Water/Irrigation Year 2025 Summary

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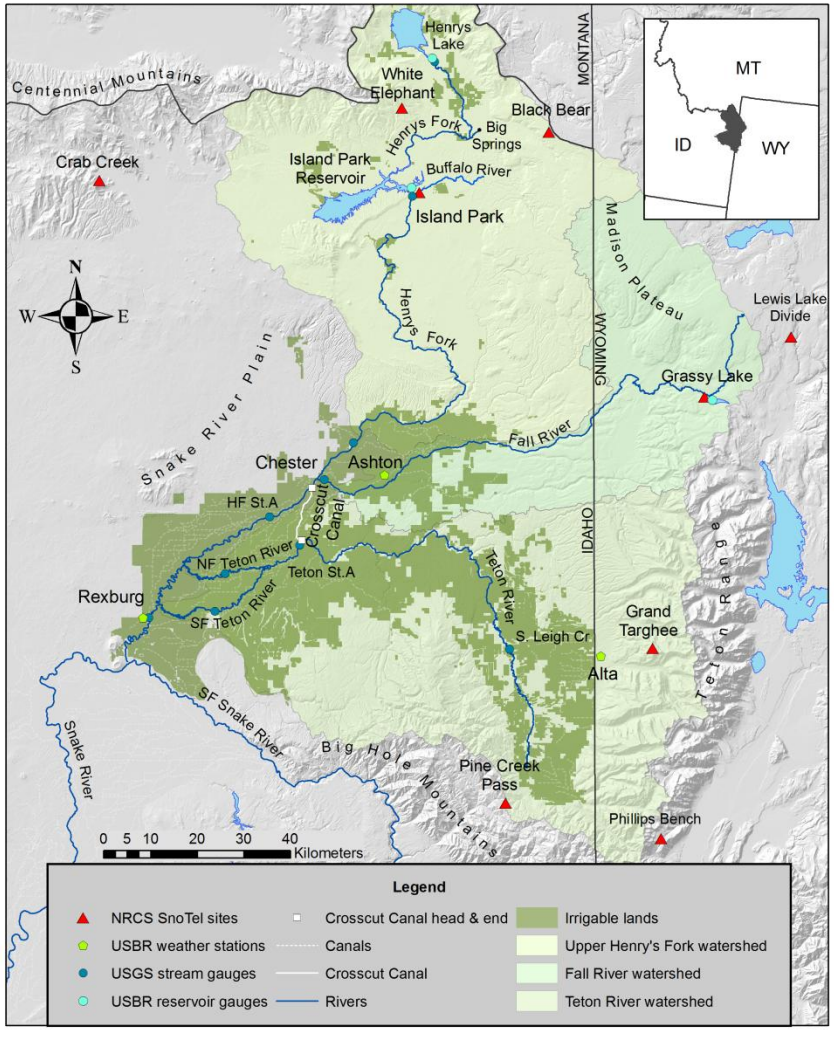
Henry's Fork Foundation
Henry's Fork Watershed Council, Nov. 18, 2025

Outline

- Water stored in the headwaters is used in the lower watershed
- Climate: warm and dry
- Natural flow (water supply): low
- April-1 predictions: good on magnitude but not timing
- Irrigation management: precise
- Island Park Reservoir: 21,353 ac-ft above expectation
- Water quality: worst IP Dam turbidity on record



Henry's Fork: The Working River

Three Storage Reservoirs

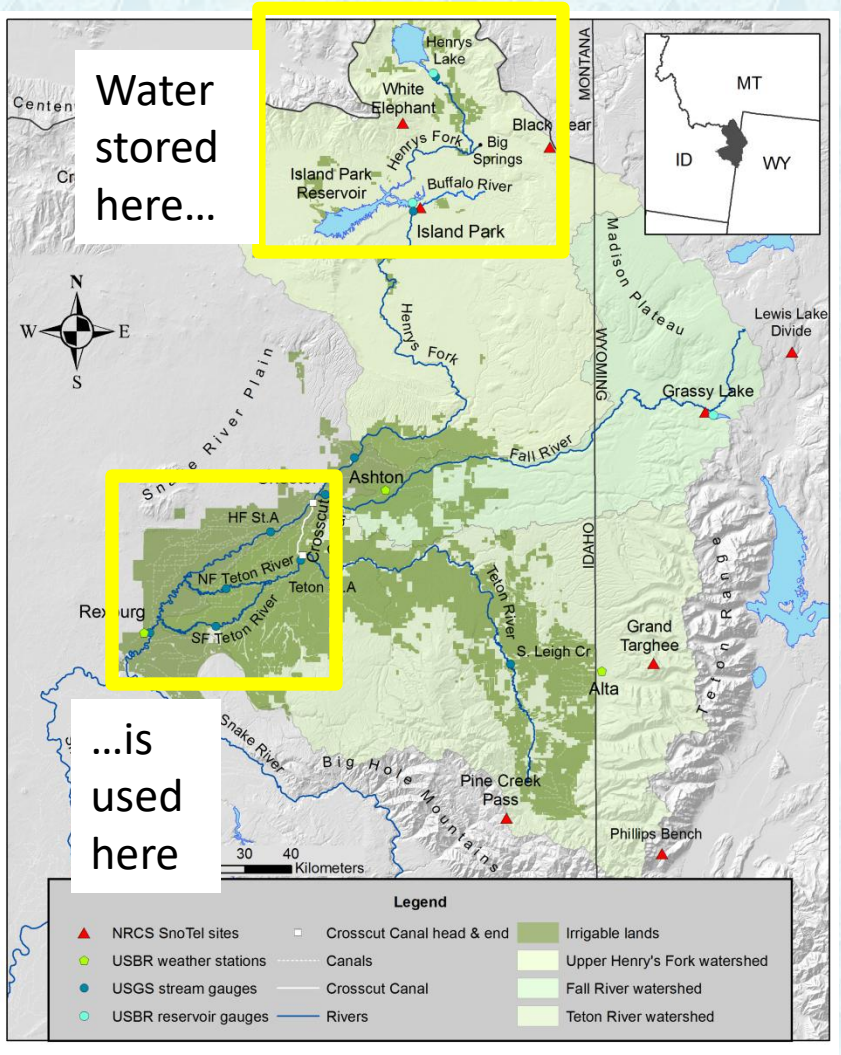
- Henrys Lake: 90,000 a-f
- Island Park Reservoir: 135,000 a-f
- Grassy Lake: 15,000 a-f

- 450,000 acres with irrigation water rights (22% of total area)
- 250,000 acres in Fremont-Madison Irrigation District

- 35 major canal systems
- 450 miles of canal
- Over 150 points of diversion
- 1504 water rights for irrigation from surface water

Seven hydroelectric plants

- Island Park
- Ashton
- Chester
- St. Anthony
- Buffalo River
- Marysville
- Felt



