Assessment of Experimental Spill Operations at Little Goose Dam

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Background

Sockeye passage differential between LMN and LGS

Hypotheses:

Tailrace eddy, hydraulic conditions

Ladder temperatures

Tailrace temperatures

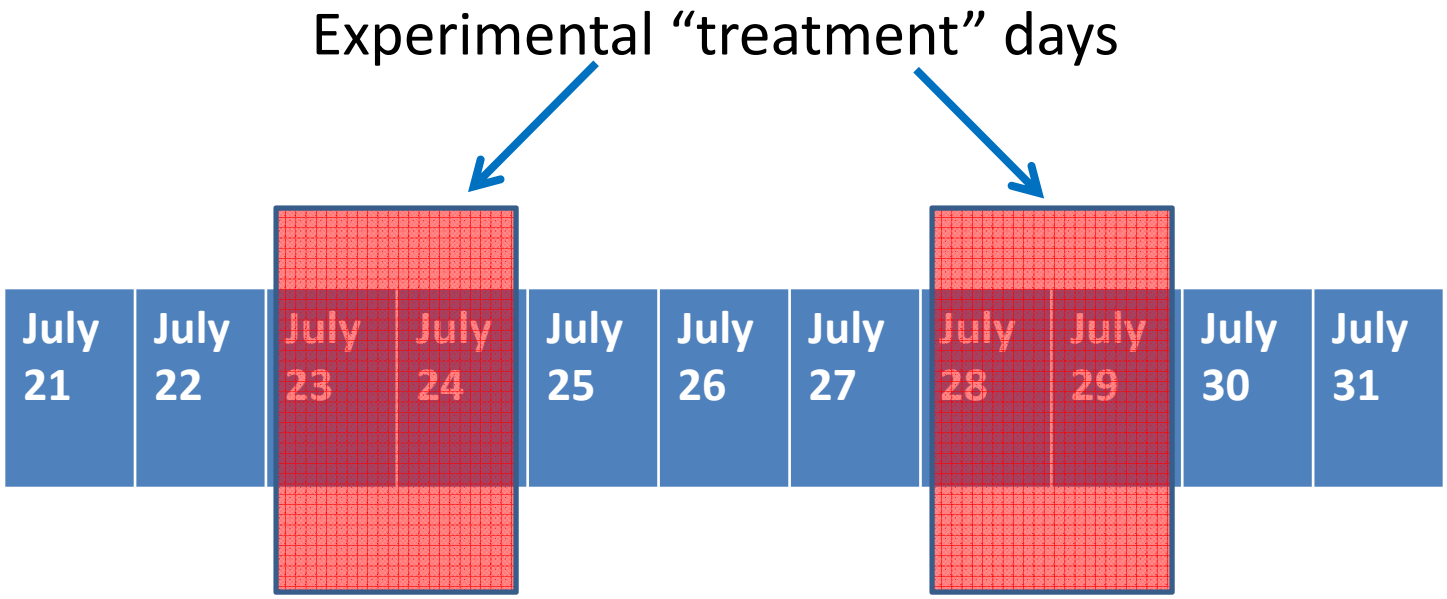
LGS experimental operation:

Eliminate spill 0400-2000 (16 h) / single unit w/spill 2000-0400 (8 h)

Assessment of experiment:

July 21	July 22	July 23	July 24	July 25	July 26	July 27	July 28	July 29	July 30	July 31

Assessment of experiment:



