ASO + M3 Works Modeling Report

Uinta Headwaters, UT

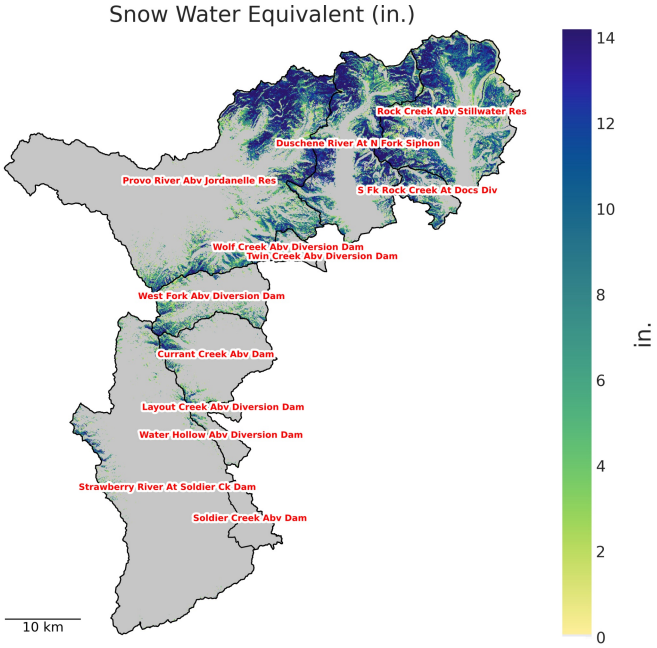
Model date: April 15, 2026

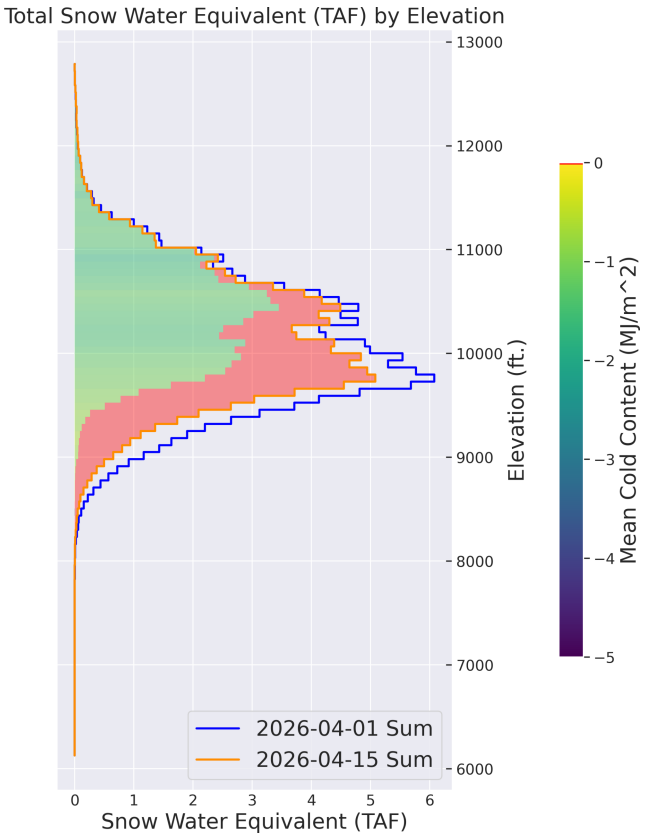
Historical data and reports can be found at:
data.airbornesnowobservatories.com

UINTA HEADWATERS, UT
APRIL 15, 2026 MODELING REPORT

Current model date: April 15, 2026
Model Total Snow Water Equivalent: 103.8 TAF
Model Mean Snow Water Equivalent: 2.6 in.
Model Mean Cold Content: -0.6 MJ/m^2

Model reporting period: Apr 01 - Apr 15, 2026
Change in Total Snow Water Equivalent: -19.8 TAF
Change in Mean Snow Water Equivalent: -0.5 in.
Accumulated Total Surface Water Input: 54.3 TAF
Accumulated Total Precipitation: 46.0 TAF
Change in Mean Cold Content: -0.2 MJ/m^2





DESCRIPTION	TOTAL	CURRANT CREEK ABV DAM	DUSCHENE RIVER AT N FORK SIPHON	LAYOUT CREEK ABV DIVERSION DAM	PROVO RIVER ABV JORDANELLE RES	ROCK CREEK ABV STILLWATER RES	S FK ROCK CREEK AT DOCS DIV	SOLDIER CREEK ABV DAM	STRAWBERRY RIVER AT SOLDIER CK DAM
Mean SWE in.	2.6	0.8	5.5	0.7	2.8	5.9	4.6	0.0	0.2
Total SWE TAF	103.8	2.0	26.0	0.1	34.4	30.9	3.4	0.0	2.1