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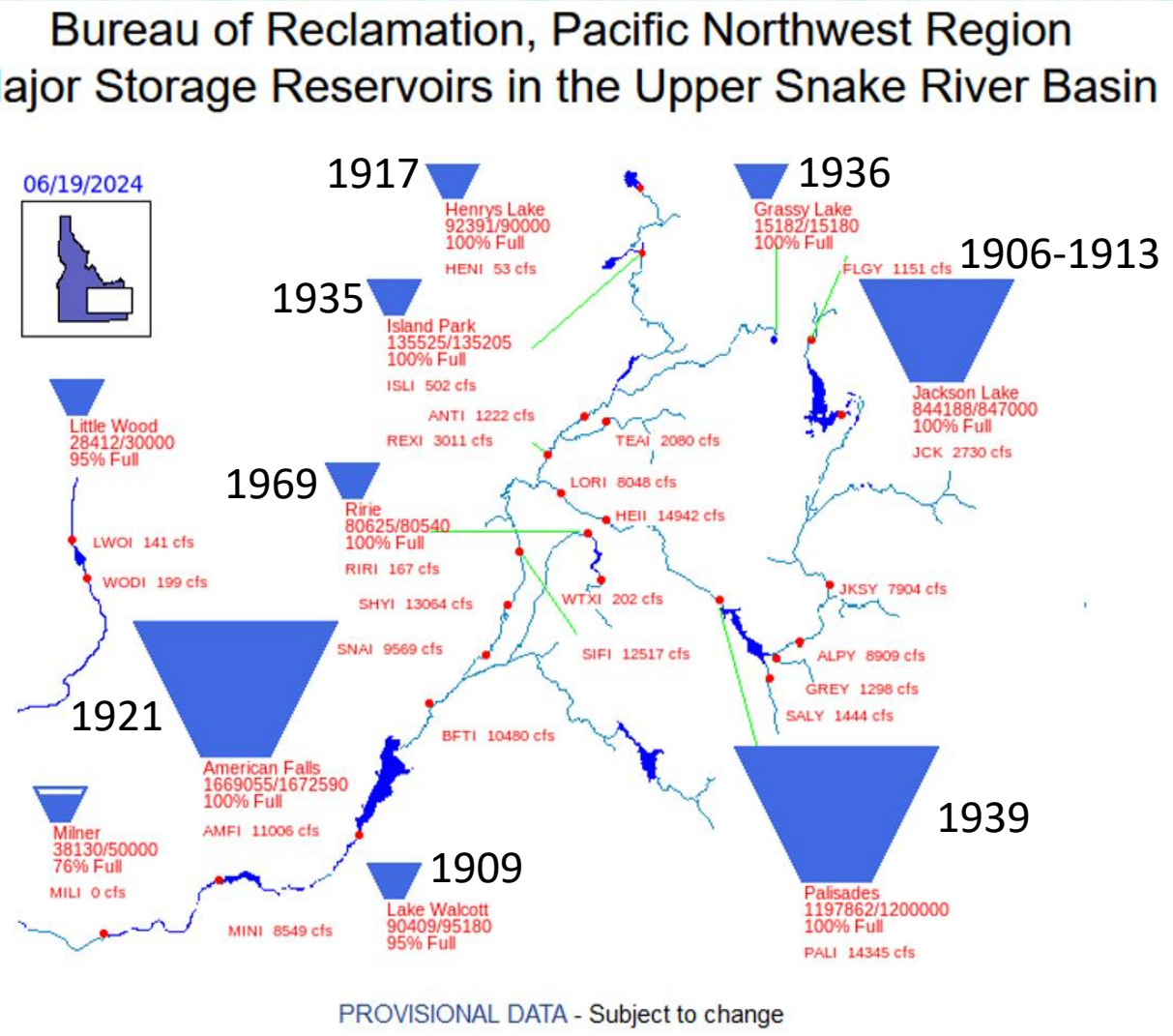
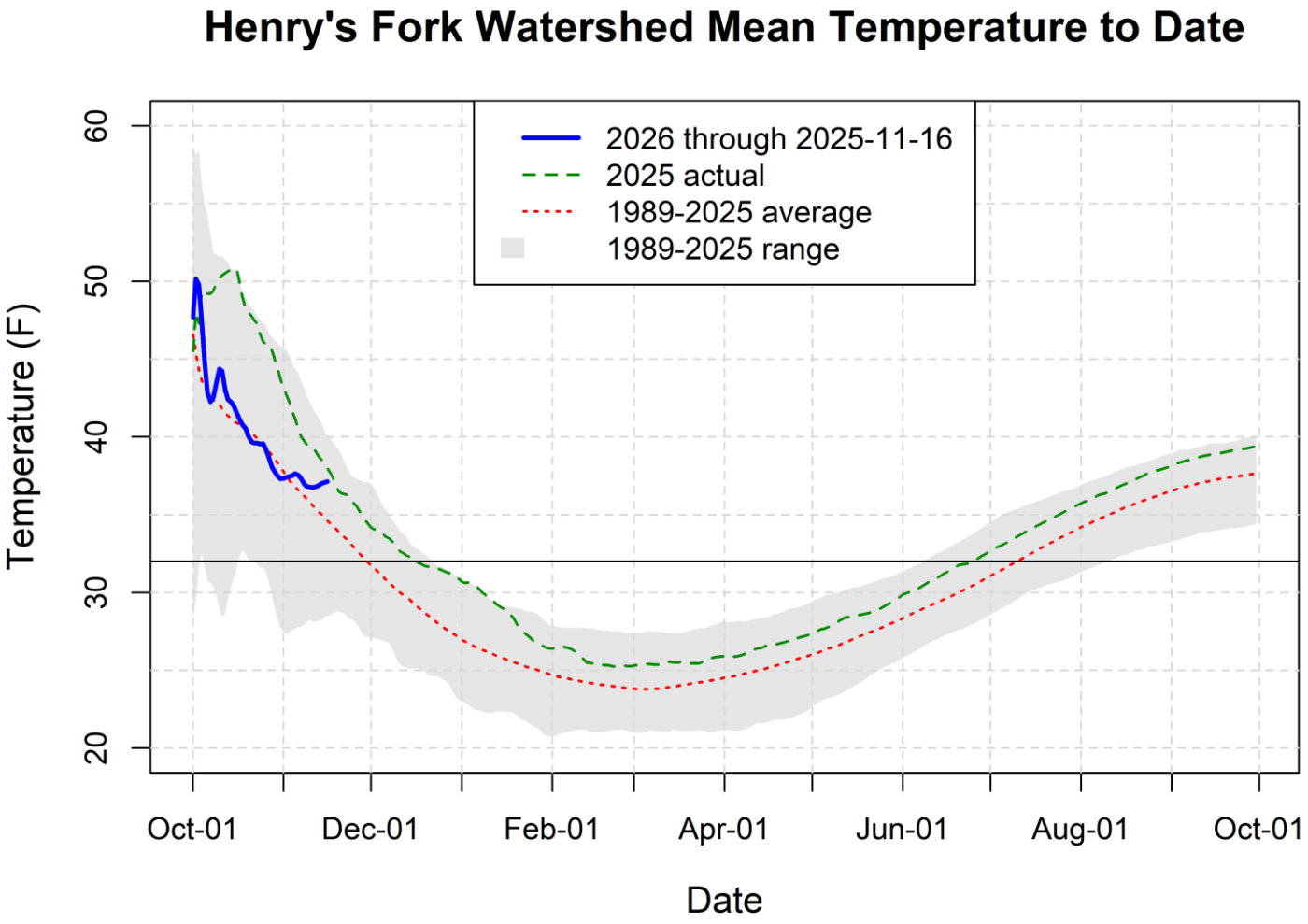
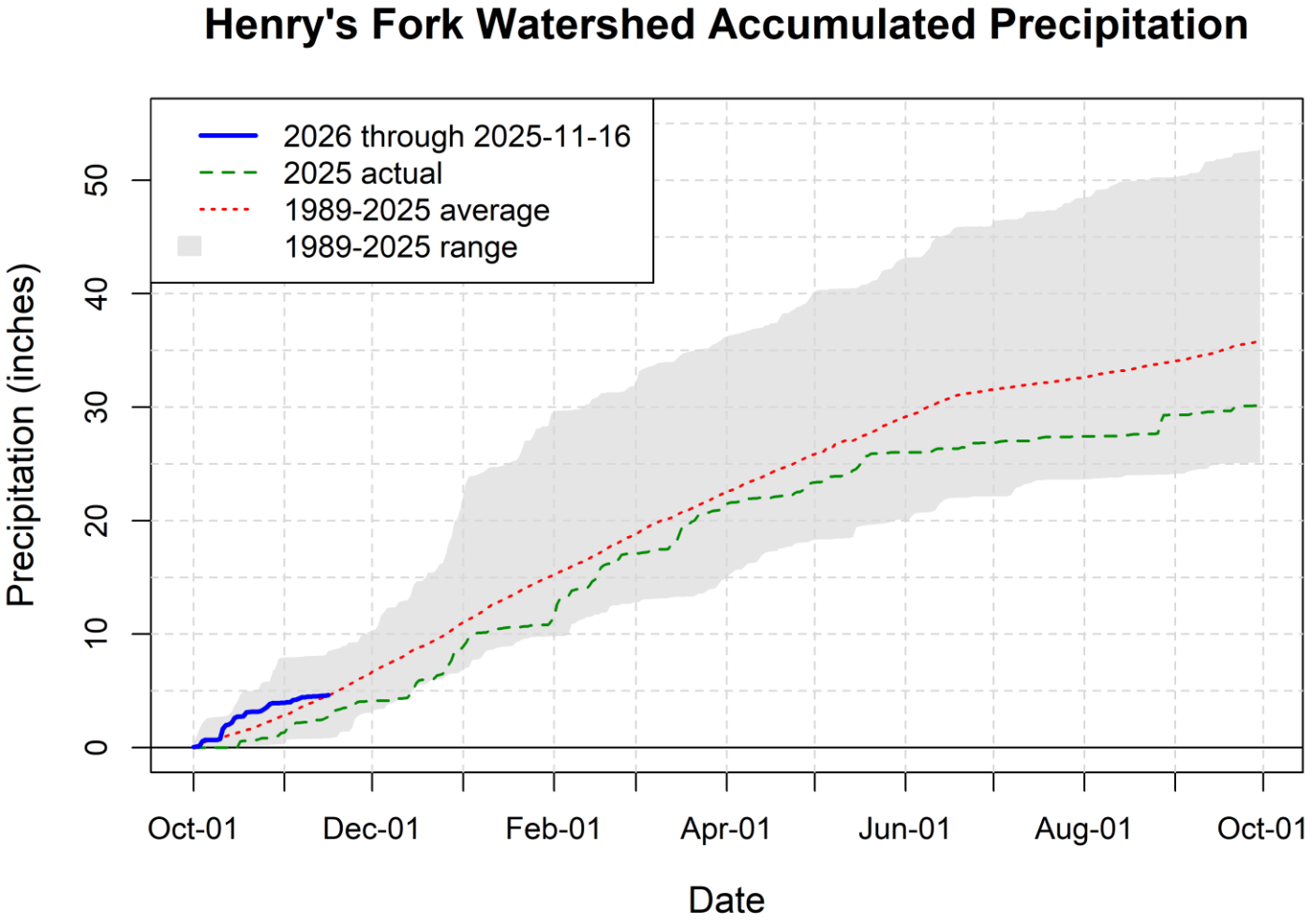


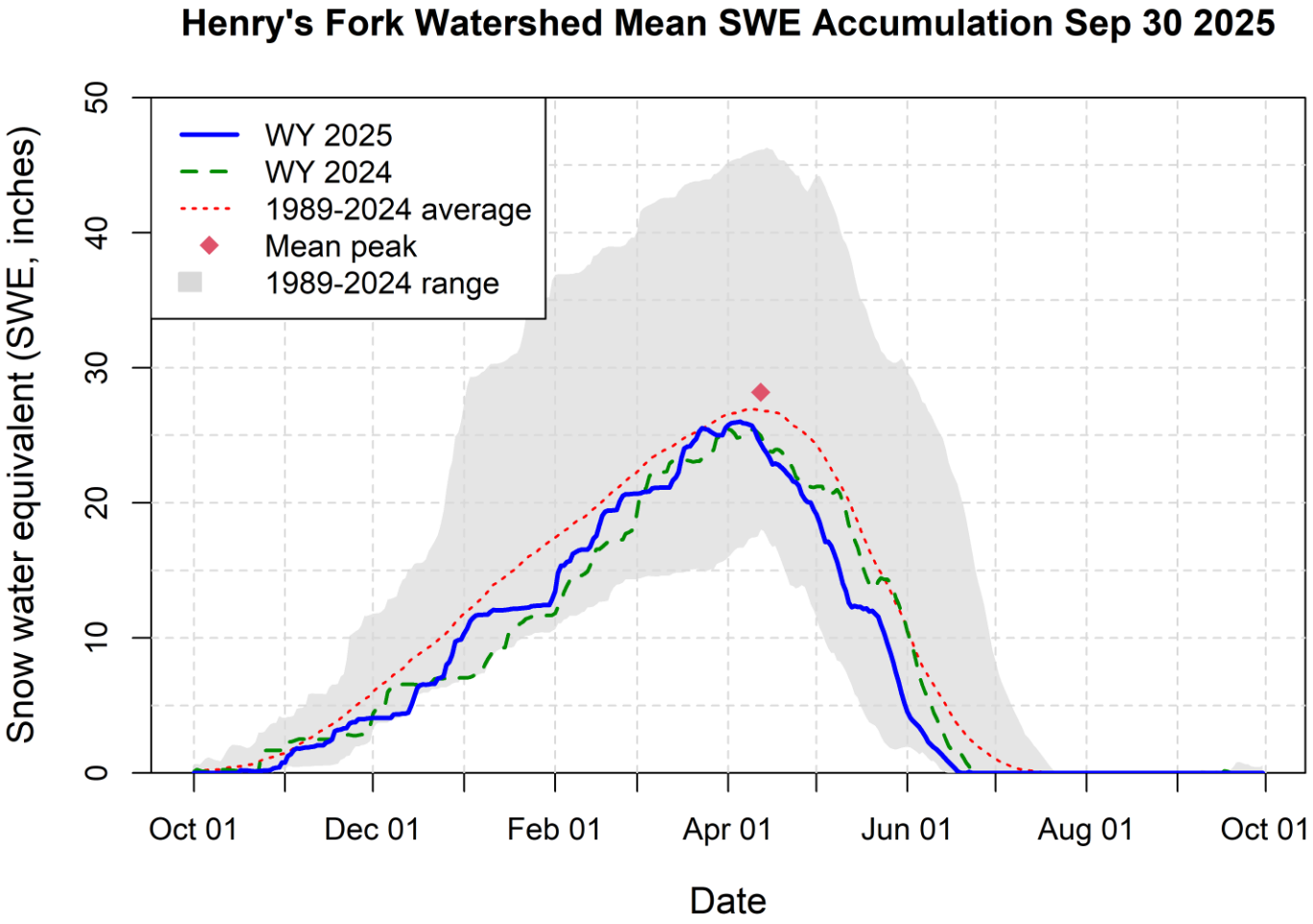
Priority dates of largest storage rights



