Utah Water Supply Outlook Report

February, 2015

Monroe Mountain, Squaw Springs Snow Course. January, 29, 2015

Photo by Kent Sutcliffe, 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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Or call toll free at (866) 632-9992 (voice) to obtain additional information, the appropriate office or to request documents. Individuals who are deaf, hard of hearing, or have speech disabilities may contact USDA through the Federal Relay service at (800) 877-8339 or (800) 845-6136 (in Spanish). USDA is an equal opportunity provider, employer, and lender. Persons with disabilities who require alternative means for communication of program information (e.g., Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

STATE OF UTAH GENERAL OUTLOOK
February 1, 2015

SUMMARY

"January wasn't much when it comes to snow accumulation" that is an exact quote from the February 2014 Water Supply Outlook Report. This January was worse for snow accumulation. Compared to January 1 snowpack percentages the February 1 figures in northern Utah are down 25% to 40% and in southern Utah the range is 0% to 32%. Ouch! January is typically a big snow month and to come up with a goose egg really takes the wind from the sail – say like a football team is driving for the winning touchdown with seconds to go and only one yard to score with the best running back in the league and the only way to lose is to throw a pass on the one yard line and you do and you lose – January was that kind of month. Percent change from January 1: Bear -31%, Weber -30%, Provo -37%, Duchesne -24%, Price -38%, Southeast – no change, Upper Sevier -10%, San Pitch – 32% and the southwest -6%. While current conditions are disappointing, especially since there was great promise of a decent snow year on January 1, conditions are still better overall than last year with 0% to 38% more snow across the state with the exception of southwest Utah which has 6% less than last year. Another potential concern is the recent and current exceptionally warm temperatures which have melted off many lower elevation snow packs. These are not likely to regenerate at this point due to the warming of the soils which have the potential to melt subsequent snow accumulation. It has also put a lot of energy into our packs statewide at a time when they are normally very cold. Should this persist, and given continued warm temperatures, early melt and flow is a possibility. There are two months remaining in the snow accumulation season and any outcome is still possible but a full recovery to normal is not likely. Water managers should take appropriate actions in preparation for anticipated reduced stream flow. Soil moisture conditions are above normal for most of the state. Reservoir storage continues to incrementally improve as water managers are storing as much as possible, currently 48% of capacity compared to 57% last year. Surface Water Supply indexes are mostly below average across the state. Overall, the water supply outlook is below average.

SNOWPACK
February first snow packs as measured by the NRCS SNOTEL system range from 62% of median in southwest Utah to 148% on the Dirty Devil – which is an isolated aberration where one local area got some big storms. Most areas are in the 75% to 90% of median range.

PRECIPITATION
Mountain precipitation during January was much below average across the state ranging from 36% on the Price to 72% in southeast Utah with most areas in the 40% to 50% range. This brings the seasonal accumulation (Oct-Jan) to 70% of normal.

SOIL MOISTURE
Soil Moisture is close to what it was last month, characteristic of winter trends. Most basins across the state are at least average and many are well above.

RESERVOIRS
Storage in 46 of Utah's key irrigation reservoirs is at 61% of capacity compared to 60% last year.

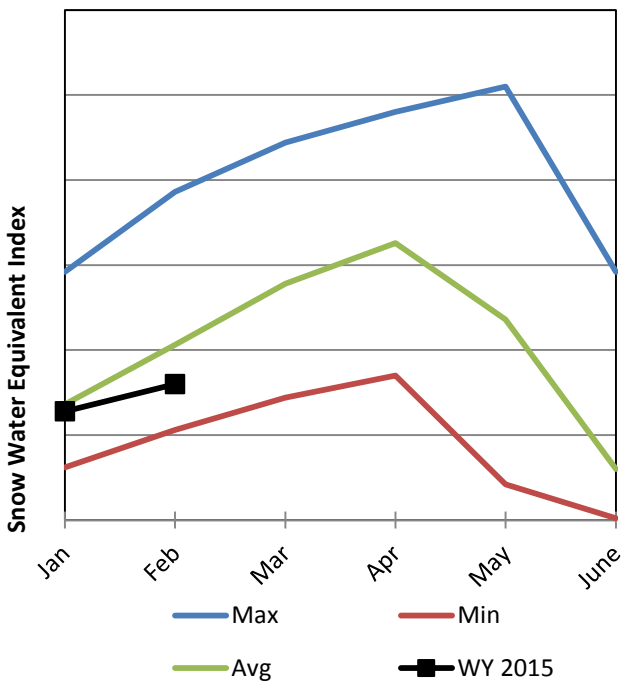
STREAMFLOW
Snowmelt stream flows are forecast to be below to near normal across the state this year. Most flows are forecast to be in the 70% to 90% range.

