ASO Hydrologic Forecast Report

Uinta Mountains: Strawberry/Duchesne

Forecast Date: May 15, 2026

Airborne Snow Observatories, Inc. is a public benefit corporation with a mission to provide high-quality, timely, and accurate snow measurement, modeling, and runoff forecasts to empower the world's water managers to make the best possible use of our planet's precious water.

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Overview:

This report summarizes WRF-Hydro hydrologic analysis and forecast results for the Uinta Mountains: Strawberry/Duchesne River Basin for forecasts generated on May 15, 2026. This report also contains results of the impacts from the recent ASO survey conducted on May 11, 2026. Hydrologic variables reported on in this report include snowpack, snowmelt, seasonal river flow/reservoir inflow, and soil moisture.

IMPORTANT: All modeled runoff and reservoir inflow forecasts are "natural" flow values with no accounting for reservoir storage/release, diversions, transfers or managed return flows. As such, these forecast numbers should be compared against analogous naturalized flow measurements or estimates.

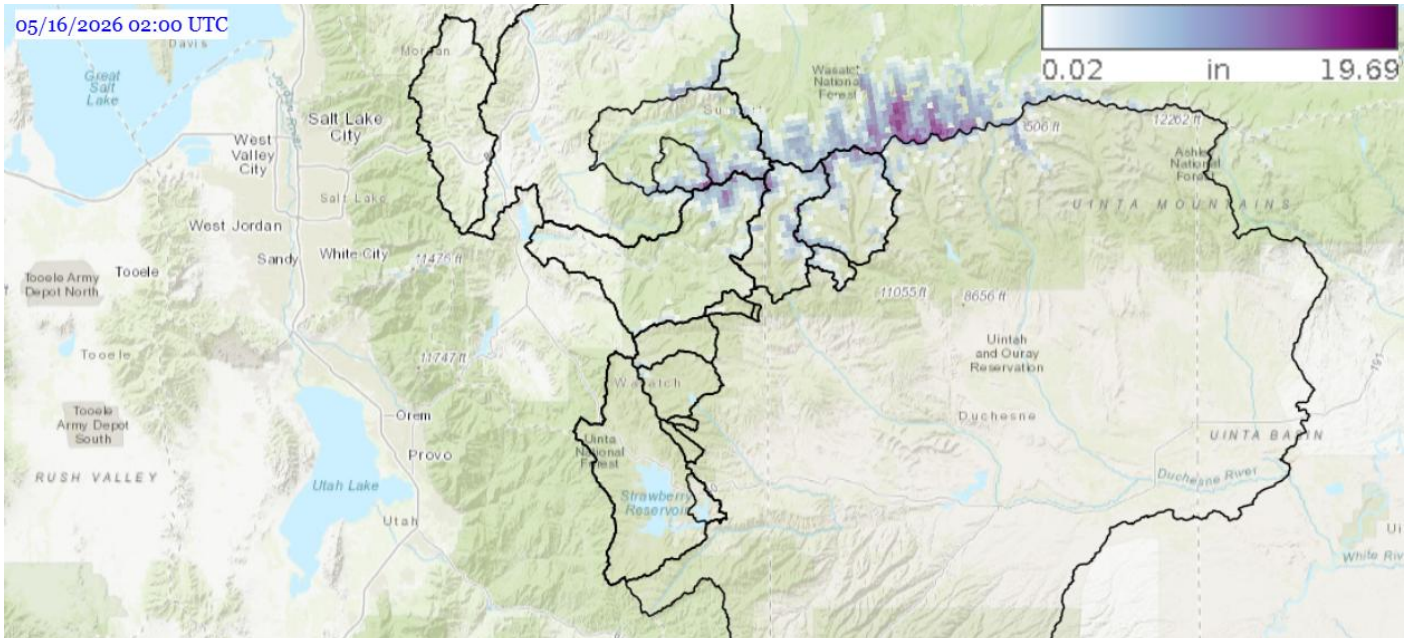

Figure 1. WRF-Hydro/ASO-assimilated 1km gridded Snow Water Equivalent (SWE - inches). Valid: May 15, 2026