TWIN CREEK ABV DIVERSION DAM	WATER HOLLOW ABV DIVERSION DAM	WEST FORK ABV DIVERSION DAM	WOLF CREEK ABV DIVERSION DAM
0.0	0.5	1.9	1.9
0.0	0.2	3.7	0.9

The model has been updated with ASO survey data, a brief summary of the changes to the model are provided:
March 11 - March 12 update summary: removed 3.7 TAF of Snow Water Equivalent

State of the Snowpack

Interpretation Notes

Elevation bands are in increments of 1000 ft, e.g., 4000 is 4000 - 5000 ft.

Mean SWE is calculated over the total basin area. Mean cold content is calculated over the snow covered area to reflect the ripeness of the existing snowpack.

Surface Water Input (SWI) includes liquid water leaving the bottom of the snowpack and rain on bare ground.

Forcing data is created with the Spatial Modeling for Resources Framework (SMRF) using the High Resolution Rapid Refresh (HRRR) output fields as inputs.

Model Results

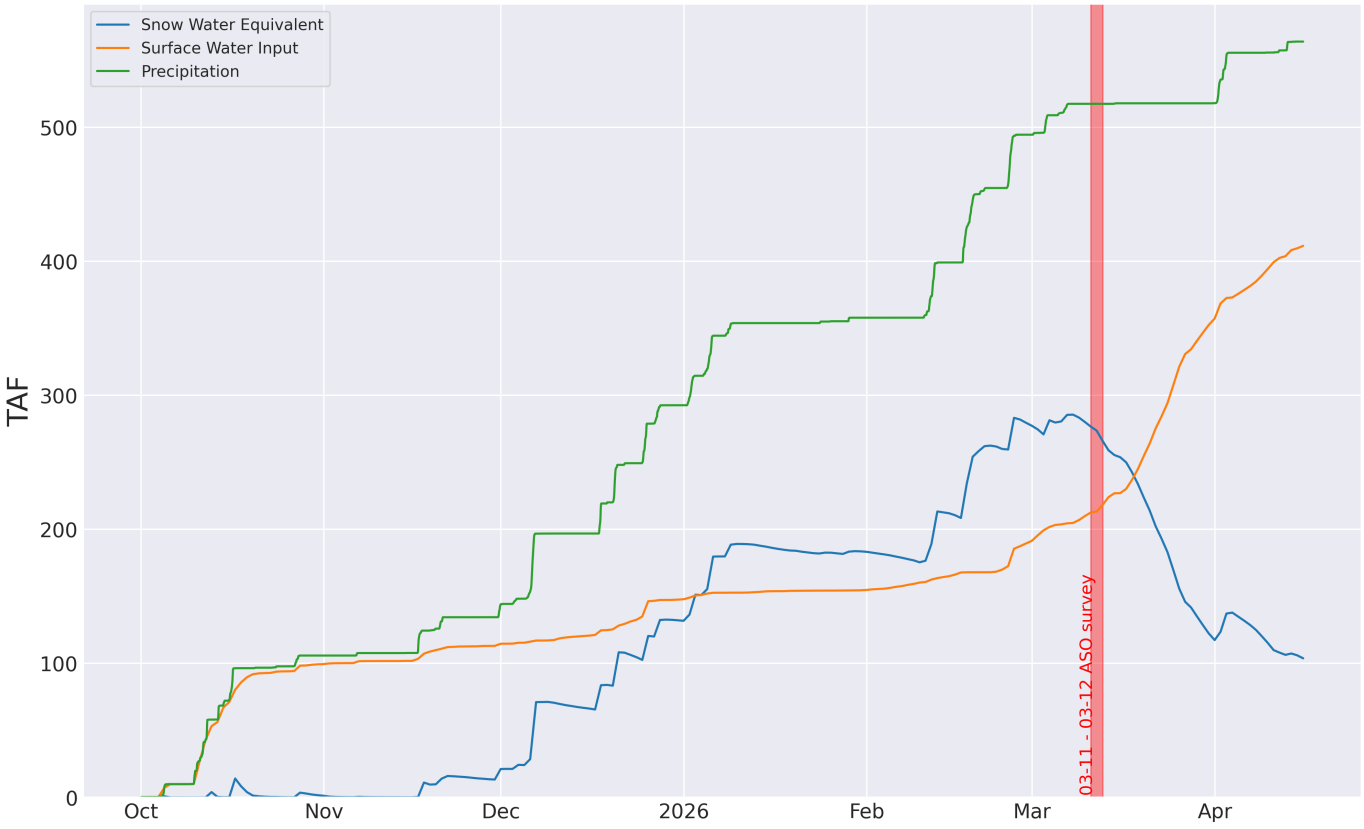


Fig.3 Water Year timeseries. Vertical lines indicate ASO survey dates.