Statewide Utah

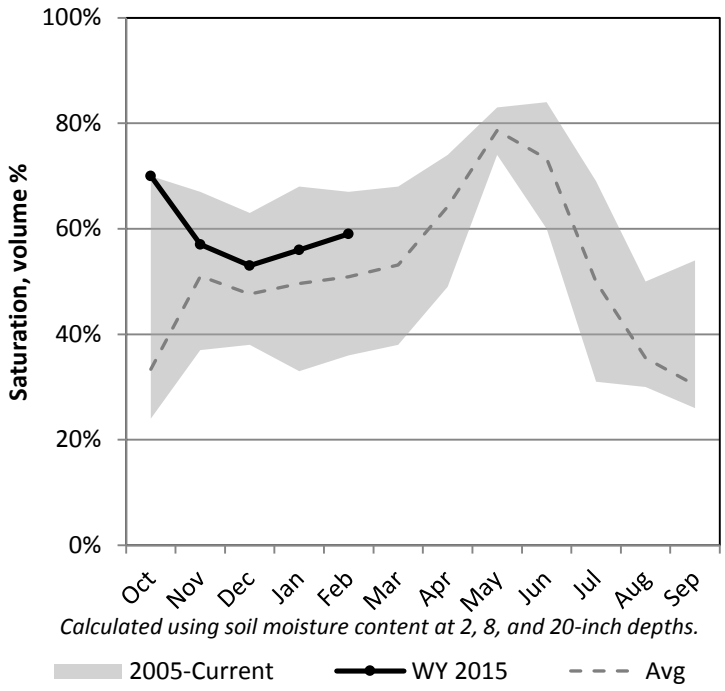
2/1/2015

Snowpack in Utah is below average at 84% of normal, compared to 75% last year. Precipitation in January was much below average at 46%, which brings the seasonal accumulation (Oct-Jan) to 70% of average. Soil moisture is at 59% compared to 51% last year. Reservoir storage is at 61% of capacity, compared to 60% last year. Forecast streamflow volumes range from 28% to 101% of average.

