

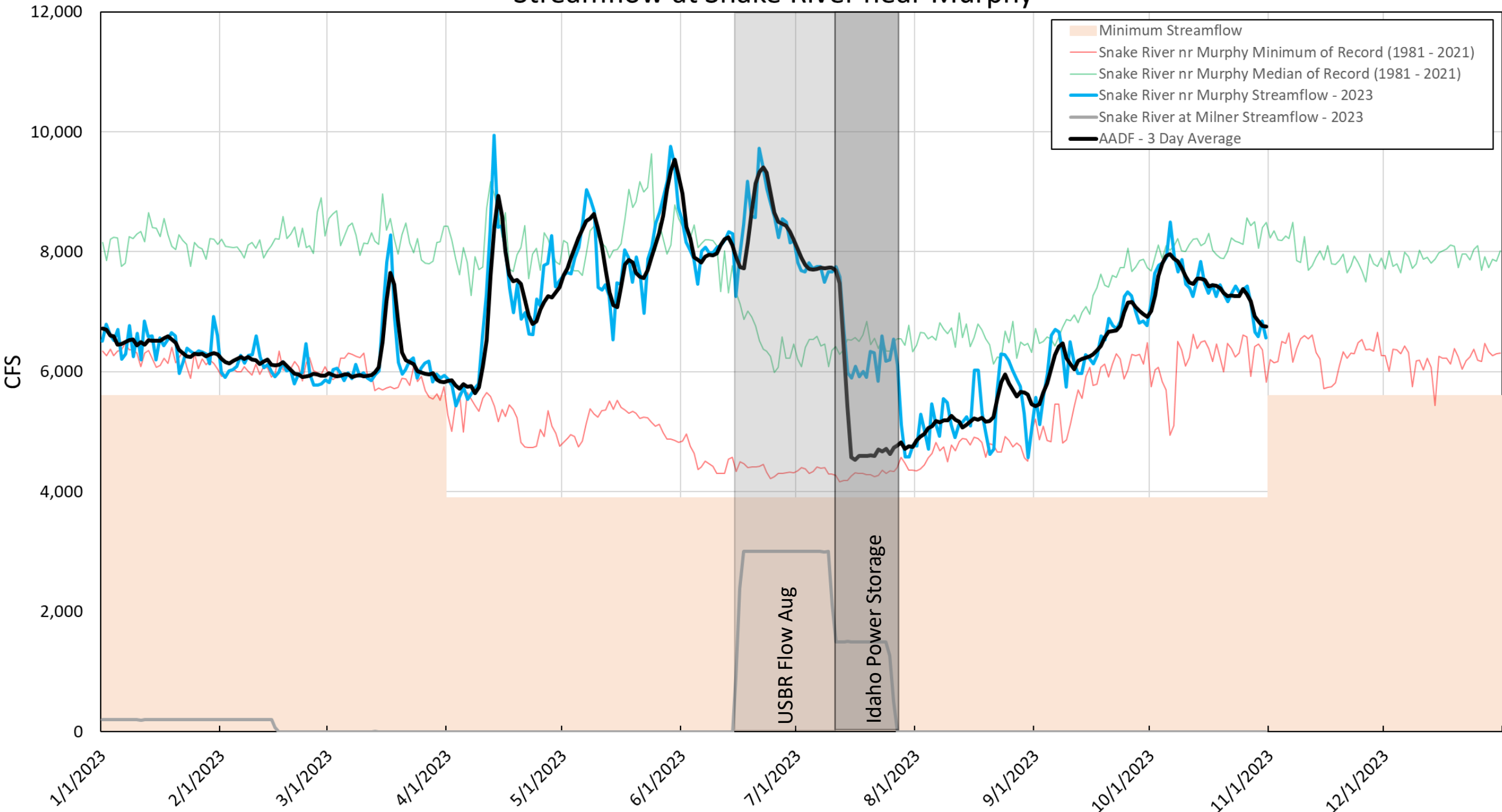
Swan Falls AADF Update

Presented by Ethan Geisler

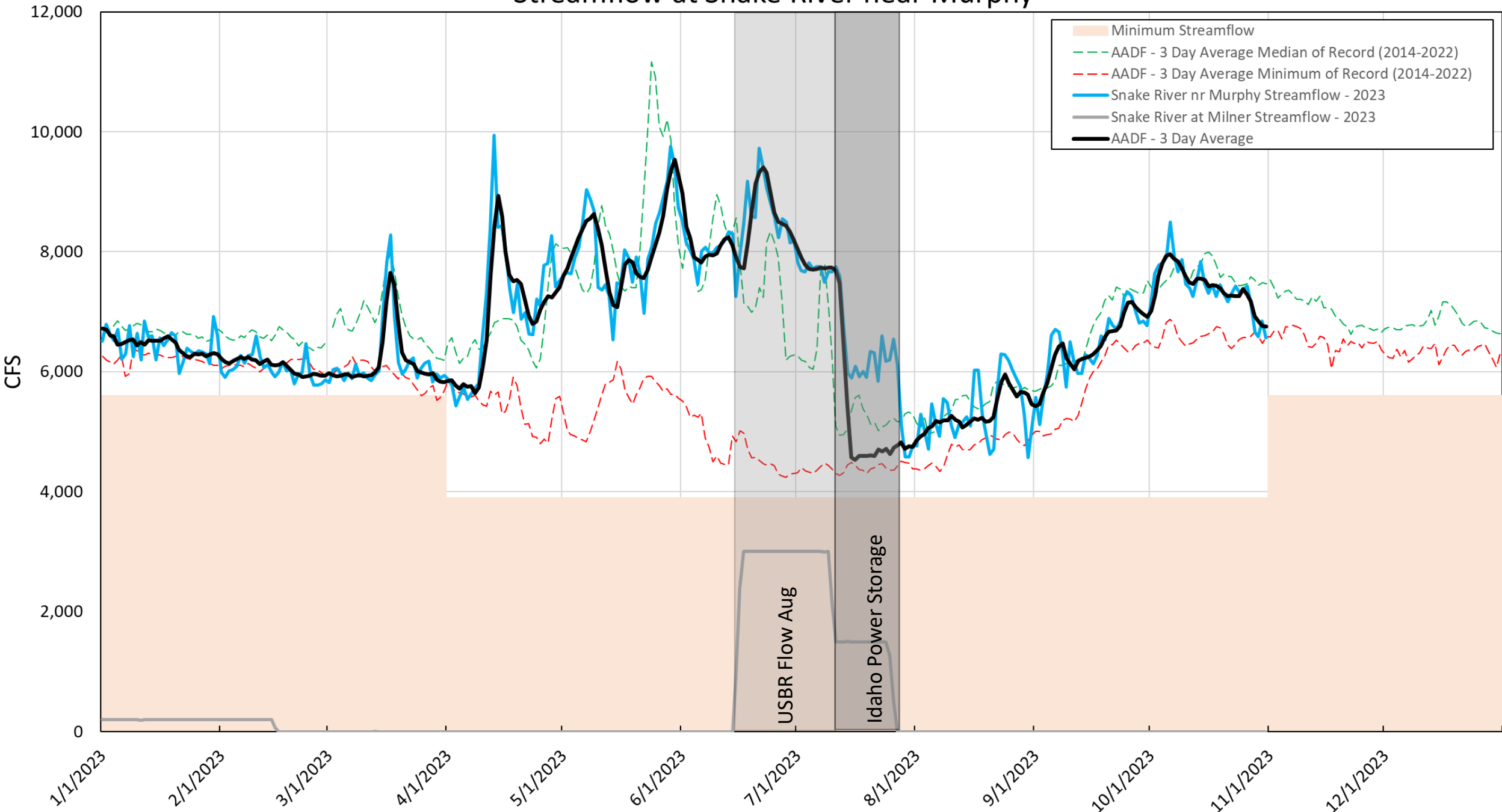