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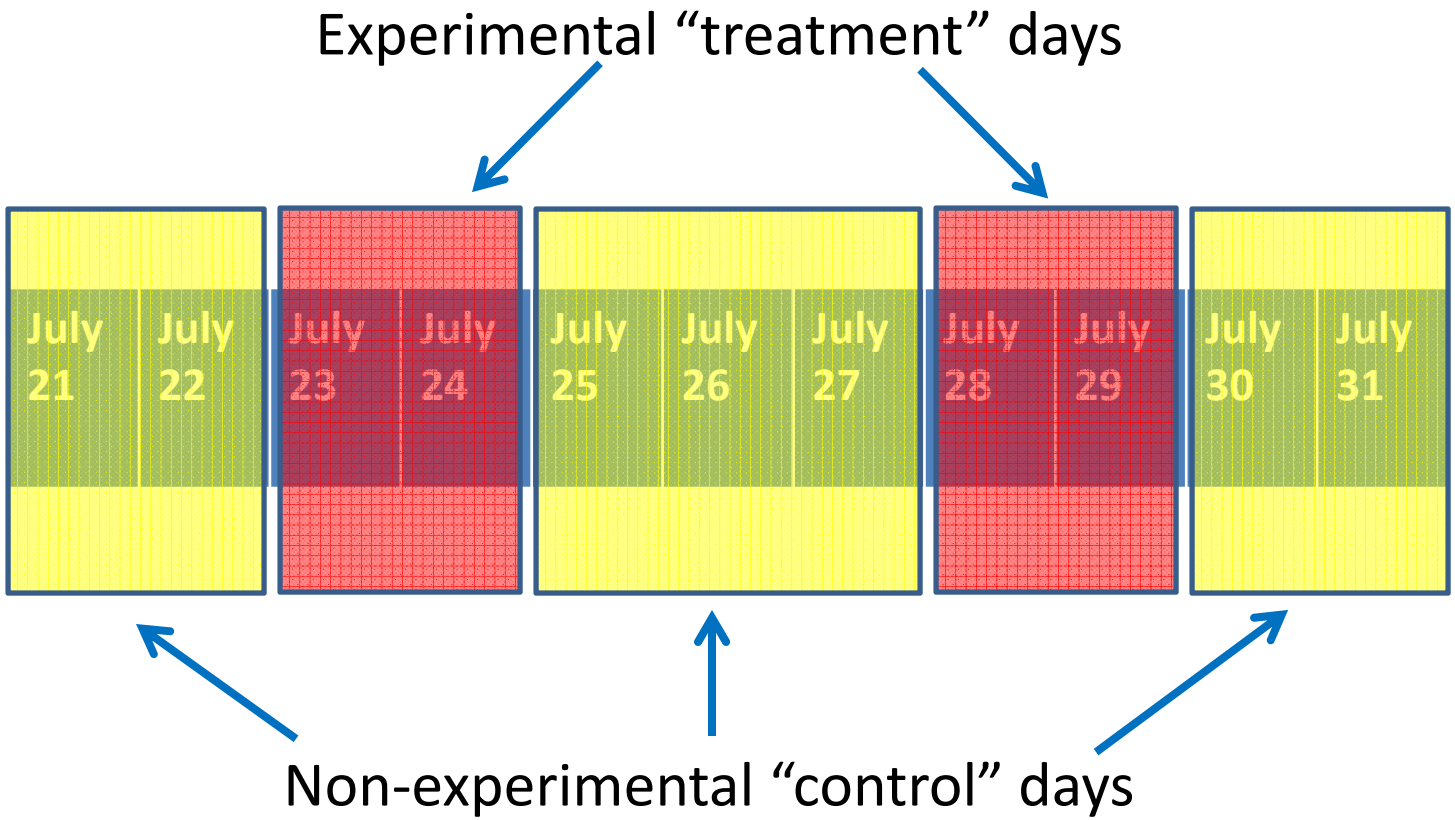

