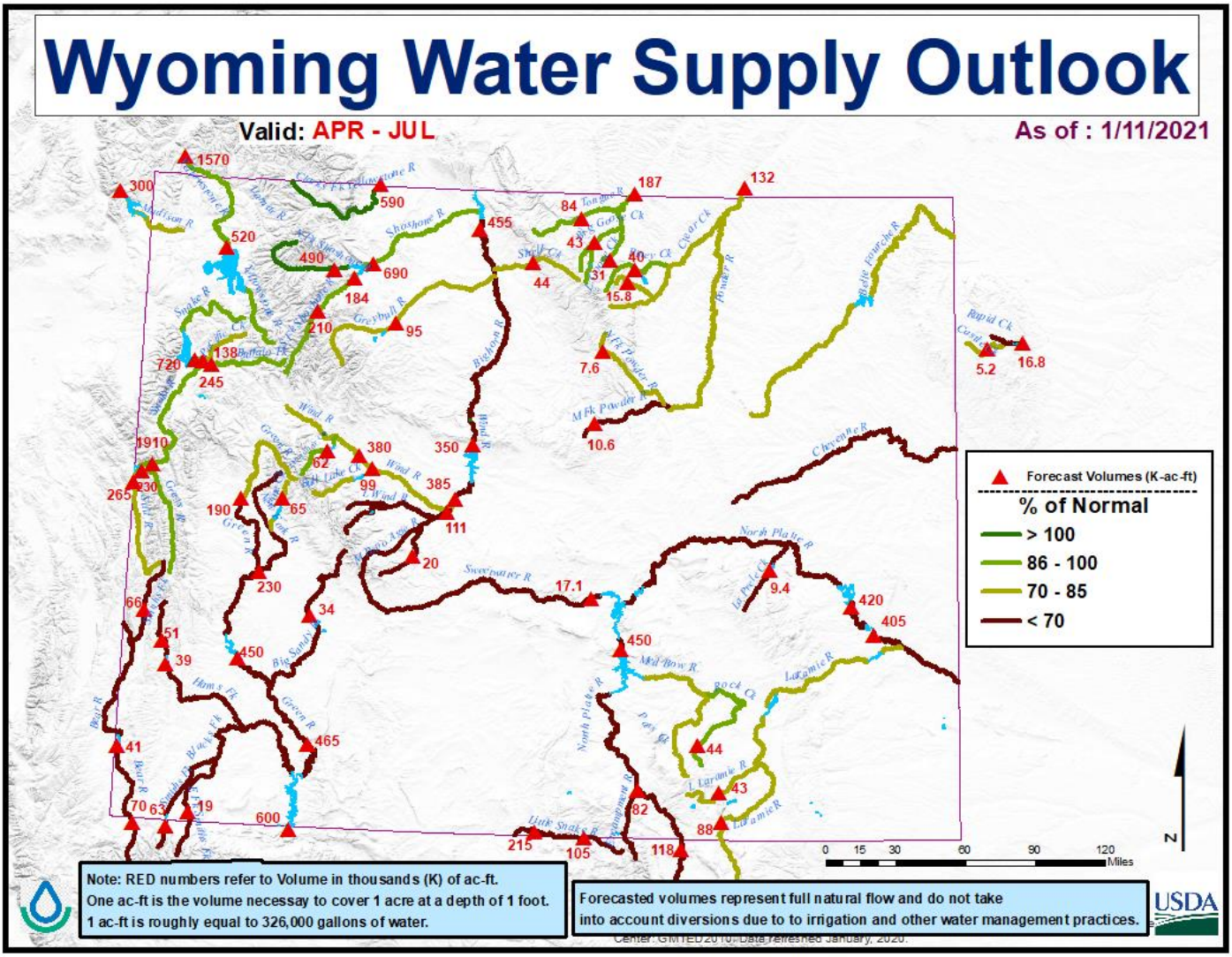
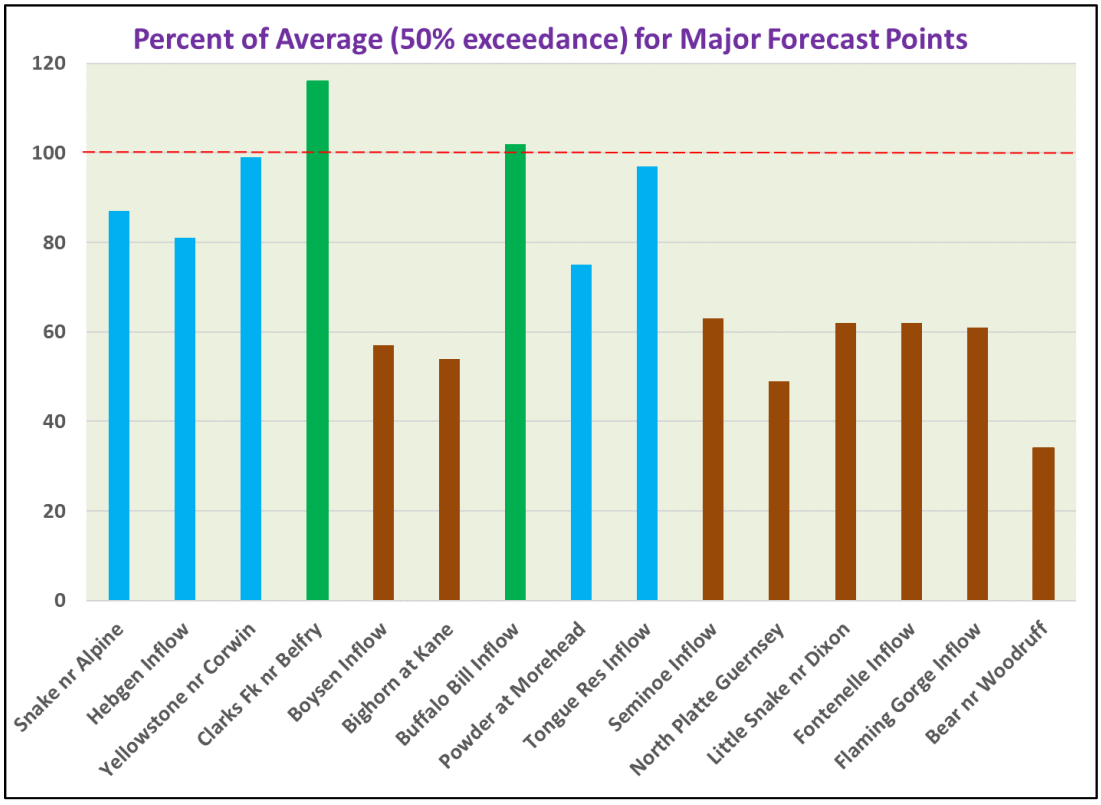
United States Department of Agriculture

Wyoming Basin & Water Supply Outlook Report
January 1, 2021

Natural Resources Conservation Service

Photo courtesy of USGS Idaho


Wyoming Water Supply Outlook
Valid: APR - JUL
As of : 1/11/2021
Forecast Volumes (K-ac-ft)
% of Normal
> 100
86 - 100
70 - 85
< 70
Note: RED numbers refer to Volume in thousands (K) of ac-ft.
One ac-ft is the volume necessay to cover 1 acre at a depth of 1 foot.
1 ac-ft is roughly equal to 326,000 gallons of water.
Forecasted volumes represent full natural flow and do not take into account diversions due to to irrigation and other water management practices.
0 15 30 60 90 120 Miles
N
USDA


Percent of Average (50% exceedance) for Major Forecast Points
120
100
80
60
40
20
0
Snake nr Alpine
Hebgen Inflow
Yellowstone nr Corwin
Clarks Fk nr Belfry
Boysen Inflow
Bighorn at Kane
Buffalo Bill Inflow
Powder at Morehead
Tongue Res Inflow
Seminoe Inflow
North Platte Guernsey
Little Snake nr Dixon
Fontenelle Inflow
Flaming Gorge Inflow
Bear nr Woodruff

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

For more information, contact:

Jim Fahey
100 East "B" Street, Casper, WY 82601
(307) 233-6787 james.fahey@usda.gov

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.

Wyoming Basin & Water Supply Outlook Report

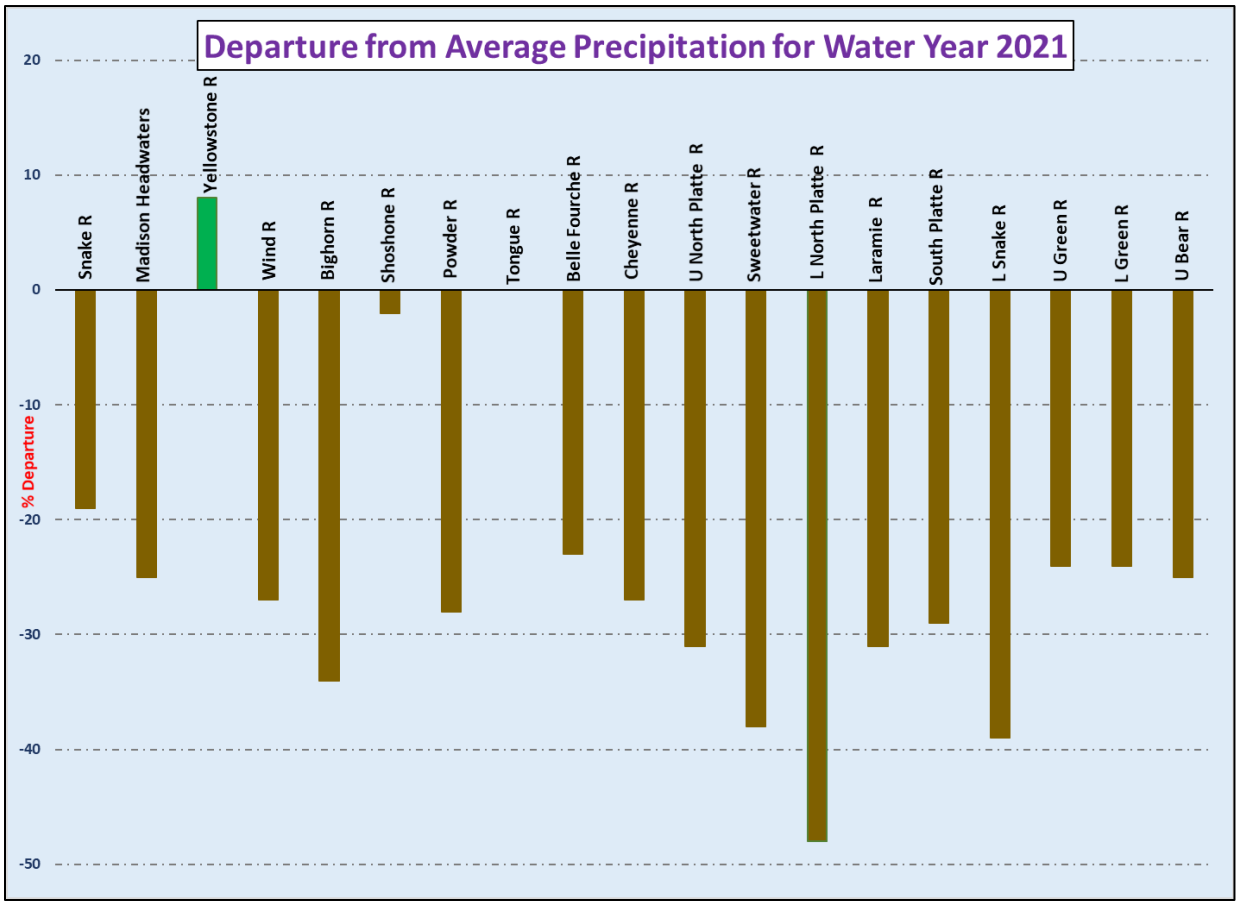
Snowpack/SWEs

Snow water equivalents (SWE)across Wyoming for January 1st was at **71**% of median. SWEs in the Shoshone River Basin were the highest at 96% of median, while SWEs in the South Plate River Basin were the lowest at **16**% of median. *See the map on page 6 and the Appendix for further information.*

Precipitation

Average basin precipitation across Wyoming was near **70**% of average. The Lower North Platte River Basin had the highest precipitation for the month at **103**% of average. The Shoshone River Basin had the lowest precipitation amount at **40**% of average. The following graph displays the major river basins and their departure from average for last month.

