

Utah Water Supply Outlook Report

May 1, 2016



Measuring Snow at Redden Mine snow course in shirt sleeves – warm in the high country – 4/27/2016.
Photo by Troy Brosten, NRCS.

Water Supply Outlook Reports and Federal - State - Private Cooperative Snow Surveys

For more water supply and resource management information, contact: your local Natural Resources Conservation Service Office or:

Snow Surveys

245 N Jimmy Doolittle Rd, SLC Utah, 84116. Phone (801)524-5213

Internet Address: <http://www.ut.nrcs.usda.gov/snow/>

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 snowcourses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in 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.

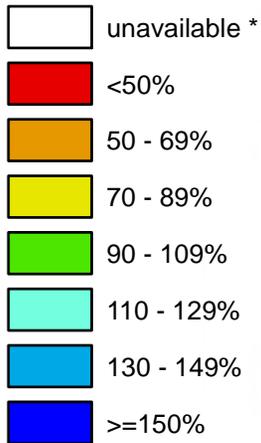
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Utah

SNOTEL Current Snow Water Equivalent (SWE) % of Normal

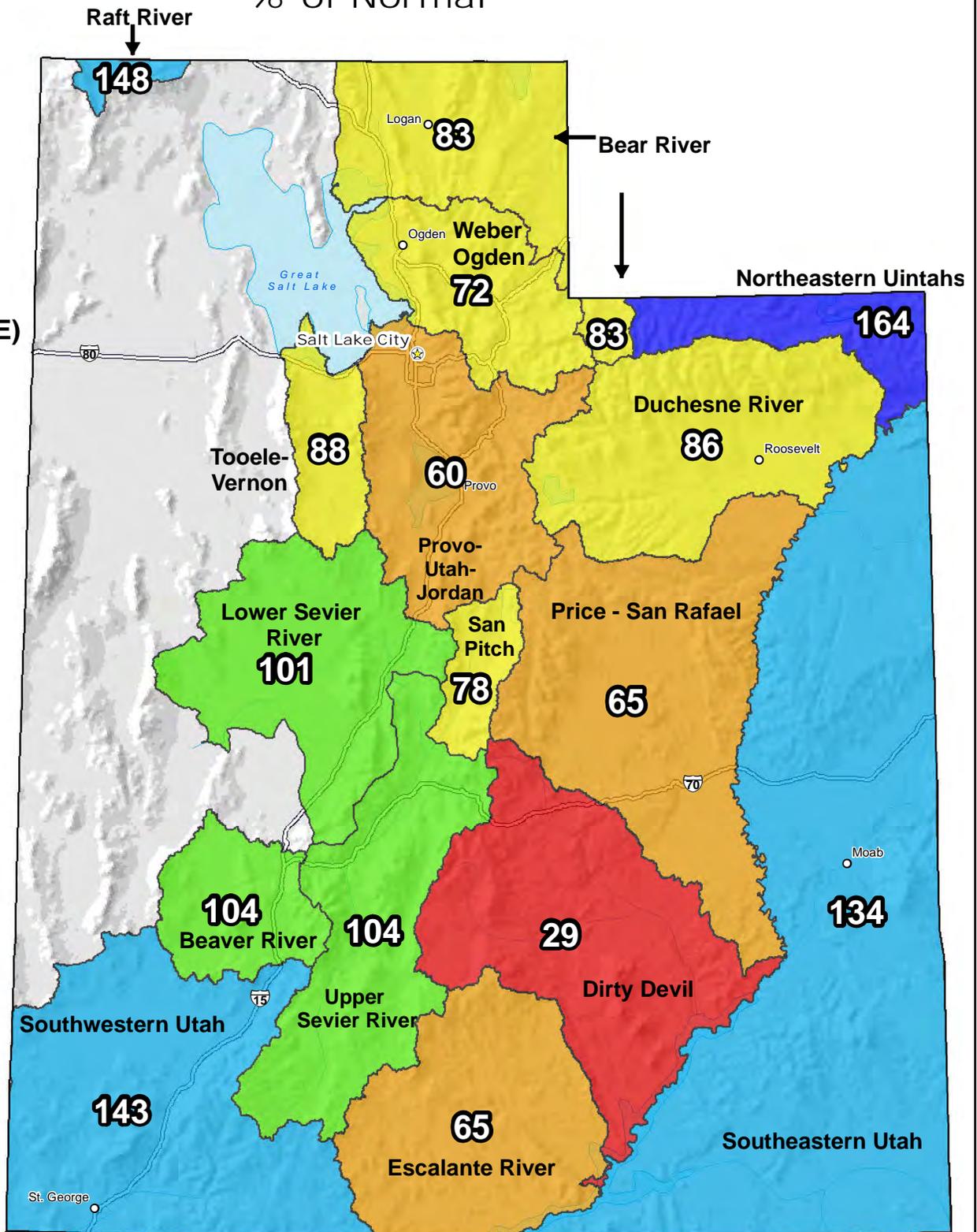
May 01, 2016

**Snow Water Equivalent (SWE)
Basin-wide
Percent of
1981-2010
Median**



* Data unavailable at time of posting or measurement is not representative at this time of year

**Provisional Data
Subject to Revision**



The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

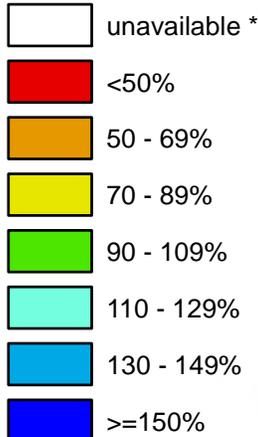
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Utah

SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

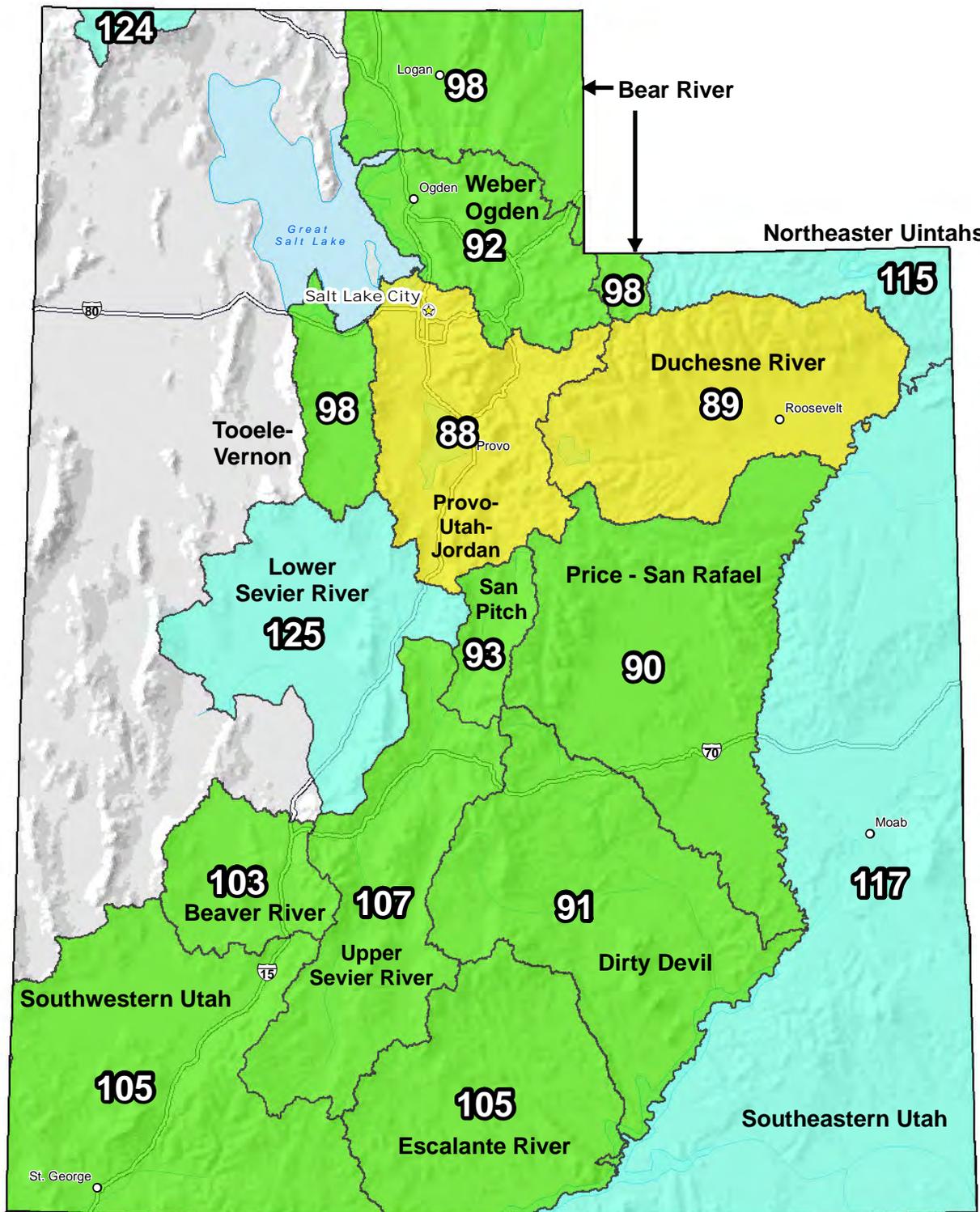
May 01, 2016

Water Year (Oct 1) to Date Precipitation Basin-wide Percent of 1981-2010 Average



* Data unavailable at time of posting or measurement is not representative at this time of year

**Provisional Data
Subject to Revision**



The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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

STATE OF UTAH GENERAL OUTLOOK

May 1, 2015

SUMMARY

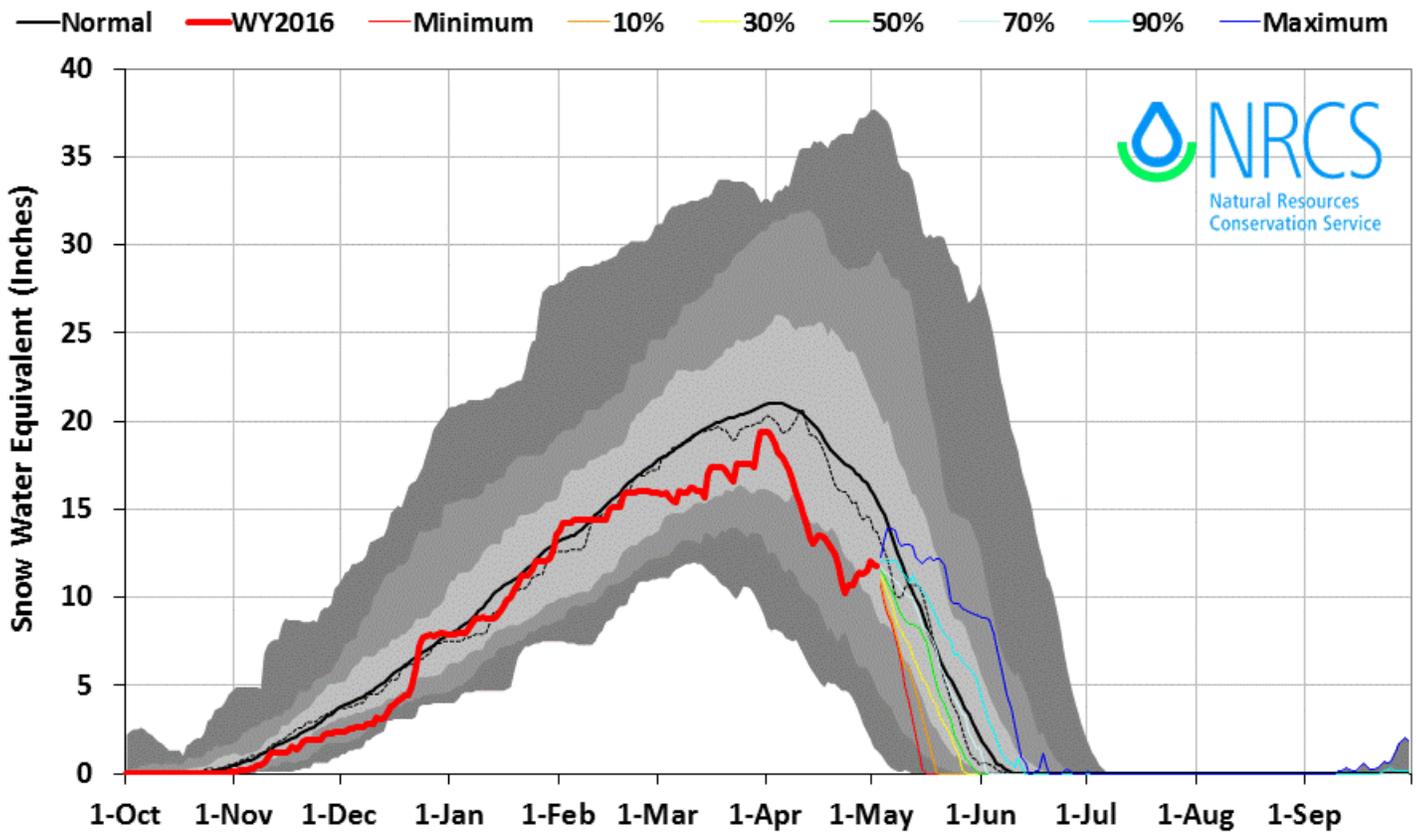
Snowpacks across Utah were near normal on April 1 of this year and subsequently melted rapidly for the first three weeks of the month. In the graph below you can see how quickly snowpacks were melting during most of April and how recent storms have slowed the decline and added modest amounts of snow to the pack.

Other basin graphs here:

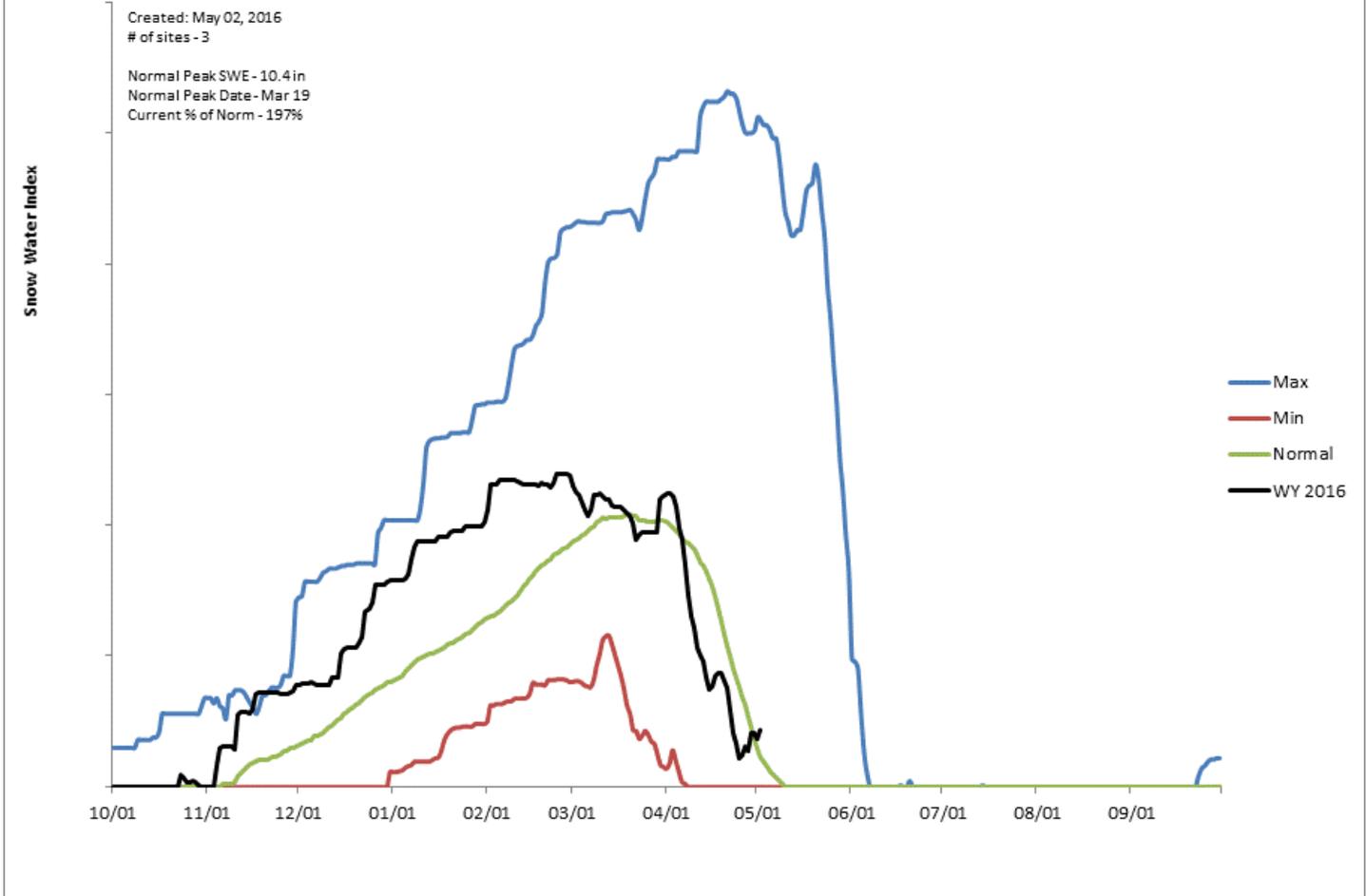
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ut/snow/products/data/?cid=nrcs141p2_034243

Weber River Basin 2016 Snow Water with Non-Exceedence Projections (14 sites)

Based on Provisional SNOTEL data as of May 02, 2016



Southeastern Utah - SWE Index



In the graph above the total amount of snow melted in April and the impact of last weeks storms can be seen. Links to these graphs for all Utah watersheds here:

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ut/snow/products/data/?cid=nrcseprd341710>

The fact is that about 85% of the total snow available for melt in southeast Utah has already melted.

The recent storms have added substantially to our snowpacks across the state (1 to 6 inches of SWE) at a critical time and will boost our total streamflow. Still, snow packs are melting quickly and streamflow response has been near normal. May 1 snowpacks across the state are: Bear – 82%, Weber – 70%, Provo – 60%, North East – 164%, Duchesne – 84%, Price-San Rafael – 65%, South East – 125%, Upper Sevier – 103%, San Pitch – 79%, Beaver – 104% and the southwest – 139% of normal. This is typically 2 to 5 times more snow that last year at this time. April precipitation was slightly below to well above average across the state this year ranging from 84% on the Bear to 176% across southwest Utah, most of which came in the later portion of the month. Current soil moisture levels in runoff producing areas are near peak for the year and will quickly begin drying as soon as snowmelt ends. Reservoir storage in 48 of Utah's key irrigation reservoirs is currently at 61% of capacity statewide which is 1% less than last year at this time. General runoff conditions are below to near average across the state. May-July stream flow forecasts range from 38% to 128% of average. Most forecasts are between 55% and 80% of average.

SNOWPACK

May first snowpacks as measured by the NRCS SNOTEL system are as follows: Bear – 82% (33% last year LY), Weber – 70% (19% LY), Provo – 60% (16% LY), Duchesne – 84% (31% LY), Price – 65% (13% LY), southeast Utah – 125% (0% LY), upper Sevier – 103% (30% LY), San Pitch – 79% (17% LY) and southwest

Utah – 139% (38% LY) and the statewide figure is 81% of average compared to 23% last year. Given current conditions, most watersheds will melt out by late-May or early June.

PRECIPITATION

Mountain precipitation as measured by the NRCS SNOTEL system during April was: Bear – 84%, Weber – 103%, Provo – 94%, Duchesne – 110%, Price – 113%, South East – 104%, Upper Sevier – 119%, Southwestern Utah – 176% and the statewide figure is 108% of average. This brings the seasonal accumulation (Oct-April) to 96% of average statewide, about 32% more than last year.

RESERVOIRS

Storage in 48 of Utah's key irrigation reservoirs is at 61% of capacity, 1% less than last year. Reservoir storage by Basin: Bear – 46%, Weber – 65%, Provo – 66%, Duchesne – 74%, Price San Rafael– 44%, Upper Sevier – 61%, Southwestern Utah – 45% of capacity.

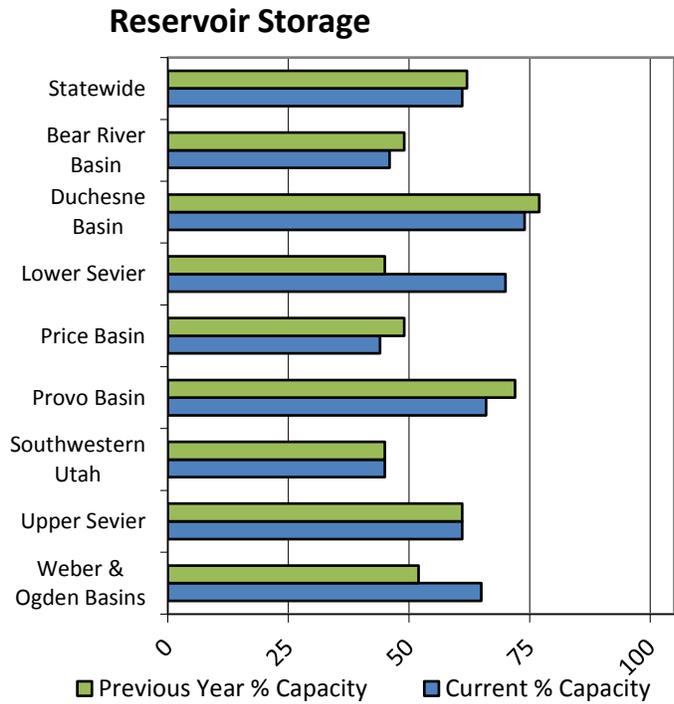
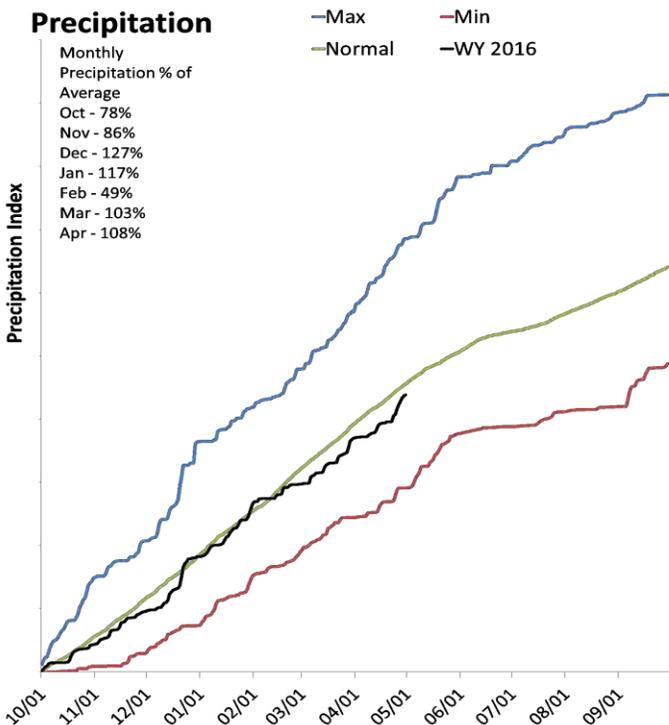
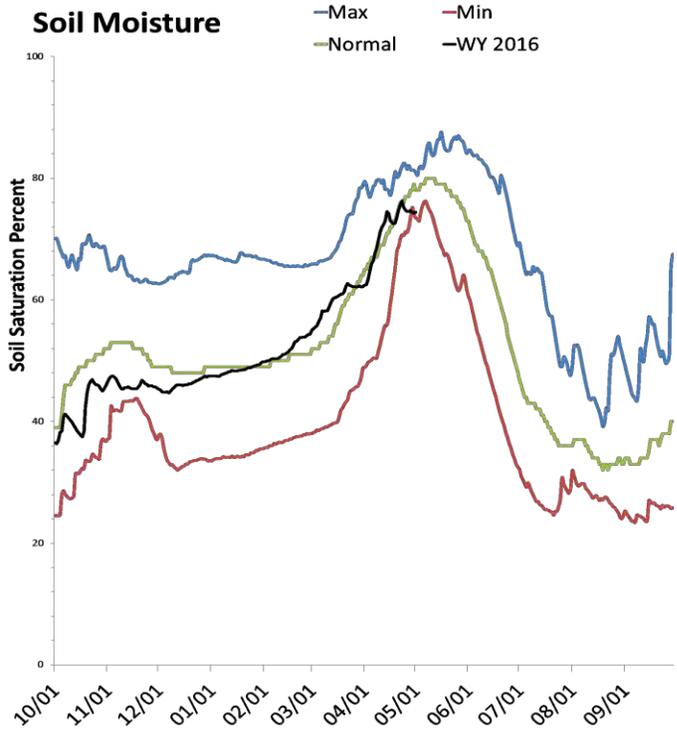
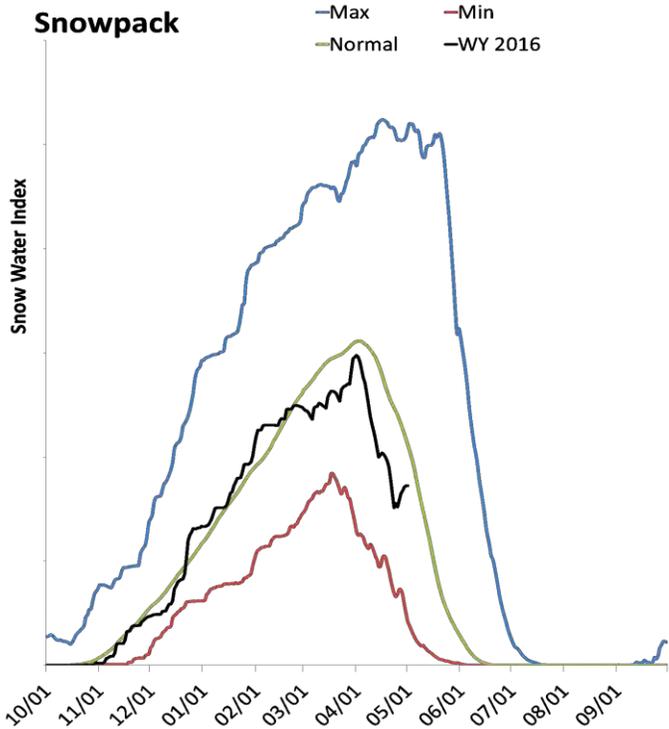
STREAMFLOW

Snowmelt streamflows are expected to be below to near average across the state this year. Stream flow will have a more normal timing compared to last year – both in peak flows and volumes.

Statewide Utah

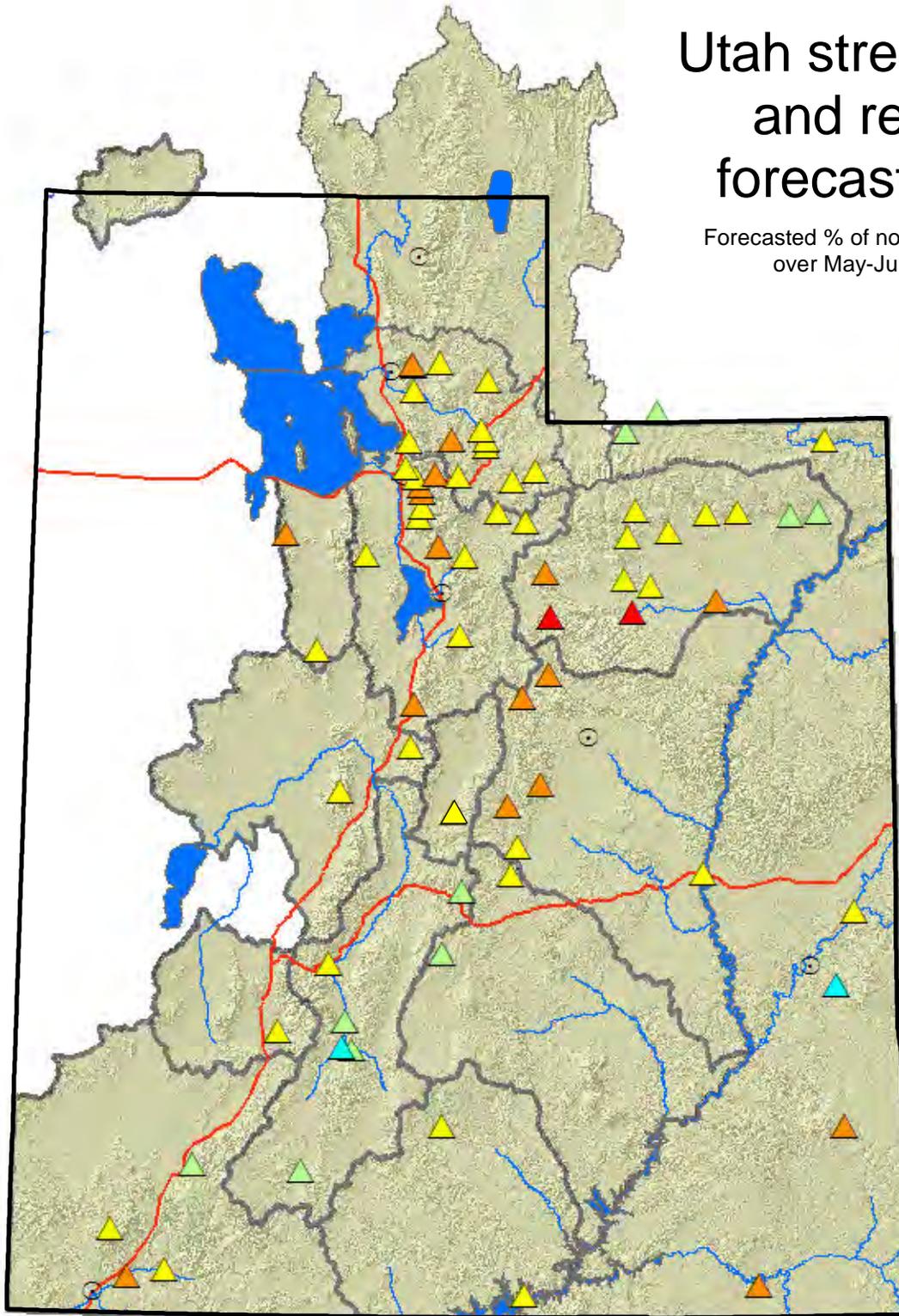
5/1/2016

Snowpack in Utah is below normal at 81% of normal, compared to 23% last year. Precipitation in April was near average at 108%, which brings the seasonal accumulation (Oct-Apr) to 96% of average. Soil moisture is at 76% compared to 77% last year. Reservoir storage is at 61% of capacity, compared to 62% last year. Forecast streamflow volumes range from 38% to 128% of average.



Utah streamflow and reservoir forecast points

Forecasted % of normal flow volume over May-July forecast period



Percent normal

- | | |
|---------------|-------------------|
| ▲ < 50% | △ Forecast points |
| ▲ 50 - 69% | ⊙ Cities |
| ▲ 70 - 89% | — Rivers |
| ▲ 90 - 109% | — Highways |
| ▲ 110 - 129% | |
| ▲ 130 - 149% | |
| ▲ > 150% | |
| △ no % avail. | |

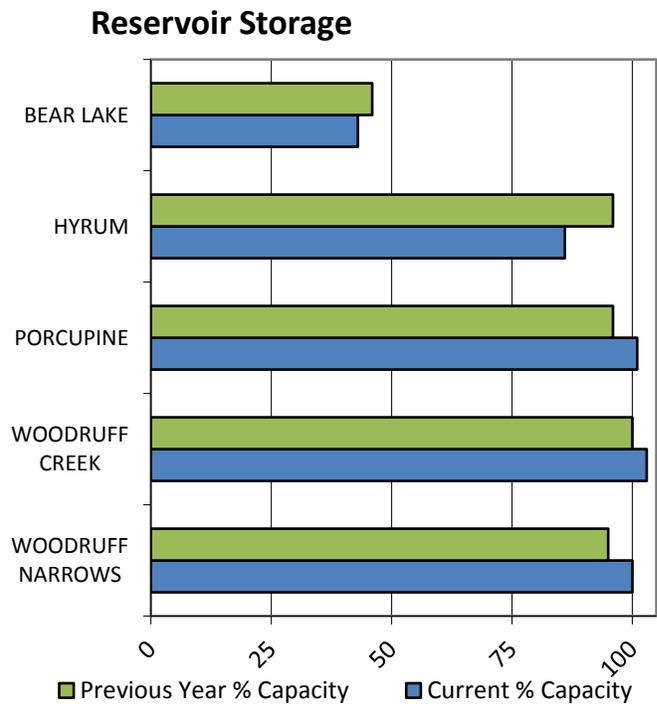
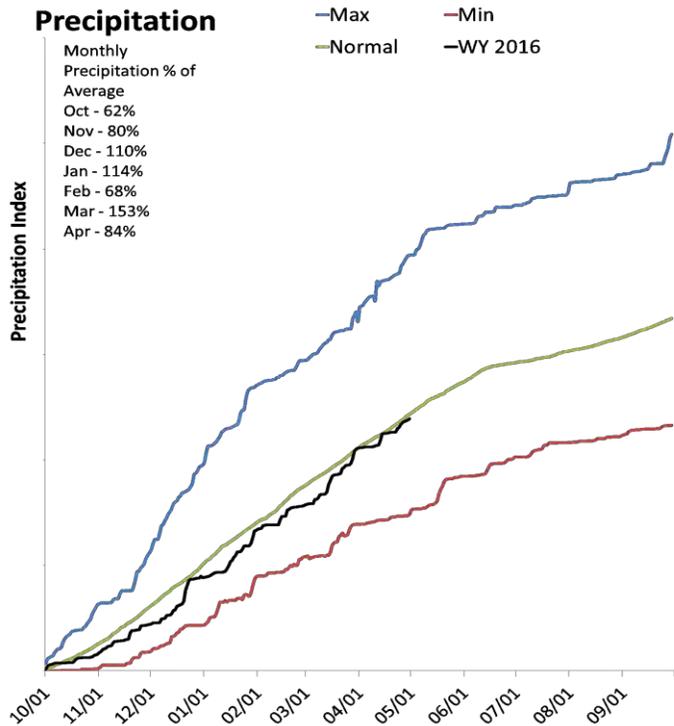
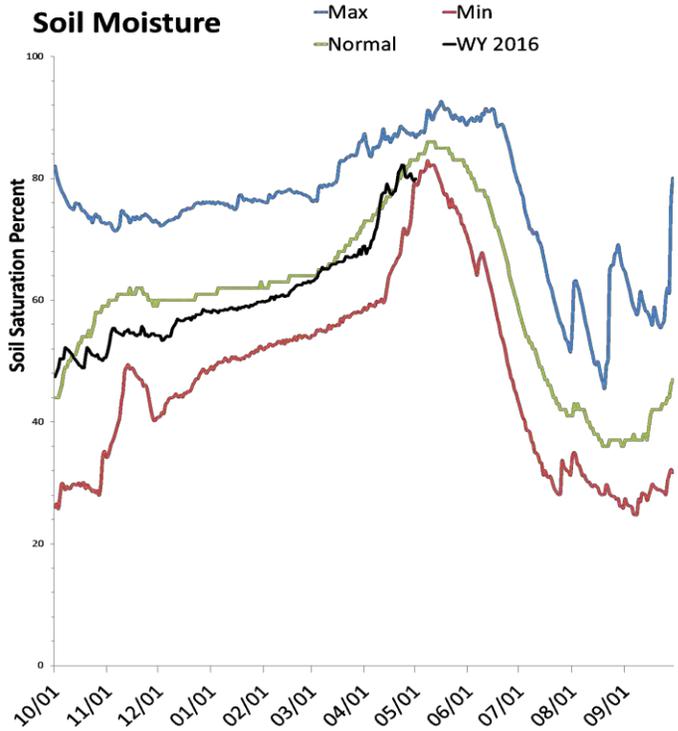
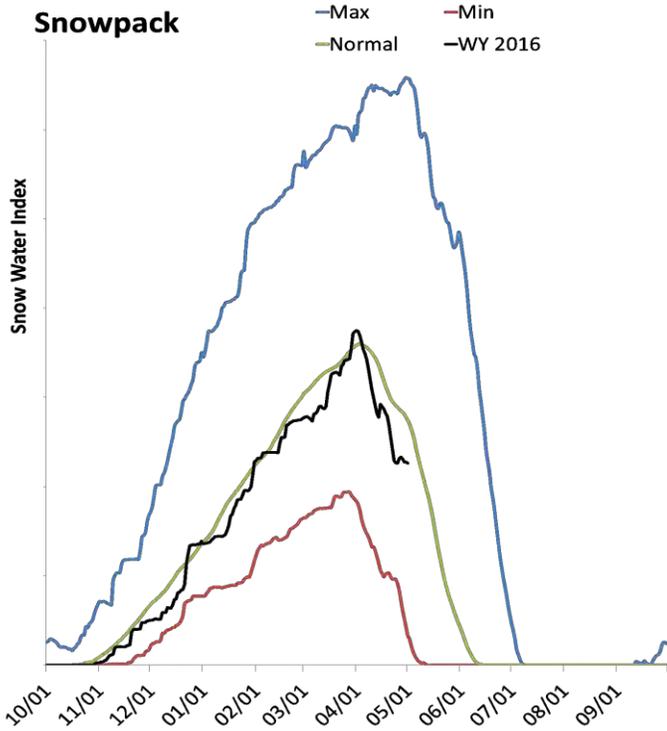
USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

0 12.5 25 50 75 100 Miles

Bear River Basin

5/1/2016

Snowpack in the Bear River Basin is below normal at 82% of normal, compared to 33% last year. Precipitation in April was below average at 84%, which brings the seasonal accumulation (Oct-Apr) to 98% of average. Soil moisture is at 80% compared to 84% last year. Reservoir storage is at 46% of capacity, compared to 49% last year. Forecast streamflow volumes range from 60% to 89% of average. The surface water supply index is 41% for the Bear River, 51% for the Woodruff Narrows, 48% for the Little Bear.



Bear River Streamflow Forecasts - May 1, 2016

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

Bear River	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	68	82	91	81%	101	114	112
	APR-SEP	76	91	101	82%	111	126	123
	MAY-JUL	68	80	88	85%	97	109	104
	MAY-SEP	75	89	98	84%	108	122	116
Bear R ab Resv nr Woodruff								
	APR-JUL	55	73	86	71%	99	117	121
	APR-SEP	59	77	90	70%	103	122	128
	MAY-JUL	47	65	76	72%	88	105	105
	MAY-SEP	52	69	80	72%	92	109	111
Big Ck nr Randolph								
	APR-JUL	1.97	2.9	3.4	89%	4	4.9	3.8
	MAY-JUL	1.31	2.2	2.7	87%	3.3	4.2	3.1
Smiths Fk nr Border								
	APR-JUL	64	72	78	88%	83	91	89
	APR-SEP	76	85	92	88%	98	108	104
	MAY-JUL	53	61	67	84%	72	80	80
	MAY-SEP	65	74	81	85%	87	97	95
Bear R bl Stewart Dam								
	APR-JUL	23	75	110	60%	145	197	183
	APR-SEP	28	83	120	59%	157	210	205
	MAY-JUL	16.5	58	86	59%	114	155	146
	MAY-SEP	13.1	62	95	56%	128	177	169
Little Bear at Paradise								
	APR-JUL	16.5	26	32	78%	38	48	41
	MAY-JUL	5.4	14.1	20	71%	26	35	28
Logan R nr Logan								
	APR-JUL	68	81	90	81%	99	113	111
	MAY-JUL	52	66	75	78%	84	98	96
Blacksmith Fk nr Hyrum								
	APR-JUL	16.5	29	38	88%	47	60	43
	MAY-JUL	7.4	19.1	27	87%	35	47	31

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bear Lake	555.9	596.7	651.7	1302.0
Hyrum Reservoir	13.2	14.8	14.1	15.3
Porcupine Reservoir	11.4	10.8	10.1	11.3
Woodruff Creek	4.1	4.0	3.8	4.0
Woodruff Narrows Reservoir	57.4	54.5	45.5	57.3
Basin-wide Total	642.1	680.8	725.2	1389.9
# of reservoirs	5	5	5	5

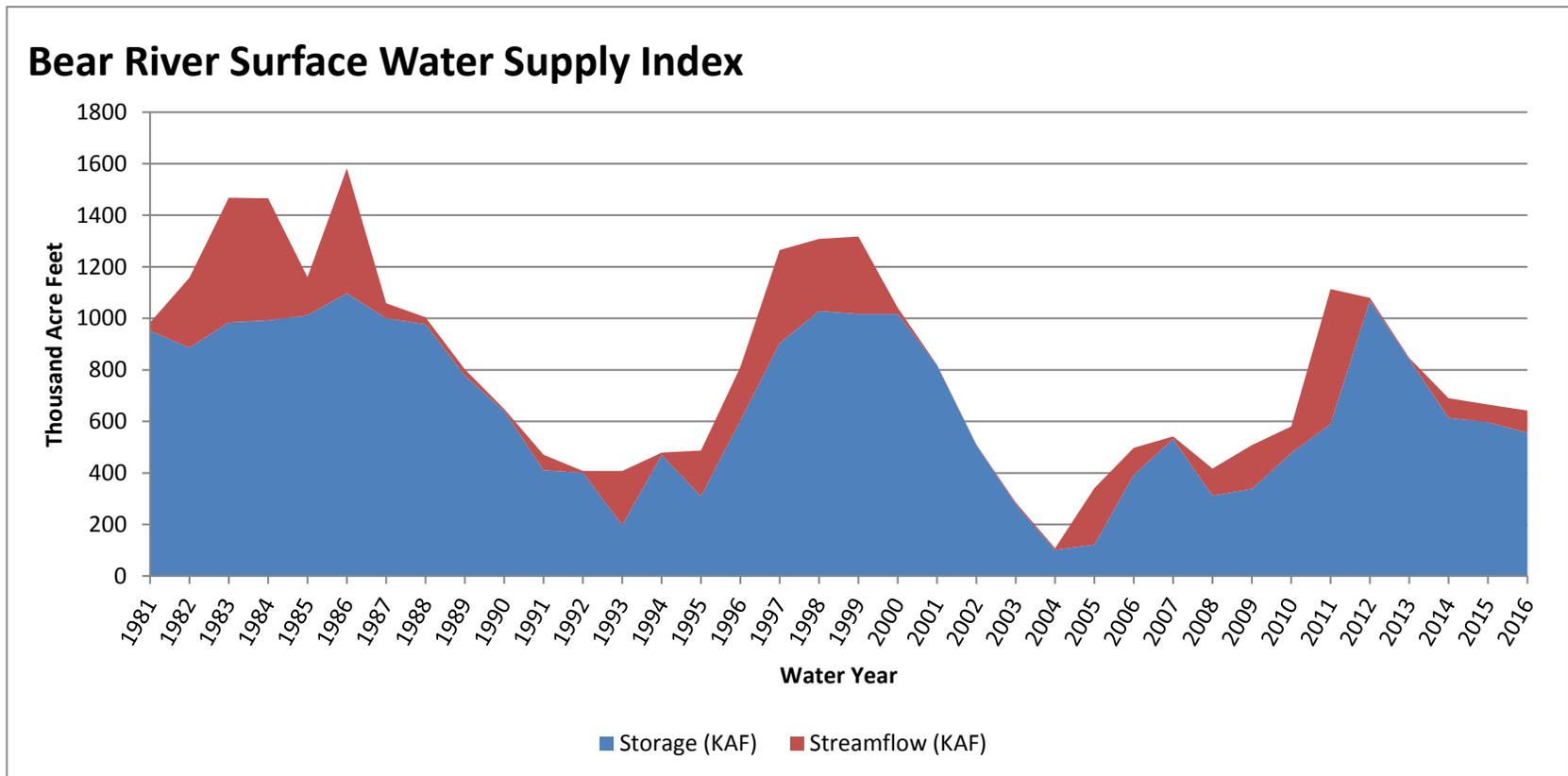
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Upper Bear	4	91%	27%
Middle Bear	7	82%	45%
Lower Bear	3	72%	16%
Logan	9	79%	30%

May 1, 2016

Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Bear River	555.93	86.00	641.93	41	-0.79	07, 10, 90, 15

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.

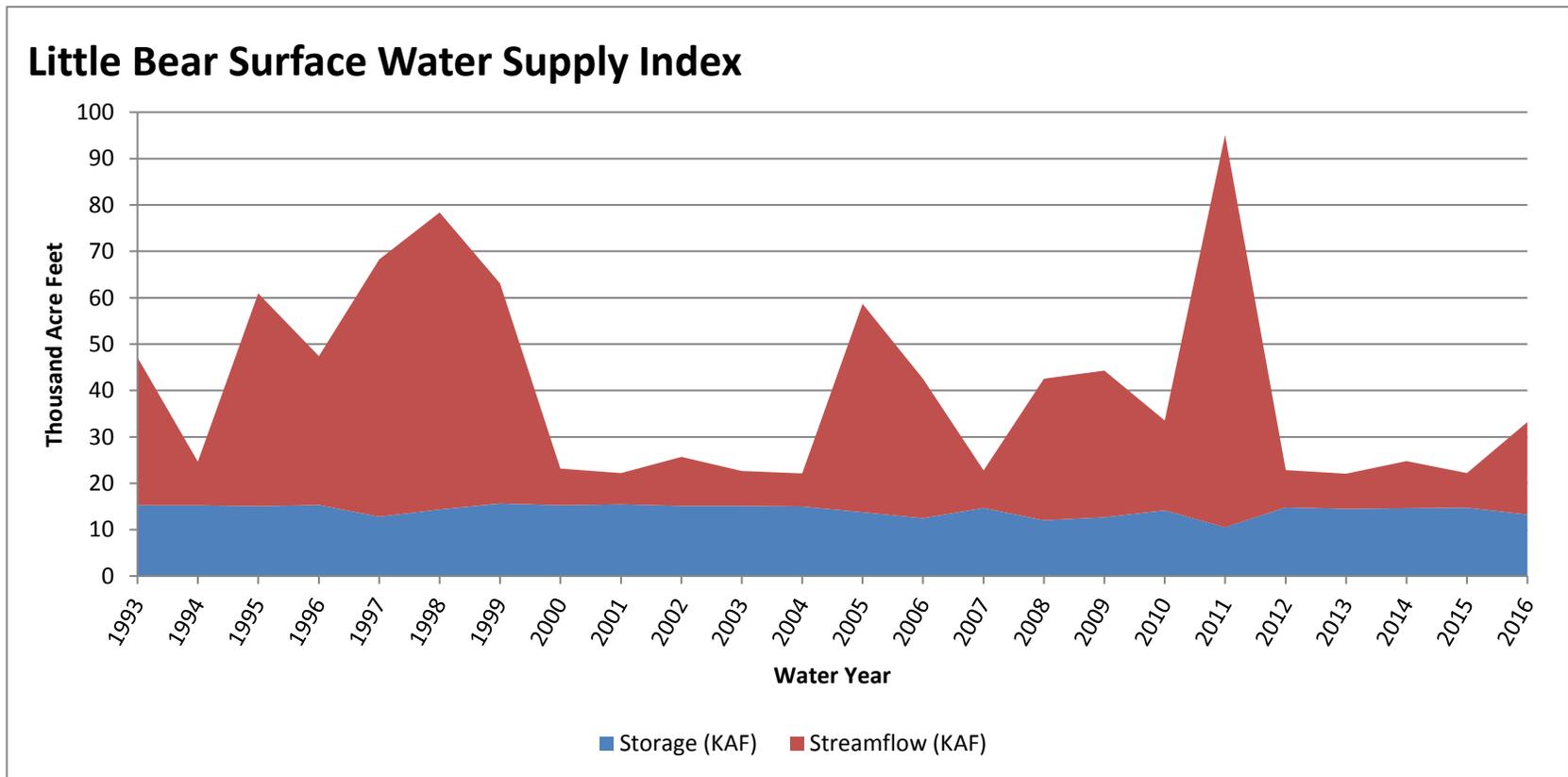


May 1, 2016

Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Little Bear	13.22	20.00	33.22	48	-0.17	14, 02, 10, 08

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.

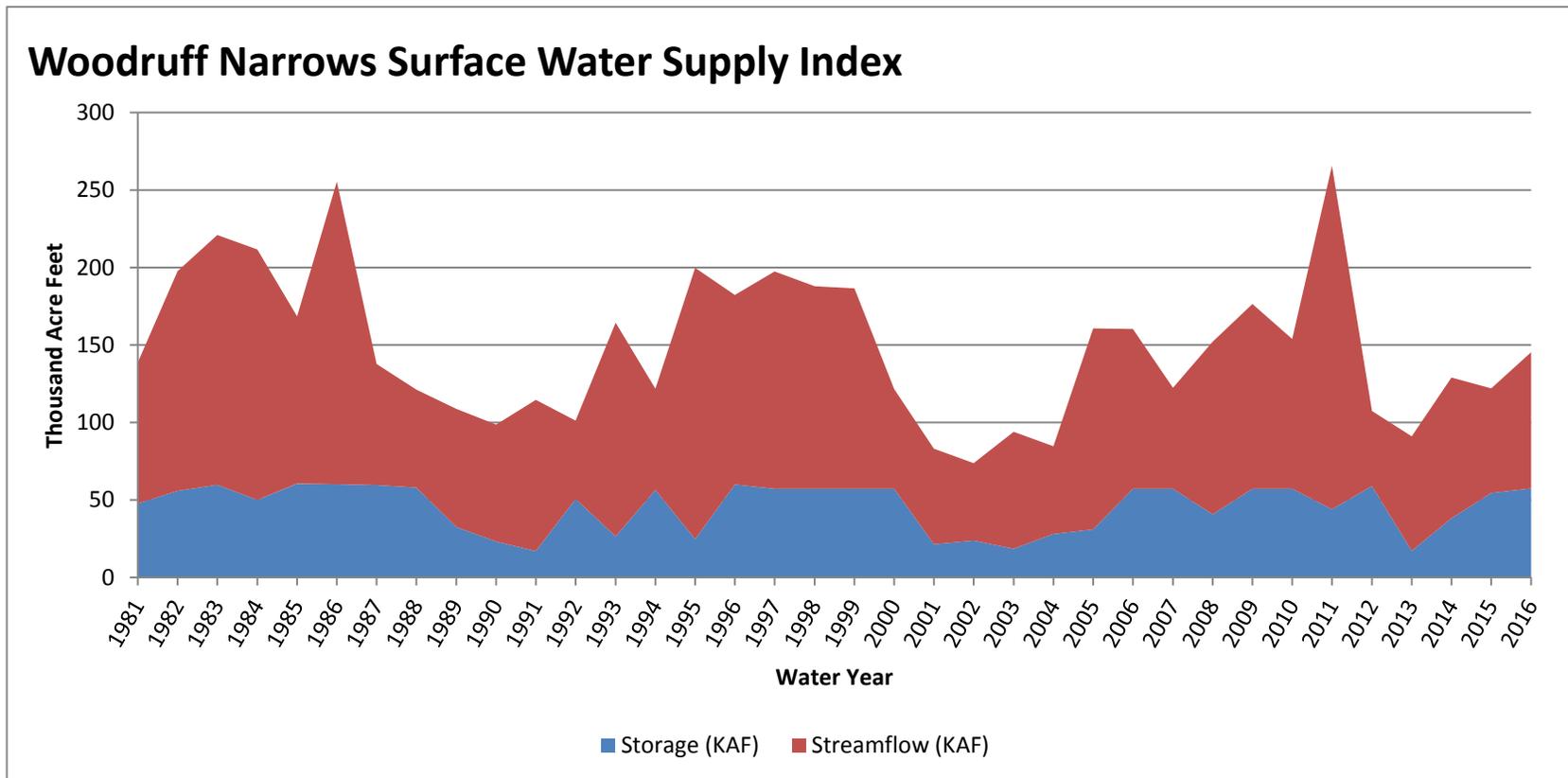


May 1, 2016

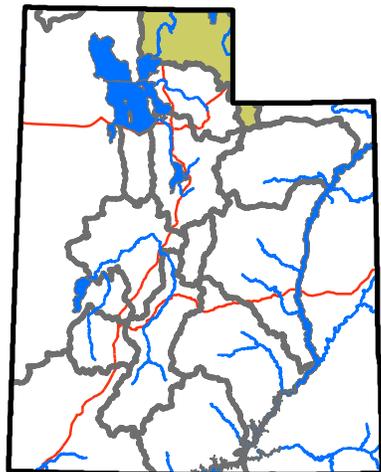
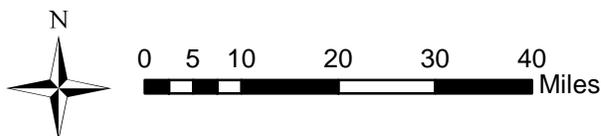
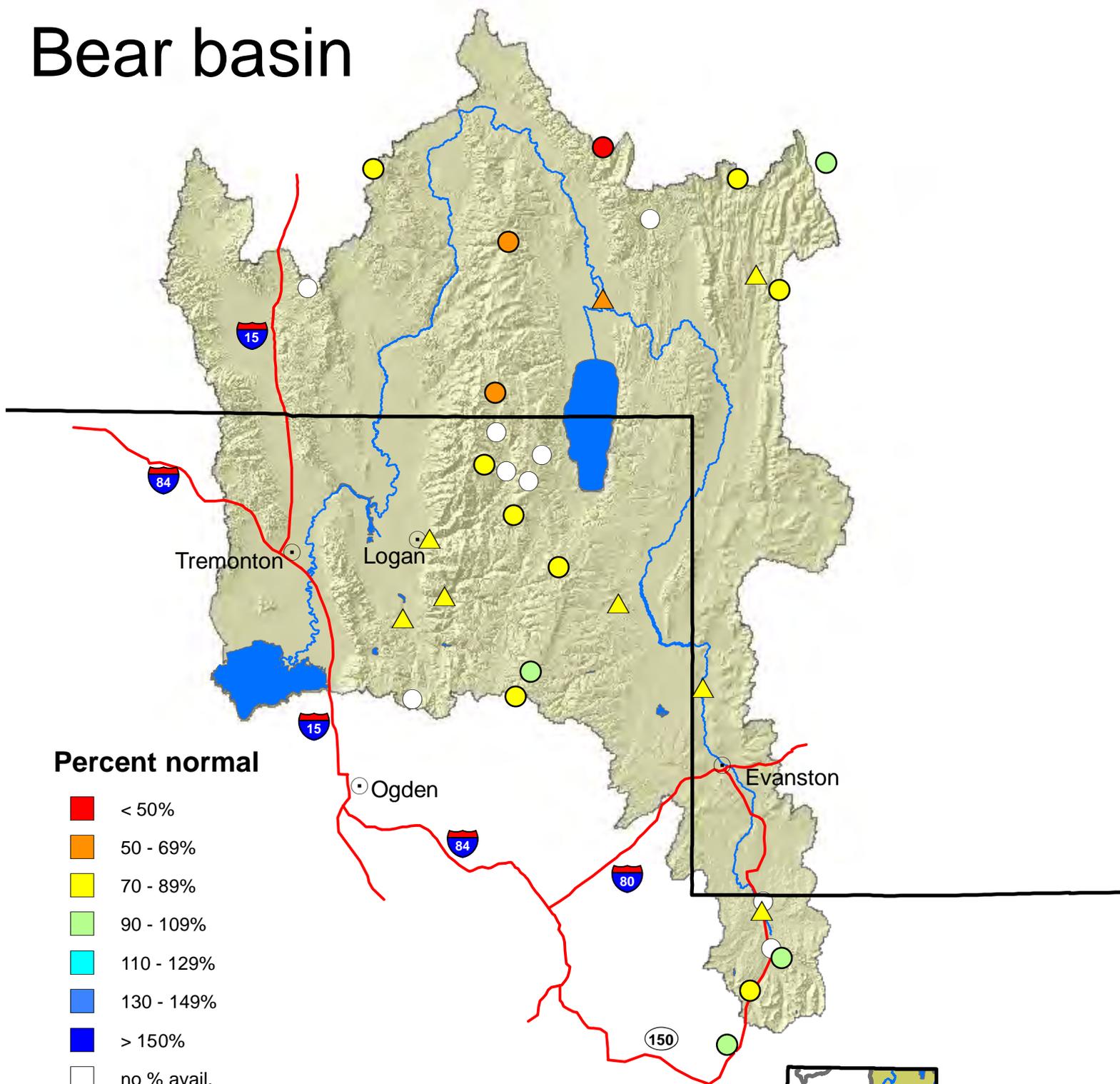
Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Woodruff Narrows	57.41	88.00	145.41	51	0.11	87, 81, 08, 10

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



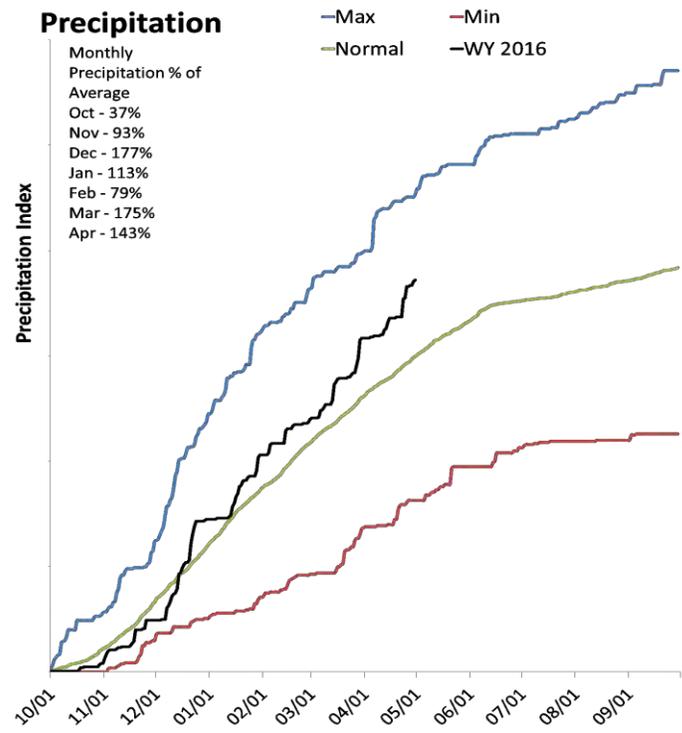
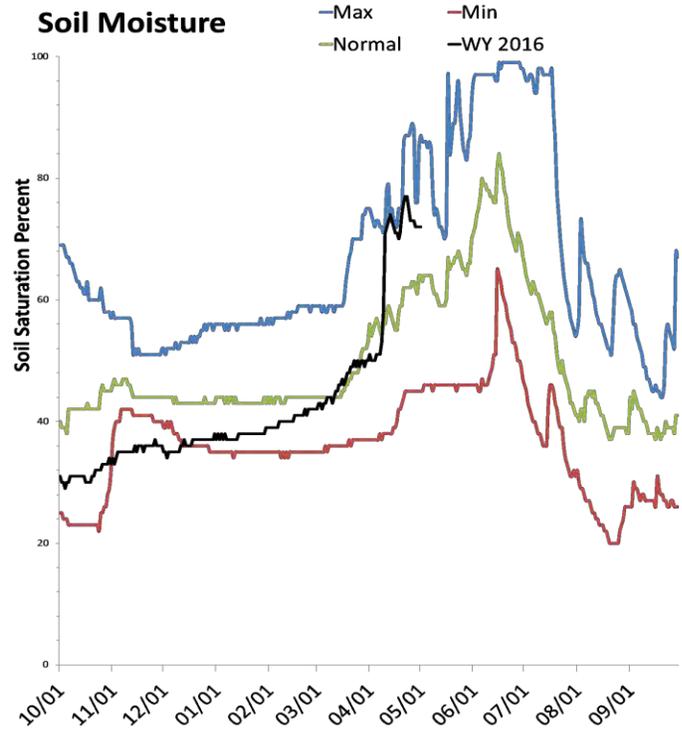
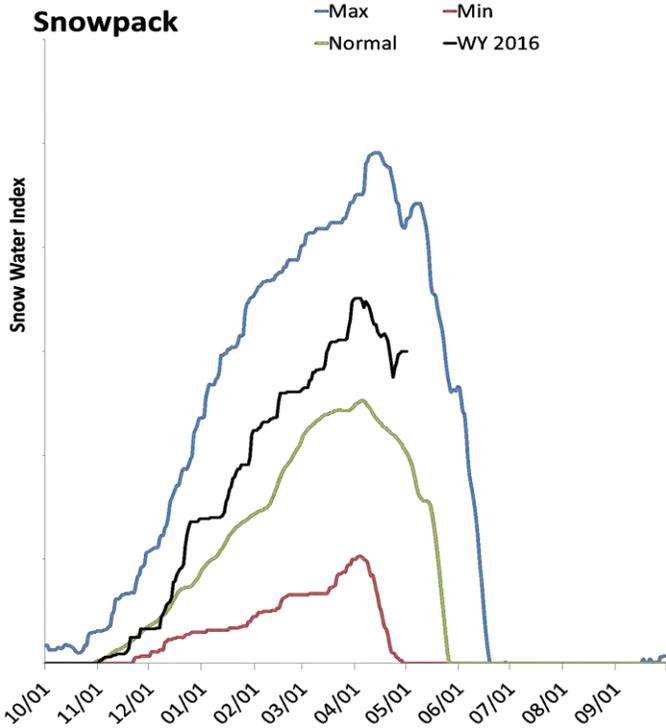
Bear basin



Raft River Basin

5/1/2016

Snowpack in the Raft River Basin is much above normal at 149% of normal, compared to 52% last year. Precipitation in April was much above average at 141%, which brings the seasonal accumulation (Oct-Apr) to 124% of average. Soil moisture is at 72% compared to 38% last year. The forecast streamflow volume for Dunn Creek is 79% of average.



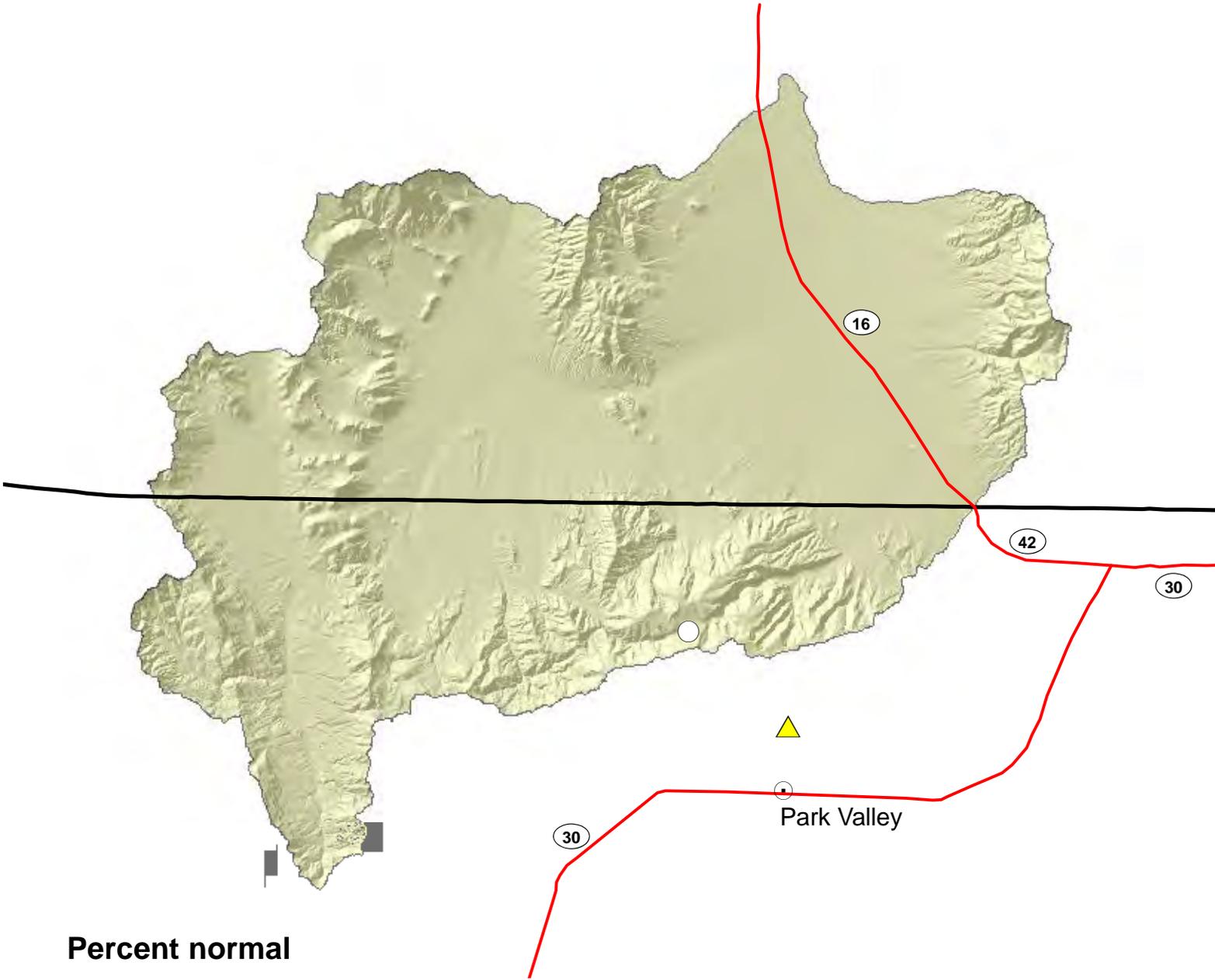
**Raft River
Streamflow Forecasts - May 1, 2016**

Raft River	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)	
Dunn Ck nr Park Valley	APR-JUL	0.29	1.62	2.3	79%	2.8	4.5	2.9
	MAY-JUL	0.18	1.07	2	77%	2.4	3.7	2.6

- 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

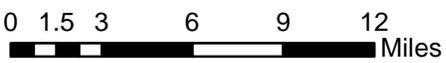
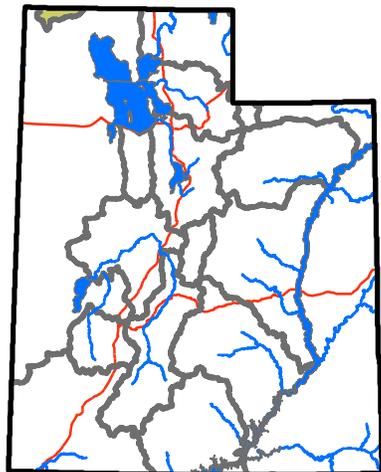
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Raft	1	149%	52%

Raft basin



Percent normal

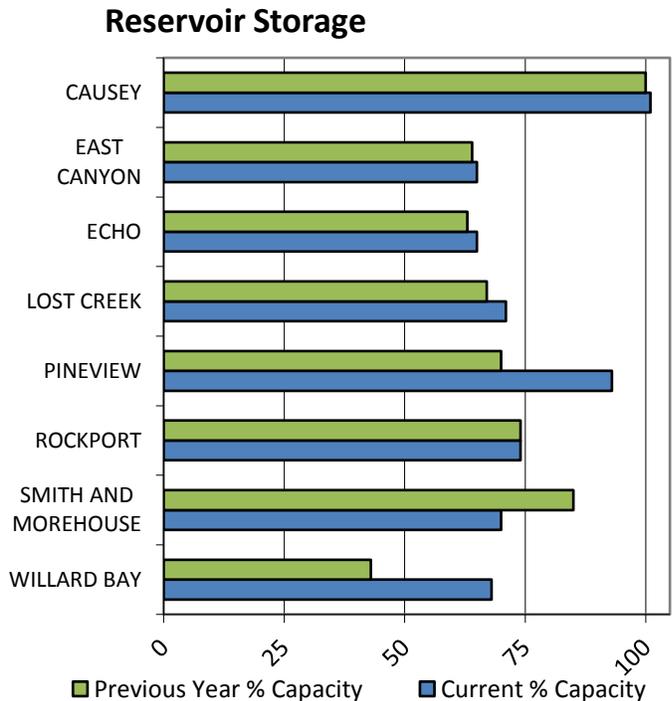
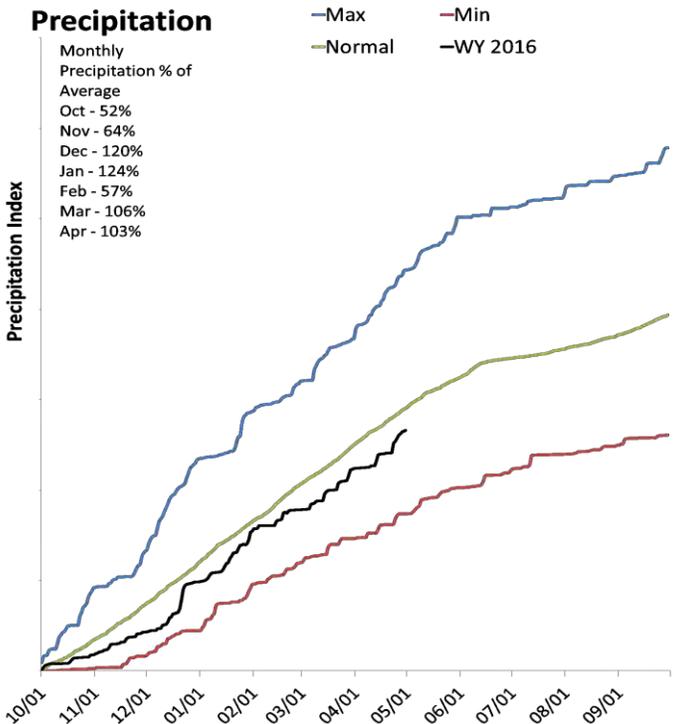
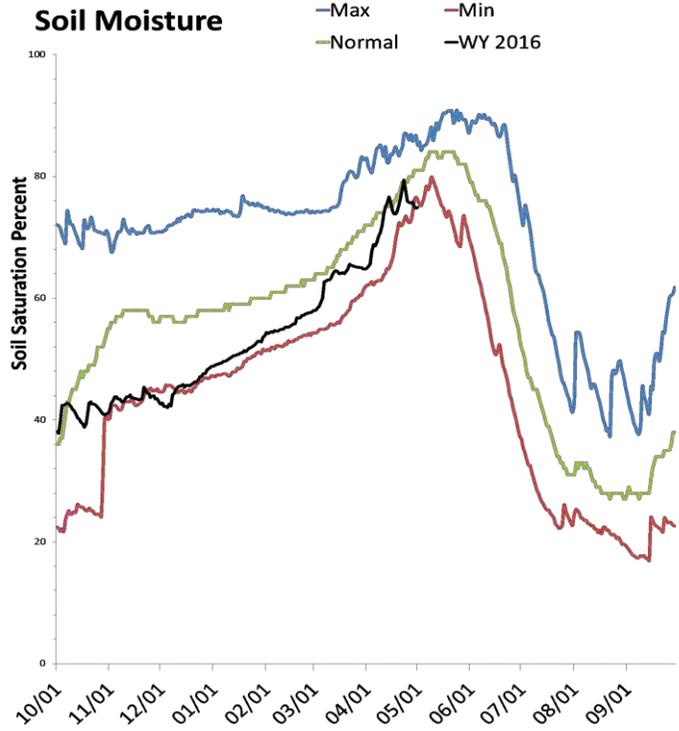
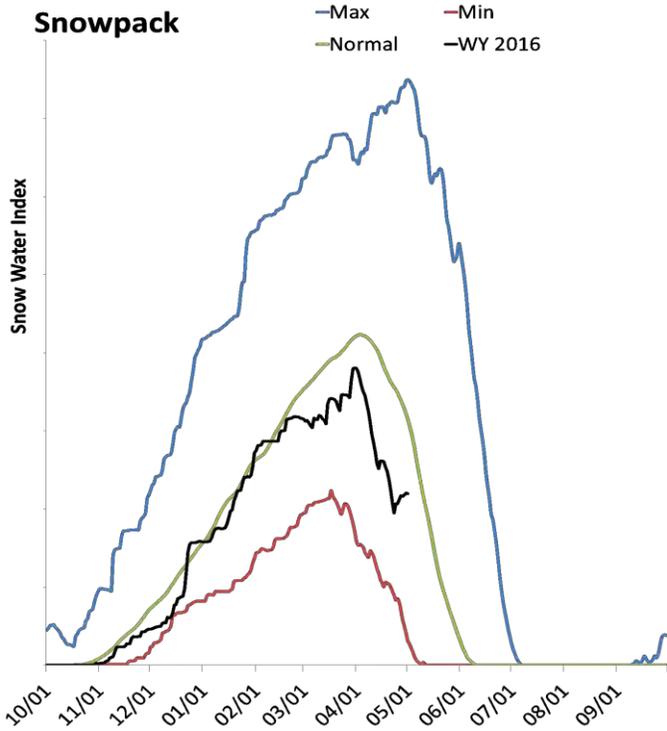
- | | | | |
|--|-------------|---|-----------------|
| ■ | < 50% | ○ | SNOTEL sites |
| ■ | 50 - 69% | △ | Forecast points |
| ■ | 70 - 89% | — | Rivers |
| ■ | 90 - 109% | — | Highways |
| ■ | 110 - 129% | ⊙ | Cities |
| ■ | 130 - 149% | | |
| ■ | > 150% | | |
| | no % avail. | | |



Weber & Ogden River Basins

5/1/2016

Snowpack in the Weber & Ogden River Basins is below normal at 70% of normal, compared to 19% last year. Precipitation in April was near average at 103%, which brings the seasonal accumulation (Oct-Apr) to 92% of average. Soil moisture is at 75% compared to 81% last year. Reservoir storage is at 65% of capacity, compared to 52% last year. Forecast streamflow volumes range from 68% to 80% of average. The surface water supply index is 57% for the Ogden River, 46% for the Weber River.



Weber Ogden Rivers Streamflow Forecasts - May 1, 2016

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

Weber Ogden Rivers	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Smith & Morehouse Resv Inflow	APR-JUL	22	25	26	76%	28	30	34
	MAY-JUL	20	23	24	77%	26	28	31
Weber R nr Oakley	APR-JUL	73	86	94	80%	102	115	117
	MAY-JUL	63	76	85	80%	94	107	106
Rockport Reservoir Inflow	APR-JUL	71	87	98	80%	109	125	123
	MAY-JUL	57	72	83	78%	93	108	106
Chalk Ck at Coalville	APR-JUL	10.9	22	30	73%	38	49	41
	MAY-JUL	6.5	17.5	25	74%	32	43	34
Weber R nr Coalville	APR-JUL	66	86	99	79%	112	131	126
	MAY-JUL	54	71	82	77%	93	110	106
Echo Reservoir Inflow	APR-JUL	55	95	122	73%	150	190	166
	MAY-JUL	44	79	103	68%	127	162	152
Lost Ck Reservoir Inflow	APR-JUL	2.1	6.5	9.5	79%	12.5	16.9	12.1
	MAY-JUL	0.51	3.9	6.5	76%	9.1	13	8.5
East Canyon Ck nr Jeremy Ranch	APR-JUL	6.4	9.7	12	79%	14.3	17.6	15.2
	MAY-JUL	0.18	4.8	8	78%	11.2	15.8	10.2
East Canyon Ck nr Morgan	APR-JUL	9.1	15	19	68%	23	29	28
	MAY-JUL	5.6	10	13	67%	16	20	19.4
Weber R at Gateway	APR-JUL	79	168	230	73%	290	375	315
	MAY-JUL	50	122	170	71%	220	290	240
SF Ogden R nr Huntsville	APR-JUL	30	38	44	79%	49	57	56
	MAY-JUL	19.7	26	30	75%	35	41	40
Pineview Reservoir Inflow	APR-JUL	15.5	46	66	77%	86	117	86
	MAY-JUL	1.61	24	40	75%	56	78	53
Wheeler Ck nr Huntsville	APR-JUL	2.2	3.4	4.3	68%	5.2	6.4	6.3
	MAY-JUL	0.72	2.1	3	70%	3.9	5.3	4.3
Centerville Ck	APR-JUL	0.72	0.89	1	74%	1.11	1.28	1.35
	MAY-JUL	0.43	0.63	0.77	72%	0.91	1.11	1.07

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Causey Reservoir	7.2	7.1	5.0	7.1
East Canyon Reservoir	32.2	31.6	40.4	49.5
Echo Reservoir	48.2	46.3	54.4	73.9
Lost Creek Reservoir	16.0	15.0	14.6	22.5
Pineview Reservoir	102.3	77.2	79.9	110.1
Rockport Reservoir	45.1	44.9	40.1	60.9
Willard Bay	146.5	92.4	158.7	215.0
Smith And Morehouse Reservoir	5.6	6.9	4.5	81.0
Basin-wide Total	403.1	321.3	397.6	620.0
# of reservoirs	8	8	8	8

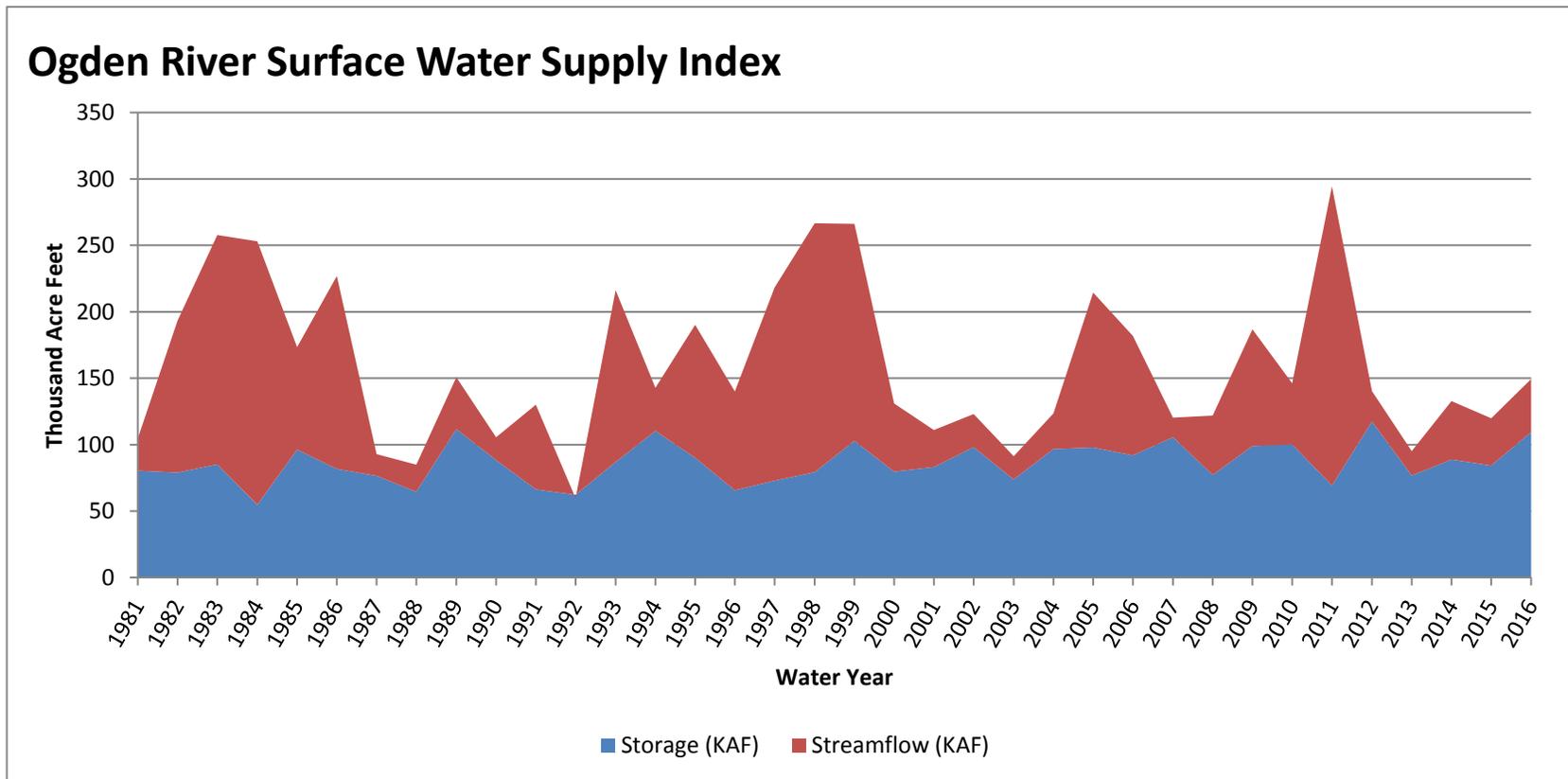
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Upper Weber	11	84%	24%
Lower Weber	7	62%	24%
Ogden	5	63%	0%
Lost Creek	3	83%	21%

May 1, 2016

Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Ogden River	109.46	40.00	149.46	57	0.56	94, 10, 89, 85

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.

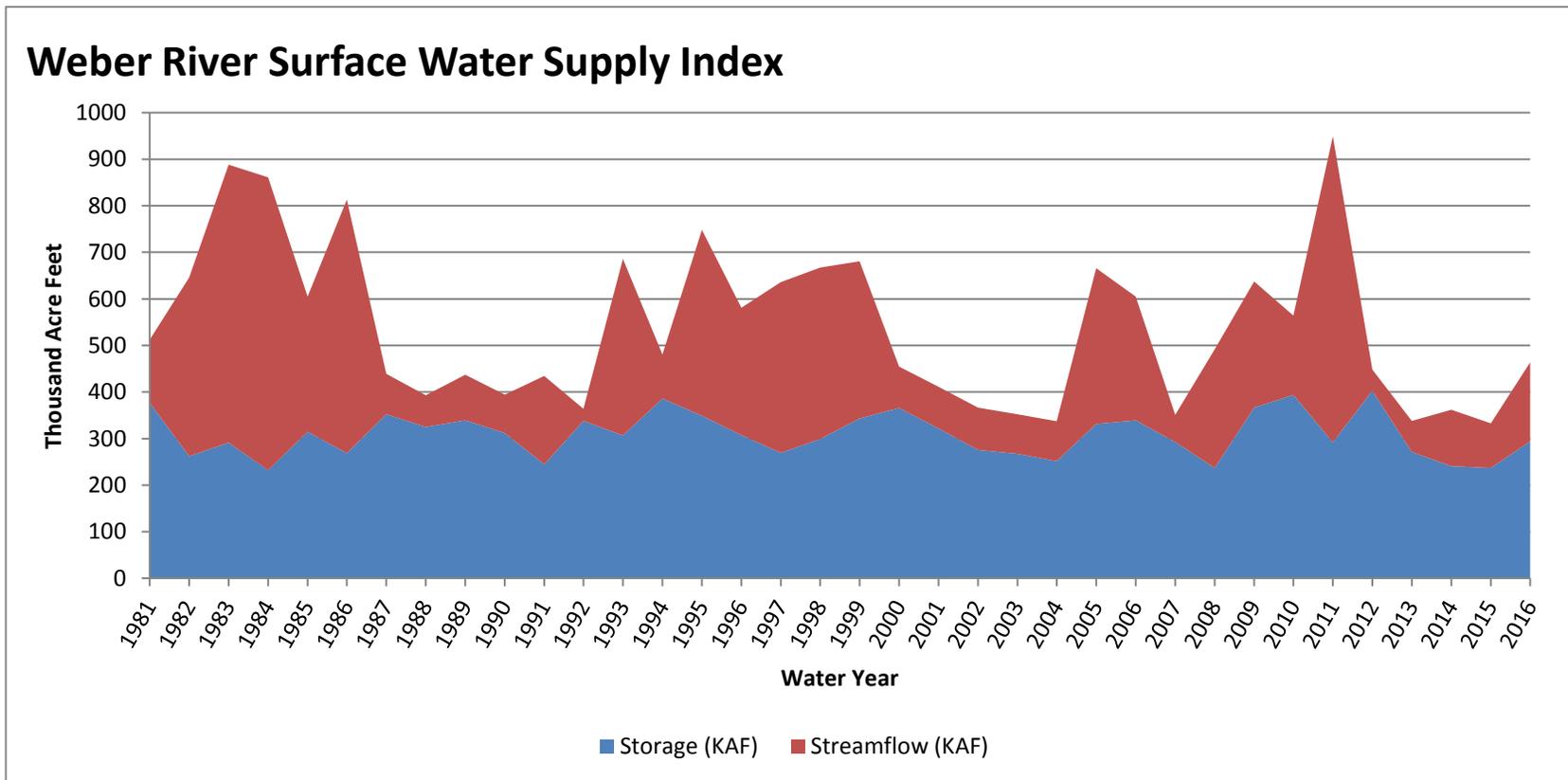


May 1, 2016

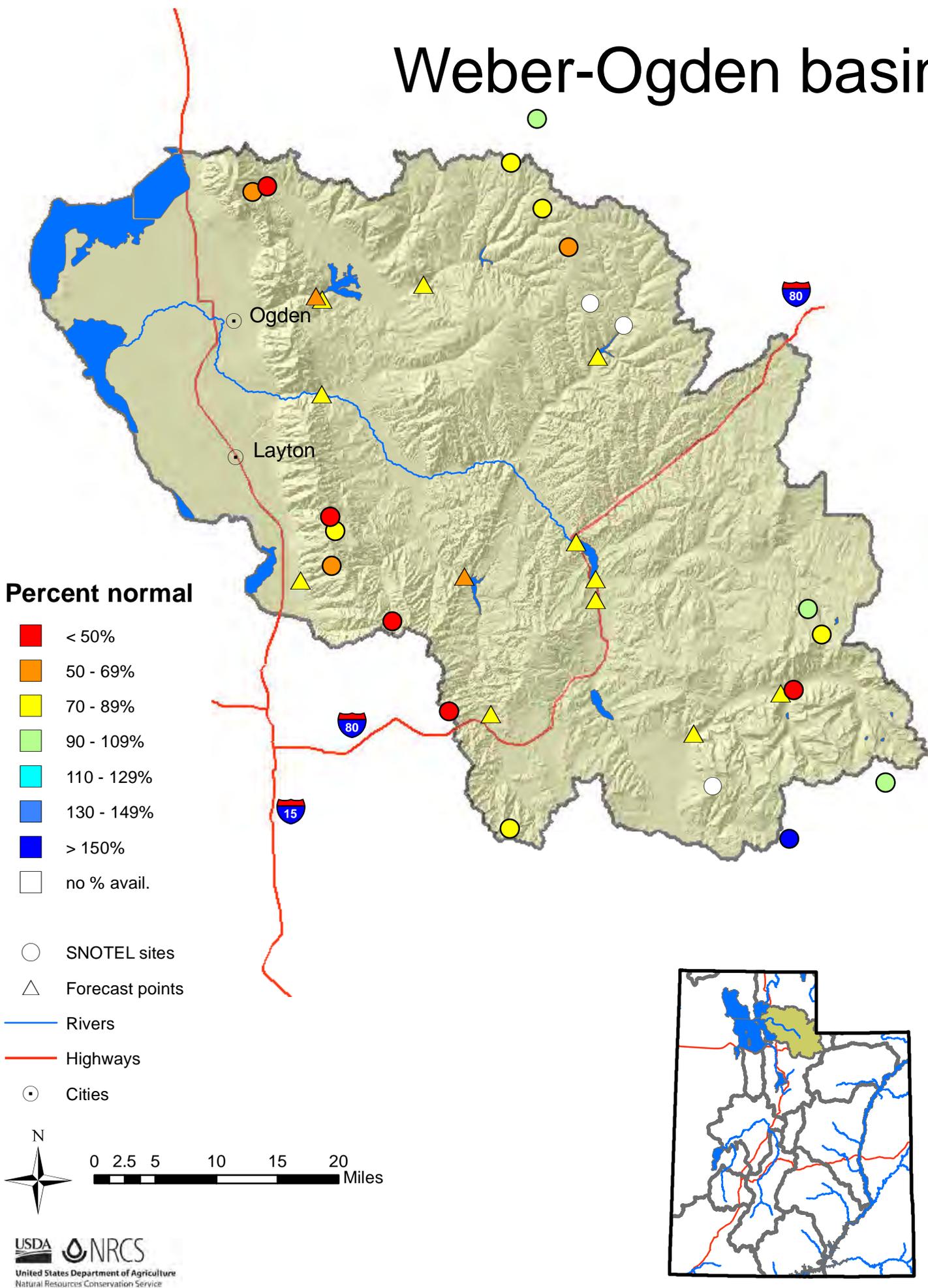
Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Weber River	293.63	170.00	463.63	46	-0.34	12, 00, 94, 08

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



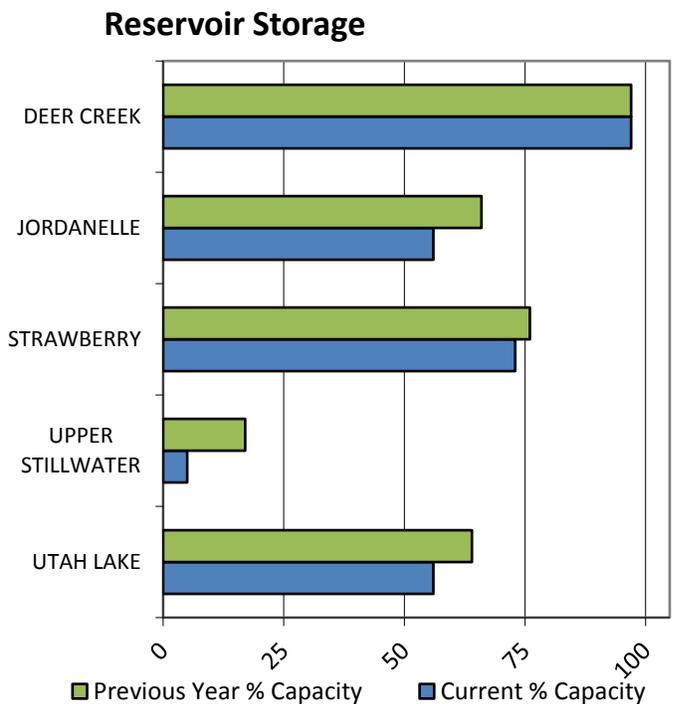
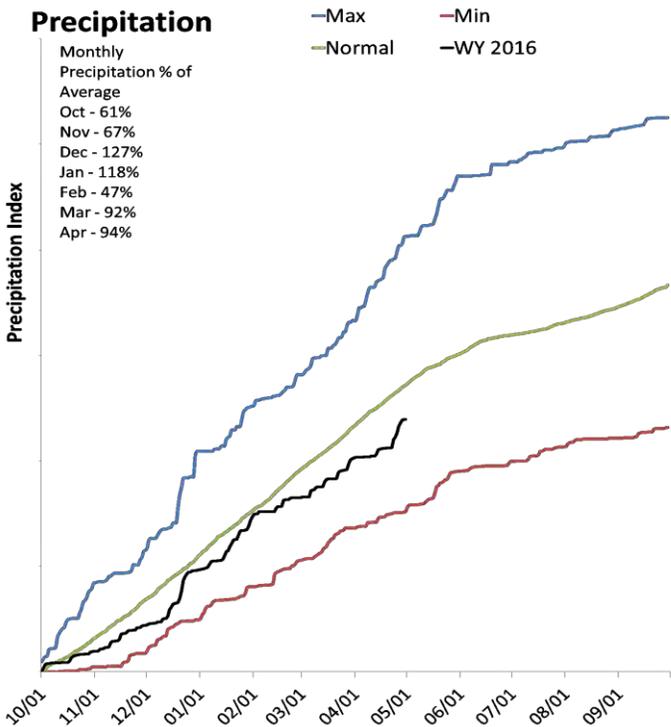
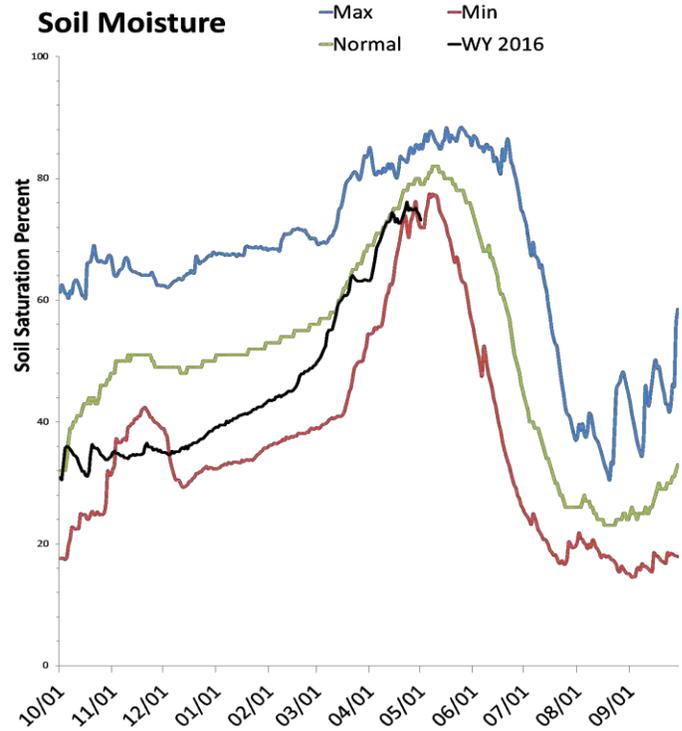
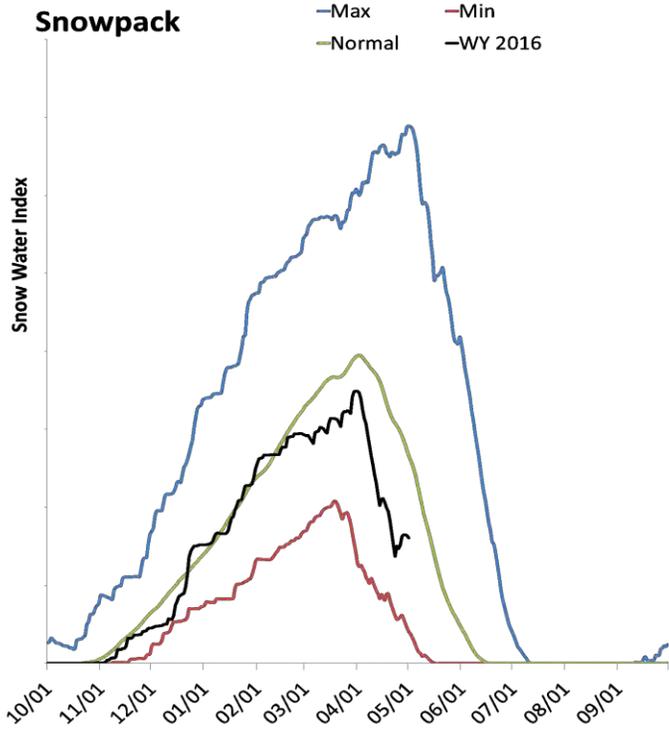
Weber-Ogden basin



Provo & Jordan River Basins

5/1/2016

Snowpack in the Provo & Jordan River Basins is much below normal at 60% of normal, compared to 16% last year. Precipitation in April was near average at 94%, which brings the seasonal accumulation (Oct-Apr) to 88% of average. Soil moisture is at 73% compared to 80% last year. Reservoir storage is at 66% of capacity, compared to 72% last year. Forecast streamflow volumes range from 59% to 79% of average. The surface water supply index is 4% for the Provo River.



Provo R Utah Lake Jordan R Streamflow Forecasts - May 1, 2016

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

Provo R Utah Lake Jordan R	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Provo R at Woodland	APR-JUL	54	69	79	79%	90	108	100
	MAY-JUL	46	60	69	78%	78	92	89
Provo R at Hailstone	APR-JUL	55	71	83	77%	96	117	108
	MAY-JUL	47	60	69	73%	79	95	94
Provo R bl Deer Ck Dam	APR-JUL	57	76	88	76%	101	120	116
	MAY-JUL	43	59	70	74%	81	98	94
Spanish Fk at Castilla	APR-JUL	-17.2	25	54	78%	83	125	69
	MAY-JUL	-23	15.5	42	78%	68	107	54
American Fk ab Upper Powerplant	APR-JUL	9.7	15.2	19	59%	23	28	32
	MAY-JUL	7.6	12.8	16.3	54%	19.9	25	30
Utah Lake Inflow	APR-JUL	8	61	185	70%	325	530	265
	MAY-JUL	3.8	50	143	74%	265	540	192
W Canyon Ck nr Cedar Fort	APR-JUL	0.46	0.96	1.3	74%	1.64	2.1	1.76
	MAY-JUL	0.31	0.78	1.1	71%	1.42	1.89	1.54
Little Cottonwood Ck nr SLC	APR-JUL	21	26	30	79%	33	40	38
	MAY-JUL	19.1	23	25	68%	28	33	37
Big Cottonwood Ck nr SLC	APR-JUL	17.4	23	27	75%	31	37	36
	MAY-JUL	13.8	19	22	67%	26	31	33
Mill Ck nr SLC	APR-JUL	0.76	2.8	4.2	66%	5.6	7.6	6.4
	MAY-JUL	0.88	2.6	3.8	64%	5	6.7	5.9
Parleys Ck nr SLC	APR-JUL	3.2	7	9.5	67%	12.1	15.9	14.2
	MAY-JUL	2.8	6.1	8.3	65%	10.5	13.8	12.8
Dell Fk nr SLC	APR-JUL	0.11	1.75	3.4	62%	5	7.5	5.5
	MAY-JUL	0.12	0.81	2.3	59%	3.8	6	3.9
Emigration Ck nr SLC	APR-JUL	0.32	1.92	3	75%	4.1	5.7	4
	MAY-JUL	0.09	1.16	2.1	68%	3	4.4	3.1
City Ck nr SLC	APR-JUL	2.2	4.3	5.8	75%	7.3	9.4	7.7
	MAY-JUL	1.68	3.7	5	68%	6.3	8.3	7.3
Salt Ck at Nephi	APR-JUL	3.2	5.2	6.5	68%	7.8	9.8	9.5
	MAY-JUL	2.3	3.9	5	66%	6.1	7.7	7.6

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Deer Creek Reservoir	144.8	145.8	122.0	149.7
Strawberry Reservoir	807.4	845.8	678.4	1105.9
Utah Lake	485.7	555.1	830.9	870.9
Jordanelle Reservoir	179.1	212.4	247.1	320.0
Basin-wide Total	1617.0	1759.1	1878.4	2446.5
# of reservoirs	4	4	4	4

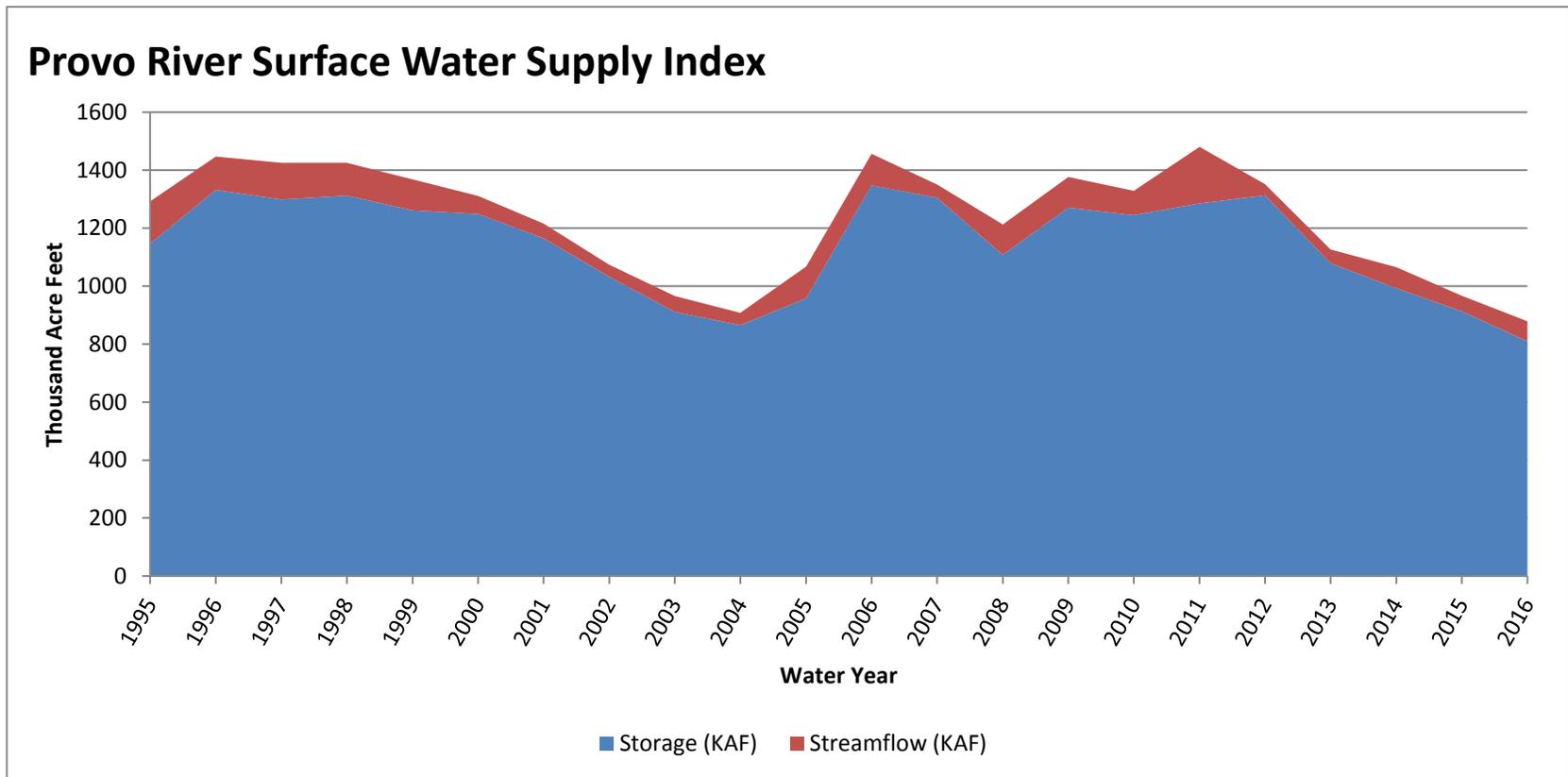
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Upper Provo	7	72%	25%
Jordan	16	66%	23%
Utah Lake	13	64%	25%
Spanish Fork	7	32%	0%
Six Creeks	15	67%	24%
Cottonwoods	7	72%	26%

May 1, 2016

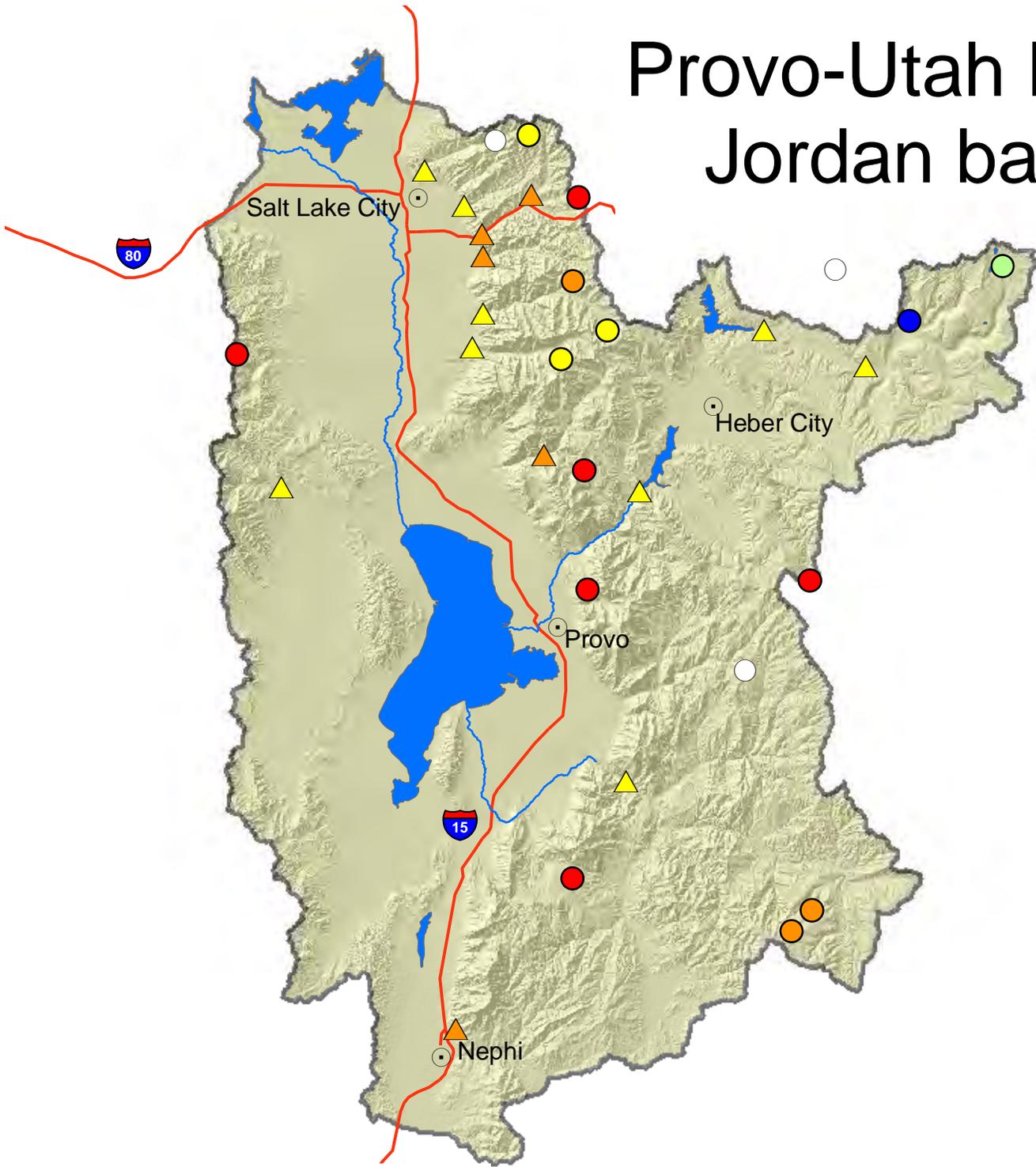
Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Provo River	809.56	69.00	878.56	4	-3.8	04, 03, 15, 14

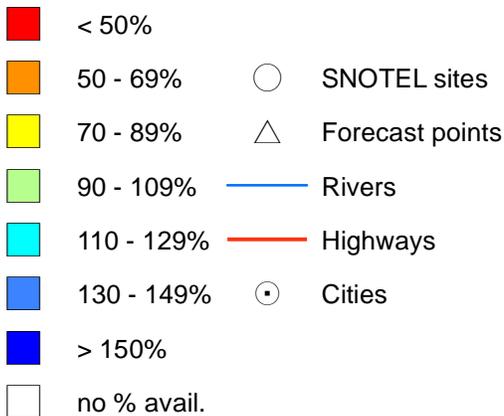
^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



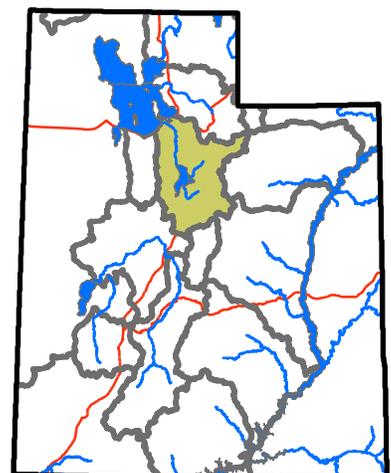
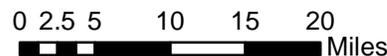
Provo-Utah Lake-Jordan basin



Percent normal



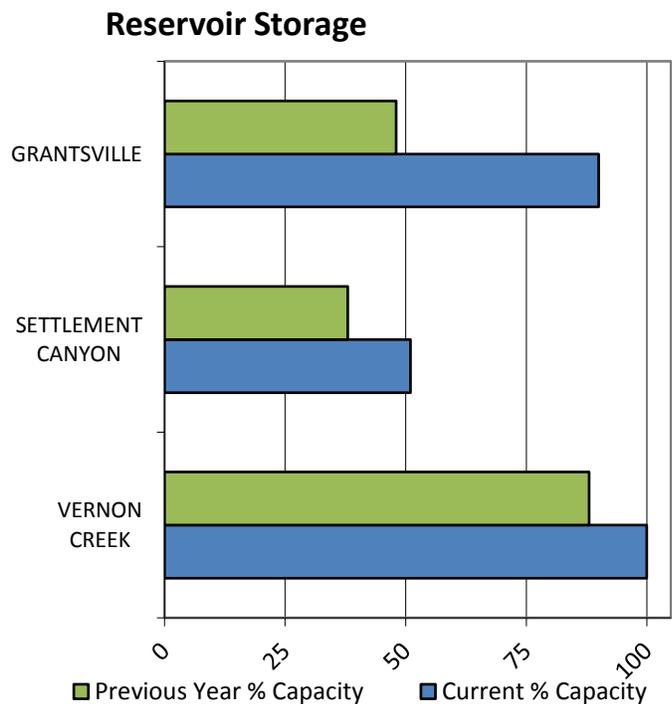
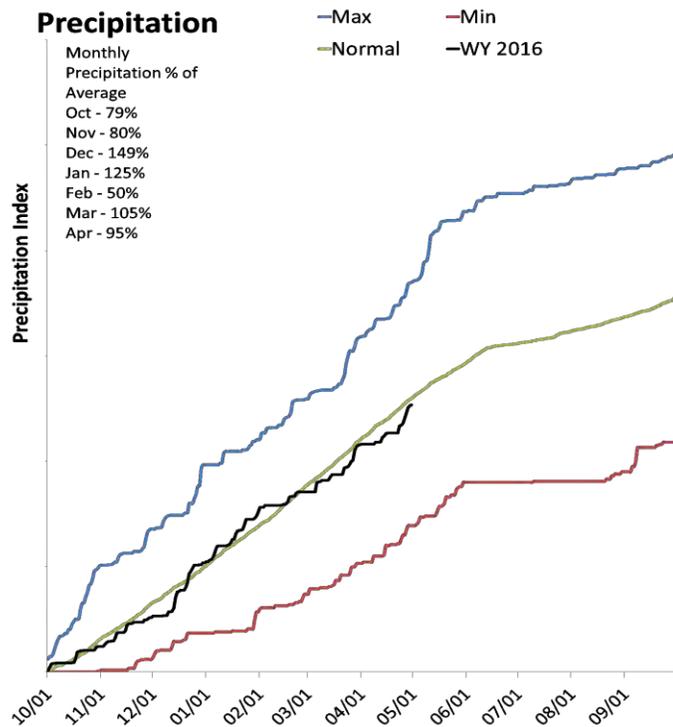
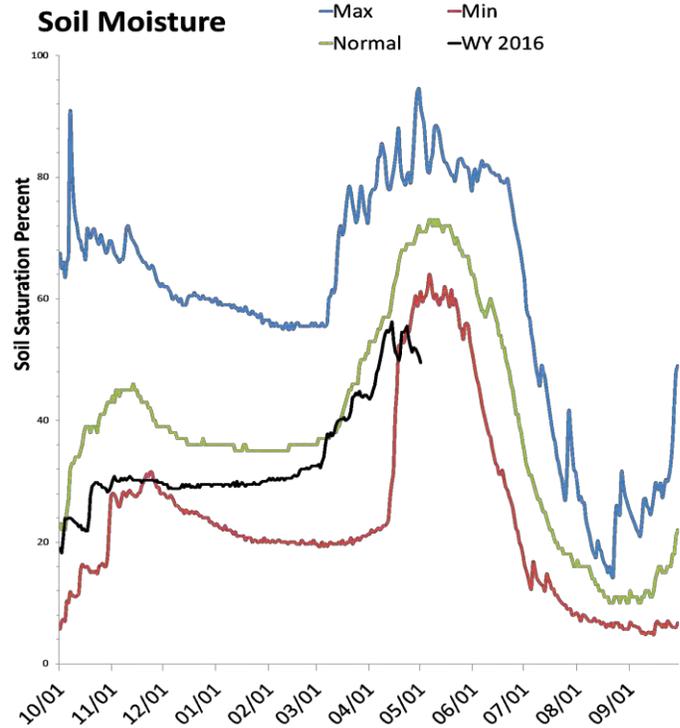
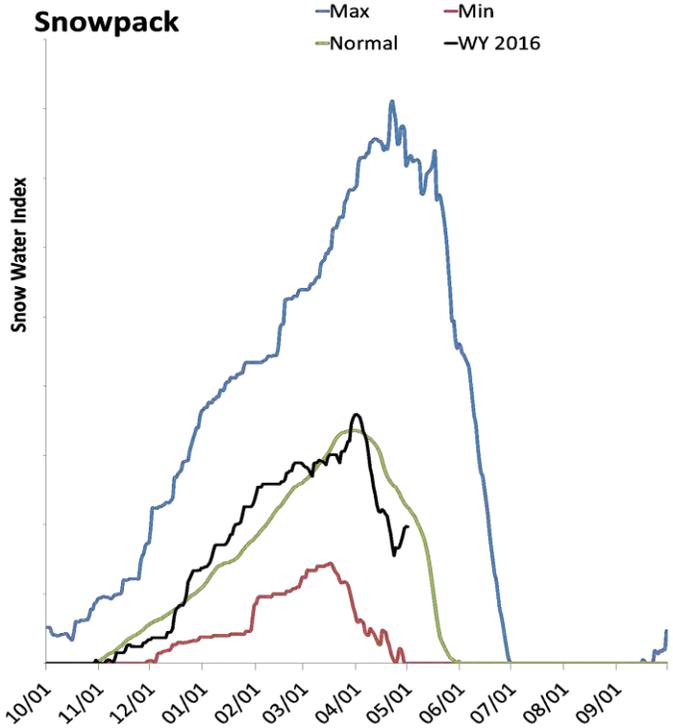
United States Department of Agriculture
 Natural Resources Conservation Service



Tooele & Vernon Creek Basins

5/1/2016

Snowpack in the Tooele & Vernon Creek Basins is below normal at 88% of normal, compared to 0% last year. Precipitation in April was near average at 95%, which brings the seasonal accumulation (Oct-Apr) to 98% of average. Soil moisture is at 50% compared to 64% last year. Reservoir storage is at 83% of capacity, compared to 51% last year. Forecast streamflow volumes range from 65% to 74% of average.



Tooele Valley Vernon Creek Streamflow Forecasts - May 1, 2016

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

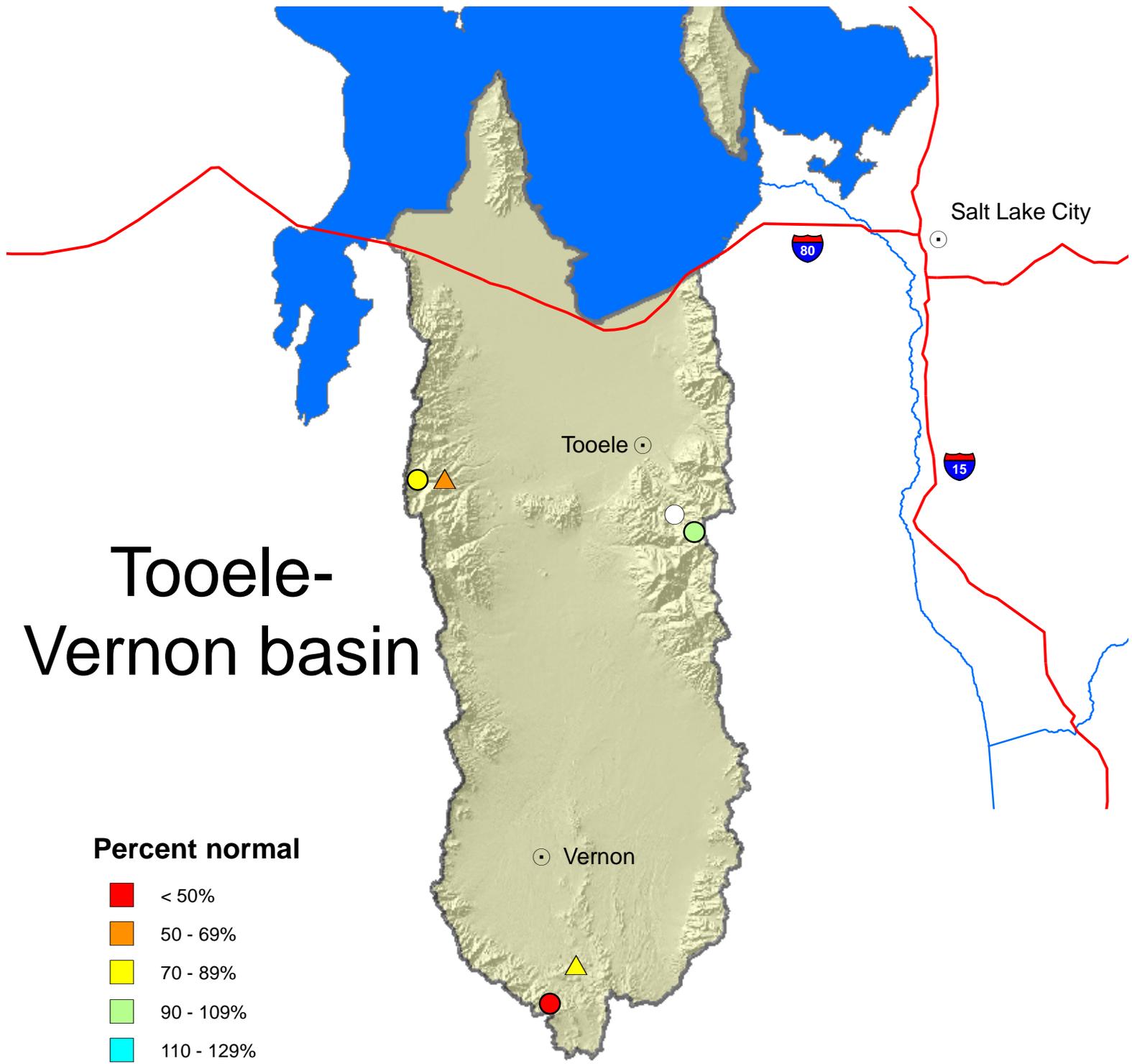
Tooele Valley Vernon Creek	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
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Vernon Ck nr Vernon	APR-JUL	0.01	0.6	1	72%	1.4	1.99	1.39
	MAY-JUL	0.03	0.4	0.7	69%	1	1.45	1.01
S Willow Ck nr Grantsville	APR-JUL	1.05	1.62	2	65%	2.4	3	3.1
	MAY-JUL	0.85	1.36	1.7	63%	2	2.6	2.7

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Vernon Creek Reservoir	0.6	0.5	0.6	0.6
Settlement Canyon Reservoir	0.5	0.4	0.8	1.0
Grantsville Reservoir	3.0	1.6	2.8	3.3
Basin-wide Total	4.1	2.5	4.2	4.9
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Tooele	3	75%	0%
NW Utah	2	77%	0%

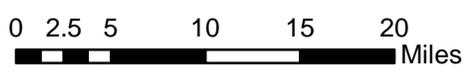
Tooele-Vernon basin



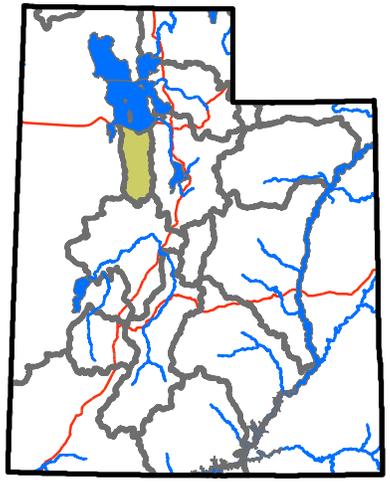
Percent normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

- SNOTEL sites
- ▲ Forecast points
- Rivers
- Highways
- Cities



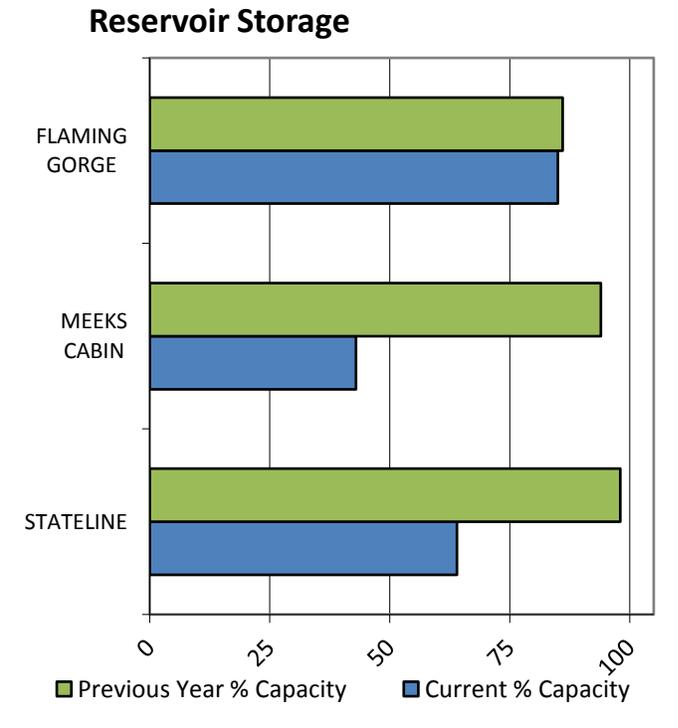
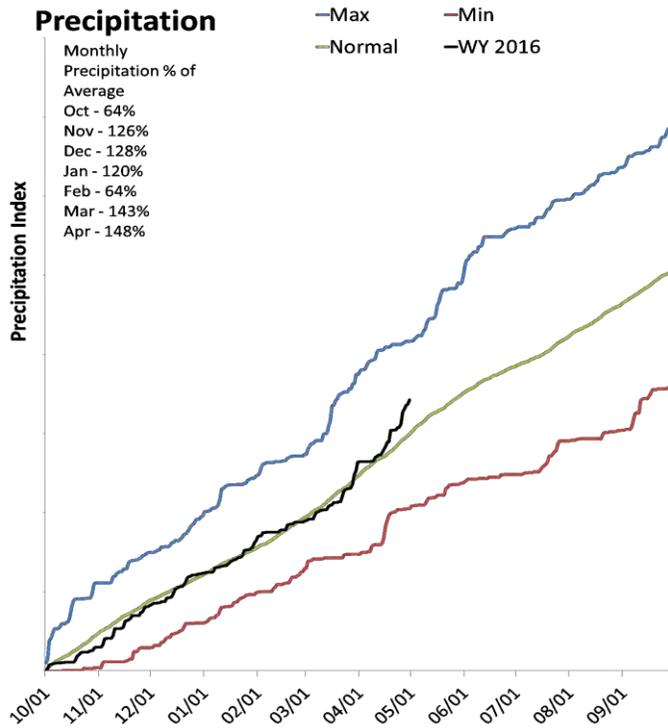
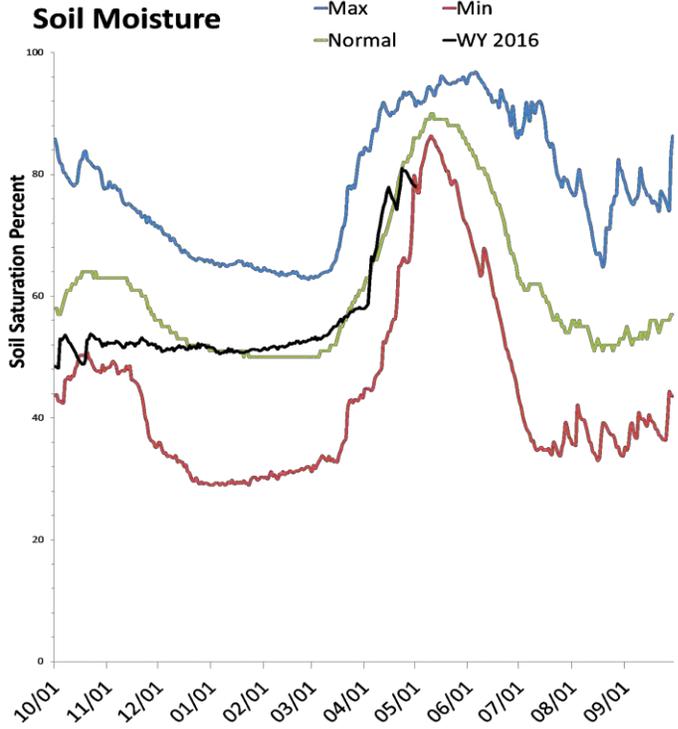
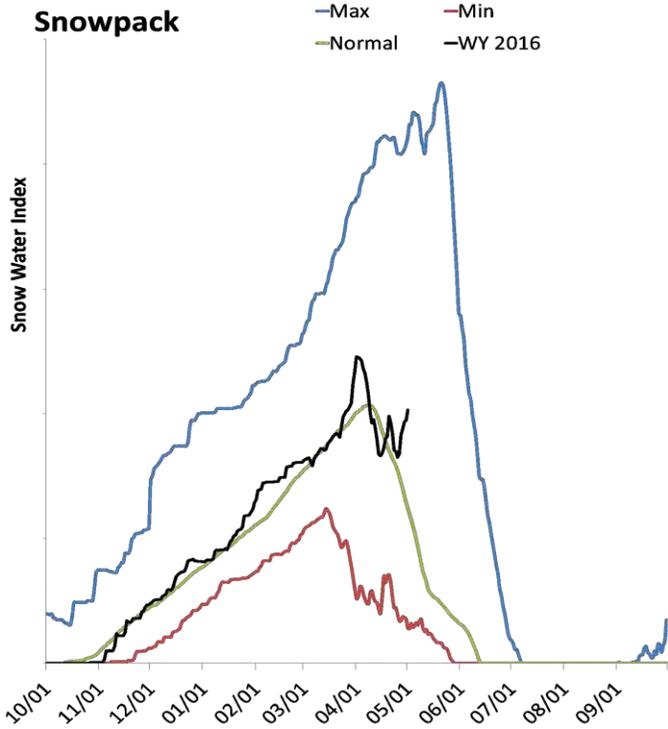
United States Department of Agriculture
 Natural Resources Conservation Service



Northeastern Uintah Basin

5/1/2016

Snowpack in the Northeastern Uintah Basin is much above normal at 164% of normal, compared to 31% last year. Precipitation in April was much above average at 150%, which brings the seasonal accumulation (Oct-Apr) to 114% of average. Soil moisture is at 83% compared to 88% last year. Reservoir storage is at 84% of capacity, compared to 86% last year. Forecast streamflow volumes range from 85% to 107% of average. The surface water supply index is 53% for the Blacks Fork, 71% for the Smiths Creek.



Northeastern Uintahs Streamflow Forecasts - May 1, 2016

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

Northeastern Uintahs	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Blacks Fk nr Robertson	APR-JUL	78	88	95	107%	102	114	89
	MAY-JUL	73	83	90	106%	97	109	85
EF of Smiths Fork nr Robertson ²	APR-JUL	22	26	29	107%	32	36	27
	MAY-JUL	21	25	28	108%	31	35	26
Flaming Gorge Reservoir Inflow ²	APR-JUL	665	765	835	85%	910	1030	980
	MAY-JUL	525	625	695	82%	770	890	845
Uinta R bl Powerplant Diversion nr Neola ²	APR-JUL	43	53	61	82%	68	81	74
	MAY-JUL	40	50	58	82%	65	78	71
Whiterocks R nr Whiterocks	APR-JUL	33	40	46	85%	52	62	54
	MAY-JUL	31	38	44	86%	50	60	51
Ashley Ck nr Vernal	APR-JUL	37	45	51	102%	57	67	50
	MAY-JUL	34	42	48	102%	54	64	47
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	15.2	18.7	21	100%	24	28	21
	MAY-JUL	12.7	16.2	18.8	102%	22	26	18.4

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Flaming Gorge Reservoir	3171.7	3212.6	3039.0	3749.0
Stateline Reservoir	7.6	11.8	6.3	12.0
Meeks Cabin Reservoir	14.0	30.5	16.5	32.5
Basin-wide Total	3193.3	3254.9	3061.8	3793.5
# of reservoirs	3	3	3	3

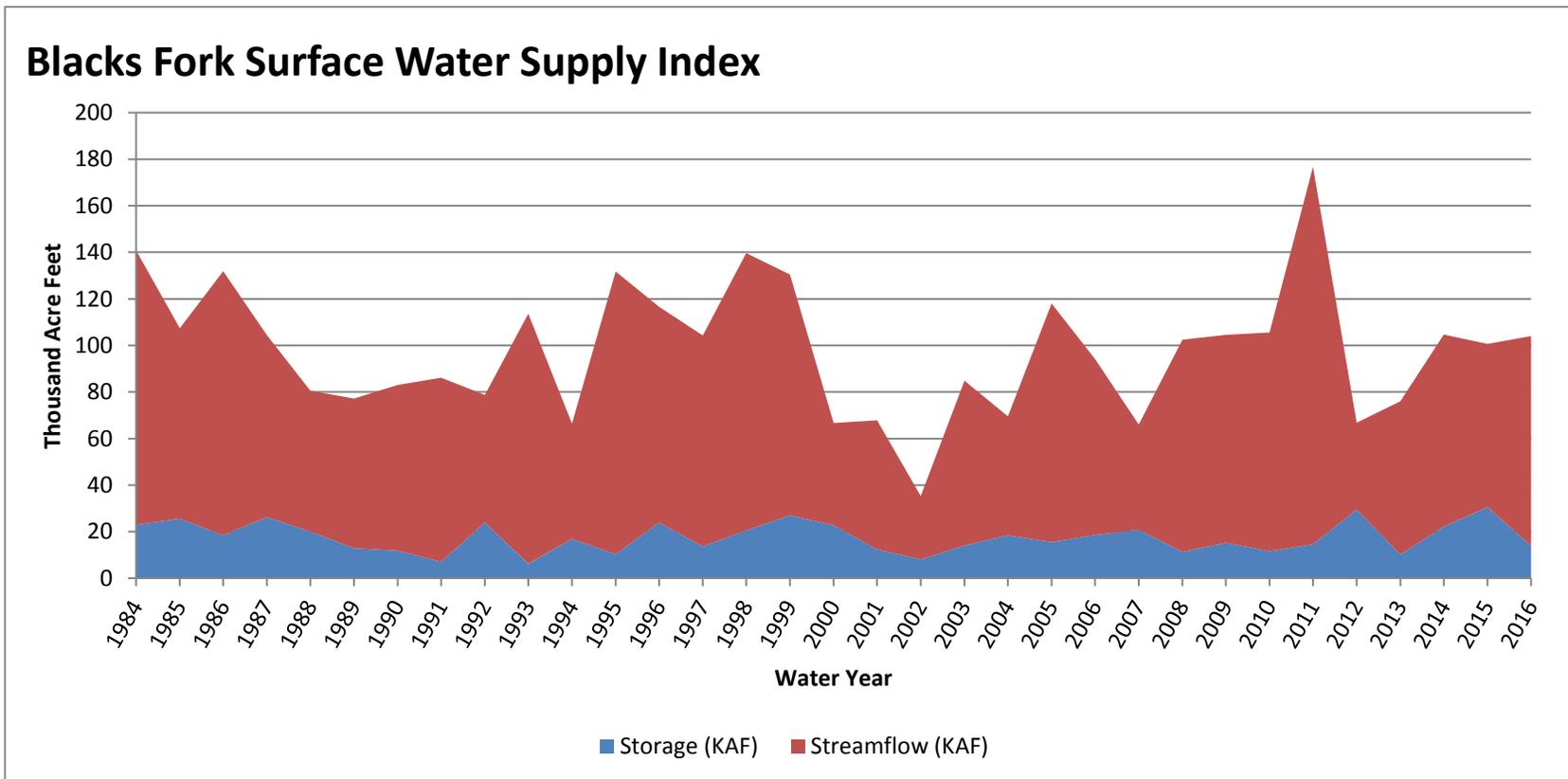
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Blacks Fk	5	112%	42%
Upper Green	2	240%	0%
Lower Green	2	70%	0%
Ashley Brush	4	118%	8%

May 1, 2016

Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Blacks Fork	13.96	90.00	103.96	53	0.25	15, 08, 97, 87

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.

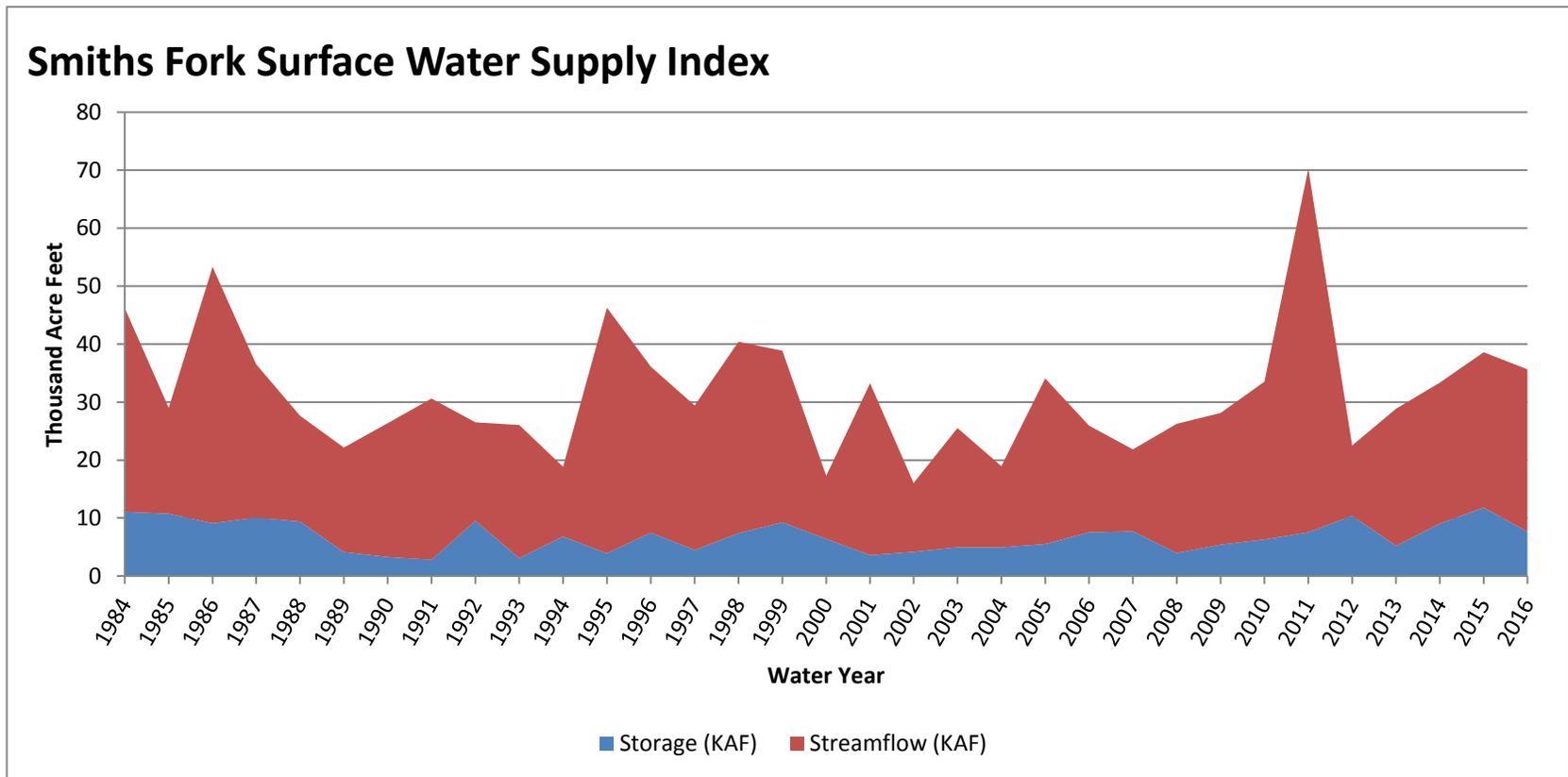


May 1, 2016

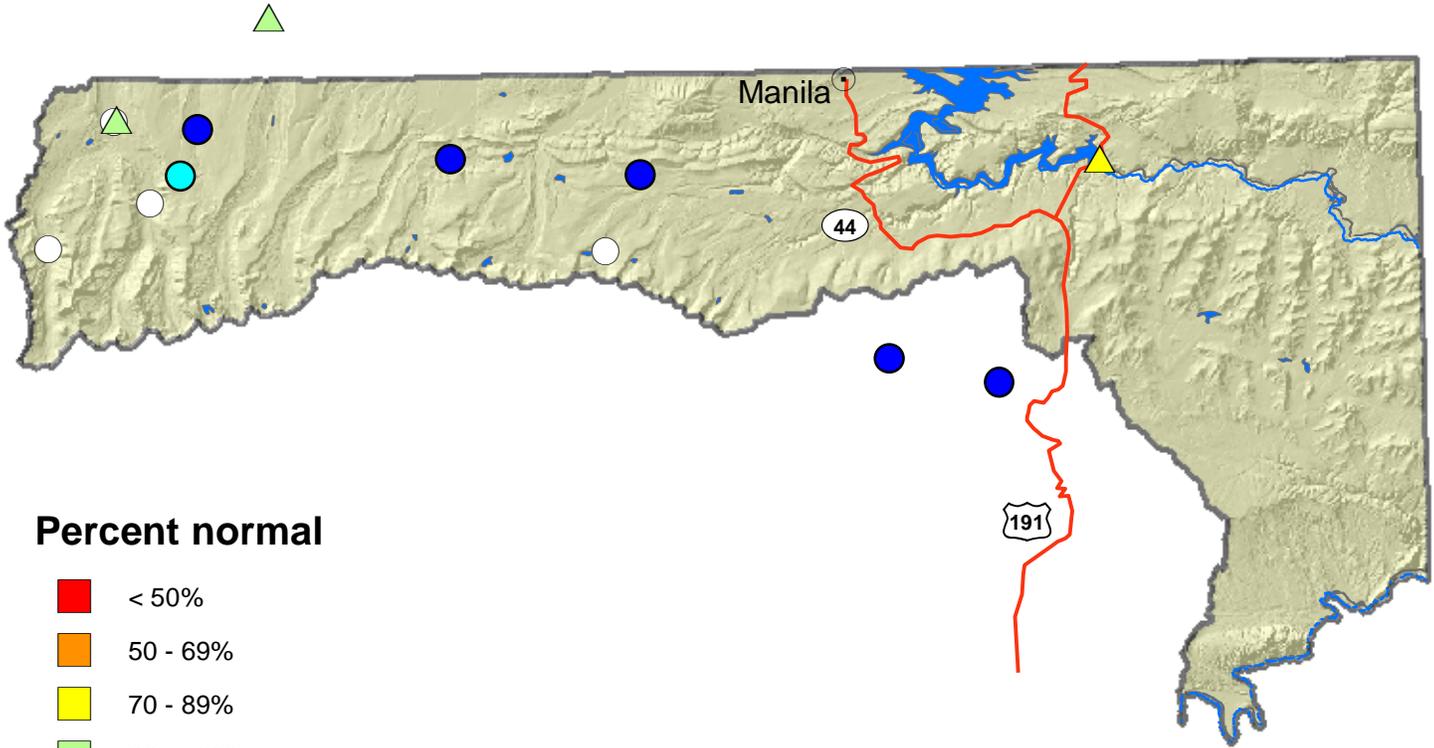
Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Smiths Fork	7.63	28.00	35.63	71	1.72	10, 05, 96, 87

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



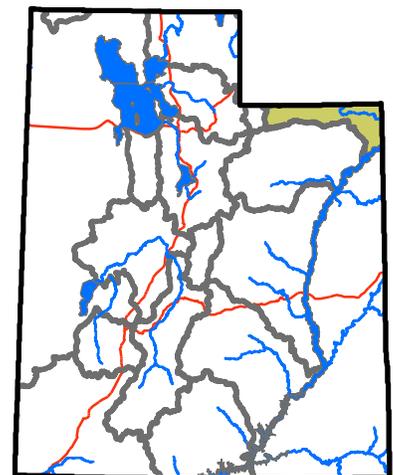
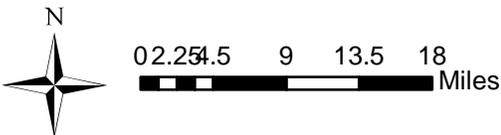
Northeastern Utah



Percent normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

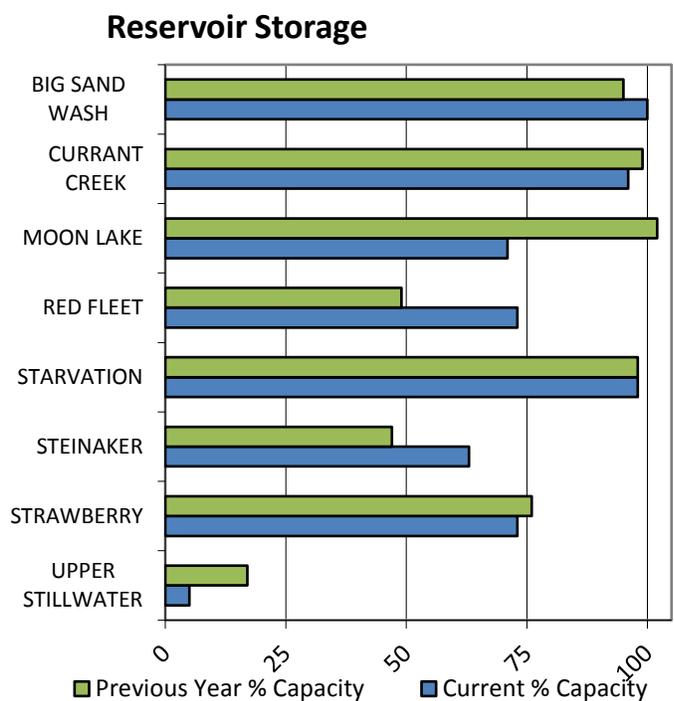
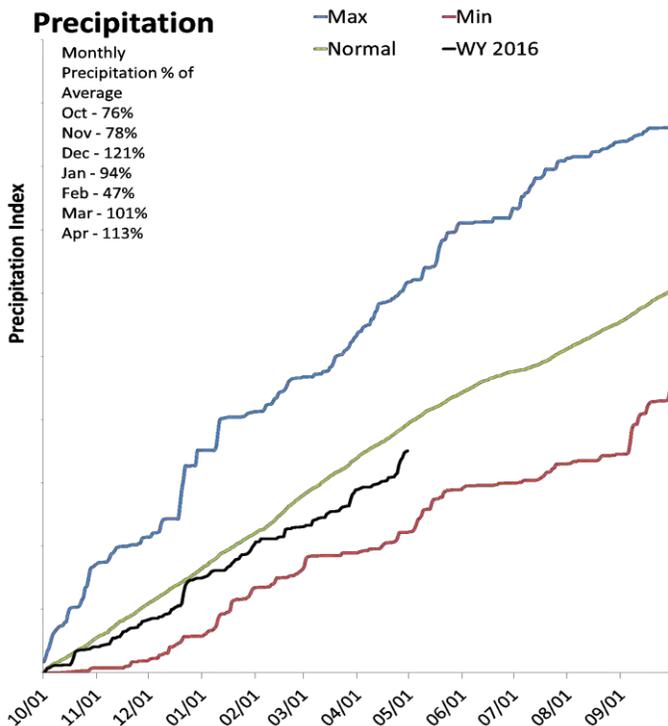
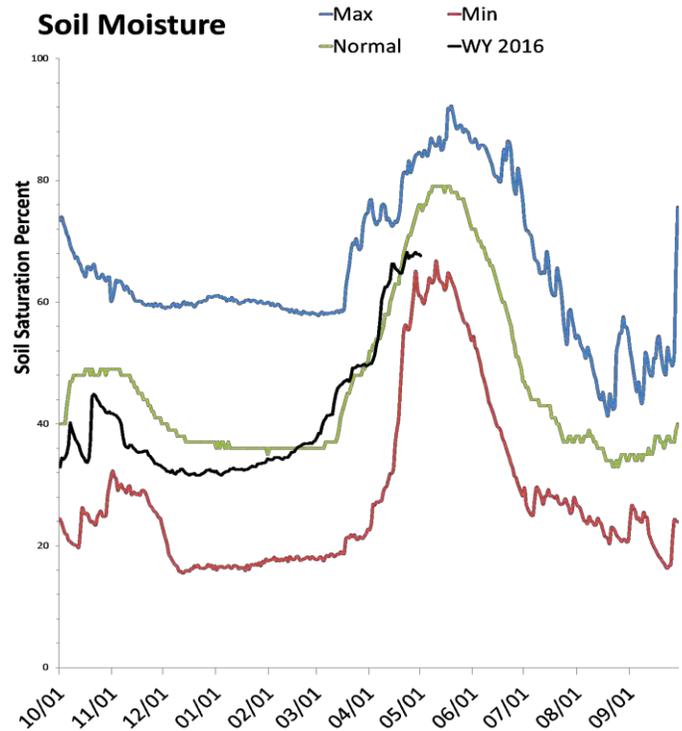
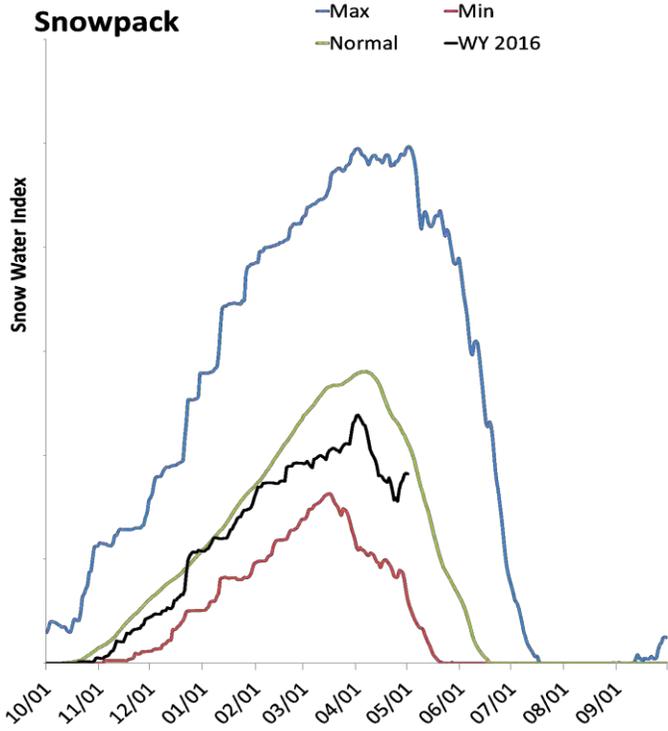
- SNOTEL sites
- △ Forecast points
- Rivers
- Highways
- Cities



Duchesne River Basin

5/1/2016

Snowpack in the Duchesne River Basin is below average at 86% of normal, compared to 31% last year. Precipitation in April was above average at 112%, which brings the seasonal accumulation (Oct-Apr) to 89% of average. Soil moisture is at 76% compared to 74% last year. Reservoir storage is at 74% of capacity, compared to 77% last year. Forecast streamflow volumes range from 38% to 102% of average. The surface water supply index is 73% for the Western Uintahs, 57% for the Eastern Uintahs.



Duchesne River Streamflow Forecasts - May 1, 2016

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

Duchesne River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
WF Duchesne R at VAT Diversion	APR-JUL	9	11.3	13.1	70%	15	18.1	18.6
	MAY-JUL	7.9	10.2	12	69%	13.9	17	17.3
Duchesne R nr Tabiona ²	APR-JUL	57	68	76	70%	85	98	108
	MAY-JUL	48	59	67	68%	76	89	98
Upper Stillwater Reservoir Inflow ²	APR-JUL	52	59	64	86%	69	77	74
	MAY-JUL	48	55	60	85%	65	73	71
Rock Ck nr Mountain Home ²	APR-JUL	61	69	75	85%	80	90	88
	MAY-JUL	56	64	70	83%	75	85	84
Duchesne R ab Knight Diversion ²	APR-JUL	115	134	148	76%	163	186	195
	MAY-JUL	100	119	133	74%	148	171	179
Currant Ck Reservoir Inflow ²	APR-JUL	6.7	8.7	10.3	52%	12	14.9	20
	MAY-JUL	4.3	6.3	7.9	46%	9.6	12.5	17.1
Strawberry R nr Soldier Springs ²	APR-JUL	20	27	32	44%	37	47	72
	MAY-JUL	12.3	18.6	24	41%	29	39	59
Strawberry R nr Duchesne ²	APR-JUL	24	35	43	38%	54	71	112
	MAY-JUL	13.1	24	32	35%	43	60	91
Lake Fork R ab Moon Lake Reservoir	APR-JUL	38	46	52	85%	58	68	61
	MAY-JUL	35	43	49	84%	55	65	58
Lake Fk R Bl Moon Lk nr Mountain Home ²	APR-JUL	46	52	56	85%	61	68	66
	MAY-JUL	43	49	53	84%	58	65	63
Yellowstone R nr Altonah	APR-JUL	41	48	53	87%	59	67	61
	MAY-JUL	37	44	49	86%	55	63	57
Duchesne R at Myton ²	APR-JUL	125	165	197	60%	230	290	330
	MAY-JUL	99	139	171	59%	205	265	290
Uinta R bl Powerplant Diversion nr Neola ²	APR-JUL	43	53	61	82%	68	81	74
	MAY-JUL	40	50	58	82%	65	78	71
Whiterocks R nr Whiterocks	APR-JUL	33	40	46	85%	52	62	54
	MAY-JUL	31	38	44	86%	50	60	51
Duchesne R nr Randlett ²	APR-JUL	138	191	235	61%	280	360	385
	MAY-JUL	110	163	205	59%	250	330	345
Ashley Ck nr Vernal	APR-JUL	37	45	51	102%	57	67	50
	MAY-JUL	34	42	48	102%	54	64	47
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	15.2	18.7	21	100%	24	28	21
	MAY-JUL	12.7	16.2	18.8	102%	22	26	18.4

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Steinaker Reservoir	21.1	15.6	25.3	33.4
Red Fleet Reservoir	18.9	12.5	19.8	25.7
Big Sand Wash Reservoir	25.8	24.3		25.7
Upper Stillwater Reservoir	1.6	5.6	2.9	32.5
Starvation Reservoir	162.8	162.1	151.9	165.3
Moon Lake Reservoir	25.5	36.5	27.6	35.8
Currant Creek Reservoir	14.9	15.3	14.9	15.5
Strawberry Reservoir	807.4	845.8	678.4	1105.9
Basin-wide Total	1052.2	1093.5	920.8	1414.1
# of reservoirs	7	7	7	7

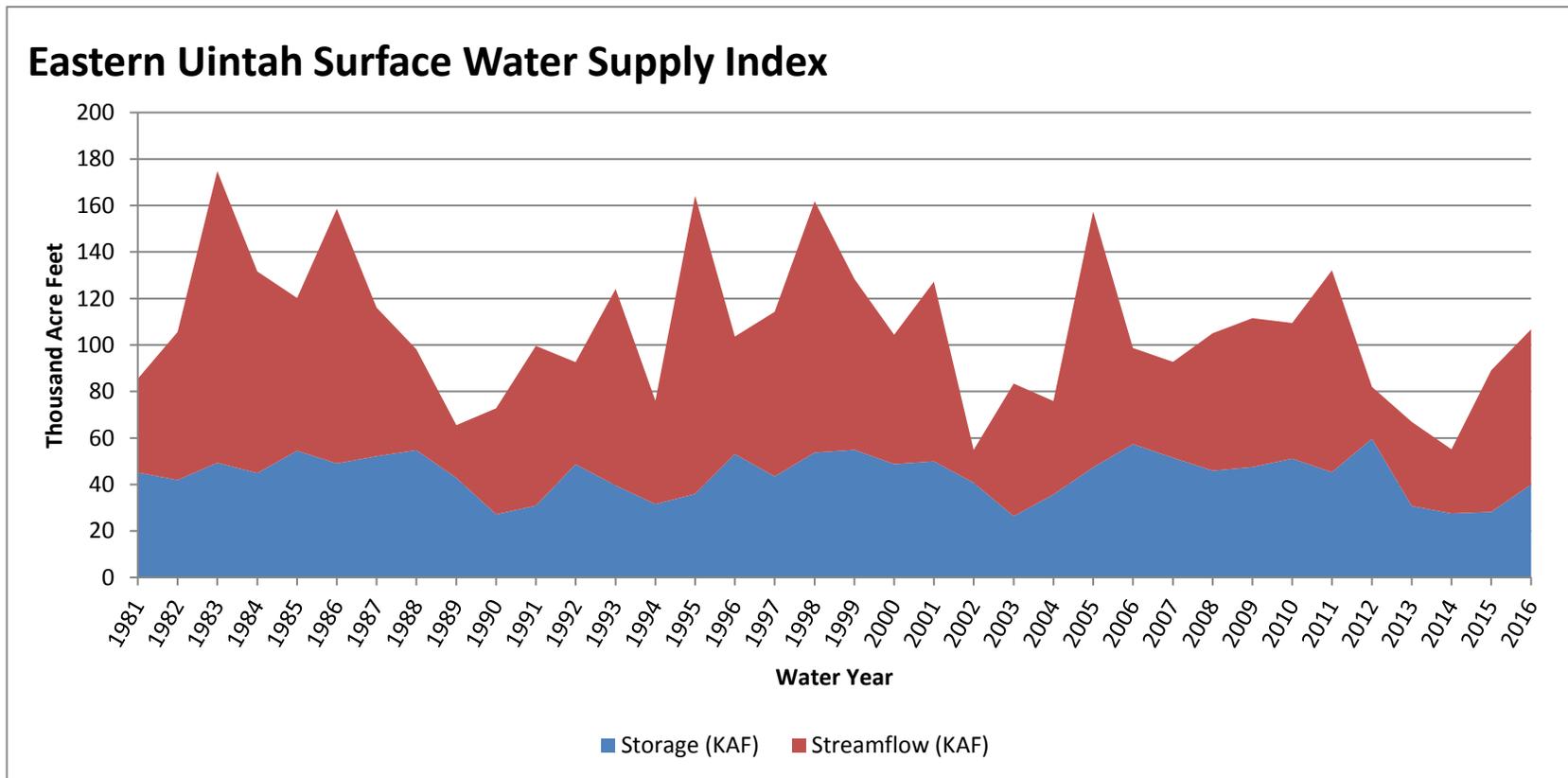
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Strawberry	5	36%	0%
Lakefork Yellowstone	7	93%	39%
Uintah Whiterocks	2	92%	11%

May 1, 2016

Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Eastern Uintah	39.97	66.80	106.77	57	0.56	08, 82, 10, 09

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.

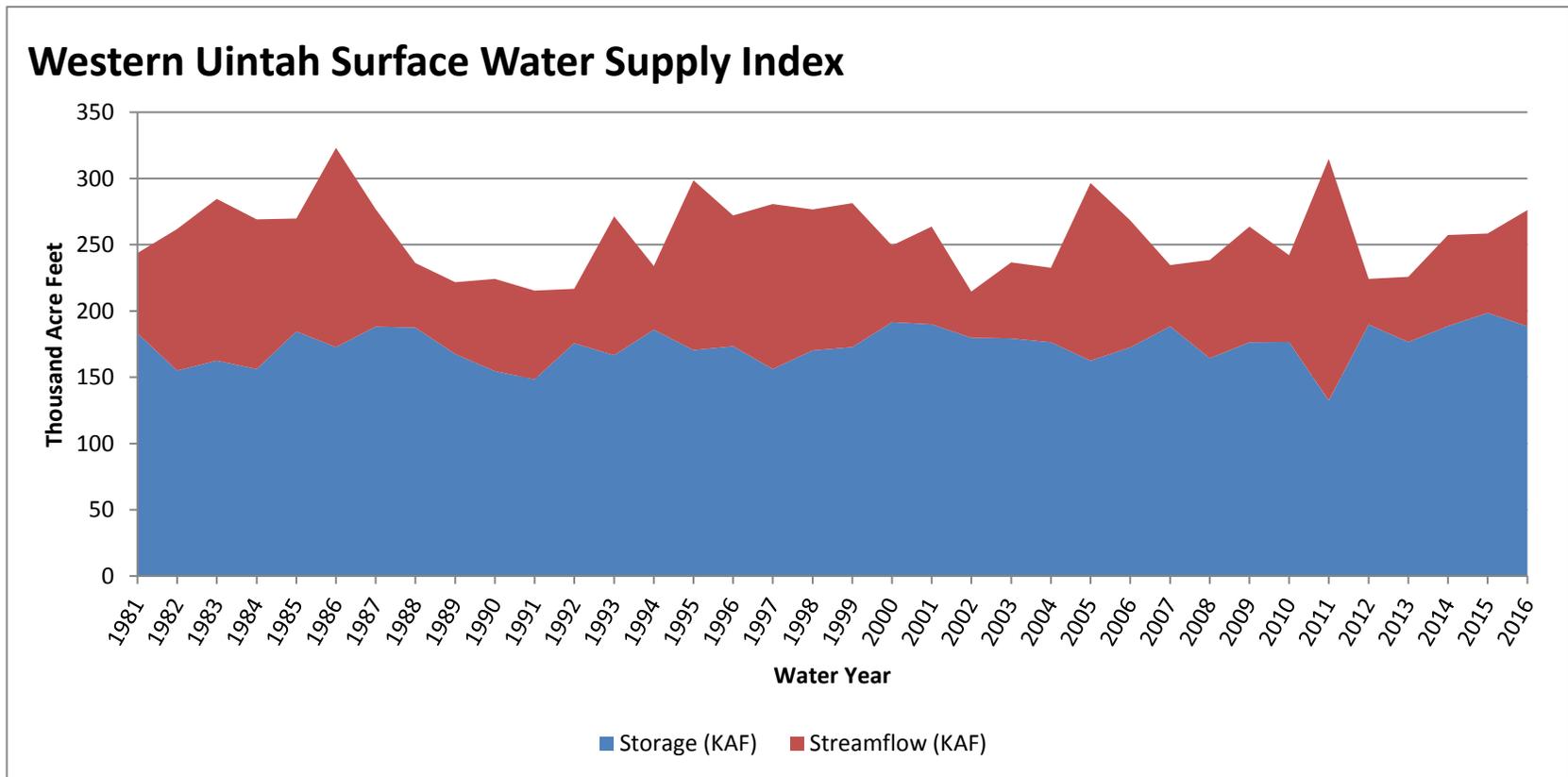


May 1, 2016

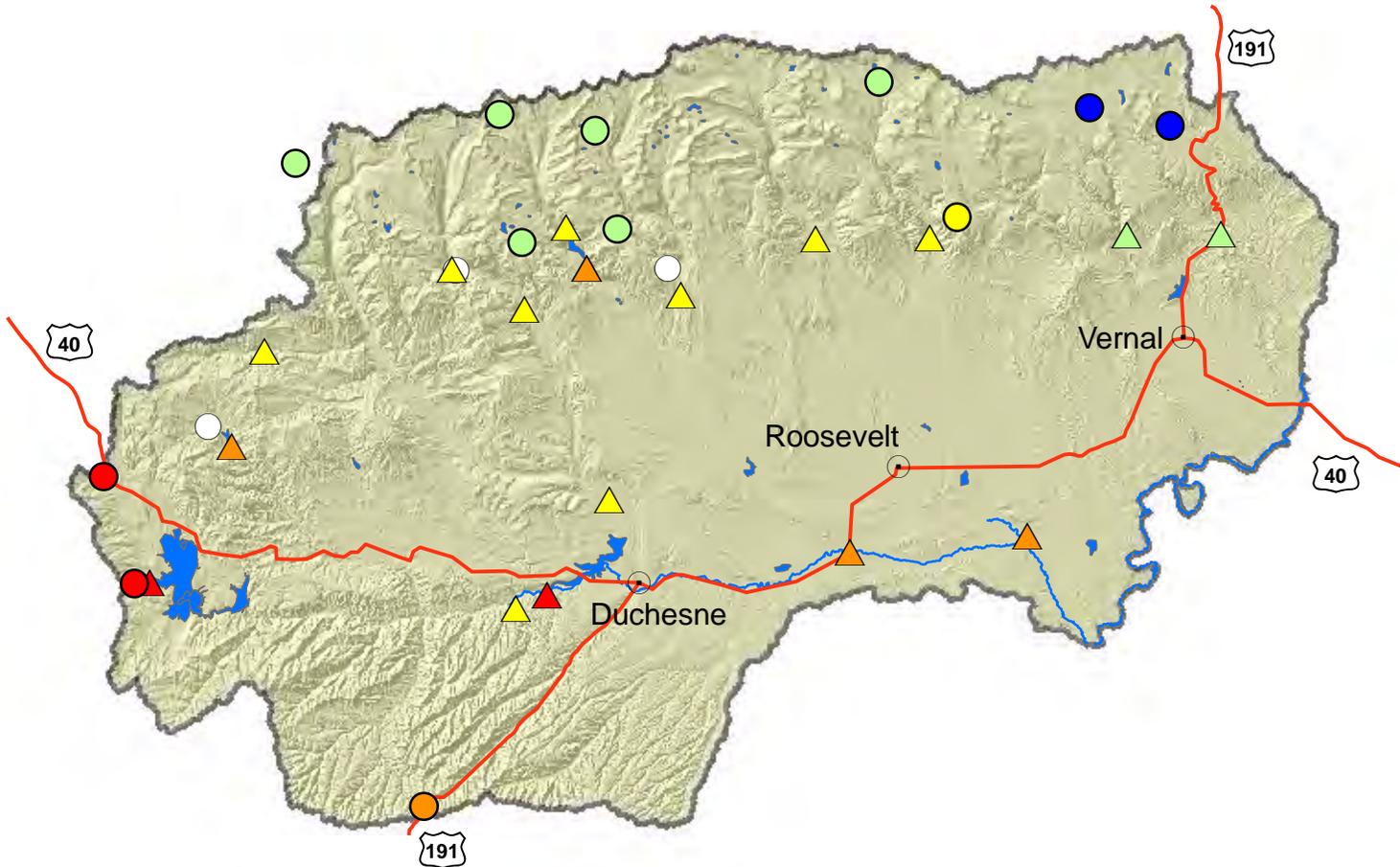
Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Western Uintah	188.29	88.00	276.29	73	1.91	93, 96, 98, 87

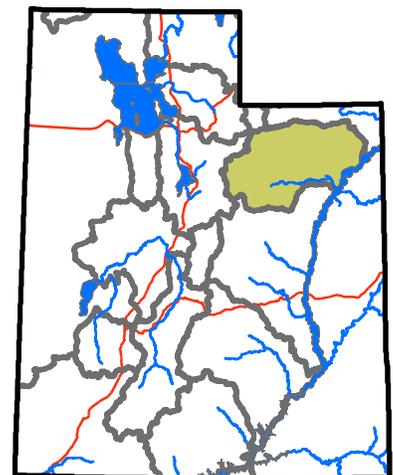
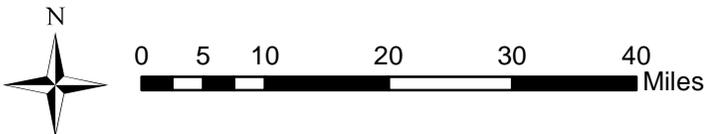
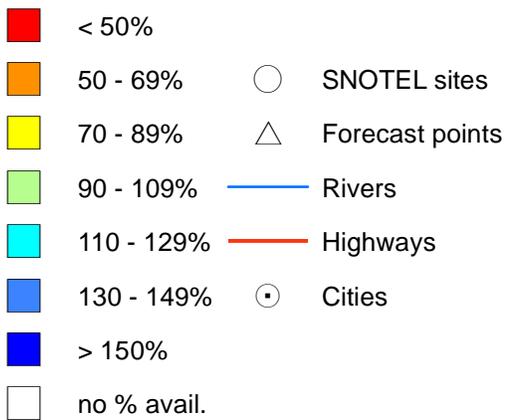
^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



Duchesne basin



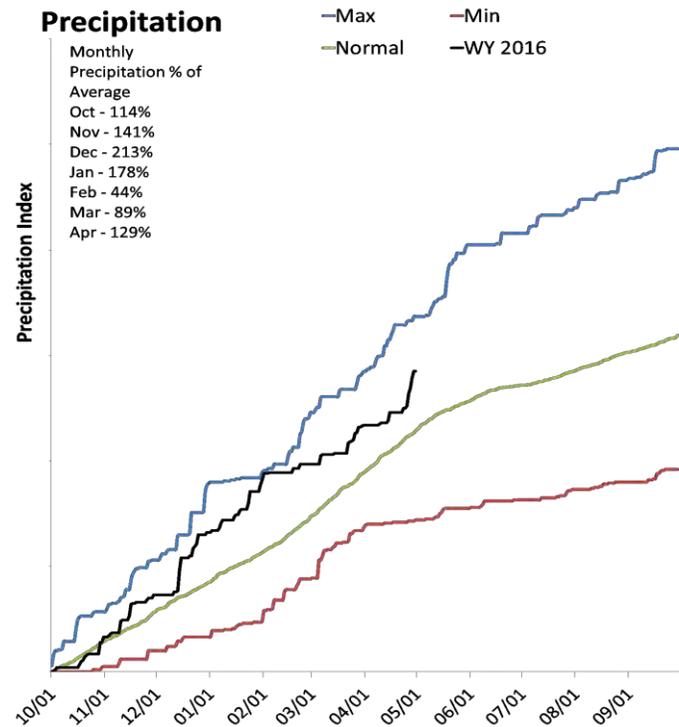
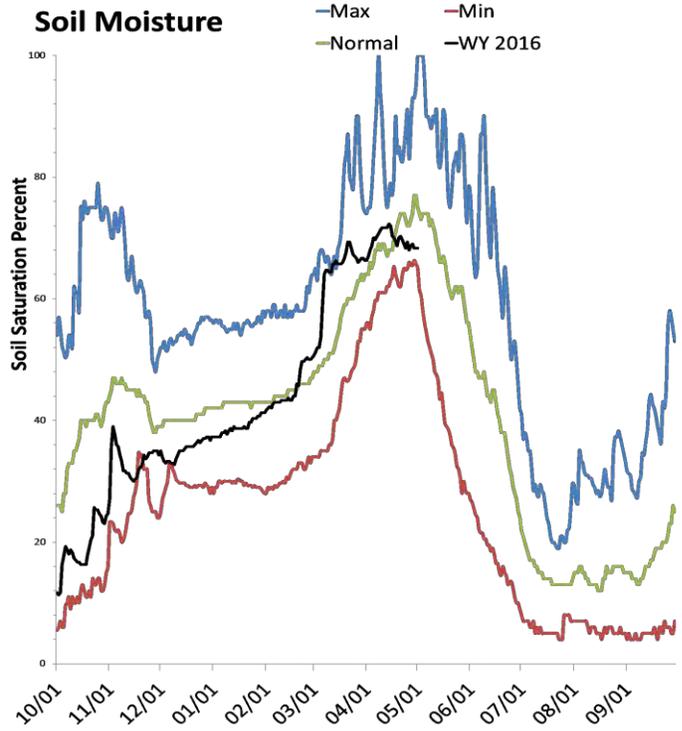
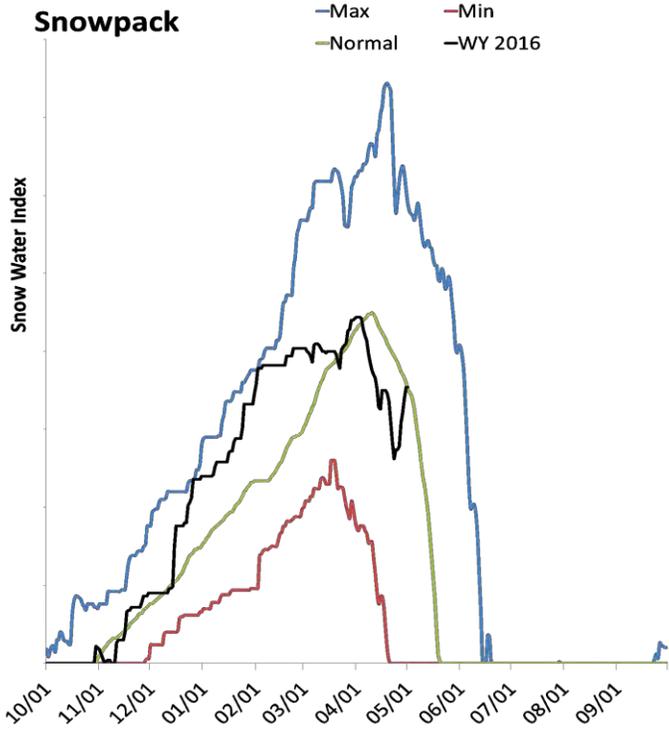
Percent normal



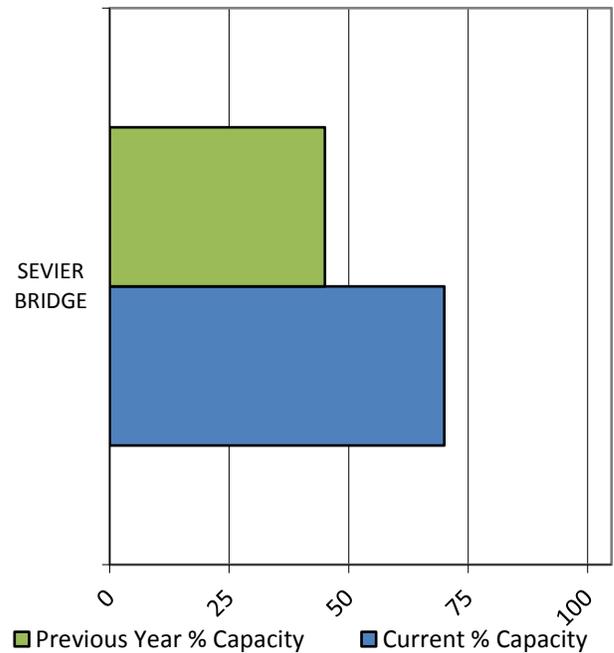
Lower Sevier River Basin

5/1/2016

Snowpack in the Lower Sevier River Basin is near normal at 101% of normal, compared to 5% last year. Precipitation in April was much above average at 131%, which brings the seasonal accumulation (Oct-Apr) to 125% of average. Soil moisture is at 68% compared to 65% last year. Reservoir storage is at 70% of capacity, compared to 45% last year. Forecast streamflow volumes range from 72% to 93% of average. The surface water supply index is 54% for the Lower Sevier.



Reservoir Storage



Lower Sevier River Streamflow Forecasts - May 1, 2016

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

Lower Sevier River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Chicken Ck nr Levan	APR-JUL	2.8	3.4	3.8	84%	4.3	5	4.5
	MAY-JUL	1.17	2	2.7	79%	3.5	4.9	3.4
Sevier R nr Gunnison	APR-JUL	41	72	92	93%	112	143	99
	MAY-JUL	39	61	77	90%	93	115	86
Oak Ck nr Oak City	APR-JUL	0.82	1.04	1.2	72%	1.38	1.66	1.66
	MAY-JUL	0.33	0.53	0.7	65%	0.89	1.21	1.07

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Sevier Bridge Reservoir	164.6	106.0	172.9	236.0
Basin-wide Total	164.6	106.0	172.9	236.0
# of reservoirs	1	1	1	1

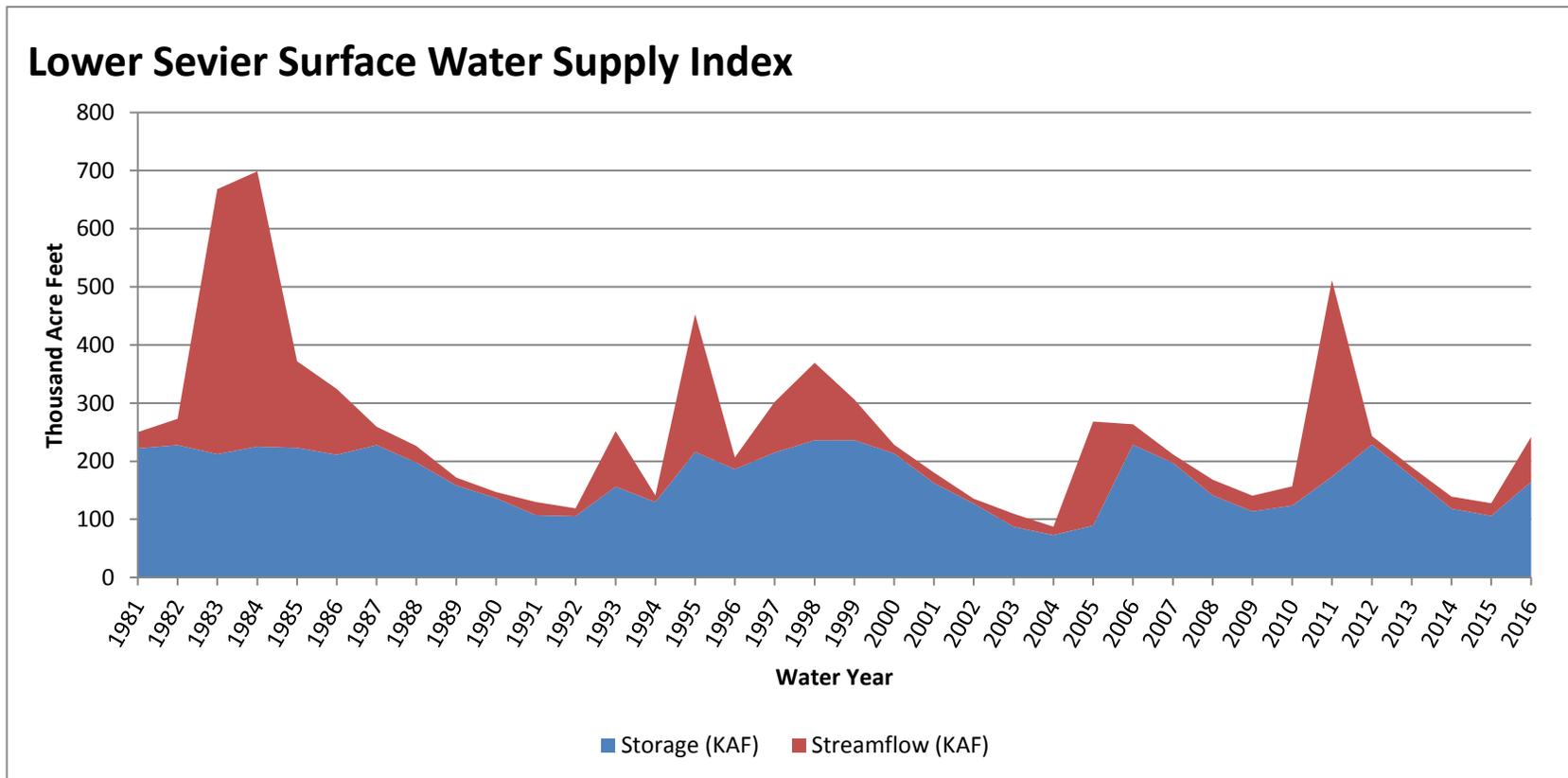
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Lower Sevier	3	83%	4%

May 1, 2016

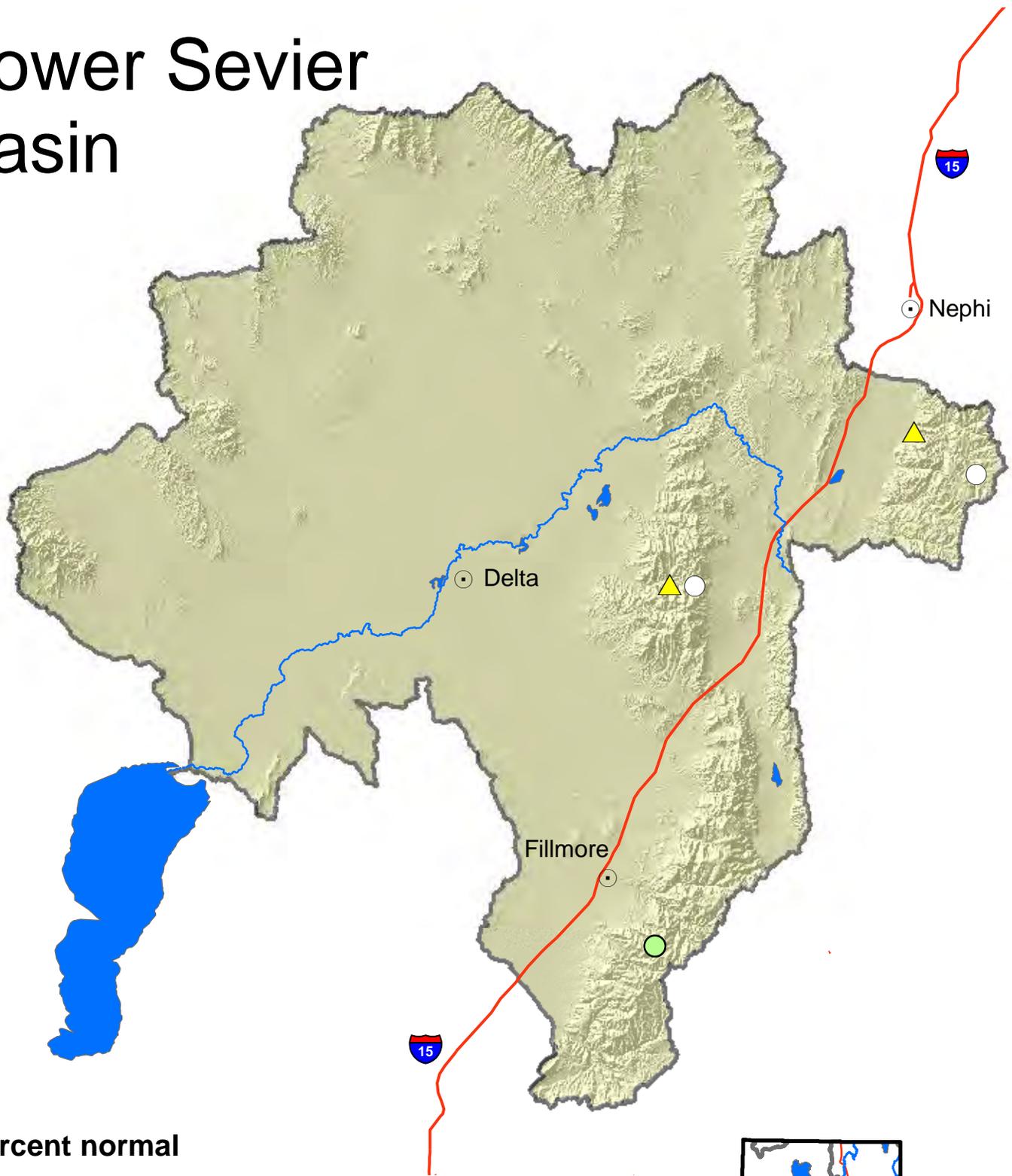
Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Lower Sevier	164.58	77.00	241.58	54	0.34	88, 00, 12, 81

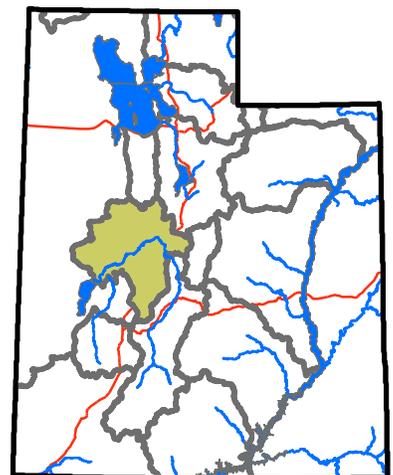
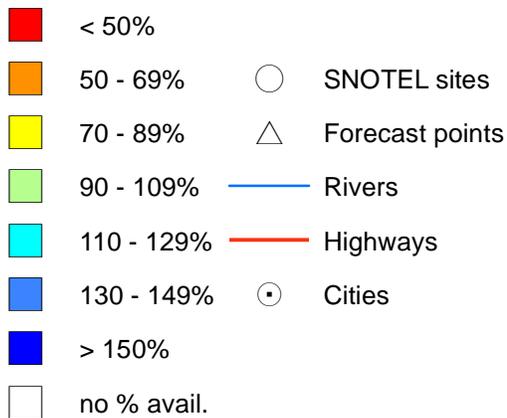
^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



Lower Sevier basin



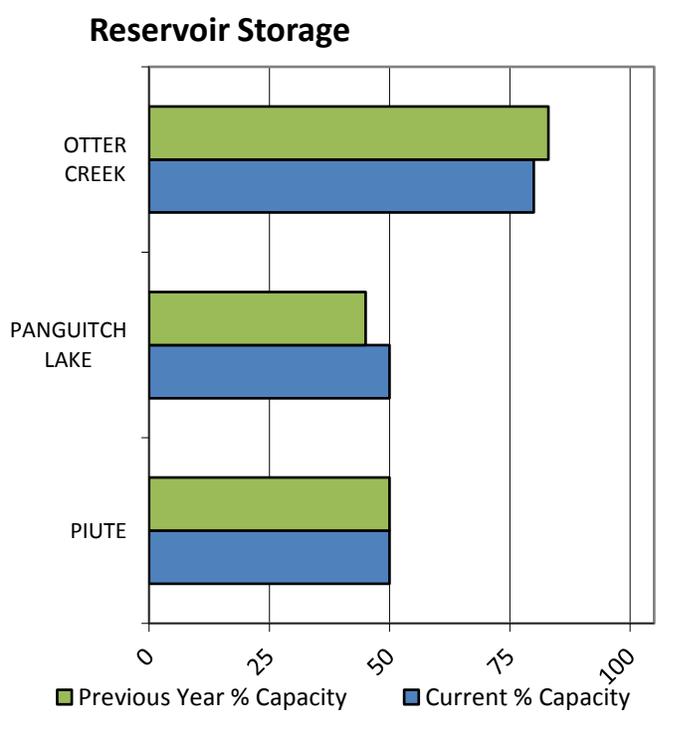
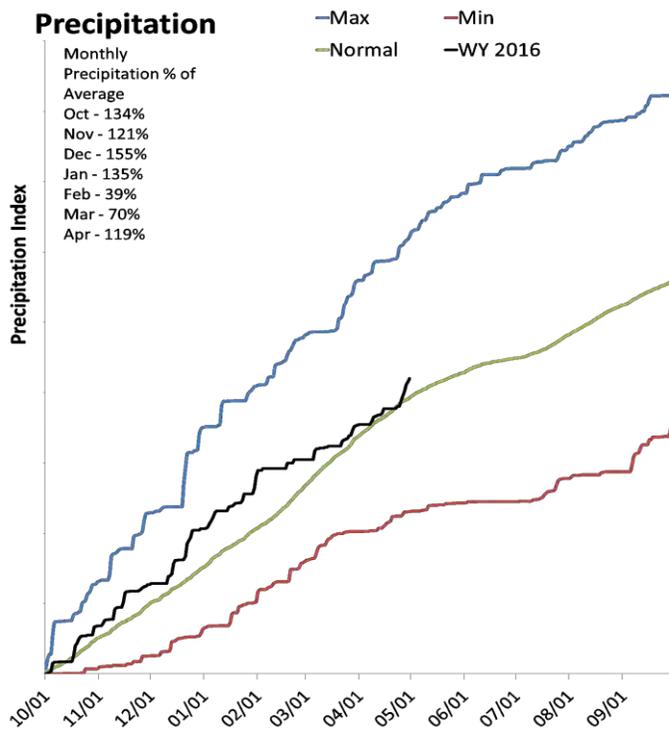
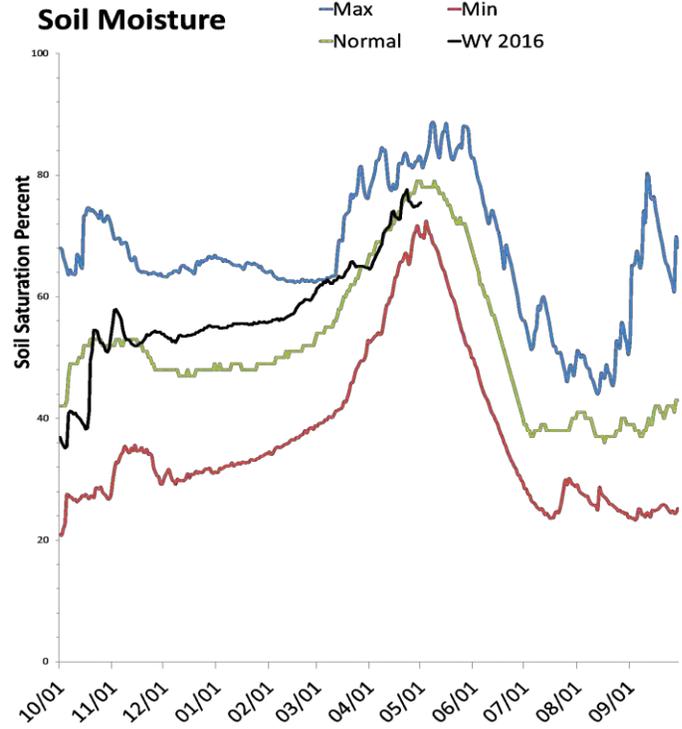
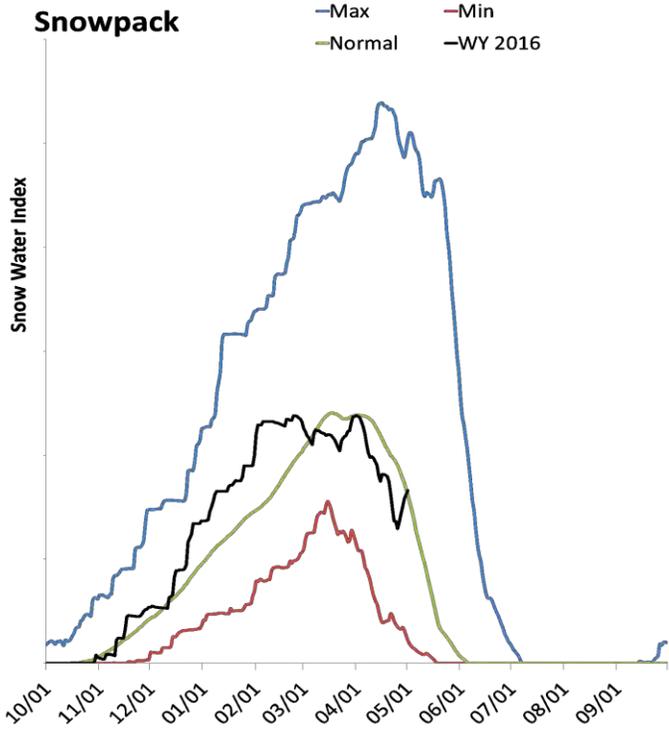
Percent normal



Upper Sevier River Basin

5/1/2016

Snowpack in the Upper Sevier River Basin is near normal at 103% of normal, compared to 30% last year. Precipitation in April was above average at 119%, which brings the seasonal accumulation (Oct-Apr) to 107% of average. Soil moisture is at 76% compared to 77% last year. Reservoir storage is at 61% of capacity, compared to 61% last year. Forecast streamflow volumes range from 86% to 109% of average. The surface water supply index is 35% for the Upper Sevier.



Upper Sevier River Streamflow Forecasts - May 1, 2016

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

Upper Sevier River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Mammoth Ck nr Hatch	APR-JUL	0.54	11.4	28	104%	45	69	27
	MAY-JUL	1	11.6	25	100%	38	58	25
Sevier R at Hatch	APR-JUL	37	46	52	108%	58	67	48
	MAY-JUL	35	41	46	110%	51	57	42
EF Sevier R nr Kingston	APR-JUL	17.1	28	35	100%	42	53	35
	MAY-JUL	7.5	19.2	27	90%	35	47	30
Sevier R nr Kingston	APR-JUL	14.7	27	36	109%	45	57	33
	MAY-JUL	8.8	21	29	112%	37	49	26
Sevier R bl Piute Dam	APR-JUL	17.7	45	64	97%	83	110	66
	MAY-JUL	15.8	34	50	91%	69	103	55
Clear Ck ab Diversions nr Sevier	APR-JUL	10.6	15	18	86%	21	25	21
	MAY-JUL	9.4	12.1	14	82%	16.1	19.4	17
Salina Ck nr Emery	APR-JUL	3.3	5.7	7.3	92%	8.9	11.3	7.9
	MAY-JUL	2.7	4.9	6.3	90%	7.8	10	7

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Piute Reservoir	36.0	35.9	54.4	71.8
Otter Creek Reservoir	42.0	43.5	44.8	52.5
Panguitch Lake	11.2	10.1	15.9	22.3
Basin-wide Total	89.2	89.5	115.1	146.6
# of reservoirs	3	3	3	3

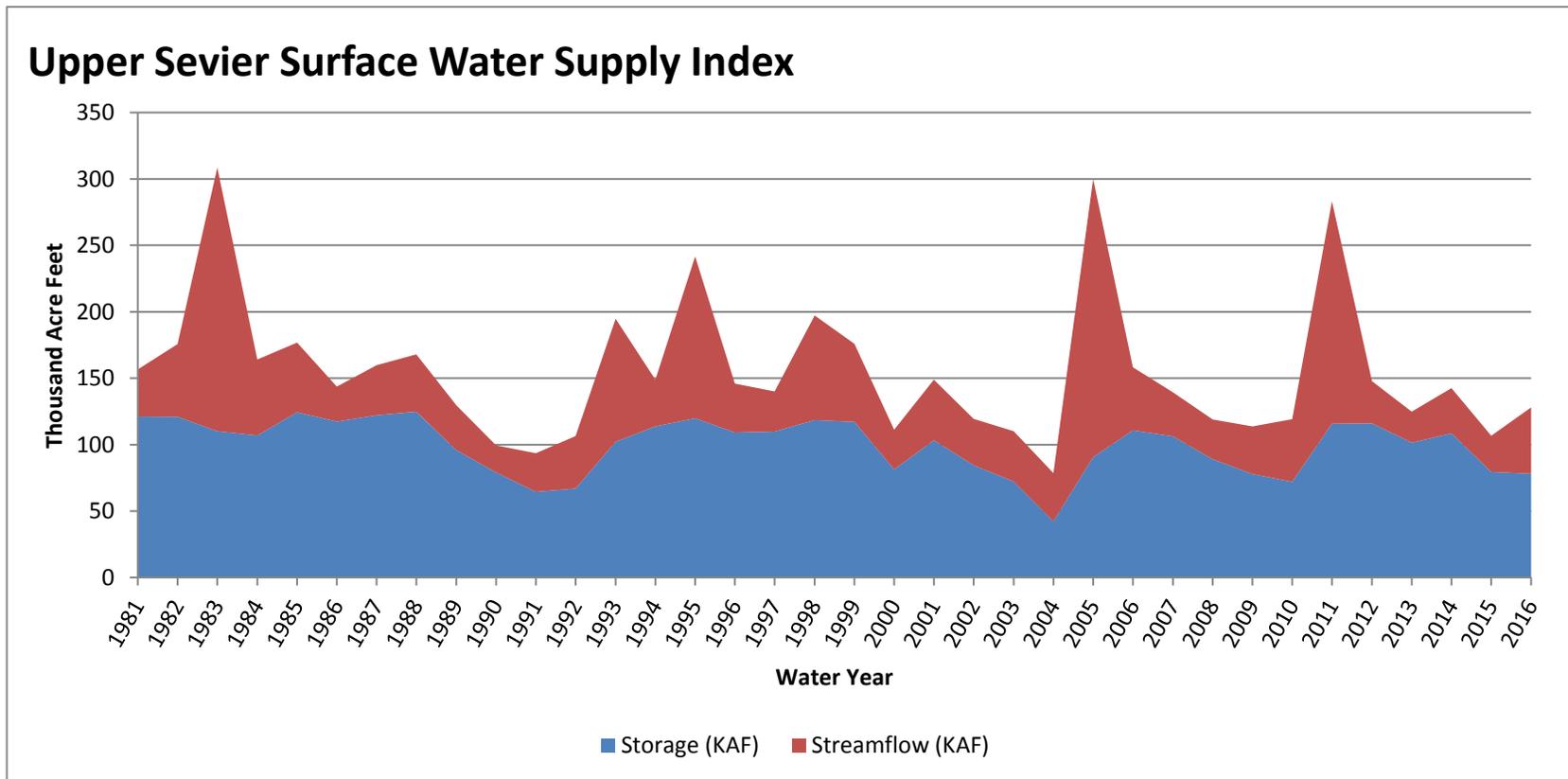
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Upper Sevier	8	121%	53%
Middle Sevier	8	93%	29%
E Fk Sevier	5	68%	13%

May 1, 2016

Surface Water Supply Index

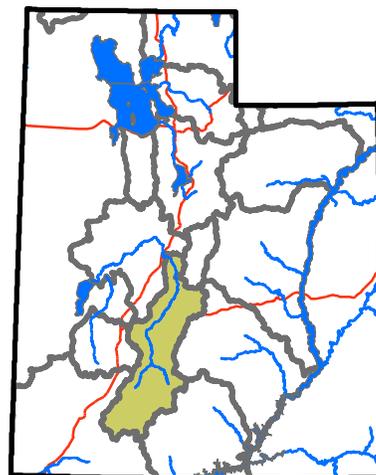
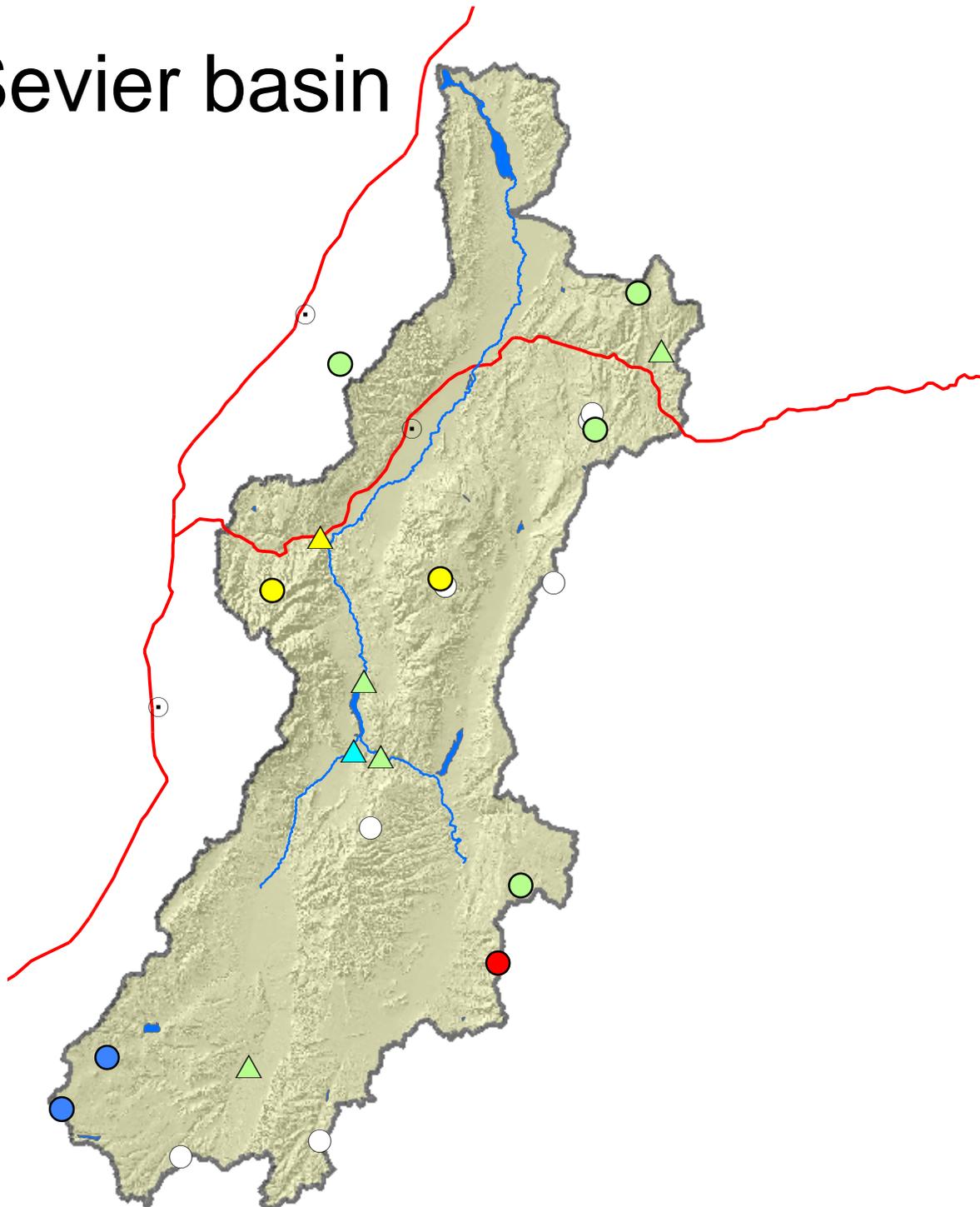
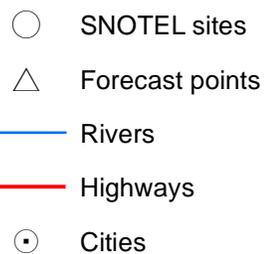
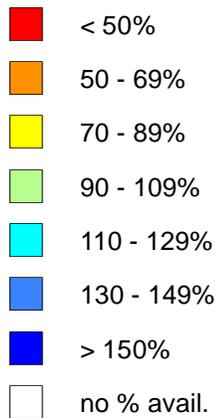
Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Upper Sevier	78.04	50.00	128.04	35	-1.24	02, 13, 89, 07

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



Upper Sevier basin

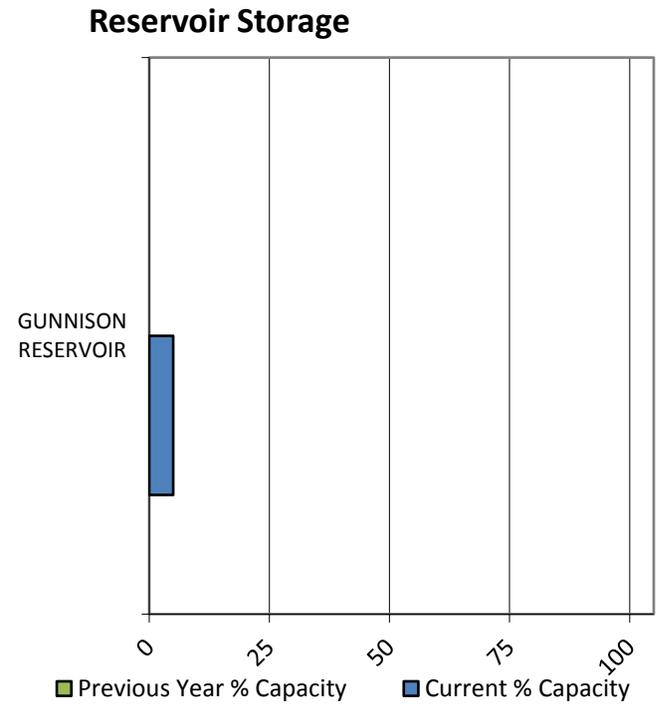
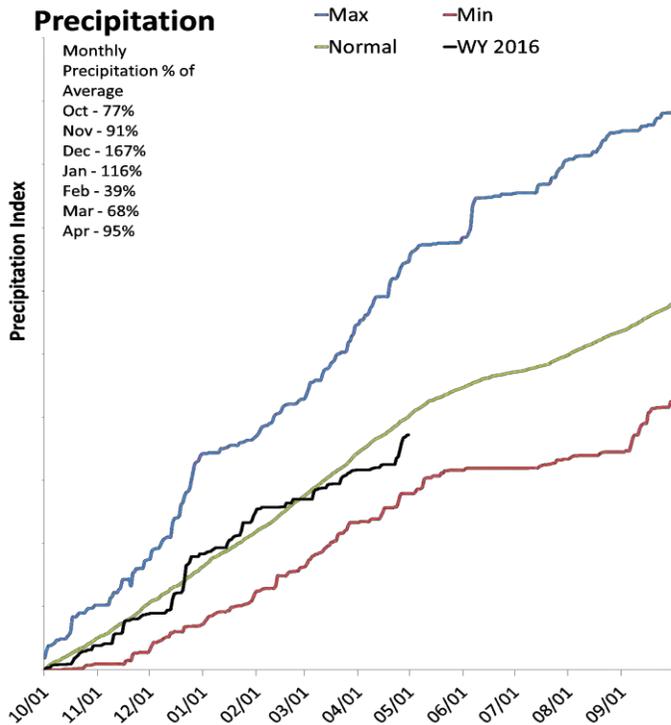
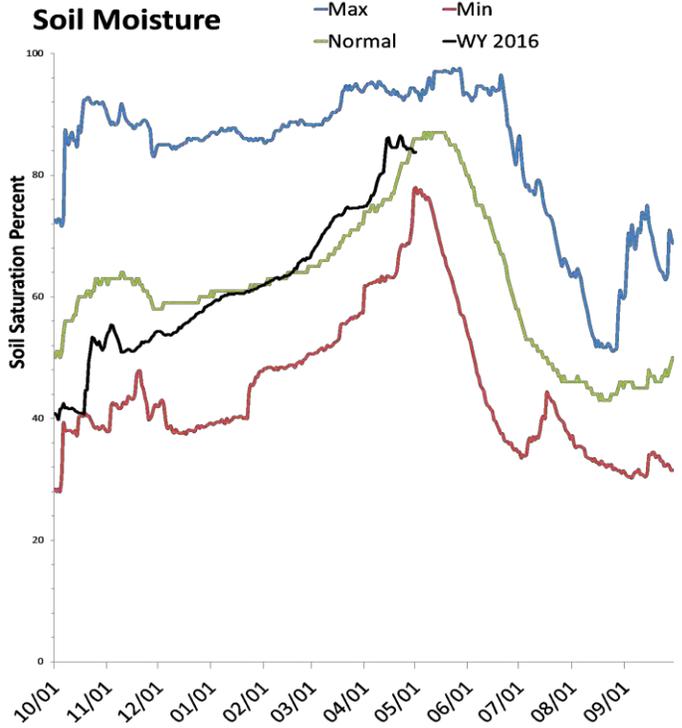
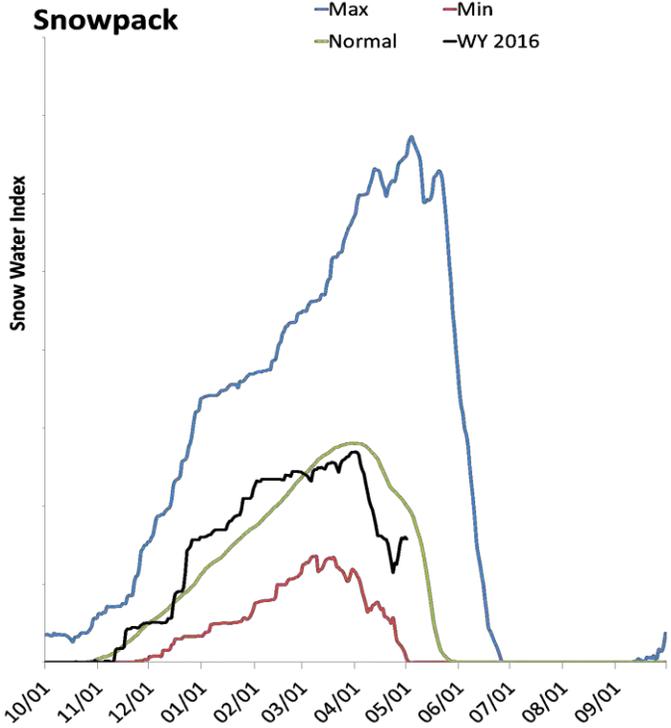
Percent normal



San Pitch River Basin

5/1/2016

Snowpack in the San Pitch River Basin is below normal at 79% of normal, compared to 17% last year. Precipitation in April was near average at 96%, which brings the seasonal accumulation (Oct-Apr) to 93% of average. Soil moisture is at 83% compared to 74% last year. Reservoir storage is at 5% of capacity, compared to 0% last year. The forecast streamflow volume for Manti Creek is 84% of average. The surface water supply index is 8% for the San Pitch.



San Pitch River Streamflow Forecasts - May 1, 2016

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

San Pitch River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Manti Ck bl Dugway Ck nr Manti	APR-JUL	10	12.3	14	84%	15.8	18.6	16.7
	MAY-JUL	8.3	10.4	12	77%	13.7	16.3	15.5
Sevier R nr Gunnison	APR-JUL	41	72	92	93%	112	143	99
	MAY-JUL	39	61	77	90%	93	115	86

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Gunnison Reservoir	1.0	0.0	14.2	20.3
Basin-wide Total	1.0		14.2	20.3
# of reservoirs	1	1	1	1

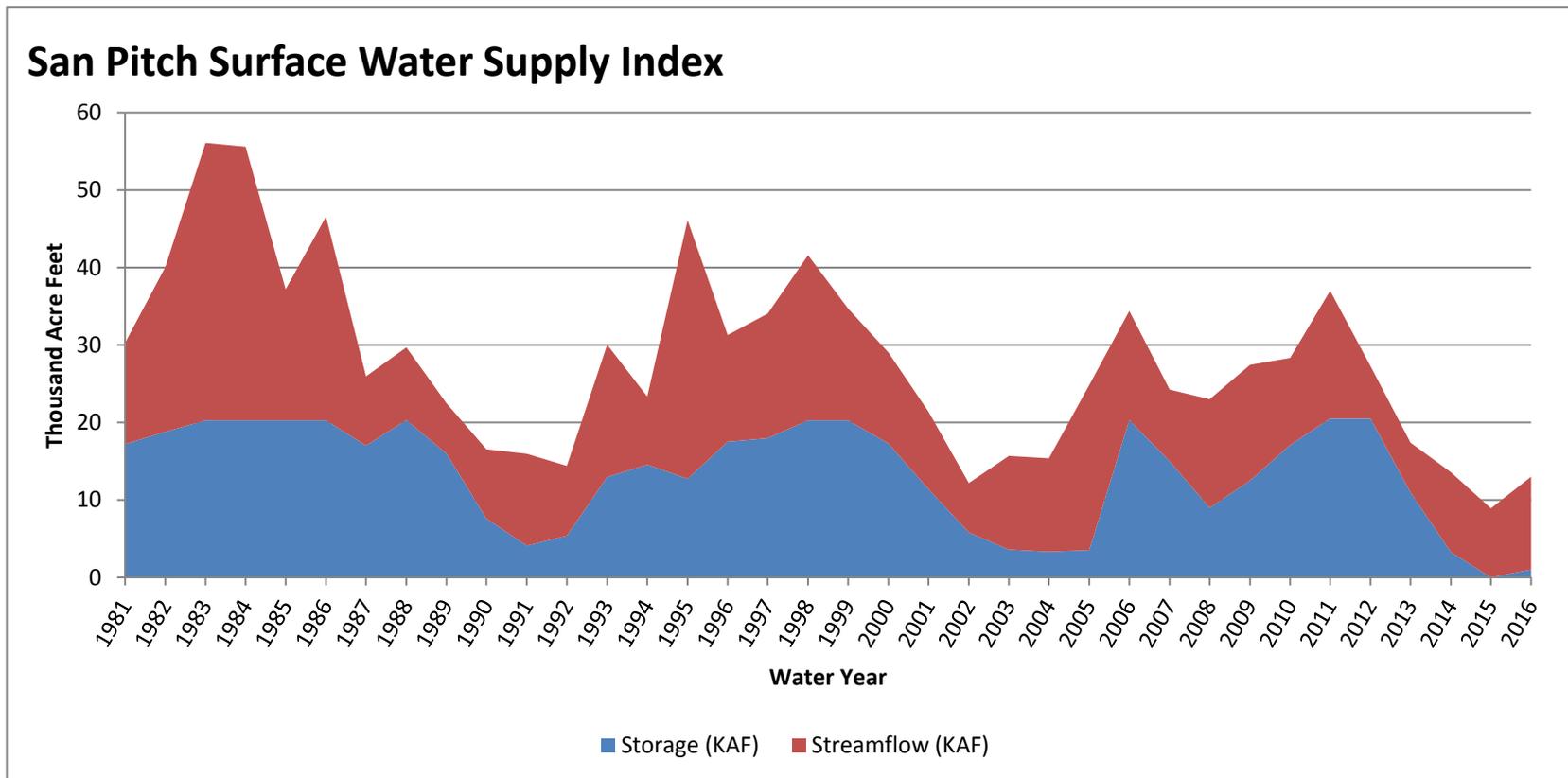
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Upper San Pitch	4	58%	26%
Lower San Pitch	7	74%	42%

May 1, 2016

Surface Water Supply Index

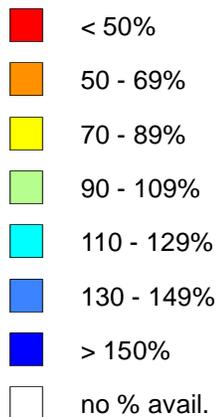
Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
San Pitch	1.01	12.00	13.01	8	-3.49	15, 02, 14, 92

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.

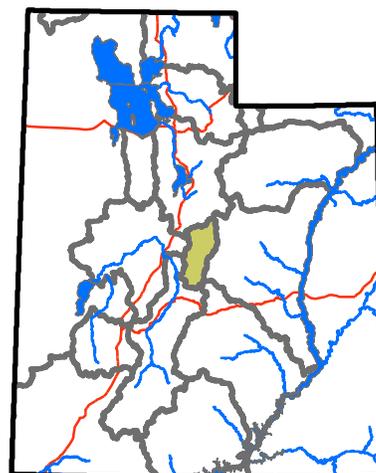
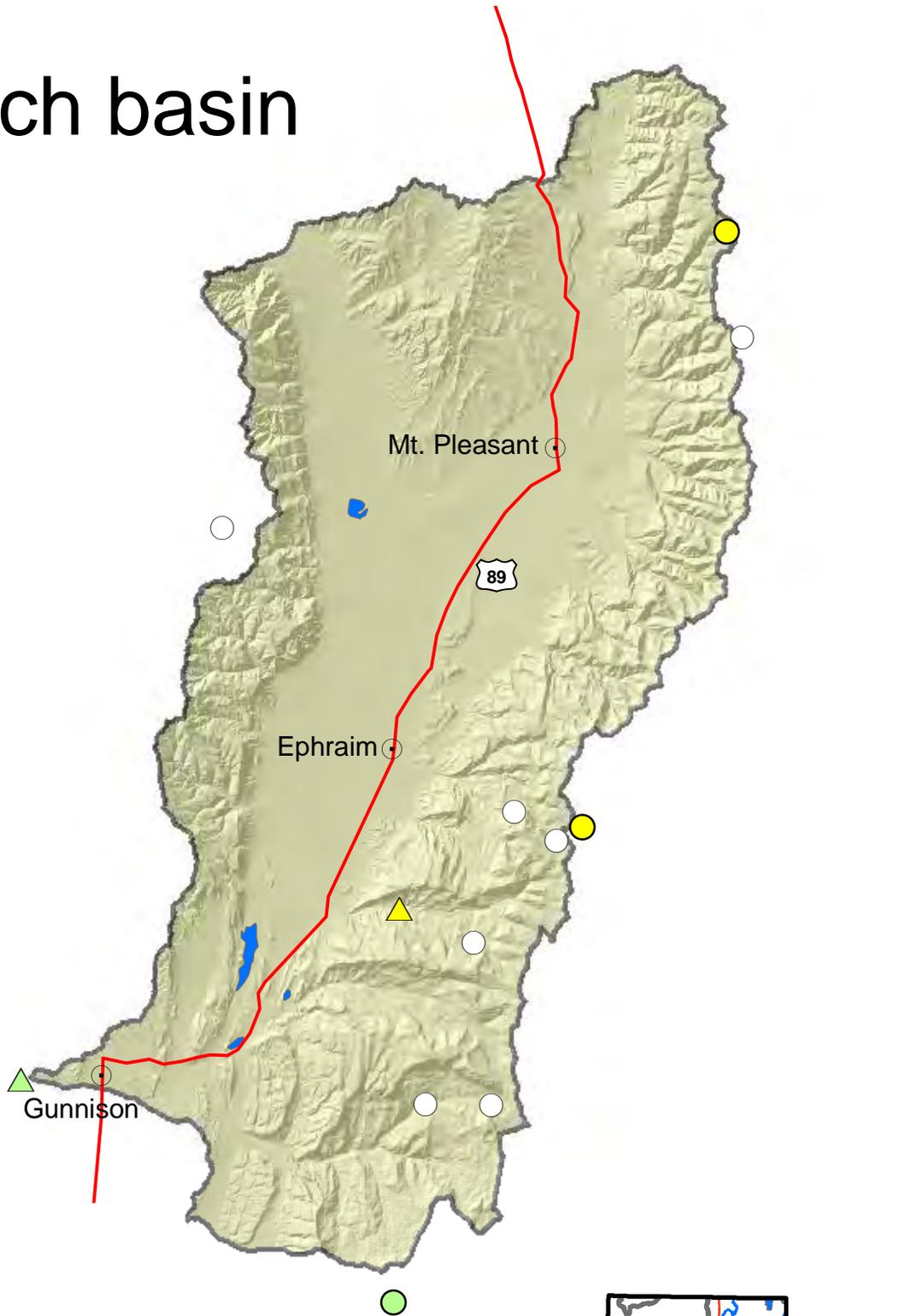
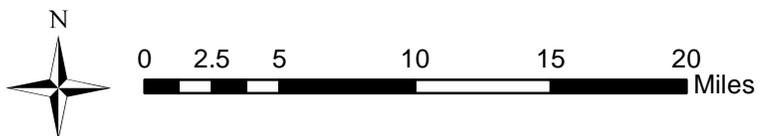


San Pitch basin

Percent normal



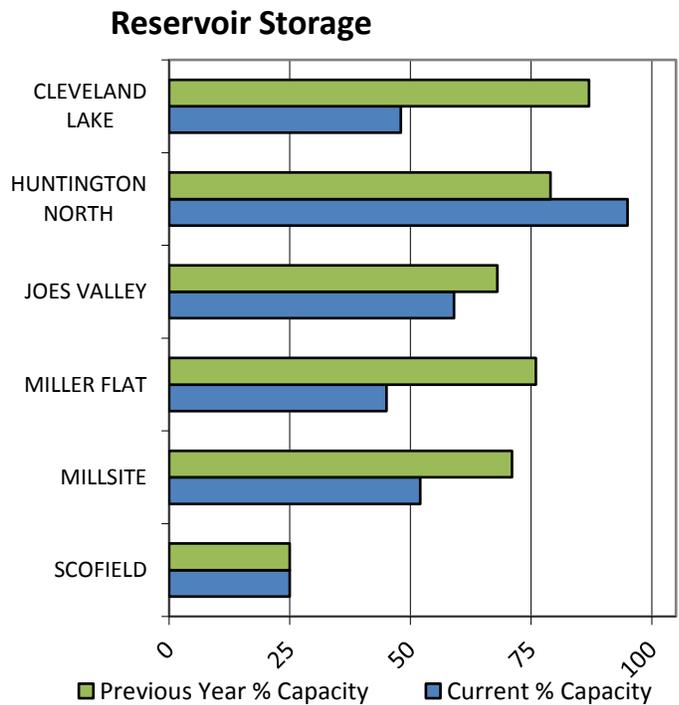
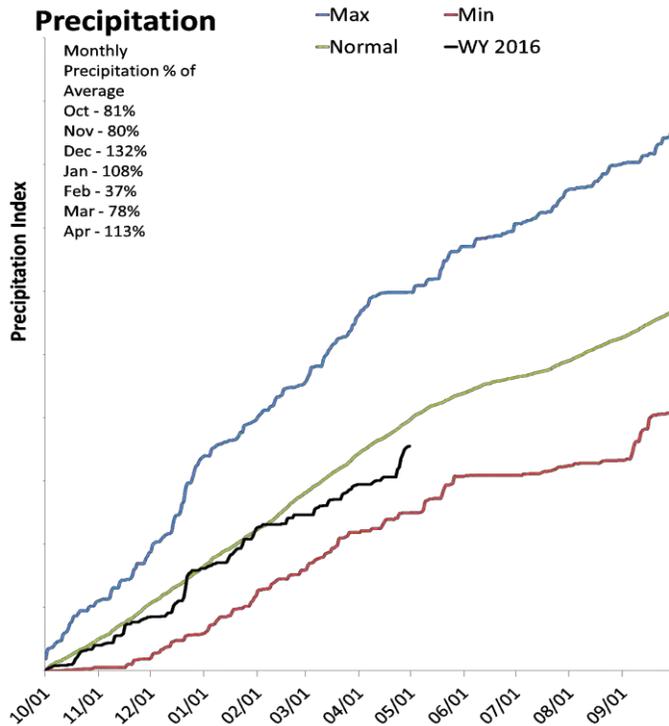
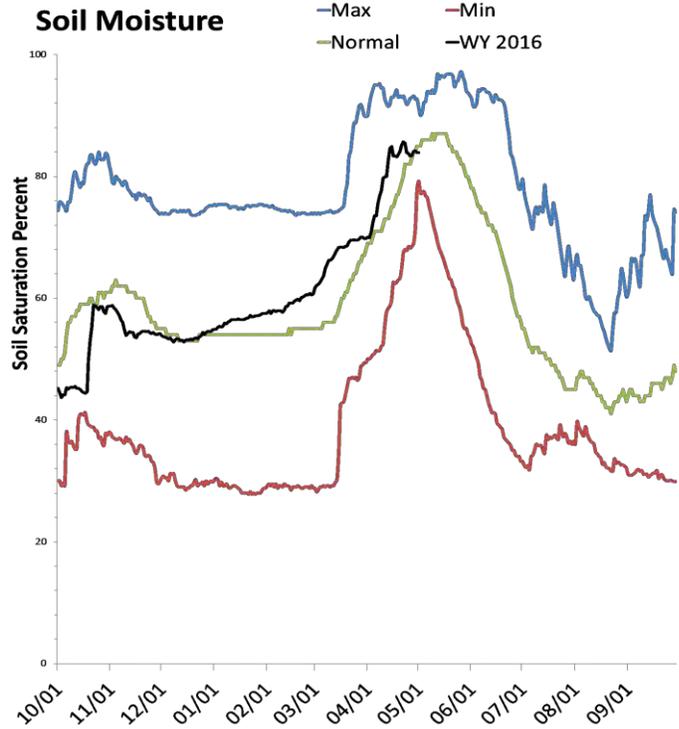
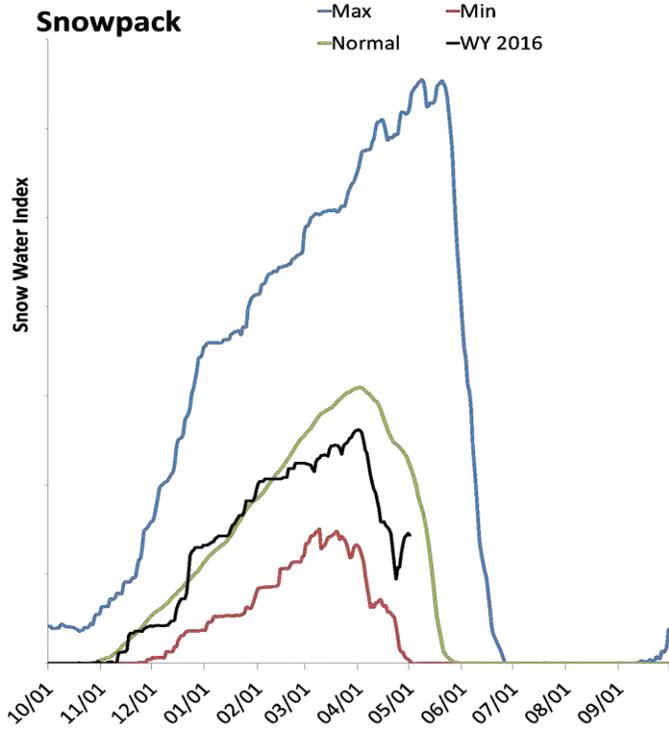
- SNOTEL sites
- △ Forecast points
- Rivers
- Highways
- ⊙ Cities



Price & San Rafael Basins

5/1/2016

Snowpack in the Price & San Rafael Basins is much below normal at 65% of normal, compared to 13% last year. Precipitation in April was above average at 113%, which brings the seasonal accumulation (Oct-Apr) to 90% of average. Soil moisture is at 84% compared to 76% last year. Reservoir storage is at 44% of capacity, compared to 49% last year. Forecast streamflow volumes range from 55% to 82% of average. The surface water supply index is 14% for the Price River, 24% for Joe's Valley, 30% for Ferron Creek.



Price San Rafael Streamflow Forecasts - May 1, 2016

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

Price San Rafael	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Fish Ck ab Reservoir nr Scofield	APR-JUL	12.5	16.1	18.9	63%	22	26	30
	MAY-JUL	10	13.6	16.4	63%	19.5	24	26
Price R nr Scofield Reservoir ²	APR-JUL	14.6	19.8	24	59%	29	36	41
	MAY-JUL	10.7	15.9	20	57%	25	32	35
White R bl Tabbyune Creek	APR-JUL	5.8	7.4	8.6	55%	9.9	12.1	15.5
	MAY-JUL	4.2	5.8	7	59%	8.3	10.5	11.9
Green R at Green River, UT ²	APR-JUL	1900	2220	2440	82%	2690	3070	2960
	MAY-JUL	1520	1840	2060	81%	2310	2690	2540
Electric Lake Inflow ²	APR-JUL	5.3	6.6	7.5	56%	8.6	10.3	13.3
	MAY-JUL	4.1	5.4	6.3	53%	7.4	9.1	11.8
Huntington Ck nr Huntington ²	APR-JUL	20	23	26	65%	29	33	40
	MAY-JUL	16.7	20	23	62%	26	30	37
Joes Valley Reservoir Inflow ²	APR-JUL	27	33	38	68%	43	51	56
	MAY-JUL	24	30	35	67%	40	48	52
Ferron Ck (Upper Station) nr Ferron	APR-JUL	22	25	27	71%	29	33	38
	MAY-JUL	19.9	23	25	71%	27	31	35

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Joes Valley Reservoir	36.1	42.0	40.1	61.6
Millsite	8.7	11.8	11.2	16.7
Huntington North Reservoir	4.0	3.3	3.9	4.2
Cleveland Lake	2.6	4.7		5.4
Miller Flat Reservoir	2.3	4.0		5.2
Scofield Reservoir	16.7	16.3	33.2	65.8
Basin-wide Total	65.5	73.4	88.4	148.3
# of reservoirs	4	4	4	4

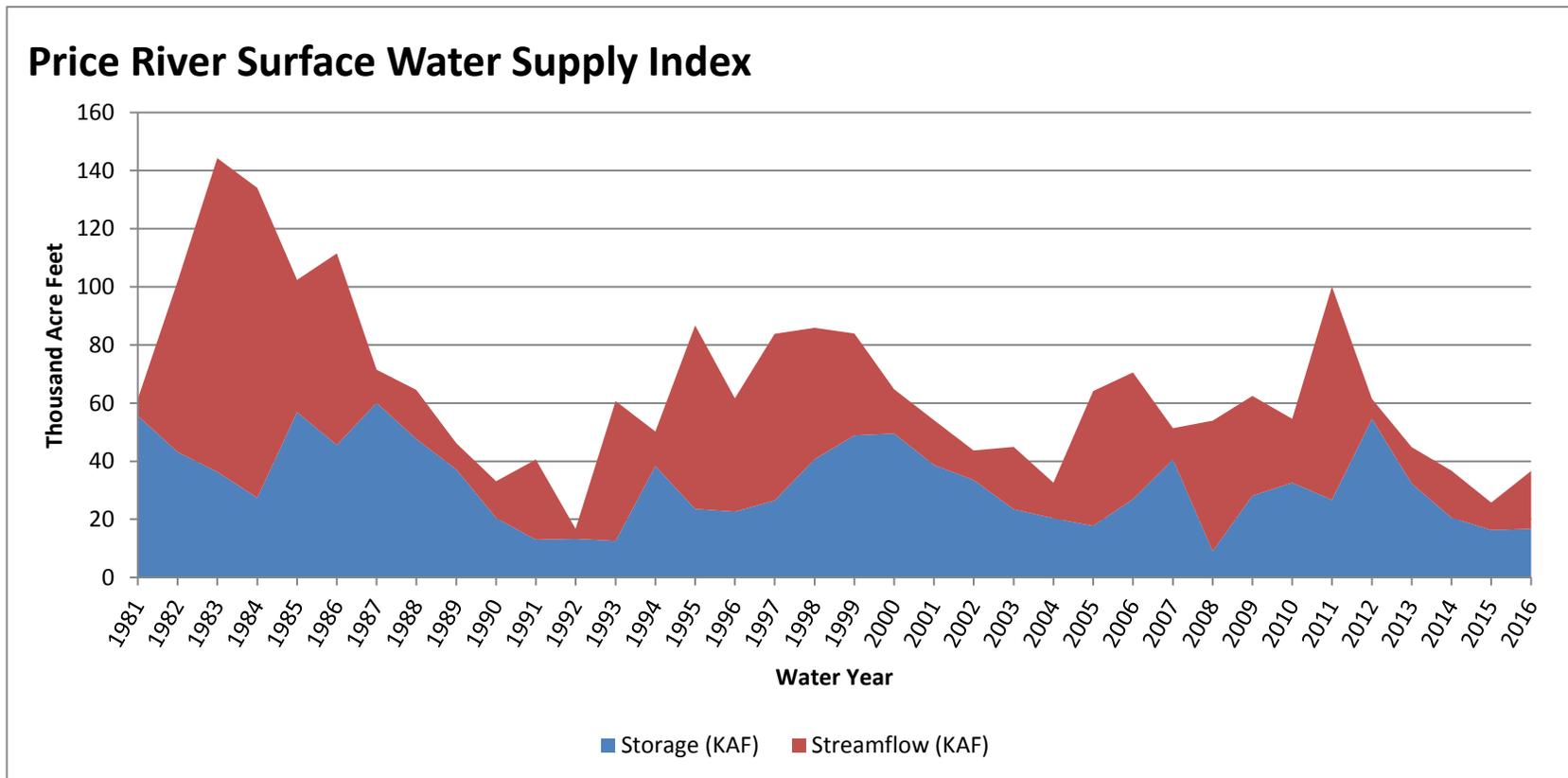
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Price	5	65%	0%
San Rafael	6	69%	39%

May 1, 2016

Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Price River	16.69	20.00	36.69	14	-3.04	04, 90, 14, 91

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.

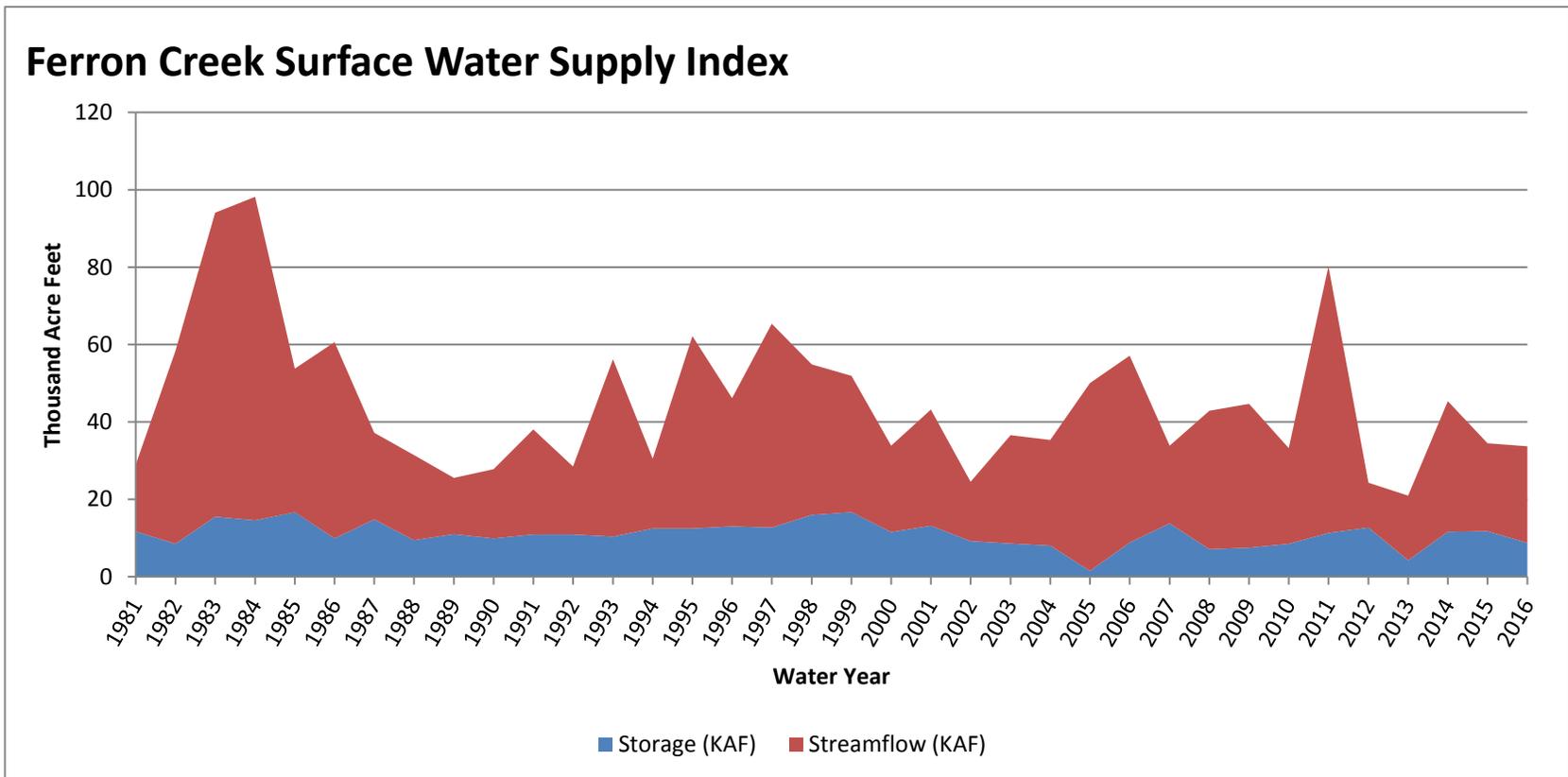


May 1, 2016

Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Ferron Creek	8.73	25.00	33.73	30	-1.69	88, 10, 00, 07

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.

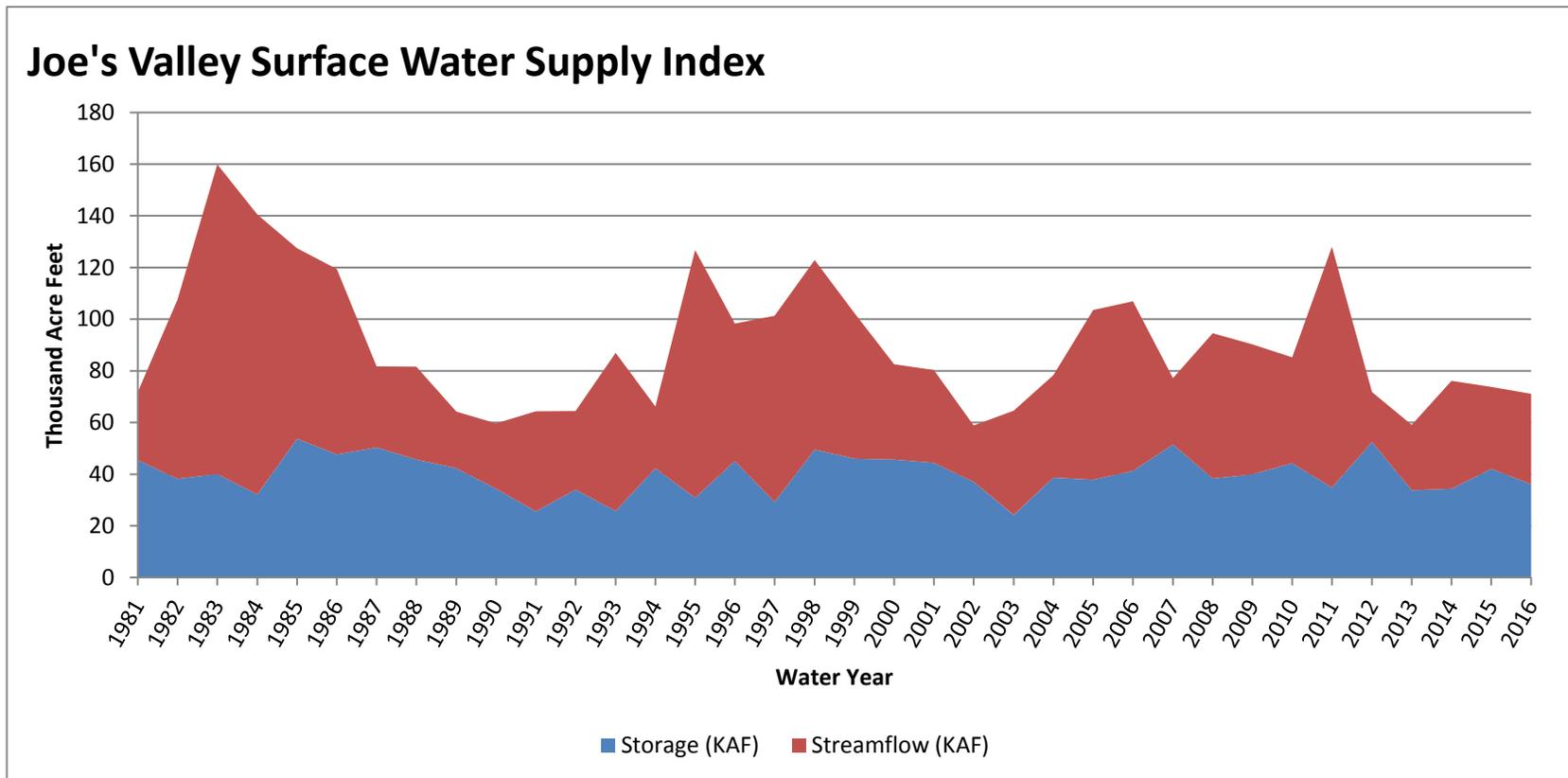


May 1, 2016

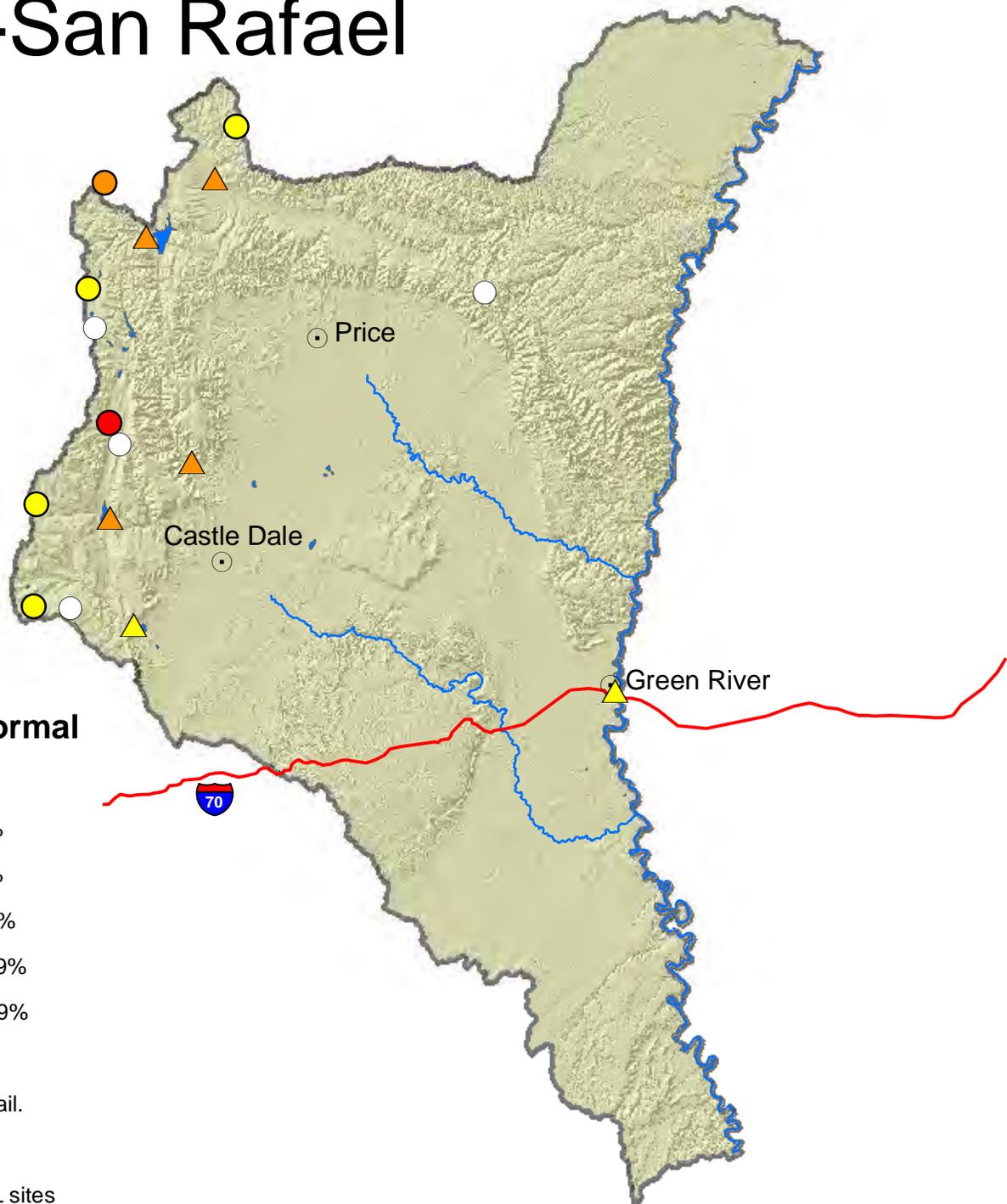
Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Joe's Valley	36.07	35.00	71.07	24	-2.14	03, 94, 81, 12

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



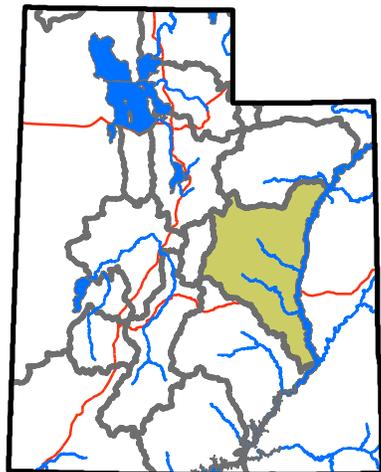
Price-San Rafael basin



Percent normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

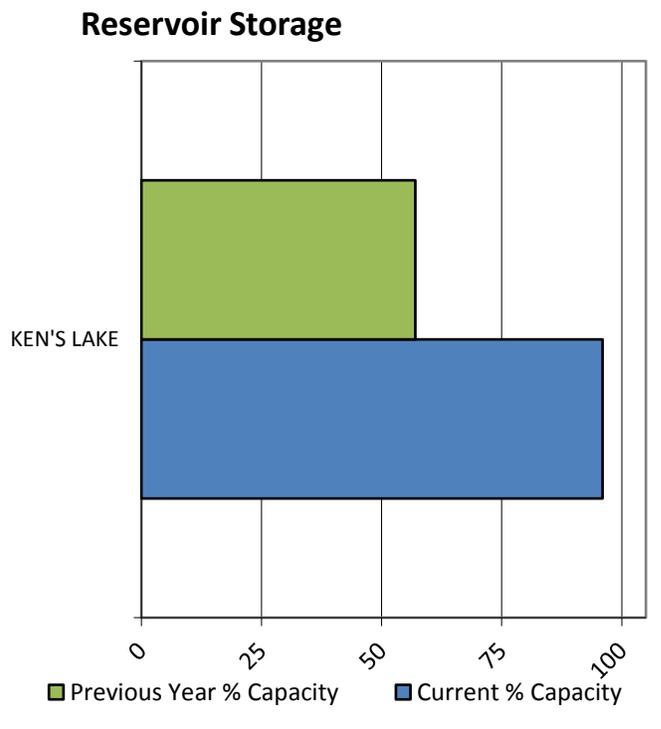
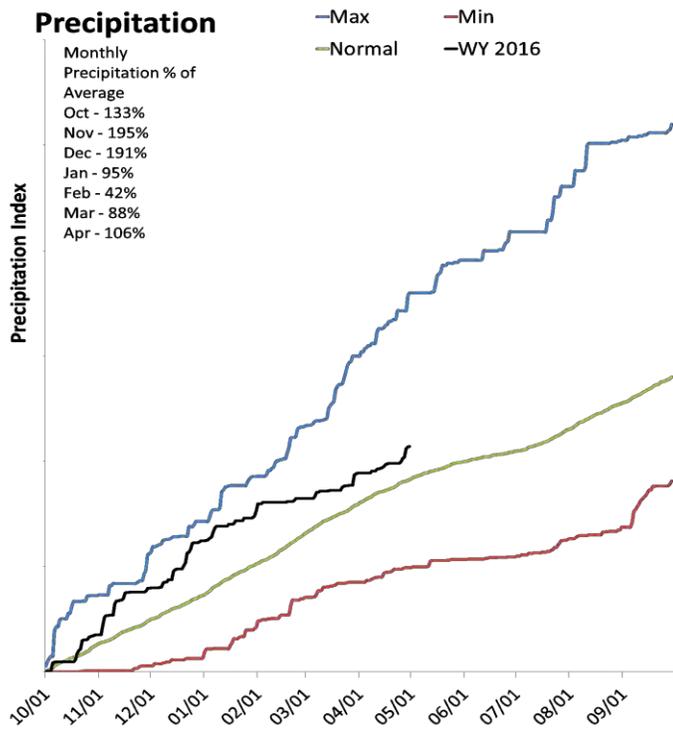
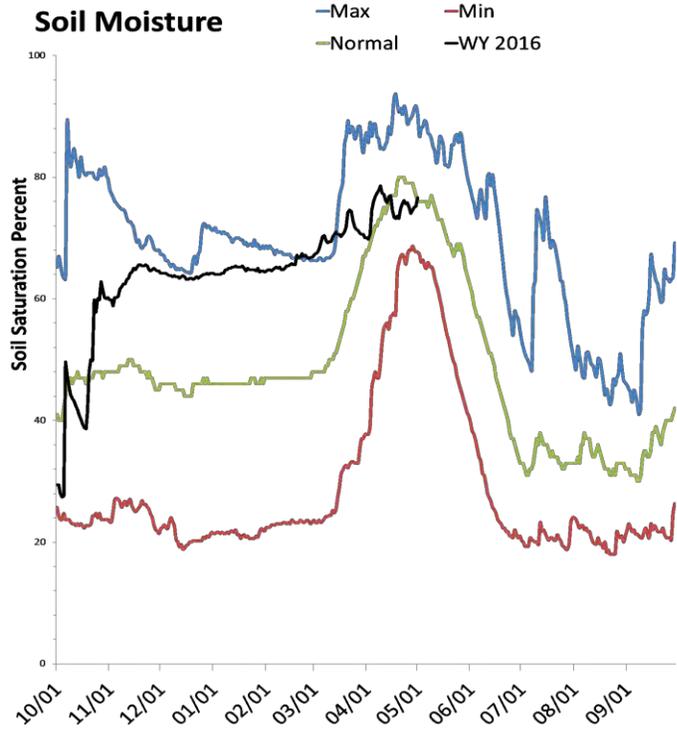
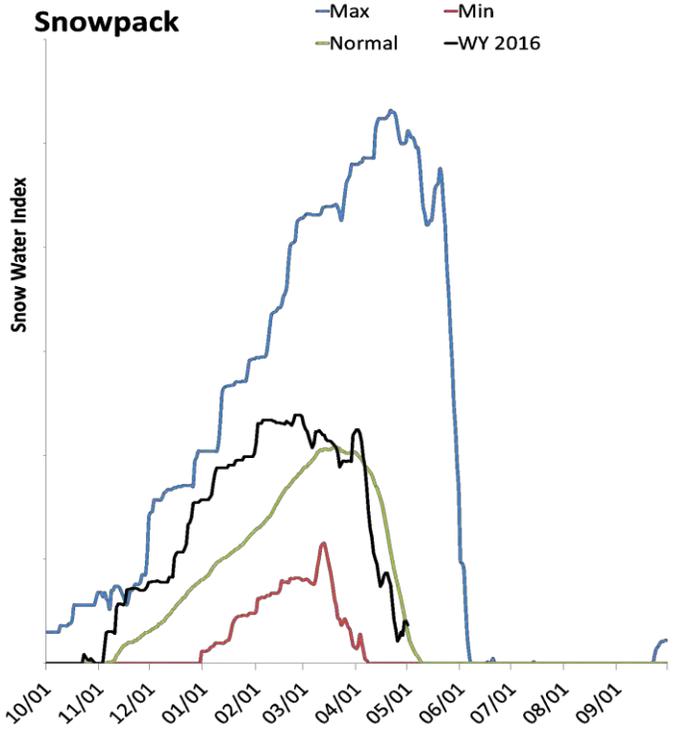
- SNOTEL sites
- Forecast points
- Rivers
- Highways
- Cities



Southeastern Utah Basin

5/1/2016

Snowpack in the Southeastern Utah Basin is above normal at 125% of normal, compared to 0% last year. Precipitation in April was near average at 104%, which brings the seasonal accumulation (Oct-Apr) to 117% of average. Soil moisture is at 85% compared to 74% last year. Reservoir storage is at 96% of capacity, compared to 57% last year. Forecast streamflow volumes range from 50% to 128% of average. The surface water supply index is 77% for Moab.



Southeastern Utah Streamflow Forecasts - May 1, 2016

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

Southeastern Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Mill Ck at Sheley Tunnel nr Moab	APR-JUL	4.1	4.9	5.5	128%	6.2	7.2	4.3
	MAY-JUL	3.1	3.9	4.5	122%	5.2	6.2	3.7
South Ck ab Resv nr Monticello	MAR-JUL	0.33	0.44	0.55	50%	0.68	0.93	1.09
	MAY-JUL	0.13	0.24	0.35	51%	0.48	0.73	0.69
Colorado R nr Cisco ²	APR-JUL	3000	3380	3660	86%	3960	4410	4280
	MAY-JUL	2490	2870	3150	85%	3450	3900	3720
San Juan R near Bluff ²	APR-JUL	590	690	760	69%	835	960	1100
	MAY-JUL	430	530	600	70%	675	800	855

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Ken's Lake	2.2	1.3	1.5	2.3
Basin-wide Total	2.2	1.3	1.5	2.3
# of reservoirs	1	1	1	1

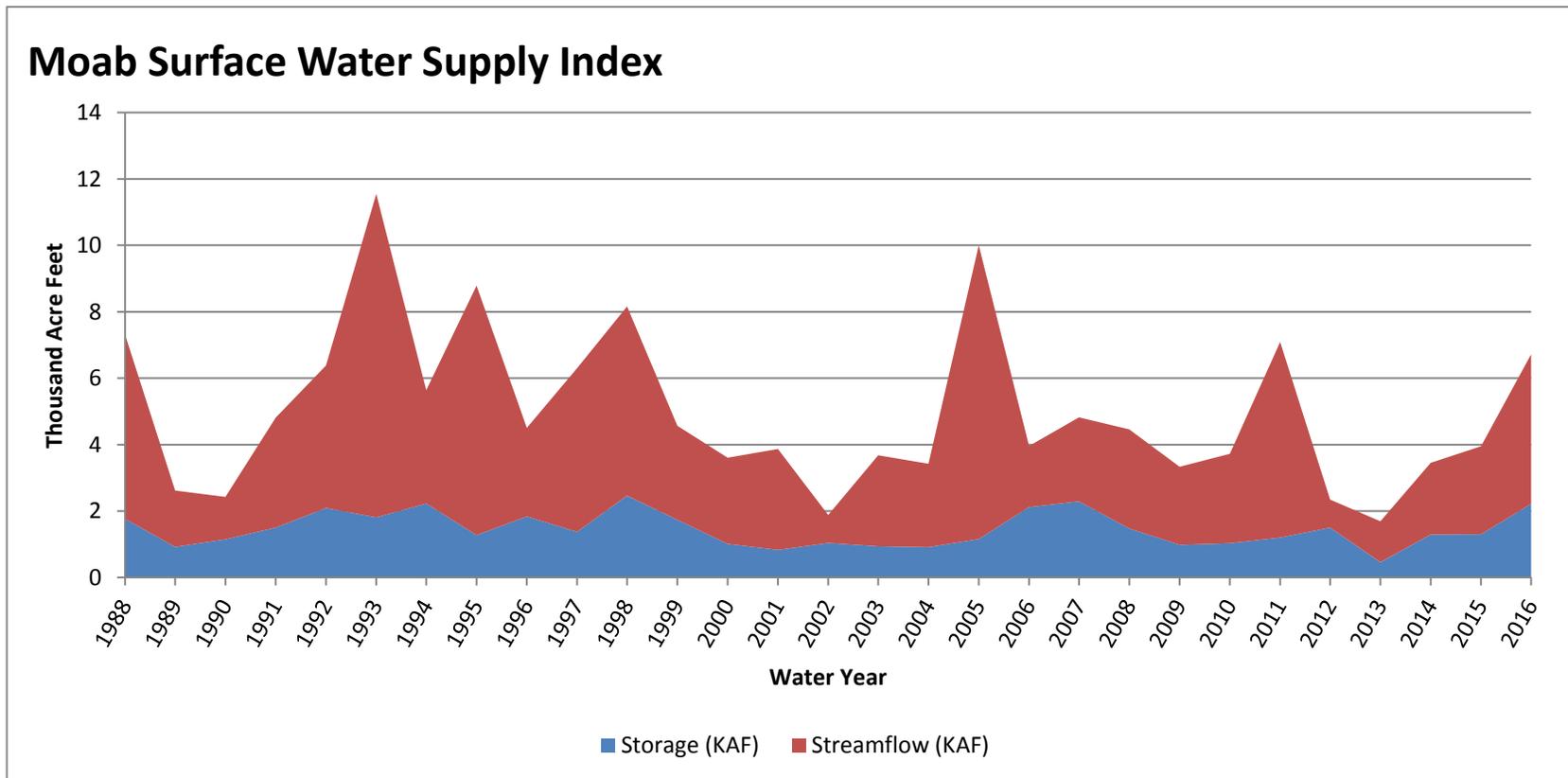
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Lasal Mtns	2	138%	0%
Lower San Juan	2	90%	0%
Lower Green	2	70%	0%

May 1, 2016

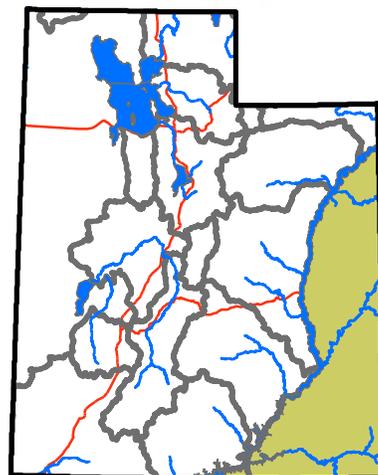
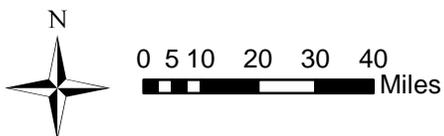
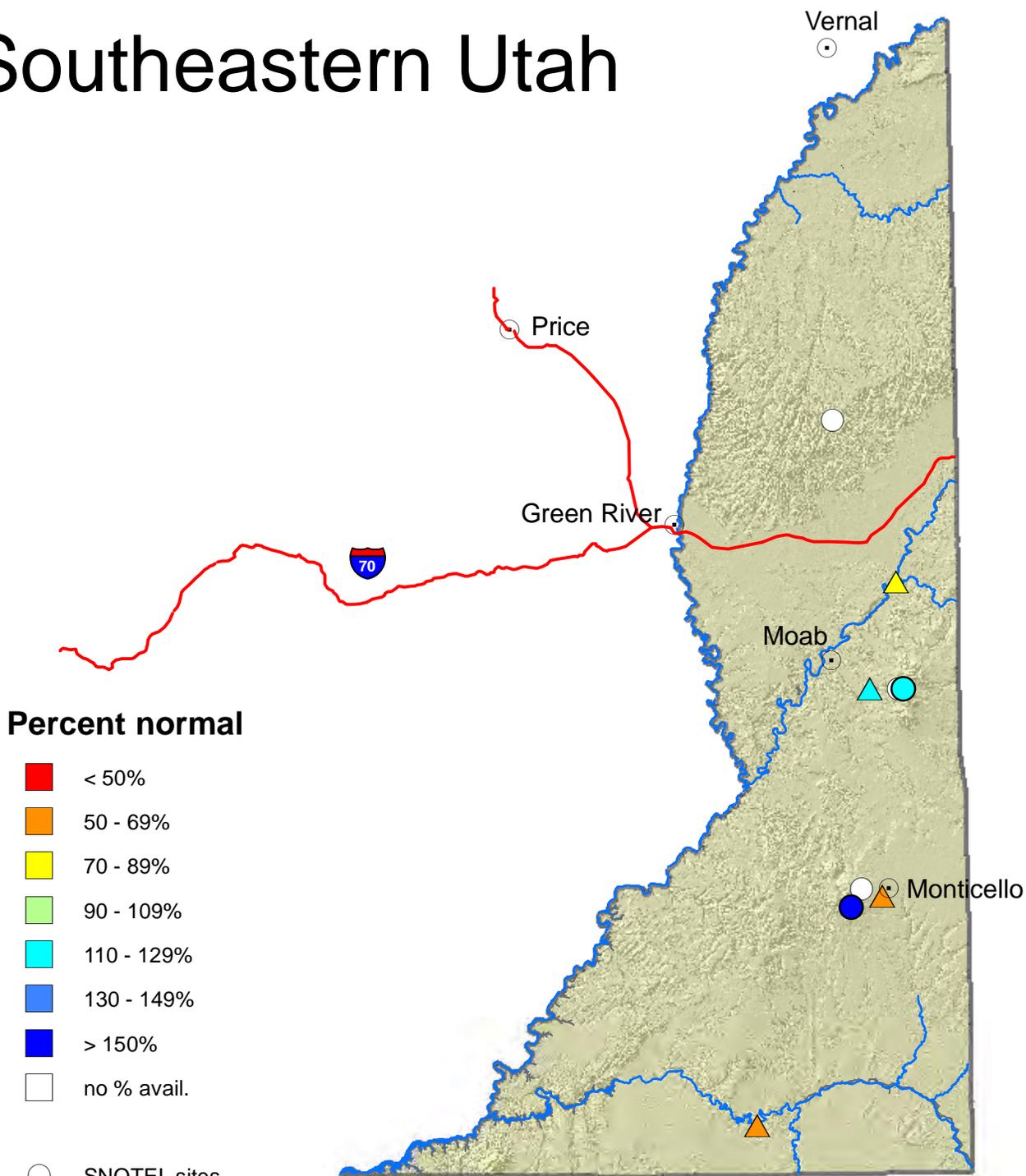
Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Moab	2.22	4.50	6.72	77	2.22	97, 92, 11, 88

^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



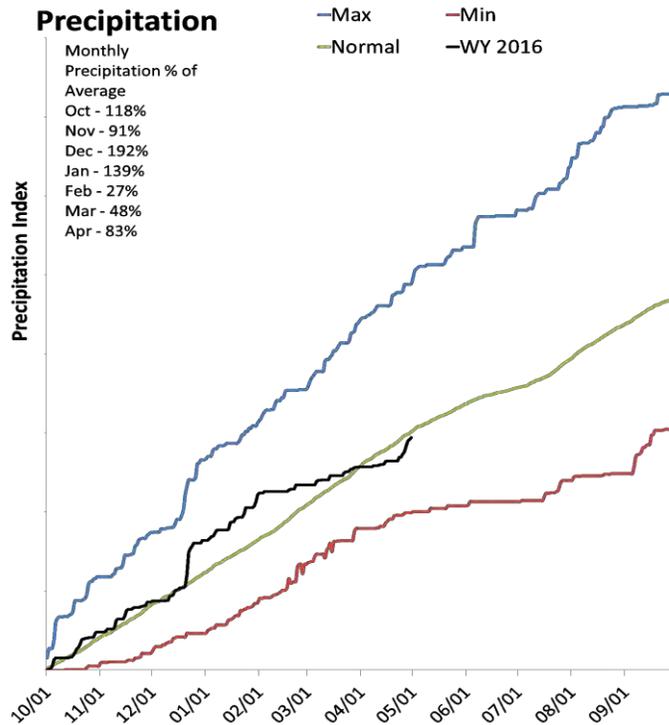
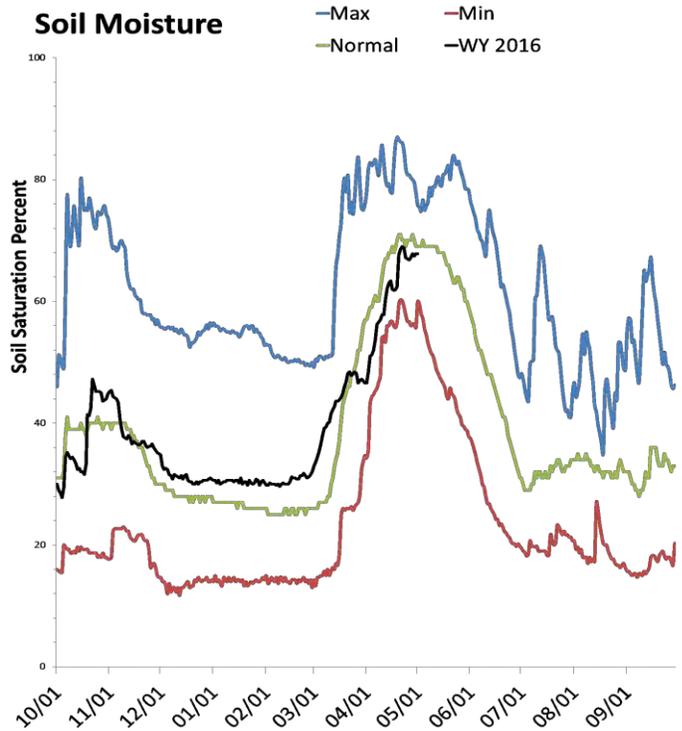
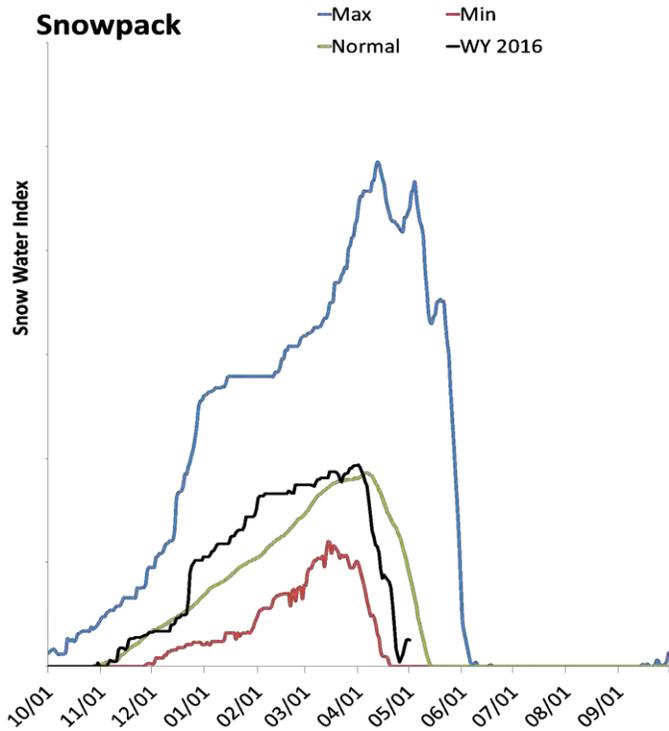
Southeastern Utah



Dirty Devil Basin

5/1/2016

Snowpack in the Dirty Devil Basin is much below normal at 29% of normal, compared to 4% last year. Precipitation in April was below average at 85%, which brings the seasonal accumulation (Oct-Apr) to 98% of average. Soil moisture is at 75% compared to 65% last year. Forecast streamflow volumes range from 72% to 96% of average.



Dirty Devil Streamflow Forecasts - May 1, 2016

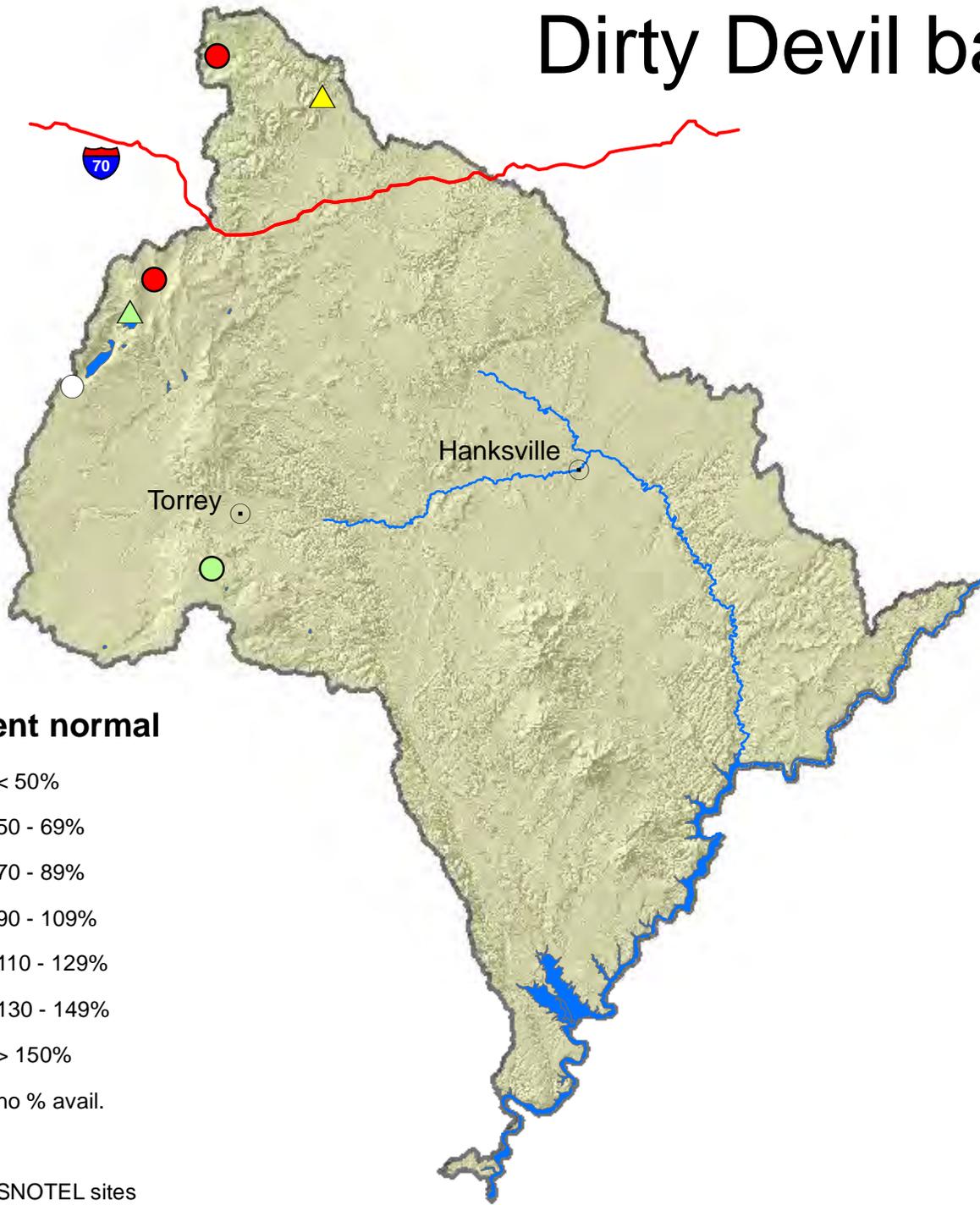
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Dirty Devil	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Muddy Ck nr Emery	APR-JUL	9.1	12	14.3	72%	16.8	21	19.9
	MAY-JUL	7.8	10.7	13	72%	15.5	19.5	18.1
Seven Mile Ck nr Fish Lake	APR-JUL	5.3	6.3	7	96%	7.8	9	7.3
	MAY-JUL	3.8	4.8	5.5	87%	6.3	7.5	6.3

- 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 May 1, 2016	# of Sites	% Median	Last Year % Median
Muddy	3	68%	12%
Fremont	3	91%	57%

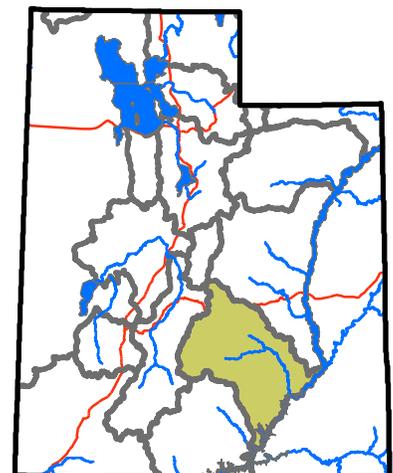
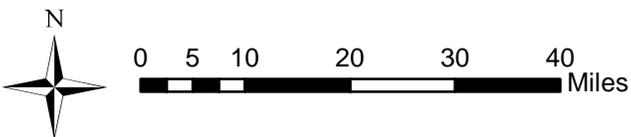
Dirty Devil basin



Percent normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

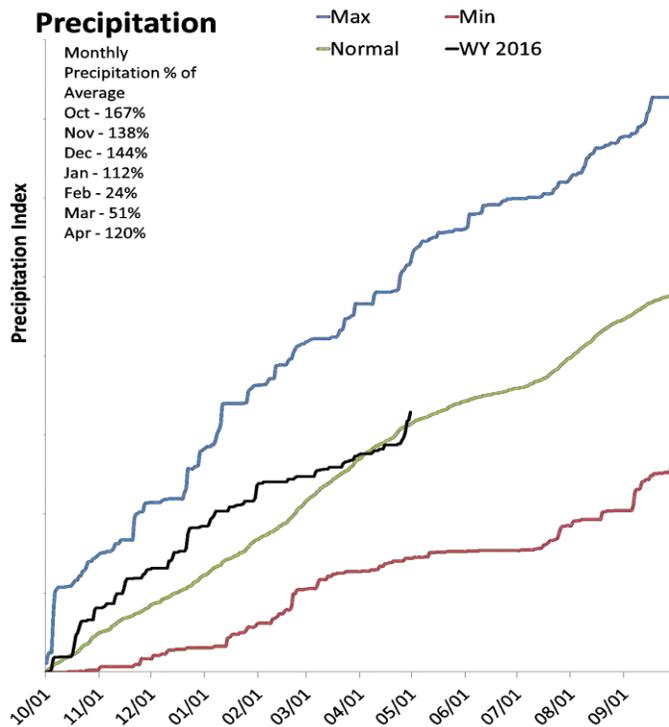
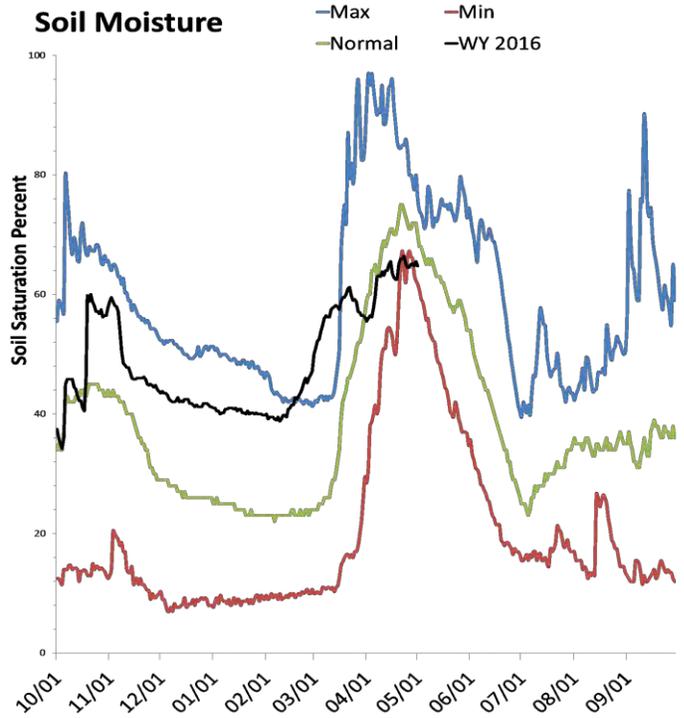
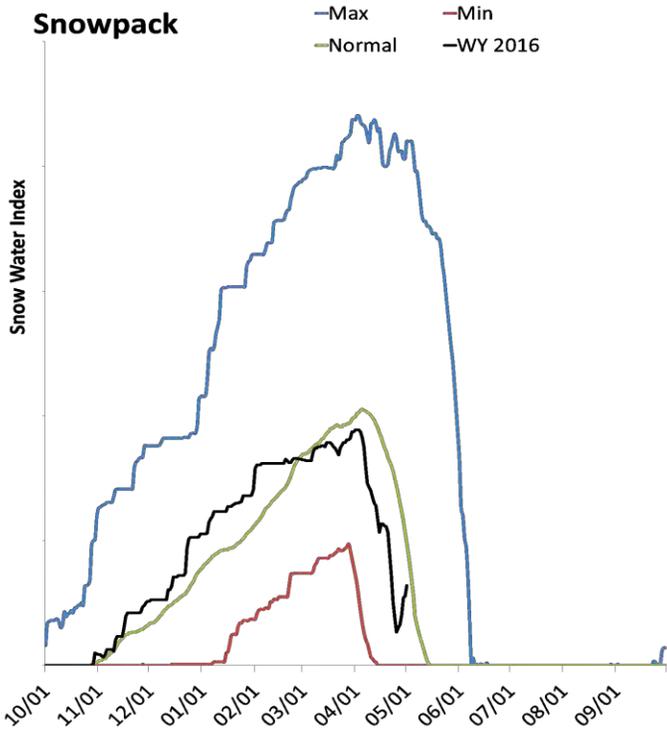
- SNOTEL sites
- △ Forecast points
- Rivers
- Highways
- Cities



Escalante River Basin

5/1/2016

Snowpack in the Escalante River Basin is much below normal at 65% of normal, compared to 21% last year. Precipitation in April was above average at 121%, which brings the seasonal accumulation (Oct-Apr) to 105% of average. Soil moisture is at 68% compared to 70% last year. The forecast streamflow volume for Pine Creek is 80% of average.



Escalante River Streamflow Forecasts - May 1, 2016

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

Escalante River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Pine Ck nr Escalante	APR-JUL	1.1	1.56	1.93	80%	2.3	3	2.4
	MAY-JUL	0.77	1.23	1.6	86%	2	2.7	1.86

- 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 May 1, 2016	# of Sites	% Median	Last Year % Median
Escalante	3	65%	21%
Paria	3	46%	31%

Escalante basin

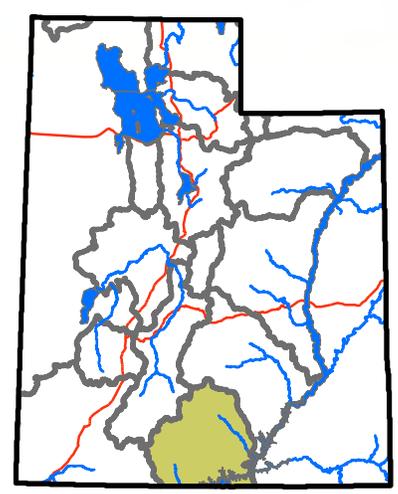


Percent normal

- | | |
|--|---|
| ■ < 50% | ○ SNOTEL sites |
| ■ 50 - 69% | △ Forecast points |
| ■ 70 - 89% | — Rivers |
| ■ 90 - 109% | — Highways |
| ■ 110 - 129% | ● Cities |
| ■ 130 - 149% | |
| ■ > 150% | |
| no % avail. | |



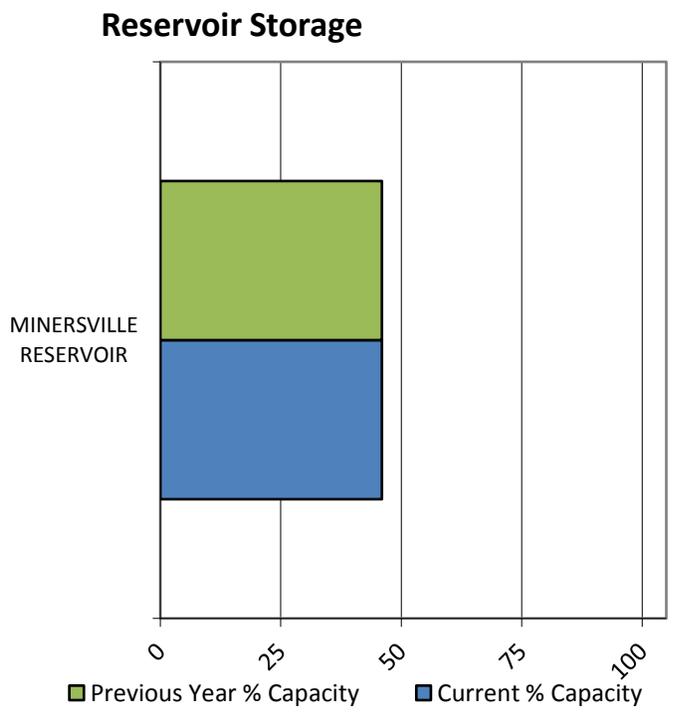
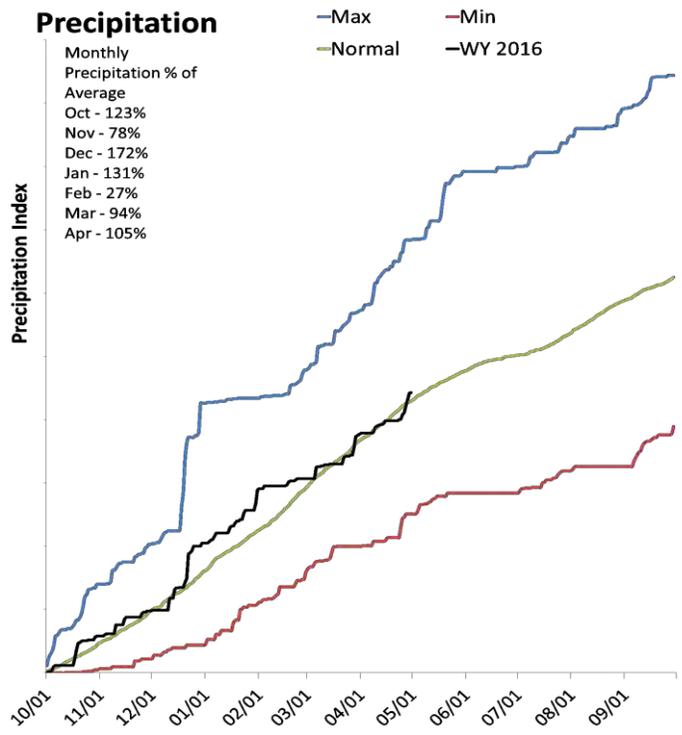
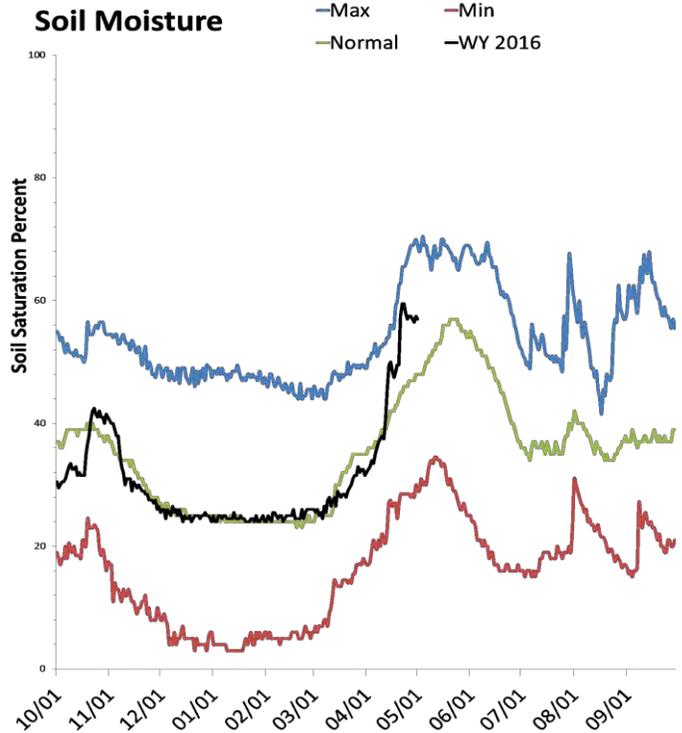
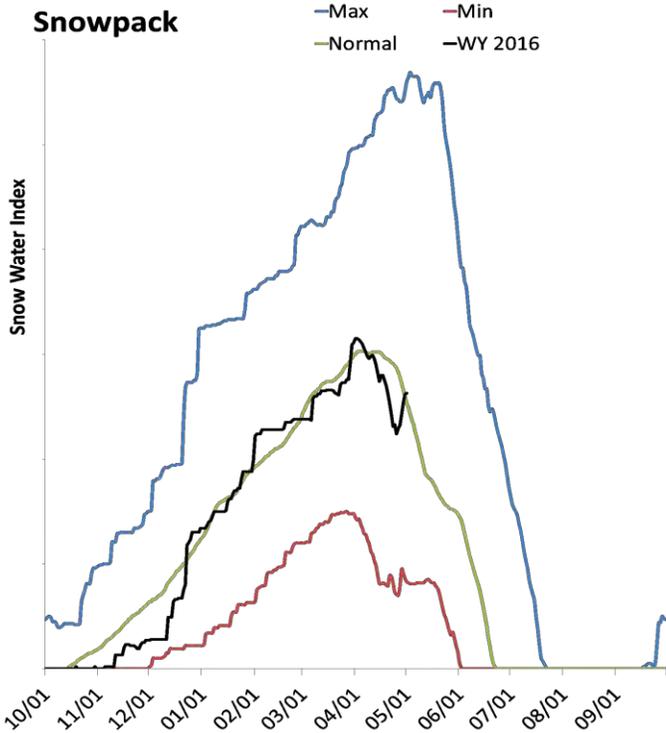
United States Department of Agriculture
 Natural Resources Conservation Service



Beaver River Basin

5/1/2016

Snowpack in the Beaver River Basin is near normal at 104% of normal, compared to 44% last year. Precipitation in April was near average at 105%, which brings the seasonal accumulation (Oct-Apr) to 103% of average. Soil moisture is at 58% compared to 63% last year. Reservoir storage is at 46% of capacity, compared to 46% last year. The forecast streamflow volume for the Beaver River is 73% of average. The surface water supply index is 38% for the Beaver River.



Beaver River Streamflow Forecasts - May 1, 2016

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

Beaver River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Beaver R nr Beaver	APR-JUL	7.2	14.2	19	73%	24	31	26
	MAY-JUL	3.7	11.6	17	74%	22	30	23

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Minersville Reservoir	10.6	10.7	16.5	23.3
Basin-wide Total	10.6	10.7	16.5	23.3
# of reservoirs	1	1	1	1

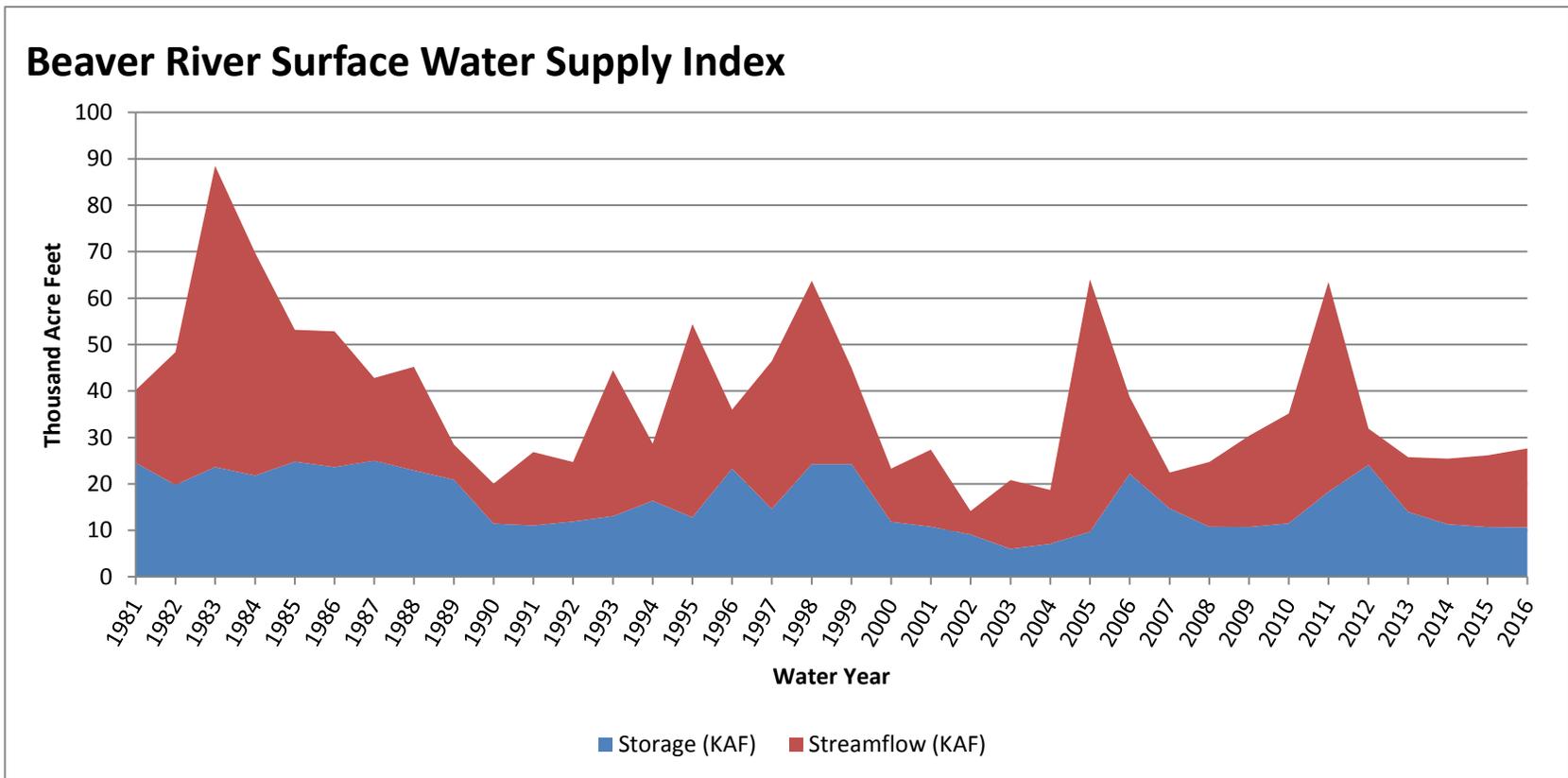
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Beaver	3	99%	30%

May 1, 2016

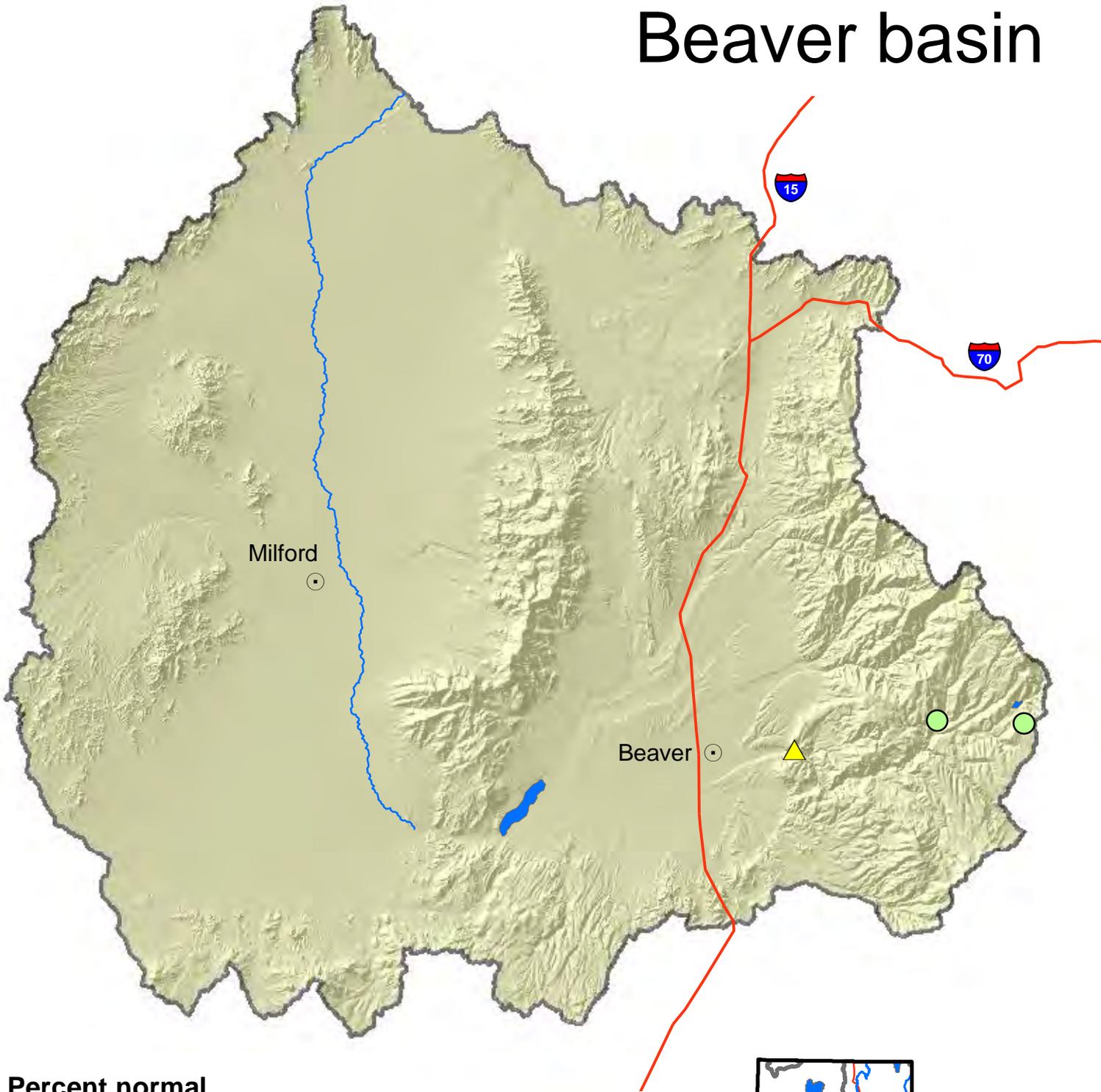
Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Beaver River	10.64	17.00	27.64	38	-1.01	91, 01, 89, 94

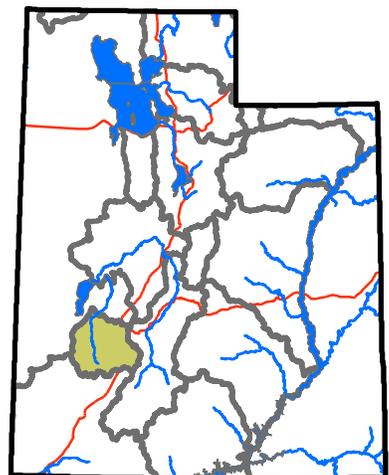
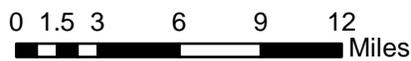
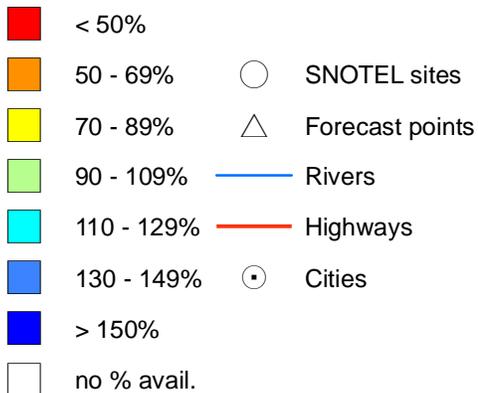
^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



Beaver basin



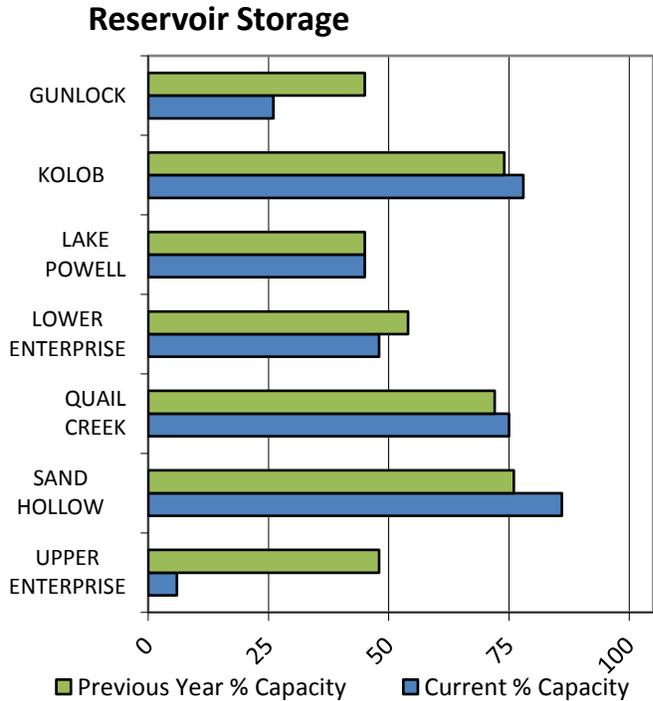
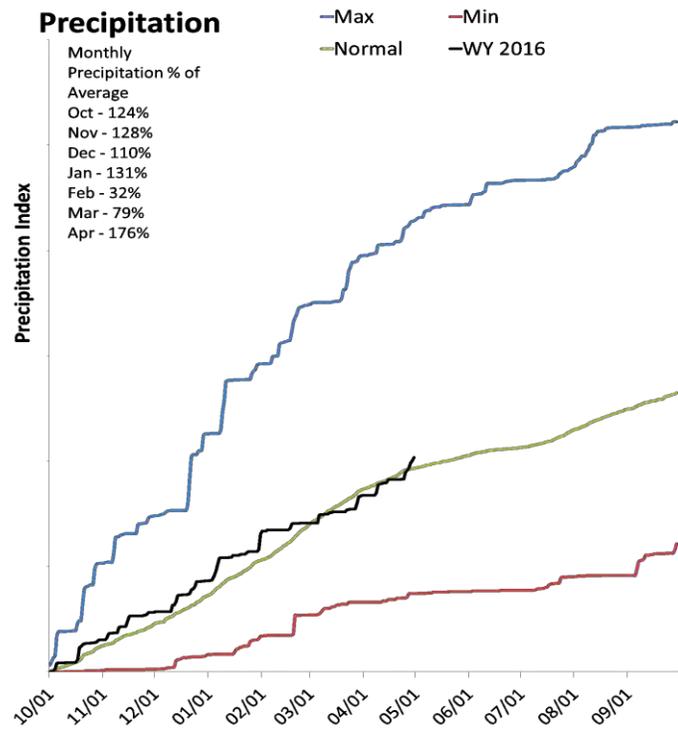
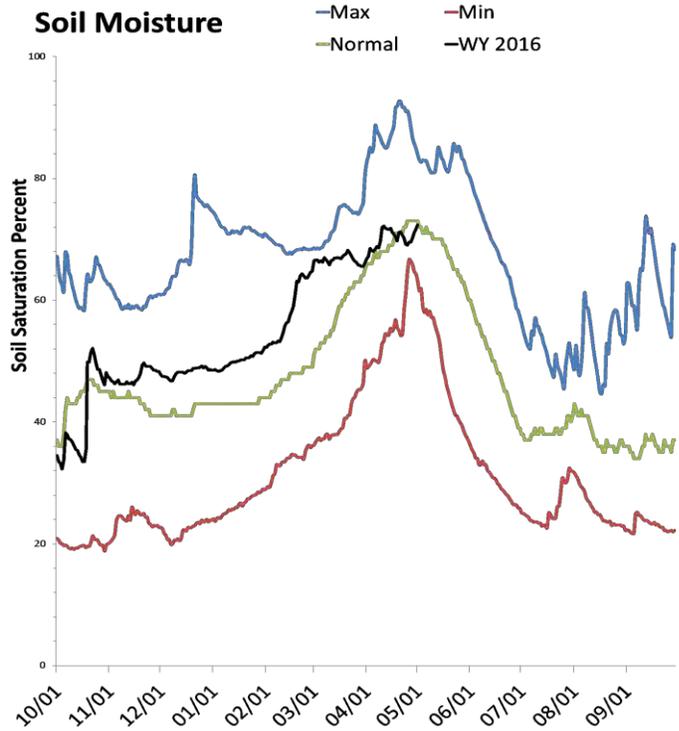
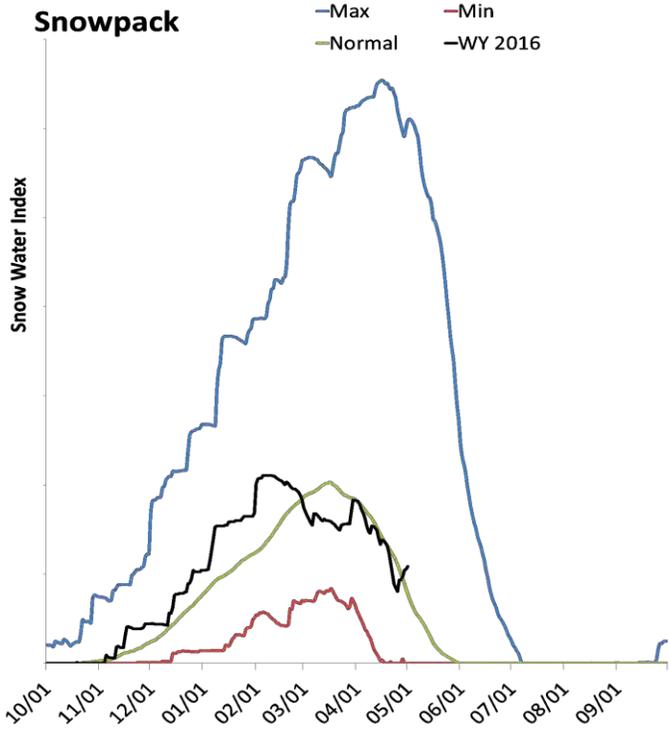
Percent normal



Southwestern Utah Basin

5/1/2016

Snowpack in the Southwestern Utah Basin is much above normal at 139% of normal, compared to 38% last year. Precipitation in April was much above average at 176%, which brings the seasonal accumulation (Oct-Apr) to 105% of average. Soil moisture is at 75% compared to 64% last year. Reservoir storage is at 45% of capacity, compared to 45% last year. Forecast streamflow volumes range from 68% to 102% of average. The surface water supply index is 52% for the Virgin River.



Southwestern Utah Streamflow Forecasts - May 1, 2016

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

Southwestern Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Lake Powell Inflow ²	APR-JUL	4250	4970	5500	77%	6060	6950	7160
	MAY-JUL	3440	4160	4690	77%	5250	6140	6100
Virgin R nr Hurricane	APR-JUL	30	37	43	68%	49	58	63
	MAY-JUL	20	27	33	80%	39	48	41
Virgin R at Virgin	APR-JUL	42	47	51	88%	55	61	58
	MAY-JUL	24	29	33	87%	37	43	38
Santa Clara R nr Pine Valley	APR-JUL	2.9	3.5	4	80%	4.4	5.2	5
	MAY-JUL	1.94	2.5	3	75%	3.4	4.2	4
Coal Ck nr Cedar City	APR-JUL	15.9	17.7	19	102%	20	22	18.6
	MAY-JUL	10.8	13.3	15	101%	16.7	19.2	14.9

- 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 April, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Powell	10985.2	10836.8	17123.0	24322.0
Lower Enterprise	1.3	1.4	1.4	2.6
Upper Enterprise	0.6	4.8	5.0	10.0
Kolob Reservoir	4.4	4.2		5.6
Gunlock	2.7	4.7	6.8	10.4
Sand Hollow Reservoir	42.9	37.9		50.0
Quail Creek	30.1	28.9	31.6	40.0
Basin-wide Total	11019.9	10876.6	17167.8	24385.0
# of reservoirs	5	5	5	5

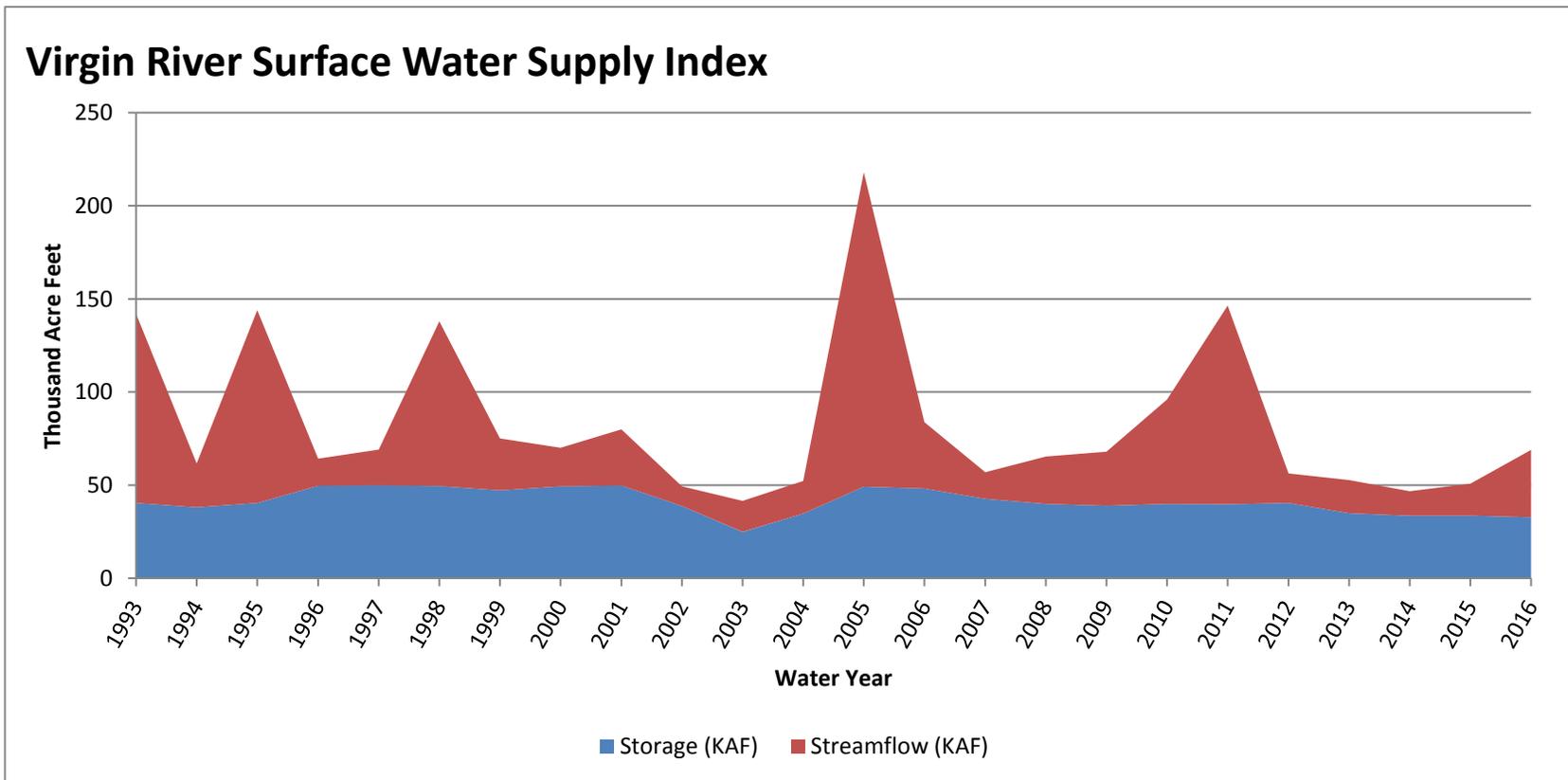
Watershed Snowpack Analysis May 1, 2016	# of Sites	% Median	Last Year % Median
Upper Virgin	8	133%	42%
Lower Virgin	2		
Cedar City Parowan	9	112%	38%

May 1, 2016

Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Virgin River	32.87	36.00	68.87	52	0.17	08, 09, 97, 00

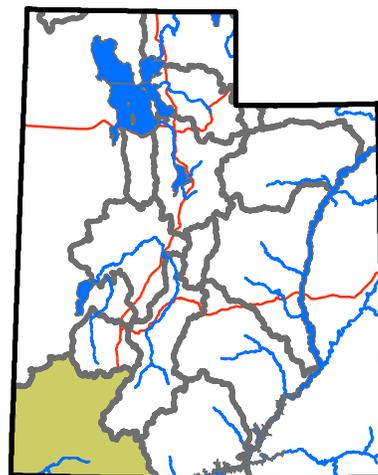
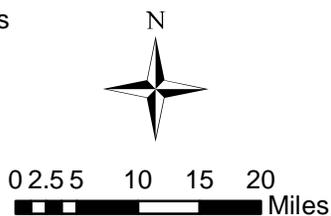
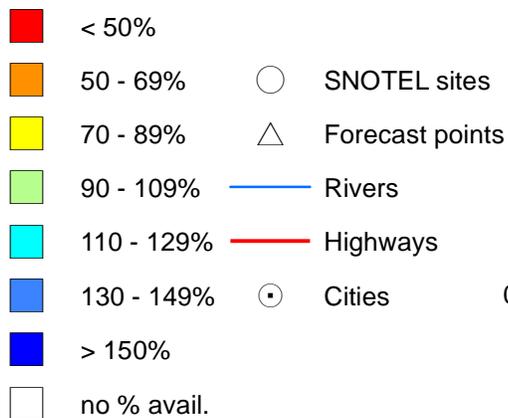
^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



Southwestern Utah



Percent normal



May 1, 2016

Surface Water Supply Index

Basin or Region	Apr EOM [*] Storage <i>KAF</i> [^]	MAY-JUL Forecast <i>KAF</i> [^]	Storage + Forecast <i>KAF</i> [^]	Percentile %	SWSI [#]	Years with similar SWSI
Bear River	555.9	86.0	641.9	41	-0.79	07, 10, 90, 15
Woodruff Narrows	57.4	88.0	145.4	51	0.11	87, 81, 08, 10
Little Bear	13.2	20.0	33.2	48	-0.17	14, 02, 10, 08
Ogden River	109.5	40.0	149.5	57	0.56	94, 10, 89, 85
Weber River	293.6	170.0	463.6	46	-0.34	12, 00, 94, 08
Provo River	809.6	69.0	878.6	4	-3.8	04, 03, 15, 14
Western Uintah	188.3	88.0	276.3	73	1.91	93, 96, 98, 87
Eastern Uintah	40.0	66.8	106.8	57	0.56	08, 82, 10, 09
Blacks Fork	14.0	90.0	104.0	53	0.25	15, 08, 97, 87
Smiths Fork	7.6	28.0	35.6	71	1.72	10, 05, 96, 87
Price River	16.7	20.0	36.7	14	-3.04	04, 90, 14, 91
Joe's Valley	36.1	35.0	71.1	24	-2.14	03, 94, 81, 12
Ferron Creek	8.7	25.0	33.7	30	-1.69	88, 10, 00, 07
Moab	2.2	4.5	6.7	77	2.22	97, 92, 11, 88
Upper Sevier	78.0	50.0	128.0	35	-1.24	02, 13, 89, 07
San Pitch	1.0	12.0	13.0	8	-3.49	15, 02, 14, 92
Lower Sevier	164.6	77.0	241.6	54	0.34	88, 00, 12, 81
Beaver River	10.6	17.0	27.6	38	-1.01	91, 01, 89, 94
Virgin River	32.9	36.0	68.9	52	0.17	08, 09, 97, 00

^{*}EOM, end of month; [#]SWSI, surface water supply index; [^]KAF, thousand acre-feet.

What is a Surface Water Supply Index?

The Surface Water Supply Index (SWSI) is a predictive indicator of total surface water availability within a watershed for the spring and summer water use seasons. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow which are based on current snowpack and other hydrologic variables. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry) with a value of zero (0) indicating median water supply as compared to historical analysis. SWSI's are calculated in this fashion to be consistent with other hydroclimatic indicators such as the Palmer Drought Index and the Precipitation index.

Utah Snow Surveys has also chosen to display the SWSI value as well as a PERCENT CHANCE OF NON-EXCEEDANCE. While this is a cumbersome name, it has the simplest application. It can be best thought of as a scale of 1 to 99 with 1 being the drought of record (driest possible conditions) and 99 being the flood of record (wettest possible conditions) and a value of 50 representing average conditions. This rating scale is a percentile rating as well, for example a SWSI of 75% means that this years water supply is greater than 75% of all historical events and that only 25% of the time has it been exceeded. Conversely a SWSI of 10% means that 90% of historical events have been greater than this one and that only 10% have had less total water supply. This scale is comparable between basins: a SWSI of 50% means the same relative ranking on watershed A as it does on watershed B, which may not be strictly true of the +4 to -4 scale.

For more information on the SWSI go to: www.ut.nrcs.usda.gov/snow/ on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

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YOU MAY OBTAIN THIS PRODUCT AS WELL AS CURRENT SNOW, PRECIPITATION, TEMPERATURE AND SOIL MOISTURE, RESERVOIR, SURFACE WATER SUPPLY INDEX, AND OTHER DATA BY VISITING OUR WEB SITE @: <http://www.ut.nracs.usda.gov/snow/>

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