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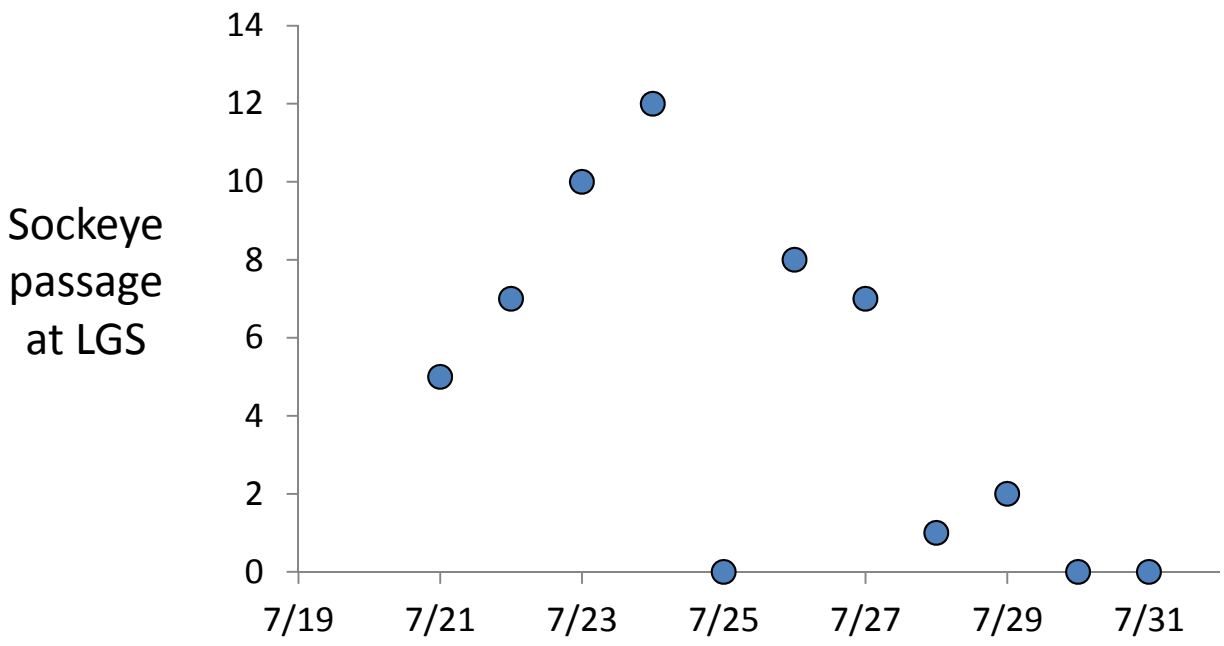

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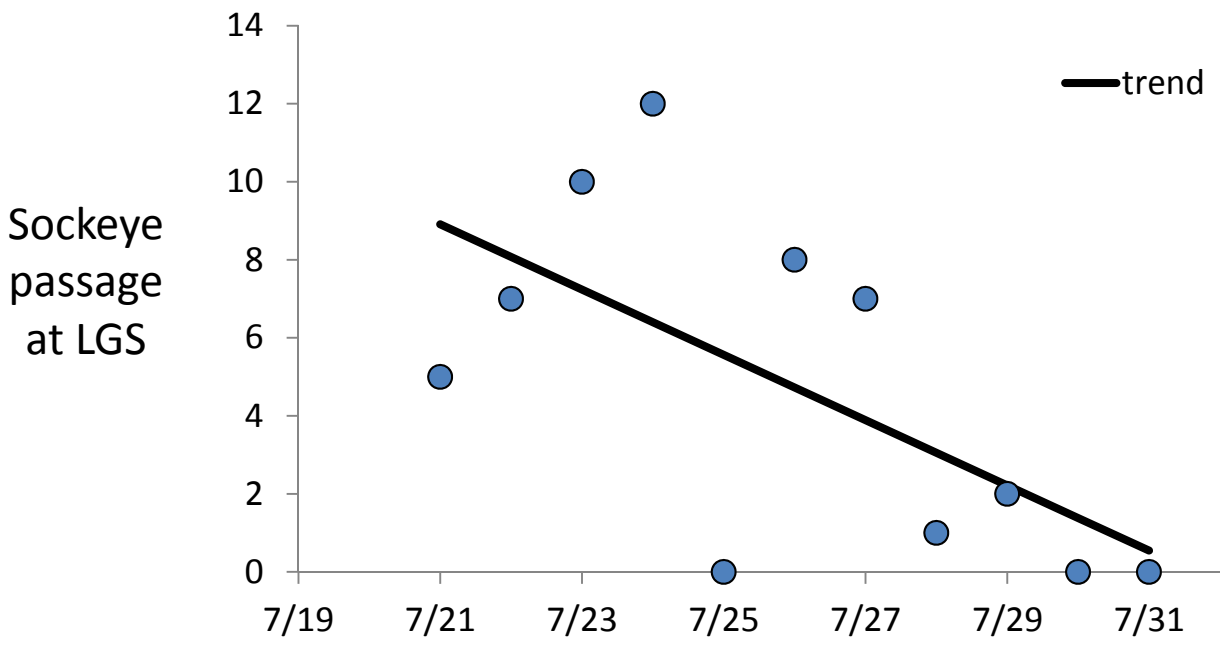

