Predicted 2026 Water Supply and Water Quality

Osborne Bridge, March 15 2019

Osborne Bridge, March 17 2026

Rob Van Kirk, Henry's Fork Foundation

Henry's Fork Watershed Council, April 14, 2026

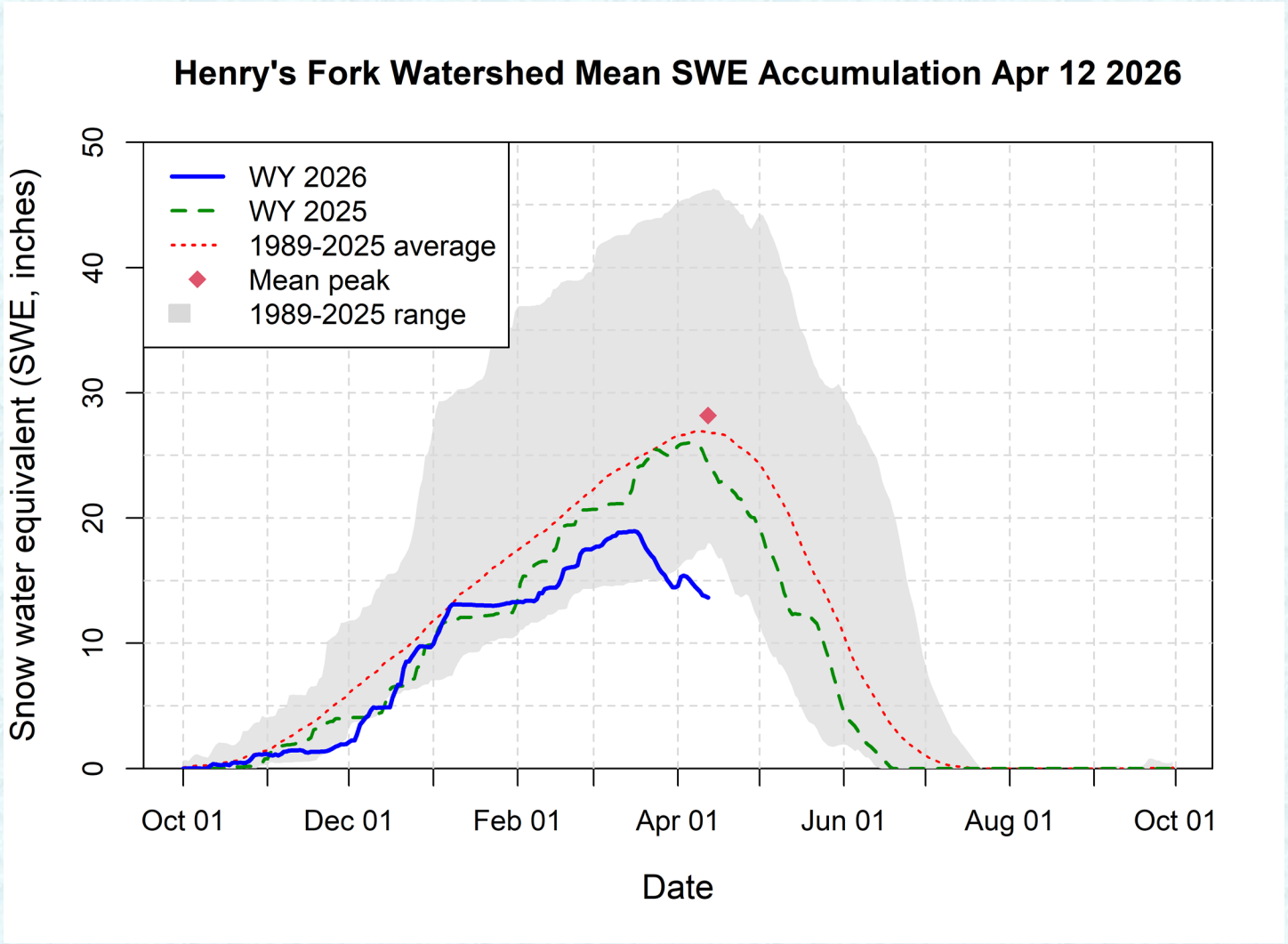
THE VOICE OF THE RIVER
SINCE 1984
HENRY'S FORK
FOUNDATION

Outline

- April-1 Conditions
- Natural flow predictions
- Irrigation-season model predictions
- So what?

