NRCS
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Utah Water Supply Outlook Report

February, 2016

12 Mile Canyon near Mt Baldy
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.

STATE OF UTAH GENERAL OUTLOOK
February 1, 2016

SUMMARY

Half of the typical December through March snow accumulation is now in the bag and descriptors like – "cautiously optimistic, don't jinx it, looking really good, knock on wood" and the like are popping out all over. After four consecutive drought years coupled with last year's record low snows, 2016 with average snow in the north and what could be a monster year in the south is looking like a princess at the ball. Should February and March continue current storm patterns, spring runoff should be average and above for the first time since 2011. The current El Nino is pretty much behaving as predicted regarding snow accumulation in Utah – big in the south and less in the north. Currently the Bear, Weber, Provo and Duchesne are all near average. Snowpacks in southern Utah, basically south of highway 6 range from near 110% to 175% of median. Some basins in southern Utah like the upper Sevier and the southeast currently have sufficient snowpack that if conditions were to go dry, would still end up average or above on April 1. That's a nice position to be in – substantially ahead at halftime and only a complete melt down (pun intended – apology extended) could mess it up. There are two months remaining in the snow accumulation season and any outcome is still possible but there is a lot of optimism in the water management arena. Soil moisture conditions are below to near average in northern Utah and well above normal in the south. With average snow and below normal soil moisture, runoff in northern Utah is expected to be a little below average. Above normal soil moisture in southern Utah will likely give a higher runoff efficiency. Reservoir storage continues to incrementally improve, currently 54% of capacity compared to 61% last year. Surface Water Supply indexes are mostly near average across the state. Overall, the water supply outlook is near average in the north and near to much above average in the south. There can be some potential in El Nino years for above or much above average late winter and spring precipitation, especially in the south. Should that occur, southern Utah could have an exceptional water year. While it is still early, water managers in southern Utah should be aware of that potential and consider appropriate preliminary preparations.

SNOWPACK
February first snow packs as measured by the NRCS SNOTEL system in northern Utah range from range from 95% to 125% of median. In southern Utah snowpacks range from about 110% to 175% of median. Last year most snowpacks were in the 70% to 90% range so current conditions are a substantial improvement over last year and all years since 2011.

PRECIPITATION
Mountain precipitation during January was near to much above average across the state ranging from 90% on the Duchesne to 138% on the Dirty Devil. In southeastern Utah, most areas are in the 100% to 130% range. This brings the statewide seasonal accumulation (Oct-Jan) to 103% of normal.

SOIL MOISTURE
Soil Moisture is close to what it was last month, characteristic of winter trends. Soil Moisture is below normal on the Weber and Provo and near to above average elsewhere across the state.

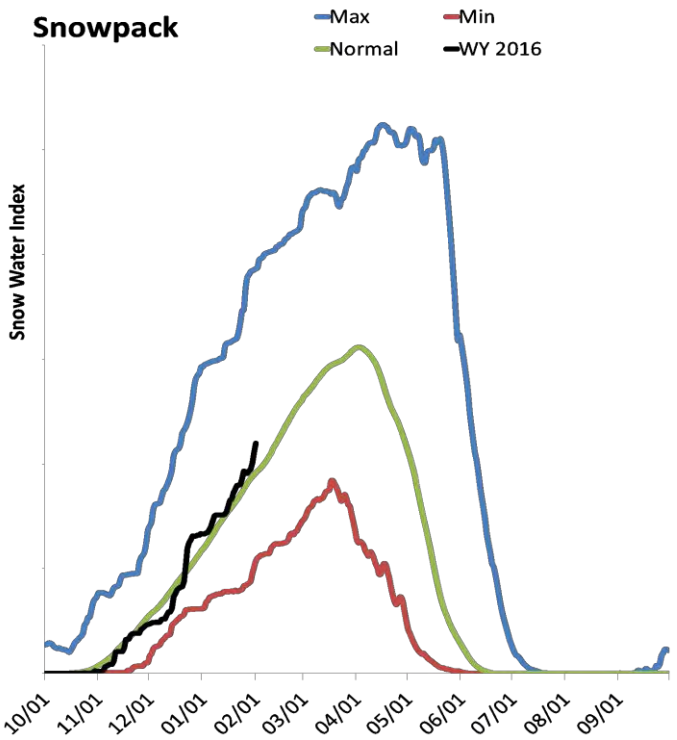
RESERVOIRS
Storage in 46 of Utah's key irrigation reservoirs is at 54% of capacity compared to 61% last year.

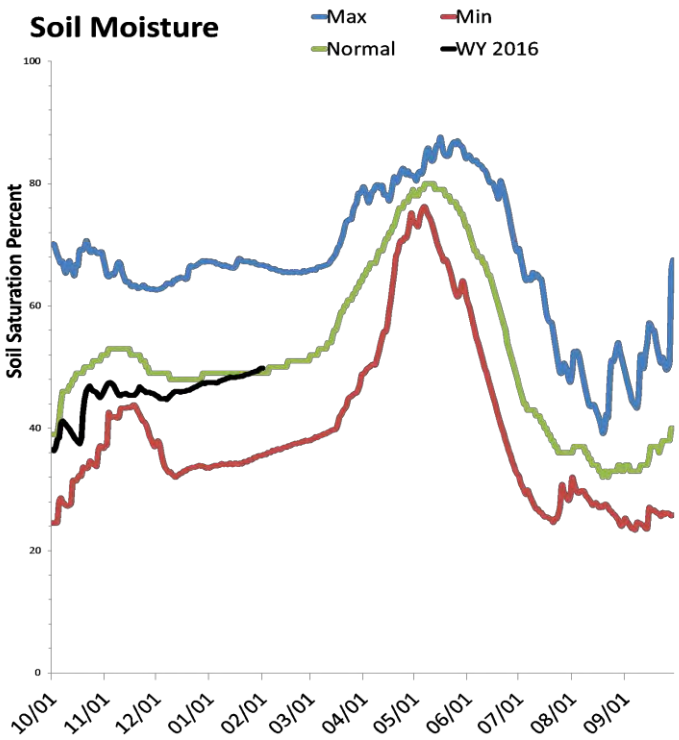
STREAMFLOW
Snowmelt stream flows are forecast to be below to near normal in northern Utah and near to much above normal in southern Utah. Most flows are forecast to be in the 85% to 120% range.

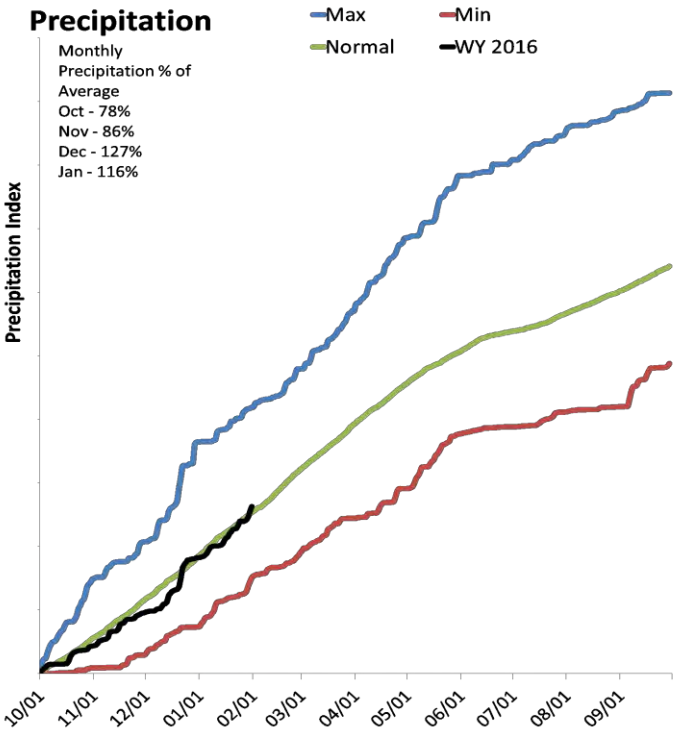
Statewide Utah

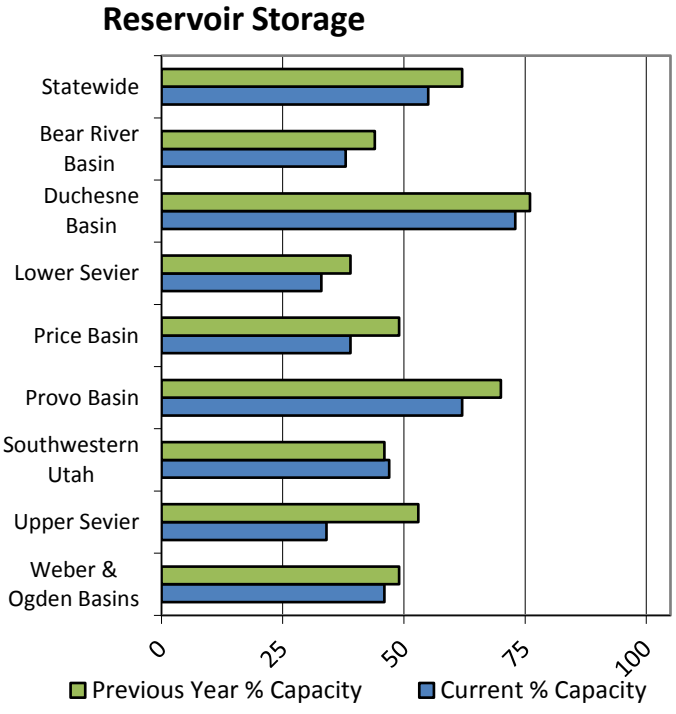
2/1/2016

Snowpack in Utah is above normal at 115% of normal, compared to 84% last year. Precipitation in January was above average at 116%, which brings the seasonal accumulation (Oct-Jan) to 104% of average. Soil moisture is at 51% compared to 55% last year. Reservoir storage is at 55% of capacity, compared to 62% last year. Forecast streamflow volumes range from 71% to 186% of average.



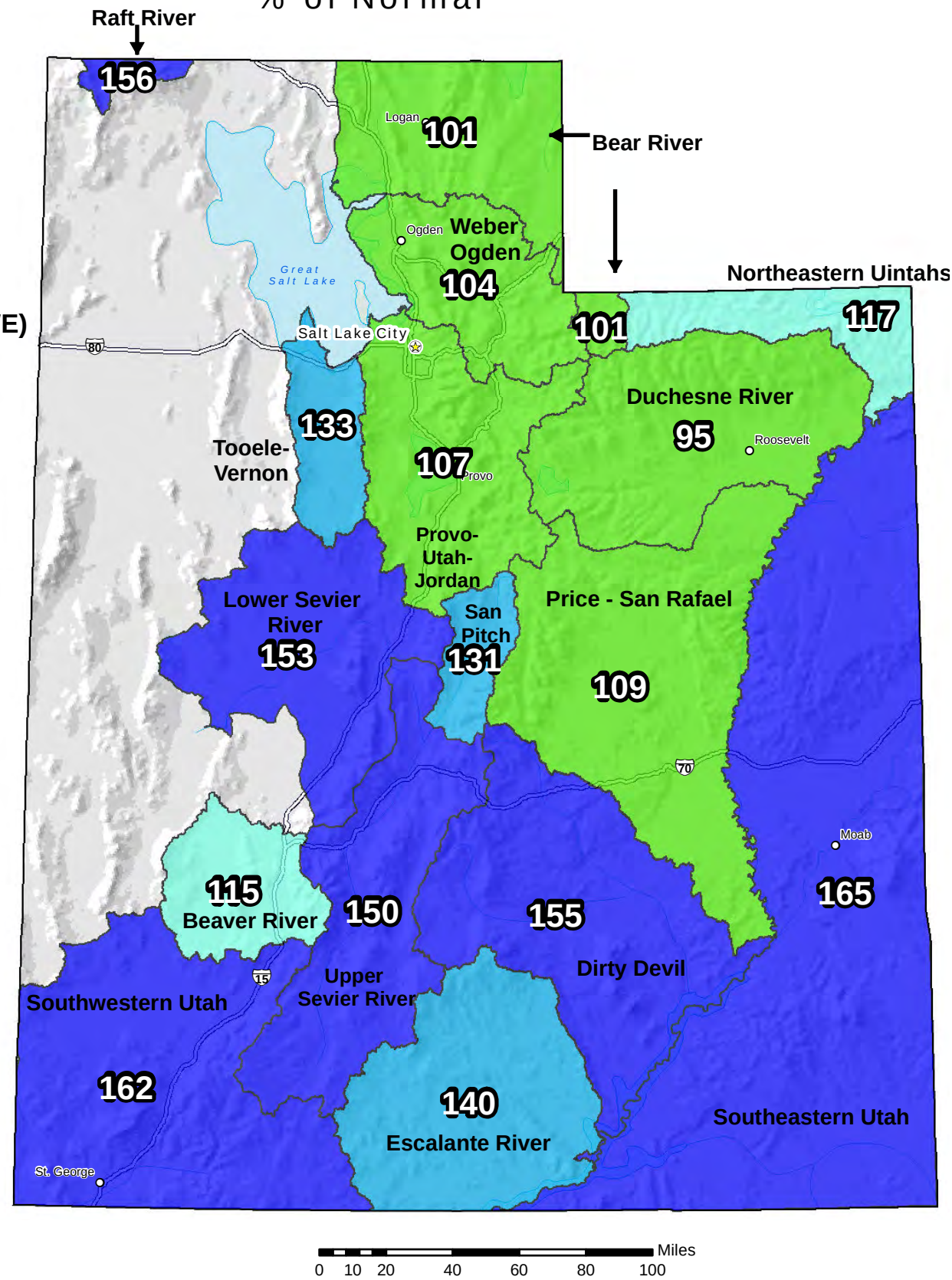






Utah
SNOTEL Current Snow Water Equivalent (SWE)
% of Normal

Feb 01, 2016



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

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

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

Provisional Data Subject to Revision

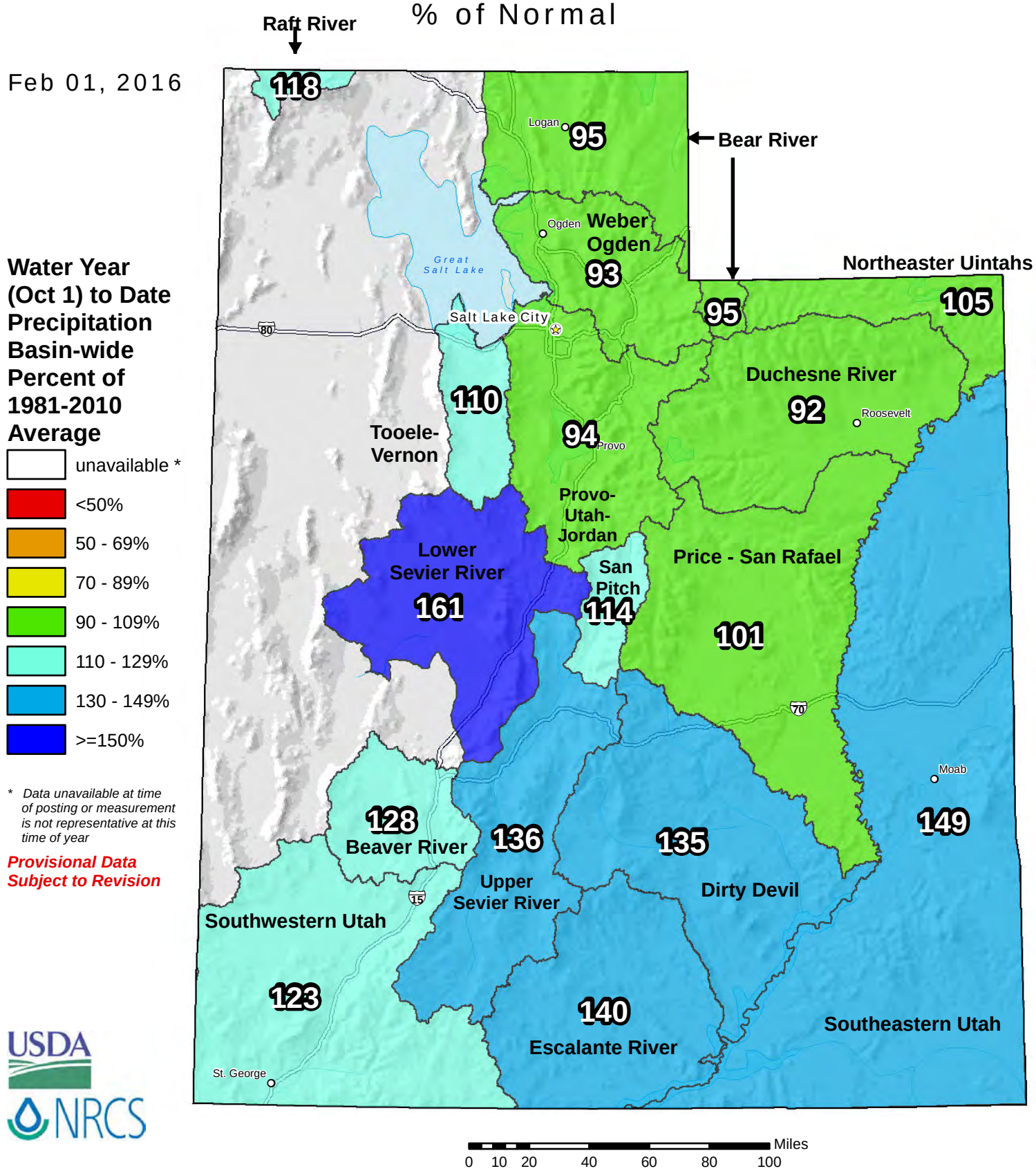
USDA NRCS

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

Feb 01, 2016



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

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

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

Provisional Data Subject to Revision

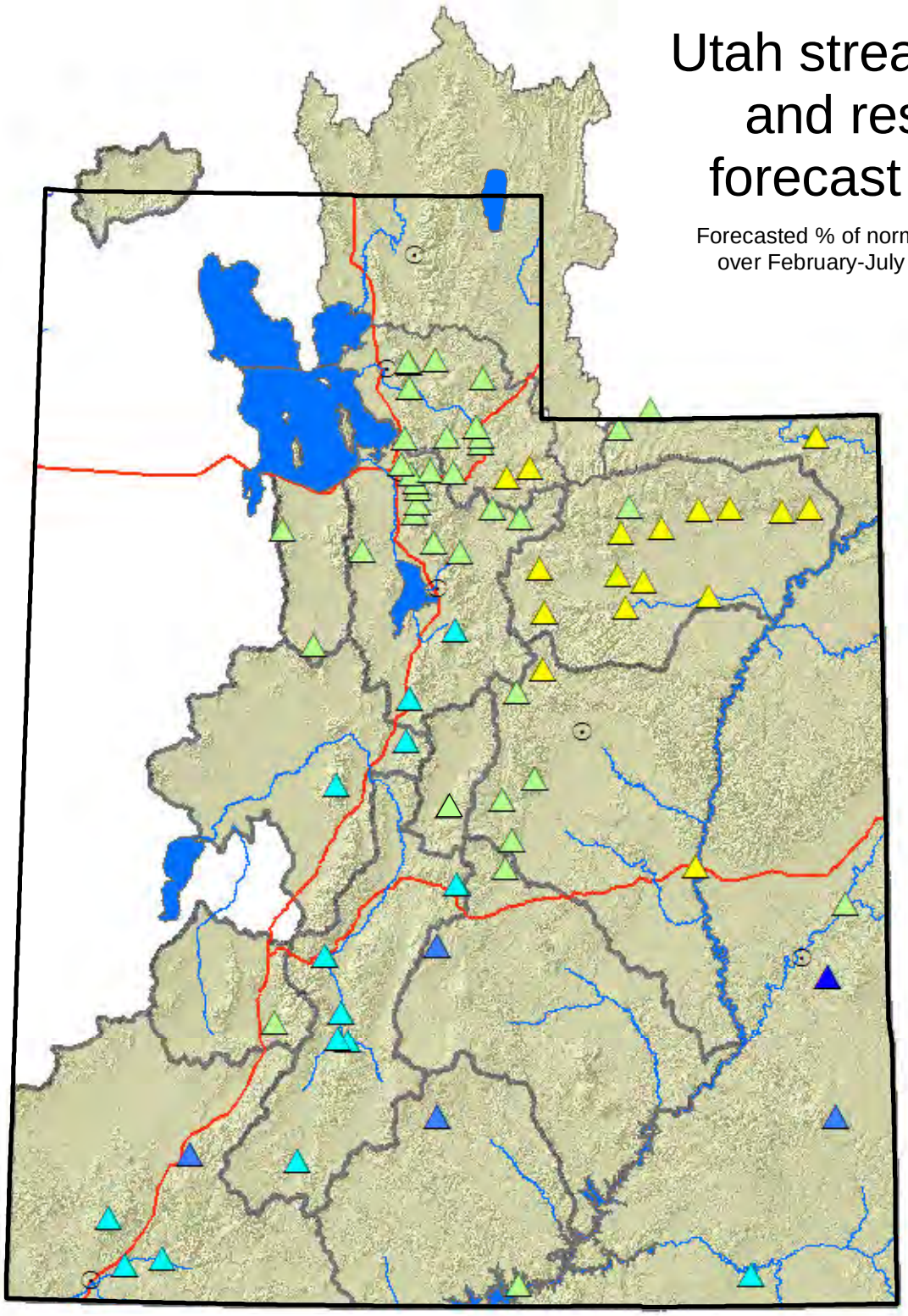
USDA NRCS

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

Utah streamflow and reservoir forecast points

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



Percent normal

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

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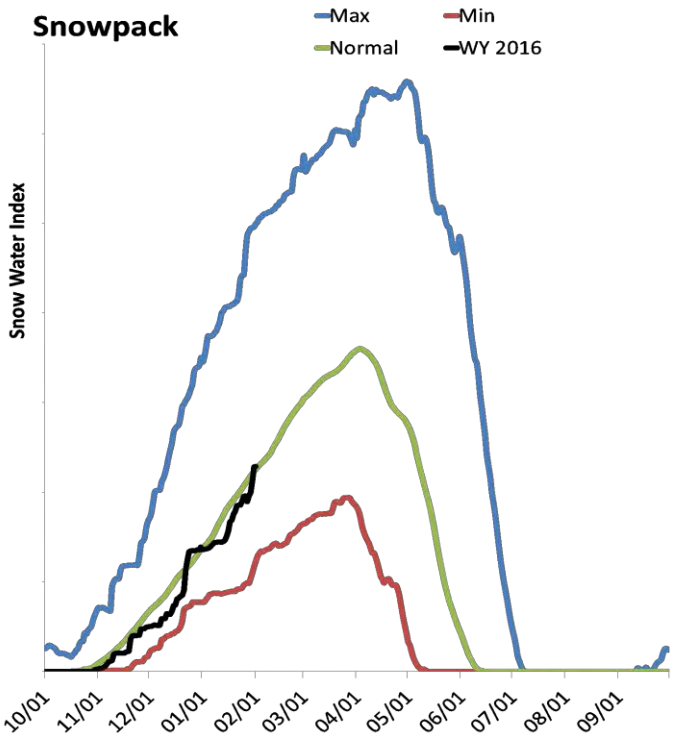
N

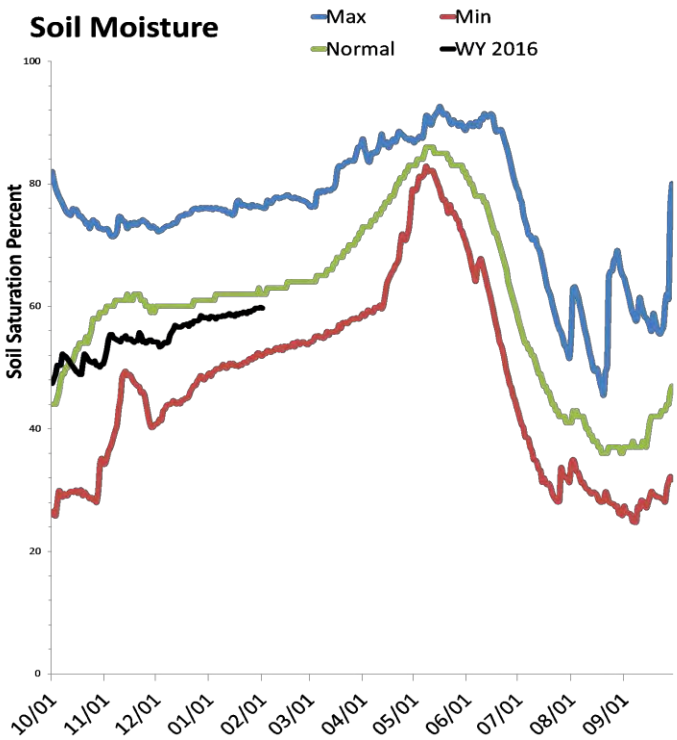
0 12.5 25 50 75 100 Miles

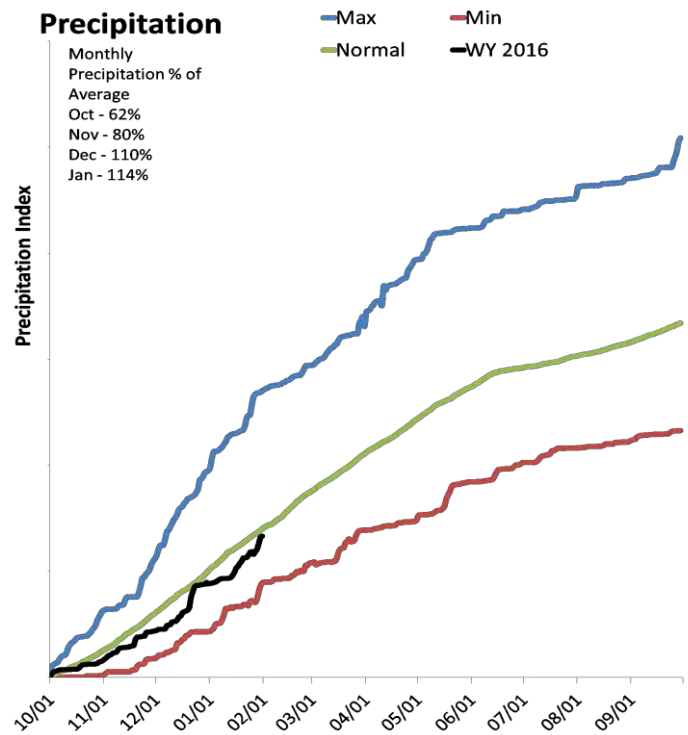
Bear River Basin

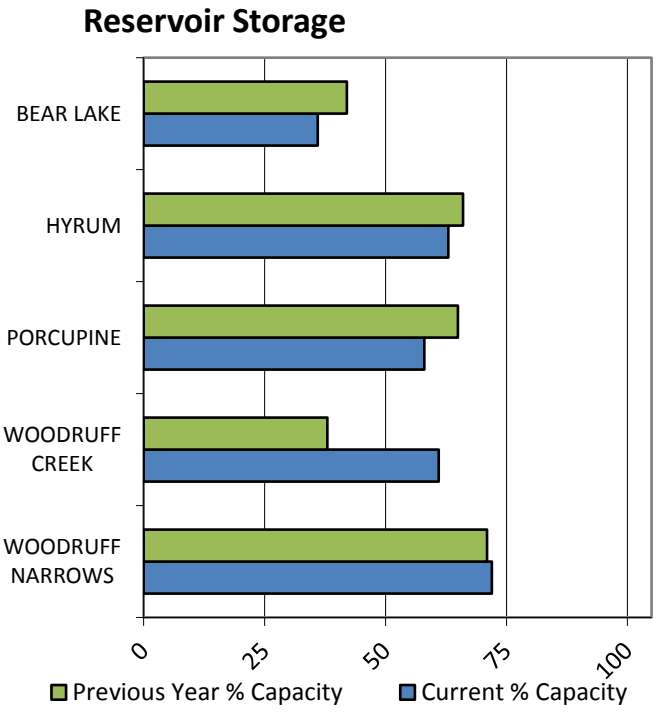
2/1/2016

Snowpack in the Bear River Basin is near normal at 101% of normal, compared to 89% last year. Precipitation in January was above average at 113%, which brings the seasonal accumulation (Oct-Jan) to 95% of average. Soil moisture is at 60% compared to 70% last year. Reservoir storage is at 38% of capacity, compared to 44% last year. Forecast streamflow volumes range from 77% to 107% of average. The surface water supply index is 41% for the Bear River, 51% for the Woodruff Narrows, 56% for the Little Bear.









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Bear River
Streamflow Forecasts - February 1, 2016

Bear River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Bear R nr UT-WY State Line								
	APR-JUL	63	87	103	92%	120	144	112
	APR-SEP	70	97	115	93%	133	160	123
Bear R ab Resv nr Woodruff								
	APR-JUL	26	82	120	99%	158	215	121
	APR-SEP	10.2	82	130	102%	178	250	128
Big Ck nr Randolph								
	APR-JUL	1.84	3.1	4	105%	4.9	6.2	3.8
Smiths Fk nr Border								
	APR-JUL	39	61	75	84%	89	111	89
	APR-SEP	50	74	90	87%	106	130	104
Bear R bl Stewart Dam								
	FEB-JUL	11.4	103	165	77%	225	320	215
	FEB-SEP	8.8	111	180	75%	250	350	240
	MAR-JUL	4.8	94	155	76%	215	305	205
	MAR-SEP	4.1	104	172	75%	240	340	230
Little Bear at Paradise								
	APR-JUL	12.4	27	38	93%	48	63	41
Logan R nr Logan								
	APR-JUL	50	80	100	90%	120	149	111
Blacksmith Fk nr Hyrum								
	APR-JUL	22	36	46	107%	56	70	43

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bear Lake	472.2	548.1	584.8	1302.0
Hyrum Reservoir	9.7	10.1	10.2	15.3
Porcupine Reservoir	6.5	7.4	6.0	11.3
Woodruff Creek	2.5	1.5	2.4	4.0
Woodruff Narrows Reservoir	41.1	40.4	29.0	57.3
Basin-wide Total	531.9	607.5	632.4	1389.9
# of reservoirs	5	5	5	5

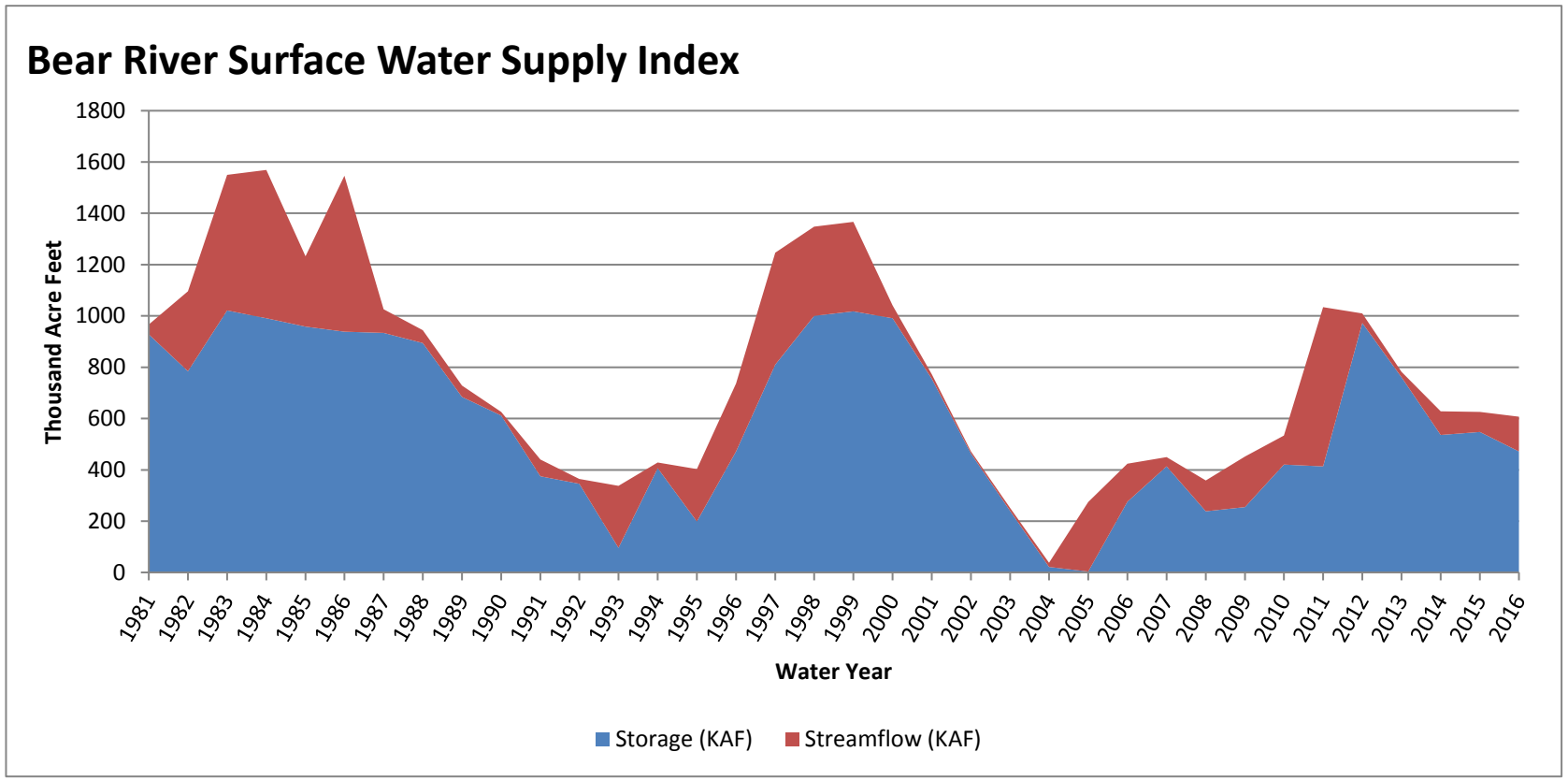
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Upper Bear	3	113%	78%
Middle Bear	7	96%	102%
Lower Bear	3	91%	75%
Logan	7	105%	84%

February 1, 2016

Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Bear River	**472.18**	**135.00**	**607.18**	**41**	**-0.79**	**02, 10, 15, 90**