See Appendix for further information.



Stream Flow Forecasts

Stream flow yields for April thru July across Wyoming is expected to average near **80**%. The Snake River, Madison, and Upper Yellowstone River Basins should yield about **88**%, **81**% and **90**% of average, respectively. Yields from both the Wind and Bighorn River Basins should be about **70**% of average. Yields from the Shoshone and Clarks Fork River Basins of Wyoming should be about **103**% and **116**% of average. Yields from the Powder and Tongue River Basins should be about **80**% and **95**% of average. Yield for the Cheyenne River Basin should be about **75**% of average. Yields for the Sweetwater, Upper North Platte, Lower North Platte, and Laramie Rivers of Wyoming should be about **29**%, **49**%, **50**%, and **80**% of average, respectively. Yields for the Little Snake, Green River, Bear River, and Smith's Fork of Wyoming should be **65**%, **75**%, **50**%, and **75**% respectively.

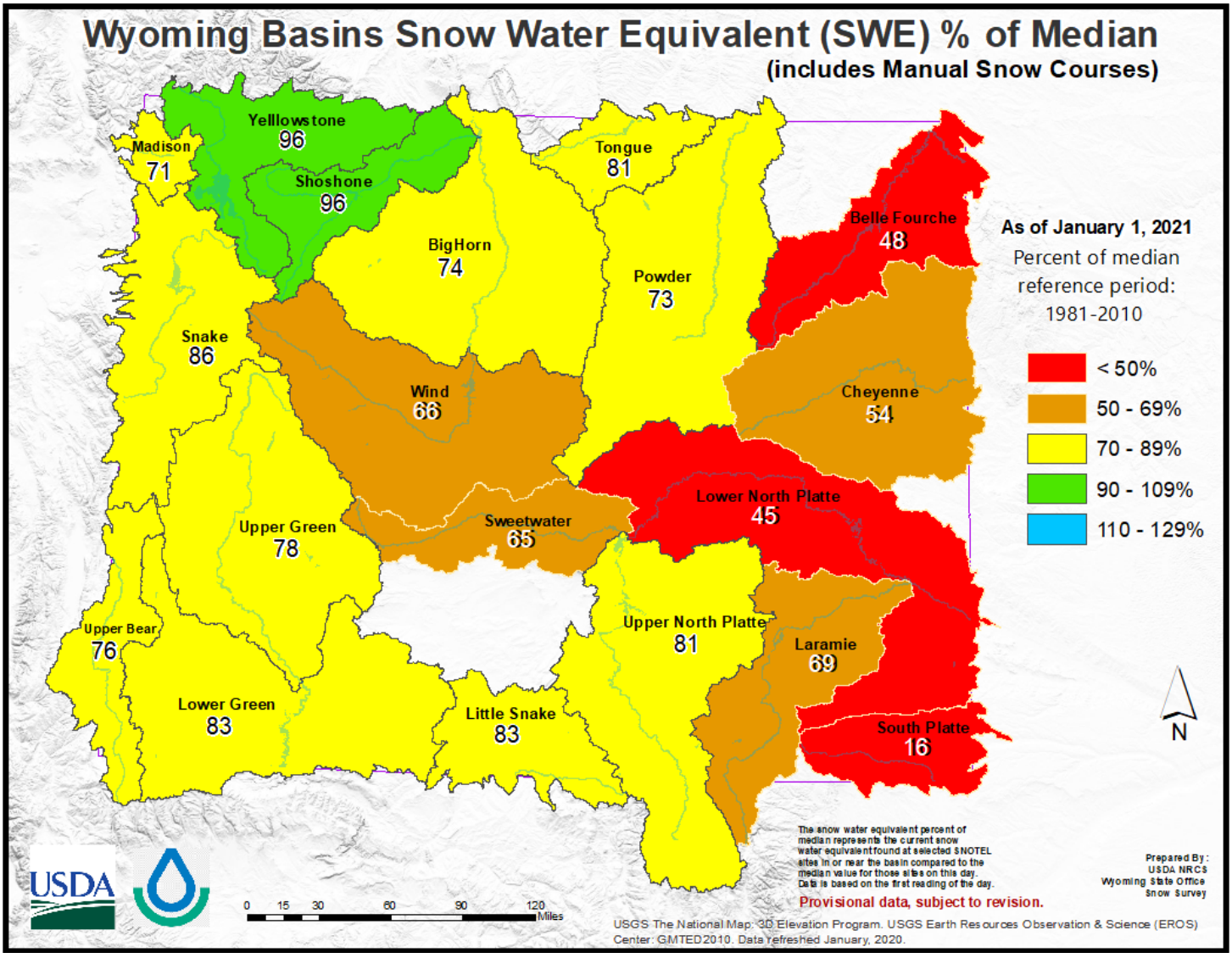
Reservoirs

Reservoir storage capacity across Wyoming was **66%**. Reservoir storages for late December were above average at **112%** of average across the entire state. The highest average reservoir storage was across the Tongue River Basin at **148%**. The Little Snake River Basin had the lowest average reservoir storage at **73%** *See below for further information.*

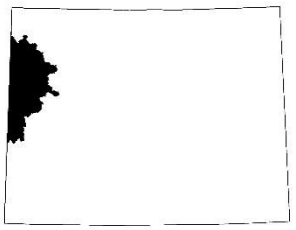
Wyoming Reservoir Storage Summary

	Reservoir Storage Summary for the end of December 2020								
	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Alcova	144.1	157.3	154.9	184.3	78%	85%	84%	93%	102%
Angostura	81.4	98.7	81.1	122.1	67%	81%	66%	100%	122%
Belle Fourche	133.1	132.1	101.2	178.4	75%	74%	57%	132%	131%
Big Sandy	8.0	22.1	16.3	38.3	21%	58%	43%	49%	136%
Bighorn Lake	880.9	931.8	871.2	1356	65%	69%	64%	101%	107%
Boysen	519.9	589.8	521.7	596	87%	99%	88%	100%	113%
Buffalo Bill	447.8	471.9	355.5	646.6	69%	73%	55%	126%	133%
Bull Lake	77.8	92.7	75.2	151.8	51%	61%	50%	103%	123%
Deerfield	14.4	14.7	13.5	15.2	95%	97%	89%	107%	109%
Ennis Lake	M	29.2	30	42	M	71%	73%	M	97%
Flaming Gorge Reservoir	3156.9	3327.1	3091	3749.0	84%	89%	82%	102%	108%
Fontenelle	188.1	207.5	175.3	344.8	55%	60%	51%	107%	118%
Glendo	317.1	284.5	254.7	506.4	63%	56%	50%	125%	112%
Grassy Lake	12.0	12.4	11.6	15.2	79%	82%	76%	103%	107%
Guernsey	12.7	13.4	9.2	45.6	28%	29%	20%	138%	146%
Hebgen Lake	314.9	316.8	283.2	378.8	83%	84%	75%	111%	112%
High Savery Reservoir	8.5	12.8	11.7	22.4	38%	57%	52%	73%	110%
Jackson Lake	652.0	595.2	424.1	847.0	77%	70%	50%	154%	140%
Keyhole	151.9	169.1	87.4	193.8	78%	87%	45%	174%	193%
PactoLa	52.1	52.3	45.6	55.0	95%	95%	83%	114%	115%
Palisades Reservoir	928.4	1249.8	882.5	1400.0	66%	89%	63%	105%	142%
Pathfinder	619.5	874.8	536.1	1016.5	61%	86%	53%	116%	163%
Pilot Butte	24.2	24.0	23.1	31.6	77%	76%	73%	105%	104%
Seminoe	594.9	800.6	553.7	1016.7	59%	79%	54%	107%	145%
Shadehill	55.2	59.4	44.1	81.4	68%	73%	54%	125%	135%
Tongue River Res	38.9	48.0	26.4	79.1	49%	61%	33%	148%	182%
Viva Naughton Res	30.3	32.8	31.4	42.4	71%	77%	74%	96%	105%
Wheatland #2	51.0	59.0	42.4	98.9	52%	60%	43%	121%	139%
Woodruff Narrows Reservoir	25.2	47.9	27.3	57.3	44%	84%	48%	92%	176%
				Averages	66%	75%	60%	112%	128%

Snow Water Equivalent (SWE) % of Median -- January 1st, 2021



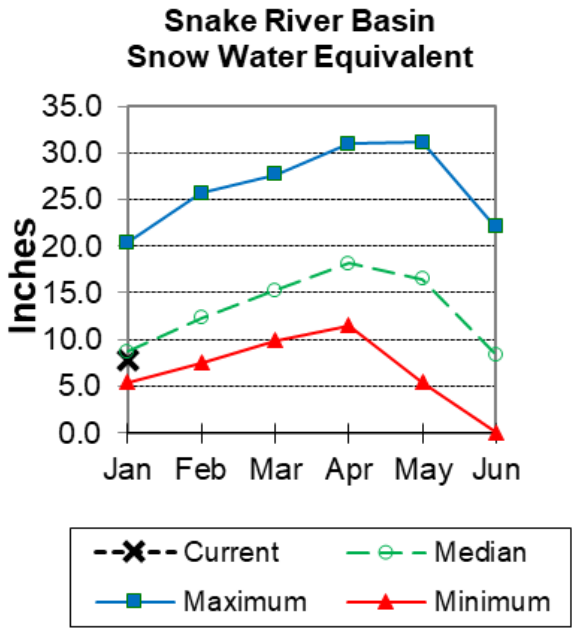
Snake River Basin

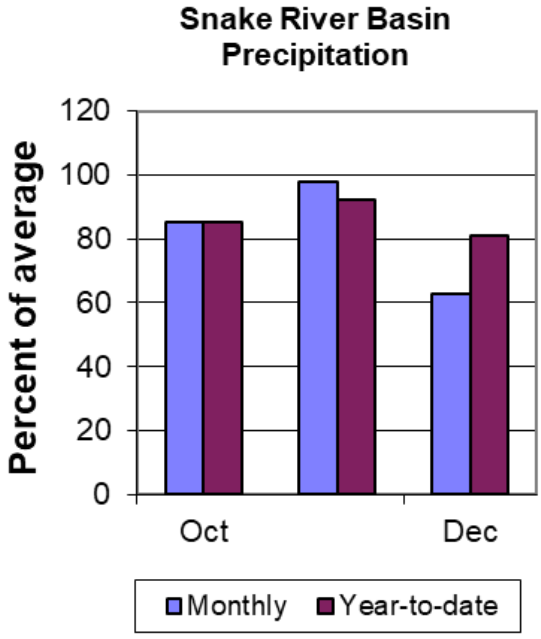


Snow

The overall Snake River Basin SWE (portion above Palisades dam) is 86% of median. SWE in the Snake River Basin above Jackson Lake is 92% of median. Pacific Creek Basin SWE is **104**% of median. Buffalo Fork SWE is 91% of median. Gros Ventre River Basin SWE is 80% of median. SWE in the Hoback River drainage is 84% of median. SWE in the Greys River drainage is 90% of median. Salt River Basin SWE is 88% of median.

See Appendix at the end of this report for a detailed listing of snow course/SNOTEL information.





Precipitation

Last month's precipitation for the Snake River Basin was **63**% of average. Water-year-to-date precipitation is **81**% of average.

Reservoirs

Current reservoir storage is **121**% of average for the three storage reservoirs in the basin.

SNAKE RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Grassy Lake	12.0	12.4	11.6	15.2	79%	82%	76%	103%	107%
Jackson Lake	652.0	595.2	424.1	847.0	77%	70%	50%	154%	140%
Palisades Reservoir	928.4	1249.8	882.5	1400.0	66%	89%	63%	105%	142%
Basin-wide Total	1592.4	1857.5	1318.2	2262.2	70%	82%	58%	121%	141%
# of reservoirs	3	3	3	3	3	3	3	3	3

Streamflow

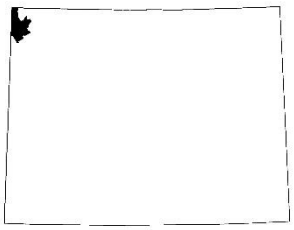
The 50% exceedance forecasts for April through September are **below** average for this basin. The Snake near Moran yield is **94**% of average. Snake River above Reservoir near Alpine will yield about **88**%. Pacific Creek near Moran Yield will be around **84**%. Buffalo Fork above

Lava near Moran yield will be around **88**% of average. Greys River above Palisades Reservoir yield about **87**%. Salt River near Etna yield will be about **77**%.