April 1 Conditions

- Warmest October-March in 132-year record
- Water-year precipitation: 93% of average
- SWE: Peaked March 17 (27 days before average)
- Peak SWE: 67% of average
- Ice melted from IP Reservoir March 31
- IPR ice-covered for 117 days (vs. 150 average)
- Soil moisture highly variable


Henry's Fork Watershed Mean SWE Accumulation Apr 12 2026
Snow water equivalent (SWE, inches)
0
10
20
30
40
50
WY 2026
WY 2025
1989-2025 average
Mean peak
1989-2025 range
Oct 01
Dec 01
Feb 01
Apr 01
Jun 01
Aug 01
Oct 01
Date

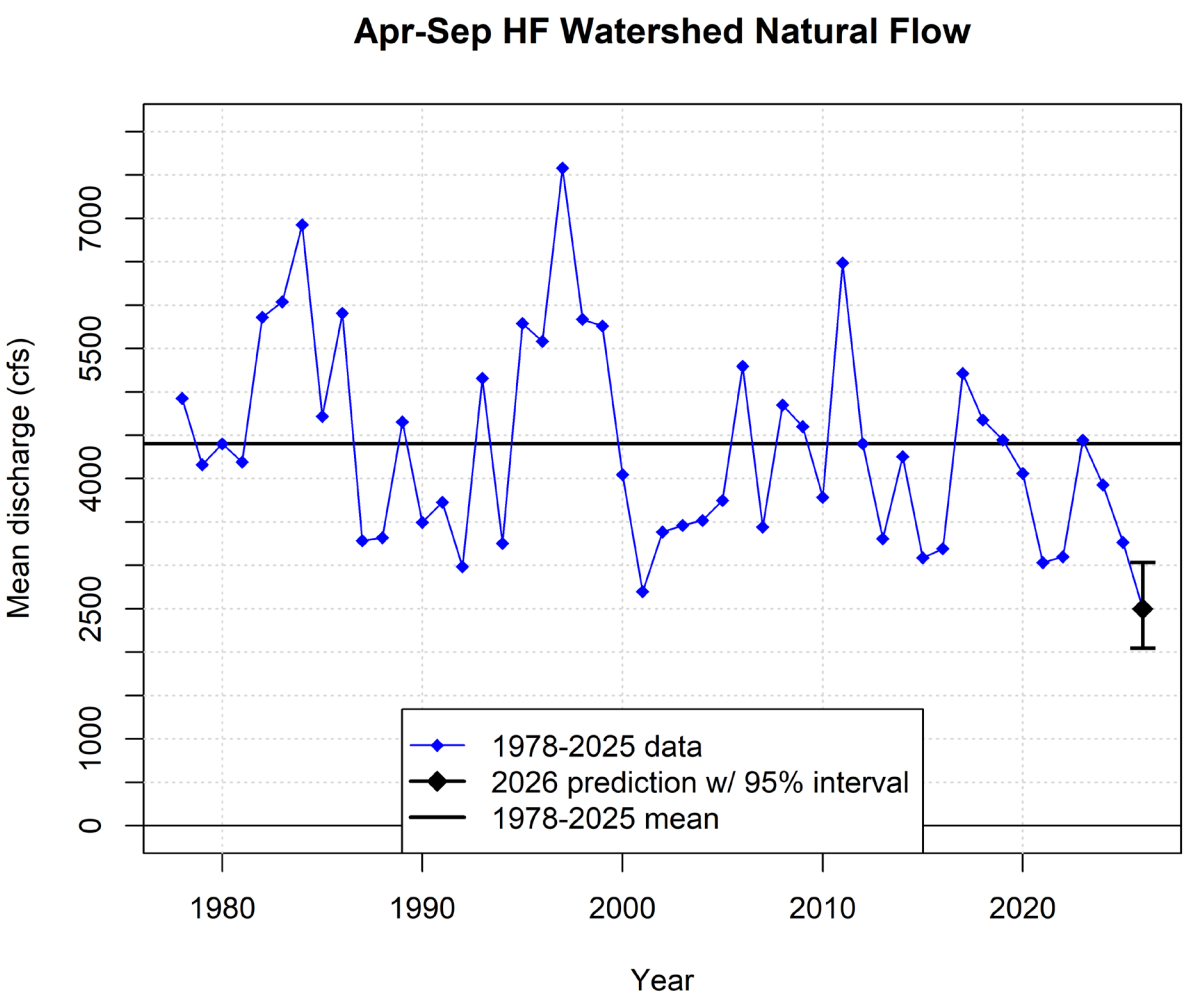
HFF predictive models

- First developed in 2017; average error in predicting natural flow: 10.5%
- Inputs
  - April-1 snow water equivalent (SWE)
  - October – March base flow
  - Moisture
  - Projected summer evapotranspiration
- Outputs
  - April – Sept streamflow volume
  - Streamflow timing
  - April – Sept diversion volume
- Water operations model
  - Reservoir draft (Henrys, Grassy, Island Park)
  - Lower-watershed streamflow targets
  - Crosscut Canal delivery
  - Send water to American Falls?

Apr – Sept Natural streamflow

Subwatershed	Prediction (mean cfs)	% 1978-2000 average	% 2001-2025 average	90% exceedance (mean cfs)	2025 observed (mean cfs)
Upper HF (Ashton)	1094	52%	67%	1000	1270
Fall River	815	55%	65%	720	1071
Teton River	664	52%	60%	541	925
HF Watershed*	2492	51%	62%	2197	3266

*Watershed total is modeled separately from subwatersheds for better precision.