Nov 1st, 2023



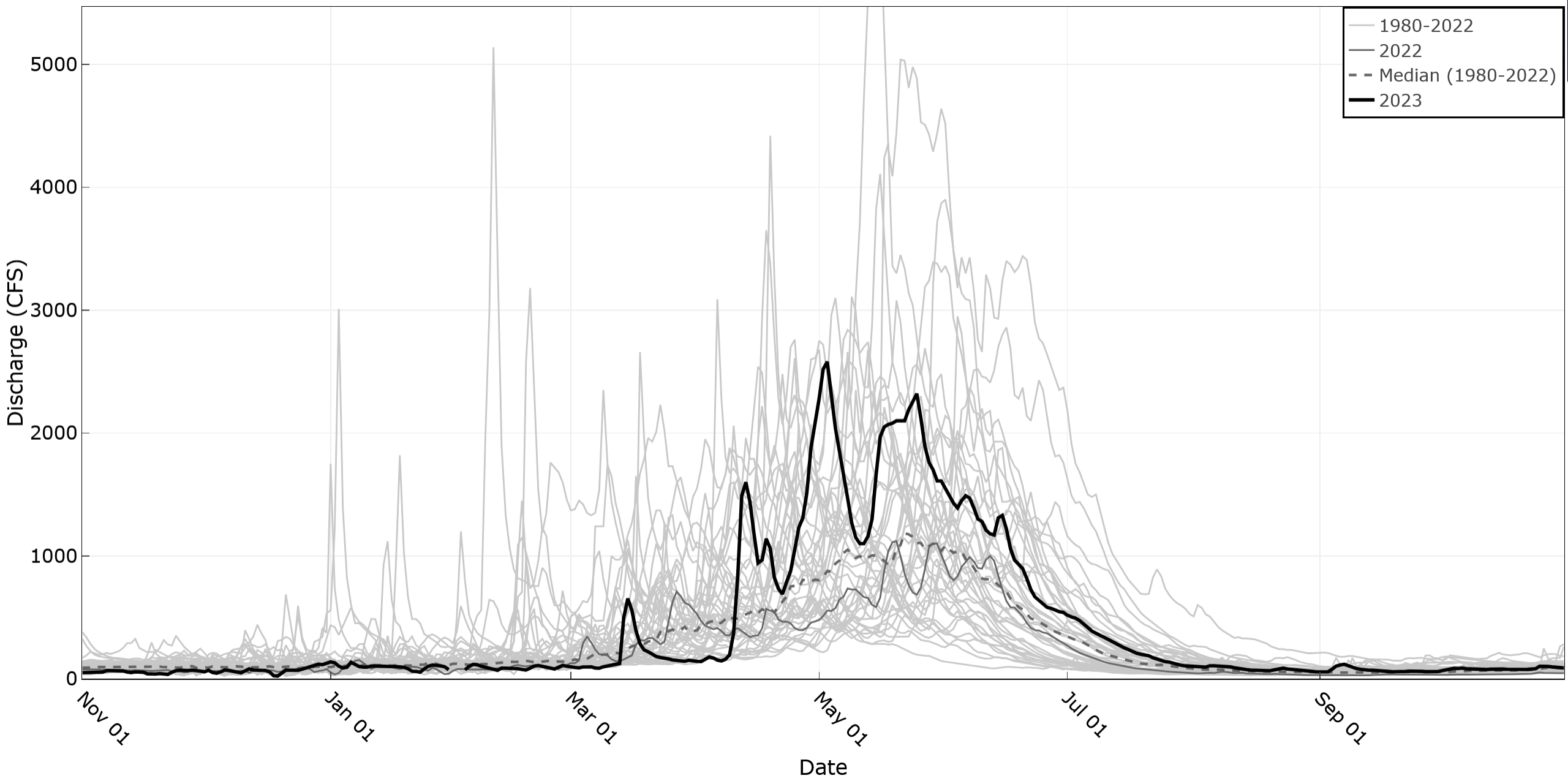
Streamflow at Snake River near Murphy



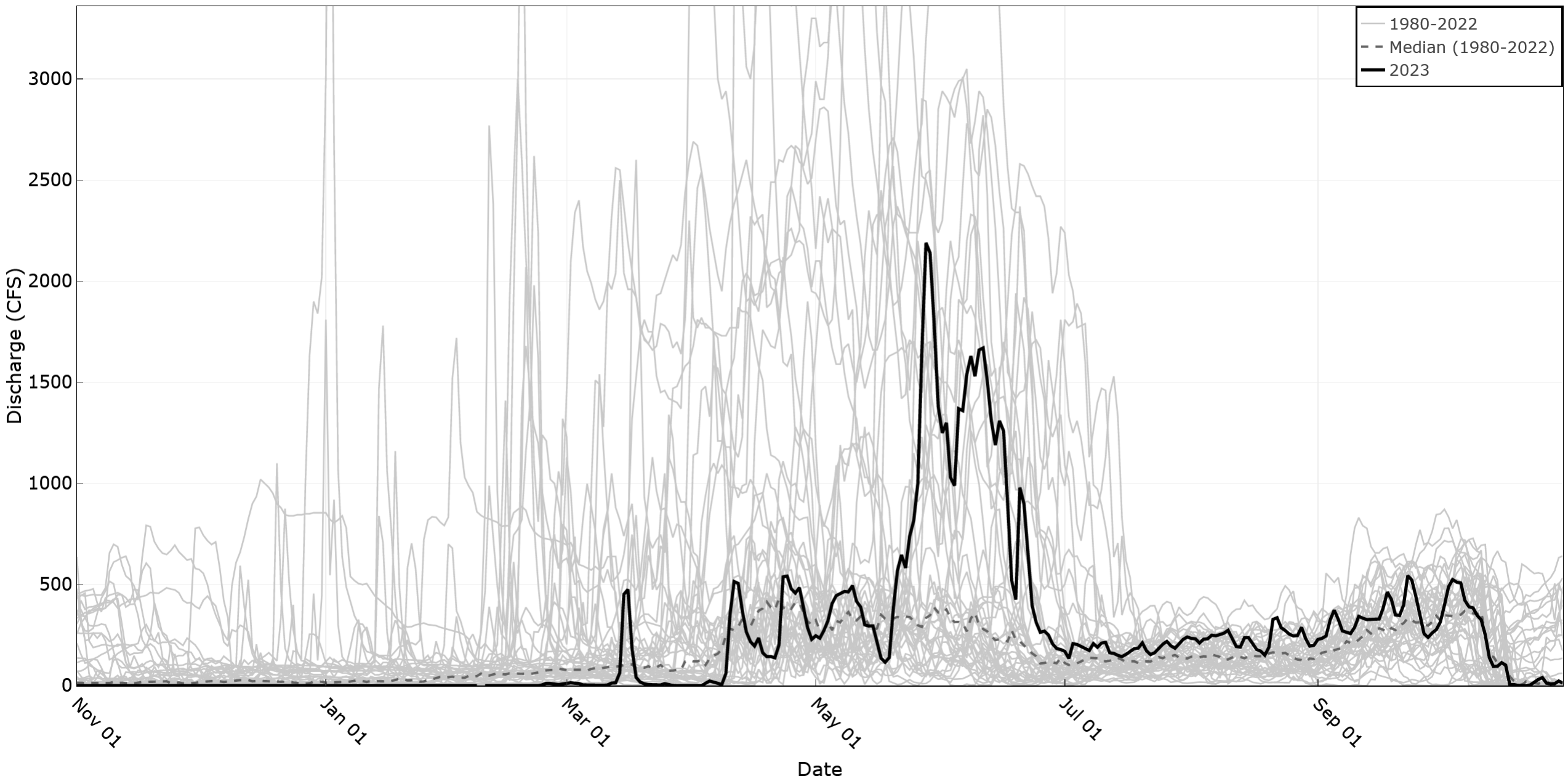
