United States
Department of
Agriculture

Wyoming Basin & Water Supply Outlook Report
May 1, 2019

Natural Resources Conservation Service

Photo is from the Hansen Sawmill Snotel Site, which is located in the Big Horn mountains at an elevation of 8360 ft. Thanks to the Sheridan SEO snow surveyors for the photo.

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

For more information, contact:

Dan Mattke
100 East "B" Street Casper, WY 82601
307-240-3210
dan.mattke@wy.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.

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Wyoming Basin & Water Supply Outlook Report

Snowpack

Snow water equivalent (SWE) across Wyoming for May 1st was at 93% of Median. SWE in the Yellowstone was the highest at 120% of median, while SWE in the Cheyenne River Basin was the lowest at 13% of median. *See SWE by basin map for further information* .

Precipitation

Last month's precipitation had above average amounts in the Western portion of Wyoming and average to below average in the Eastern portion of Wyoming. The Yellowstone River Basin had the highest precipitation for the month at 151% of average. The Cheyenne River Basin had the lowest precipitation amount at 58% of average. The following table displays the major river basins and their departure from average for last month. *See precipitation by basin map for further information* .

Basin	Departure from average	Basin	Departure from average
Snake River	**+46%**	**Upper North Platte River**	**+-0%**
Madison-Gallatin	**+44%**	**Sweetwater River**	**+13%**
Yellowstone River	**+51%**	**Lower North Platte River**	**-27%**
Wind River	**+10%**	**Laramie River**	**-8%**
Bighorn River	**-16%**	**North Platte River (Total)**	**+8%**
Shoshone River	**+37%**	**South Platte River**	**-3%**
Powder River	**-21%**	**Little Snake River**	**+18%**
Tongue River	**-19%**	**Upper Green River**	**+31%**
Belle Fourche River	**-7%**	**Lower Green River**	**+42%**
Cheyenne River	**-42%**	**Upper Bear River**	**+26%**

Streams

The Snake River, Madison, and Upper Yellowstone River Basins should yield about 102%, 107% and 112% of average, respectively. Yields from the Wind and Bighorn River Basins should be about 92% and 83% of average. Yields from the Shoshone and Clarks Fork River Basins of Wyoming should be about 115% and 110% of average. Yields from the Powder and Tongue River Basins should be about 63% and 43% of average. Yield for the Cheyenne River Basin should be about 73% of average. Yields for the Sweetwater, Upper North Platte, Lower North Platte, and Laramie Rivers of Wyoming should be about 80%, 122%, 117%, and 106% of average, respectively. Yields for the Little Snake, Green River, Bear River, and Smith’s Fork of Wyoming should be 102%, 95%, 117%, and 114% respectively.

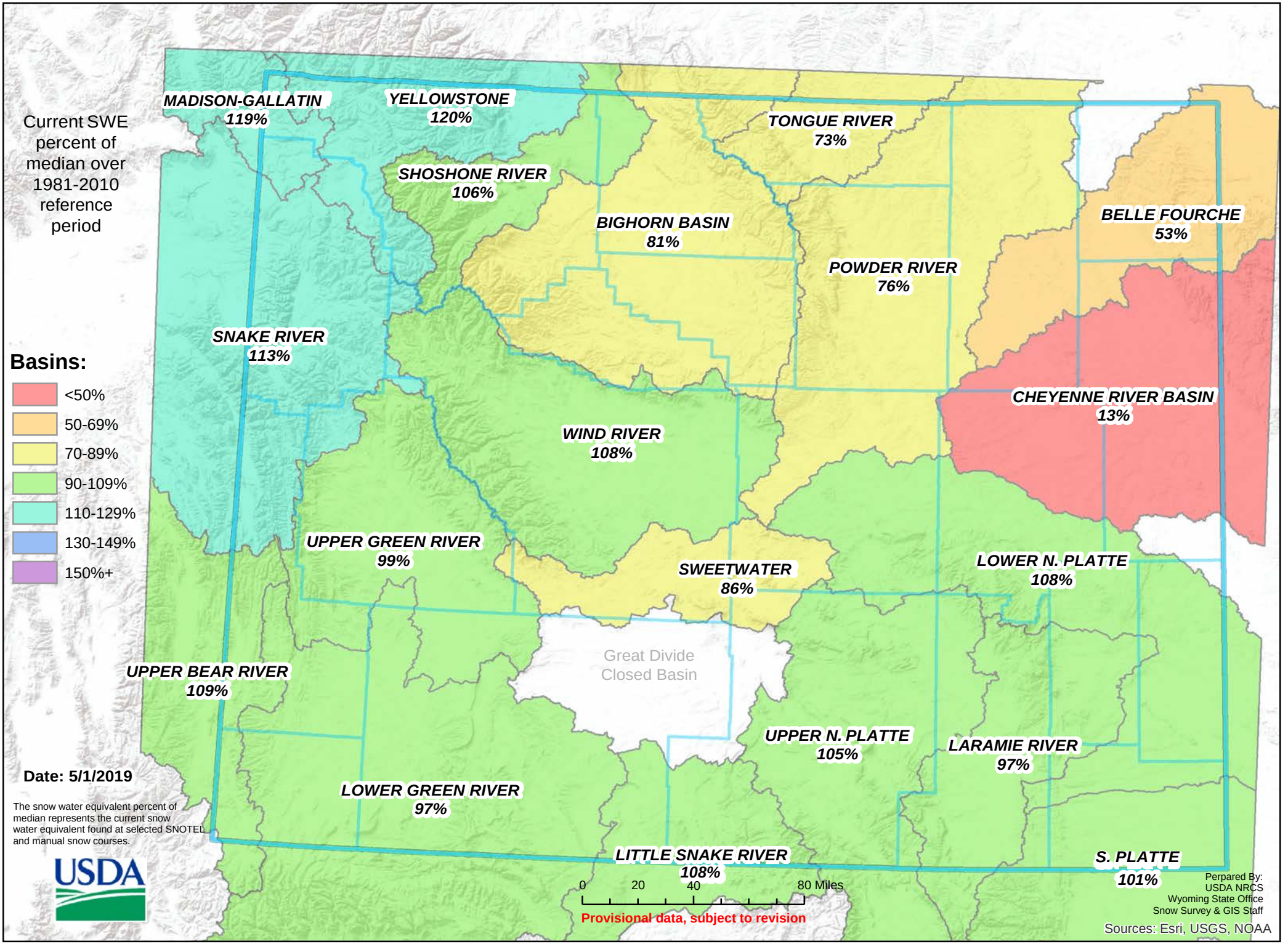
Reservoirs

See below for further information.

