

# Modeling of Dworshak Summer 2008 Operations



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TMT Presentation

Columbia River Inter-Tribal Fish Commission

Portland, Oregon

# Introduction



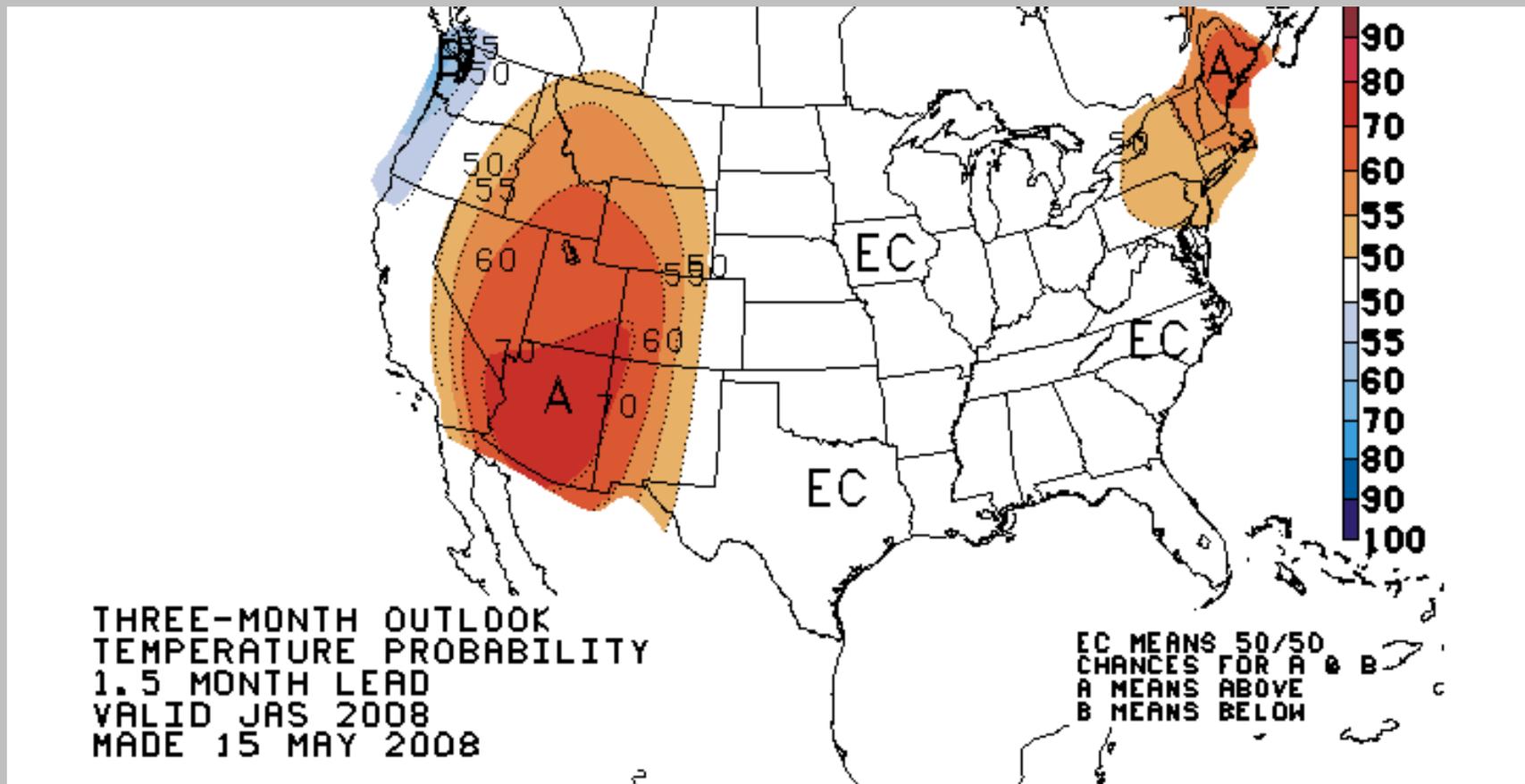
- Goals: (1) Model Dworshak flows and elevations for summer operation scenarios. (2) Evaluate impacts on Dworshak pool elevation and lower Snake water temperature and flow.
- CRITFC's Hydro spreadsheet: modeled outflows and elevations. Inflows provided by NOAA-NWRFC.
- EPA's RBM-10 model: water temperature. Assumes (1) 1975, 1976, 1985, and 1989 weather years, (2) 1999 tributary inflows, (3) 2000 Dworshak and Brownlee water temperatures, and (3) Dworshak release temperatures are 43 to 45 degF.

