United States Department of Agriculture

Wyoming Basin & Water Supply Outlook Report
February 1, 2021

Natural Resources Conservation Service

Photo courtesy of NRCS Snow Survey

Basin Outlook Reports
And
Federal - State - Private Cooperative Snow Surveys

For more Wyoming water supply information, contact:

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

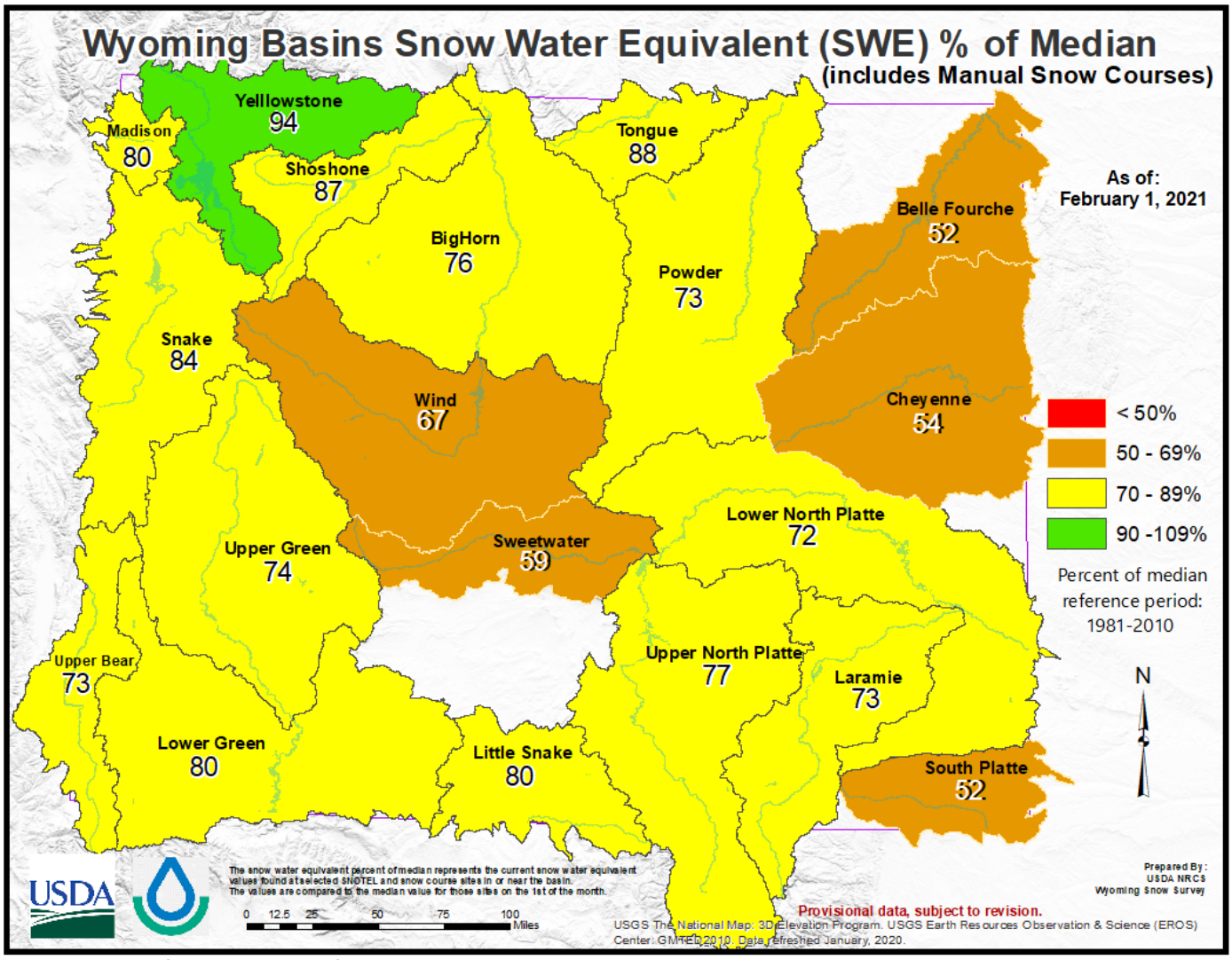
The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Summary

- Wyoming continues to see **below** median percent of snowpack and/or snow water equivalents (SWEs)through late January.
- Precipitation totals across Wyoming for January as well as for the water year also continue to be **below** average.
- Reservoirs across Wyoming were averaging near **72**% of capacity-down from **80**% reported last year. Overall reservoir storages for late January continue to be **above average**.
- Stream flow snowmelt volumes are forecasted to be **below** average for almost all major drainages across Wyoming.

Snowpack/SWEs

Snow water equivalents (SWEs)across Wyoming for February 1st were near **73**% of median. SWEs in the Yellowstone River Basin were the highest **90** to **95**% of median, while SWEs in the South Plate and Belle Fourche River Basins were the lowest at **50** to **52**% of median. Last year, SWEs across the state were **111**% of median. (**For complete tabular data, see Appendix**)

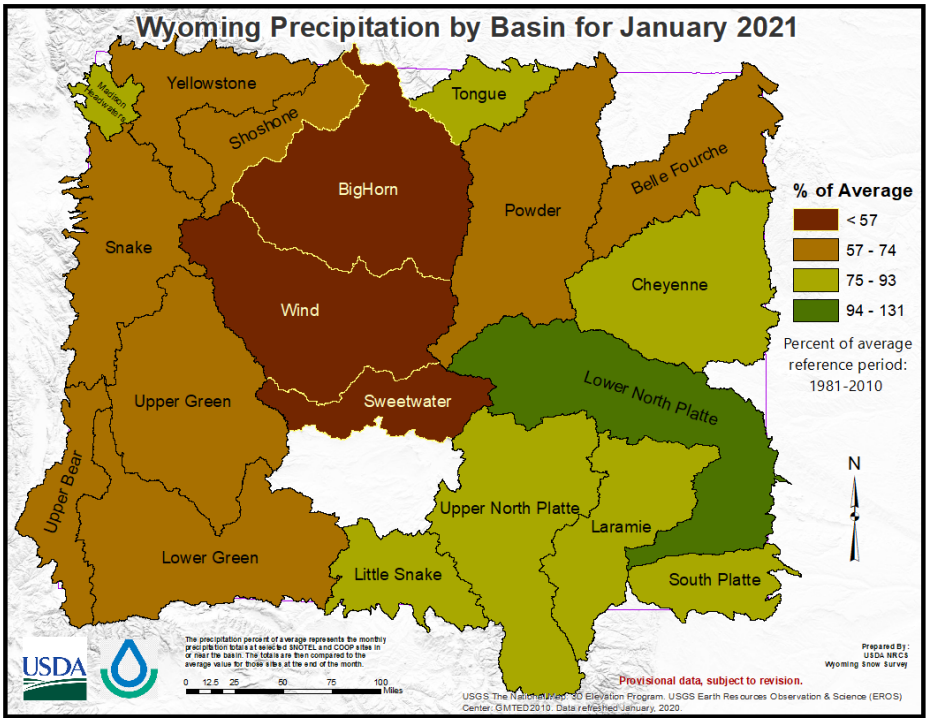


Map 1. Wyoming SWEs—February 1, 2021.

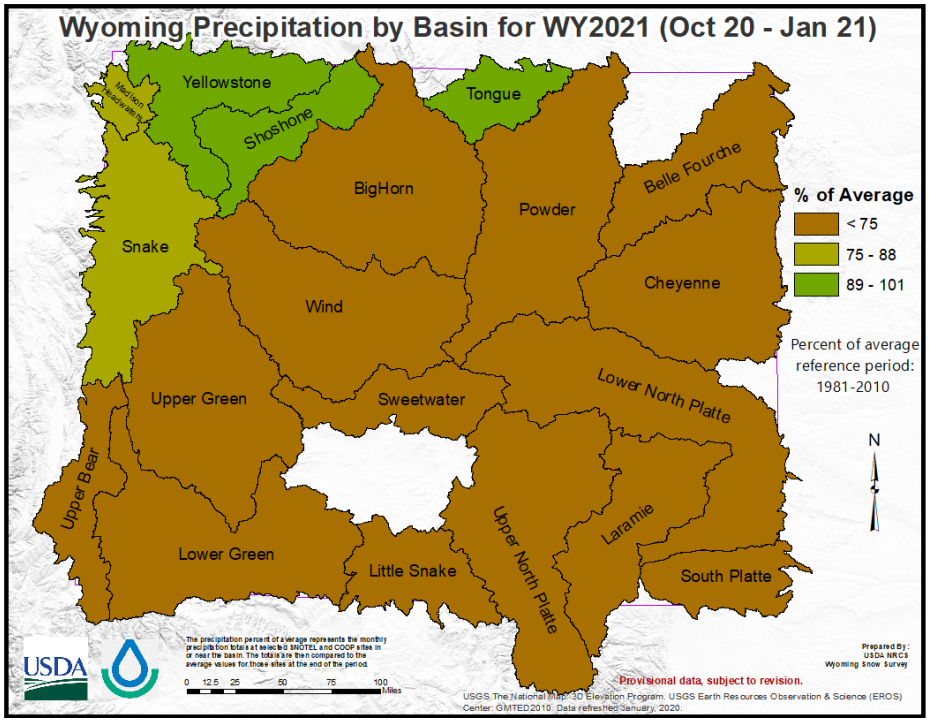
Precipitation

Basin precipitation across Wyoming was near 75% of average. The Lower North Platte River Basin had the highest precipitation totals for the month at 130 to 135% of average. The Sweetwater River Basin had the lowest precipitation amount at 45 to 50% of average. Water year precipitation (October – January) is currently at 70 to 75% of average.

(See Appendix for complete tabular data.)



Map 2. Current monthly precipitation by basin.



Map 3. Water year to date precipitation by basin.

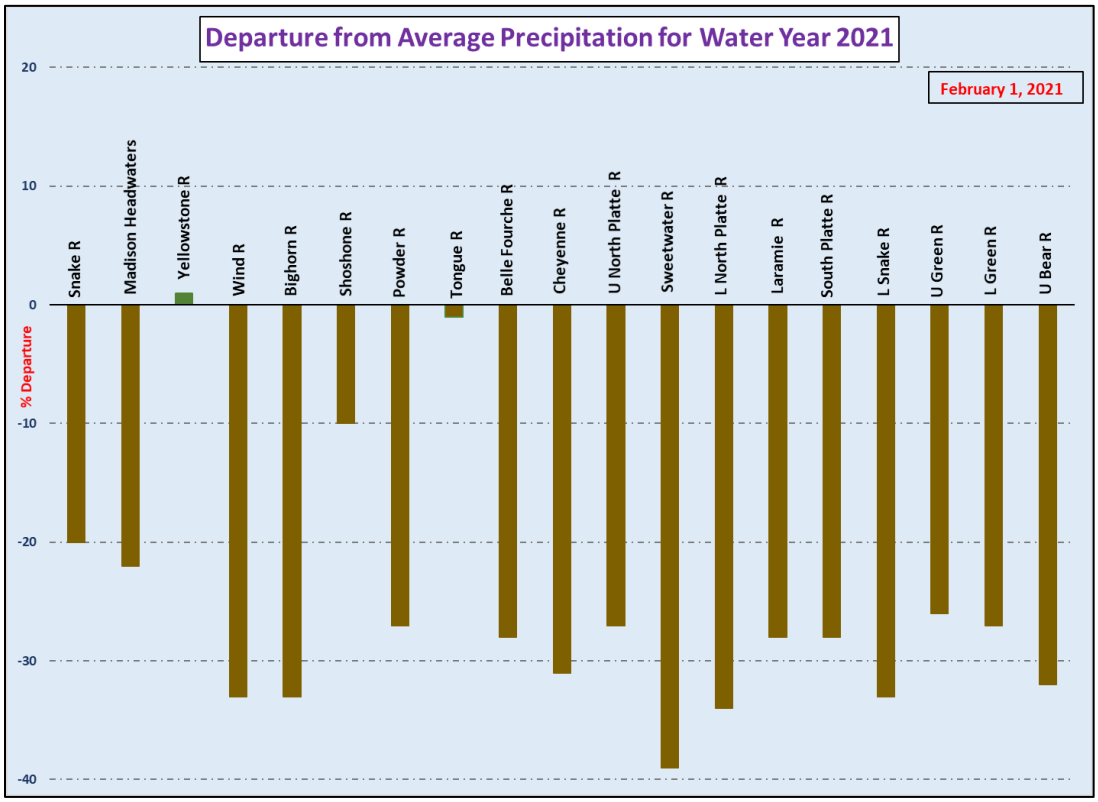


Chart 1. Departure from average precipitation (water year).

Reservoirs

Reservoirs across Wyoming were averaging near **72**% of capacity (**80**% last year). Overall reservoir storages for late January were **above** average at **110**% (**123**% last year). The highest average reservoir storage was across the Tongue River Basin at **150-155**%. The Little Snake River Basin had the lowest average reservoir storage at **70-75**%.

(See Appendix for complete tabular data.)