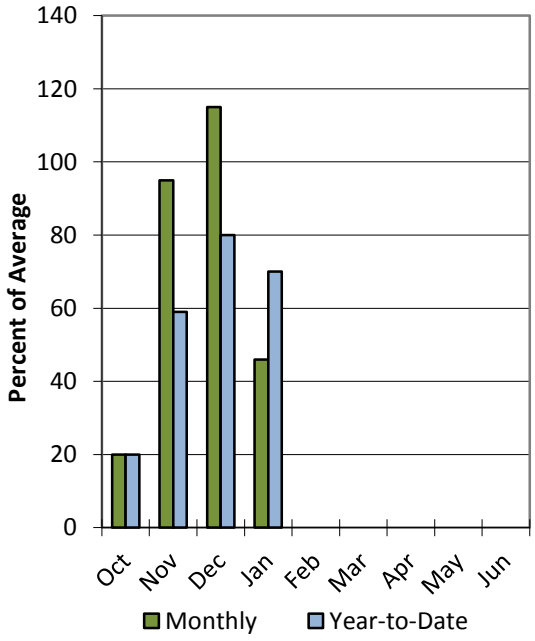
Snowpack



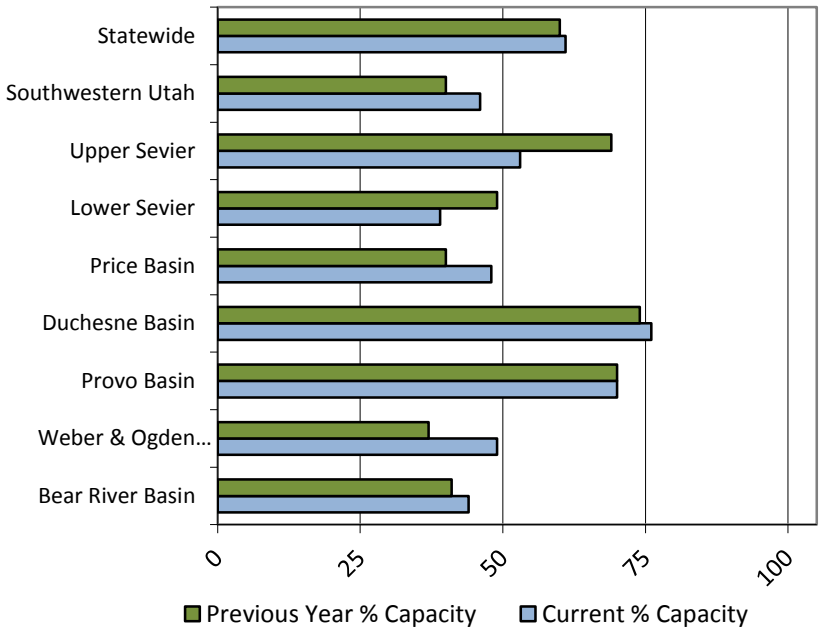
Soil Moisture



Precipitation

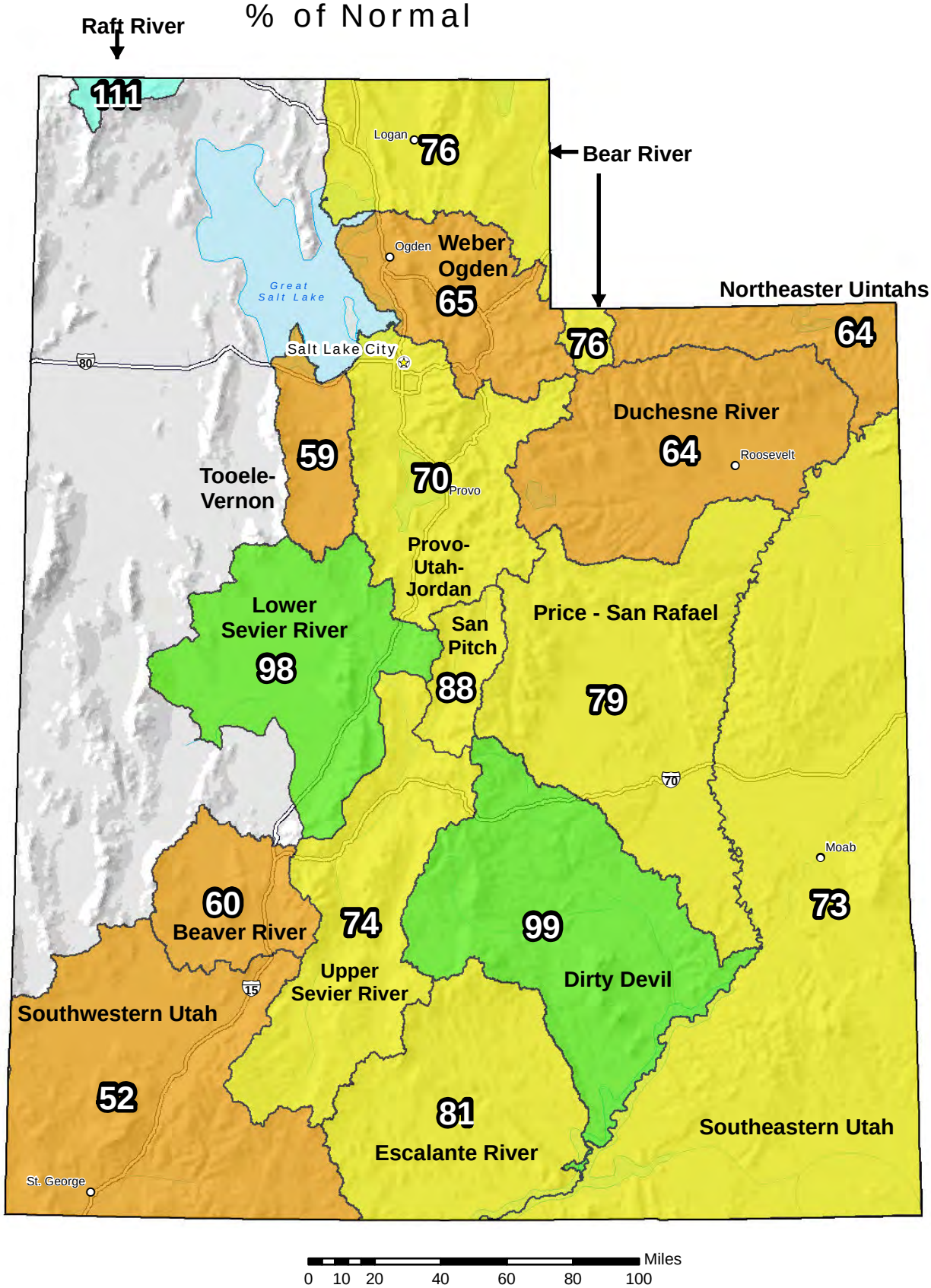


Reservoir Storage



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

Feb 01, 2015



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*

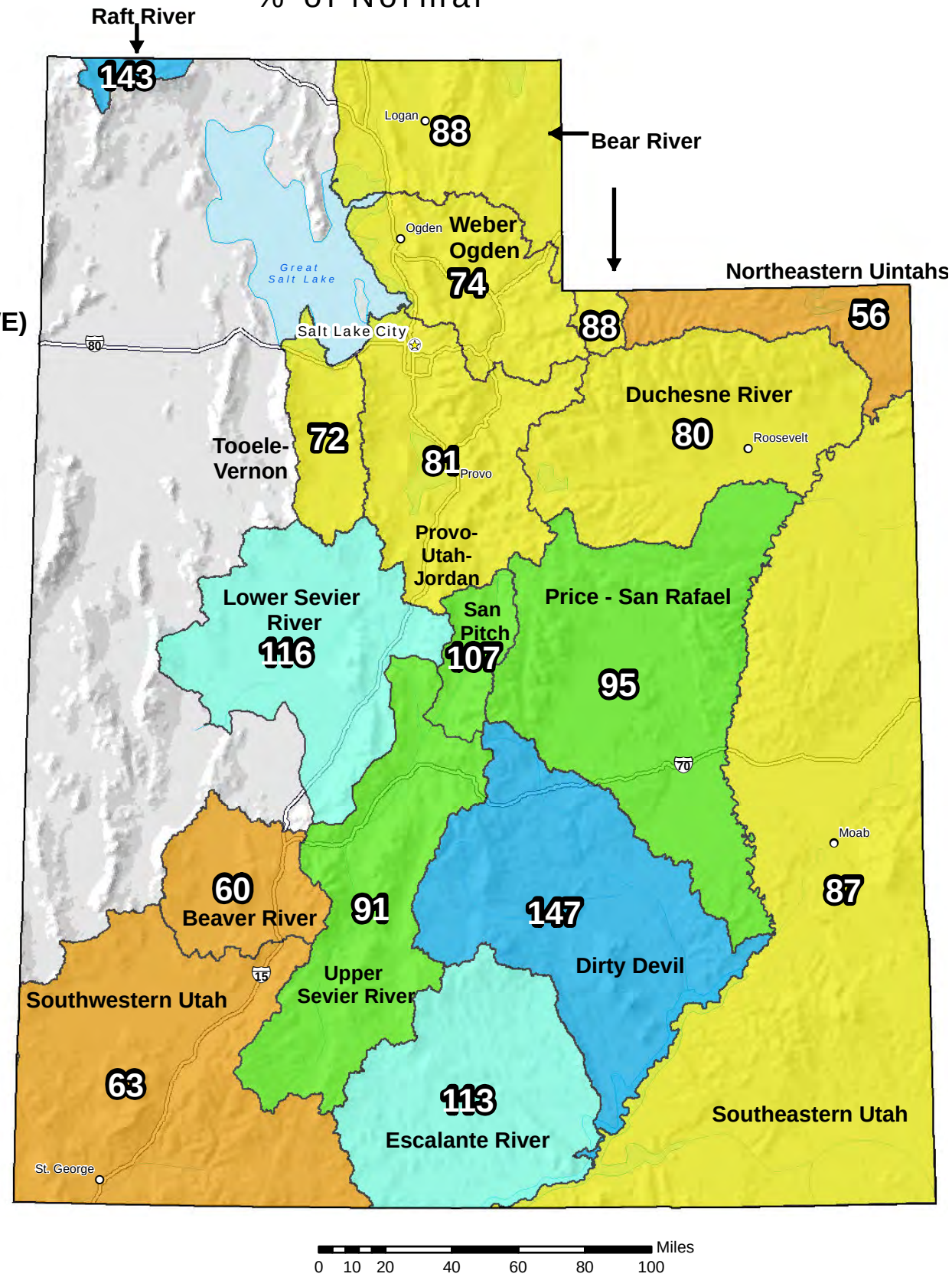
Provisional Data Subject to Revision

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
SNOTEL Current Snow Water Equivalent (SWE)
% of Normal

Feb 01, 2015



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

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- <50%
- 50 - 69%
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- 110 - 129%
- 130 - 149%
- >=150%