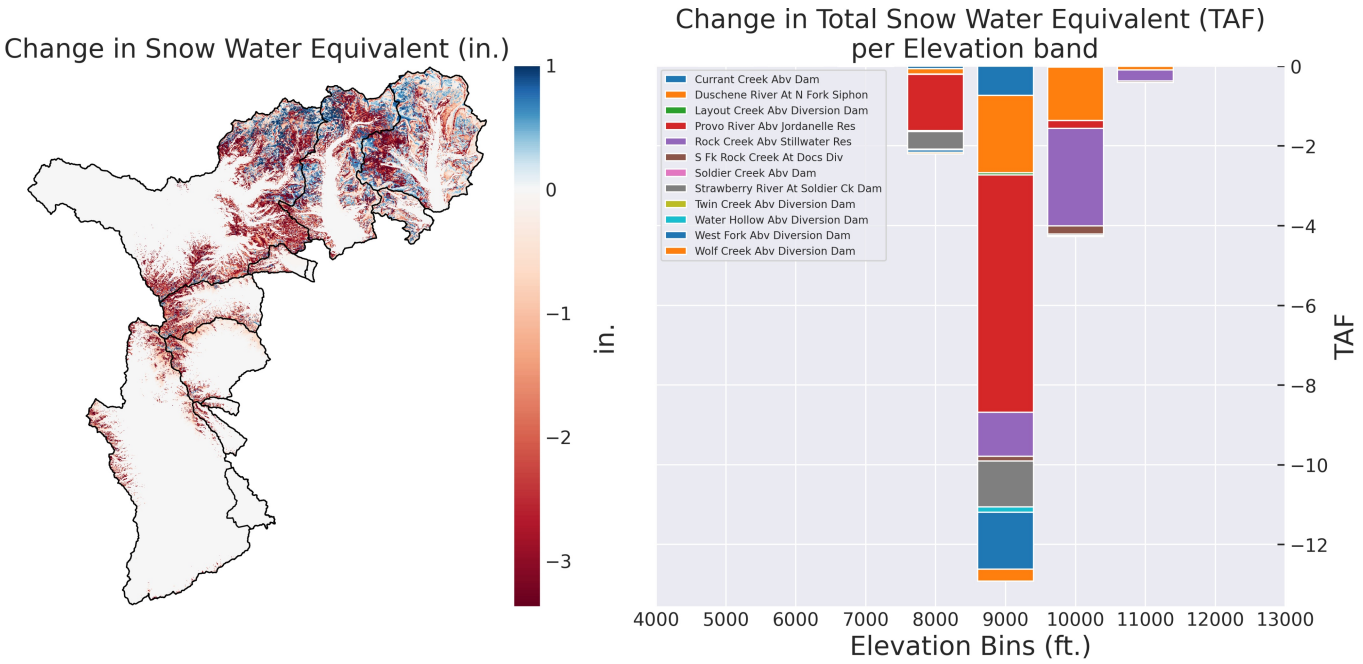


Fig.4 Change in Snow Water Equivalent from 2026-04-01 to 2026-04-15

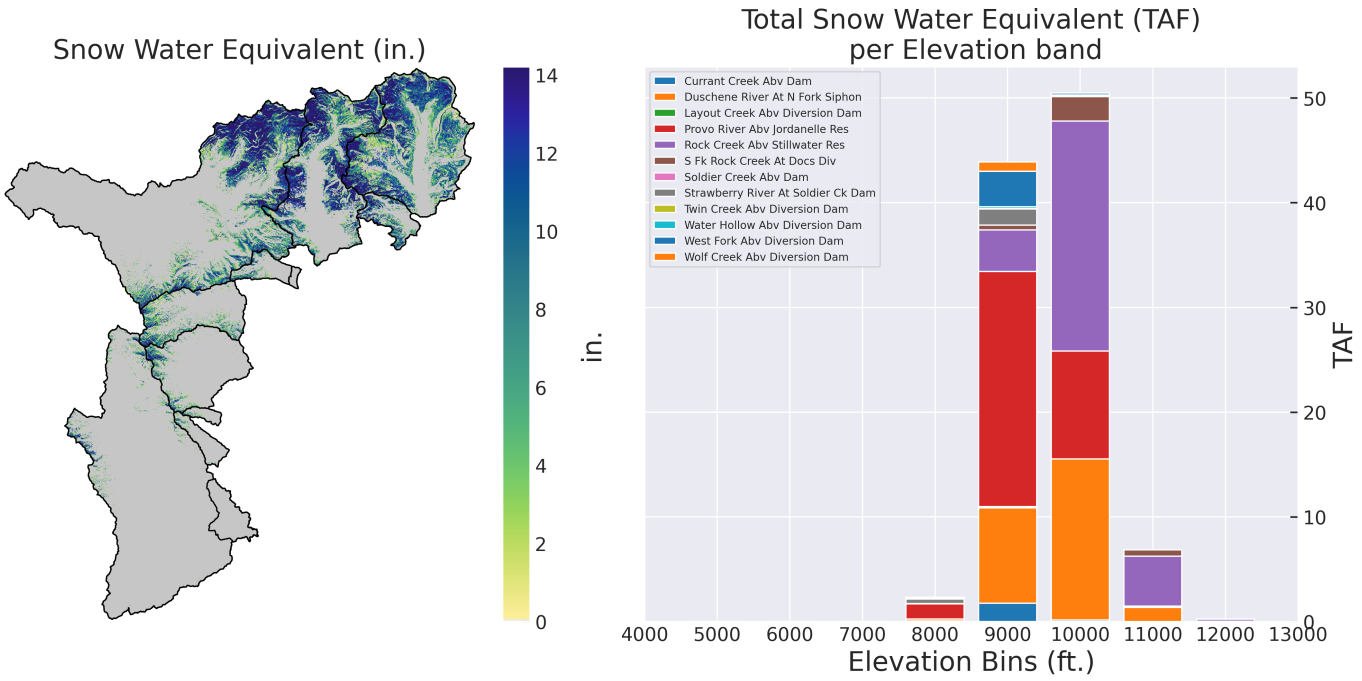