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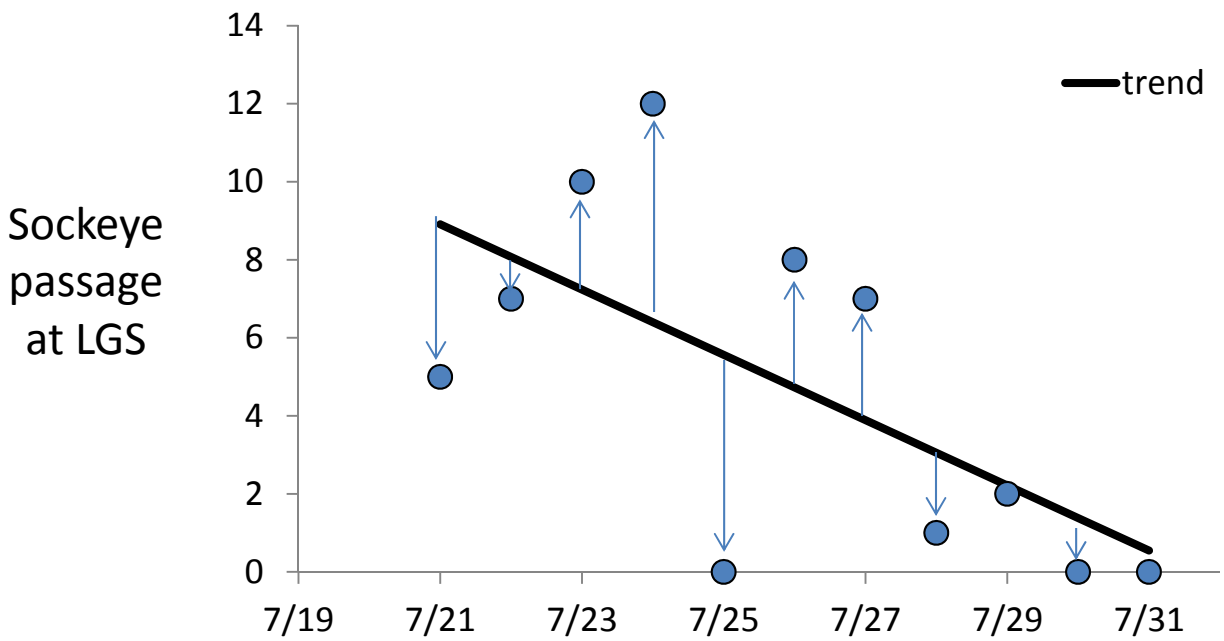


Similar trend removal and residuals calculations for ladder and tailrace temperature data