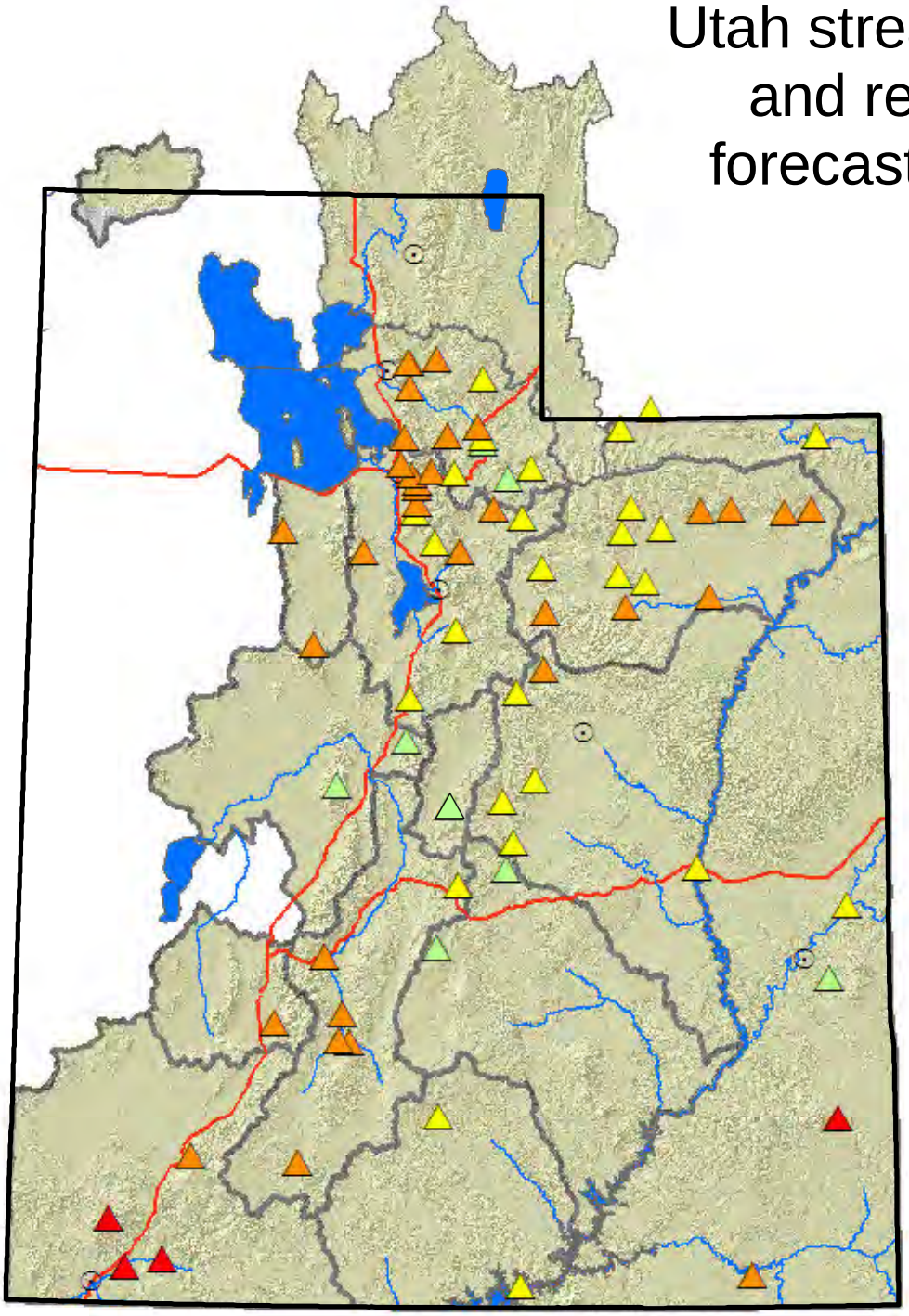
* *Data unavailable at time of posting or measurement is not representative at this time of year*

Provisional Data Subject to Revision

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 streamflow and reservoir forecast points



