

# COUGAR DOWNSTREAM PASSAGE PROJECT

## CONSTRUCTION SCHEDULE & EA/EIS DECISION

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NOTE:  
TAMTER GATE

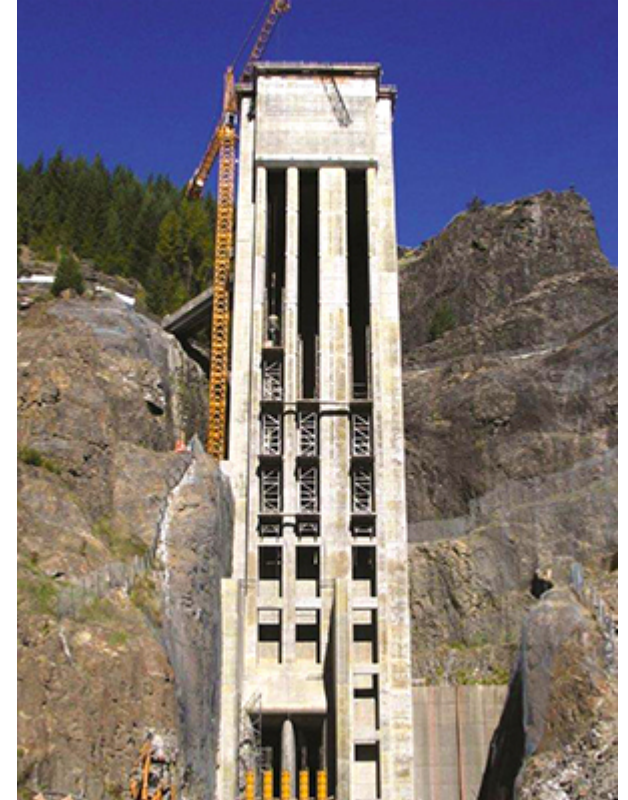
# CONSTRUCTION SCHEDULE

- Award in April 2020
- Initial Drawdown of Reservoir – 1 month (3/1/21 - 3/31/21)
- Full Drawdown - 6 months (4/1/21 - 9/30/21)\*
  - Temperature Control Tower Modifications for connecting Floating Screen Structure
  - Mooring construction
  - Rock removal for Floating Screen Structure
- Construction complete December 2022

## BLUF

- PDT has determined that the environmental impacts of project construction and operations are not considered significant under NEPA
- NEPA Document: Environmental Assessment with FONSI

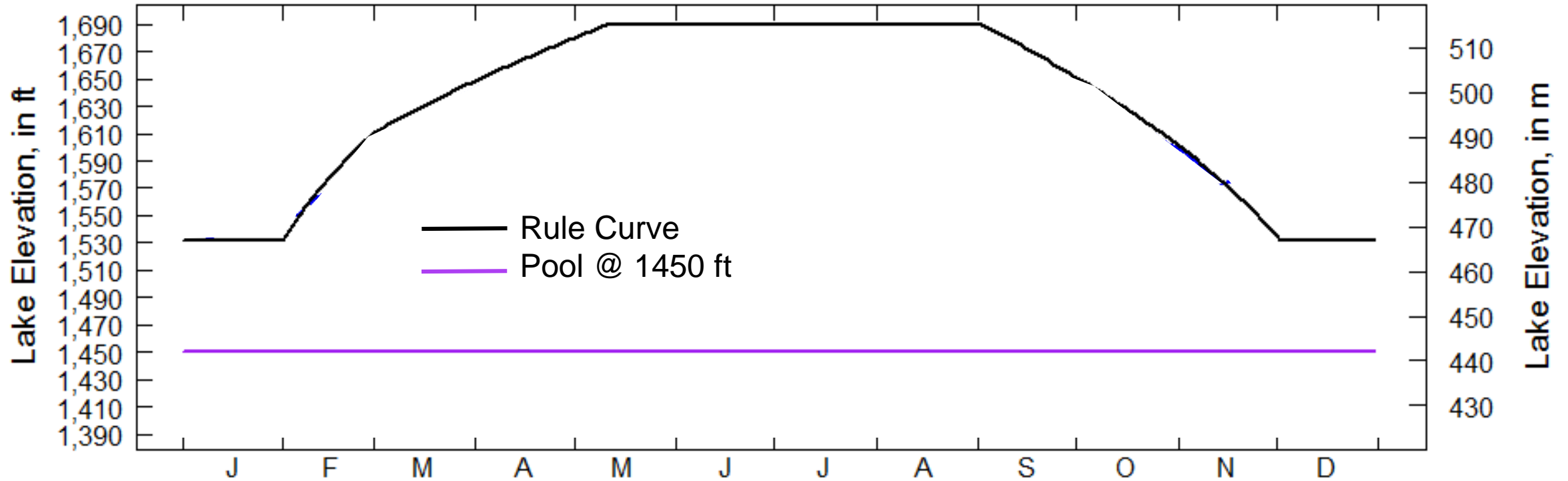
\*only showing schedule for construction activities that have potential for a significant impact under NEPA