See the following table for further information.

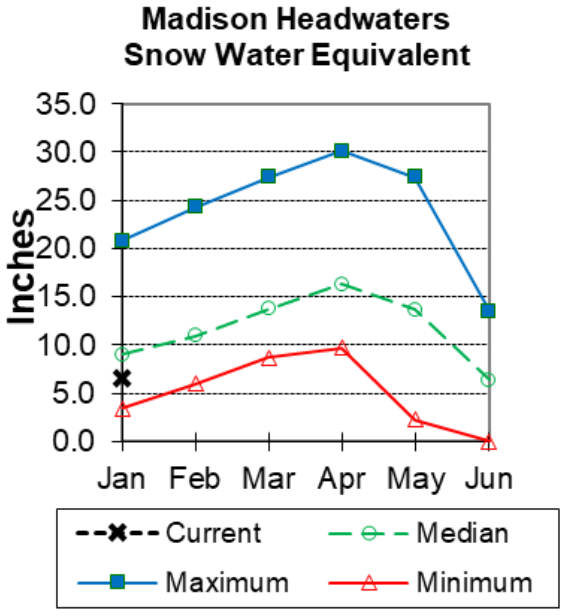
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
SNAKE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Snake R nr Moran,2								
	APR-JUL	485	625	720	94%	815	955	765
	APR-SEP	545	695	795	94%	895	1050	845
Snake R ab Reservoir nr Alpine,2								
	APR-JUL	1200	1620	1910	88%	2200	2620	2170
	APR-SEP	1400	1870	2190	88%	2510	2980	2500
Snake R nr Irwin ,2								
	APR-JUL	1550	2160	2580	86%	3000	3610	3010
	APR-SEP	1830	2530	3000	86%	3470	4170	3500
Snake R nr Heise2								
	APR-JUL	1700	2340	2770	85%	3200	3840	3240
	APR-SEP	2040	2760	3250	86%	3740	4460	3780
Pacific Ck at Moran								
	APR-JUL	80	115	138	84%	161	196	164
	APR-SEP	87	122	146	84%	170	205	173
Buffalo Fk ab Lava Ck nr Moran								
	APR-JUL	162	210	245	88%	280	330	280
	APR-SEP	187	240	280	88%	320	375	320
Greys R ab Reservoir nr Alpine								
	APR-JUL	159	220	265	87%	310	370	305
	APR-SEP	189	260	310	86%	360	430	360
Salt R ab Reservoir nr Etna								
	APR-JUL	85	171	230	77%	290	375	300
	APR-SEP	124	225	290	78%	355	455	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								

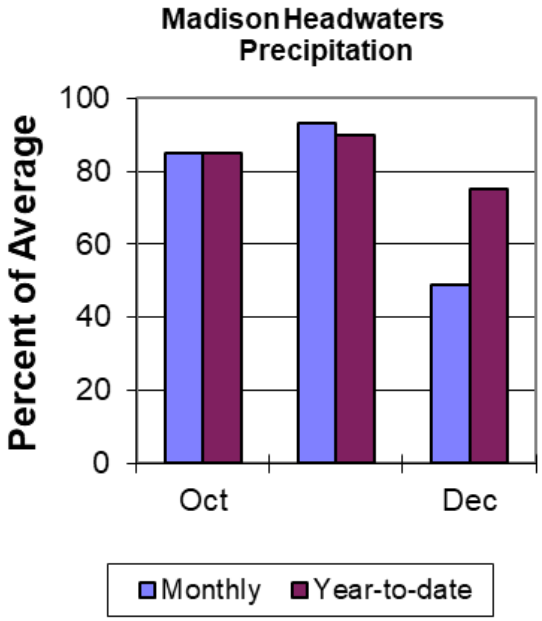
Madison Headwaters Basin



Snow

SWE is **71**% of median in the Madison Headwaters drainage. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Last month precipitation in the Madison Headwaters drainage was **49**% of average. Water-year-to-date precipitation is at **75**% of average.

Reservoirs

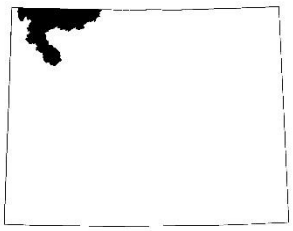
Current reservoir storage is **111**% of average in the basin.

MADISON HEADWATER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Ennis Lake		29.2	30.0	41.0		71%	73%		97%
Hebgen Lake	314.9	316.8	283.2	378.8	83%	84%	75%	111%	112%
Basin-wide Total	314.9	346.0	313.2	419.8	83%	78%	74%	111%	105%
# of reservoirs	1	2	2	2	1	2	2	1	2

Streamflow

The 50% exceedance forecast for April through July is **below** average for the basin. Hebgen Reservoir inflow is **81**% of average. *See below for detailed runoff volumes.*

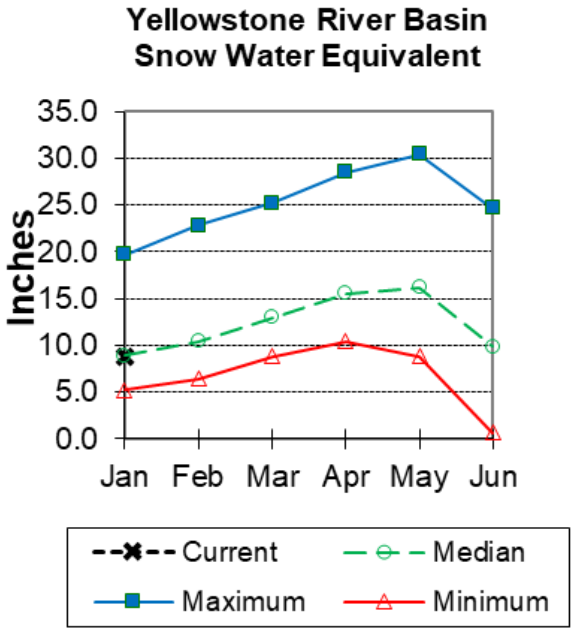
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
MADISON HEADWATER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Hebgen Reservoir Inflow	APR-JUL	395	260	300	81%	340	205	370
1) 90% and 10% exceedance 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								

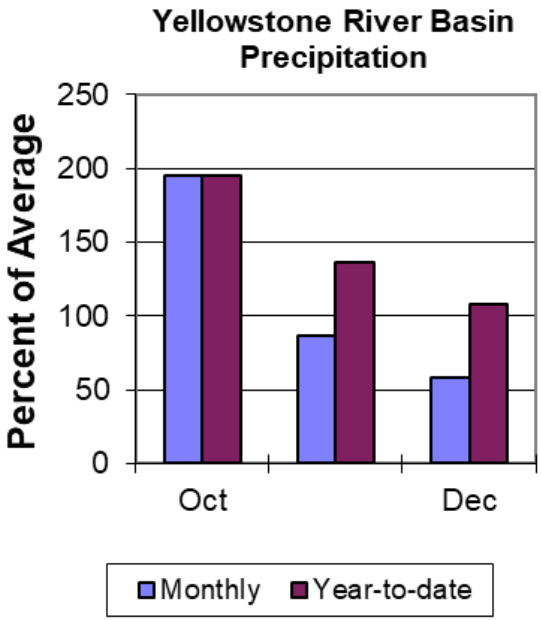


Yellowstone River Basin

Snow

SWE in the Yellowstone River Basin is 93% of median. SWE in the Clarks Fork Drainage of the Yellowstone River Basin in Wyoming is **103**% of median. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Last month's precipitation in the Yellowstone River Basin was **58**% of average. Water-year-to-date precipitation is **108**% of average.

Reservoirs No reservoir data

Streamflow

The 50% exceedance forecasts for April through September are near average for the basin. Yellowstone at Lake Outlet will yield around **90**% of average. Clarks Fork of the Yellowstone near Belfry will yield around **116**%.

See the following for further information.

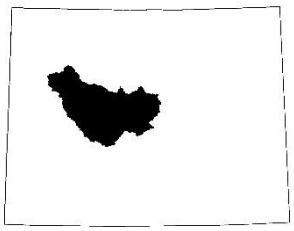
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
YELLOWSTONE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Yellowstone R at Yellowstone Lake Outlet								
	APR-JUL	355	455	520	90%	585	685	575
	APR-SEP	470	605	695	90%	785	920	770
Clarks Fk Yellowstone R nr Belfry[2]								
	APR-JUL	440	530	590	116%	650	740	510
	APR-SEP	480	580	645	117%	710	805	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

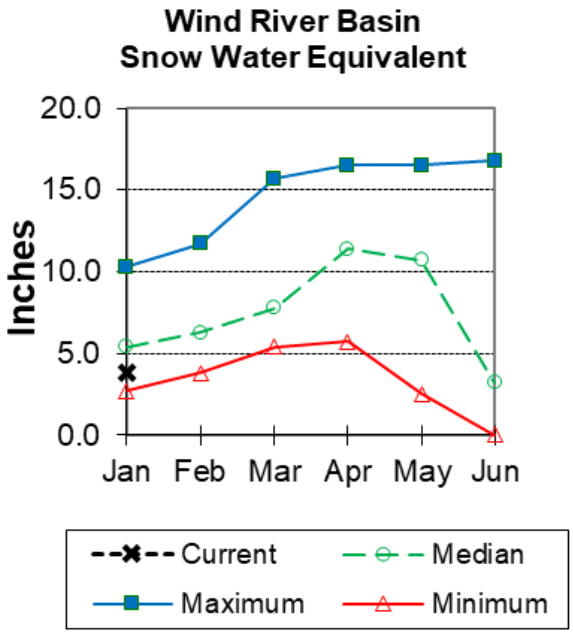
3) Median value used in place of average

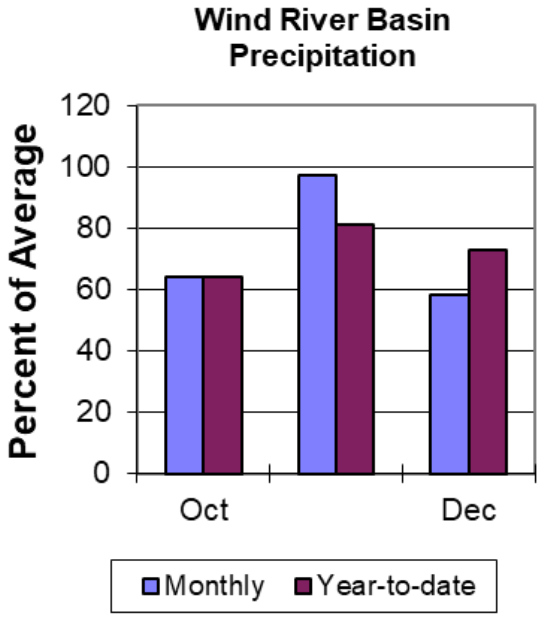
Wind River Basin



Snow

Wind River Basin SWE (above Boysen Reservoir) is **66**% of median. SWE in the Wind River above Dubois is 95% of median. Little Wind SWE is **31**% of median, and Popo Agie drainage SWE is **61**% of median. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Precipitation for the basin was **58**% of average. Water year-to-date precipitation is **73**% of average.

Reservoirs

Current storage is **113**% of average in the basin.