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

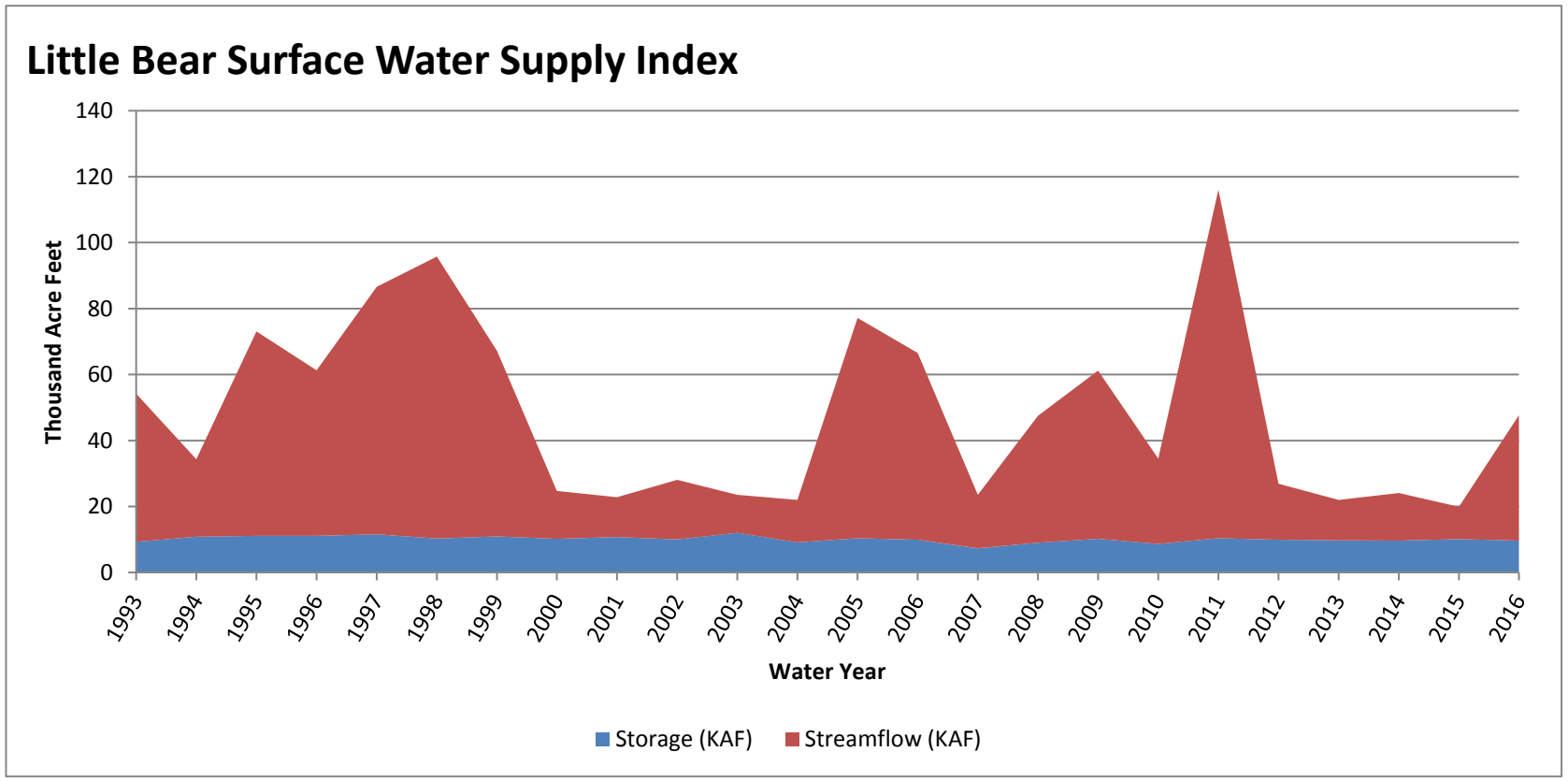


February 1, 2016

Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Little Bear	**9.68**	**38.00**	**47.68**	**56**	**0.5**	**10, 08, 93, 09**

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

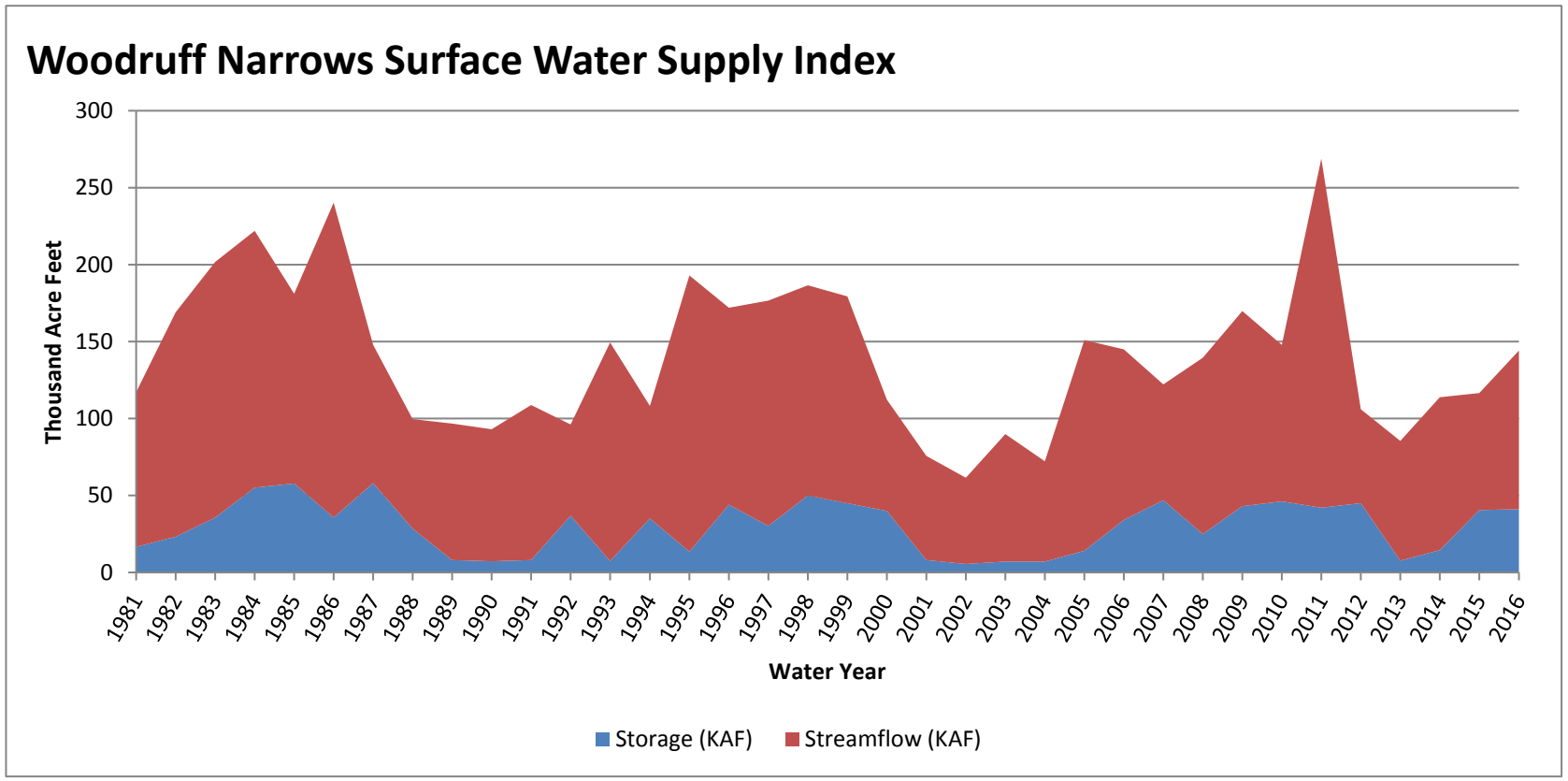


February 1, 2016

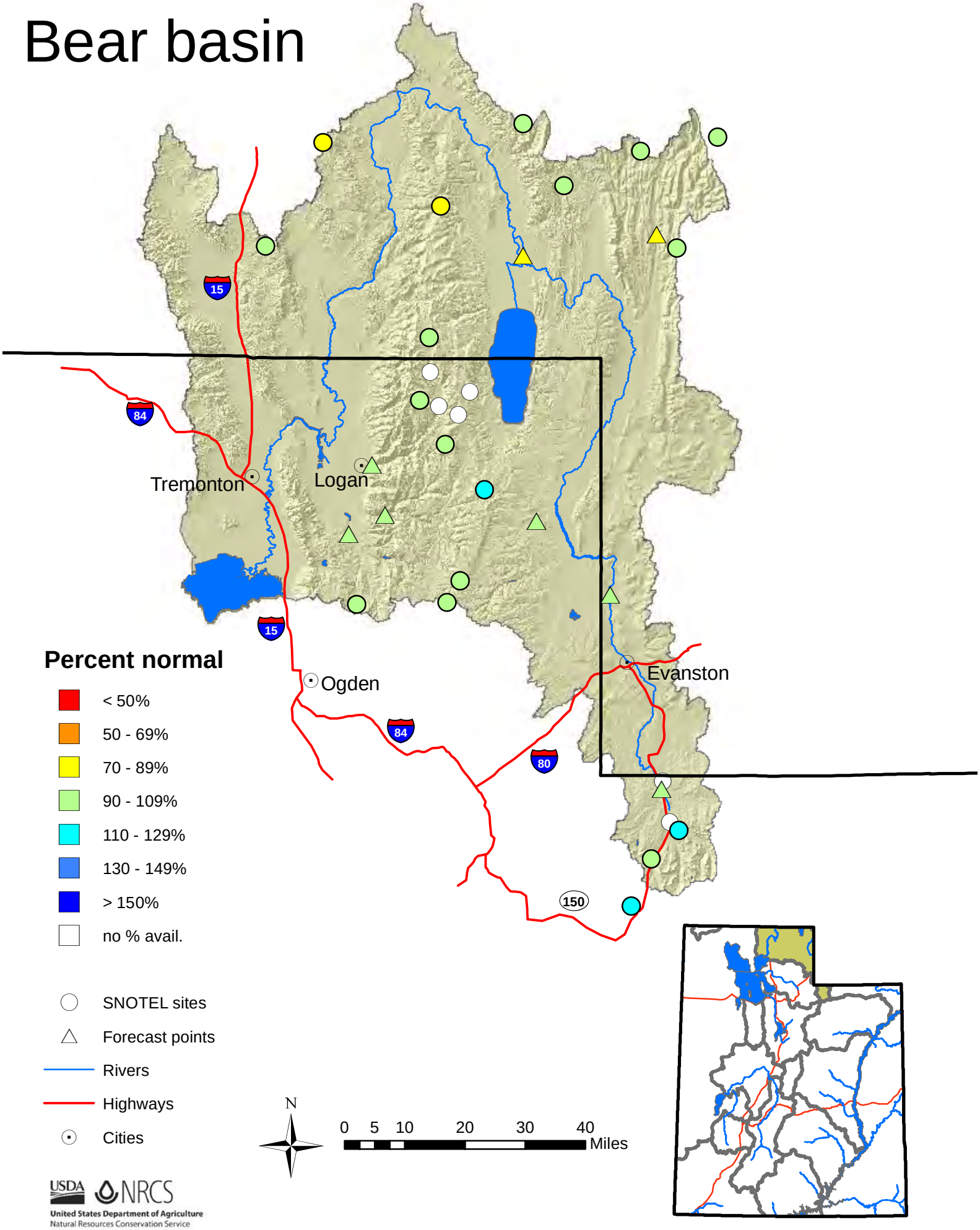
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Woodruff Narrows	**41.14**	**103.00**	**144.14**	**51**	**0.11**	**07, 08, 06, 10**

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



Bear basin



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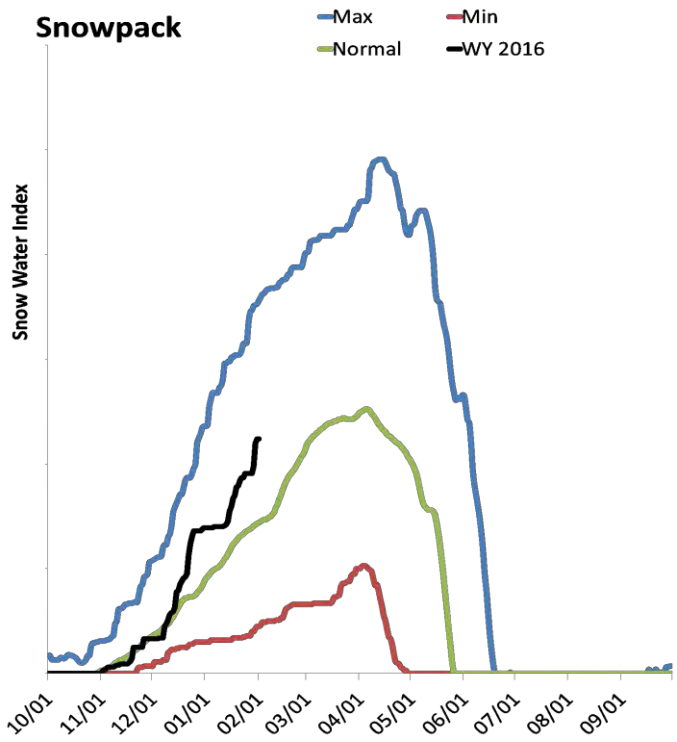
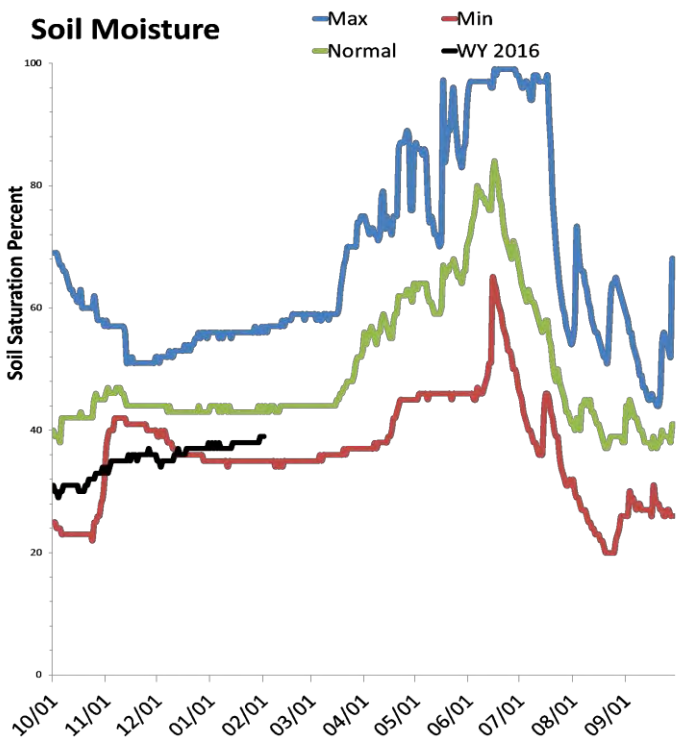
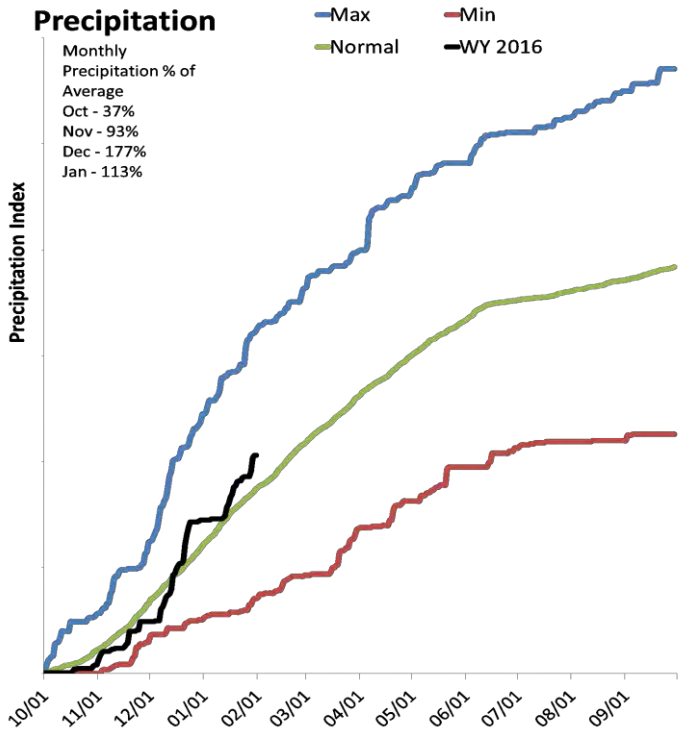
Raft River Basin

2/1/2016

Snowpack in the Raft River Basin is much above normal at 156% of normal, compared to 143% last year. Precipitation in January was above average at 111%, which brings the seasonal accumulation (Oct-Jan) to 118% of average. Soil moisture is at 39% compared to 59% last year. The forecast streamflow volume for Dunn Creek is 103% of average.







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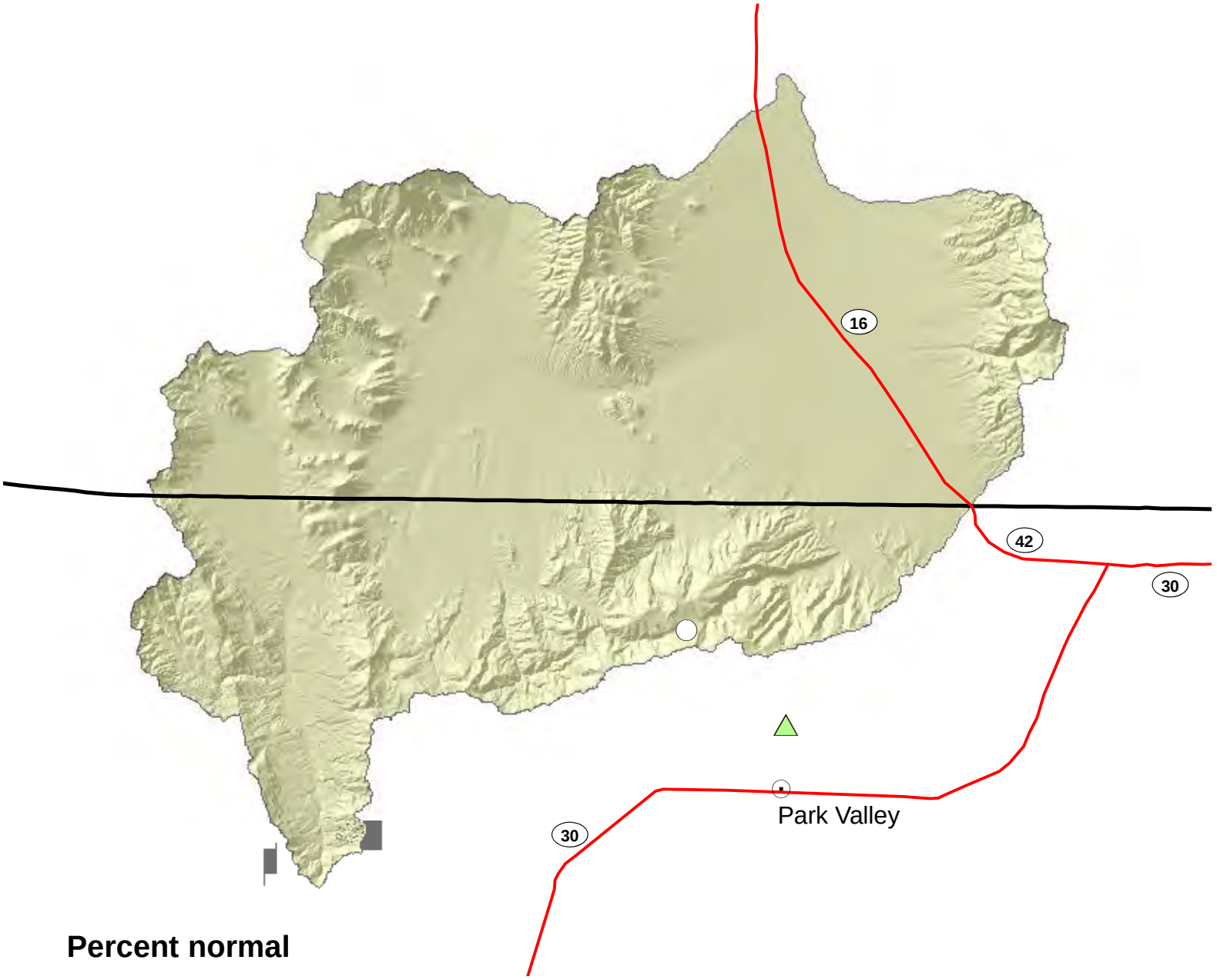
Raft River
Streamflow Forecasts - February 1, 2016

Raft River	Forecast Period	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast 90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Dunn Ck nr Park Valley	APR-JUL	0.09	1.1	3	103%	4.2	5.3	2.9

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

Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Raft	1	156%	143%

Raft basin



Percent normal

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

- SNOTEL sites
- Forecast points
- Rivers
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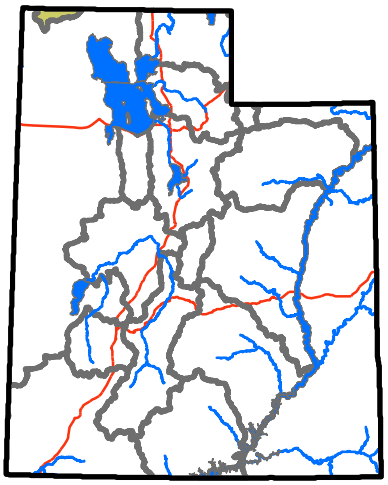
- Cities



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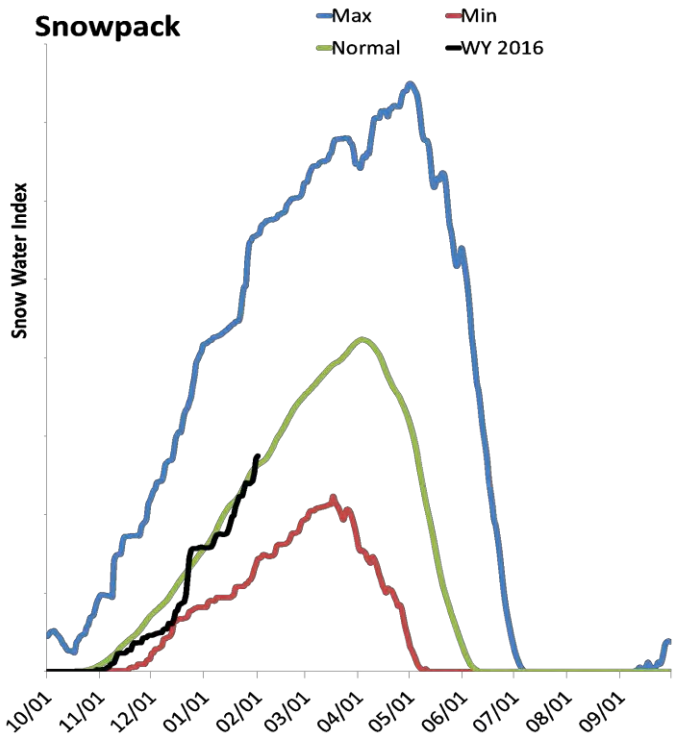
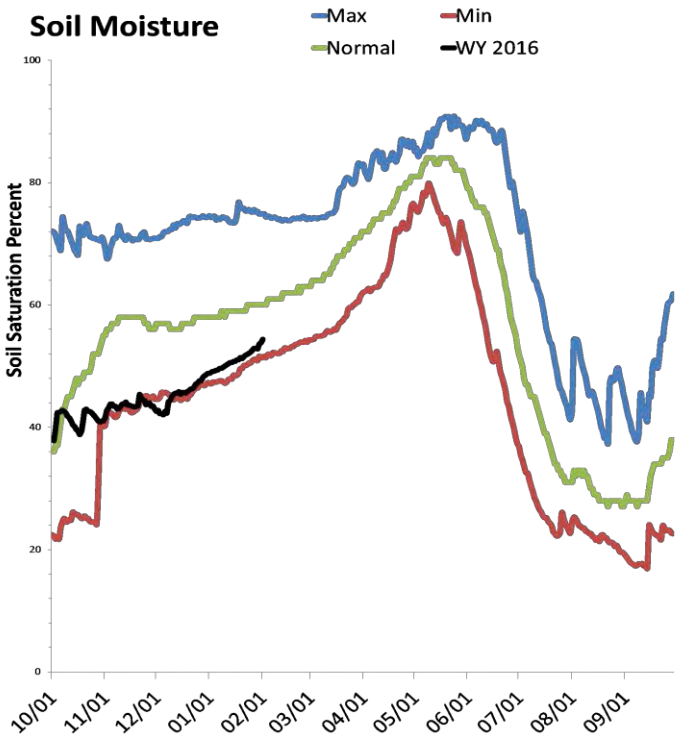
Miles

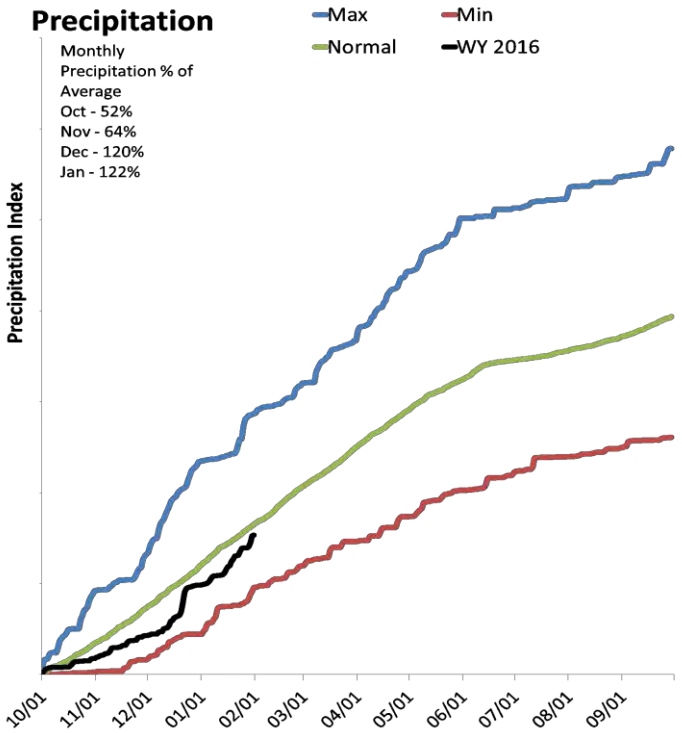
Weber & Ogden River Basins

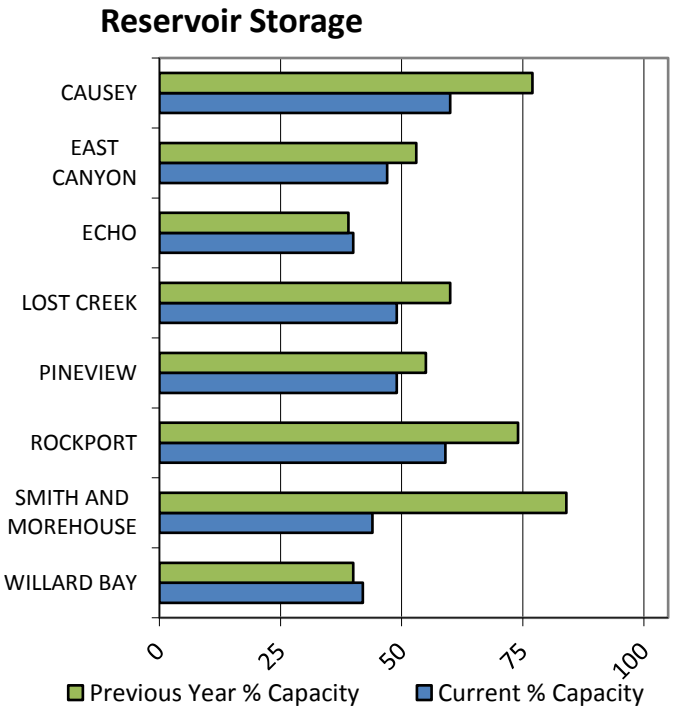
2/1/2016

Snowpack in the Weber & Ogden River Basins is near normal at 104% of normal, compared to 75% last year. Precipitation in January was above average at 121%, which brings the seasonal accumulation (Oct-Jan) to 93% of average. Soil moisture is at 54% compared to 61% last year. Reservoir storage is at 46% of capacity, compared to 49% last year. Forecast streamflow volumes range from 88% to 99% of average. The surface water supply index is 54% for the Ogden River, 49% for the Weber River.









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Weber Ogden Rivers
Streamflow Forecasts - February 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	21	26	30	88%	34	39	34
Weber R at Gateway	APR-JUL	66	205	300	95%	395	535	315
Weber R nr Coalville	APR-JUL	54	91	116	92%	141	178	126
Weber R nr Oakley	APR-JUL	60	86	104	89%	121	147	117
Rockport Reservoir Inflow	APR-JUL	54	91	115	93%	140	177	123
Chalk Ck at Coalville	APR-JUL	10.1	26	37	90%	48	64	41
Echo Reservoir Inflow	APR-JUL	54	114	155	93%	196	255	166
Lost Ck Reservoir Inflow	APR-JUL	1.35	7.1	11	91%	14.9	21	12.1
East Canyon Ck nr Jeremy Ranch	APR-JUL	2.7	9.4	14	92%	18.6	25	15.2
East Canyon Ck nr Morgan	APR-JUL	9.2	19.2	26	93%	33	43	28
SF Ogden R nr Huntsville	APR-JUL	19.8	40	53	95%	67	87	56
Pineview Reservoir Inflow	APR-JUL	11.7	55	85	99%	115	158	86
Wheeler Ck nr Huntsville	APR-JUL	2.3	4.3	5.7	90%	7.1	9.1	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

Reservoir Storage End of January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Causey Reservoir	4.3	5.5	3.2	7.1
East Canyon Reservoir	23.4	26.3	34.7	49.5
Echo Reservoir	29.4	28.5	46.3	73.9
Lost Creek Reservoir	11.0	13.5	12.3	22.5
Pineview Reservoir	54.2	60.2	51.4	110.1
Rockport Reservoir	36.2	44.8	34.5	60.9
Willard Bay	91.0	85.1	133.7	215.0
Smith And Morehouse Reservoir	3.6	6.8	3.6	81.0
Basin-wide Total	253.0	270.8	319.7	620.0
# of reservoirs	8	8	8	8

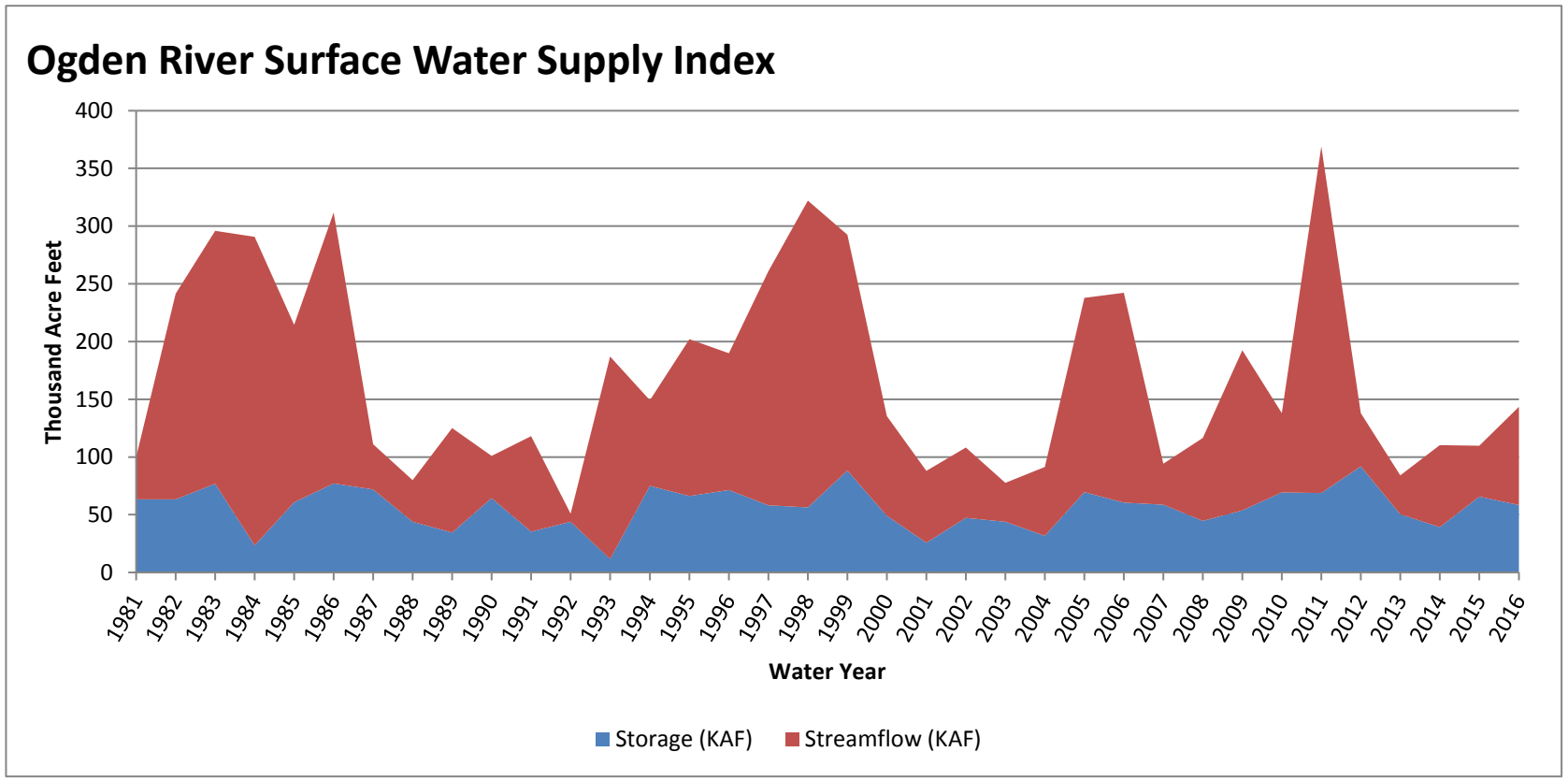
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Upper Weber	9	111%	82%
Lower Weber	7	101%	79%
Ogden	5	105%	67%
Lost Creek	3	114%	85%

February 1, 2016

Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Ogden River	**58.42**	**85.00**	**143.42**	**54**	**0.34**	**10, 12, 94, 93**