# Weather Assumptions

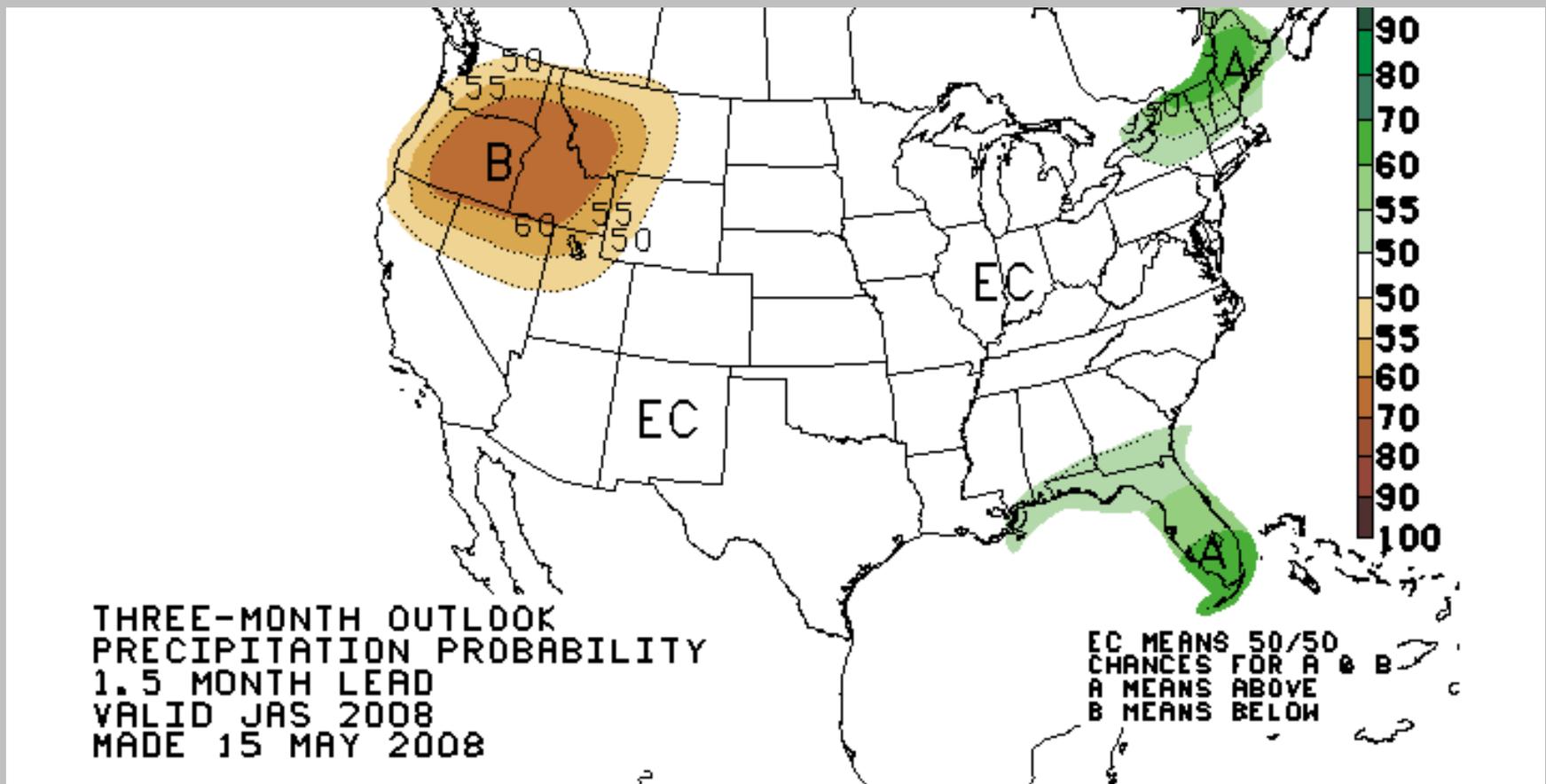


Lewiston air temperature (degF)	MAY	JUN	JUL	AUG	SEP	Dworshak April-July Inflow (KaF)
<b>1975</b>	57.79	63.6	77.74	70.39	66.15	3342
Departure	-0.4	-2.0	4.0	-1.4	2.7	
<b>1976</b>	59.69	62.95	73.89	69.97	68.98	3524
Departure	1.5	-2.7	0.1	-1.8	5.5	
<b>1985</b>	60.26	66.9	79.94	69.47	56.8	2913
Departure	2.0	1.0	5.9	-2.9	-6.9	
<b>1989</b>	59.34	68.57	74.47	71.35	66.03	2603
Departure	1.0	2.7	0.4	-1.0	2.3	
Average Departure:	<b>1.0</b>	<b>-0.3</b>	<b>2.6</b>	<b>-1.8</b>	<b>0.9</b>	<b>3,096</b>
	MAY	JUN	JUL	AUG	SEP	NWS June WSF (KaF):
2008 departure	2.5	-4				2880
Assumption: "ENSO-cold and PDO-warm/cool"						
Oct. 2007 - May 2008: MEI = -1.06 (+/- 0.32) PDO = -1.06 (+/- 0.34)						

# NOAA 90-day forecast



# NOAA 90-day forecast



# Highlights of Scenarios

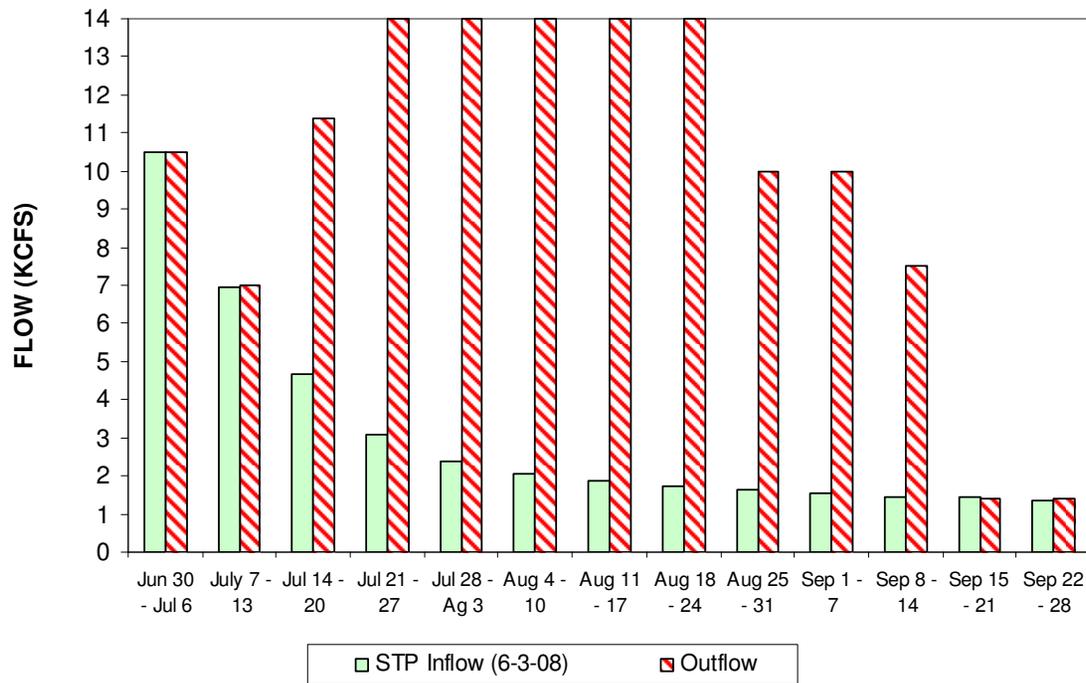


- Nez Perce Tribe 2008: draft to 1535 feet by Aug. 31, then 1520 feet by Sept. 30. Shape the July-August outflow to balance NPT concerns with lower Snake needs. Outflows are 7.5 to 14 kcfs.
- TMT-2007: draft to 1535 ft by Aug. 31, then 1520 feet by Sept. 30. Outflows are based on 2007 observed weekly elevations. More water is shaped in July. Outflows are 8.5 to 14 kcfs.
- Observed water temperatures: June 10 – June 17.

