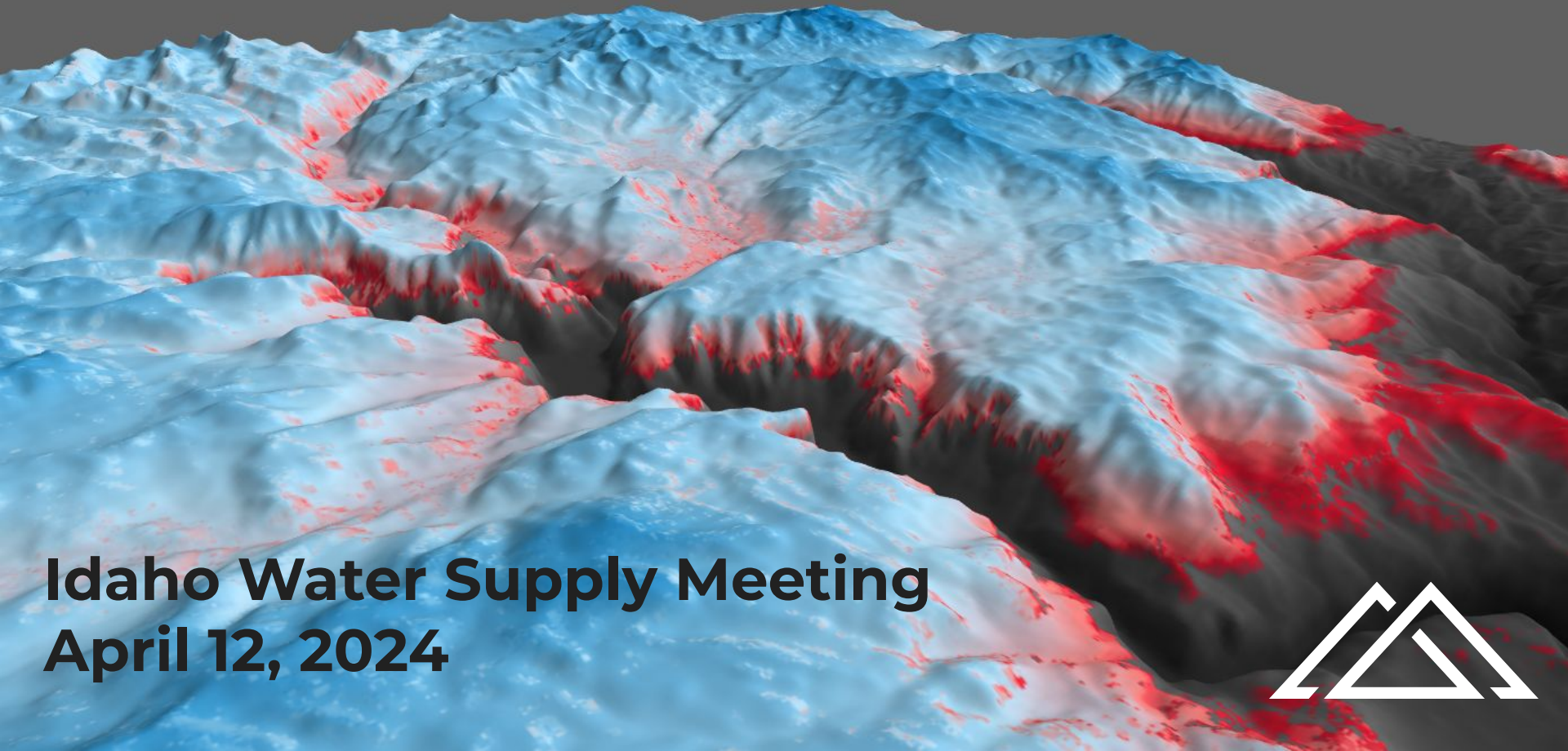
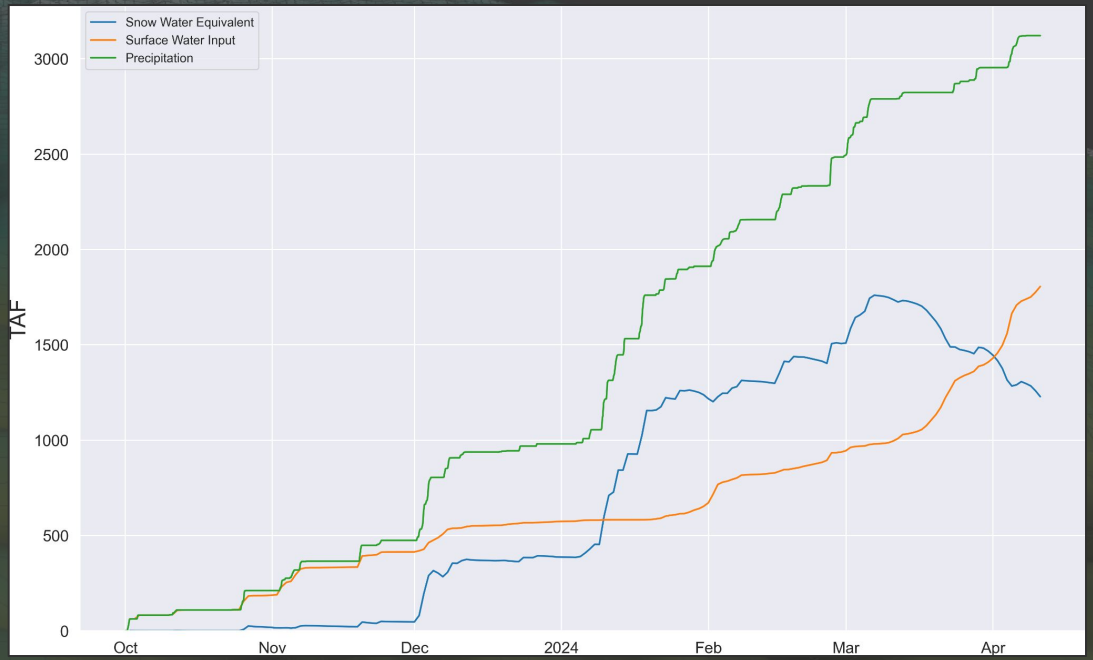
Snowpack Modeling and Streamflow Forecast