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

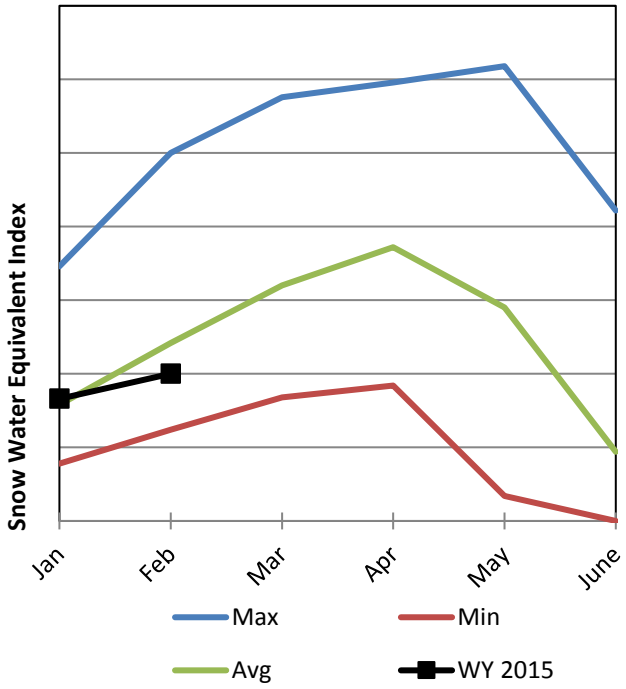
0 15 30 60 90 120 Miles

Bear River Basin

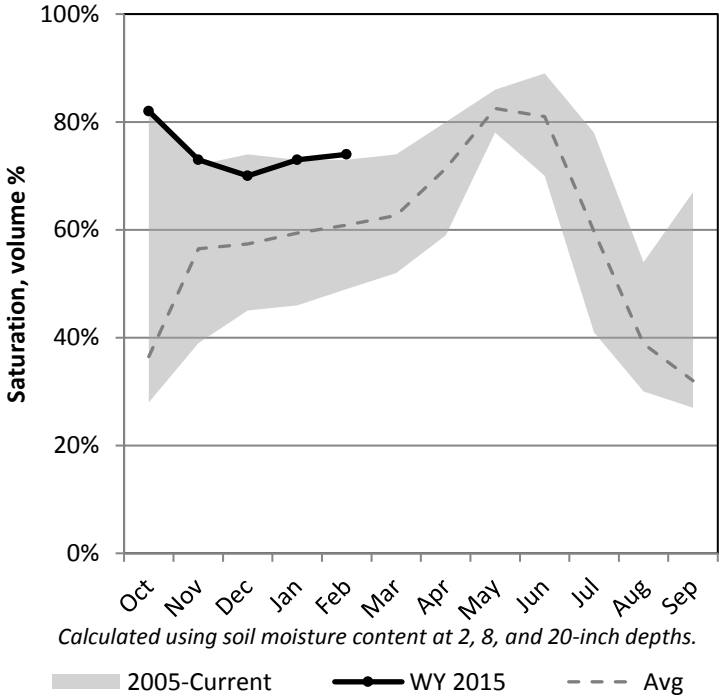
2/1/2015

Snowpack in the Bear River Basin is below average at 89% of normal, compared to 80% last year. Precipitation in January was much below average at 46%, which brings the seasonal accumulation (Oct-Jan) to 77% of average. Soil moisture is at 74% compared to 55% last year. Reservoir storage is at 44% of capacity, compared to 41% last year. Forecast streamflow volumes range from 41% to 99% of average. The surface water supply index is 47% for the Bear River, 47% for the Woodruff Narrows, 38% for the Little Bear.

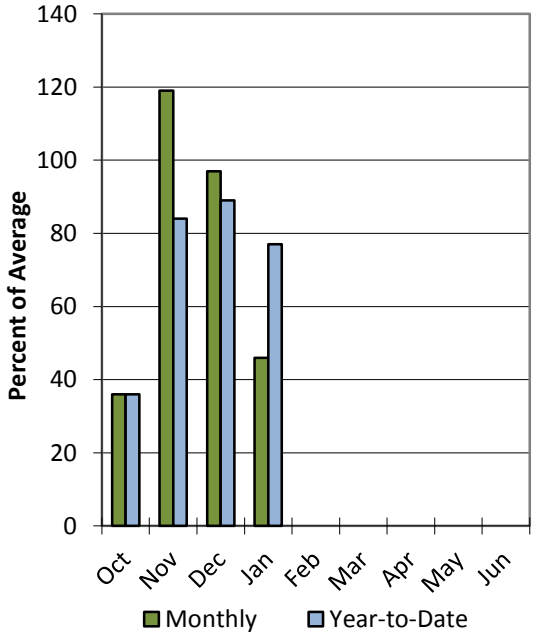
Snowpack



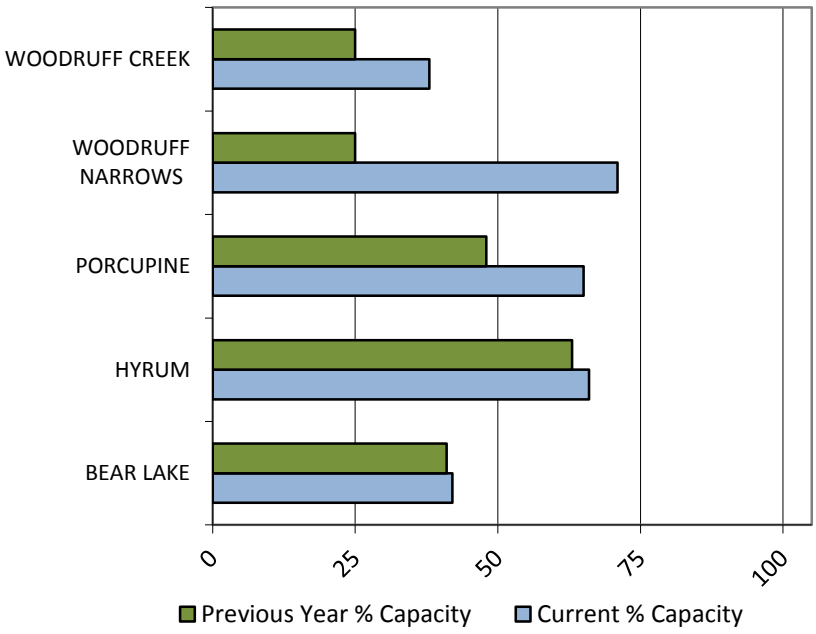
Soil Moisture



Precipitation



Reservoir Storage



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Bear River
Streamflow Forecasts - February 1, 2015