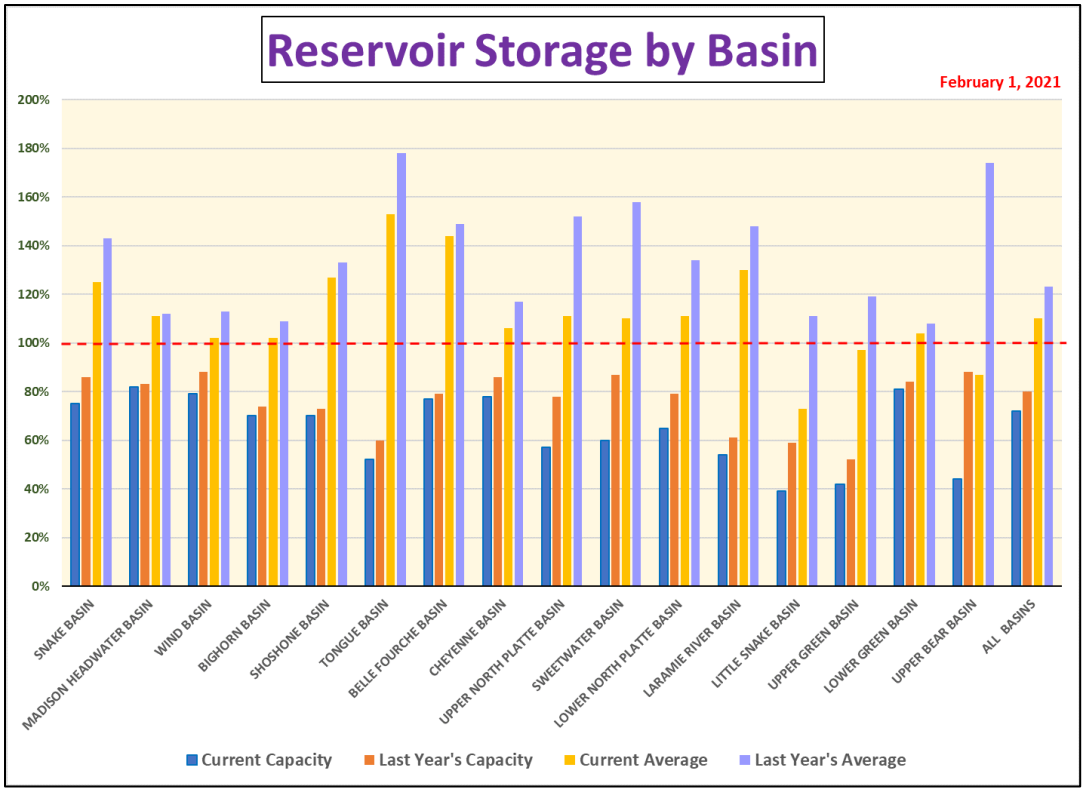
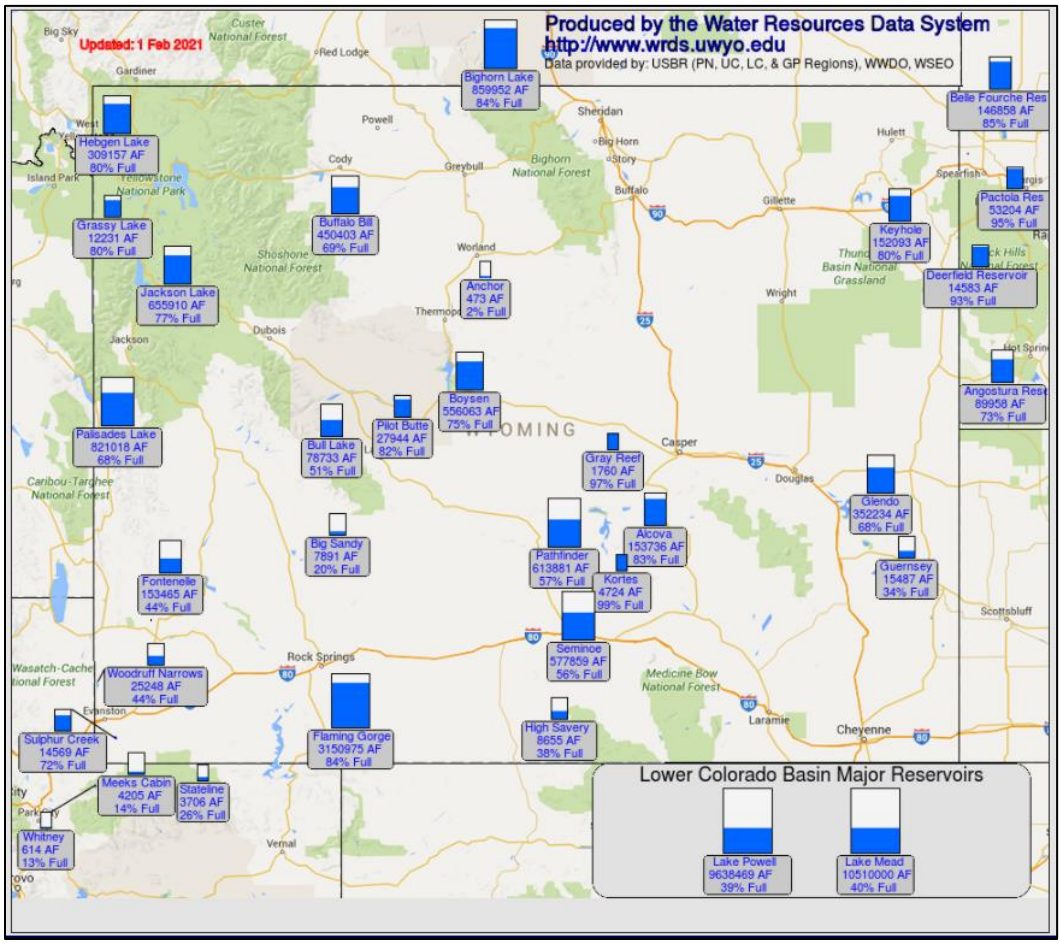


Chart 2. Reservoir storage by basin.



Map 4. Teacup diagrams of Wyoming reservoirs. (provided by WRDS)

Stream Flows

Snowmelt runoff stream flow volumes across the state are expected to be **below average** at **68**%. The highest forecasted stream flows due to snowmelt are across the Yellowstone Basin at near **95**% of normal. The lowest snowmelt runoff volumes are expected across the Sweetwater Drainage at **26**% of average.

(See Appendix for complete tabular listing of stream flow forecasts.)

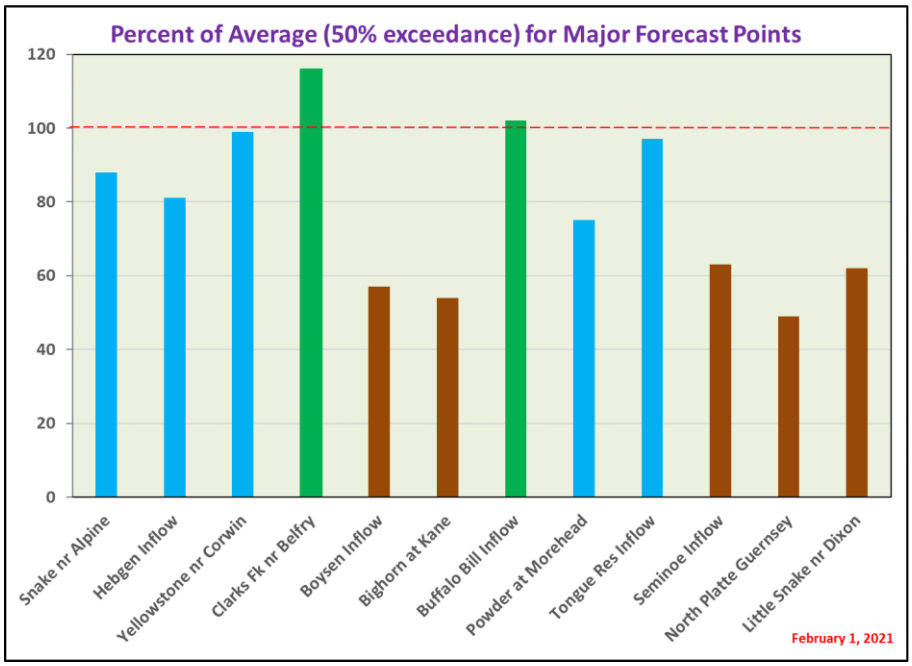
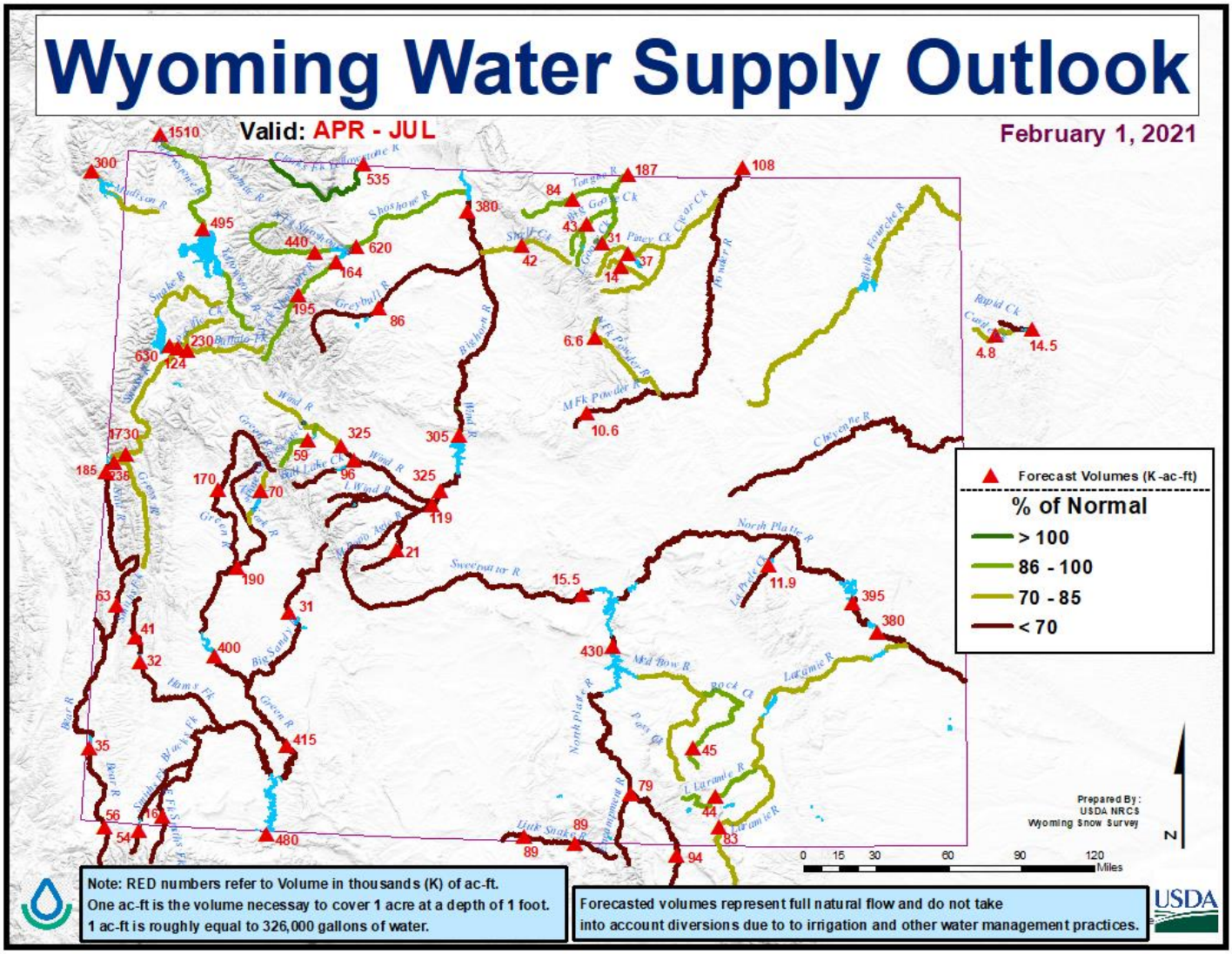
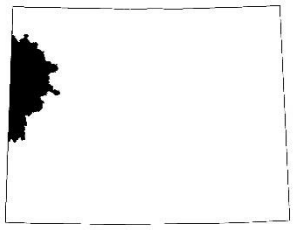


Chart 3. 50% exceedance for major forecast points.

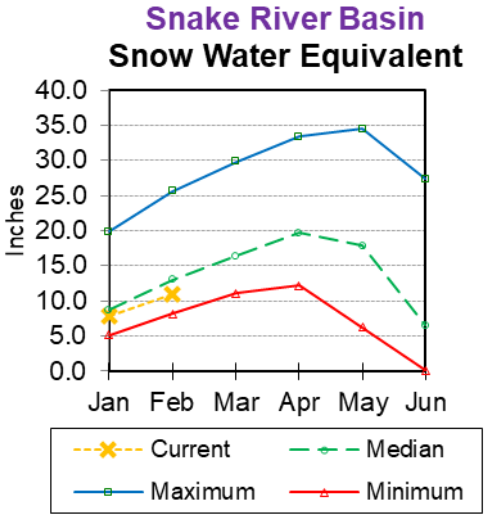


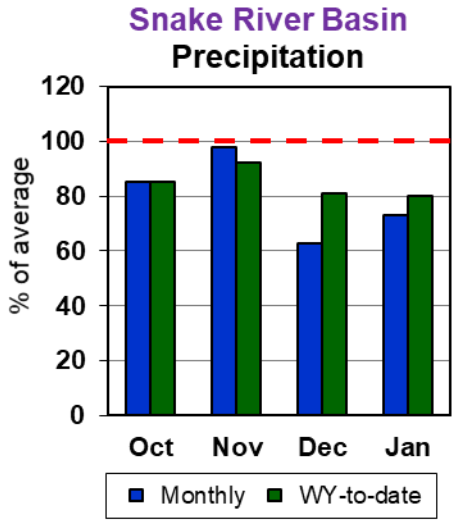
Map 4. Wyoming water supply outlook—February 1, 2021.



Snake River Basin

- The overall Snake River Basin SWE is near **85**% of median.
- Last month's precipitation for the Snake River Basin was **70** to **75**% of average. Water-year-to-date precipitation is near **80**% of average.
- Current reservoir storage is near **125**% of average for the three main reservoirs in the basin.
- The streamflow forecasts for April through July are **below** average (**77**%) for this basin. Snake River near Moran and Buffalo Fork near Moran are both expected to have flows at **82**% of average.