Snowpack Status: Impact of ASO Airborne Surveys

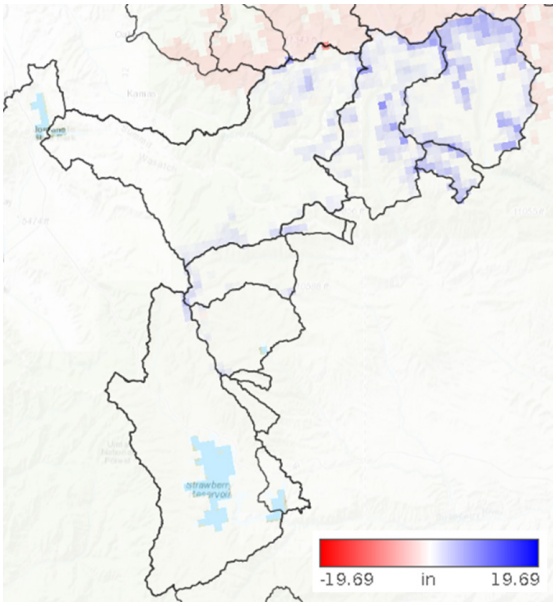

Figure 2. Spatial map of SWE difference between WRF-Hydro ASO-assimilated values (inches) before and after survey assimilation. Blue(red) values indicate increases(decreases). Valid: May 15, 2026

Table 1. Valid: May 15, 2026

Basin	Estimated SWE volume (kac-ft)
SNODAS	14.110
ASO-assimilated	32.834

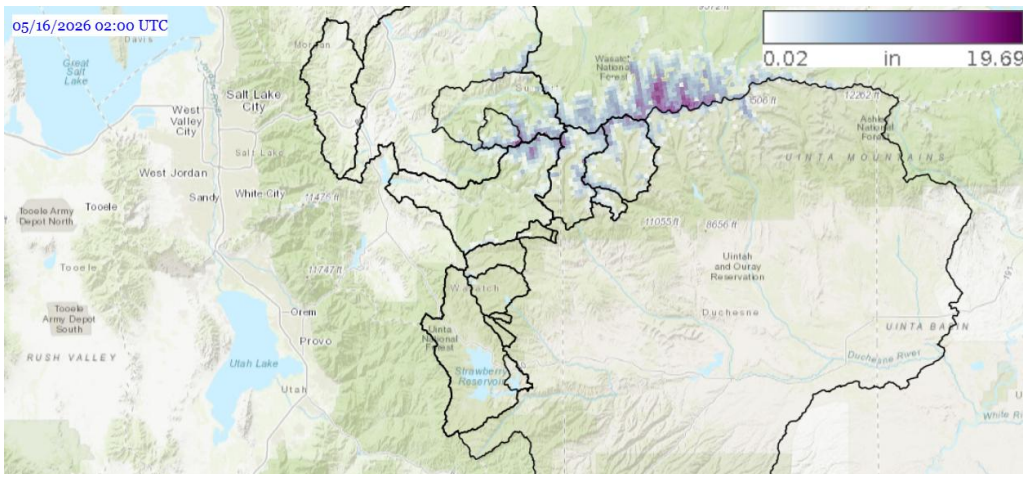

Figure 3. ASO-assimilated WRF-Hydro SWE. (inches) Valid: May 15, 2026

Impact of ASO Survey Assimilation:

The assimilation of the May 11 ASO airborne survey resulted in a net 28 TAF increase in SWE across the full survey domain. Most of that increase was concentrated in northern basins such as Rock Creek, N. Fork Duchesne subbastions as well as in the upper Provo River basin. Much smaller additions of snow due to assimilation were found in other basins further south. Differences between modeled and surveyed SWE values were attributed to largely to errors in modeled snow ablation rates which were too aggressive. Model snowmelt parameters and input energy forcings were adjusted during the assimilation period since the prior survey to achieve closure between the modeled and surveyed SWE values.

Snowpack Status: Snowpack Volume

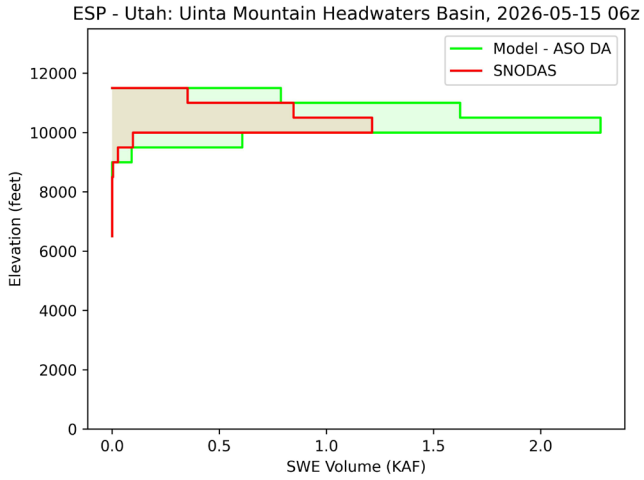

Figure 4. Elevation distribution of SWE between WRF-Hydro ASO-assimilated model and SNODAS (kac-ft). Valid: May 15, 2026