Streamflow at Snake River near Murphy



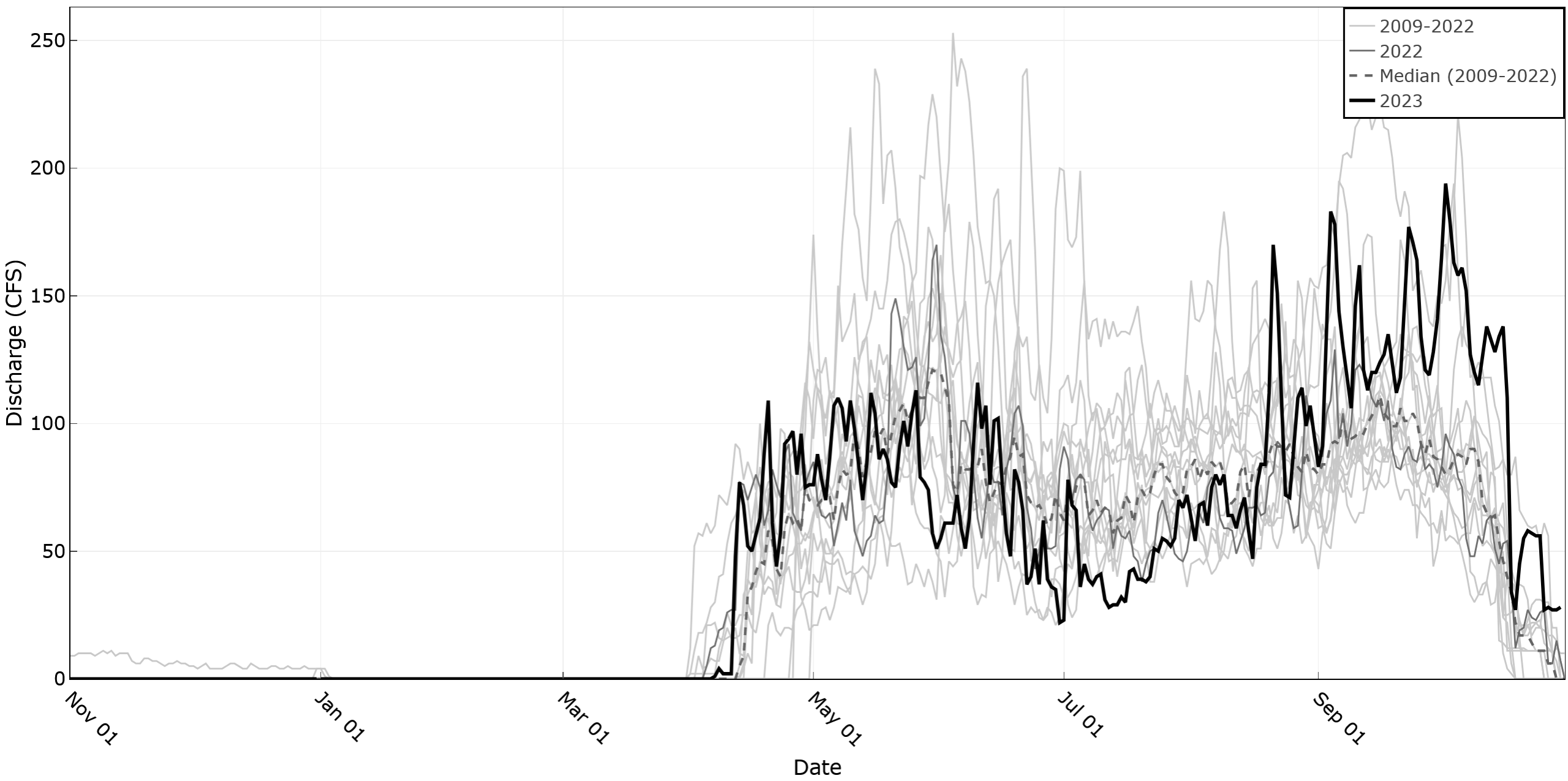
Bruneau River nr Hot Springs