WIND RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Bull Lake	92.3	81.3	75.4	151.8	61%	54%	50%	122%	108%
Boysen	569.5	552.7	506.0	596.0	96%	93%	85%	113%	109%
Pilot Butte	23.9	24.1	23.2	31.6	76%	76%	73%	103%	104%
Basin-wide Total	685.7	658.1	604.6	779.4	88%	84%	78%	113%	109%
# of reservoirs	3	3	3	3	3	3	3	3	3

Streamflow

The 50% exceedance forecasts for the April through July runoff period are **below** average. The Wind River above Bull Lake Creek will yield about **84**% of average. Little Popo Agie River near Lander should yield around **48**% of average. Little Wind River near Riverton will yield around **41**% of average. Boysen Reservoir inflow will yield about **57**% of average. *See the following page for detailed runoff volumes.*

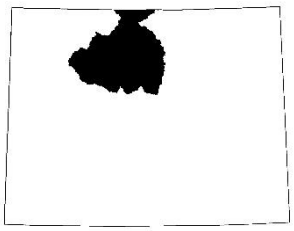
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
WIND RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Dinwoody Ck nr Burris								
	APR-JUL	48	56	62	94%	68	76	66
	APR-SEP	70	80	87	95%	94	104	92
Wind R Ab Bull Lake Ck								
	APR-JUL	215	315	380	84%	450	550	455
	APR-SEP	220	325	400	82%	475	585	490
Bull Lake Ck nr Lenore								
	APR-JUL	64	85	99	71%	113	134	139
	APR-SEP	78	103	120	71%	137	163	169
Wind R at Riverton								
	APR-JUL	205	310	385	81%	460	570	475
	APR-SEP	240	365	450	82%	530	655	550
Little Popo Agie R nr Lander								
	APR-JUL	0.43	12.1	20	48%	28	40	42
	APR-SEP	3.7	16	24	49%	33	45	49
Little Wind R nr Riverton								
	APR-JUL	2.7	46	111	41%	176	270	270
	APR-SEP	3	55	124	42%	193	295	295
Boysen Reservoir Inflow								
	APR-JUL	6.1	210	350	57%	490	700	610
	APR-SEP	6.6	220	370	56%	520	745	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

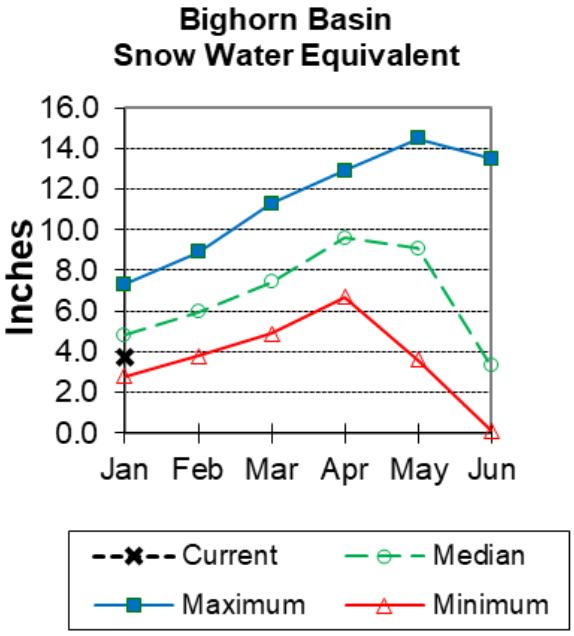
3) Median value used in place of average

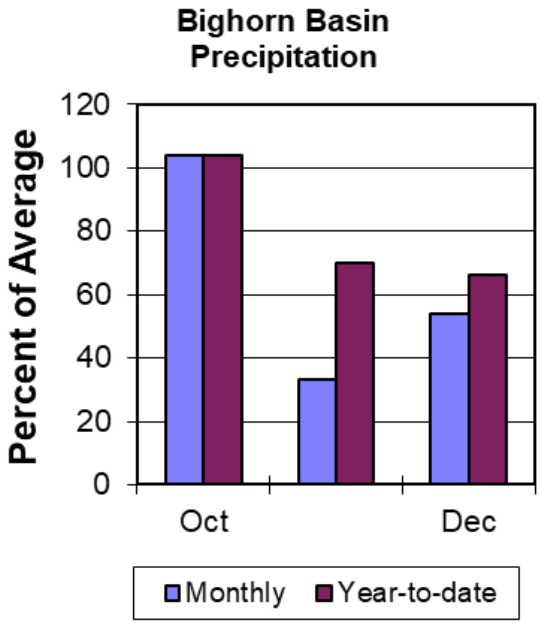
Bighorn River Basin



Snow

The Bighorn River Basin SWE (above Bighorn Reservoir) is **74**% of median. The Nowood River is at **66**% of median. The Greybull River SWE is at **76**% of median. Shell Creek SWE is at **87**% of median. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Last month's precipitation was **54**% of average. Year-to-date precipitation is **66**% of average.

Reservoirs

Current reservoir storage in the basin is **101**% of average.

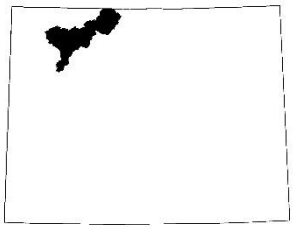
BIGHORN RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Boysen	519.9	589.8	521.7	596.0	87%	99%	88%	100%	113%
Bighorn Lake	880.9	931.8	871.2	1356.0	65%	69%	64%	101%	107%
Basin-wide Total	1400.8	1521.6	1392.9	1952.0	72%	78%	71%	101%	109%
# of reservoirs	2	2	2	2	2	2	2	2	2

Streamflow

The 50% exceedance forecasts for the April through July runoffs are **below** average. The Greybull River near Meeteetse yielding around **73**% of average; Shell Creek near Shell yielding around **80**% of average and the Bighorn River at Kane to yield around **54**% of average. *See the following for detailed runoff volumes.*

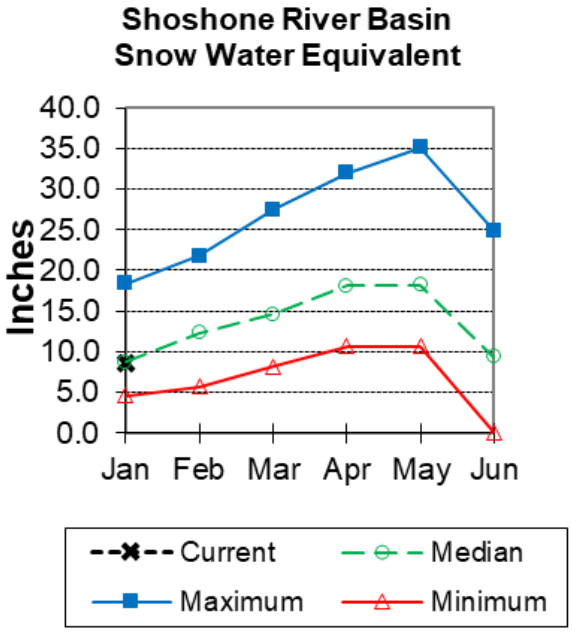
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
BIGHORN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Boysen Reservoir Inflow								
	APR-JUL	6.1	210	350	57%	490	700	610
	APR-SEP	6.6	220	370	56%	520	745	665
Greybull R nr Meeteetse								
	APR-JUL	40	73	95	73%	118	150	131
	APR-SEP	63	102	128	72%	155	194	177
Shell Ck nr Shell								
	APR-JUL	28	37	44	80%	51	60	55
	APR-SEP	38	49	56	85%	63	74	66
Bighorn R at Kane								
	APR-JUL	8.4	255	455	54%	655	945	840
	APR-SEP	9	250	465	51%	680	995	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								
3) Median value used in place of average								

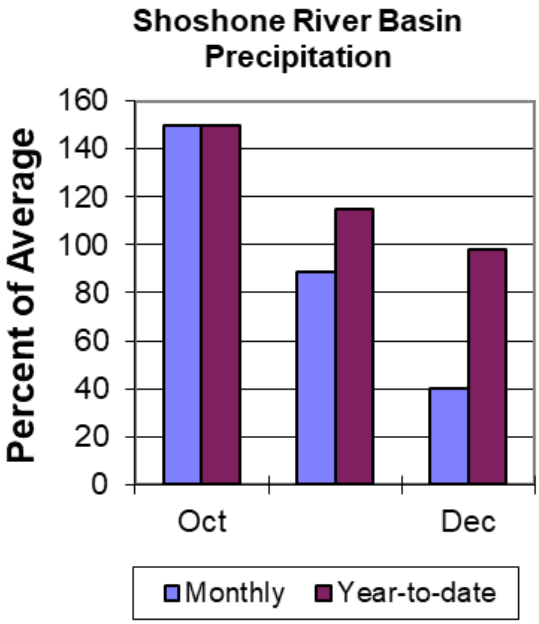
Shoshone River Basin



Snow

Snow Water Equivalent (SWE) is **96**% of median in this basin. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Precipitation for last month was **40**% of average. The basin year-to-date precipitation is now **98**% of average.

Reservoirs

Current storage in Buffalo Bill Reservoir is about **126**% of average.

SHOSHONE RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year %	Average % Capacity	Current % Average	Last Year % Average
Buffalo Bill	447.8	471.9	355.5	646.6	69%	73%	55%	126%	133%
Basin-wide Total	447.8	471.9	355.5	646.6	69%	73%	55%	126%	133%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The 50% exceedance forecasts for the April through July period are near average for the basin. The North Fork Shoshone River at Wapiti will yield 107% of average. The South Fork of the Shoshone River near Valley would yield 102% of average. The Buffalo Bill Reservoir inflow to yield 105%. *See the following for detailed runoff volumes.*

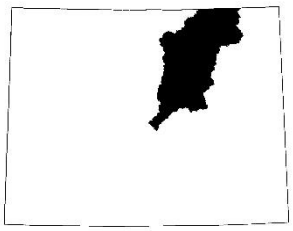
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
SHOSHONE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg
NF Shoshone R at Wapiti								
	APR-JUL	365	440	490	107%	540	615	460
	APR-SEP	405	490	545	106%	600	685	515
SF Shoshone R nr Valley								
	APR-JUL	152	188	210	98%	235	275	215
	APR-SEP	174	215	245	100%	270	315	245
SF Shoshone R ab Buffalo Bill								
	APR-JUL	97	149	184	95%	220	270	193
	APR-SEP	102	158	196	98%	235	290	200
Buffalo Bill Reservoir Inflow[2]								
	APR-JUL	470	600	690	102%	780	910	675
	APR-SEP	530	670	765	103%	860	1000	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

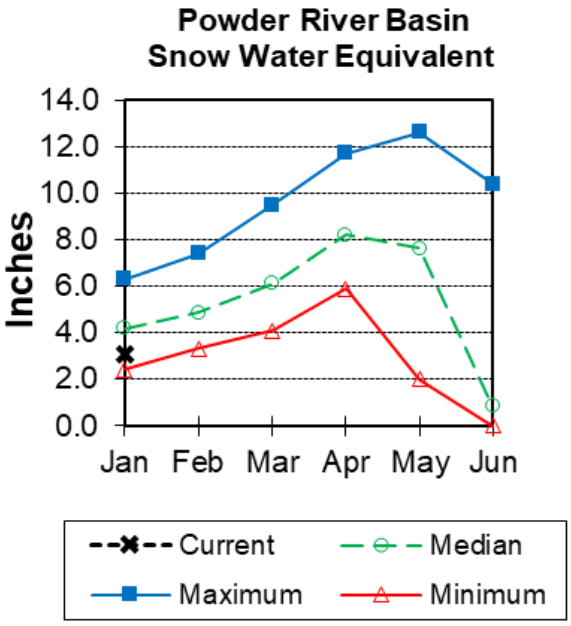
3) Median value used in place of average

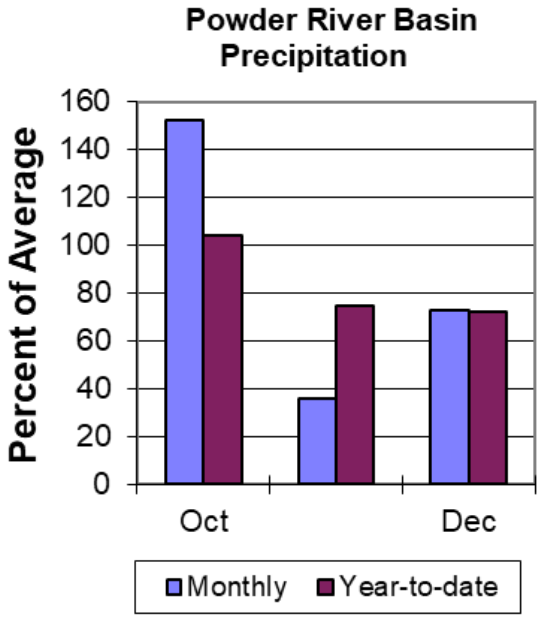
Powder River Basin



Snow

Powder River Basin SWE is at **73**% of median. Upper Powder River drainage is **66**% of median. SWE in the Clear Creek drainage is **89**% of median. Crazy Woman Creek drainage SWE is at **92**%. *See appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Last month's precipitation was **73**% of average in the basin. Year-to-date precipitation is **72**% of average.