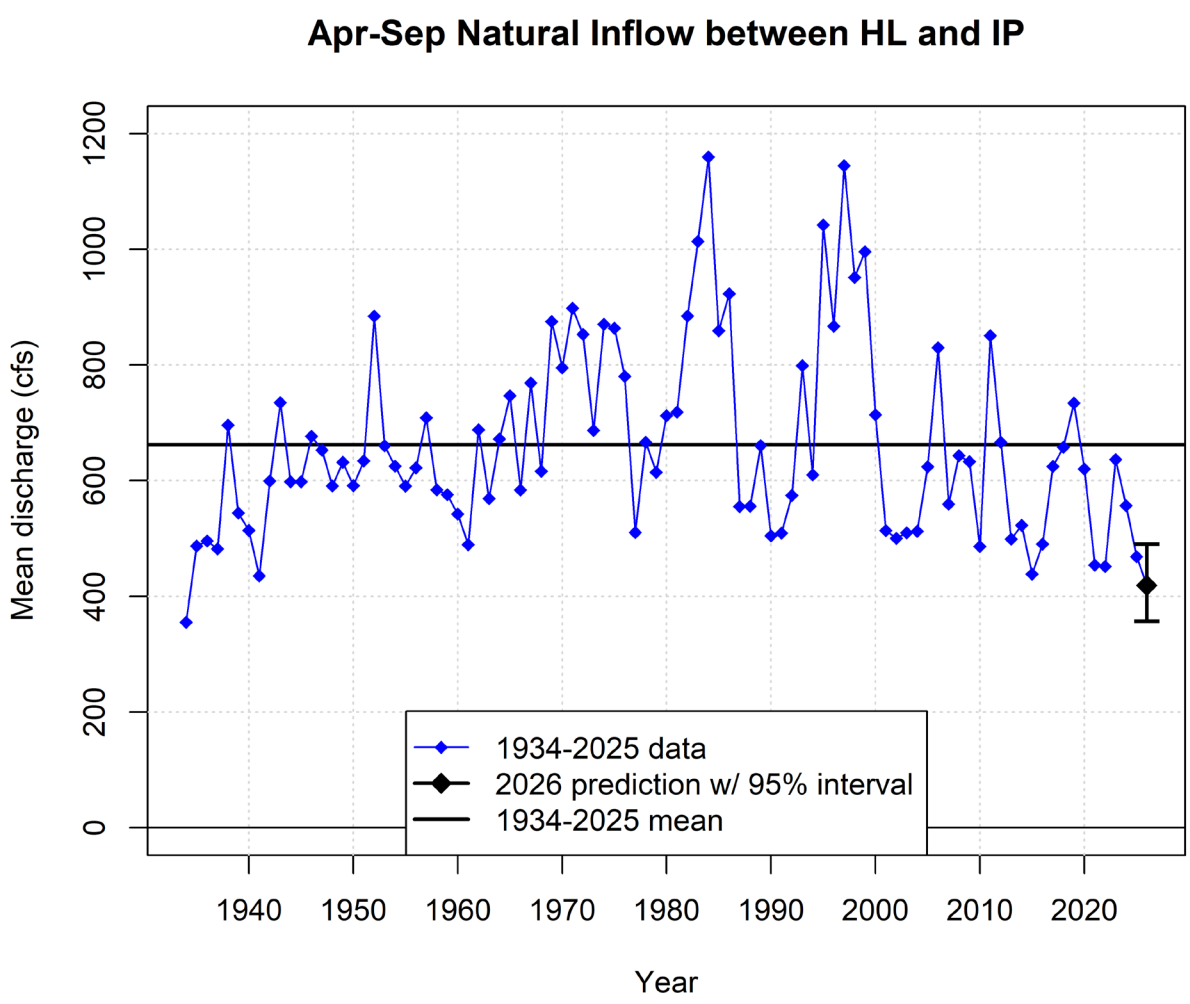


Similar to

- 2001

In best case, similar to

- 2015
- 2016
- 2021
- 2022

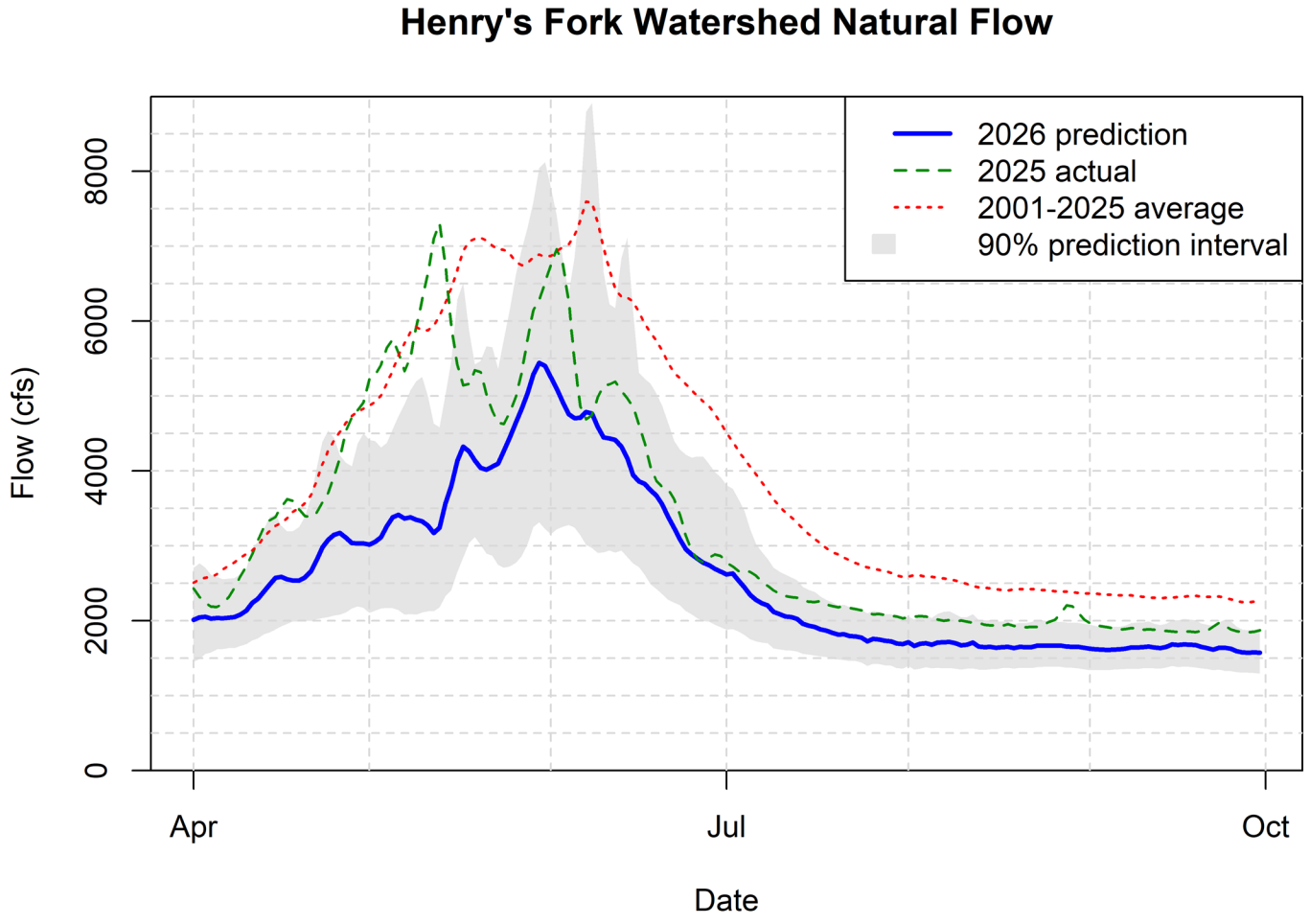


Similar to

- 1941
- 2015
- 2021
- 2022
- 2025

In worst case, similar to

- 1934



Runoff peak

- 2-3 weeks early
- ~55% of average

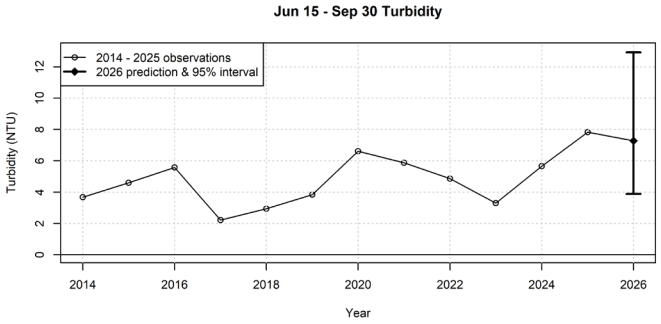
Operations Model Assumptions

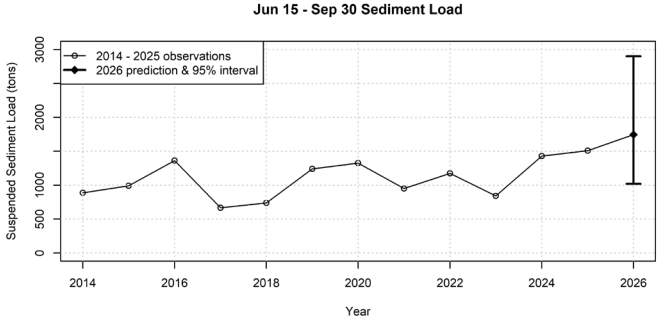
- Island Park Reservoir not drafted before May 8