Idaho Water Supply Meeting
April 12, 2024

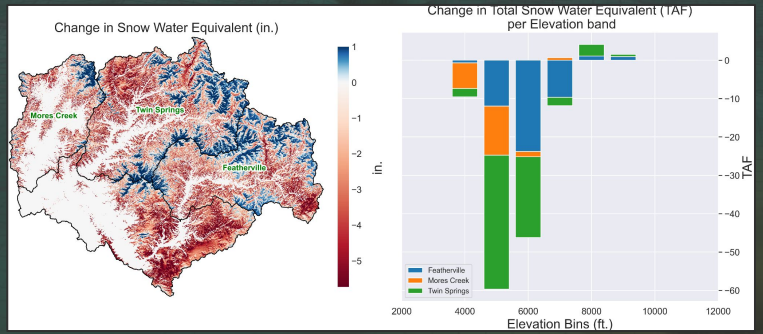
April 10 Model Summary

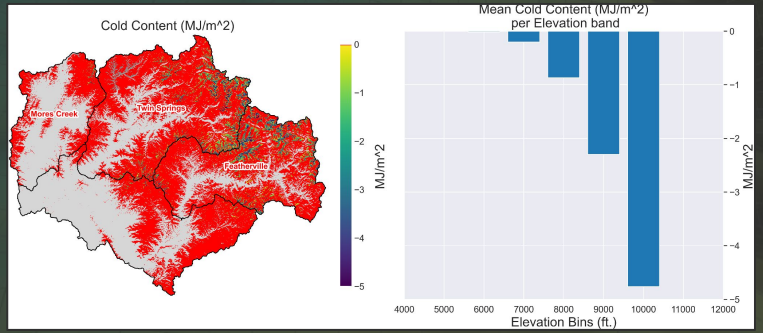
- 1228 KAF
- Mean SWE: 8.6 in
- YTD runoff ratio: 30%
- Estimated end of year runoff ratio: ~45%