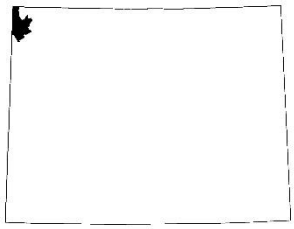




SNAKE RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Grassy Lake	12.2	12.8	11.9	15.2
Jackson Lake	655.9	613.4	431.2	847.0
Palisades Reservoir	1021.0	1314.0	911.2	1400.0
Basin-wide Total	1689.2	1940.2	1354.3	2262.2
# of reservoirs	3	3	3	3

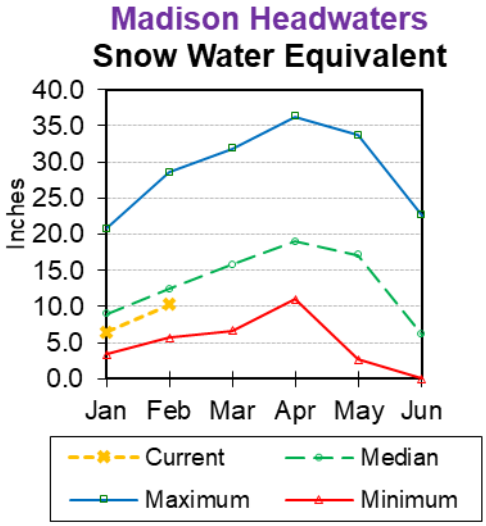
Streamflow Forecasts	Forecast Period	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast 90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Snake R nr Moran[1,2]								
	APR-JUL	445	555	**630**	82%	705	820	765
	APR-SEP	490	615	**700**	83%	780	905	845
Snake R ab Reservoir nr Alpine[1,2]								
	APR-JUL	1170	1500	**1730**	80%	1960	2290	2170
	APR-SEP	1360	1740	**1990**	80%	2250	2630	2500
Snake R nr Irwin [1,2]								
	APR-JUL	1510	1970	**2290**	76%	2610	3070	3010
	APR-SEP	1770	2310	**2670**	76%	3030	3570	3500
Snake R nr Heise[2]								
	APR-JUL	1660	2140	**2470**	76%	2790	3270	3240
	APR-SEP	1970	2520	**2900**	77%	3270	3820	3780
Pacific Ck at Moran								
	APR-JUL	81	106	**124**	76%	141	167	164
	APR-SEP	87	113	**132**	76%	150	177	173
Buffalo Fk ab Lava Ck nr Moran								
	APR-JUL	160	200	**230**	82%	260	300	280
	APR-SEP	178	225	**260**	81%	295	340	320
Greys R ab Reservoir nr Alpine								
	APR-JUL	157	205	**235**	77%	265	310	305
	APR-SEP	184	235	**275**	76%	310	365	360
Salt R ab Reservoir nr Etna								
	APR-JUL	69	138	**185**	62%	230	300	300
	APR-SEP	101	182	**235**	64%	290	375	370

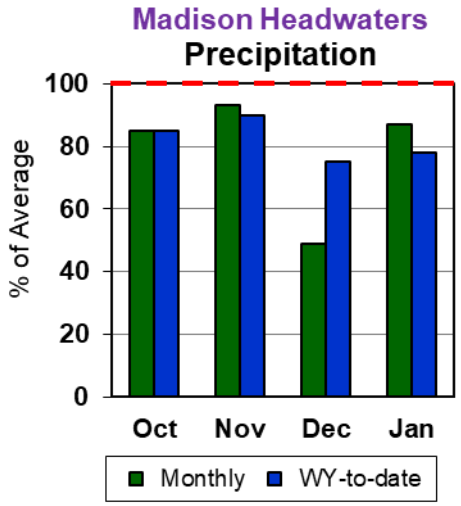
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Madison Headwaters Basin

- The overall Madison Headwaters Basin SWE is around **80**% of median.
- Last month's precipitation for the Madison Headwaters River Basin was **85** to **90**% of average. Water-year-to-date precipitation is around **80**% of average.
- Current reservoir storage is near **110**% of average for one main reservoir in the basin.
- Hebgen Reservoir inflows (April-July) are forecasted to be **below** average at **81**%.

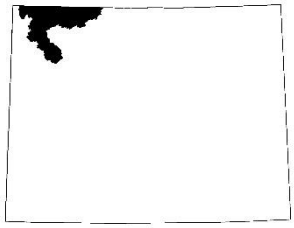




MADISON HEADWATERS RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Hebgen Lake	301.8	313.3	279.0	378.8
Basin-wide Total	301.8	313.3	279.0	378.8
# of reservoirs	1	1	1	1

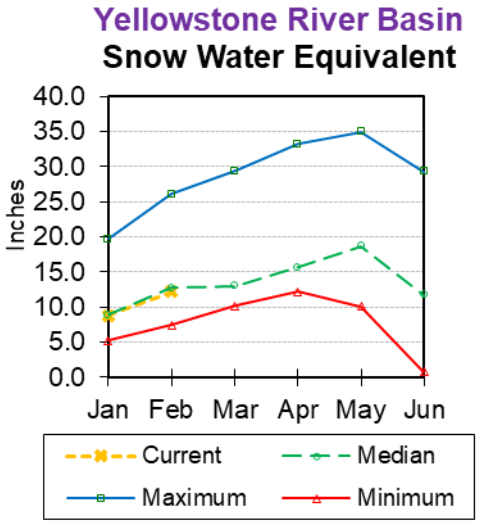
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	**50% (KAF)**	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Hebgen Lake Inflow	APR-JUL	220	265	**300**	81%	330	380	370

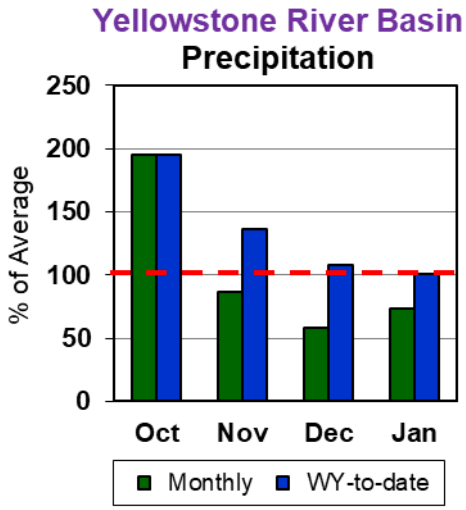
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Yellowstone River Basin

- The overall Yellowstone River Basin SWE is near **95**% of median.
- Last month's precipitation for the Yellowstone River Basin was **70** to **75**% of average. Water-year-to-date precipitation is near **100**% of average.
- The 50% exceedance forecasts for April through July are near average (**95**%) for this basin. Clarks Fork near Belfry is forecasted to have flows at **105**% of average.

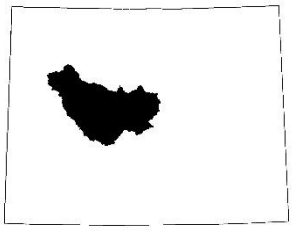




No reservoir data for the basin.

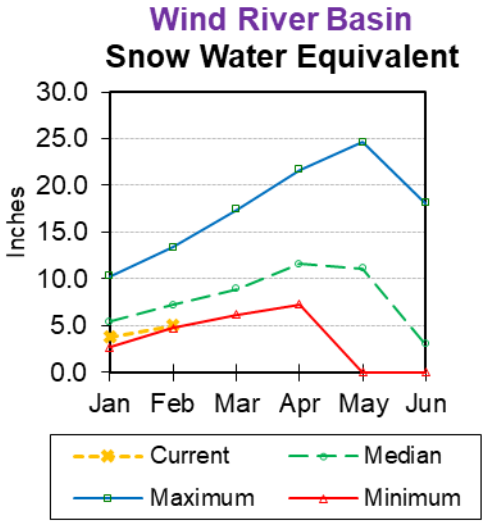
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will						
Yellowstone R at Yellowstone Lake Outlet								
	APR-JUL	360	440	**495**	86%	550	630	575
	APR-SEP	490	595	**670**	87%	745	850	770
Yellowstone R at Corwin Springs								
	APR-JUL	1820	1380	**1510**	95%	1920	1200	1590
Clarks Fk Yellowstone R nr Belfry[2]								
	APR-JUL	410	485	**535**	105%	585	660	510
	APR-SEP	445	525	**580**	105%	635	720	550

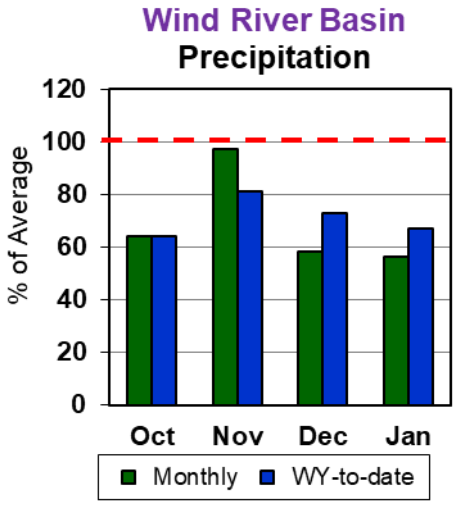
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Wind River Basin

- The overall Wind River Basin SWE is **65** to **70**% of median.
- Last month's precipitation for the Wind River Basin was near **55**% of average. Water-year-to-date precipitation is **65** to **70**% of average.
- Current reservoir storage is near **100**% of average for the three main reservoirs in the basin.
- The streamflow forecasts for April through July are **below** average (**63**%) for this basin. Dinwoody Creek near Burris is expected to have flows at **89**% of average.

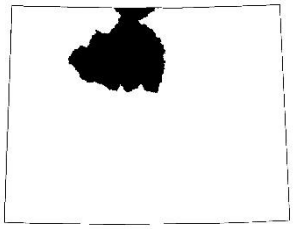




WIND RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bull Lake	78.0	92.3	75.4	151.8
Boysen	516.0	569.5	506.0	596.0
Pilot Butte	24.1	23.9	23.2	31.6
Basin-wide Total	618.1	685.7	604.6	779.4
# of reservoirs	3	3	3	3

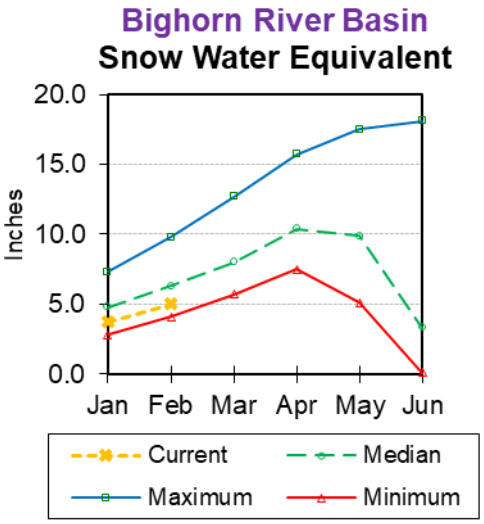
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	**50% (KAF)**	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Dinwoody Ck nr Burris								
	APR-JUL	45	53	**59**	89%	65	73	66
	APR-SEP	68	78	**84**	91%	90	100	92
Wind R Ab Bull Lake Ck								
	APR-JUL	171	265	**325**	71%	390	485	455
	APR-SEP	169	270	**335**	68%	405	505	490
Bull Lake Ck nr Lenore								
	APR-JUL	63	83	**96**	69%	110	130	139
	APR-SEP	77	101	**117**	69%	133	156	169
Wind R at Riverton								
	APR-JUL	154	255	**325**	68%	395	495	475
	APR-SEP	188	300	**375**	68%	450	560	550
Little Popo Agie R nr Lander								
	APR-JUL	0.09	12.5	**21**	50%	29	42	42
	APR-SEP	3.3	16.4	**25**	51%	34	47	49
Little Wind R nr Riverton								
	APR-JUL	1	49	**119**	44%	189	290	270
	APR-SEP	1	57	**130**	44%	205	310	295
Boysen Reservoir Inflow								
	APR-JUL	1	158	**305**	50%	450	665	610
	APR-SEP	1	160	**315**	47%	470	695	665

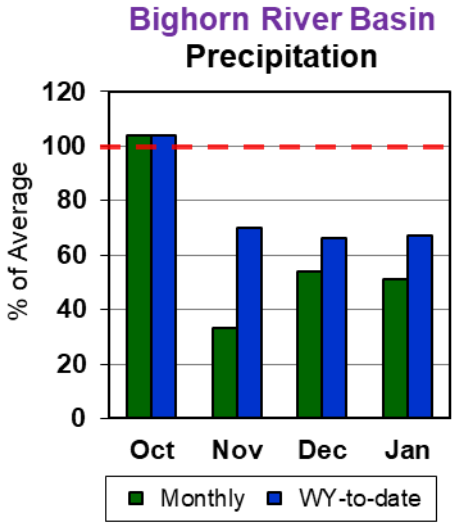
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Bighorn River Basin

- The overall Bighorn River Basin SWE is near **75**% of median.
- Last month's precipitation for the Bighorn River Basin was near **50**% of average. Water-year-to-date precipitation is **65** to **70**% of average.
- Current reservoir storage is near **100**% of average for the two main reservoirs in the basin.
- The 50% exceedance forecasts for April through July are **below** average (**62**%) for this basin. Shell Creek near Shell is forecasted to have flows at **84**% of average.

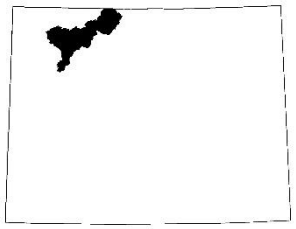




BIGHORN RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Boysen	516.0	569.5	506.0	596.0
Bighorn Lake	848.2	878.9	825.9	1356.0
Basin-wide Total	1364.2	1448.3	1331.9	1952.0
# of reservoirs	2	2	2	2

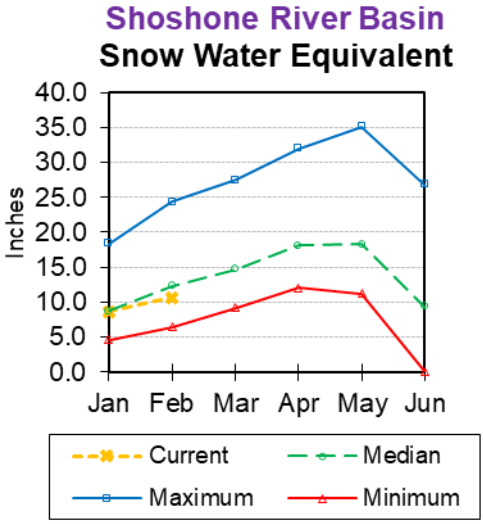
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Boysen Reservoir Inflow								
	APR-JUL	1	158	**305**	50%	450	665	610
	APR-SEP	1	160	**315**	47%	470	695	665
Greybull R at Meeteetse								
	APR-JUL	30	64	**86**	66%	109	143	131
	APR-SEP	49	88	**114**	64%	141	180	177
Shell Ck nr Shell								
	APR-JUL	27	36	**42**	76%	48	57	55
	APR-SEP	35	45	**52**	79%	59	69	66
Bighorn R at Kane								
	APR-JUL	1	177	**380**	45%	585	885	840
	APR-SEP	1	147	**365**	40%	585	910	905

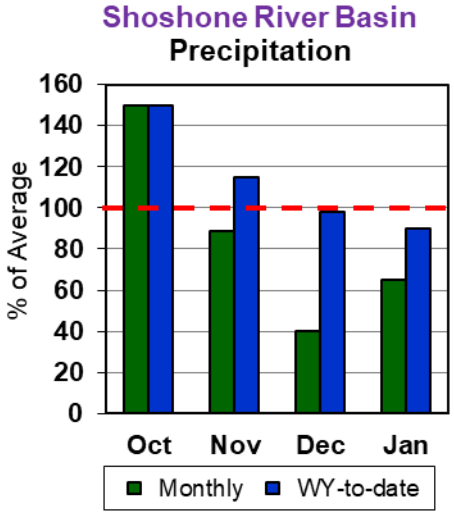
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Shoshone River Basin

- The overall Shoshone River Basin SWE is around **85** to **90**% of median.
- Last month's precipitation for the Shoshone River Basin was near **65**% of average. Water-year-to-date precipitation is around **90**% of average.
- Current reservoir storage is **125** to **130**% of average for one main reservoir in the basin.
- Streamflow forecasts for April through July are **below** average (**91**%) for this basin. North Fork Shoshone River at Wapiti is expected to have flows at **96**% of average.