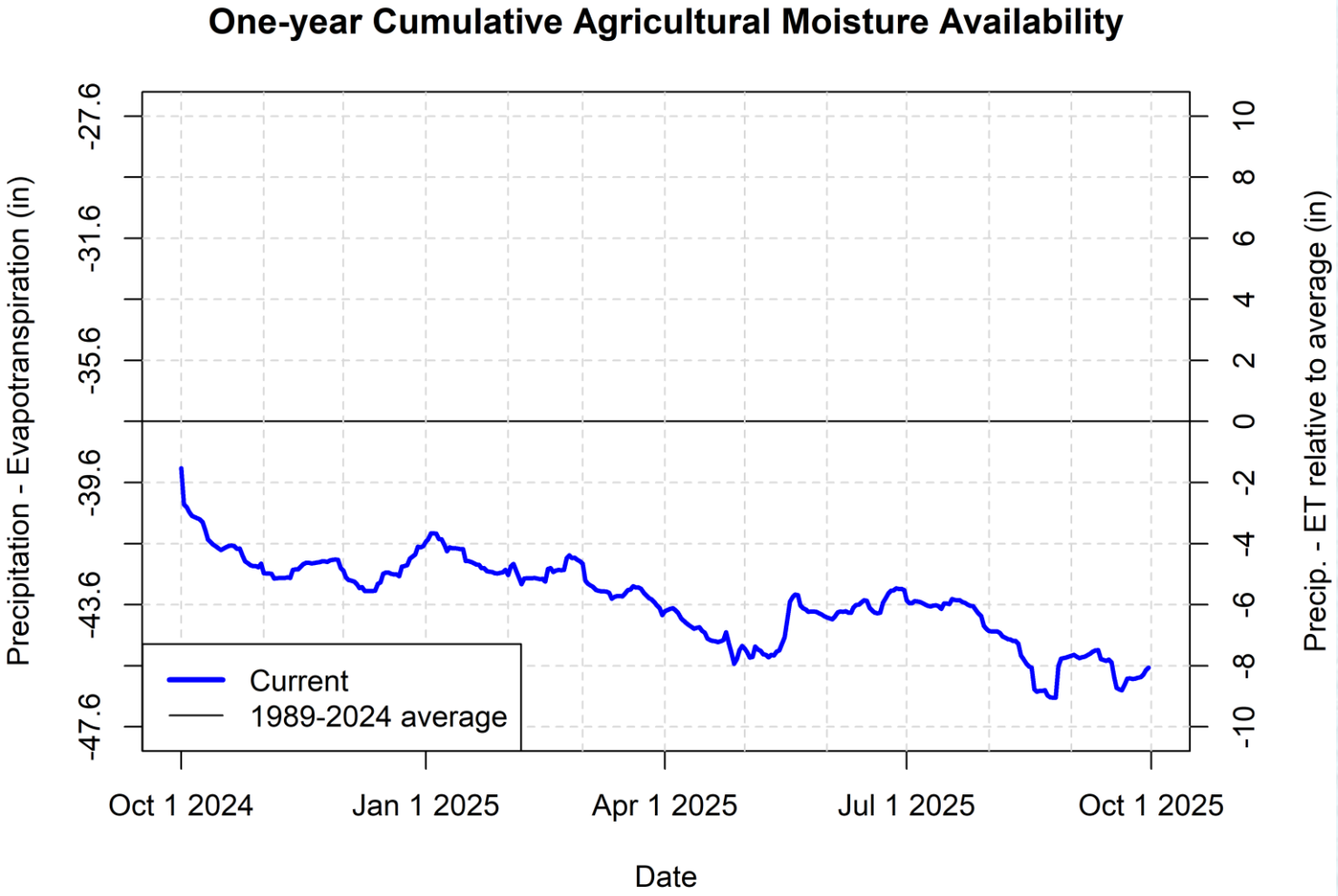
- 1.8 degrees above average
- 3rd warmest/37 yrs



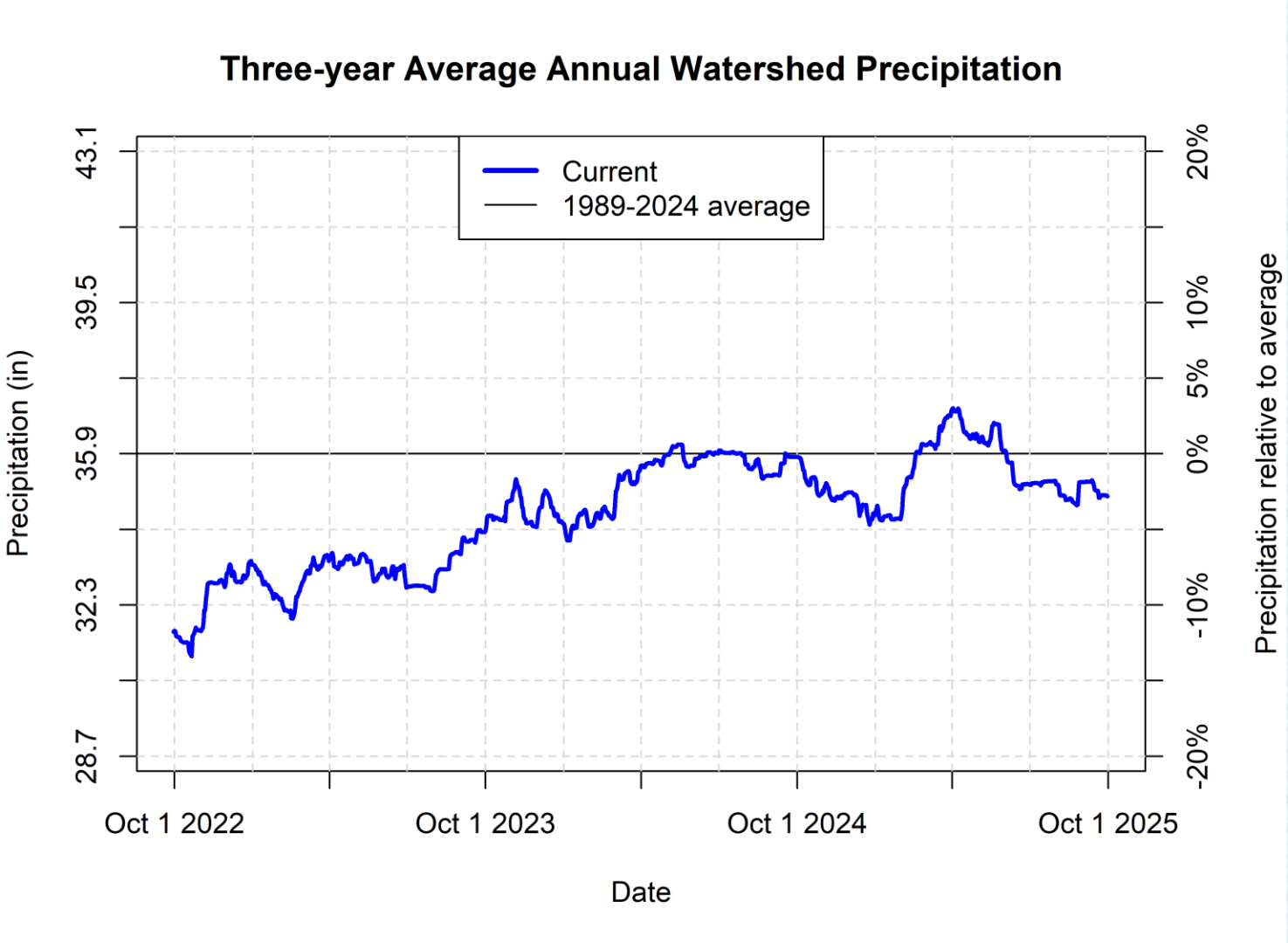
- 84% of average
- 8th lowest/37 years



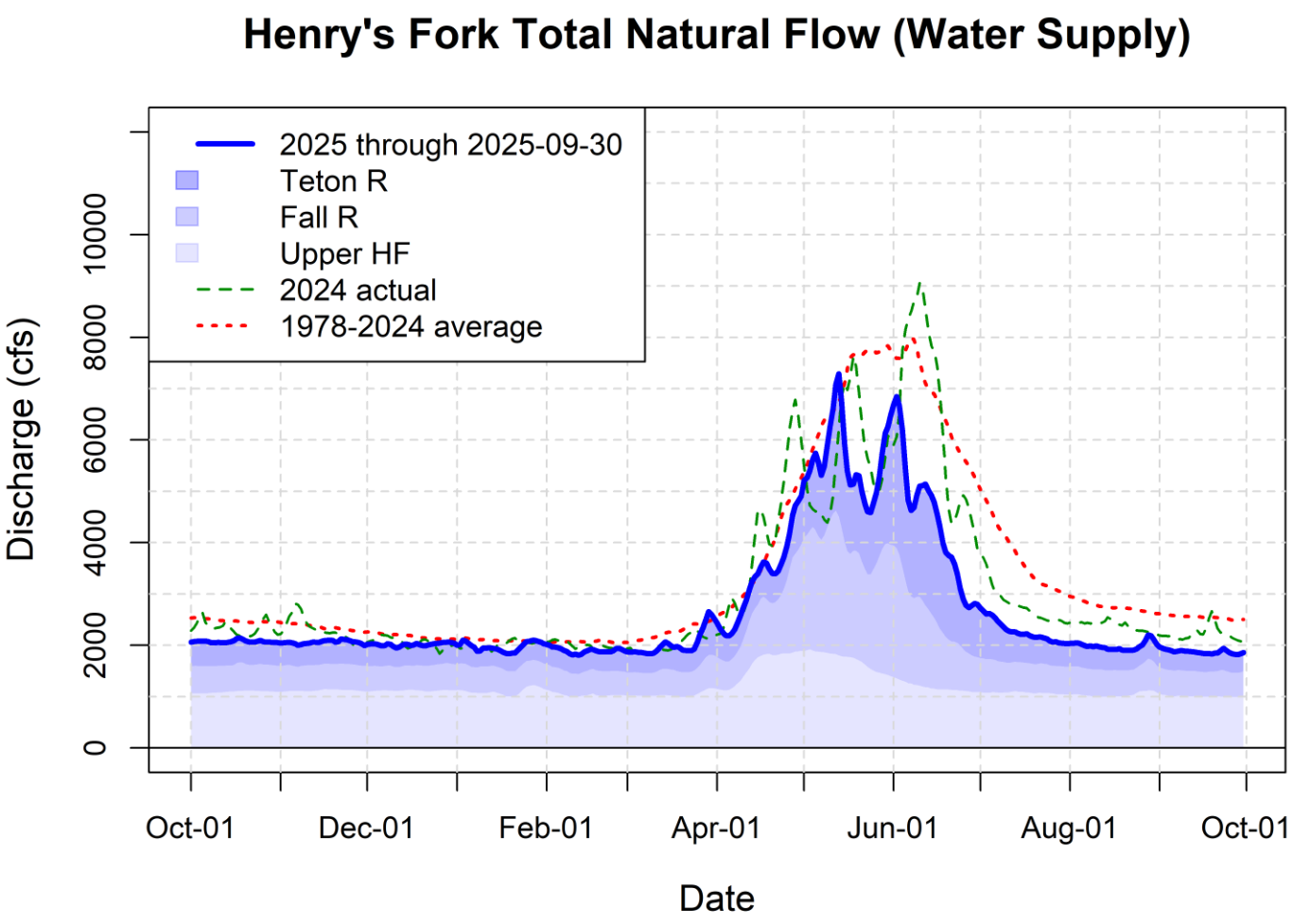
- 92% of average
- Peaked 7 days earlier than average