Fig.5 Snow Water Equivalent as of 2026-04-15

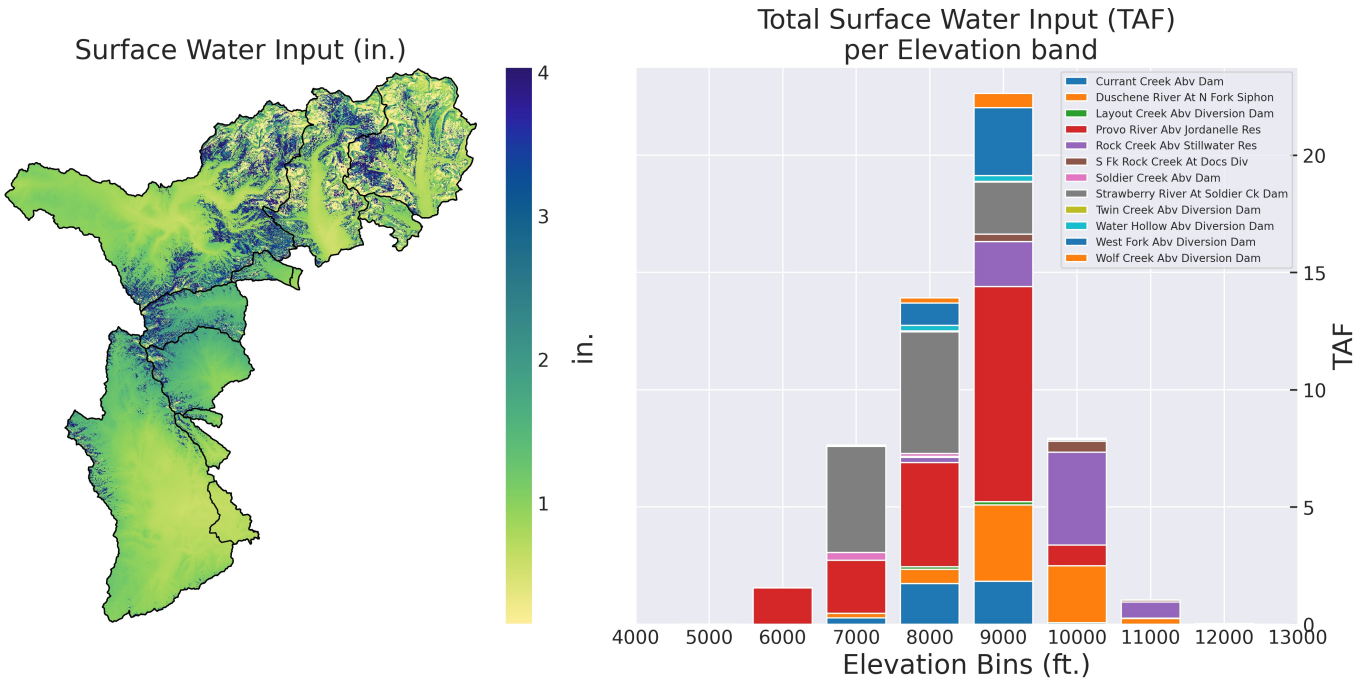


Fig.6 Accumulated Surface Water Input from 2026-04-01 to 2026-04-15

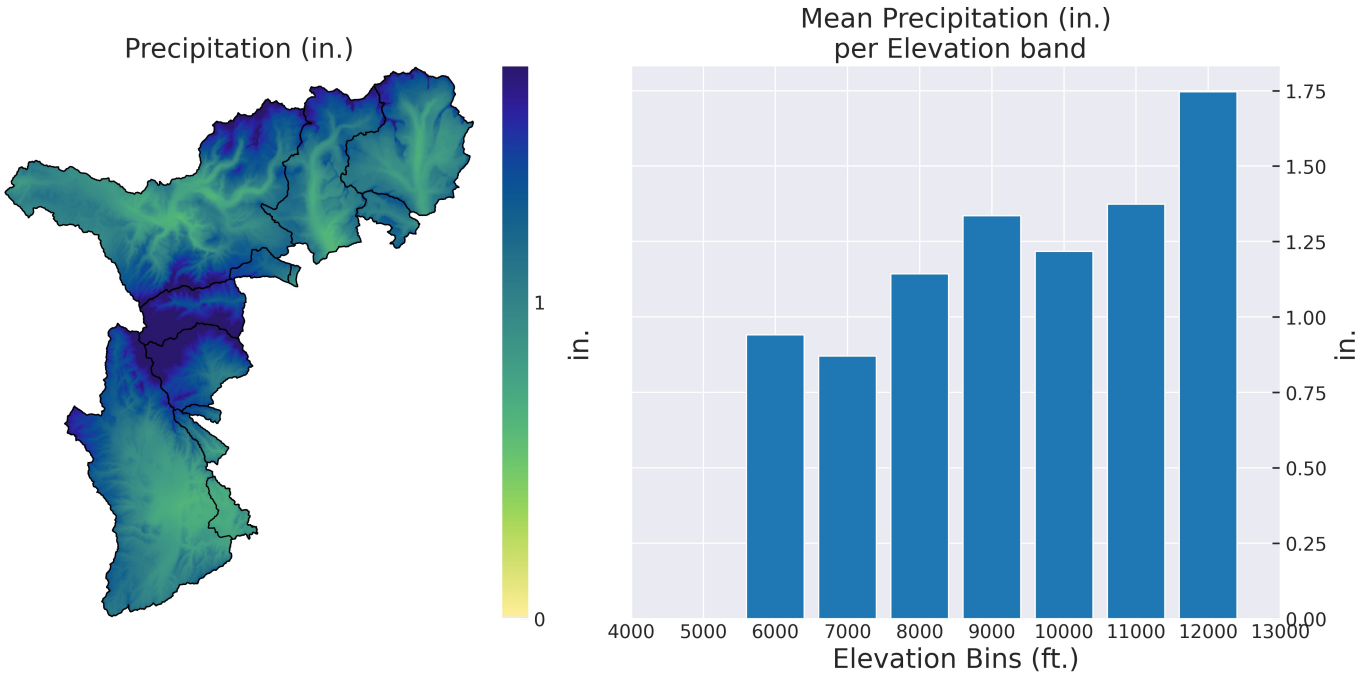


Fig.7 Accumulated Precipitation from 2026-04-01 to 2026-04-15. Precipitation fields are locally interpolated using SMRF with underlying data from HRRR.

