

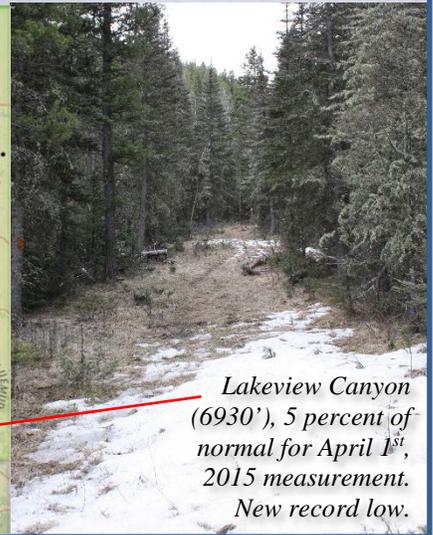
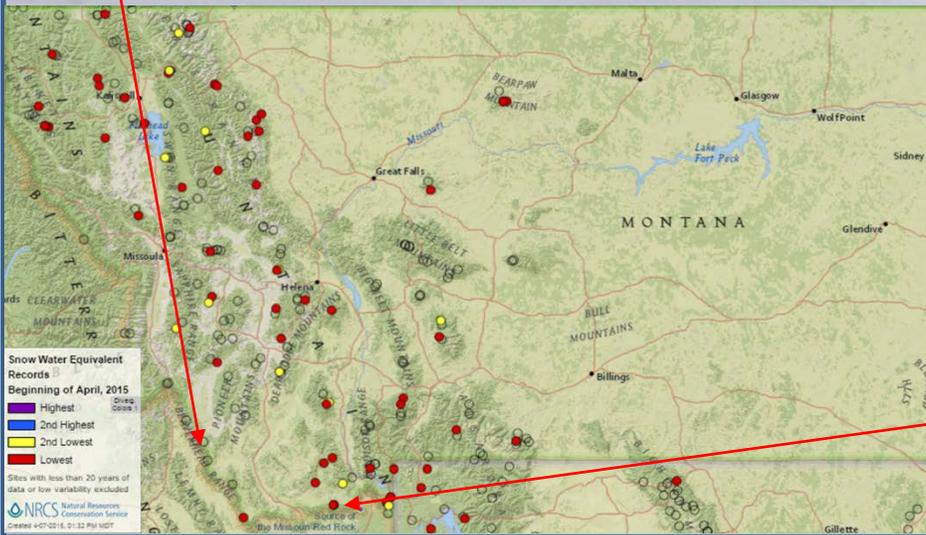
Montana

Water Supply Outlook Report

April 1st, 2015



Slagameit Lake (7940'), 101 percent of normal for April 1st, 2015 measurement.



Lakeview Canyon (6930'), 5 percent of normal for April 1st, 2015 measurement. New record low.

Well above average temperatures during the month of March, and well below normal snowfall has caused all basins to decline below normal for April 1st, 2015. 47 measurement locations in the state set new record low snow water equivalent values for April 1st, many of these locations are low-elevation sites. Low to mid elevations have experienced significant melt during the month, while higher elevations have continued to hold on to the abundant snow they received earlier in the year. Basin declines have caused streamflow prospects to drop this spring and summer during the April-July time period. (Photos: Lucas Zukiewicz, Chris Carparelli)

For more water supply and resource management information, contact:

Lucas Zukiewicz
Water Supply Specialist
Federal Building
10 East Babcock, Room 443
Bozeman, MT 59715
Phone 406-587-6843
lucas.zukiewicz@mt.usda.gov
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/mt/snow/>

Montana Water Supply Outlook Report as of April 1st, 2015

How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Natural Resources Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs and marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C., 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.

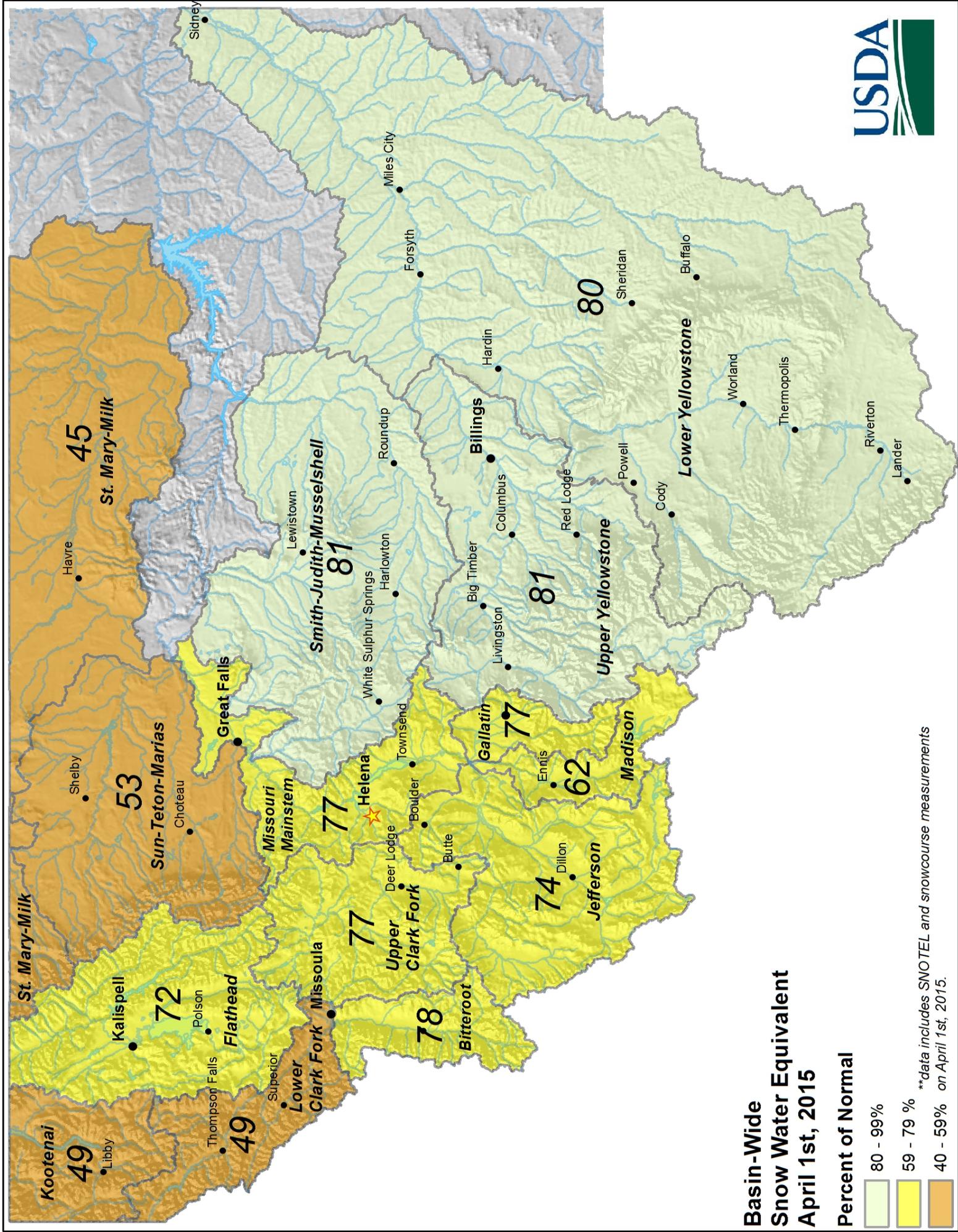
Snowpack

Three straight months of below normal snowfall and well above average to record breaking temperatures has taken its toll on Montana's snowpack. All basins in the state saw decreases in snowpack percentages this month with only minimal snow falling in the mountains of Montana. A combination of low-elevation melt and no additional snow for the snowpack has caused these drops, for the most part. Higher elevations which have so far been spared from the bulk of the melt are still near their seasonal peak snow water equivalent and have held on through the warmer temperatures. In fact, many sites that were well above normal beginning the month have been able to stay near to slightly above normal on April 1st.

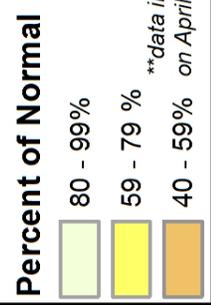
The lower elevations were not so lucky. Many sites experienced significant melt during the month with 18 SNOTEL sites completely melted out on April 1st. The melt and lack of snowfall at low to mid elevations left 47 measurement locations (SNOTEL and snowcourse) with new record low snow water equivalent for April 1st. This substantial melt will have an impact on our water yield this summer as this snow water has already made its way into the soil and our river systems.

Snowpack in the state typically peaks during the month of April to early May depending on the part of the state. Unless a major pattern change occurs snowpack could peak earlier than normal in mid-to-late March, and this peak would be well below normal. East of the Continental Divide many basins are favored for spring precipitation and snowfall, and a pattern change would be more than welcome at this point.

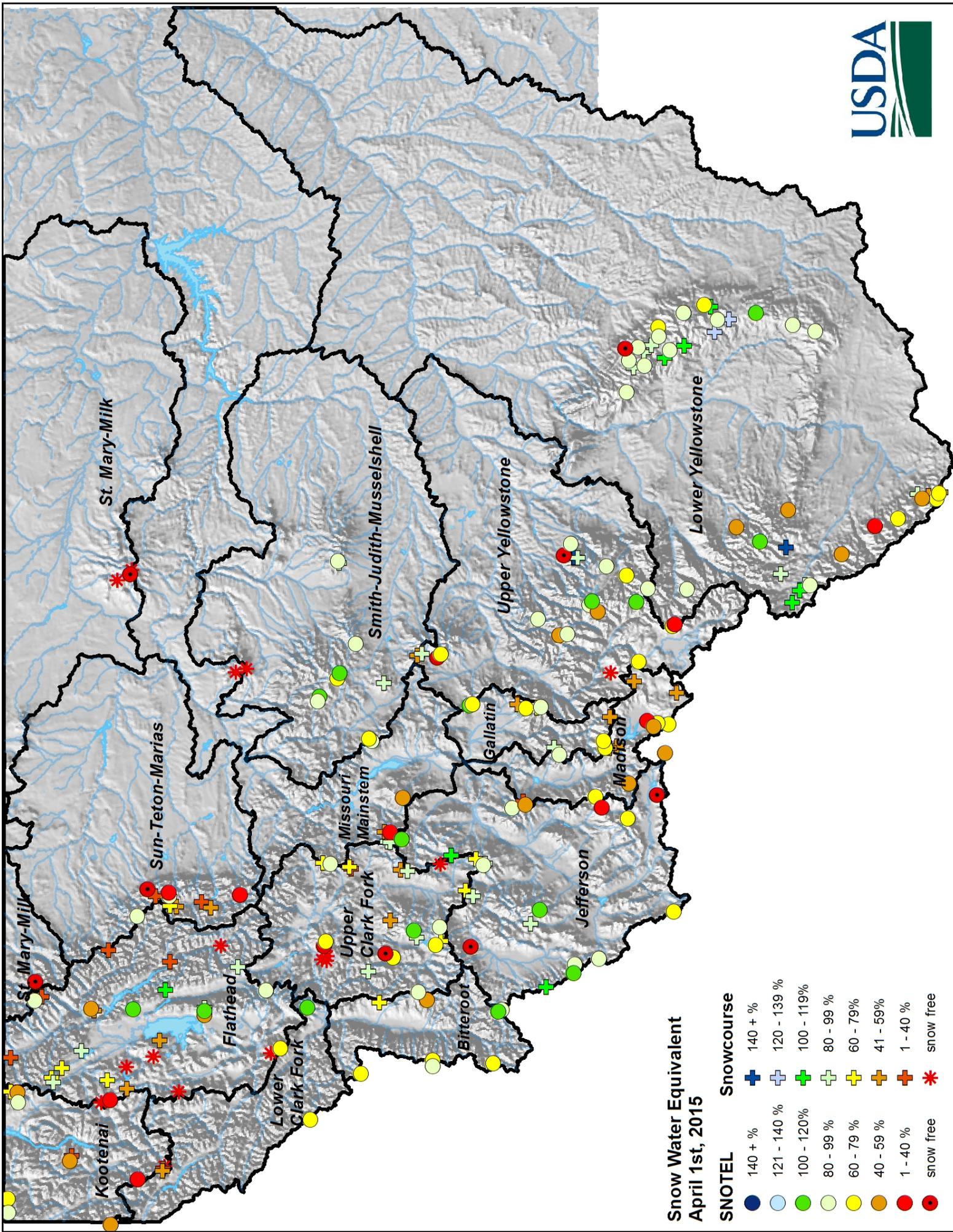
April 1st, 2015 Snow Water Equivalent		
<i>River Basin</i>	April 1 % of Median	Monthly Change
Columbia	67	-19%
Kootenai	49	-11%
Flathead	72	-16%
Upper Clark Fork	77	-29%
Bitterroot	78	-20%
Lower Clark Fork	49	-16%
Missouri	67	-27%
Missouri Headwaters	70	-25%
Jefferson	74	-26%
Madison	62	-18%
Gallatin	77	-20%
Missouri Mainstem	67	-32%
Headwaters Mainstem	77	-35%
Smith-Judith Musselshell	81	-28%
Sun-Teton-Marias	53	-34%
Milk	0	-48%
St. Mary	53	-24%
St. Mary & Milk	45	-20%
Yellowstone	81	-26%
Upper Yellowstone	81	-25%
Lower Yellowstone	80	-27%
East of Divide	72	-26%
West of Divide	67	-19%
Statewide	68	--23%



Basin-Wide Snow Water Equivalent April 1st, 2015



**data includes SNOTEL and snowcourse measurements on April 1st, 2015.



**Snow Water Equivalent
April 1st, 2015**

SNOTEL	Snowcourse
●	140 + %
○	121 - 140 %
●	100 - 120%
○	80 - 99 %
●	60 - 79 %
○	40 - 59 %
●	1 - 40 %
○	snow free
+	140 + %
○	120 - 139 %
+	100 - 119%
○	80 - 99 %
+	60 - 79%
○	41 - 59%
+	1 - 40 %
*	snow free

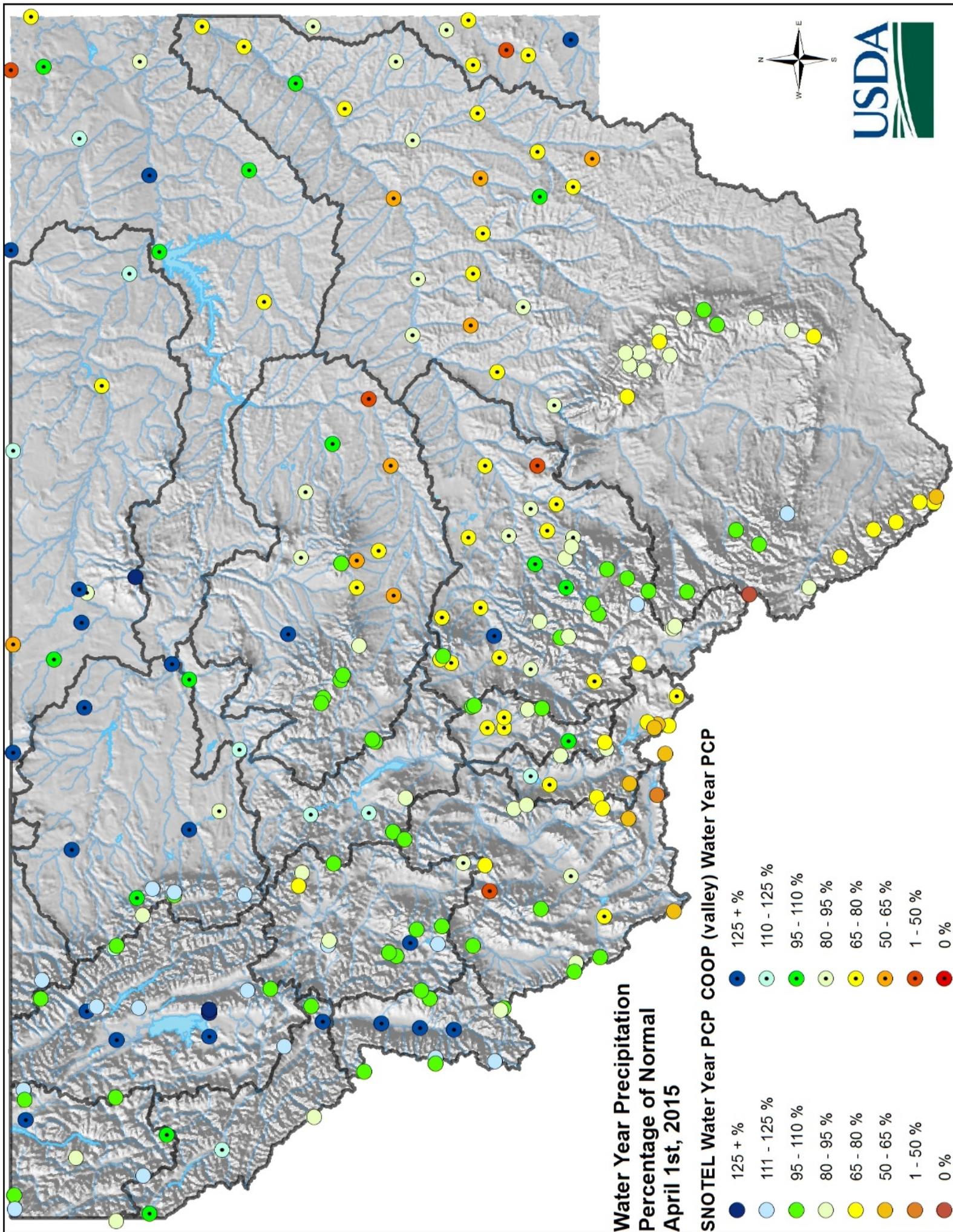
Precipitation

While the northwest basins in the Columbia drainage and northern basins east of the Divide saw well above normal precipitation during March, other basins in the southern half of the state saw well below normal precipitation for the month. During the first half of the month the Kootenai and Flathead River basins received 5 to 11 inches of precipitation, swelling the rivers and melting low elevation snow. Southern basins received paltry amounts of precipitation during the month (38 to 54 percent of normal), dropping their water year-to-date percentages.

The amount of precipitation we have received this year has kept most basins near normal for the water year (October 1st to current), but a few basins in southwest Montana and in Wyoming are now well below normal for this time (Jefferson, Madison and Lower Yellowstone) due to the lack of March precipitation.

State-wide precipitation for the month of March was 74 percent of normal, and is currently 99 percent of the water year-to-date average for April 1st.

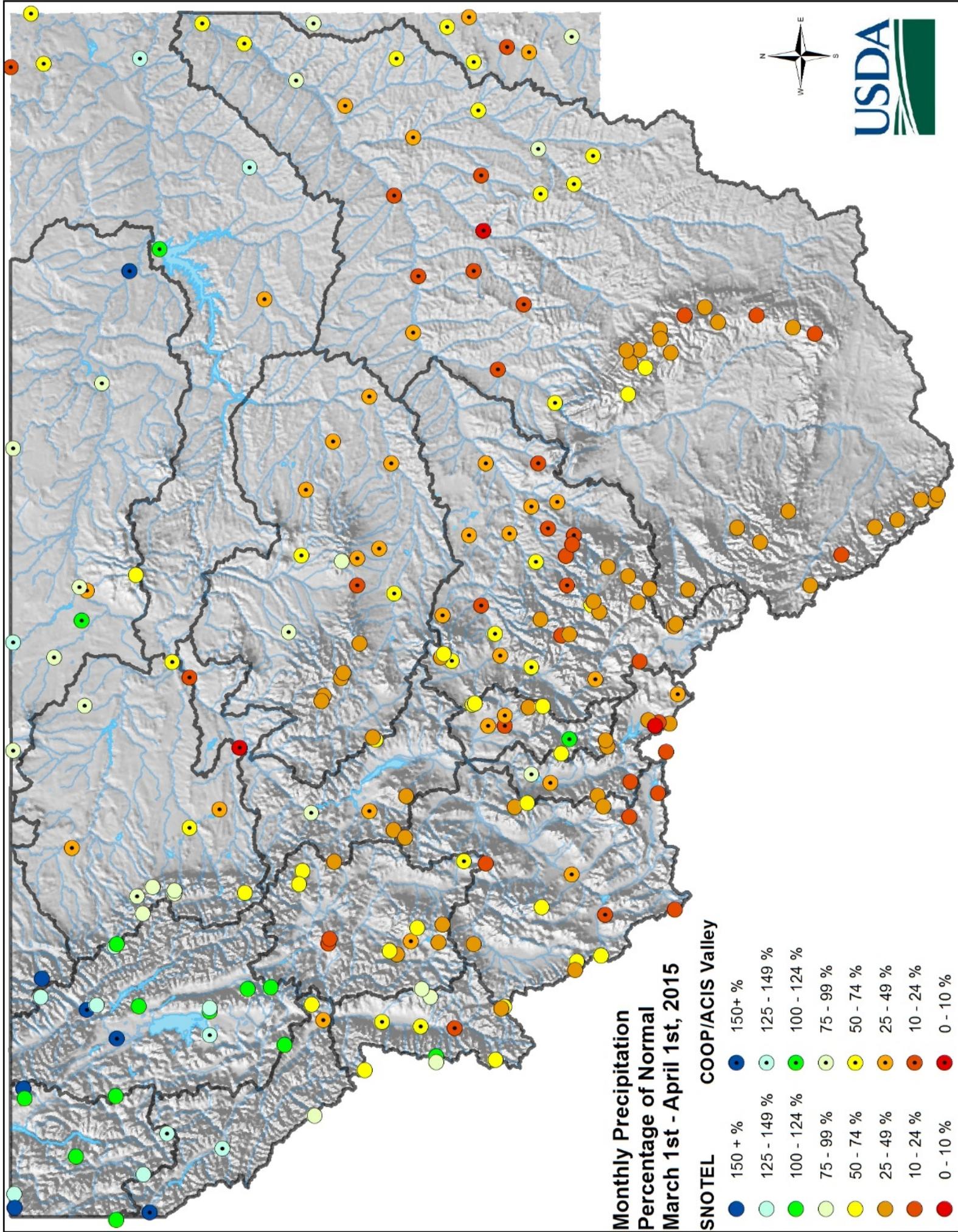
April 1st, 2015 Precipitation		
<i>River Basin</i>	March % of Average	Water Year % of Average
Columbia	101	106
Kootenai	132	103
Flathead	121	112
Upper Clark Fork	56	100
Bitterroot	79	108
Lower Clark Fork	111	105
Missouri	52	91
Missouri Headwaters	40	82
Jefferson	38	84
Madison	38	74
Gallatin	54	92
Missouri Mainstem	62	101
Smith-Judith Musselshell	47	94
Sun-Teton-Marias	90	108
Milk	157	155
St.Mary	146	110
St. Mary & Milk	119	122
Yellowstone	41	88
Upper Yellowstone	43	92
Lower Yellowstone	40	83
Statewide	74	99



**Water Year Precipitation
Percentage of Normal
April 1st, 2015**

SNOTEL Water Year PCP COOP (valley) Water Year PCP

- | | |
|---------------|---------------|
| ● 125 + % | ● 125 + % |
| ● 111 - 125 % | ● 110 - 125 % |
| ● 95 - 110 % | ● 95 - 110 % |
| ● 80 - 95 % | ● 80 - 95 % |
| ● 65 - 80 % | ● 65 - 80 % |
| ● 50 - 65 % | ● 50 - 65 % |
| ● 1 - 50 % | ● 1 - 50 % |
| ● 0 % | ● 0 % |



**Monthly Precipitation
Percentage of Normal
March 1st - April 1st, 2015**

SNOTEL COOP/ACIS Valley

- 150 + % ● 150 + %
- 125 - 149 % ● 125 - 149 %
- 100 - 124 % ● 100 - 124 %
- 75 - 99 % ● 75 - 99 %
- 50 - 74 % ● 50 - 74 %
- 25 - 49 % ● 25 - 49 %
- 10 - 24 % ● 10 - 24 %
- 0 - 10 % ● 0 - 10 %



Reservoirs

Below normal snowfall during and well above average temperatures reduced our snowpack percentages for April 1st, but the snowmelt was caught in most reservoirs where volumes increased during the month. Almost all reservoirs in the state showed an increase this month for the April 1st percentage of average storage.

State Project reservoirs were kept near winter maximums this winter and had excellent carryover from the snow and runoff we experienced last spring/summer. Many of these reservoirs continue to be well above average for the date. West of the Divide the heavy precipitation experienced during the beginning of the month yielded direct runoff into the lakes and reservoirs and helped to increase the volume stored. Only one reservoir in the state is slightly below normal, Clark Canyon on the Beaverhead River, which is 87 percent of average for April 1st.

State-wide reservoir storage is currently 125 percent of average for April 1st, and 110 percent of last year at this time.

April 1 Reservoir Storage		
<i>River Basin</i>	April 1 % of Average	April 1 % Last Year
Columbia	149	109
Kootenai	167	99
Flathead	140	121
Upper Clark Fork	114	115
Bitterroot	203	161
Lower Clark Fork	104	101
Missouri	117	117
Missouri Headwaters	106	107
Jefferson	101	125
Madison	114	105
Gallatin	104	130
Missouri Mainstem	116	116
Smith-Judith Musselshell	158	137
Sun-Teton-Marias	121	125
Milk	150	109
St. Mary	213	161
St. Mary & Milk	164	121
Yellowstone	110	105
Upper Yellowstone	112	106
Lower Yellowstone	110	105
Statewide	125	110

Streamflow

Basins in the state that were near to above normal on March 1st have now dropped to below normal due to the unseasonable weather we have experienced this year. Based on the decline in the snowpack percentages of normal during the month, streamflow forecasts have also been reduced for spring snowmelt runoff (April-July) for the third straight month.

Although basins west of the Divide have low snowpack this winter, well above normal precipitation this month has kept streamflow prospects decent on the main stems of the Kootenai and Flathead Rivers. Other basins further south west of the divide have seen drops in the forecasts due to the lack of snowfall and melting of lower elevations during the month.

East of the Divide declines in snowpack percentages and well below normal snowfall and precipitation has caused large drops in some basin forecasts. The southwest portion of the state, which has been dry for most of the water year, looks to receive well below average streamflows, in some cases possible record lows. Other adjacent basins in southwest Montana share this dry trend and the individual basins reports should be consulted for specific area information.

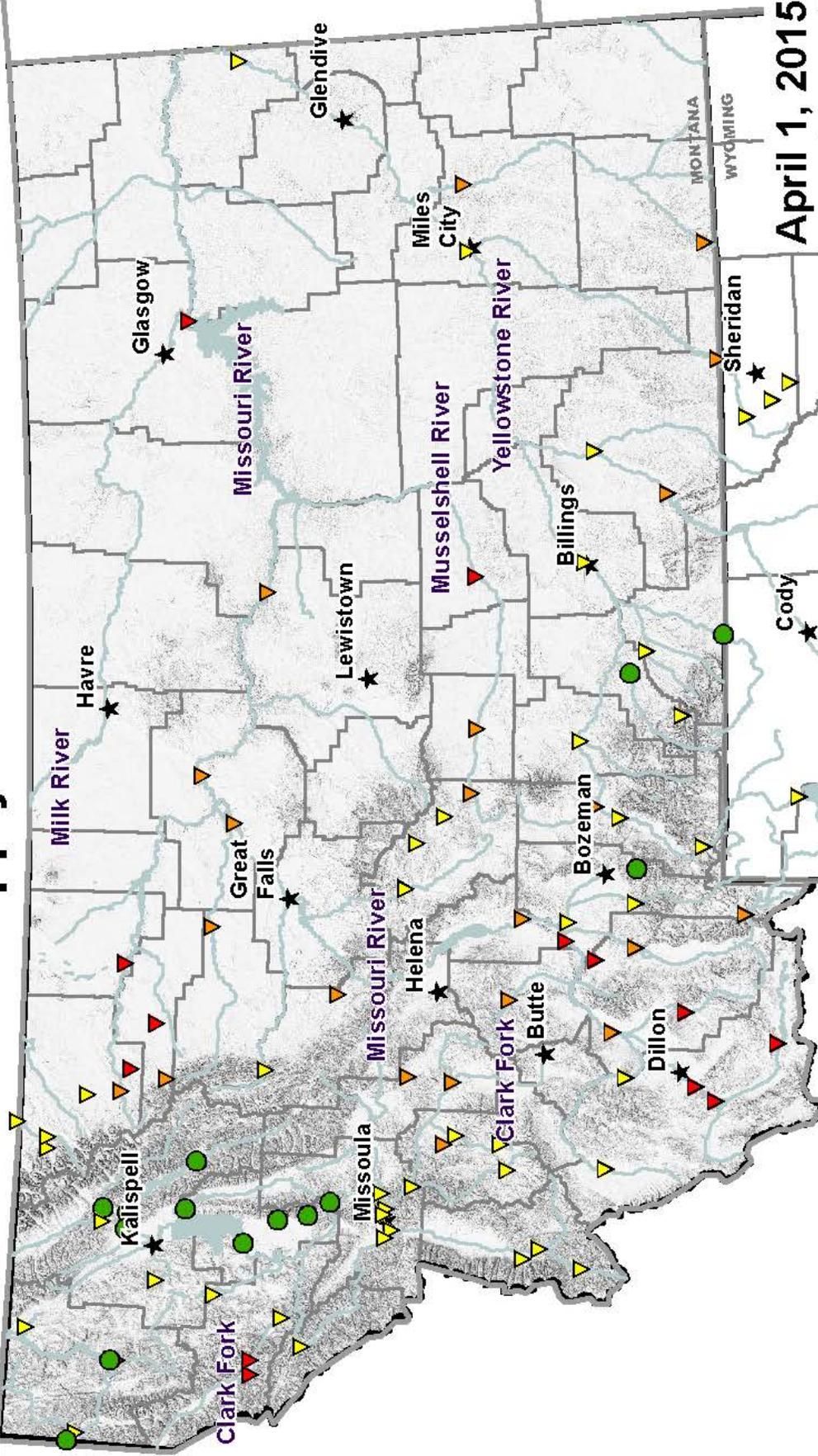
Please consult the individual basin reports for a more comprehensive guide to individual basin conditions as they can vary widely this water year.

Following are streamflow forecasts for the period April 1 through July 31. **THE FIGURES IN THE TABLE BELOW ARE AN AVERAGE OF ALL FORECASTS WITHIN THE PARTICULAR BASIN AT THE 50 PERCENT EXCEEDANCE ONLY. ALL 50 PERCENT EXCEEDANCE FORECASTS ASSUME NEAR NORMAL WEATHER THROUGH THE END OF THE FORECAST PERIOD.**

FOR FORECASTS ABOVE AND BELOW THE 50 PERCENT EXCEEDANCE, LOOK TO THE SPECIFIC BASIN REPORTS.

April-July Streamflow Forecast Period		
River Basin	Forecast as % of Average	Forecast as % Last Year's Flows
Columbia	89	67
Kootenai	92	79
Flathead	94	68
Upper Clark Fork	78	56
Bitterroot	79	47
Lower Clark Fork	86	55
Missouri	57	47
Missouri Headwaters	60	54
Jefferson	55	48
Madison	61	63
Gallatin	74	65
Missouri Mainstem	56	45
Headwaters Mainstem	56	46
Smith-Judith Musselshell	64	42
Sun-Teton-Marias	59	43
St. Mary	76	54
Yellowstone	80	52
Upper Yellowstone	86	59
Lower Yellowstone	76	48
Statewide	79	58

Water Supply Forecast for Montana



April 1, 2015

WATER SUPPLY FORECAST

- ▲ Extremely Above Average (Over 150)
- ▲ Much Above Average (131 - 150)
- ▲ Above Average (111 - 130)
- Near Average (91 - 110)
- ▼ Below Average (71 - 90)
- ▼ Much Below Average (51 - 70)
- ▼ Extremely Below Average (Below 51)

NOTE: Data used to generate this map are PROVISIONAL and SUBJECT TO CHANGE.



SWSI

The Surface Water Supply Index (SWSI) is a measure of available surface water availability for the spring and summer months. Water users that rely on mountain precipitation can use the index to evaluate seasonal surface water supplies. The SWSI accounts for mountain snowpack, mountain precipitation, streamflow, reservoir storage, and soil moisture.

Watershed	This month's SWSI	Last Year's SWSI
Marias above Tiber Reservoir	-2.9	0.7
Tobacco	-2.9	0.2
Kootenai Ft. Steele to Libby Dam	-0.7	-1.1
Kootenai below Libby Dam	2.3	0.3
Fisher	-3.1	1.2
Yaak	-2.2	-0.6
North Fk. Flathead	-1.8	0.5
Middle Fk. Flathead	-1.1	1.2
South Fk. Flathead	3.3	1.6
Flathead at Columbia Falls	0.7	1.5
Swan	0.7	1.5
Flathead at Polson	-0.2	0.9
Mission Valley	1.2	2.2
Little Bitterroot	-1.6	3.9
Clark Fork above Milltown	-1.6	1.8
Blackfoot	-2.5	1.2
Clark Fork above Missoula	-2.2	1.8
Bitterroot	-2.0	1.7
Clark Fork River below Bitterroot	-2.1	1.8
Clark Fork River below Flathead	-0.9	1.2
Beaverhead	-2.4	-1.3
Ruby	-4.0	1.2
Big Hole	-1.1	1.7
Boulder (Jefferson)	-1.8	2.5
Jefferson	-2.4	1.4
Madison	-3.3	0.4
Gallatin	-2.2	0.1
Missouri above Canyon Ferry	-2.9	0.1
Missouri below Canyon Ferry	-2.2	1.4
Smith	-0.4	2.8
Sun	-2.5	1.0
Teton	-1.6	0.1
Birch/Dupuyer Creeks	-1.3	0.3
Marias	-0.7	2.9
Musselshell	-0.9	2.8
Missouri above Fort Peck	-0.2	1.8
Missouri below Fort Peck	-0.9	0.8
Milk		
Dearborn near Craig	-2.7	2.8
Yellowstone above Livingston	-1.8	2.5
Shields	-2.6	2.2
Boulder (Yellowstone)	-2.7	3.0
Stillwater	-1.6	1.7
Rock/Red Lodge Creeks	-0.5	2.8
Clarks Fork Yellowstone	-0.2	2.7
Yellowstone above Bighorn River	-0.4	2.4
Bighorn below Bighorn Lake	-0.7	3.0
Little Bighorn	-1.6	1.8
Yellowstone below Bighorn	-0.5	2.7
Tongue	-1.8	3.9
Powder	-1.1	1.6
Upper Judith	-0.3	3.6
Saint Mary	-2.7	1.1

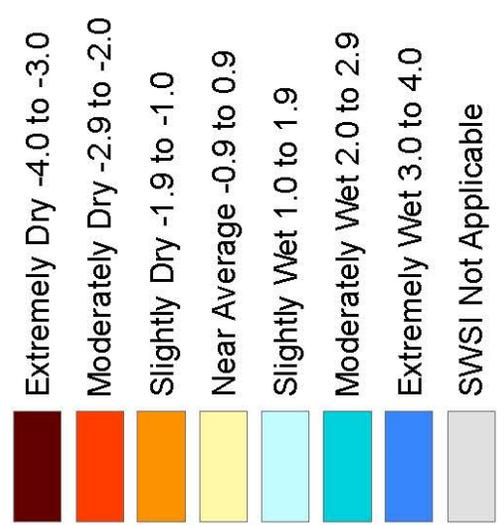
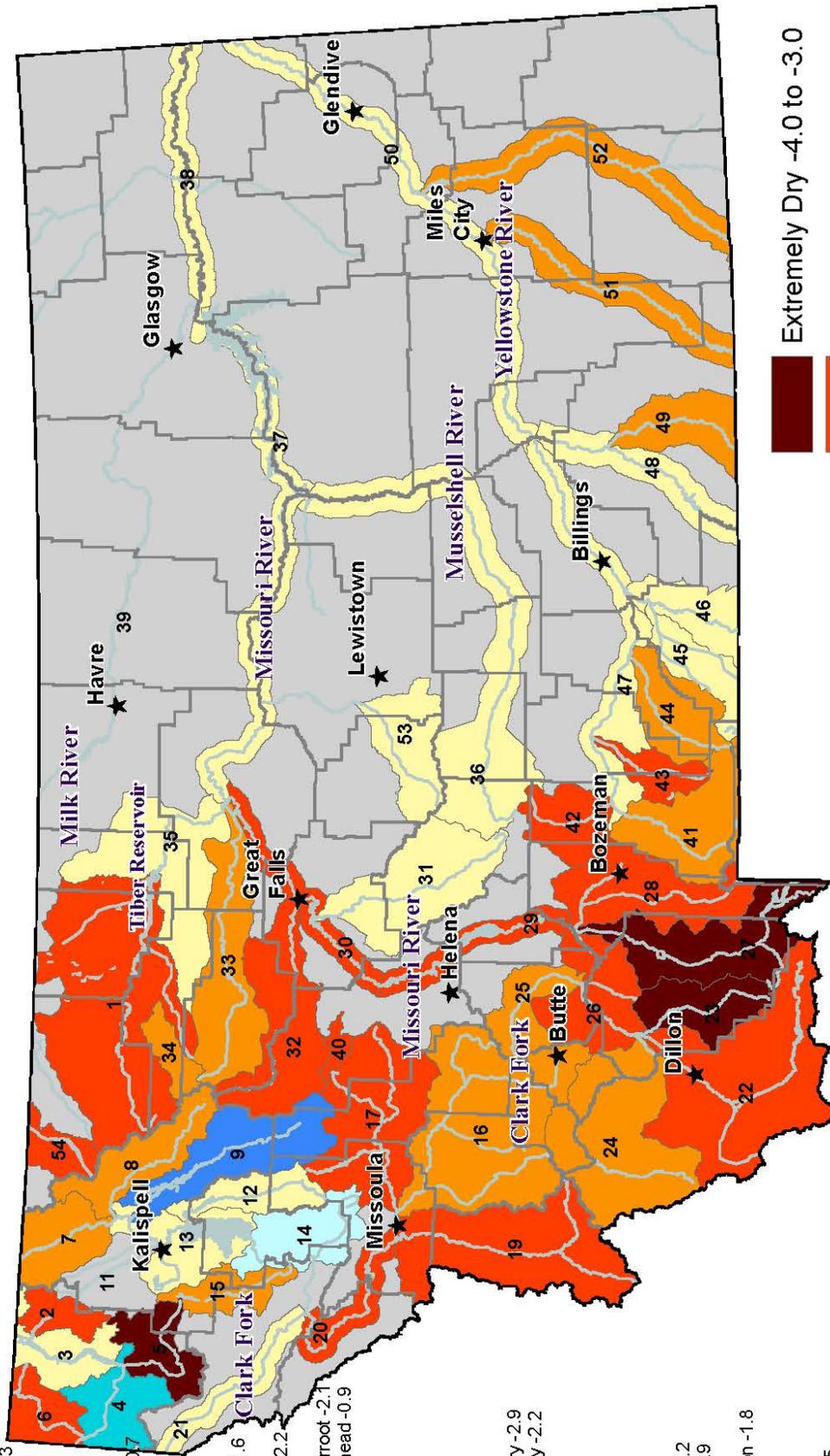
SWSI Scale

+3.0 to +4.0	Extremely Wet
+2.0 to +2.9	Moderately Wet
+1.0 to +1.9	Slightly Wet
+0.9 to -0.9	Near Average
-1.0 to -1.9	Slightly Dry
-2.0 to -2.9	Moderately Dry
-3.0 to -4.0	Extremely Dry

Surface Water Supply Index (SWSI) Values

RIVER INDEX & SWSI VALUES

- 1 Marias above Tiber Reservoir -2.9
- 2 Tobacco -2.9
- 3 Kootenai Ft. Steele to Libby Dam -0.7
- 4 Kootenai below Libby Dam 2.3
- 5 Fisher -3.1
- 6 Yaak -2.2
- 7 North Fk. Flathead -1.8
- 8 Middle Fk. Flathead -1.1
- 9 South Fk. Flathead 3.3
- 10 Flathead at Columbia Falls 0.7
- 11 Kalispell 8
- 12 Swan 0.7
- 13 Flathead at Polson -0.2
- 14 Mission Valley 1.2
- 15 Little Bitterroot -1.6
- 16 Clark Fork above Milltown -1.6
- 17 Blackfoot -2.5
- 18 Clark Fork above Missoula -2.2
- 19 Bitterroot -2
- 20 Clark Fork River below Bitterroot -2.1
- 21 Clark Fork River below Flathead -0.9
- 22 Beaverhead -2.4
- 23 Ruby -4
- 24 Big Hole -1.1
- 25 Boulder (Jefferson) -1.8
- 26 Jefferson -2.4
- 27 Madison -3.3
- 28 Gallatin -2.2
- 29 Missouri above Canyon Ferry -2.9
- 30 Missouri below Canyon Ferry -2.2
- 31 Smith -0.4
- 32 Sun -2.5
- 33 Teton -1.6
- 34 Birch/Dupuyer Creeks -1.3
- 35 Marias -0.7
- 36 Musselshell -0.9
- 37 Missouri above Fort Peck -0.2
- 38 Missouri below Fort Peck -0.9
- 40 Dearborn near Craig -2.7
- 41 Yellowstone above Livingston -1.8
- 42 Shields -2.6
- 43 Boulder (Yellowstone) -2.7
- 44 Stillwater -1.6
- 45 Rock/Red Lodge Creeks -0.5
- 46 Clarks Fork Yellowstone -0.2
- 47 Yellowstone above Bighorn River -0.4
- 48 Bighorn below Bighorn Lake -0.7
- 49 Little Bighorn -1.6
- 50 Yellowstone below Bighorn -0.5
- 51 Tongue -1.8
- 52 Powder -1.1
- 53 Upper Judith -0.3
- 54 Saint Mary -2.7

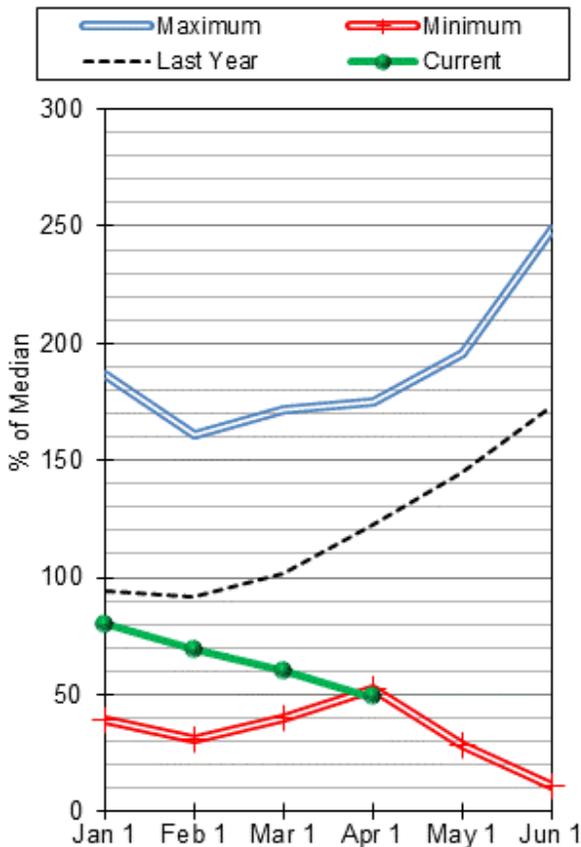


April 1, 2015

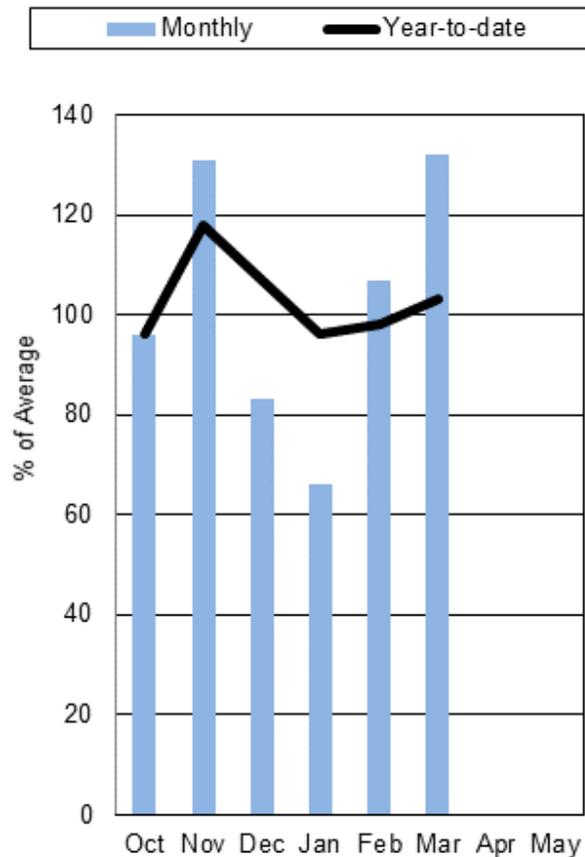
NOTE: Data used to generate this map are **PROVISIONAL** and **SUBJECT TO CHANGE.**

Kootenai River Basin in Montana

Mountain Snowpack



Precipitation



Ah the Ides of March, a relatively large spread precipitation event hit the basin around mid-month. Unfortunately this event was rain (warm at that) with very little snow accumulation. Snow water equivalents during this storm increased as the pack was saturated by rain. However, very little depth accumulation occurred during this event. Another slightly colder storm hit the basin during the last week of March which brought some snow accumulations. Towards the end of the month, drier and warmer conditions returned and the snowpack started to decrease again. Several SNOTEL sites and snow courses have set a new minimum low snow water equivalent for April 1. Overall the basin lost 11 percent of normal between March 1 and April 1. Snowpack in Canada above Lake Kooconusa is slightly better at 78 percent of normal. Snowpack in Montana ranges from 30 percent of normal in the Fisher River Basin to 80 percent in the Yaak River Basin. The basin-wide April 1 snowpack for the Kootenai in Montana is 49 percent of normal and 39 percent of last year at this time .

Much needed precipitation in the form of rain fell in the basin during March with a major storm system hitting the basin around mid-month. Valley stations also received decent rain increments from this same storm system. Our Hawkins Lake SNOTEL site received 8.1 inches of rain for the month. The lower elevation SNOTEL sites in the basin, Garver Creek and Banfield Mountain, picked up 4.2 and 4.6 inches of rain respectively. Valley stations also received rain during the month. March mountain precipitation ranged from 164 percent of average in the Yaak River Basin to 100 percent of average (Hand Creek SNOTEL site only) in the Fisher River Basin. Overall the basin is 103 percent of the water year-to-date normal for April 1st, and 103 percent of last year at this time.

Reservoir storage in Lake Kooconusa is 167 percent of average and is 99 percent of last year.

Based on average precipitation for the rest of the year, the April-July streamflow forecast for the Kootenai River is 92 percent of average and 79 percent of last year.

Kootenai River Basin In Montana Streamflow Forecasts - April 1, 2015

KOOTENAI RIVER BASIN in MONTANA	Forecast Period	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast					30yr Avg (KAF)	
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)		10% (KAF)
Tobacco R nr Eureka	APR-JUL	58	76	89	71%	103	126	126
	APR-SEP	64	85	100	71%	116	143	140
Libby Reservoir Inflow ¹	APR-JUL	4140	4750	5020	94%	5290	5900	5340
	APR-SEP	4980	5600	5880	94%	6160	6780	6250
Fisher R nr Libby	APR-JUL	73	91	105	51%	120	143	205
	APR-SEP	82	101	116	53%	132	156	220
Yaak R nr Troy	APR-JUL	230	280	315	75%	355	415	420
	APR-SEP	240	295	335	76%	375	440	440
Kootenai R at Leonia ^{1,2}	APR-JUL	5090	5820	6160	93%	6490	7230	6600
	APR-SEP	6000	6750	7090	93%	7430	8180	7590

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

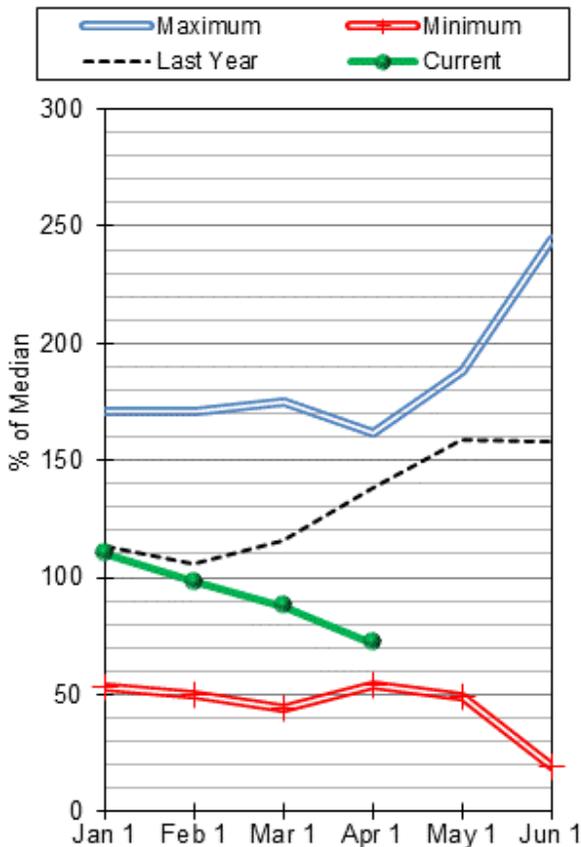
3) Median value used in place of average

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Koocanusa	4020.2	4060.0	2408.0	5748.0
Basin-wide Total	4020.2	4060.0	2408.0	5748.0
# of reservoirs	1	1	1	1

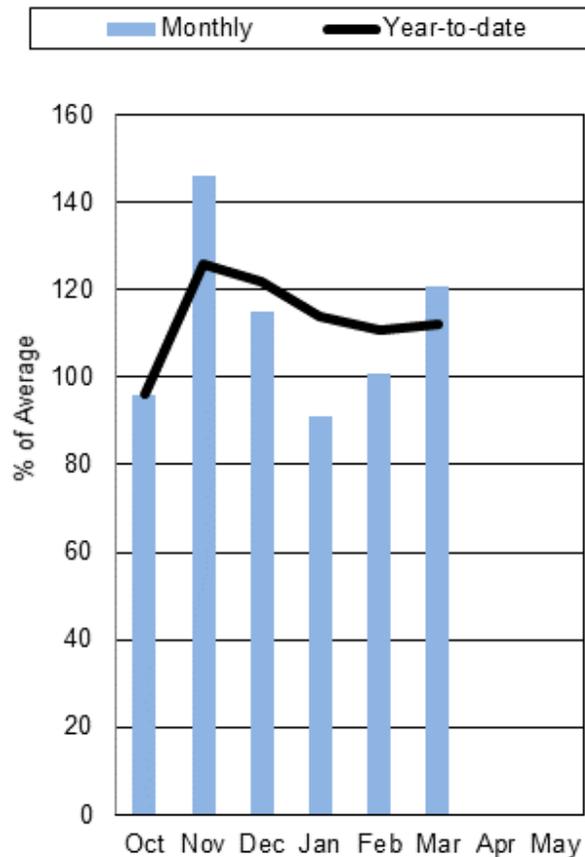
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
KOOTENAY in CANADA	9	78%	119%
KOOTENAI MAINSTEM	4	41%	117%
TOBACCO	3	70%	126%
FISHER	5	30%	140%
YAAK	2	83%	117%
KOOTENAI RIVER BASIN in MONTANA	14	49%	126%
KOOTENAI ab BONNERS FERRY	22	60%	127%

Flathead River Basin

Mountain Snowpack



Precipitation



The same mid-month precipitation event that hit the Kootenai River basin also hit the Flathead River Basin. Like in the Kootenai, this was a warm rain event causing some significant melt or melt outs of snowpacks at the low to mid-elevation SNOTEL sites. However, higher elevation sites received good snow accumulations. Subsequent storms brought more rain and very little snow. Basin wide snowpack decreased from 88 percent of normal on March 1 to 71 percent of normal on April 1. Snowpack as of April 1 range from 27 percent of normal in the Little Bitterroot-Ashley River Basins to 98 percent of normal in the Swan River Basin. The Flathead River Basin snowpack including sites in Canada on the North Fork are 71 percent of normal. The basin-wide April 1 snowpack for the Flathead in Montana is 71 percent of normal and 51 percent of last year at this time.

Precipitation in March was near to above average over the major sub-basins. The mid-month storm brought substantial precipitation increments to Glacier National Park with Flattop Mtn. picked up 5.5 inches while Many Glacier received 5.0 inches. Unfortunately, Many Glacier’s snow pillow melted out shortly after this event. March monthly totals for these sites were equally as impressive: Flattop Mtn. 8.6 inches and Many Glacier 7.0 inches. Basin percentages ranged from 100 percent of average in the Little Bitterroot-Ashley River Basins to 138 percent of average in the North Fork Flathead River Basin. March precipitation for the Flathead River Basin including valley stations was 121 percent of average. Overall the basin is 112 percent of the water year-to-date normal for April 1st, and 98 percent of last year at this time.

Basin-wide March reservoir storages are 140 percent of average and 121 percent of last year. Smaller reservoir storages increased substantially from the rain events and subsequent snowmelt throughout the month.

Based on average precipitation for the rest of the year, basin-wide April-July streamflow forecast is 94 percent of average and 68 percent of last year.

Flathead River Basin Streamflow Forecasts - April 1, 2015

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

FLATHEAD RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
NF Flathead R nr Columbia Falls	APR-JUL	1150	1270	1350	88%	1430	1550	1540
	APR-SEP	1270	1410	1500	88%	1600	1730	1700
MF Flathead R nr West Glacier	APR-JUL	1150	1280	1370	91%	1460	1590	1500
	APR-SEP	1240	1380	1480	91%	1580	1720	1630
Sf Flathead R nr Hungry Horse	APR-JUL	995	1090	1160	98%	1220	1320	1180
	APR-SEP	1050	1160	1230	98%	1300	1400	1260
Hungry Horse Reservoir Inflow ^{1,2}	APR-JUL	1500	1750	1870	101%	1990	2240	1860
	APR-SEP	1580	1860	1980	100%	2100	2380	1980
Flathead R at Columbia Falls ²	APR-JUL	4020	4410	4670	93%	4940	5330	5020
	APR-SEP	4350	4790	5080	93%	5380	5820	5450
Ashley Ck nr Marion ²	APR	0.71	1.56	2.1	81%	2.7	3.6	2.6
	APR-JUL	2.9	4.3	5.2	80%	6.2	7.5	6.5
Swan R nr Bigfork	APR-JUL	480	535	570	110%	605	660	520
	APR-SEP	545	605	650	109%	690	755	595
Flathead Lake Inflow ^{1,2}	APR-JUL	4330	5050	5380	93%	5710	6430	5810
	APR-SEP	4610	5440	5820	93%	6190	7020	6270
Mill Ck ab Bassoo ck nr Niarada	APR-JUL	2.2	3	3.5	88%	4	4.8	4
	APR-SEP	2.5	3.3	3.8	86%	4.3	5.1	4.4
South Crow Ck nr Ronan	APR-JUL	7.9	9.3	10.3	102%	11.2	12.6	10.1
	APR-SEP	9	10.6	11.7	101%	12.8	14.3	11.6
Mission Ck nr St. Ignatius	APR-JUL	22	24	25	100%	27	29	25
	APR-SEP	25	28	30	100%	32	35	30
SF Jocko R nr Arlee	APR-JUL	26	30	33	100%	36	40	33
	APR-SEP	29	34	37	100%	40	44	37
NF Jocko R bl Tabor Feeder Canal	APR-JUL	26	29	31	100%	33	35	31
	APR-SEP	28	31	33	100%	34	37	33

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

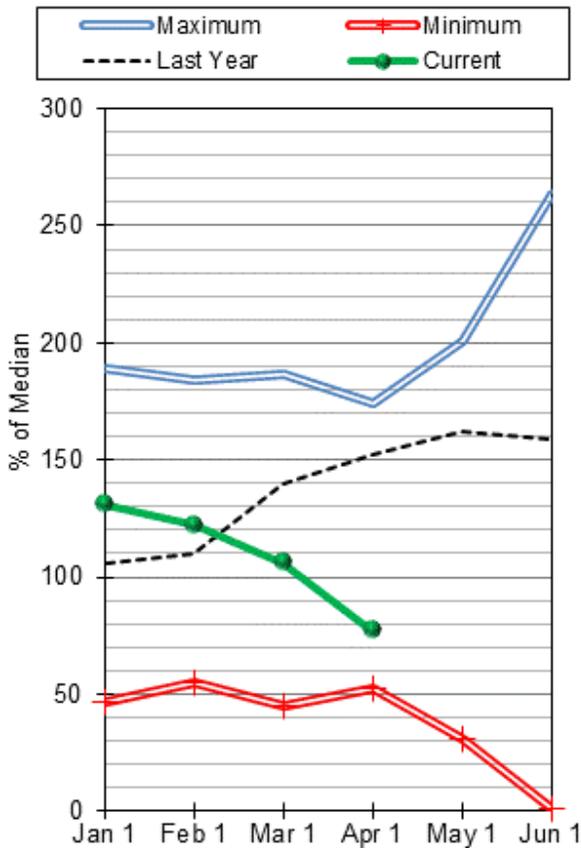
3) Median value used in place of average

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Camas (4)	41.8	27.7	22.5	45.2
Lower Jocko Lake	0.0	0.0	0.0	6.4
Mission Valley (8)	36.8	26.8	33.7	100.0
Hungry Horse Lake	2969.8	2538.0	2081.0	3451.0
Flathead Lake	1007.5	762.3	762.6	1791.0
Basin-wide Total	4056.0	3354.8	2899.8	5393.6
# of reservoirs	5	5	5	5

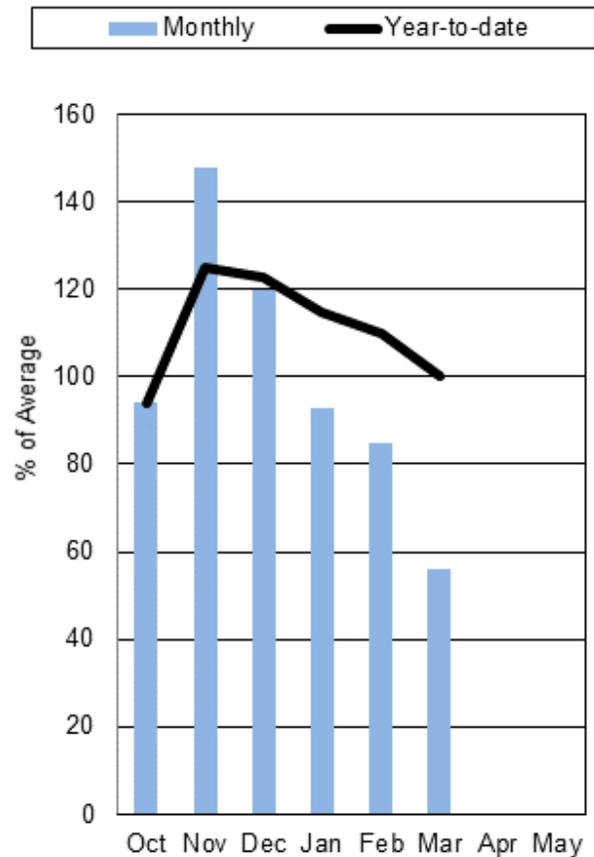
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
NF FLATHEAD in CANADA	3	52%	135%
NF FLATHEAD in MONTANA	9	65%	127%
MIDDLE FORK FLATHEAD	5	72%	138%
SOUTH FORK FLATHEAD	6	84%	137%
STILLWATER-WHITEFISH	9	68%	151%
SWAN	6	98%	134%
MISSION VALLEY	4	88%	142%
LITTLE BITTERROOT-ASHLEY	5	27%	145%
JOCKO	4	90%	134%
FLATHEAD in MONTANA	34	72%	139%
FLATHEAD RIVER BASIN	37	71%	138%

Upper Clark Fork River Basin

Mountain Snowpack



Precipitation



The mid-March major storm that hit the northwest part of Montana didn't make it into the Upper Clark Fork except for sites in the very northern reaches of the basin. Even those sites received mostly rain and very little snow accumulations. A storm system towards the end of March brought some snowpack accumulations and a little more rain to the majority of sites in the basin. April 1 snowpack range from 73 percent of the normal in the Flint Creek Drainage to 82 percent of normal in the Rock Creek Drainage. This basin started out on January 1 with 131 percent of normal snowpack. However, like all other basins Montana it was not immune to the continual decrease in snowpack percentages. Currently the basin is 77 percent of normal on April 1st, and 51 percent of last year at this time.

March precipitation was pretty dismal for this basin and ranged from 38 percent of average in the Clark Fork above Flint Creek Drainage to 68 percent of average in the Blackfoot Drainage. Overall the Upper Clark Fork River Basin is currently 100 percent of the water year-to-date average, and is only 84 percent of last year at this time.

Basin-wide reservoir storage for the end of March is 114 percent of average and is 115 percent of last year.

April-July streamflow forecast for the Upper Clark Fork River is 86 percent of average and 55 percent of last year, assuming average precipitation for the rest of the year.

Upper Clark Fork River Basin Streamflow Forecasts - April 1, 2015

UPPER CLARK FORK RIVER BASIN	Forecast Period	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						30yr Avg (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Little Blackfoot nr Garrison	APR-JUL	22	38	49	70%	60	77	70
	APR-SEP	25	43	55	71%	67	85	77
Flint Ck nr Southern Cross	APR-JUL	4.4	8.1	10.6	85%	13.1	16.8	12.4
	APR-SEP	4.6	9.2	12.4	85%	15.5	20	14.6
Flint Ck bl Boulder Ck	APR-JUL	22	36	45	87%	55	69	52
	APR-SEP	30	47	58	88%	70	87	66
Lower Willow Ck Reservoir Inflow ²	APR-MAY	1.12	3.2	4.7	64%	6.1	8.2	7.3
	APR-JUL	1.23	4.6	6.9	65%	9.1	12.5	10.6
MF Rock Ck nr Philipsburg	APR-JUL	34	44	50	86%	57	66	58
	APR-SEP	39	50	57	88%	64	75	65
Rock Ck nr Clinton	APR-JUL	134	179	210	84%	240	285	250
	APR-SEP	159	210	245	88%	275	330	280
Clark Fork R ab Milltown	APR-JUL	189	325	415	78%	510	645	530
	APR-SEP	230	380	480	78%	580	730	615
Nevada Ck nr Helmville	APR-MAY	0.89	3.1	4.6	55%	6.1	8.3	8.4
	APR-JUL	3.2	6.8	9.2	65%	11.6	15.2	14.2
Blackfoot R nr Bonner	APR-JUL	370	475	545	76%	615	720	720
	APR-SEP	425	540	615	77%	690	805	800
Clark Fork R ab Missoula	APR-JUL	600	820	970	78%	1120	1340	1250
	APR-SEP	705	945	1110	78%	1270	1510	1420

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

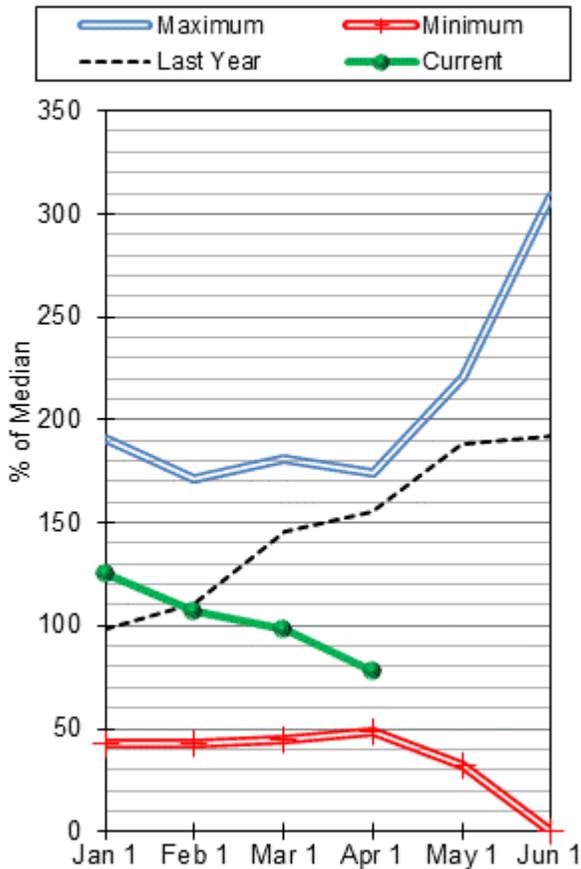
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

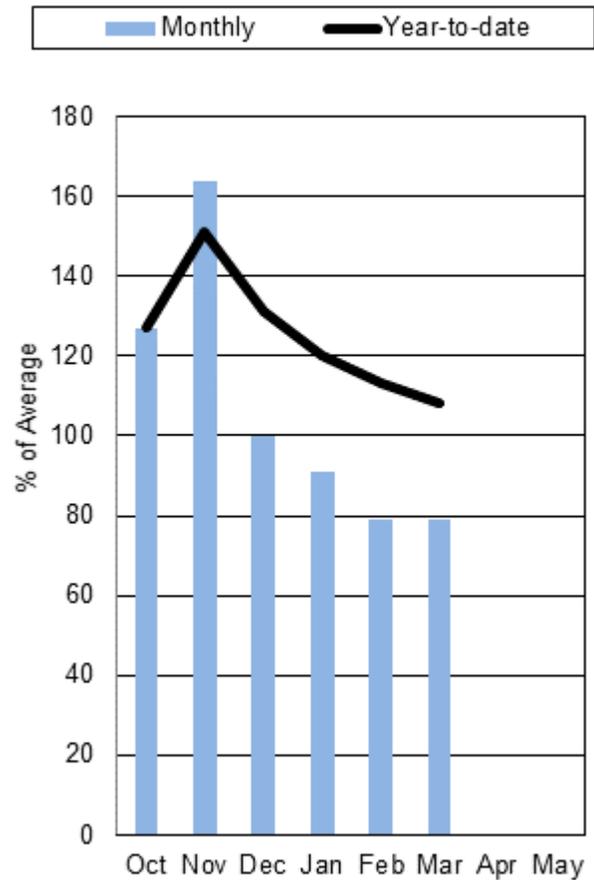
Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
East Fork Rock Creek Res	11.0	9.7	9.1	15.6
Georgetown Lake	28.8	28.0	27.8	31.0
Lower Willow Creek Reservoir		2.9	3.0	4.9
Nevada Creek Res	10.9	6.5	7.7	12.6
Basin-wide Total	50.7	44.2	44.6	59.2
# of reservoirs	3	3	3	3
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median	
CLARK FORK ab FLINT CREEK	14	74%	148%	
FLINT CREEK	5	73%	155%	
ROCK CREEK	5	82%	146%	
CLARK FORK ab BLACKFOOT	22	76%	150%	
BLACKFOOT	12	77%	155%	
UPPER CLARK FORK RIVER BASIN	32	77%	151%	

Bitterroot River Basin

Mountain Snowpack



Precipitation



Another month of below normal snowfall and above average temperatures has caused the Bitterroot River basin to decline for the third straight month. The first two weeks of the month brought some precipitation, albeit in the form of rain at all but the highest of elevations. A return to well above average temperatures began snowmelt at most elevations under 7,000 feet in the mountains during the third week which caused the lower elevation SNOTEL sites to lose 1 to 3 inches of snow water during the time. Most low elevation SNOTEL sites in the basin are well below average for April 1st, the Daly Creek SNOTEL on the east side of the basin is currently 2nd lowest of 35 years of measurements.

Higher elevations in the basin that had deeper snowpack from earlier in the year continued to hang on to the snow water they had until the end of the month and are slightly below normal on April 1. The low basin percentages of normal can mostly be attested to the lack of snowfall this winter and not to snowmelt at elevations where SNOTEL sites and snowcourses are located, though some melt has occurred. Currently the Bitterroot River basin is 78 percent of normal for April 1st, and 49 percent of last year at this time.

Valley weather stations received 66 percent of monthly average precipitation for March, while mountain SNOTEL sites received 80 percent. Currently on April 1st, the Bitterroot River Basin is 108 percent of the water year-to-date average, and 85 percent of last year at this time.

Painted Rocks Lake reservoir is currently at 230 percent of average and Lake Como reservoir is currently 187 percent of average. Basin-wide reservoir storage is at 203 percent of average and 161 percent of last year at this time.

The basin-wide average April-July streamflow forecast for the Bitterroot River is currently at 79 percent of average and 47 percent of last year.

Bitterroot River Basin Streamflow Forecasts - April 1, 2015

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

BITTERROOT RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
WF Bitterroot R Nr Conner ²	APR-JUL	57	82	99	77%	116	141	128
	APR-SEP	64	90	108	78%	126	153	139
Bitterroot R Nr Darby	APR-JUL	200	275	325	79%	370	445	410
	APR-SEP	250	320	370	79%	420	490	470
Como Reservoir Inflow ²	APR-JUL	48	56	62	82%	67	76	76
	APR-SEP	50	59	65	82%	71	80	79
Bitterroot R nr Missoula	APR-JUL	655	805	910	79%	1010	1170	1150
	APR-SEP	695	860	975	78%	1090	1250	1250

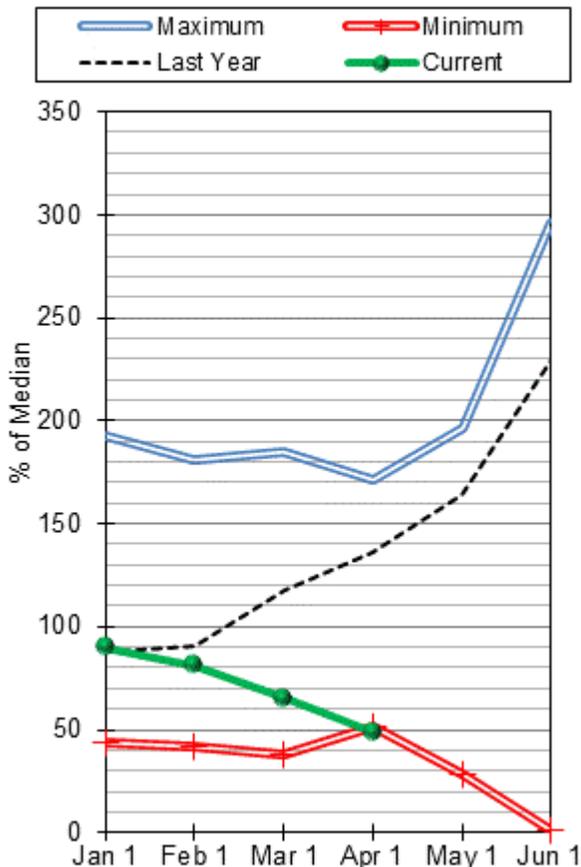
- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Painted Rocks Lake	20.0	14.1	8.7	31.7
Lake Como	29.1	16.4	15.6	34.9
Basin-wide Total	49.1	30.5	24.3	66.6
# of reservoirs	2	2	2	2

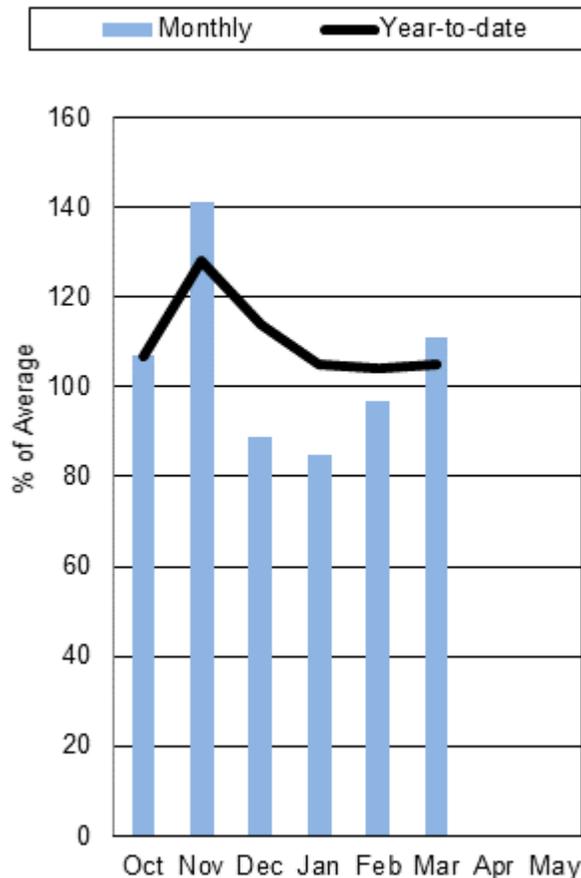
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
WEST FORK BITTERROOT	2	90%	157%
EAST SIDE BITTERROOT	4	83%	157%
WEST SIDE BITTERROOT	3	74%	160%
BITTERROOT RIVER BASIN	8	78%	158%

Lower Clark Fork River Basin

Mountain Snowpack



Precipitation



The mid-March rain storm also graced this Basin but not to the extent of its neighboring basins to the north. Snow accumulations in March were very minimal and melt was occurring at low to mid-elevations. High elevation sites showed slight increases with little or no melt. This basin started off the year with 90 percent of normal and has continually dropped to 49 percent of normal on April 1. Travelling Interstate 90 along the Clark Fork River the end of March, snow is virtually gone all the way from Missoula to Lookout Pass. Only the upper elevations of the mountains had any snow to speak of. March storms brought precipitation fell in the form of rain with very little or no snow accumulations. Low to mid-elevation sites have melted out. Overall basin snowpack is 49 percent of normal and is only 38 percent of last year.

As mentioned above, the storms that made it through the basin during March were mainly rain events. The largest increments were seen more toward the northwest side of the basin along the Montana-Idaho border at both SNOTEL and valley stations. Sites in the southwest and the interior parts of the basin were not favored with below average precipitation. Basin-wide March precipitation was 111 percent of average. Currently on April 1st, the Bitterroot River Basin is 105 percent of the water year-to-date average, and 99 percent of last year at this time.

Reservoir storage in Noxon Reservoir is 104 percent of average and is 101 percent of last year.

Based on average precipitation for the rest of the year, the basin-wide April-July streamflow forecast is 89 percent of average and 66 percent of last year.

Lower Clark Fork River Basin Streamflow Forecasts - April 1, 2015

LOWER CLARK FORK RIVER BASIN	Forecast Period	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						30yr Avg (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Clark Fork R bl Missoula	APR-JUL	1280	1640	1880	78%	2120	2480	2400
	APR-SEP	1420	1810	2080	78%	2340	2730	2670
Clark Fork R at St. Regis ¹	APR-JUL	1580	2210	2500	79%	2780	3410	3160
	APR-SEP	1770	2450	2760	79%	3080	3760	3510
Clark Fork R nr Plains ^{1,2}	APR-JUL	6240	7600	8210	89%	8830	10200	9200
	APR-SEP	6770	8310	9000	89%	9700	11200	10100
Thompson nr Thompson Falls	APR-JUL	25	58	80	44%	103	135	181
	APR-SEP	37	72	96	47%	120	155	205
Prospect Ck at Thompson Falls	APR-JUL	33	44	52	51%	60	71	102
	APR-SEP	37	49	57	52%	65	77	110
Clark Fork R at Whitehorse Rapids ^{1,2}	APR-JUL	7220	8630	9270	88%	9920	11300	10500
	APR-SEP	7870	9470	10200	89%	10900	12500	11500

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

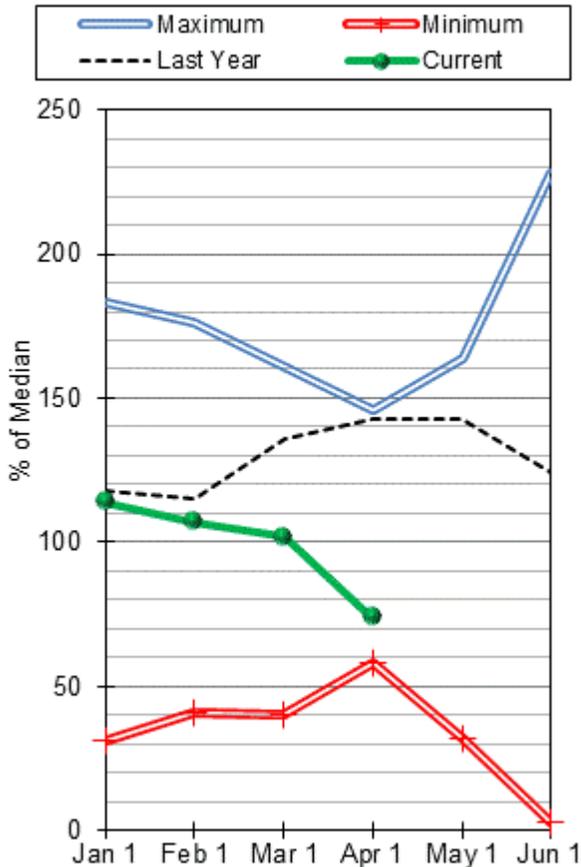
3) Median value used in place of average

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Noxon Rapids Reservoir	323.2	319.1	309.9	335.0
Basin-wide Total	323.2	319.1	309.9	335.0
# of reservoirs	1	1	1	1

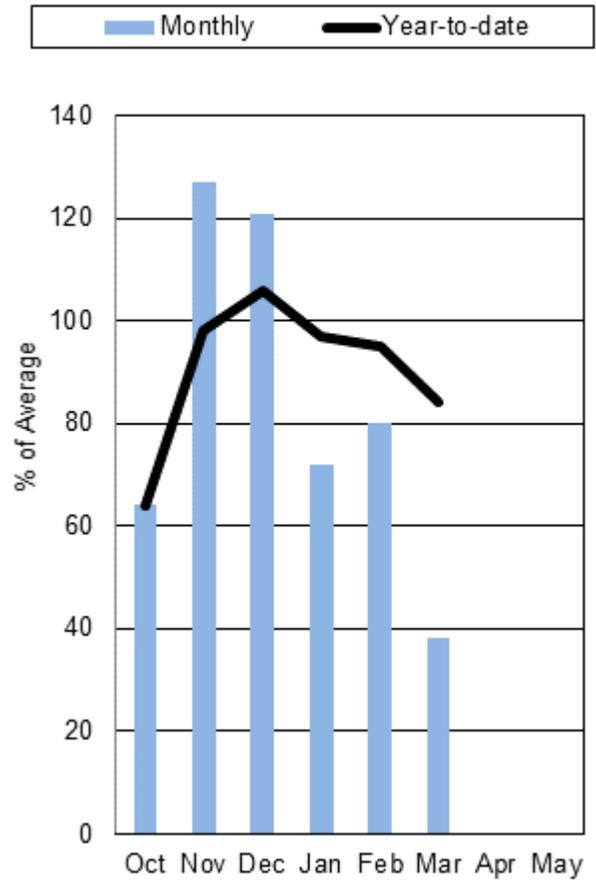
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
LOWER CLARK FORK RIVER BASIN	12	49%	136%

Jefferson River Basin

Mountain Snowpack



Precipitation



In all basins except the Bighole River sub-basin things have gone from bad to worse in the mountains that feed the Jefferson River during the month on March. The southern half of the basin has seen further declines in snowpack percentages due to low and mid elevation melt combined with the lack of significant snowfall during the month. All basins experienced a substantial decline from March 1st in terms of basin percentages of normal. The Beaverhead River dropped of 26 percent from March 1st to April 1st to 71 percent, the Ruby dropped 15 percent to 61 percent of normal, the Boulder dropped 38 percent to 83 percent of normal, and the Bighole dropped 30 percent to 91 percent of normal.

The Pioneer and Beaverhead Ranges that feed the Bighole and Beaverhead Rivers still have mid and upper elevation snowpacks that are near to above normal for April 1st. Unfortunately, this is not the case as you move south in the basin. The headwaters of the Ruby and Beaverhead drainages are well below normal at almost all elevations with many sites experiencing record low snowpack levels for April 1st. Six SNOTEL sites are at record low levels for the date with two low elevation sites having completely melted out during March.

This is the third straight month of declines for the basin and water users should expect below to well below average snow melt driven streamflows this spring and summer in all basins except for the Bighole. Currently the Jefferson River basin as a whole is 75 percent of normal for March 1st, and 53 percent of last year at this time.

Valley weather stations received only 28 percent of monthly average precipitation for March, while mountain SNOTEL sites received only 38 percent. Currently on April 1st, the Jefferson River Basin is 84 percent of the water year-to-date average, and 73 percent of last year at this time.

Clark Canyon Reservoir is currently at 87 percent of average, Lima Reservoir is 141 percent of average, and Ruby Reservoir is currently at 118 percent of average. Basin-wide reservoir storage is at 101 percent of average and 125 percent of last year of last year at this time.

The basin-wide average April-July streamflow forecast for the Jefferson River is currently at 55 percent of average and 48 percent of last year.

Jefferson River Basin Streamflow Forecasts - April 1, 2015

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

JEFFERSON RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Lima Reservoir Inflow ²	APR-JUL	1	9.4	16.4	20%	23	34	82
	APR-SEP	1	7	15	17%	23	35	89
Clark Canyon Inflow ²	APR-JUL	-16	7	17.5	17%	44	84	101
	APR-SEP	-5	10	25	21%	53	95	120
Beaverhead R at Barretts ²	APR-JUL	15	26	41	32%	83	146	129
	APR-SEP	22	37	56	36%	106	180	156
Ruby R Reservoir Inflow ²	APR-JUL	3.8	17.1	26	34%	35	49	77
	APR-SEP	9.1	25	35	38%	46	62	91
Big Hole R at Wisdom	APR-JUL	17	56	82	80%	108	147	102
	APR-SEP	15.9	58	87	81%	116	158	108
Big Hole R nr Melrose	APR-JUL	285	375	440	85%	505	595	515
	APR-SEP	310	410	480	86%	550	650	560
Jefferson R nr Twin Bridges ²	APR-JUL	86	280	415	60%	550	745	690
	APR-SEP	81	305	455	62%	605	830	730
Boulder R nr Boulder	APR-JUL	23	37	47	68%	57	71	69
	APR-SEP	23	39	50	68%	61	77	74
Willow Ck Reservoir Inflow ²	APR-JUL	1	3.1	6.2	37%	9.3	13.9	16.8
	APR-SEP	1	2.8	6.3	33%	9.8	14.9	19.3
Jefferson R nr Three Forks ²	APR-JUL	110	161	300	41%	440	640	740
	APR-SEP	96	146	300	38%	455	680	800

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

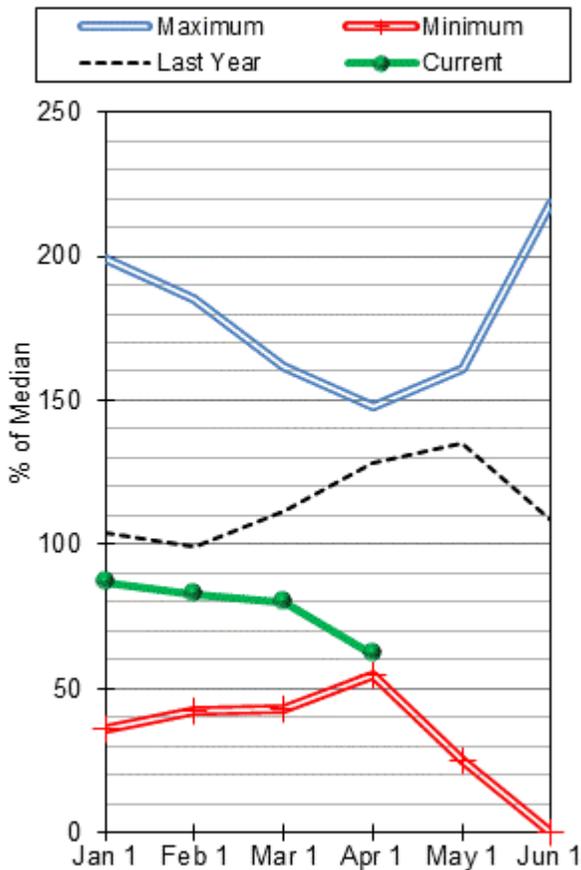
3) Median value used in place of average

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lima Reservoir	48.1	25.4	34.2	84.0
Clark Canyon Res	116.4	101.7	134.5	255.6
Ruby River Reservoir	37.1	34.5	31.5	38.8
Basin-wide Total	201.7	161.6	200.2	378.4
# of reservoirs	3	3	3	3

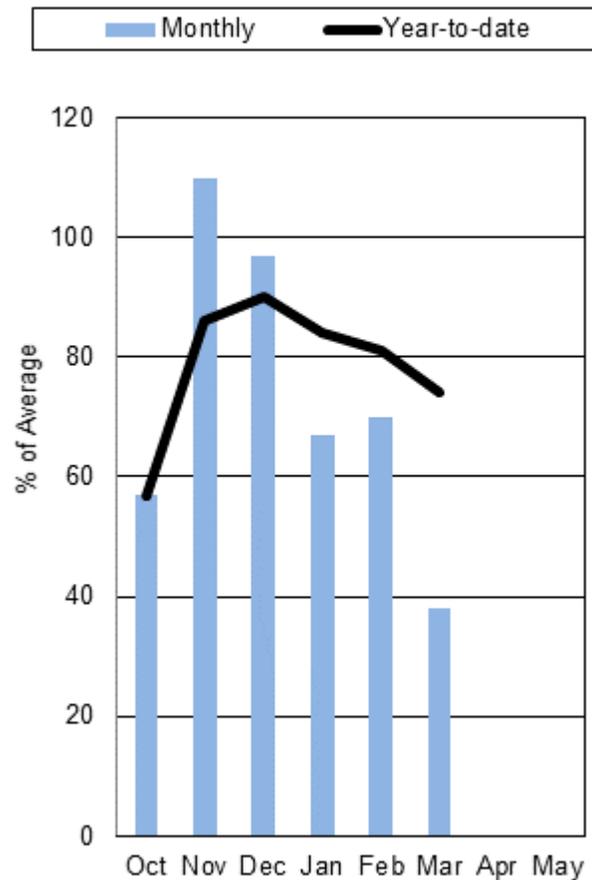
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
BEAVERHEAD	10	71%	125%
RUBY	5	61%	135%
BIGHOLE	14	90%	154%
BOULDER	7	74%	165%
JEFFERSON RIVER BASIN	30	74%	143%

Madison River Basin

Mountain Snowpack



Precipitation



Disappointing might be an understatement for the snow received in the Madison River basin this water year. The mountains feeding the Madison have been below normal all winter and snowpacks have made further declines during the month of March. Higher elevation sites saw declines due to the lack of snow during the month, but little melt occurred. The low elevations displayed active melt during the month, and made substantial declines in terms of percentage of normal. Above Hebgen Dam two SNOTEL sites and one snowcourse (West Yellowstone (33%), Whiskey Creek (51%), and Norris Basin SC (40%)) were the lowest on record for April 1st, and the basin snowpack is currently 57 percent of normal. Below the dam snowpack totals are slightly better, but record low snowpack for the date was experienced at two SNOTEL sites and one snowcourse (Clover Meadow (66%), Lower Twin (54%), and Potomageton Park (44%)). Below the dam the snowpack is currently 65 percent of normal.

How does this rank the basin in terms of snowpack? Using data from the SNOTEL sites only in the basin, the basin-wide snow water equivalent is currently the lowest of the last 35 years of record. Currently the greater Madison River basin is 62 percent of normal, and 48 percent of the snowpack at this time last year. The lack of snowfall this winter, and low snowpack on April 1st indicates snow melt driven water supply will be well below average this spring and summer.

Valley weather stations received 51 percent of the average precipitation for March while mountain stations received 70 percent of average. Currently on April 1st, the Madison River Basin is 74 percent of the water year-to-date average, and 64 percent of last year at this time.

Basin reservoir storage is currently 114 percent of average for April 1st, and 105 percent of last year at this time.

The basin-wide average April-July streamflow forecast for the Madison River is currently at 61 percent of average and 63 of last year.

Madison River Basin Streamflow Forecasts - April 1, 2015

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

MADISON RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Hebgen Reservoir Inflow ²	APR-JUL	184	215	235	64%	255	285	370
	APR-SEP	250	285	305	65%	330	365	470
Ennis Reservoir Inflow ²	APR-JUL	255	325	375	60%	420	490	625
	APR-SEP	340	420	475	61%	530	615	775

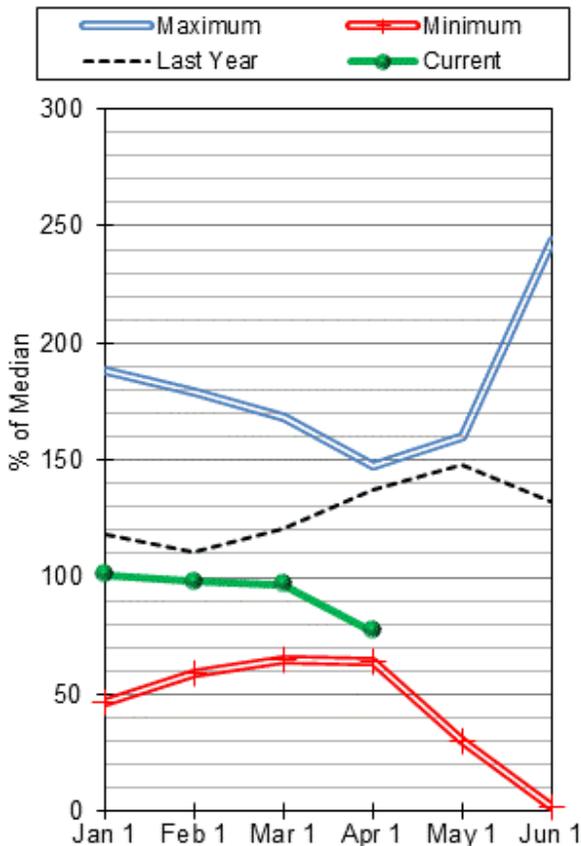
- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Ennis Lake	28.5	28.5	29.5	41.0
Hebgen Lake	314.1	297.0	270.4	377.5
Basin-wide Total	342.6	325.6	299.9	418.5
# of reservoirs	2	2	2	2

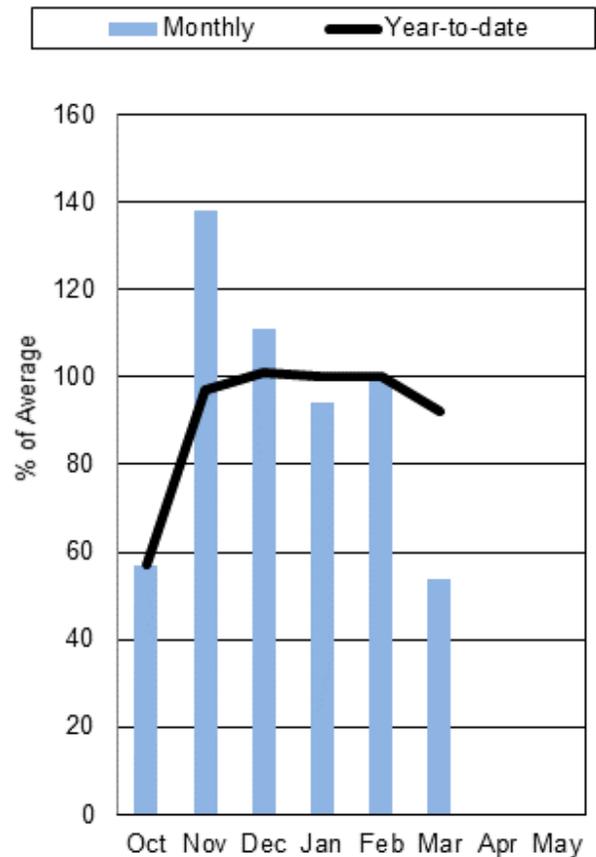
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
MADISON abv HEBGEN LAKE	5	57%	123%
MADISON blw HEBGEN LAKE	10	65%	132%
MADISON RIVER BASIN	15	62%	128%

Gallatin River Basin

Mountain Snowpack



Precipitation



Spring skiing occurred much sooner than expected this year in the Gallatin River basin, where another month of well above normal temperatures and lack of snowfall yielded less than desirable conditions on the local hills for local powder hounds. The snowpack has seen the third straight month of decline due to these conditions, leaving some low elevation snowcourses and SNOTEL sites with record low snow water equivalent for April 1st (New World Gulch SC 52%, Lick Creek SNOTEL 63%). The lower elevations in the basin below 7500 feet lost snow water equivalent due to melt and lack of snowfall and saw the percentages of normal decline, higher elevation sites did not experience much melt but did decline due to the lack of snowfall during the month.

The Upper Gallatin snowpack which drives the bulk of the flows in the basin is well below normal at 73 percent and the Hyalite/Middle Creek drainage is also well below normal at 71 percent on April 1st. The one sub-basin holding on is the Bridger Range where early snowfall boosted percentages of normal early in the year and currently stands at 95 percent of normal. As a whole the snowpack of the Gallatin River Basin is currently 77 percent of normal for April 1st, 5th lowest in the last 35 years, and 56 percent of the snowpack at this time last year.

Valley weather stations received 47 percent of the average precipitation for March while mountain stations received 55 percent of average. Currently on April 1st, the Gallatin River Basin is 92 percent of the water year-to-date average, and 72 percent of last year at this time.

Middle Creek Reservoir is currently 104 percent of average and 130 percent of last year at this time.

The basin-wide average April-July streamflow forecast for the Gallatin River is currently at 74 percent of average and 65 of last year.

Gallatin River Basin Streamflow Forecasts - April 1, 2015

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

GALLATIN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Gallatin R nr Gateway	APR-JUL	215	270	305	76%	340	395	400
	APR-SEP	255	320	360	77%	405	465	470
Hyalite Reservoir Inflow ²	APR-JUL	15.1	17.2	18.5	93%	19.9	22	20
	APR-SEP	17.6	19.6	21	91%	22	25	23
Gallatin R at Logan	APR-JUL	158	250	315	72%	380	475	440
	APR-SEP	184	295	365	72%	440	550	505

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

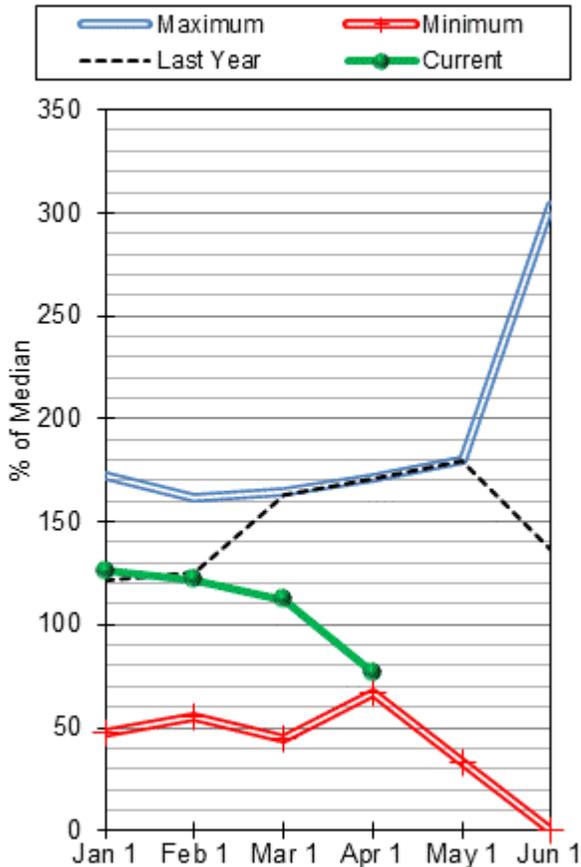
3) Median value used in place of average

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Middle Creek Res	5.8	4.5	5.6	10.2
Basin-wide Total	5.8	4.5	5.6	10.2
# of reservoirs	1	1	1	1

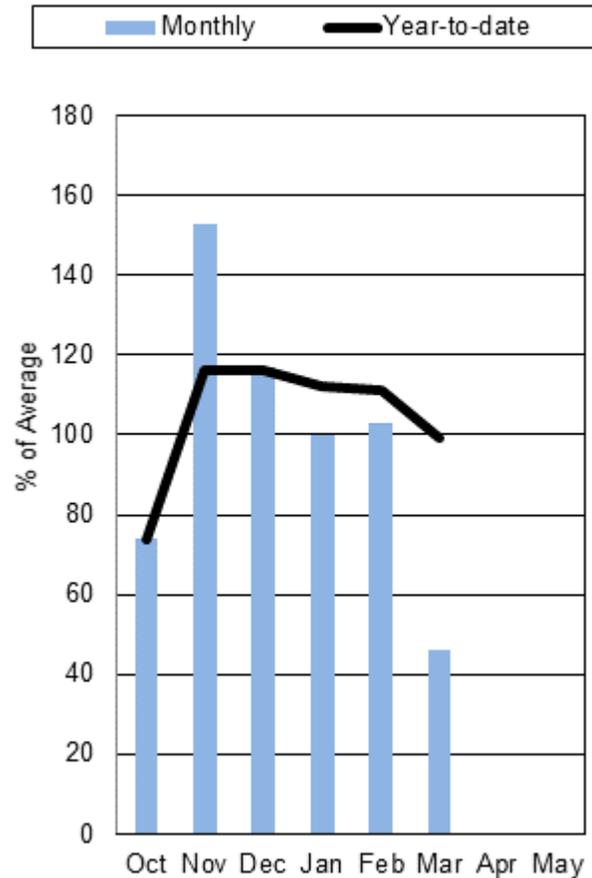
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
UPPER GALLATIN	5	73%	124%
HYALITE	4	71%	142%
BRIDGER	2	95%	162%
GALLATIN RIVER BASIN	11	77%	137%

Missouri Headwaters Mainstem River Basin

Mountain Snowpack



Precipitation



On March 1st the Missouri Headwaters Mainstem River basin held the largest snowpack in the state in terms of percentage of normal, at 112 percent. The month of March didn't bode as well for this region. Since March 1st the basin has seen a 35 percent reduction in percentage of normal snowpack, the largest reduction in the state. Most of the reduction in snow water occurred at mid to low elevation. Frohner Meadow SNOTEL (6480 ft) is nearly melted-out after seeing a reduction from 120 percent of normal at what appears to be this year's peak on March 5th, to 28 percent of normal snowpack on April 1st. Frohner Meadow SNOTEL site's average peak date is April 13th.

Higher elevation locations in the basin fared better in March. Rocker Peak SNOTEL (8000 ft) received a net gain of 0.6 inches of snow water and is currently at 102 percent of normal, down 17 percent from March 1st. Overall the Missouri Headwaters Mainstem River basin is at 77 percent of normal for April 1st, and 45 percent of last year at this time.

Currently on April 1st, mountain weather stations in the Missouri Mainstem River Basin are 99 percent of the water year-to-date average, and 72 percent of last year at this time.

Fort Peck Lake is currently at 118 percent of average and Canyon Ferry is currently 105 percent of average. Basin-wide reservoir storage is 117 percent of average and 100 percent of last year at this time.

The basin-wide average April-July streamflow forecast for the Missouri Headwaters Mainstem River is currently at 56 percent of average and 46 percent of last year.

Missouri Mainstem Basin Streamflow Forecasts - April 1, 2015

MISSOURI MAINSTEM BASIN	Forecast Period	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						30yr Avg (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Missouri R at Toston ²	APR-JUL	440	780	1010	56%	1240	1580	1790
	APR-SEP	465	870	1150	56%	1430	1840	2070
Dearborn R nr Craig	APR-JUL	11.2	40	59	66%	79	107	89
	APR-SEP	14.8	45	65	68%	86	116	95
Missouri R at Fort Benton ²	APR-JUL	585	1090	1440	55%	1790	2300	2610
	APR-SEP	685	1310	1740	56%	2170	2800	3110
Missouri R nr Virgelle ²	APR-JUL	635	1230	1630	54%	2030	2620	3000
	APR-SEP	735	1460	1950	55%	2440	3170	3520
Missouri R nr Landusky ²	APR-JUL	645	1240	1650	52%	2060	2650	3160
	APR-SEP	760	1500	2000	54%	2500	3240	3720
Missouri R bl Fort Peck Dam ²	APR-JUL	360	1040	1500	46%	1960	2640	3240
	APR-SEP	225	1100	1690	46%	2280	3160	3700
Lake Sakakawea Inflow ²	APR-JUL	2430	4090	5210	63%	6330	7980	8310
	APR-SEP	2280	4380	5810	62%	7240	9350	9400

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

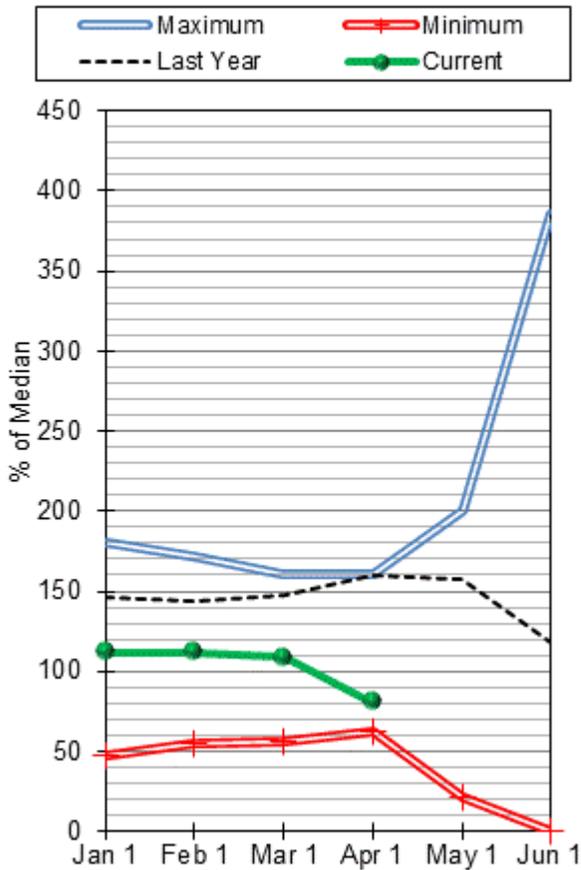
3) Median value used in place of average

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Canyon Ferry Lake	1533.1	1407.2	1457.0	2043.0
Helena Valley Reservoir	4.9	5.8	4.6	9.2
Lake Helena	10.7	10.0	10.9	12.7
Hauser Lake & Lake Helena	73.1	70.5	73.5	74.6
Holter Lake	81.1	80.9	77.9	81.9
Fort Peck Lake	15365.6	13125.5	13029.0	18910.0
Basin-wide Total	17068.6	14699.9	14652.9	21131.4
# of reservoirs	6	6	6	6

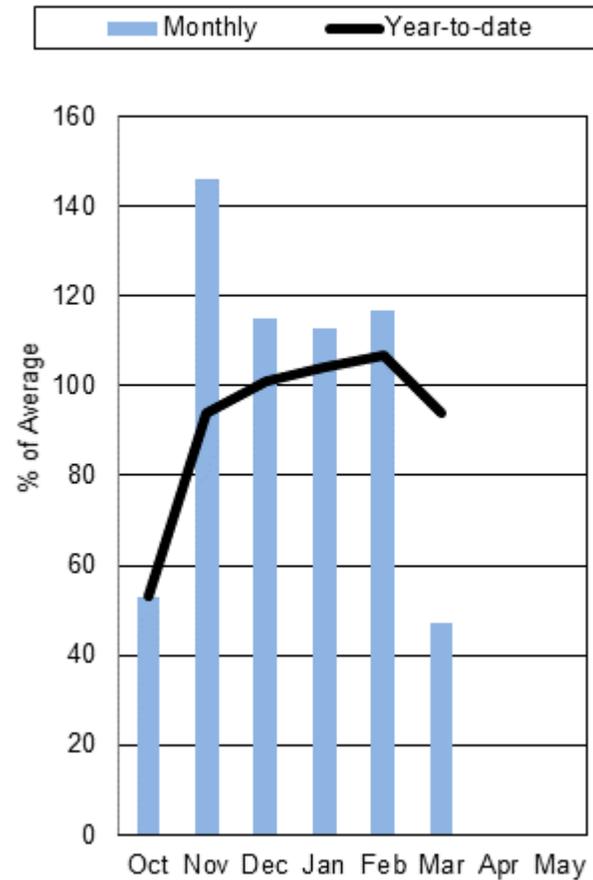
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
HEADWATERS MAINSTEM	9	77%	171%
SMITH-JUDITH-MUSSELSHELL	13	81%	157%
SUN-TETON-MARIAS	11	53%	149%
MAINSTEM ab FT PECK RES	34	67%	158%
MILK RIVER BASIN	3	0%	161%
MISSOURI MAINSTEM BASIN	37	65%	158%

Smith-Judith-Musselshell River Basins

Mountain Snowpack



Precipitation



If it were a competition the Smith-Judith-Musselshell River basin would be at the top of the podium. As of April 1st the basin had the largest percentage of normal snowpack in the state. Even with such an achievement the basin still saw a 27 percent reduction in its snowpack percent of normal during March. Similar to the rest of the state this basin appears to have experienced peak snow water equivalent, which was about 90 percent of its average value and 35 days early. Following a typical trend across the state, the deeper snowpack at higher elevations insulated itself more than the shallow low elevation snowpack in the basin. Boulder Mountain received a net increase 1.9 inches of snow water, the largest increase in the basin, and is currently at 84 percent of normal snowpack. Porcupine SNOTEL (6500 ft) melted out on March 27th, coming close to its previous earliest melt out date of March 25th in 2007. Overall the Smith-Judith-Musselshell River basin is at 81 percent of normal for April 1st, and 52 percent of last year at this time.

Valley weather stations received 48 percent of monthly average precipitation for March, while mountain SNOTEL sites received 47 percent. Currently on April 1st, the Smith-Judith-Musselshell River Basin is 94 percent of the water year-to-date average and 71 percent of last year at this time.

Basin-wide reservoir storage is currently at 158 percent of average for April 1st, and 137 percent of last year at this time.

The basin-wide average April-July streamflow forecast for the Smith-Judith-Musselshell River is currently at 64 percent of average and 42 percent of last year.

Smith-Judith-Musselshell Streamflow Forecasts - April 1, 2015

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

SMITH-JUDITH-MUSSELSHELL	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Sheep Ck nr White Sulphur Springs	APR-JUL	8.5	11.7	13.9	90%	16.1	19.3	15.5
	APR-SEP	10.1	14	16.7	91%	19.4	23	18.4
Smith R bl Eagle Ck ²	APR-JUL	38	69	90	85%	111	141	106
	APR-SEP	40	77	103	89%	128	166	116
NF Musselshell R nr Delpine	APR-JUL	1	1.94	2.7	79%	3.5	4.6	3.4
	APR-SEP	1.07	2.4	3.2	80%	4.1	5.4	4
SF Musselshell R ab Martinsdale	APR-JUL	1	8.6	19.6	56%	31	47	35
	APR-SEP	1	9.6	22	58%	34	51	38
Musselshell R at Harlowton ²	APR-JUL	-2	12.5	33	58%	53	84	57
	APR-SEP	-2	10.9	33	56%	56	89	59
Musselshell R nr Roundup ²	APR-JUL	-23	9	22	33%	64	127	67
	APR-SEP	-26	7.6	19.1	29%	61	123	66

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

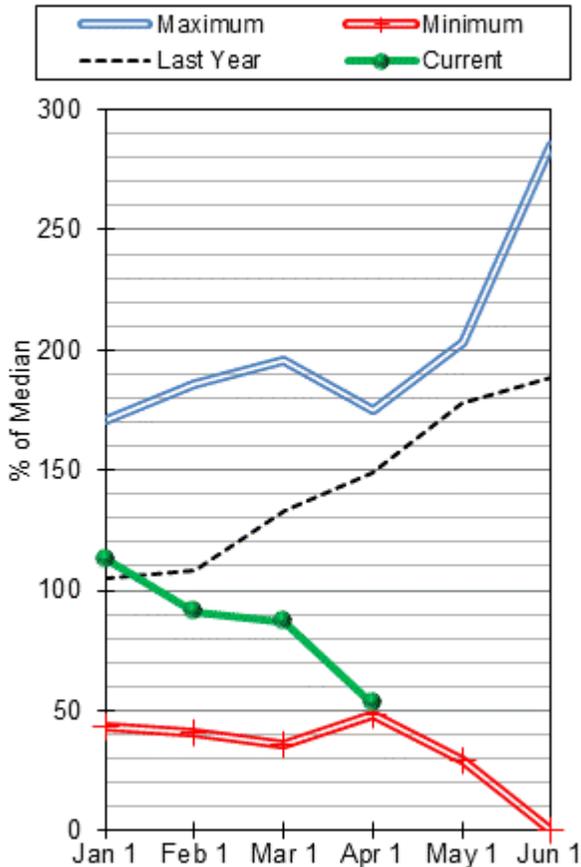
3) Median value used in place of average

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Smith River Res	10.3	8.1	6.7	10.6
Ackley Lake	4.0	4.2	2.8	7.0
Bair Res	5.6	3.8	3.7	7.0
Martinsdale Res	19.3	7.3	8.8	23.1
Deadman's Basin Res	70.6	56.4	47.5	72.2
Basin-wide Total	109.9	79.9	69.5	119.9
# of reservoirs	5	5	5	5

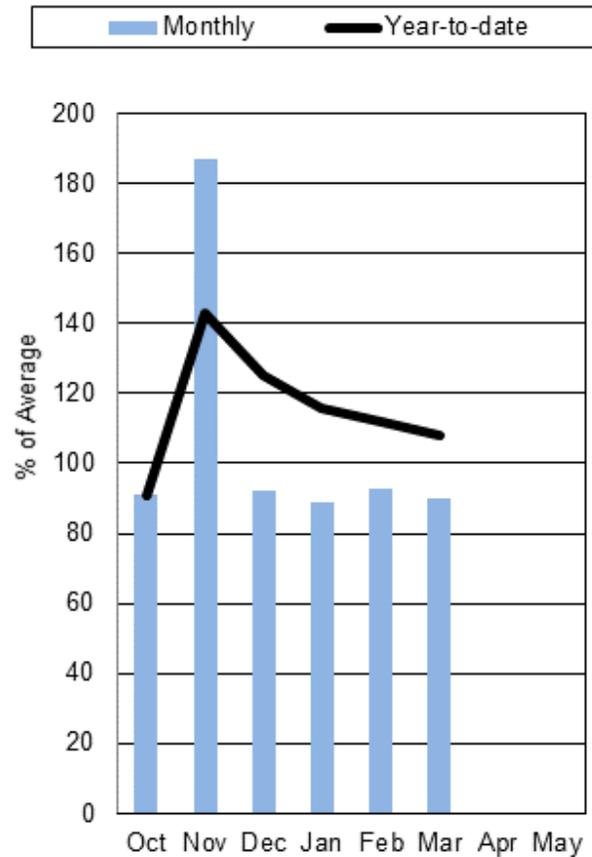
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
SMITH	7	87%	149%
HIGHWOOD	2	0%	155%
JUDITH	5	87%	146%
MUSSELSHELL	5	69%	182%
SMITH-JUDITH-MUSSELSHELL	13	81%	157%

Sun-Teton-Marias River Basins

Mountain Snowpack



Precipitation



Breaking trail into the Sun and Teton River basin snow courses surveyors Kraig Lang, Ian Bardwell, and Jeremy Franks made their way into USA TODAY via Erin Madison’s article in the Great Falls Tribune. Kraig who surveys the Sun River basin snow courses reported to us that on his trip in there next month he will likely be riding horses all the way to the sites for the first time in 15 years.

The basin saw a 34 reduction in snowpack over the month March. Dupuyer Creek, Freight Creek, Waldron, Wrong Creek, and Wood Creek measurement locations have either no snow or the lowest snowpack on record. Wrong Creek and Freight Creek being the oldest snow courses in the basin having records that date back to 1948 and 1947 respectively. Dupuyer Creek melted out on March 28th shattering its previous earliest melt-out date of May 1st in 2007. The Sun-Teton-Marias River basin appears to have reached its peak snow water equivalent on March 10th at 11.8 inches, about 4.5 inches and 35 days short of its average peak value and date. In 35 years of record the Sun-Teton-Marias River basin has its 2nd lowest snowpack for April 1st. Overall the basin is at 53 percent of normal, and 35 percent of last year at this time.

Valley weather stations received 98 percent of monthly average precipitation for March, while mountain SNOTEL sites received 88 percent. Currently on April 1st, the Sun-Teton-Marias River Basin is 108 percent of the water year-to-date average, and 94 percent of last year at this time.

Basin-wide reservoir storage is currently at 121 percent of average and 125 percent of last year at this time.

The basin-wide average April-July streamflow forecast for the Sun-Teton-Marias River is currently at 59 percent of average and 43 percent of last year.

Sun-Teton-Marias Streamflow Forecasts - April 1, 2015

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

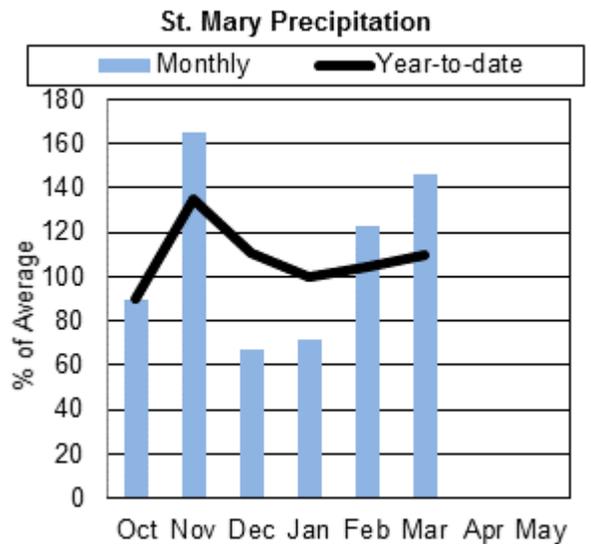
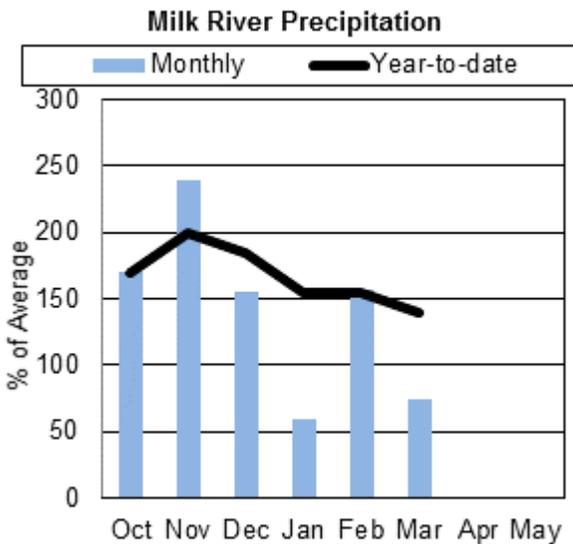
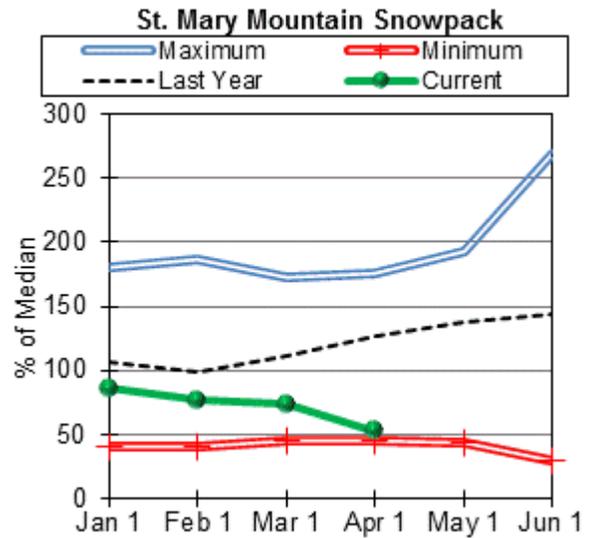
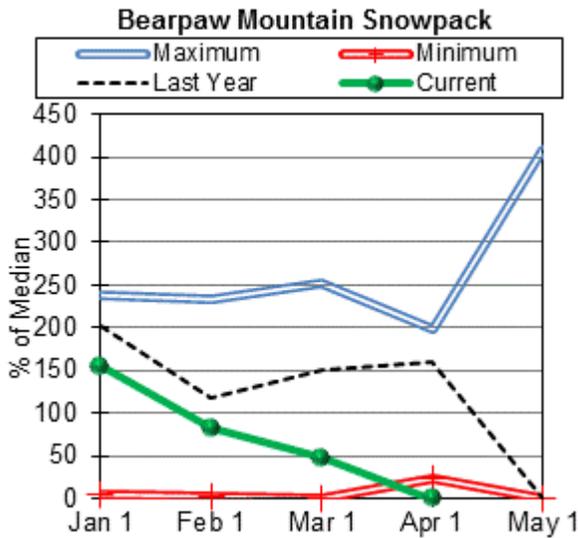
SUN-TETON-MARIAS	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Gibson Reservoir Inflow	APR-JUL	205	255	285	72%	320	370	395
	APR-SEP	230	285	320	73%	355	410	440
Two Medicine R nr Browning ²	APR-JUL	73	96	112	61%	128	151	183
	APR-SEP	80	104	121	62%	138	162	194
Badger Ck nr Browning	APR-JUL	23	36	45	51%	54	67	88
	APR-SEP	30	45	55	53%	65	80	103
Swift Reservoir Inflow ²	APR-JUL	12.2	23	30	53%	38	49	57
	APR-SEP	18.2	31	39	58%	48	60	67
Dupuyer Ck nr Valier	APR-JUL	0.5	1	1.9	17%	6.7	13.8	11.1
	APR-SEP	1	1.5	2.9	23%	8.2	16	12.7
Cut Bank Ck nr Browning	APR-JUL	32	44	52	75%	60	72	69
	APR-SEP	34	47	56	75%	65	78	75
Marias R nr Shelby ²	APR-JUL	40	91	157	46%	225	320	345
	APR-SEP	64	88	160	44%	235	340	360
Teton R nr Dutton	APR-JUL	5	9	22	52%	40	66	42
	APR-SEP	5	7.6	27	56%	46	74	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

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Gibson Res	58.4	24.6	47.9	99.1
Pishkun Res	19.2	6.1	18.2	32.0
Willow Creek Res - Augusta	30.5	28.8	23.8	32.2
Lower Two Medicine Lake	11.7	6.3	9.0	11.9
Four Horns Lake	9.9	9.9	10.1	19.2
Swift Res	19.3	7.3	17.2	30.0
Lake Frances	81.5	47.0	60.1	112.0
Lake Elwell (Tiber)	834.8	731.0	697.7	1347.0
Basin-wide Total	1065.4	860.9	884.0	1683.4
# of reservoirs	8	8	8	8

Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
SUN	6	54%	156%
TETON	4	45%	147%
MARIAS	4	54%	141%
SUN-TETON-MARIAS	11	53%	149%

St. Mary and Milk River Basins



The Saint Mary-Milk River basin typically reaches its peak snow water equivalent around April 1st. This year it appeared to have reached its peak on March 19th at 12.6 inches of snow water. The average snow water equivalent peak for the basin is 19.7 inches. As with much of Montana, lower elevation snow in the basin is nearly non-existent. Many Glacier SNOTEL site (4900 ft) melted-out on March 27th, the earliest this has happened in its 39 years of record. On March 1st with 4.0 inches of snow water, Rocky Boy SNOTEL site was at 115 percent of normal. The site melted-out on March 25th. The snowpack in the basin is faring better at higher elevations. Flattop Mountain SNOTEL site (6300 ft) is currently at 84 percent of normal with 35.1 inches of snow water. The Saint Mary-Milk River basin currently has the lowest percent of normal snowpack east of the Divide and its lowest April 1st snowpack in 35 years. Overall the basin is at 45 percent of normal for April 1st, and 34 percent of last year at this time.

Valley weather stations received 125 percent of monthly average precipitation for March, while mountain SNOTEL sites also received 125 percent. Currently on April 1st, the Saint Mary-Milk River basin is 121 percent of the water year-to-date average, and 110 percent of last year at this time.

Basin-wide reservoir storage is currently at 164 percent of average and 121 percent of last year at this time.

The basin-wide average April-July streamflow forecast for the Saint Mary River is currently at 76 percent of average and 54 percent of last year.

St. Mary & Milk Basins Streamflow Forecasts - April 1, 2015

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

ST. MARY & MILK BASINS	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Lake Sherburne Inflow	APR-JUL	63	71	77	79%	83	91	97
	APR-SEP	75	84	91	81%	98	107	112
St. Mary R nr Babb ²	APR-JUL	220	260	285	77%	310	350	370
	APR-SEP	265	310	340	80%	370	415	425
St. Mary R at Intl Boundary ²	APR-JUL	225	280	320	74%	360	415	435
	APR-SEP	285	345	385	76%	425	485	505

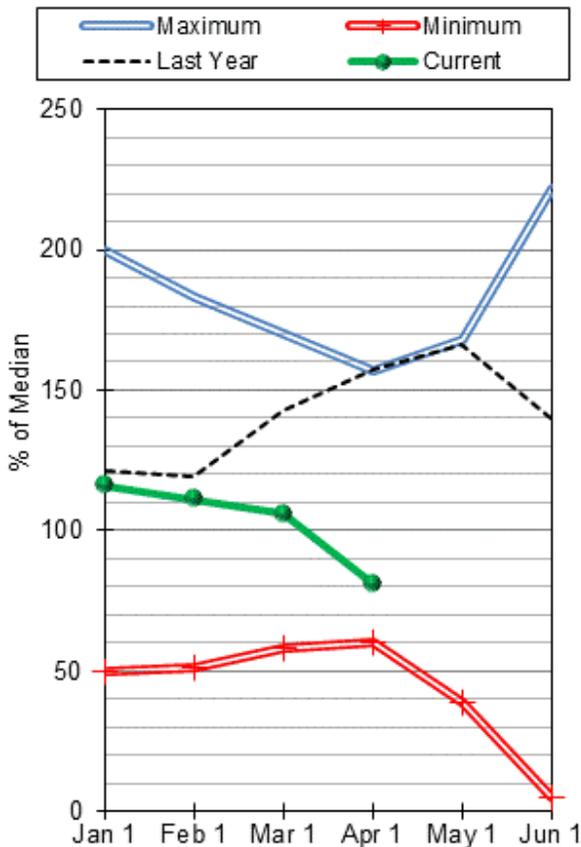
- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Sherburne	56.1	34.9	26.4	64.3
Fresno Res	89.0	75.5	58.6	127.0
Nelson Res	49.5	51.9	34.0	66.8
Basin-wide Total	194.6	162.2	119.0	258.1
# of reservoirs	3	3	3	3

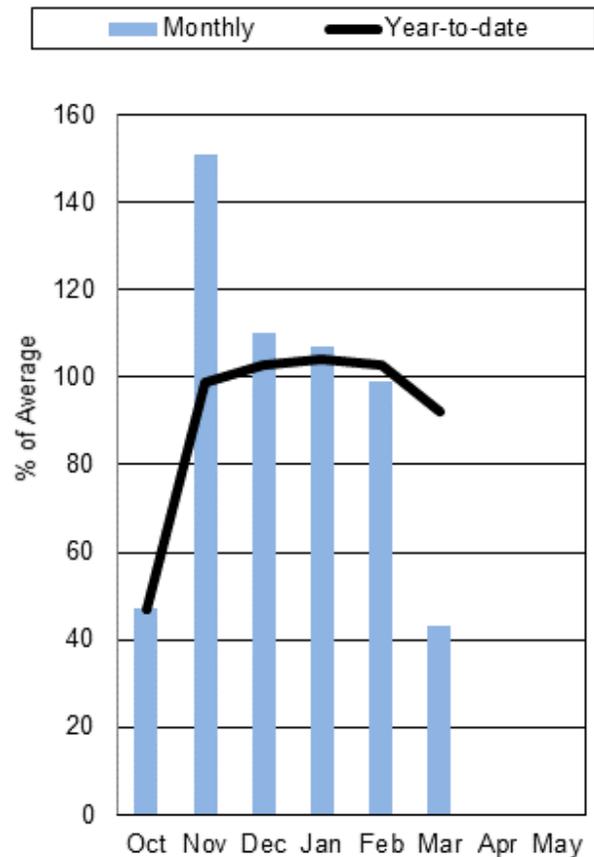
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median
ST. MARY	3	53%	127%
BEARPAW MOUNTAINS	3	0%	161%
CYPRESS HILLS, CANADA	0		
MILK RIVER BASIN	3	0%	161%
ST. MARY & MILK BASINS	6	45%	131%

Upper Yellowstone River Basin

Mountain Snowpack



Precipitation



Like all other basins across the state the Upper Yellowstone River basin saw a decline in basin snowpack percentages from above normal on March 1st to well below normal on April 1st. The Yellowstone above Livingston experienced a 21 percent decline during March from near normal to 77 percent, the Shields declined 29 percent to 80 percent of normal, the Boulder declined 30 percent to 80 percent of normal, the Red Lodge/Rock Creek drainage declined 54 percent to 76 percent of normal, and the Clark’s Fork declined 21 percent to 93 percent of normal. As a whole, the Upper Yellowstone River basin is currently 80 percent of normal, and 51 percent of last year at this time.

Low elevations experienced significant declines due to melt and above average temperatures and river flows increased due to the melt. Some low elevation SNOTEL sites and snowcourses are snow free and have melted out this month (Lupine SC 7380’ - YNP, Porcupine SNOTEL – Shields River, East Boulder Mine SNOTEL 6335’ – Boulder River, and Burnt Mountain SNOTEL 5880’ - Red Lodge/Rock Creek). High elevation sites which received abundant snowfall during the beginning of the year have been able to maintain near to slightly above normal snowpack conditions, and these elevations should yield near normal snow water.

Valley weather stations received only 41 percent of monthly average precipitation for March, while mountain SNOTEL sites received a similarly disappointing 43 percent. Currently on April 1st, the Upper Yellowstone River Basin is 92 percent of the water year-to-date average and 65 percent of last year at this time.

Basin-wide reservoir storage is currently at 112 percent of average, and 106 percent of last year at this time.

The basin-wide average April-July streamflow forecast for the Upper Yellowstone River is currently at 86 percent of average and 59 percent of last year.

Upper Yellowstone River Basin Streamflow Forecasts - April 1, 2015

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

UPPER YELLOWSTONE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Yellowstone R at Yellowstone Lake Outlet								
	APR-JUL	315	370	410	71%	450	505	575
	APR-SEP	410	485	535	69%	585	660	770
Yellowstone R at Corwin Springs								
	APR-JUL	1060	1230	1350	85%	1460	1630	1590
	APR-SEP	1230	1430	1570	84%	1710	1920	1880
Yellowstone R at Livingston								
	APR-JUL	1180	1390	1540	86%	1680	1900	1800
	APR-SEP	1370	1620	1800	84%	1970	2230	2140
Shields R nr Livingston								
	APR-JUL	1	40	67	52%	94	134	129
	APR-SEP	1	43	74	52%	105	150	143
Boulder R at Big Timber								
	APR-JUL	167	205	235	84%	260	300	280
	APR-SEP	171	215	250	83%	280	330	300
Mystic Lake Inflow ²								
	APR-JUL	44	48	51	86%	54	58	59
	APR-SEP	55	62	66	89%	70	77	74
Stillwater R nr Absarokee ²								
	APR-JUL	315	370	410	92%	450	510	445
	APR-SEP	365	435	480	92%	530	595	520
Clarks Fk Yellowstone R nr Belfry								
	APR-JUL	440	490	525	103%	560	610	510
	APR-SEP	470	525	565	103%	605	660	550
Cooney Reservoir Inflow								
	APR-JUL	11.8	23	31	82%	39	51	38
	APR-SEP	19	32	40	83%	49	61	48
Yellowstone R at Billings								
	APR-JUL	1950	2450	2790	86%	3130	3630	3230
	APR-SEP	2170	2770	3180	85%	3600	4200	3730

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

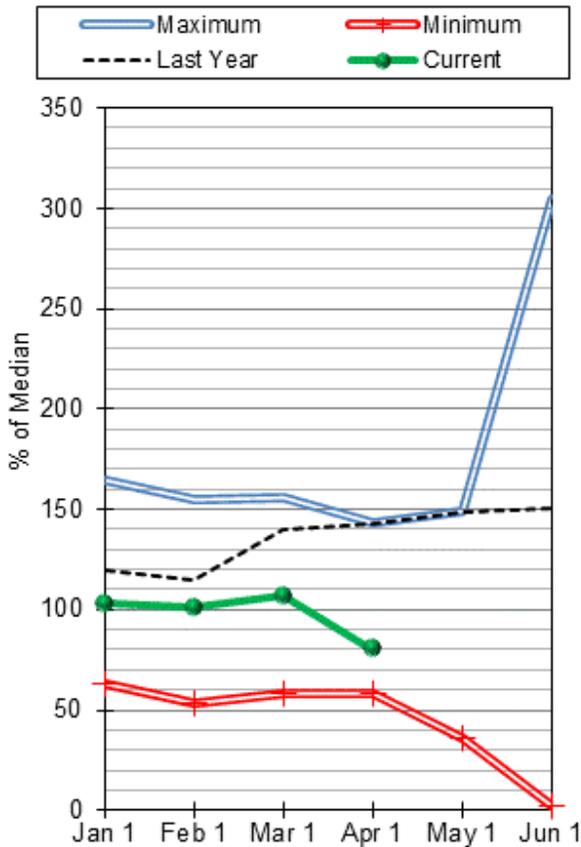
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

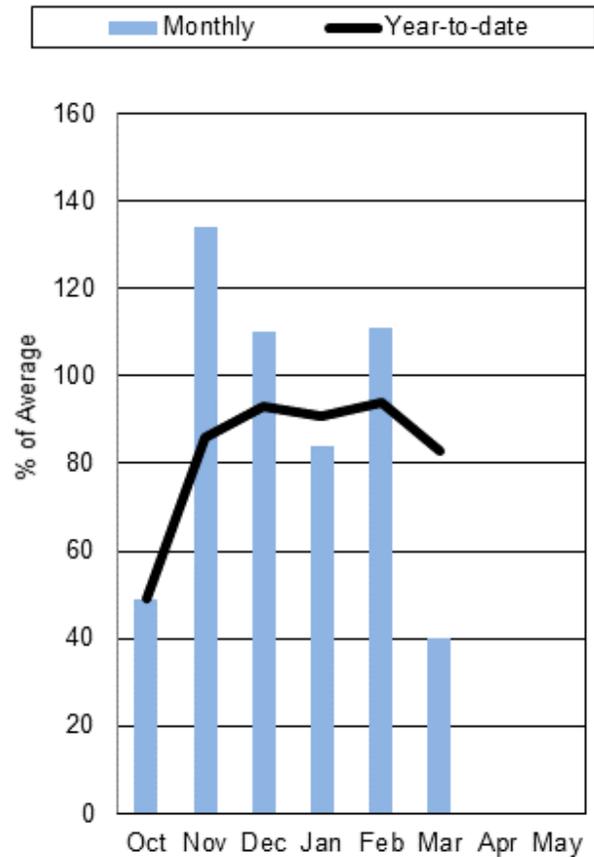
Reservoir Storage End of March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Mystic Lake	1.4	0.9	1.0	21.0
Cooney Res	22.3	21.5	20.2	27.4
Basin-wide Total	23.7	22.4	21.2	48.4
# of reservoirs	2	2	2	2
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median	
YELLOWSTONE ab LIVINGSTON	10	77%	144%	
SHIELDS	5	80%	168%	
BOULDER-STILLWATER	3	80%	159%	
RED LODGE-ROCK CREEK	5	81%	203%	
CLARK'S FORK	7	93%	155%	
UPPER YELLOWSTONE RIVER BASIN	27	81%	158%	

Lower Yellowstone River Basin

Mountain Snowpack



Precipitation



The Lower Yellowstone River Basin might not make headlines like some of the other basins with record snow levels at SNOTEL sites and snowcourses for April 1st, but it is below normal for the first time this water year and down significantly from above normal on March 1st. The five major basins experienced declines of 25 to 35 percent over the month due to the lack of significant snowfall and well above average temperatures which caused low to mid elevation snowmelt. The southern half of the Wind River Range on the east side is currently the lowest in terms of snowpack, with 4 SNOTEL sites and 2 snowcourses ranking 2nd lowest on record for snow water equivalent on April 1st (6% - 60% of normal). While not dire yet, snowpack levels in this area are very low for this time of year. Further east the rivers fed by the Bighorn Range look to fare better in terms of snowmelt drive flows, but snowpack did see major declines during the month from the above normal snowpack in most locations on March 1st. As a whole, the Lower Yellowstone River Basin is currently 80 percent of normal, and 56 percent of last year at this time.

Valley weather stations received 44 percent of monthly average precipitation for February, while mountain SNOTEL sites received 39 percent. Currently on March 1st, the Lower Yellowstone River Basin is 83 percent of the water year-to-date average and 61 percent of last year at this time.

Basin-wide reservoir storage is currently at 110 percent of average, and 105 percent of last year at this time.

The basin-wide average April-July streamflow forecast for the Lower Yellowstone River is currently at 76 percent of average and 48 percent of last year.

Lower Yellowstone River Basin (Wyoming) Streamflow Forecasts - April 1, 2015

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

LOWER YELLOWSTONE RIVER BASIN (Wyoming)	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Bighorn R nr St. Xavier ²	APR-JUL	280	645	890	64%	1140	1500	1380
	APR-SEP	220	635	920	63%	1200	1620	1460
Little Bighorn R nr Hardin	APR-JUL	39	64	81	83%	98	122	98
	APR-SEP	49	77	95	86%	114	141	111
Tongue R nr Dayton ²	APR-JUL	39	55	66	77%	77	93	86
	APR-SEP	45	63	75	77%	87	105	98
Big Goose Ck nr Sheridan	APR-JUL	19.1	29	35	76%	41	51	46
	APR-SEP	27	36	43	80%	50	59	54
Little Goose Ck nr Bighorn	APR-JUL	13.1	19	23	74%	27	33	31
	APR-SEP	19.2	26	30	77%	34	41	39
Tongue River Reservoir Inflow ²	APR-JUL	31	90	129	67%	169	230	193
	APR-SEP	41	104	146	68%	189	250	215
Yellowstone R at Miles City ²	APR-JUL	2330	3180	3760	79%	4340	5190	4780
	APR-SEP	2430	3510	4250	78%	4990	6070	5450
Powder R at Moorehead	APR-JUL	7.9	77	123	69%	170	240	177
	APR-SEP	21	92	140	71%	188	260	196
Powder R nr Locate	APR-JUL	6	82	138	69%	194	275	199
	APR-SEP	6.3	95	155	70%	215	305	220
Yellowstone R nr Sidney ²	APR-JUL	2030	3030	3710	77%	4390	5390	4830
	APR-SEP	1970	3240	4100	76%	4960	6230	5430

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 March, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bighorn Lake	848.6	802.2	787.5	1356.0
Tongue River Res	56.1	60.6	32.3	79.1
Basin-wide Total	904.7	862.8	819.8	1435.1
# of reservoirs	2	2	2	2
Watershed Snowpack Analysis April 1, 2015	# of Sites	% Median	Last Year % Median	
WIND RIVER (Wyoming)	19	76%	137%	
SHOSHONE RIVER (Wyoming)	4	75%	146%	
BIGHORN RIVER (Wyoming)	18	85%	147%	
LITTLE BIGHORN (Wyoming)	3	86%	138%	
TONGUE RIVER (Wyoming)	9	79%	141%	
POWDER RIVER (Wyoming)	8	91%	159%	
LOWER YELLOWSTONE RIVER BASIN (Wyoming)	46	80%	142%	

Montana Site Report

	Network	Elevation (ft)	Depth (in)	SWE (in)	Median (in)	% Median	Last Year SWE (in)	Last Year % Median
Albro Lake	SNOTEL	8300	40	14.2	17.7	80%	29.2	165%
Ambrose	SC	6480	22	8.0	10.4	77%	16.6	160%
Arch Falls	SC	7350	25	7.6	10.8	70%	13.7	127%
Ashley Divide	SC	4820	0	0.0	4.4	0%	8.6	195%
Badger Pass	SNOTEL	6900	59	27.1	29.8	91%	41.7	140%
Banfield Mountain	SNOTEL	5600	21	8.2	17.2	48%	20.9	122%
Baree Creek	SC	5500	42	17.1	34.9	49%	44.7	128%
Baree Midway	SC	4600	17	7.1	27.8	26%	33.8	122%
Baree Trail	SC	3800	0	0.0	7.2	0%	9.1	126%
Barker Lakes	SNOTEL	8250	34	11.6	13.9	83%	20.0	144%
Basin Creek	SNOTEL	7180	16	6.3	7.5	84%	12.3	164%
Bassoo Peak	SC	5150	0	0.0	7.8	0%	12.6	162%
Beagle Springs	SNOTEL	8850	18	5.9	8.8	67%	10.1	115%
Bear Basin	SC	8150			17.7		24.8	140%
Bear Mountain	SNOTEL	5400	52	24.5	54.3	45%	55.9	103%
Beartooth Lake	SNOTEL	9360	59	18.9	21.0	90%	31.0	148%
Beaver Creek	SNOTEL	7850	35	13.0	16.6	78%	21.4	129%
Big Snowy	SC	7150	41	14.8	18.2	81%	24.3	134%
Bisson Creek	SNOTEL	4920	12	4.9	10.0	49%	14.4	144%
Black Bear	SNOTEL	8170	63	25.0	36.3	69%	41.3	114%
Black Mountain	SC	7750	33	11.5	14.1	82%	15.3	109%
Black Pine	SNOTEL	7210	18	7.0	9.6	73%	17.9	186%
Blacktail	SC	5650	16	5.6	12.0	47%	15.7	131%
Blacktail Mtn	SNOTEL	5650	7	2.8			16.5	
Bloody Dick	SNOTEL	7600	26	9.7	10.9	89%	17.0	156%
Bots Sots	SC	7750	9	3.1	7.0	44%	14.4	206%
Boulder Mountain	SNOTEL	7950	48	16.3	19.4	84%	26.8	138%
Box Canyon	SNOTEL	6670	9	3.6	8.6	42%	15.0	174%
Boxelder Creek	SC	5100	0	0.0	7.1	0%	7.5	106%
Brackett Creek	SNOTEL	7320	53	21.6	19.0	114%	32.1	169%
Bristow Creek	SC	3900	1	0.4	7.0	6%	12.7	181%
Brush Creek Timber	SC	5000	0	0.0	6.1	0%	19.7	323%
Bull Mountain	SC	6600		4.2	5.6	75%	8.8	157%
Burnt Mtn	SNOTEL	5880	0	0.0	4.4	0%	11.5	261%
Cabin Creek	SC	5200	1	0.2	5.0	4%	8.6	172%
Calvert Creek	SNOTEL	6430	0	0.0	7.1	0%	12.6	177%
Camp Senia	SC	7890	28	9.0	5.4	167%	17.1	317%
Canyon	SNOTEL	7870	24	9.6	12.3	78%	15.2	124%
Carrot Basin	SNOTEL	9000	52	18.3	25.2	73%	28.8	114%
Chessman Reservoir	SC	6200	3	1.1	2.6	42%	10.0	385%
Chicago Ridge	SC	5800	52	20.4			37.8	
Chicken Creek	SC	4060	25	10.8	13.8	78%	20.5	149%
Clover Meadow	SNOTEL	8600	34	10.3	15.6	66%	17.5	112%
Cole Creek	SNOTEL	7850	32	11.6	13.5	86%	22.4	166%
Combination	SNOTEL	5600	0	0.0	4.2	0%	8.1	193%
Copper Bottom	SNOTEL	5200	0	0.0			9.6	
Copper Camp	SNOTEL	6950	56	29.8			49.6	
Copper Mountain	SC	7700	25	10.5	9.9	106%	12.9	130%
Cottonwood Creek	SC	6400	10	3.0	7.3	41%	9.1	125%
Coyote Hill	SC	4200			7.0		12.7	181%
Crevice Mountain	SC	8400			9.4		14.4	153%
Crystal Lake	SNOTEL	6050	30	9.8	11.9	82%	18.9	159%
Dad Creek Lake	SC	8800			13.4			
Daisy Peak	SNOTEL	7600	25	8.6	9.8	88%	14.5	148%
Daly Creek	SNOTEL	5780	14	5.2	9.6	54%	17.5	182%

	Network	Elevation (ft)	Depth (in)	SWE (in)	Median (in)	% Median	Last Year SWE (in)	Last Year % Median
Darkhorse Lake	SNOTEL	8600	77	29.2	26.2	111%	37.2	142%
Deadman Creek	SNOTEL	6450	15	6.6	9.7	68%	14.8	153%
Desert Mountain	SC	5600		7.4	12.6	59%	19.5	155%
Discovery Basin	SC	7050	21	8.4	9.2	91%	13.6	148%
Divide	SNOTEL	7800	15	6.1	9.8	62%	10.8	110%
Dix Hill	SC	6400	5	1.6	9.1	18%	15.2	167%
Dupuyer Creek	SNOTEL	5750	0	0.0	8.6	0%	11.9	138%
Eagle Creek	SC	7000		9.3	11.6	80%	23.7	204%
East Boulder Mine	SNOTEL	6335	0	0.0			10.3	
El Dorado Mine	SC	7800	25	9.4	17.4	54%	17.8	102%
Elk Horn Springs	SC	7800	25	7.4	8.0	93%	12.5	156%
Elk Peak	SNOTEL	7600	40	16.7			33.8	
Elk Peak	SC	8000		10.9	12.8	85%	20.7	162%
Emery Creek	SNOTEL	4350	17	7.3	13.7	53%	20.5	150%
Fatty Creek	SC	5500	47	17.0	21.2	80%	34.6	163%
Fish Creek	SC	8000	22	7.8	9.0	87%	17.6	196%
Fisher Creek	SNOTEL	9100	77	29.3	30.1	97%	42.9	143%
Flattop Mtn.	SNOTEL	6300	93	35.1	42.0	84%	52.8	126%
Fleecer Ridge	SC	7500	21	8.2	9.5	86%	14.4	152%
Foolhen	SC	8280	31	11.6	14.4	81%		
Forest Lake	SC	6400		5.9	10.0	59%	20.8	208%
Four Mile	SC	6900	6	2.4	7.0	34%	11.8	169%
Freight Creek	SC	6000	11	3.4	11.9	29%	17.0	143%
Frohner Meadow	SNOTEL	6480	4	2.1	7.4	28%	13.8	186%
Garver Creek	SNOTEL	4250	15	5.9	9.1	65%	10.2	112%
Gibbons Pass	SC	7100			20.0		29.4	147%
Goat Mountain	SC	7000	12	4.6	8.0	58%	15.6	195%
Government Saddle	SC	5270	43	15.6			34.8	
Grave Creek	SNOTEL	4300	14	6.2	13.8	45%	21.9	159%
Griffin Creek Divide	SC	5150	11	4.0	8.4	48%	14.0	167%
Hand Creek	SNOTEL	5035	4	1.9	11.1	17%	15.0	135%
Hawkins Lake	SNOTEL	6450	55	21.1	23.4	90%	27.8	119%
Haymaker	SC	8050			10.6		19.7	186%
Hebgen Dam	SC	6550	19	4.6	9.8	47%	9.2	94%
Hell Roaring Divide	SC	5770	58	21.8	25.8	84%	33.0	128%
Herrig Junction	SC	4850	40	17.4	24.1	72%	31.0	129%
Highwood Divide	SC	5650	0	0.0	6.7	0%	8.7	130%
Highwood Station	SC	4600	0	0.0	3.8	0%	7.6	200%
Holbrook	SC	4530	0	0.0	6.8	0%	10.7	157%
Hoodoo Basin	SNOTEL	6050	67	25.8	38.9	66%	52.3	134%
Humboldt Gulch	SNOTEL	4250	4	1.2	9.1	13%	18.0	198%
Jakes Canyon	SC	9040			11.2		14.9	133%
Johnson Park	SC	6450			4.2		8.6	205%
Kishenehn	SC	3890	6	1.8	6.6	27%	9.8	148%
Kraft Creek	SNOTEL	4750	0	0.0			22.4	
Lake Camp	SC	7780			8.8			
Lakeview Canyon	SC	6930	1	0.5	9.5	5%	7.3	77%
Lakeview Ridge	SNOTEL	7400	0	0.0	10.4	0%	8.8	85%
Lemhi Ridge	SNOTEL	8100	23	8.5	9.7	88%	13.7	141%
Lick Creek	SNOTEL	6860	17	7.0	11.2	63%	16.8	150%
Little Park	SC	7400	31	11.8	13.7	86%	18.6	136%
Logan Creek	SC	4300	9	3.9	5.8	67%	10.7	184%
Lolo Pass	SNOTEL	5240	40	16.5	27.1	61%	40.5	149%
Lone Mountain	SNOTEL	8880	35	13.7	16.7	82%	24.1	144%
Lookout	SNOTEL	5140	13	5.5	26.2	21%	32.4	124%
Lower Twin	SNOTEL	7900	37	8.9	16.6	54%	25.0	151%
Lubrecht Flume	SNOTEL	4680	0	0.0	1.6	0%	7.1	444%

	Network	Elevation (ft)	Depth (in)	SWE (in)	Median (in)	% Median	Last Year SWE (in)	Last Year % Median
Lubrecht Forest No 3	SC	5450	0	0.0	4.6	0%	8.4	183%
Lubrecht Forest No 4	SC	4650	0	0.0	0.4	0%	3.6	900%
Lubrecht Forest No 6	SC	4040	0	0.0	0.6	0%	5.6	933%
Lubrecht Hydroplot	SC	4200	0	0.0	0.6	0%	7.4	1233%
Lupine Creek	SC	7380	0	0.0	7.4	0%	10.4	141%
Madison Plateau	SNOTEL	7750	30	12.8	21.3	60%	24.8	116%
Many Glacier	SNOTEL	4900	0	0.0	12.4	0%	18.3	148%
Marias Pass	SC	5250	11	4.4	14.4	31%	20.9	145%
Mineral Creek	SC	4000	4	1.6	15.4	10%	17.2	112%
Monument Peak	SNOTEL	8850	48	17.6	18.8	94%	28.6	152%
Moss Peak	SNOTEL	6780	96	41.7	35.1	119%	46.4	132%
Moulton Reservoir	SC	6850	0	0.0	6.3	0%	10.6	168%
Mount Allen No 7	SC	5700						
Mount Lockhart	SNOTEL	6400	36	14.7	18.4	80%	28.3	154%
Mudd Lake	SC	7650			17.2			
Mule Creek	SNOTEL	8300	41	14.0	13.8	101%	21.5	156%
N Fk Elk Creek	SNOTEL	6250	22	8.2	10.6	77%	17.0	160%
Nevada Ridge	SNOTEL	7020	31	11.9	13.9	86%	22.1	159%
New World	SC	6900	20	6.7	12.8	52%	19.6	153%
Nez Perce Camp	SNOTEL	5650	26	9.4	13.0	72%	19.9	153%
Noisy Basin	SNOTEL	6040	97	41.0	39.3	104%	47.8	122%
Norris Basin	SC	7550	8	3.5	8.8	40%		
North Fork Jocko	SNOTEL	6330	79	34.6	40.3	86%	51.4	128%
Northeast Entrance	SNOTEL	7350	13	4.8	9.6	50%	15.5	161%
Onion Park	SNOTEL	7410	35	13.2	13.0	102%	17.2	132%
Ophir Park	SC	7150	24	9.4	14.8	64%	20.5	139%
Parker Peak	SNOTEL	9400	53	19.9	18.8	106%	31.1	165%
Peterson Meadows	SNOTEL	7200	20	7.6	9.6	79%	14.9	155%
Pickfoot Creek	SNOTEL	6650	16	5.7	9.5	60%	16.4	173%
Pike Creek	SNOTEL	5930	0	0.0			12.0	
Pipestone Pass	SC	7200	8	2.8	4.6	61%	8.2	178%
Placer Basin	SNOTEL	8830	41	13.9	16.6	84%	26.3	158%
Poorman Creek	SNOTEL	5100	33	13.7	35.1	39%	43.4	124%
Porcupine	SNOTEL	6500	0	0.0	5.9	0%	11.5	195%
Potomageton Park	SC	7150	17	5.3	12.0	44%	19.0	158%
Revais	SC	4800	0	0.0	0.2	0%	2.1	1050%
Rock Creek Mdws	SC	3400	13	6.4			16.4	
Rocker Peak	SNOTEL	8000	37	12.6	12.4	102%	21.1	170%
Rocky Boy	SNOTEL	4700	0	0.0	3.8	0%	7.2	189%
Roland Summit	SC	5120	29	14.4	31.0	46%	45.9	148%
S Fork Shields	SNOTEL	8100	35	12.0	15.3	78%	22.1	144%
Sacajawea	SNOTEL	6550	27	10.6	14.8	72%	22.7	153%
Saddle Mtn.	SNOTEL	7940	56	23.0	22.9	100%	36.4	159%
Short Creek	SNOTEL	7000	1	0.5	5.7	9%	5.9	104%
Shower Falls	SNOTEL	8100	54	18.3	20.7	88%	28.8	139%
Skalkaho Summit	SNOTEL	7250	42	17.2	21.4	80%	30.5	143%
Sleeping Woman	SNOTEL	6150	24	9.6	13.9	69%	21.8	157%
Slide Rock Mountain	SC	7100	28	12.2	12.9	95%	20.2	157%
Spotted Bear Mountain	SC	7000	11	4.3	12.2	35%	18.8	154%
Spur Park	SNOTEL	8100	58	20.5	19.5	105%	28.3	145%
Stahl Peak	SNOTEL	6030	82	27.9	33.3	84%	40.4	121%
Stemple Pass	SC	6600	19	6.2	8.3	75%	13.0	157%
Storm Lake	SC	7780	29	10.0	12.6	79%	15.5	123%
Stringer Creek	SNOTEL	6550	23	8.7	10.1	86%	15.6	154%
Stryker Basin	SC	6180	70	27.5	28.2	98%	40.4	143%
Stuart Mountain	SNOTEL	7400	77	32.0	30.6	105%	38.7	126%
Taylor Road	SC	4080	0	0.0	1.0	0%	4.4	440%

	Network	Elevation (ft)	Depth (in)	SWE (in)	Median (in)	% Median	Last Year SWE (in)	Last Year % Median
Ten Mile Lower	SC	6600	15	4.7	5.7	82%	14.2	249%
Ten Mile Middle	SC	6800	26	8.3	9.8	85%	16.6	169%
Tepee Creek	SNOTEL	8000	20	7.7	13.3	58%	12.7	95%
Timberline Creek	SC	8850	33	10.7	12.1	88%	20.5	169%
Tizer Basin	SNOTEL	6880	15	5.2	9.4	55%	14.5	154%
Trinkus Lake	SC	6100	85	38.8	37.2	104%	51.0	137%
Truman Creek	SC	4060	0	0.0	2.5	0%	0.0	0%
Twelvemile Creek	SNOTEL	5600	28	10.5	14.5	72%	25.5	176%
Twenty-One Mile	SC	7150	20	6.8	14.7	46%	15.2	103%
Twin Lakes	SNOTEL	6400	69	30.1	35.4	85%	57.2	162%
Upper Holland Lake	SC	6200	62	25.2	29.6	85%	40.8	138%
Waldron	SNOTEL	5600	11	4.2	10.7	39%	15.8	148%
Warm Springs	SNOTEL	7800	61	21.6	19.0	114%	28.3	149%
Weasel Divide	SC	5450	52	18.9	29.0	65%	33.6	116%
West Yellowstone	SNOTEL	6700	6	3.4	10.2	33%	14.4	141%
Whiskey Creek	SNOTEL	6800	18	7.7	15.0	51%	17.6	117%
White Elephant	SNOTEL	7710	31	13.3	25.7	52%	27.3	106%
White Mill	SNOTEL	8700	57	23.0	21.6	106%	33.2	154%
Wolverine	SNOTEL	7650	11	6.1	9.1	67%	15.7	173%
Wood Creek	SNOTEL	5960	6	2.2	8.5	26%	13.5	159%
Wrong Creek	SC	5700	13	4.2	10.2	41%	14.9	146%
Wrong Ridge	SC	6800	23	8.4	13.5	62%	18.5	137%
Younts Peak	SNOTEL	8350			14.1			

Issued by:

Jason Weller
Chief
Natural Resources Conservation Service
U.S. Department of Agriculture

Released by:

Ray Dotson
State Conservationist (Acting)
Natural Resources Conservation Service
Bozeman, Montana



Federal Building, Room 443
10 E. Babcock
Bozeman, MT 59715



Montana
Water Supply Outlook
Report
Natural Resources Conservation Service