Reservoirs

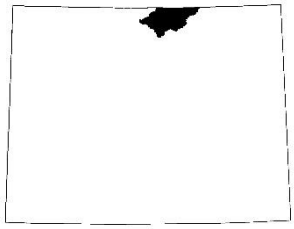
No reservoir data for this basin.

Streamflow

The 50% exceedance forecasts for the April through July period are **below** average for the basin. The Middle Fork of the Powder River near Barnum should yield around **66**% of average. The North Fork of the Powder River near Hazelton to yield around **84**%. The Powder River near Morehead to yield around **75**% of average. *See the following for detailed runoff volumes.*

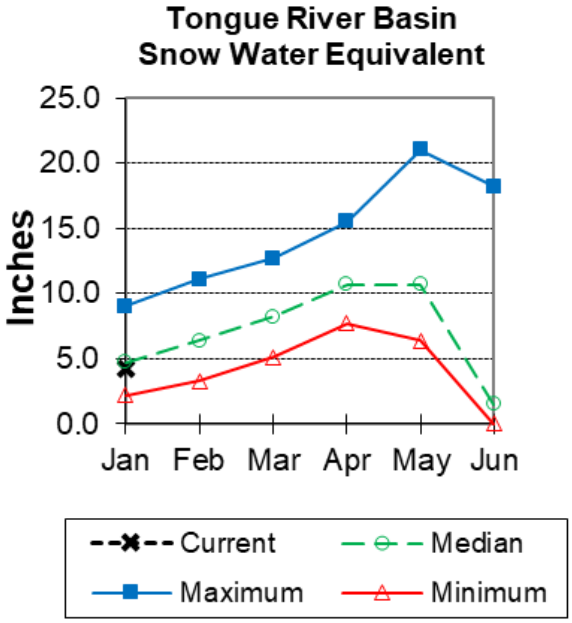
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
POWDER RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
MF Powder R nr Barnum								
	APR-JUL	3.5	7.7	10.6	66%	13.5	17.7	16.1
	APR-SEP	4.1	8.4	11.4	67%	14.4	18.7	17
NF Powder R nr Hazelton								
	APR-JUL	3.8	6.1	7.6	84%	9.2	11.4	9.1
	APR-SEP	4.3	6.6	8.2	83%	9.8	12.1	9.9
Rock Ck nr Buffalo								
	APR-JUL	5.8	11.7	15.8	85%	19.8	26	18.6
	APR-SEP	8.4	14.8	19.1	87%	23	30	22
Piney Ck at Kearny								
	APR-JUL	11.5	29	40	91%	52	69	44
	APR-SEP	13.6	31	43	91%	55	72	47
Powder R at Moorehead								
	APR-JUL	1.77	74	132	75%	189	275	177
	APR-SEP	1.96	87	146	74%	205	290	196
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								
3) Median value used in place of average								

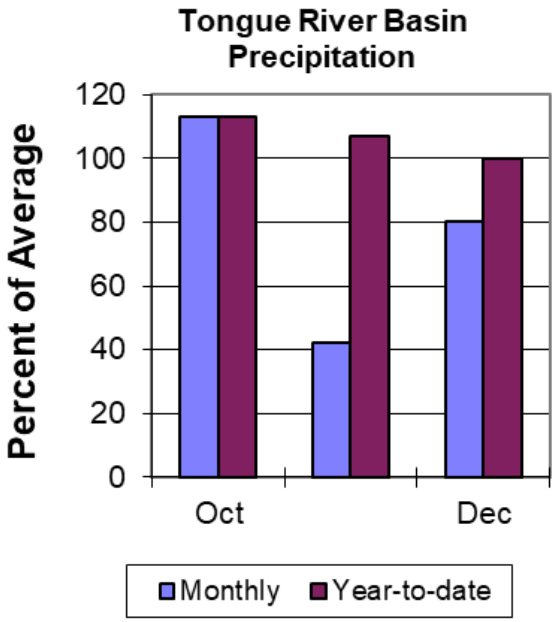
Tongue River Basin



Snow

Upper Tongue River drainage SWE is at **81**% of median. The Goose Creek drainage SWE is at **78**% of median. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Last month's precipitation was **80**% of average. Year-to-date precipitation is **100**% of average in the basin.

Reservoirs

The Tongue River Reservoir is at **148**% of average for this time of year.

TONGUE RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Tongue River Res	38.9	48.0	26.4	79.1	48%	61%	33%	148%	182%
Basin-wide Total	38.9	48.0	0.0	0.0	48%	61%	33%	148%	182%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The 50% exceedance forecasts for the April through July period are near average for the basin. The yield for Tongue River near Dayton is forecasted to be **98**% of average. Big Goose Creek near Sheridan to yield around **93**%. Little Goose Creek near Bighorn yielding 100% of average. The Tongue River Reservoir Inflow will be about **97**% of average. *See below for detailed runoff volumes.*

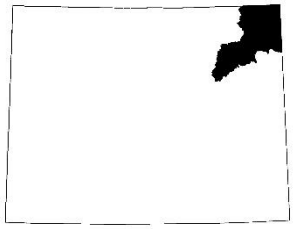
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
TONGUE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg
Tongue R nr Dayton								
	APR-JUL	51	70	84	98%	97	116	86
	APR-SEP	61	82	96	98%	110	130	98
Big Goose Ck nr Sheridan								
	APR-JUL	22	35	43	93%	52	65	46
	APR-SEP	29	42	51	94%	60	73	54
Little Goose Ck nr Bighorn								
	APR-JUL	17.8	26	31	100%	37	45	31
	APR-SEP	25	34	40	103%	45	54	39
Tongue River Reservoir Inflow								
	APR-JUL	78	143	187	97%	230	295	193
	APR-SEP	96	165	210	98%	260	325	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

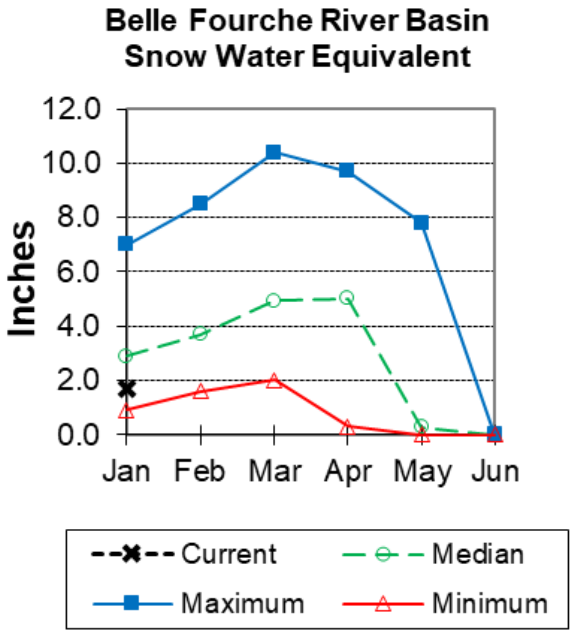
3) Median value used in place of average

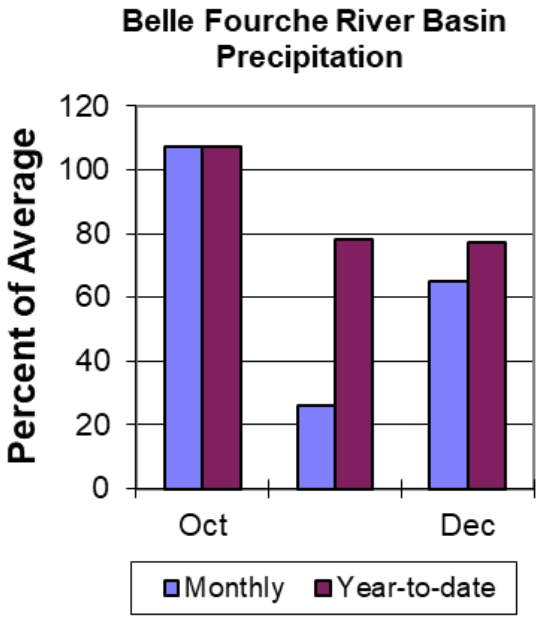
Belle Fourche River Basin



Snow

Belle Fourche River Basin SWE is at **48**% of median. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Precipitation for last month was **65**% of average in the Belle Fourche basin. Year-to-date precipitation is **77**% of average.

Reservoirs

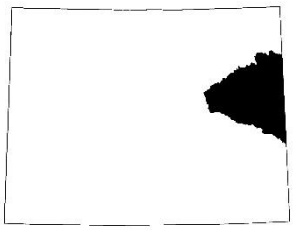
Combined storage for the 3 reservoirs in the basin is at **146**% of average.

BELLE FOURCHE RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Belle Fourche	133.1	132.1	101.2	178.4	75%	74%	57%	132%	131%
Keyhole	151.9	169.1	87.4	193.8	78%	87%	45%	174%	193%
Shadehill	55.2	59.4	44.1	81.4	68%	73%	54%	125%	135%
Basin-wide Total	340.2	360.6	232.7	453.6	75%	79%	51%	146%	155%
# of reservoirs	3	3	3	3	3	3	3	3	3

Streamflow

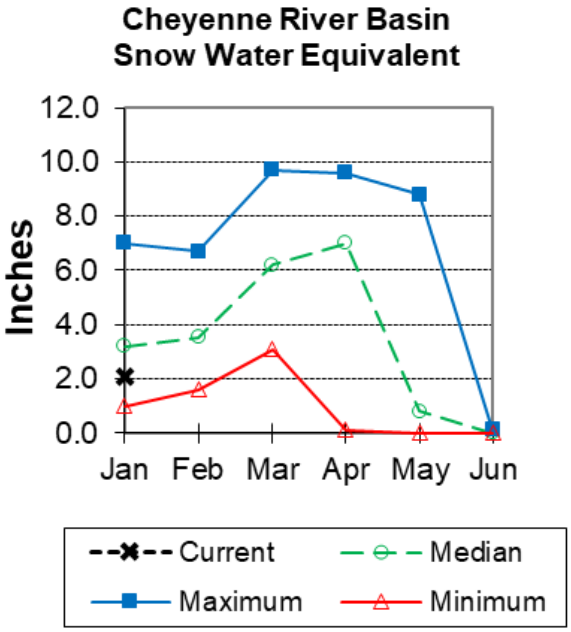
There are no streamflow forecast points for the basin.

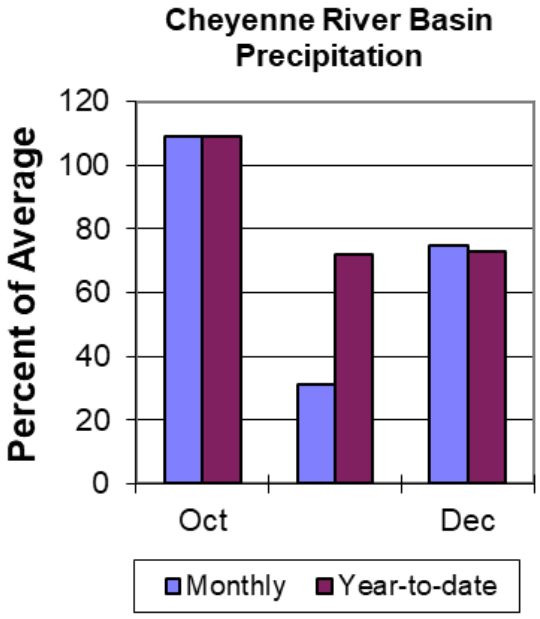
Cheyenne River Basin



Snow

Cheyenne River Basin SWE is at **54**% of median. *See Appendix at the end of this report for a detailed listing.*





Precipitation

Precipitation for last month was **75**% of average. Year-to-date precipitation is **73**%.

Reservoirs

Combined storage for the 3 reservoirs in the basin is at **106**% of average.