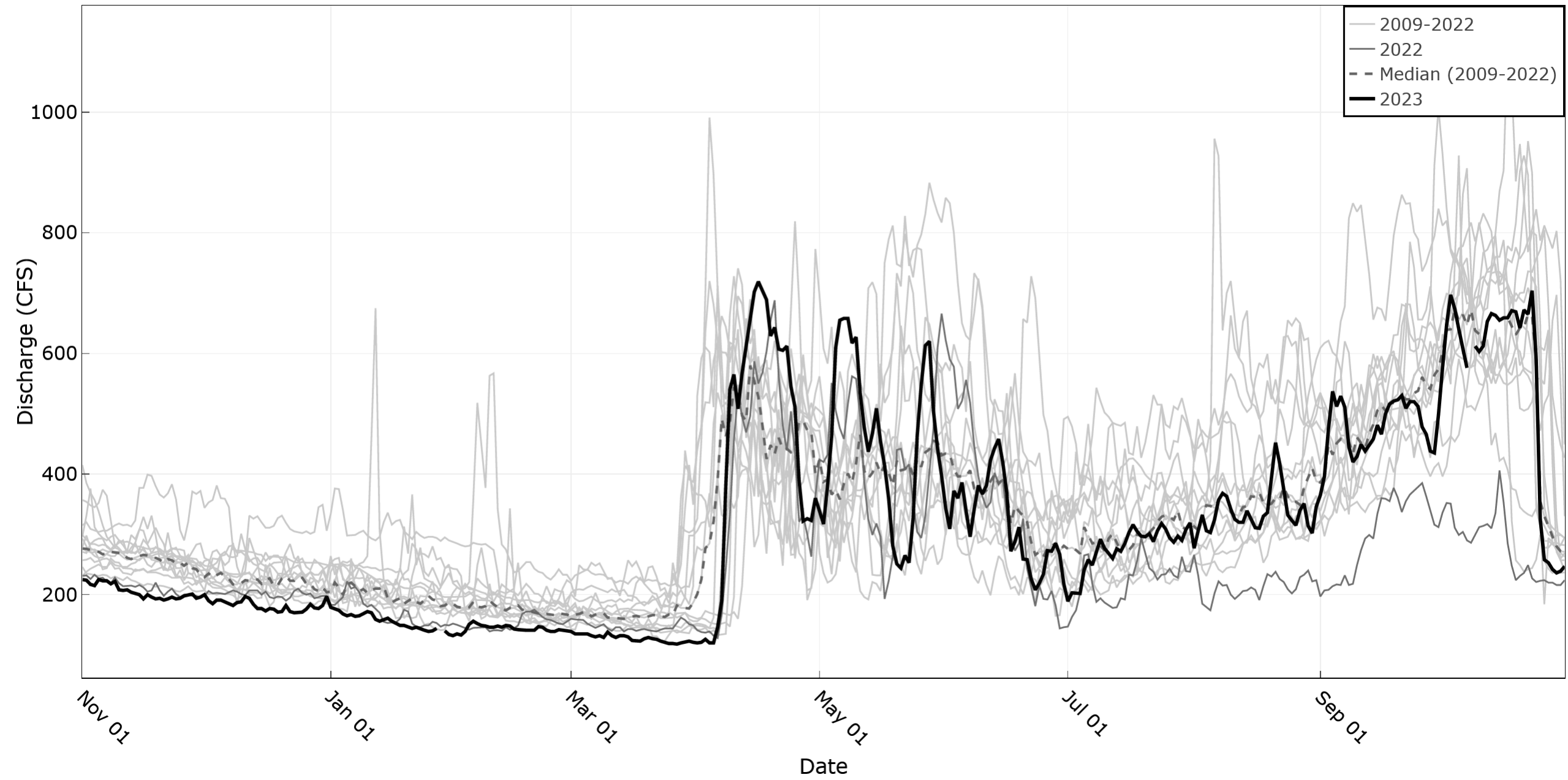
Malad River nr Gooding



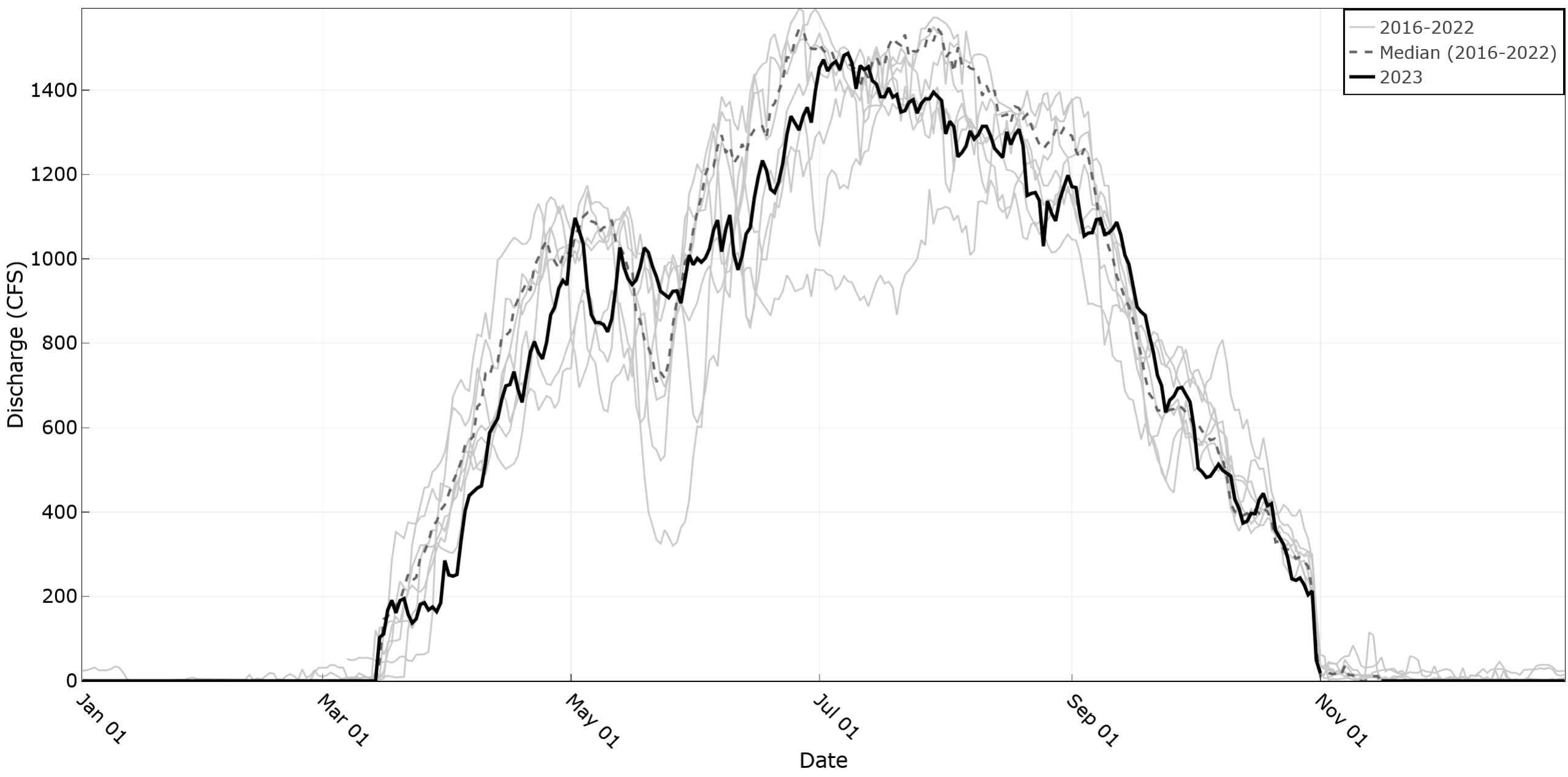