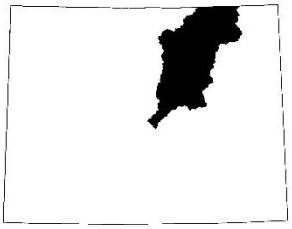




SHOSHONE RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Buffalo Bill	450.4	469.6	353.8	646.6
Basin-wide Total	450.4	469.6	353.8	646.6
# of reservoirs	1	1	1	1

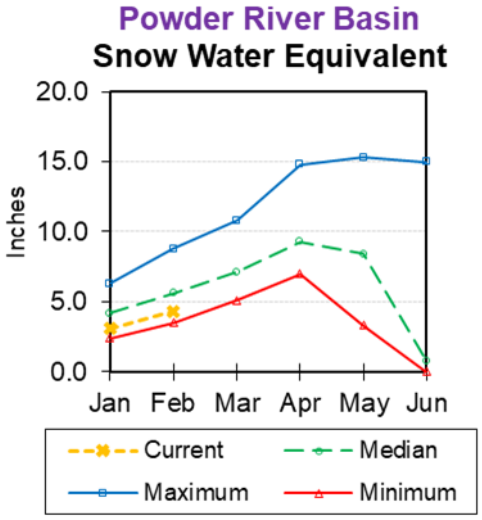
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	**50% (KAF)**	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
NF Shoshone R at Wapiti								
	APR-JUL	335	395	**440**	96%	485	545	460
	APR-SEP	375	445	**490**	95%	535	605	515
SF Shoshone R nr Valley								
	APR-JUL	136	171	**195**	91%	220	255	215
	APR-SEP	155	195	**225**	92%	250	290	245
SF Shoshone R ab Buffalo Bill Reservoir								
	APR-JUL	80	130	**164**	85%	197	245	193
	APR-SEP	80	134	**171**	86%	205	260	200
Buffalo Bill Reservoir Inflow[2]								
	APR-JUL	430	545	**620**	92%	700	815	675
	APR-SEP	480	605	**690**	93%	775	900	745

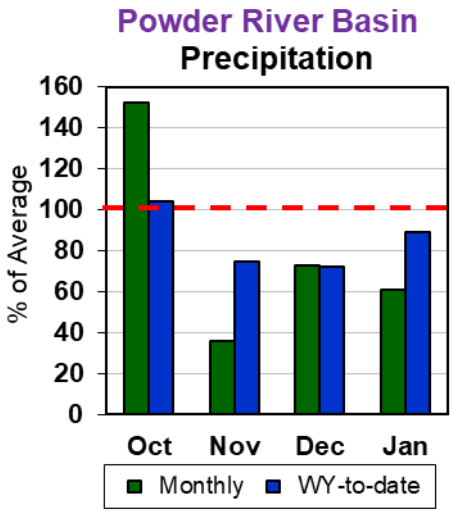
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Powder River Basin

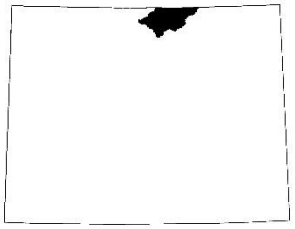
- The overall Powder River Basin SWE is near **75**% of median.
- Last month's precipitation for the Powder River Basin was near **60**% of average. Water-year-to-date precipitation is around **90**% of average.
- The 50% exceedance forecasts for April through July are **below** average for this basin. Piney Creek at Kearney is expected to have flows at **84**% of average.





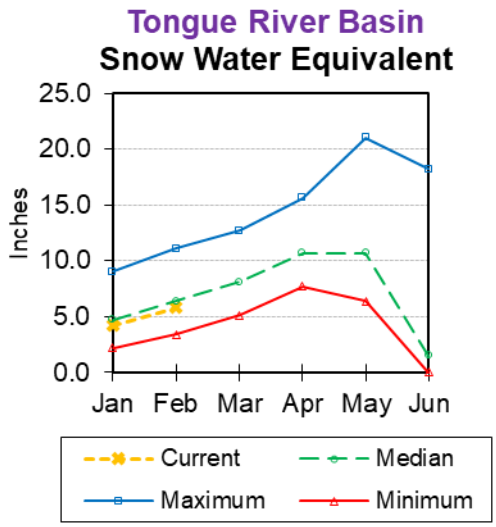
No reservoir data for the basin.

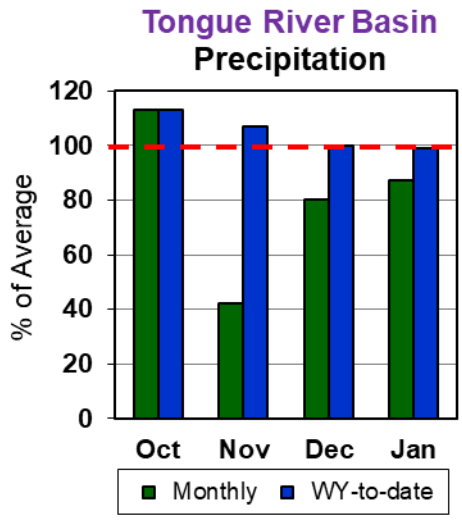
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	**50% (KAF)**	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
MF Powder R nr Barnum								
	APR-JUL	3.6	7.8	**10.6**	66%	13.4	17.5	16.1
	APR-SEP	4.2	8.4	**11.3**	66%	14.2	18.5	17
NF Powder R nr Hazelton								
	APR-JUL	3.3	5.3	**6.6**	73%	8	9.9	9.1
	APR-SEP	3.8	5.8	**7.2**	73%	8.6	10.6	9.9
Rock Ck nr Buffalo								
	APR-JUL	4.5	10.2	**14**	75%	17.8	23	18.6
	APR-SEP	7	13.1	**17.2**	78%	21	27	22
Piney Ck at Kearny								
	APR-JUL	8	25	**37**	84%	49	66	44
	APR-SEP	9.8	27	**39**	83%	51	69	47
Powder R at Moorhead								
	APR-JUL	1	54	**108**	61%	162	240	177
	APR-SEP	1	66	**121**	62%	175	255	196



Tongue River Basin

- The overall Tongue River Basin SWE is near **90**% of median.
- Last month's precipitation for the Tongue River Basin was **85** to **90**% of average. Water-year-to-date precipitation is near **100**% of average.
- Current reservoir storage is **150** to **155**% of average for one main reservoir in the basin.
- The 50% exceedance forecasts for April through July are near average (**97**%) for this basin. Little Goose Creek near Big Horn is forecasted to have flows at **100**% of average.





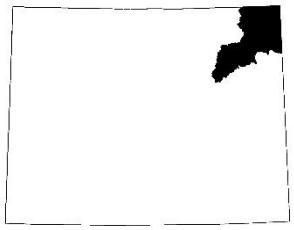
TONGUE RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Tongue River Res	40.9	47.5	26.7	79.1
Basin-wide Total	40.9	47.5	26.7	79.1
# of reservoirs	1	1	1	1

		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	**50% (KAF)**	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Tongue R nr Dayton								
	APR-JUL	55	72	**84**	98%	96	113	86
	APR-SEP	65	83	**96**	98%	109	127	98
Big Goose Ck nr Sheridan								
	APR-JUL	22	35	**43**	93%	51	64	46
	APR-SEP	30	43	**51**	94%	59	72	54
Little Goose Ck nr Big Horn								
	APR-JUL	17.5	25	**31**	100%	36	44	31
	APR-SEP	24	33	**39**	100%	44	53	39
Tongue River Reservoir Inflow								
	APR-JUL	83	145	**187**	97%	230	290	193
	APR-SEP	100	165	**210**	98%	255	320	215

1) 90% and 10% exceedance probabilities are actually 95% and 5%

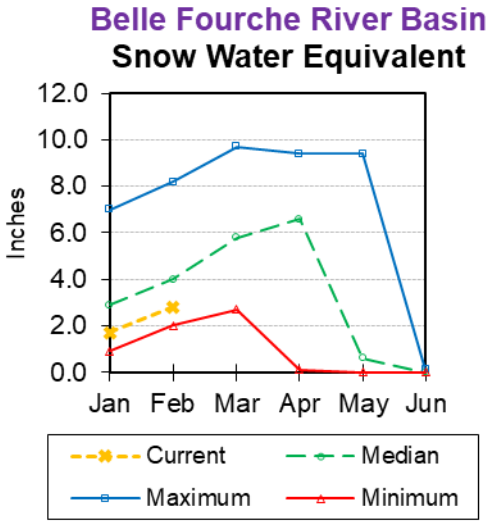
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

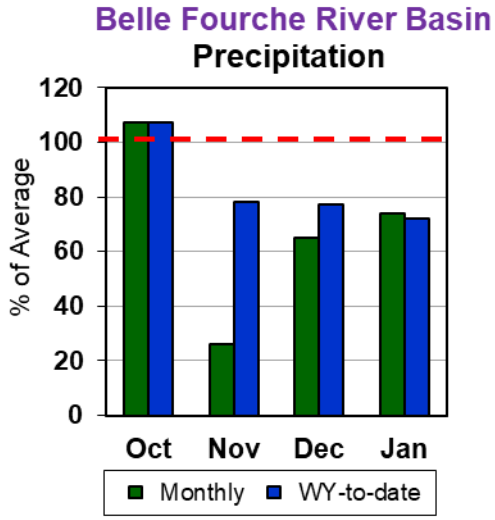
3) Median value used in place of average



Belle Fourche River Basin

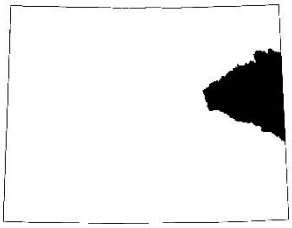
- The overall Belle Fourche River Basin SWE is **50** to **55**% of median.
- Last month's precipitation for the Belle Fourche River Basin was near **75**% of average. Water-year-to-date precipitation is around **70**% of average.
- Current reservoir storage is near **145**% of average for three main reservoirs in the basin.





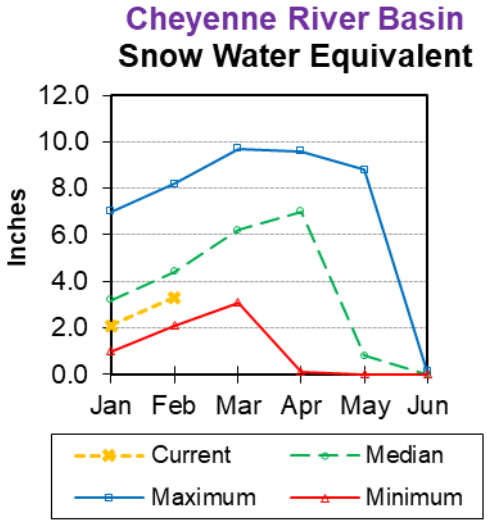
BELLE FOURCHE RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Belle Fourche	143.8	132.5	110.5	178.4
Keyhole	151.8	169.8	87.9	193.8
Shadehill	52.2	57.5	42.8	81.4
Basin-wide Total	347.8	359.8	241.2	453.6
# of reservoirs	3	3	3	3

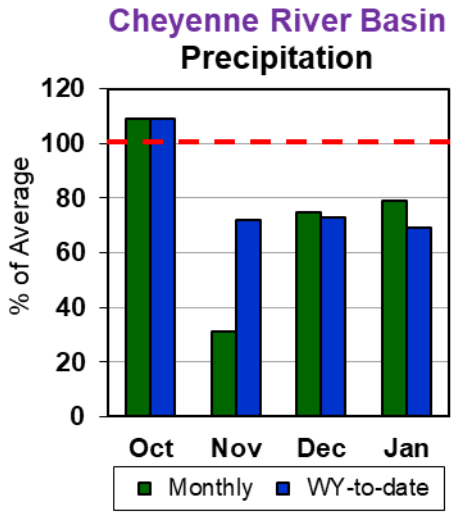
There are no streamflow forecast points for the basin.



Cheyenne River Basin

- The overall Cheyenne River Basin SWE is near **55**% of median.
- Last month's precipitation for the Cheyenne River Basin was near **80**% of average. Water-year-to-date precipitation is around **70**% of average.
- Current reservoir storage is near **105**% of average for three main reservoirs in the basin.
- The 50% exceedance forecasts for April through July are **below** average (**63**%) for this basin. Deerfield Reservoir inflows are forecasted to be **77**% of average.