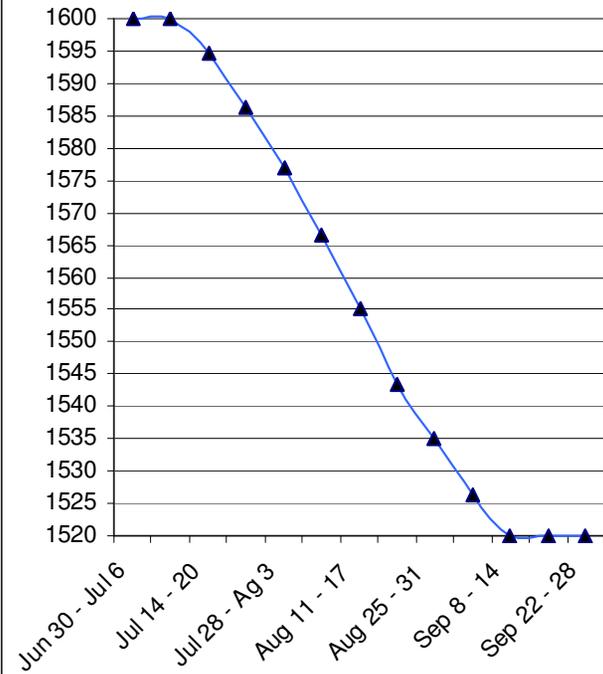
# NPT 2008



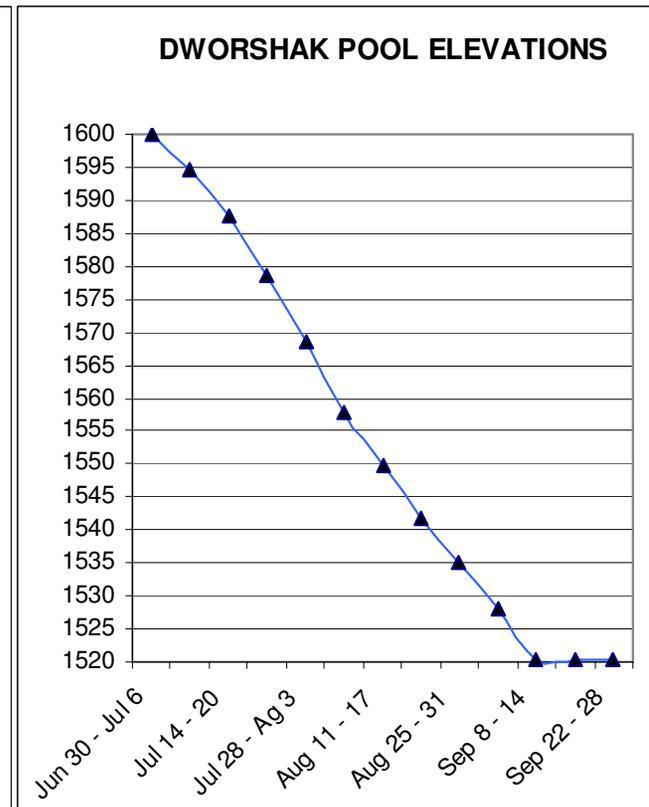
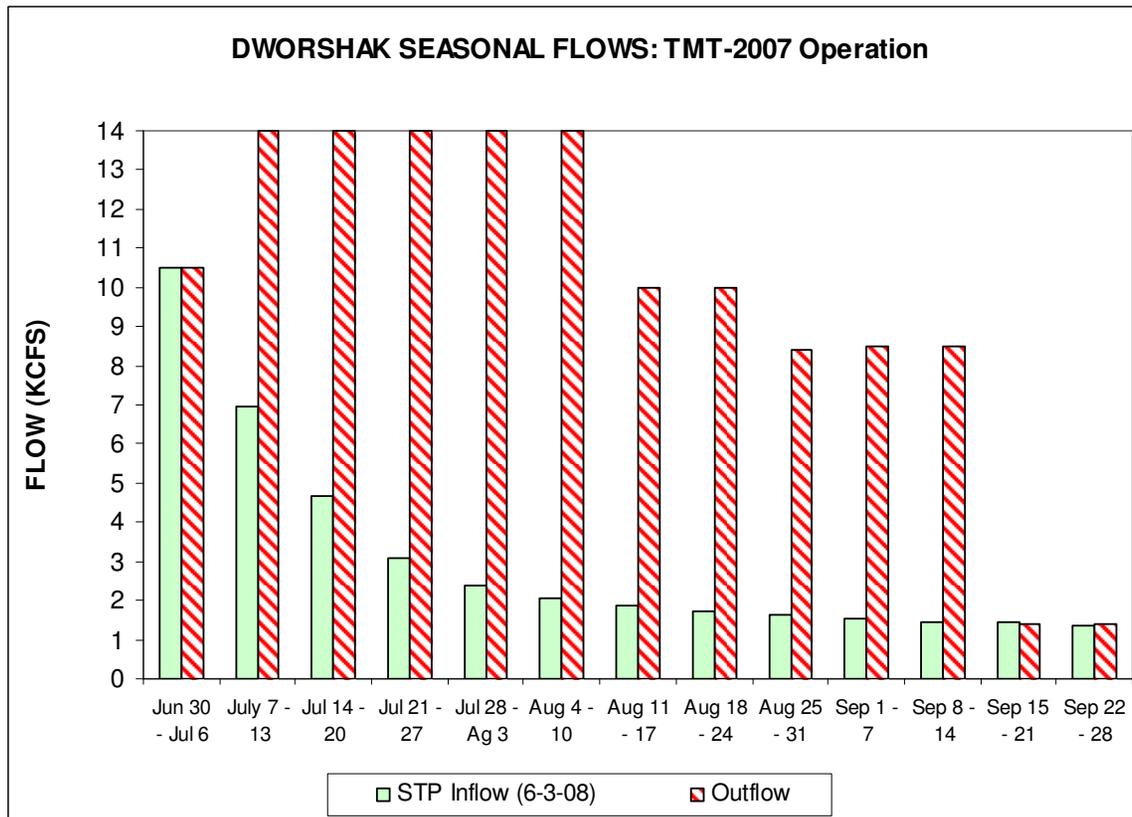
**DWORSHAK SEASONAL FLOWS: NEZ PERCE TRIBE PLAN**