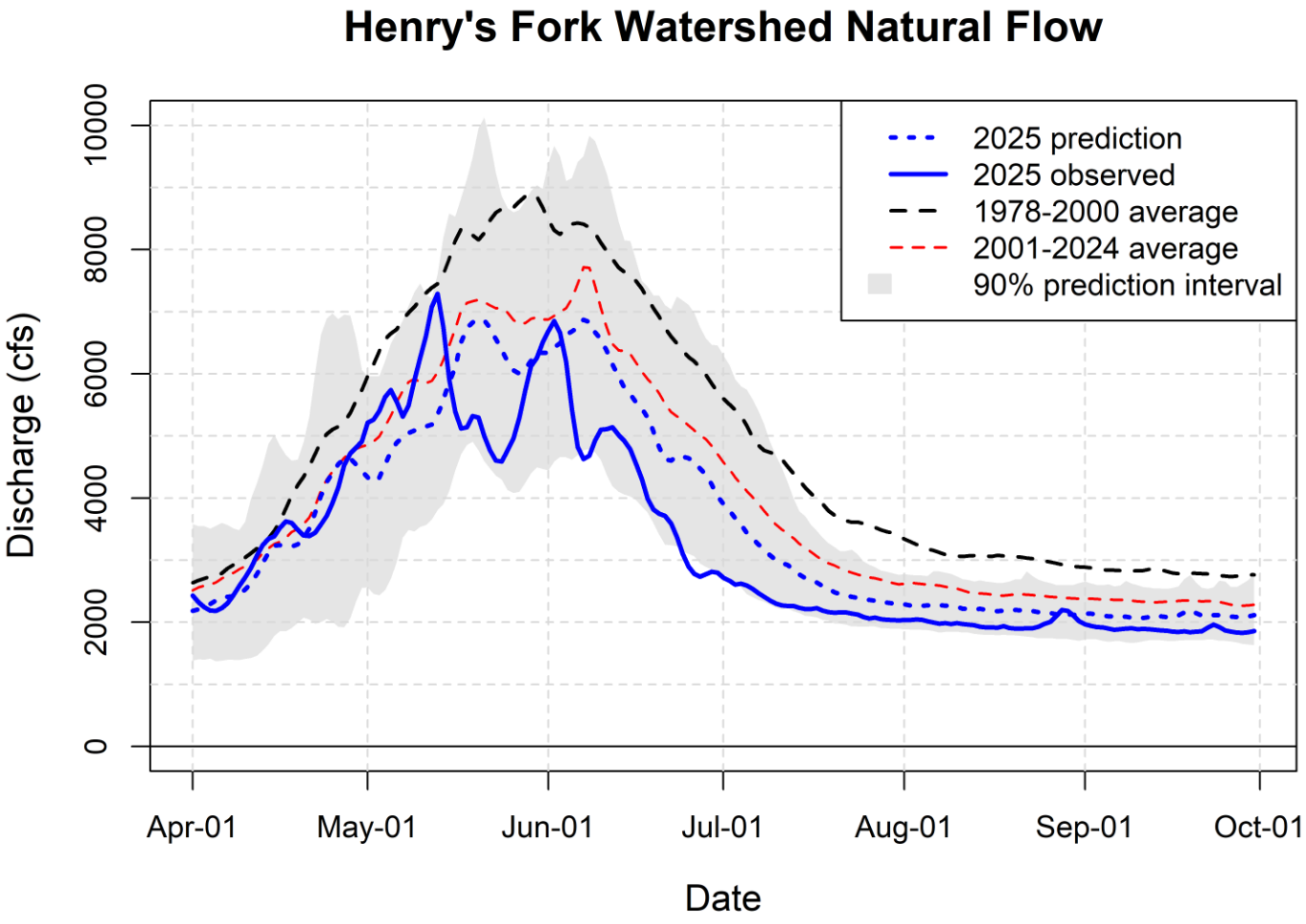
- Short-term drought worsened



- Medium-term drought persisted



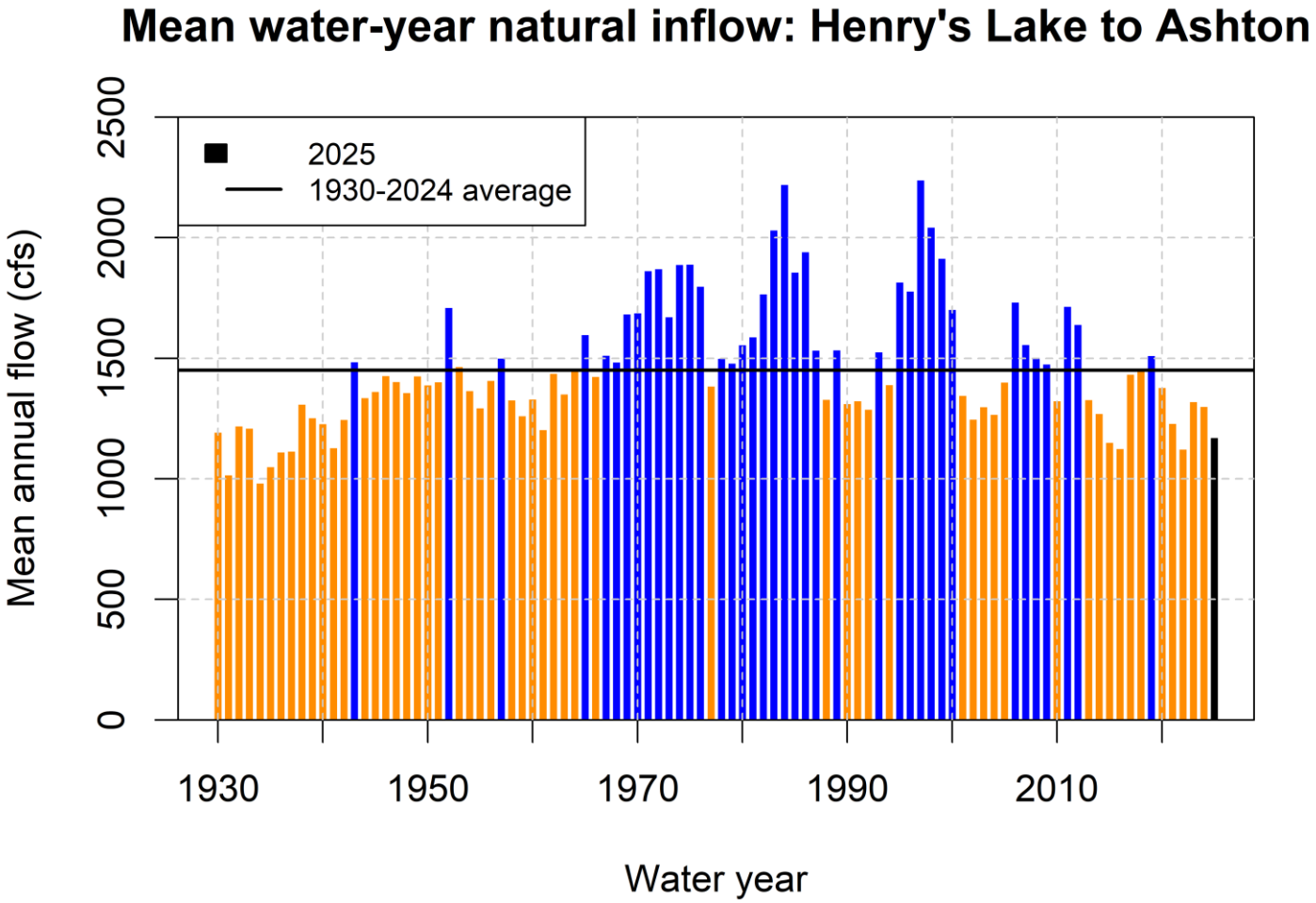
- 81% of average
- 7th lowest/37 yrs
- Early peak
- Very low summer flows



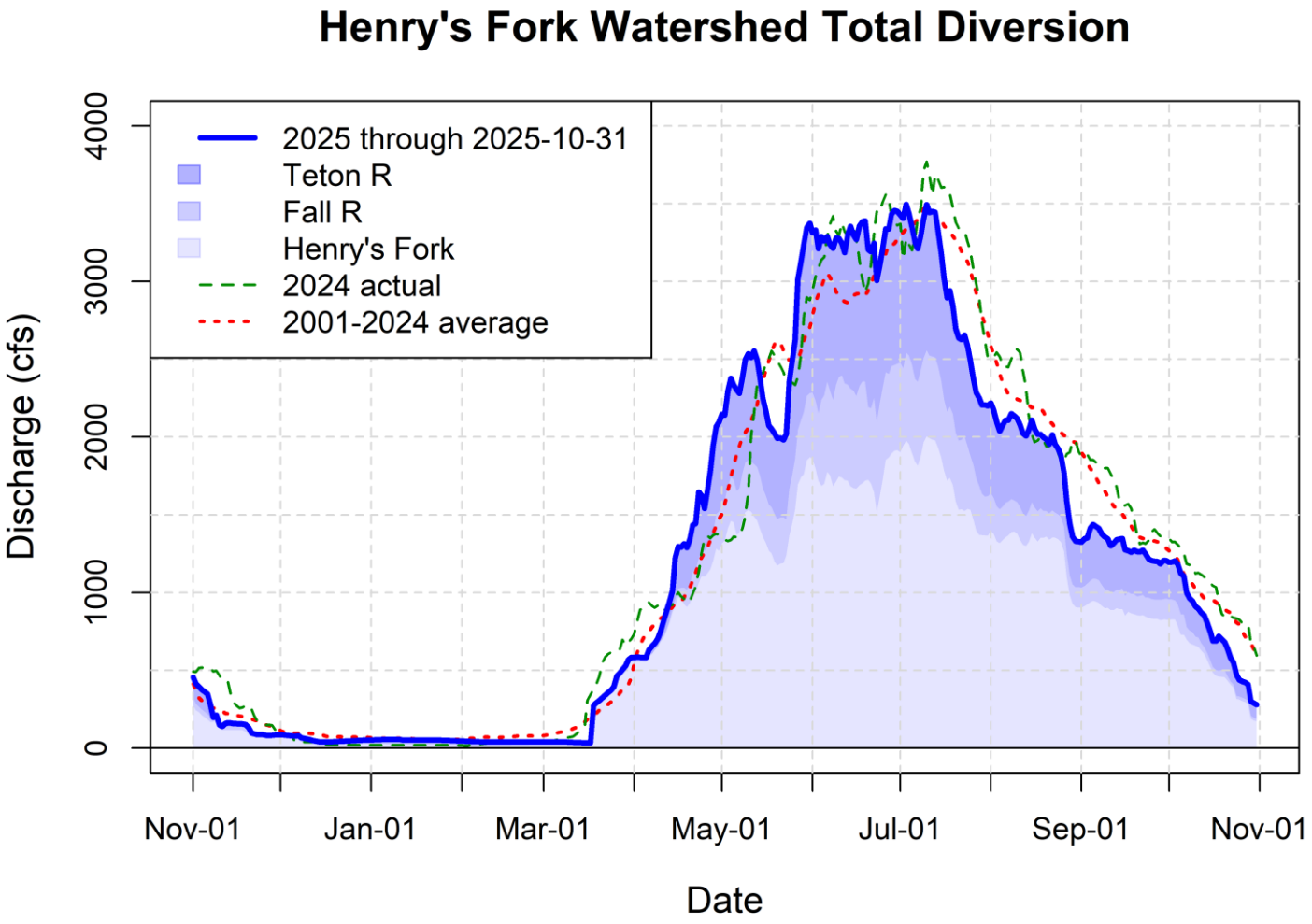
April-1 model over-predicted nat. flow.