Snake River Northside Return Flow



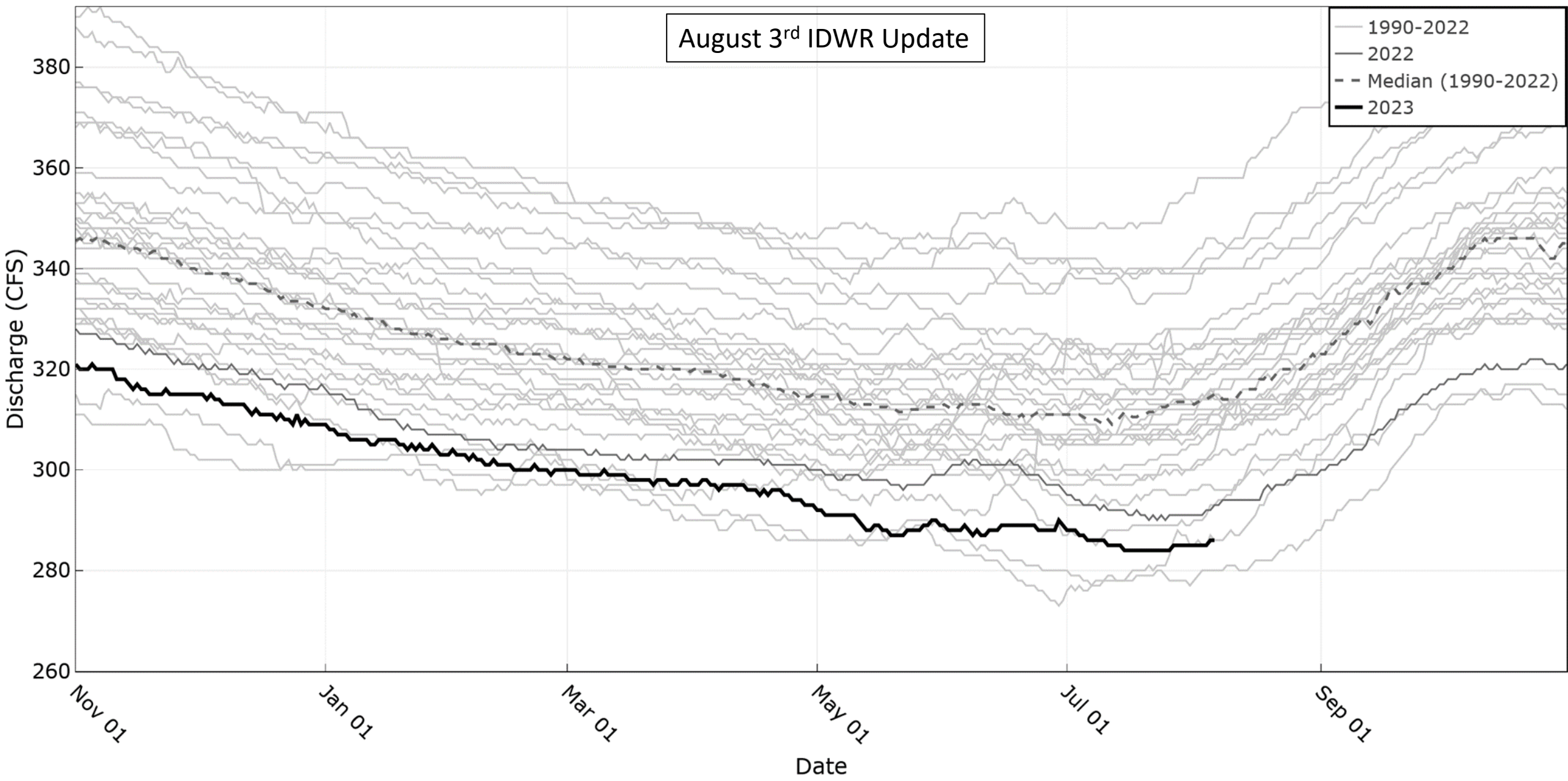
Snake River Southside Return Flows



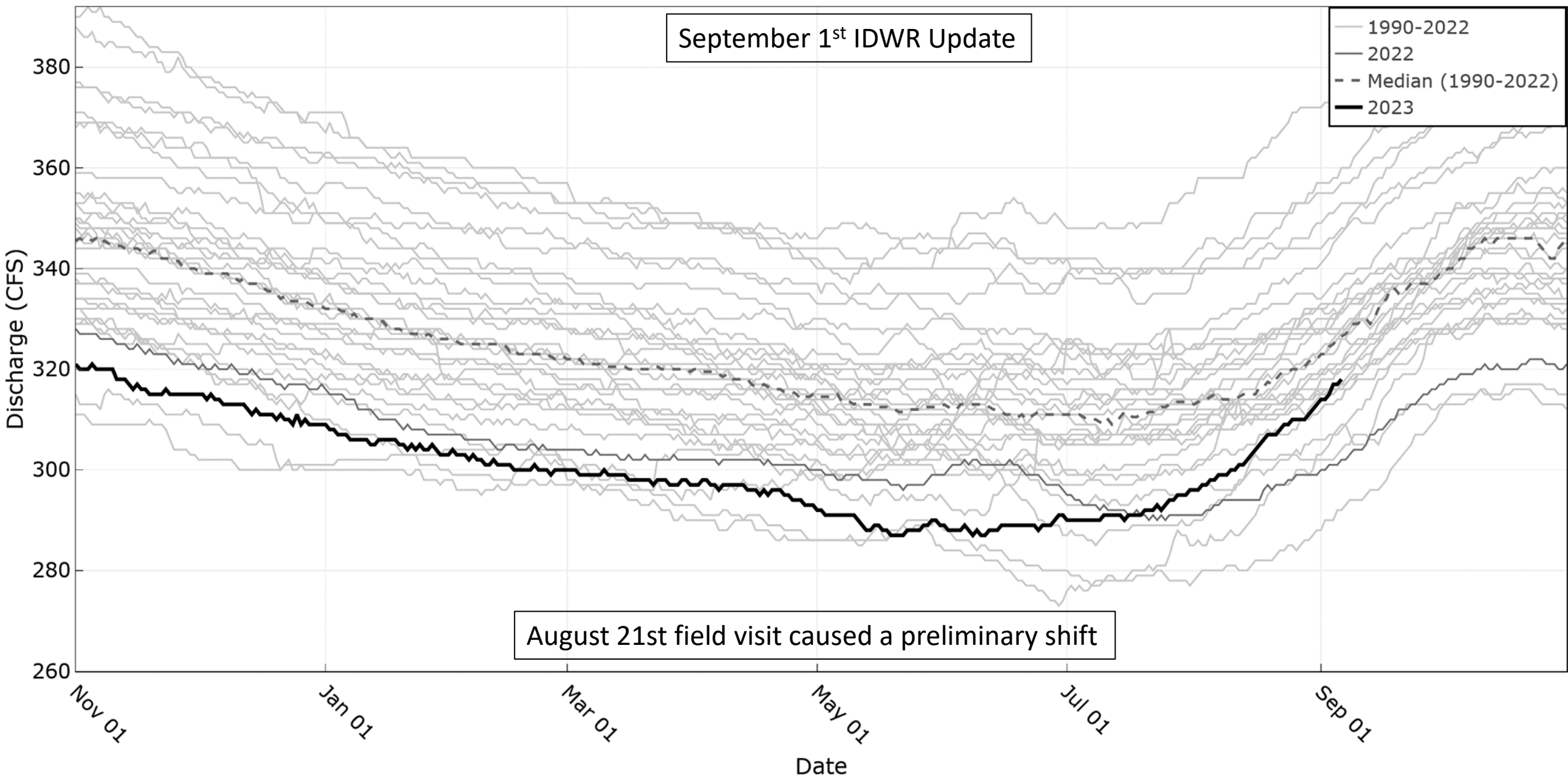