- Teton exchange wells pump a minimum of 30,000 ac-ft June 1 - September 15
- Delivery of 80 cfs from Henry's Lake June 1 – September 30
- Grassy Lake drafted to 7,000 ac-ft, vs. 9,000 ac-ft last year.
- Lower HF streamflow target 300 cfs vs 350 cfs in recent years.
- Lower HF target 525 cfs Aug-Sept to send water to American Falls.

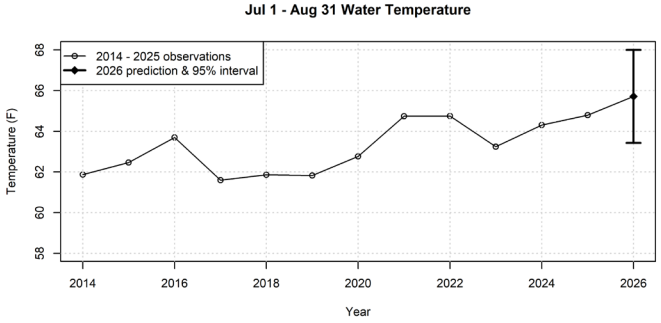
Operations Model Outputs

- Island Park Reservoir fills by May 8
- Median date of first draft: June 9 (3 weeks early)
- IPR outflow: peak at 1,750 cfs mid-July; could exceed 2,000 cfs
- Expected Teton exchange pumping: 37,615 ac-ft (similar to 2007, 2016, 2022)
- September 30 reservoir volumes:
  - Henry's Lake: 80% full (similar to 2007 and 2021)
  - IP Reservoir: 9% full (similar to 1960, 1961, 2003)
  - Grassy Lake: 46% full (similar to 1977, 2005)
- ~20,000 ac-ft sent to American Falls (vs. ~11,000 in 2025)
- Natural-flow priorities drop ~one month earlier than average
- FMID gets <60% storage allocation (info from WD01)