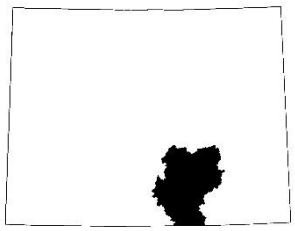


CHEYENNE RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Angostura	84.3	98.2	83.2	122.1
Deerfield	14.4	15.1	13.7	15.2
Pactola	52.2	53.0	45.5	55.0
Basin-wide Total	150.9	166.3	142.4	192.3
# of reservoirs	3	3	3	3

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

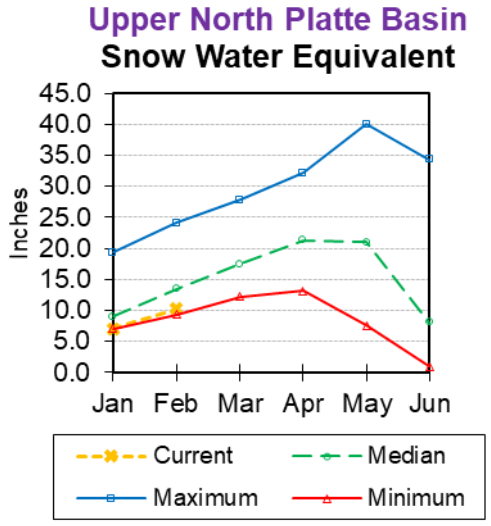
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Deerfield Reservoir Inflow								
	MAR-JUL	1.05	3.3	4.8	77%	6.3	8.6	6.2
	APR-JUL	0.37	2.4	3.7	71%	5.1	7.1	5.2
Pactola Reservoir Inflow								
	MAR-JUL	1	8	14.5	58%	21	30	25
	APR-JUL	1	5.8	11.9	54%	18.1	27	22

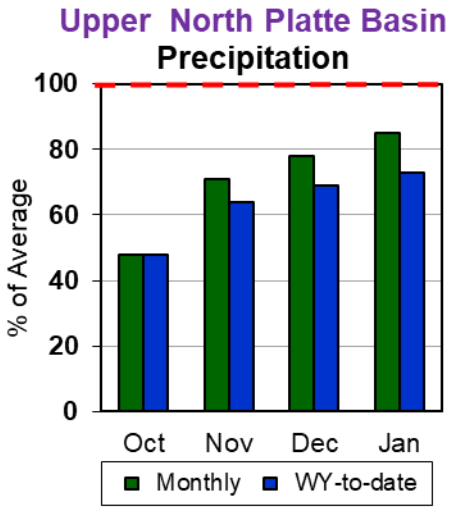
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Upper North Platte River Basin

- The overall Upper North Platte River Basin SWE is **75** to **80**% of median.
- Last month's precipitation for the Upper North River Basin was near **85**% of average. Water-year-to-date precipitation is **70** to **75**% of average.
- Current reservoir storage is near **110**% of average for one main reservoir in the basin.
- Streamflow forecasts for April through July are **below** average (**56**%) for this basin. Rock Creek near Arlington is expected to have flows at **92**% of average.

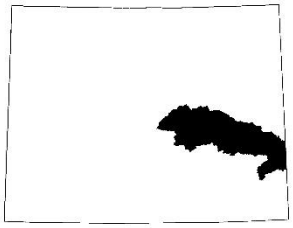




UPPER NORTH PLATTE RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Seminoe	577.9	794.1	520.8	1016.7
Basin-wide Total	577.9	794.1	520.8	1016.7
# of reservoirs	1	1	1	1

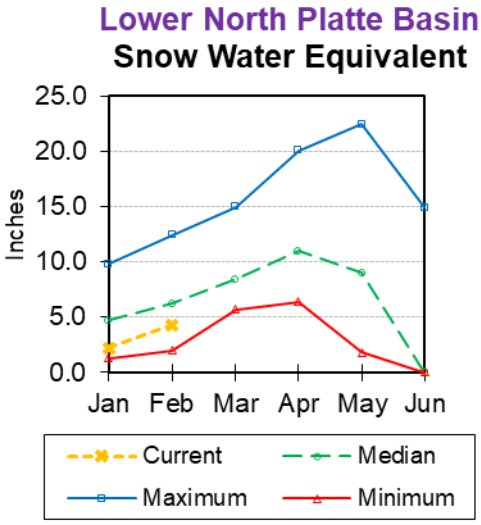
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
North Platte R nr Northgate								
	APR-JUL	1	41	**94**	42%	146	225	225
	APR-SEP	1	46	**103**	41%	160	245	250
Encampment R nr Encampment[2]								
	APR-JUL	19.1	55	**79**	61%	103	138	129
	APR-SEP	23	59	**84**	61%	109	146	138
Rock Ck ab King Canyon Cnl nr Arlington								
	APR-JUL	27	38	**45**	92%	53	63	49
	APR-SEP	29	40	**48**	92%	55	67	52
Sweetwater R nr Alcova								
	APR-JUL	1	1.11	**15.5**	26%	30	51	59
	APR-SEP	1	2.2	**17.5**	27%	33	55	64
Seminoe Reservoir Inflow								
	APR-JUL	46	275	**430**	60%	585	815	715
	APR-SEP	65	305	**465**	60%	630	870	770

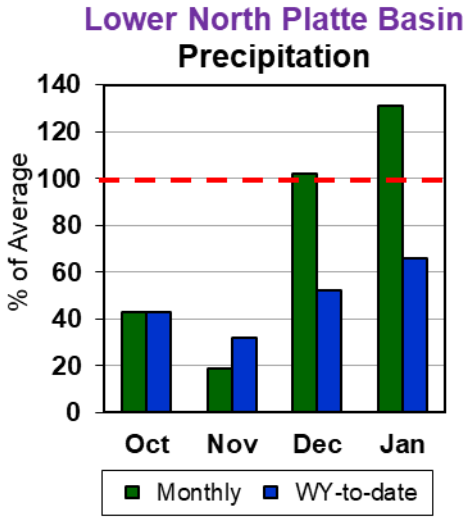
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Lower North Platte River Basin

- The overall Lower North Platte River Basin SWE is **75** to **80**% of median.
- Last month's precipitation for the Lower North Platte River Basin was near **130**% of average. Water-year-to-date precipitation is around **65**% of average.
- Current reservoir storage is near **110**% of average for four main reservoirs in the basin.
- The 50% exceedance forecasts for April through July are **below** average (**51**%) for this basin. La Prele Creek near Douglas is forecasted to have flows at **60**% of average.

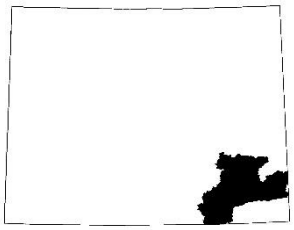




LOWER NORTH PLATTE RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Alcova	153.8	157.0	155.0	184.3
Glendo	352.2	324.2	301.5	506.4
Guernsey	15.6	16.6	11.4	45.6
Pathfinder	614.0	882.4	559.0	1016.5
Basin-wide Total	1135.6	1380.3	1026.9	1752.8
# of reservoirs	4	4	4	4

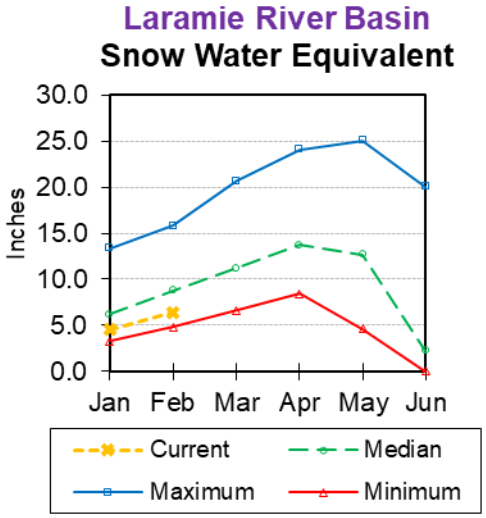
	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Streamflow Forecasts	90% (KAF)	70% (KAF)	**50% (KAF)**	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
La Prele Ck nr Douglas							
APR-JUL	2	7	**11.9**	60%	19.1	31	19.9
APR-SEP	2	7	**12.1**	61%	19.4	32	19.9
North Platte R bl Glendo Reservoir							
APR-JUL	1	180	**395**	48%	610	930	820
APR-SEP	1	180	**400**	47%	625	950	850
North Platte R bl Guernsey Reservoir							
APR-JUL	1	158	**380**	46%	600	930	820
APR-SEP	1	156	**385**	45%	615	950	850

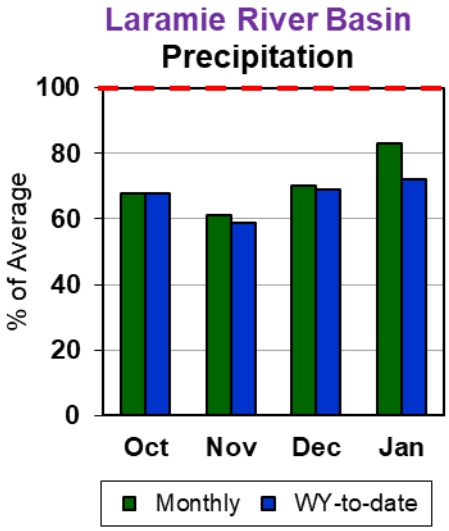
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Laramie River Basin

- The overall Laramie River Basin SWE is **70** to **75**% of median.
- Last month's precipitation for the Laramie River Basin was **80** to **85**% of average. Water-year-to-date precipitation is near **70**% of average.
- Current reservoir storage is around **130**% of average for one main reservoir in the basin.
- Streamflow forecasts for April through July are **below** average (**79**%) for this basin. Little Laramie River near Filmore is expected to have flows at **86**% of average.

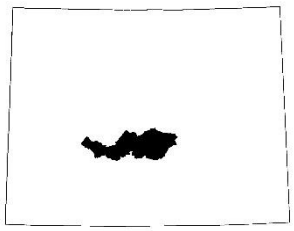




LARAMIE RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Wheatland #2	53.1	60.7	40.9	98.9
Basin-wide Total	53.1	60.7	40.9	98.9
# of reservoirs	1	1	1	1

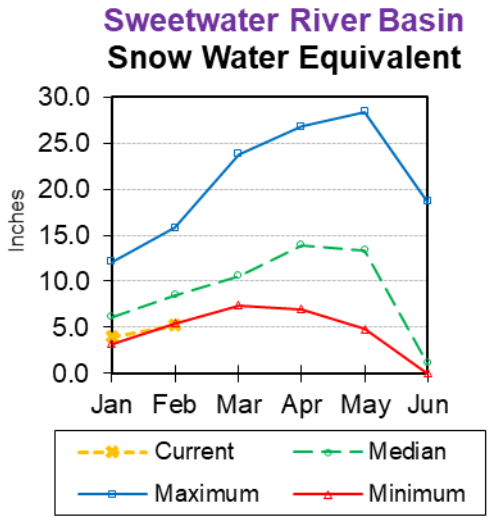
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	**50% (KAF)**	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Laramie R and Pioneer Cnl nr Woods Lg								
	APR-JUL	24	59	**83**	72%	107	142	115
	APR-SEP	27	65	**91**	72%	116	154	126
Little Laramie R nr Filmore								
	APR-JUL	22	35	**44**	86%	53	66	51
	APR-SEP	25	39	**48**	87%	57	71	55

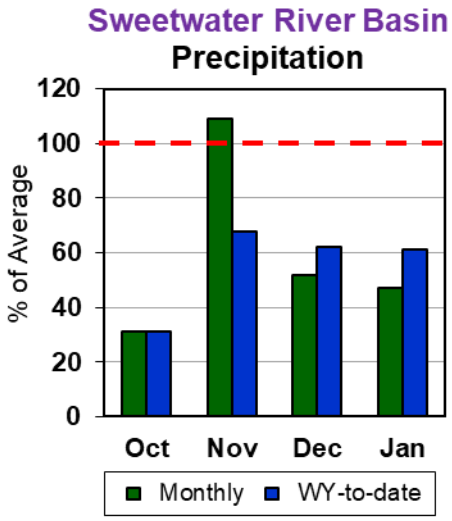
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Sweetwater River Basin

- The overall Sweetwater River Basin SWE is around **60%** of median.
- Last month's precipitation for the Sweetwater River Basin was **45** to **50%** of average. Water-year-to-date precipitation is near **60%** of average.
- Current reservoir storage is near **110%** of average for one main reservoir in the basin.
- Streamflow forecast for Sweetwater River near Alcova (April-July) is **well below** average at **26%**.

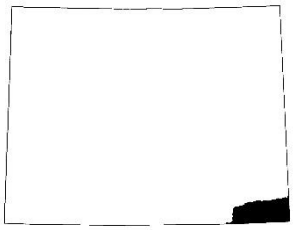




SWEETWATER RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Pathfinder	614.0	882.4	559.0	1016.5
Basin-wide Total	614.0	882.4	559.0	1016.5
# of reservoirs	1	1	1	1

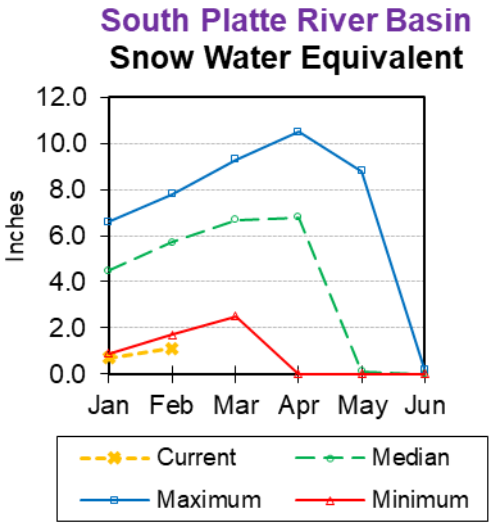
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	**50% (KAF)**	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Sweetwater R nr Alcova								
	APR-JUL	1	1.11	**15.5**	26%	30	51	59
	APR-SEP	1	2.2	**17.5**	27%	33	55	64

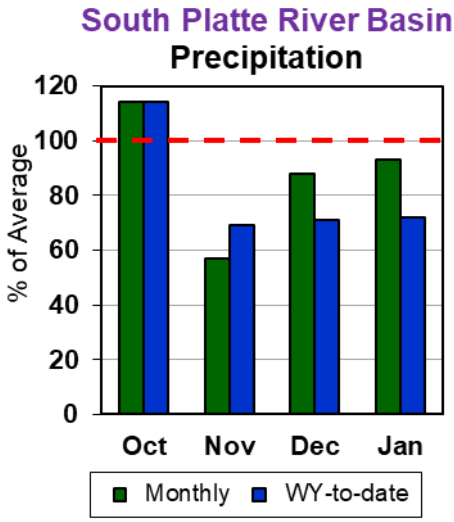
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



South Platte River Basin (WY)

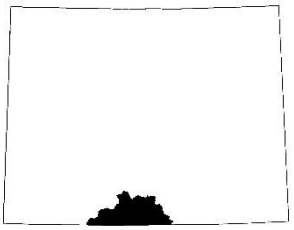
- The overall South Platte River Basin SWE is **50** to **55**% of median.
- Last month's precipitation for the South Platte River Basin was **90** to **95**% of average. Water-year-to-date precipitation is around **70**% of average.