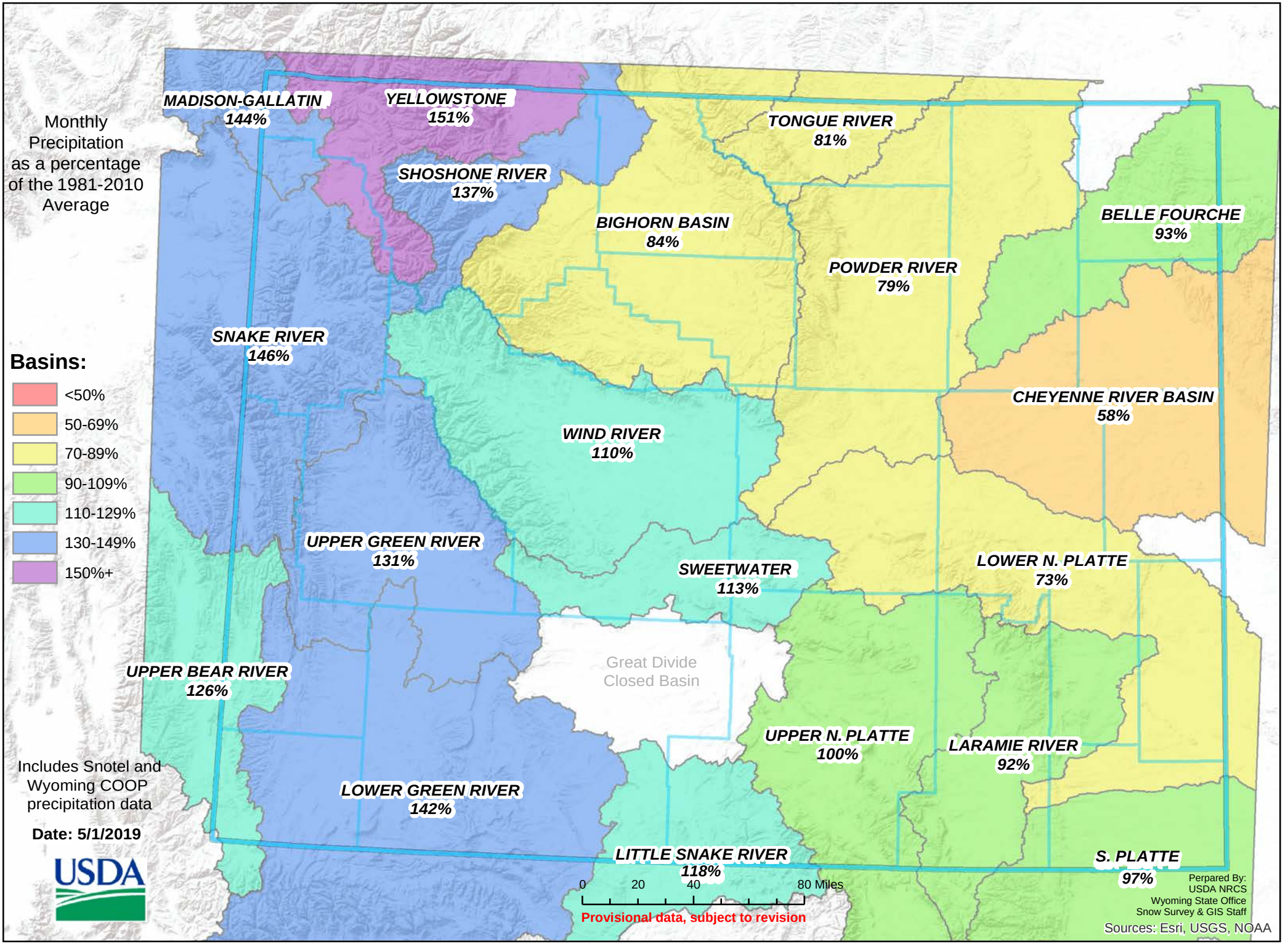
Wyoming Reservoir Levels

Basinwide Summary: May 1, 2019 (averages based on 1981-2010 reference period)	Reservoir Storage Summary for the end of April 2019								
Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Grassy Lake	13.7	14.4	12.8	15.2	90%	95%	84%	107%	112%
Jackson Lake	654.2	625.6	445.7	847.0	77%	74%	53%	147%	140%
Palisades Reservoir	853.5	762.4	911.7	1400.0	61%	54%	65%	94%	84%
Ennis Lake	34.3	33.6	32.4	41.0	84%	82%	79%	106%	104%
Hebgen Lake	281.8	274.3	276.7	378.8	74%	72%	73%	102%	99%
Bull Lake	84.1	101.7	75.1	151.8	55%	67%	49%	112%	135%
Boysen	536.3	418.9	476.4	596.0	90%	70%	80%	113%	88%
Pilot Butte	26.2	25.3	26.1	31.6	83%	80%	83%	100%	97%
Boysen	536.3	418.9	476.4	596.0	90%	70%	80%	113%	88%
Bighorn Lake	773.9	718.4	773.6	1356.0	57%	53%	57%	100%	93%
Buffalo Bill	396.8	349.6	336.3	646.6	61%	54%	52%	118%	104%
Tongue River Res	73.4	62.2	34.7	79.1	93%	79%	44%	211%	179%
Belle Fourche	155.8	159.8	144.5	178.4	87%	90%	81%	108%	111%
Keyhole	176.5	159.4	98.1	193.8	91%	82%	51%	180%	162%
Shadehill	80.5	73.2	61.2	81.4	99%	90%	75%	131%	120%
Angostura	113.5	113.2	97.6	122.1	93%	93%	80%	116%	116%
Deerfield	15.4	15.3	14.2	15.2	102%	101%	93%	109%	108%
PactoLa	54.6	54.9	47.7	55.0	99%	100%	87%	115%	115%
Seminoe	673.1	711.7	492.5	1016.7	66%	70%	48%	137%	145%
Pathfinder	680.7	917.7	617.9	1016.5	67%	90%	61%	110%	149%
Alcova	179.8	179.9	178.9	184.3	98%	98%	97%	100%	101%
Glendo	464.3	402.8	434.5	506.4	92%	80%	86%	107%	93%
Guernsey	28.3	28.5	29.9	45.6	62%	63%	66%	95%	95%
Pathfinder	680.7	917.7	617.9	1016.5	67%	90%	61%	110%	149%
Wheatland #2		73.6	55.6	98.9		74%	56%		132%
High Savery Reservoir		13.7	15.3	22.4		61%	68%		90%
Big Sandy	22.0	35.8	23.1	38.3	58%	93%	60%	95%	155%
Fontenelle	136.6	130.4	125.0	344.8	40%	38%	36%	109%	104%
Fontenelle	136.6	130.4	125.0	344.8	40%	38%	36%	109%	104%
Flaming Gorge Reservoir	3302.6	3185.8	3039.0	3749.0	88%	85%	81%	109%	105%
Viva Naughton Res	34.9	40.5	31.6	42.4	82%	95%	75%	110%	128%
Woodruff Narrows Reservoir	58.0	59.1	45.5	57.3	101%	103%	79%	127%	130%

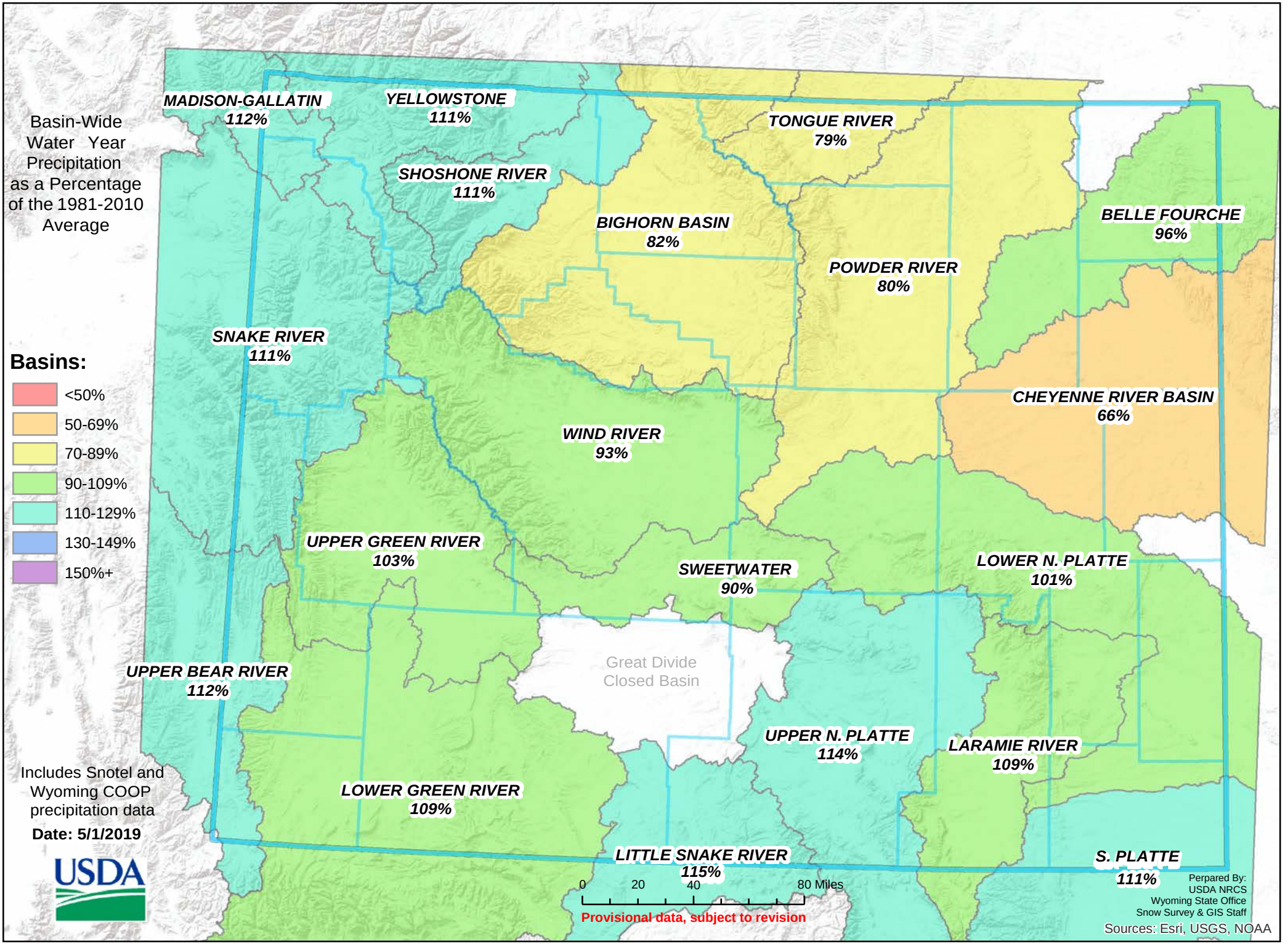
Wyoming Basins Snow Water Equivalent (SWE) % of Median (includes manual snow courses)



Wyoming Monthly Precipitation by Basin (April 2019)



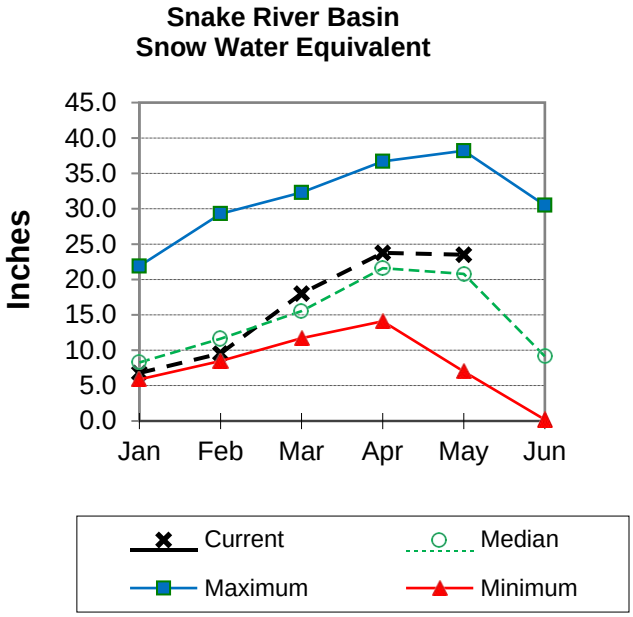
Wyoming Water Year to Date Precipitation by Basin (May 1, 2019)

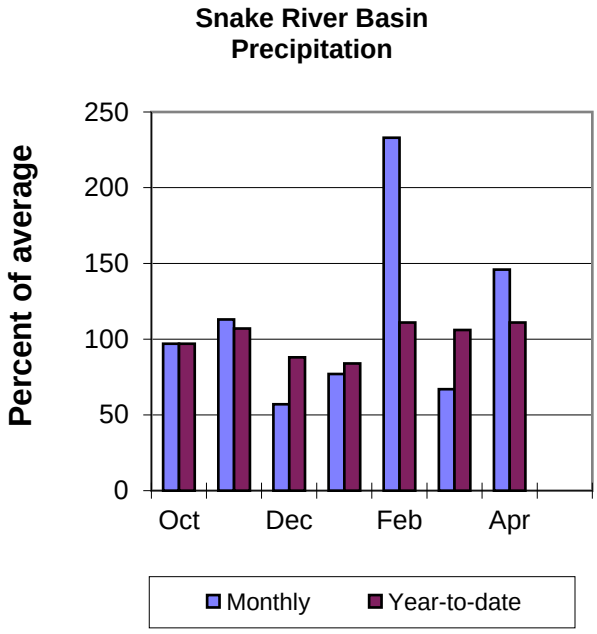


Snake River Basin

Snow

The overall Snake River Basin SWE (portion above Palisades dam) is 113% of median. SWE in the Snake River Basin above Jackson Lake is 114% of median. Pacific Creek Basin SWE is 123% of median. Buffalo Fork SWE is 113% of median. Gros Ventre River Basin SWE is 98% of median. SWE in the Hoback River drainage is 101% of median. SWE in the Greys River drainage is 115% of median. Salt River Basin SWE is 137% of median.





Precipitation

Last month's precipitation for the Snake River Basin was 146% of average. Water-year-to-date precipitation is 111% of average.

Reservoirs

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	13.7	14.4	12.8	15.2	90%	95%	84%	107%	112%
Jackson Lake	654.2	625.6	445.7	847.0	77%	74%	53%	147%	140%
Palisades Reservoir	853.5	762.4	911.7	1400.0	61%	54%	65%	94%	84%
Basin-wide Total	1521.4	1402.3	1370.2	2262.2	67%	62%	61%	111%	102%
# of reservoirs	3	3	3	3	3	3	3	3	3

Streamflow

The 50% exceedance forecasts for May through September are near average for this basin. The Snake near Moran yield is 110% of average. Snake River above Reservoir near Alpine will yield about 100%. Pacific Creek near Moran Yield will be around 102%. Buffalo Fork above Lava near Moran yield will be around 103% of average. Greys River above Palisades Reservoir yield about 102%. Salt River near Etna yield will be about 105%.

See the following page for further information.