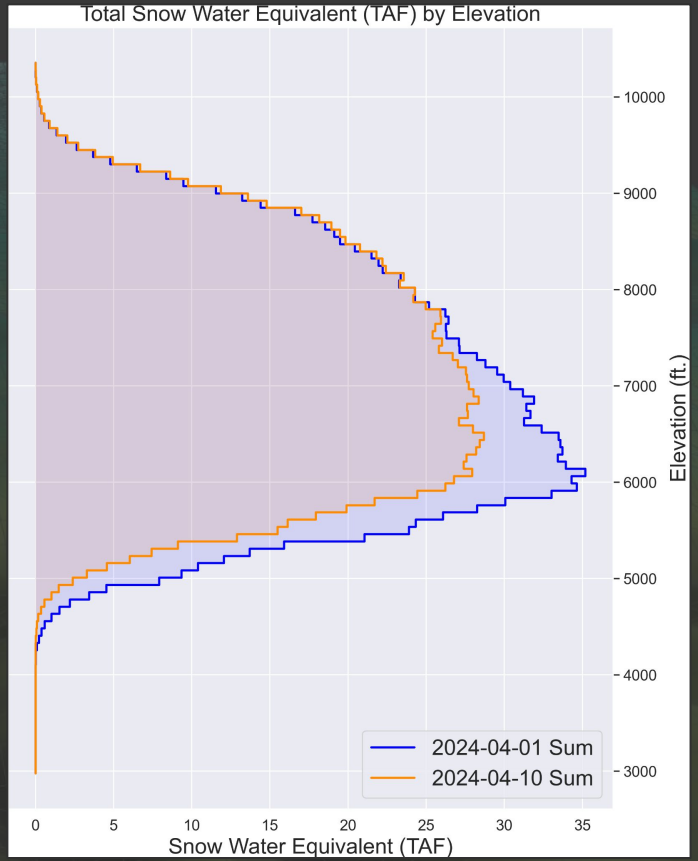


April 10 Model Summary

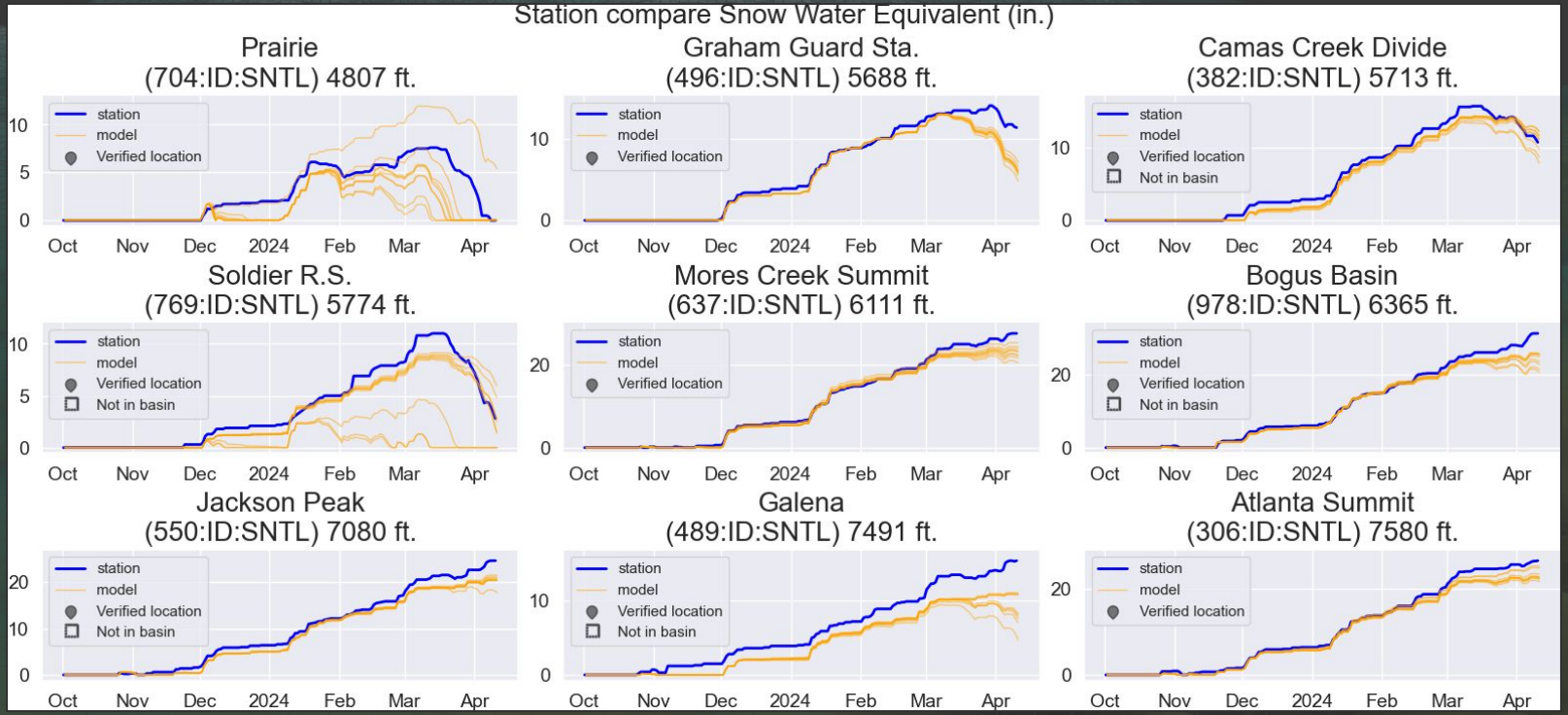
- -189 KAF in April
- Available for melt below 8,000ft