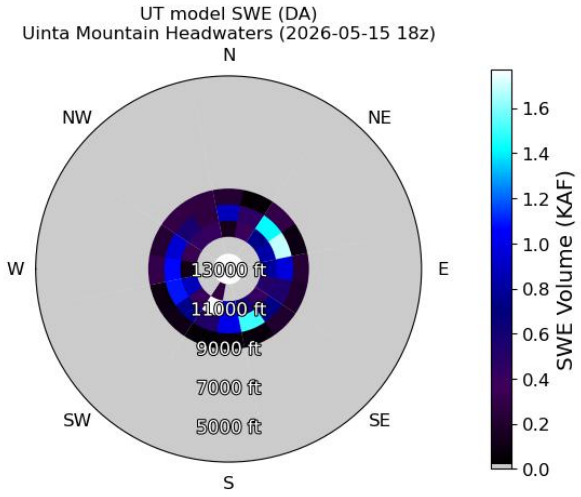

Figure 5. Terrain aspect-elevation distribution of snowpack (kac-ft) Valid: May 15, 2026

Summary of Snowpack Conditions:

The figures on this page show various distributions of snowpack within the basin. The elevation distribution of SWE in Fig. 4 shows that the ASO-assimilated WRF-Hydro model estimated more snowpack than operational SNODAS estimate product across most elevation bands. Figure 5 shows that the ASO-assimilated snowpack in the basin is generally distributed on northeast and southeast aspects. The seasonal trend of basin-integrated snowpack shown in Fig. 6 shows the broad decline in SWE since the last survey assimilation which occurred on April 25.

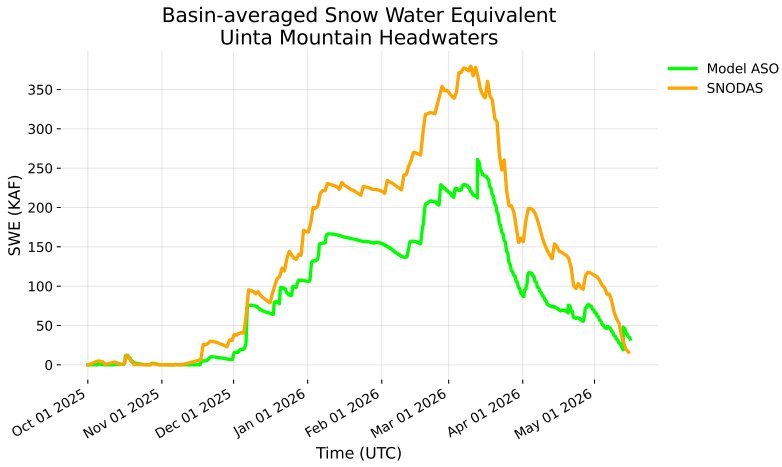

Figure 6. Basin-avg SWE from WRF-Hydro ASO-assimilated model and SNODAS (kac-ft). Valid: May 15, 2026

Table 2. Valid: May 15, 2026

Strawberry Reservoir - SWE

Basin	Estimated SWE volume (kac-ft)
SNODAS	None
ASO-assimilated	None

Provo R. above Jordanelle Res. - SWE

Basin	Estimated SWE volume (kac-ft)
SNODAS	1.573
ASO-assimilated	9.976

Rock Cr. above Stillwater - SWE

Basin	Estimated SWE volume (kac-ft)
SNODAS	8.039
ASO-assimilated	11.049

Snowpack Forecast:

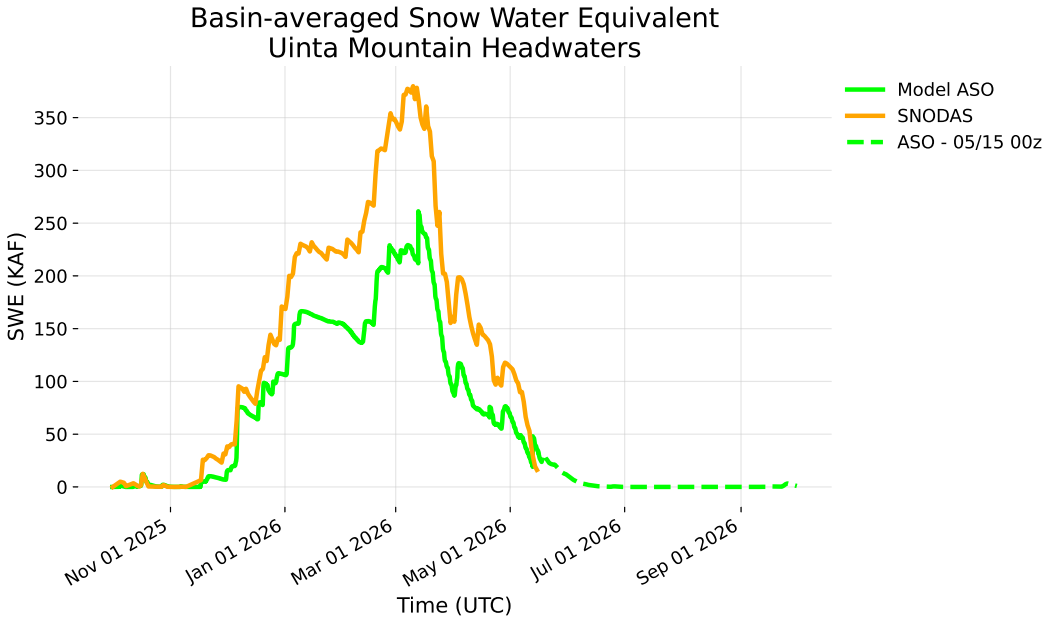

Figure 7. WRF-Hydro model analyzed and ensemble mean forecasted SWE. Valid: May 15, 2026

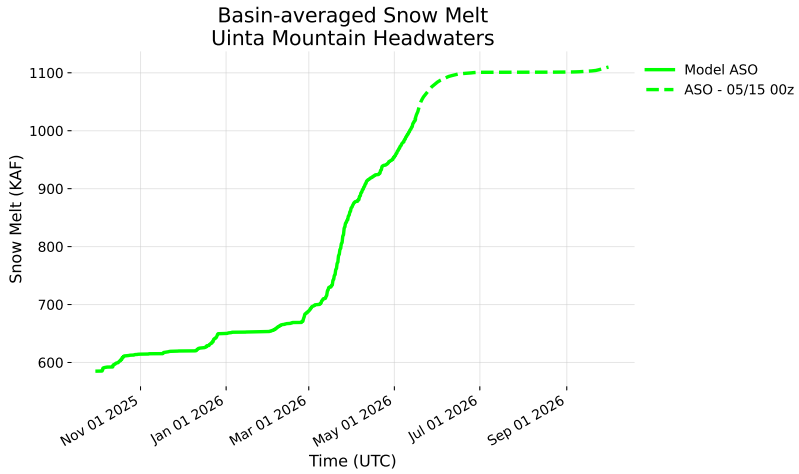

Figure 8. WRF-Hydro model forecasted basin-integrated ensemble mean accumulated snow-melt (inches) from the ASO-assimilated model instance. Valid: May 15, 2026

Summary of Snowpack Forecasts

The snowpack forecasts for the ASO-assimilated model (dashed green line) continued to show a fairly typical melt out pattern, though earlier than normal, extending forward from model initialization. (Fig. 7) The forecasted SWE and snowmelt (Fig. 8) continued to suggest that the snowpack will largely be melted out by late May/early June under current forecasted conditions. Currently, around 32 TAF of SWE remains to be melted in the combined Duschesne/Provo system. Future precipitation may add additional inputs to that expected amount of snowmelt though any appreciable new snowpack accumulations are not currently expected.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast					
Strawberry Reservoir Inflow					
Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	22.3	22.9	24.7	28.4	31.0

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	23.42	23.67	24.05	25.05	25.57

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	23.2	24.0	24.7	26.0	27.2

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	20.40	20.77	21.05	22.18	22.80

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from the CBRFC.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast

Water Hollow abv Diversion Dam

Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	0.55	0.57	0.60	0.70	0.81

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	0.55	0.56	0.57	0.59	0.62

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	0.60	0.61	0.61	0.63	0.65

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	0.613	0.614	0.618	0.626	0.635

Summary of Flow Forecasts

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Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast

Layout Cr abv Diversion Dam

Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	0.25	0.26	0.28	0.33	0.39

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	0.29	0.30	0.30	0.31	0.33

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	0.26	0.27	0.27	0.28	0.29

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	0.282	0.282	0.283	0.289	0.293