- Upper HF: 6.6%
- Fall R: 12.7%
- Teton R: 15.3%

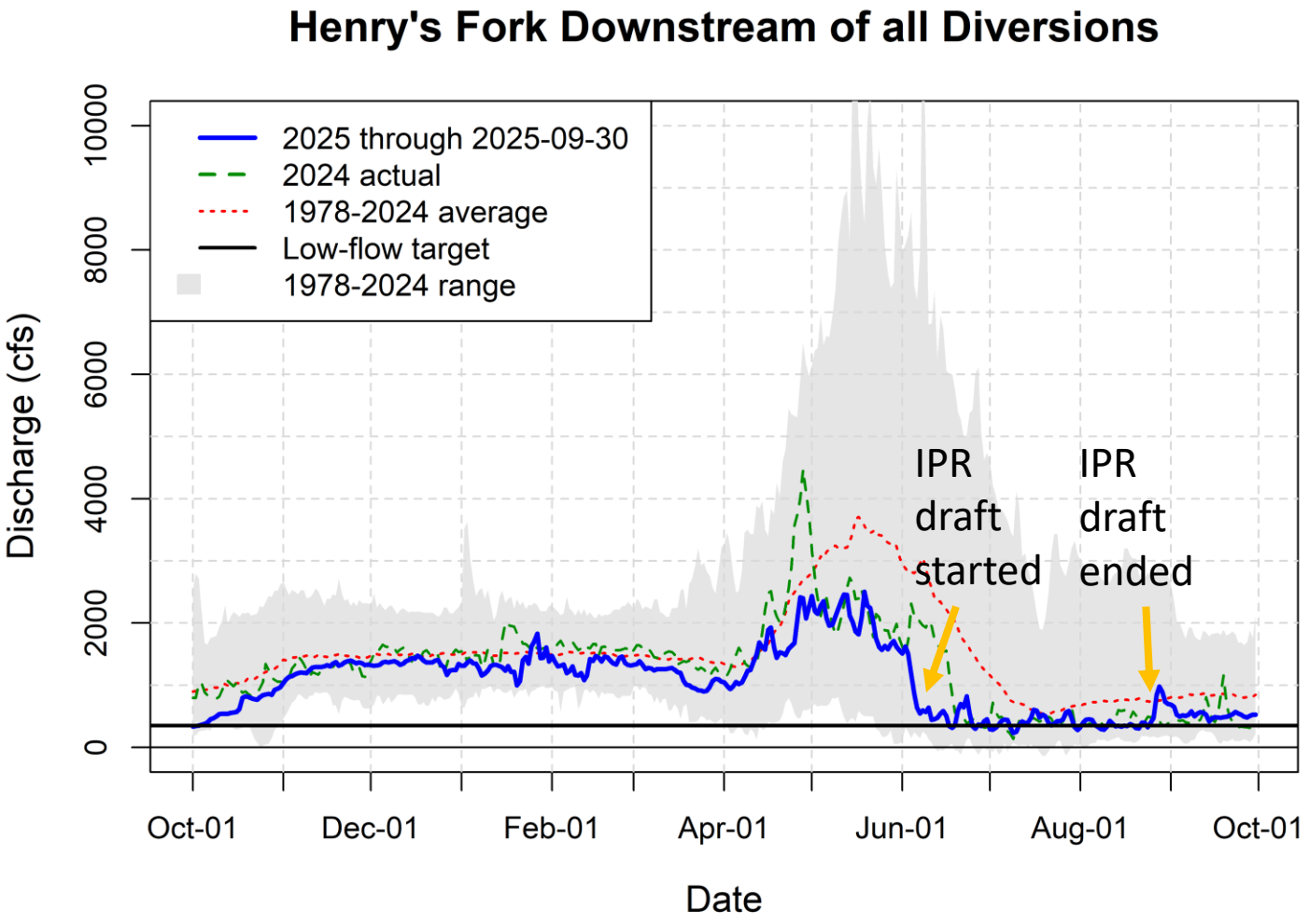
- Total: 13.0%



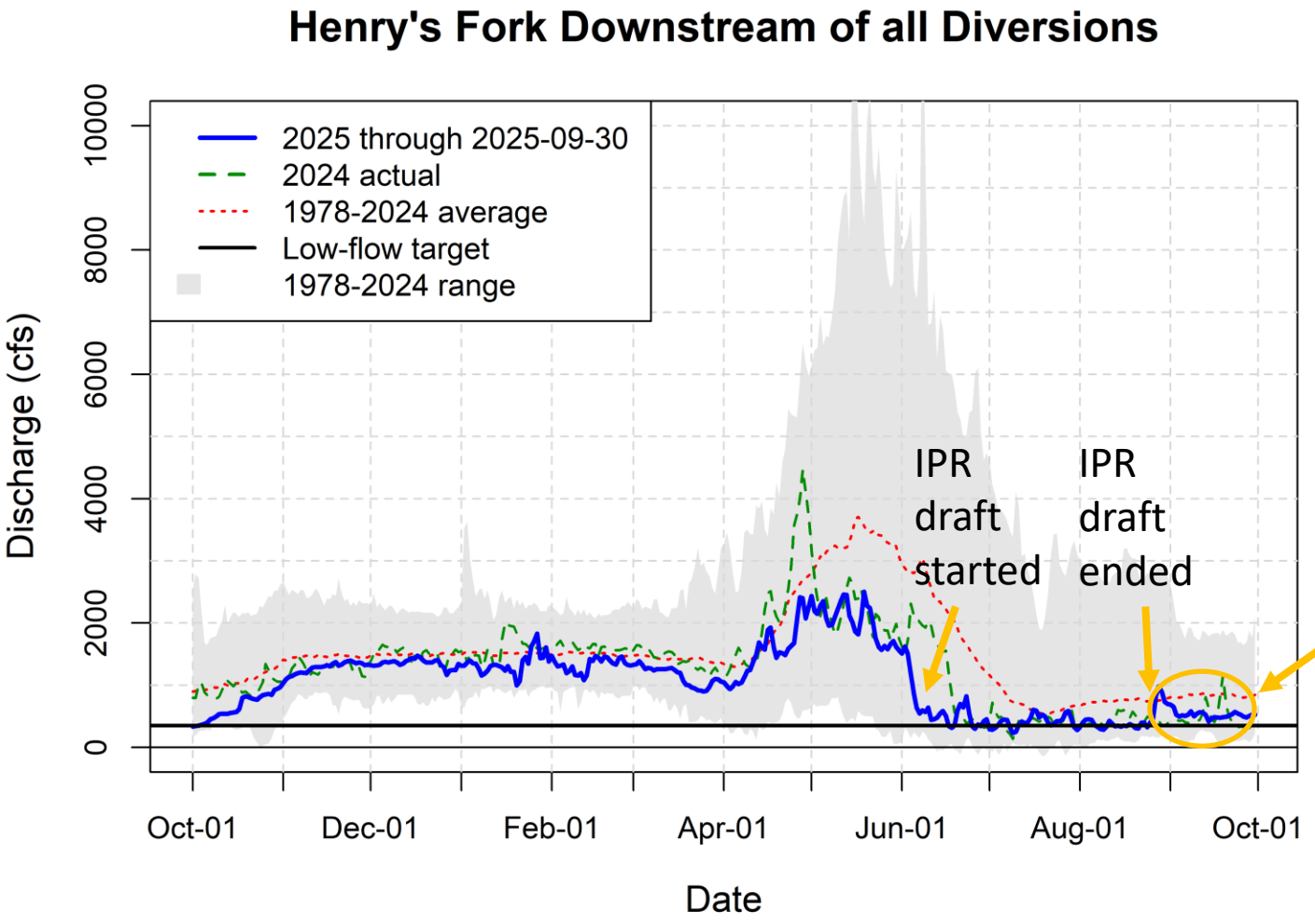
- 25-year trend of lower water supply continued
- Longer record: Was 1967-2000 the anomaly?



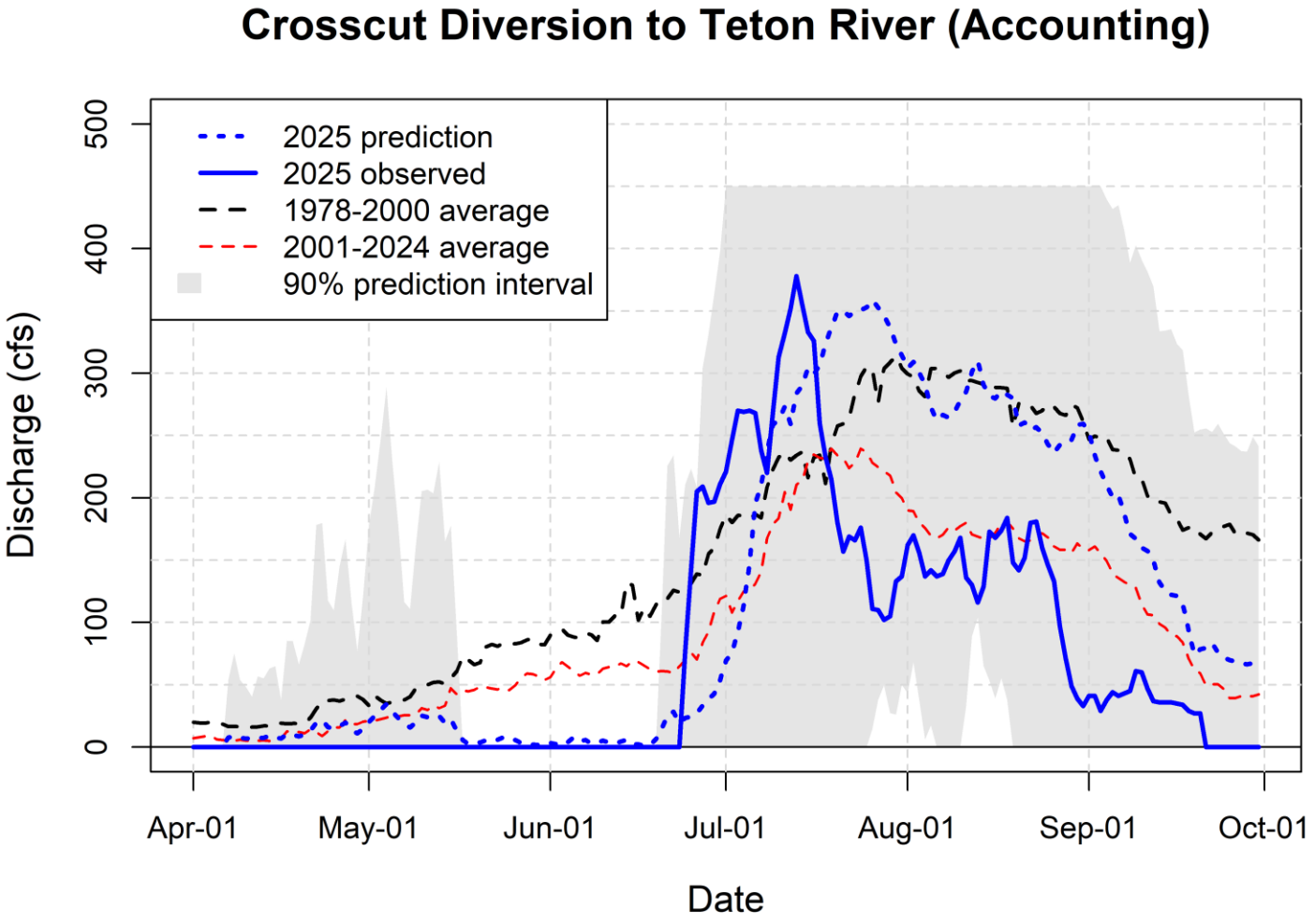
- Above average in early season because of weather
- Below average in late season due to poor water rights
- Total: 97% of 2001-2024 ave.