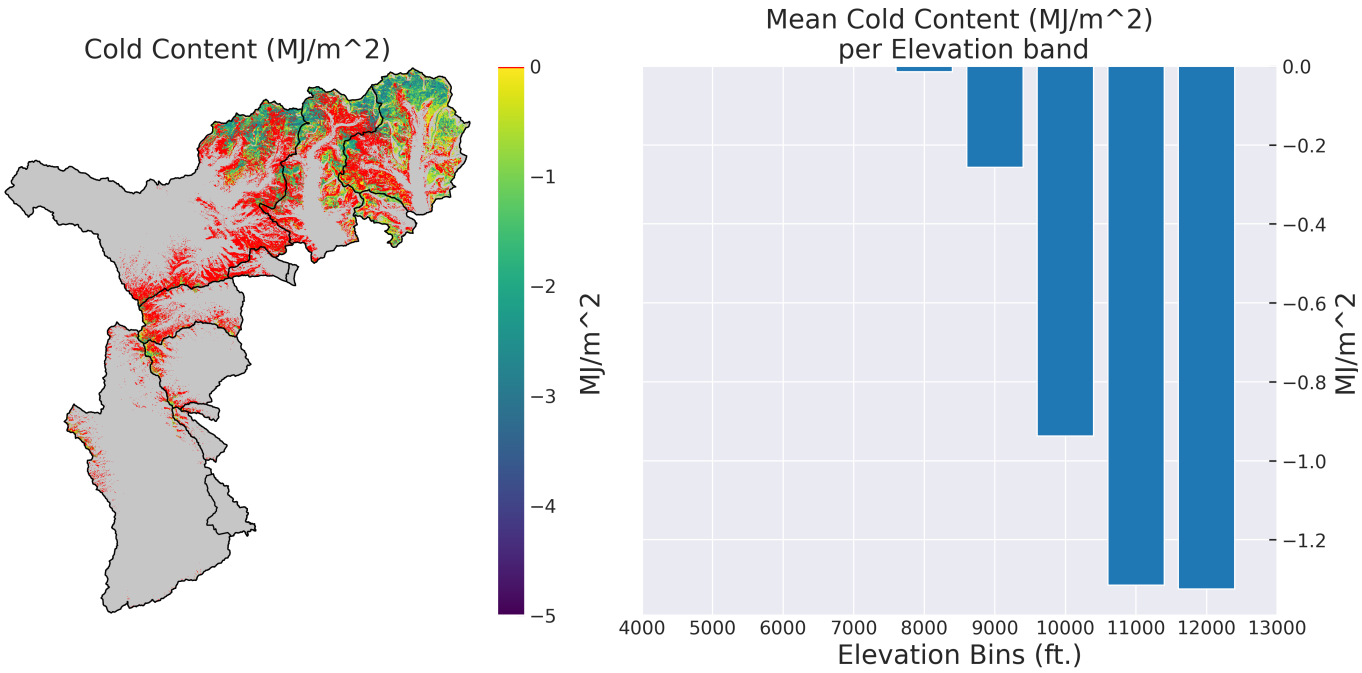


Fig.8 Cold Content as of 2026-04-15

The un-ripe snow represents approximately 61% of the basin SWE.

Model to station comparisons are a comparison of 50 meter cells to a point within the basin. Some differences are expected when comparing modeled and measured snowpack behavior at these different spatial scales. ASO 3m snow depth measurements at each station are indicated by the red '+' symbols. Absence of these symbols indicates that the station location or data quality are suspect, and they were not used in the ASO survey validation and report.