**DWORSHAK POOL ELEVATIONS**

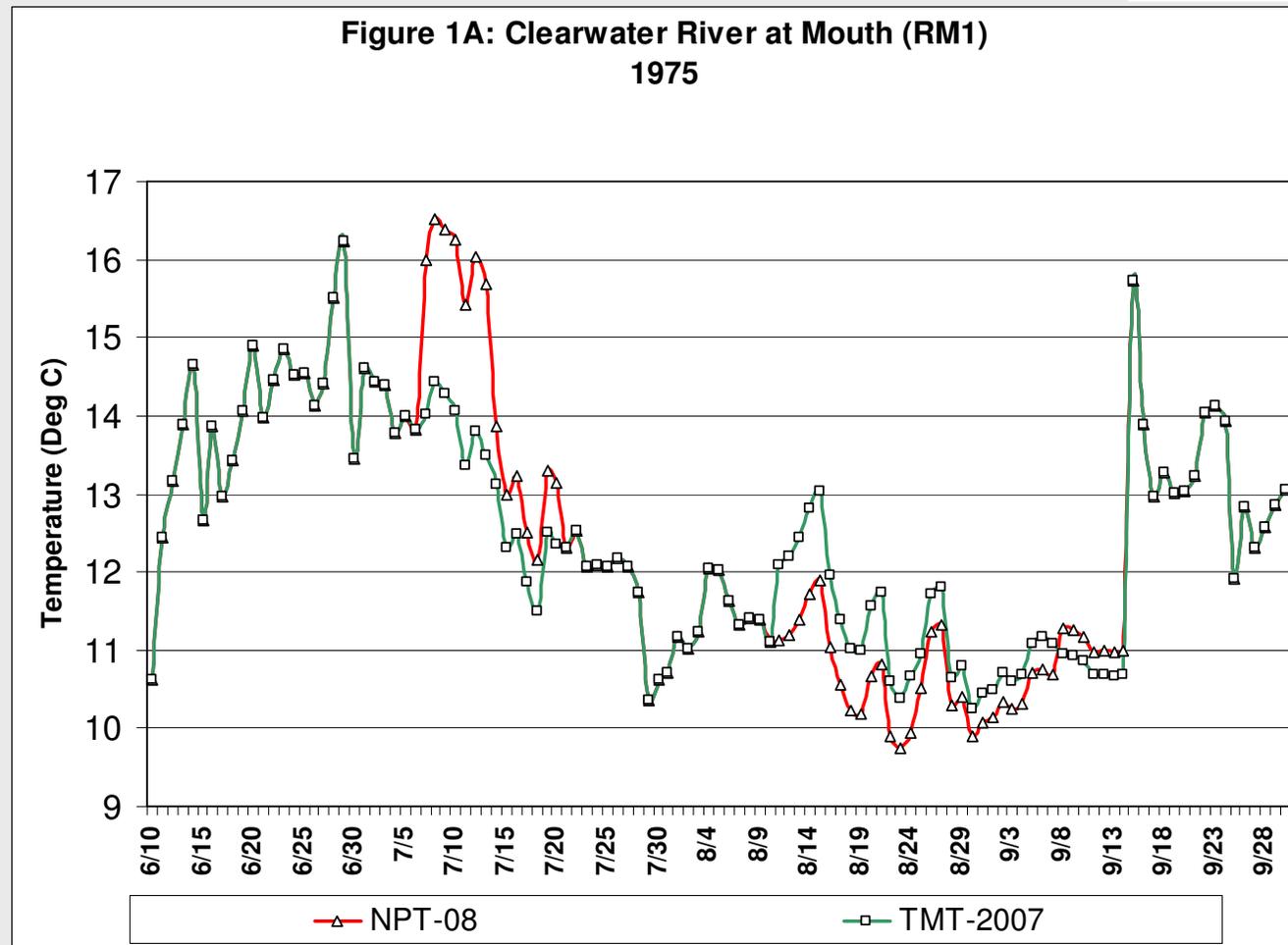


# TMT-2007



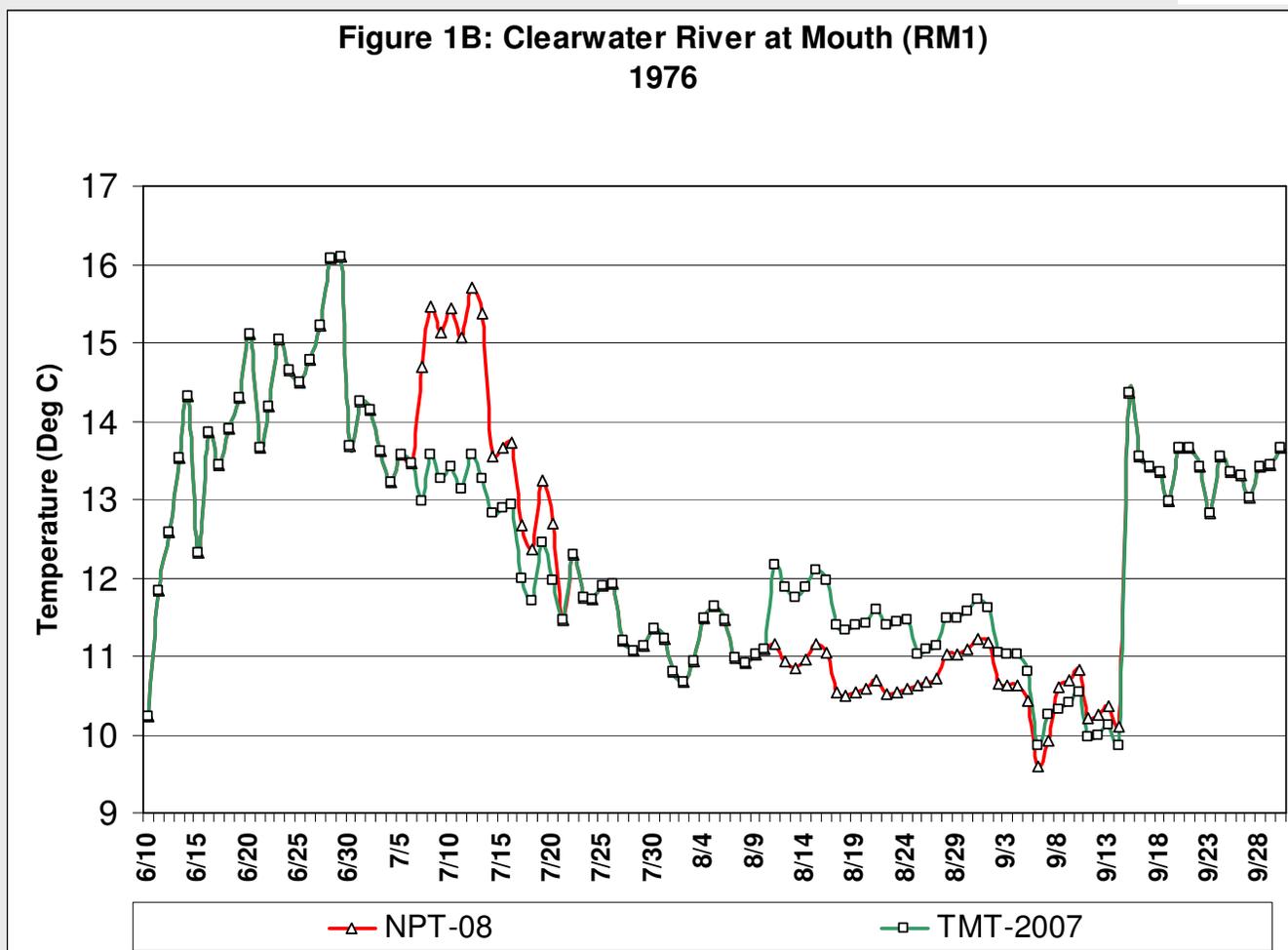
# Modeled Water Temperature

(Model data courtesy of Ben Cope, EPA-Seattle)