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

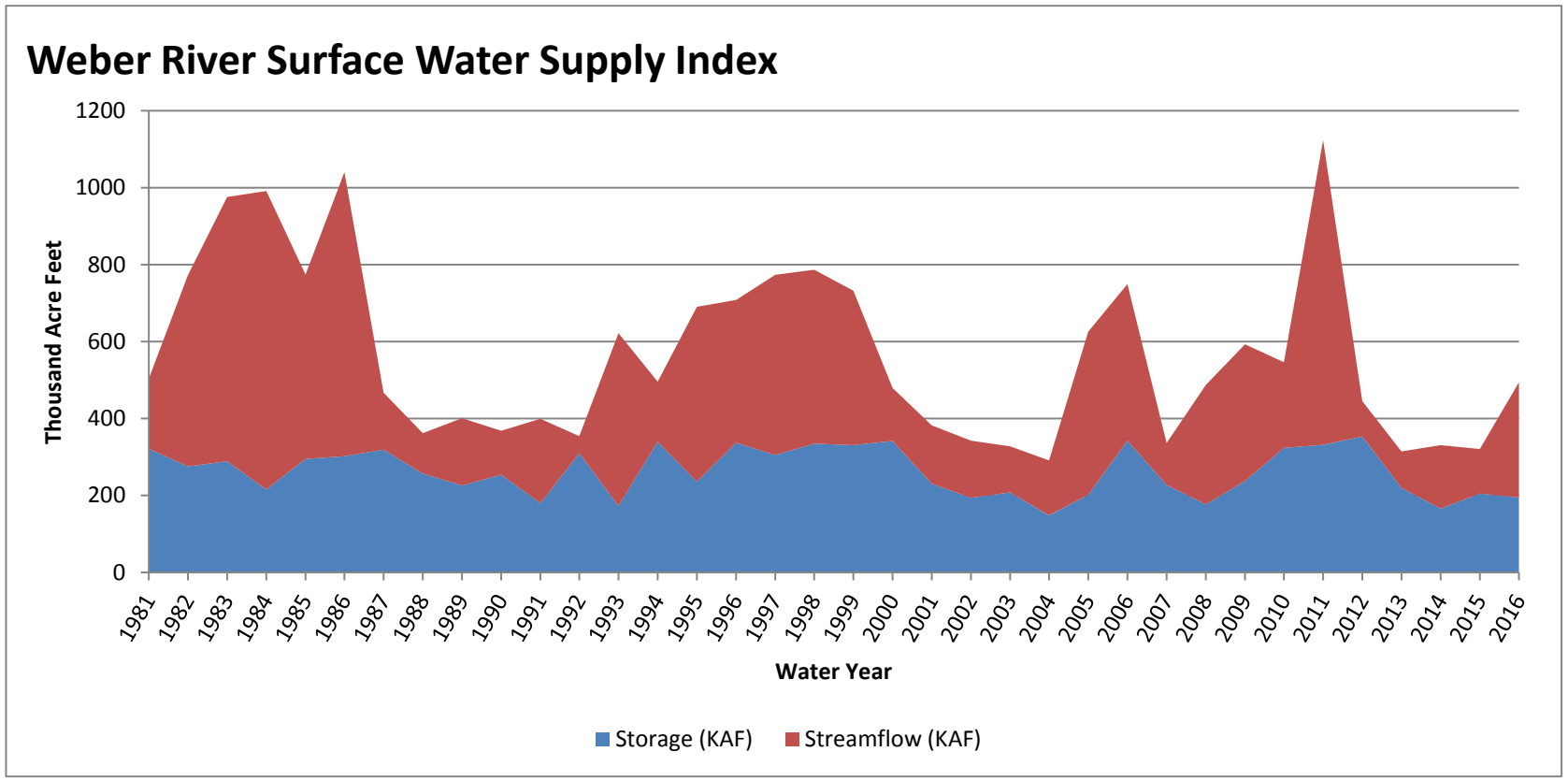


February 1, 2016

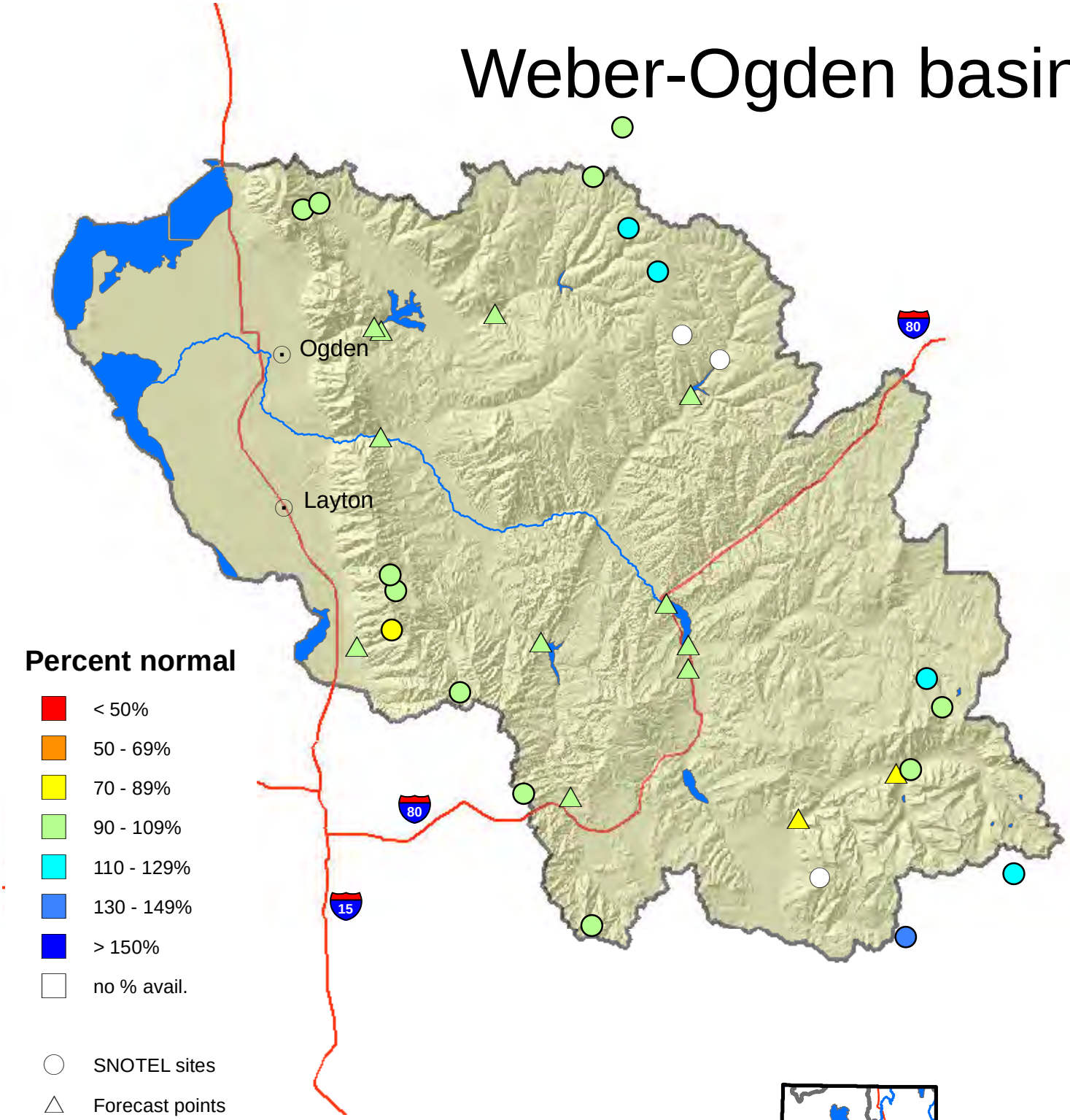
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Weber River	**194.58**	**300.00**	**494.58**	**49**	**-0.11**	**00, 08, 94, 81**

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



Weber-Ogden basin



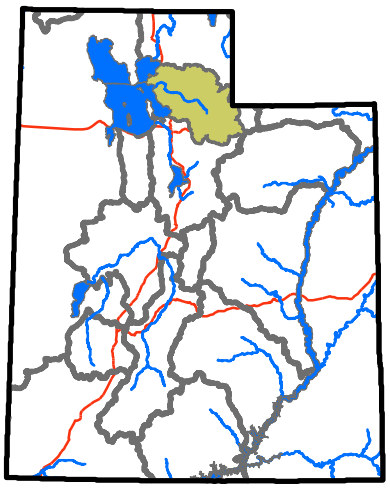
Percent normal

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

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

N

0 2.5 5 10 15 20 Miles



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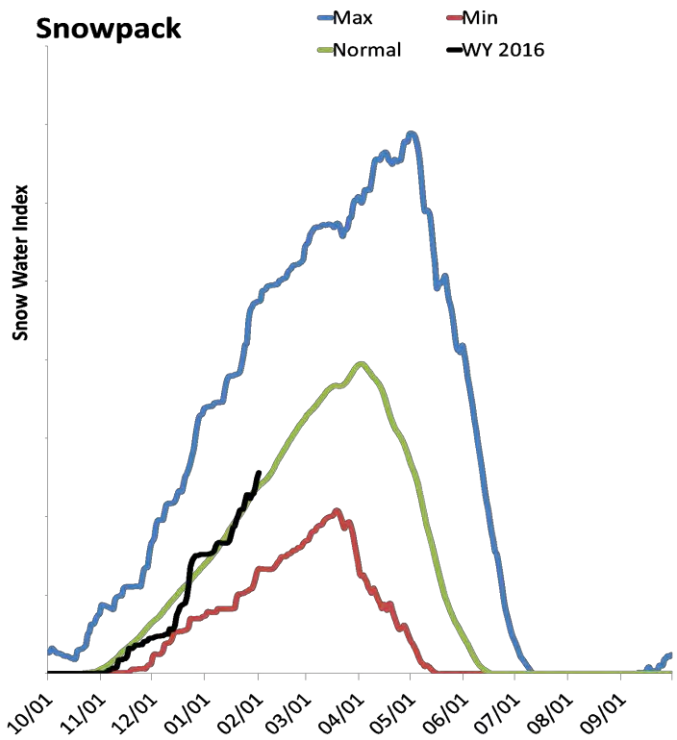
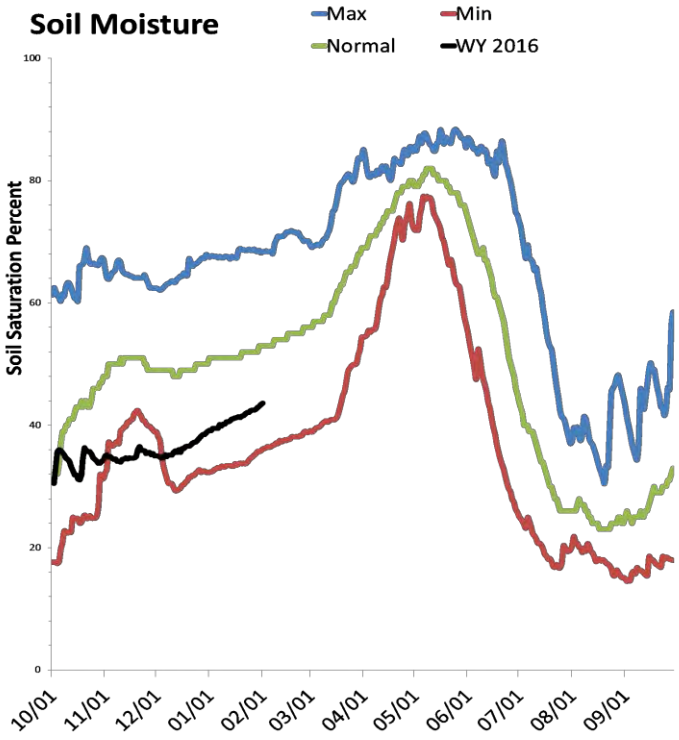
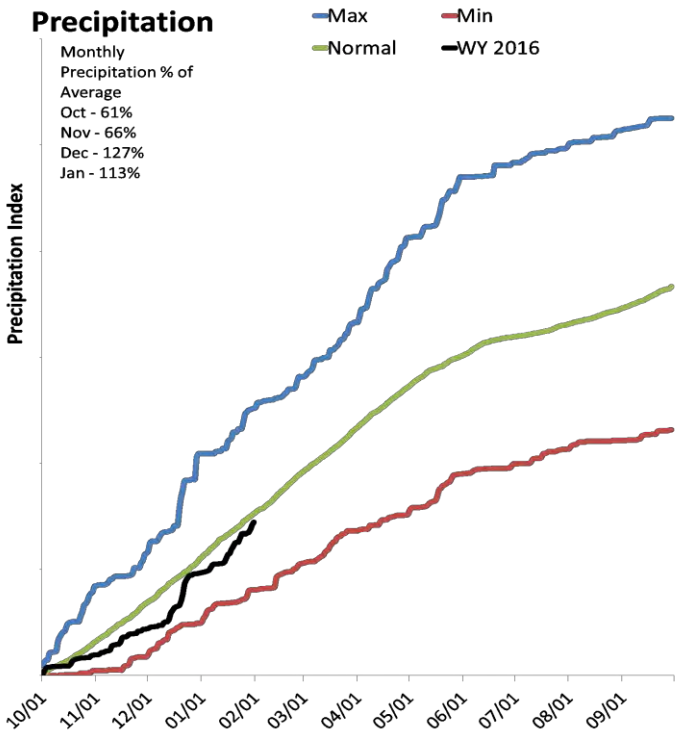
Provo & Jordan River Basins

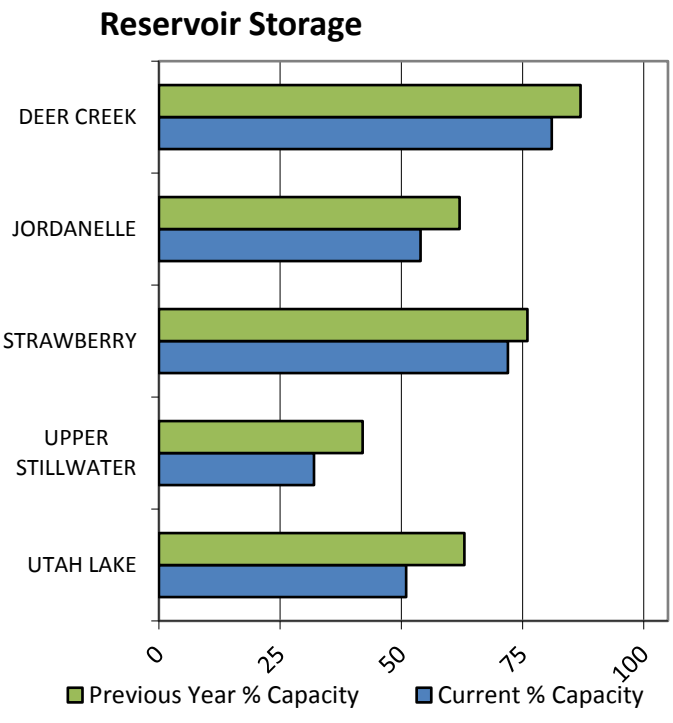
2/1/2016

Snowpack in the Provo & Jordan River Basins is near normal at 107% of normal, compared to 85% last year. Precipitation in January was above average at 113%, which brings the seasonal accumulation (Oct-Jan) to 95% of average. Soil moisture is at 43% compared to 59% last year. Reservoir storage is at 62% of capacity, compared to 70% last year. Forecast streamflow volumes range from 94% to 116% of average. The surface water supply index is 13% for the Provo River.









Data Current as of: 2/4/2016 8:00:00 AM

Provo R Utah Lake Jordan R
Streamflow Forecasts - February 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)
Salt Ck at Nephi	APR-JUL	0.8	6.9	11	116%	15.1	21	9.5
Spanish Fk at Castilla	APR-JUL	26	54	76	110%	98	126	69
Provo R at Woodland	APR-JUL	64	88	107	107%	127	160	100
Provo R at Hailstone	APR-JUL	65	91	110	102%	131	166	108
Provo R bl Deer Ck Dam	APR-JUL	71	97	115	99%	133	159	116
American Fk ab Upper Powerplant	APR-JUL	16.2	26	32	100%	38	48	32
Utah Lake Inflow	APR-JUL	24	132	275	104%	420	520	265
W Canyon Ck nr Cedar Fort	APR-JUL	0.59	1.37	1.9	108%	2.4	3.2	1.76
Little Cottonwood Ck nr SLC	APR-JUL	27	34	39	103%	44	53	38
Big Cottonwood Ck nr SLC	APR-JUL	22	30	35	97%	40	48	36
Mill Ck nr SLC	APR-JUL	2.2	4.5	6	94%	7.5	9.8	6.4
Parleys Ck nr SLC	APR-JUL	5.9	11.6	15.4	108%	19.2	25	14.2
Dell Fk nr SLC	APR-JUL	0.22	3.1	5.6	102%	8.1	11.9	5.5
Emigration Ck nr SLC	APR-JUL	0.24	2.4	3.8	95%	5.2	7.4	4
City Ck nr SLC	APR-JUL	3.2	6	7.9	103%	9.8	12.5	7.7

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Deer Creek Reservoir	120.7	130.9	107.7	149.7
Strawberry Reservoir	792.0	837.4	658.4	1105.9
Utah Lake	442.5	548.3	752.5	870.9
Jordanelle Reservoir	172.5	199.5	242.0	320.0
Basin-wide Total	1527.7	1716.2	1760.6	2446.5
# of reservoirs	4	4	4	4

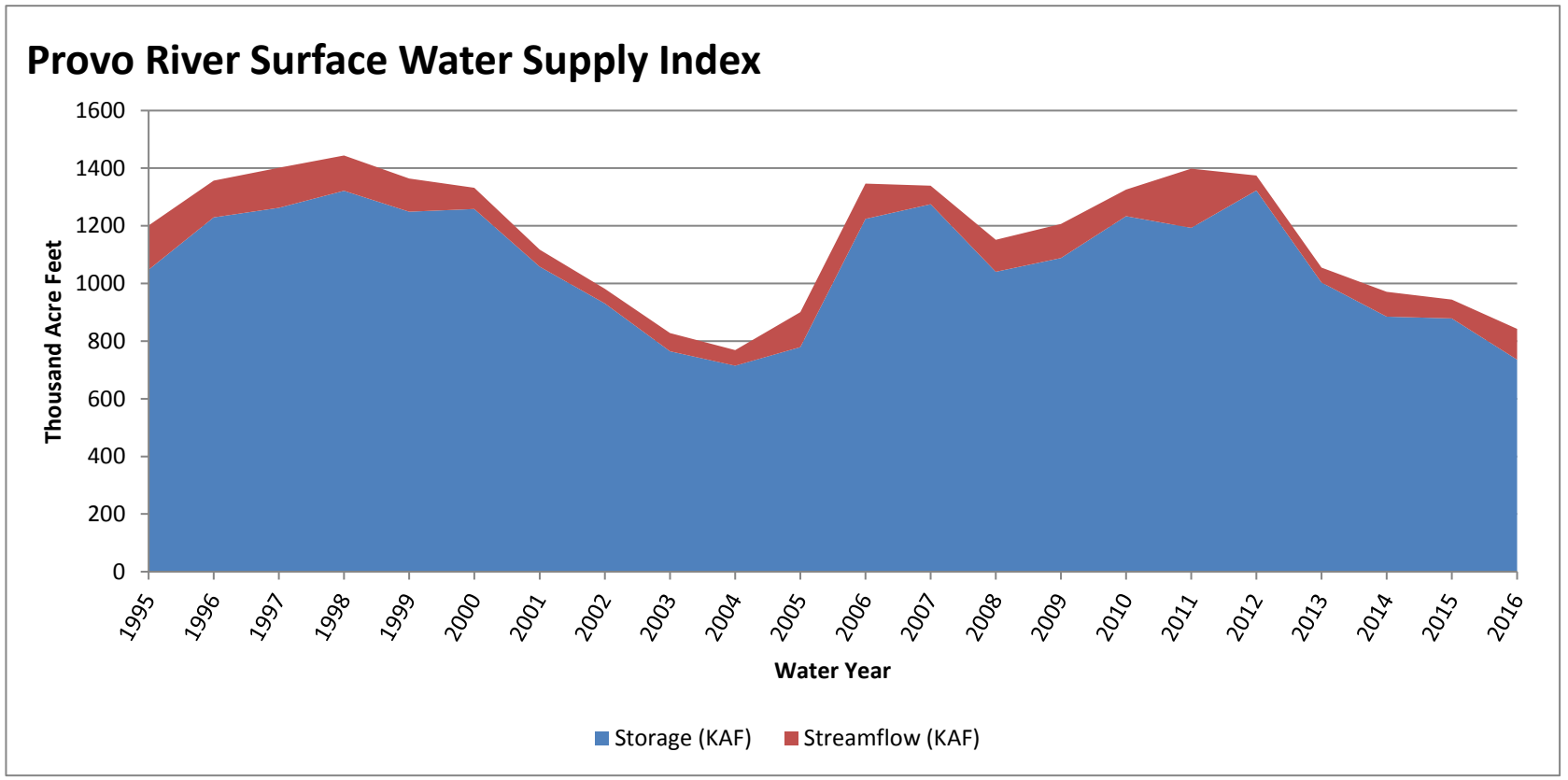
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Upper Provo	6	106%	86%
Jordan	16	100%	78%
Utah Lake	13	100%	85%
Spanish Fork	5	100%	83%
Six Creeks	15	99%	77%
Cottonwoods	7	94%	77%

February 1, 2016

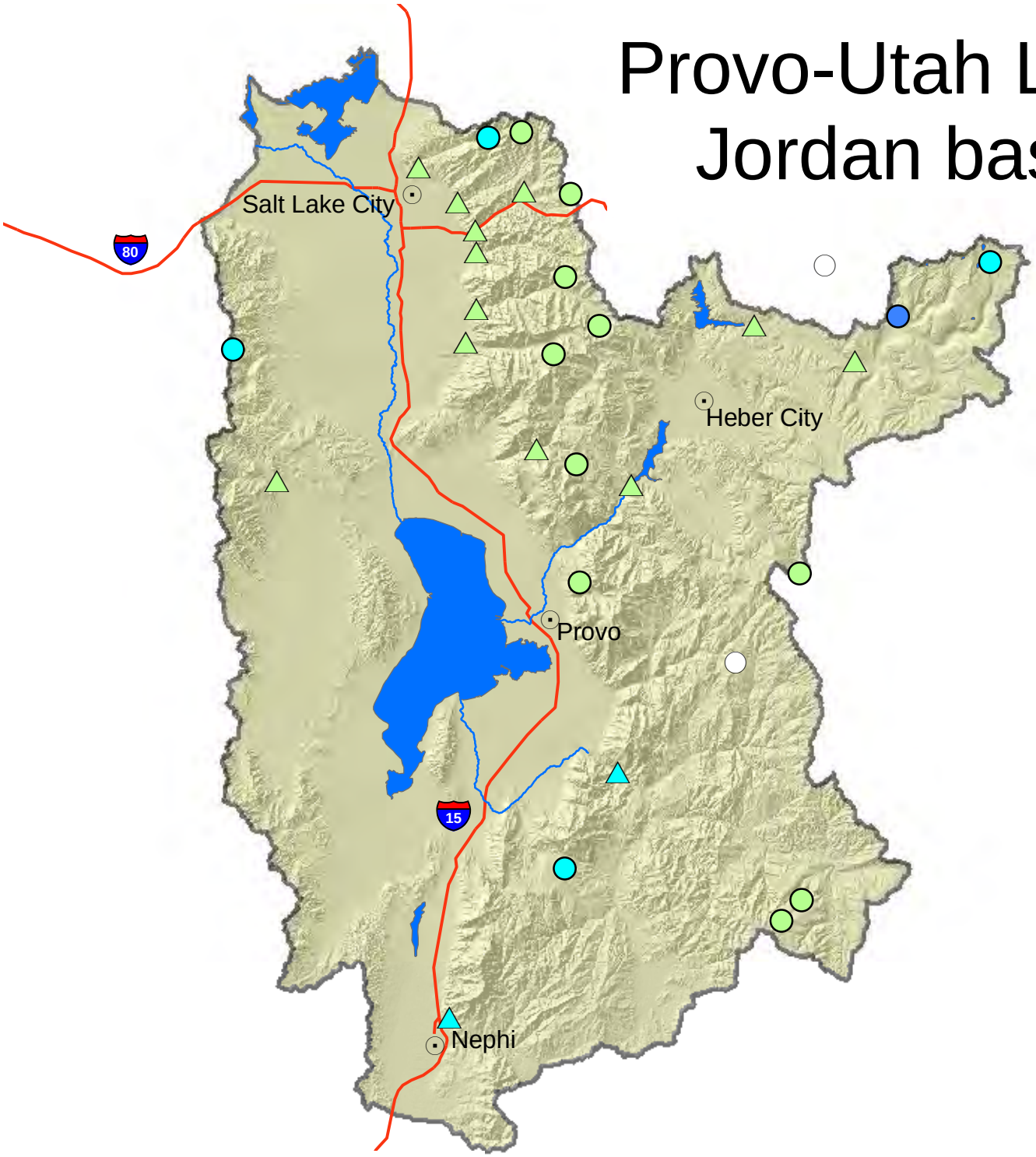
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Provo River	**735.70**	**107.00**	**842.70**	**13**	**-3.08**	**04, 03, 05, 15**

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



Provo-Utah Lake-Jordan basin



Percent normal

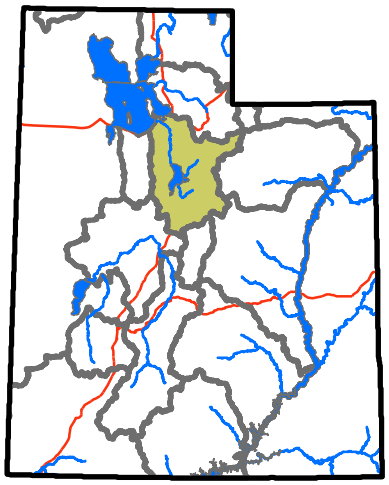
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

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

N

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

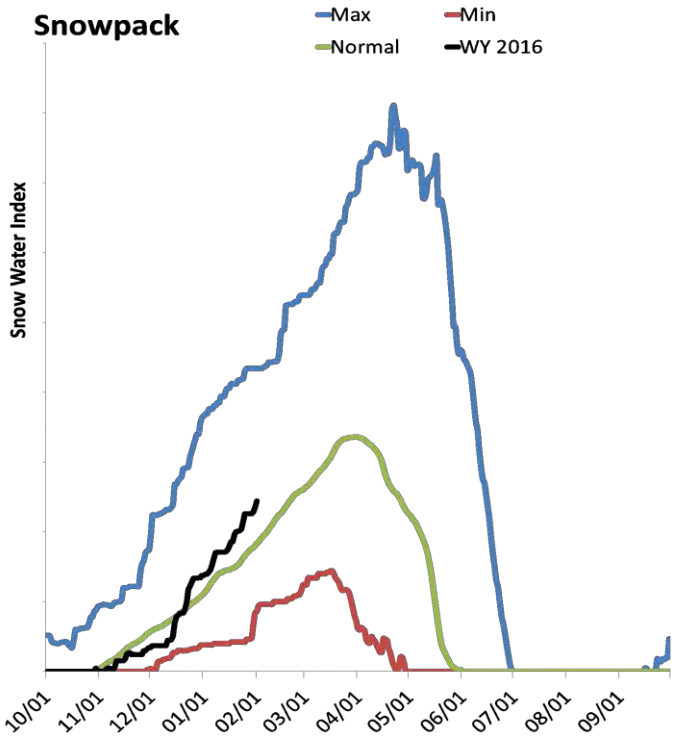
0 2.5 5 10 15 20
Miles

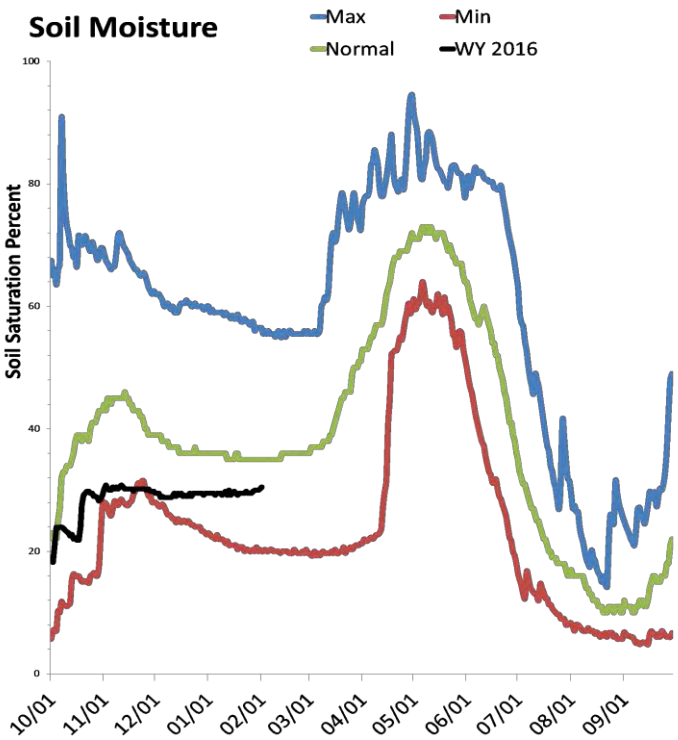


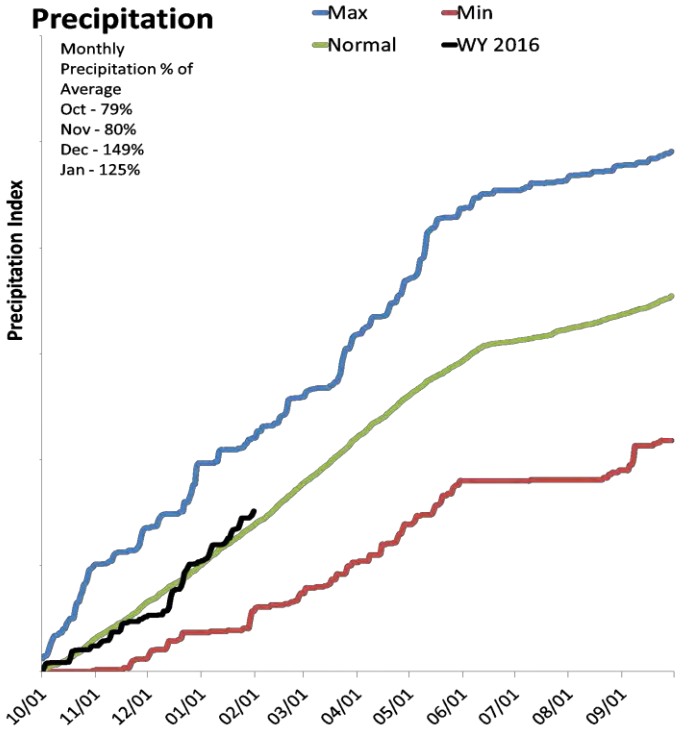
Tooele & Vernon Creek Basins

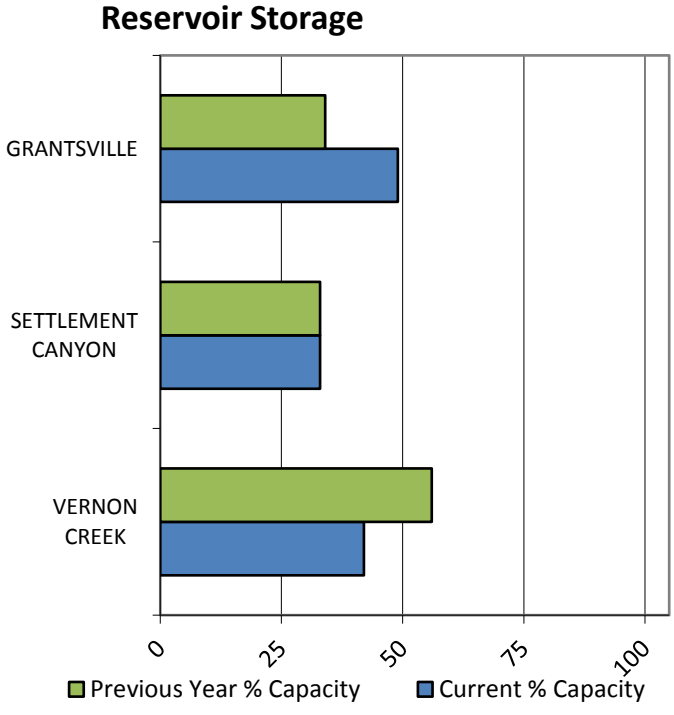
2/1/2016

Snowpack in the Tooele & Vernon Creek Basins is much above normal at 133% of normal, compared to 73% last year. Precipitation in January was above average at 124%, which brings the seasonal accumulation (Oct-Jan) to 110% of average. Soil moisture is at 31% compared to 31% last year. Reservoir storage is at 45% of capacity, compared to 37% last year. Forecast streamflow volumes range from 103% to 108% of average.









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Tooele Valley Vernon Creek
Streamflow Forecasts - February 1, 2016

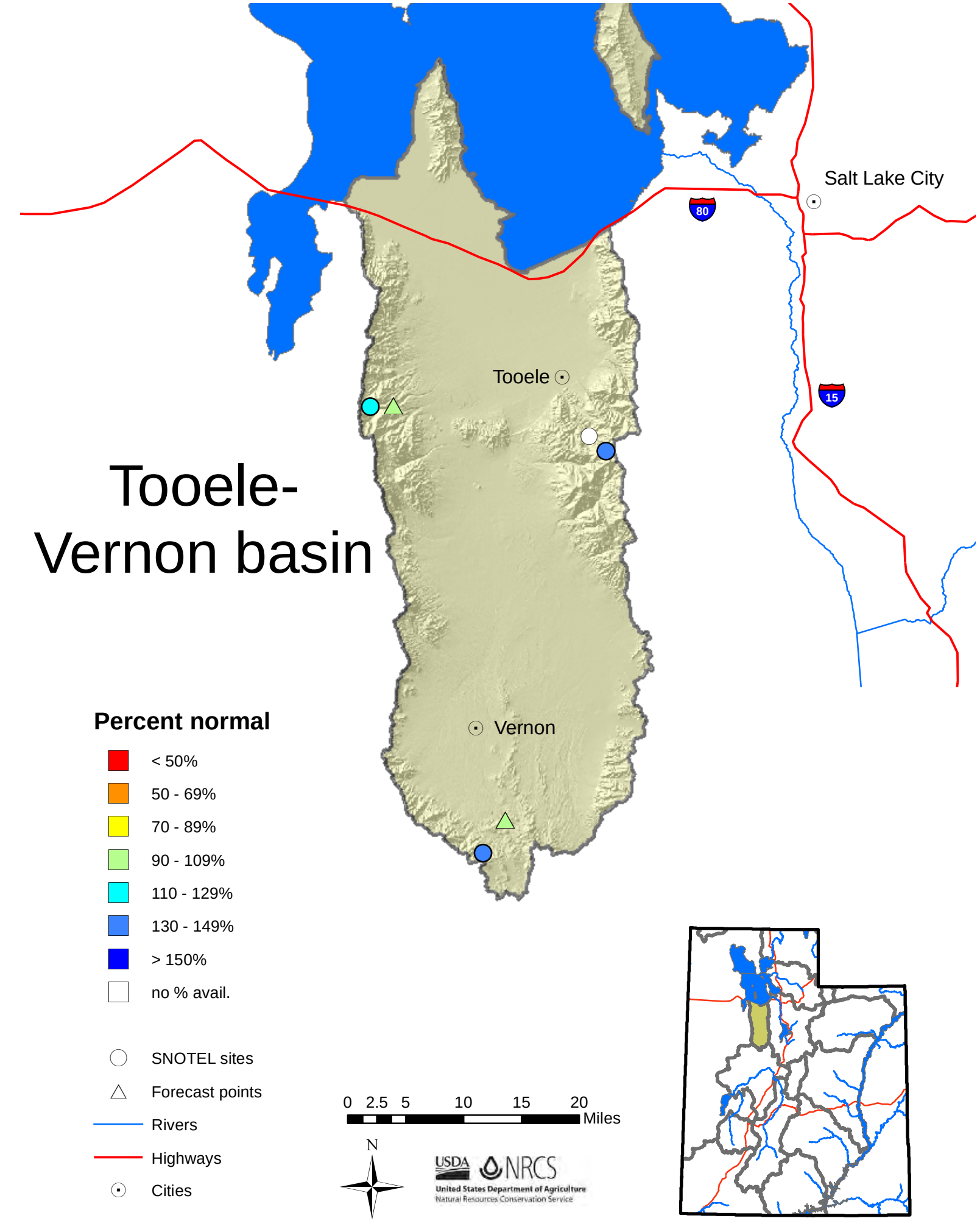
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Tooele Valley Vernon Creek	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Vernon Ck nr Vernon								
	APR-JUL	0.04	0.87	1.5	108%	2.1	2.7	1.39
S Willow Ck nr Grantsville								
	APR-JUL	1.36	2.5	3.2	103%	3.9	5	3.1

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Vernon Creek Reservoir	0.3	0.3	0.5	0.6
Settlement Canyon Reservoir	0.3	0.3	0.7	1.0
Grantsville Reservoir	1.6	1.1	1.8	3.3
Basin-wide Total	2.2	1.8	2.9	4.9
# of reservoirs	3	3	3	3

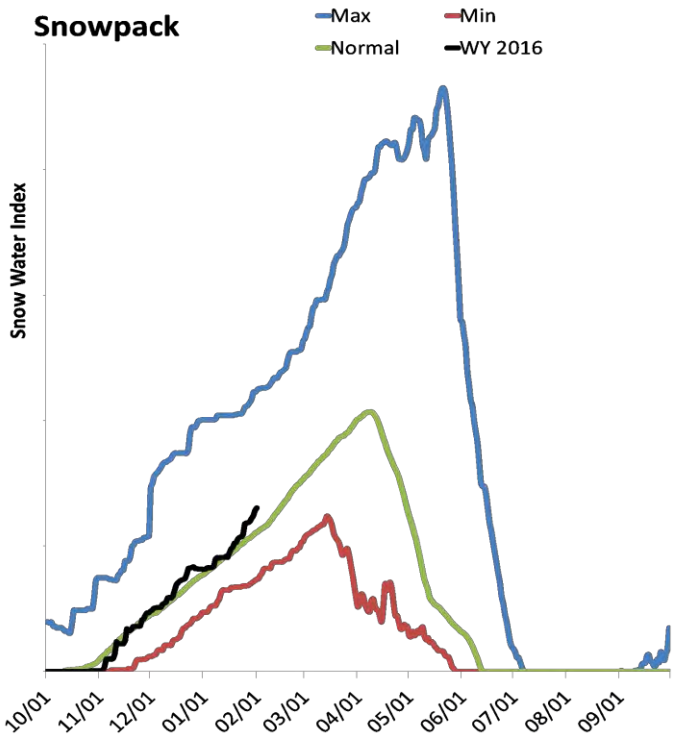
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Tooele	3	129%	79%
NW Utah	2	131%	72%

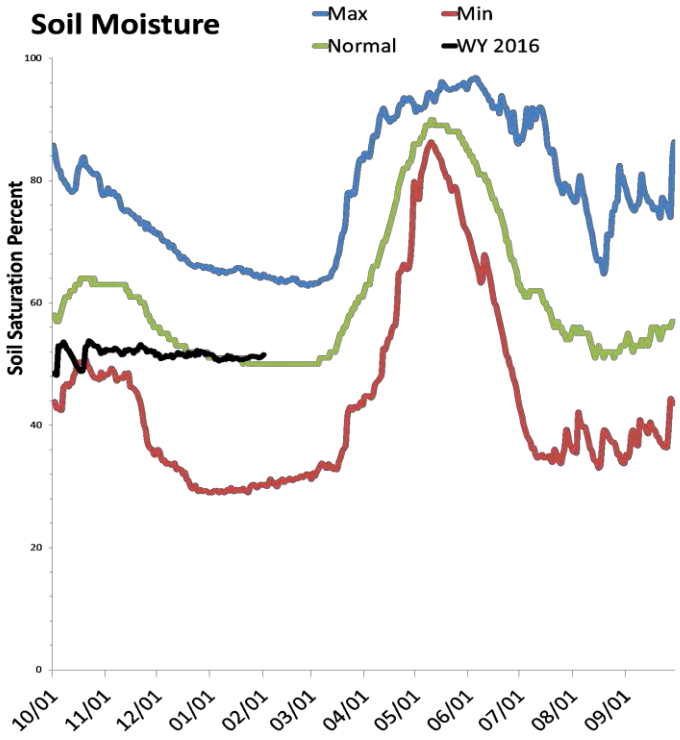

Salt Lake City
80
15
Tooele
Vernon
Tooele-
Vernon basin
Percent normal
< 50%
50 - 69%
70 - 89%
90 - 109%
110 - 129%
130 - 149%
> 150%
no % avail.
SNOTEL sites
Forecast points
Rivers
Highways
Cities
0 2.5 5 10 15 20
Miles
N
USDA
NRCS
United States Department of Agriculture
Natural Resources Conservation Service

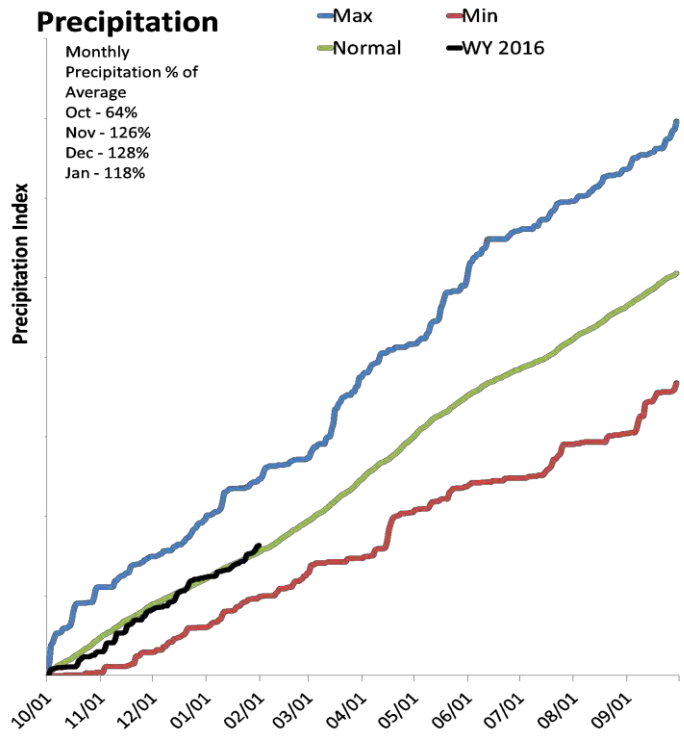
Northeastern Uintah Basin

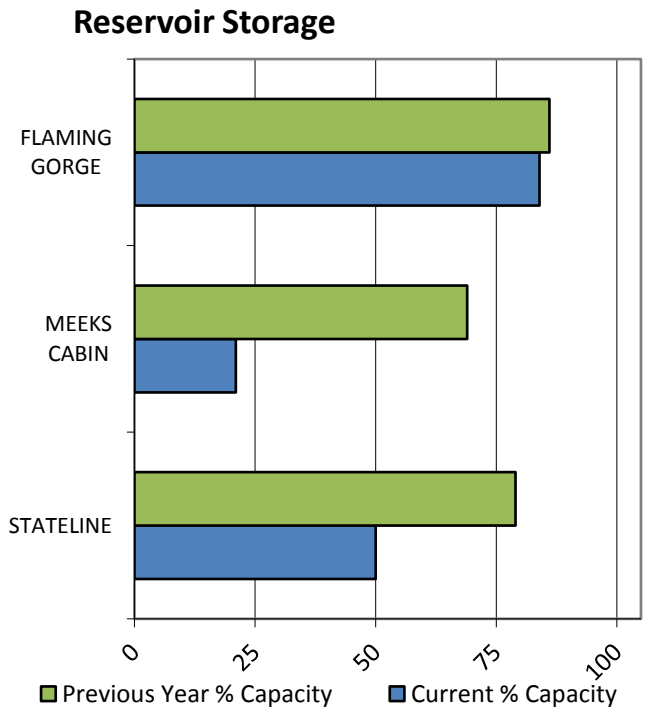
2/1/2016

Snowpack in the Northeastern Uintah Basin is above normal at 117% of normal, compared to 69% last year. Precipitation in January was above average at 120%, which brings the seasonal accumulation (Oct-Jan) to 106% of average. Soil moisture is at 55% compared to 60% last year. Reservoir storage is at 84% of capacity, compared to 86% last year. Forecast streamflow volumes range from 77% to 100% of average. The surface water supply index is 47% for the Blacks Fork, 59% for the Smiths Creek.









Data Current as of: 2/4/2016 8:00:03 AM

Northeastern Uintahs
Streamflow Forecasts - February 1, 2016

Northeastern Uintahs	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Blacks Fk nr Robertson	APR-JUL	58	75	89	100%	104	127	89
EF of Smiths Fork nr Robertson [2]	APR-JUL	17.2	23	27	100%	32	39	27
Flaming Gorge Reservoir Inflow [2]	APR-JUL	375	585	750	77%	935	1250	980
Uinta R bl Powerplant Diversion nr Neola[2]	APR-JUL	29	47	62	84%	79	107	74
Whiterocks R nr Whiterocks	APR-JUL	24	36	45	83%	55	73	54
Ashley Ck nr Vernal	APR-JUL	22	33	41	82%	50	66	50
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	8.9	14.3	18	86%	22	27	21

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Flaming Gorge Reservoir	3165.0	3234.4	3049.0	3749.0
Stateline Reservoir	6.0	9.5	5.4	12.0
Meeks Cabin Reservoir	6.9	22.5	11.9	32.5
Basin-wide Total	3177.9	3266.4	3066.3	3793.5
# of reservoirs	3	3	3	3

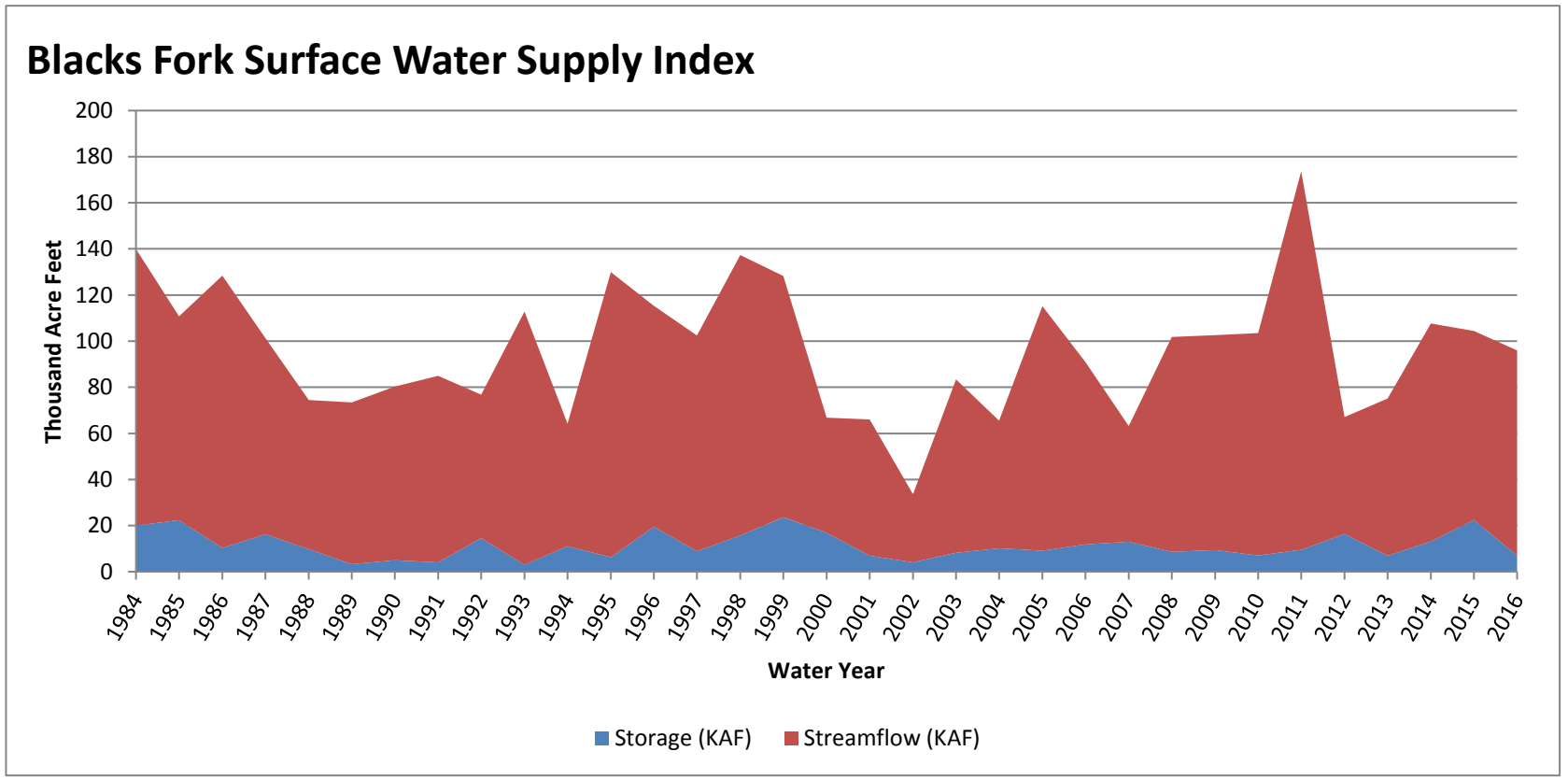
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Blacks Fk	3	106%	73%
Upper Green	2	151%	101%
Lower Green	2	132%	87%
Ashley Brush	4	83%	52%

February 1, 2016

Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Blacks Fork	**6.93**	**89.00**	**95.93**	**47**	**-0.25**	**91, 06, 87, 08**

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

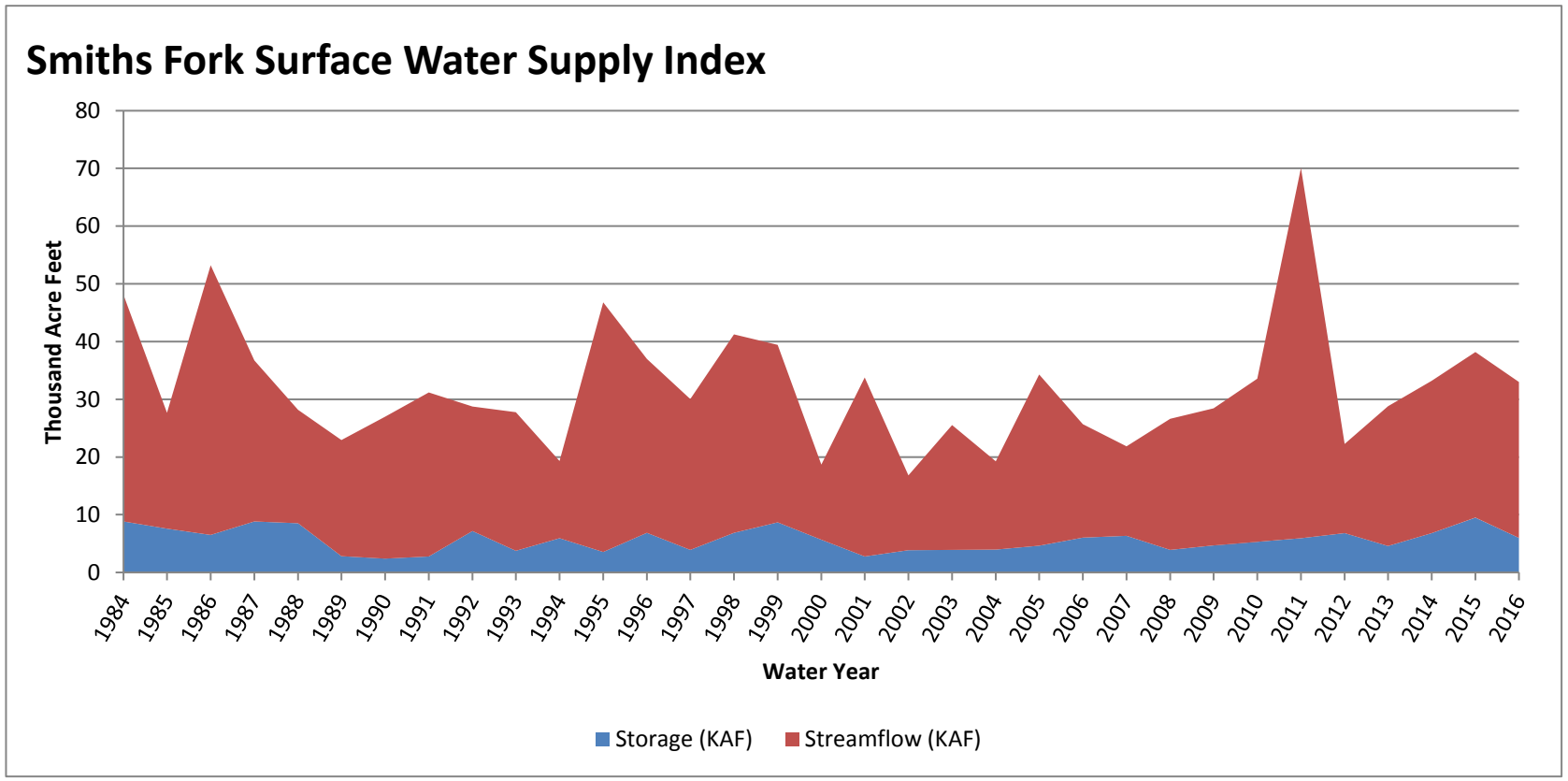


February 1, 2016

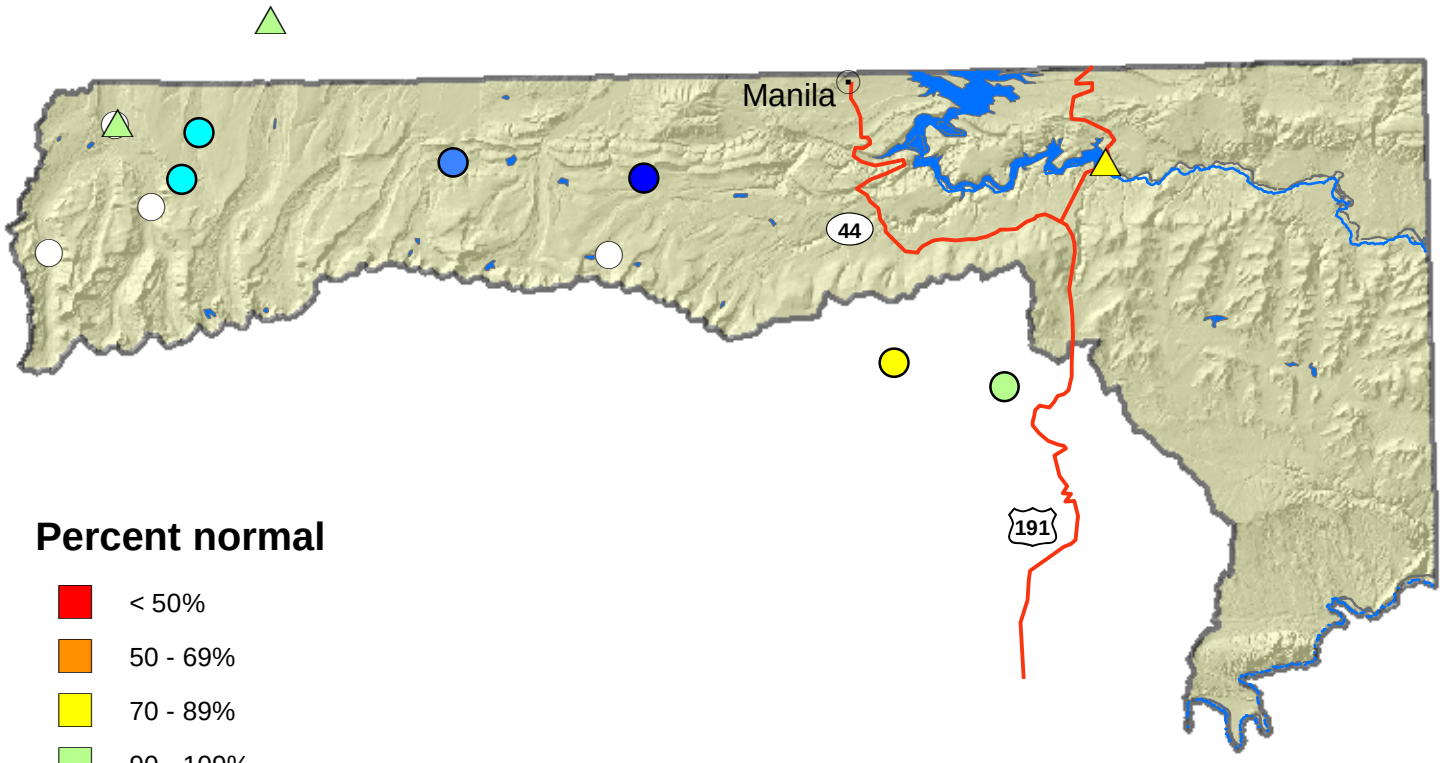
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Smiths Fork	**5.98**	**27.00**	**32.98**	**59**	**0.74**	**97, 91, 14, 10**

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



Northeastern Utah



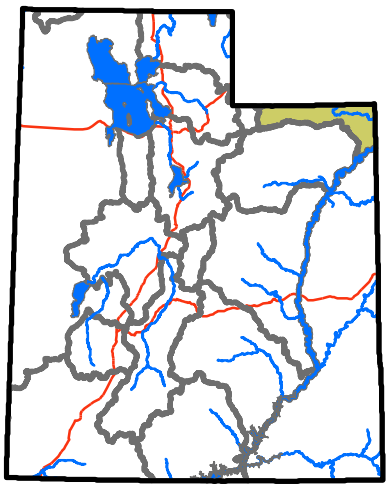
Percent normal

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

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

N

0 2.25 4.5 9 13.5 18 Miles



USDA NRCS
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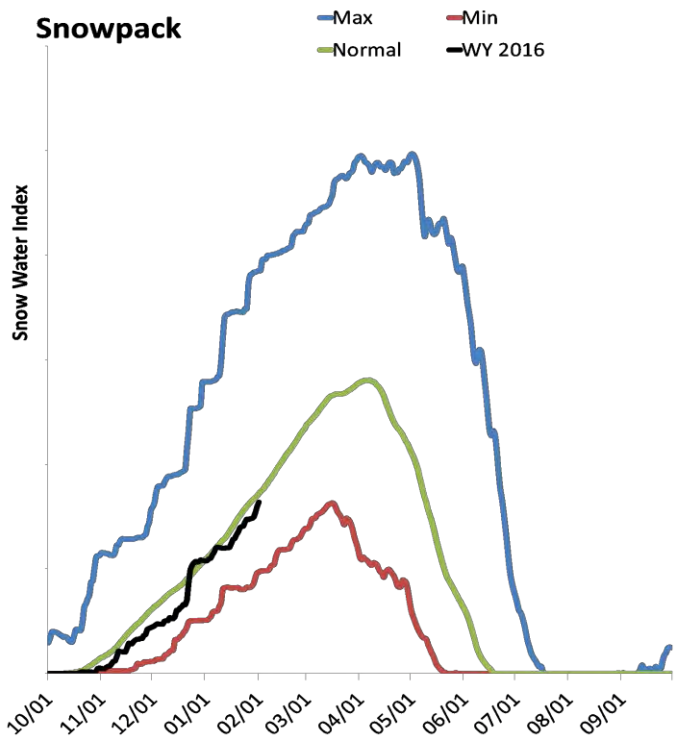
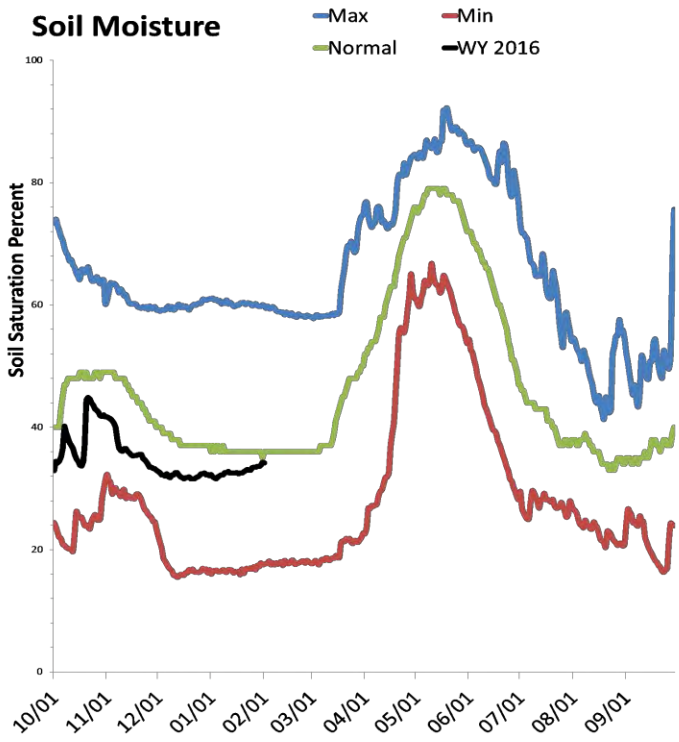
Natural Resources Conservation Service

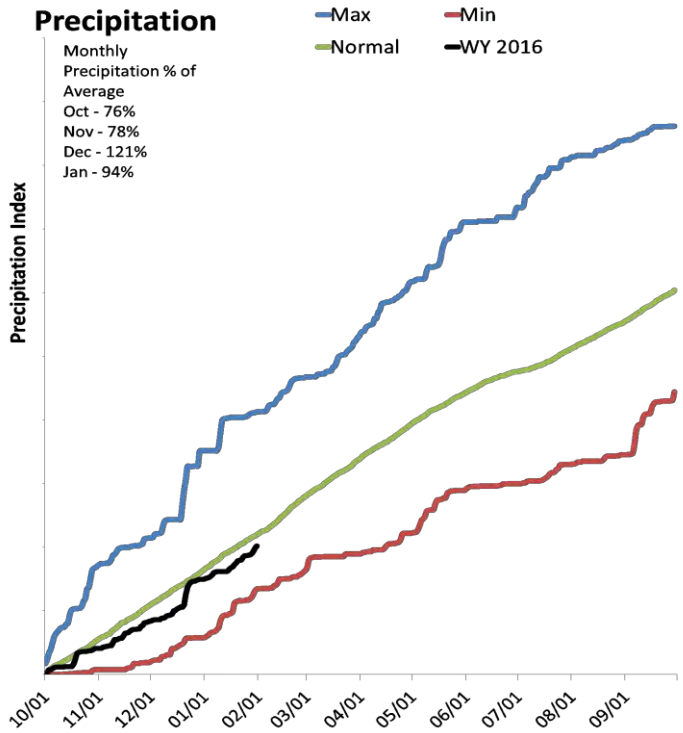
Duchesne River Basin

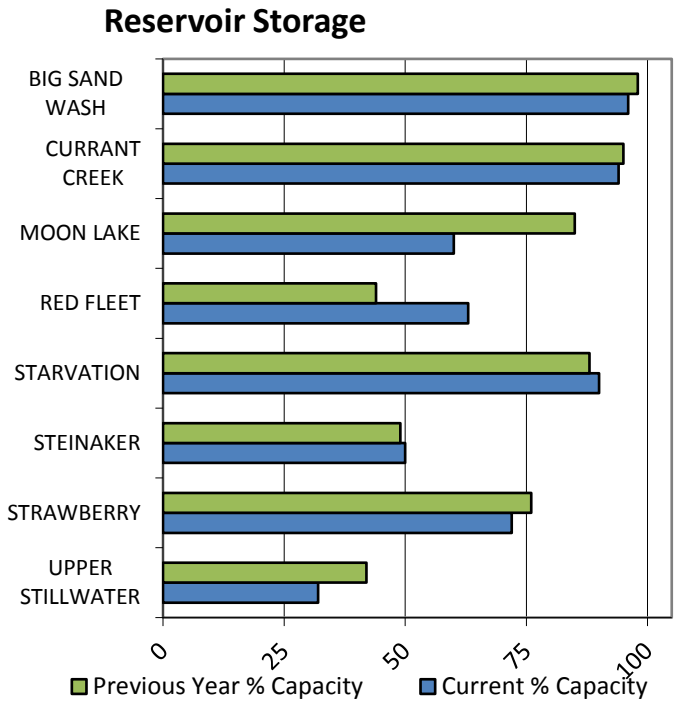
2/1/2016

Snowpack in the Duchesne River Basin is near average at 95% of normal, compared to 80% last year. Precipitation in January was near average at 93%, which brings the seasonal accumulation (Oct-Jan) to 92% of average. Soil moisture is at 36% compared to 44% last year. Reservoir storage is at 73% of capacity, compared to 76% last year. Forecast streamflow volumes range from 71% to 90% of average. The surface water supply index is 73% for the Western Uintahs, 30% for the Eastern Uintahs.









Data Current as of: 2/4/2016 8:00:04 AM

Duchesne River
Streamflow Forecasts - February 1, 2016

Duchesne River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Duchesne R nr Tabiona [2]	APR-JUL	61	80	95	88%	111	137	108
Strawberry R nr Duchesne [2]	APR-JUL	31	55	80	71%	98	137	112
Strawberry R nr Soldier Springs [2]	APR-JUL	24	39	51	71%	65	89	72
Duchesne R at Myton [2]	APR-JUL	134	205	260	79%	325	430	330
Duchesne R nr Randlett [2]	APR-JUL	113	210	295	77%	395	560	385
Duchesne R ab Knight Diversion [2]	APR-JUL	112	145	170	87%	197	240	195
WF Duchesne R at VAT Diversion	APR-JUL	8.6	12.2	15	81%	18.1	23	18.6
Rock Ck nr Mountain Home [2]	APR-JUL	52	66	77	88%	88	106	88
Yellowstone R nr Altonah	APR-JUL	32	43	52	85%	61	77	61
Upper Stillwater Reservoir Inflow[2]	APR-JUL	43	56	65	88%	75	91	74
Lake Fk R Bl Moon Lk nr Mountain Home[2]	APR-JUL	37	48	57	86%	66	81	66
Lake Fork R ab Moon Lake Reservoir	APR-JUL	33	46	55	90%	66	83	61
Currant Ck Reservoir Inflow[2]	APR-JUL	7.3	11.5	14.8	74%	18.6	25	20

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Steinaker Reservoir	16.6	16.4	21.7	33.4
Red Fleet Reservoir	16.1	11.3	17.9	25.7
Big Sand Wash Reservoir	24.6	25.2		25.7
Upper Stillwater Reservoir	10.4	13.6	8.6	32.5
Starvation Reservoir	148.7	145.1	138.8	165.3
Moon Lake Reservoir	21.6	30.6	24.4	35.8
Currant Creek Reservoir	14.6	14.8	14.9	15.5
Strawberry Reservoir	792.0	837.4	658.4	1105.9
Basin-wide Total	1020.0	1069.2	884.7	1414.1
# of reservoirs	7	7	7	7

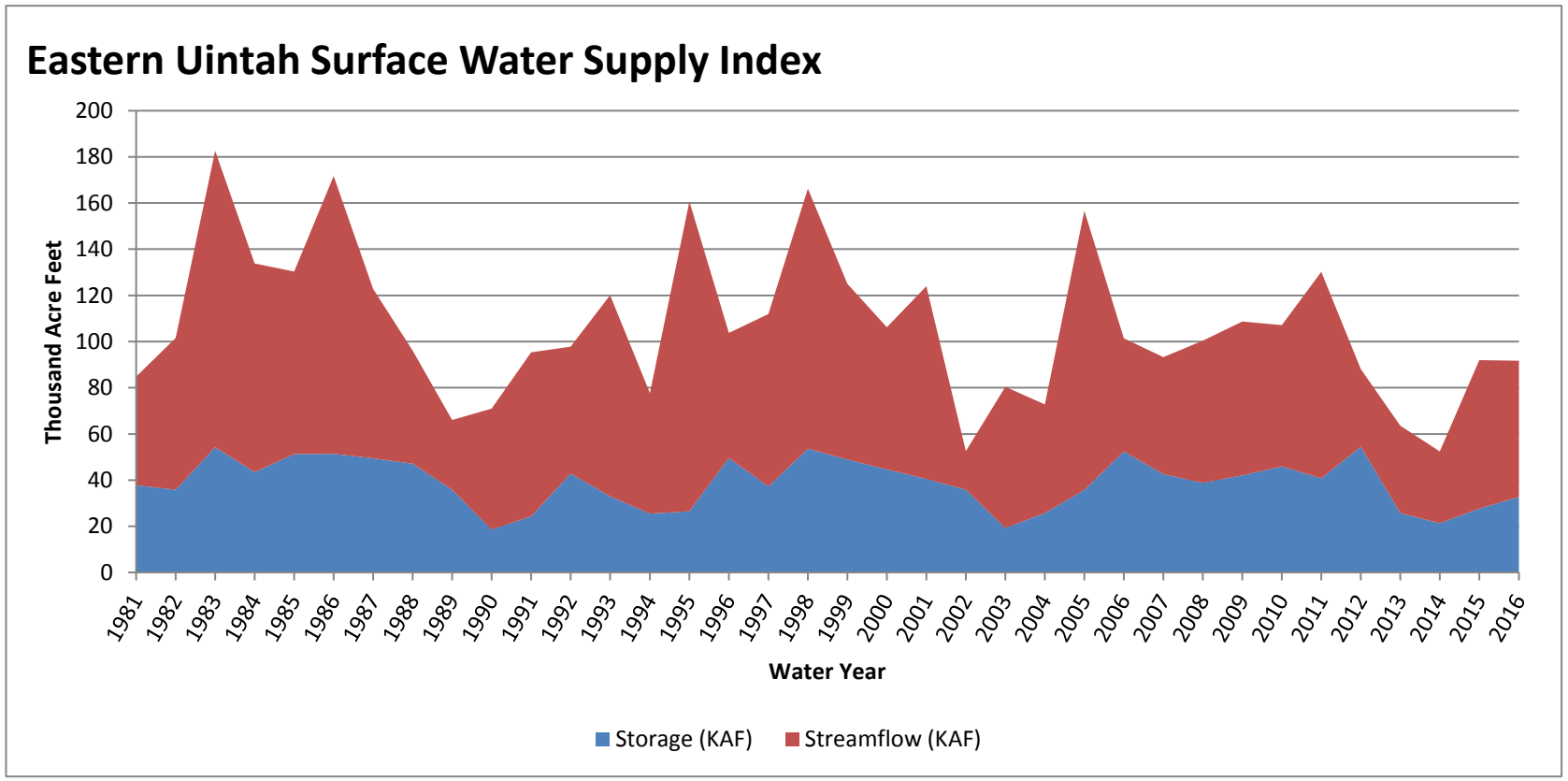
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Strawberry	5	103%	91%
Lakefork Yellowstone	6	97%	80%
Uintah Whiterocks	2	77%	60%

February 1, 2016

Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Eastern Uintah	**32.70**	**59.00**	**91.70**	**30**	**-1.69**	**81, 12, 15, 07**

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

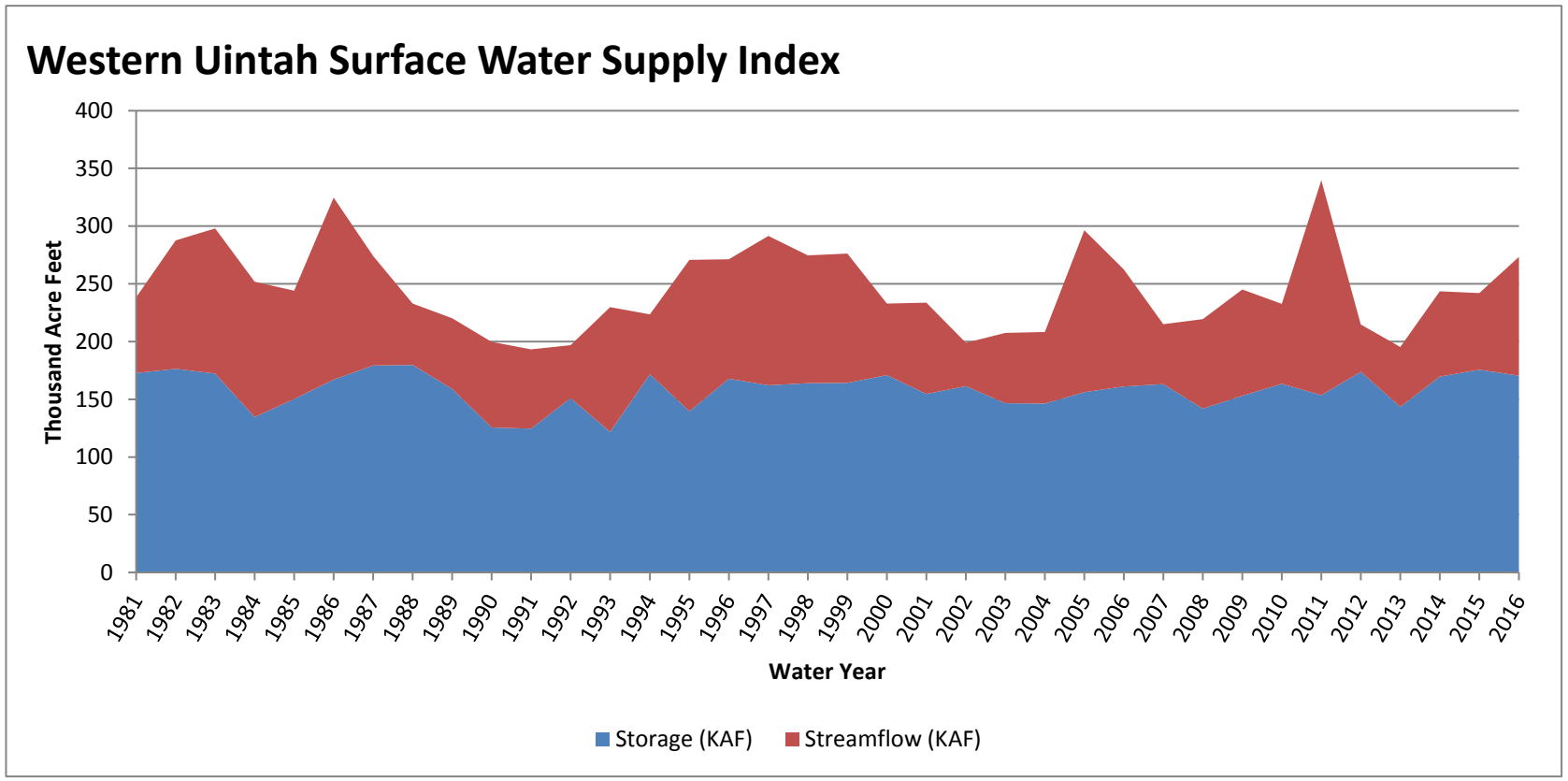


February 1, 2016

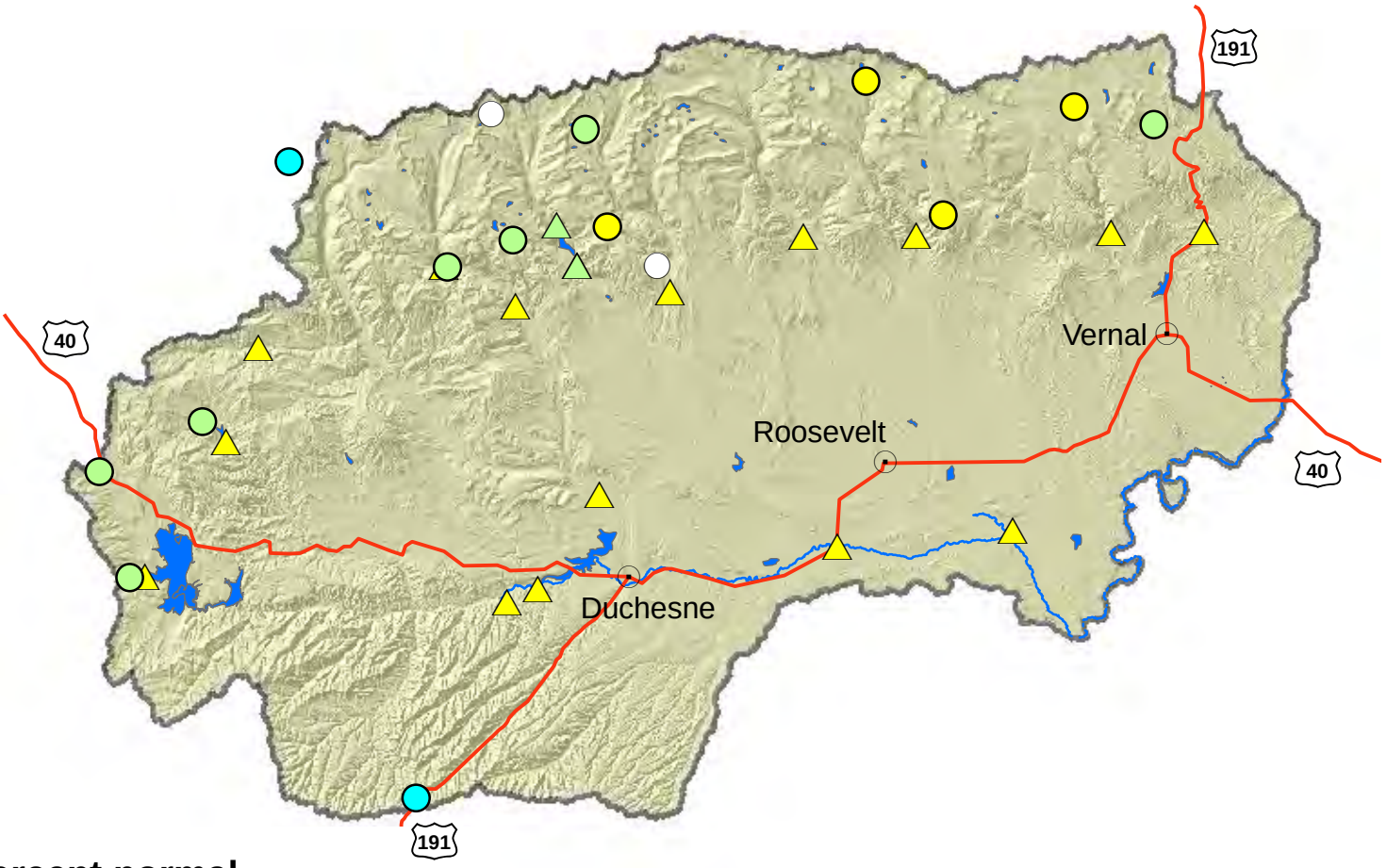
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Western Uintah	**170.36**	**103.00**	**273.36**	**73**	**1.91**	**95, 96, 87, 98**

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



Duchesne basin



Percent normal

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

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

N

0 5 10 20 30 40 Miles

USDA NRCS
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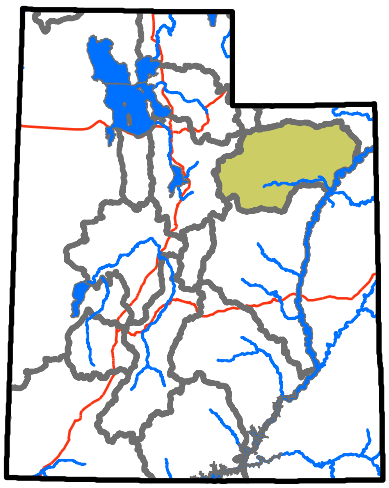
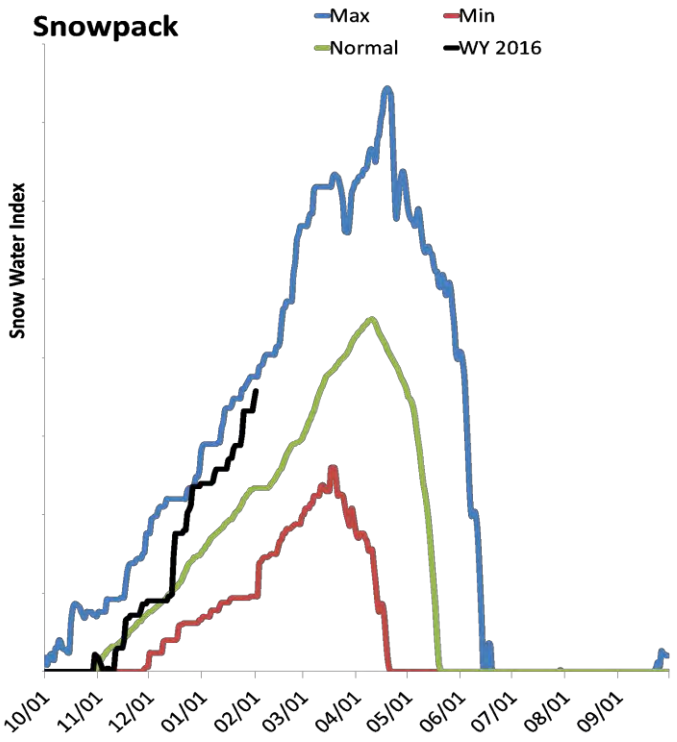
Natural Resources Conservation Service

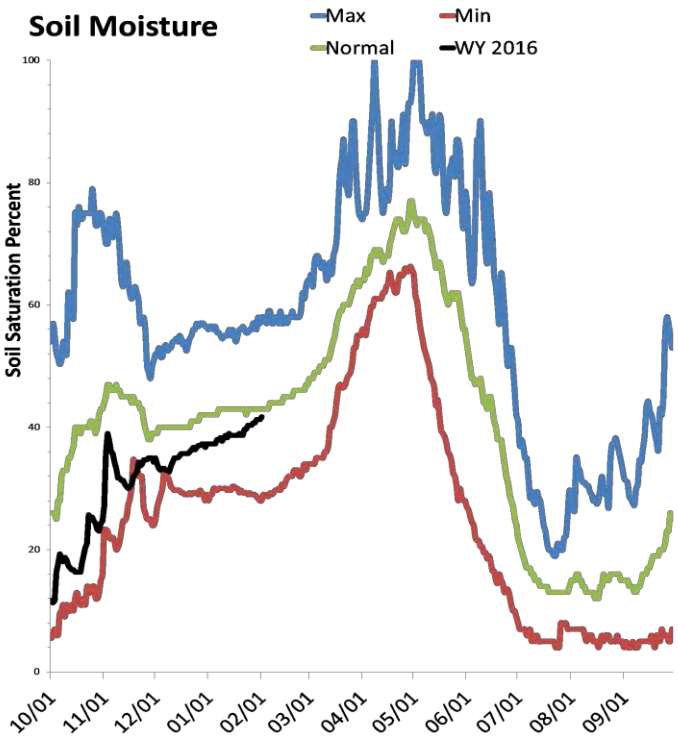


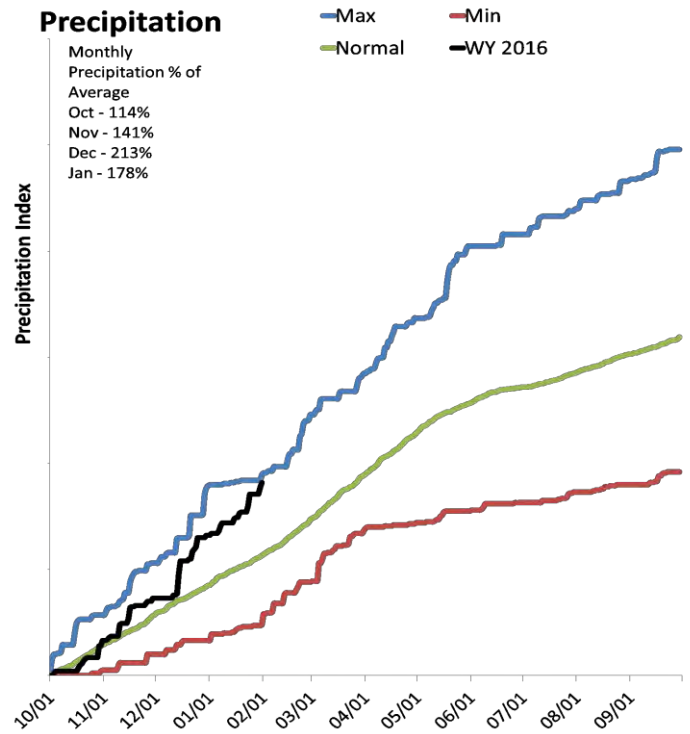
Lower Sevier River Basin

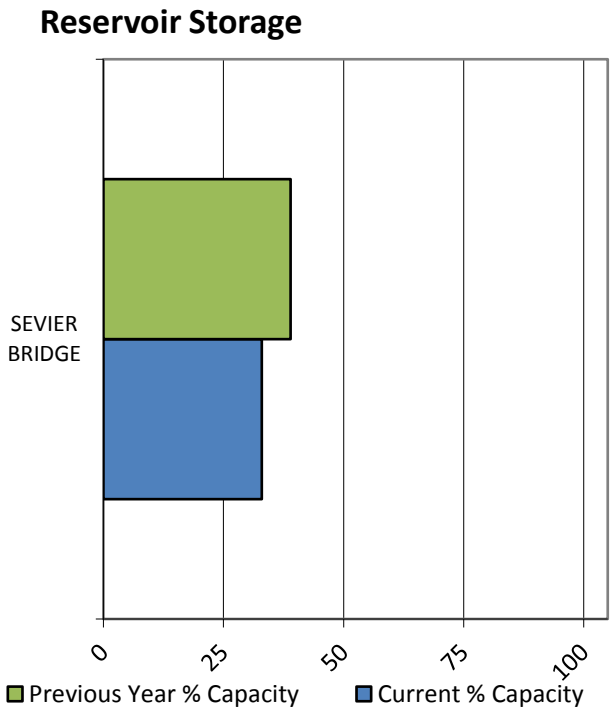
2/1/2016

Snowpack in the Lower Sevier River Basin is much above normal at 153% of normal, compared to 115% last year. Precipitation in January was much above average at 179%, which brings the seasonal accumulation (Oct-Jan) to 161% of average. Soil moisture is at 42% compared to 38% last year. Reservoir storage is at 33% of capacity, compared to 39% last year. Forecast streamflow volumes range from 111% to 114% of average. The surface water supply index is 43% for the Lower Sevier.









Data Current as of: 2/4/2016 8:00:12 AM

Lower Sevier River
Streamflow Forecasts - February 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	3.6	5	111%	6.7	10	4.5
Oak Ck nr Oak City								
	APR-JUL	1.07	1.54	1.9	114%	2.3	3	1.66

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Sevier Bridge Reservoir	78.6	91.6	155.7	236.0
Basin-wide Total	78.6	91.6	155.7	236.0
# of reservoirs	1	1	1	1

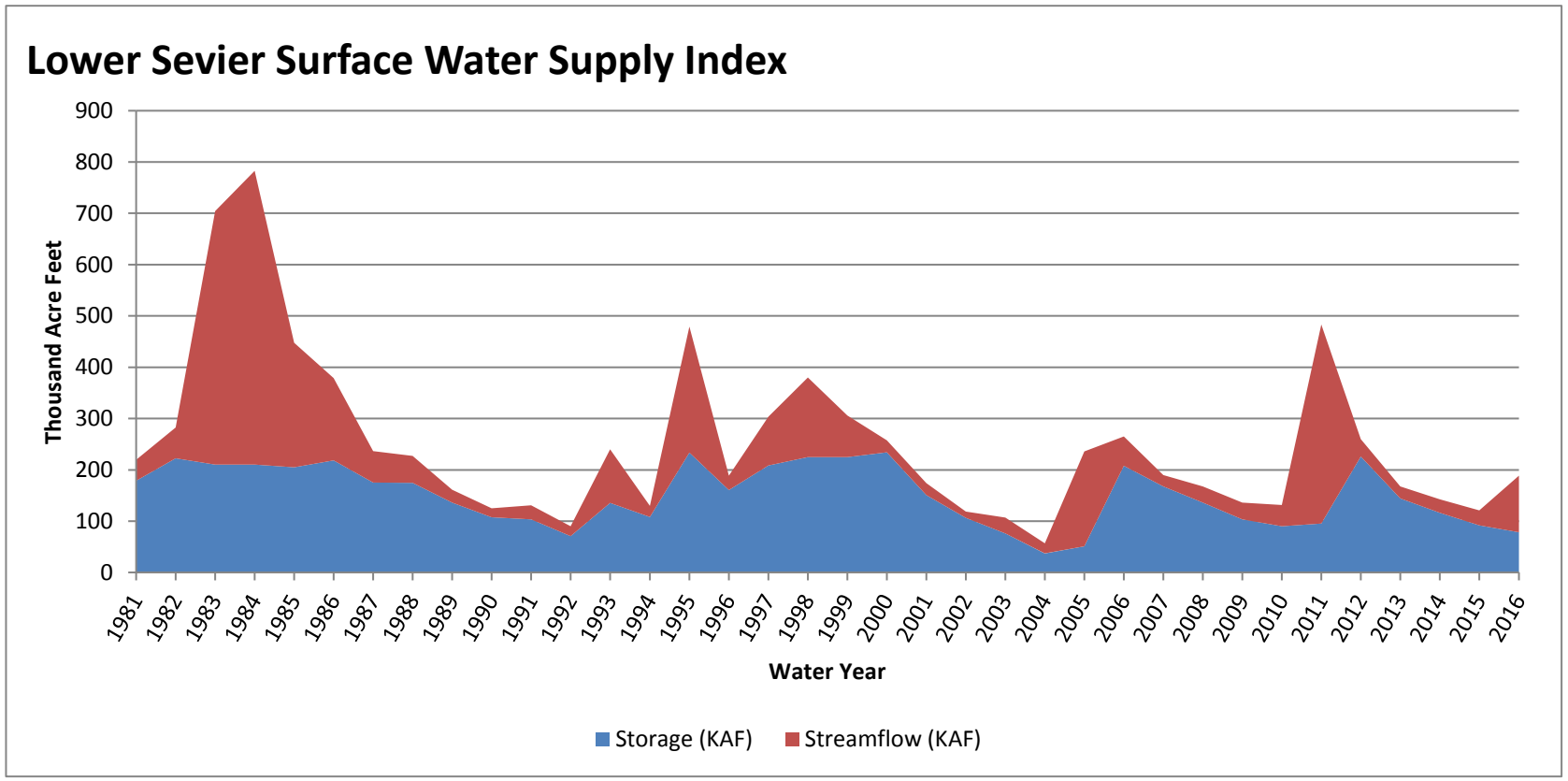
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Lower Sevier	2	150%	98%

February 1, 2016

Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Lower Sevier	**78.61**	**110.00**	**188.61**	**43**	**-0.56**	**13, 01, 96, 07**

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



Lower Sevier basin

Percent normal

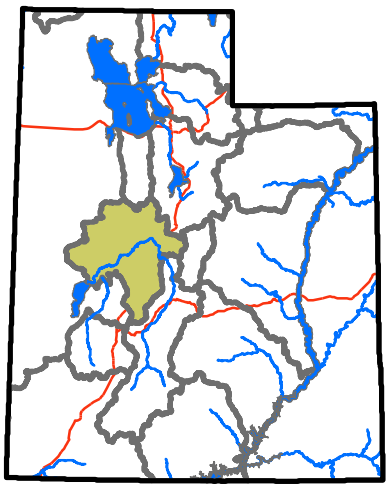
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

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

N

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

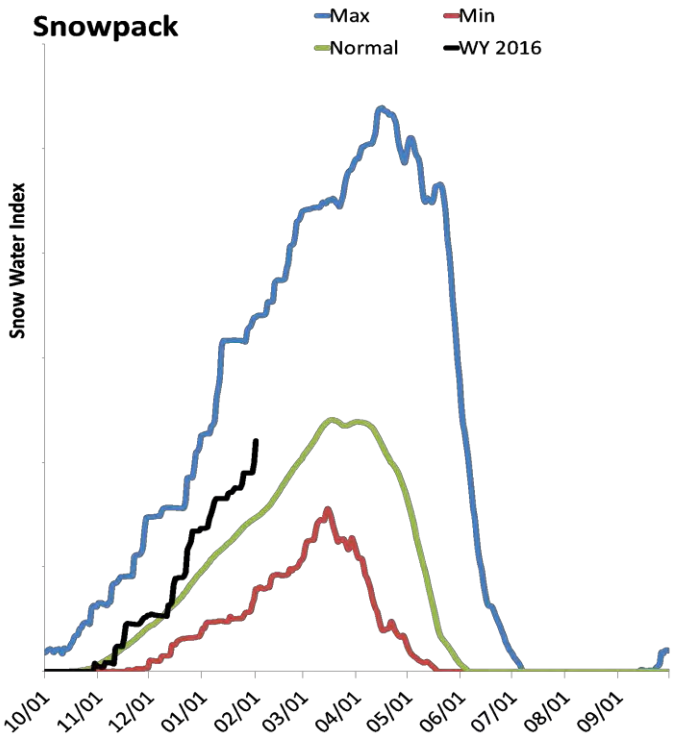
0 2.5 5 10 15 20
Miles

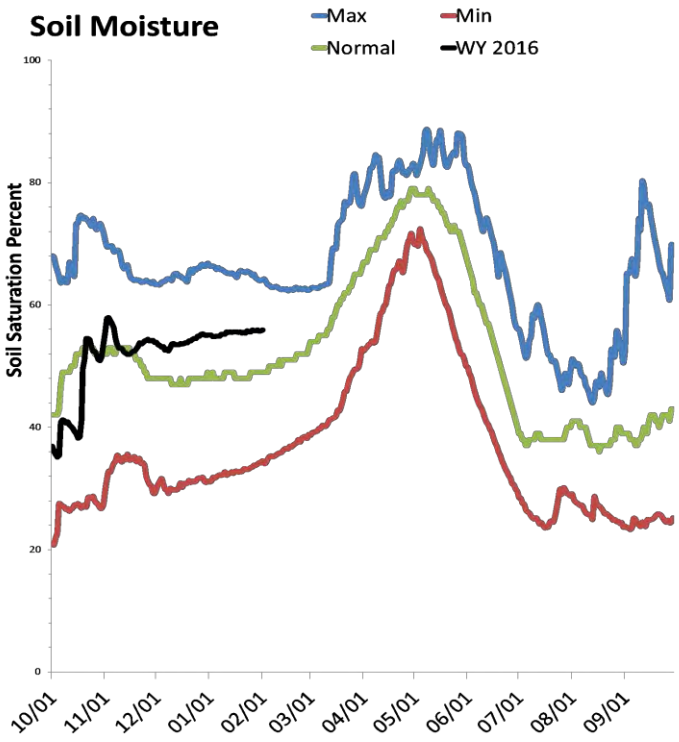


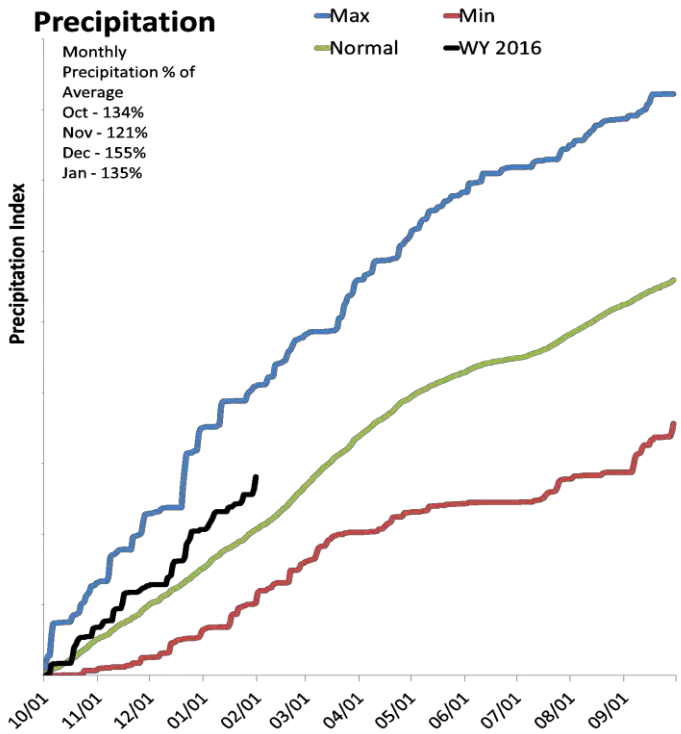
Upper Sevier River Basin

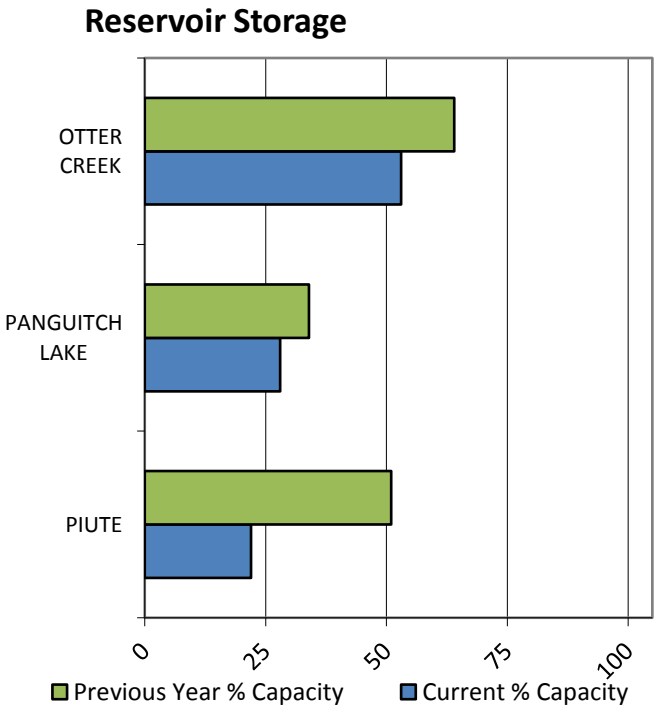
2/1/2016

Snowpack in the Upper Sevier River Basin is much above normal at 150% of normal, compared to 91% last year. Precipitation in January was much above average at 135%, which brings the seasonal accumulation (Oct-Jan) to 136% of average. Soil moisture is at 57% compared to 49% last year. Reservoir storage is at 34% of capacity, compared to 53% last year. Forecast streamflow volumes range from 114% to 124% of average. The surface water supply index is 38% for the Upper Sevier.









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Upper Sevier River
Streamflow Forecasts - February 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)
Sevier R at Hatch	APR-JUL	32	46	56	117%	66	80	48
EF Sevier R nr Kingston	APR-JUL	17.6	31	40	114%	49	62	35
Sevier R nr Kingston	APR-JUL	2.6	24	38	115%	52	73	33
Sevier R bl Piute Dam	APR-JUL	22	54	76	115%	98	130	66
Clear Ck ab Diversions nr Sevier	APR-JUL	13.9	21	26	124%	31	38	21
Salina Ck nr Emery	APR-JUL	3.2	7	9.5	120%	12	15.8	7.9

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Piute Reservoir	15.9	36.3	49.2	71.8
Otter Creek Reservoir	27.7	33.7	35.0	52.5
Panguitch Lake	6.3	7.6	12.7	22.3
Basin-wide Total	49.9	77.6	96.9	146.6
# of reservoirs	3	3	3	3

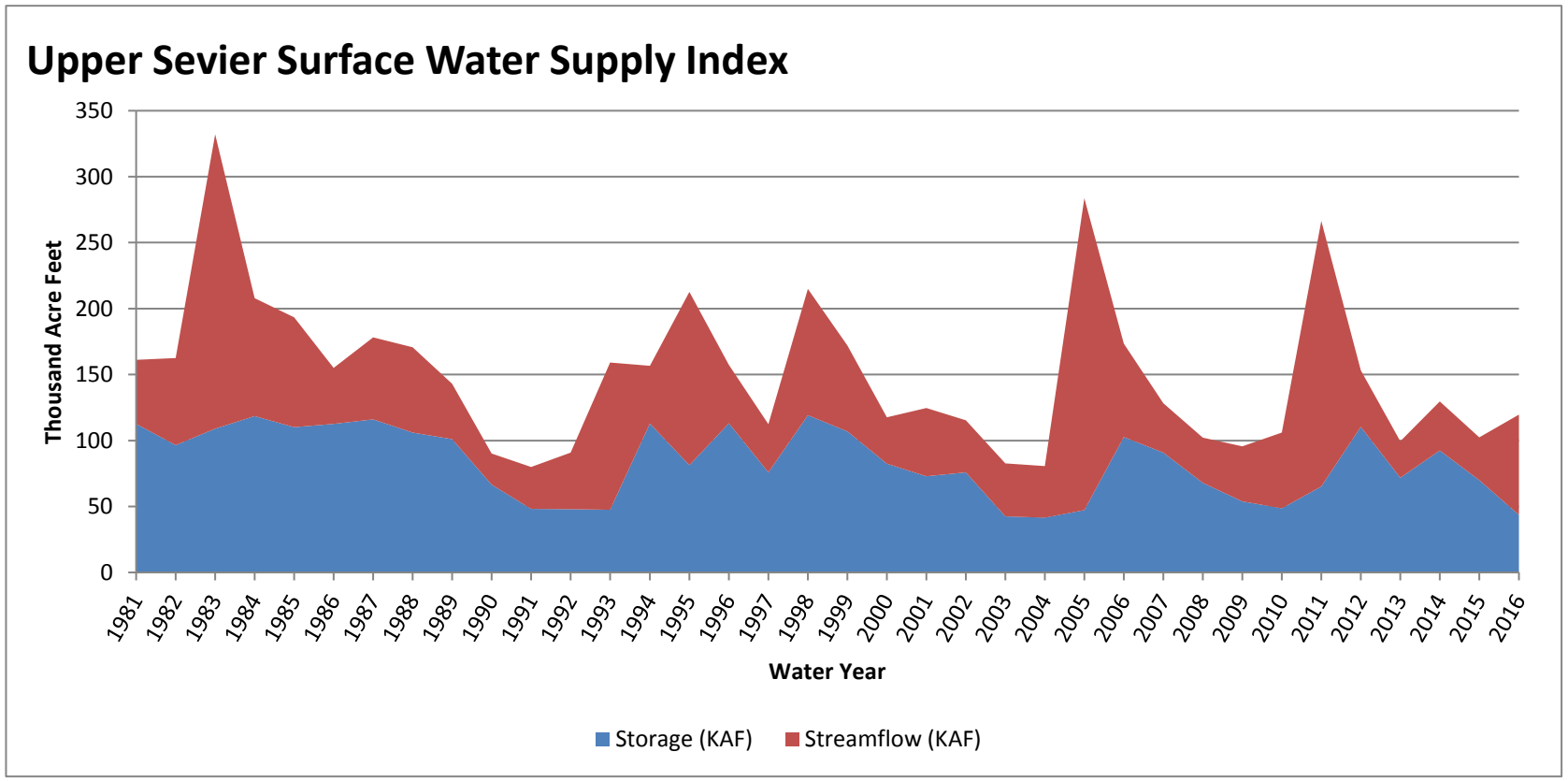
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Upper Sevier	6	152%	58%
Middle Sevier	8	140%	100%
E Fk Sevier	4	122%	88%

February 1, 2016

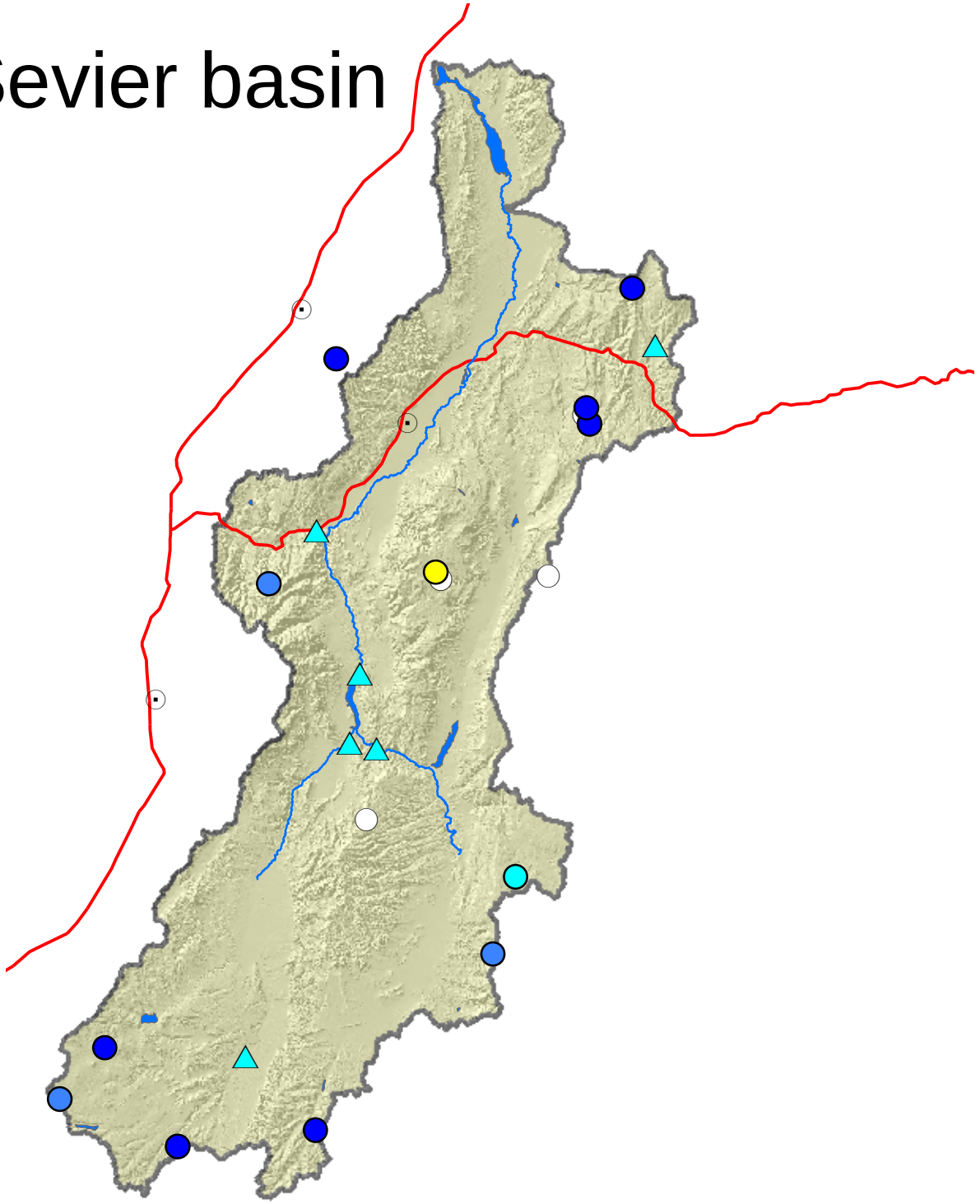
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Upper Sevier	**43.59**	**76.00**	**119.59**	**38**	**-1.01**	**02, 00, 01, 07**

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



Upper Sevier basin



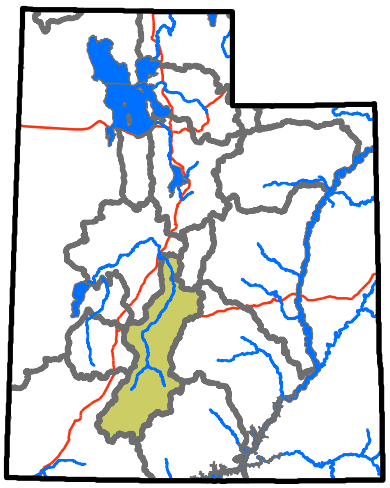
Percent normal

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

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

N

0 5 10 20 30 40 Miles



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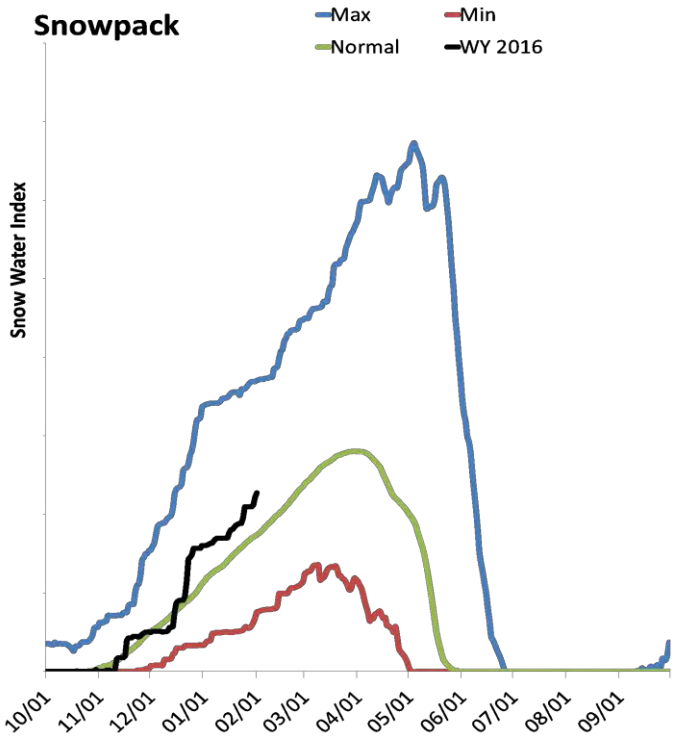
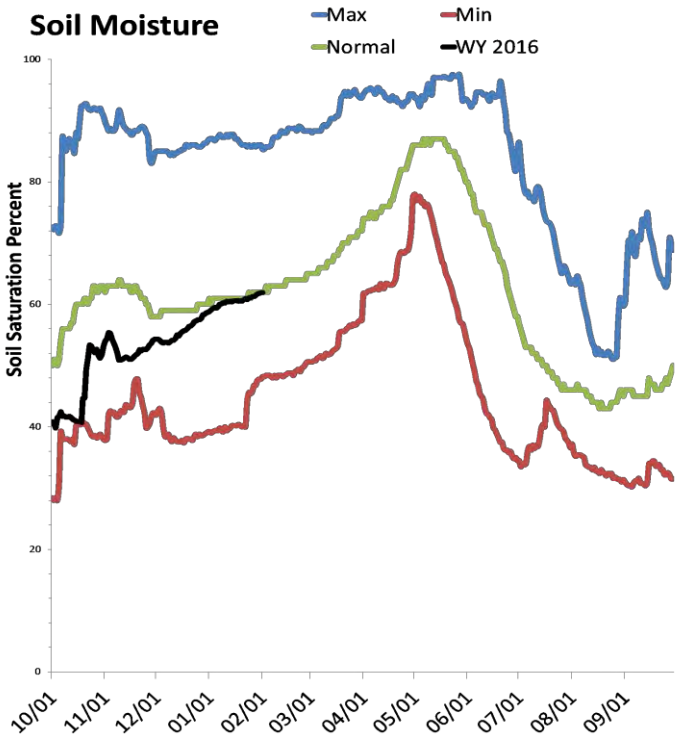
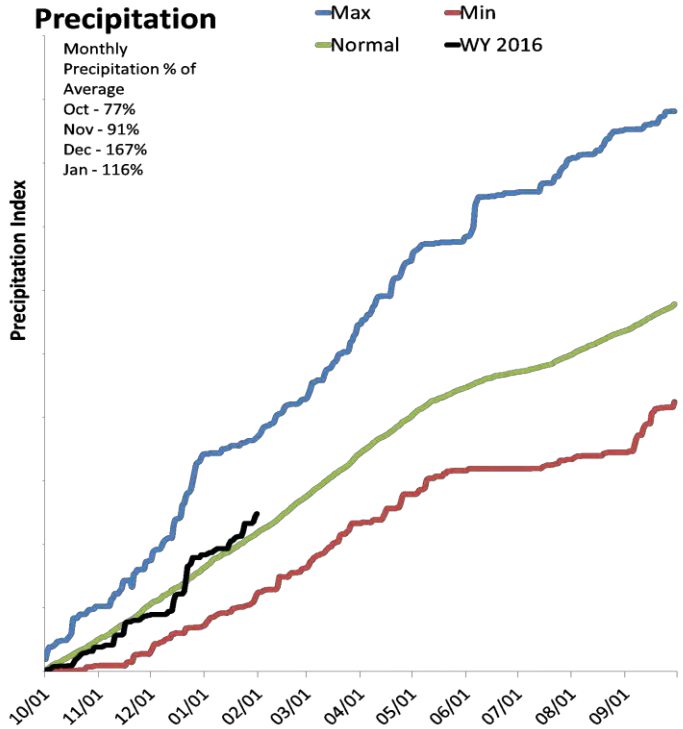
San Pitch River Basin

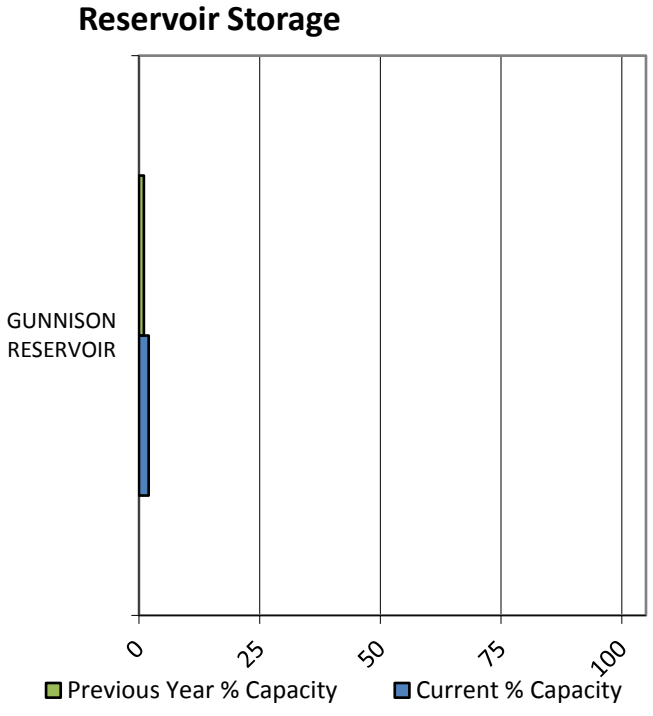
2/1/2016

Snowpack in the San Pitch River Basin is much above normal at 131% of normal, compared to 106% last year. Precipitation in January was above average at 116%, which brings the seasonal accumulation (Oct-Jan) to 114% of average. Soil moisture is at 61% compared to 67% last year. Reservoir storage is at 2% of capacity, compared to 1% last year. The forecast streamflow volume for Manti Creek is 108% of average. The surface water supply index is 38% for the San Pitch.









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San Pitch River
Streamflow Forecasts - February 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	10.9	14.9	18	108%	21	27	16.7
Sevier R nr Gunnison								
	APR-JUL	57	89	110	111%	131	163	99

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Gunnison Reservoir	0.4	0.2	11.4	20.3
Basin-wide Total	0.4	0.2	11.4	20.3
# of reservoirs	1	1	1	1

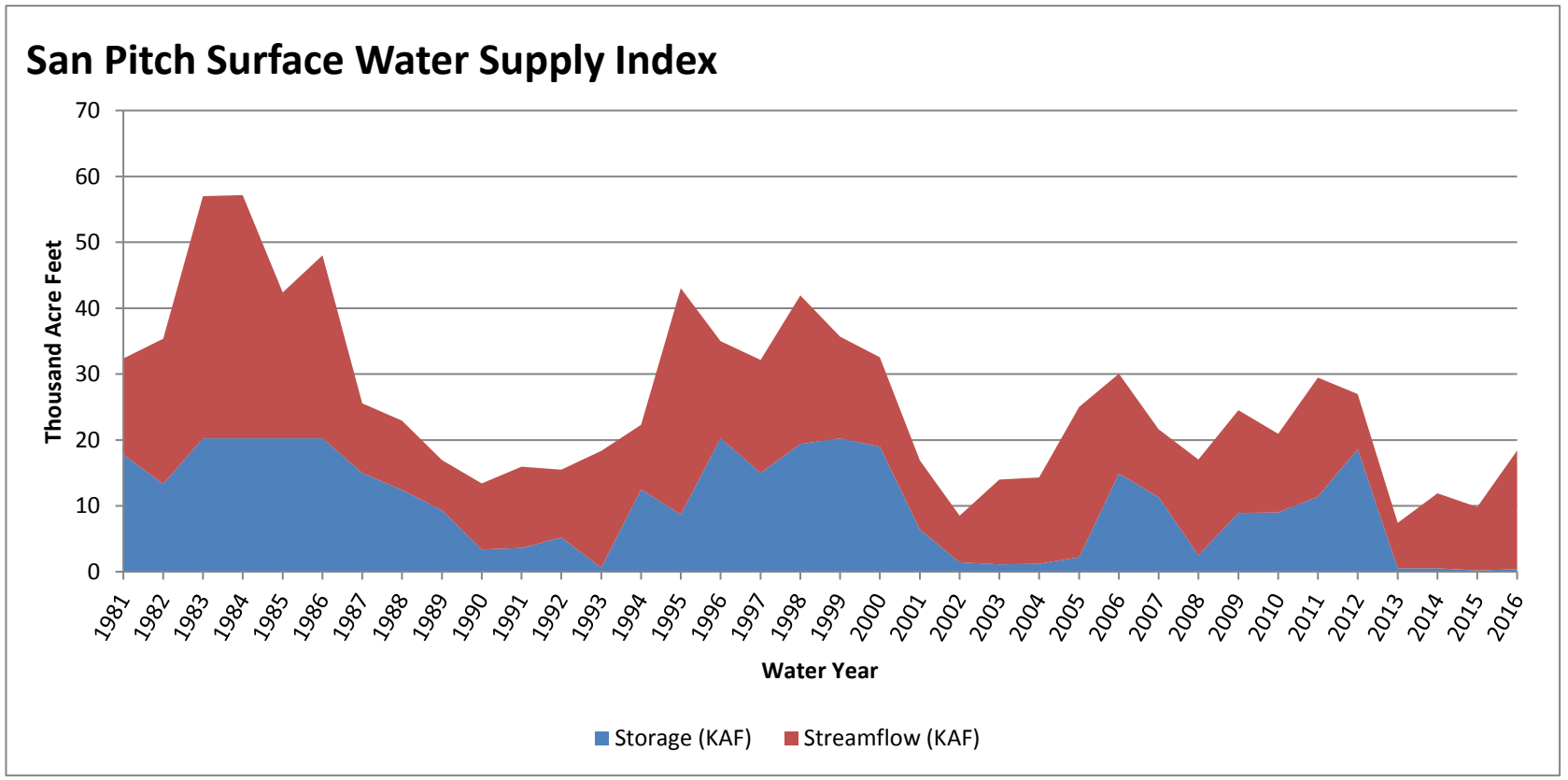
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Upper San Pitch	2	110%	90%
Lower San Pitch	5	134%	117%

February 1, 2016

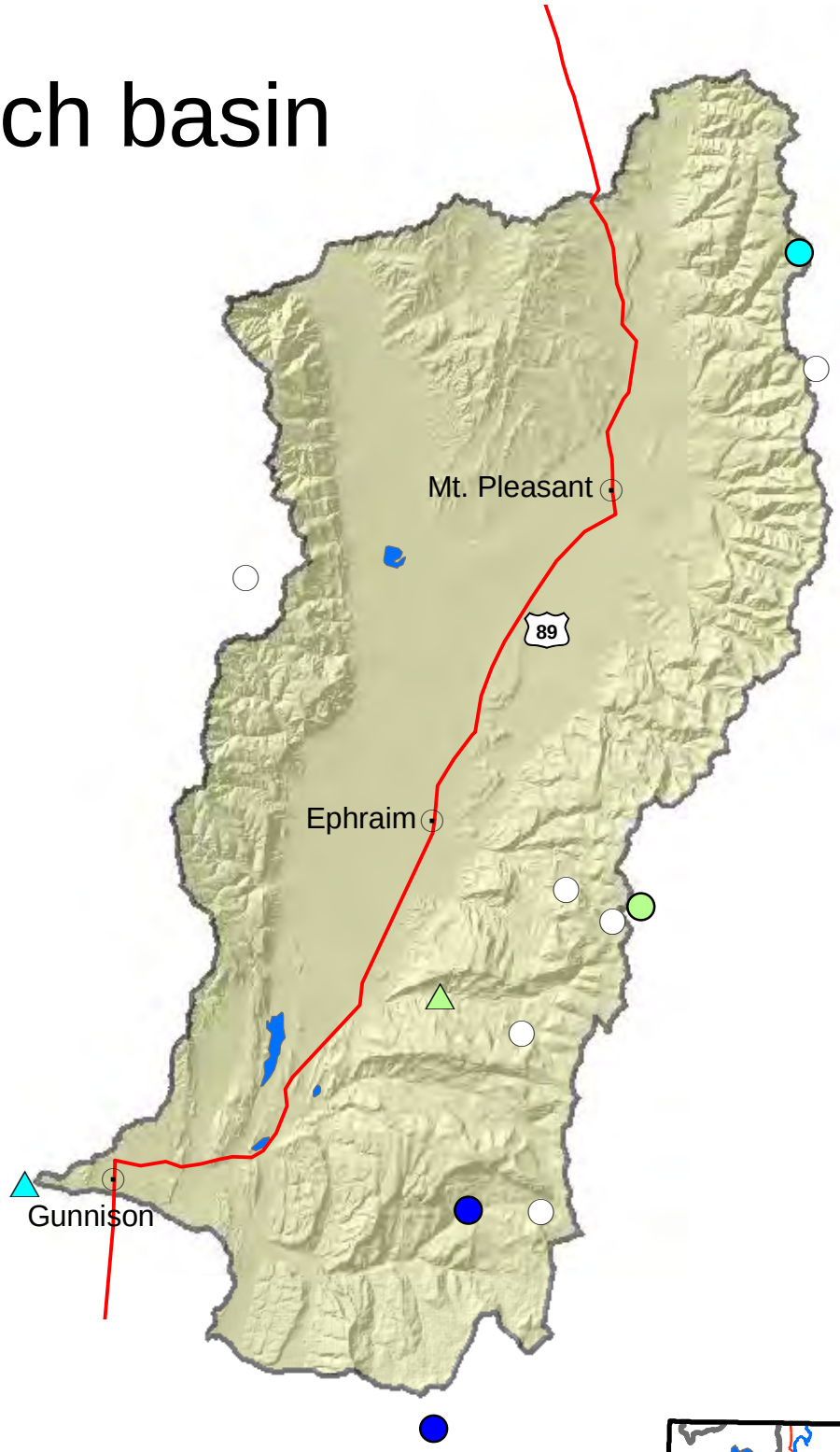
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
San Pitch	**0.40**	**18.00**	**18.40**	**38**	**-1.01**	**08, 93, 10, 07**

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



San Pitch basin



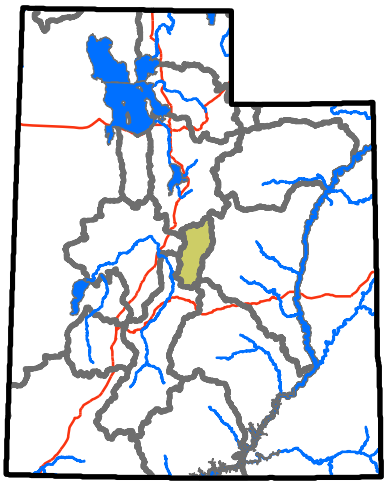
Percent normal

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

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

N

0 2.5 5 10 15 20 Miles



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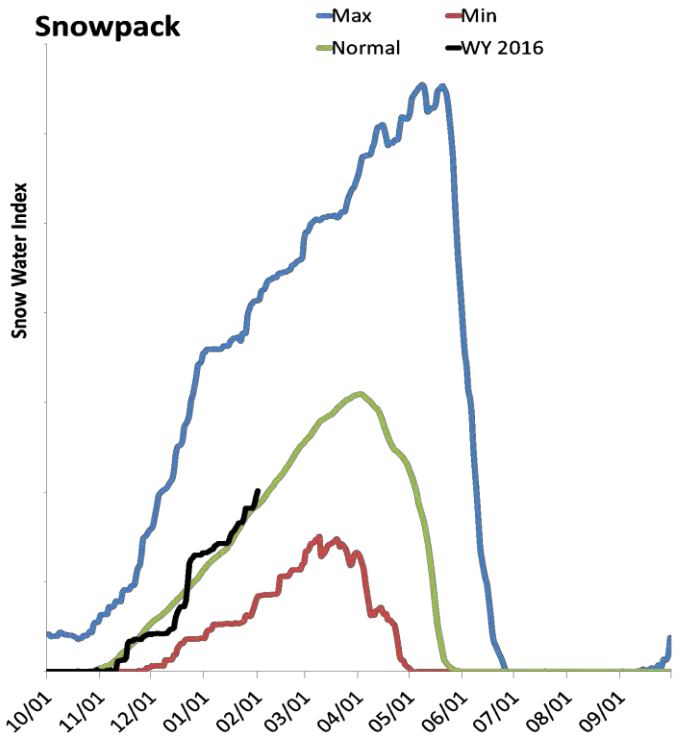
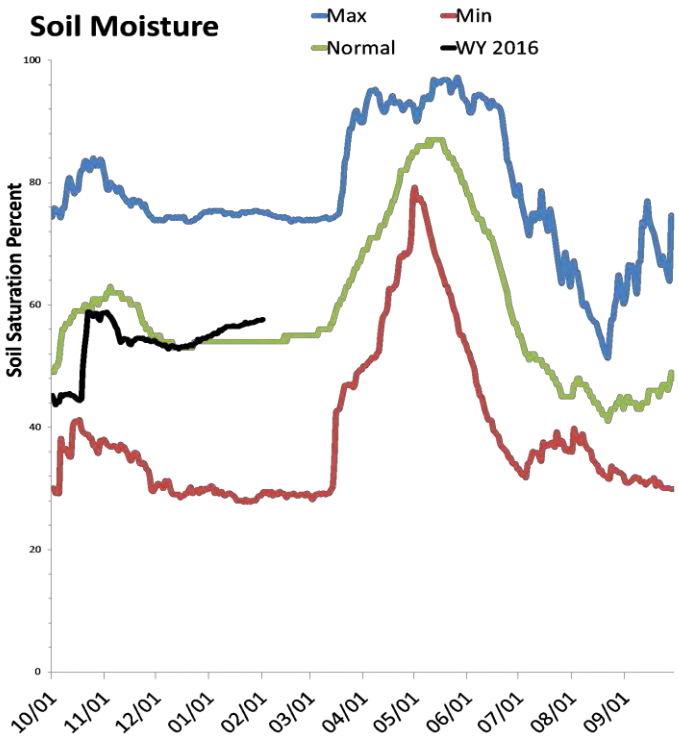
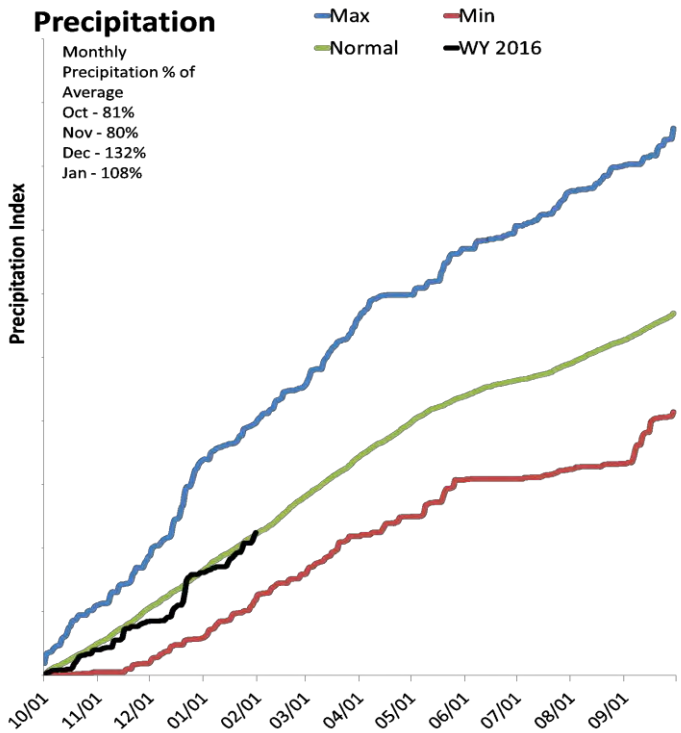
Price & San Rafael Basins

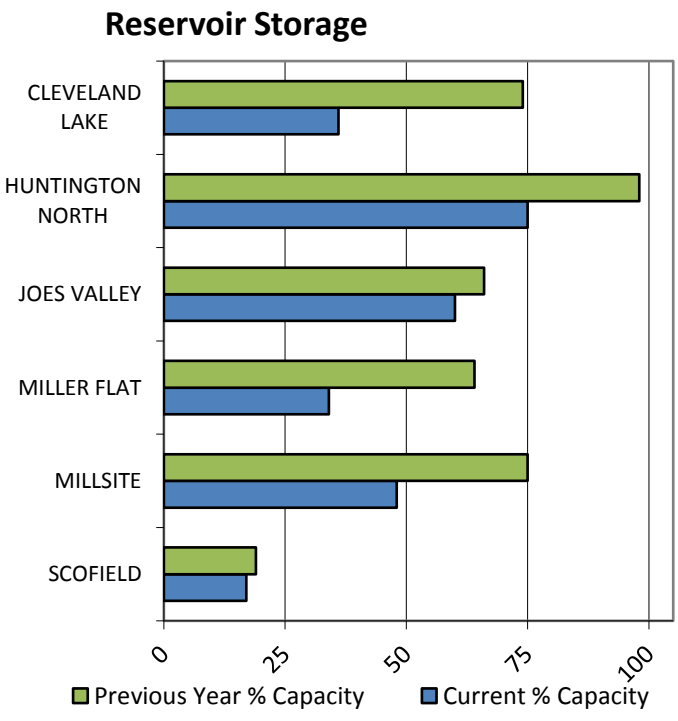
2/1/2016

Snowpack in the Price & San Rafael Basins is near normal at 109% of normal, compared to 94% last year. Precipitation in January was near average at 107%, which brings the seasonal accumulation (Oct-Jan) to 101% of average. Soil moisture is at 57% compared to 61% last year. Reservoir storage is at 39% of capacity, compared to 49% last year. Forecast streamflow volumes range from 84% to 105% of average. The surface water supply index is 30% for the Price River, 54% for Joe's Valley, 59% for Ferron Creek.









Data Current as of: 2/4/2016 8:00:05 AM

Price San Rafael
Streamflow Forecasts - February 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	15.5	23	28	93%	34	44	30
Price R nr Scofield Reservoir[2]	APR-JUL	17.7	28	37	90%	47	63	41
White R bl Tabbyune Creek	APR-JUL	7	10.5	13.3	86%	16.4	22	15.5
Green R at Green River, UT [2]	APR-JUL	1480	2060	2500	84%	2990	3780	2960
Electric Lake Inflow [2]	APR-JUL	6.1	9.2	11.6	87%	14.3	18.9	13.3
Huntington Ck nr Huntington [2]	APR-JUL	23	31	38	95%	45	57	40
Joes Valley Reservoir Inflow[2]	APR-JUL	32	43	51	91%	60	74	56
Ferron Ck (Upper Station) nr Ferron	APR-JUL	28	35	40	105%	45	54	38

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Joes Valley Reservoir	36.8	40.7	39.9	61.6
Millsite	8.0	12.5	10.1	16.7
Huntington North Reservoir	3.2	4.1	2.7	4.2
Cleveland Lake	1.9	4.0		5.4
Miller Flat Reservoir	1.8	3.3		5.2
Scofield Reservoir	10.9	12.5	29.9	65.8
Basin-wide Total	58.8	69.7	82.6	148.3
# of reservoirs	4	4	4	4

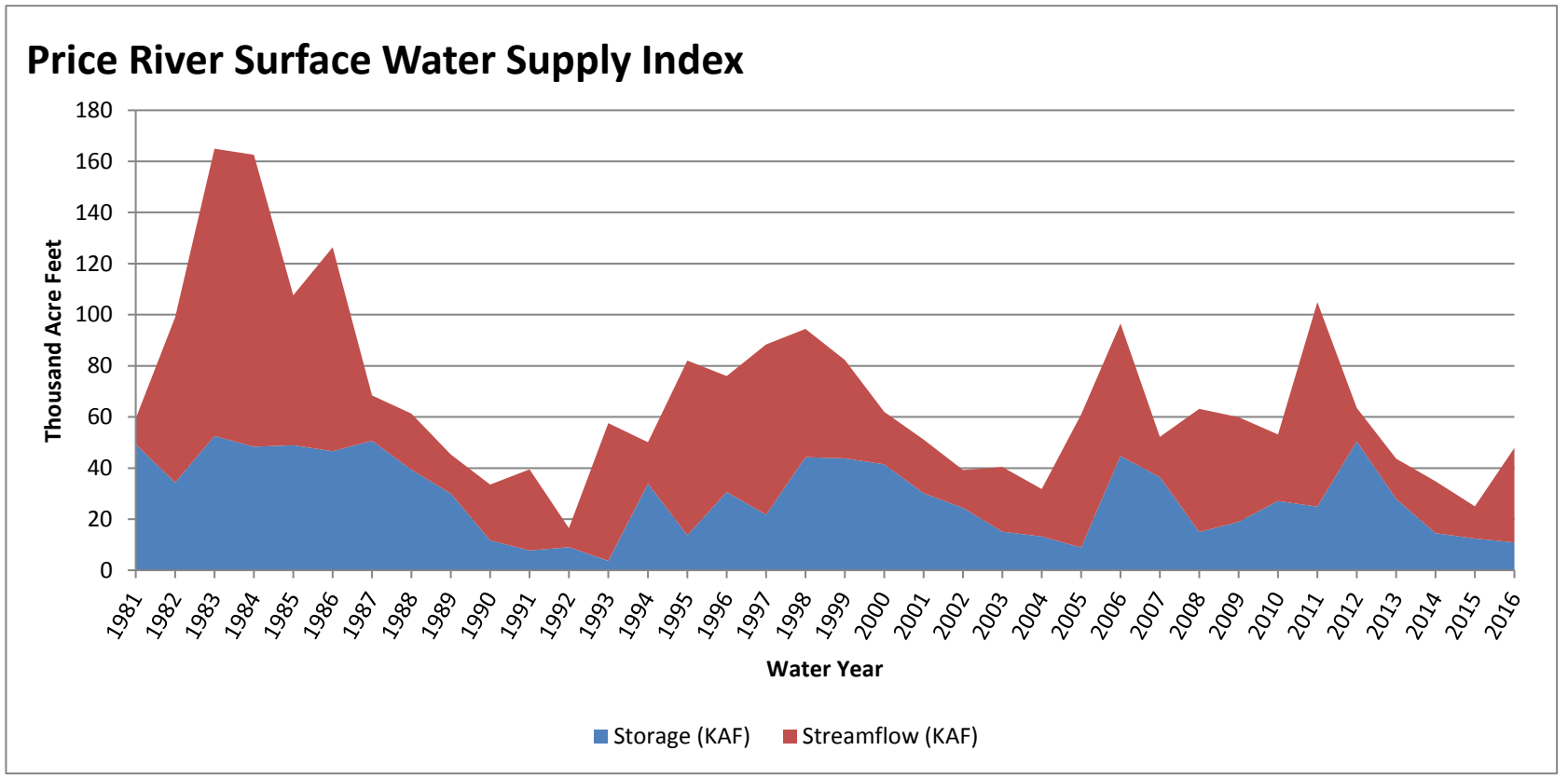
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Price	4	114%	87%
San Rafael	4	110%	99%

February 1, 2016

Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Price River	**10.91**	**37.00**	**47.91**	**30**	**-1.69**	**13, 89, 94, 01**

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

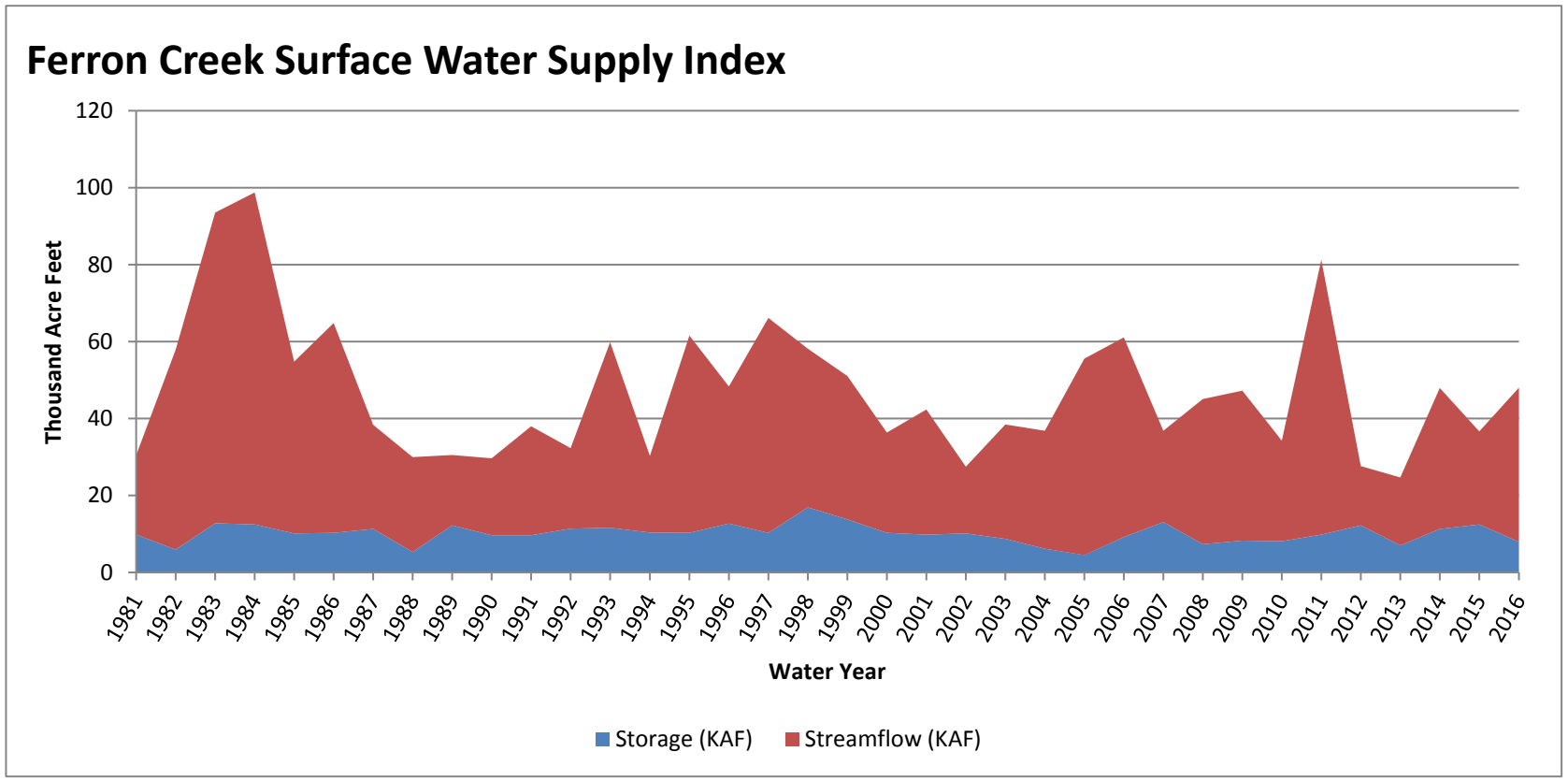


February 1, 2016

Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Ferron Creek	**7.99**	**40.00**	**47.99**	**59**	**0.79**	**09, 14, 96, 99**

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

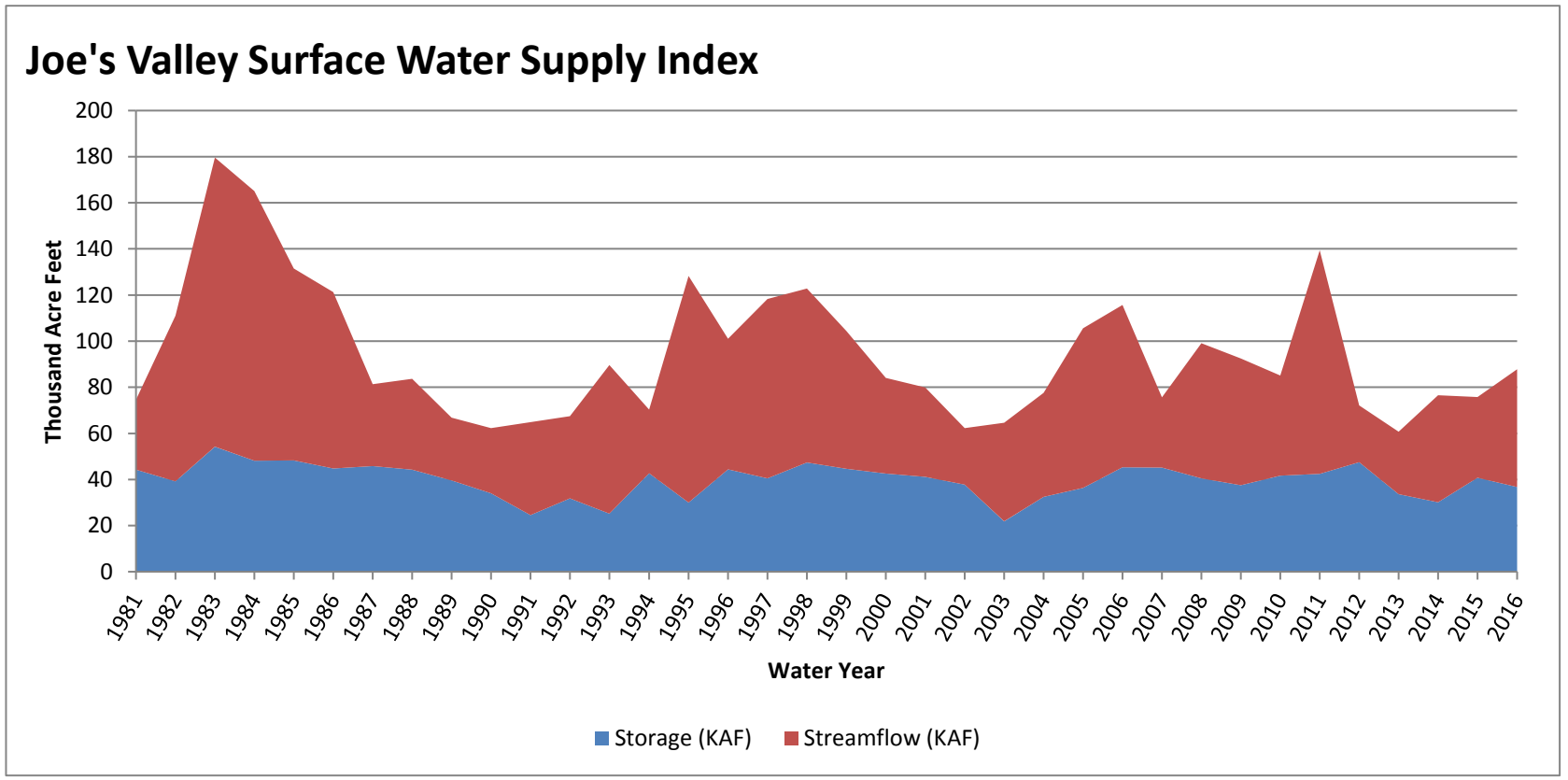


February 1, 2016

Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Joe's Valley	**36.79**	**51.00**	**87.79**	**54**	**0.34**	**00, 10, 93, 09**

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



Price-San Rafael basin

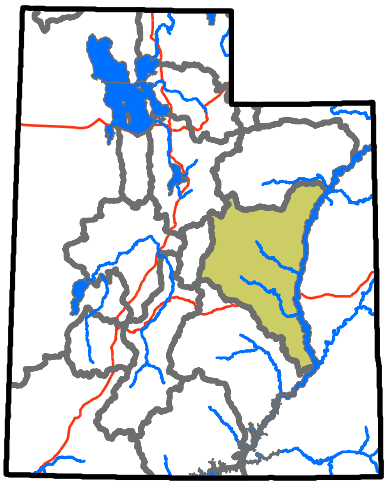
Percent normal

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

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

N

0 5 10 20 30 40 Miles

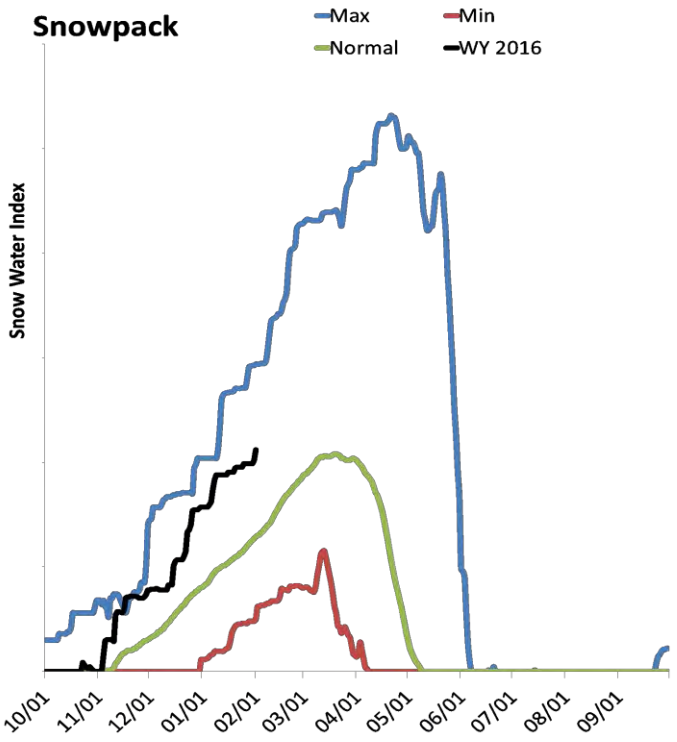


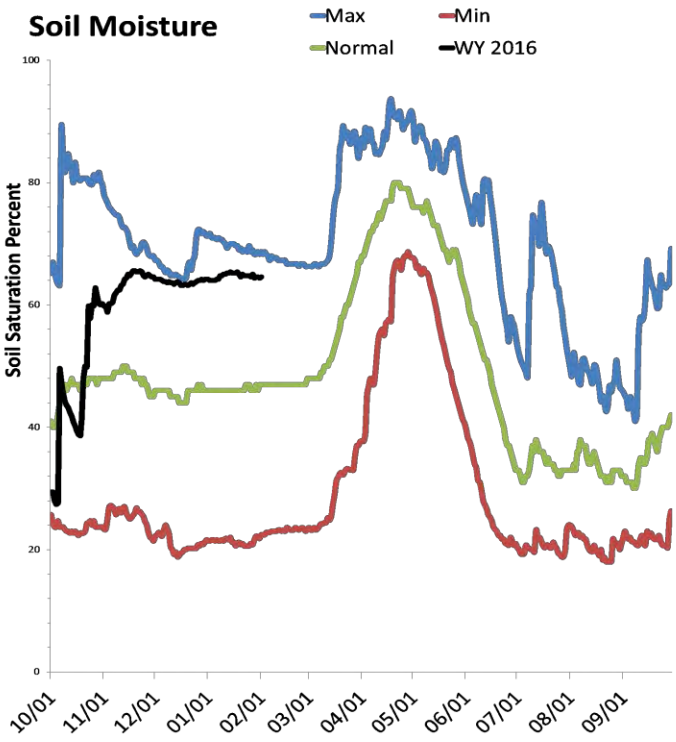
USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

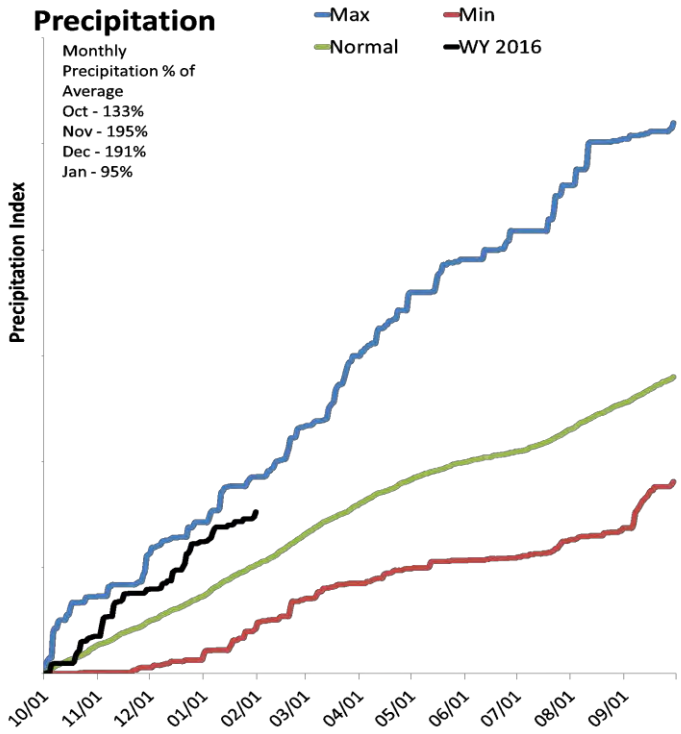
Southeastern Utah Basin

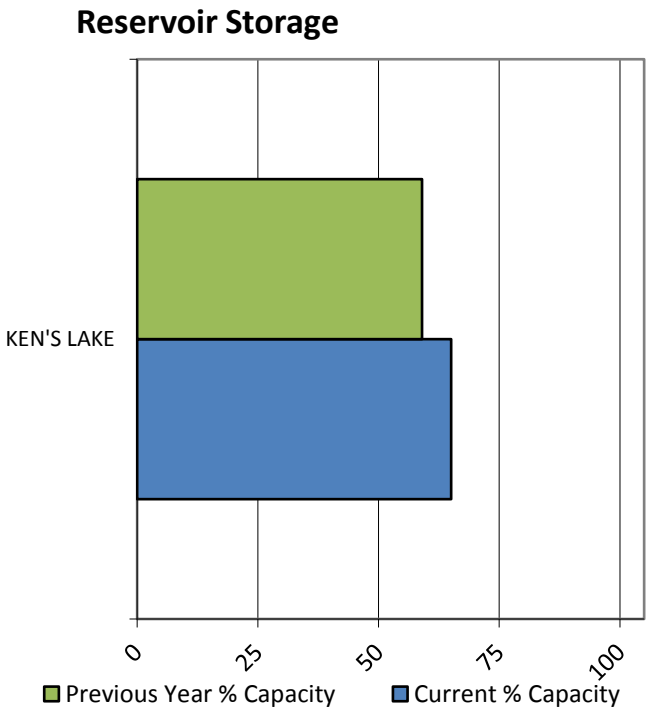
2/1/2016

Snowpack in the Southeastern Utah Basin is much above normal at 165% of normal, compared to 90% last year. Precipitation in January was near average at 96%, which brings the seasonal accumulation (Oct-Jan) to 149% of average. Soil moisture is at 73% compared to 58% last year. Reservoir storage is at 65% of capacity, compared to 59% last year. Forecast streamflow volumes range from 104% to 186% of average. The surface water supply index is 90% for Moab.









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Southeastern Utah
Streamflow Forecasts - February 1, 2016

Southeastern Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Mill Ck at Sheley Tunnel nr Moab	APR-JUL	5.2	6.8	8	186%	9.3	11.4	4.3
South Ck ab Resv nr Monticello	MAR-JUL	0.62	1.08	1.49	137%	2	2.9	1.09
Colorado R nr Cisco [2]	APR-JUL	2870	3770	4440	104%	5170	6350	4280
San Juan R near Bluff [2]	APR-JUL	805	1060	1250	114%	1450	1780	1100

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Ken's Lake	1.5	1.4	1.1	2.3
Basin-wide Total	1.5	1.4	1.1	2.3
# of reservoirs	1	1	1	1

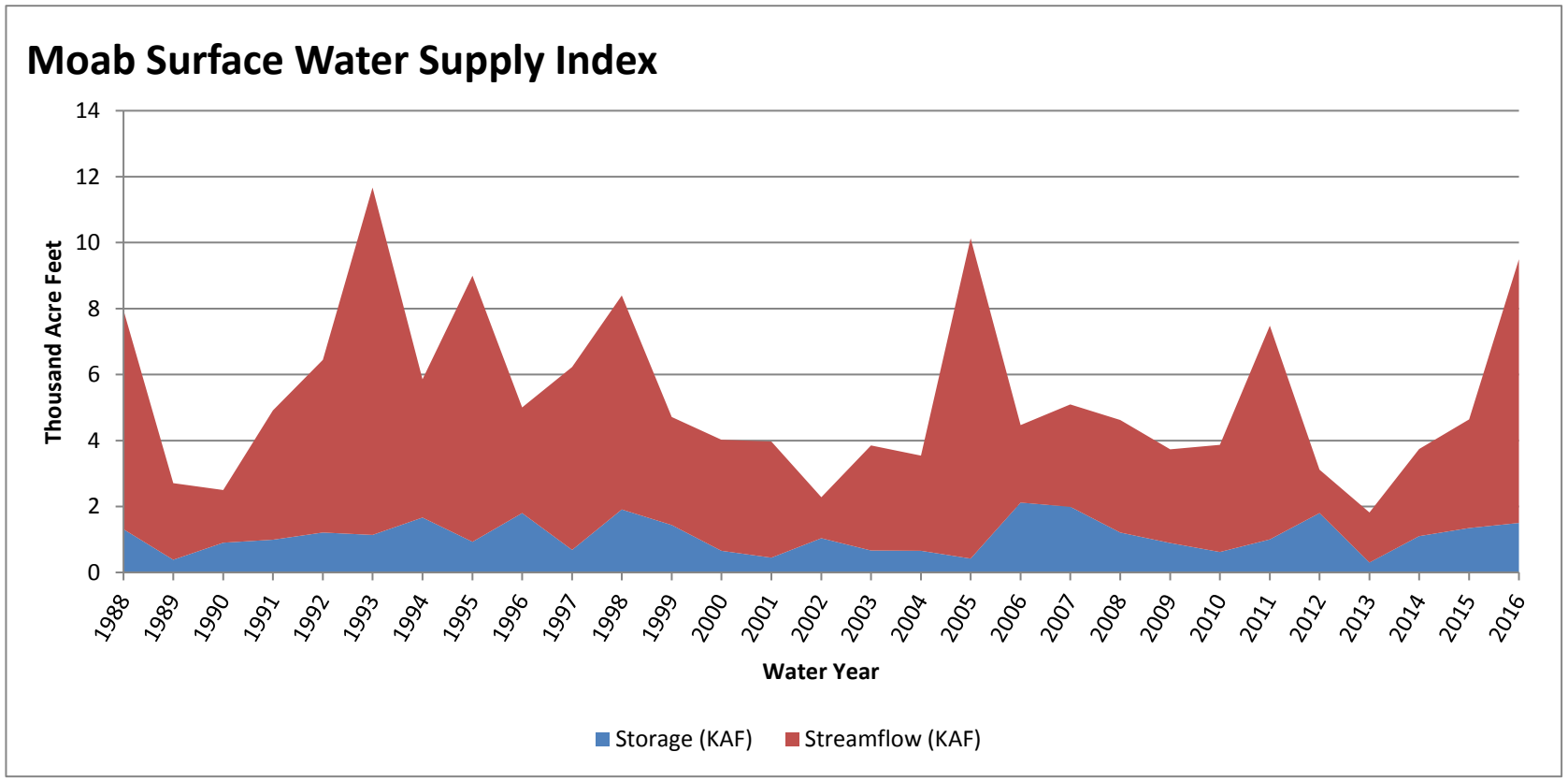
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Lasal Mtns	1	173%	101%
Lower San Juan	1	171%	85%
Lower Green	2	132%	87%

February 1, 2016

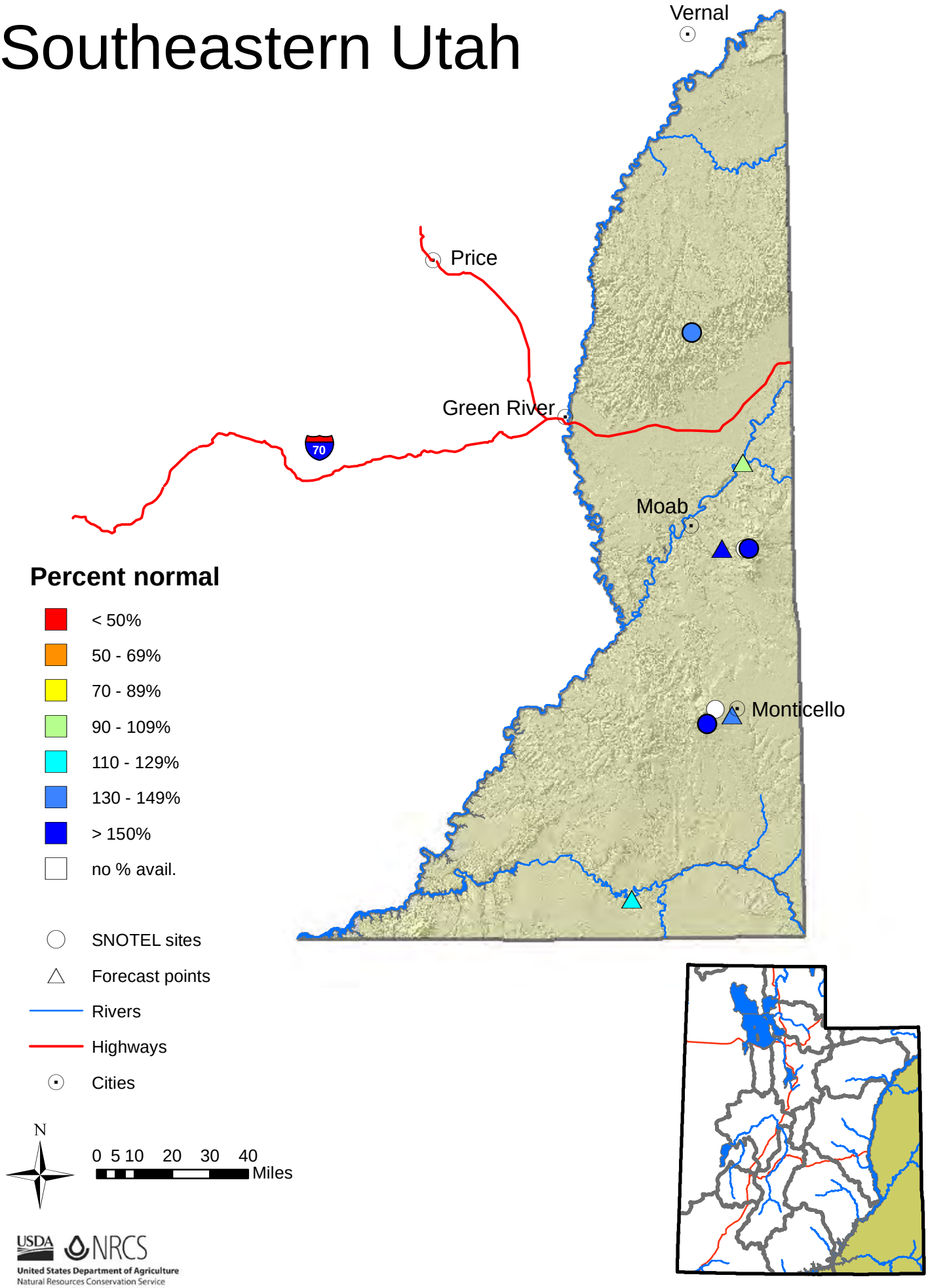
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Moab	**1.50**	**8.00**	**9.50**	**90**	**3.33**	**98, 95, 05, 93**

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



Southeastern Utah



USDA NRCS
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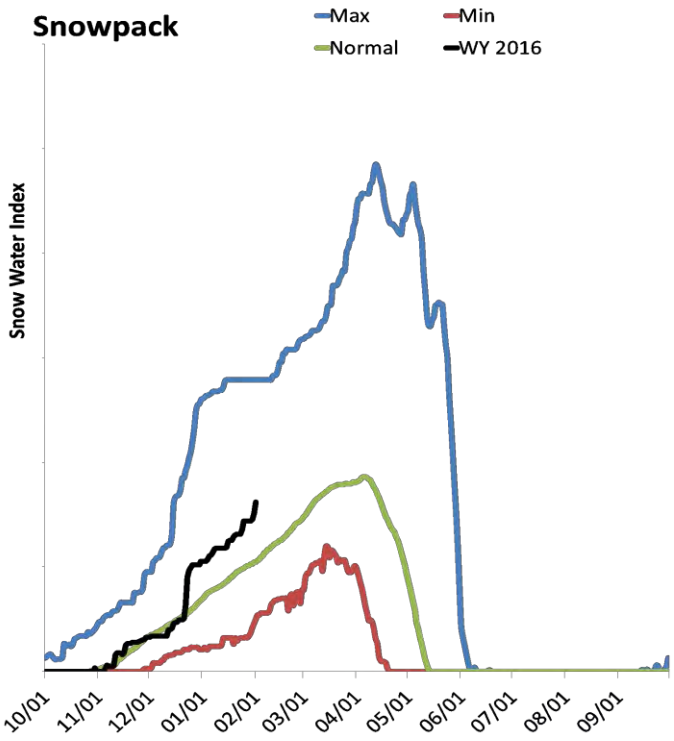
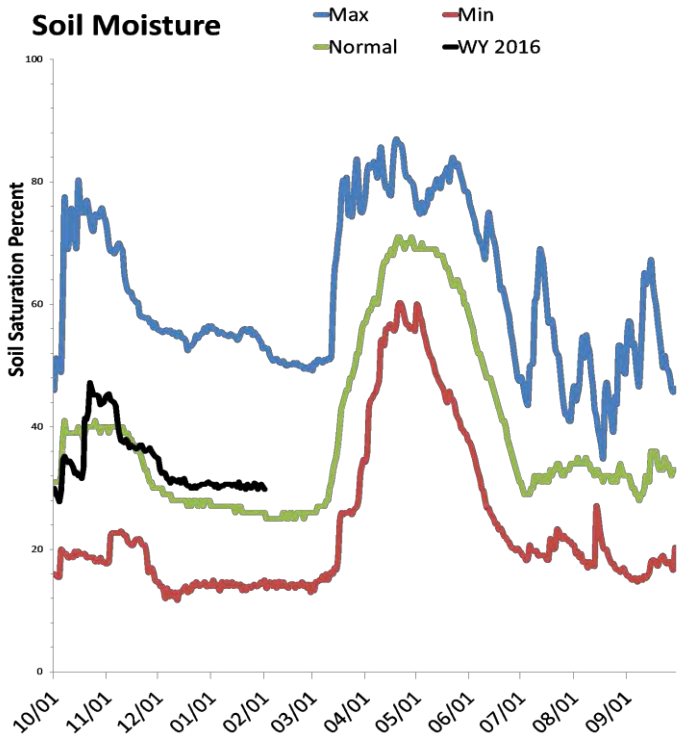
Natural Resources Conservation Service

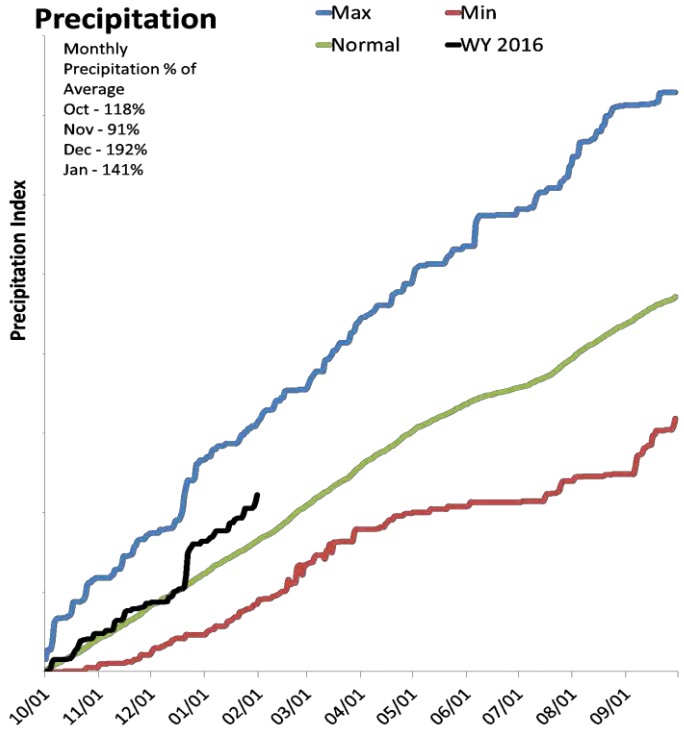
Dirty Devil Basin

2/1/2016

Snowpack in the Dirty Devil Basin is much above normal at 155% of normal, compared to 148% last year. Precipitation in January was much above average at 140%, which brings the seasonal accumulation (Oct-Jan) to 135% of average. Soil moisture is at 33% compared to 25% last year. Forecast streamflow volumes range from 106% to 144% of average.







Data Current as of: 2/4/2016 8:00:07 AM

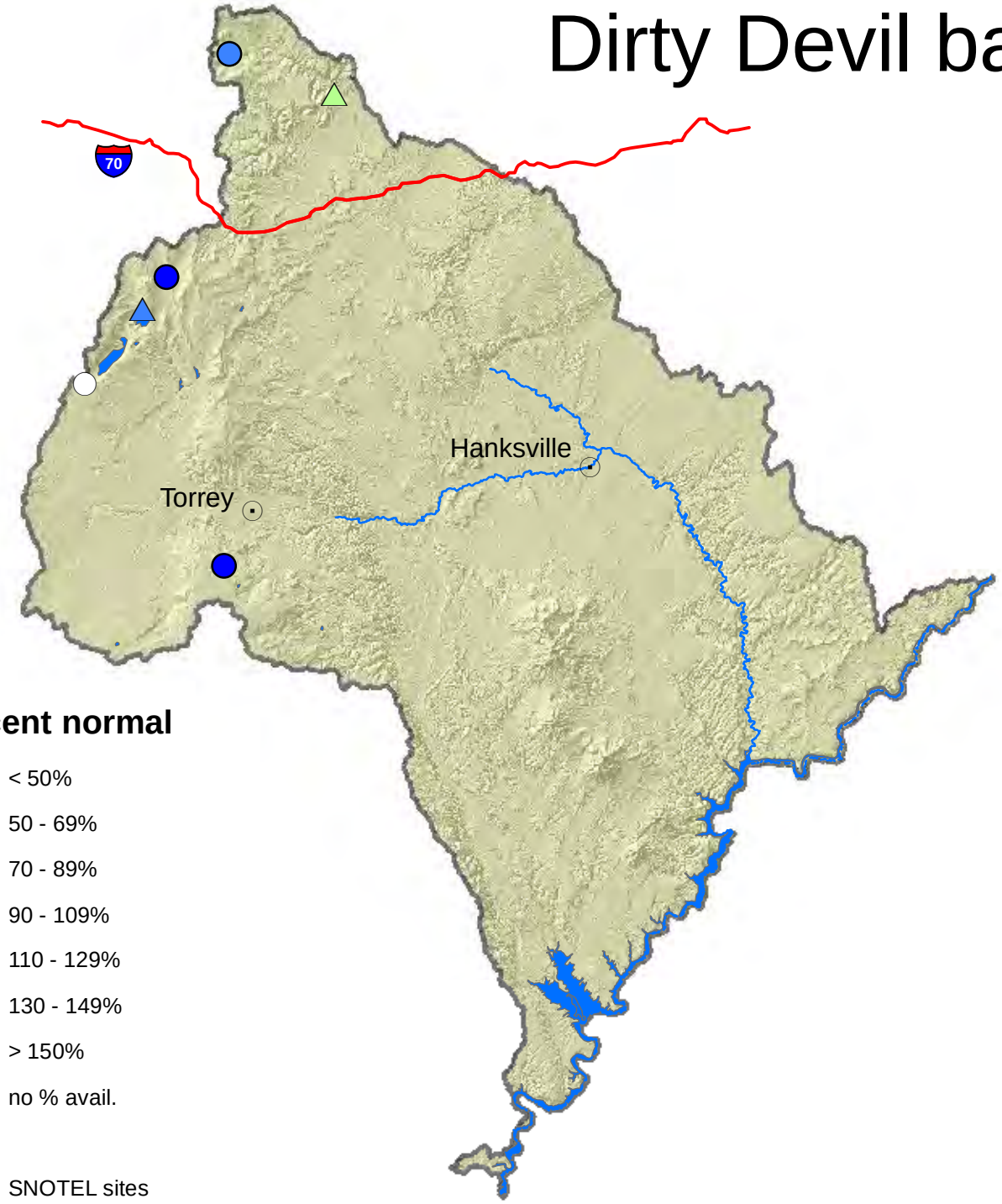
Dirty Devil
Streamflow Forecasts - February 1, 2016

Dirty Devil	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Muddy Ck nr Emery								
	APR-JUL	13	17.5	21	106%	25	31	19.9
Seven Mile Ck nr Fish Lake								
	APR-JUL	6.4	8.7	10.5	144%	12.4	15.6	7.3

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 February 1, 2016	# of Sites	% Median	Last Year % Median
Muddy	3	133%	119%
Fremont	3	164%	137%

Dirty Devil basin



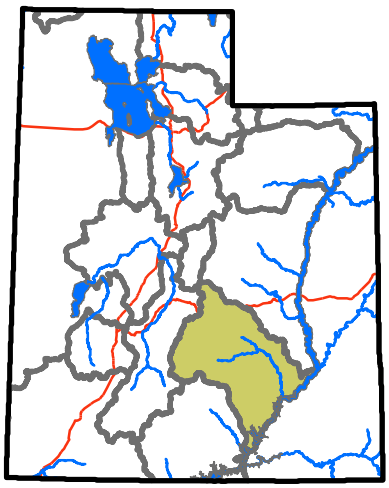
Percent normal

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

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

N

0 5 10 20 30 40 Miles

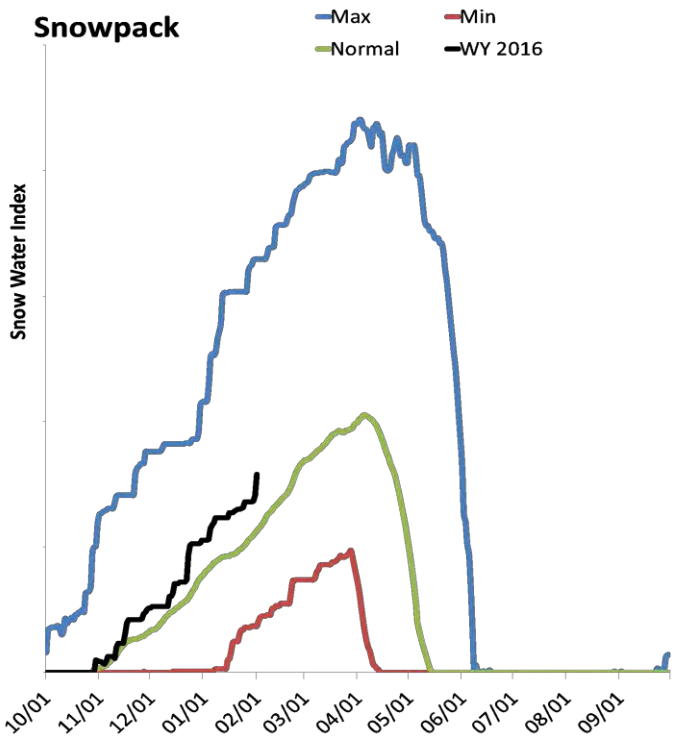


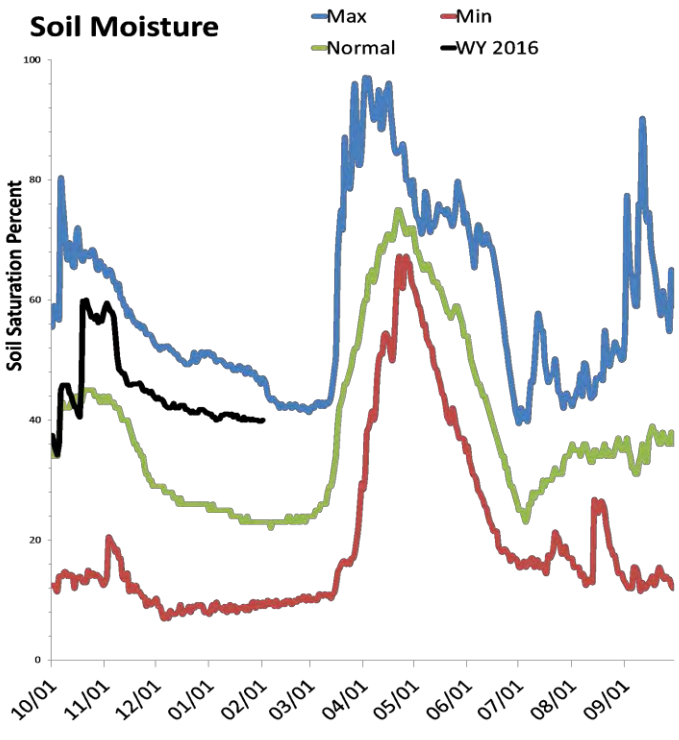
USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

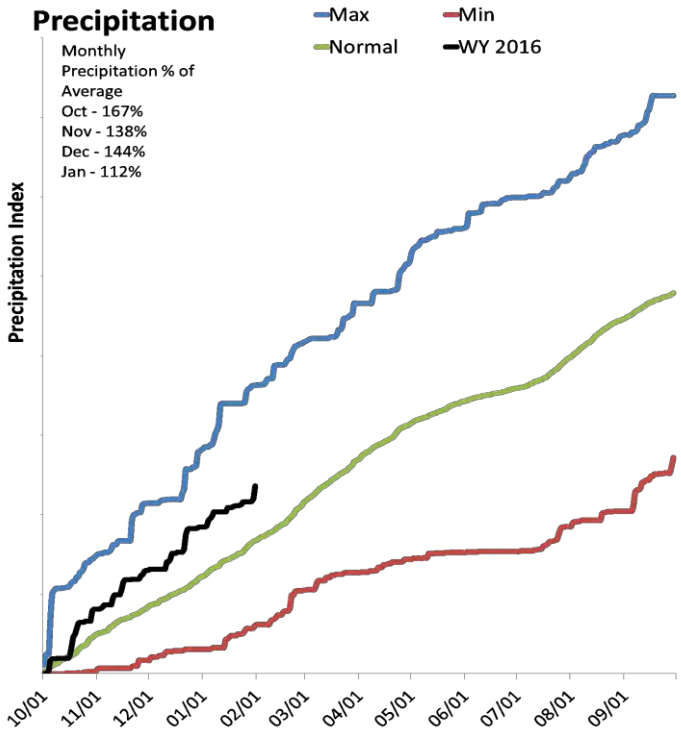
Escalante River Basin

2/1/2016

Snowpack in the Escalante River Basin is much above normal at 140% of normal, compared to 114% last year. Precipitation in January was above average at 112%, which brings the seasonal accumulation (Oct-Jan) to 140% of average. Soil moisture is at 41% compared to 24% last year. The forecast streamflow volume for Pine Creek is 133% of average.