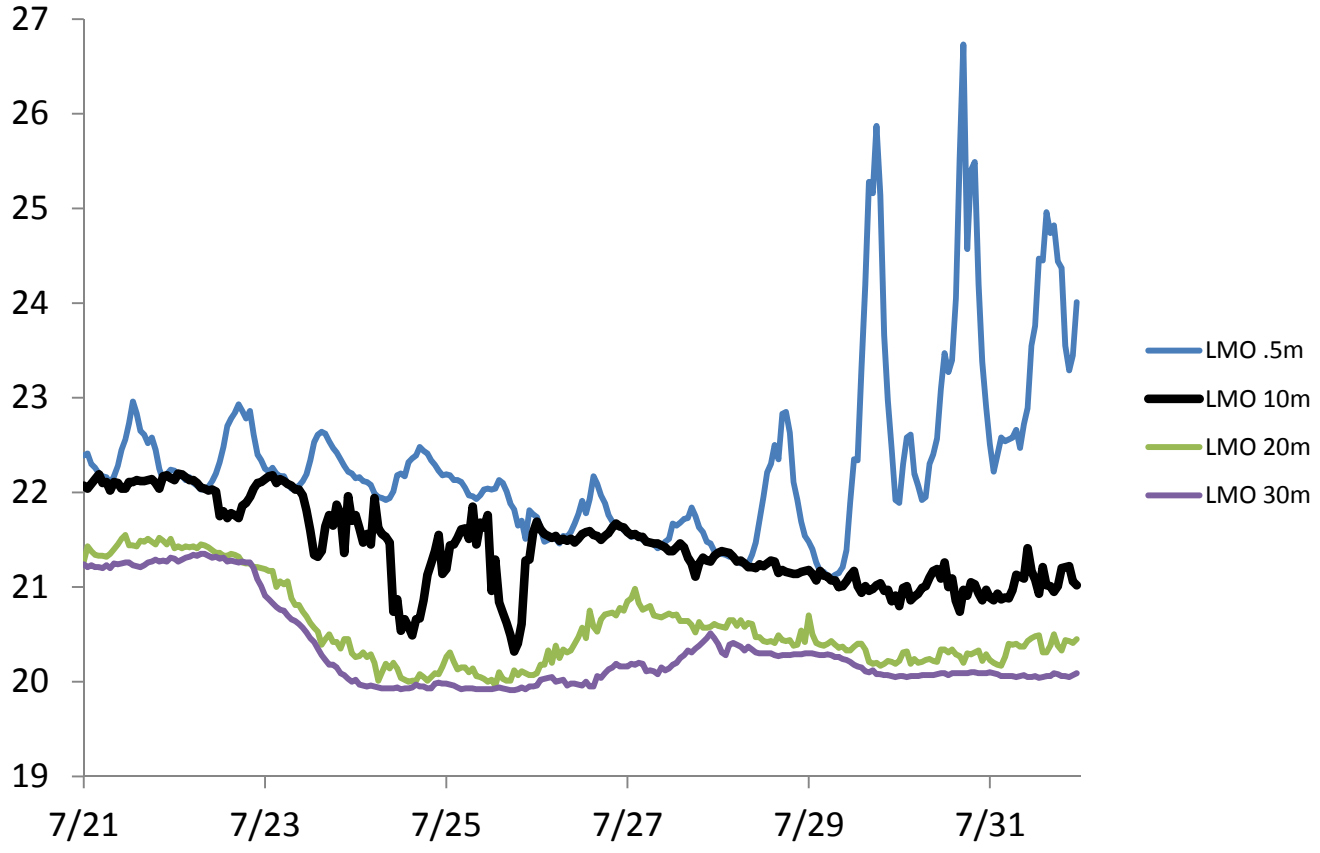
t-tests on residuals to assess effects of the experiment

Results

Metric	5 “control” days	7 “control” days
Sockeye passage	P = 0.37	P = 0.29
Ladder exit temp.	P = 0.57	P = 0.80
Tailrace TDG temp.	P = 0.03	P = 0.03