		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volu						me 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]								
	MAY-JUL	655	720	765	109%	810	875	700
	MAY-SEP	730	800	850	110%	900	970	775
Snake R ab Reservoir nr Alpine[2]								
	MAY-JUL	1700	1850	1950	99%	2050	2210	1960
	MAY-SEP	1970	2150	2270	100%	2390	2560	2280
Snake R nr Irwin [2]								
	MAY-JUL	2260	2500	2670	100%	2830	3070	2660
	MAY-SEP	2680	2960	3150	100%	3340	3630	3150
Snake R nr Heise[2]								
	MAY-JUL	2430	2680	2850	100%	3020	3270	2840
	MAY-SEP	2900	3190	3390	100%	3590	3880	3390
Pacific Ck at Moran								
	MAY-JUL	110	137	155	102%	174	200	152
	MAY-SEP	118	146	165	102%	183	210	161
Buffalo Fk ab Lava Ck nr Moran								
	MAY-JUL	235	260	280	106%	295	325	265
	MAY-SEP	265	295	315	103%	340	370	305
Greys R ab Reservoir nr Alpine								
	MAY-JUL	225	250	270	102%	290	320	265
	MAY-SEP	265	300	320	102%	345	375	315
Salt R ab Reservoir nr Etna								
	MAY-JUL	180	225	255	104%	285	335	245
	MAY-SEP	235	290	325	105%	365	415	310

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

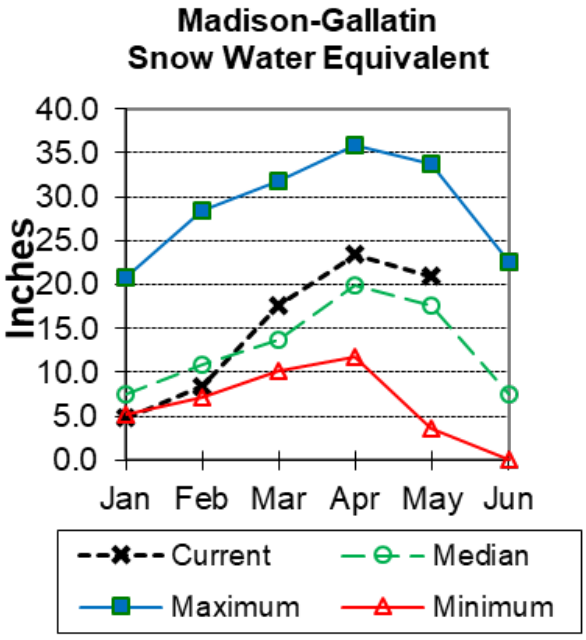
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

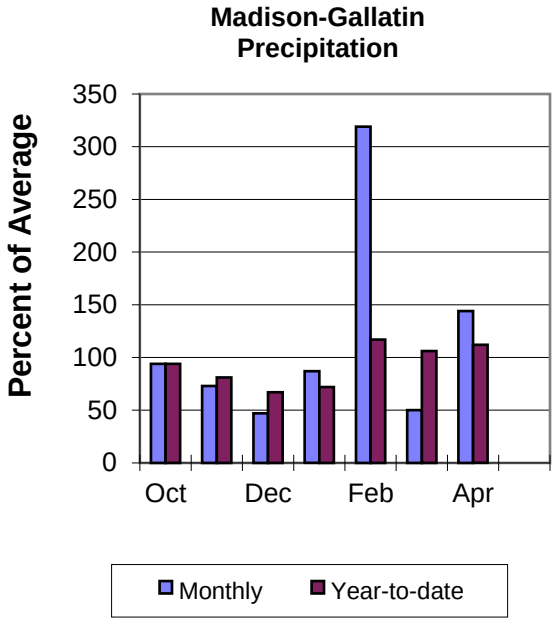
3) Median value used in place of average

Madison-Gallatin Rivers Basin

Snow

SWE is 119% of median in the Madison-Gallatin drainage.





Precipitation

Last month precipitation in the Madison-Gallatin drainage was 144% of average. Water-year-to-date precipitation is at 112% of average.

Reservoirs

MADISON-GALLATIN RIVER BASINS	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Ennis Lake	34.3	33.6	32.4	41.0	84%	82%	79%	106%	104%
Hebgen Lake	281.8	274.3	276.7	378.8	74%	72%	73%	102%	99%
Basin-wide Total	316.1	307.9	309.1	419.8	75%	73%	74%	102%	100%
# of reservoirs	2	2	2	2	2	2	2	2	2

Streamflow

The 50% exceedance forecast for May through September is near average for the basin. Hebgen Reservoir inflow 107% of average. *See below for detailed runoff volumes.*

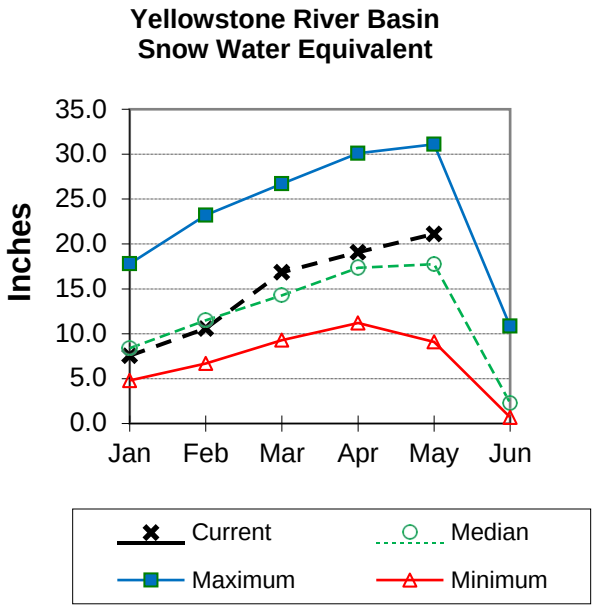
	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast							
MADISON-GALLATIN RIVER BASINS	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Hebgen Reservoir Inflow								
	MAY-JUL	265	305	330	108%	355	395	305
	MAY-SEP	350	400	435	107%	470	520	405

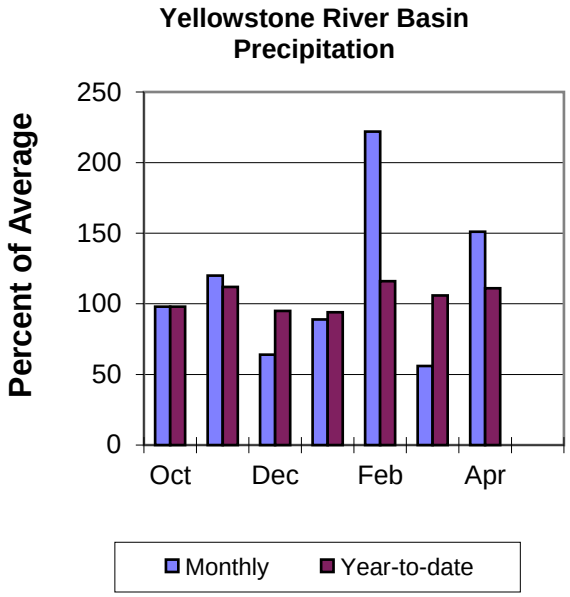
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Yellowstone River Basin

Snow

SWE in the Yellowstone River Basin is 120% of median. SWE in the Clarks Fork Drainage of the Yellowstone River Basin in Wyoming is 120% of median.





Precipitation

Last month's precipitation in the Yellowstone River Basin was 151% of average. Water-year-to-date precipitation is 111% of average.

Reservoirs

No reservoir data

Streamflow

The 50% exceedance forecasts for May through September are slightly above average for the basin. Yellowstone at Lake Outlet will yield around 112% of average. Yellowstone at Corwin Springs will yield around 112%. Clarks Fork of the Yellowstone near Belfry will yield around 110%. *See the following for further information.*

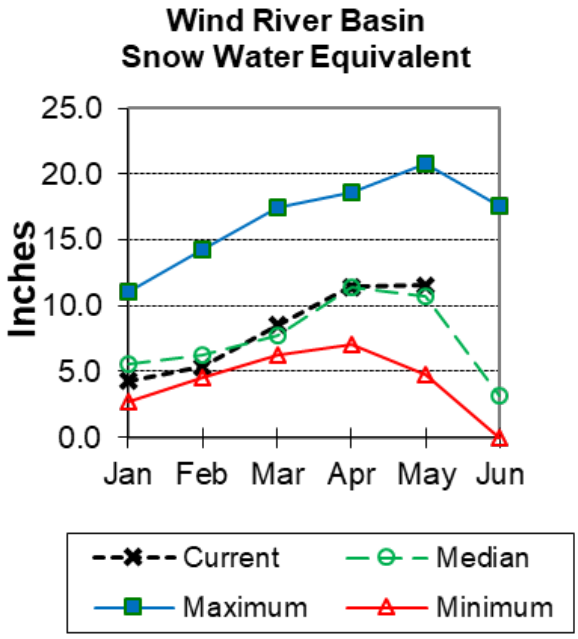
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
YELLOWSTONE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Yellowstone R at Yellowstone Lake Outlet								
	MAY-JUL	510	570	615	113%	660	720	545
	MAY-SEP	700	775	825	112%	880	955	735
Yellowstone R at Corwin Springs								
	MAY-JUL	1410	1560	1660	112%	1760	1910	1480
	MAY-SEP	1690	1870	1980	112%	2100	2280	1770
Yellowstone R at Livingston								
	MAY-JUL	1580	1760	1890	113%	2020	2200	1670
	MAY-SEP	1890	2110	2260	112%	2400	2620	2010
Clarks Fk Yellowstone R nr Belfry[2]								
	MAY-JUL	450	500	535	111%	565	615	480
	MAY-SEP	490	545	580	110%	620	675	525

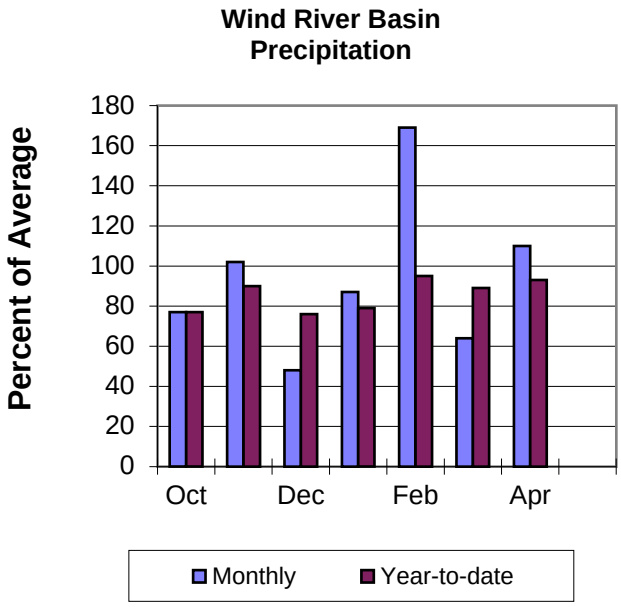
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Wind River Basin

Snow

Wind River Basin SWE (above Boysen Reservoir) is 108% of median. SWE in the Wind River above Dubois is 97% of median. Little Wind SWE is 109% of median, and Popo Agie drainage SWE is 108% of median.





Precipitation

Precipitation for the basin was 110% of average. Water year-to-date precipitation is 93% of average.