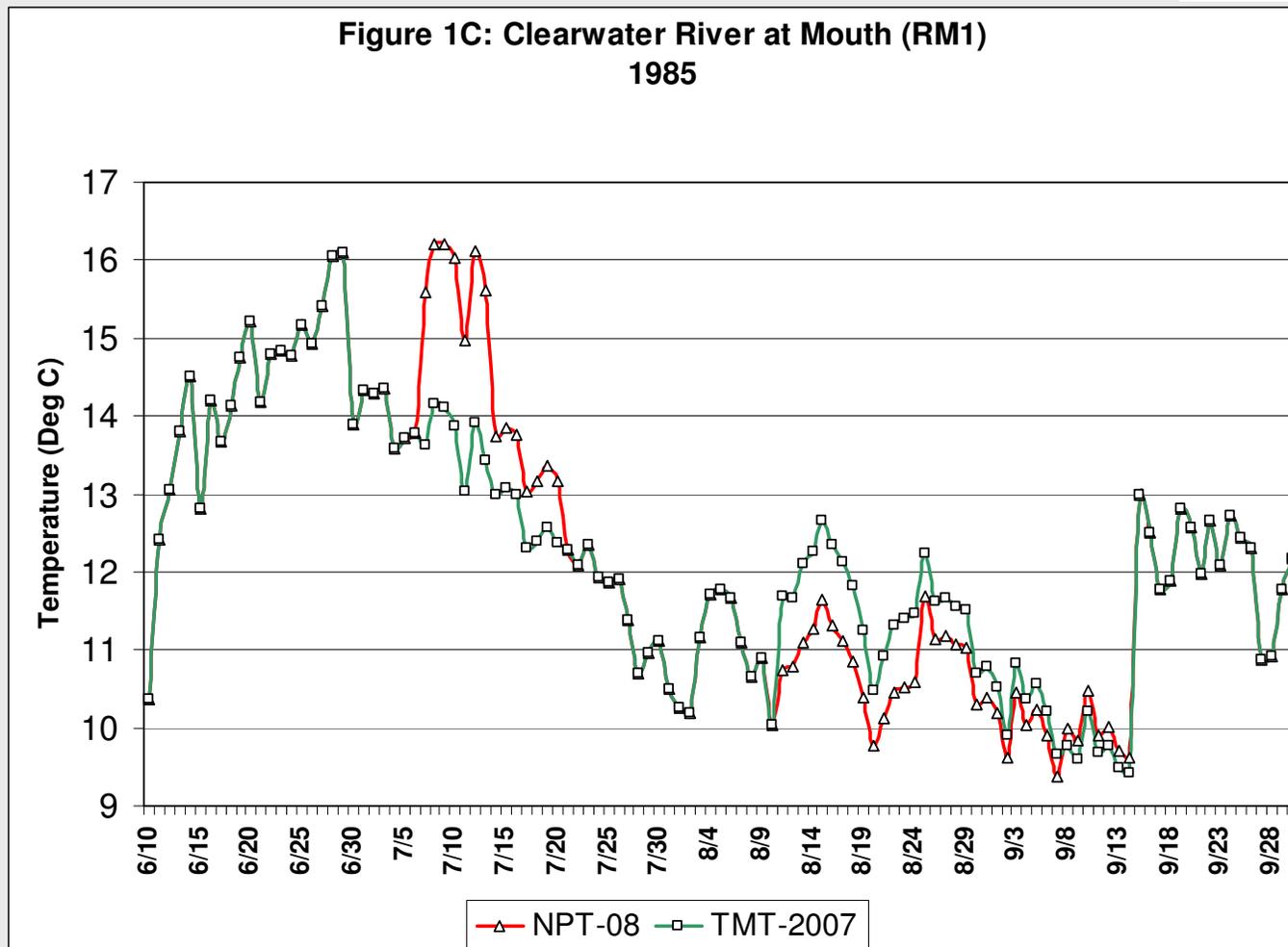
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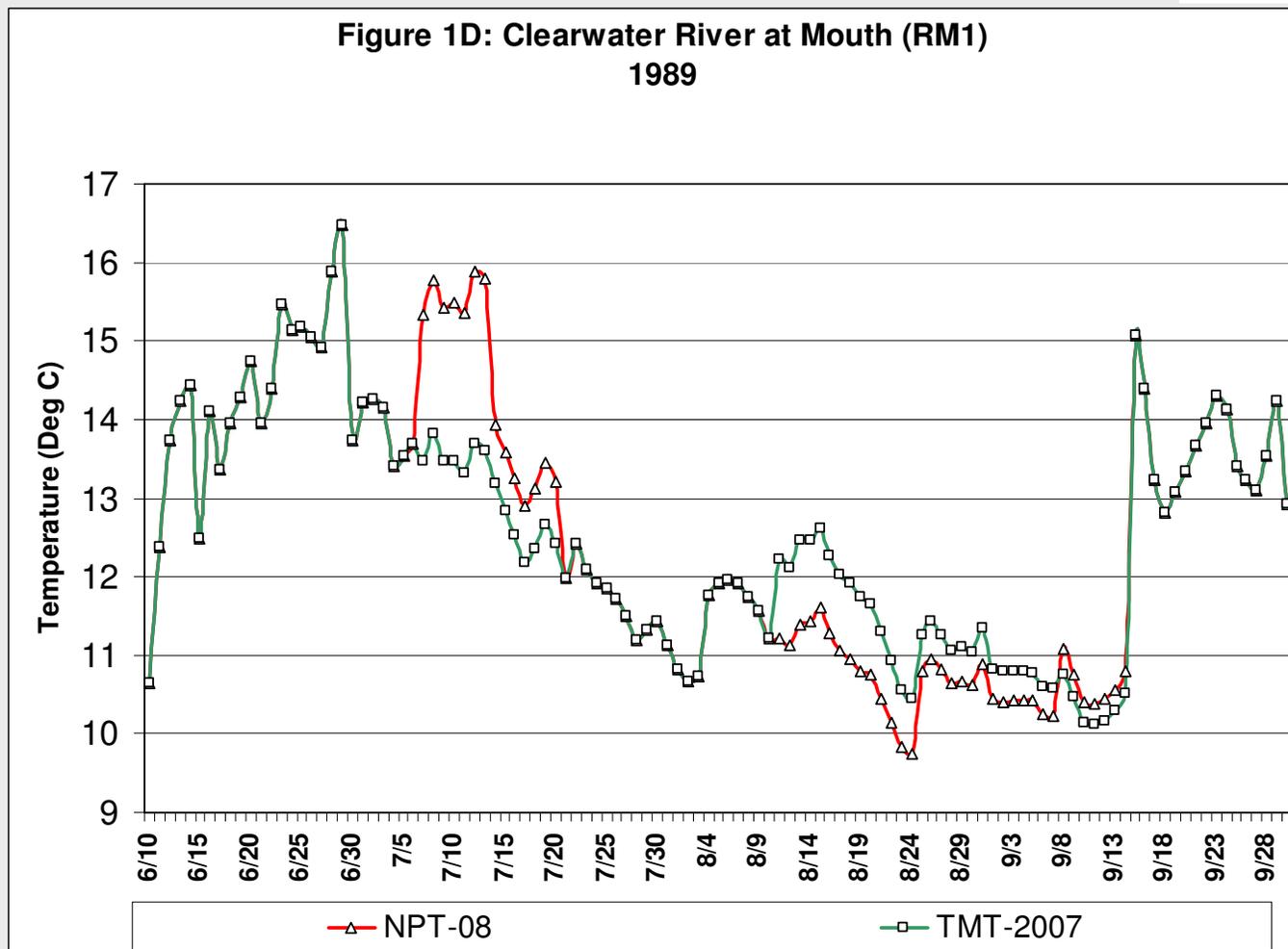
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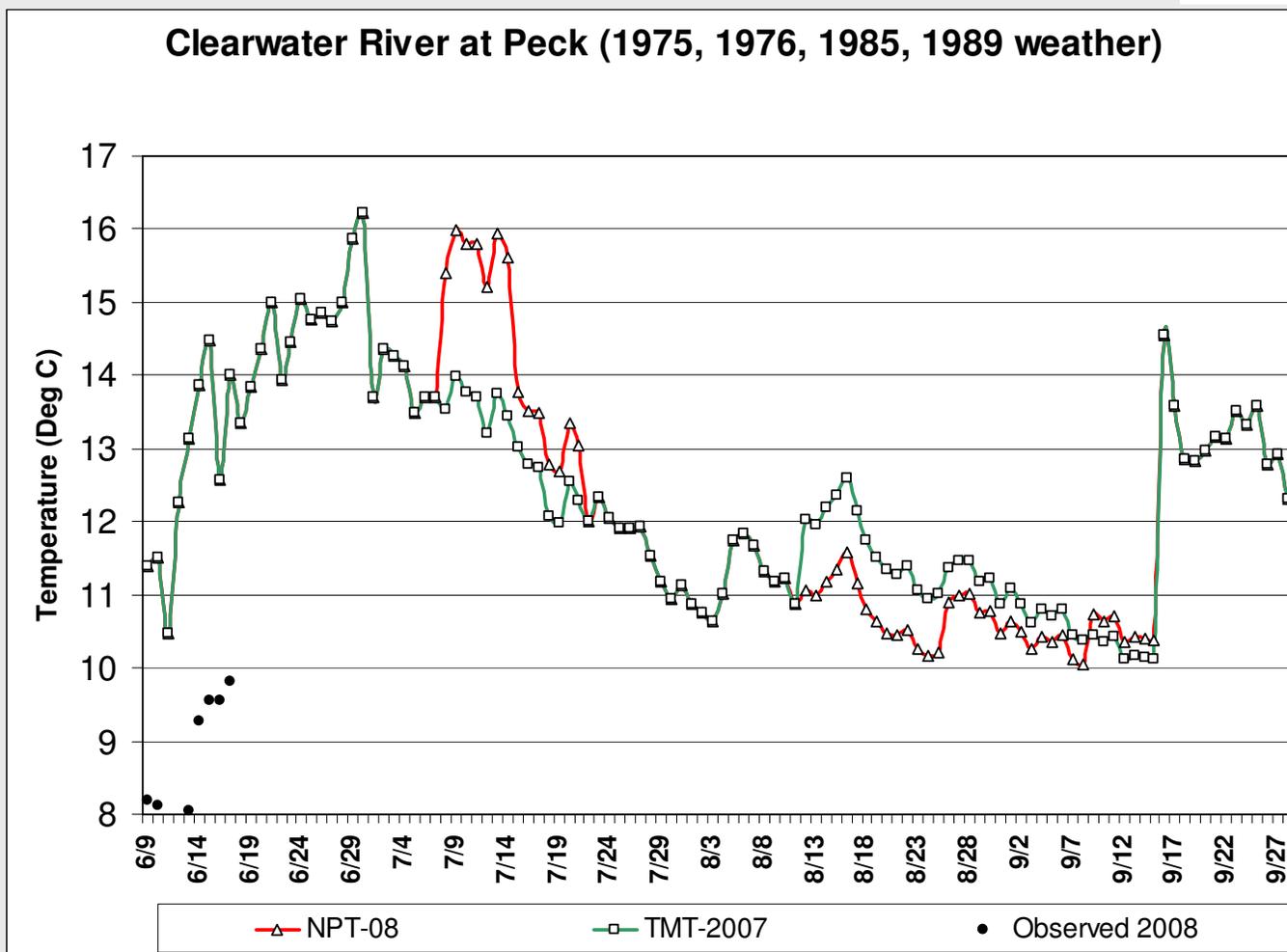
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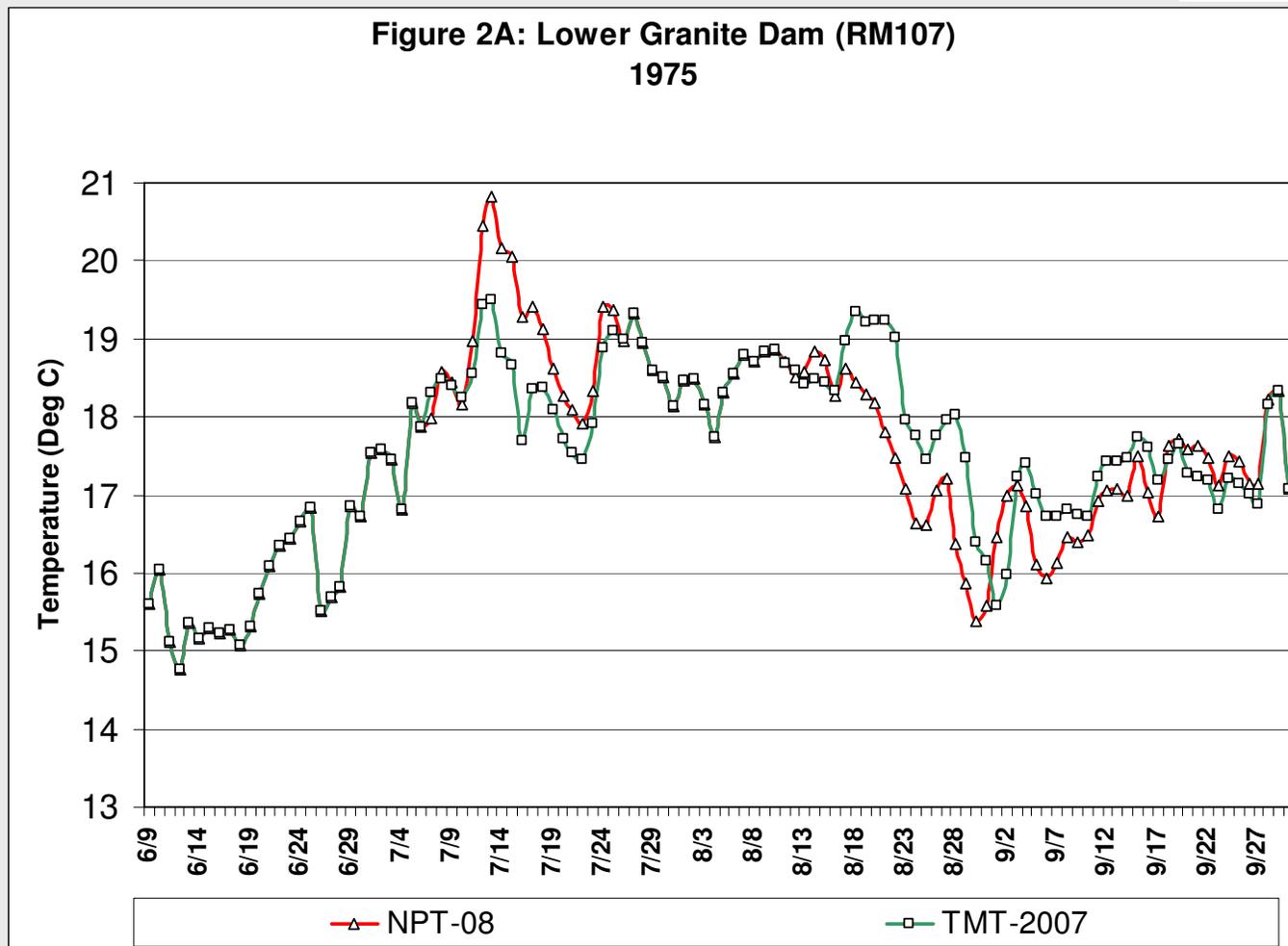