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Escalante River
Streamflow Forecasts - February 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	1.54	2.5	3.2	133%	4	5.5	2.4

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

Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Escalante	3	140%	114%
Paria	2	156%	110%

Escalante basin

Percent normal

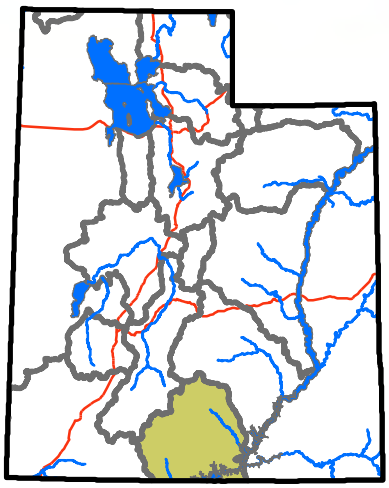
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

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

N

0 2.5 5 10 15 20 Miles

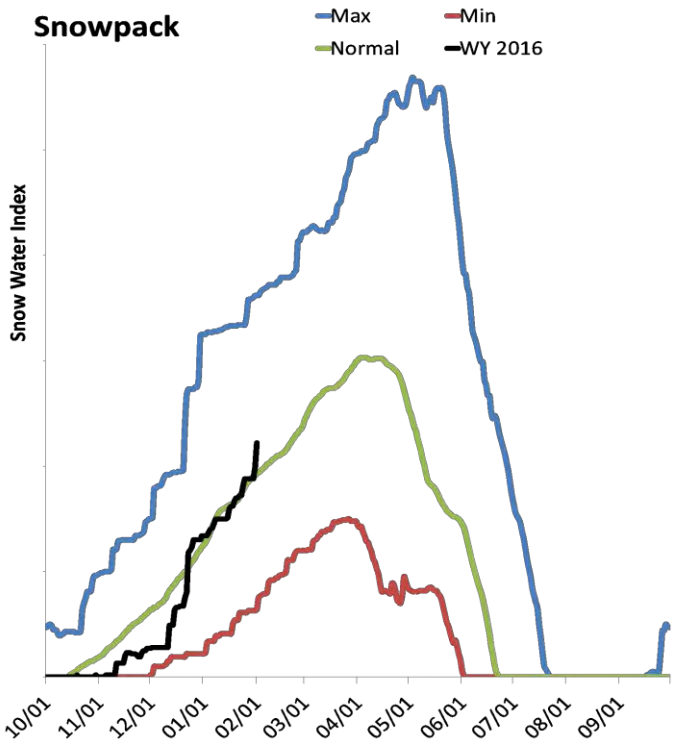
USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

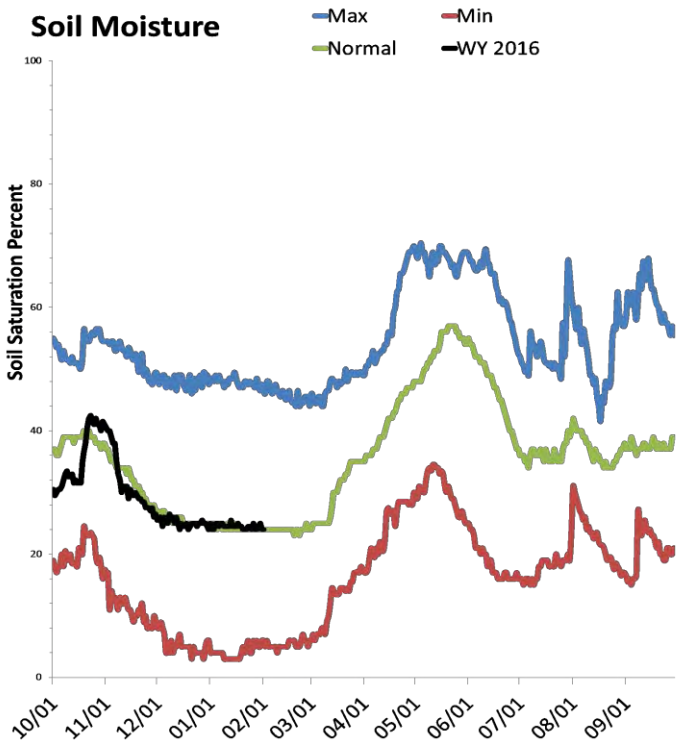


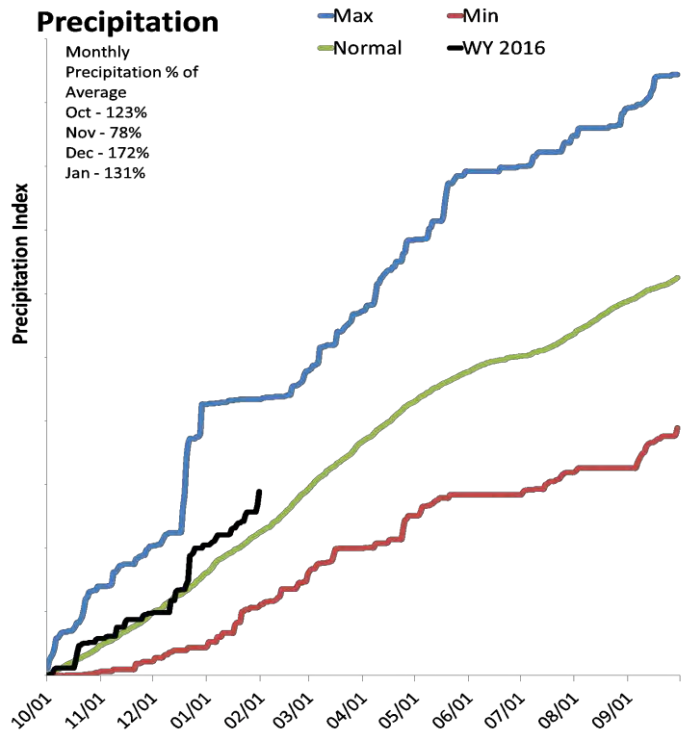
Beaver River Basin

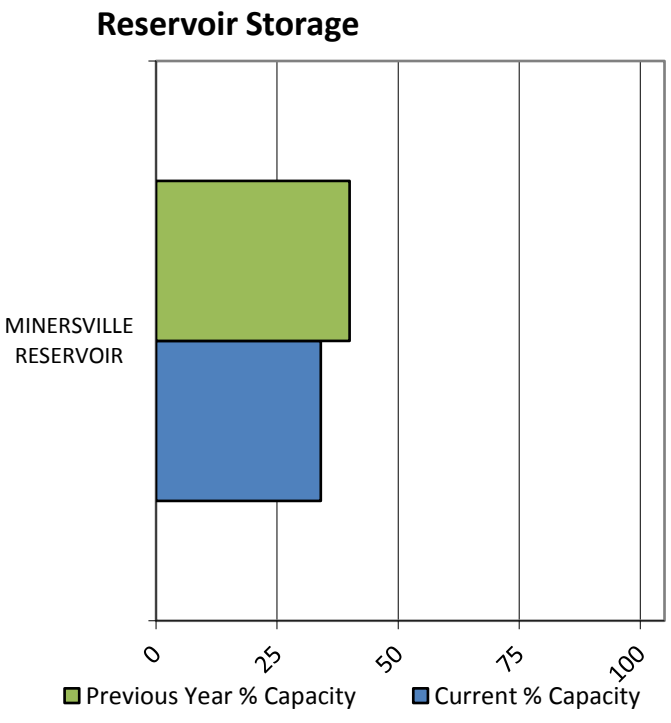
2/1/2016

Snowpack in the Beaver River Basin is above normal at 115% of normal, compared to 61% last year. Precipitation in January was much above average at 131%, which brings the seasonal accumulation (Oct-Jan) to 128% of average. Soil moisture is at 24% compared to 25% last year. Reservoir storage is at 34% of capacity, compared to 40% last year. The forecast streamflow volume for the Beaver River is 108% of average. The surface water supply index is 54% for the Beaver River.









Data Current as of: 2/4/2016 8:00:13 AM

Beaver River
Streamflow Forecasts - February 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	13.1	22	28	108%	34	43	26

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Minersville Reservoir	7.9	9.3	13.4	23.3
Basin-wide Total	7.9	9.3	13.4	23.3
# of reservoirs	1	1	1	1

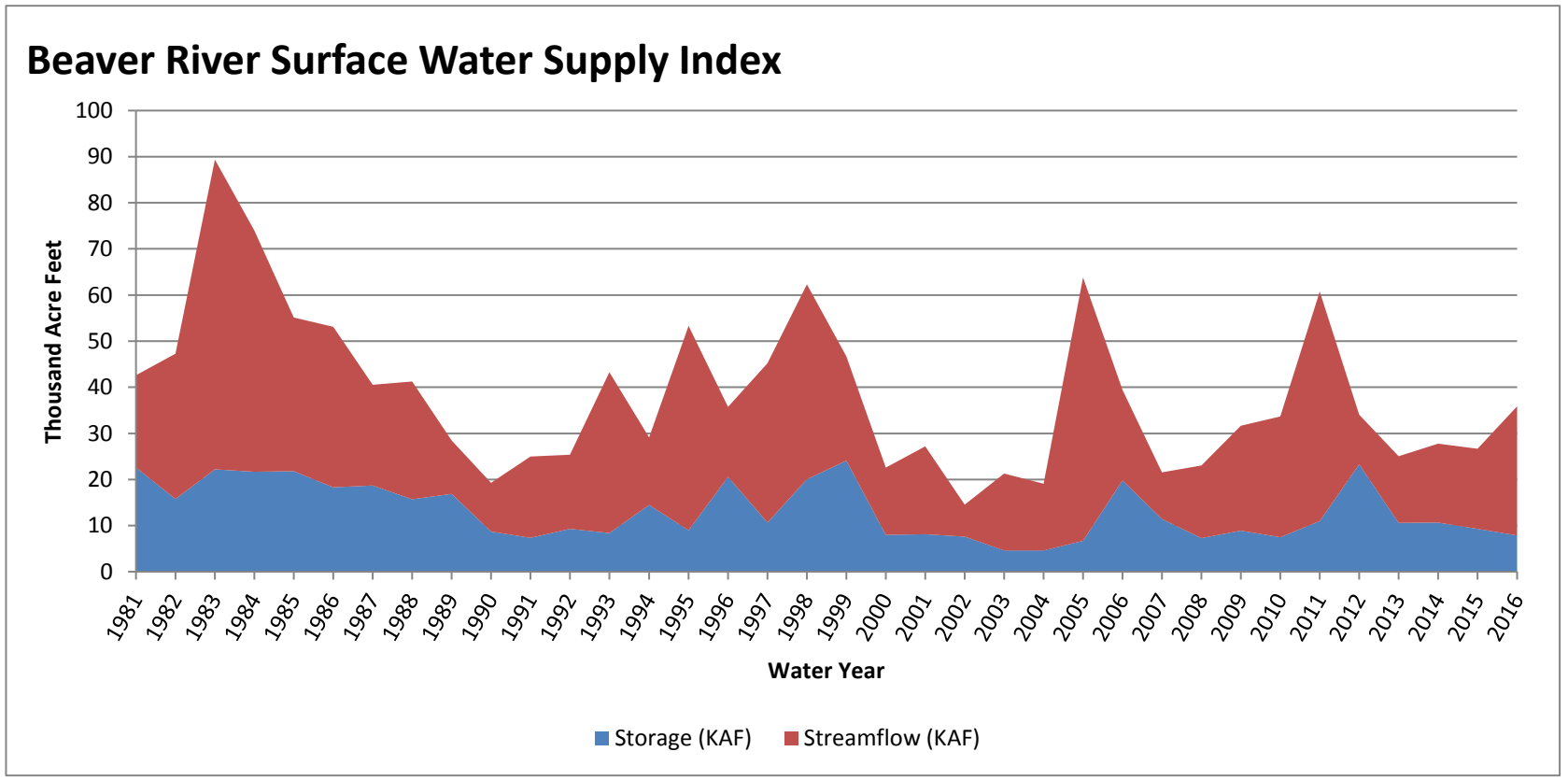
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Beaver	3	125%	69%

February 1, 2016

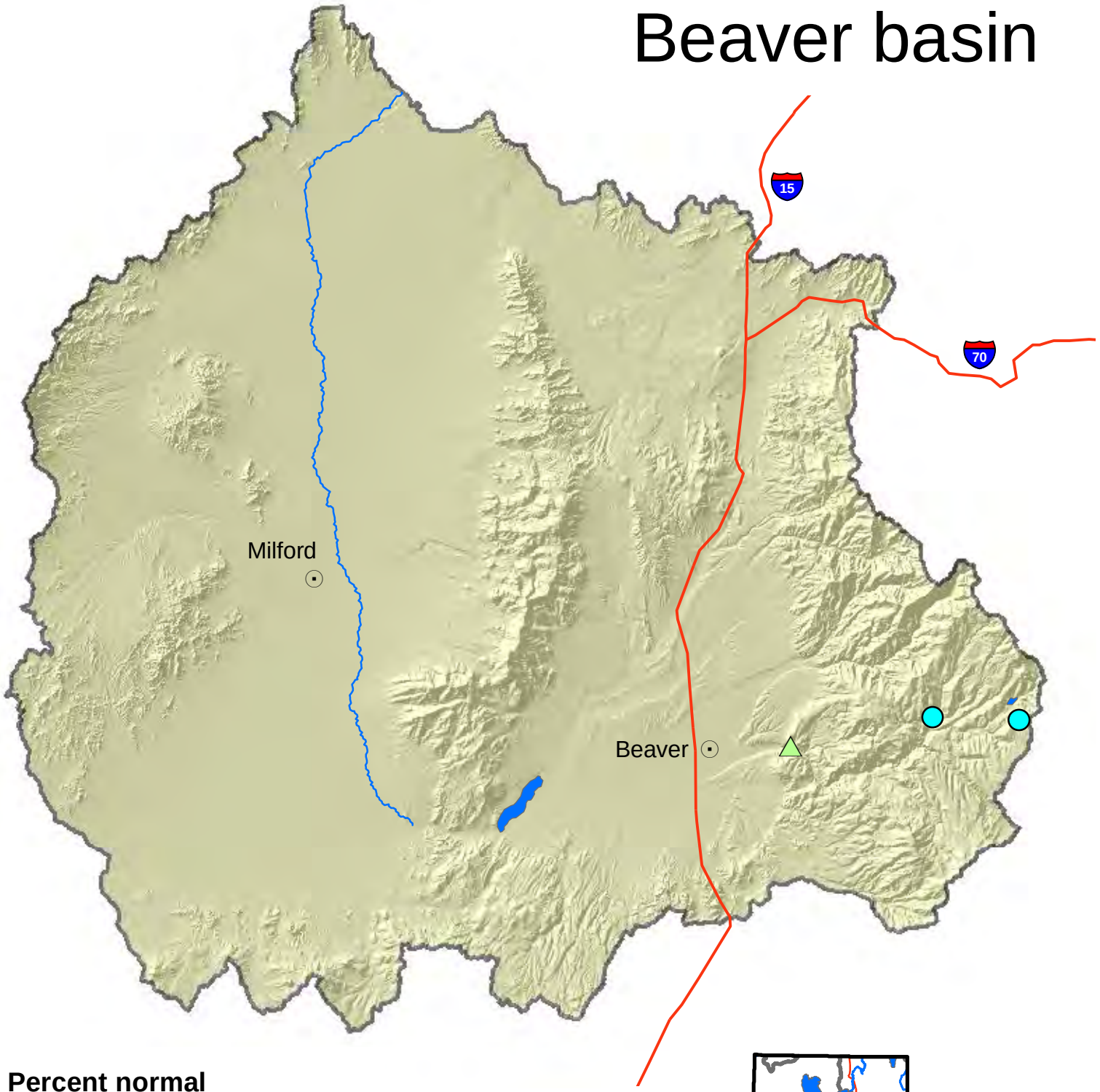
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Beaver River	**7.86**	**28.00**	**35.86**	**54**	**0.34**	**12, 96, 06, 87**

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



Beaver basin



Percent normal

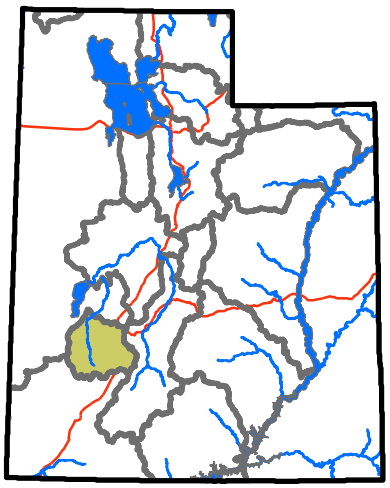
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

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

0 1.5 3 6 9 12 Miles

N

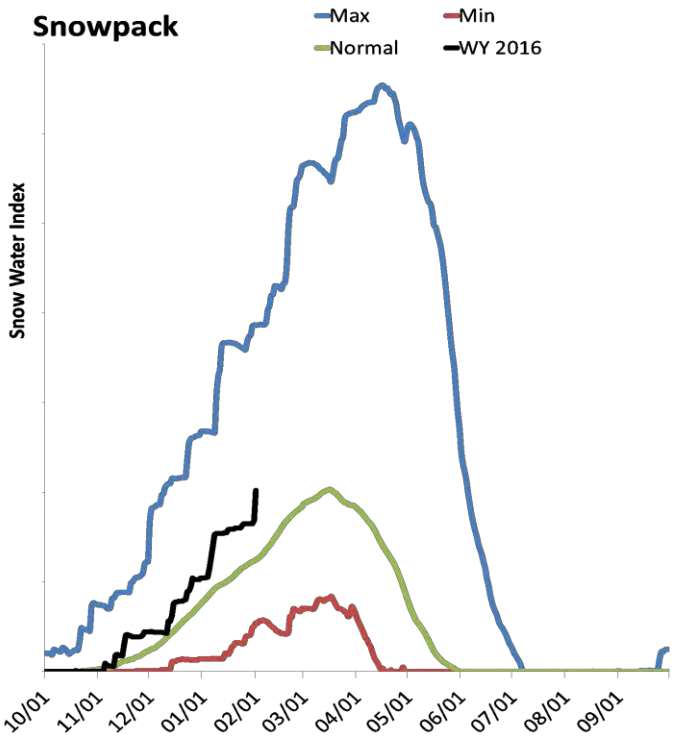
USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

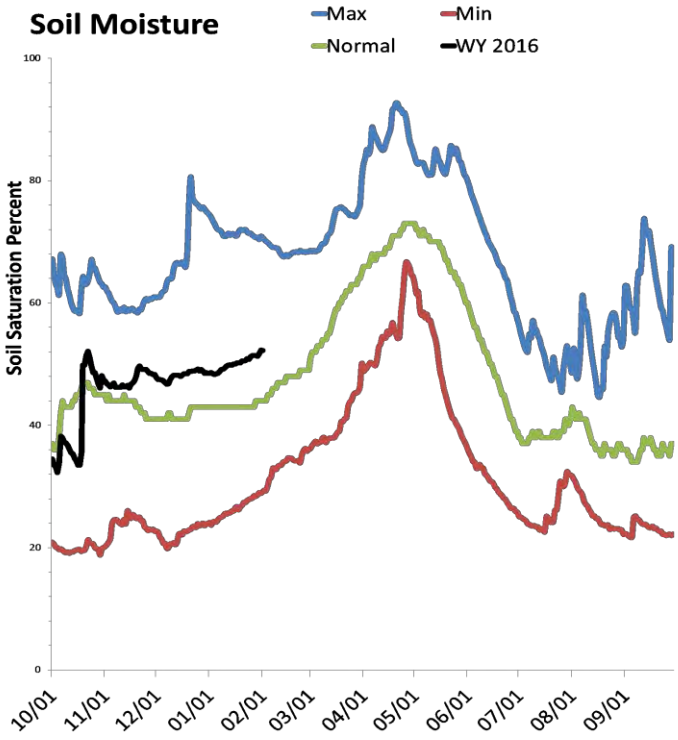


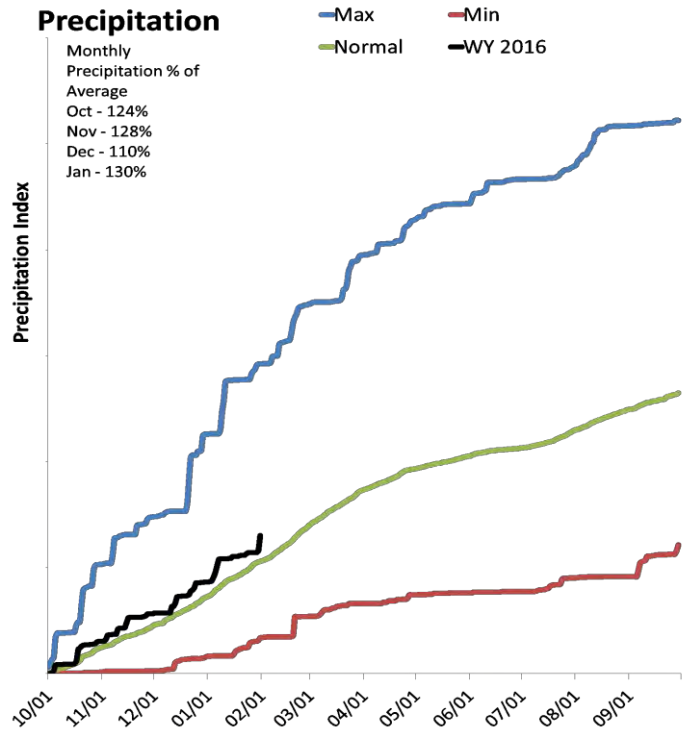
Southwestern Utah Basin

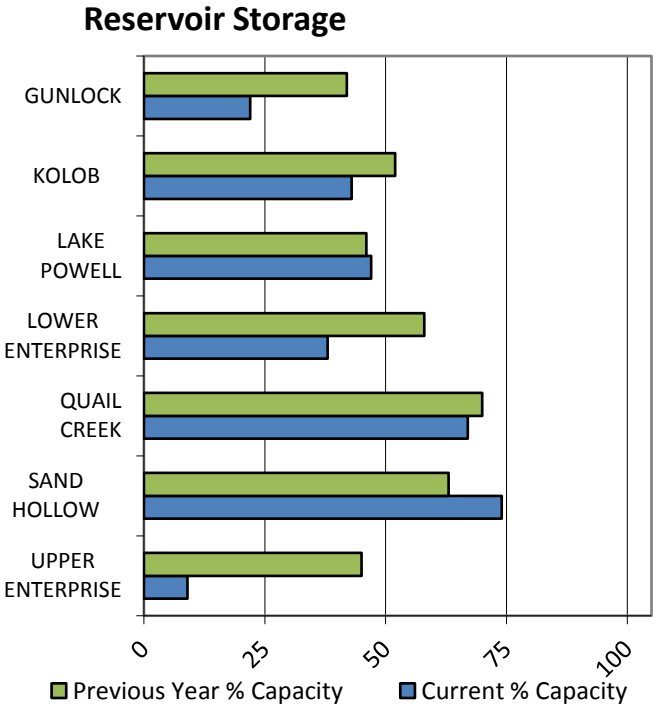
2/1/2016

Snowpack in the Southwestern Utah Basin is much above normal at 162% of normal, compared to 63% last year. Precipitation in January was much above average at 131%, which brings the seasonal accumulation (Oct-Jan) to 123% of average. Soil moisture is at 54% compared to 50% last year. Reservoir storage is at 47% of capacity, compared to 46% last year. Forecast streamflow volumes range from 98% to 134% of average. The surface water supply index is 72% for the Virgin River.









Data Current as of: 2/4/2016 8:00:16 AM

Southwestern Utah
Streamflow Forecasts - February 1, 2016

Southwestern Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Lake Powell Inflow [2]	APR-JUL	4100	5730	7000	98%	8390	10700	7160
Virgin R nr Hurricane	APR-JUL	34	58	78	124%	101	140	63
Virgin R at Virgin	APR-JUL	40	59	73	126%	89	116	58
Santa Clara R nr Pine Valley	APR-JUL	2.5	4.2	5.7	114%	7.3	10.1	5
Coal Ck nr Cedar City	APR-JUL	14.5	21	25	134%	29	35	18.6

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 January, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Powell	11429.5	11146.8	17338.0	24322.0
Lower Enterprise	1.0	1.5	0.6	2.6
Upper Enterprise	0.9	4.5	3.1	10.0
Kolob Reservoir	2.4	2.9		5.6
Gunlock	2.3	4.4	6.5	10.4
Sand Hollow Reservoir	37.1	31.6		50.0
Quail Creek	26.6	28.0	26.0	40.0
Basin-wide Total	11460.3	11185.1	17374.2	24385.0
# of reservoirs	5	5	5	5

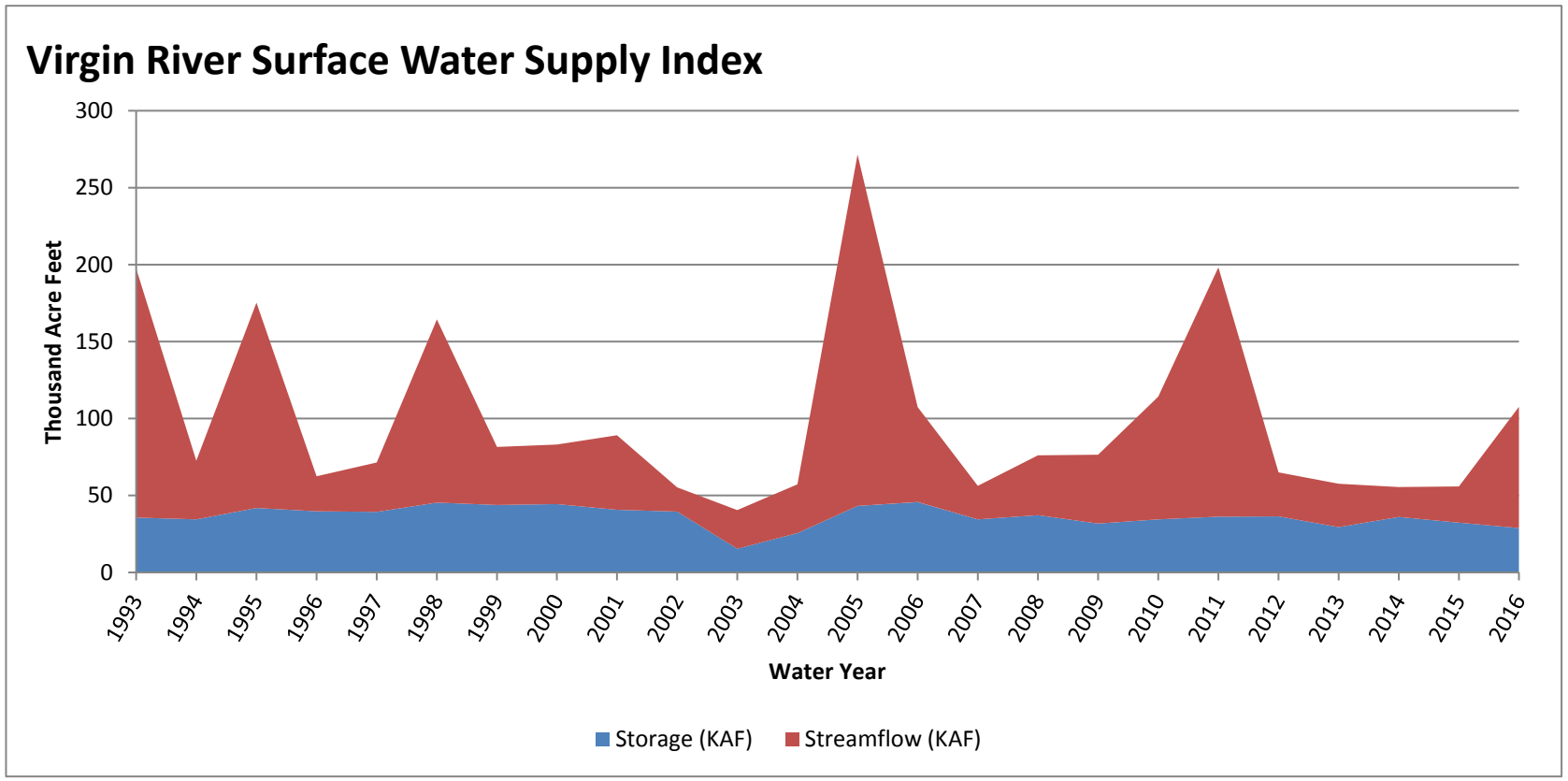
Watershed Snowpack Analysis February 1, 2016	# of Sites	% Median	Last Year % Median
Upper Virgin	8	162%	62%
Lower Virgin	2	210%	46%
Cedar City Parowan	4	151%	67%

February 1, 2016

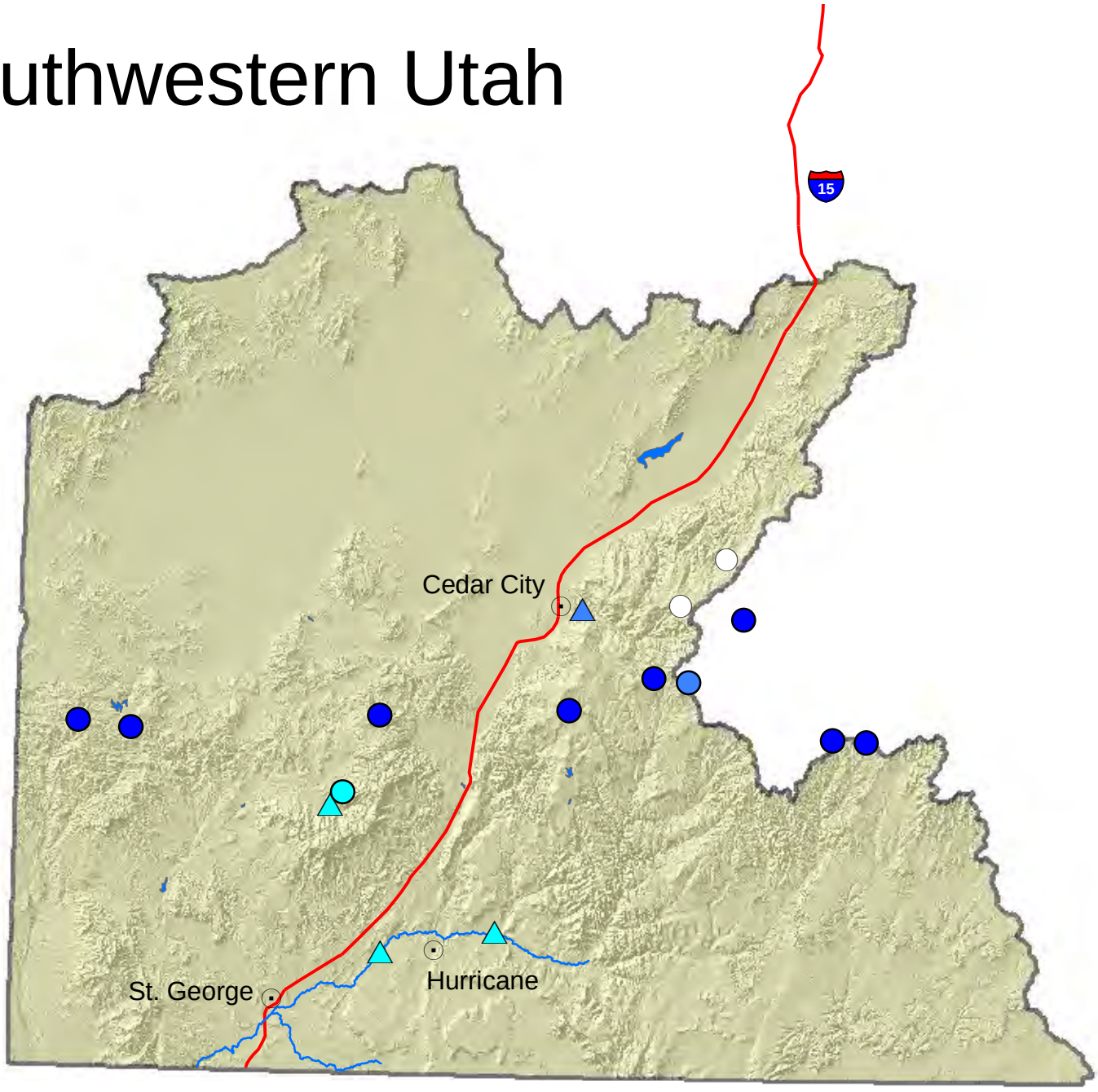
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Virgin River	**28.94**	**78.70**	**107.64**	**72**	**1.83**	**01, 06, 10, 98**

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



Southwestern Utah



Percent normal

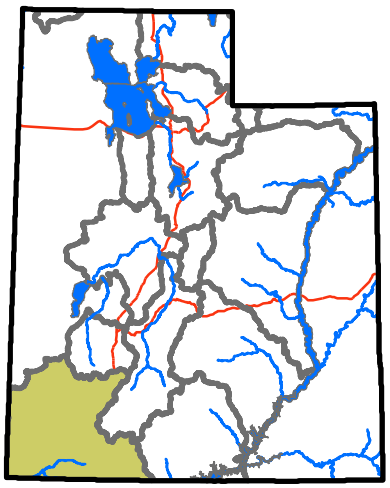
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

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

N

0 2.5 5 10 15 20 Miles

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service



February 1, 2016

Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF ^	*KAF ^*	*KAF ^*	*%*		
Bear River	**472.2**	**135.0**	**607.2**	**41**	**-0.79**	**02, 10, 15, 90**
Woodruff Narrows	**41.1**	**103.0**	**144.1**	**51**	**0.11**	**07, 08, 06, 10**
Little Bear	**9.7**	**38.0**	**47.7**	**56**	**0.5**	**10, 08, 93, 09**
Ogden River	**58.4**	**85.0**	**143.4**	**54**	**0.34**	**10, 12, 94, 93**
Weber River	**194.6**	**300.0**	**494.6**	**49**	**-0.11**	**00, 08, 94, 81**
Provo River	**735.7**	**107.0**	**842.7**	**13**	**-3.08**	**04, 03, 05, 15**
Western Uintah	**170.4**	**103.0**	**273.4**	**73**	**1.91**	**95, 96, 87, 98**
Eastern Uintah	**32.7**	**59.0**	**91.7**	**30**	**-1.69**	**81, 12, 15, 07**
Blacks Fork	**6.9**	**89.0**	**95.9**	**47**	**-0.25**	**91, 06, 87, 08**
Smiths Fork	**6.0**	**27.0**	**33.0**	**59**	**0.74**	**97, 91, 14, 10**
Price River	**10.9**	**37.0**	**47.9**	**30**	**-1.69**	**13, 89, 94, 01**
Joe's Valley	**36.8**	**51.0**	**87.8**	**54**	**0.34**	**00, 10, 93, 09**
Ferron Creek	**8.0**	**40.0**	**48.0**	**59**	**0.79**	**09, 14, 96, 99**
Moab	**1.5**	**8.0**	**9.5**	**90**	**3.33**	**98, 95, 05, 93**
Upper Sevier	**43.6**	**76.0**	**119.6**	**38**	**-1.01**	**02, 00, 01, 07**
San Pitch	**0.4**	**18.0**	**18.4**	**38**	**-1.01**	**08, 93, 10, 07**
Lower Sevier	**78.6**	**110.0**	**188.6**	**43**	**-0.56**	**13, 01, 96, 07**
Beaver River	**7.9**	**28.0**	**35.9**	**54**	**0.34**	**12, 96, 06, 87**
Virgin River	**28.9**	**78.7**	**107.6**	**72**	**1.83**	**01, 06, 10, 98**

**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.

Issued by

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

Released by

David Brown
State Conservationist
Natural Resources Conservation Service
Salt Lake City, Utah

Prepared by
Snow Survey Staff
Randall Julander, Supervisor
Troy Brosten, Assistant Supervisor
Beau Uriona, Hydrologist
Jordan Clayton, Hydrologist
Jeffrey O'Connell, Hydrologist
Bob Nault, Electronics Technician
Kent Sutcliffe, Soil Scientist

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

Snow Survey, NRCS, USDA
245 North Jimmy Doolittle Road
Salt Lake City, UT 84116
(801) 524-5213

Utah Climate and Water Report

Natural Resources Conservation Service
Salt Lake City, UT