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# Water surface elevations for proposed drawdown at Cougar Reservoir



Bottom of Temperature tower: 1561 ft

RO Bypass: 1479 ft

Diversion tunnel: 1290 ft



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# PROPOSED NEPA DOCUMENT - ENVIRONMENTAL ASSESSMENT

## Resources of concern

Hydro Power Impact: no power production during drawdown

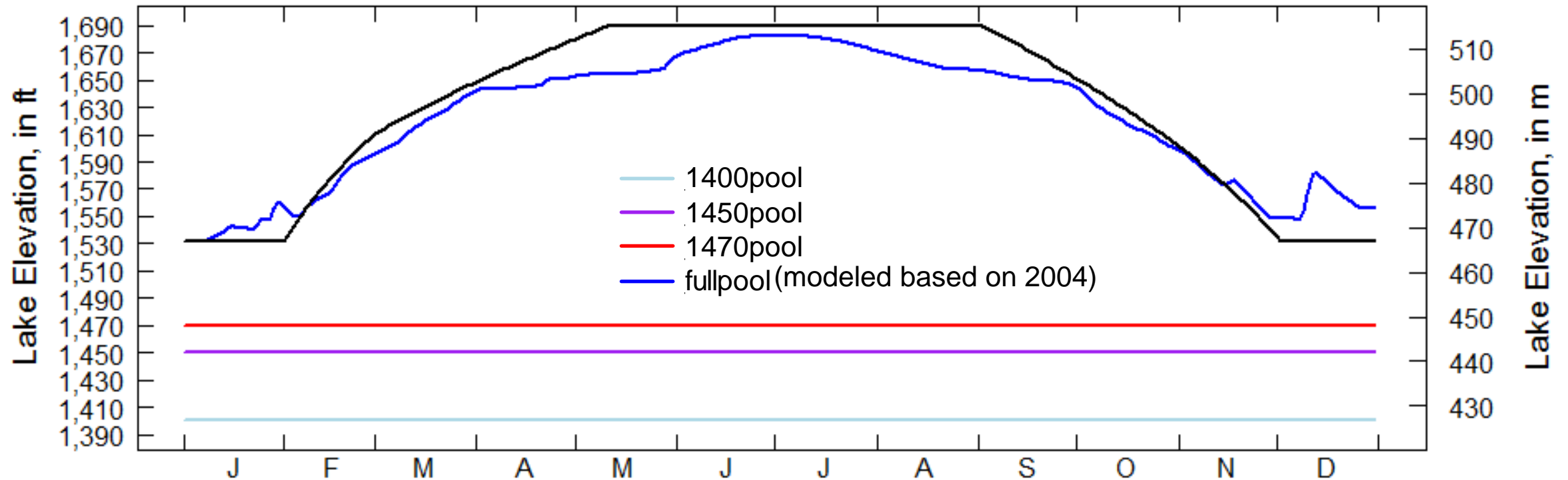
- BPA does not consider this “significant” under NEPA (communication through Joyce Casey).