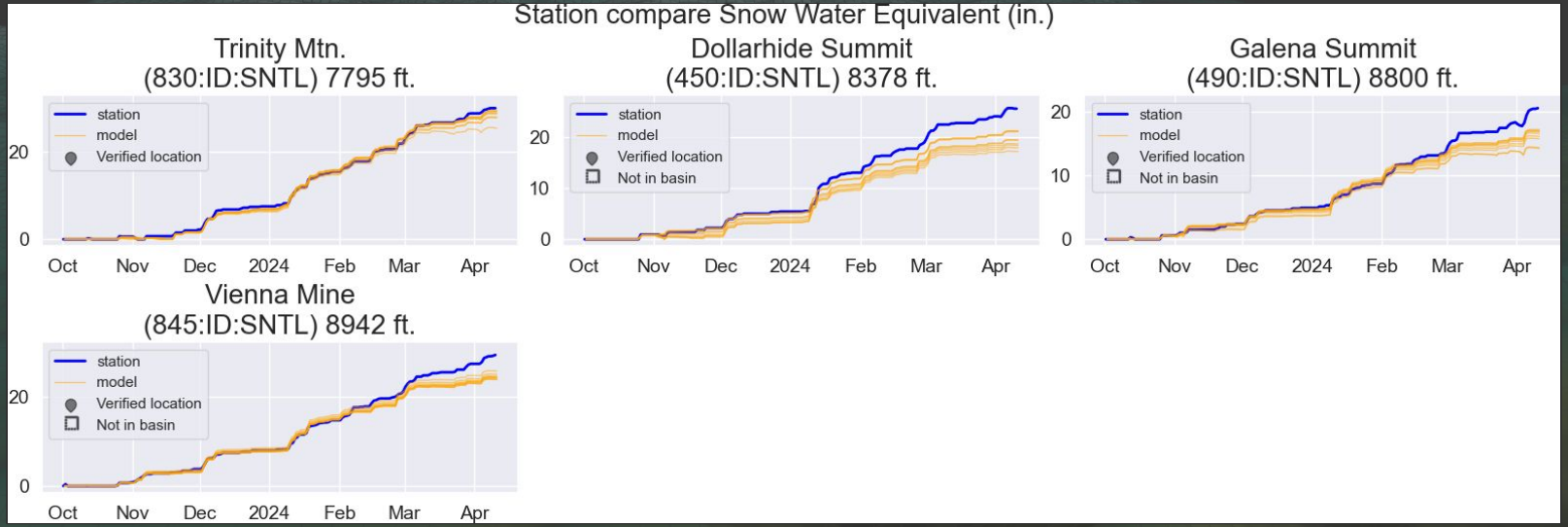




April 10 Model Validation

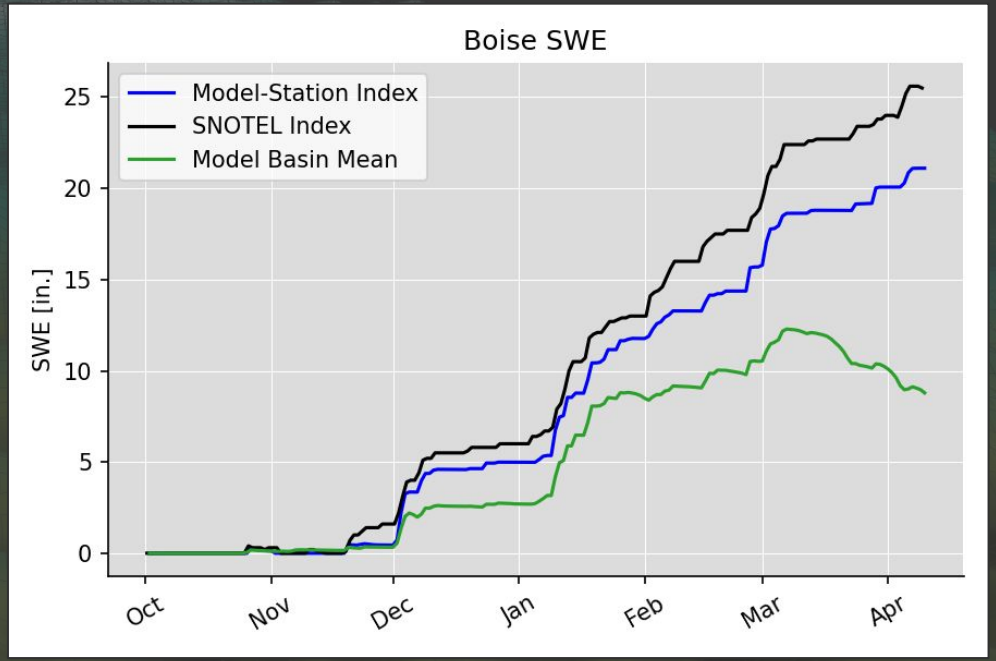


April 10 Model Validation



Site Index v. Volume

- Model performance is excellent - we like to see 50m model values slightly below the pillows
- Note the difference between **site index** and **volume**
- Model is **33%** below peak