Tailrace TDG temperatures 0.39 degrees C warmer during “treatment” days

Downstream effects at LMN:



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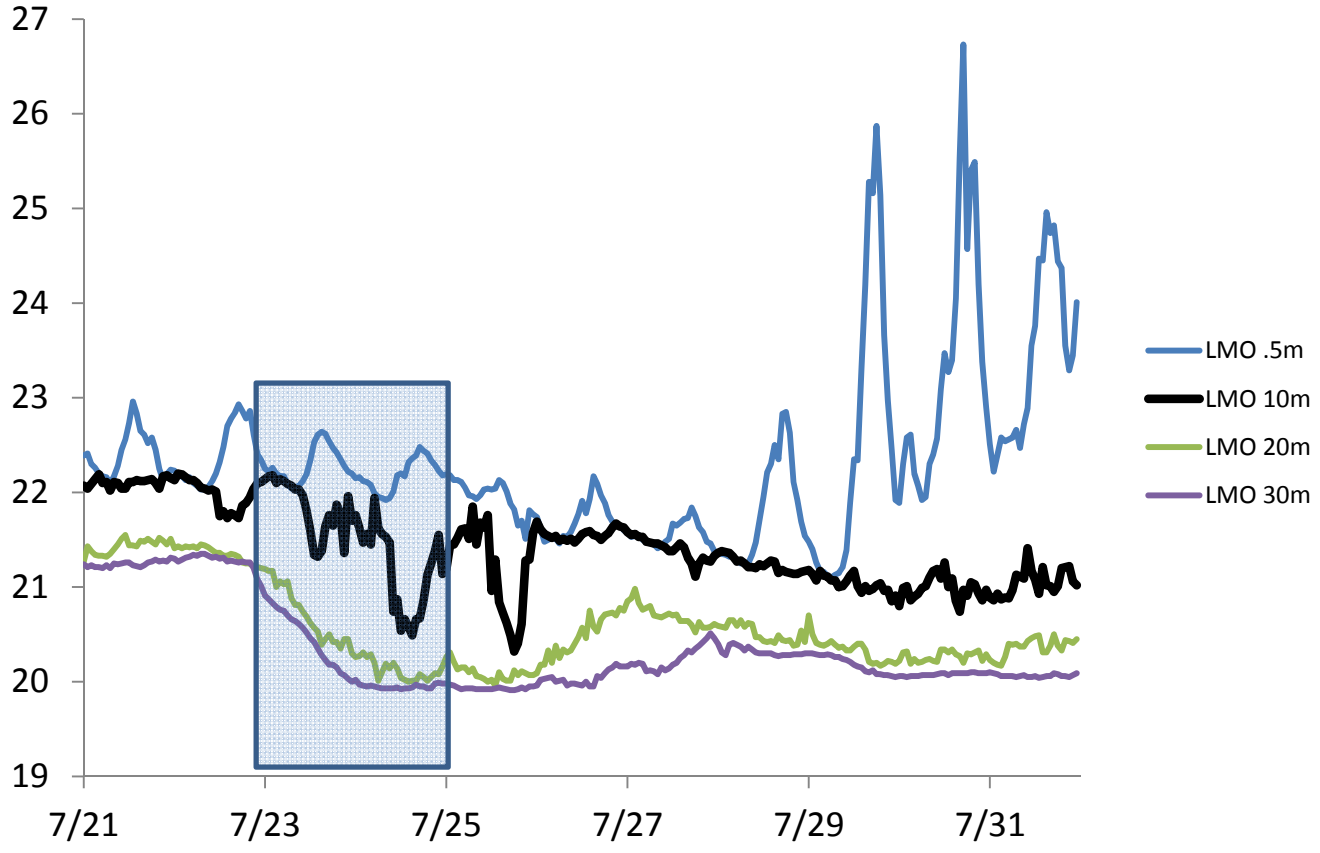