WD02 Diversions



Box Canyon Spring nr Wendell



Box Canyon Spring nr Wendell

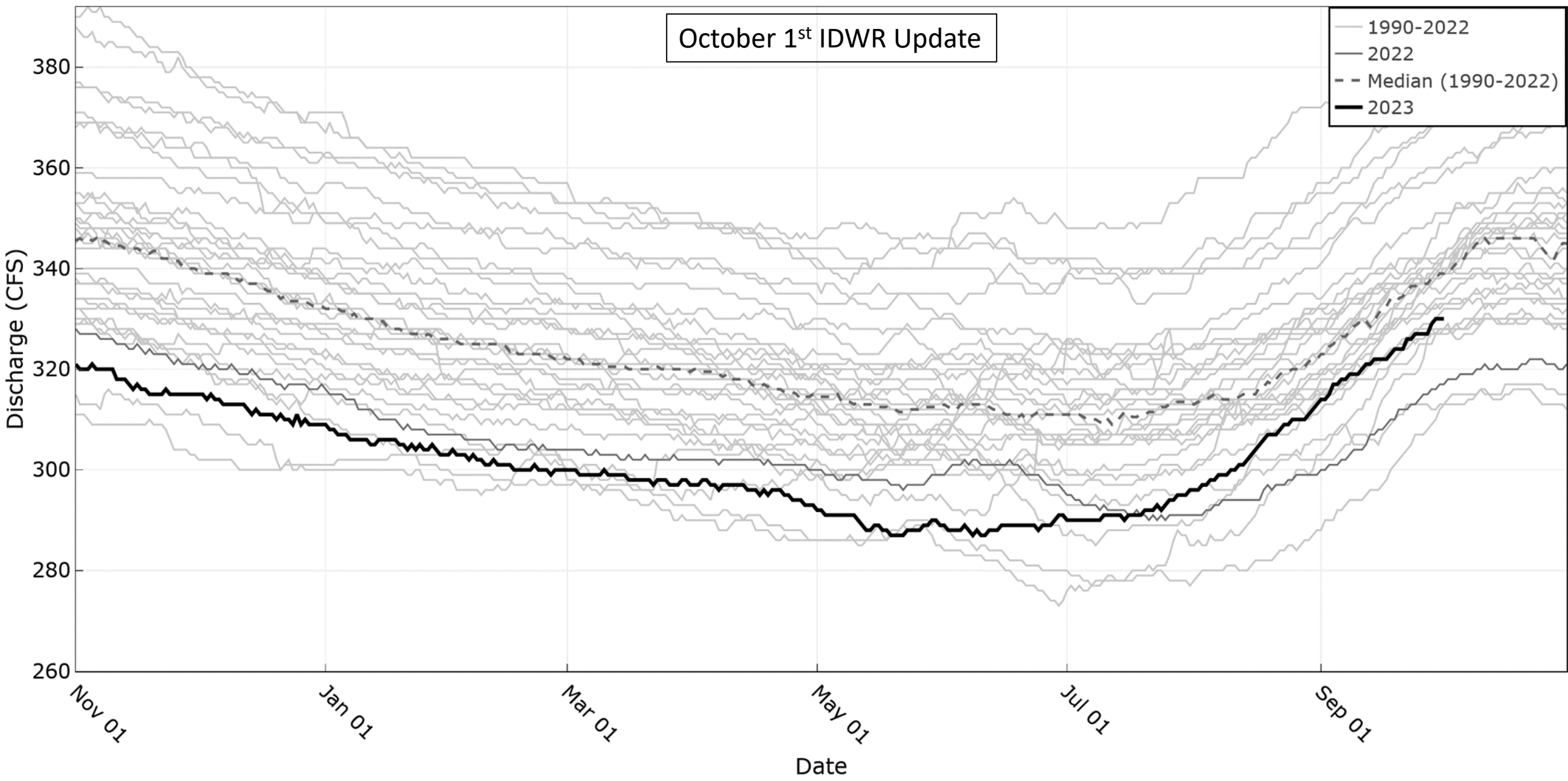