Listed Species Impact: downstream Chinook impacted due to lack of temperature control and Total Dissolved Gas (TDG) during drawdown

- TDG increases limited by releasing through the diversion tunnel
- Thermal barrier for spawning adults
- High temperatures impact to egg survival
- High temperatures resulting in early emergence (negatively impacts survivability)



## Simulated water surface elevations of Cougar Reservoir in 2004.



Bottom of Temperature tower: 1561 ft

RO Bypass: 1479 ft

Diversion tunnel: 1290 ft

Increased sediment erosion: <1450ft

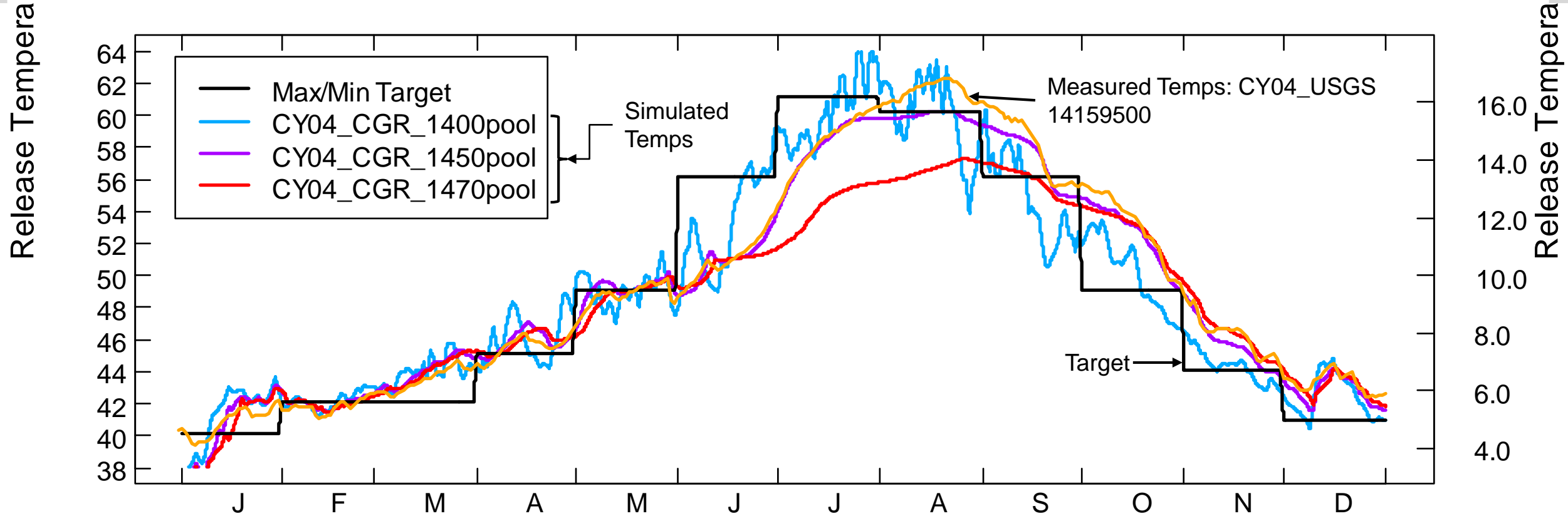


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# Supporting Analysis

## Simulated water temperature downstream of Cougar in 2004 for various pool levels



Note: 1450 pool elevation avoids sediment transport issues



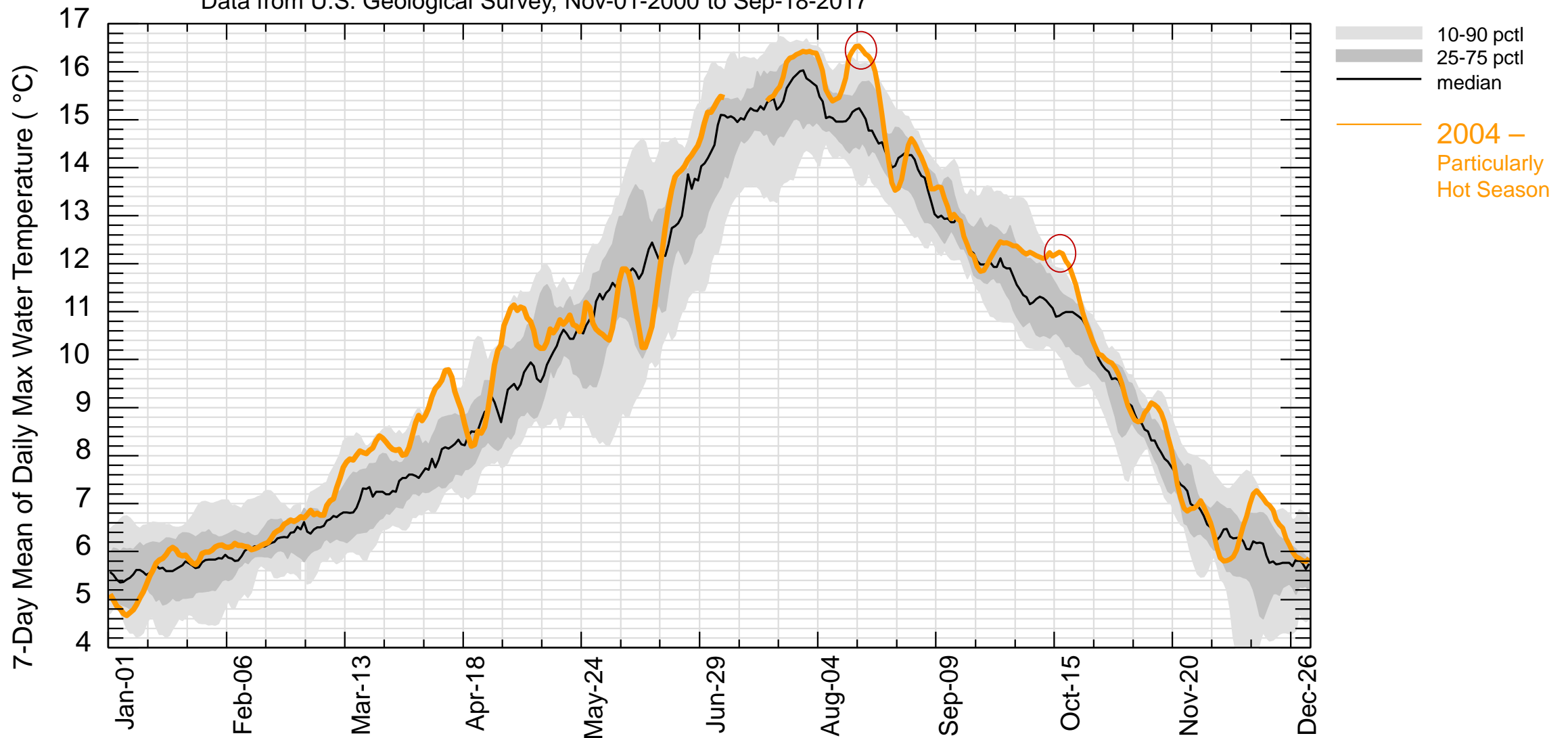
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# Measured water temperature in McKenzie R at Vida in 2004 (16.5 miles downstream of Cougar Dam)