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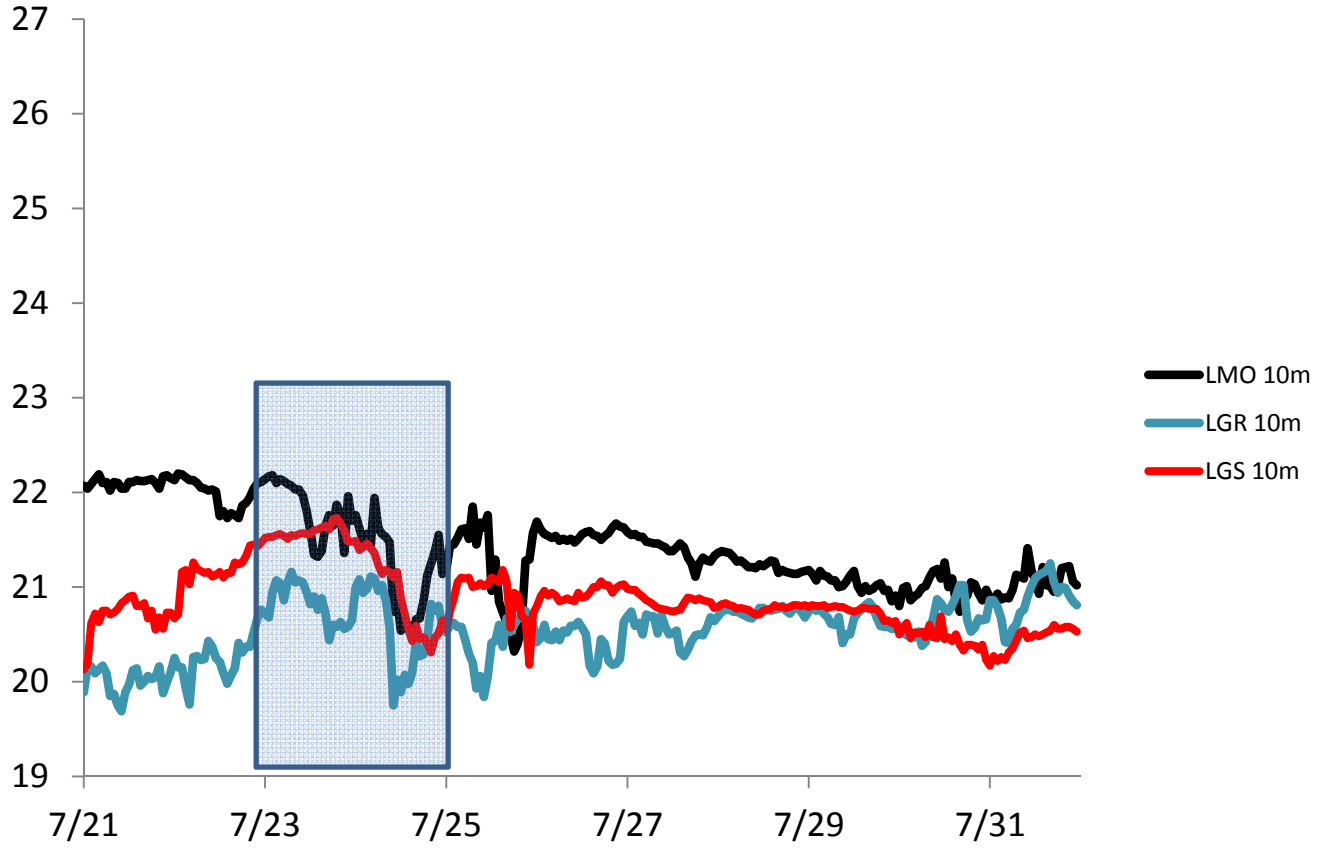