Summary of Flow Forecasts

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Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast						
Currant Creek abv Dam						
Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	2.18	2.82	3.82	5.47	7.32

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	2.41	2.68	3.27	4.20	5.34

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	2.35	2.56	2.89	3.66	4.61

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	2.56	2.67	2.88	3.38	3.93

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from the CBRFC.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast

West Fork abv Diversion Dam

Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	4.66	5.32	6.44	8.92	10.55

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	6.30	6.51	6.88	7.78	8.60

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	5.65	5.91	6.18	7.21	7.88

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	6.29	6.33	6.43	6.74	7.22

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from the CBRFC.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast

Wolf Cr. abv Diversion Dam

Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	0.80	0.89	1.10	1.38	1.55

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	1.07	1.15	1.19	1.31	1.37

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	0.98	1.03	1.10	1.22	1.28

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	1.10	1.10	1.13	1.15	1.23

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from model analysis. No naturalized streamflow estimate available in real-time.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast

Twin Cr. abv Diversion Dam

Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	0.13	0.16	0.20	0.24	0.28

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	0.15	0.16	0.18	0.20	0.23

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	0.16	0.17	0.19	0.21	0.23

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	0.169	0.171	0.179	0.188	0.206

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from model analysis. No naturalized streamflow estimate available in real-time.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast						
Hades Cr.						
Forecast Date		Q90	Q75	Q50	Q25	Q10
12-Mar-26		2.48	3.17	4.67	6.28	7.18

Forecast Date		Q90	Q75	Q50	Q25	Q10
6-Apr-26		3.25	3.52	4.35	5.26	5.94

Forecast Date		Q90	Q75	Q50	Q25	Q10
25-Apr-26		3.43	3.60	4.01	4.71	5.08

Forecast Date		Q90	Q75	Q50	Q25	Q10
15-May-26		4.02	4.11	4.25	4.61	4.96

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from model analysis. No naturalized streamflow estimate available in real-time.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast

S. Fork Rock Cr. abv Diversion

Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	4.77	5.43	7.72	10.46	11.46

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	6.75	7.04	7.74	8.46	9.12

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	5.95	6.15	6.83	7.61	8.17

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	5.34	5.49	5.67	6.33	6.69

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from the CBRFC.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast

Rock Cr. abv Stillwater Diversion

Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	25.1	29.8	47.5	68.2	76.9

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	37.34	39.40	44.44	49.26	54.75

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	35.7	37.6	41.8	47.9	52.4

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	39.59	40.44	42.21	45.97	50.95

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from the CBRFC.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast

Lake Fork abv Moon Lake

Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	21.4	26.5	37.9	53.9	61.6

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	32.39	34.72	39.38	43.83	47.30

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	37.1	39.2	42.8	46.8	50.0

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	33.0	33.7	35.6	37.7	40.5

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from the CBRFC.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast

Yellowstone R abv Altonah

Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	20.5	25.7	30.6	38.1	43.6

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	26.78	28.17	30.55	31.93	33.58

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	27.6	28.5	30.6	32.4	34.2

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	24.57	25.07	26.11	27.19	28.79

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from the CBRFC.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast					
Duchesne River at Knight Diversion					
Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	72.5	81.1	112.9	148.5	167.0

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	90.80	95.07	104.47	115.82	125.31

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	89.1	91.7	101.4	111.6	121.0

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	96.70	98.41	100.71	109.06	117.47

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from the CBRFC.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast					
Provo River at Woodland					
Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	41.7	48.4	66.2	86.6	104.1

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	50.85	54.46	64.53	77.06	87.31

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	52.5	54.9	58.5	63.0	67.6

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	53.3	54.4	55.5	56.6	57.7

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included. Flow from April 1 through forecast initialization comes from USGS gauge at this site.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast					
Provo River at Hailstone					
Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	46.2	53.0	70.9	91.9	109.3

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	56.5	60.1	70.3	83.0	93.1

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	56.3	58.7	62.3	67.0	71.6

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	60.7	61.9	63.0	64.1	65.1

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included in the forecast. Flow from April 1 through forecast initialization comes from the CBRFC.