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	44	68	85	76%	101	125	112
	APR-SEP	49	75	93	76%	111	138	123
Bear R ab Resv nr Woodruff								
	APR-JUL	3.6	52	90	74%	128	184	121
	APR-SEP	3.8	47	95	74%	143	215	128
Big Ck nr Randolph								
	APR-JUL	0.34	1.63	2.5	66%	3.4	4.7	3.8
Smiths Fk nr Border								
	APR-JUL	52	74	88	99%	102	124	89
	APR-SEP	65	89	105	101%	121	145	104
Bear R bl Stewart Dam								
	FEB-JUL	6.4	50	112	52%	174	266	215
	FEB-SEP	7.2	56	125	52%	194	296	240
	MAR-JUL	4.1	41	102	50%	163	252	205
	MAR-SEP	4.6	47	115	50%	183	283	230
Little Bear at Paradise								
	APR-JUL	0.41	6.8	17	41%	27	42	41
Logan R nr Logan								
	APR-JUL	26	56	76	68%	96	126	111
Blacksmith Fk nr Hyrum								
	APR-JUL	5.7	20	30	70%	40	54	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bear Lake	548.1	536.2	584.8	1421.0
Hyrum Reservoir	10.1	9.7	10.2	15.3
Porcupine Reservoir	7.4	5.4	6.0	11.3
Woodruff Creek	1.5	1.0	2.4	4.0
Woodruff Narrows Reservoir	40.4	14.4	29.0	57.3
Basin-wide Total	607.5	566.6	632.4	1508.9
# of reservoirs	5	5	5	5

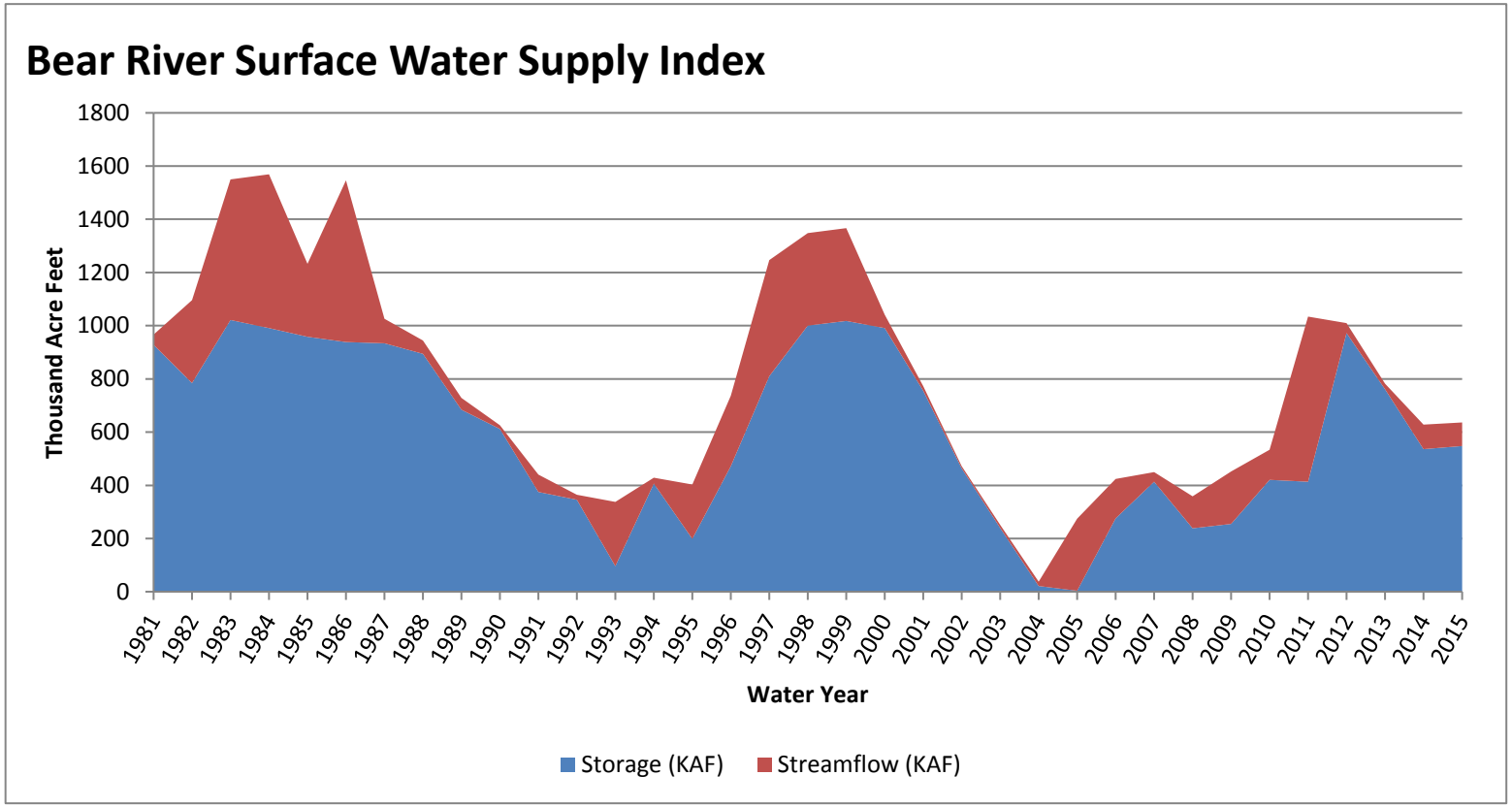
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Upper Bear	3	78%	89%
Middle Bear	7	102%	88%
Lower Bear	3	75%	63%
Logan	7	84%	75%