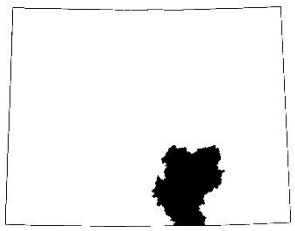
CHEYENNE RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Angostura	81.4	98.7	81.1	122.1	67%	81%	66%	100%	122%
Deerfield	14.4	14.7	13.5	15.2	95%	97%	89%	107%	109%
PactoLa	52.1	52.3	45.6	55.0	95%	95%	83%	114%	115%
Basin-wide Total	147.9	165.7	140.2	192.3	77%	86%	73%	106%	118%
# of reservoirs	3	3	3	3	3	3	3	3	3

Streamflow

The Deerfield Reservoir Inflow yield is forecasted at **84**% of average. Pactola Reservoir Inflow yield is **67**% of average. *See the following for detailed runoff volumes.*

			Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast					
CHEYENNE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Deerfield Reservoir Inflow								
	MAR-JUL	1.15	3.6	5.2	84%	6.9	9.3	6.2
	APR-JUL	0.46	2.6	4.1	79%	5.6	7.7	5.2
Pactola Reservoir Inflow								
	MAR-JUL	0.25	9.5	16.8	67%	24	35	25
	APR-JUL	0.22	7.2	14.1	64%	21	31	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								
3) Median value used in place of average								

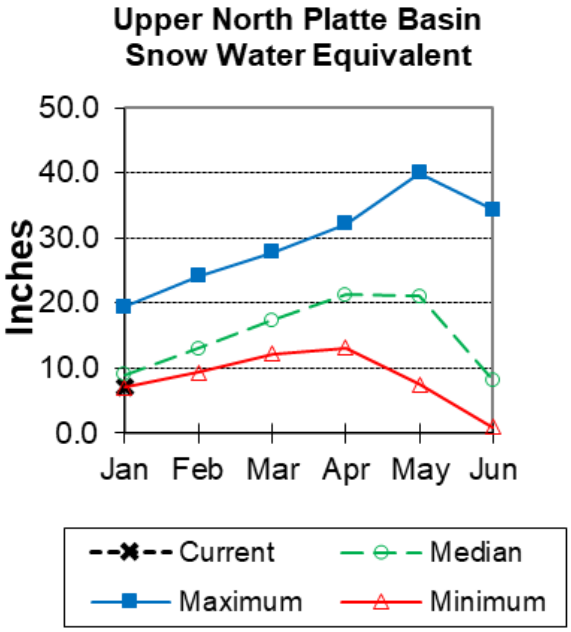
Upper North Platte River Basin

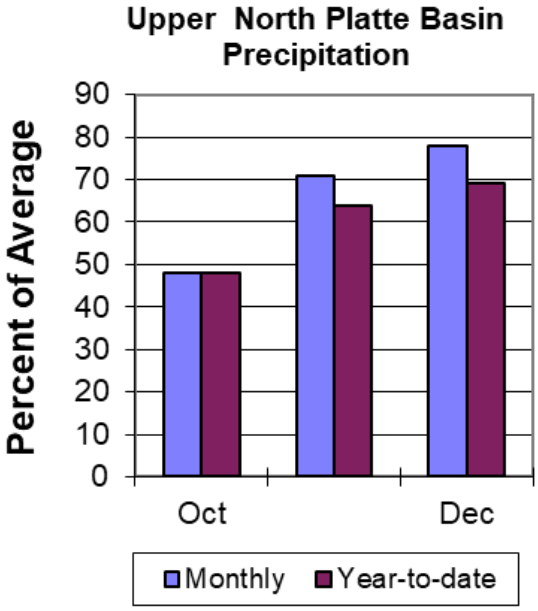


Snow

The Upper North Platte River Basin SWE above Seminoe Reservoir is **81**% of median. North Platte above Northgate SWE is **81**% of median. Encampment River SWE is **88**% of median. Brush Creek SWE is **84**% of median. Medicine Bow and Rock Creek SWE are **91**% of median.

See Appendix at the end of this report for a detailed listing of snow course information.





Precipitation

Last month's precipitation was **78**% of average. Total water-year-to-date precipitation is **69**% of average.

Reservoirs

Seminoe Reservoir storage is at **107**% of average.

UPPER NORTH PLATTE RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Seminoe	594.9	800.6	553.7	1016.7	59%	79%	54%	107%	145%
Basin-wide Total	594.9	800.6	553.7	1016.7	59%	79%	54%	107%	145%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The 50% exceedance forecasts for the April through July period are **well below** average for the Upper North Platte River Basin. The yield for the North Platte River near Northgate will be around **52**% of average. The Encampment River near Encampment yield will be about

64%. Rock Creek near Arlington yield will be around **90**%. Seminoe Reservoir inflow should be about **63**%. *See the following page for more detailed information on projected runoff.*

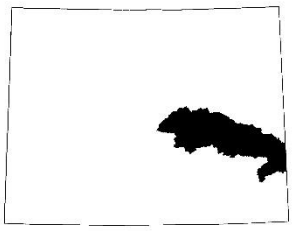
			Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast					
UPPER NORTH PLATTE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
North Platte R nr Northgate								
	APR-JUL	2.2	64	118	52%	172	250	225
	APR-SEP	2.5	70	129	52%	188	275	250
Encampment R nr Encampment[2]								
	APR-JUL	11.6	54	82	64%	110	152	129
	APR-SEP	15	58	88	64%	118	161	138
Rock Ck nr Arlington								
	APR-JUL	23	36	44	90%	52	65	49
	APR-SEP	24	37	46	88%	55	68	52
Sweetwater R nr Alcova								
	APR-JUL	0.59	3.3	17.1	29%	31	51	59
	APR-SEP	0.64	4.6	19.4	30%	34	56	64
Seminoe Reservoir Inflow								
	APR-JUL	12.2	275	450	63%	625	890	715
	APR-SEP	26	300	485	63%	670	945	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

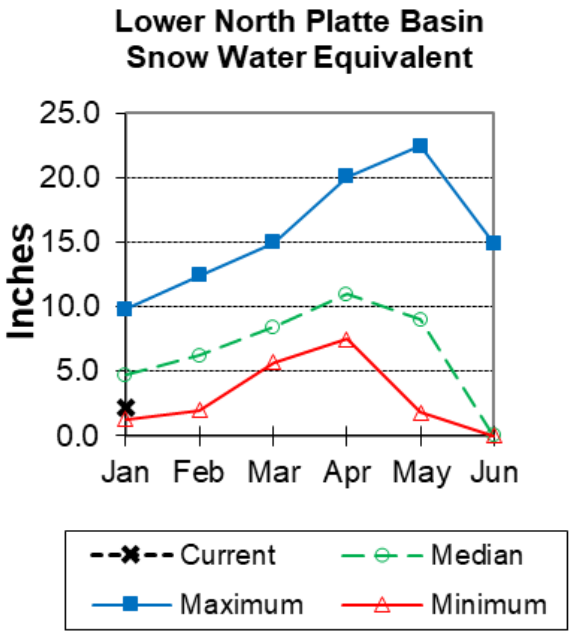
3) Median value used in place of average

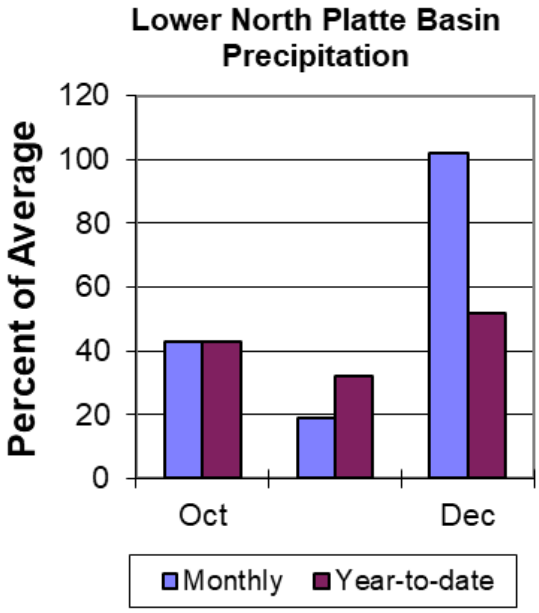
Lower North Platte River Basin



Snow

Lower North Platte River Basin SWE is **45**% of median. Deer Creek and LaPrele Creek SWE is at **50**%. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Last month's precipitation was **102**% of average. The water year-to-date precipitation for the basin is currently **52**% of average.

Reservoirs

Combined storage for the 4 reservoirs in the basin is at 134% of average.

LOWER NORTH PLATTE RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Alcova	144.1	157.3	154.9	184.3	78%	85%	84%	93%	102%
Glendo	317.1	284.5	254.7	506.4	63%	56%	50%	125%	112%
Guernsey	12.7	13.4	9.2	45.6	28%	29%	20%	138%	146%
Pathfinder	619.5	874.8	536.1	1016.5	61%	86%	53%	116%	163%
Basin-wide Total	1093.4	1330.0	954.9	1752.8	62%	76%	54%	115%	139%
# of reservoirs	4	4	4	4	4	4	4	4	4

Streamflow

The 50% exceedance forecasts for the April through July period will be **well below** average. LaPrele Creek above LaPrele Reservoir is forecasted to yield **47**% of average. North Platte River below Guernsey Reservoir to yield around **49**% of average. *See the following for more detailed information on projected runoff.*

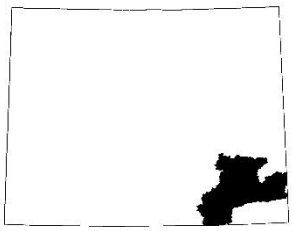
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
LOWER NORTH PLATTE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
La Prele Ck ab La Prele Reservoir								
	APR-JUL	0.84	4.8	9.4	47%	15.5	27	19.9
	APR-SEP	0.77	4.7	9.3	47%	15.4	27	19.9
North Platte R bl Glendo Reservoir								
	APR-JUL	8.2	185	420	51%	655	1000	820
	APR-SEP	8.5	187	430	51%	675	1030	850
North Platte R bl Guernsey Reservoir								
	APR-JUL	8.2	164	405	49%	650	1000	820
	APR-SEP	8.5	167	415	49%	665	1030	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

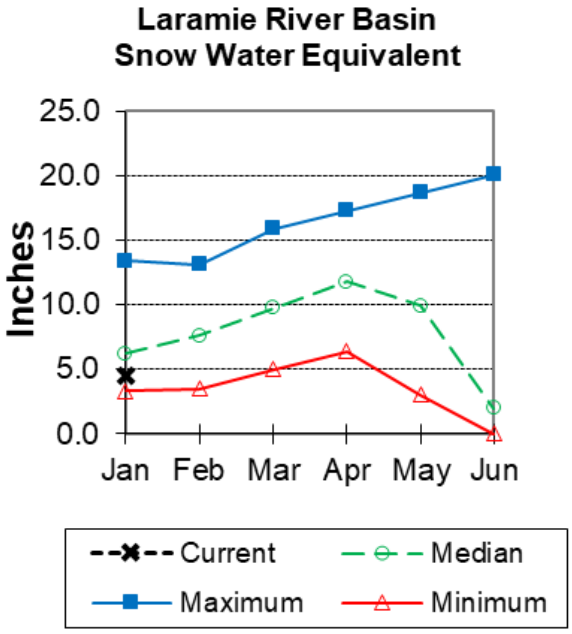
3) Median value used in place of average

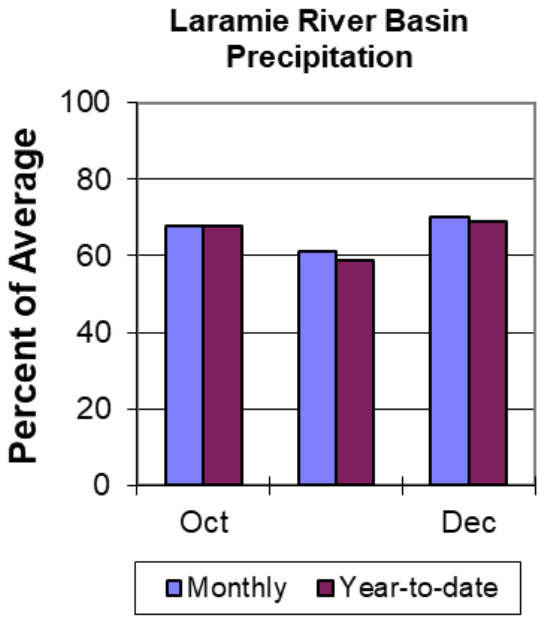
Laramie River Basin



Snow

SWE for the entire Laramie River Basin is **69**% of median. SWE for the Laramie River above Laramie is **73**% of median. SWE for the Little Laramie River is **77**% of median. ***See Appendix at the end of this report for a detailed listing of snow course information.***





Precipitation

Last month's precipitation was **70**% of average. The water year-to-date precipitation for the basin is currently **69**% of average.

