Snowpack Modeling and Streamflow Forecast

Idaho Water Supply Meeting
May 8, 2024

May 6 Model Summary

- 579 KAF
- Mean SWE: 4.0 in
- Runoff ratio:
  - Year-to-date 29%
  - End of WY ~46%

May 6 Model Summary

- -13.4 KAF in May
- Isothermal below 7,000ft

May Precipitation

179 KAF precipitation
May 1-6

SWI near normal for
April-May

May 6 Model Validation

May 6 Model Validation

Site Index v. Volume

- Note the difference between **site index** and **volume**
- Model is melting faster than pillows since late April
- Percent of peak:
  - Model **30%**
  - Site index **75%**

May 6 Model State

Model

May 6: **101%** of median

SNOTEL

May 6: **90%** 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 May 6:

1985, 1989, 1998, 2000, 2021, 2022

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: 757 KAF

A-S: 864 KAF

Far lower than expected observed YTD runoff efficiency

Minimum Remaining A-J Forecast May 7 to July 30

579 x 0.5 = 290 KAF with **no** future precip

Questions?

kehan.yang@m3works.io
mark.robertson@m3works.io
micah.johnson@m3works.io
micah.sandusky@m3works.io

www.m3works.io