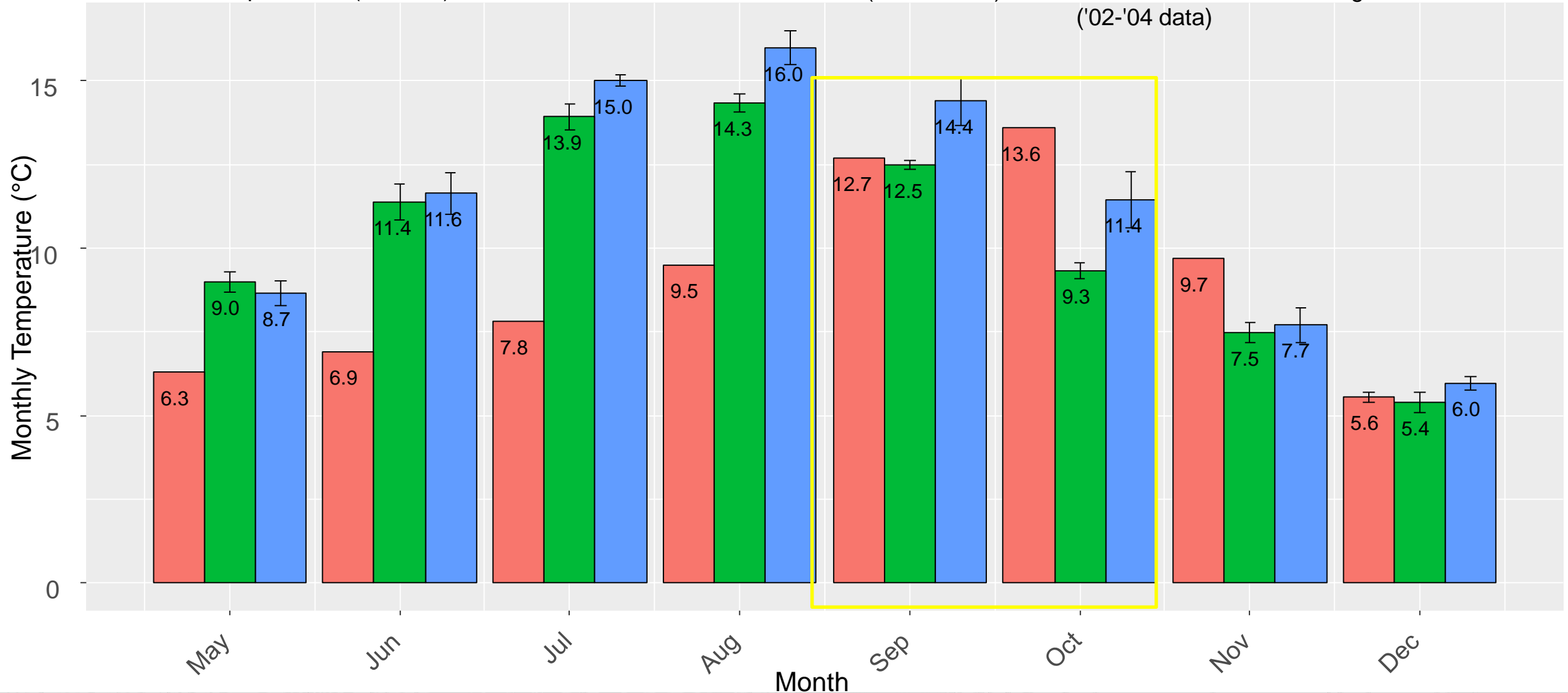
McKenzie River near Vida, OR (14162500)