Reservoirs

Storage for Wheatland Reservoir #2 is at **121**% of average.

LARAMIE RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Wheatland #2	51.0	59.0	42.4	98.9	52%	60%	43%	121%	139%
Basin-wide Total	51.0	59.0	42.4	98.9	52%	60%	43%	121%	139%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The 50% exceedance forecasts for the April through July period at Laramie River near Woods Landing should yield around **77**% of average. The Little Laramie near Filmore should produce about **84**% of average.

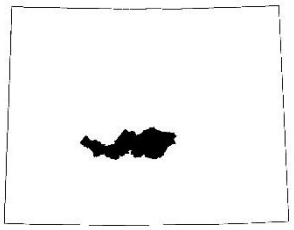
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
LARAMIE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KA	10% (KAF)	30yr Avg (KAF)
Laramie R nr Woods								
	APR-JUL	32	65	88	77%	110	144	115
	APR-SEP	36	72	96	76%	120	156	126
Little Laramie R nr Filmore								
	APR-JUL	17.9	33	43	84%	53	69	51
	APR-SEP	19.5	36	46	84%	57	73	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

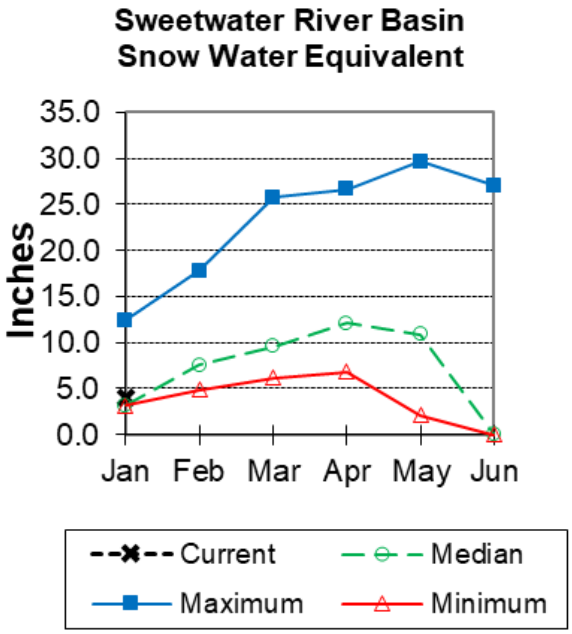
3) Median value used in place of average

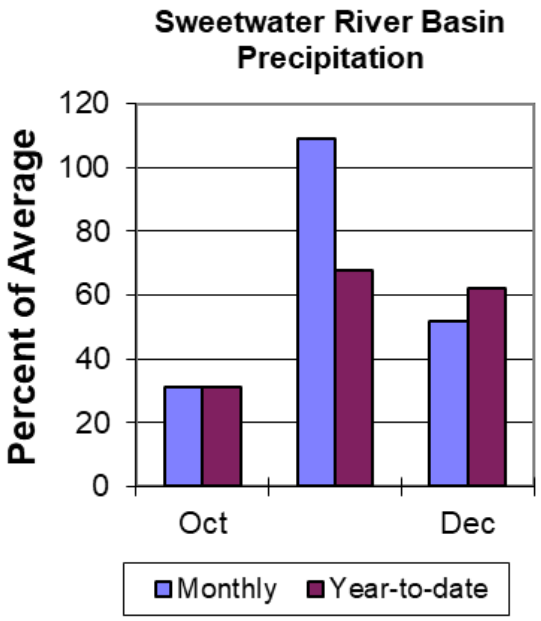
Sweetwater River Basin



Snow

Sweetwater River Basin SWE is at **65**% of median. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Last month's precipitation was **52**% of average. The water year-to-date precipitation for the basin is currently **62**% of average.

Reservoirs

Pathfinder is storing at **116**% of average for this time of year.

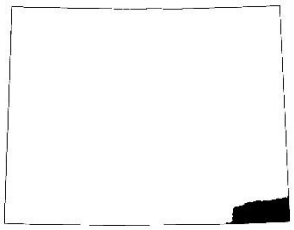
SWEETWATER RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Pathfinder	619.5	874.8	536.1	1016.5	61%	86%	53%	116%	163%
Basin-wide Total	619.5	874.8	536.1	1016.5	61%	86%	53%	116%	163%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The following is the streamflow forecast for the April through July period. The Sweetwater River near Pathfinder will yield about **29**% of average. *See below for detailed information on projected runoff.*

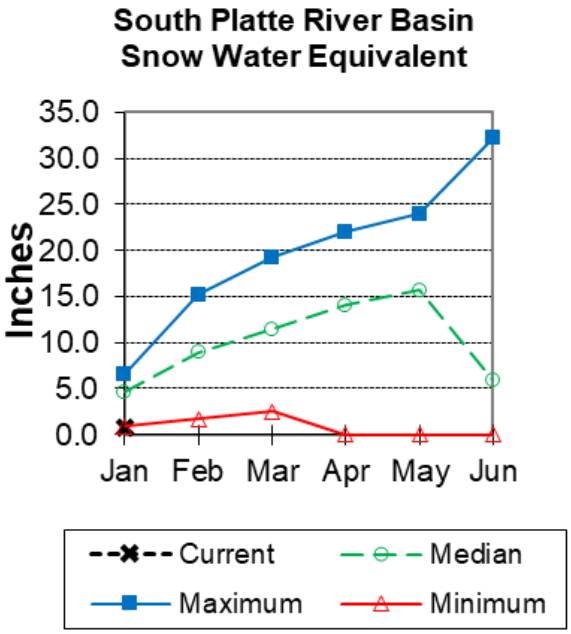
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
SWEETWATER RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Sweetwater R nr Alcova								
	APR-JUL	0.59	3.3	17.1	29%	31	51	59
	APR-SEP	0.64	4.6	19.4	30%	34	56	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								

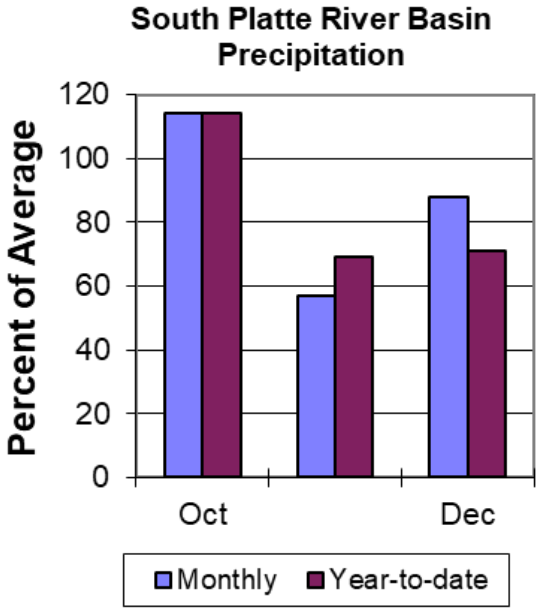
South Platte River Basin (WY)



Snow

South Platte River Basin SWE in WY is **16**% of median. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Last month's precipitation was **88**% of average. The water year-to-date precipitation for the basin is currently **71**%.

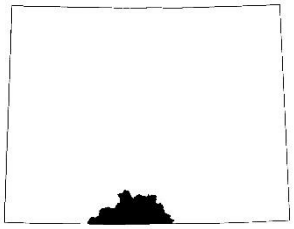
Reservoirs

No reservoir data for the basin.

Streamflow

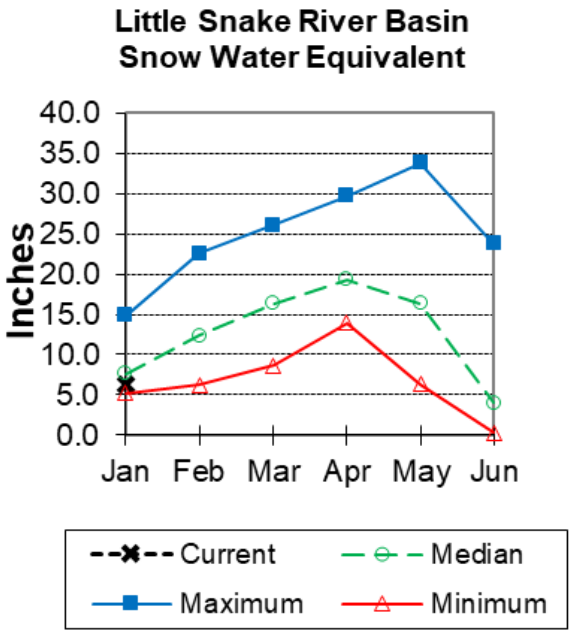
There are no streamflow forecast points for the basin.

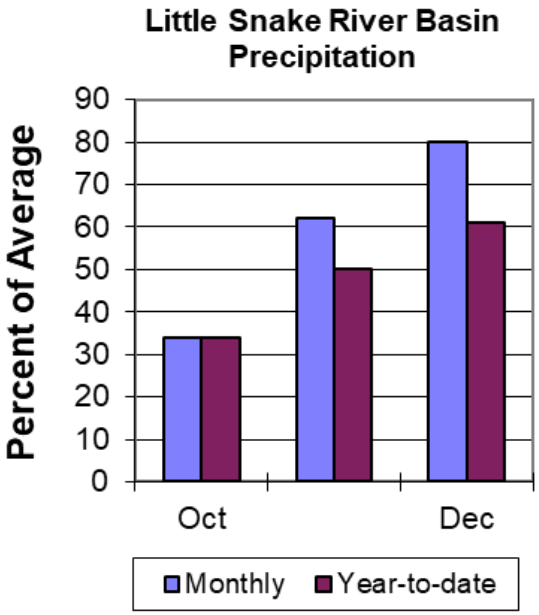
Little Snake River Basin



Snow

Little Snake River drainage SWE is **83**% of median. See *Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Precipitation across the basin was **80**% of average. The Little Snake River Basin water-year-to-date precipitation is currently **61**% of average.

Reservoirs

Storage for High Savery Reservoir is at **73**% of average.