September 1st IDWR Update

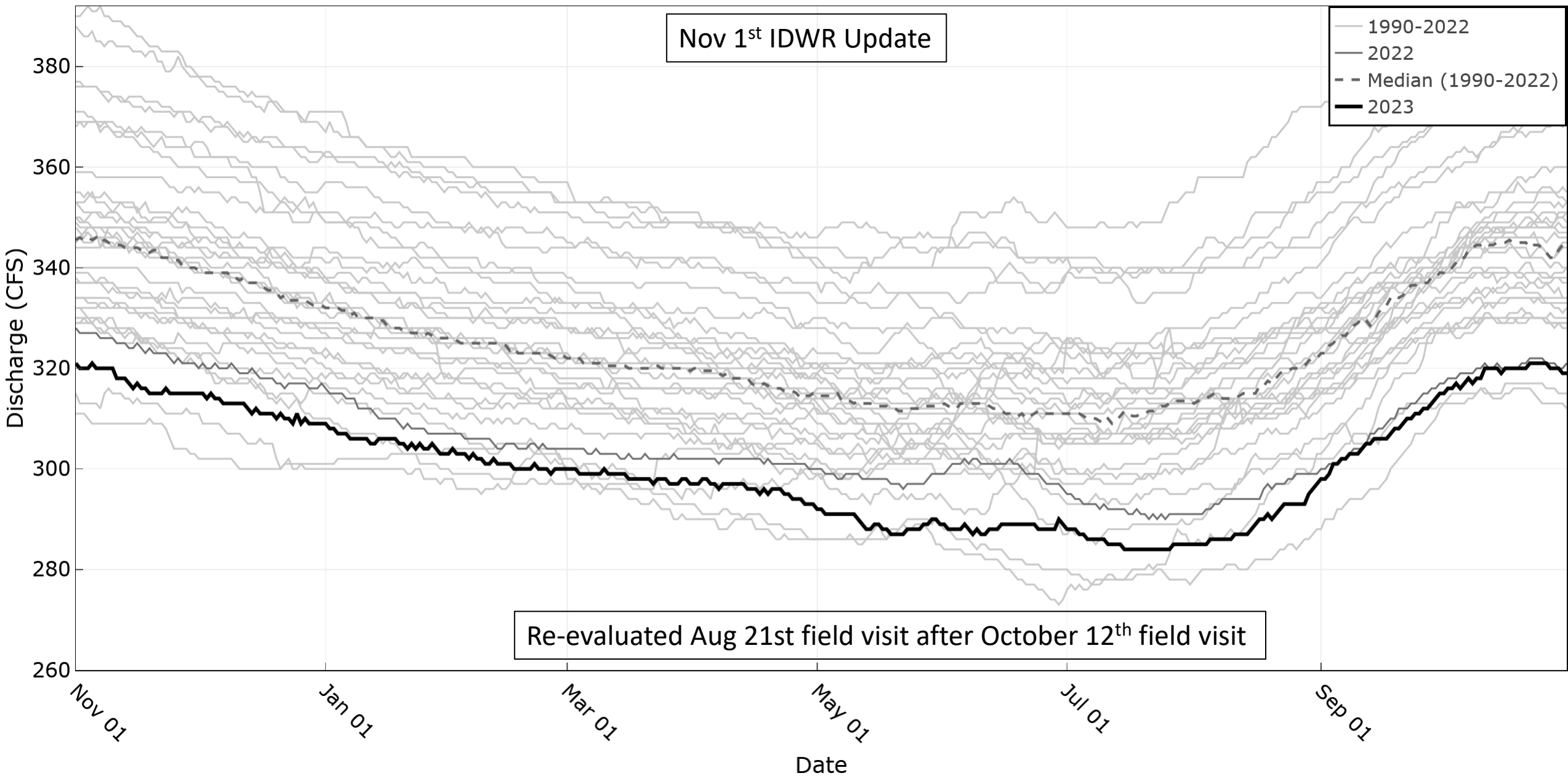
— 1990-2022
— 2022
- - Median (1990-2022)
— 2023