Data from U.S. Geological Survey, Nov-01-2000 to Sep-18-2017



# Comparison of measured water temperature downstream of Cougar Before and after temperature tower construction

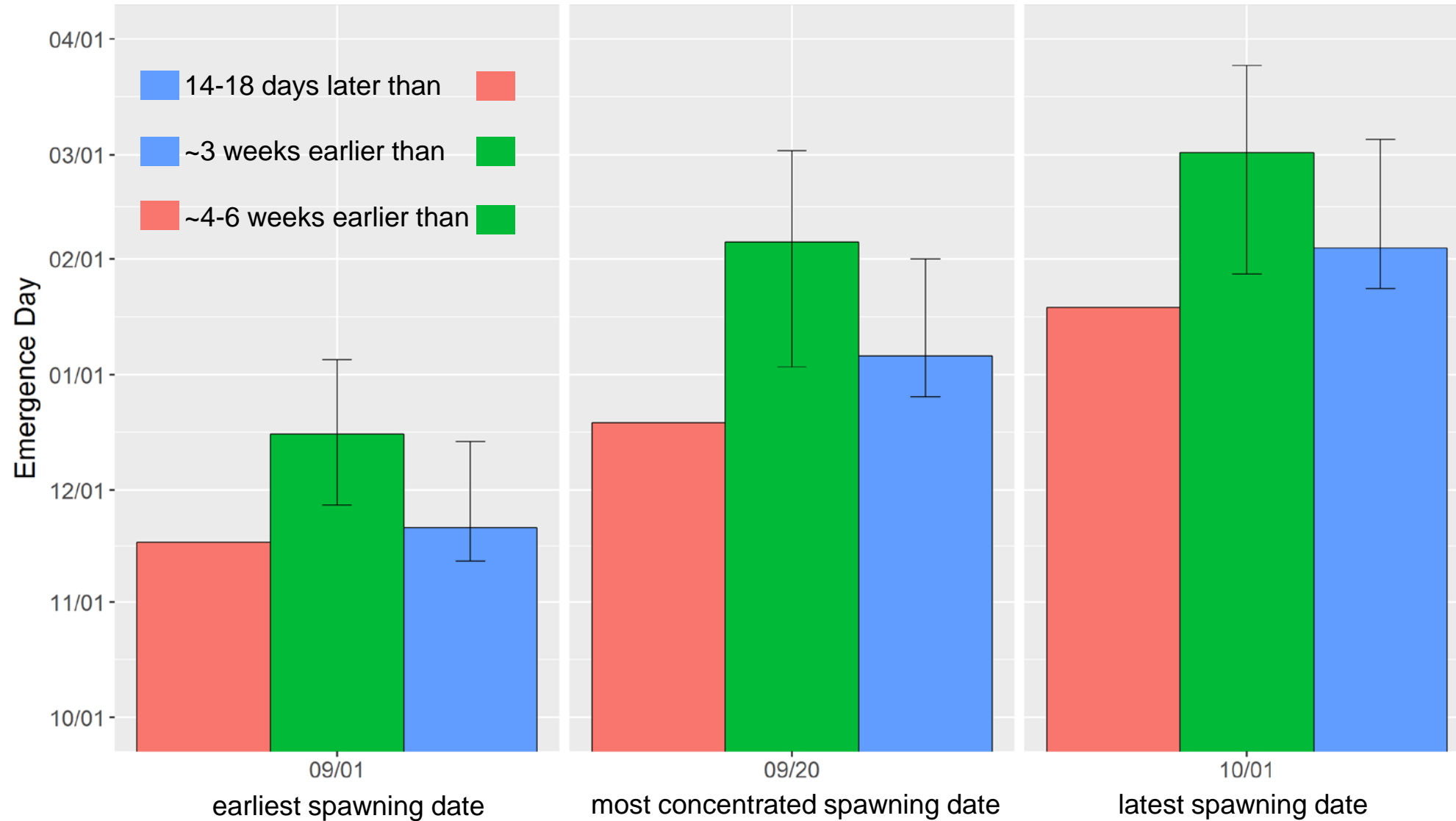
■ Full pool without temperature control Conditions pre-tower ('01 data)   ■ Full pool with temperature control Current conditions w/ Tower ('05-'16 data)   ■ Pool<1450 without temperature control Drawdown conditions during tower construction ('02-'04 data)





# Comparison of Emergence timing before and after temperature tower construction

■ Full pool without temperature control Conditions pre-tower ('01 data)
 ■ Full pool with temperature control Current conditions w/ Tower ('05-'16 data)
 ■ Pool<1450 without temperature control Drawdown conditions during tower construction ('02-'04 data)



# EMERGENCE TIMING IN 2004

## DATE IN WHICH 1750 THERMAL UNITS IS MET

Spawn Date (Egg in Gravel)	Modeled 1400 pool	Modeled 1450 pool	Modeled 1470 pool	Modeled Full Pool (w/ Tower)	2004 <i>Measured</i> 1450 pool	2005 <i>Measured</i> Full Pool (w/ Tower)
Sep 1 (Early)	Dec 14	Nov 26	Nov 27	Dec 3	Nov 23	Dec 17
Sep 20 (Peak)	Jan 31	Jan 17	Jan 14	Jan 20	Jan 10	Feb 3
Oct 1 (Late)	Feb 23	Feb 11	Feb 9	Feb 15	Feb 7	Feb 28

3-7 days  
difference

~3 weeks  
difference



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# CONCLUSION AND NEXT STEPS

- 1) no thermal barrier to adults spawning
- 2) Limited to no impact to egg survival
- 3) emergence timing effect less than 3 weeks
- 4) single season

The PDT will move forward with an Environmental Assessment, including a robust stakeholder engagement plan.