Reservoirs

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	84.1	101.7	75.1	151.8	55%	67%	49%	112%	135%
Boysen	536.3	418.9	476.4	596.0	90%	70%	80%	113%	88%
Pilot Butte	26.2	25.3	26.1	31.6	83%	80%	83%	100%	97%
Basin-wide Total	646.6	545.8	577.6	779.4	83%	70%	74%	112%	95%
# of reservoirs	3	3	3	3	3	3	3	3	3

Streamflow

The 50% exceedance forecasts for the May through September runoff period are average to slightly below average. The Wind River above Bull Lake Creek will yield about 94% of average. Little Popo Agie River near Lander should yield around 93% of average. Little Wind River near Riverton will yield around 93% of average. Boysen Reservoir inflow will yield about 92% of average. *See the following page for detailed runoff volumes.*

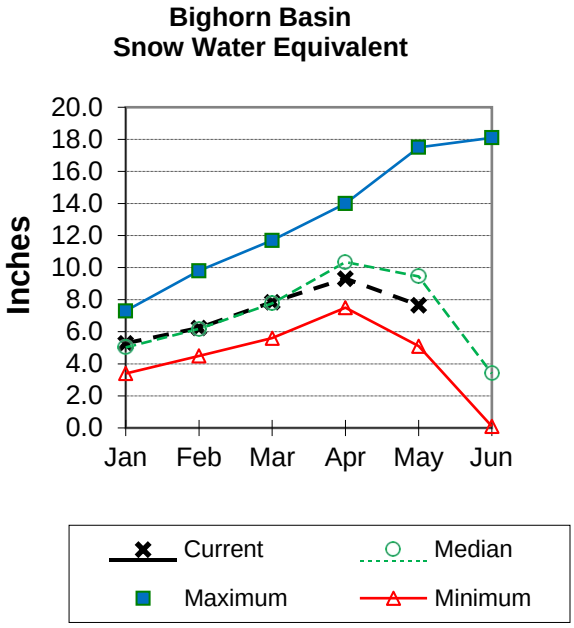
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
WIND RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Dinwoody Ck nr Burris								
	MAY-JUL	55	62	66	102%	70	77	65
	MAY-SEP	81	88	93	102%	98	105	91
Wind R Ab Bull Lake Ck								
	MAY-JUL	300	365	405	94%	445	510	430
	MAY-SEP	320	390	435	94%	480	550	465
Bull Lake Ck nr Lenore								
	MAY-JUL	118	131	140	104%	149	162	135
	MAY-SEP	145	160	171	103%	181	197	166
Wind R at Riverton								
	MAY-JUL	310	375	415	93%	455	520	445
	MAY-SEP	375	445	490	93%	535	600	525
Little Popo Agie R nr Lander								
	MAY-JUL	25	32	37	95%	42	49	39
	MAY-SEP	30	38	43	93%	48	55	46
Little Wind R nr Riverton								
	MAY-JUL	124	187	230	94%	275	335	245
	MAY-SEP	144	210	255	93%	300	365	275
Boysen Reservoir Inflow								
	MAY-JUL	295	425	520	93%	610	740	560
	MAY-SEP	330	470	565	92%	660	800	615

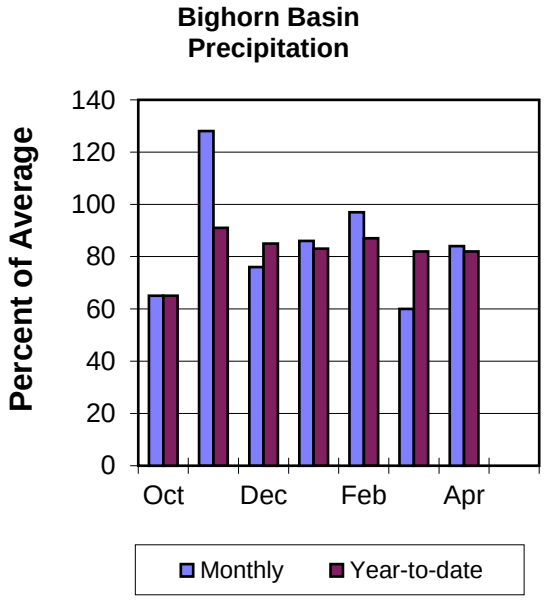
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Bighorn River Basin

Snow

The Bighorn River Basin SWE (above Bighorn Reservoir) is 81% of median. The Nowood River is at 73% of median. The Greybull River SWE is at 83% of median. Shell Creek SWE is at 89% of median.





Precipitation

Last month's precipitation was 84% of average. Year-to-date precipitation is 82% of average.

Reservoirs

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	536.3	418.9	476.4	596.0	90%	70%	80%	113%	88%
Bighorn Lake	773.9	718.4	773.6	1356.0	57%	53%	57%	100%	93%
Basin-wide Total	1310.2	1137.3	1250.0	1952.0	67%	58%	64%	105%	91%
# of reservoirs	2	2	2	2	2	2	2	2	2

Streamflow

The 50% exceedance forecasts for the May through September runoffs are below average. Boysen Reservoir inflow has a forecasted yield 92% of average; the Greybull River near Meeteetse yielding around 88% of average; Shell Creek near Shell yielding around 78% of average and the Bighorn River at Kane to yield around 83% of average. *See the following for detailed runoff volumes.*

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

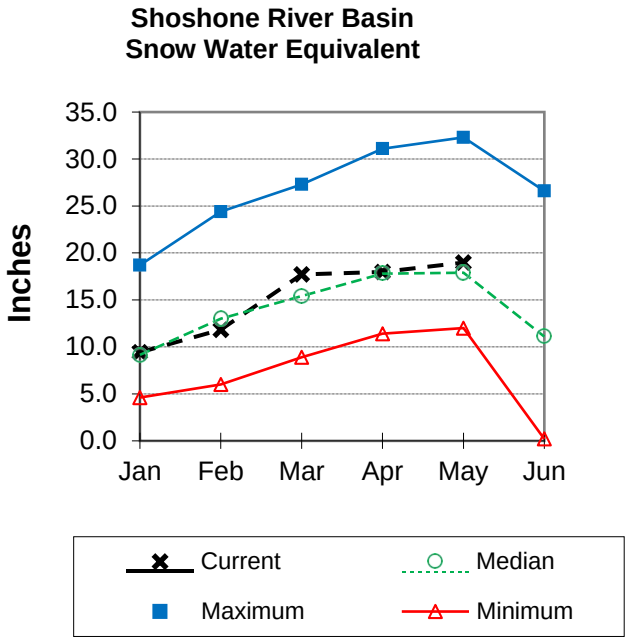
BIGHORN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Boysen Reservoir Inflow								
	MAY-JUL	295	425	520	93%	610	740	560
	MAY-SEP	330	470	565	92%	660	800	615
Greybull R nr Meeteetse								
	MAY-JUL	61	89	108	87%	127	155	124
	MAY-SEP	93	126	149	88%	171	205	170
Shell Ck nr Shell								
	MAY-JUL	25	33	39	75%	45	53	52
	MAY-SEP	33	43	49	78%	55	65	63
Bighorn R at Kane								
	MAY-JUL	280	495	645	84%	790	1010	770
	MAY-SEP	305	535	690	83%	845	1070	830

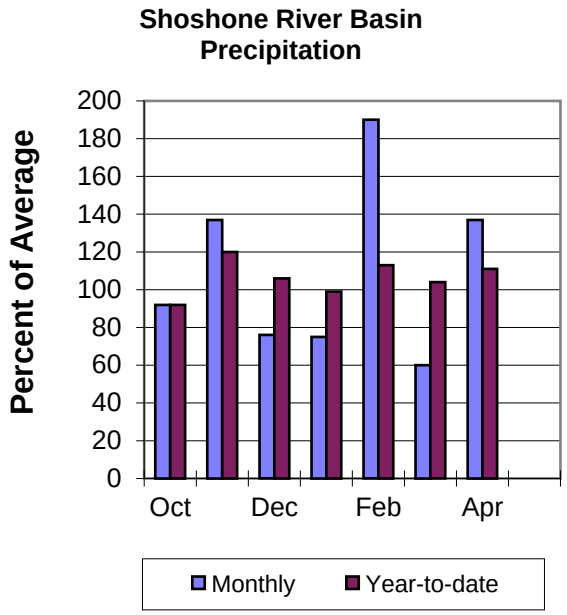
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Shoshone River Basin

Snow

Snow Water Equivalent (SWE) is 106% of median in this basin.





Precipitation

Precipitation for last month was 137% of average. The basin year-to-date precipitation is now 111% of average.

Reservoirs

SHOSHONE RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Buffalo Bill	396.8	349.6	336.3	646.6	61%	54%	52%	118%	104%
Basin-wide Total	396.8	349.6	336.3	646.6	61%	54%	52%	118%	104%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The 50% exceedance forecasts for the May through September period are all above average for the basin. The North Fork Shoshone River at Wapiti will yield 121% of average. The South Fork of the Shoshone River near Valley would yield 106% of average. The Buffalo Bill Reservoir inflow to yield 115%. *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 (KAF)
NF Shoshone R at Wapiti								
	MAY-JUL	440	490	520	121%	555	600	430
	MAY-SEP	490	545	585	121%	620	675	485
SF Shoshone R nr Valley								
	MAY-JUL	178	200	215	108%	230	255	200
	MAY-SEP	205	230	250	106%	270	295	235
SF Shoshone R ab Buffalo Bill Reservoir								
	MAY-JUL	140	173	195	106%	215	250	184
	MAY-SEP	146	182	205	107%	230	265	192
Buffalo Bill Reservoir Inflow[2]								
	MAY-JUL	590	665	720	114%	775	855	630
	MAY-SEP	660	745	805	115%	860	950	700

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

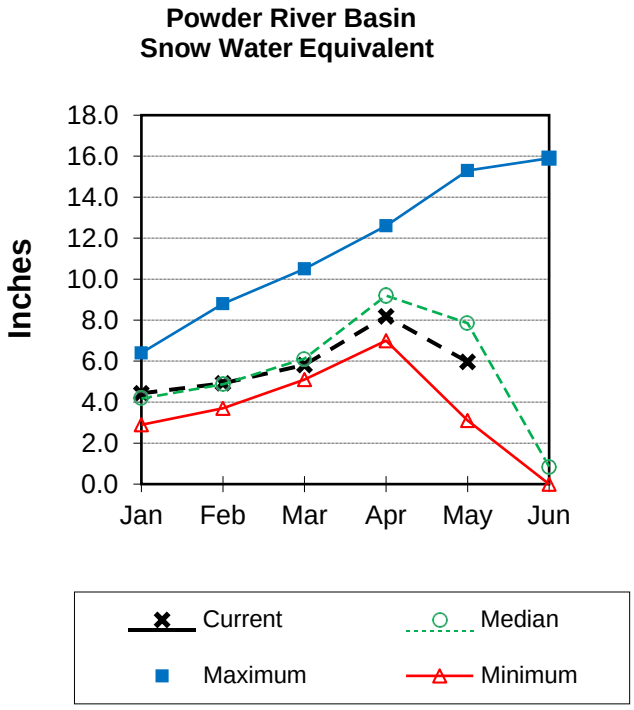
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

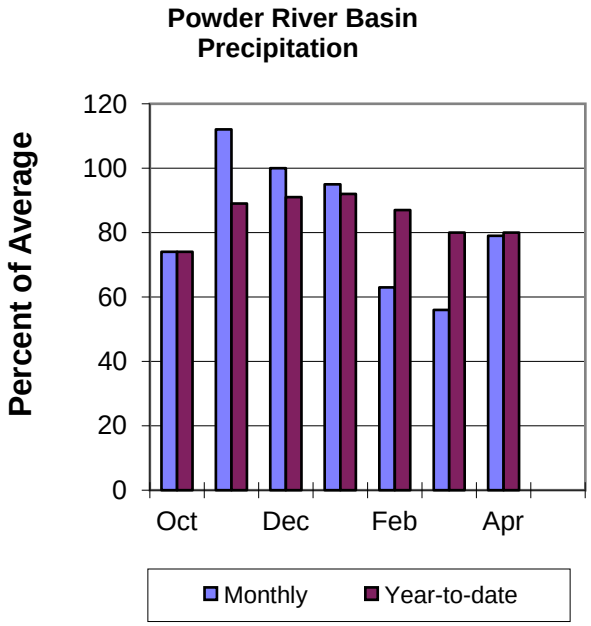
3) Median value used in place of average

Powder River Basin

Snow

Powder River Basin SWE is at 76% of median. Upper Powder River drainage is 72% of median. SWE in the Clear Creek drainage is 84% of median. Crazy Woman Creek drainage SWE is at 82%.





Precipitation

Last month's precipitation was 79% of average in the basin. Year-to-date precipitation is 80% of average.

Reservoirs

No reservoir data for this basin.

Streamflow

The 50% exceedance forecasts for the May through September period are well below average for the basin. The Middle Fork of the Powder River near Barnum should yield around 60% of average. The North Fork of the Powder River near Hazelton to yield around 73%. The Powder River near Morehead to yield around 63% of average. *See the following for detailed runoff volumes.*

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

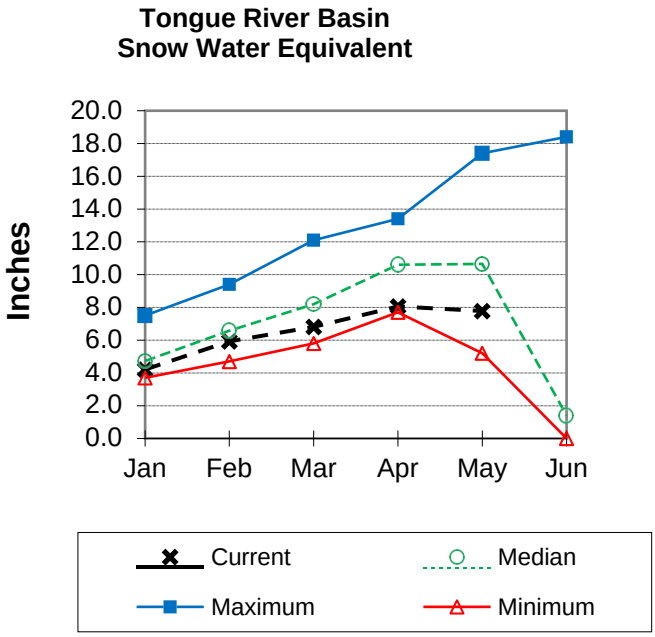
POWDER RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
MF Powder R nr Barnum								
	MAY-JUL	1.96	5.5	7.9	58%	10.3	13.9	13.7
	MAY-SEP	2.5	6.2	8.7	60%	11.2	14.8	14.6
NF Powder R nr Hazelton								
	MAY-JUL	2.8	4.7	5.9	71%	7.2	9.1	8.3
	MAY-SEP	3.3	5.2	6.6	73%	7.9	9.8	9
Rock Ck nr Buffalo								
	MAY-JUL	4.4	9.5	13	73%	16.4	22	17.7
	MAY-SEP	7	12.4	16.1	77%	19.8	25	21
Piney Ck at Kearny								
	MAY-JUL	1	11.6	22	55%	31	46	40
	MAY-SEP	1	13.7	24	56%	34	49	43
Powder R at Moorehead								
	MAY-JUL	1	43	93	62%	143	215	151
	MAY-SEP	1	57	107	63%	158	230	170
Powder R nr Locate								
	MAY-JUL	1	47	103	63%	159	240	164
	MAY-SEP	1	58	117	63%	175	260	185

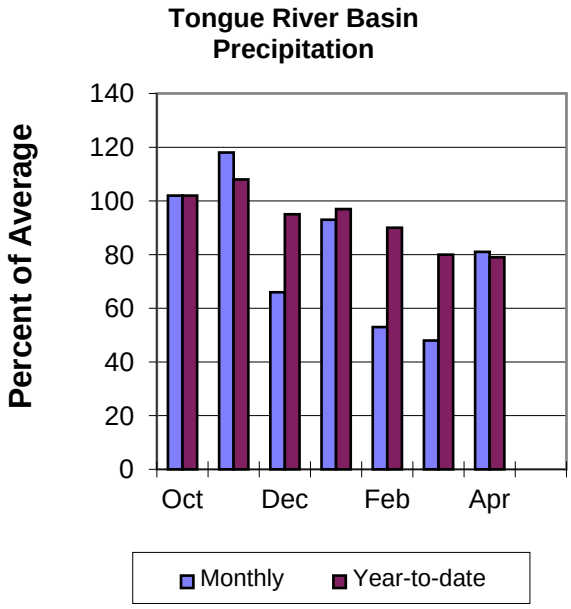
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Tongue River Basin

Snow

Upper Tongue River drainage SWE is at 73% of median. The Goose Creek drainage SWE is at 71% of median.





Precipitation

Last month's precipitation was 81% of average. Year-to-date precipitation is 79% of average in the basin.

Reservoirs

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	73.4	62.2	34.7	79.1	93%	79%	44%	211%	179%
Basin-wide Total	73.4	62.2	34.7	79.1	93%	79%	44%	211%	179%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The 50% exceedance forecasts for the May through September period are well below average for the basin. The yield for Tongue River near Dayton is forecasted to be 59% of average. Big Goose Creek near Sheridan to yield around 60%. Little Goose Creek near Bighorn yielding 65% of average. The Tongue River Reservoir Inflow will be about 43% of average.

See below for detailed runoff volumes.

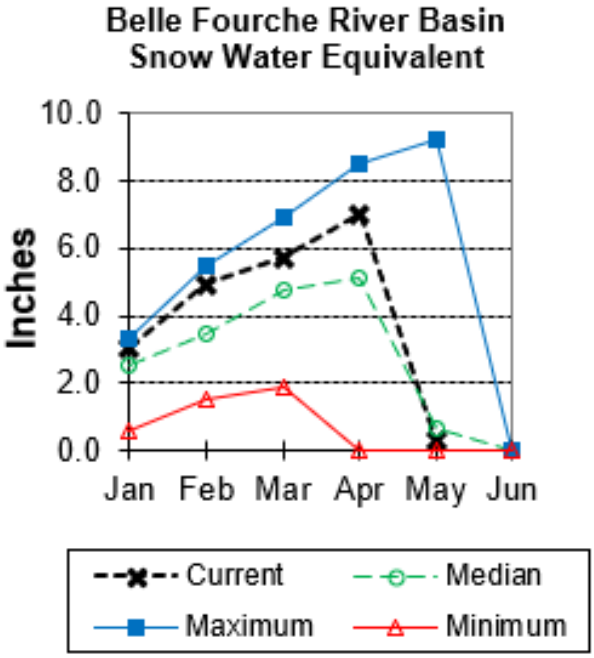
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
TONGUE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Tongue R nr Dayton								
	MAY-JUL	19.2	34	44	55%	54	69	80
	MAY-SEP	26	42	54	59%	65	81	92
Big Goose Ck nr Sheridan								
	MAY-JUL	6.8	16.6	23	52%	30	40	44
	MAY-SEP	14.2	24	31	60%	38	48	52
Little Goose Ck nr Bighorn								
	MAY-JUL	7.3	13.3	17.4	60%	22	28	29
	MAY-SEP	13.4	20	24	65%	29	36	37
Tongue River Reservoir Inflow								
	MAY-JUL	1	34	70	40%	106	158	175
	MAY-SEP	1	49	86	43%	124	180	198

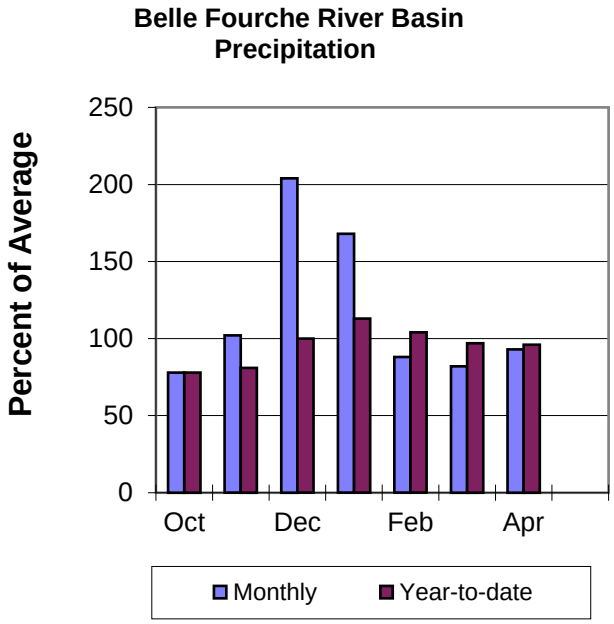
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Belle Fourche River Basin

Snow

Belle Fourche River Basin SWE is at 53% of median.





Precipitation

Precipitation for last month was 93% of average in the Belle Fourche basin. Year-to-date precipitation is 96% of average.

Reservoirs

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	155.8	159.8	144.5	178.4	87%	90%	81%	108%	111%
Keyhole	176.5	159.4	98.1	193.8	91%	82%	51%	180%	162%
Shadehill	80.5	73.2	61.2	81.4	99%	90%	75%	131%	120%
Basin-wide Total	412.8	392.4	303.8	453.6	91%	87%	67%	136%	129%
# of reservoirs	3	3	3	3	3	3	3	3	3

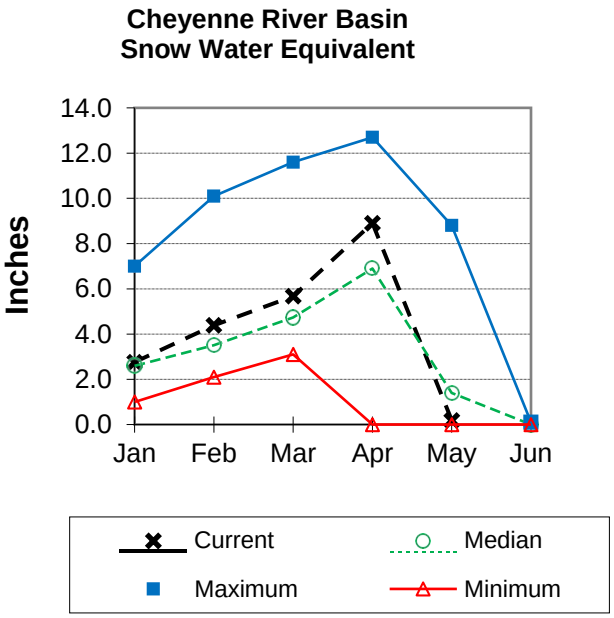
Streamflow

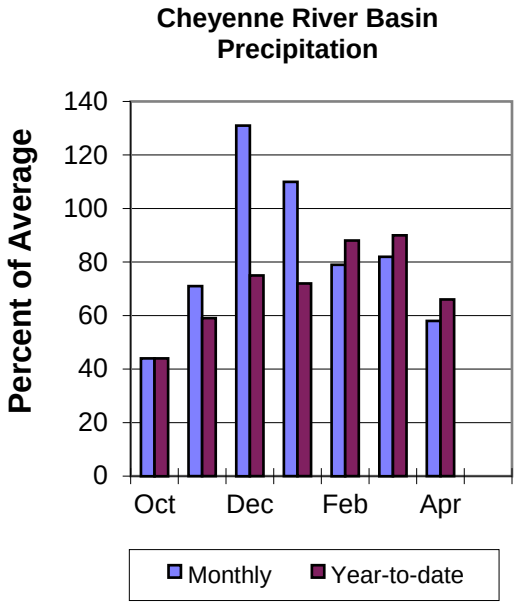
There are no streamflow forecast points for the basin.

Cheyenne River Basin

Snow

Cheyenne River Basin SWE is at 13% of median.





Precipitation

Precipitation for last month was 58% of average. Year-to-date precipitation is 66%.

Reservoirs

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	113.5	113.2	97.6	122.1	93%	93%	80%	116%	116%
Deerfield	15.4	15.3	14.2	15.2	102%	101%	93%	109%	108%
PactoLa	54.6	54.9	47.7	55.0	99%	100%	87%	115%	115%
Basin-wide Total	183.5	183.4	159.5	192.3	95%	95%	83%	115%	115%
# of reservoirs	3	3	3	3	3	3	3	3	3

Streamflow

The Deerfield Reservoir Inflow yield is forecasted at 79% of average. Pactola Reservoir Inflow yield is 73% of average. *See the following for detailed runoff volumes.*

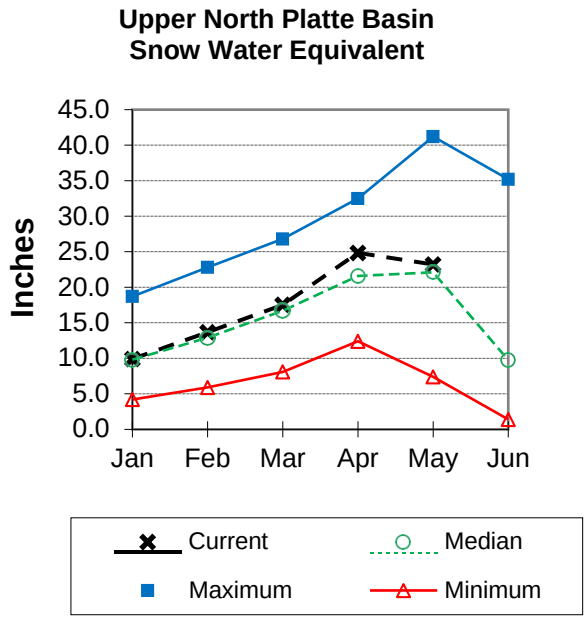
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
CHEYENNE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Deerfield Reservoir Inflow								
	MAY-JUL	0.64	2.1	3.1	79%	4.1	5.6	3.9
Pactola Reservoir Inflow								
	MAY-JUL	1.41	8.2	12.8	73%	17.4	24	17.5

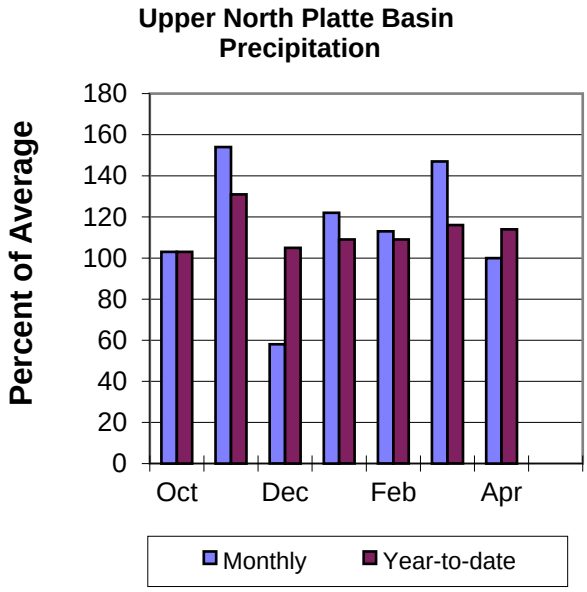
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Upper North Platte River Basin

Snow

The Upper North Platte River Basin SWE above Seminoe Reservoir is 105% of median. North Platte above Northgate SWE is 108% of median. Encampment River SWE is 111% of median. Brush Creek SWE is 88% of median. Medicine Bow and Rock Creek SWE are 100% of median.





Precipitation

Last month's precipitation was 100% of average. Total water-year-to-date precipitation is 114% of average.

Reservoirs

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	673.1	711.7	492.5	1016.7	66%	70%	48%	137%	145%
Basin-wide Total	673.1	711.7	492.5	1016.7	66%	70%	48%	137%	145%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The 50% exceedance forecasts for the May through September period are above average for the Upper North Platte River Basin. The yield for the North Platte River near Northgate will be around 121% of average. The Encampment River near Encampment yield will be about 129%. Rock Creek near Arlington yield will be around 110%. Seminoe Reservoir inflow should be about 122%. *See the following page for more detailed information on projected runoff.*

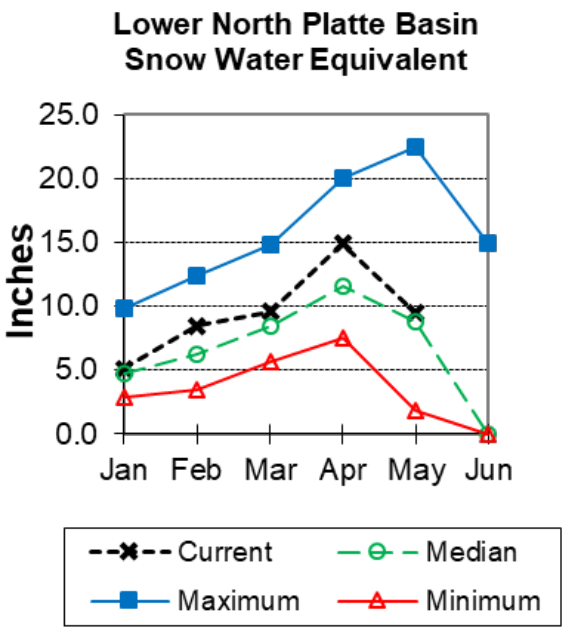
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
UPPER NORTH PLATTE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
North Platte R nr Northgate								
	MAY-JUL	137	192	230	123%	270	325	187
	MAY-SEP	150	210	255	121%	300	360	210
Encampment R nr Encampment[2]								
	MAY-JUL	112	137	153	130%	170	195	118
	MAY-SEP	120	146	164	129%	181	205	127
Rock Ck nr Arlington								
	MAY-JUL	40	47	52	108%	57	64	48
	MAY-SEP	42	50	55	110%	60	67	50
Sweetwater R nr Alcova								
	MAY-JUL	12.6	27	36	78%	45	59	46
	MAY-SEP	14.6	30	40	80%	50	65	50
Seminoe Reservoir Inflow								
	MAY-JUL	515	660	755	123%	850	990	615
	MAY-SEP	570	720	820	122%	925	1070	670

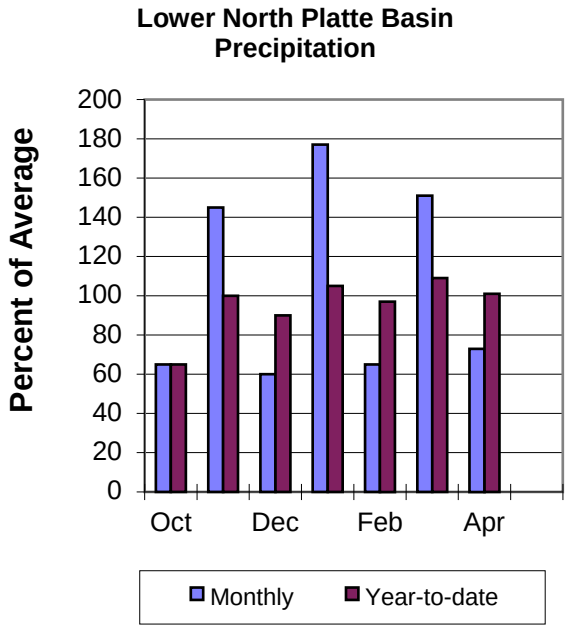
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Lower North Platte River Basin

Snow

Lower North Platte River Basin SWE is 108% of median. Deer Creek and LaPrele Creek SWE is at 118%. SWE total for the entire North Platte River Basin above Torrington, WY is 101% of median.





Precipitation

Last month's precipitation was 73% of average. The water year-to-date precipitation for the basin is currently 101% of average.

Reservoirs

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	179.8	179.9	178.9	184.3	98%	98%	97%	100%	101%
Glendo	464.3	402.8	434.5	506.4	92%	80%	86%	107%	93%
Guernsey	28.3	28.5	29.9	45.6	62%	63%	66%	95%	95%
Pathfinder	680.7	917.7	617.9	1016.5	67%	90%	61%	110%	149%
Basin-wide Total	1353.0	1528.9	1261.2	1752.8	77%	87%	72%	107%	121%
# of reservoirs	4	4	4	4	4	4	4	4	4

Streamflow

The 50% exceedance forecasts for the May through September period are above average. LaPrele Creek above LaPrele Reservoir is forecasted to yield 109% of average. North Platte River below Guernsey Reservoir to yield around 118% of average. *See the following for more detailed information on projected runoff.*

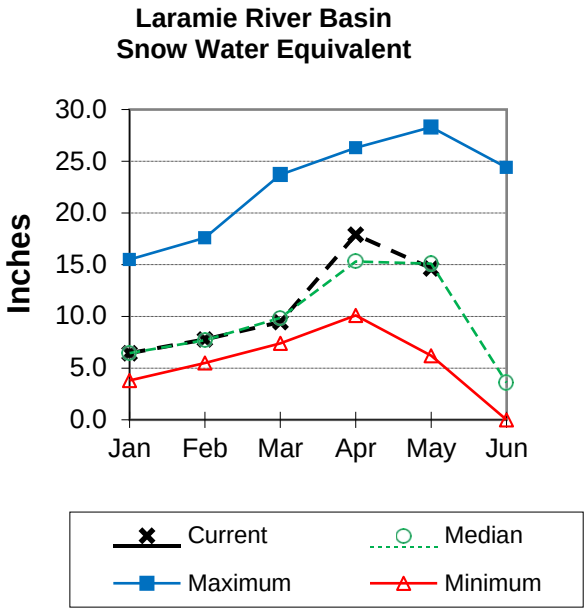
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
LOWER NORTH PLATTE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
La Prele Ck ab La Prele Reservoir								
	MAY-JUL	7.9	12.6	15.8	106%	19	24	14.9
	MAY-SEP	8.3	13	16.2	109%	19.4	24	14.8
North Platte R bl Glendo Reservoir								
	MAY-JUL	450	645	780	116%	915	1110	670
	MAY-SEP	480	680	820	117%	955	1160	700
North Platte R bl Guernsey Reservoir								
	MAY-JUL	440	645	785	117%	920	1130	670
	MAY-SEP	475	680	825	118%	965	1170	700

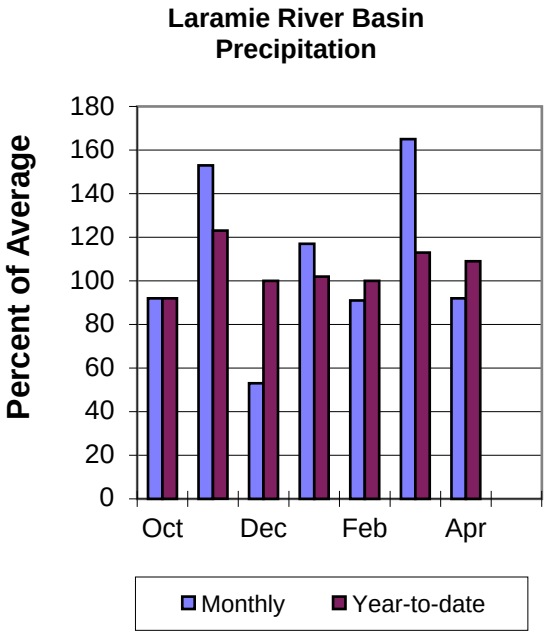
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Laramie River Basin

Snow

SWE for the entire Laramie River Basin (above mouth entering North Platte) is 97% of median. SWE for the Laramie River above Laramie is 94% of median. SWE for the Little Laramie River is 97% of median.





Precipitation

Last month's precipitation was 92% of average. The water year-to-date precipitation for the basin is currently 109% of average.

Reservoirs

Wheatland #2 did not report as of 5/7/2019

Streamflow

The 50% exceedance forecasts for the May through September period will be above average. Laramie River near Woods Landing should yield around 103% of average. The Little Laramie near Filmore should produce about 106% of average. *See below for detailed information on projected runoff.*

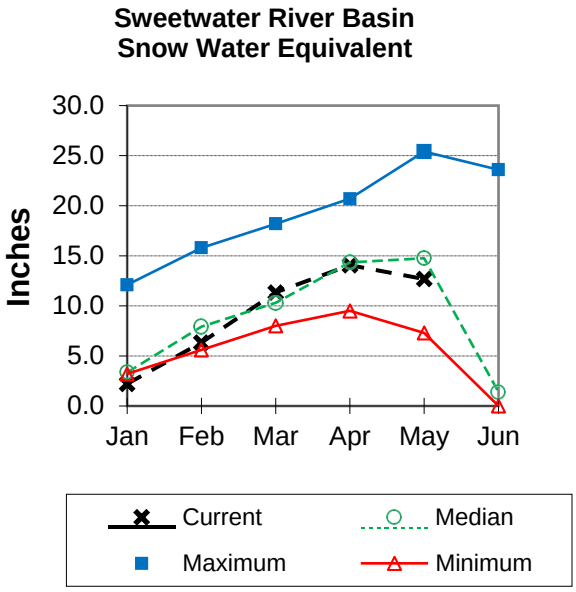
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
LARAMIE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Laramie R nr Woods								
	MAY-JUL	76	98	114	106%	130	152	108
	MAY-SEP	81	106	123	103%	140	165	119
Little Laramie R nr Filmore								
	MAY-JUL	37	46	52	108%	58	67	48
	MAY-SEP	38	48	55	106%	62	72	52

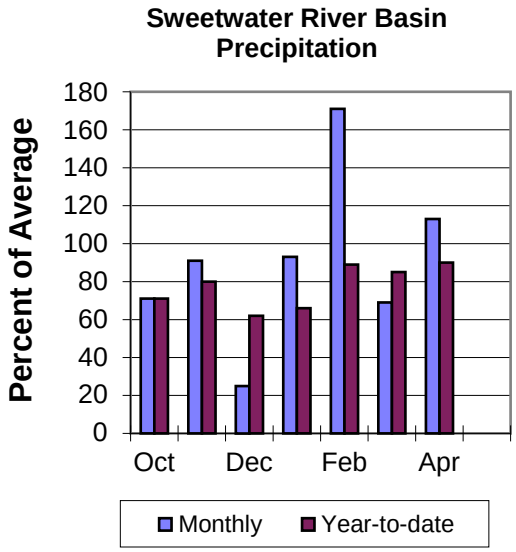
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Sweetwater River Basin

Snow

Sweetwater River Basin SWE is at 86% of median.





Precipitation

Last month's precipitation was 113% of average. The water year-to-date precipitation for the basin is currently 90% of average.

Reservoirs

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	680.7	917.7	617.9	1016.5	67%	90%	61%	110%	149%
Basin-wide Total	680.7	917.7	617.9	1016.5	67%	90%	61%	110%	149%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The following is the streamflow forecast for the May through September period. The Sweetwater River near Alcova will yield about 80% of average.

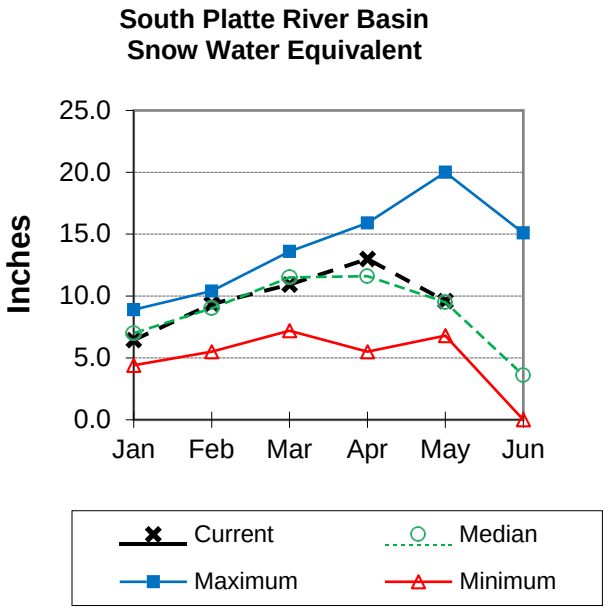
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
SWEETWATER RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Sweetwater R nr Alcova								
	MAY-JUL	12.6	27	36	78%	45	59	46
	MAY-SEP	14.6	30	40	80%	50	65	50

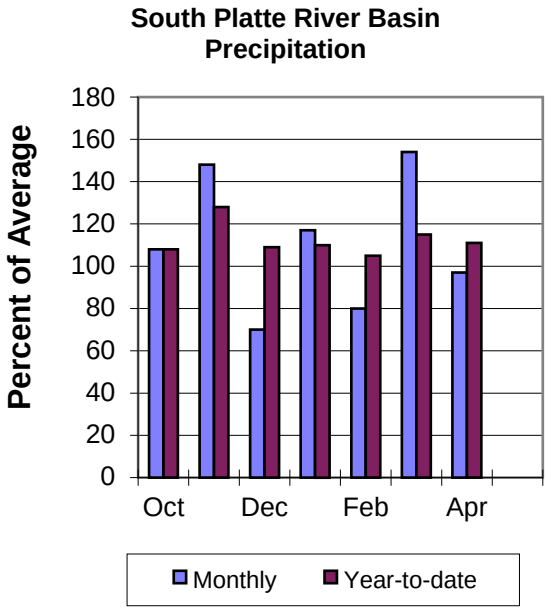
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

South Platte River Basin (WY)

Snow

South Platte River Basin SWE in WY is 101% of median.





Precipitation

Last month's precipitation was 97% of average. The water year-to-date precipitation for the basin is currently 111%.

Reservoirs

No reservoir data for the basin.

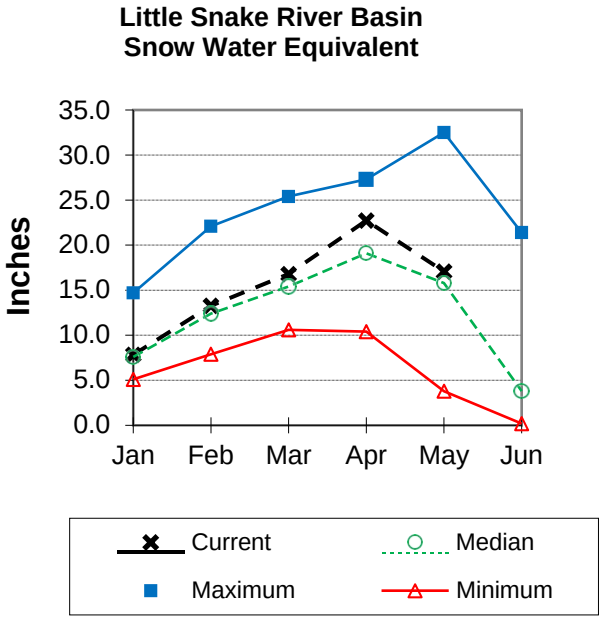
Streamflow

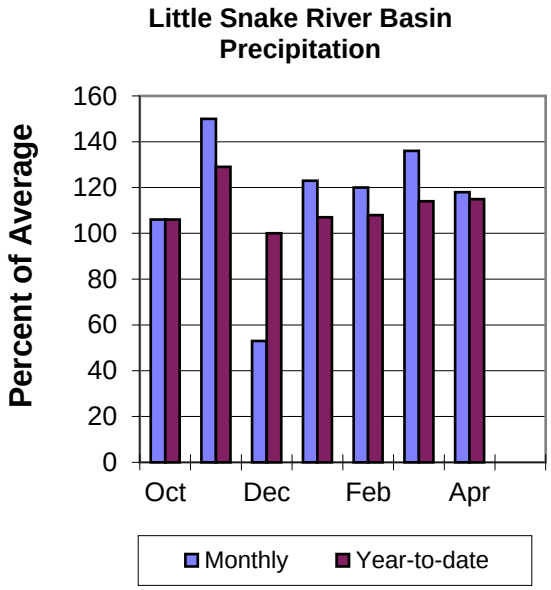
There are no streamflow forecast points for the basin.

Little Snake River Basin

Snow

Little Snake River drainage SWE is 108% of median.





Precipitation

Precipitation across the basin was 118% of average. The Little Snake River Basin water-year-to-date precipitation is currently 115% of average.

Reservoirs

High Savery Reservoir did not report as of 5/7/2019

Streamflow

The 50% exceedance forecasts for the May through July period will be above average. The Little Snake River near Slater is forecasted to yield around 109% of average. *See below for detailed information on projected runoff.*

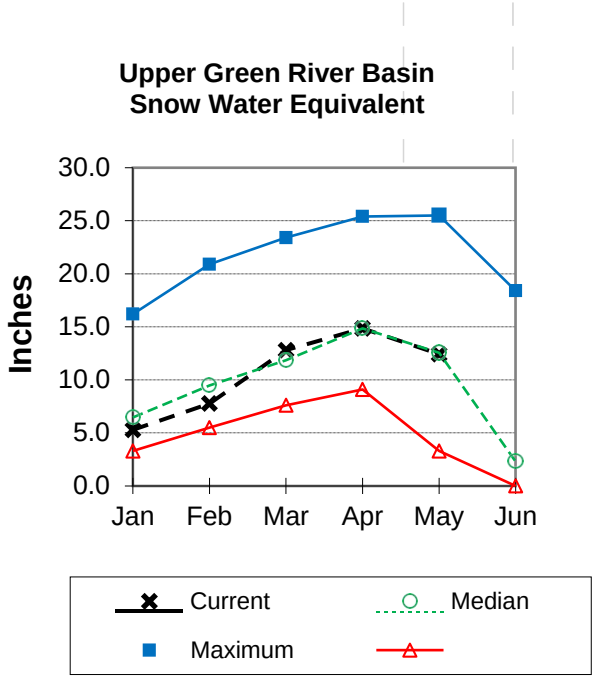
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
LITTLE SNAKE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Little Snake R nr Slater[2]								
	APR-JUL	135	158	174	112%	190	215	156
	MAY-JUL	111	134	150	109%	166	189	138
Little Snake R nr Dixon[2]								
	APR-JUL	265	325	365	106%	405	470	345
	MAY-JUL	197	260	300	102%	340	405	295

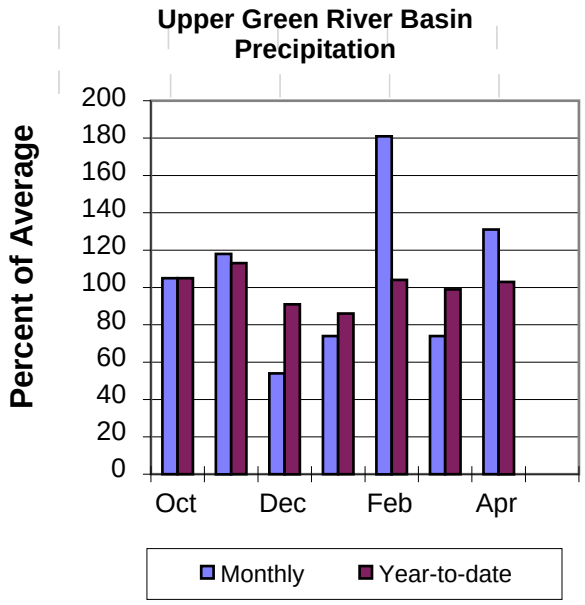
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Upper Green River Basin

Snow

The Upper Green River Basin SWE (above Fontenelle Reservoir) is 99% of median. Green River Basin above Warren Bridge SWE is 89% of median. West Side of Upper Green River Basin SWE is 98% of median. New Fork River SWE is 114% of median. Big Sandy-Eden Valley Basin SWE is 87% of median.





Precipitation

Precipitation for sites in the basin was 131% of average last month. Water year-to-date precipitation is 103% of average.

Reservoir

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	22.0	35.8	23.1	38.3	58%	93%	60%	95%	155%
Fontenelle	136.6	130.4	125.0	344.8	40%	38%	36%	109%	104%
Basin-wide Total	158.6	166.2	148.1	383.1	41%	43%	39%	107%	112%
# of reservoirs	2	2	2	2	2	2	2	2	2

Streamflow

The 50% exceedance forecasts for the May through July period will be average. The yield on the Green River at Warren Bridge is about 93% of average. New Fork River near Big Piney yield will be around 103% of average. Fontenelle Reservoir Inflow is estimated to be about 95% of average. *See the following for a more detailed forecast.*

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

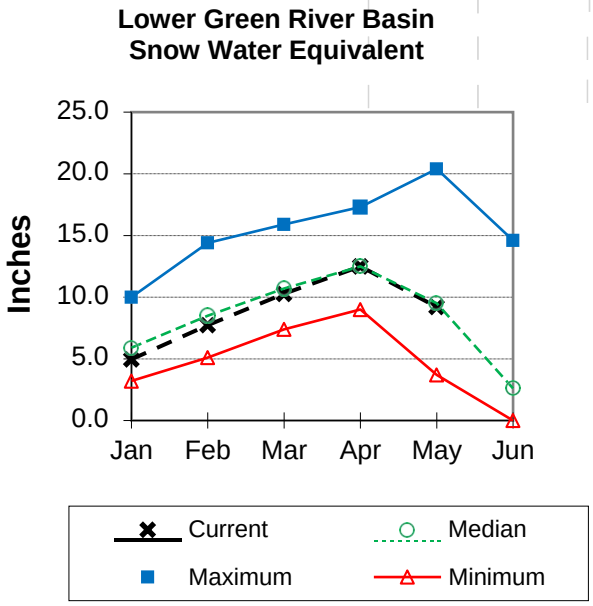
UPPER GREEN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Green R at Warren Bridge								
	APR-JUL	184	210	225	92%	240	265	245
	MAY-JUL	168	193	210	93%	225	250	225
Pine Creek ab Fremont Lake								
	APR-JUL	86	93	98	100%	104	111	98
	MAY-JUL	82	90	95	99%	100	108	96
New Fork R nr Big Piney								
	APR-JUL	280	335	370	104%	400	455	355
	MAY-JUL	255	305	340	103%	375	425	330
Fontenelle Reservoir Inflow								
	APR-JUL	545	655	725	100%	800	910	725
	MAY-JUL	425	535	610	95%	685	795	640
Big Sandy R nr Farson								
	APR-JUL	41	49	54	104%	60	67	52
	MAY-JUL	34	42	47	98%	52	60	48

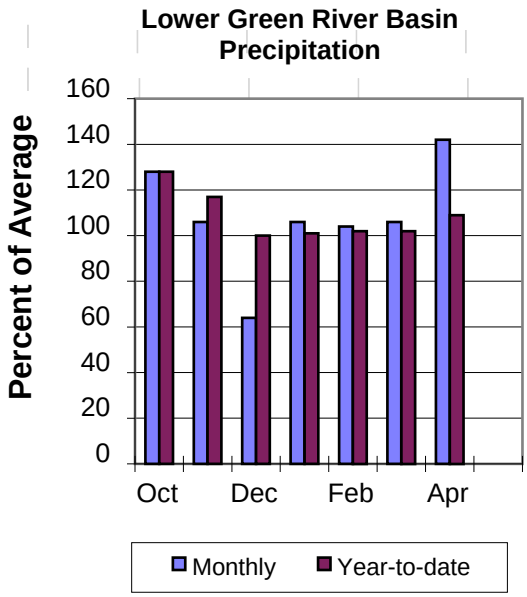
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Lower Green River Basin

Snow

Lower Green River Basin SWE is at 97% of median. Hams Fork drainage SWE is 91% of median. Blacks Fork drainage SWE is 113% of median. Henrys Fork SWE is 96% of median. SWE for the entire Green River Basin (above Flaming Gorge) is at 99% of median.





Precipitation

Precipitation for the basin last month was 142% of average. The basin year-to-date precipitation is currently 109% of average.

Reservoirs

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	136.6	130.4	125.0	344.8	40%	38%	36%	109%	104%
Flaming Gorge Reservoir	3302.6	3185.8	3039.0	3749.0	88%	85%	81%	109%	105%
Viva Naughton Res	34.9	40.5	31.6	42.4	82%	95%	75%	110%	128%
Basin-wide Total	3474.0	3356.7	3195.6	4136.2	84%	81%	77%	109%	105%
# of reservoirs	3	3	3	3	3	3	3	3	3

Streamflow

The following are the 50% exceedance forecasts for the May through July period. The Green River near Green River will yield about 98% of average. The Flaming Gorge Reservoir inflow will be about 98% of average. *See the following page for more detailed information on projected runoff.*

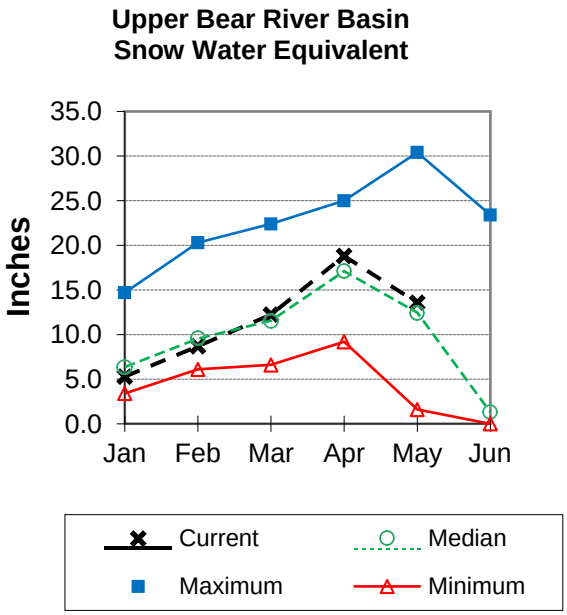
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast								
LOWER GREEN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Green R nr Green River, WY [2]								
	APR-JUL	550	665	745	102%	825	940	730
	MAY-JUL	435	550	630	98%	710	825	640
Blacks Fk nr Robertson								
	APR-JUL	86	97	105	122%	113	124	86
	MAY-JUL	81	92	100	122%	108	119	82
EF of Smiths Fork nr Robertson [2]								
	APR-JUL	24	30	33	122%	37	43	27
	MAY-JUL	22	28	31	119%	35	41	26
Hams Fk bl Pole Ck nr Frontier								
	APR-JUL	31	39	44	81%	49	56	54
	MAY-JUL	25	33	38	79%	43	50	48
Viva Naughton Reservoir Inflow								
	APR-JUL	36	49	59	80%	68	82	74
	MAY-JUL	24	37	47	76%	56	70	62
Flaming Gorge Reservoir Inflow [2]								
	APR-JUL	770	950	1070	109%	1190	1370	980
	MAY-JUL	530	710	830	98%	950	1130	845

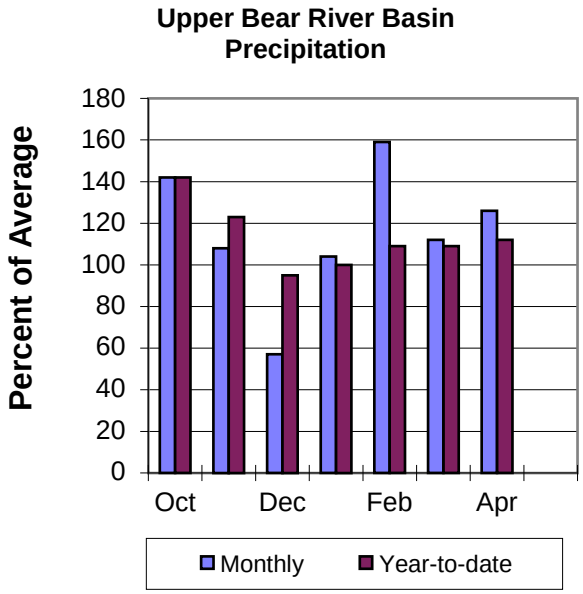
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Upper Bear River Basin

Snow

SWE in the Upper Bear River Basin of Utah is 109%of median. SWE in the Wyoming portion of the Bear River drainage (Smiths and Thomas Forks) is 98% of median.





Precipitation

Precipitation for last month was 126% of average in the basin. The year-to-date precipitation for the basin is 112% of average.

Reservoirs

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	58.0	59.1	45.5	57.3	101%	103%	79%	127%	130%
Basin-wide Total	58.0	59.1	45.5	57.3	101%	103%	79%	127%	130%
# of reservoirs	1	1	1	1	1	1	1	1	1

Streamflow

The 50% exceedance forecasts for the May through September period will be above average. The Bear River above reservoir near Woodruff to yield around 117% of average. The Smiths Fork River near Border Jct. will yield around 114%. *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	106	119	128	114%	137	150	112
	APR-SEP	118	133	143	116%	153	168	123
	MAY-JUL	97	110	118	113%	126	139	104
	MAY-SEP	108	122	132	114%	142	156	116
Bear R ab Resv nr Woodruff								
	APR-JUL	85	117	139	115%	161	193	121
	APR-SEP	88	123	147	115%	171	205	128
	MAY-JUL	72	102	122	116%	142	172	105
	MAY-SEP	75	108	130	117%	152	185	111
Smiths Fk nr Border								
	APR-JUL	82	92	99	111%	106	116	89
	APR-SEP	96	108	116	112%	124	136	104
	MAY-JUL	73	83	90	113%	97	107	80
	MAY-SEP	89	100	108	114%	116	127	95

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

May 7, 2019

Issued by:

Matthew Lohr (Chief)
U.S.D.A.
Natural Resources Conservation Service
Washington D.C.

Released by:

Astrid Martinez
State Conservationist
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