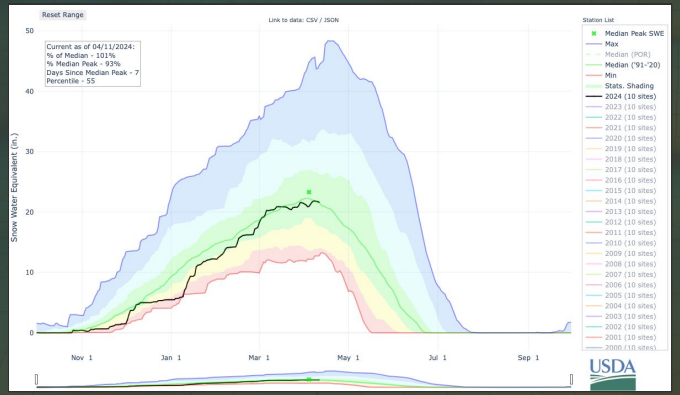
April 10 Model State

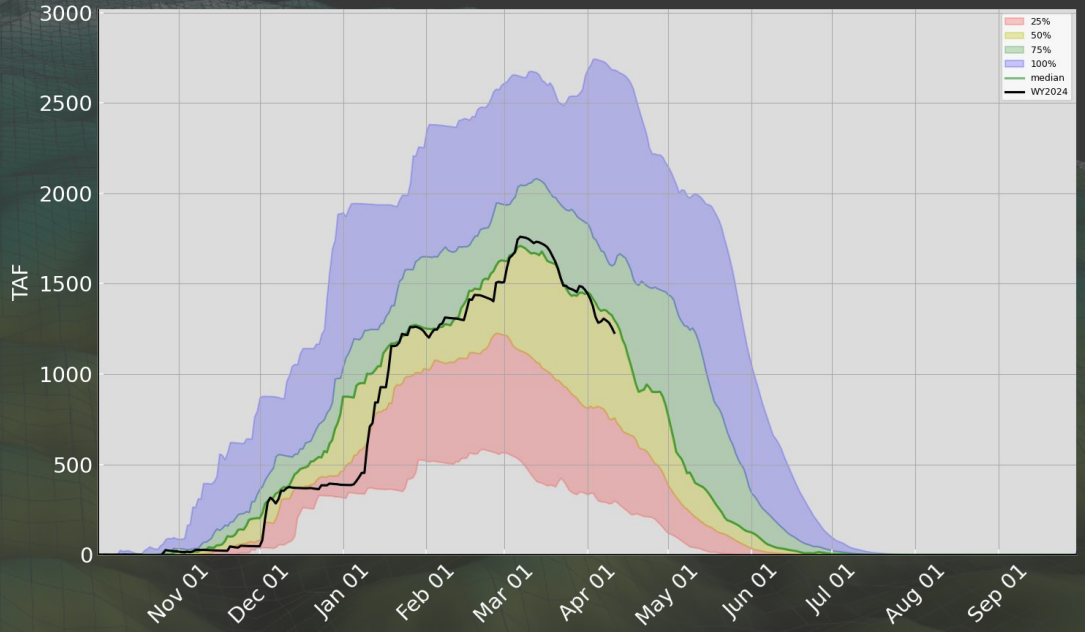
Model

April 10: **94%** of median

SNOTEL

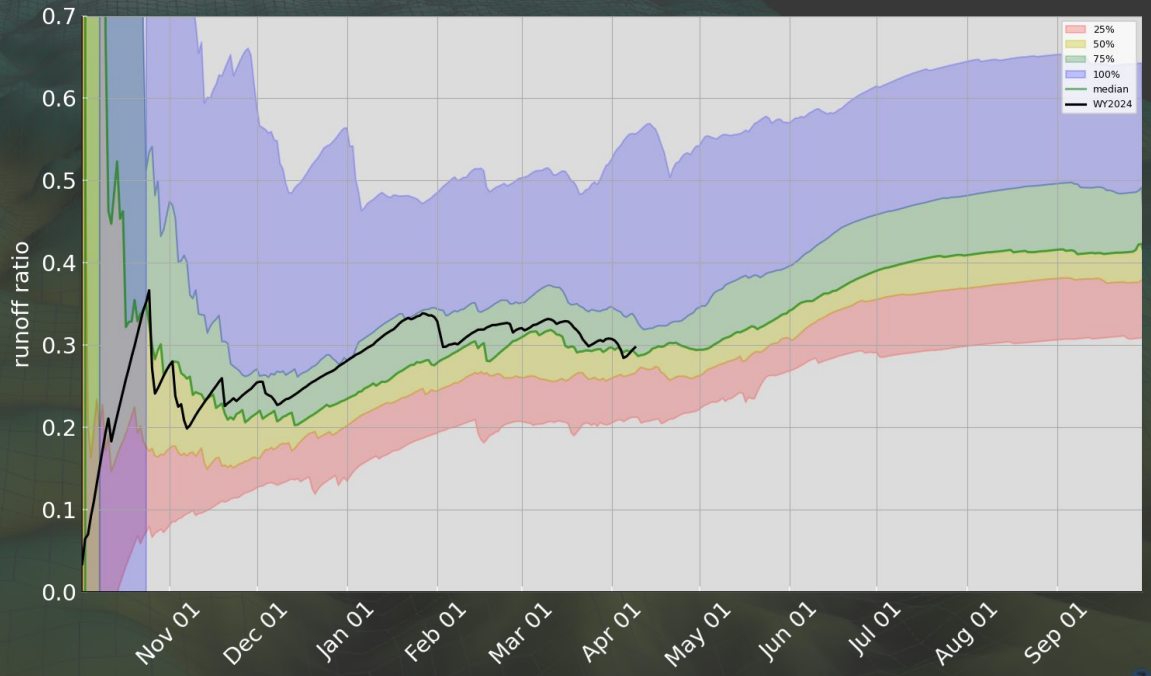
April 10: **100%** of median