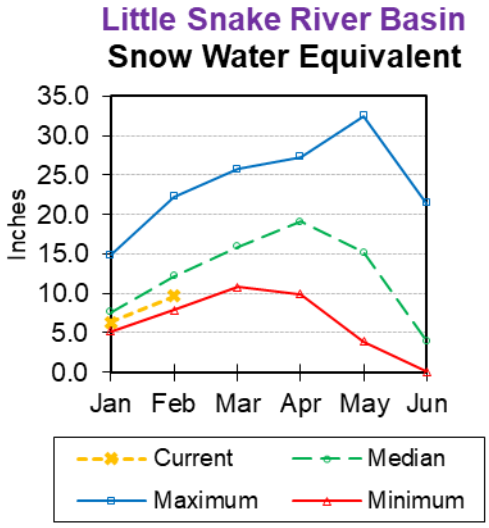
No reservoir data for the basin.

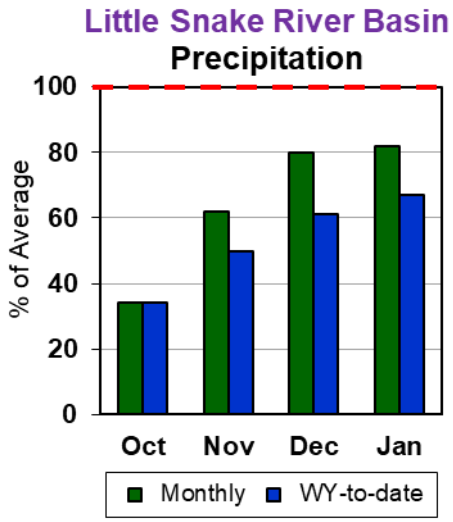
There are no streamflow forecast points for the basin.



Little Snake River Basin

- The overall Little Snake River Basin SWE is near **80**% of median.
- Last month's precipitation for the Little Snake River Basin was near **80**% of average. Water-year-to-date precipitation is **65** to **70**% of average.
- Current reservoir storage is **70** to **75**% of average for one main reservoir in the basin.
- The 50% exceedance forecasts for April through July are **below** average (**53**%) for this basin. Little Snake River near Slater is forecasted to have flows at **57**% of average.

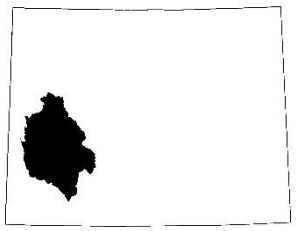




LITTLE SNAKE RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
High Savery Reservoir	8.7	13.2	11.9	22.4
Basin-wide Total	8.7	13.2	11.9	22.4
# of reservoirs	1	1	1	1

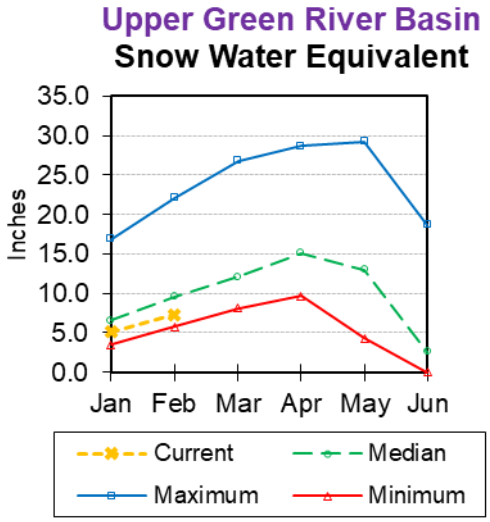
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	**50% (KAF)**	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Little Snake R nr Slater[2]	APR-JUL	53	73	**89**	57%	106	135	156
Little Snake R nr Dixon[2]	APR-JUL	77	128	**170**	49%	220	300	345

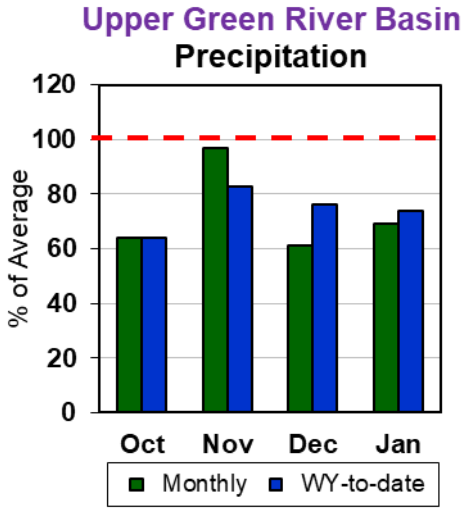
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Upper Green River Basin

- The overall Upper Green River Basin SWE is near **75**% of median.
- Last month's precipitation for the Upper River Basin was near **70**% of average. Water-year-to-date precipitation is around **75**% of average.
- Current reservoir storage is **95** to **100**% of average for two main reservoirs in the basin.
- Streamflow forecasts for April through July are **below** average (**62**%) for this basin. Pine Creek above Fremont Lake is expected to have flows at **71**% of average.



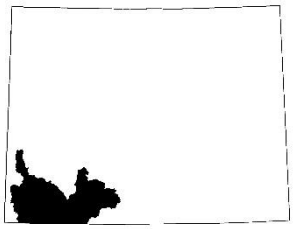


UPPER GREEN RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Big Sandy	7.9	22.5	17.0	38.3
Fontenelle	153.5	176.6	150.1	344.8
Basin-wide Total	161.4	199.2	167.1	383.1
# of reservoirs	2	2	2	2

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

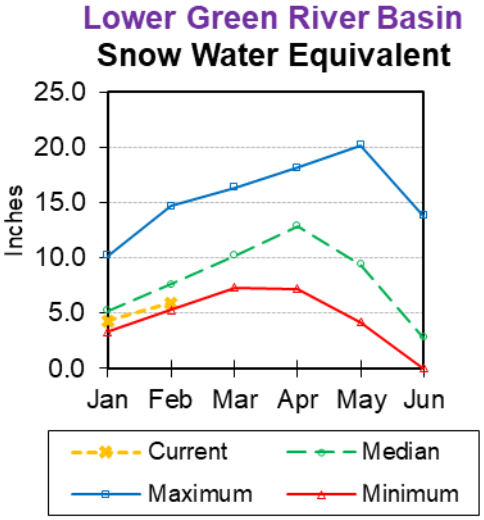
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Green R at Warren Bridge	APR-JUL	118	148	170	69%	194	230	245
Pine Ck ab Fremont Lake	APR-JUL	56	64	70	71%	76	86	98
New Fork R nr Big Piney	APR-JUL	91	145	190	54%	240	325	355
Fontenelle Reservoir Inflow	APR-JUL	185	305	400	55%	510	695	725
Big Sandy R nr Farson	APR-JUL	17.1	25	31	60%	38	49	52

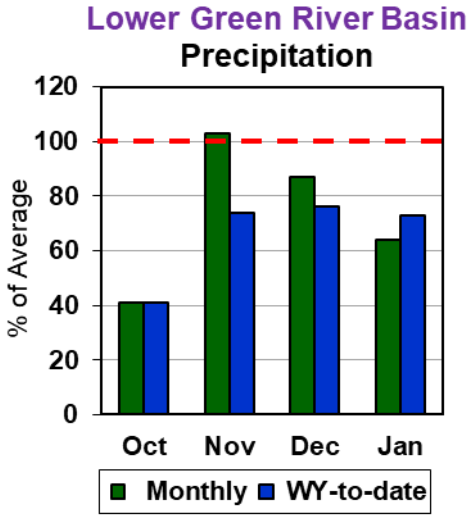
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Lower Green River Basin

- The overall Lower Green River Basin SWE is near **80**% of median.
- Last month's precipitation for the Lower Green River Basin was near **65**% of average. Water-year-to-date precipitation is **70** to **75**% of average.
- Current reservoir storage is **100** to **105**% of average for three main reservoirs in the basin.
- Streamflow forecasts for April through July are **below** average (**57**%) for this basin. Blacks Fork near Robertson is forecasted to have flows at **63**% of average.

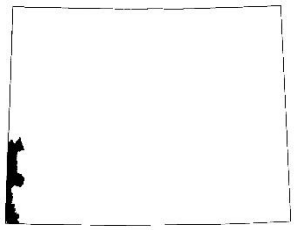




LOWER GREEN RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Fontenelle	153.5	176.6	150.1	344.8
Flaming Gorge Reservoir	3151.0	3273.6	3049.0	3749.0
Viva Naughton Res	29.4	30.4	30.1	42.4
Basin-wide Total	3333.9	3480.6	3229.2	4136.2
# of reservoirs	3	3	3	3

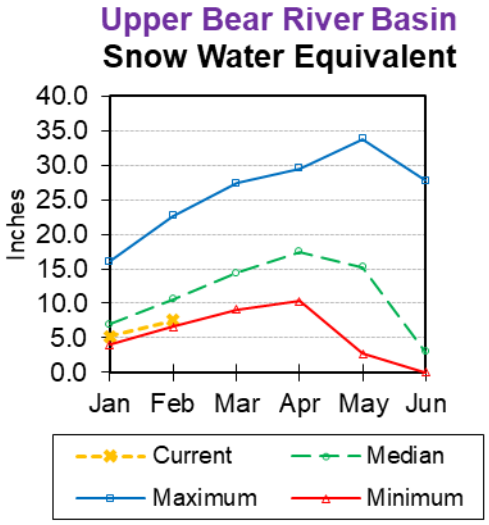
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	**50% (KAF)**	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Green R nr Green River, WY [2]								
	APR-JUL	189	315	**415**	57%	530	730	730
Blacks Fk nr Robertson								
	APR-JUL	30	44	**54**	63%	66	85	86
EF of Smiths Fork nr Robertson [2]								
	APR-JUL	8.7	12.8	**16**	59%	19.6	25	27
Hams Fk bl Pole Ck nr Frontier								
	APR-JUL	13.7	24	**32**	59%	42	58	54
Viva Naughton Reservoir Inflow								
	APR-JUL	14.4	29	**41**	55%	56	81	74
Flaming Gorge Reservoir Inflow [2]								
	APR-JUL	194	350	**480**	49%	630	895	980

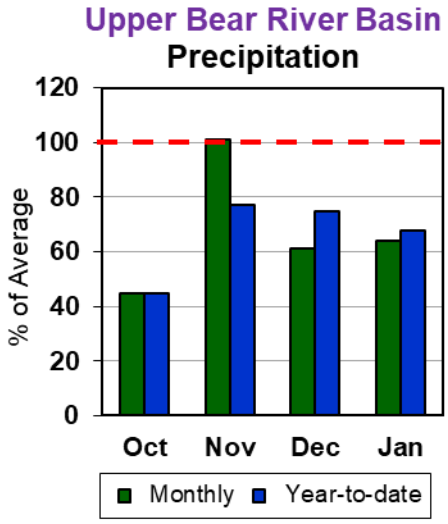
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average



Upper Bear River Basin

- The overall Upper Bear River Basin SWE is **70** to **75**% of median.
- Last month's precipitation for the Upper Bear River Basin was near **65**% of average. Water-year-to-date precipitation is around **70**% of average.
- Current reservoir storage is **85** to **90**% of average for one main reservoir in the basin.
- The 50% exceedance forecasts for April through July are **well below** average (**47**%) for this basin. Smiths Fork near Border is expected to have flows at **63**% of average.





UPPER BEAR RIVER BASIN RESERVOIR STORAGE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Woodruff Narrows Reservoir	25.1	50.6	29.0	57.3
Basin-wide Total	25.1	50.6	29.0	57.3
# of reservoirs	1	1	1	1

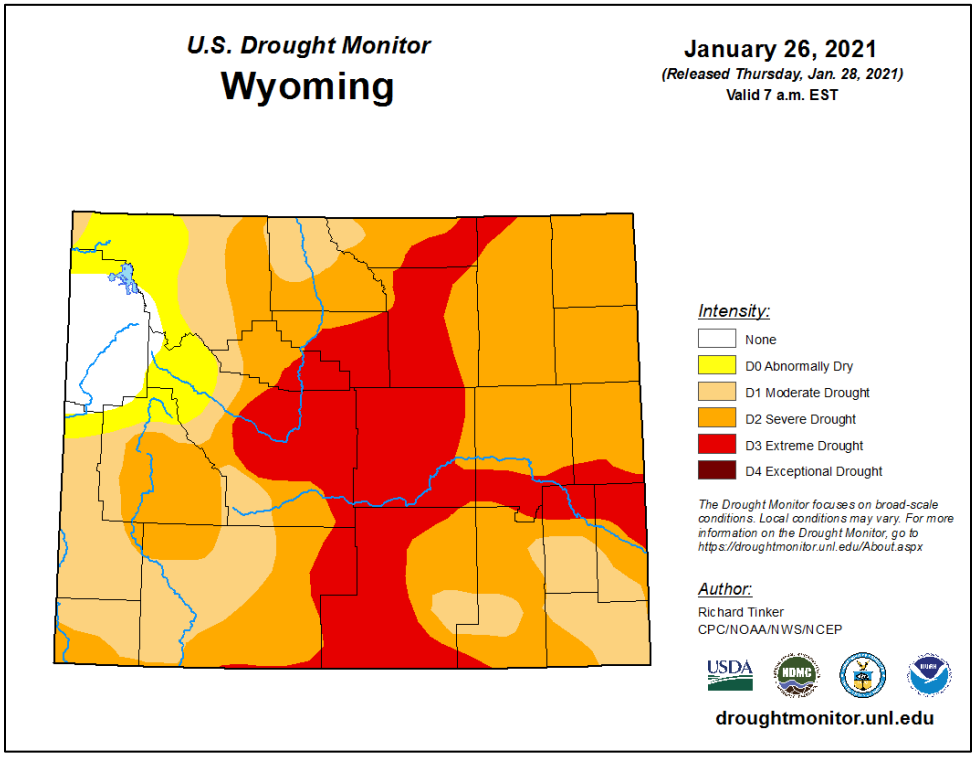
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Streamflow Forecasts	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Bear R nr UT-WY State Line								
	APR-JUL	16.1	40	56	50%	73	97	112
	APR-SEP	18.6	45	63	51%	81	108	123
Bear R ab Resv nr Woodruff								
	APR-JUL	2.4	12.1	35	29%	71	123	121
	APR-SEP	3.8	14.1	38	30%	77	134	128
Smiths Fk nr Border								
	APR-JUL	27	45	56	63%	68	86	89
	APR-SEP	34	54	68	65%	82	102	104