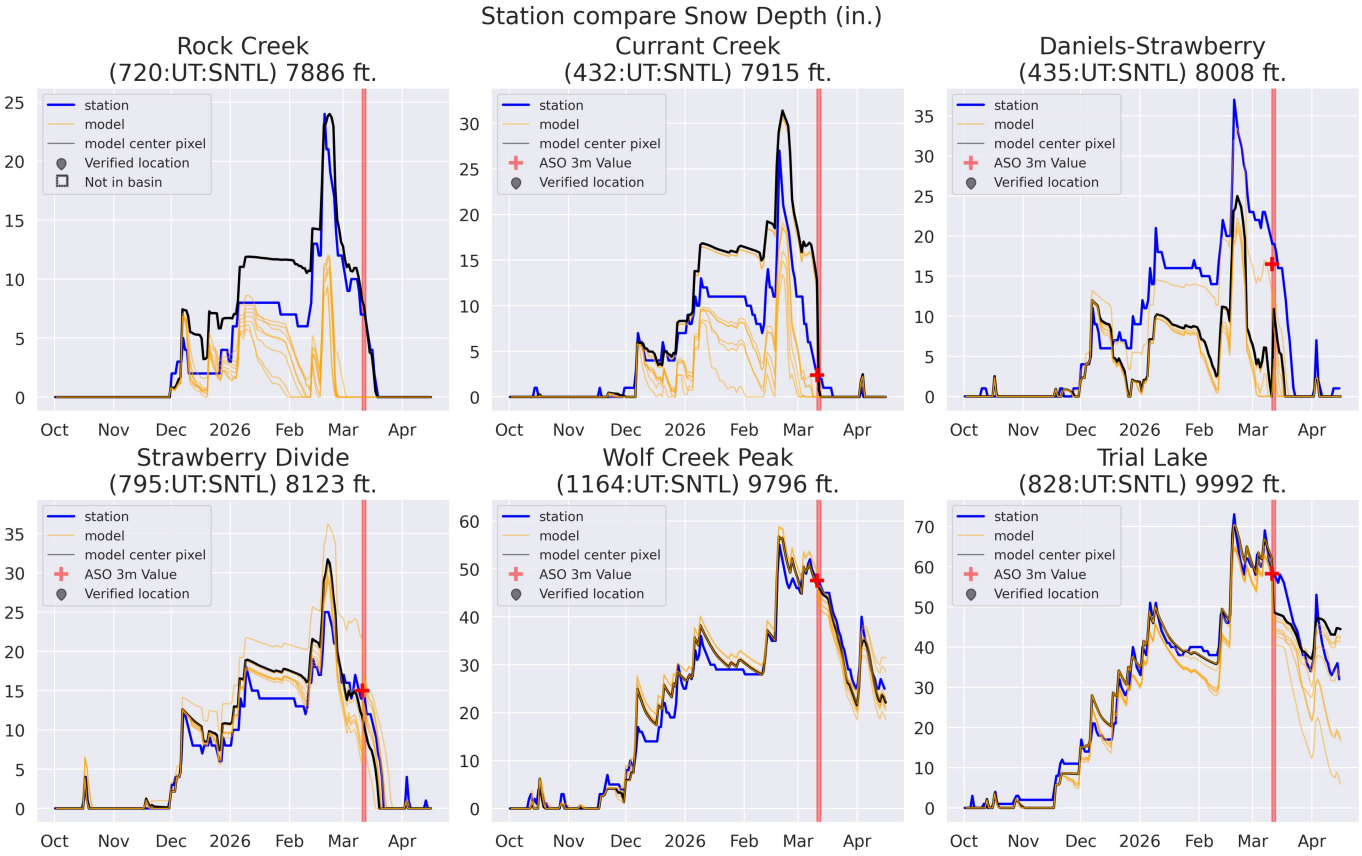


Fig.9 Comparison of modeled and measured Snow Depth [in.]. Comparisons of model pixels to measured station data are performed with the 9 nearest model pixels to give a more spatially complete view of model behavior.

Model Description

Modeled data is generated using the M3 Works model framework BOREAS, which is the next generation of the Automated Water Supply Model (AWSM). Underlying forcing data is sourced from the High Resolution Rapid Refresh model (HRRR). BOREAS simulates the snowpack state using the physically based, distributed energy and mass balance snow model, iSnobal.

This report is brought to you by the team at M3 Works: Mark Robertson, Micah Johnson, Micah Sandusky, Christina Aragon, Andrew Slaughter, and Ben Roberts-Pierel.

For more information on Airborne Snow Observatories, Inc. visit airbornesnowobservatories.com.

More information about M3 Works can be found at m3works.io.

Additional Details

Total Snow Water Equivalent values (TAF) on 2026-04-15

ELEVATION RANGE	TOTAL	CURRANT CREEK ABV DAM	DUSCHENE RIVER AT N FORK SIPHON	LAYOUT CREEK ABV DIVERSION DAM	PROVO RIVER ABV JORDANELLE RES	ROCK CREEK ABV STILLWATER RES	S FK ROCK CREEK AT DOCS DIV	SOLDIER CREEK ABV DAM	STRAWBERRY RIVER AT SOLDIER CK DAM
7000 - 7999	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8000 - 8999	2.3	0.1	0.2	0.0	1.5	0.0	0.0	0.0	0.4
9000 - 9999	43.9	1.7	9.1	0.1	22.5	4.0	0.5	0.0	1.5
10000 - 10999	50.5	0.2	15.4	0.0	10.3	22.0	2.3	0.0	0.1
11000 - 11999	6.8	0.0	1.3	0.0	0.1	4.8	0.6	0.0	0.0
12000 - 12999	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0

Total Snow Water Equivalent values (TAF) on 2026-04-15 cont.