Streamflow Forecast From Similar Years

Use runoff ratio from similar years to create streamflow forecast

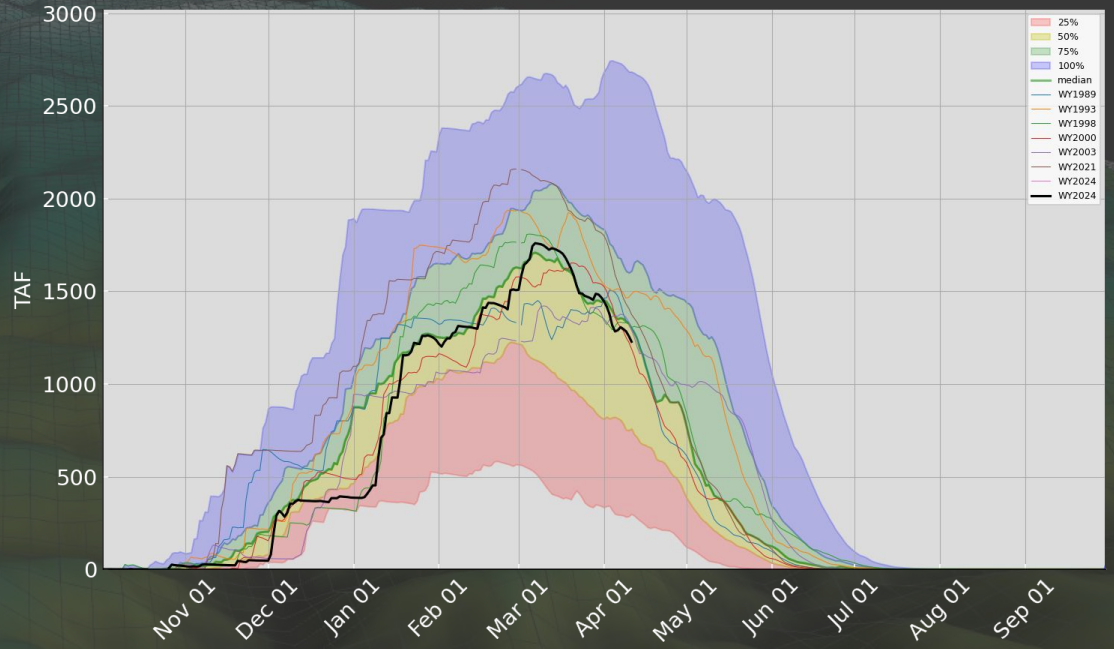


Streamflow Forecast From Similar Years

Select similar years with similar SWE on April 10:

1989, 1993, 1998, 2000, 2003, 2021

1998 was a ‘median’ year that followed a big snow year



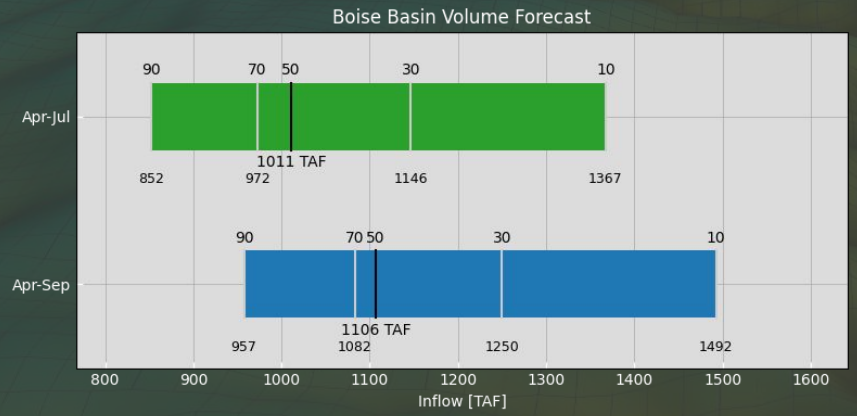
Streamflow Forecast From Similar Years

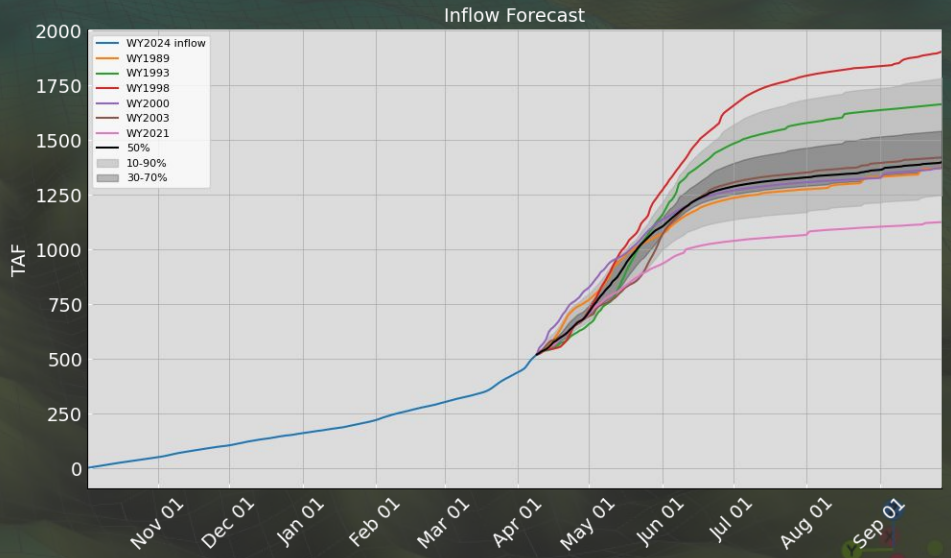
Using similar years: 1989, 1993, 1998, 2000, 2003, 2021

A-J: 1011 KAF (-205 from Mar 10)

A-S: 1106 KAF (-213 from Mar 10)

Additional years modeled





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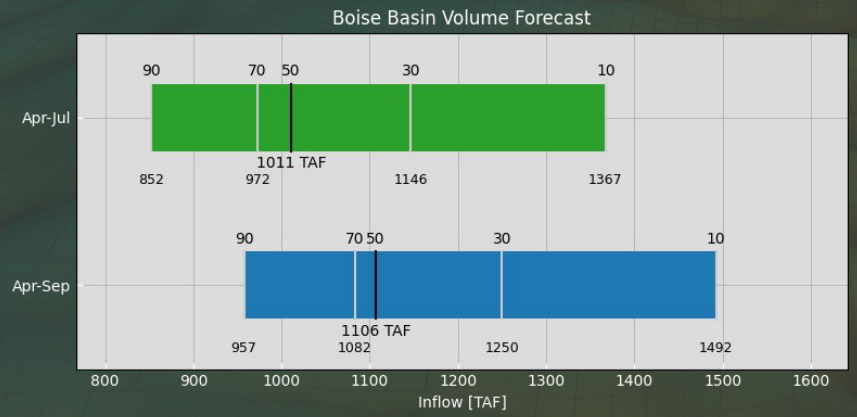

Minimum Forecast

- 1228 x 0.45 = 552.6 TAF with **no** future precip

Questions?

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