Water Quality at Island Park Dam

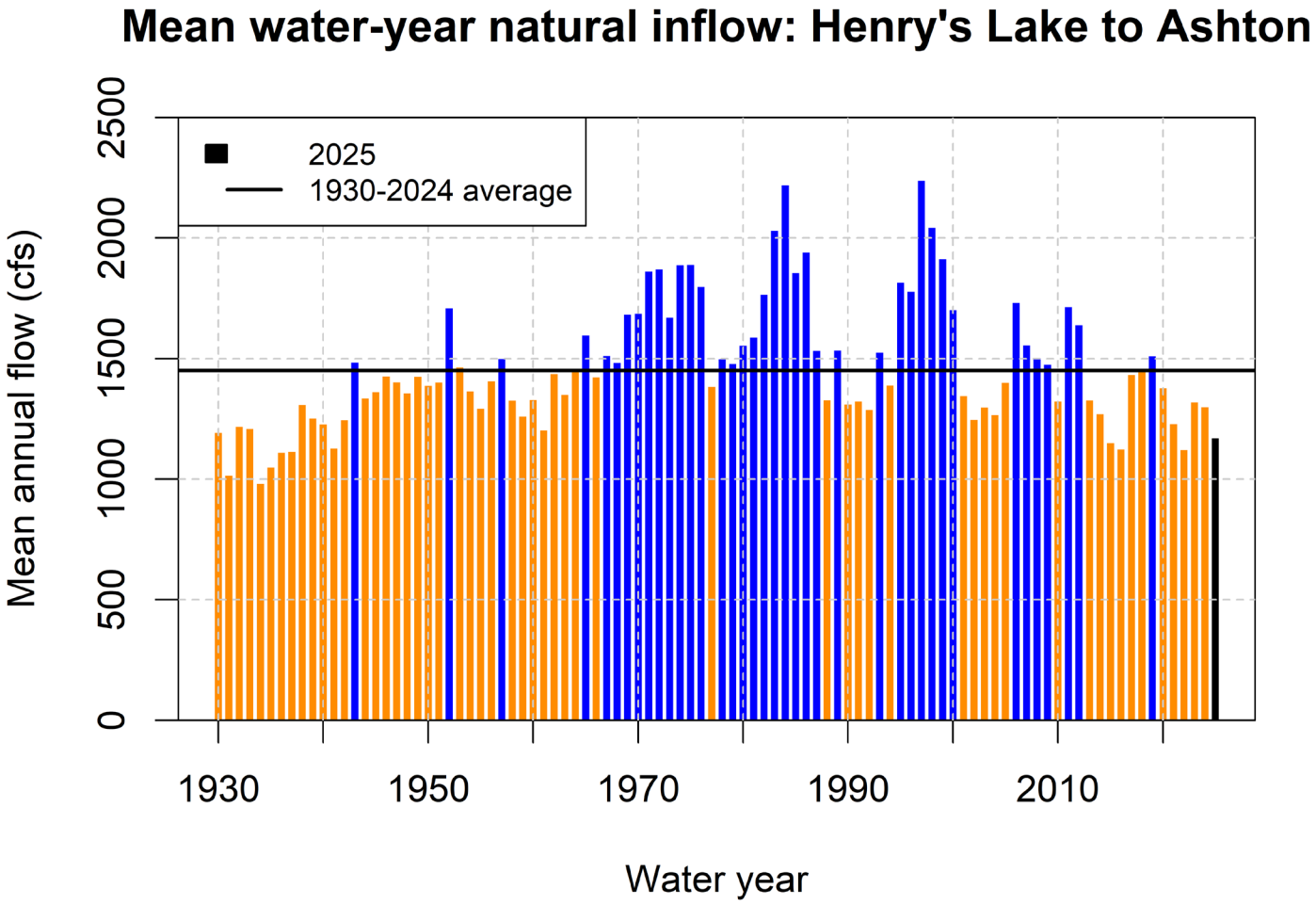






- Turbidity
- Sediment load
- Water temperature

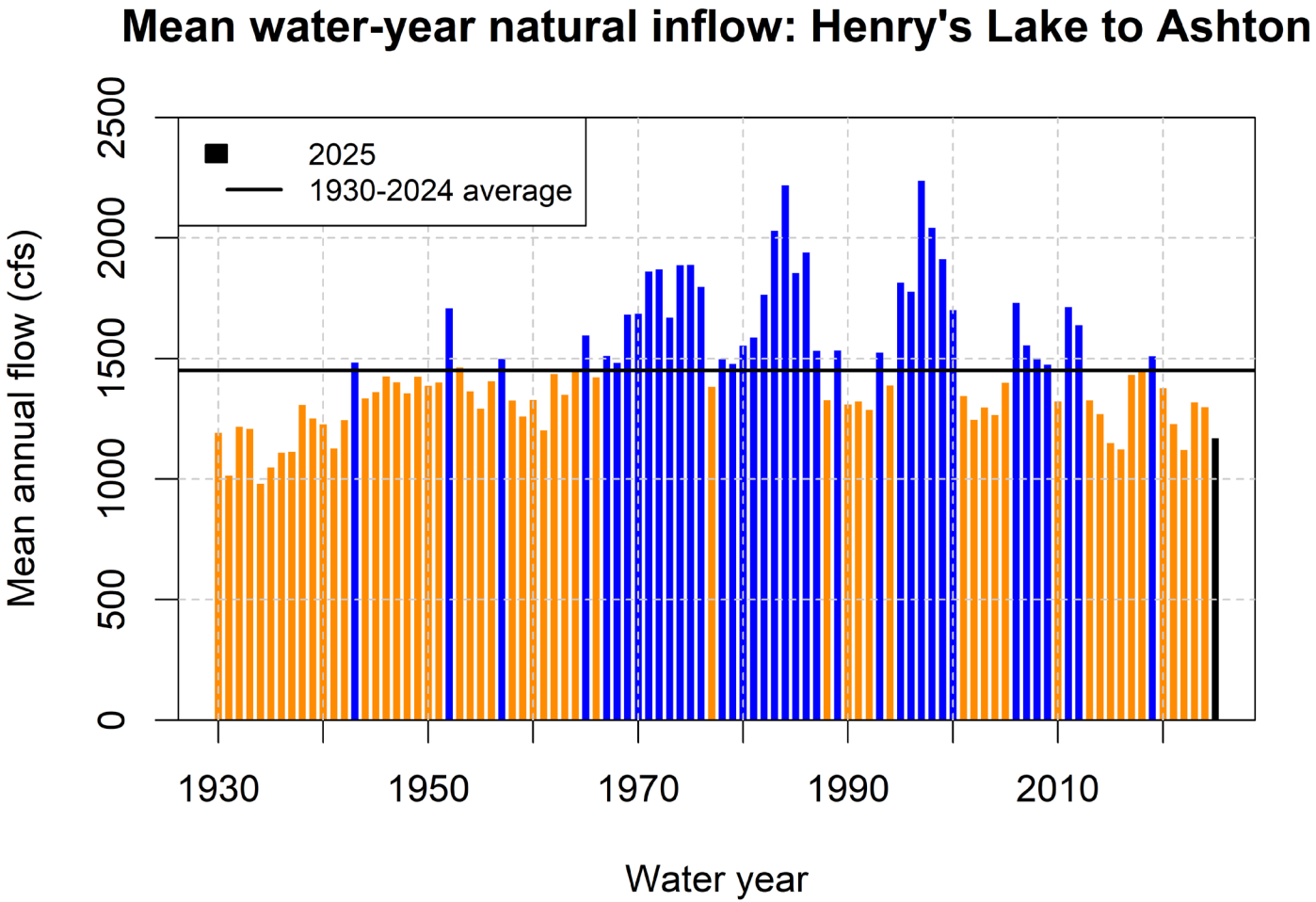
All likely to be highest in our 13-year record.



- 1930-1965 DRY
- 1966-2000 WET
- 2001-??? DRY

Years with water supply similar to 2026:

- 1930s
- 1977
- 2001
- 2015
- 2022



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Years with water supply similar to 2026:

- 1930s
- 1977
- 2001
- 2015
- 2022

Years with *temperature* similar to 2026:

- 1934

What does this mean?

- For irrigation supply
  - Diversion 83-89% below modern average (already 23% lower than pre-2000)
  - Farmers and irrigation managers have adapted
  - We've seen this before.
- For water quality in/downstream of IP Reservoir: lower inflow =
  - warmer temperatures
  - higher probability of Harmful Algal Blooms
  - higher turbidity
  - We probably haven't seen this before.
- For trout populations above/below IPR: lower inflow =
  - fewer fish survive in reservoir = fewer fish upstream
  - lower winter outflow = lower trout populations downstream
- All features of IP-Riverside fishery dependent on high water supply

2026: Anomaly or “new normal”?