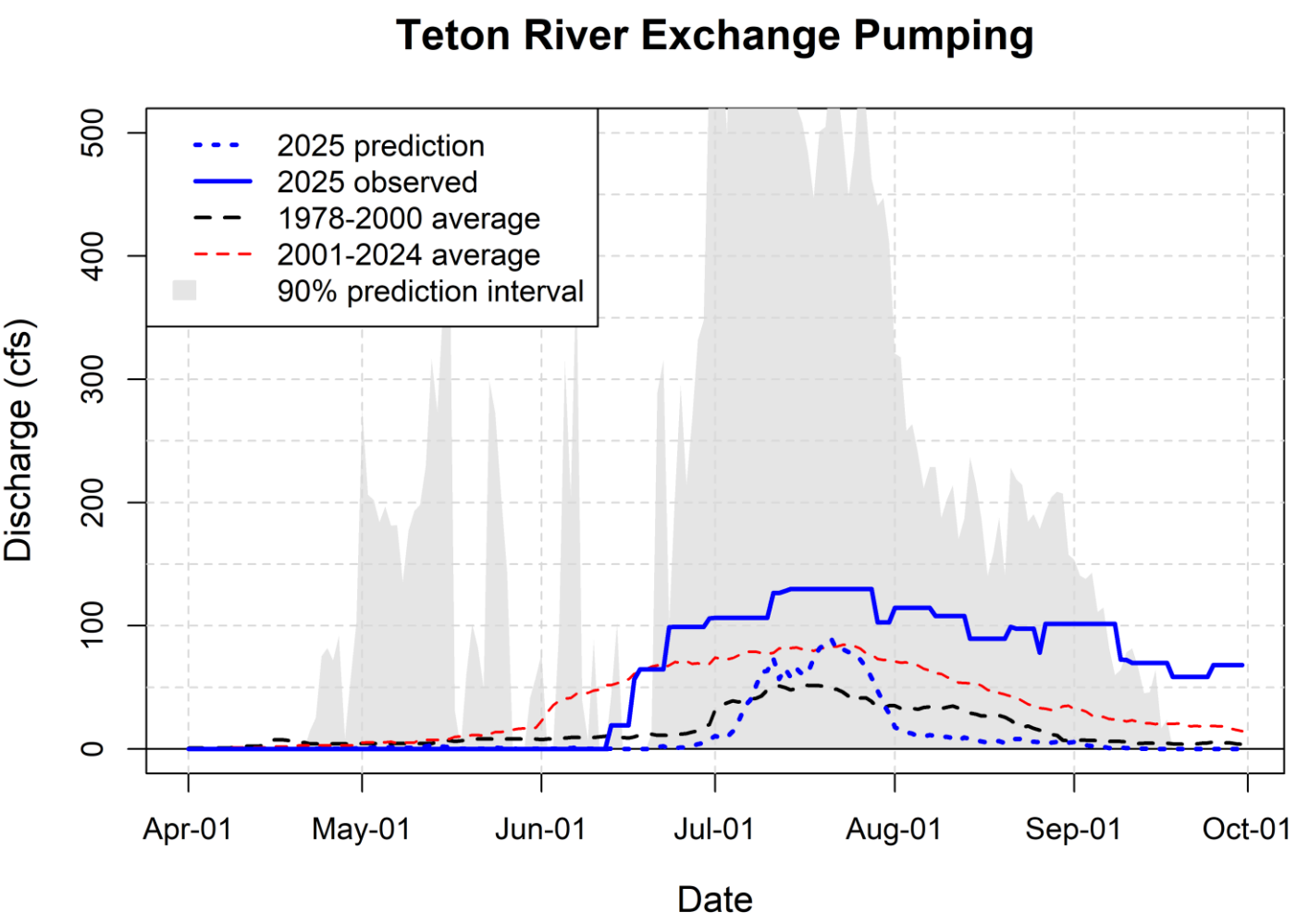
- Highly precise management in lower watershed during period of reservoir draft



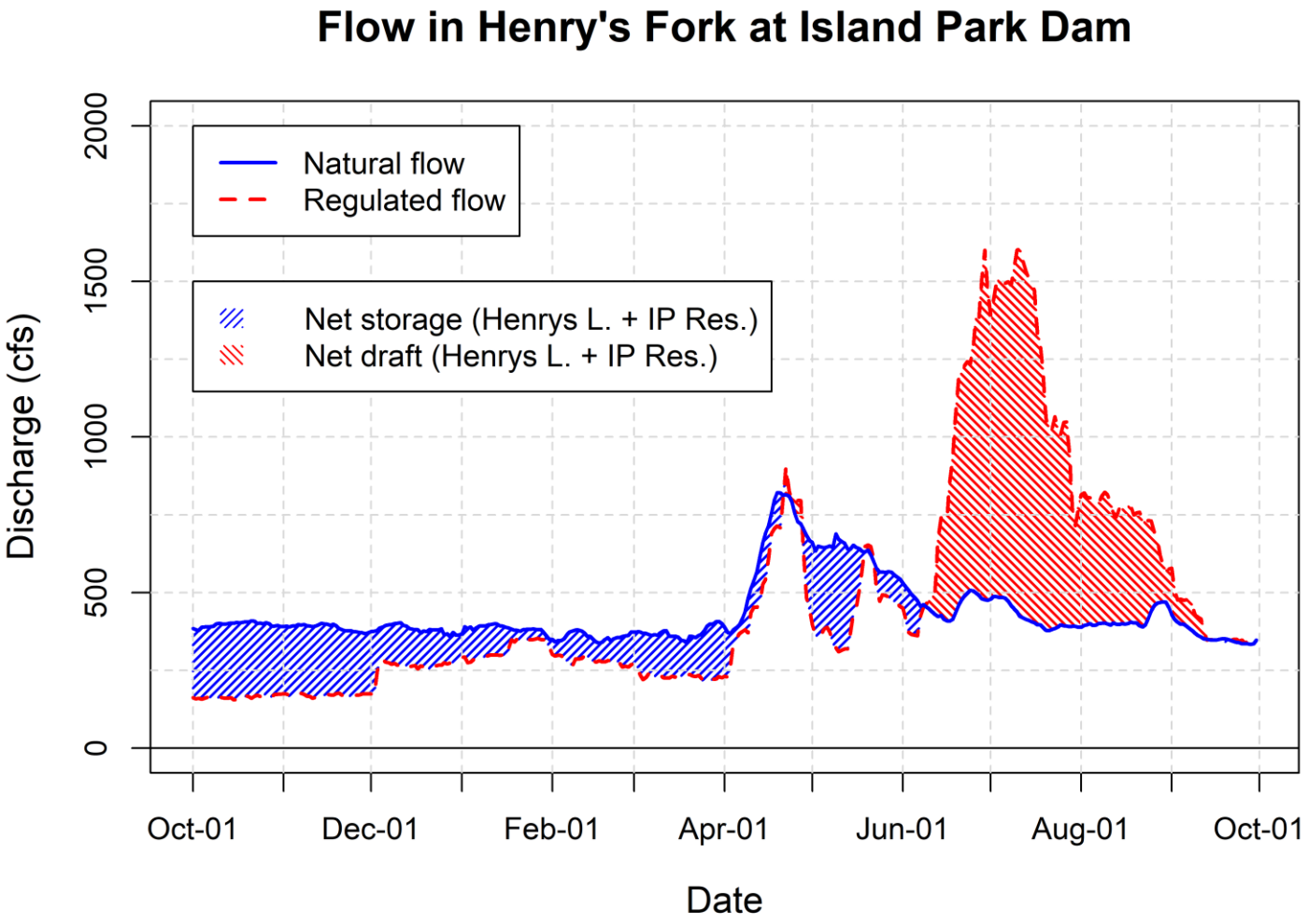
- Highly precise management in lower watershed during period of reservoir draft
- 10,610 ac-ft sent to American Falls Aug. 28 – Oct. 4



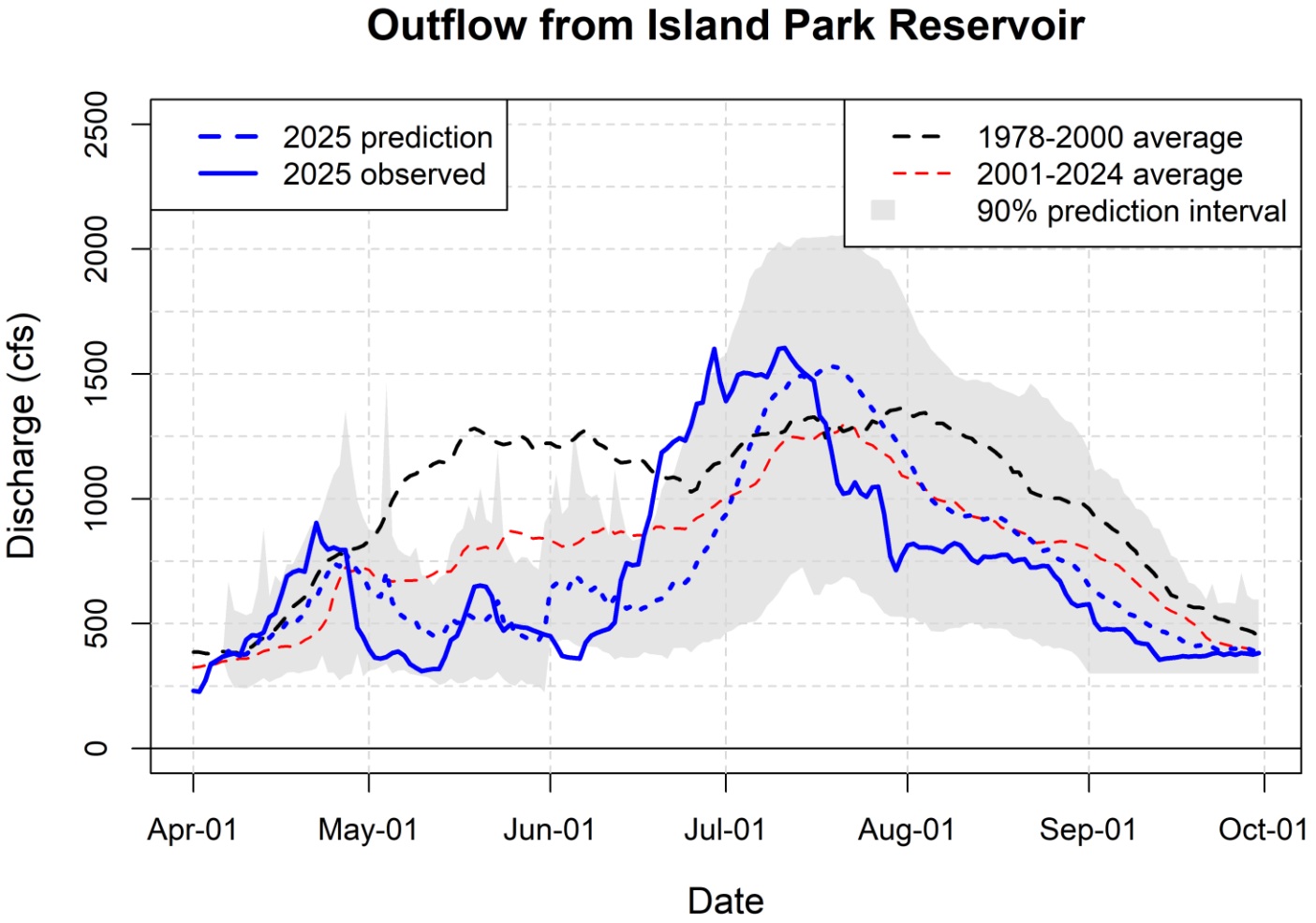
- 70% of average
- 62% of Apr-1 prediction