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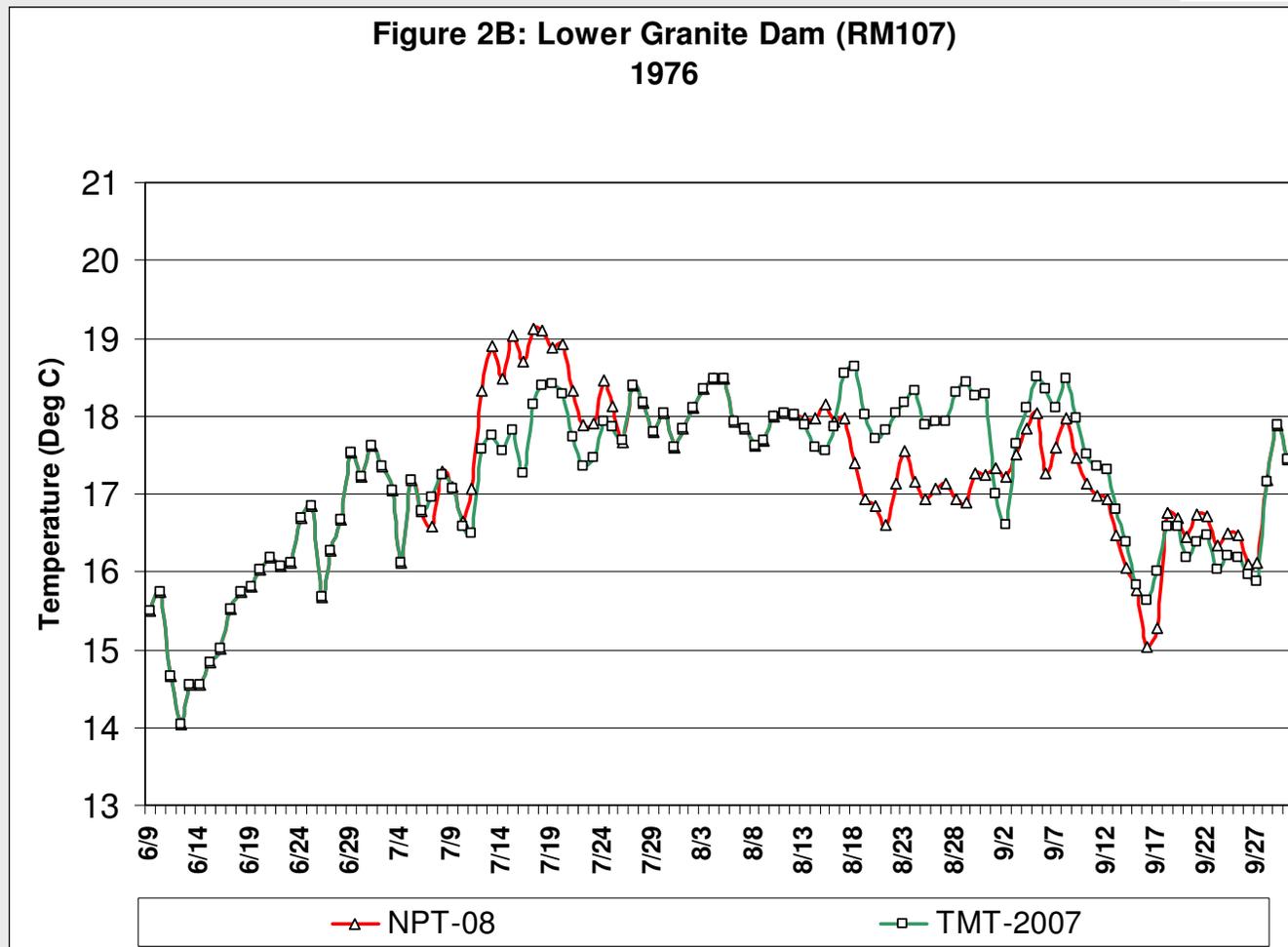
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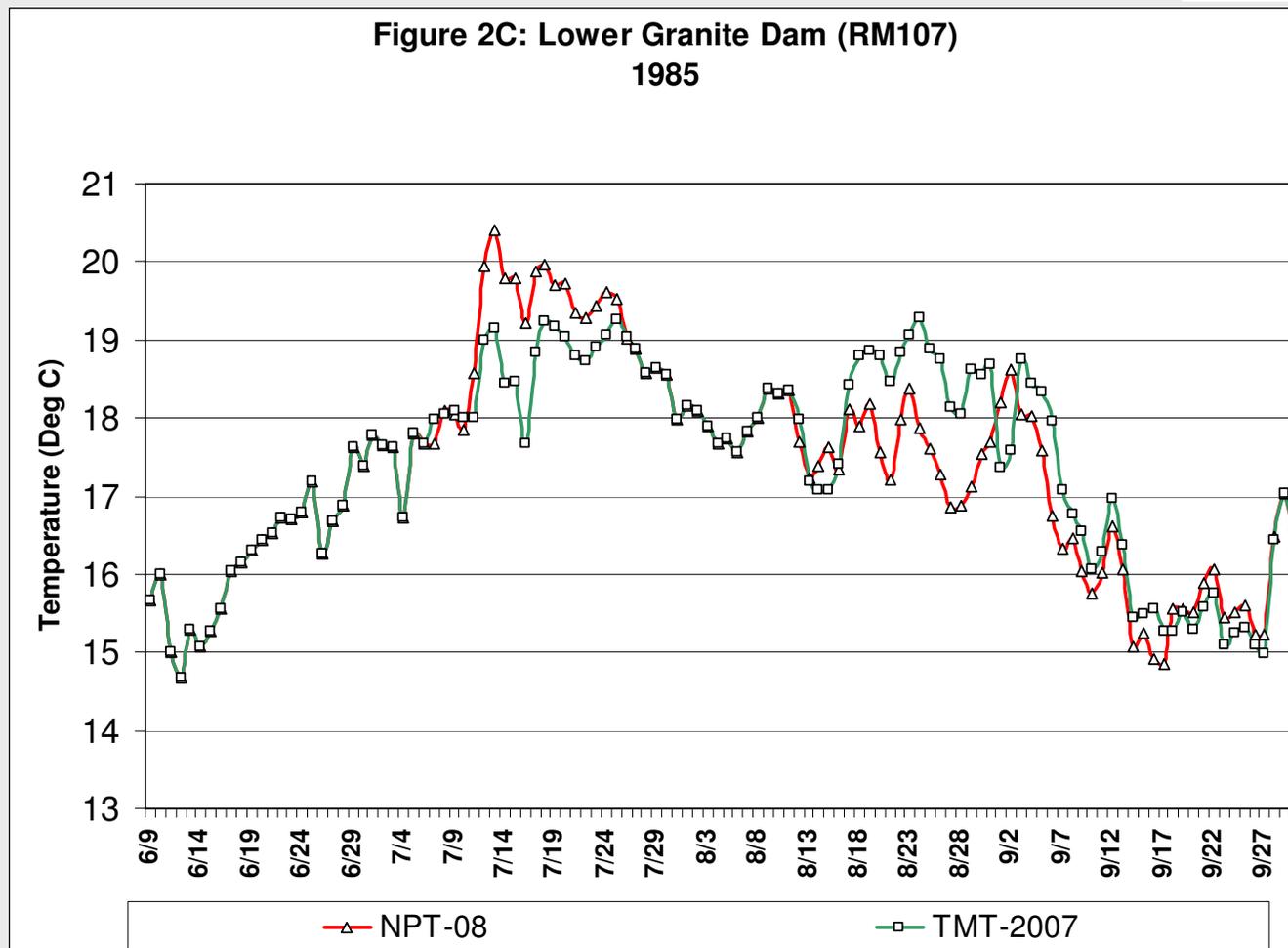
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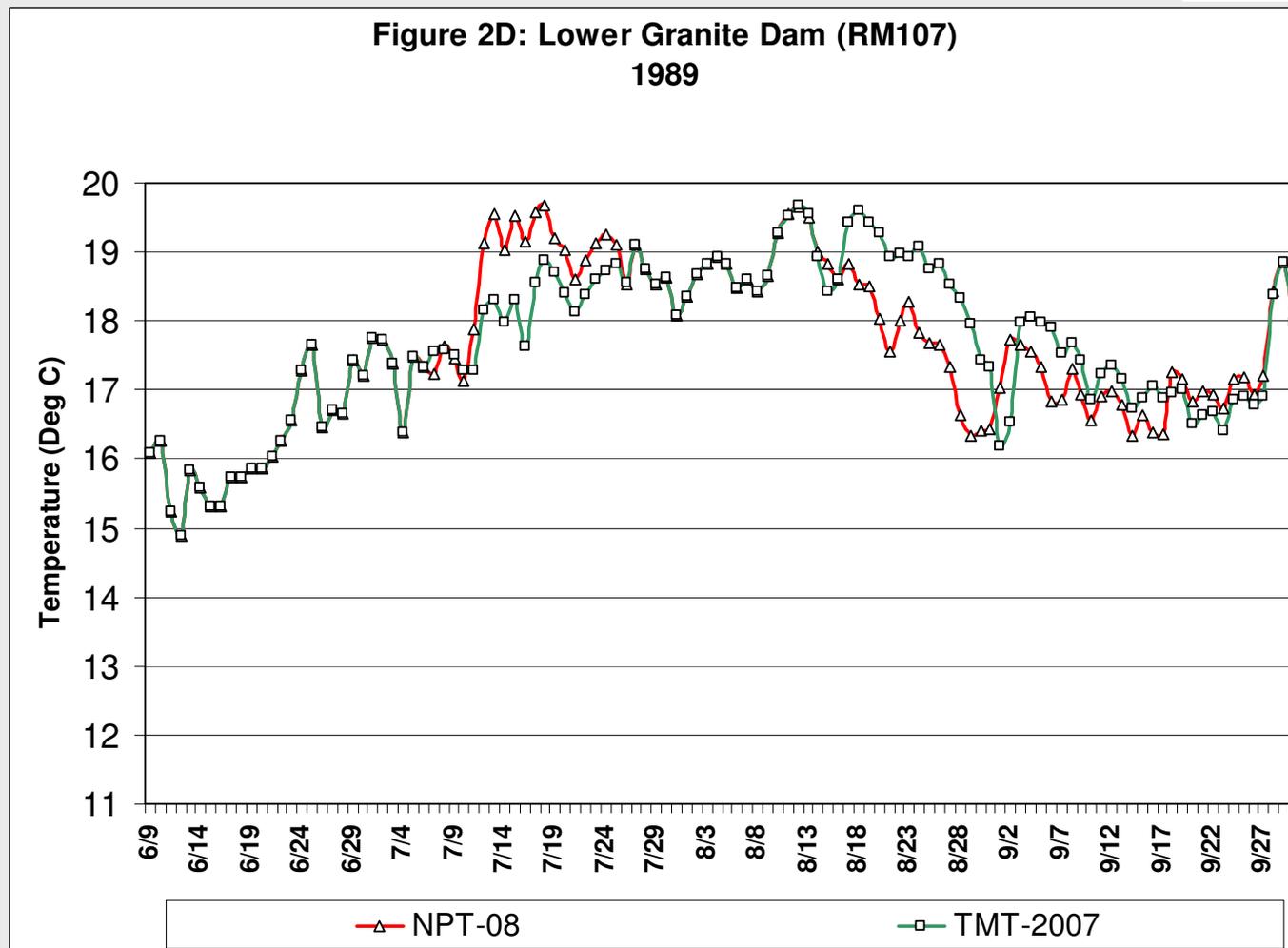