Runoff & Reservoir Inflow Forecast:

ASO-Assimilated April-July Runoff Forecast					
Provo River - Jordanelle Inflow					
Forecast Date	Q90	Q75	Q50	Q25	Q10
12-Mar-26	48.6	55.2	73.5	94.2	111.9

Forecast Date	Q90	Q75	Q50	Q25	Q10
6-Apr-26	57.36	61.00	71.07	83.55	93.84

Forecast Date	Q90	Q75	Q50	Q25	Q10
25-Apr-26	58.7	61.1	64.6	69.4	73.9

Forecast Date	Q90	Q75	Q50	Q25	Q10
15-May-26	63.3	64.5	65.5	66.8	67.7

Summary of Flow Forecasts

This flow forecast represents the April-July natural accumulated runoff for this site. No accounting for human diversions, impoundments or transfers have been included in the forecast. Flow from April 1 through forecast initialization comes from the CBRFC.

Soil Saturation Status:

Summary of Soil Moisture Conditions:

Basin averaged soil moisture conditions have largely remained level over the past couple of weeks as additional moisture inputs appear to be balanced by some drying. (Fig. 10) Low elevation areas appear to remain particularly dry throughout the model domain (Figs. 9 and 11) while middle and upper-middle elevation areas exhibit comparatively higher soil saturation values.

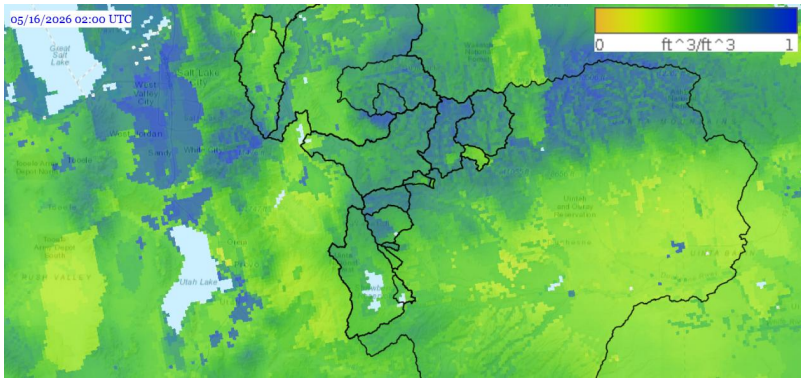

Figure 9. WRF-Hydro analyzed, vertically-integrated soil saturation. (%-saturation). Valid: May 15, 2026

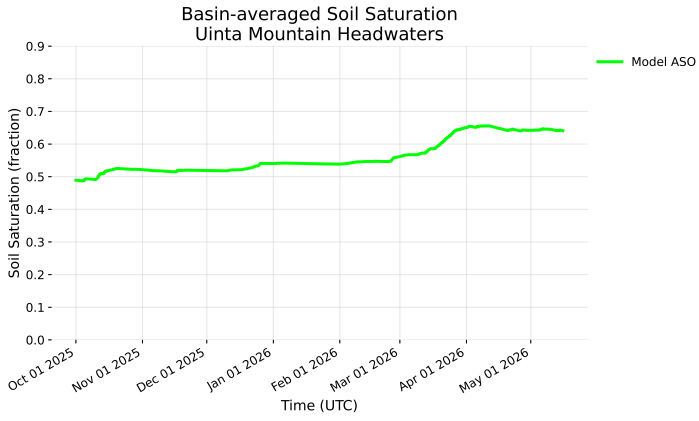

Figure 10. WRF-Hydro modeled soil saturation (% of saturation) from the ASO-assimilated model analyses. Valid: May 15, 2026

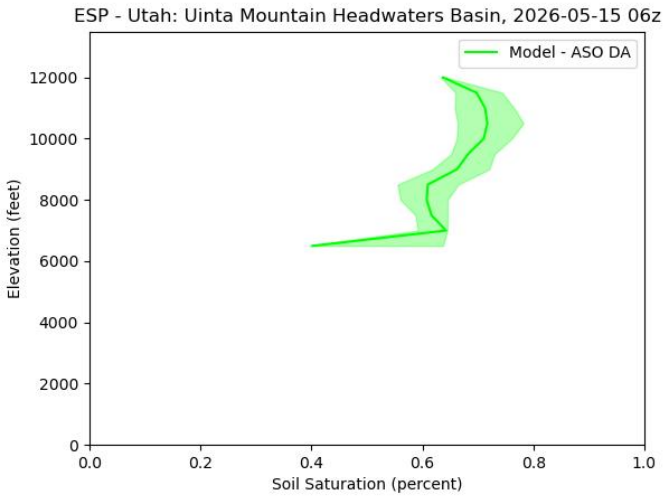

Figure 11. Elevation-band averaged soil saturation (% of saturation) modeled by the ASO WRF-Hydro system. Valid: May 15, 2026

Supplemental flow/inflow forecast information: