

# Wyoming Water Supply Outlook Report

January 1, 2018



## **Kelley Guard Station**

**Snow piles up on the SNOTEL shelter from last year's snows.**

**Photo by Kevin Payne**

## Basin Outlook Reports

### And

## Federal - State - Private Cooperative Snow Surveys

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*For more water supply and resource management information, contact:*

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100 East B Street, Casper, Wyoming 82602  
307-233-6784

### *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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# STATE OF WYOMING GENERAL OUTLOOK

January 1, 2018

## SUMMARY

The snow water equivalent (SWE) across Wyoming is above median at 112%. Monthly precipitation for the basins ranged from a low of 67% of average in the Lower North Platte Basin to a high of 164% of average in the Shoshone River Basin, for an overall average of 110%. The year-to-date precipitation average for Wyoming basins is now at 99% varying from a low of 41% to a high of 195% of average. Forecasted runoff varies from 38% to 160% of average across the Wyoming basins. Basin reservoir levels for Wyoming vary from 83-189% of average for an overall average of 123%. Basin reservoir levels for Wyoming vary from 83-189% of average for an overall average of 122%.

## SNOWPACK

The SWE across Wyoming is above median for Jan. 4<sup>th</sup> at 112%, compared to 115% last year. The SWE was the lowest in the Lower North Platte River Basin at 69%, while SWE in the Upper Yellowstone in WY Basin is the highest at 161% of median. The Kirwin SNOTEL had the highest SWE at 161% of median, while the Crow Creek SNOTEL had the lowest SWE at 20% of median.

## PRECIPITATION

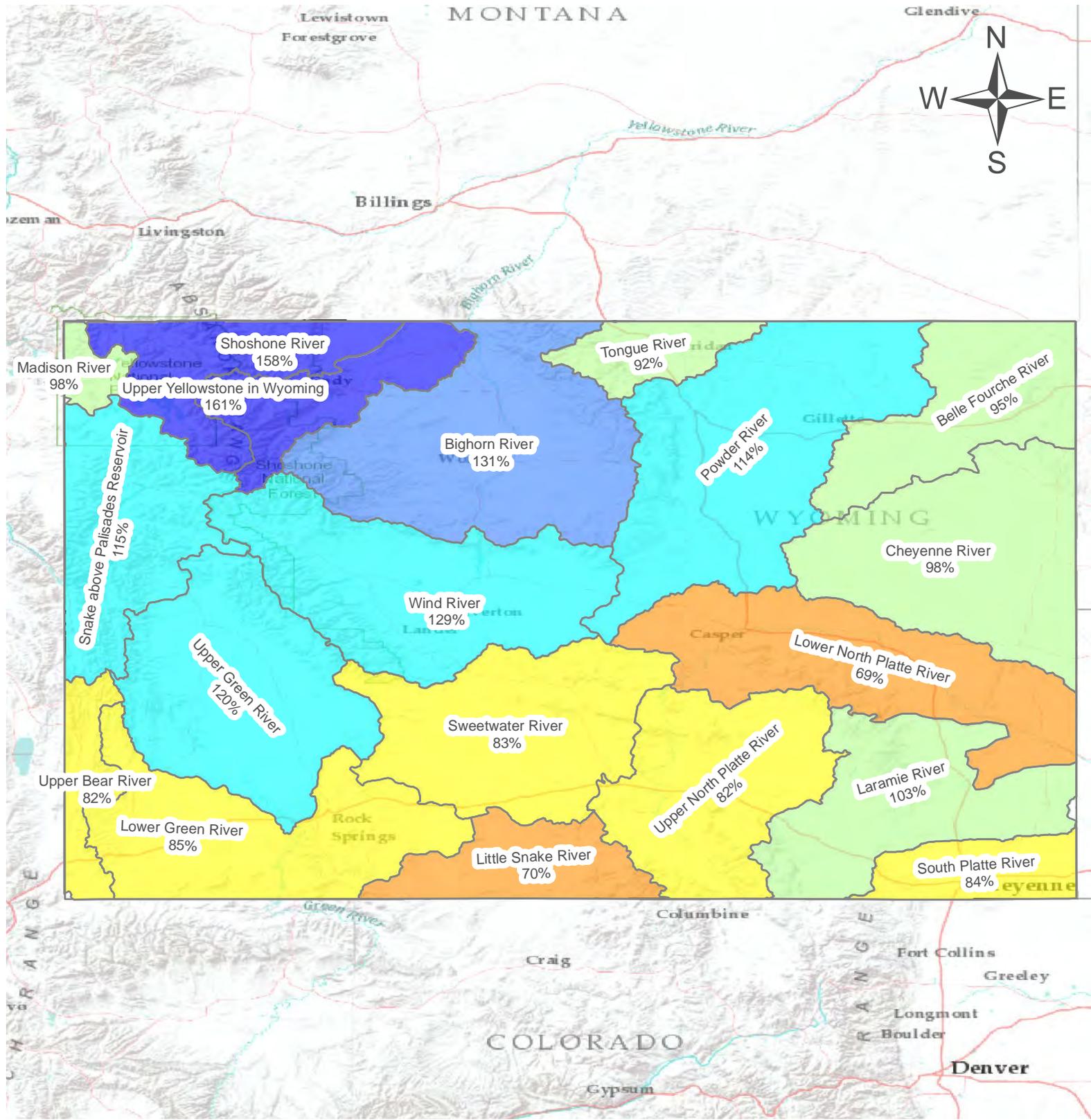
Year to date precipitation is at 99% of average. The Clarks Fork in WY Basin had the highest precipitation amount at 156% of average and the Henrys Fork had the lowest precipitation amount at 61% of average. The Beartooth Lake SNOTEL had the highest precipitation at 195% of average, while the Sandstone RS SNOTEL had the lowest precipitation at 41% of average.

## RESERVOIRS

Reservoir storage is above average at 122% for the entire state. Reservoirs in the Snake above Palisade Basin are above average at 153%. Reservoirs in the Madison abv Hebgen Lake Basin are above average at 117%. Reservoirs in the Wind River Basin are above average at 121%. Reservoirs on the Big Horn are above average at 110%. The Buffalo Bill Reservoir on the Shoshone is above average at 138%. The Tongue River Basin Reservoir is above average at 183%. Reservoirs in the Belle Fourche and Cheyenne River Basins are slightly above average in storage at 101 and 106% respectively. Reservoirs on the Upper and Lower North Platte River are above average at 147% and 128% respectively. Reservoirs on the Laramie and Little Snake River basins are at 125% and 91% respectively. Reservoirs on the Upper Green River are above average at 122%. Reservoirs on the Lower Green River Basin are above average at 109%. Woodruff Narrows Reservoir on the Upper Bear River Basin is above average at 169%.

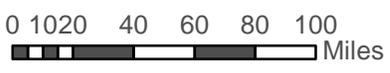
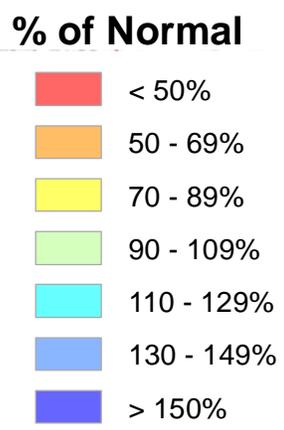
## STREAMFLOW

The Snake above Palisades, Madison abv Hebgen Lake, and Upper Yellowstone in WY Basins should yield about 103%, 101% and 135% of average, respectively. Yields from the Wind and Bighorn River Basins should be about 160% and 148% of average, respectively. Yields from the Shoshone River Basin should be about 148% of average. Yields from the Powder and Tongue River Basins should be about 133% and 77% of average, respectively. Yield for the Cheyenne River Basin should be about 92% of average. Yields for the Upper North Platte, Sweetwater, Lower North Platte, and Laramie Rivers of Wyoming should be about 82%, 73%, 78%, and 108% of average, respectively. Yields for the Little Snake, Upper Green River, Lower Green River, and Smith's Fork of Wyoming should be 57%, 101%, 103%, and 91% of average respectively.



# Statewide Snow Water Equivalent

As of January 1, 2018:  
 112% of Normal Snow Water Equivalent



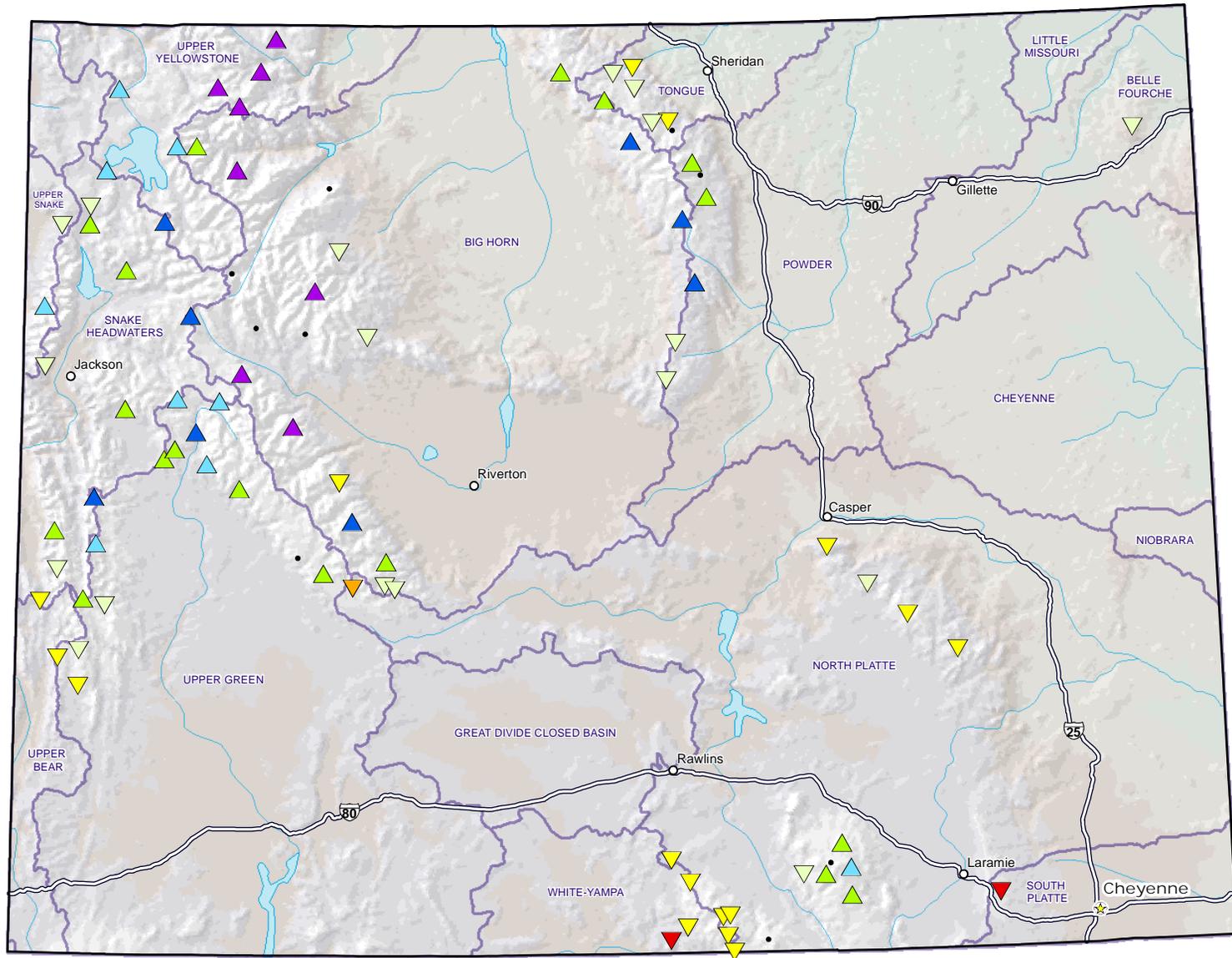
# Wyoming SNOTEL Snow Water Equivalent (SWE) % of Normal

Jan 01, 2018

## Current SWE % of 1981-2010 Median

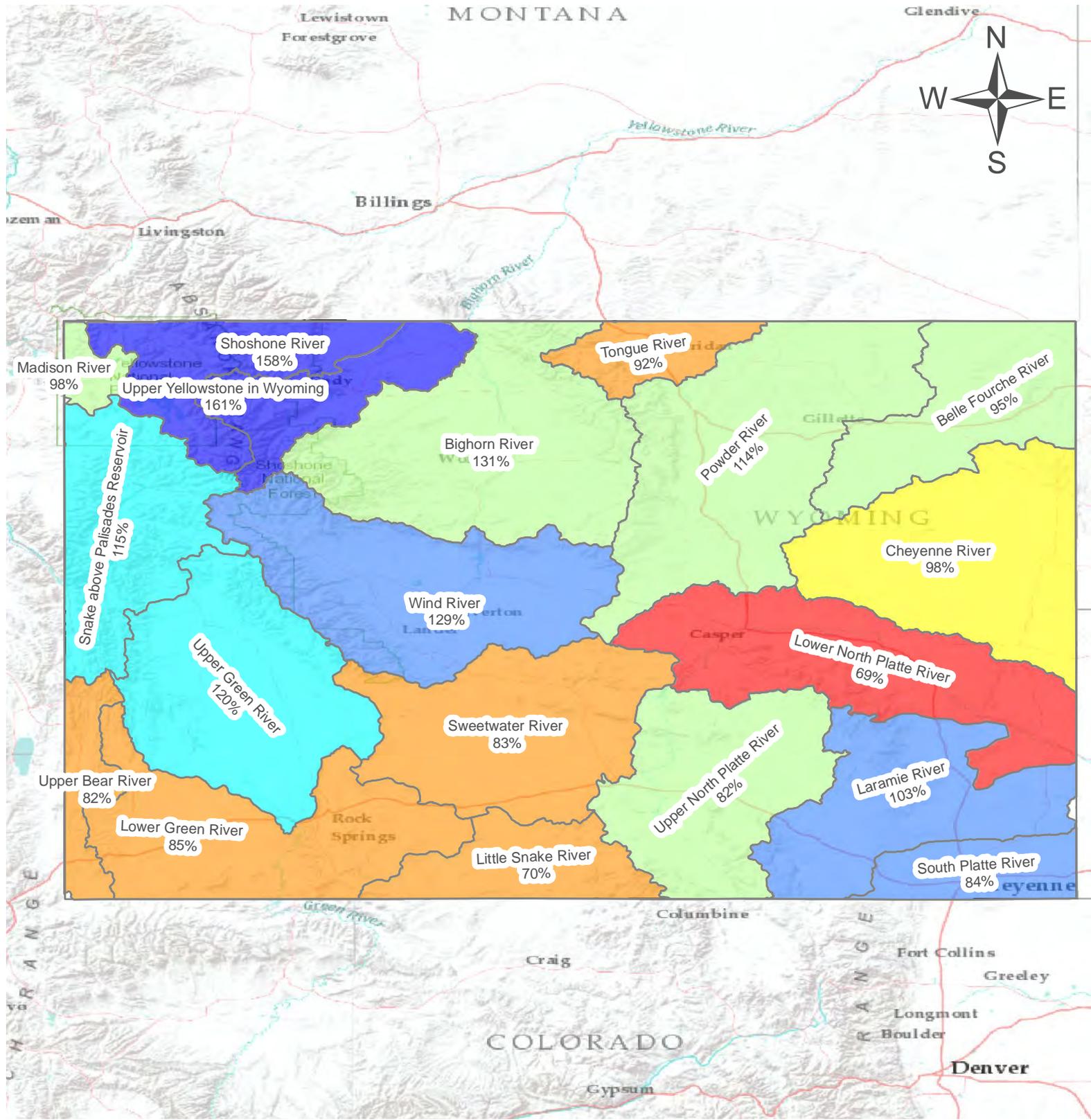
- ▲ > 160%
- ▲ 140-160%
- ▲ 120-139%
- ▲ 100-119%
- ▼ 80-99%
- ▼ 60-79%
- ▼ 40-59%
- ▼ 1-39%
- + 0%
- Unavailable\*

*Provisional Data  
Subject to Revision*



Prepared by:  
USDA/NRCS National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

*\* Data unavailable at time of posting or unavailable long-term normal.*

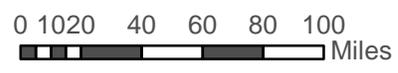


# Statewide Precipitation

As of January 1, 2018:  
99% of Normal Precipitation

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%



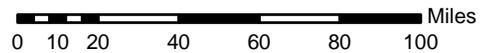
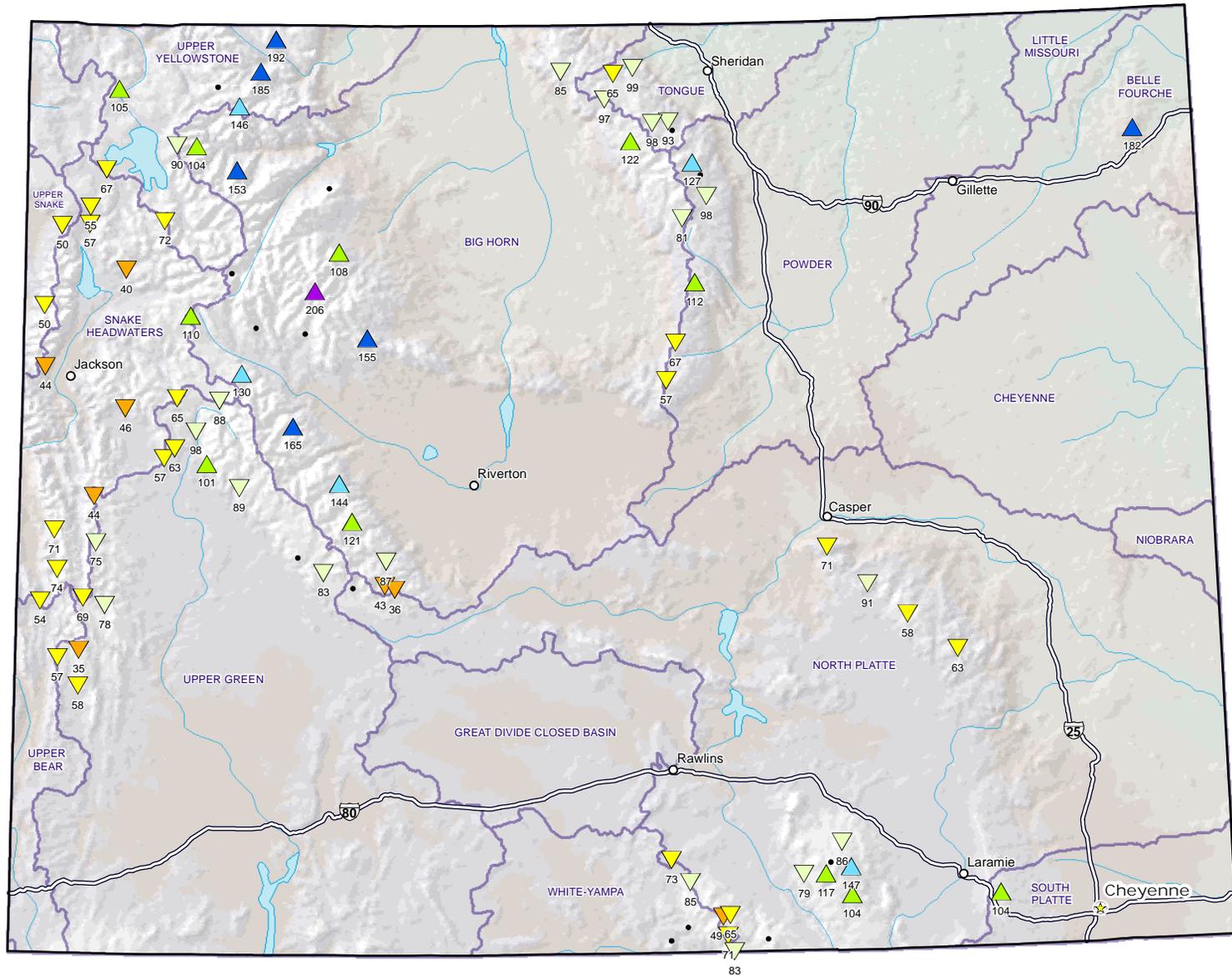
# Wyoming SNOTEL Month to Date (MTD) Precipitation % of Normal

Jan 01, 2018

## Current MTD Precipitation % of 1981-2010 Average

- ▲ > 200%
- ▲ 150-200%
- ▲ 125-149%
- ▲ 100-124%
- ▼ 75-99%
- ▼ 50-74%
- ▼ 25-49%
- ▼ 1-24%
- +
- Unavailable\*

*Provisional Data  
Subject to Revision*



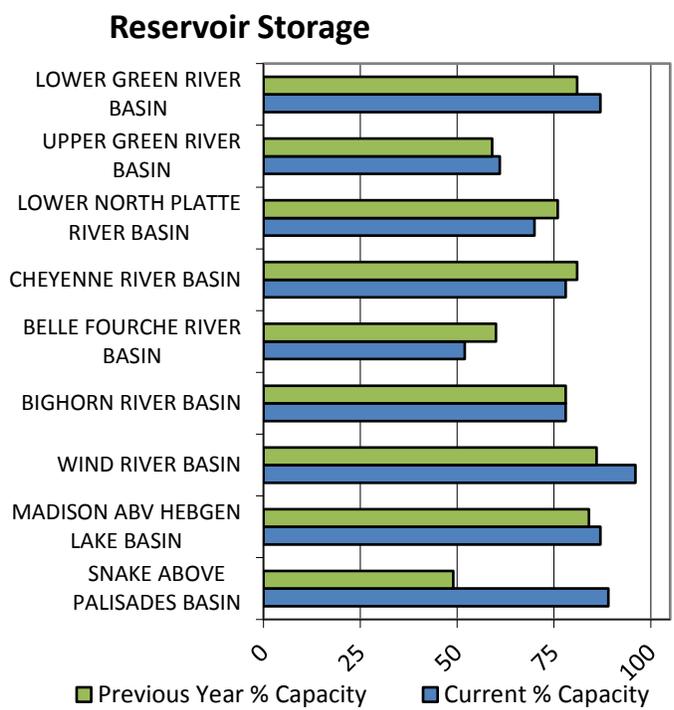
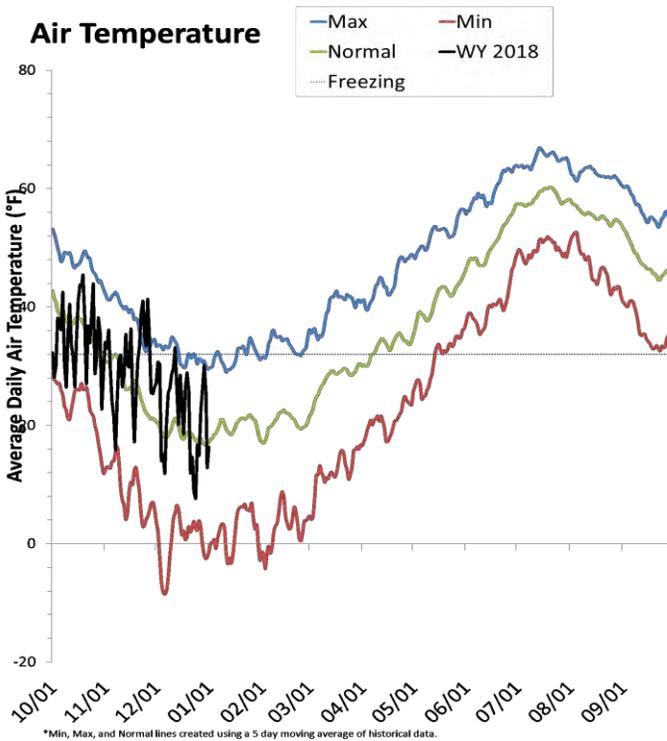
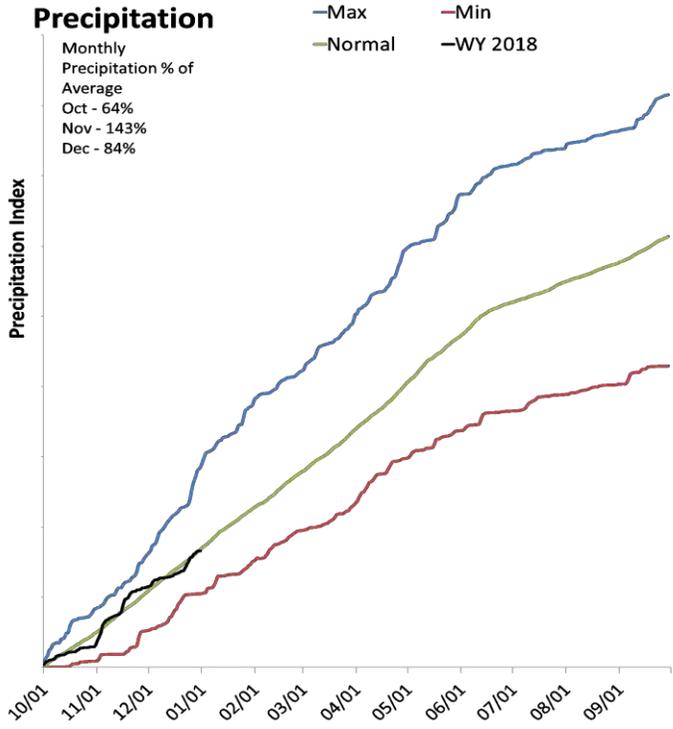
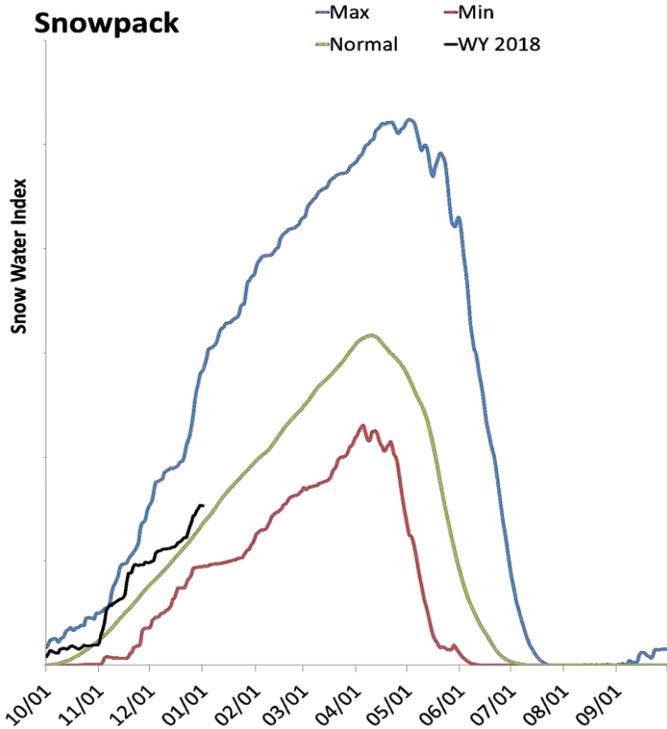
Prepared by:  
USDA/NRCS National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

*\* Data unavailable at time of posting or unavailable long-term normal.*

# Wyoming Statewide

January 1, 2018

Snowpack in Wyoming is above normal at 112% of normal, compared to 115% last year. Precipitation in December was below average at 84%, which brings the seasonal accumulation (Oct-Dec) to 99% of average. Soil moisture at sites with sensors is at 51% of saturation. Reservoir storage is at 80% of capacity, compared to 72% last year. Forecast streamflow volumes range from 38% to 160% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

**Statewide - January 1, 2018**

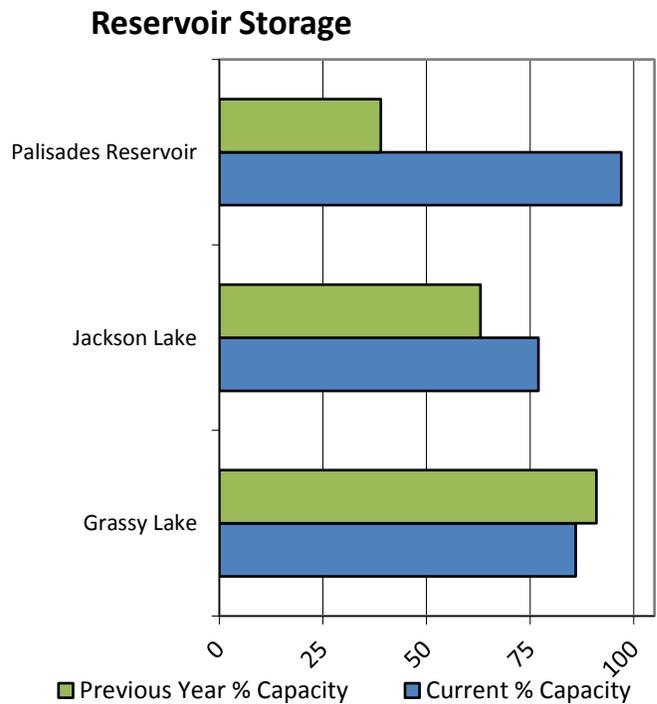
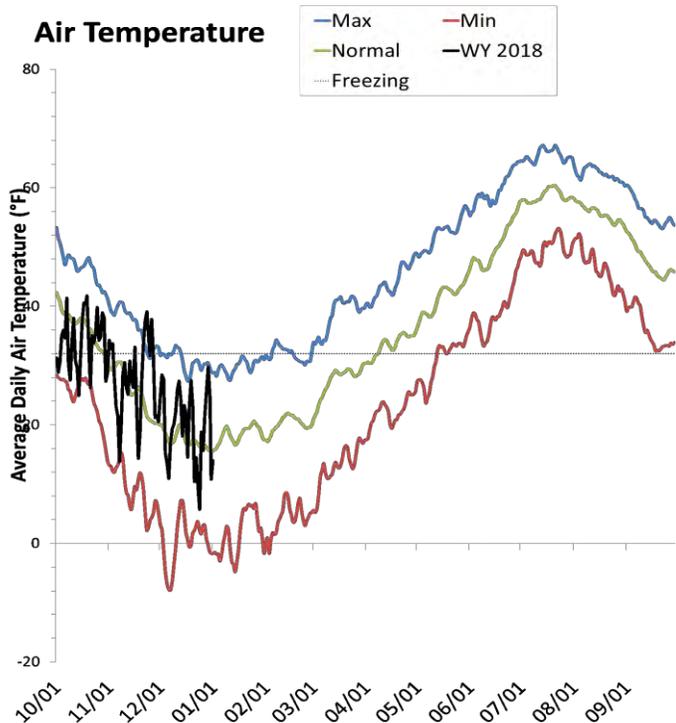
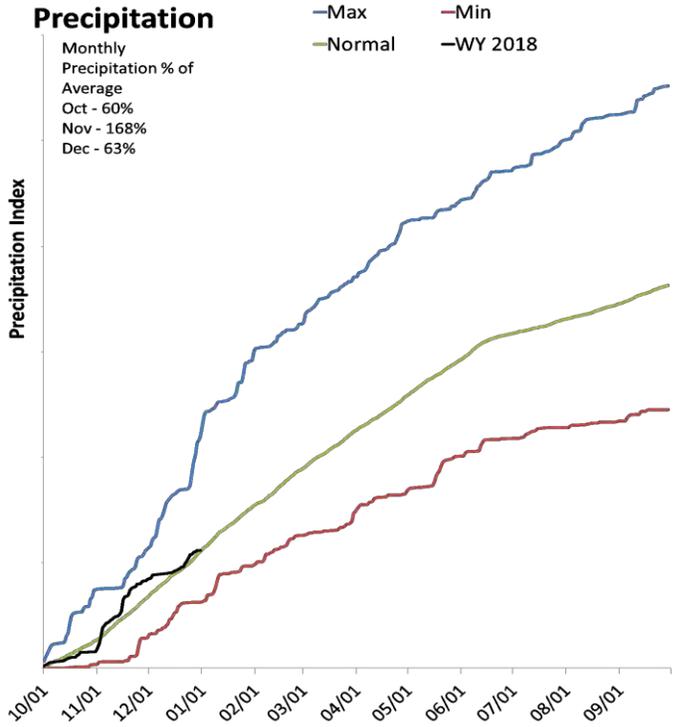
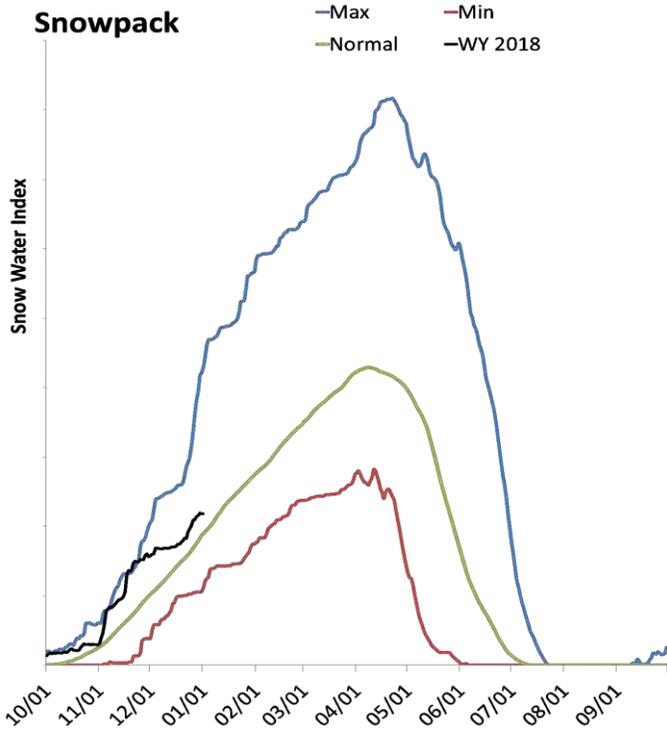
<b>Reservoir Storage End of December, 2017</b>	<b>Current (KAF)</b>	<b>Last Year (KAF)</b>	<b>Average (KAF)</b>	<b>Capacity (KAF)</b>
Hebgen Lake	330.2	316.7	283.2	378.8
Pilot Butte	24.3	25.6	23.1	31.6
Bull Lake	103.9	39.8	75.2	151.8
Boysen	620.2	604.6	521.7	596.0
Buffalo Bill	491.3	475.9	355.5	646.6
Bighorn Lake	912.0	919.1	871.2	1356.0
Tongue River Res	48.2	49.9	26.4	79.1
Shadehill	37.0	37.2	44.1	81.4
Angostura	83.6	89.2	81.1	122.1
Deerfield	14.7	15.0	13.5	15.2
Pactola	50.7	51.7	45.6	55.0
Keyhole	118.2	143.3	87.4	193.8
Belle Fourche	79.0	92.0	101.2	178.4
Seminole	811.6	763.2	553.7	1016.7
Pathfinder	824.1	903.2	536.1	1016.5
Alcova	156.7	157.1	154.9	184.3
Glendo	223.0	265.6	254.7	506.4
Guernsey	16.1	0.0	9.2	45.6
Wheatland #2	52.8	44.5	42.4	98.9
Fontenelle	203.6	203.2	175.3	344.8
Big Sandy	29.9	22.0	16.3	38.3
Meeks Cabin Reservoir	8.7	9.7	9.9	32.5
Viva Naughton Res	33.1	31.6	31.4	42.4
Flaming Gorge Reservoir	3343.2	3130.4	3091.0	3749.0
High Savery Reservoir	10.6	11.6	11.7	22.4
Woodruff Narrows Reservoir	46.0	46.4	27.3	57.3
Jackson Lake	655.7	533.8	424.1	847.0
Palisades Reservoir	1354.3	552.9	882.5	1400.0
Grassy Lake	13.0	13.8	11.6	15.2
<b>Basin-wide Total</b>	<b>10695.8</b>	<b>9549.0</b>	<b>8761.3</b>	<b>13303.1</b>
<b># of reservoirs</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>

<b>Watershed Snowpack Analysis January 1, 2018</b>	<b># of Sites</b>	<b>% Median</b>	<b>Last Year % Median</b>
SNAKE ABOVE PALISADES BASIN	20	115%	121%
MADISON ABV HEBGEN LAKE BASIN	4	98%	92%
UPPER YELLOWSTONE IN WY BASIN	8	161%	114%
WIND RIVER BASIN	9	130%	119%
BIGHORN RIVER BASIN	10	131%	105%
SHOSHONE RIVER BASIN	4	158%	127%
POWDER RIVER BASIN	6	115%	82%
TONGUE RIVER BASIN	6	93%	104%
BELLE FOURCHE RIVER BASIN	1	95%	123%
CHEYENNE RIVER BASIN	2	98%	102%
UPPER NORTH PLATTE RIVER BASIN	17	82%	97%
SWEETWATER RIVER BASIN	3	83%	145%
LOWER NORTH PLATTE RIVER BASIN	4	69%	97%
LARAMIE RIVER BASIN	7	103%	96%
SOUTH PLATTE RIVER BASIN	4	84%	87%
LITTLE SNAKE RIVER BASIN	8	70%	103%
UPPER GREEN RIVER BASIN	12	120%	136%
LOWER GREEN RIVER BASIN	7	85%	119%
UPPER BEAR RIVER BASIN	7	82%	118%
<b>Statewide</b>	<b>80</b>	<b>112%</b>	<b>115%</b>

# Snake above Palisades Reservoir

January 1, 2018

Snowpack in the Snake above Palisades Reservoir is above normal at 115% of normal, compared to 121% last year. Precipitation in December was much below average at 62%, which brings the seasonal accumulation (Oct-Dec) to 100% of average. Soil moisture at sites with sensors is at 58% of saturation. Reservoir storage is at 89% of capacity, compared to 49% last year. Forecast streamflow volumes range from 82% to 128% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

### Snake Above Palisades Basin Streamflow Forecasts - January 1, 2018

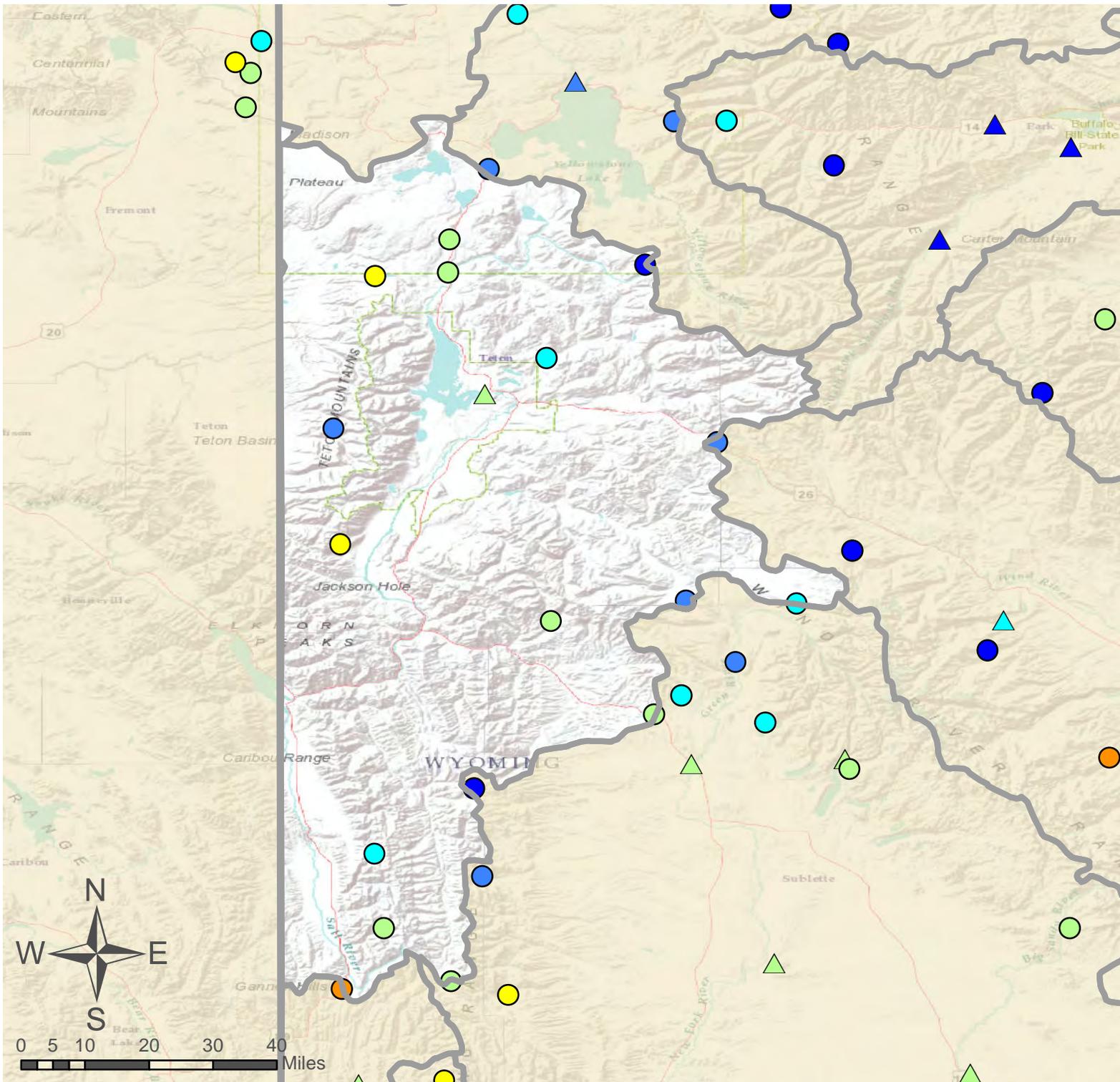
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

SNAKE ABOVE PALISADES BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Snake R nr Moran <sup>2</sup>	APR-JUL	615	740	820	107%	905	1030	765
	APR-SEP	680	815	910	108%	1000	1140	845
Snake R ab Reservoir nr Alpine <sup>2</sup>	APR-JUL	1880	2260	2520	116%	2780	3150	2170
	APR-SEP	2170	2600	2890	116%	3180	3610	2500
Snake R nr Irwin <sup>2</sup>	APR-JUL	2190	2730	3100	103%	3470	4010	3010
	APR-SEP	2550	3160	3590	103%	4010	4630	3500
Snake R nr Heise <sup>2</sup>	APR-JUL	2370	2940	3330	103%	3720	4300	3240
	APR-SEP	2780	3440	3880	103%	4330	4990	3780
Pacific Ck at Moran	APR-JUL	148	184	210	128%	230	270	164
	APR-SEP	157	194	220	127%	245	280	173
Buffalo Fk ab Lava Ck nr Moran	APR-JUL	255	305	340	121%	375	425	280
	APR-SEP	290	350	390	122%	430	485	320
Greys R ab Reservoir nr Alpine	APR-JUL	198	255	300	98%	340	395	305
	APR-SEP	230	300	345	96%	395	460	360
Salt R ab Reservoir nr Etna	APR-JUL	109	190	245	82%	300	380	300
	APR-SEP	149	245	305	82%	370	465	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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Grassy Lake	13.0	13.8	11.6	15.2
Jackson Lake	655.7	533.8	424.1	847.0
Palisades Reservoir	1354.3	552.9	882.5	1400.0
Basin-wide Total	2022.9	1100.4	1318.2	2262.2
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
SNAKE above Jackson Lake	13	112%	127%
PACIFIC CREEK	4	122%	150%
BUFFALO FORK	2	152%	131%
GROS VENTRE RIVER	5	138%	128%
HOBACK RIVER	5	125%	142%
GREYS RIVER	4	117%	122%
SALT RIVER	3	100%	109%
SNAKE AB PALISADES RESV	29	114%	128%



# Snake above Palisades Reservoir

- SNOTEL Site
- △ Forecast Point

## % of Normal

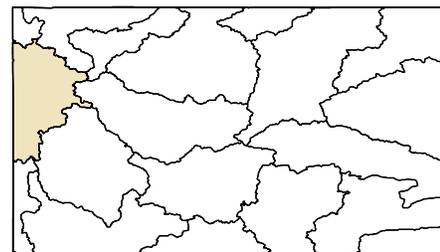
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

115% of Normal SWE

100% of Normal Precipitation

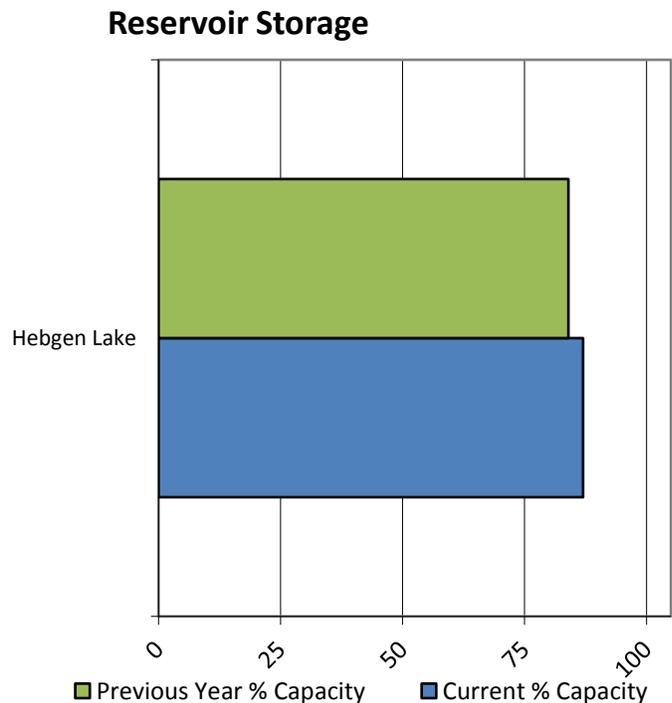
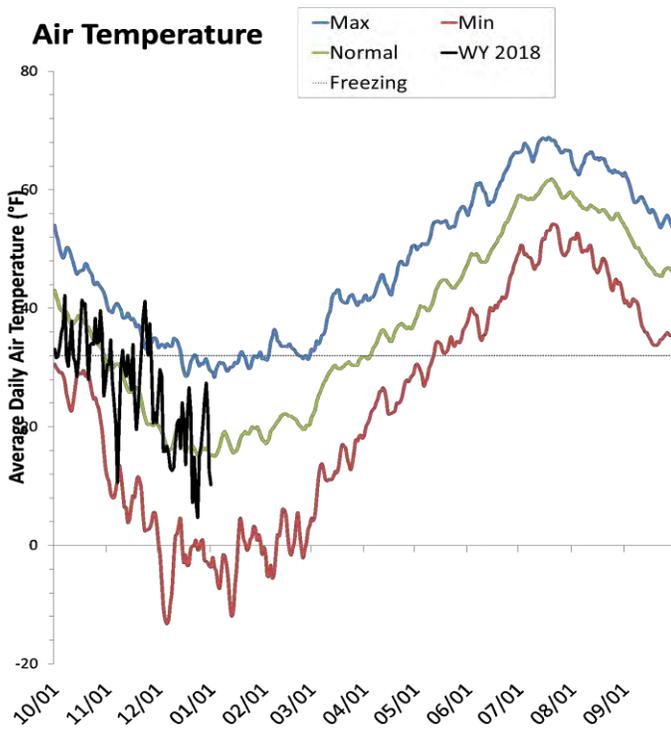
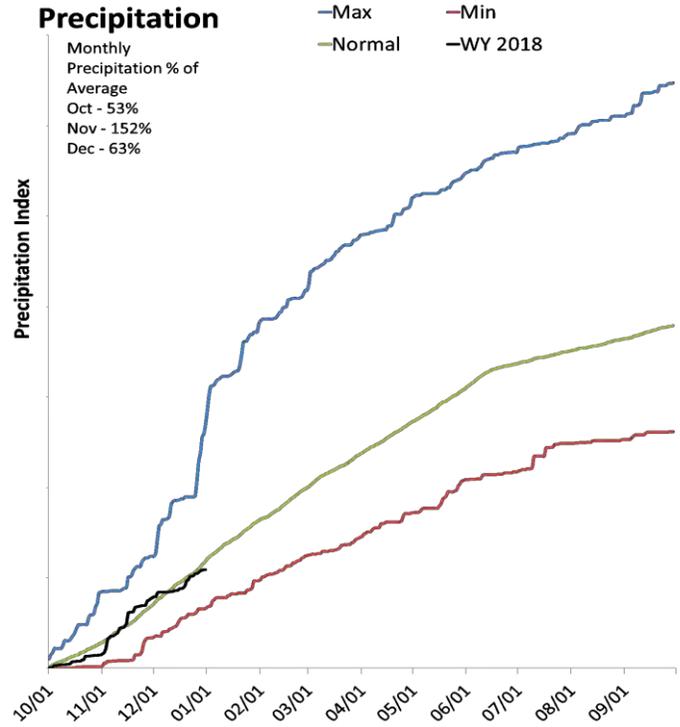
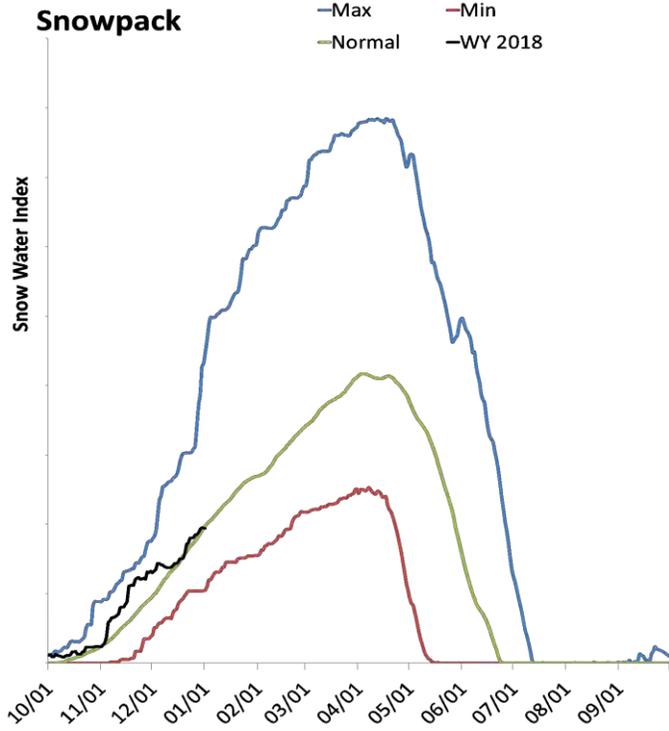
62% of Normal Precipitation Last Month



# Madison River above Hebgen Lake

January 1, 2018

Snowpack in the Madison River above Hebgen Lake is near normal at 98% of normal, compared to 92% last year. Precipitation in December was much below average at 62%, which brings the seasonal accumulation (Oct-Dec) to 92% of average. Reservoir storage is at 87% of capacity, compared to 84% last year. Forecast streamflow volumes range from 101% to 101% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

### Madison Abv Hebgen Lake Basin Streamflow Forecasts - January 1, 2018

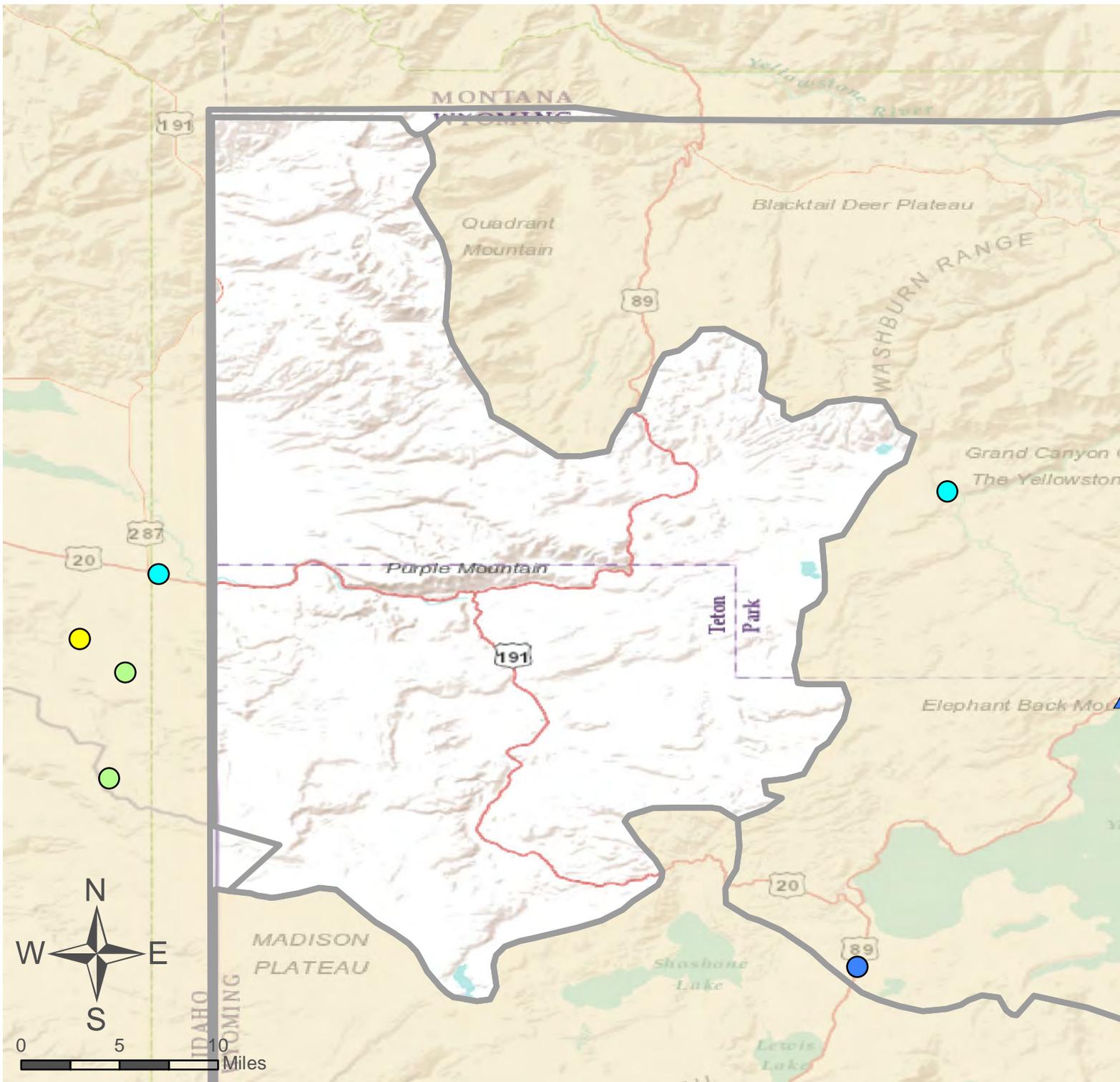
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

MADISON ABV HEBGEN LAKE BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Hebgen Lake Inflow								
	APR-JUL	275	335	375	101%	410	470	370
	APR-SEP	355	425	475	101%	520	590	470

- 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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Hebgen Lake	330.2	316.7	283.2	378.8
Basin-wide Total	330.2	316.7	283.2	378.8
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
MADISON ABV HEBGEN LAKE	5	98%	94%



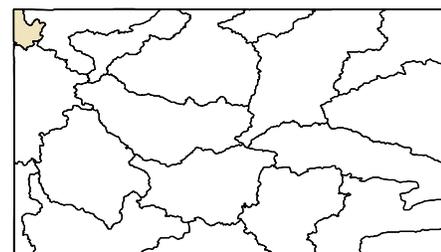
# Madison River above Hebgen Lake

As of January 1, 2018:

98% of Normal SWE

92% of Normal Precipitation

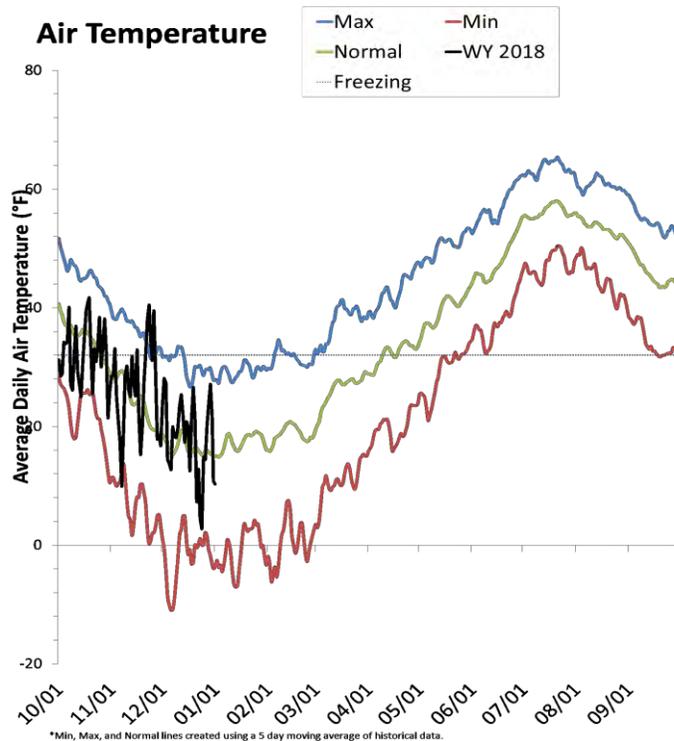
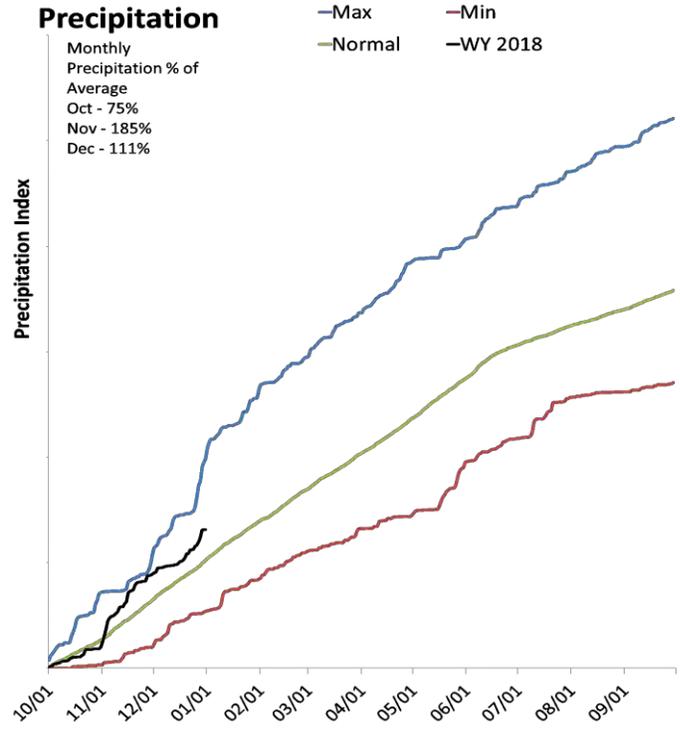
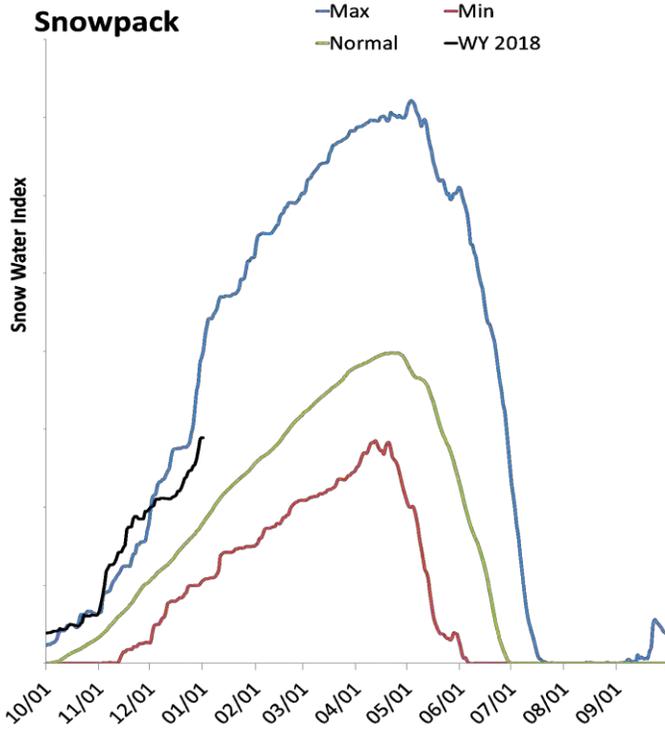
62% of Normal Precipitation Last Month



# Upper Yellowstone in Wyoming

January 1, 2018

Snowpack in the Upper Yellowstone in Wyoming is much above normal at 161% of normal, compared to 114% last year. Precipitation in December was above average at 111%, which brings the seasonal accumulation (Oct-Dec) to 129% of average. Soil moisture at sites with sensors is at 79% of saturation. Forecast streamflow volumes range from 135% to 138% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

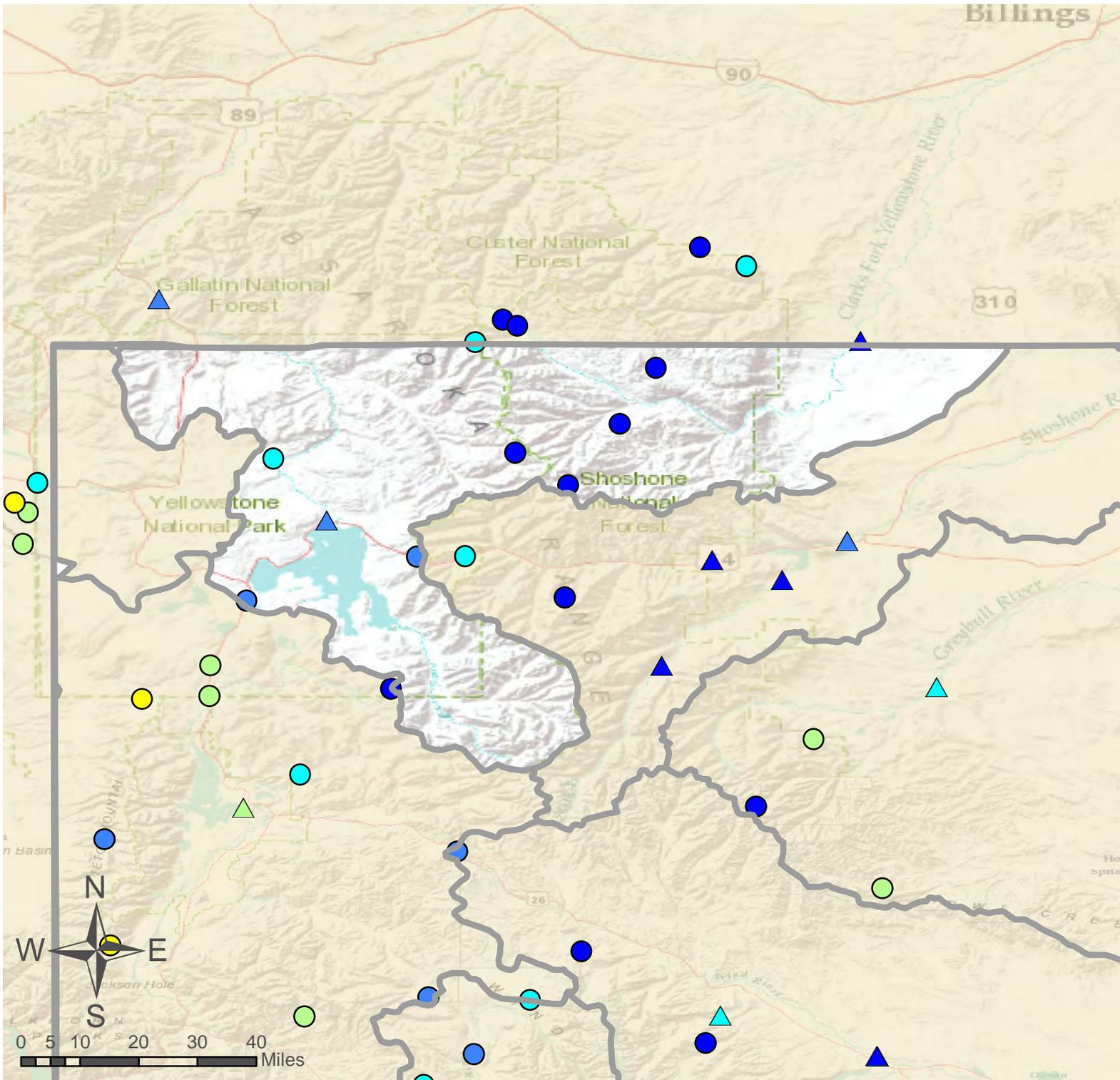
## Upper Yellowstone In Wy Basin Streamflow Forecasts - January 1, 2018

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

UPPER YELLOWSTONE IN WY BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
<hr/>								
Yellowstone R at Yellowstone Lake Outlet	APR-JUL	630	725	795	138%	860	960	575
	APR-SEP	850	980	1070	139%	1160	1300	770
Yellowstone R at Corwin Springs	APR-JUL	1760	1990	2150	135%	2310	2540	1590
	APR-SEP	2100	2370	2560	136%	2740	3020	1880
Clarks Fk Yellowstone R nr Belfry <sup>2</sup>	APR-JUL	635	725	785	154%	845	935	510
	APR-SEP	710	805	870	158%	935	1030	550

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

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
UPPER YELLOWSTONE IN WY	8	161%	114%
CLARKS FORK in WY	7	178%	115%



# Upper Yellowstone in Wyoming

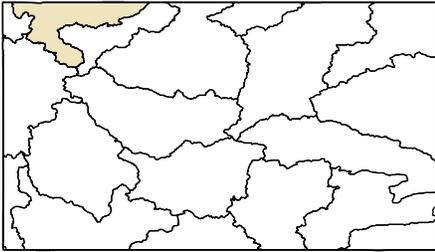
- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

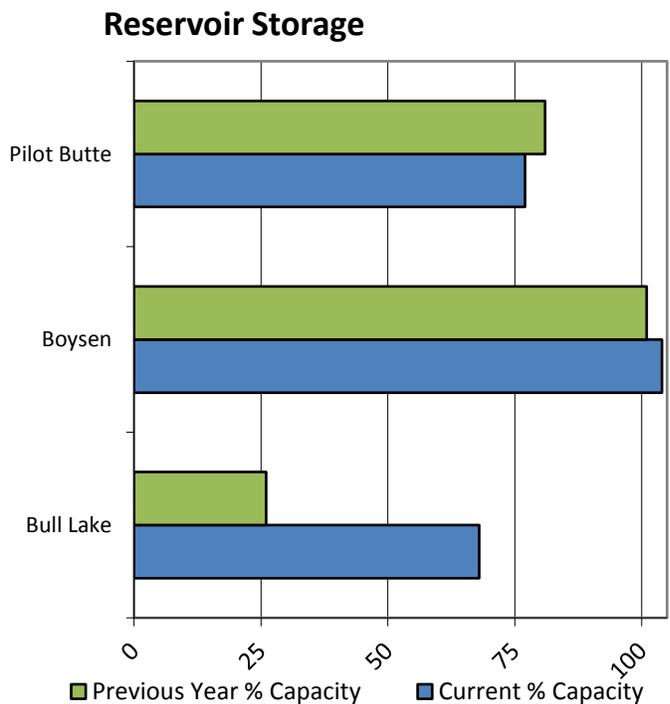
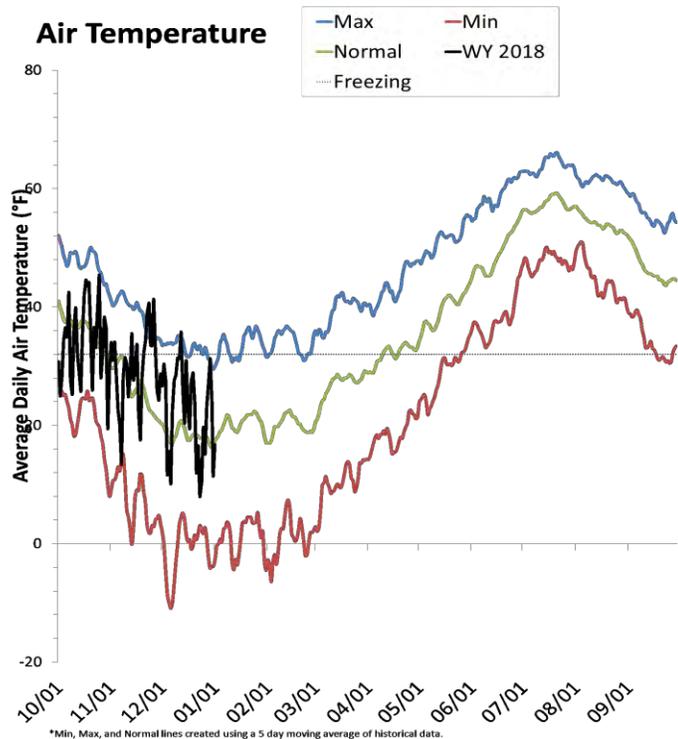
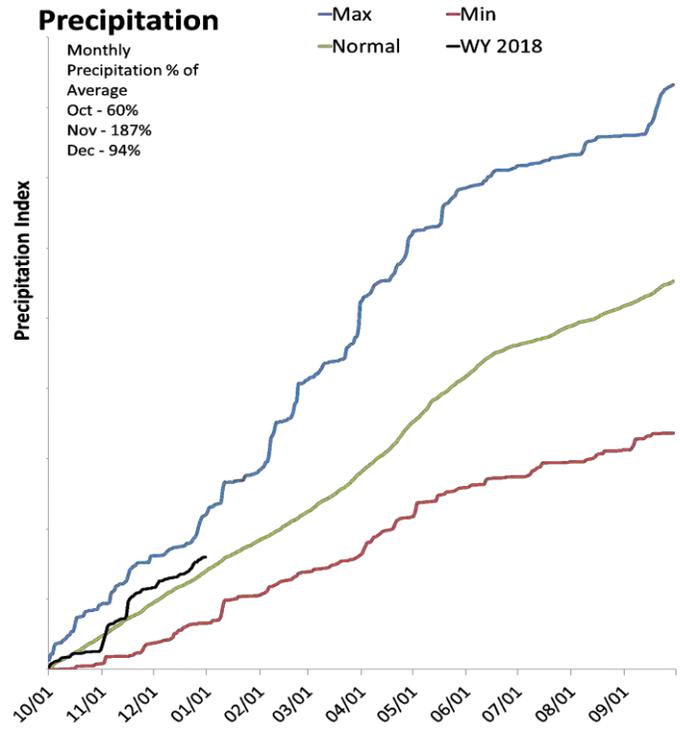
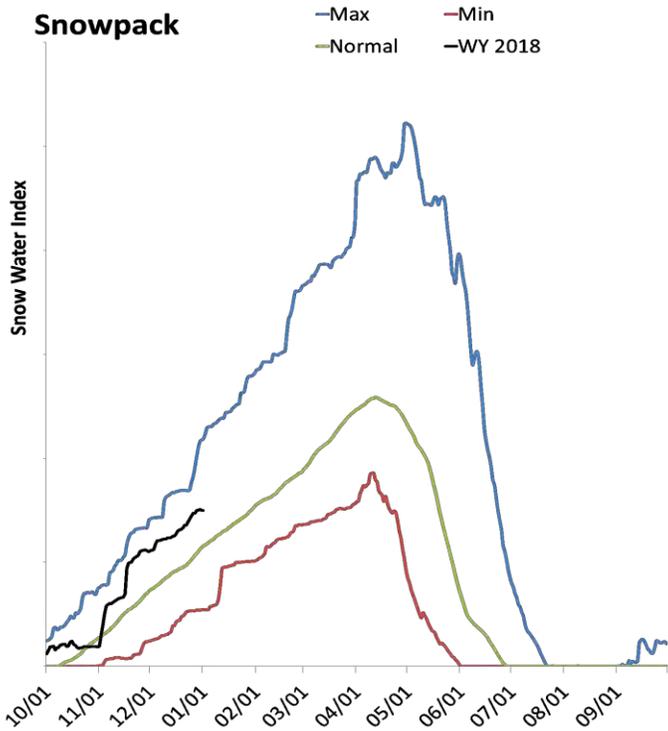
- 161% of Normal SWE
- 129% of Normal Precipitation
- 111% of Normal Precipitation Last Month



# Wind River Basin

January 1, 2018

Snowpack in the Wind River Basin is above normal at 130% of normal, compared to 119% last year. Precipitation in December was near average at 94%, which brings the seasonal accumulation (Oct-Dec) to 114% of average. Reservoir storage is at 96% of capacity, compared to 86% last year. Forecast streamflow volumes range from 95% to 160% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

## Wind River Basin Streamflow Forecasts - January 1, 2018

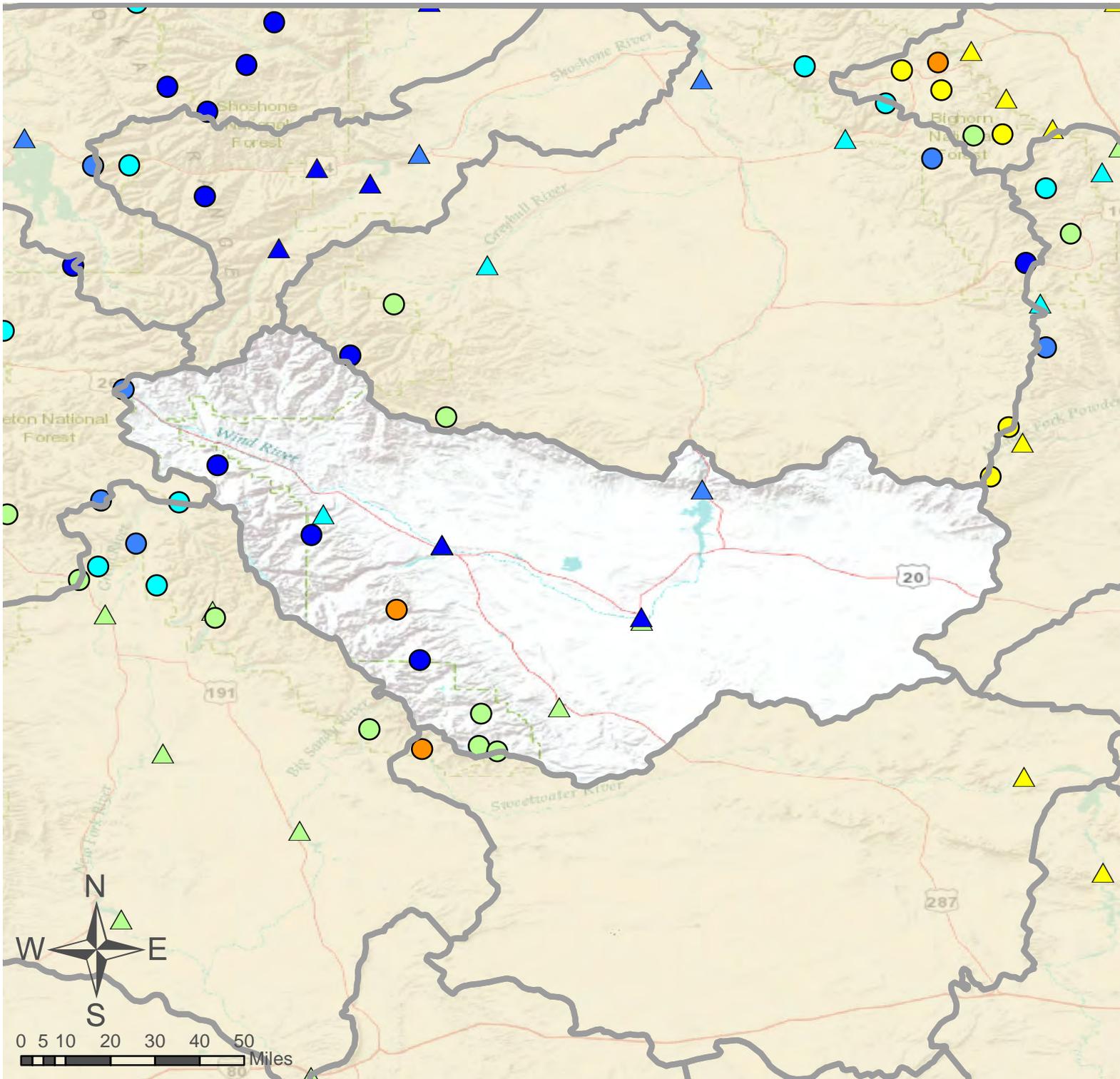
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

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	66	74	80	121%	86	94	66
	APR-SEP	93	103	110	120%	117	127	92
Wind R Ab Bull Lake Ck	APR-JUL	545	645	715	157%	780	880	455
	APR-SEP	600	710	785	160%	860	965	490
Bull Lake Ck nr Lenore	APR-JUL	131	152	167	120%	181	200	139
	APR-SEP	160	185	200	118%	220	245	169
Wind R at Riverton	APR-JUL	575	685	760	160%	835	945	475
	APR-SEP	680	800	885	161%	970	1090	550
Little Popo Agie R nr Lander	APR-JUL	20	32	40	95%	48	60	42
	APR-SEP	25	38	46	94%	54	67	49
Little Wind R nr Riverton	APR-JUL	115	210	275	102%	340	435	270
	APR-SEP	132	235	300	102%	370	470	295
Boysen Reservoir Inflow	APR-JUL	540	745	890	146%	1030	1240	610
	APR-SEP	595	815	965	145%	1120	1340	665

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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bull Lake	103.9	39.8	75.2	151.8
Boysen	620.2	604.6	521.7	596.0
Pilot Butte	24.3	25.6	23.1	31.6
Basin-wide Total	748.4	670.0	620.0	779.4
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
WIND above Dubois	2	165%	116%
LITTLE WIND	2	125%	101%
POPO AGIE	4	110%	128%
WIND RIVER	9	130%	119%

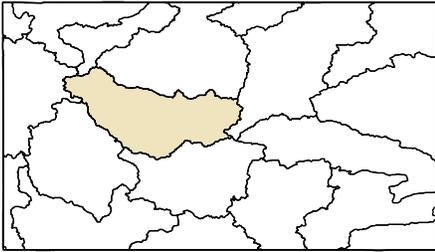


# Wind River Basin

- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%



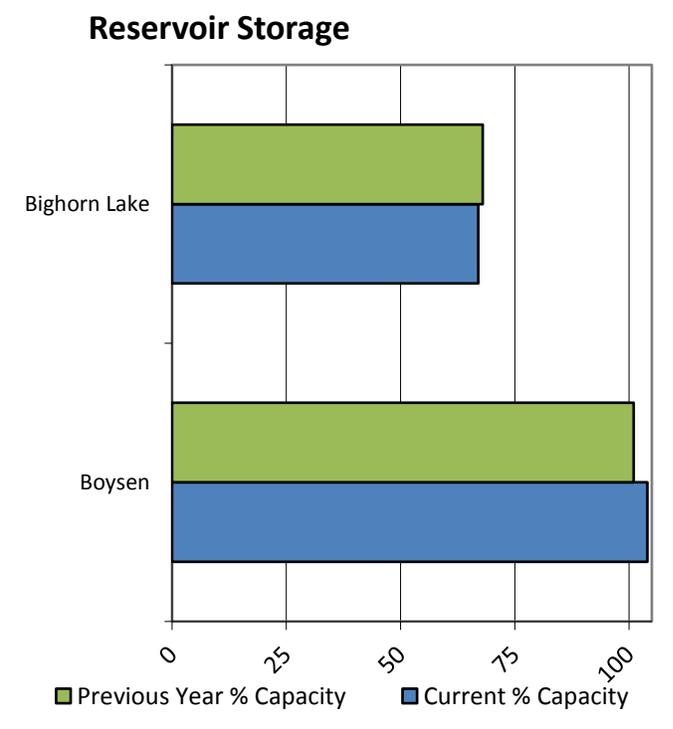
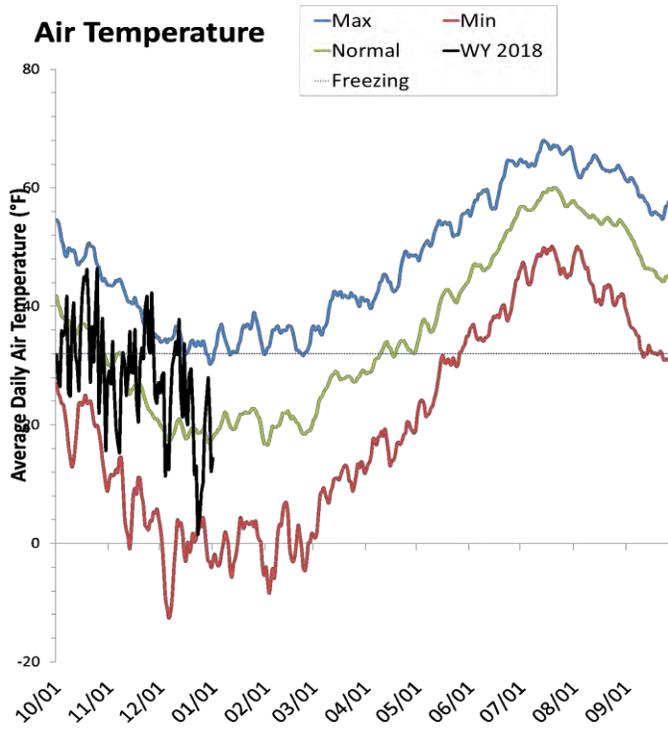
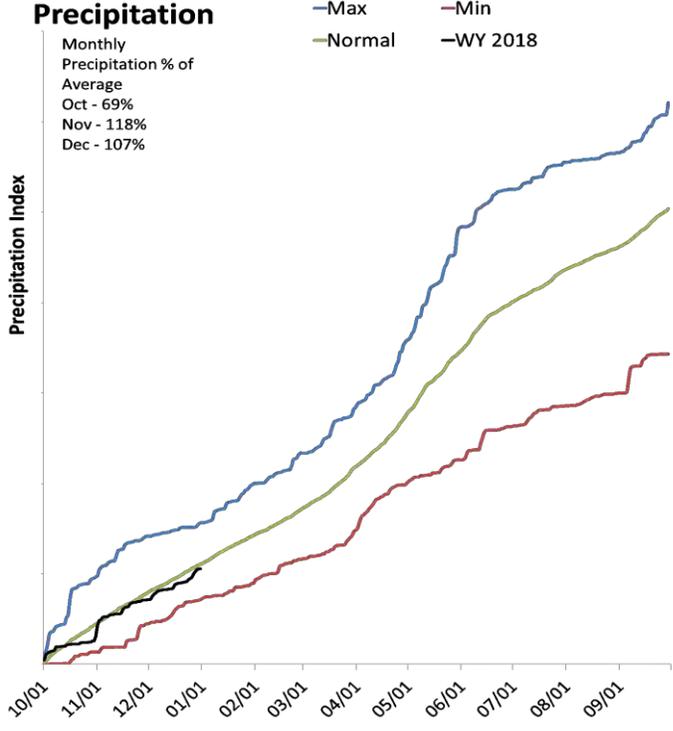
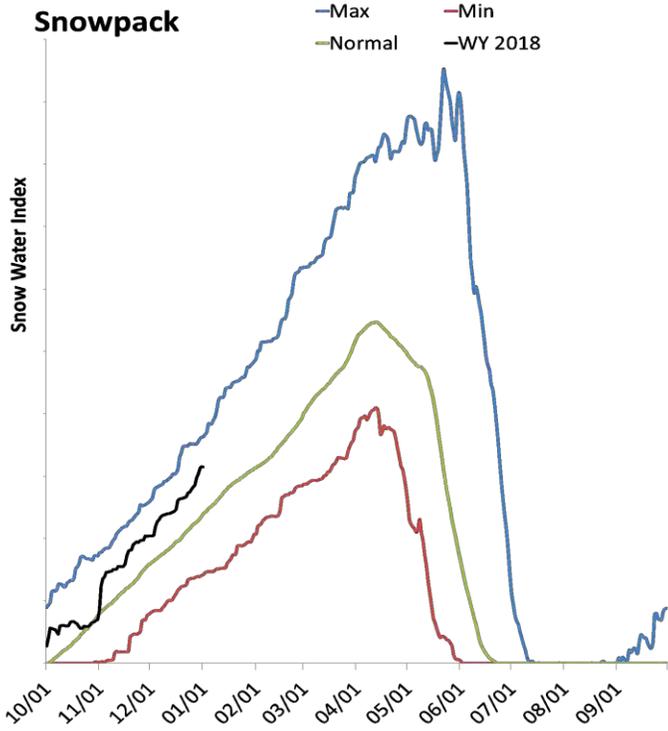
As of January 1, 2018:

- 129% of Normal SWE
- 114% of Normal Precipitation
- 94% of Normal Precipitation Last Month

# Bighorn River Basin

January 1, 2018

Snowpack in the Bighorn River Basin is much above normal at 131% of normal, compared to 105% last year. Precipitation in December was near average at 107%, which brings the seasonal accumulation (Oct-Dec) to 95% of average. Reservoir storage is at 78% of capacity, compared to 78% last year. Forecast streamflow volumes range from 115% to 148% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

## Bighorn River Basin Streamflow Forecasts - January 1, 2018

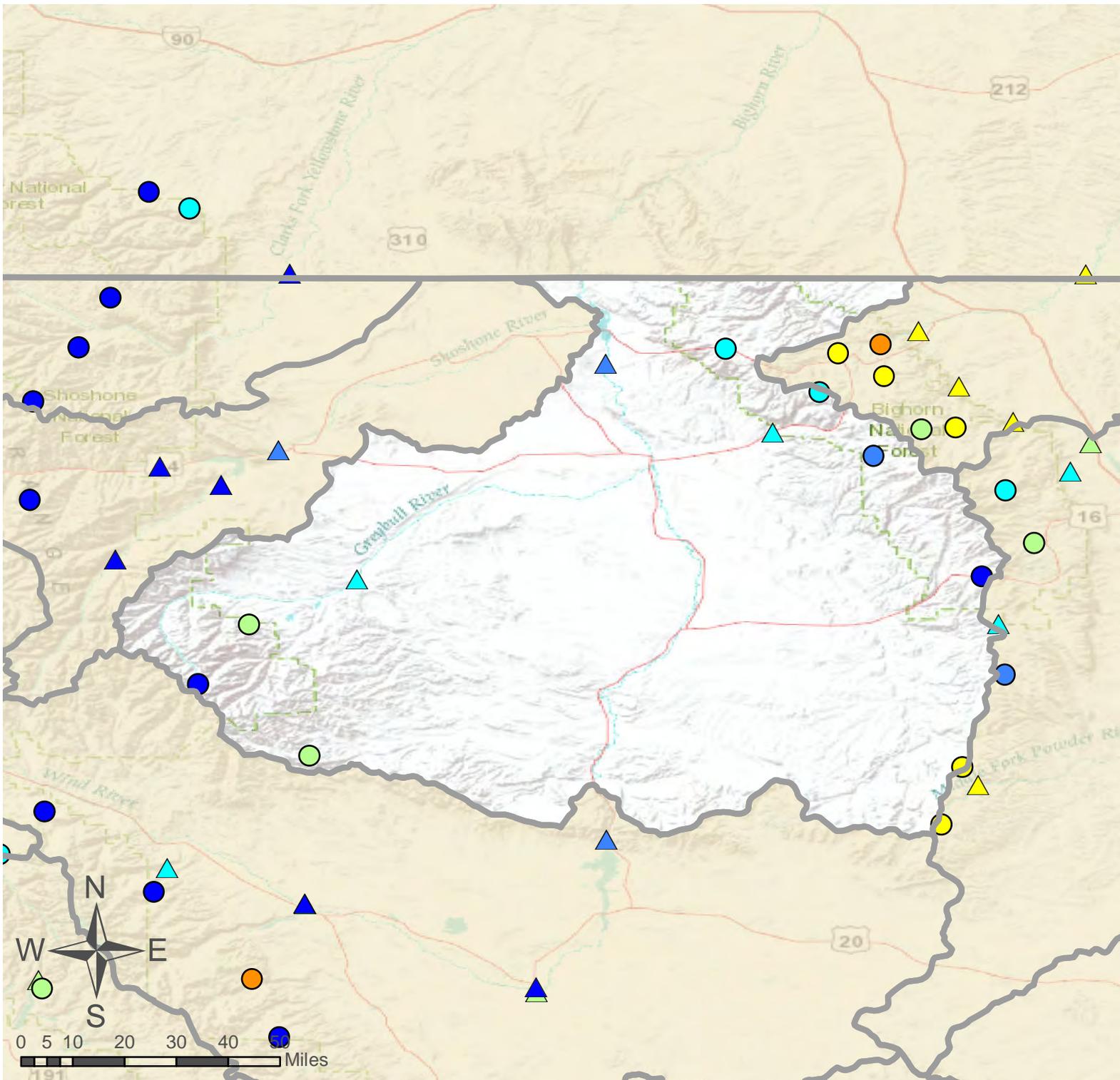
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

BIGHORN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Boysen Reservoir Inflow	APR-JUL	540	745	890	146%	1030	1240	610
	APR-SEP	595	815	965	145%	1120	1340	665
Greybull R at Meeteetse	APR-JUL	106	139	162	124%	184	215	131
	APR-SEP	153	192	220	124%	245	285	177
Shell Ck nr Shell	APR-JUL	46	56	63	115%	69	79	55
	APR-SEP	57	68	75	114%	82	93	66
Bighorn R at Kane	APR-JUL	745	1040	1240	148%	1430	1730	840
	APR-SEP	805	1120	1340	148%	1550	1870	905

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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Boysen	620.2	604.6	521.7	596.0
Bighorn Lake	912.0	919.1	871.2	1356.0
Basin-wide Total	1532.2	1523.7	1392.9	1952.0
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
NOWOOD RIVER	4	118%	73%
GREYBULL RIVER	2	205%	148%
SHELL CREEK	3	124%	115%
BIGHORN RIVER	10	131%	105%

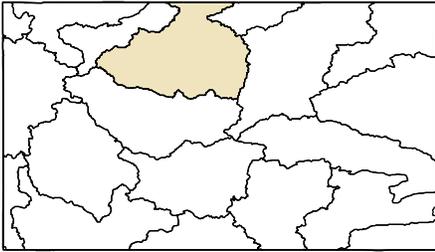


# Bighorn River Basin

- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%



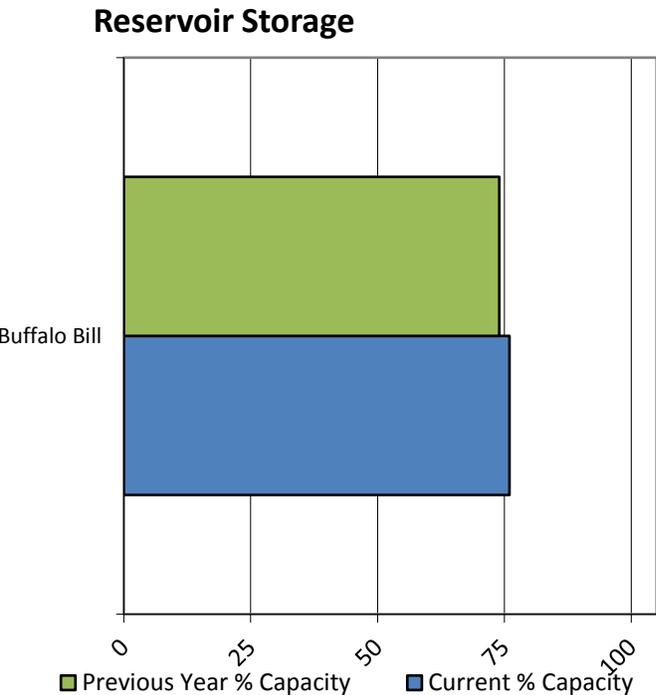
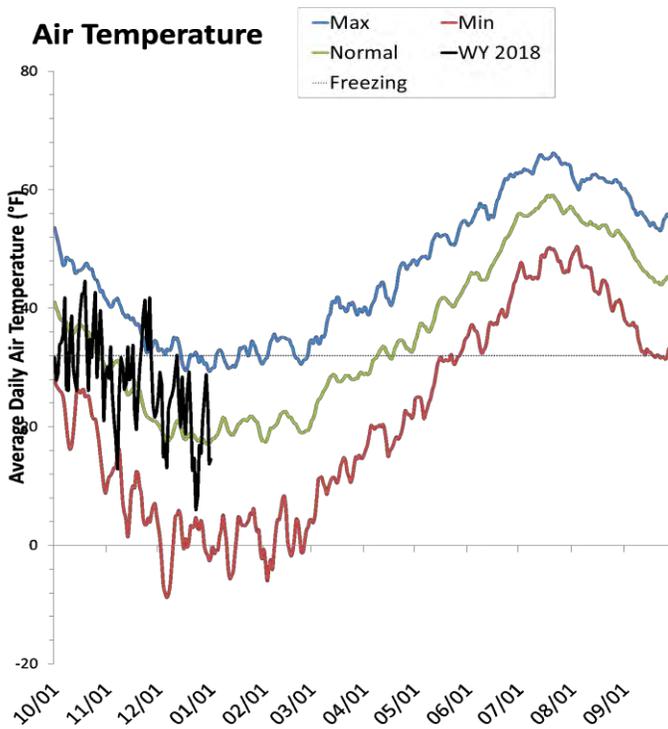
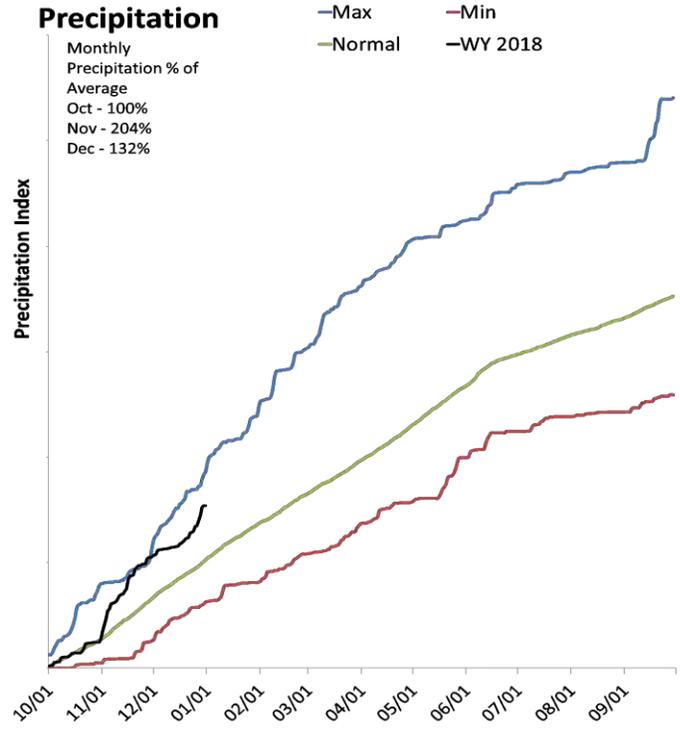
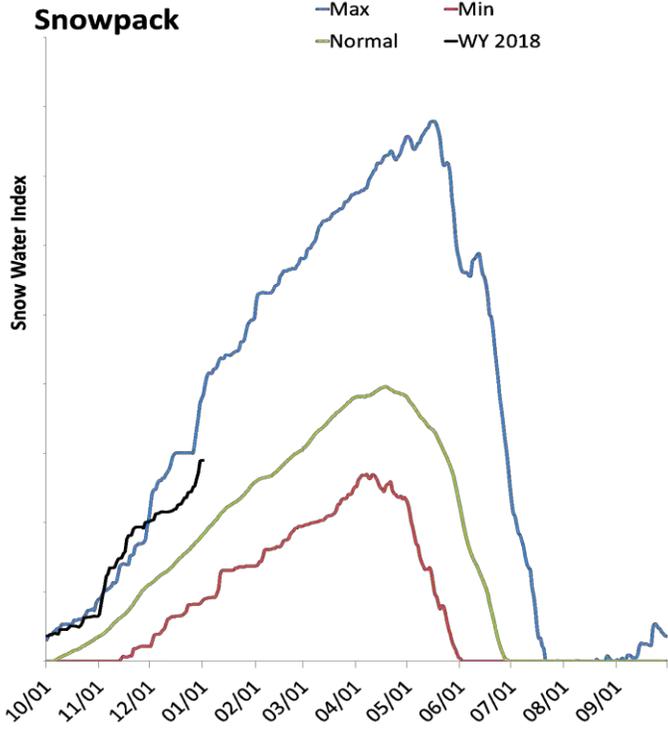
As of January 1, 2018:

- 131% of Normal SWE
- 95% of Normal Precipitation
- 107% of Normal Precipitation Last Month

# Shoshone River Basin

January 1, 2018

Snowpack in the Shoshone River Basin is much above average at 158% of normal, compared to 127% last year. Precipitation in December was above average at 124%, which brings the seasonal accumulation (Oct-Dec) to 142% of average. Reservoir storage is at 76% of capacity, compared to 74% last year. Forecast streamflow volumes range from 148% to 153% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

## Shoshone River Basin Streamflow Forecasts - January 1, 2018

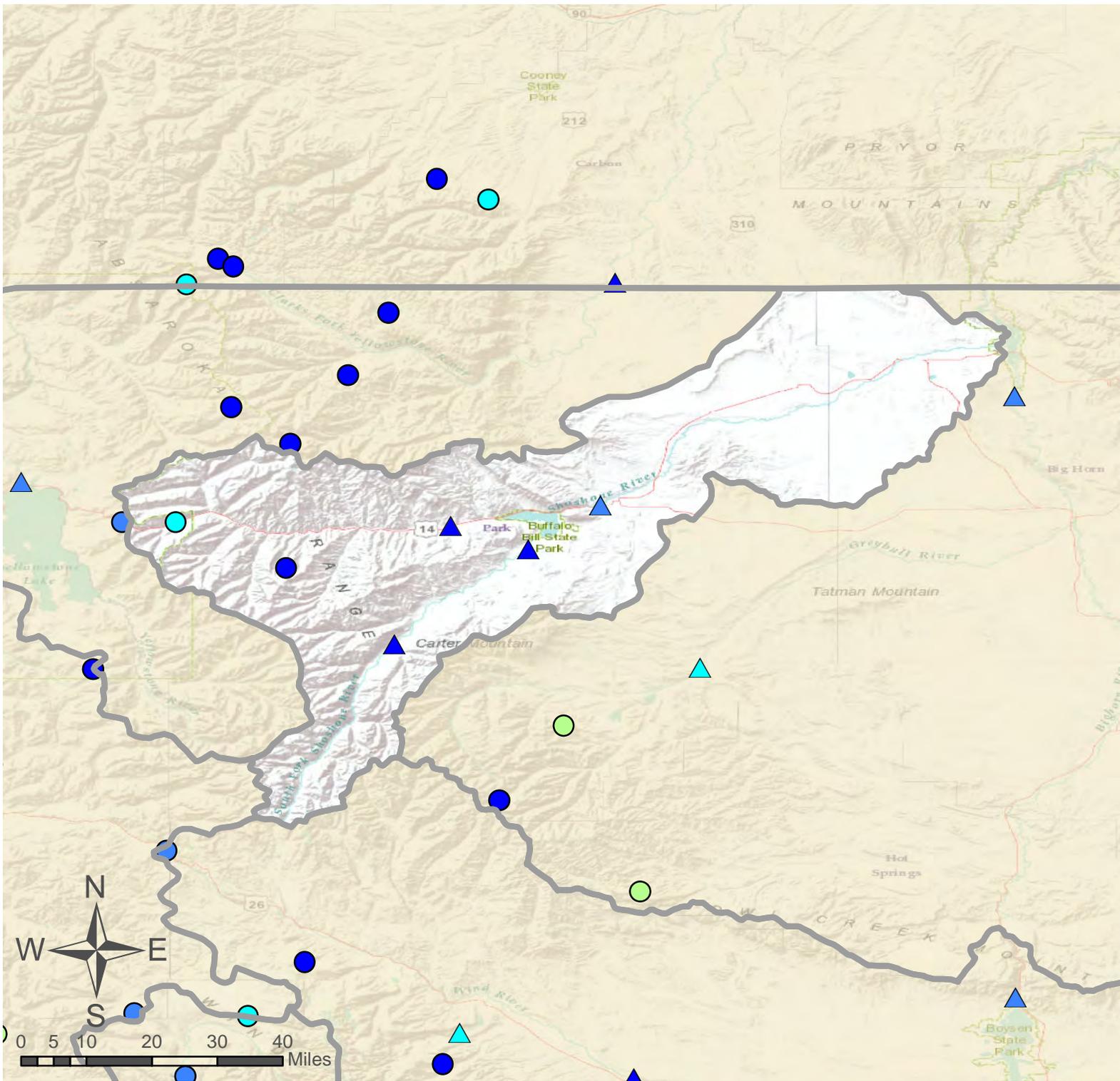
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

SHOSHONE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
NF Shoshone R at Wapiti	APR-JUL	565	640	695	151%	745	820	460
	APR-SEP	635	715	775	150%	830	910	515
SF Shoshone R nr Valley	APR-JUL	270	305	330	153%	355	390	215
	APR-SEP	315	355	385	157%	410	455	245
SF Shoshone R ab Buffalo Bill Reservoir	APR-JUL	210	260	295	153%	330	380	193
	APR-SEP	220	275	315	158%	355	410	200
Buffalo Bill Reservoir Inflow <sup>2</sup>	APR-JUL	850	980	1000	148%	1160	1290	675
	APR-SEP	950	1090	1110	149%	1280	1420	745

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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Buffalo Bill	491.3	475.9	355.5	646.6
Basin-wide Total	491.3	475.9	355.5	646.6
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
SHOSHONE RIVER	4	158%	127%



# Shoshone River Basin

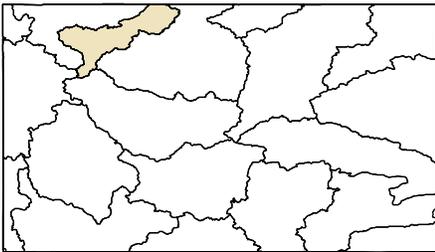
- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

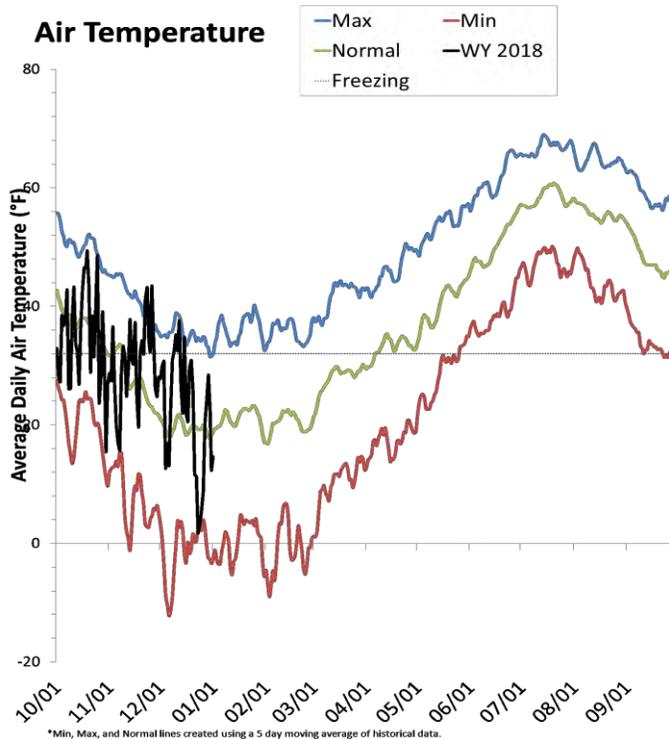
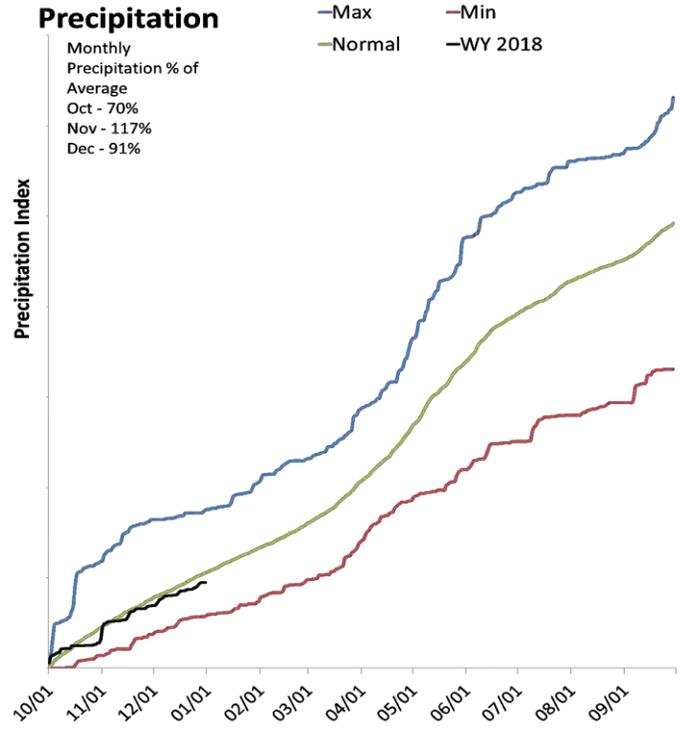
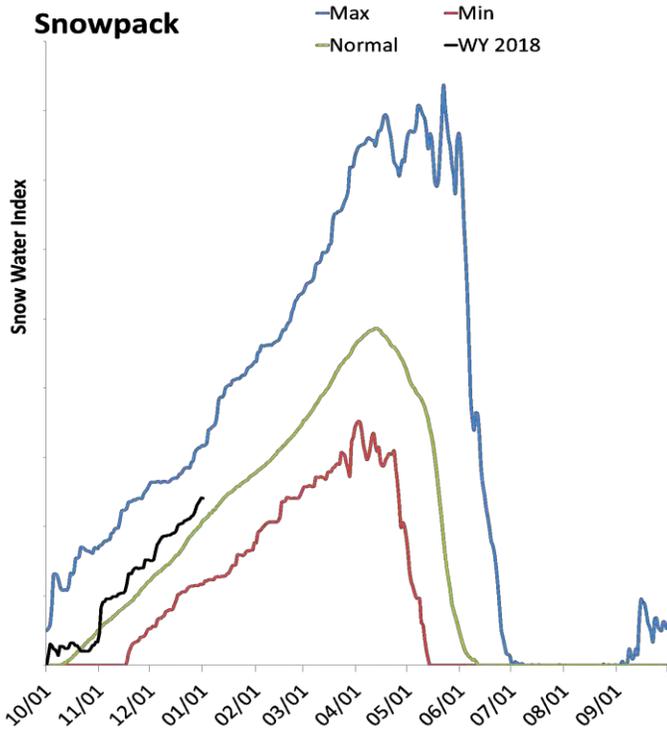
- 158% of Normal SWE
- 142% of Normal Precipitation
- 124% of Normal Precipitation Last Month



# Powder River Basin

January 1, 2018

Snowpack in the Powder River Basin is above normal at 115% of normal, compared to 82% last year. Precipitation in December was near average at 93%, which brings the seasonal accumulation (Oct-Dec) to 90% of average. Forecast streamflow volumes range from 87% to 133% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

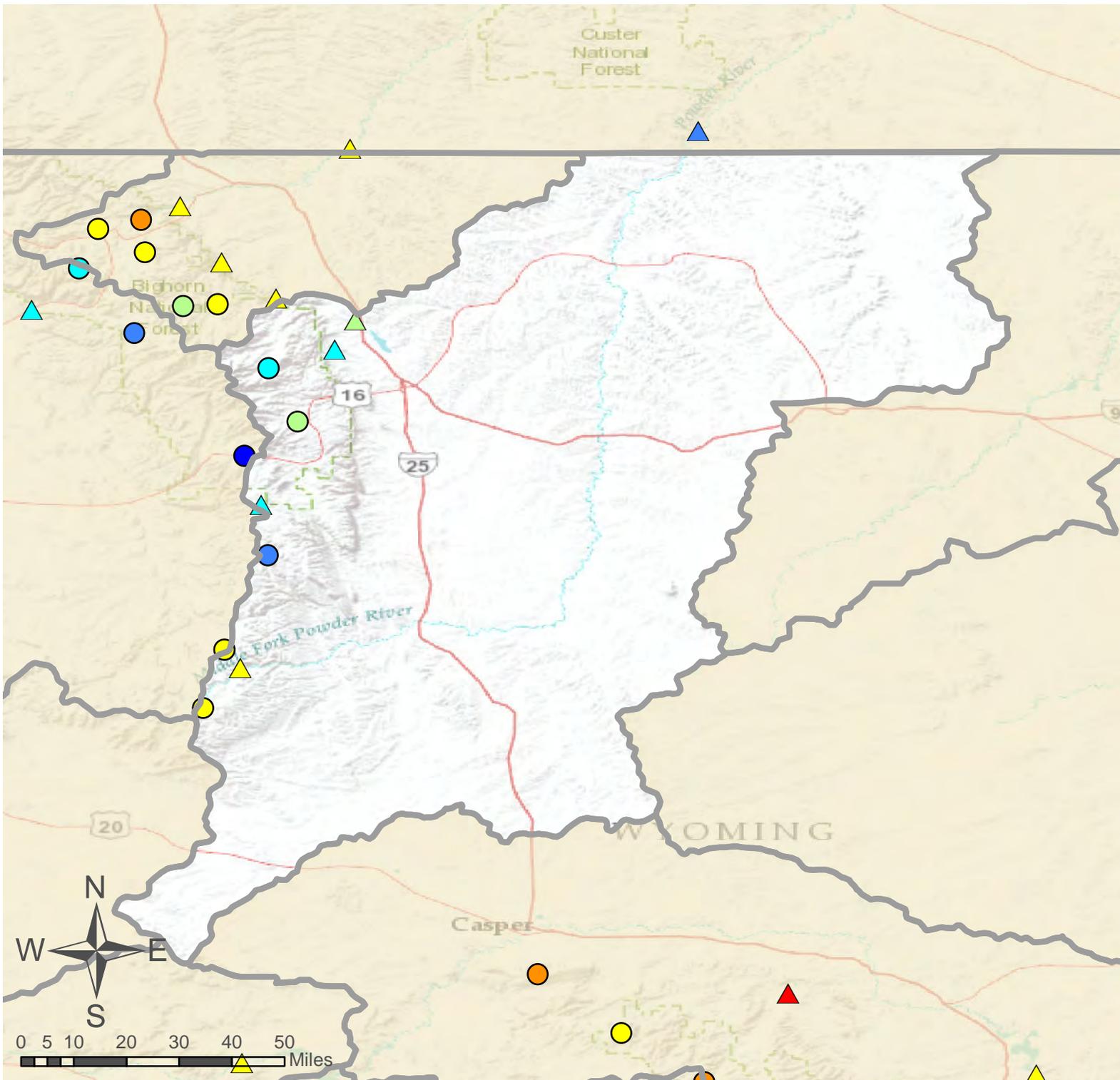
## Powder River Basin Streamflow Forecasts - January 1, 2018

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	6.9	11.1	14	87%	16.9	21	16.1
	APR-SEP	7.7	12	15	88%	18	22	17
NF Powder R nr Hazelton	APR-JUL	7.3	9.6	11.1	122%	12.7	14.9	9.1
	APR-SEP	8.1	10.4	12	121%	13.5	15.9	9.9
Rock Ck nr Buffalo	APR-JUL	12.3	18.3	22	118%	26	32	18.6
	APR-SEP	15.6	22	26	118%	31	37	22
Piney Ck at Kearny	APR-JUL	16.6	34	45	102%	57	74	44
	APR-SEP	18.9	36	48	102%	60	78	47
Powder R at Moorehead	APR-JUL	95	179	235	133%	295	380	177
	APR-SEP	114	200	260	133%	320	405	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 diversions
- 3) Median value used in place of average

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
UPPER POWDER RIVER	4	118%	73%
CLEAR CREEK	2	111%	96%
CRAZY WOMAN CREEK	1	156%	56%
POWDER RIVER	6	115%	82%



# Powder River Basin

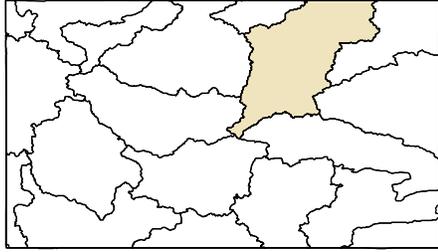
- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

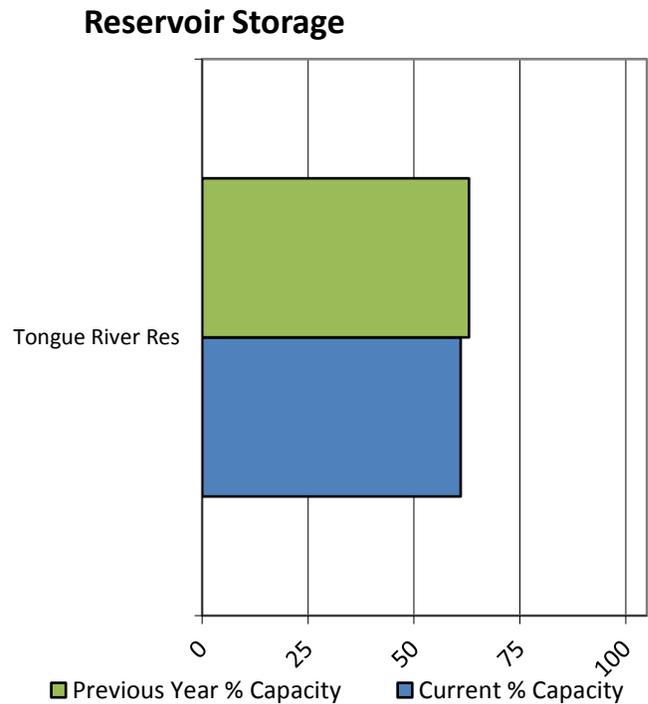
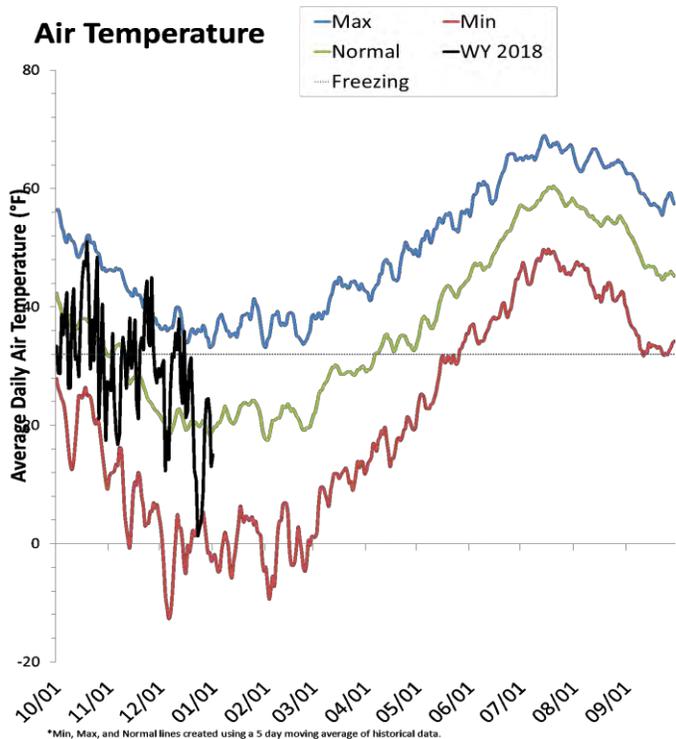
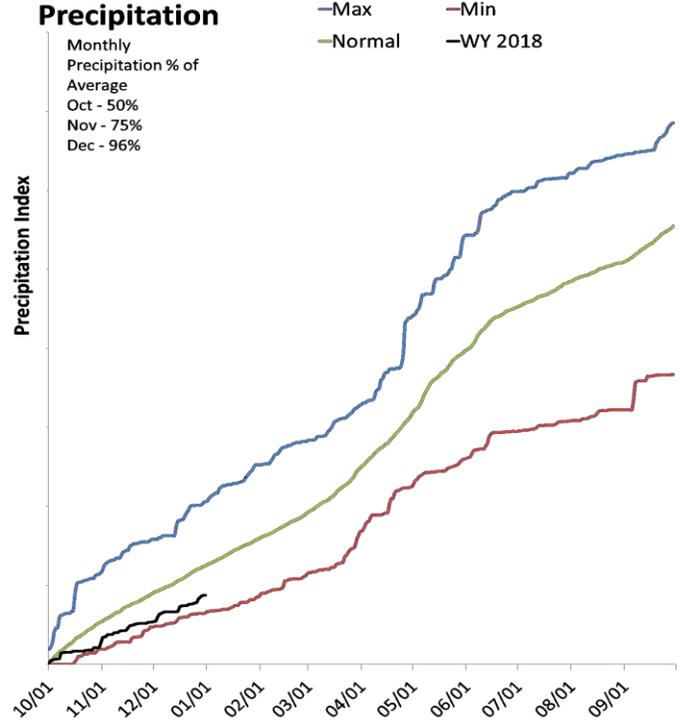
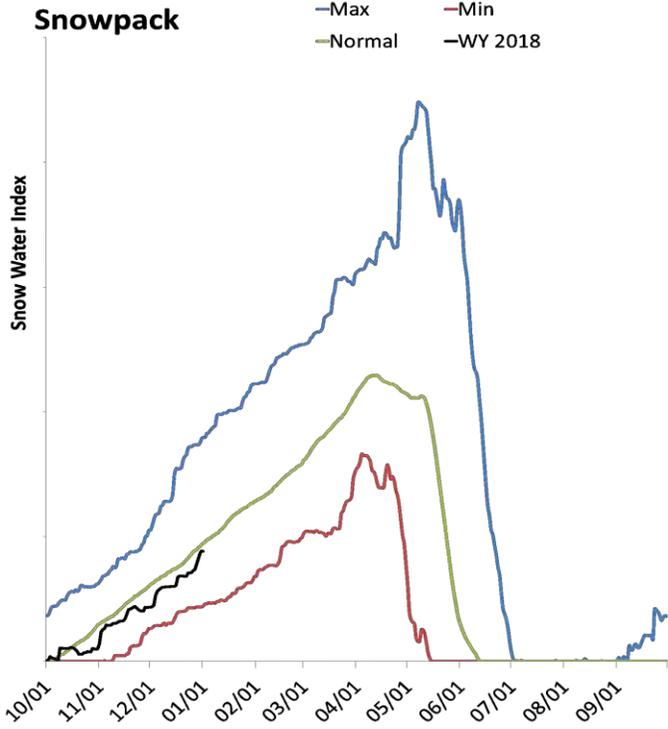
- 114% of Normal SWE
- 90% of Normal Precipitation
- 93% of Normal Precipitation Last Month



# Tongue River Basin

January 1, 2018

Snowpack in the Tongue River Basin is near normal at 93% of normal, compared to 104% last year. Precipitation in December was near average at 96%, which brings the seasonal accumulation (Oct-Dec) to 70% of average. Reservoir storage is at 61% of capacity, compared to 63% last year. Forecast streamflow volumes range from 77% to 85% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

## Tongue River Basin Streamflow Forecasts - January 1, 2018

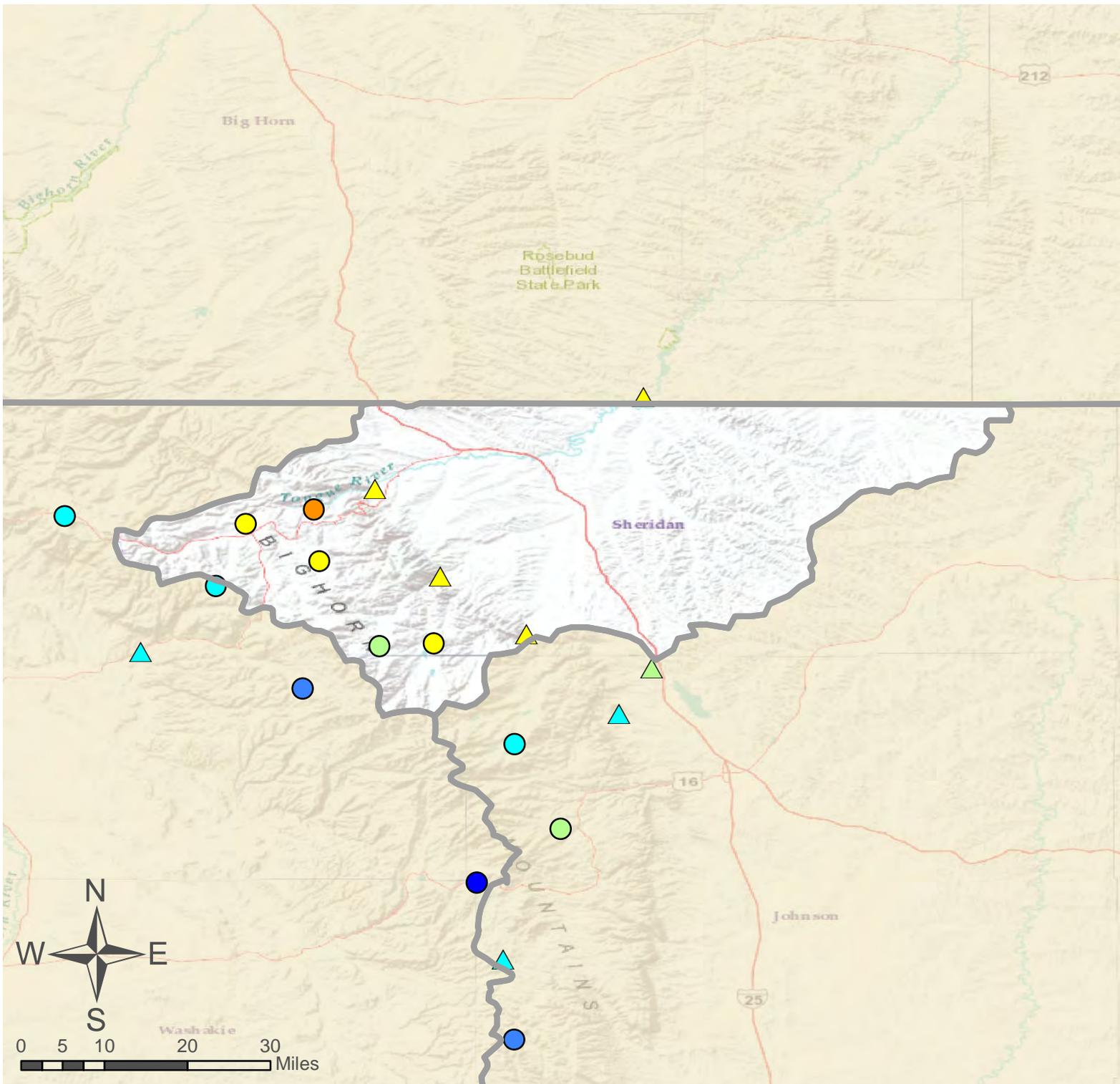
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

TONGUE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Tongue R nr Dayton	APR-JUL	38	57	70	81%	83	103	86
	APR-SEP	46	67	81	83%	95	115	98
Big Goose Ck nr Sheridan	APR-JUL	16.9	30	39	85%	47	60	46
	APR-SEP	24	38	46	85%	55	69	54
Little Goose Ck nr Big Horn	APR-JUL	12.5	21	26	84%	31	40	31
	APR-SEP	19.3	28	34	87%	40	49	39
Tongue River Reservoir Inflow	APR-JUL	38	103	148	77%	192	255	193
	APR-SEP	52	121	168	78%	215	285	215

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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Tongue River Res	48.2	49.9	26.4	79.1
Basin-wide Total	48.2	49.9	26.4	79.1
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
GOOSE CREEK	2	92%	104%
TONGUE RIVER	6	93%	104%



# Tongue River Basin

- SNOTEL Site
- △ Forecast Point

## % of Normal

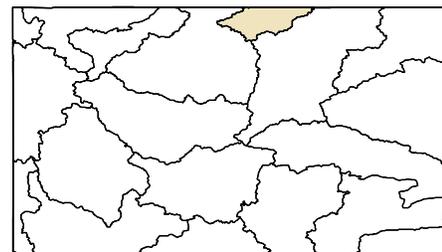
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

92% of Normal SWE

71% of Normal Precipitation

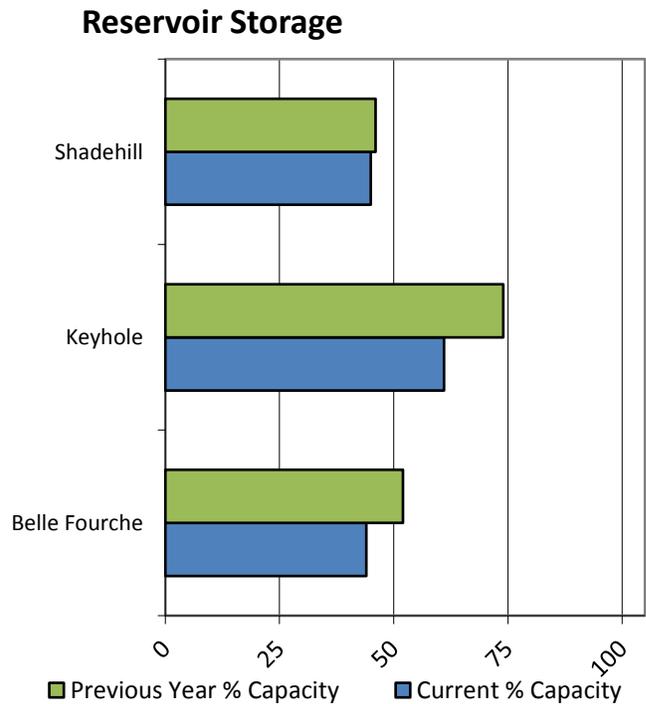
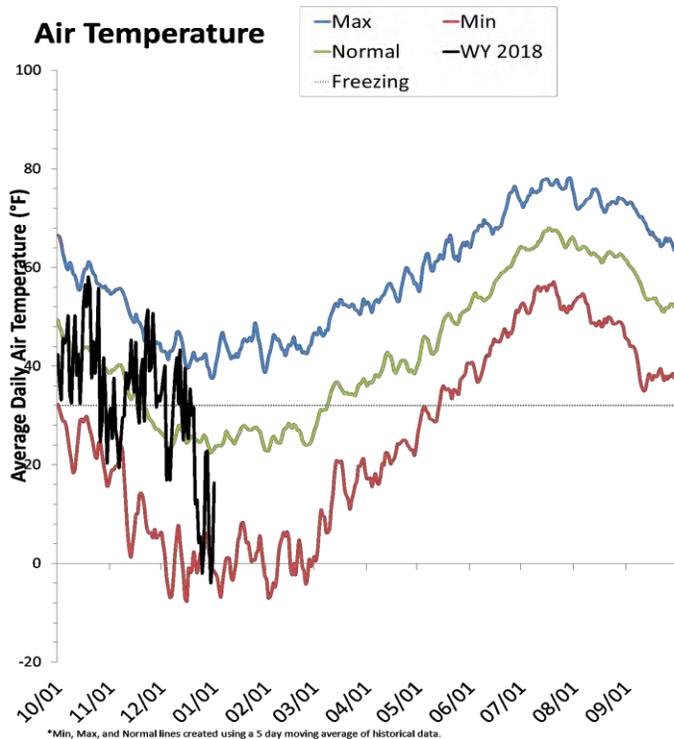
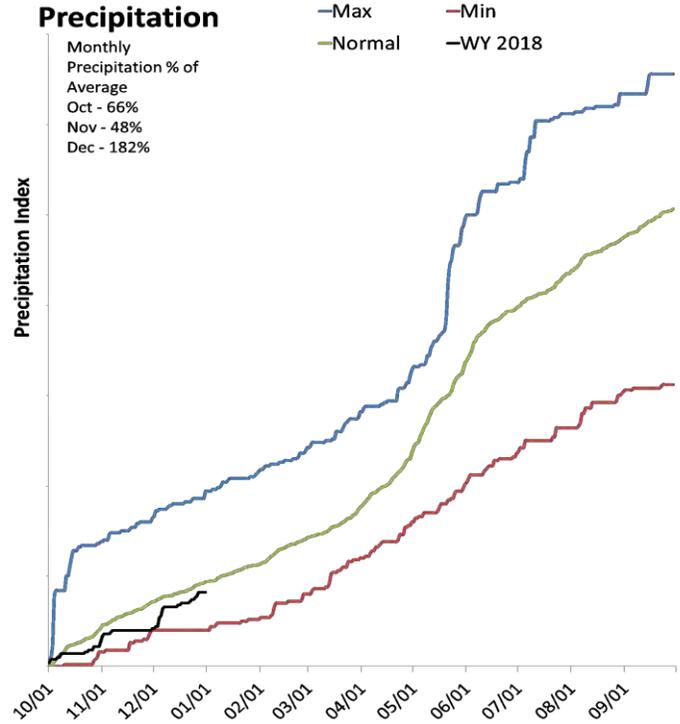
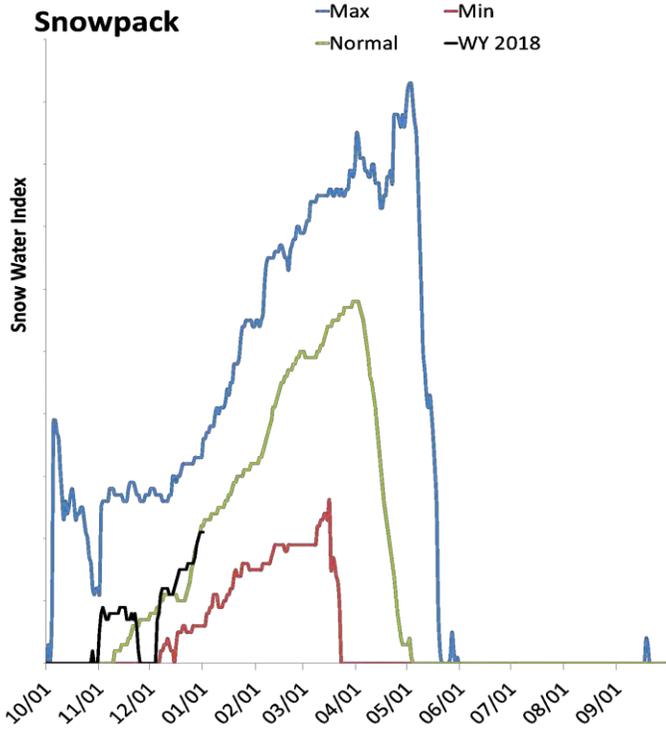
97% of Normal Precipitation Last Month



# Belle Fourche River Basin

January 1, 2018

Snowpack in the Belle Fourche River Basin is near normal at 95% of normal, compared to 123% last year. Precipitation in December was much above average at 182%, which brings the seasonal accumulation (Oct-Dec) to 87% of average. Reservoir storage is at 52% of capacity, compared to 60% last year. Forecast streamflow volumes range from 0% to 0% of average.



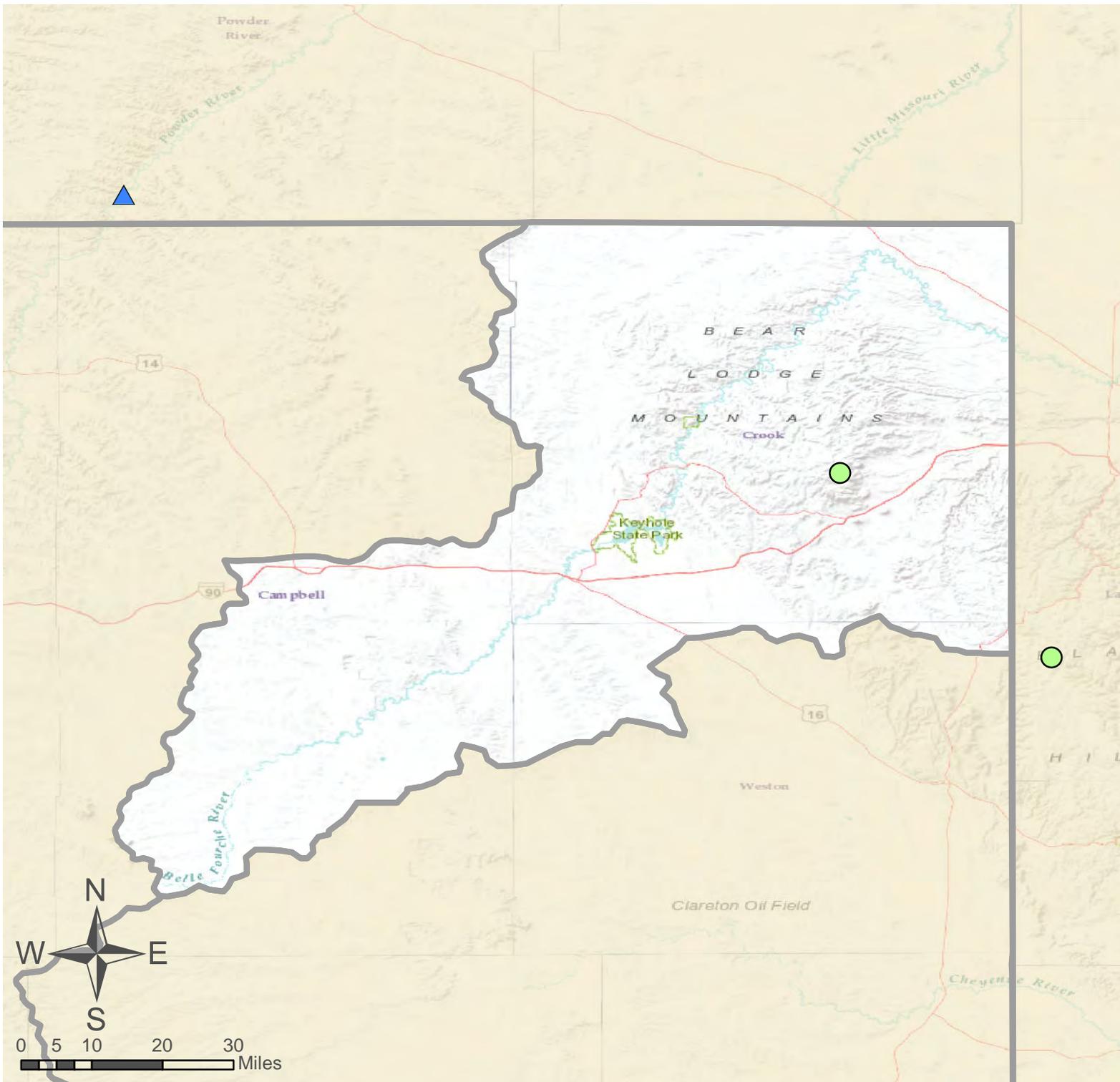
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

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## Belle Fourche River Basin - January 1, 2018

<b>Reservoir Storage End of December, 2017</b>	<b>Current (KAF)</b>	<b>Last Year (KAF)</b>	<b>Average (KAF)</b>	<b>Capacity (KAF)</b>
Belle Fourche	79.0	92.0	101.2	178.4
Keyhole	118.2	143.3	87.4	193.8
Shadehill	37.0	37.2	44.1	81.4
Basin-wide Total	234.2	272.5	232.7	453.6
# of reservoirs	3	3	3	3

<b>Watershed Snowpack Analysis January 1, 2018</b>	<b># of Sites</b>	<b>% Median</b>	<b>Last Year % Median</b>
BELLE FOURCHE RIVER	3	77%	110%



# Belle Fourche River Basin

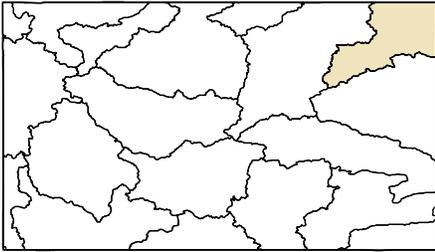
- SNOTEL Site
- △ Forecast Point

As of January 1, 2018:

95% of Normal SWE  
 87% of Normal Precipitation  
 182% of Normal Precipitation Last Month

### % of Normal

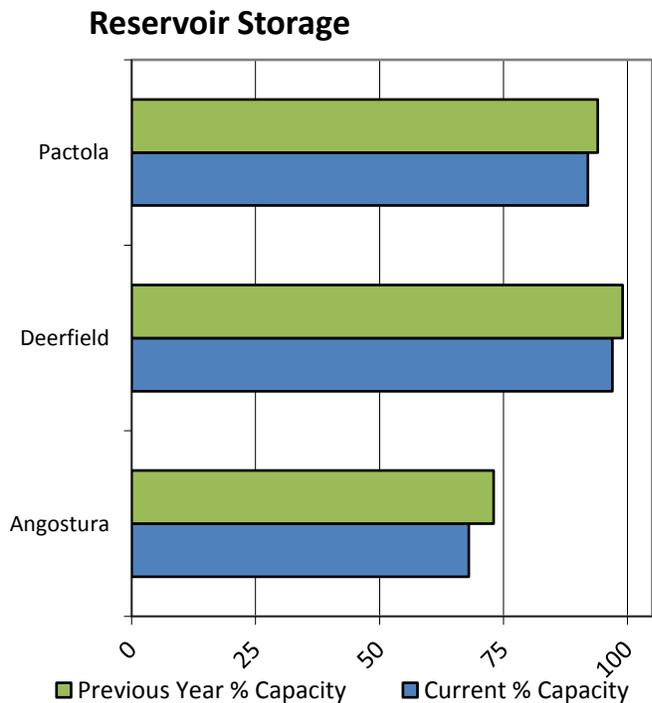
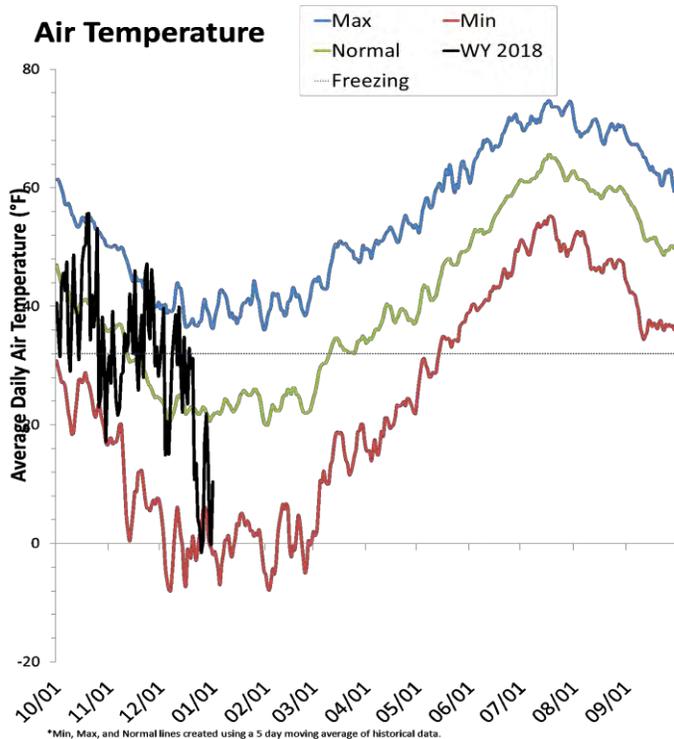
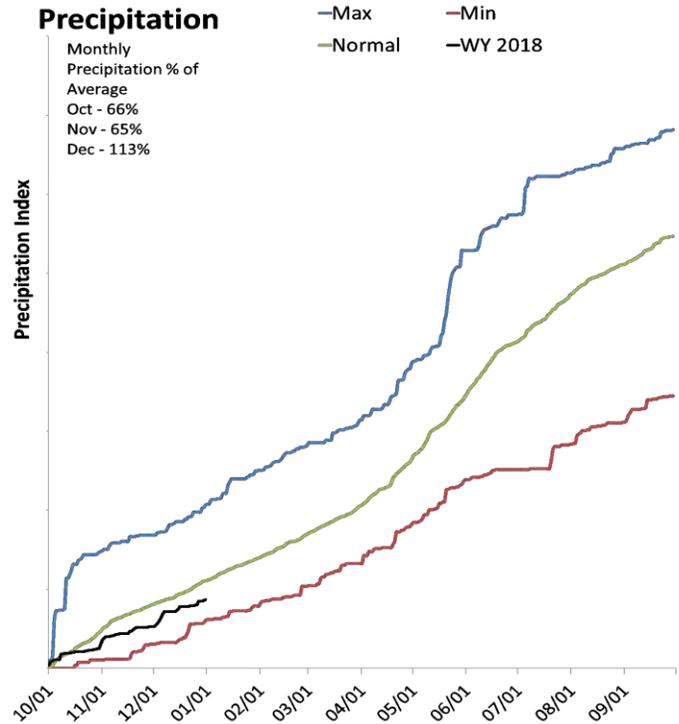
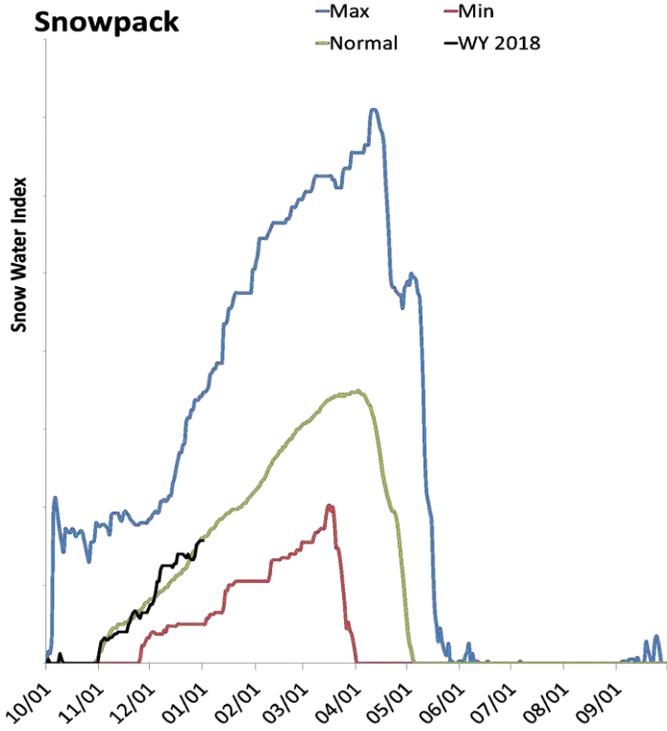
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%



# Cheyenne River Basin

January 1, 2018

Snowpack in the Cheyenne River Basin is near normal at 98% of normal, compared to 102% last year. Precipitation in December was above average at 117%, which brings the seasonal accumulation (Oct-Dec) to 79% of average. Reservoir storage is at 78% of capacity, compared to 81% last year. Forecast streamflow volumes range from 92% to 103% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

## Cheyenne River Basin Streamflow Forecasts - January 1, 2018

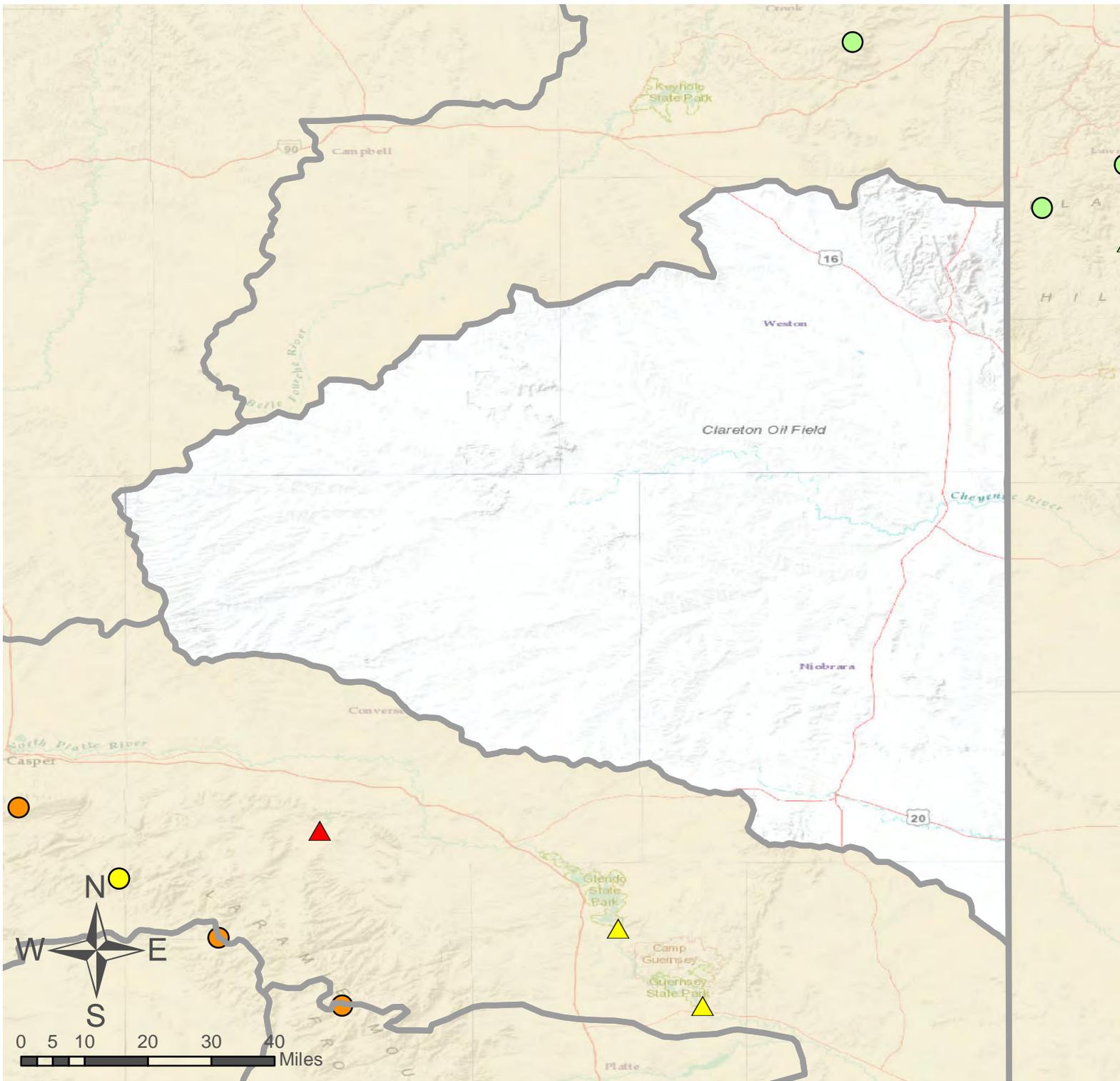
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

CHEYENNE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
<b>Deerfield Reservoir Inflow</b>								
	MAR-JUL	2.3	4.7	6.4	103%	8	10.5	6.2
	APR-JUL	1.55	3.7	5.2	100%	6.7	8.8	5.2
<b>Pactola Reservoir Inflow</b>								
	MAR-JUL	5.4	16	23	92%	30	41	25
	APR-JUL	3.2	13.3	20	91%	27	37	22

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

<b>Reservoir Storage End of December, 2017</b>	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Angostura	83.6	89.2	81.1	122.1
Deerfield	14.7	15.0	13.5	15.2
Pactola	50.7	51.7	45.6	55.0
Basin-wide Total	149.1	155.9	140.2	192.3
# of reservoirs	3	3	3	3

<b>Watershed Snowpack Analysis January 1, 2018</b>	# of Sites	% Median	Last Year % Median
CHEYENNE RIVER	6	81%	104%



# Cheyenne River Basin

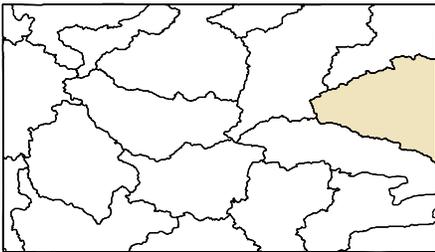
- SNOTEL Site
- △ Forecast Point

### % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

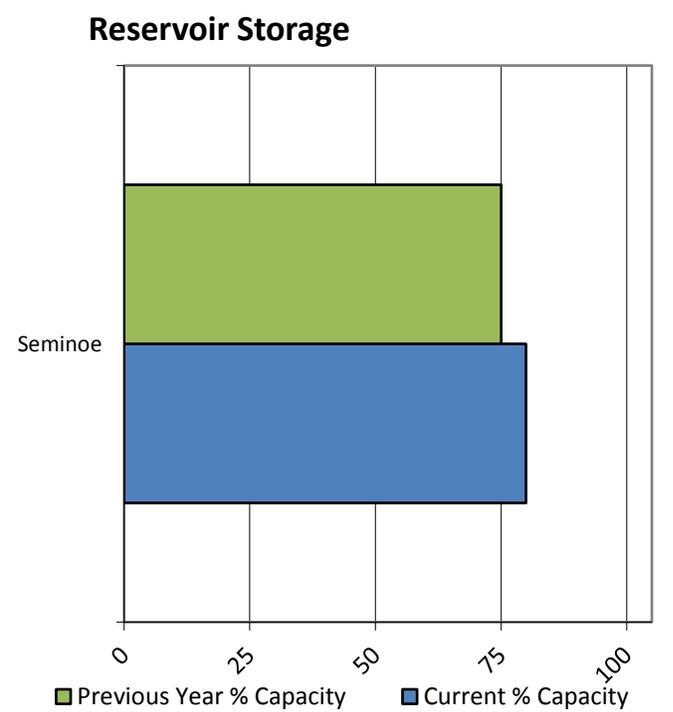
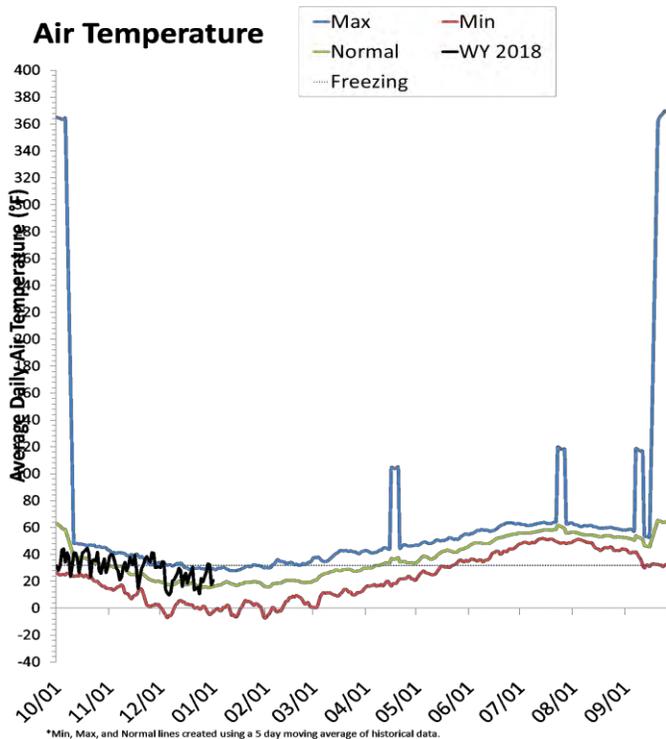
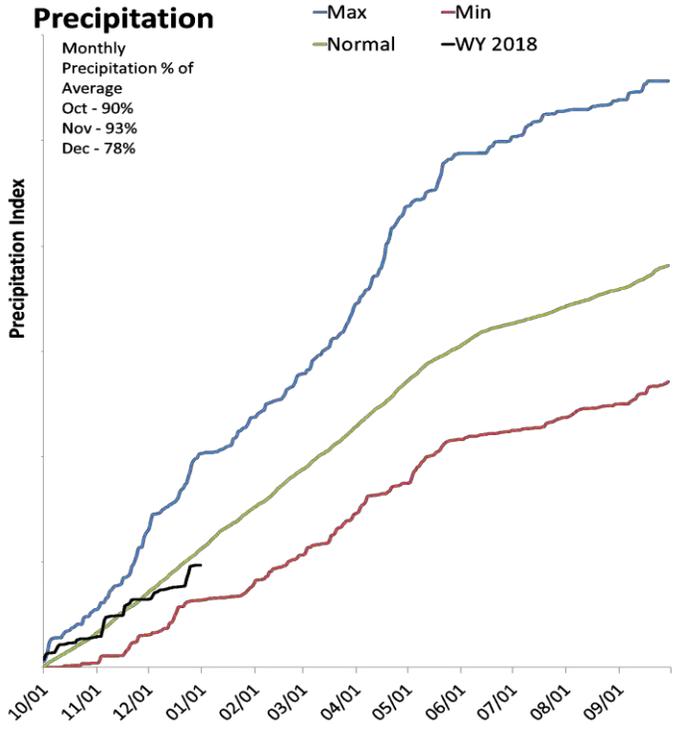
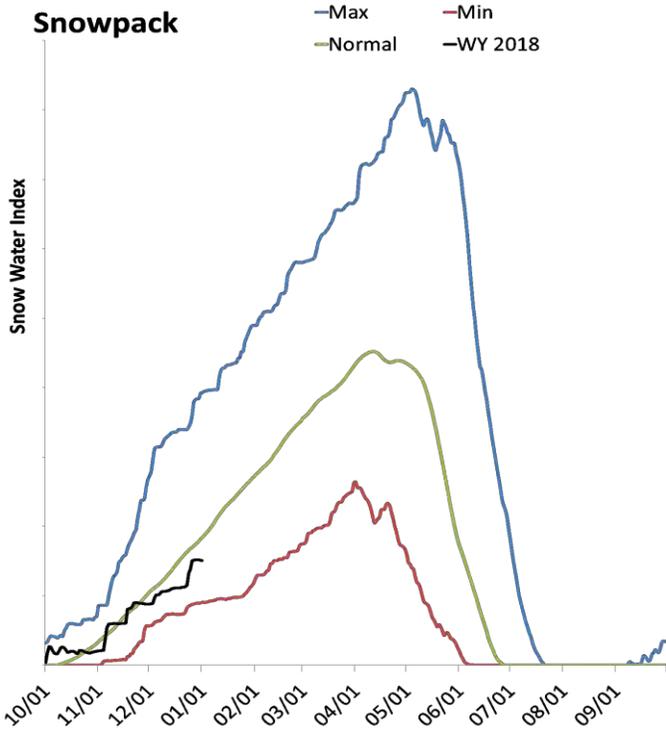
98% of Normal SWE  
 79% of Normal Precipitation  
 117% of Normal Precipitation Last Month



# Upper North Platte River Basin

January 1, 2018

Snowpack in the Upper North Platte River Basin is below normal at 82% of normal, compared to 97% last year. Precipitation in December was below average at 78%, which brings the seasonal accumulation (Oct-Dec) to 87% of average. Soil moisture at sites with sensors is at 50% of saturation. Reservoir storage is at 80% of capacity, compared to 75% last year. The forecast streamflow volume for Manti Creek is 84% of average.



## Upper North Platte River Basin Streamflow Forecasts - January 1, 2018

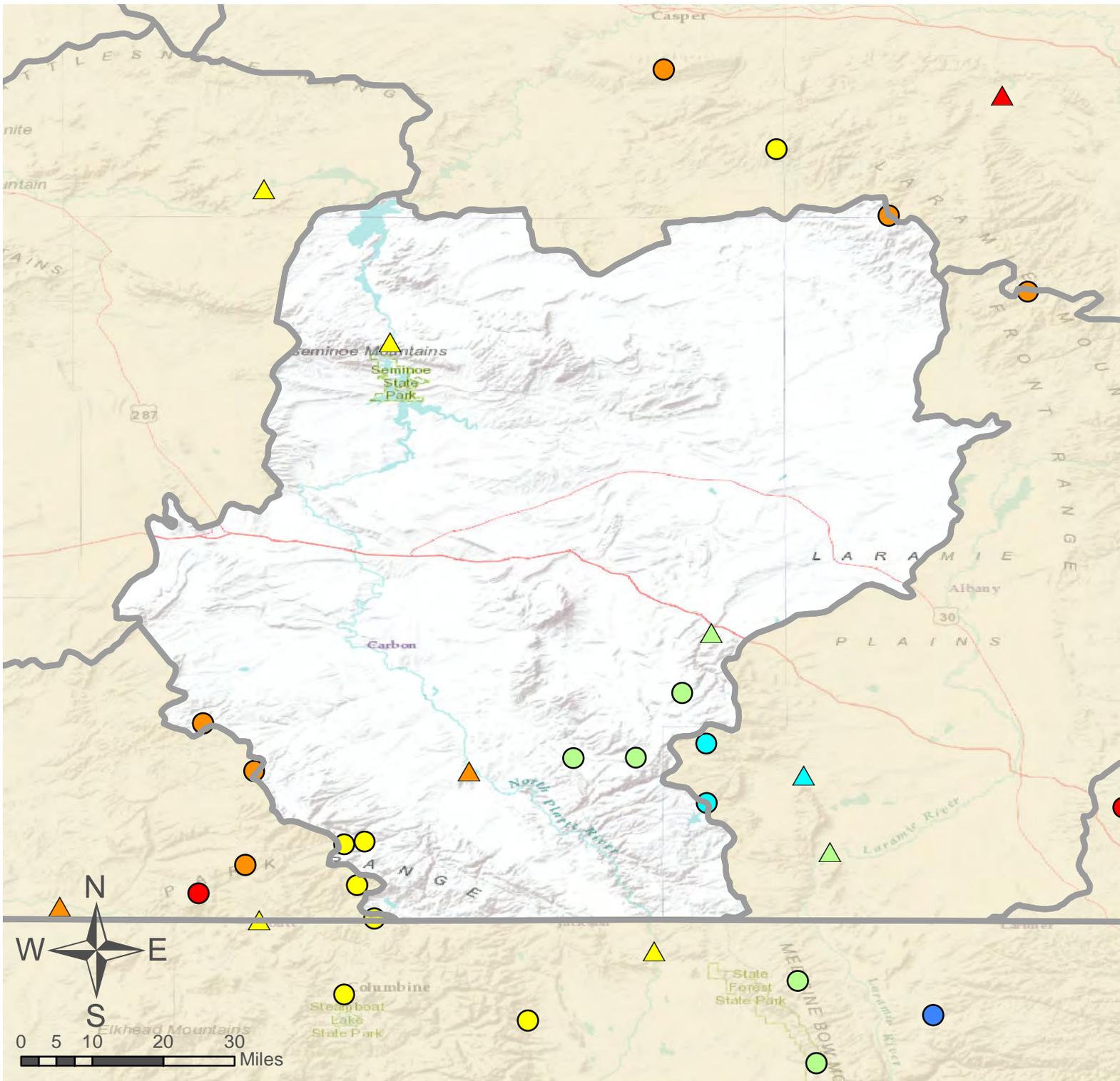
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

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	56	136	190	84%	245	325	225
	APR-SEP	65	151	210	84%	270	355	250
Encampment R nr Encampment <sup>2</sup>	APR-JUL	18.6	61	88	68%	117	159	129
	APR-SEP	19	62	92	67%	122	165	138
Rock Ck ab King Canyon Cnl nr Arlington	APR-JUL	29	42	50	102%	58	71	49
	APR-SEP	31	44	53	102%	61	74	52
Sweetwater R nr Alcova	APR-JUL	9	29	43	73%	57	77	59
	APR-SEP	10.2	32	47	73%	61	83	64
Seminole Reservoir Inflow	APR-JUL	148	410	585	82%	765	1020	715
	APR-SEP	171	445	630	82%	815	1090	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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Seminole	811.6	763.2	553.7	1016.7
Basin-wide Total	811.6	763.2	553.7	1016.7
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
N PLATTE above Northgate	9	82%	104%
ENCAMPMENT RIVER	3	75%	97%
BRUSH CREEK	2	99%	84%
MEDICINE BOW & ROCK CREEKS	1	102%	96%
UPPER NORTH PLATTE RIVER	17	82%	97%



# Upper North Platte River Basin

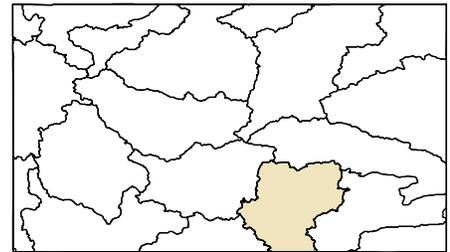
- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

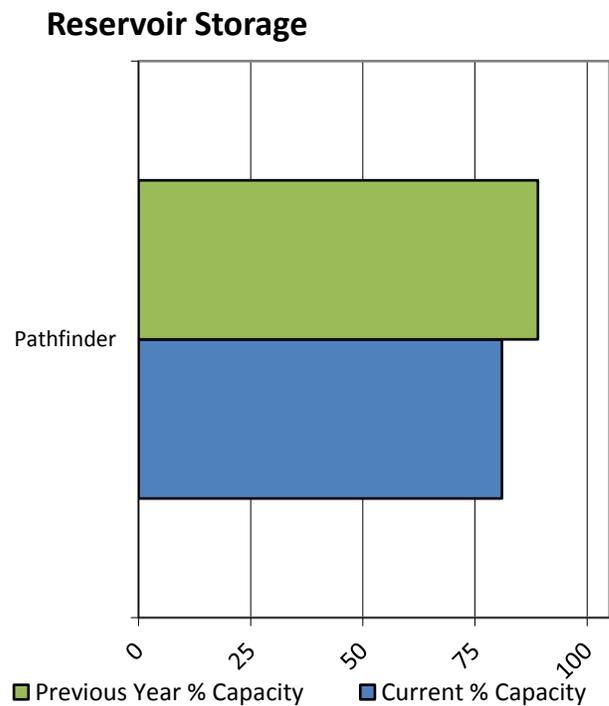
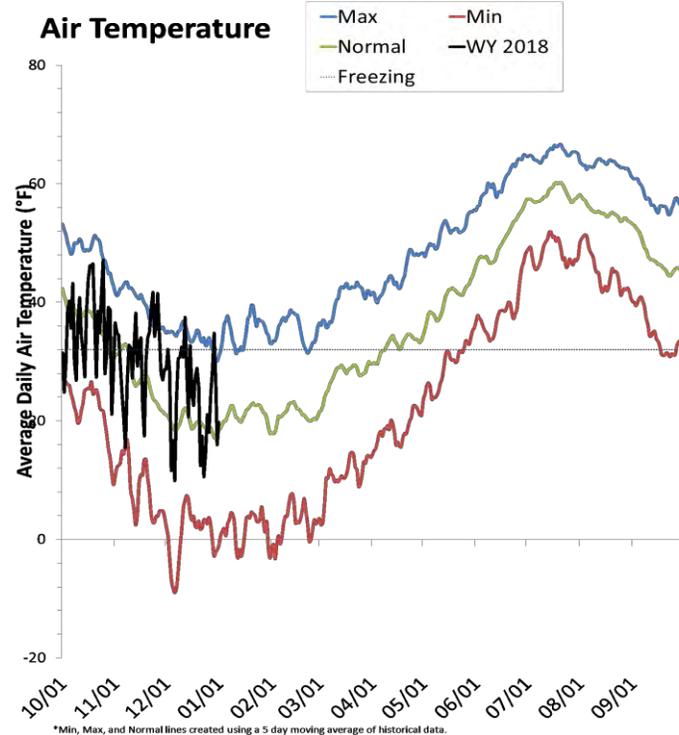
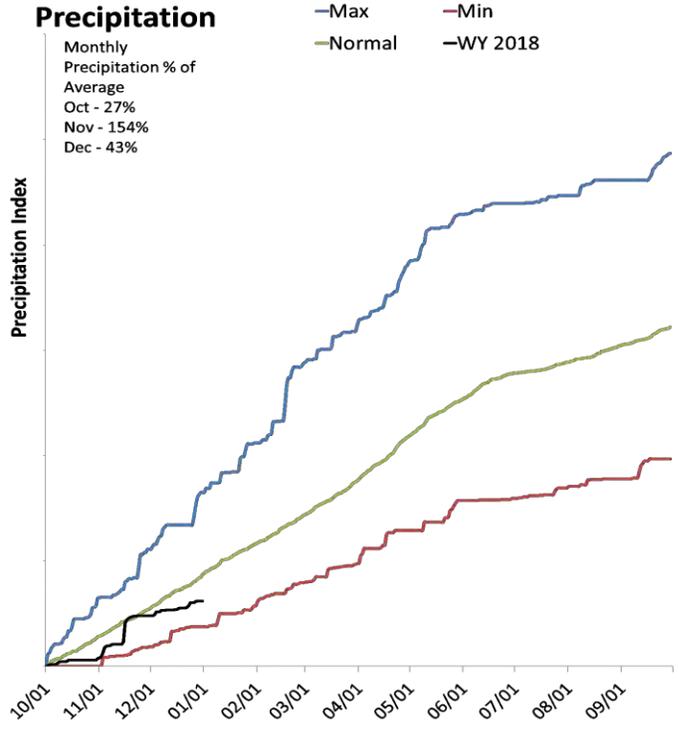
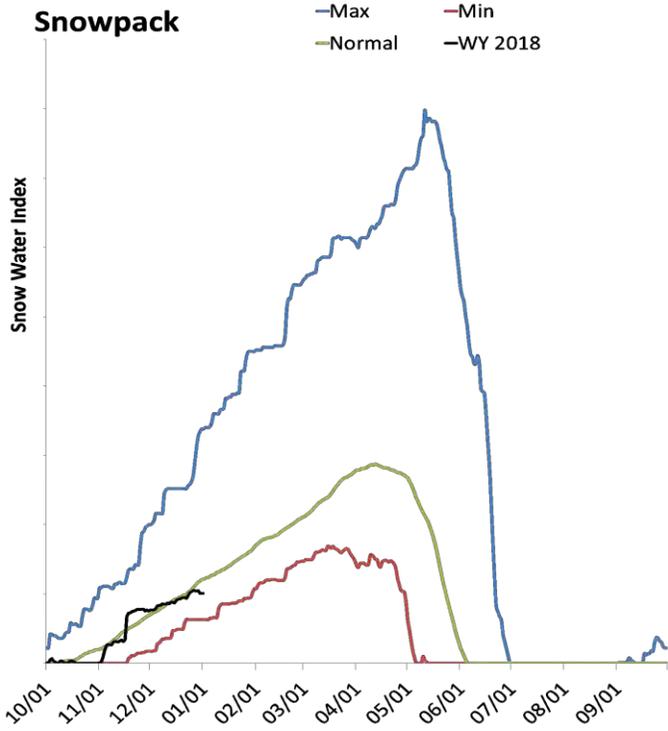
- 82% of Normal SWE
- 87% of Normal Precipitation
- 78% of Normal Precipitation Last Month



# Sweetwater River Basin

January 1, 2018

Snowpack in the Sweetwater River Basin is below normal at 83% of normal, compared to 145% last year. Precipitation in December was much below average at 43%, which brings the seasonal accumulation (Oct-Dec) to 71% of average. Soil moisture at sites with sensors is at 21% of saturation. Reservoir storage is at 81% of capacity, compared to 89% last year. Forecast streamflow volumes range from 73% to 73% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

## Sweetwater River Basin Streamflow Forecasts - January 1, 2018

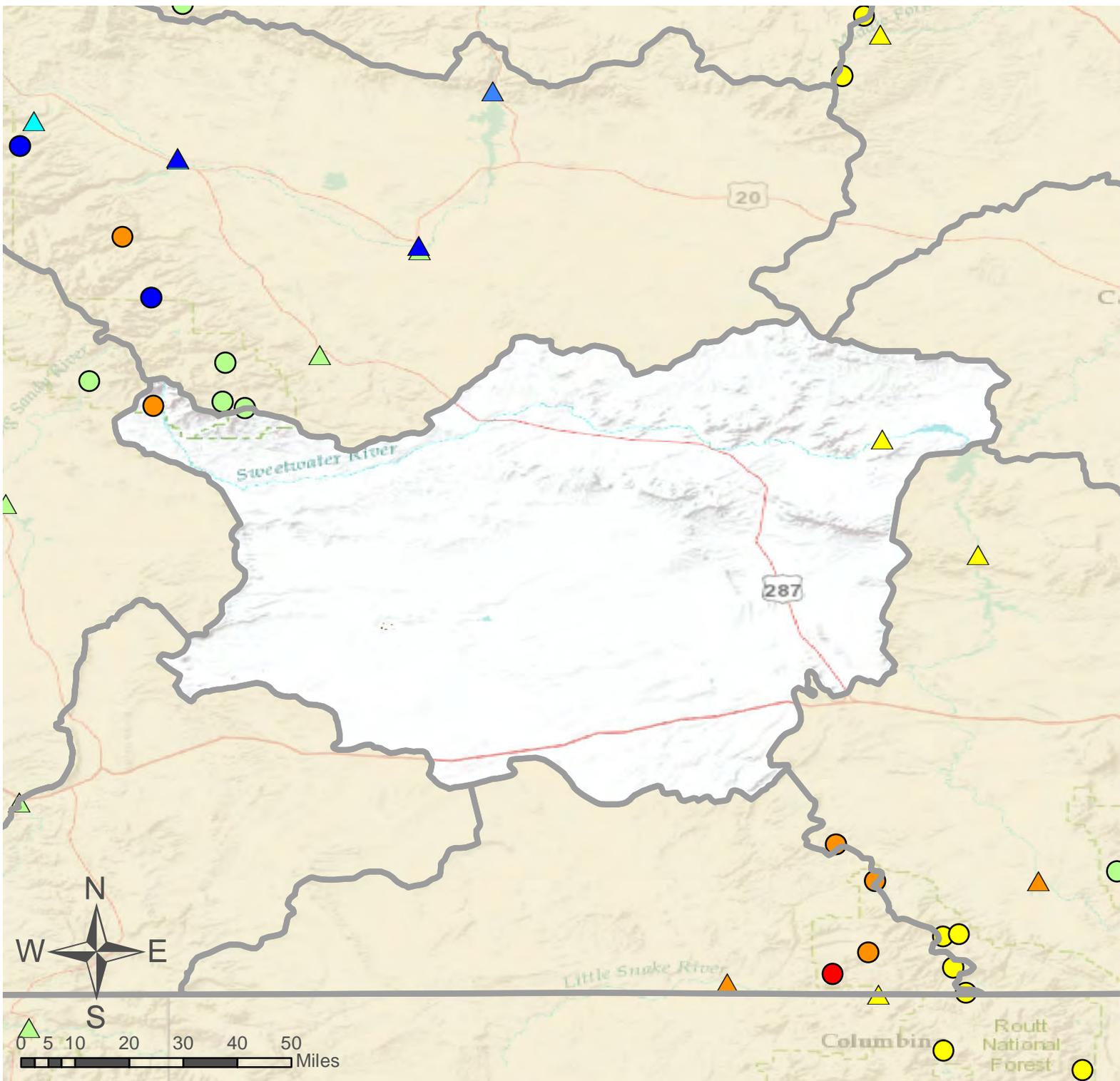
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

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	9	29	43	73%	57	77	59
	APR-SEP	10.2	32	47	73%	61	83	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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Pathfinder	824.1	903.2	536.1	1016.5
Basin-wide Total	824.1	903.2	536.1	1016.5
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
SWEETWATER RIVER	3	83%	145%



# Sweetwater River Basin

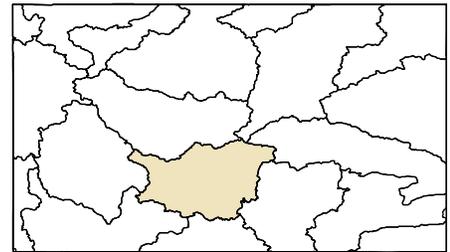
- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

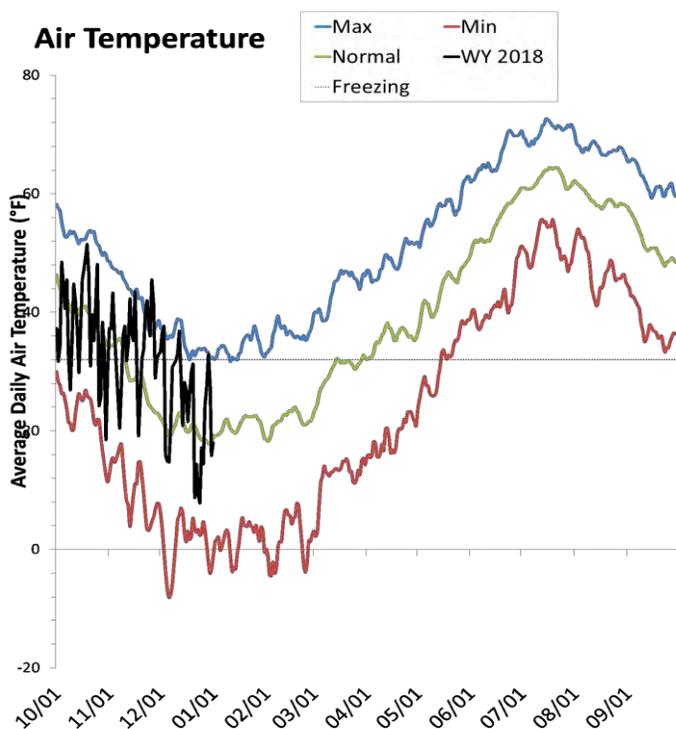
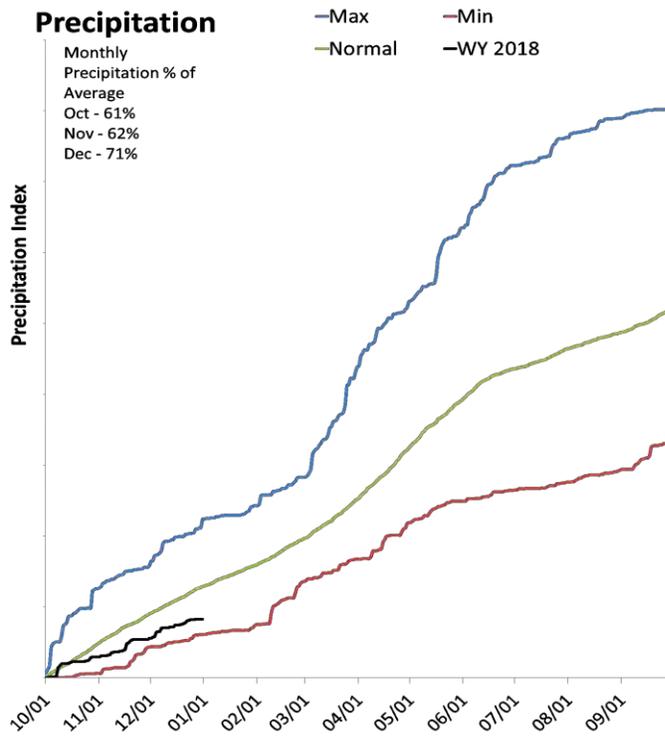
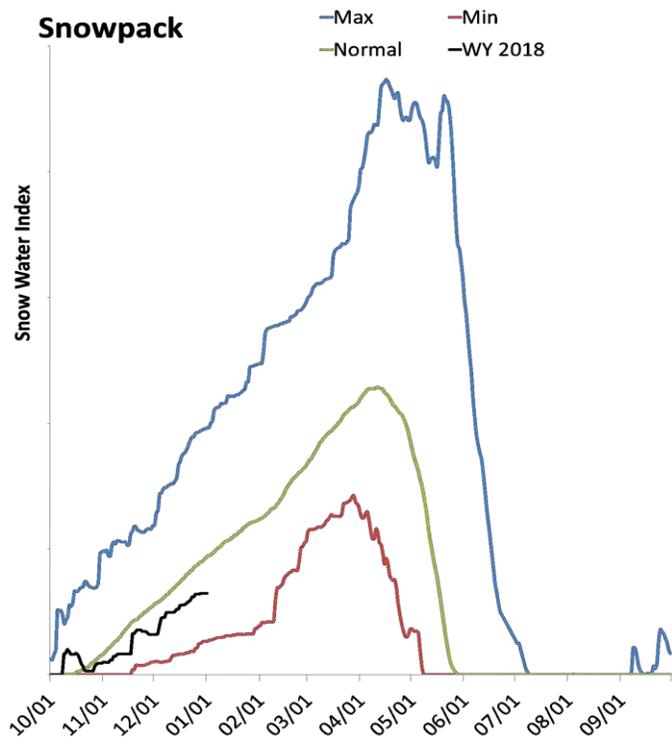
- 83% of Normal SWE
- 71% of Normal Precipitation
- 43% of Normal Precipitation Last Month



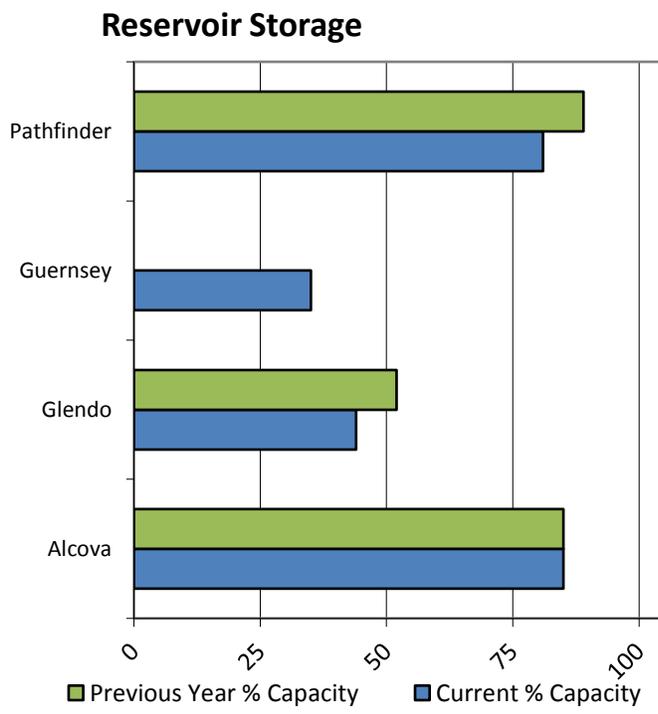
# Lower North Platte River Basin

January 1, 2018

Snowpack in the Lower North Platte River Basin is much below normal at 69% of normal, compared to 97% last year. Precipitation in December was below average at 70%, which brings the seasonal accumulation (Oct-Dec) to 64% of average. Soil moisture at sites with sensors is at 13% of saturation. Reservoir storage is at 70% of capacity, compared to 76% last year. The forecast streamflow volume for the Beaver River is 78% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.



## Lower North Platte River Basin Streamflow Forecasts - January 1, 2018

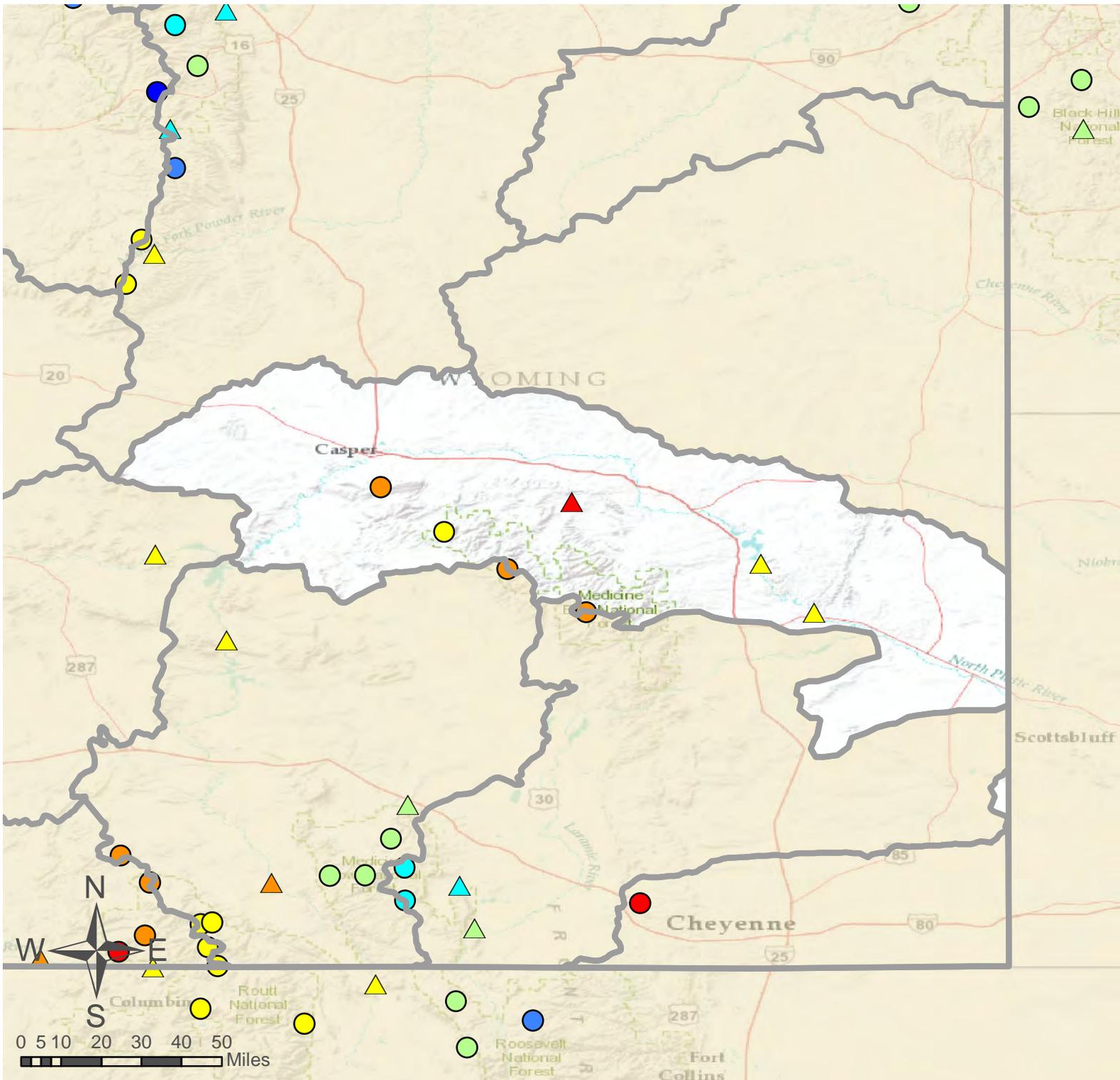
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

LOWER NORTH PLATTE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
La Prele Ck nr Douglas	APR-JUL	0.35	3.5	7.5	38%	13	24	19.9
	APR-SEP	0.41	3.7	7.9	40%	13.6	25	19.9
North Platte R bl Glendo Reservoir	APR-JUL	56	400	640	78%	875	1220	820
	APR-SEP	57	415	655	77%	900	1260	850
North Platte R bl Guernsey Reservoir	APR-JUL	37	395	635	77%	875	1230	820
	APR-SEP	33	400	650	76%	900	1260	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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Alcova	156.7	157.1	154.9	184.3
Glendo	223.0	265.6	254.7	506.4
Guernsey	16.1	0.0	9.2	45.6
Pathfinder	824.1	903.2	536.1	1016.5
Basin-wide Total	1220.0	1325.9	954.9	1752.8
# of reservoirs	4	4	4	4

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
DEER & LaPRELE CREEKS	2	72%	100%
LOWER NORTH PLATTE RIVER	4	69%	97%



# Lower North Platte River Basin

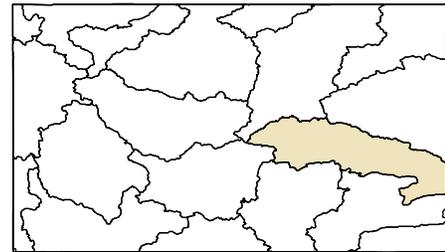
- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

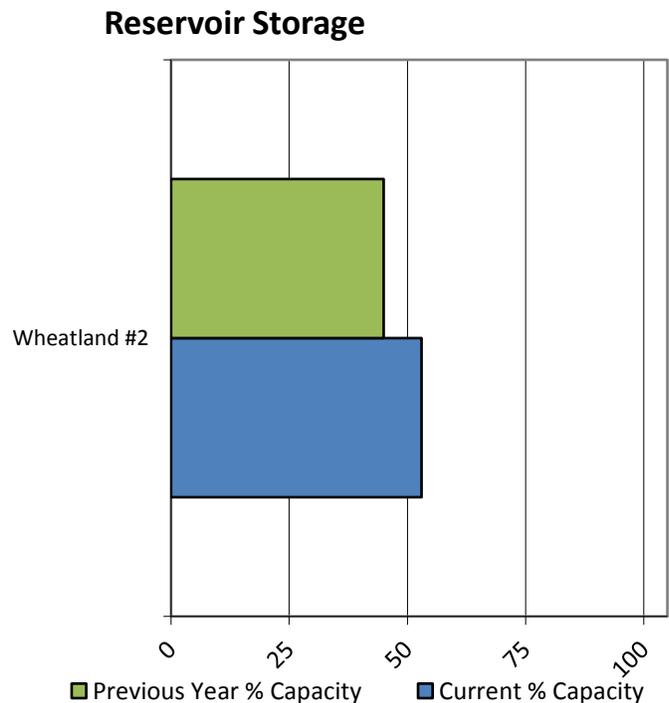
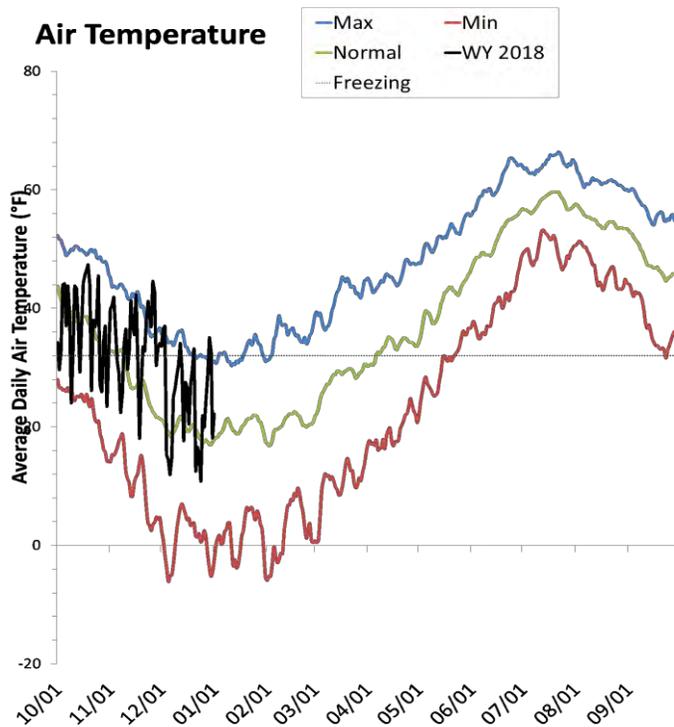
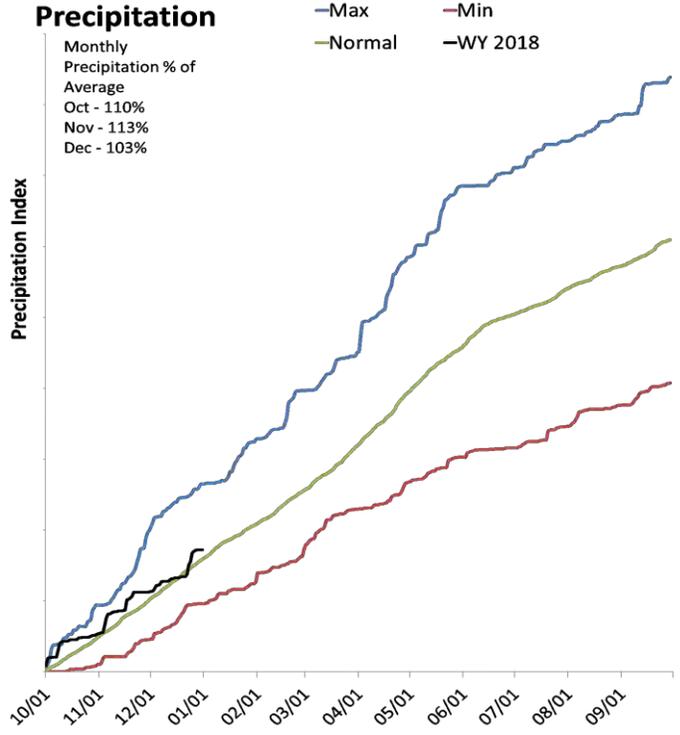
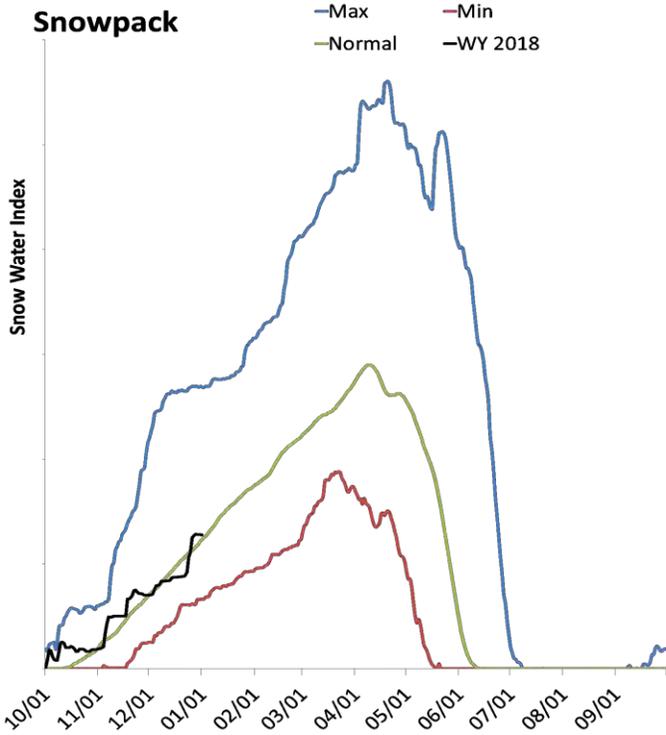
- 69% of Normal SWE
- 64% of Normal Precipitation
- 70% of Normal Precipitation Last Month



# Laramie River Basin

January 1, 2018

Snowpack in the Laramie River Basin is near normal at 103% of normal, compared to 96% last year. Precipitation in December was near average at 102%, which brings the seasonal accumulation (Oct-Dec) to 108% of average. Soil moisture at sites with sensors is at 43% of saturation. Reservoir storage is at 53% of capacity, compared to 45% last year. The forecast streamflow volume for the Beaver River is 112% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

## Laramie River Basin Streamflow Forecasts - January 1, 2018

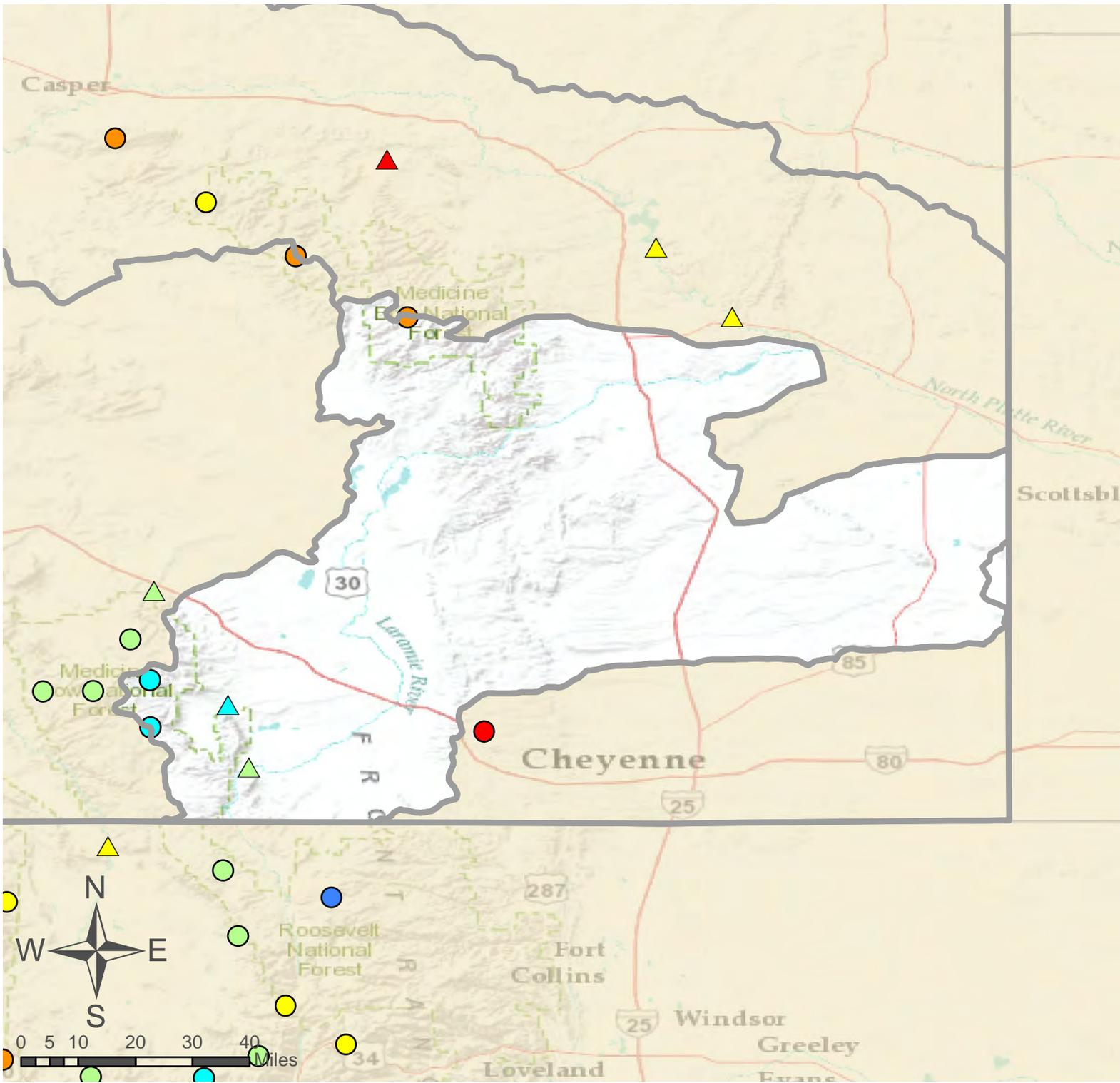
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

LARAMIE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Laramie R and Pioneer Cnl nr Woods Lg	APR-JUL	68	101	124	108%	147	180	115
	APR-SEP	75	111	136	108%	160	196	126
Little Laramie R nr Filmore	APR-JUL	32	47	57	112%	67	82	51
	APR-SEP	35	51	62	113%	72	88	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

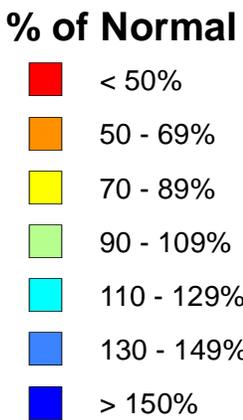
Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Wheatland #2	52.8	44.5	42.4	98.9
Basin-wide Total	52.8	44.5	42.4	98.9
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
LARAMIE RIVER abv Laramie	4	97%	94%
LITTLE LARAMIE RIVER	2	119%	96%
LARAMIE RIVER	7	103%	96%
NORTH PLATTE TOTAL RIVER	26	86%	101%

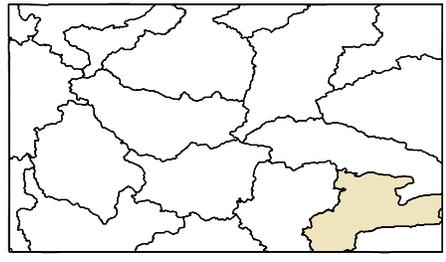


# Laramie River Basin

- SNOTEL Site
- △ Forecast Point



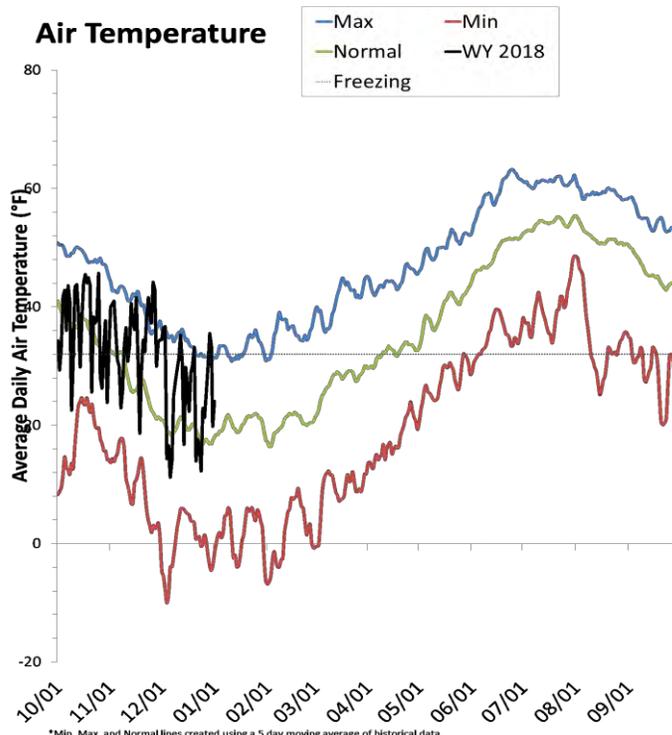
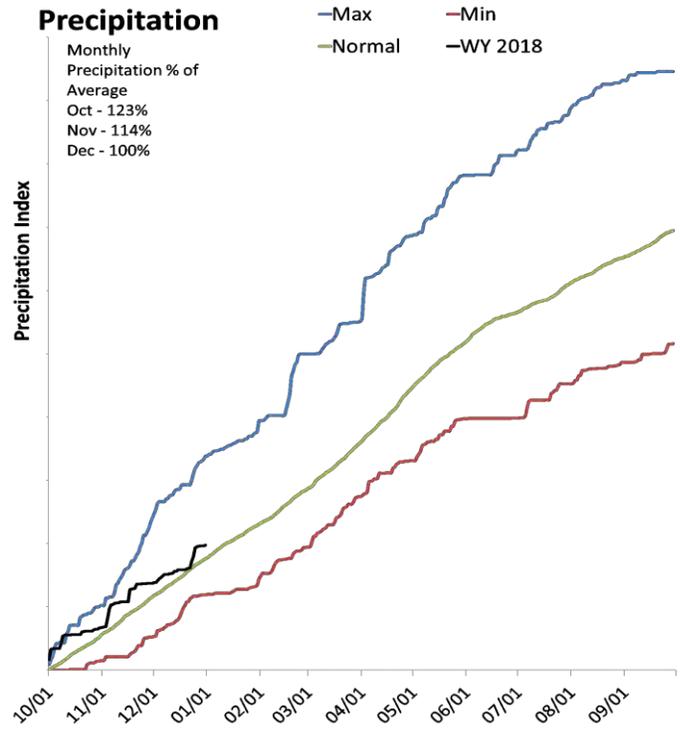
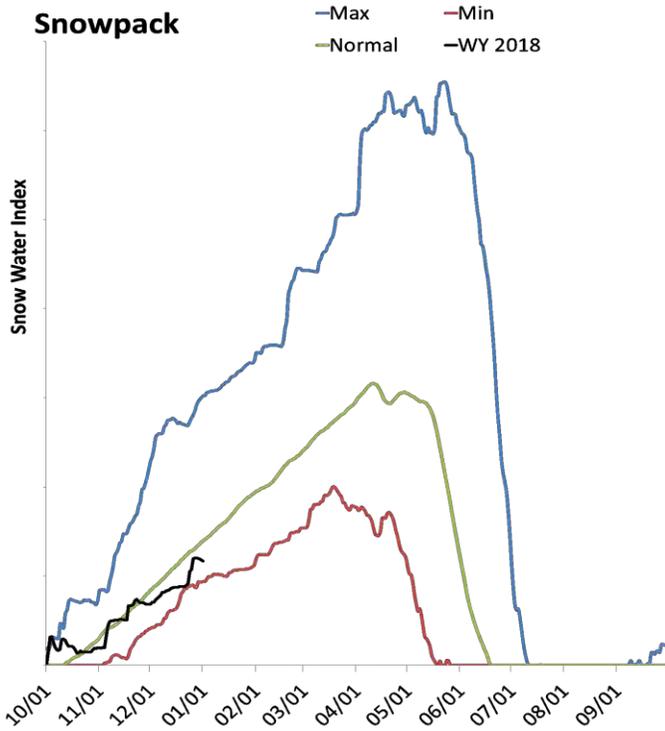
As of January 1, 2018:  
 103% of Normal SWE  
 108% of Normal Precipitation  
 102% of Normal Precipitation Last Month



# South Platte River Basin

January 1, 2018

Snowpack in the South Platte River Basin is below normal at 84% of normal, compared to 87% last year. Precipitation in December was near average at 99%, which brings the seasonal accumulation (Oct-Dec) to 112% of average. Soil moisture at sites with sensors is at 53% of saturation. Forecast streamflow volumes range from 0% to 0% of average.

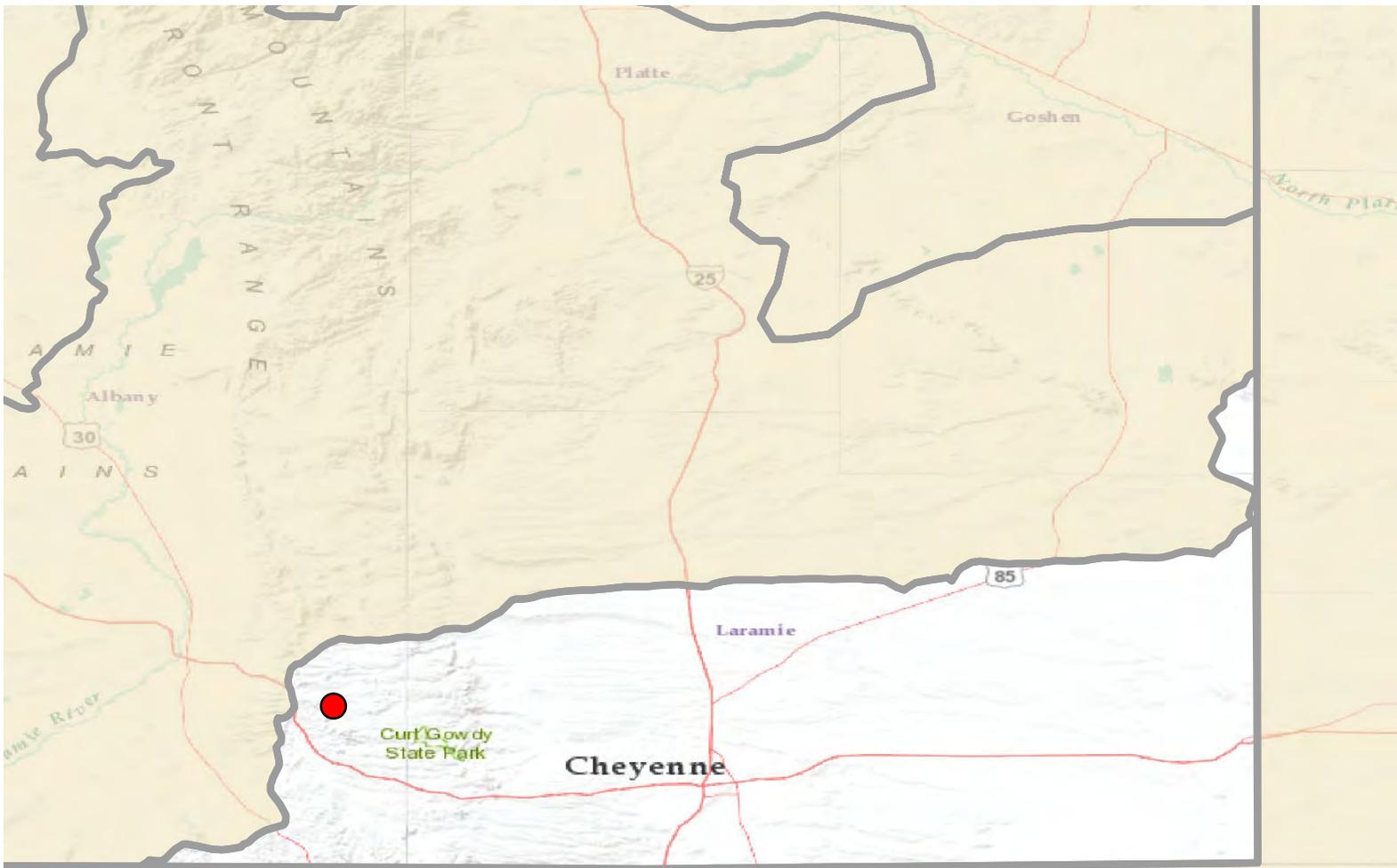


\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

Data Current as of: 1/5/2018 11:20:18 AM

## South Platte River Basin - January 1, 2018

<b>Watershed Snowpack Analysis January 1, 2018</b>	# of Sites	% Median	Last Year % Median
SOUTH PLATTE RIVER	4	84%	87%

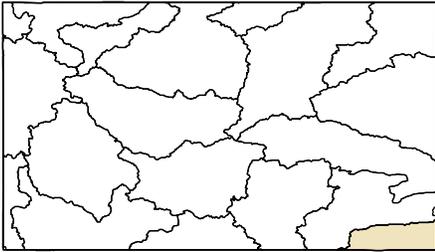


# South Platte River Basin

- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%



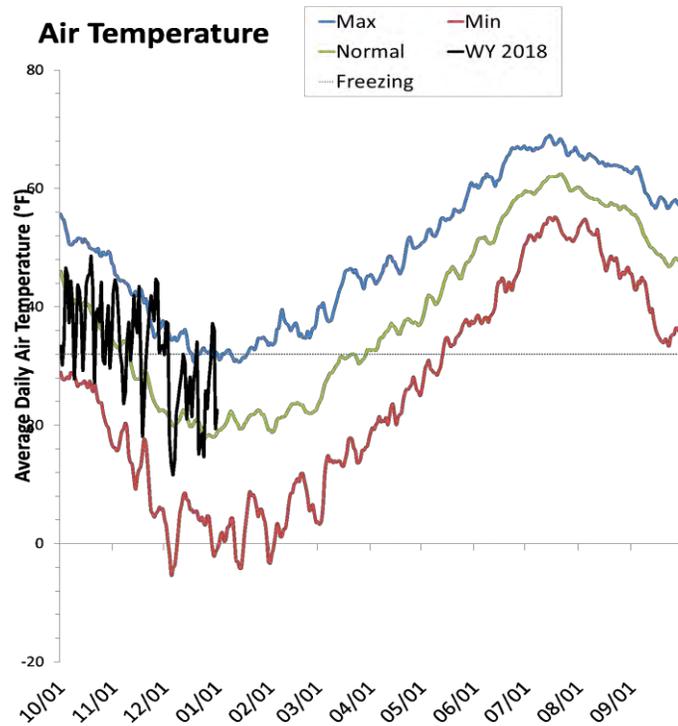
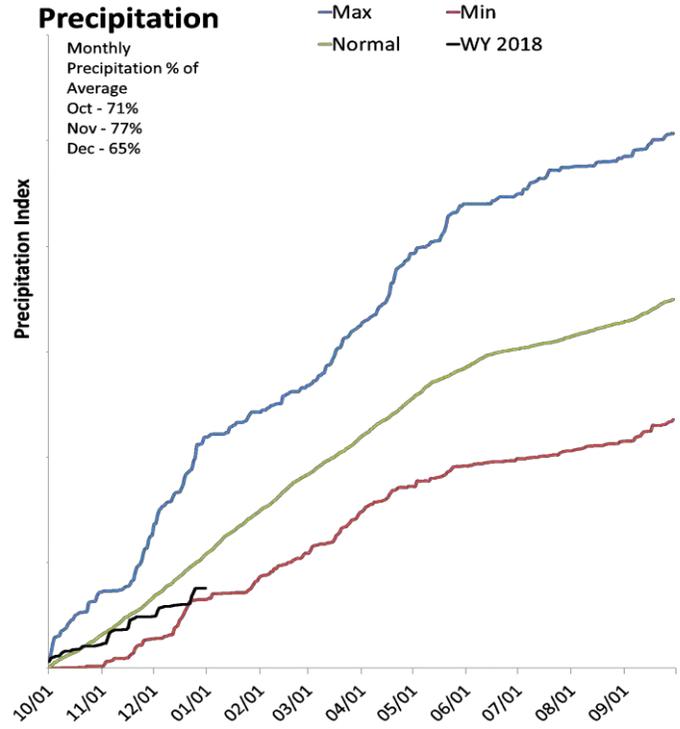
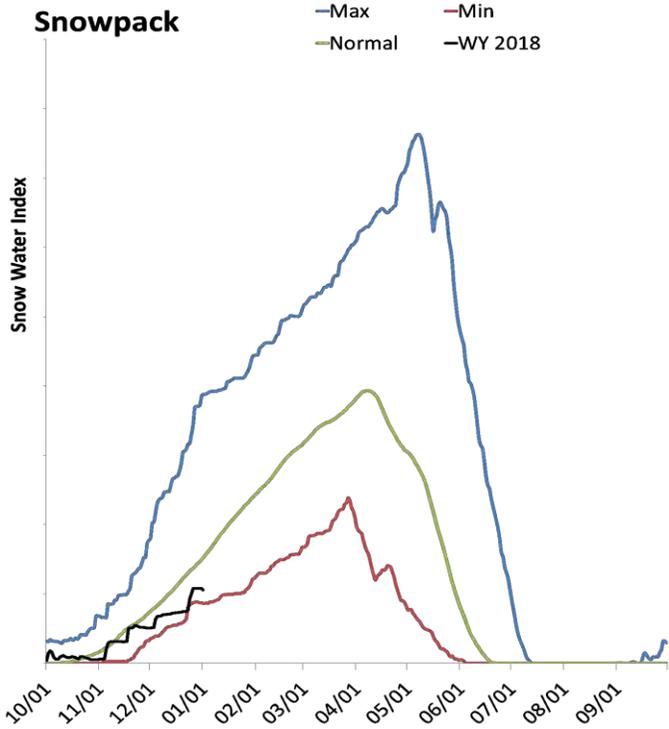
As of January 1, 2018:

- 84% of Normal SWE
- 112% of Normal Precipitation
- 99% of Normal Precipitation Last Month

# Little Snake River Basin

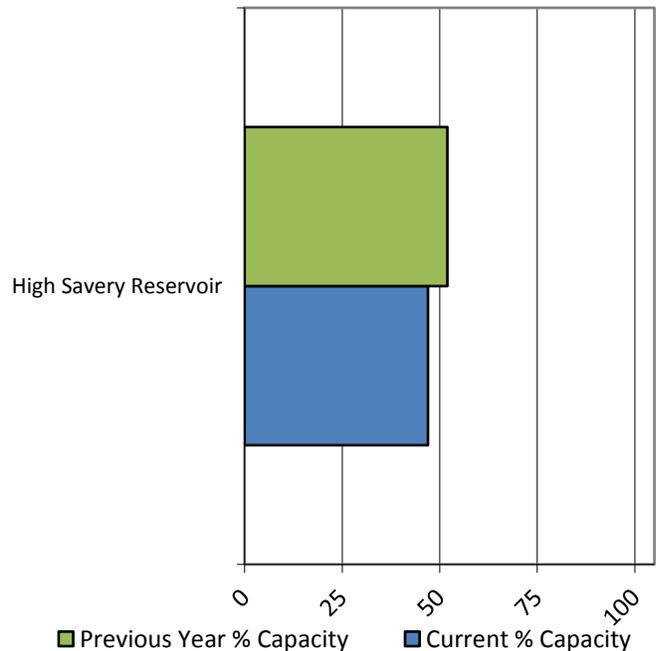
January 1, 2018

Snowpack in the Little Snake River Basin is below normal at 70% of normal, compared to 103% last year. Precipitation in December was much below average at 65%, which brings the seasonal accumulation (Oct-Dec) to 70% of average. Soil moisture at sites with sensors is at 68% of saturation. Reservoir storage is at 47% of capacity, compared to 52% last year. Forecast streamflow volumes range from 57% to 72% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

### Reservoir Storage



## Little Snake River Basin Streamflow Forecasts - January 1, 2018

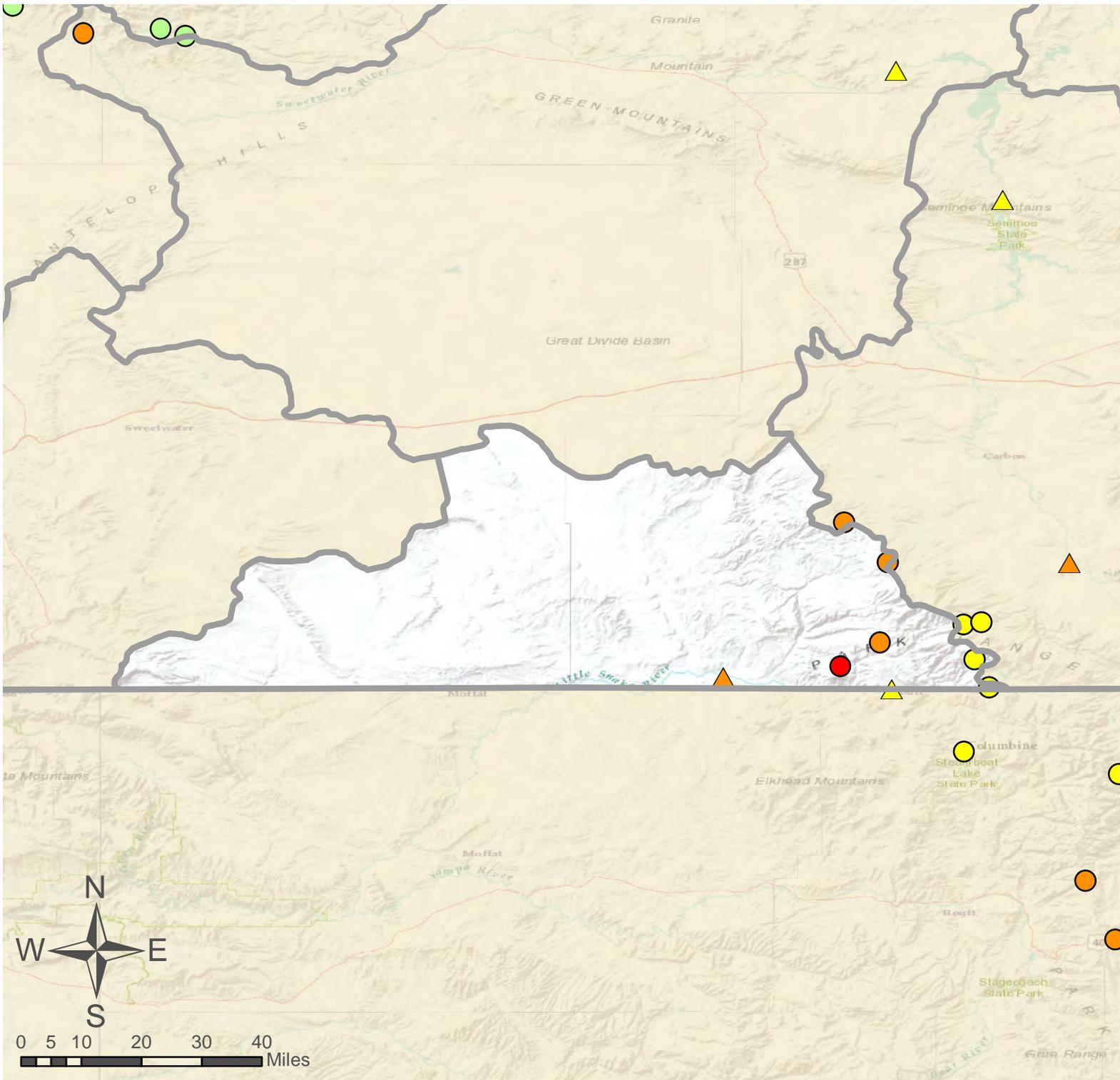
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

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 <sup>2</sup>	APR-JUL	59	89	113	72%	140	185	156
Little Snake R nr Dixon <sup>2</sup>	APR-JUL	83	145	197	57%	255	360	345

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

<b>Reservoir Storage End of December, 2017</b>	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
High Savery Reservoir	10.6	11.6	11.7	22.4
Basin-wide Total	10.6	11.6	11.7	22.4
# of reservoirs	1	1	1	1

<b>Watershed Snowpack Analysis January 1, 2018</b>	# of Sites	% Median	Last Year % Median
LITTLE SNAKE RIVER	8	70%	103%



# Little Snake River Basin

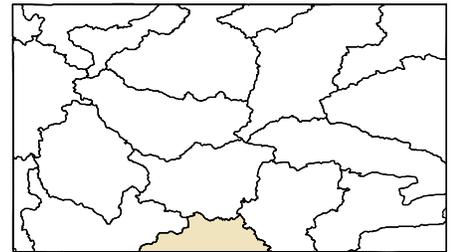
- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

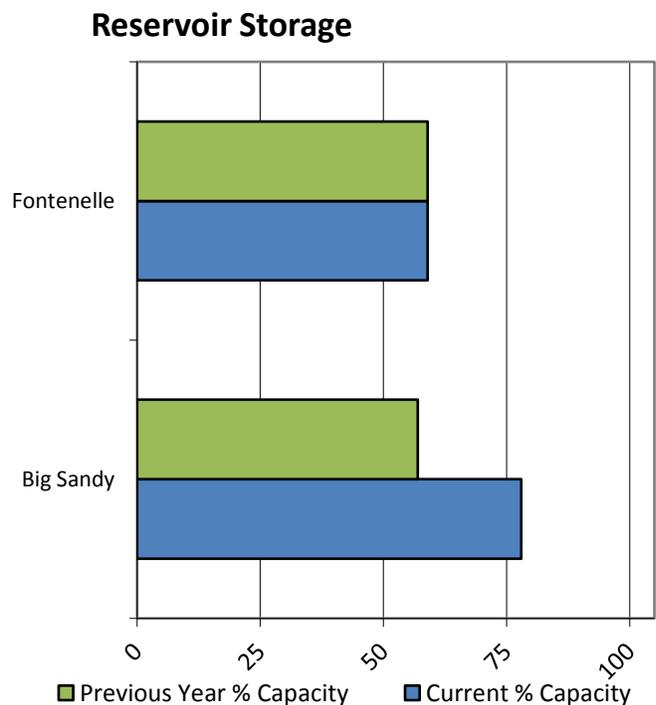
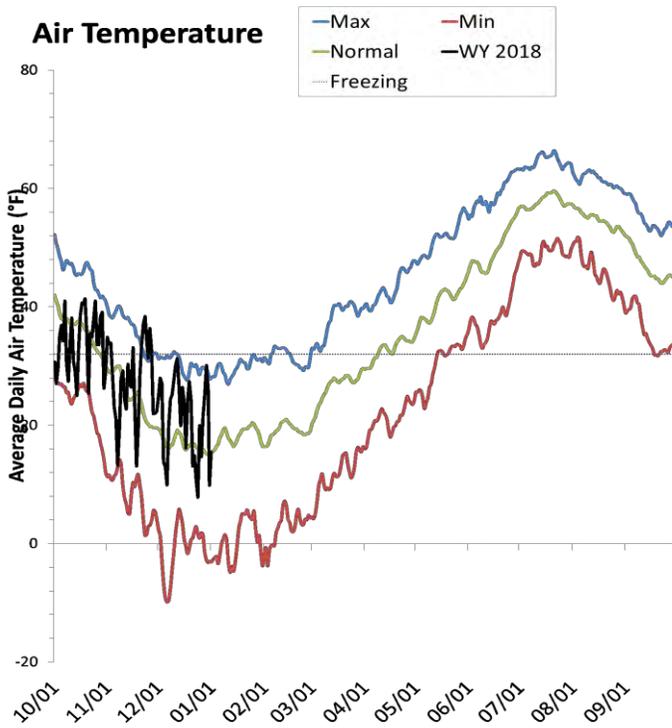
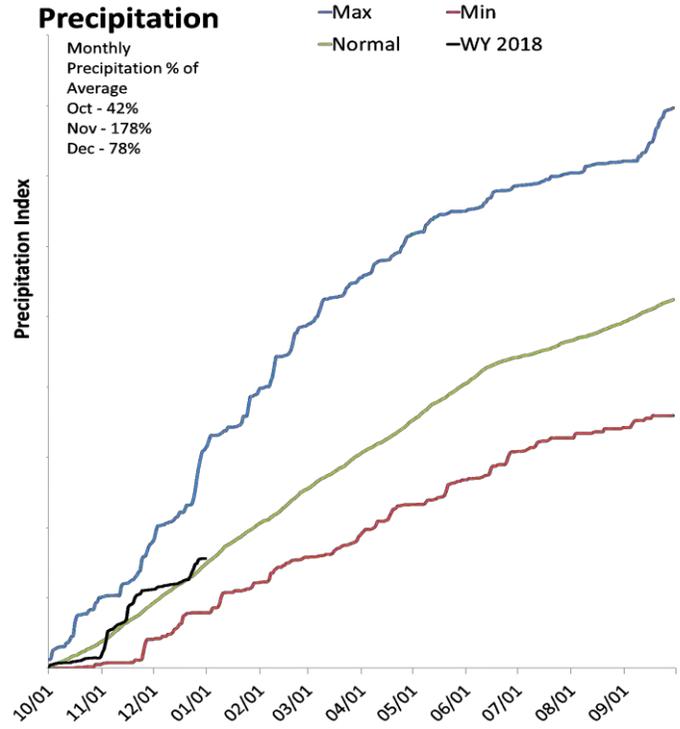
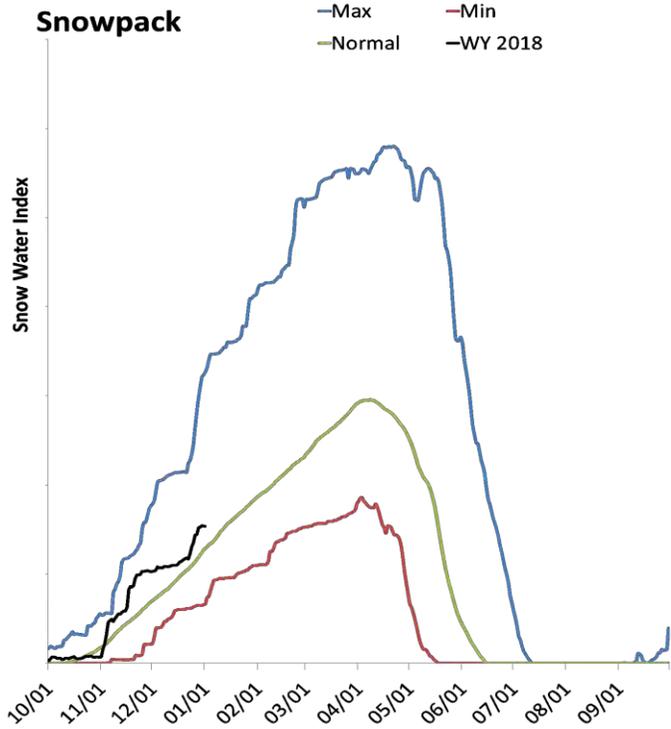
- 70% of Normal SWE
- 70% of Normal Precipitation
- 65% of Normal Precipitation Last Month



# Upper Green River Basin

January 1, 2018

Snowpack in the Upper Green River Basin is above normal at 120% of normal, compared to 136% last year. Precipitation in December was below average at 79%, which brings the seasonal accumulation (Oct-Dec) to 106% of average. Soil moisture at sites with sensors is at 46% of saturation. Reservoir storage is at 61% of capacity, compared to 59% last year. Forecast streamflow volumes range from 96% to 104% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

## Upper Green River Basin Streamflow Forecasts - January 1, 2018

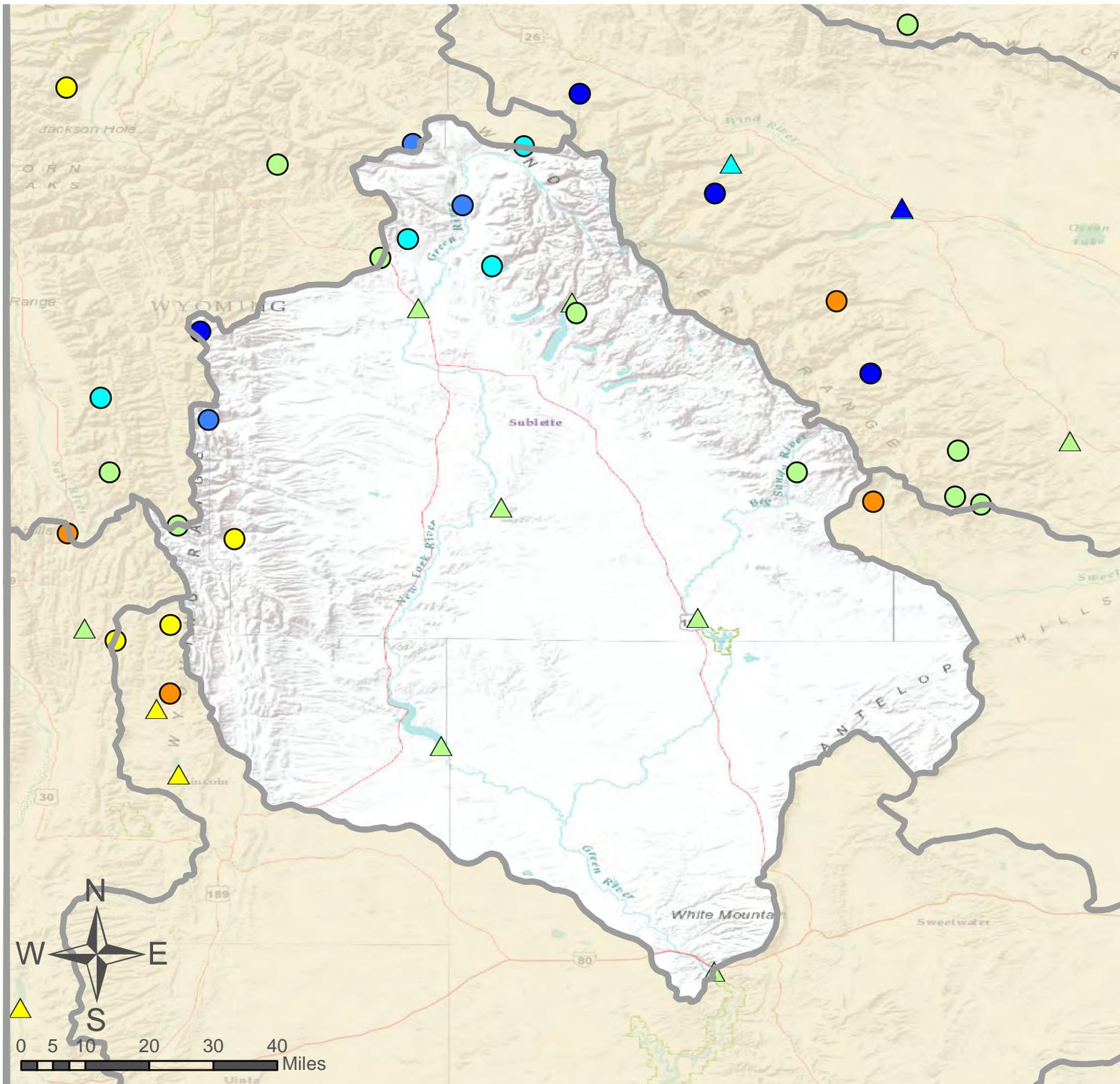
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

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	167	220	255	104%	295	345	245
Pine Creek ab Fremont Lake	APR-JUL	78	92	102	104%	111	126	98
New Fork R nr Big Piney	APR-JUL	195	300	370	104%	440	545	355
Fontenelle Reservoir Inflow	APR-JUL	330	570	735	101%	900	1140	725
Big Sandy R nr Farson	APR-JUL	29	41	50	96%	59	71	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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Big Sandy	29.9	22.0	16.3	38.3
Fontenelle	203.6	203.2	175.3	344.8
Basin-wide Total	233.5	225.2	191.6	383.1
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
GREEN above Warren Bridge	5	124%	135%
UPPER GREEN - West Side	4	122%	141%
NEWFORK RIVER	2	111%	120%
BIG SANDY-EDEN VALLEY	2	83%	147%
GREEN above Fontenelle	12	120%	136%
UPPER GREEN RIVER	12	120%	136%



# Upper Green River Basin

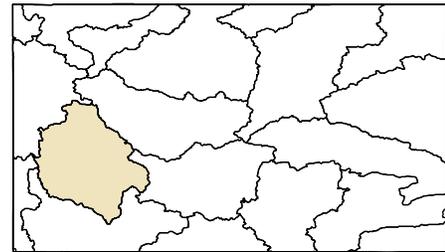
- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

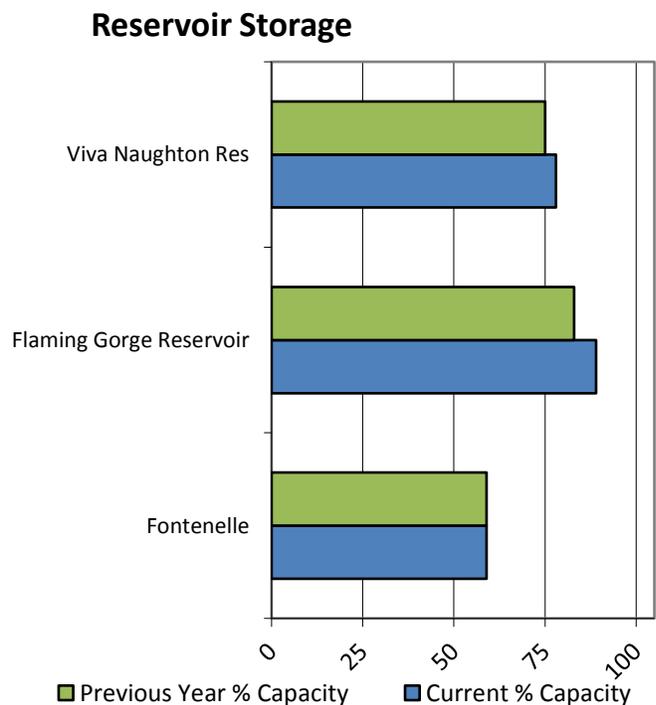
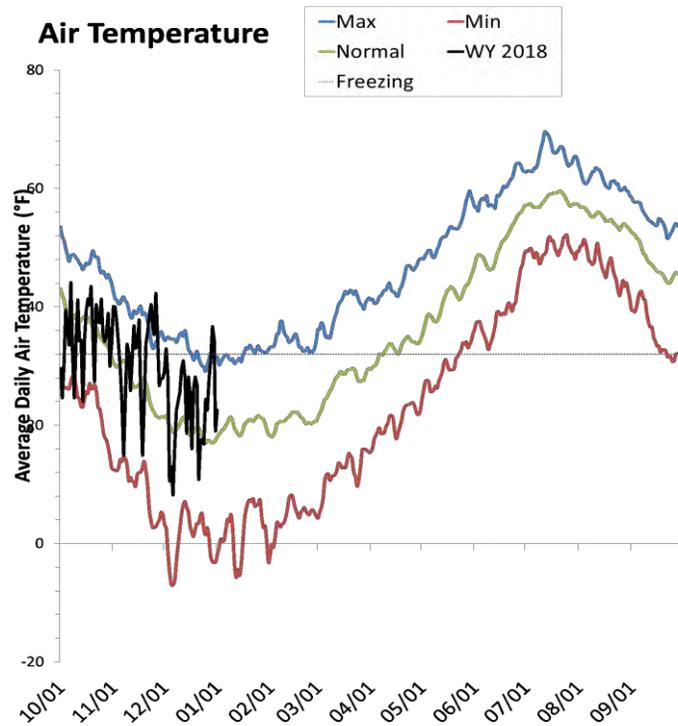
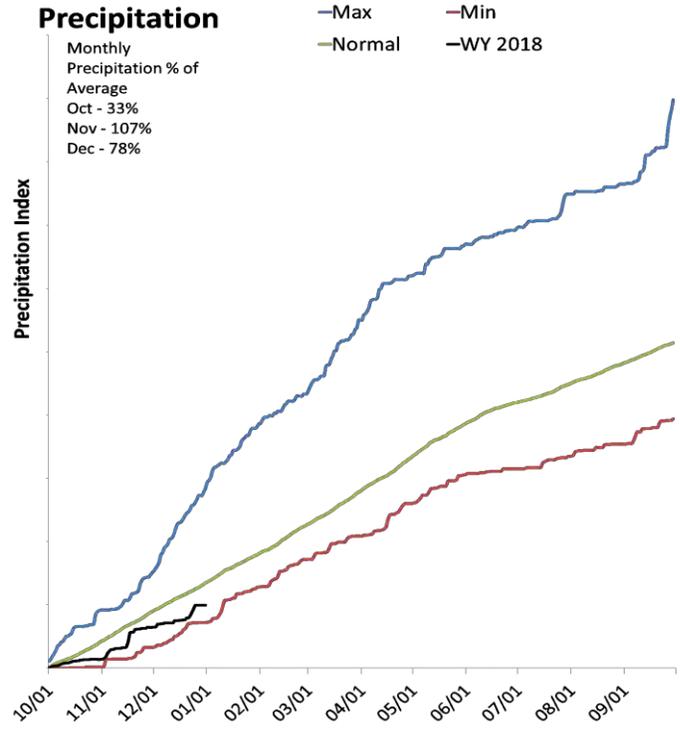
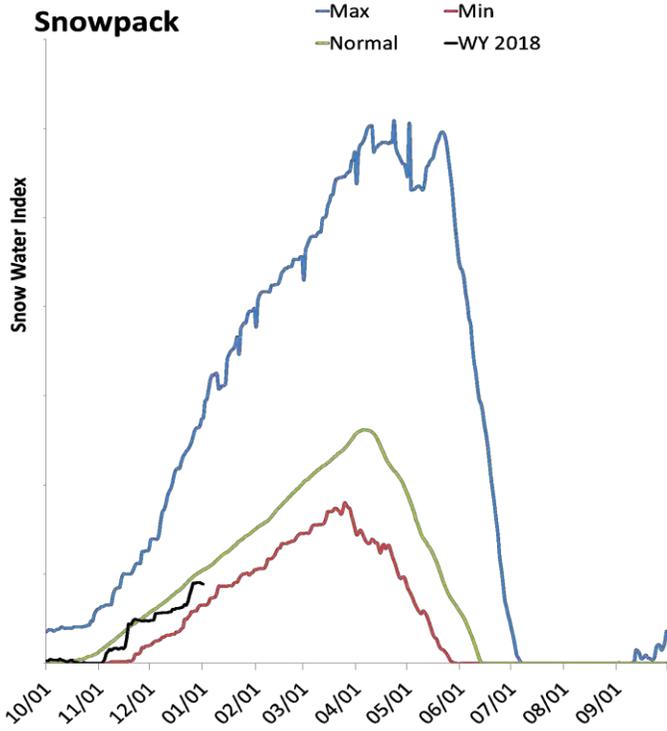
- 120% of Normal SWE
- 106% of Normal Precipitation
- 79% of Normal Precipitation Last Month



# Lower Green River Basin

January 1, 2018

Snowpack in the Lower Green River Basin is below normal at 85% of normal, compared to 119% last year. Precipitation in December was below average at 78%, which brings the seasonal accumulation (Oct-Dec) to 74% of average. Soil moisture at sites with sensors is at 54% of saturation. Reservoir storage is at 87% of capacity, compared to 81% last year. Forecast streamflow volumes range from 72% to 103% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

## Lower Green River Basin Streamflow Forecasts - January 1, 2018

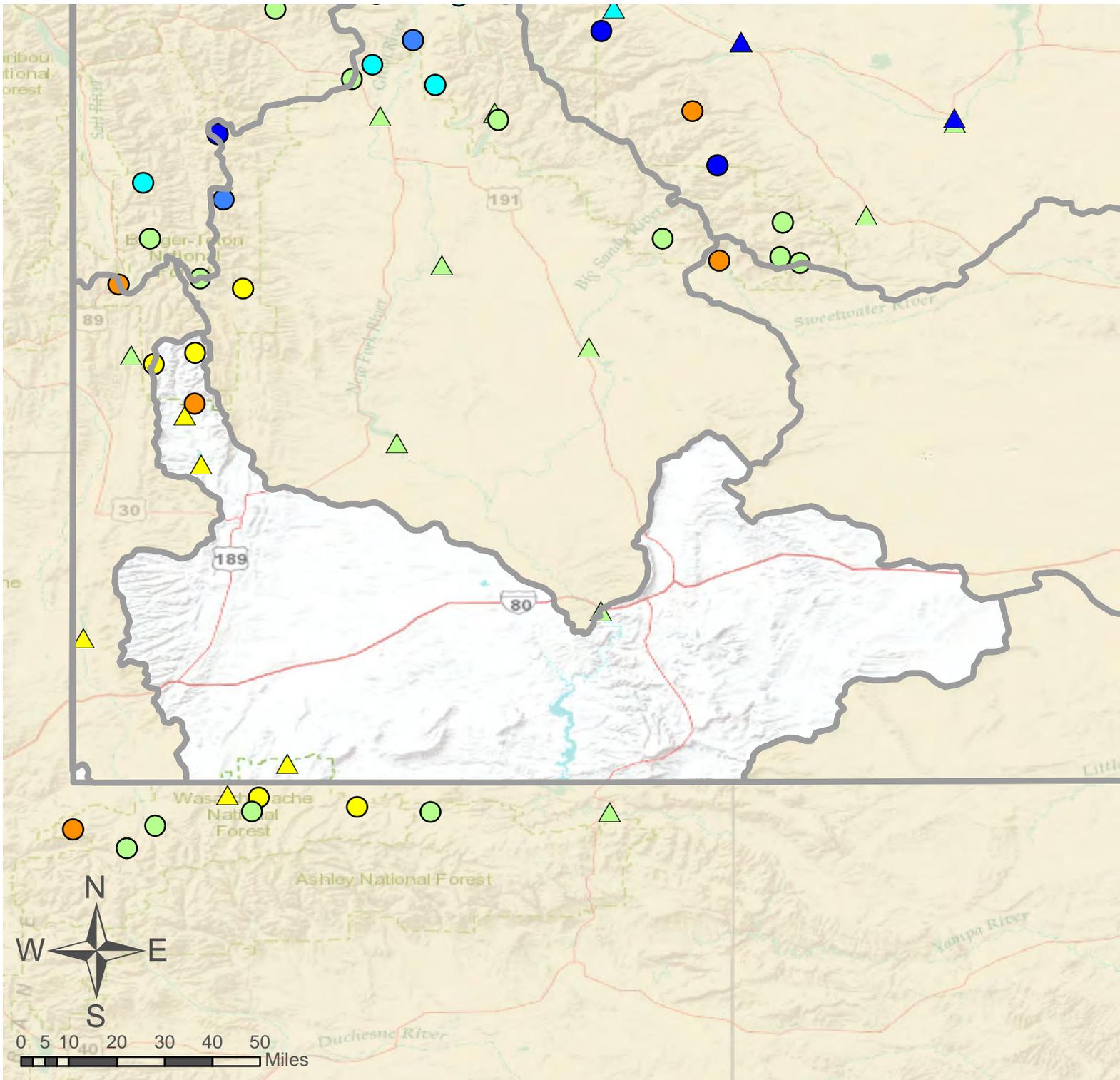
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

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 <sup>2</sup>	APR-JUL	325	575	750	103%	925	1180	730
Blacks Fk nr Robertson	APR-JUL	43	61	74	86%	86	105	86
EF of Smiths Fork nr Robertson <sup>2</sup>	APR-JUL	12.5	18.1	22	81%	26	32	27
Hams Fk bl Pole Ck nr Frontier	APR-JUL	9.3	28	40	74%	53	71	54
Viva Naughton Reservoir Inflow	APR-JUL	20	37	53	72%	73	102	74
Flaming Gorge Reservoir Inflow <sup>2</sup>	APR-JUL	295	650	890	91%	1130	1490	980

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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Fontenelle	203.6	203.2	175.3	344.8
Flaming Gorge Reservoir	3343.2	3130.4	3091.0	3749.0
Viva Naughton Res	33.1	31.6	31.4	42.4
Basin-wide Total	3580.0	3365.2	3297.7	4136.2
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
HAMS FORK RIVER	3	78%	120%
BLACKS FORK	2	95%	116%
HENRYS FORK	2	90%	122%
LOWER GREEN RIVER	7	85%	119%
GREEN above FLAMING GORGE	19	108%	131%



# Lower Green River Basin

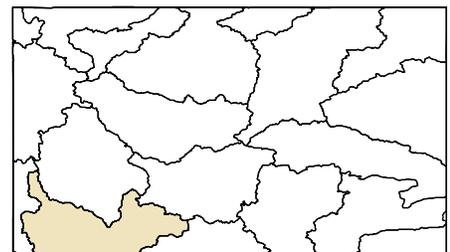
- SNOTEL Site
- △ Forecast Point

## % of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

As of January 1, 2018:

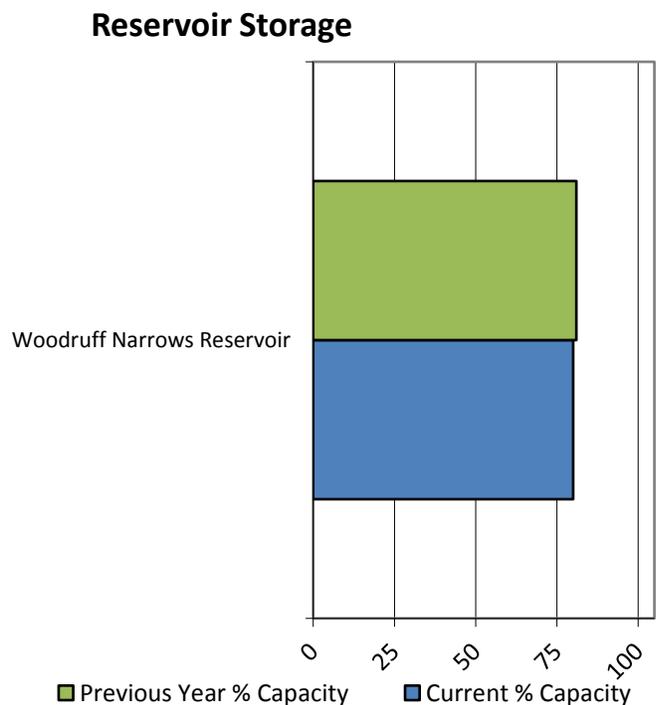
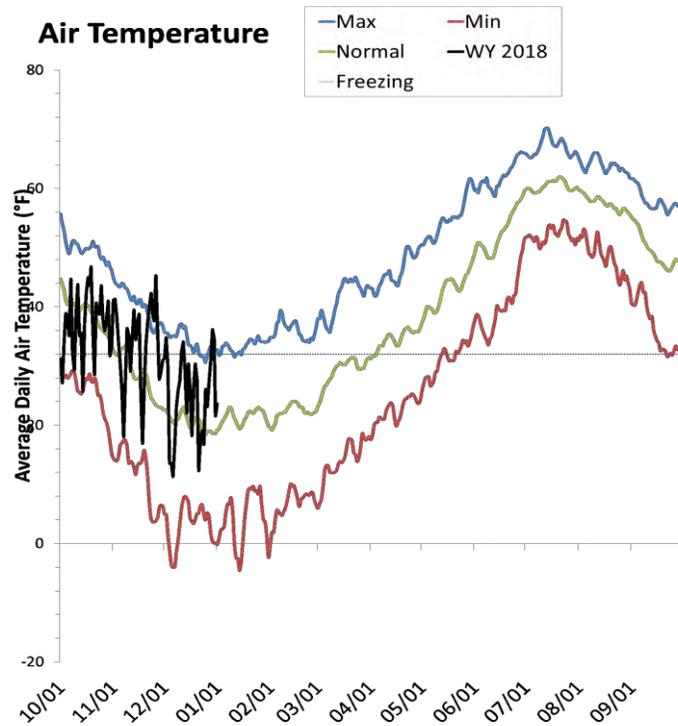
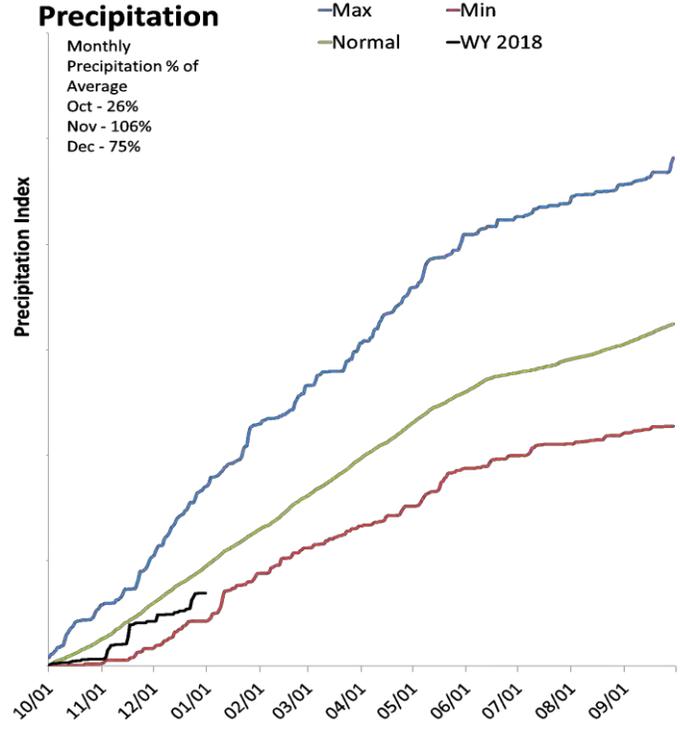
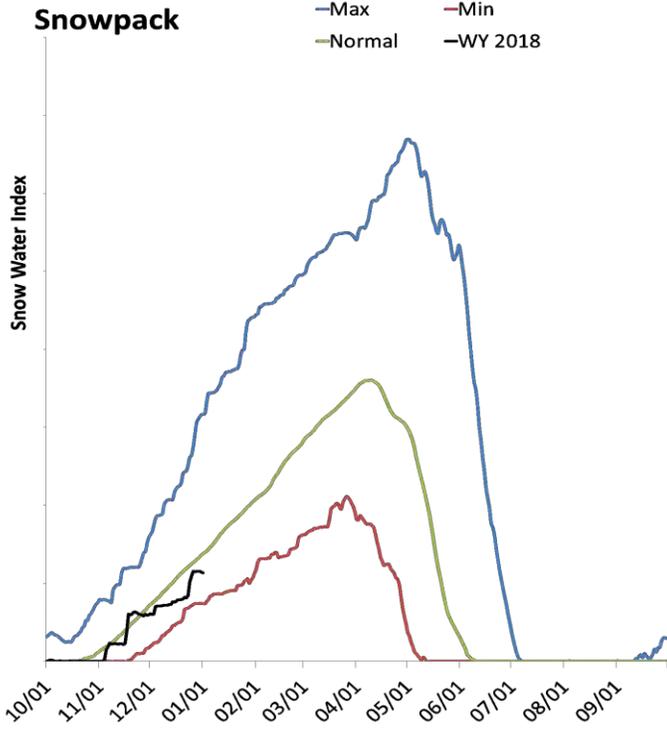
- 85% of Normal SWE
- 74% of Normal Precipitation
- 78% of Normal Precipitation Last Month



# Upper Bear River Basin

January 1, 2018

Snowpack in the Upper Bear River Basin is below normal at 82% of normal, compared to 118% last year. Precipitation in December was below average at 76%, which brings the seasonal accumulation (Oct-Dec) to 73% of average. Soil moisture at sites with sensors is at 69% of saturation. Reservoir storage is at 80% of capacity, compared to 81% last year. Forecast streamflow volumes range from 79% to 91% of average.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

## Upper Bear River Basin Streamflow Forecasts - January 1, 2018

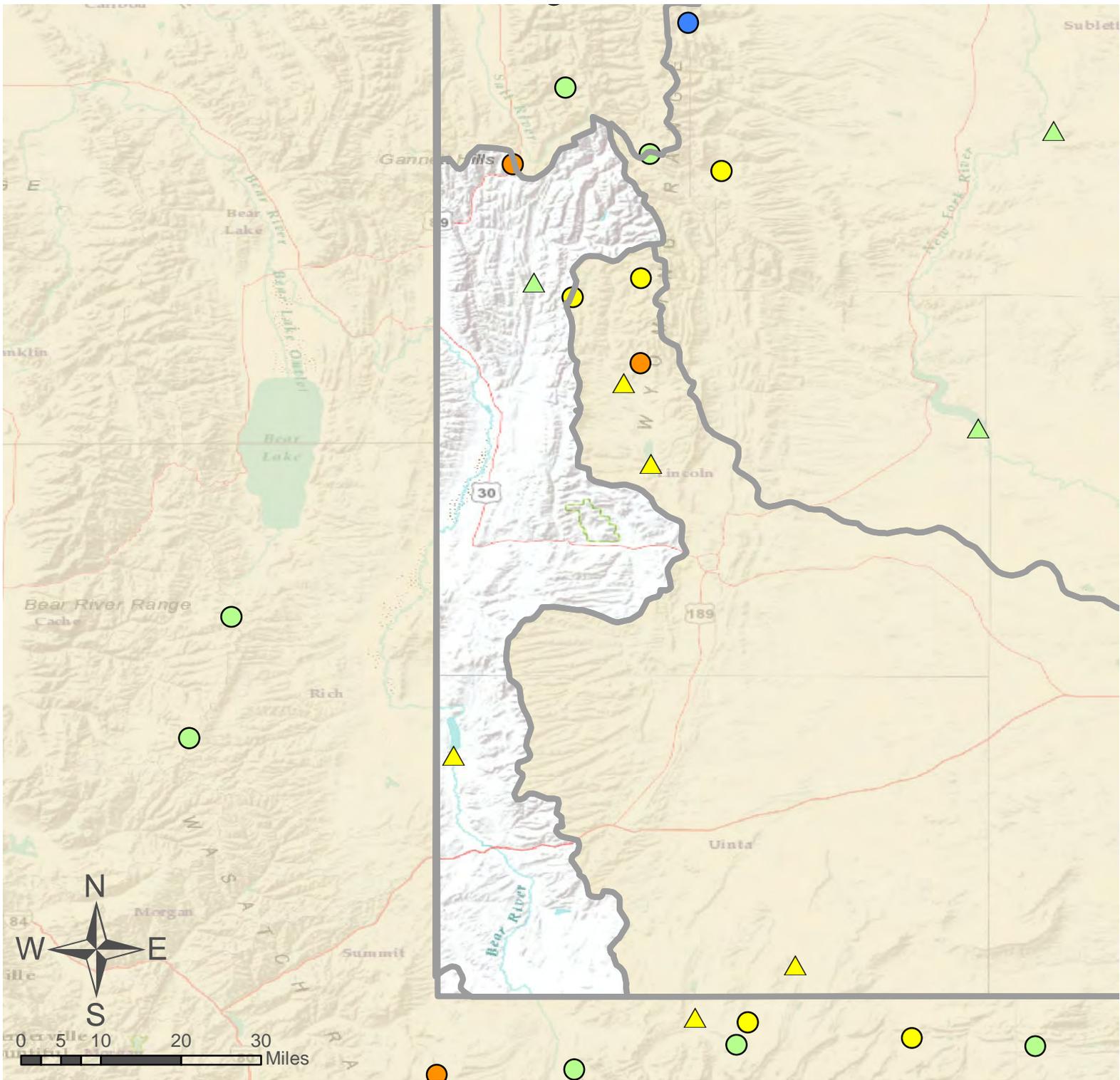
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

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	48	75	92	82%	110	136	112
	APR-SEP	54	83	102	83%	121	149	123
Bear R ab Resv nr Woodruff	APR-JUL	7.6	60	95	79%	130	182	121
	APR-SEP	11.7	67	105	82%	143	198	128
Smiths Fk nr Border	APR-JUL	45	66	81	91%	95	117	89
	APR-SEP	54	78	95	91%	111	136	104

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

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Woodruff Narrows Reservoir	46.0	46.4	27.3	57.3
Basin-wide Total	46.0	46.4	27.3	57.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
UPPER BEAR RIVER in Utah	3	80%	113%
SMITHS & THOMAS FORKS	3	86%	121%
UPPER BEAR RIVER	7	82%	118%

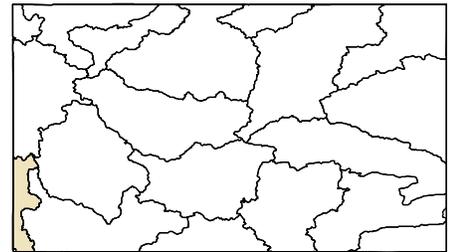


As of January 1, 2018:

82% of Normal SWE

73% of Normal Precipitation

76% of Normal Precipitation Last Month



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# **Wyoming Water Supply Outlook Report**

**Natural Resources Conservation Service**  
**Casper, WY**