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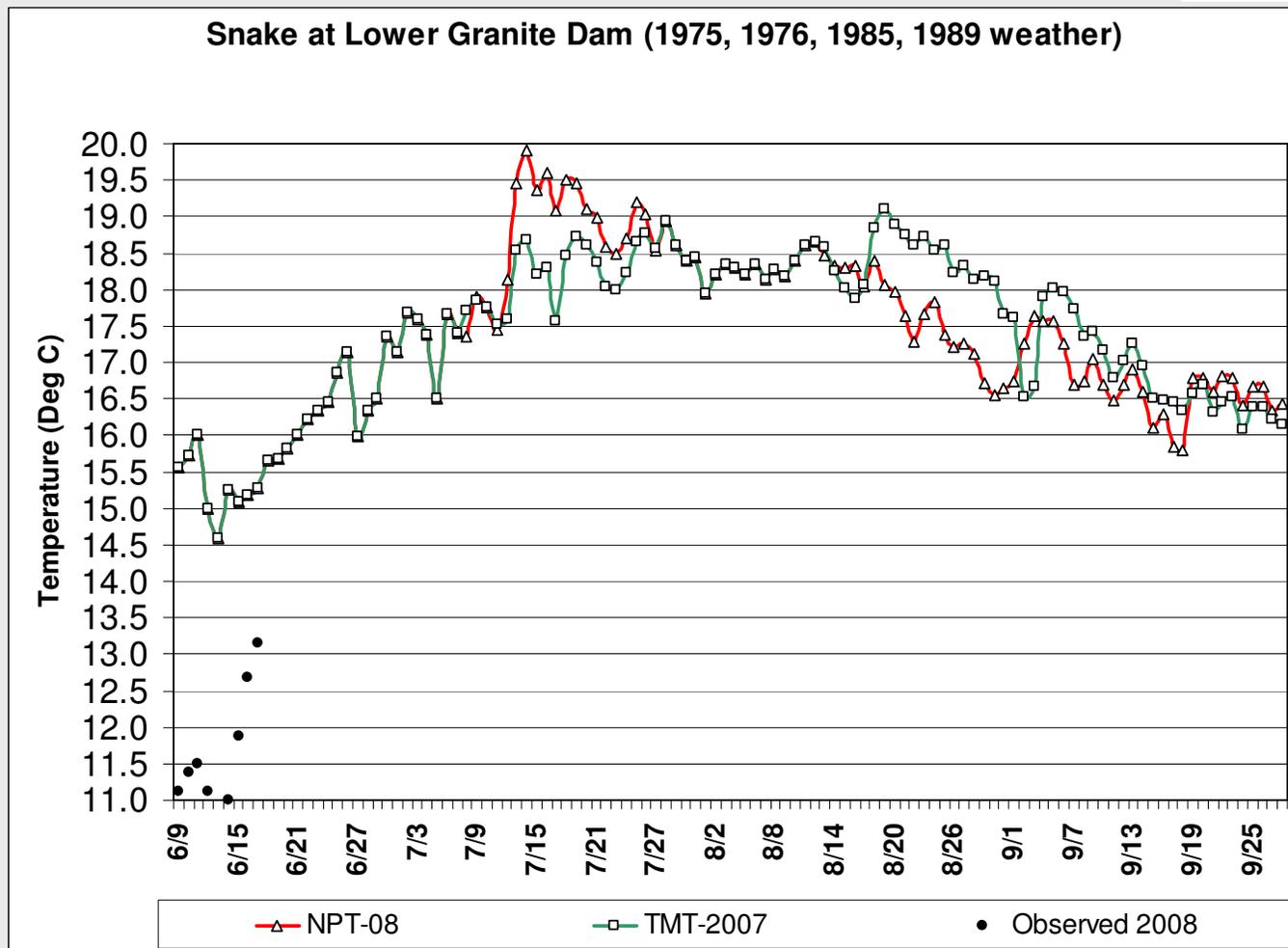
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# Conclusions



- Nez Perce Tribe-2008: Draft 1794 KaF (July-Sept). Outflows 7.5 to 14 kcfs. Balance and temperature control is achieved in early July and September. September carryover: ~200 KaF.
- TMT-2007 Operation: Draft 1787KaF (July-Sept.). Outflows 8.5 to 14 kcfs. September carryover: ~200 KaF.
- Water temperature modeling shows that NPT 2008 gives a good balance for temperature control (20 degC) in July and September (very important for returning adults and their spawning conditions).
- What are your questions? ☺