August 21st field visit caused a preliminary shift

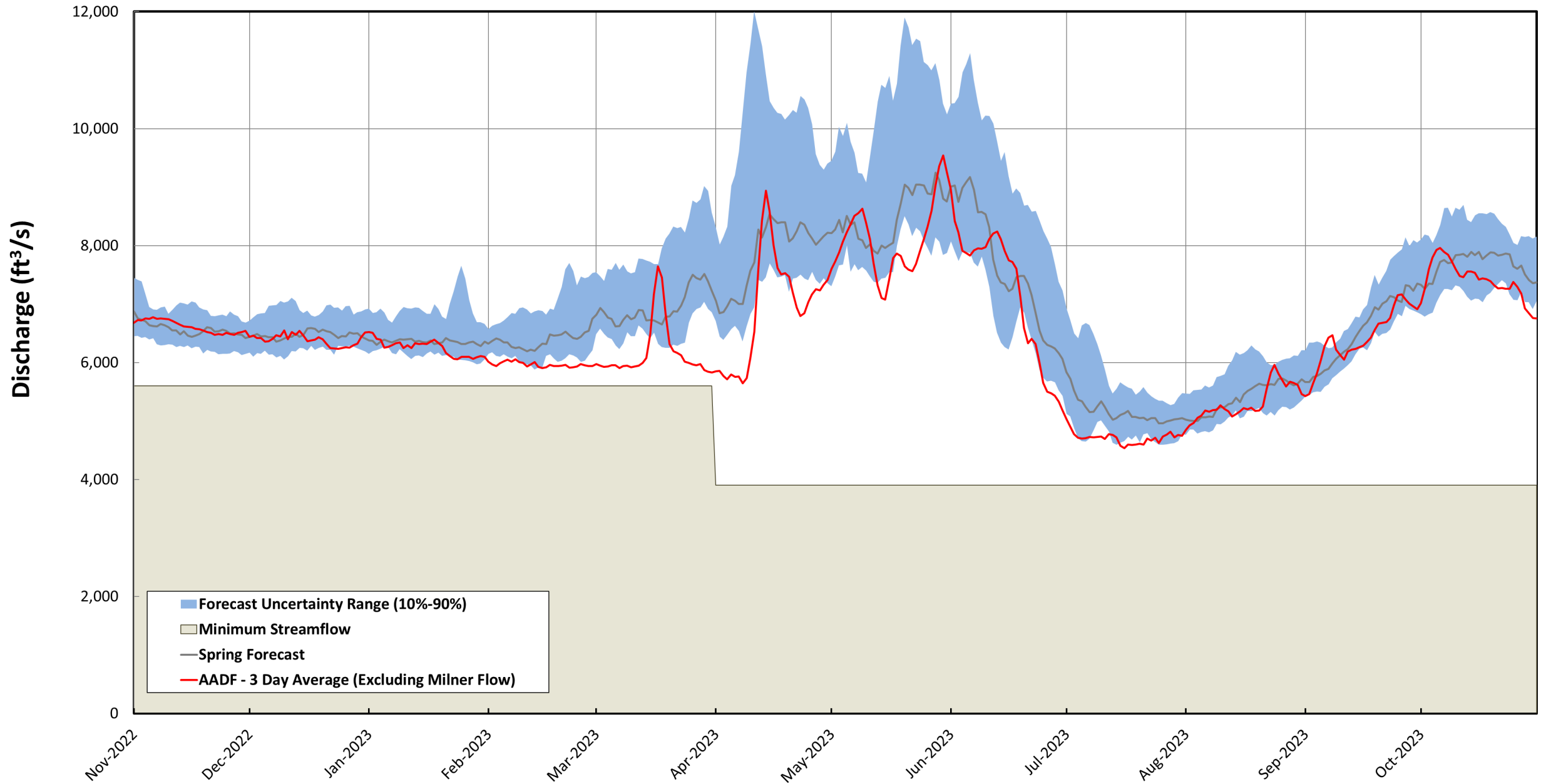
Box Canyon Spring nr Wendell



Box Canyon Spring nr Wendell



2023 Spring Forecast



Q5: Analysis of the necessary ESPA levels and/or cumulative storage change required to maintain the minimum flow rate at the Murphy Gage during the low flow period

Additional Tasks for SFIG Q5 analysis:

1. Comparison of July Average vs July Minimum
2. Non-ESPA Flow Trends
3. Identifying a value similar to the Sentinel Well Index for Southwest ESPA (1980's – present)

Q5: Analysis of the necessary ESPA levels and/or maintain the minimum flow rate at the Murphy

- Summed daily Non-ESPA data for 2002-2022 years
 - Non-ESPA Flows =
 - +Bruneau River
 - +Malad River
 - +Salmon Falls Creek
 - +Rock Creek
 - +Northside Returns
 - +Southside Returns
 - +Above Kimberly Reach Gains
- Calculated 3-Day Average Non-ESPA flow
 - Identified the July minimum from that 3-day average
- Same statistics for Consumptive Demand

Year	Non ESPA Flow July 3-Day Average Min	Consumptive Demand July 3 Day Average Min	July Average ESPA Calculated Discharge	Calculated 3 Day Average AADF Minimum	Historic 3 Day Average AADF Minimum
2002	876	-1,817	5546	4,605	
2003	796	-1,817	5240	4,219	
2004	867	-1,705	5013	4,174	
2005	999	-1,817	4964	4,146	
2006	1083	-1,792	5325	4,616	
2007	824	-1,817	5236	4,243	
2008	1044	-1,817	5120	4,348	
2009	1183	-1,631	5548	5,099	
2010	1164	-1,817	5202	4,549	
2011	1495	-1,372	5499	5,623	
2012	1035	-1,817	5378	4,597	
2013	838	-1,817	5122	4,143	
2014	983	-1,817	5268	4,434	4,306
2015	1068	-1,817	5443	4,694	4,410
2016	1220	-1,817	5042	4,446	4,418
2017	1410	-1,587	5151	4,974	5,174
2018	1190	-1,730	5232	4,692	4,926
2019	1522	-1,606	5499	5,414	5,326
2020	1304	-2,050	6028	5,282	5,424
2021	958	-1,767	5082	4,273	4,425
2022	957	-1,804	5178	4,332	4,273
2023	833				4,533
5th Percentile	800	-2027			
10th Percentile	826	-1817			
50th Percentile	1040	-1817			



AADF 3-Day Average Minimum: Historic vs Calculated

Calculated 3 Day Average AADF Minimum

$y = 0.8212x + 832.39$
 $R^2 = 0.8623$

- Historic 3 Day Avg AADF Min vs Calculated 3 Day Average AADF Min
- Linear (1:1)

Historic 3 Day Average AADF Minimum

