 52 days before Sept 1 – 2 days @ 12 kcfs and 50 days @ 9.5 kcfs = 1535 ft
 - Base Plan 12 kcfs through July 13, 9.5 July 14-31
 - Alternative 1 12 kcfs through July 16, 9.5 July 17-27, 7.3 kcfs July 28-30
 - Temperatures Boundary Conditions at Anatone and Orofino 2006

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- Results of CEQUAL-W2 simulation (June 1-July 31 simulation)
 - Base Condition
 - SR Temps near 20°C at LWG next five days
 - Mild warming trend July 16-20
 - SR Temps edge above 20 C
 - Second Hot spike in air temperatures on July 21
 - Limited to PH capacity resulting in temperature > 21 C
 - Alternative 1
 - Slightly cooler temperatures July 18-21
 - Up to 0.5 C cooler than base condition
 - Warmer conditions associated with DWK 7.3 kcfs release in August

Lower Granite Pool