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

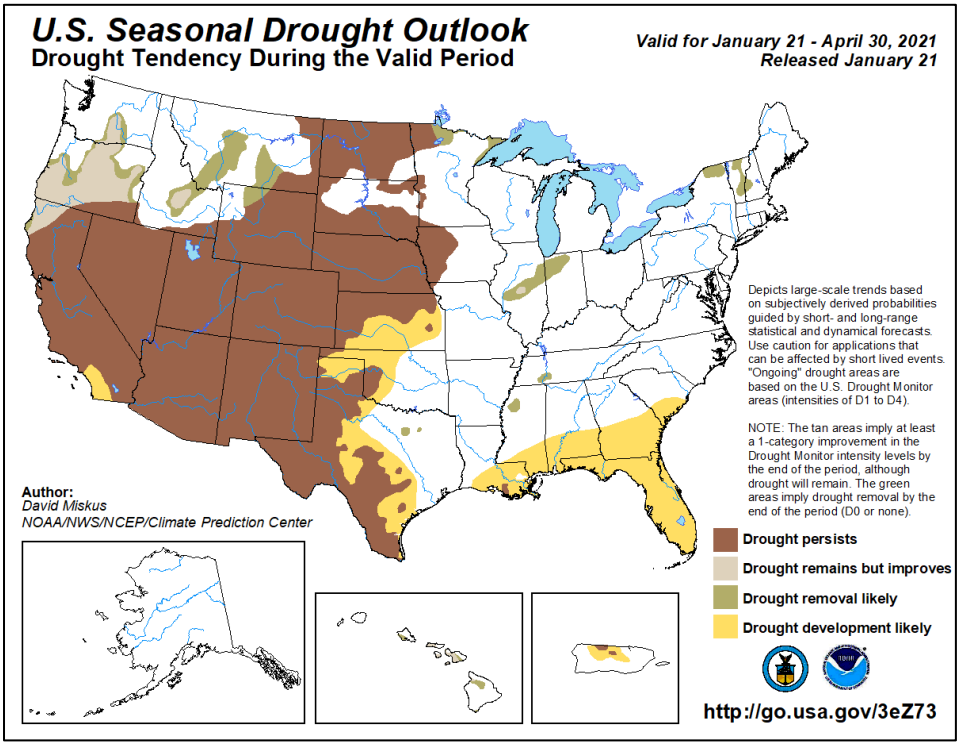
Appendix

DROUGHT

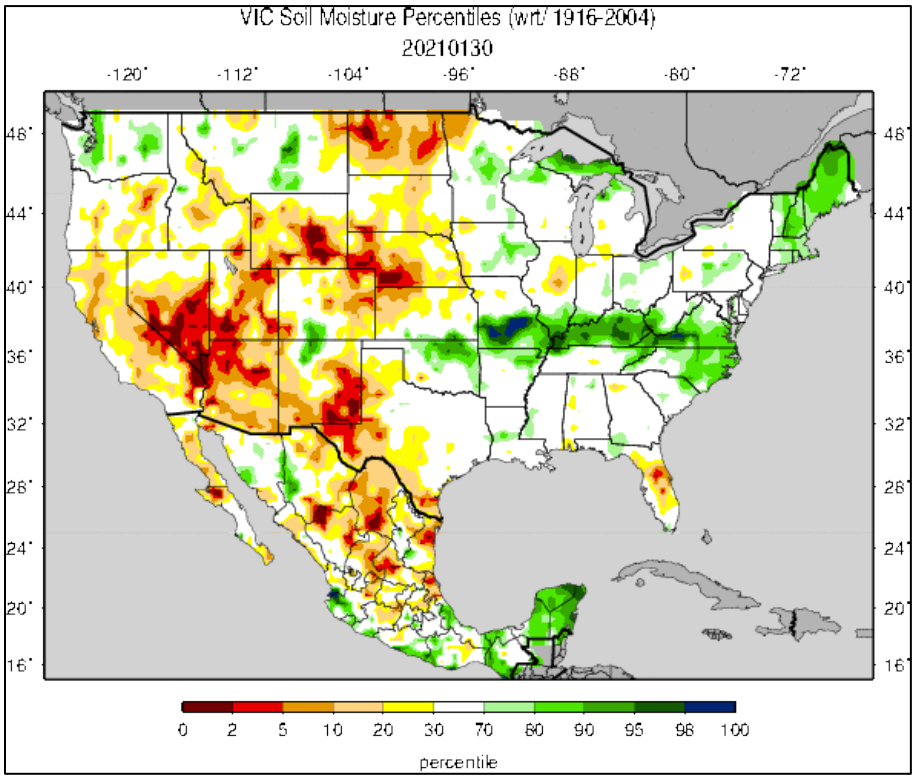


CURRENT CONDITIONS

OUTLOOK through APRIL 30th

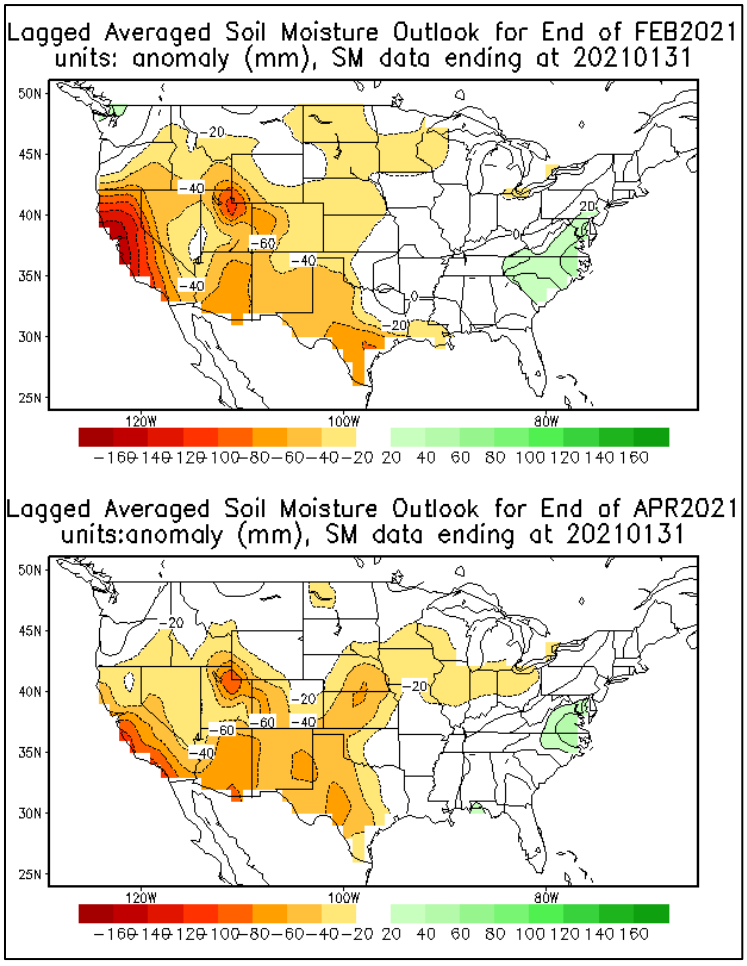


SOIL MOISTURE



CURRENT CONDITIONS

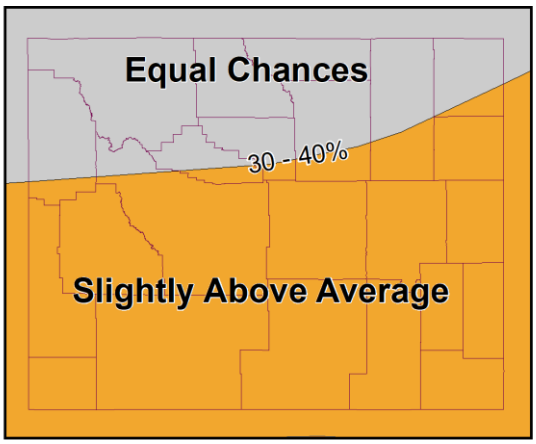
FORECAST through APRIL



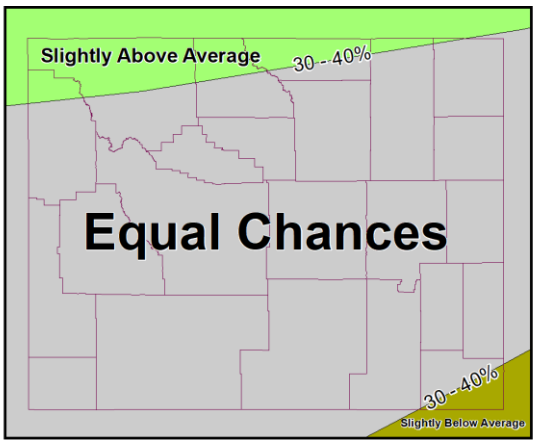
TEMPERATURE/PRECIPITATION OUTLOOK

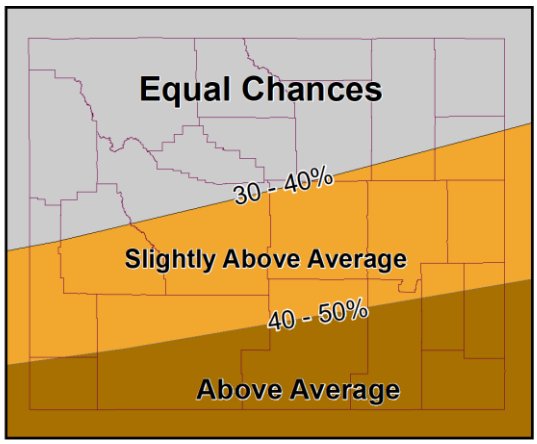
TEMPERATURE

PRECIPITATION

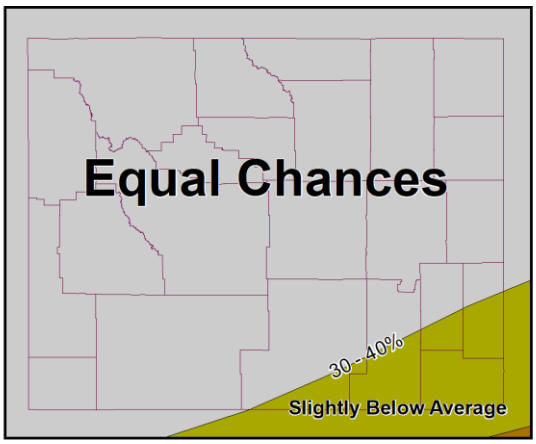


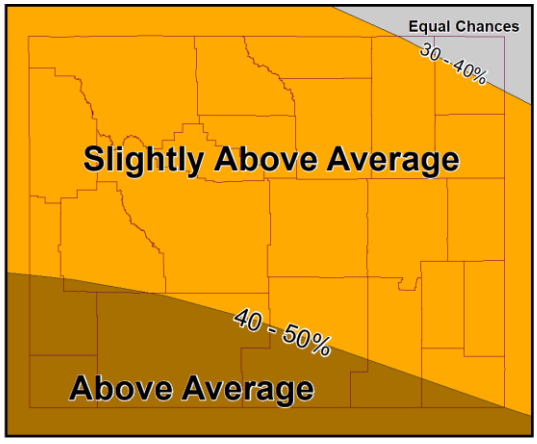
FEB - APR



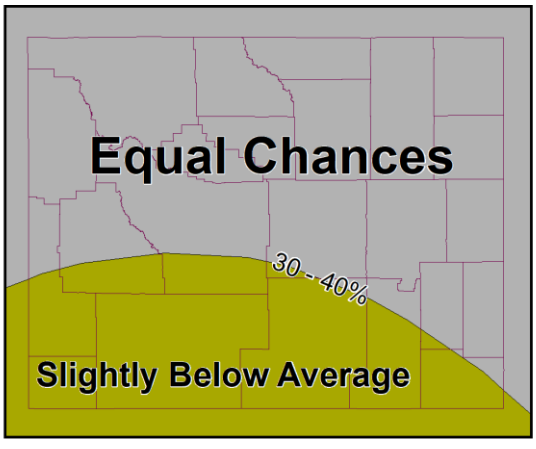


MAR - MAY

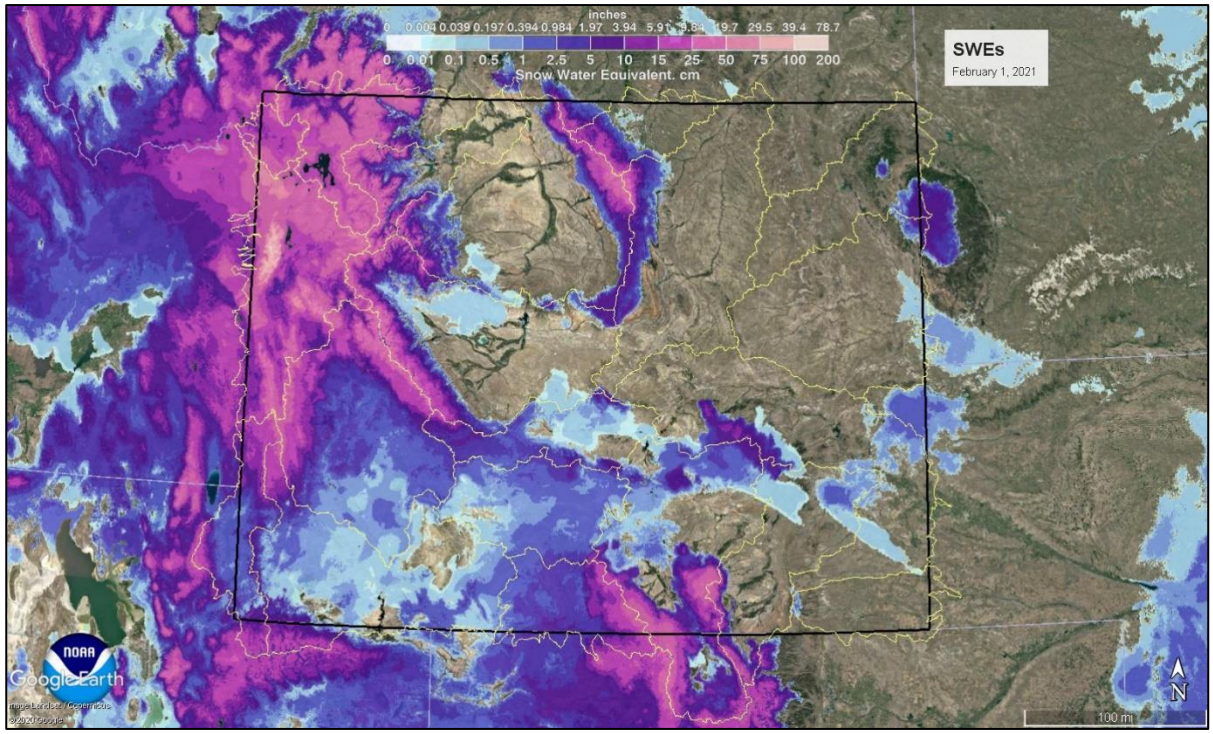




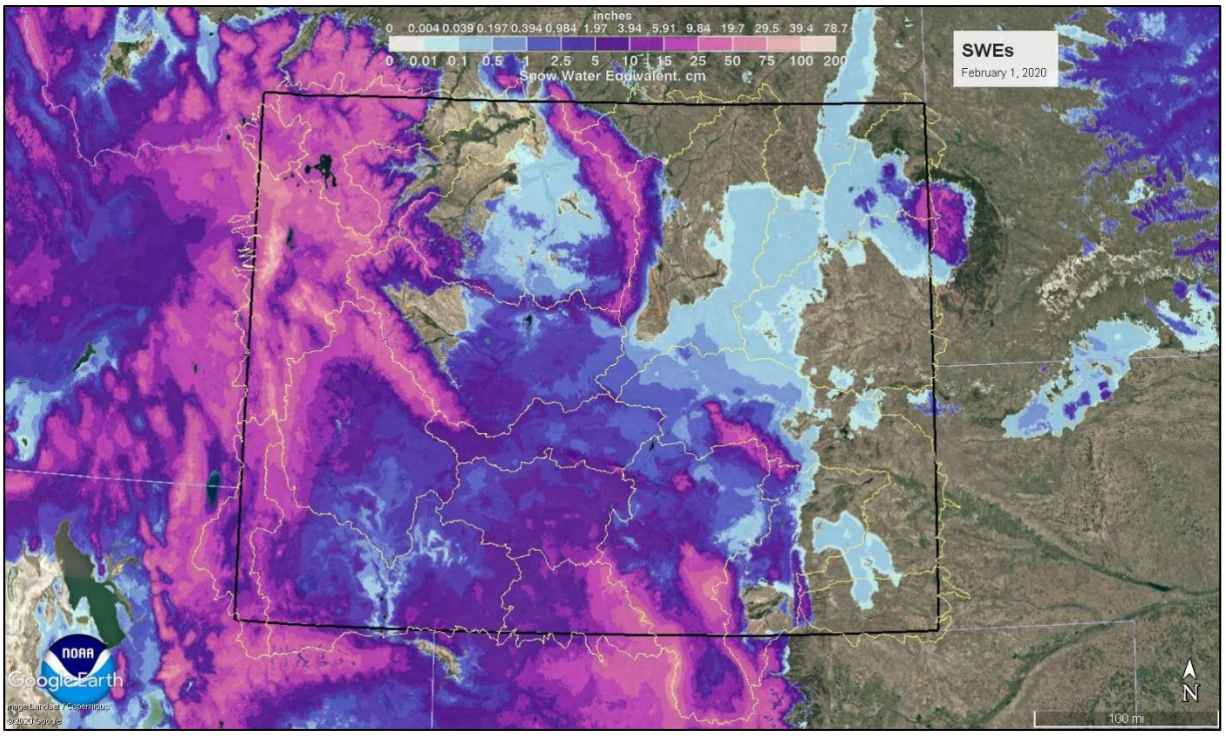
APR - JUN



SWE ANALYSIS FROM NOHRSC

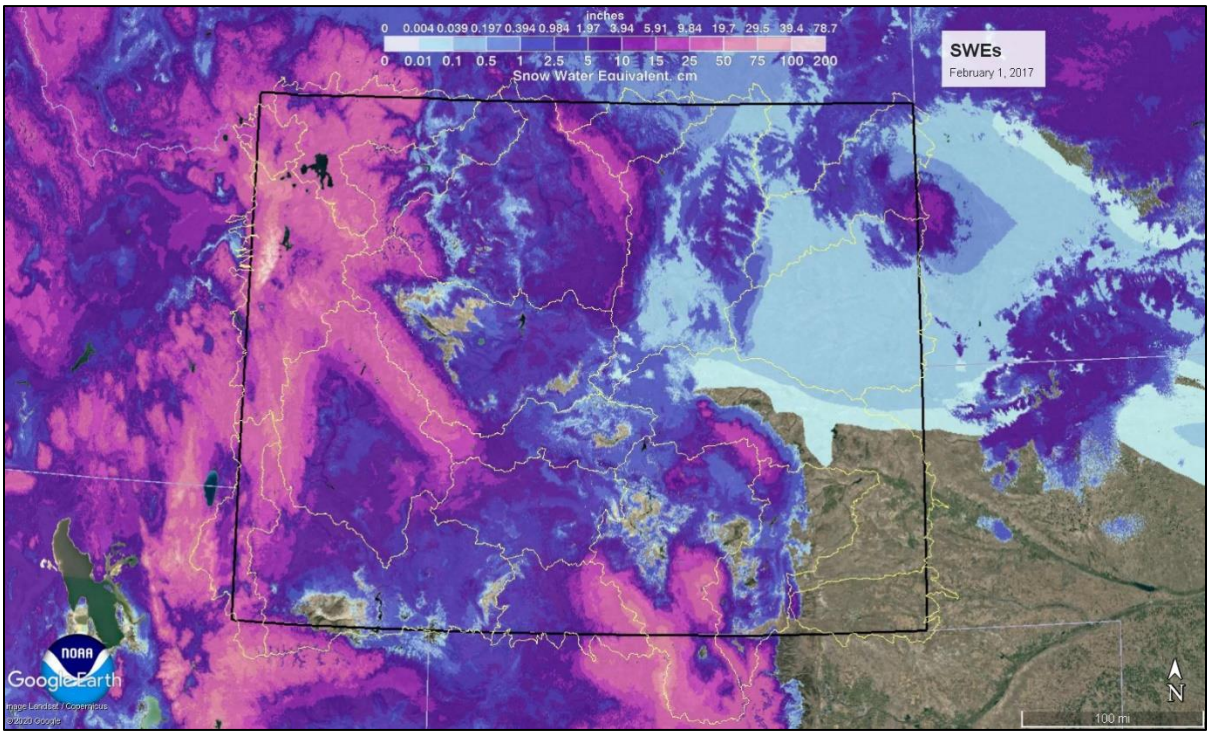


FEBRUARY 1, 2021



FEBRUARY 1, 2020

Record Water Years



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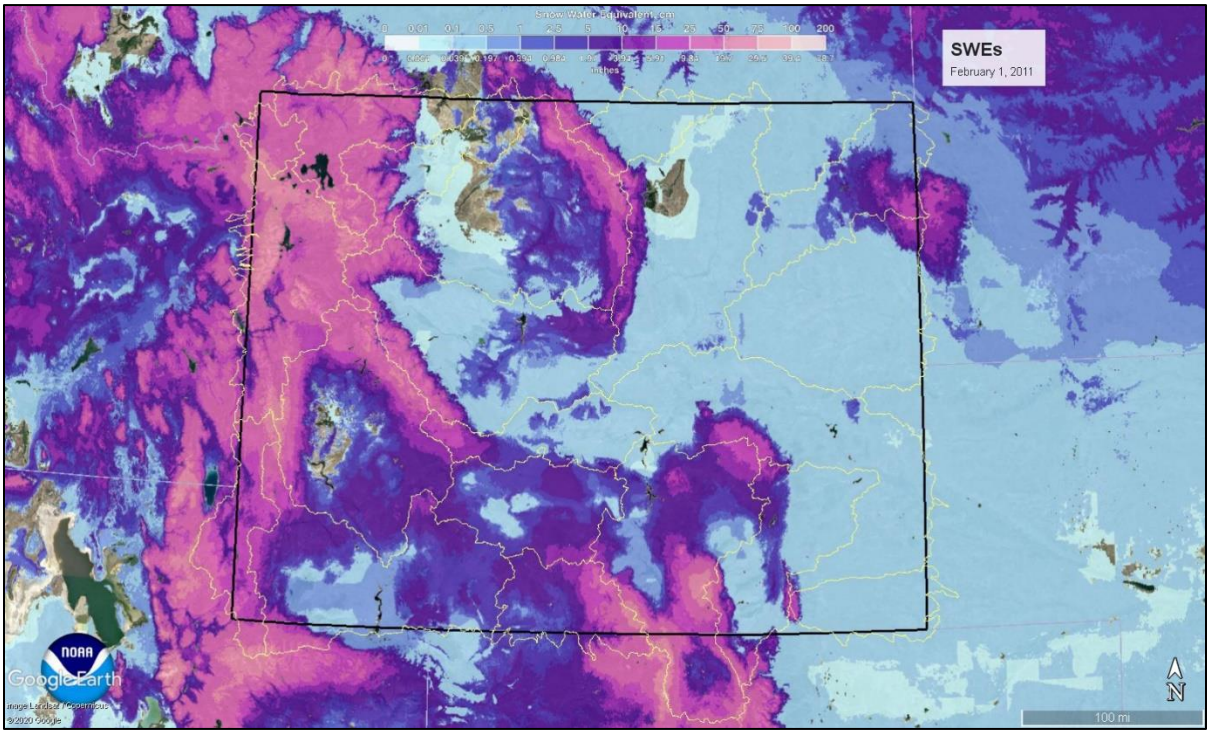
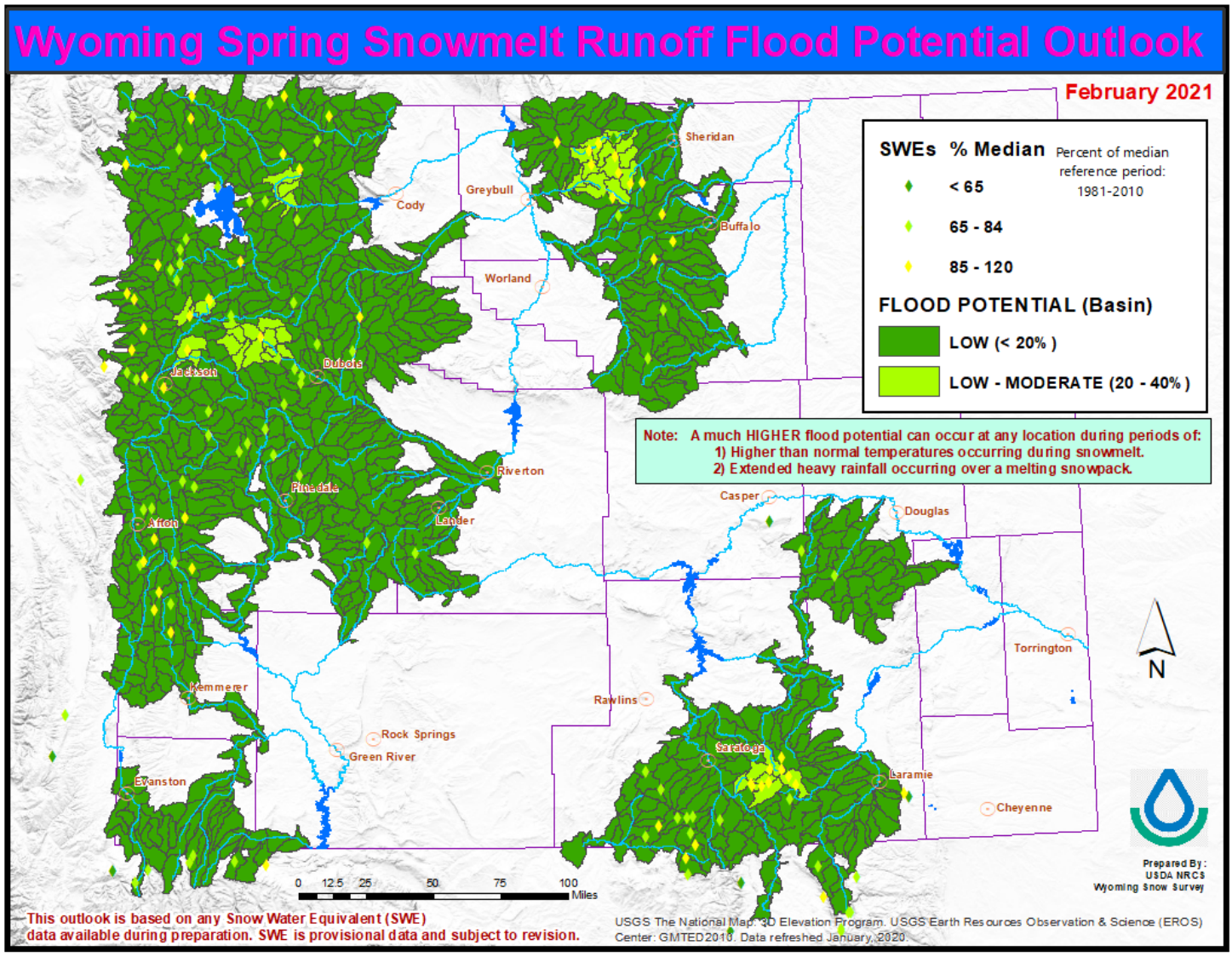


FEBRUARY 1, 2011

SPRING SNOWMELT RUNOFF FLOOD OUTLOOK



TABULAR DATA

Snowpack (SNOTEL/Snow Course) Data

In Word double click the object below to view entire document

SWE_data_02012021.pdf

Precipitation Data

In Word double click the object below to view entire document

Precip_data_02012021.pdf

Reservoir Data

In Word double click the object below to view entire document

Reservoir_data_02012021.pdf

Stream Flow Forecasts

In Word double click the object below to view entire document

Streamflow_forecasts_02012021.pdf

Wyoming Basin Outlook Report
National Resources Conservation Service
Casper, Wyoming

Issued by:

Kevin D. Norton (Acting Chief)
U.S.D.A.
Natural Resources Conservation Service
Washington D.C.

Released by:

Astrid Martinez
State Con.
N R C S
Casper, Wyoming

The Following Agencies and Organizations Cooperate with the Natural Resources Conservation Service with Snow Surveys and/or with Data:

FEDERAL:

United States Department of the Interior (National Park Service)

United States Department of the Interior (Bureau of Reclamation)

United States Department of Agriculture (Forest Service)

United States Department of Commerce NOAA (National Weather Service)

STATE:

The Wyoming State Engineer's Office

The University of Wyoming

LOCAL:

The City of Cheyenne