ELEVATION RANGE	TWIN CREEK ABV DIVERSION DAM	WATER HOLLOW ABV DIVERSION DAM	WEST FORK ABV DIVERSION DAM	WOLF CREEK ABV DIVERSION DAM
7000 - 7999	0.0	0.0	0.0	0.0
8000 - 8999	0.0	0.0	0.1	0.0
9000 - 9999	0.0	0.2	3.4	0.9
10000 - 10999	0.0	0.0	0.2	0.0
11000 - 11999	0.0	0.0	0.0	0.0
12000 - 12999	0.0	0.0	0.0	0.0

Accumulated Total Surface Water Input values (TAF) from 2026-04-01 to 2026-04-15

ELEVATION RANGE	TOTAL	CURRANT CREEK ABV DAM	DUSCHENE RIVER AT N FORK SIPHON	LAYOUT CREEK ABV DIVERSION DAM	PROVO RIVER ABV JORDANELLE RES	ROCK CREEK ABV STILLWATER RES	S FK ROCK CREEK AT DOCS DIV	SOLDIER CREEK ABV DAM	STRAWBERRY RIVER AT SOLDIER CK DAM
6000 - 6999	1.6	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0
7000 - 7999	7.3	0.3	0.2	0.0	2.3	0.0	0.0	0.3	4.5
8000 - 8999	13.8	1.7	0.6	0.1	4.4	0.2	0.0	0.1	5.2
9000 - 9999	22.6	1.8	3.3	0.1	9.2	1.9	0.3	0.0	2.2
10000 - 10999	7.9	0.1	2.4	0.0	0.9	4.0	0.5	0.0	0.1
11000 - 11999	1.0	0.0	0.2	0.0	0.0	0.7	0.1	0.0	0.0
12000 - 12999	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Accumulated Total Surface Water Input values (TAF) from 2026-04-01 to 2026-04-15 cont.

ELEVATION RANGE	TWIN CREEK ABV DIVERSION DAM	WATER HOLLOW ABV DIVERSION DAM	WEST FORK ABV DIVERSION DAM	WOLF CREEK ABV DIVERSION DAM
6000 - 6999	0.0	0.0	0.0	0.0
7000 - 7999	0.0	0.0	0.0	0.0
8000 - 8999	0.0	0.2	1.0	0.2
9000 - 9999	0.0	0.3	2.9	0.6
10000 - 10999	0.0	0.0	0.0	0.0
11000 - 11999	0.0	0.0	0.0	0.0
12000 - 12999	0.0	0.0	0.0	0.0

Change in Total Snow Water Equivalent values (TAF) from 2026-04-01 to 2026-04-15

ELEVATION RANGE	TOTAL	CURRANT CREEK ABV DAM	DUSCHENE RIVER AT N FORK SIPHON	LAYOUT CREEK ABV DIVERSION DAM	PROVO RIVER ABV JORDANELLE RES	ROCK CREEK ABV STILLWATER RES	S FK ROCK CREEK AT DOCS DIV	SOLDIER CREEK ABV DAM	STRAWBERRY RIVER AT SOLDIER CK DAM
7000 - 7999	-0.0	0.0	0.0	0.0	-0.0	0.0	0.0	0.0	-0.0
8000 - 8999	-2.2	-0.1	-0.1	-0.0	-1.4	-0.0	-0.0	0.0	-0.4
9000 - 9999	-12.9	-0.7	-1.9	-0.1	-6.0	-1.1	-0.1	-0.0	-1.1
10000 - 10999	-4.3	-0.0	-1.3	-0.0	-0.2	-2.4	-0.2	0.0	-0.0
11000 - 11999	-0.4	0.0	-0.1	0.0	-0.0	-0.3	-0.0	0.0	0.0
12000 - 12999	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Change in Total Snow Water Equivalent values (TAF) from 2026-04-01 to 2026-04-15 cont.

ELEVATION RANGE	TWIN CREEK ABV DIVERSION DAM	WATER HOLLOW ABV DIVERSION DAM	WEST FORK ABV DIVERSION DAM	WOLF CREEK ABV DIVERSION DAM
7000 - 7999	0.0	0.0	0.0	0.0
8000 - 8999	-0.0	-0.0	-0.1	-0.0
9000 - 9999	-0.0	-0.1	-1.4	-0.3
10000 - 10999	0.0	-0.0	-0.0	0.0
11000 - 11999	0.0	0.0	0.0	0.0
12000 - 12999	0.0	0.0	0.0	0.0