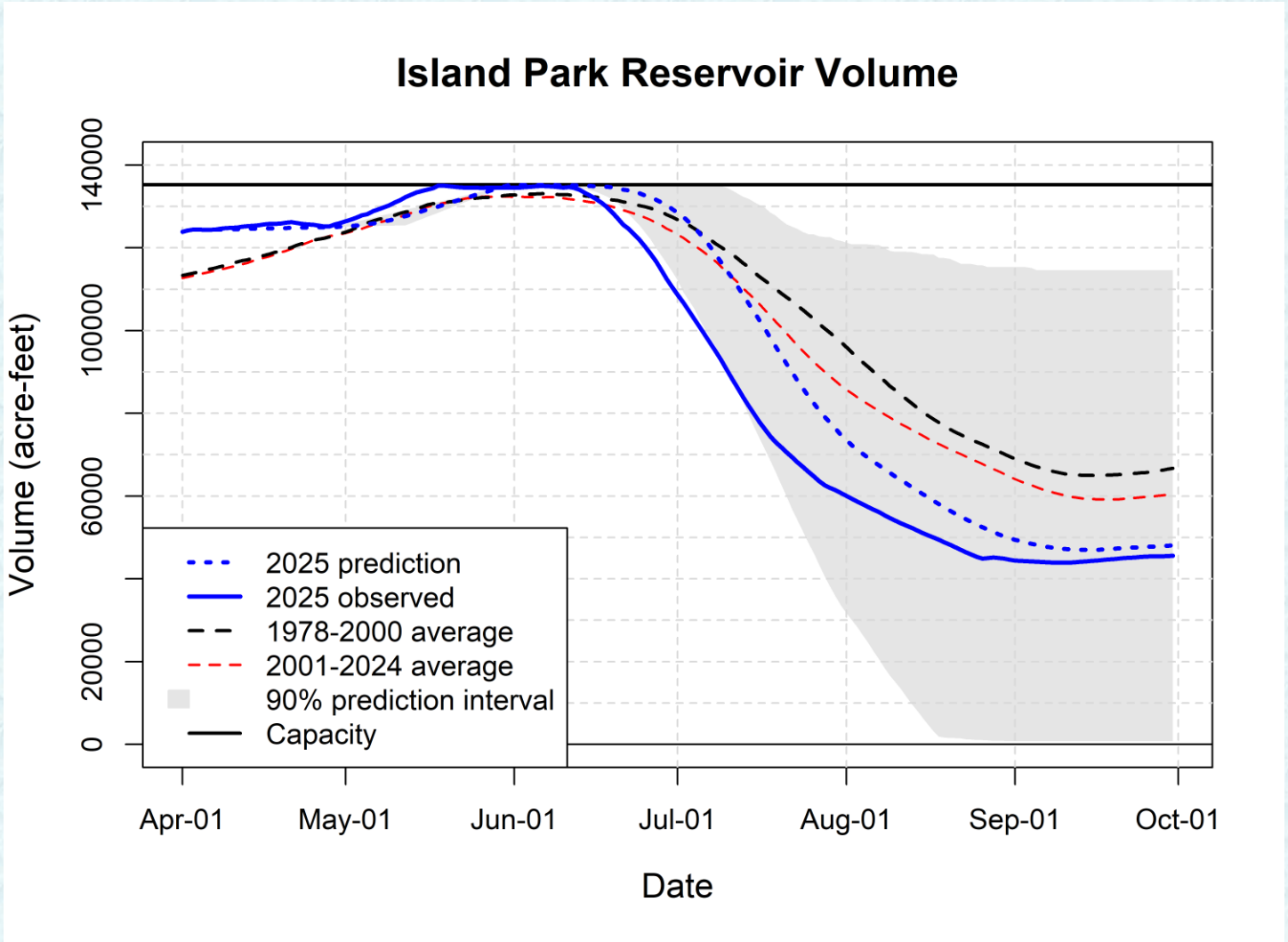
- 150% of average
- ~5 times predicted

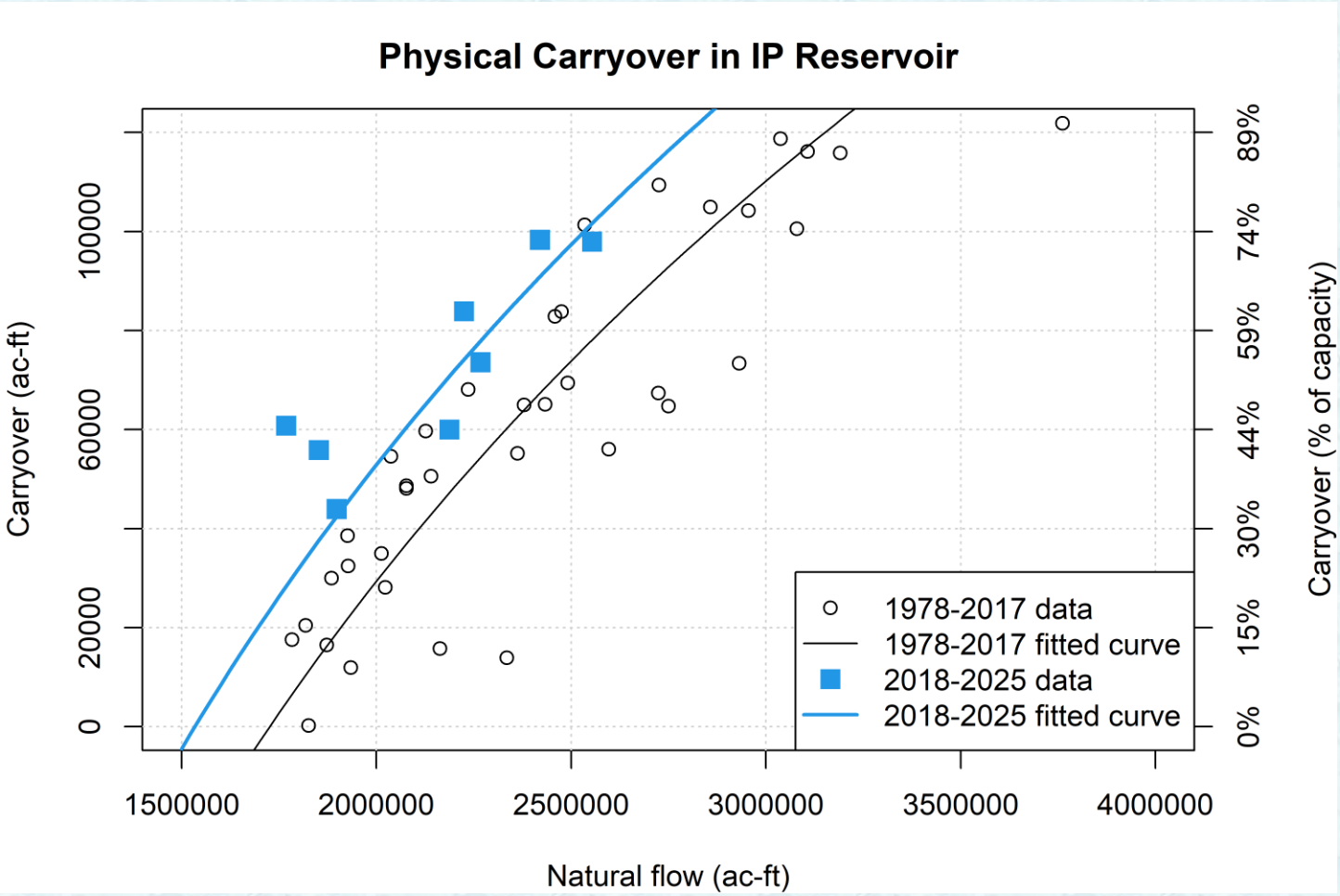


- IP Reservoir drafted Jun 13 – Aug 27
- Henry's Lake drafted until Oct. 1

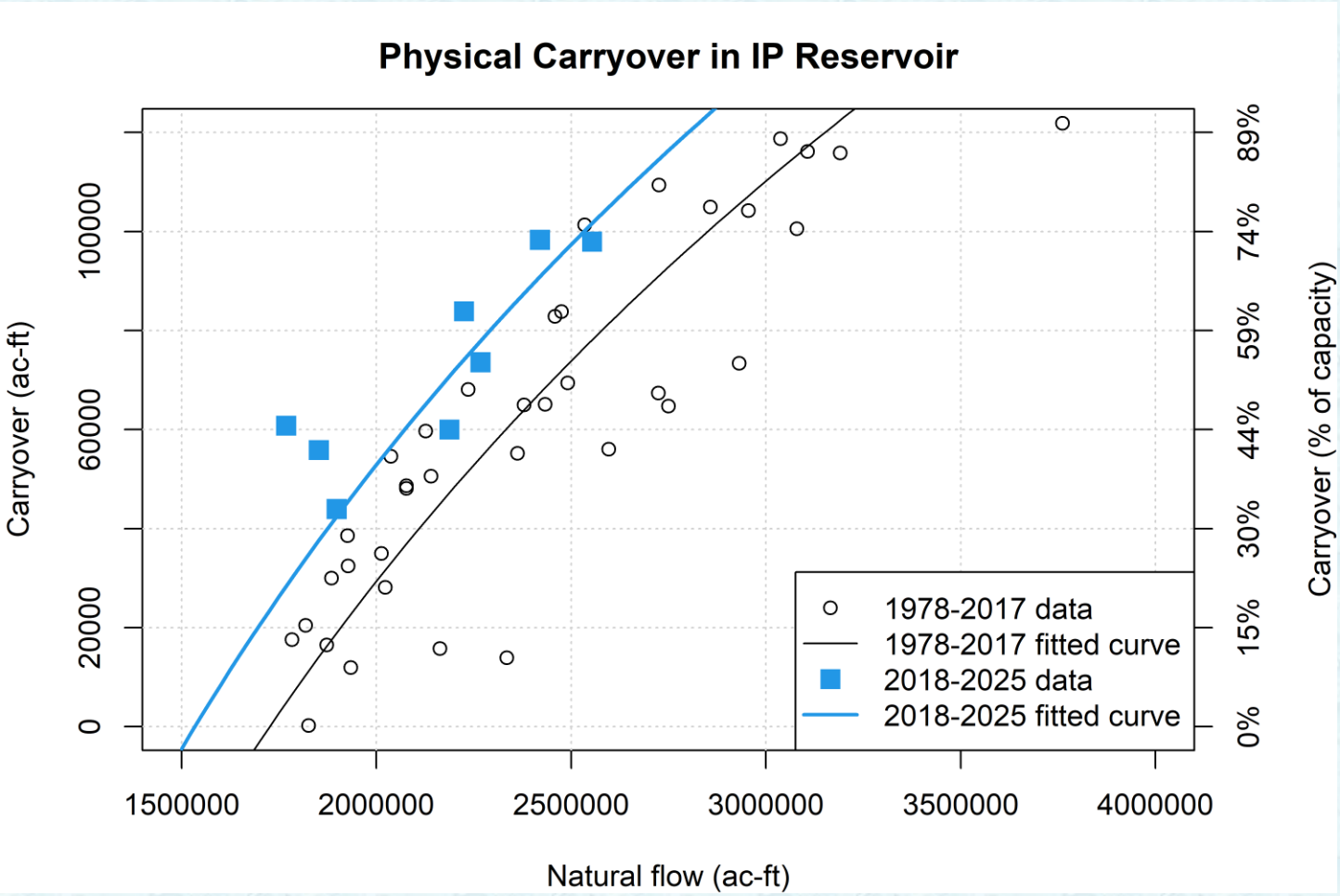


- April-1 prediction missed in timing but not magnitude


Island Park Reservoir Volume
Volume (acre-feet)
0
20000
60000
100000
140000
Apr-01
May-01
Jun-01
Jul-01
Aug-01
Sep-01
Oct-01
Date
2025 prediction
2025 observed
1978-2000 average
2001-2024 average
90% prediction interval
Capacity