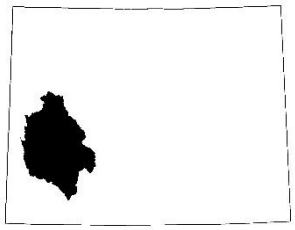
LITTLE SNAKE RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
High Savery Reservoir	8.5	12.8	11.7	22.4	38%	57%	52%	73%	110%
Basin-wide Total	8.5	12.8	11.7	22.4	38%	57%	52%	73%	110%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The 50% exceedance forecasts for the April through July period will be **well below** average. The Little Snake River near Slater is forecasted to yield around **67**% of average. ***See below for detailed information on projected runoff.***

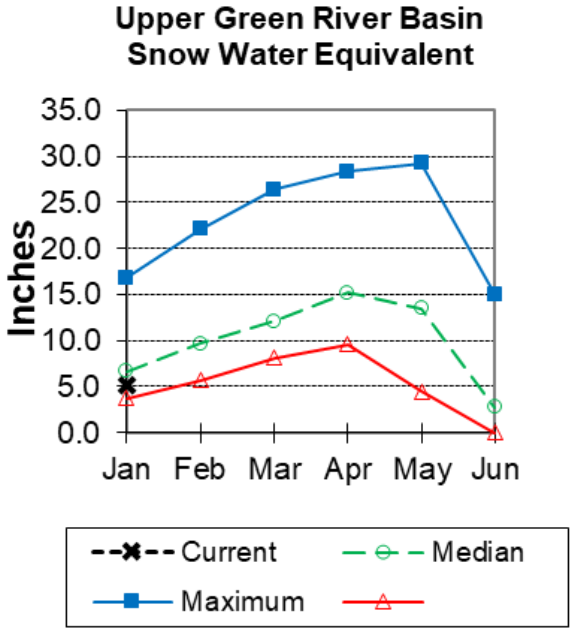
			Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast					
LITTLE SNAKE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Little Snake R nr Slater[2]								
	APR-JUL	29	74	105	67%	136	181	156
Little Snake R nr Dixon[2]								
	APR-JUL	38	143	215	62%	285	390	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								
3) Median value used in place of average								

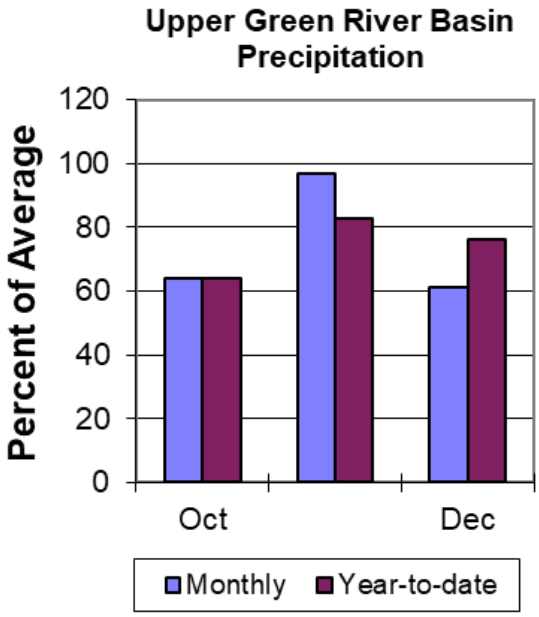
Upper Green River Basin



Snow

The Upper Green River Basin SWE is **78**% of median. Green River Basin above Warren Bridge SWE is **75**% of median. West Side of Upper Green River Basin SWE is **90**% of median. New Fork River SWE is **73**% of median. Big Sandy-Eden Valley Basin SWE is **57**% of median. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Precipitation for sites in the basin was **61**% of average last month. Water year-to-date precipitation is **76**% of average.

Reservoir

Combined water storage in the basin was at **102**% of average for the 2 reservoirs.

UPPER GREEN RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Big Sandy	8.0	22.1	16.3	38.3	21%	58%	43%	49%	136%
Fontenelle	188.1	207.5	175.3	344.8	55%	60%	51%	107%	118%
Basin-wide Total	196.0	229.7	191.6	383.1	51%	60%	50%	102%	120%
# of reservoirs	2	2	2	2	2	2	2	2	2

Streamflow

The 50% exceedance forecasts for the April through July period will be **well below** average. The yield on the Green River at Warren Bridge is about **78**% of average. New Fork River near Big Piney yield will be around **65**% of average. Fontenelle Reservoir Inflow is estimated to be about **62**% of average. *See the following for a more detailed forecast.*

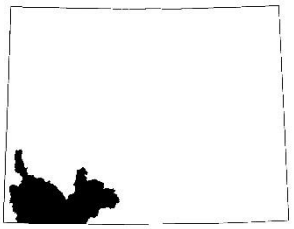
			Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast					
UPPER GREEN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Green R at Warren Bridge								
	APR-JUL	101	154	190	78%	225	280	245
Pine Creek ab Fremont Lake								
	APR-JUL	51	65	75	77%	85	99	98
New Fork R nr Big Piney								
	APR-JUL	56	159	230	65%	300	405	355
Fontenelle Reservoir Inflow								
	APR-JUL	45	285	450	62%	615	855	725
Big Sandy R nr Farson								
	APR-JUL	12.8	25	34	65%	43	55	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

3) Median value used in place of average

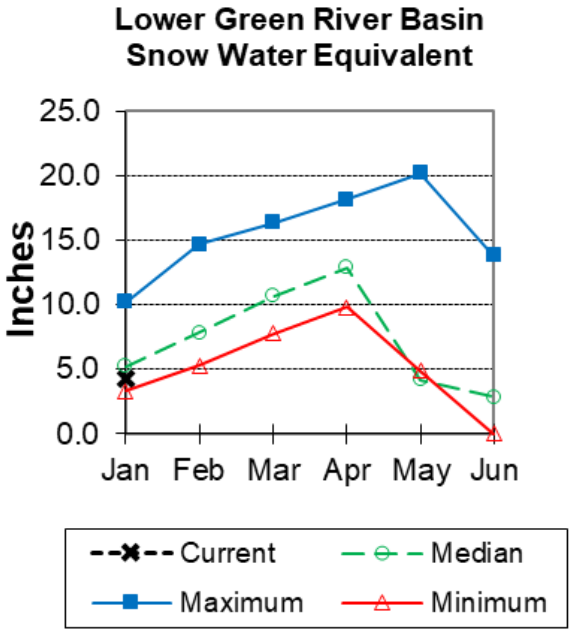
Lower Green River Basin

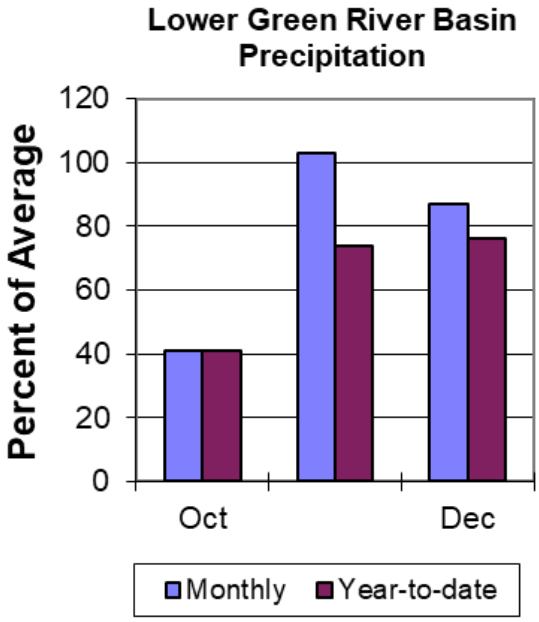


Snow

Lower Green River Basin SWE is at **83**% of median. Hams Fork drainage SWE is **85**% of median. Blacks Fork drainage SWE is **83**% of median. Henrys Fork SWE is **83**% of median.

See Appendix at the end of this report for a detailed listing of snow course information.





Precipitation

Precipitation for the basin last month was **87**% of average. The basin year-to-date precipitation is currently **76**% of average.

Reservoirs

Combined storage for the 3 reservoirs in the basin was at **102**% of average at the end of last month.

LOWER GREEN RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Fontenelle	188.1	207.5	175.3	344.8	55%	60%	51%	107%	118%
Flaming Gorge Reservoir	3156.9	3327.1	3091.0	3749.0	84%	89%	82%	102%	108%
Viva Naughton Res	30.3	32.8	31.4	42.4	71%	77%	74%	96%	104%
Basin-wide Total	3375.3	3567.4	3297.7	4136.2	81%	86%	69%	102%	110%
# of reservoirs	3	3	3	3	3	3	3	3	3

Streamflow

The following are the 50% exceedance forecasts for the April through July period. The Green River near Green River will yield about **64**% of average. The Flaming Gorge Reservoir inflow will be about **61**% of average. *See the following page for more detailed information on projected runoff.*

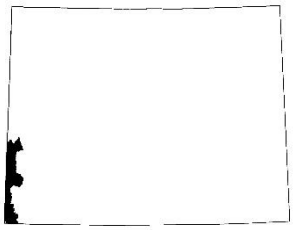
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
LOWER GREEN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Green R nr Green River, WY 2								
	APR-JUL	38	290	465	64%	640	890	730
Blacks Fk nr Robertson								
	APR-JUL	32	51	63	73%	75	94	86
EF of Smiths Fork nr Robertson 2								
	APR-JUL	9.5	15.1	19	70%	23	29	27
Hams Fk bl Pole Ck nr Frontier								
	APR-JUL	8.1	27	39	72%	51	70	54
Viva Naughton Reservoir Inflow								
	APR-JUL	2.1	31	51	69%	71	100	74
Flaming Gorge Reservoir Inflow 2								
	APR-JUL	5.6	360	600	61%	845	1200	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

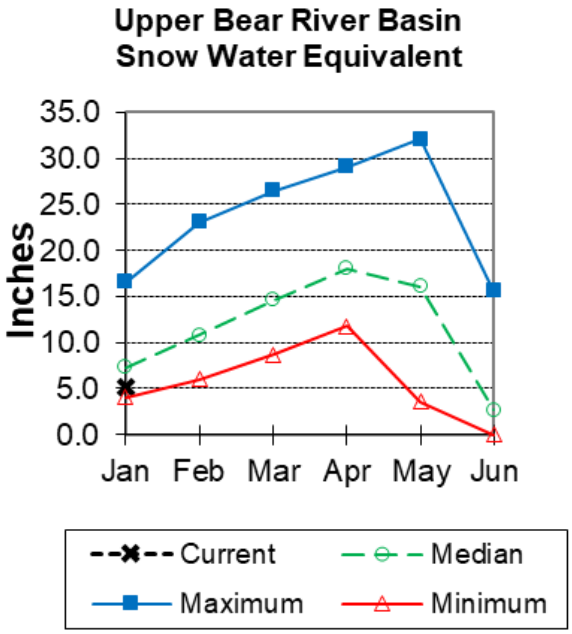
3) Median value used in place of average

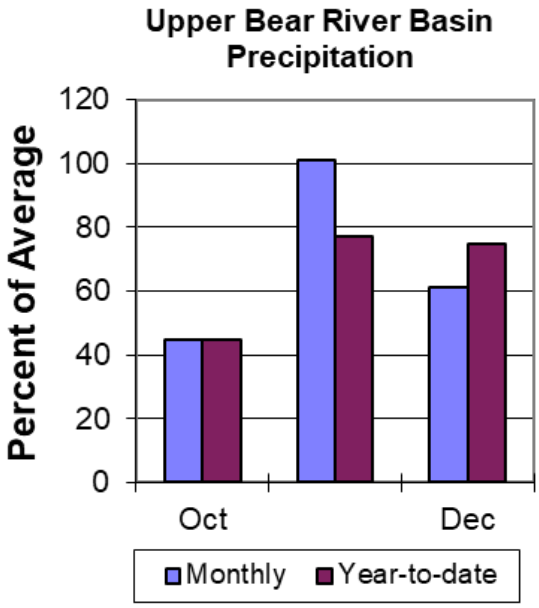
Upper Bear River Basin



Snow

SWE in the Upper Bear River Basin is **76**% of median. SWE in the Wyoming portion of the Bear River drainage (Smiths and Thomas Forks) is **84**% of median. *See Appendix at the end of this report for a detailed listing of snow course information.*





Precipitation

Precipitation for last month was **61**% of average in the basin. The year-to-date precipitation for the basin is **75**% of average.

Reservoirs

Storage in Woodruff Narrows Reservoir was at **92**% of average for the end of last month.

UPPER BEAR RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Woodruff Narrows Reservoir	25.2	47.9	27.3	57.3	44%	84%	48%	92%	176%
Basin-wide Total	25.2	47.9	27.3	57.3	44%	84%	48%	92%	176%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The 50% exceedance forecasts for the April through July period will be **well below** average. The Bear River above Reservoir near Woodruff to yield around **34**% of average. The Smiths Fork River near Border Jct. will yield around **74**%. *See below for detailed information on projected runoff.*

		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
UPPER BEAR RIVER BASIN	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	26	52	70	63%	87	113	112
	APR-SEP	29	58	77	63%	96	124	123
Bear R ab Resv nr Woodruff								
	APR-JUL	3.6	13.3	41	34%	76	128	121
	APR-SEP	3.8	19.2	44	34%	81	132	128
Smiths Fk nr Border								
	APR-JUL	30	52	66	74%	81	102	89
	APR-SEP	38	62	79	76%	95	120	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								
3) Median value used in place of average								

Appendix - Snowpack Data

In Word double click the object below to view entire document

SWE_data_0101202
1.pdf

Appendix - Precipitation Data

Precip_data_010120
21.pdf

In Word double click the object below to view entire document

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 on the Snow Survey Work.

FEDERAL:

United States Department of the Interior (National Park Service) United States Department of Agriculture

(Forest Service)

United States Department of the Interior (Bureau of Reclamation)

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

The City of Rawlins