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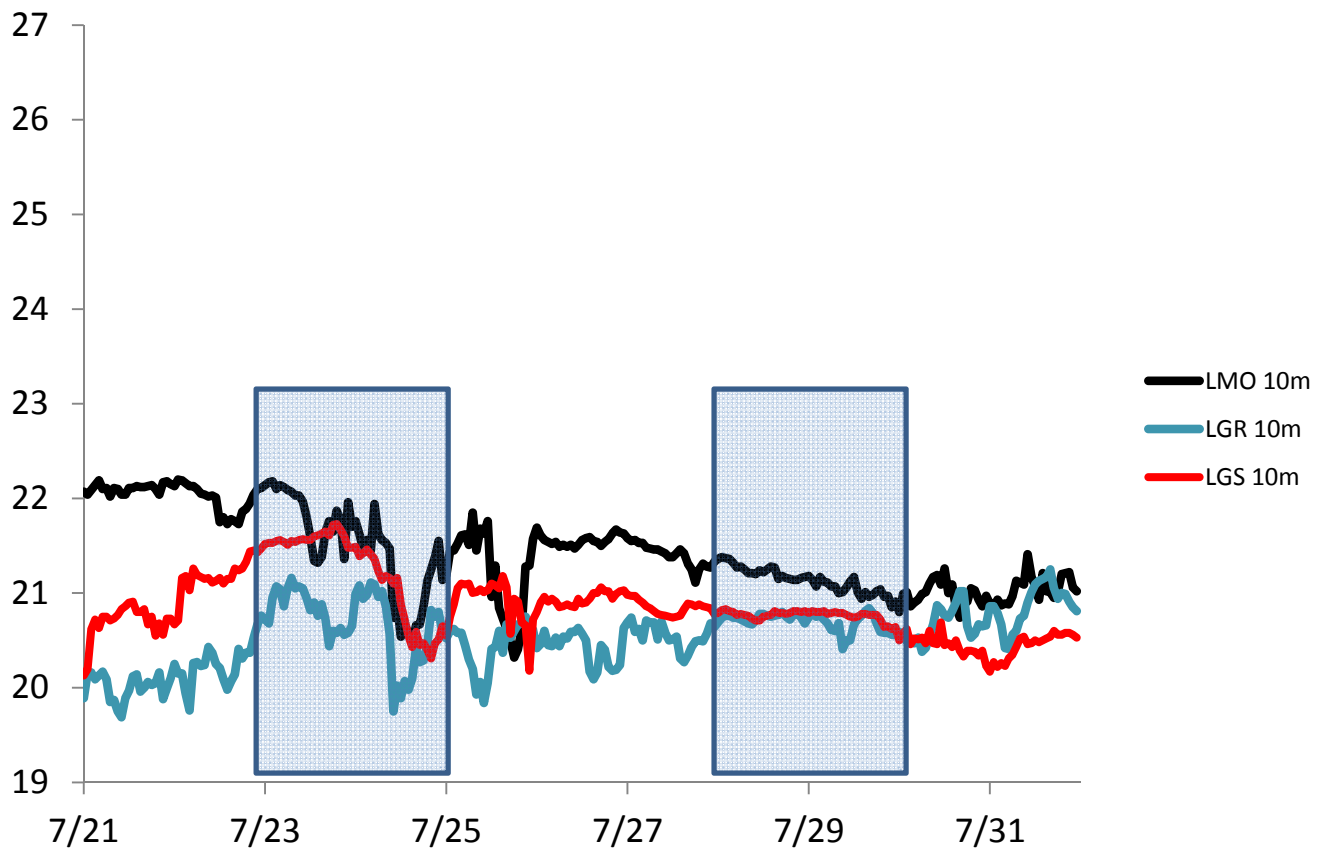

Conclusions:

Sockeye passage rates were similar between treatment and control days

Ladder temperatures were similar between treatment and control days

Temperatures at tailrace TDG station were higher during treatment days

Downstream temperatures did not appear to decline, after considering upstream temperature patterns