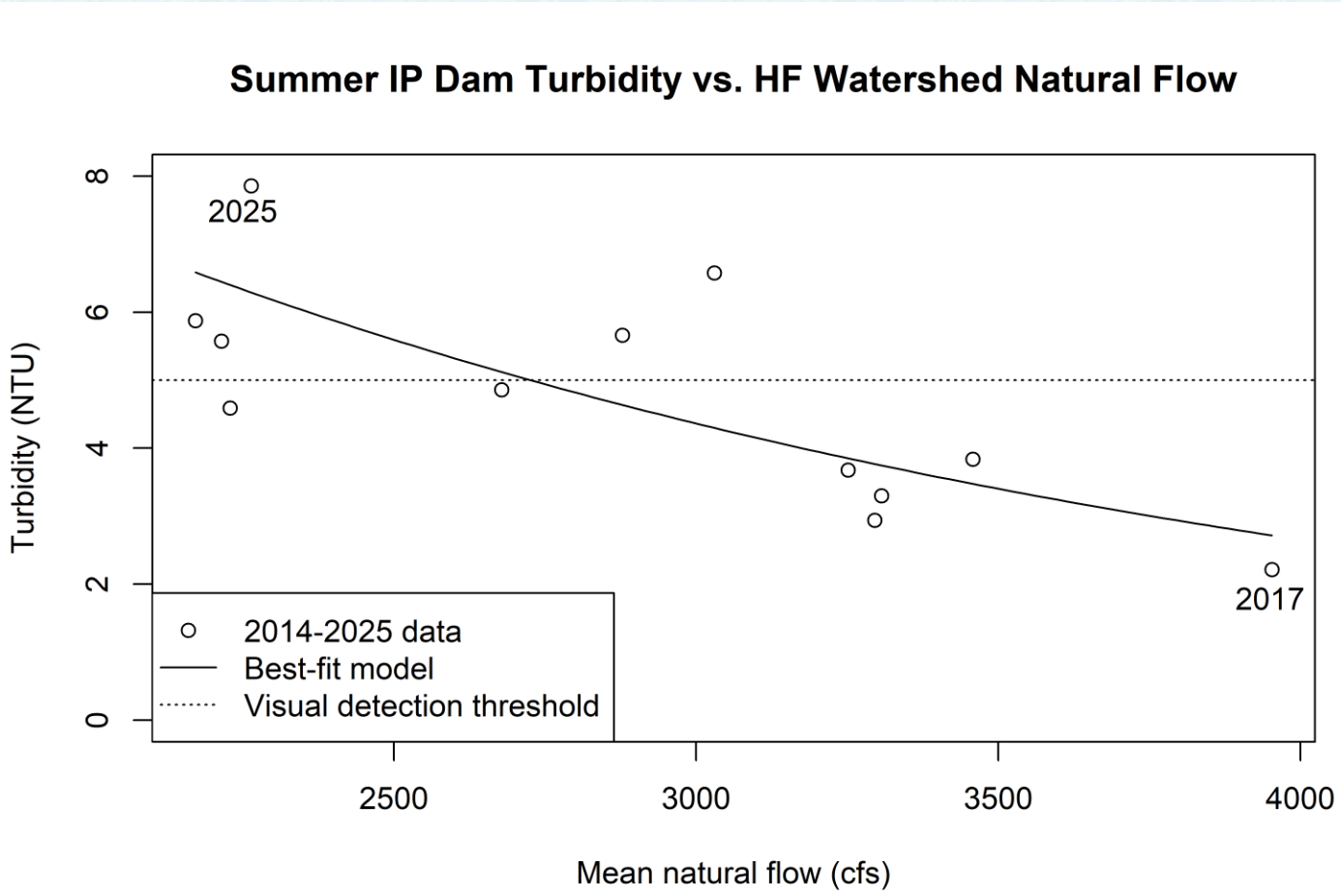
- 8-year average improvement: 23,530 ac-ft



- 8-year average improvement: 23,530 ac-ft

=

- 100 cfs higher winter flow
- 0.5°F cooler water temperature
- 17% less sediment delivery

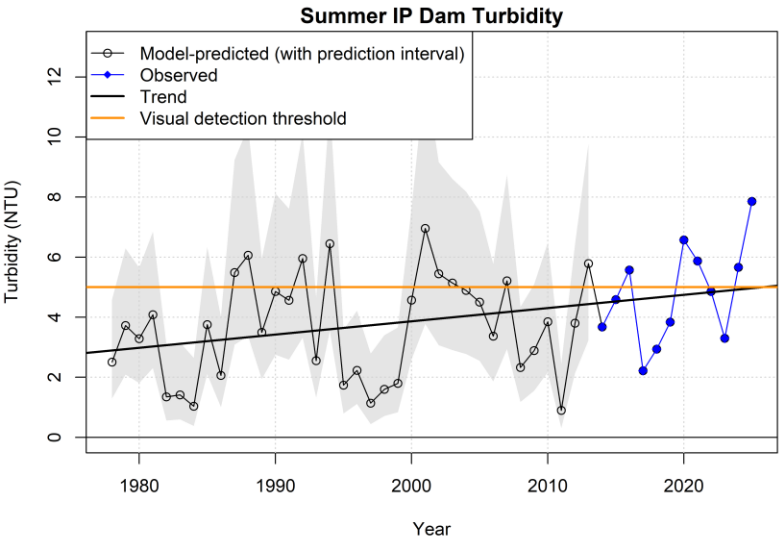


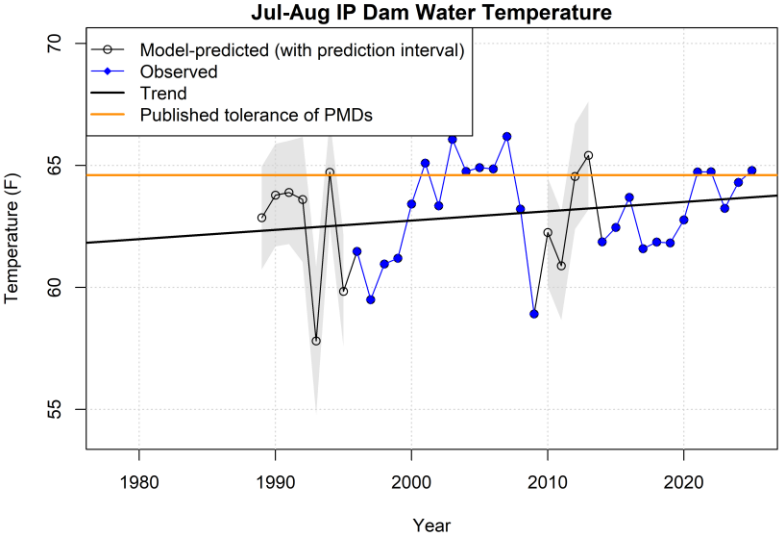
- Highest in 12 years of monitoring

Predictors of Water Quality at IP Dam

	Watershed nat. flow	Reservoir carryover	Reservoir outflow	Air temp.	Reservoir inflow	Peak SWE
Summer turbidity	**–**	–	+			
Summer sediment load	–	–	**+**			
Jul-Aug water temperature	–	**–**	+	**+**	–	–

Large red symbols indicate strongest statistical predictors.

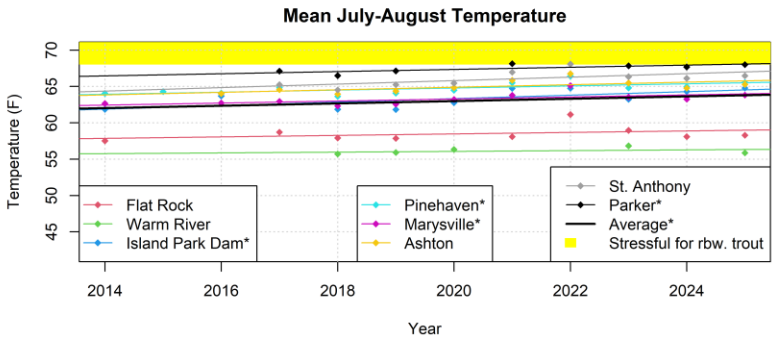


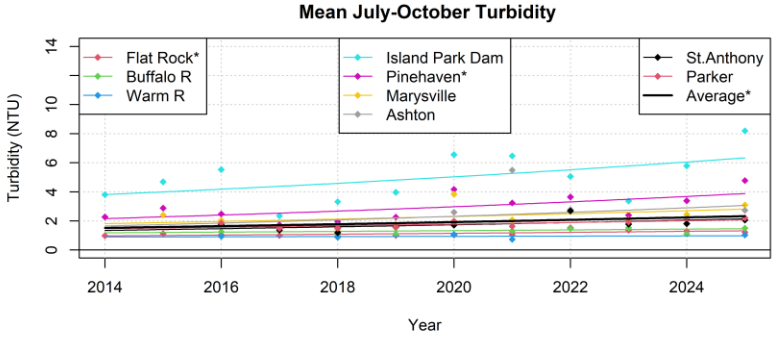


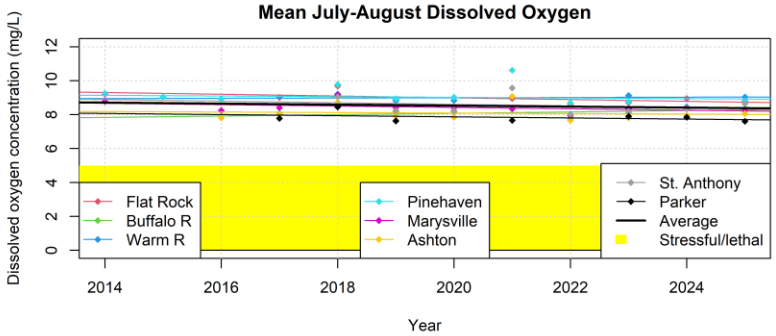
Based on statistical models:

- Turbidity increasing 0.44 NTU/decade

- Temperature increasing 0.4°F/decade







Based on 12 years of measurement across watershed:

- Water temp. increasing at 1.6°F/decade
- Turbidity increasing at 4% per *year*
- No trend in dissolved oxygen

Summary

40-year trends:

- Warmer spring and summer temperatures
- Earlier snowmelt
- Less streamflow per unit of precipitation
- Lower water supply
- Lower irrigation diversion
- Worse water quality at IP Dam (related to lower water supply)

12-year trends:

- Higher turbidity *watershed-wide*
- Higher summer water temperatures *watershed-wide*

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Prompt for other speakers: *Can we do anything about the water quality issues?*

Questions?

Contact: rob@henrysfork.org

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HENRY'S FORK
FOUNDATION