February 1, 2015

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	**548.09**	**88.00**	**636.09**	**47**	**-0.23**	**90, 14, 89, 96**

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

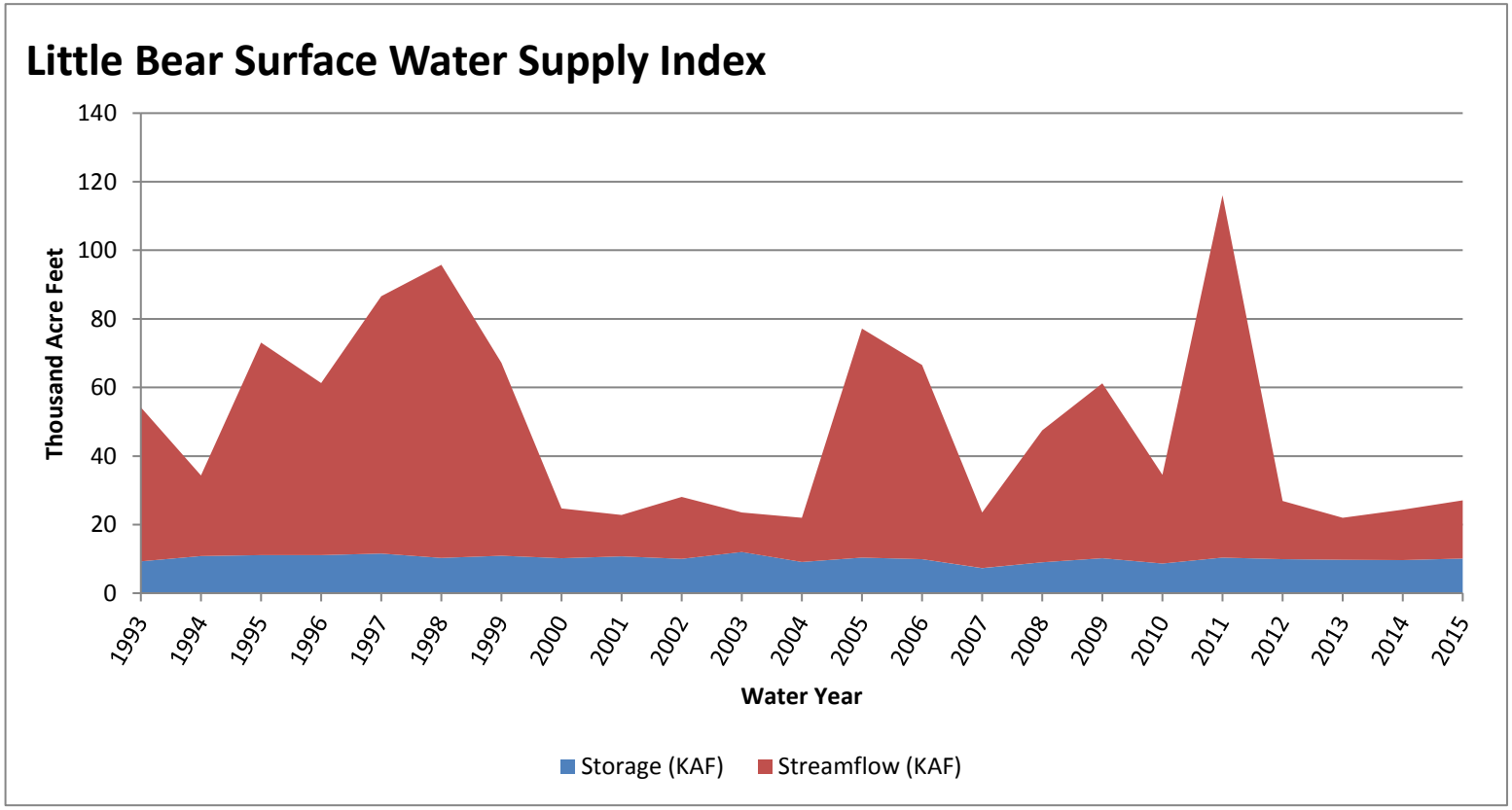


February 1, 2015

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	**10.09**	**17.00**	**27.09**	**38**	**-1.04**	**00, 12, 02, 94**

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

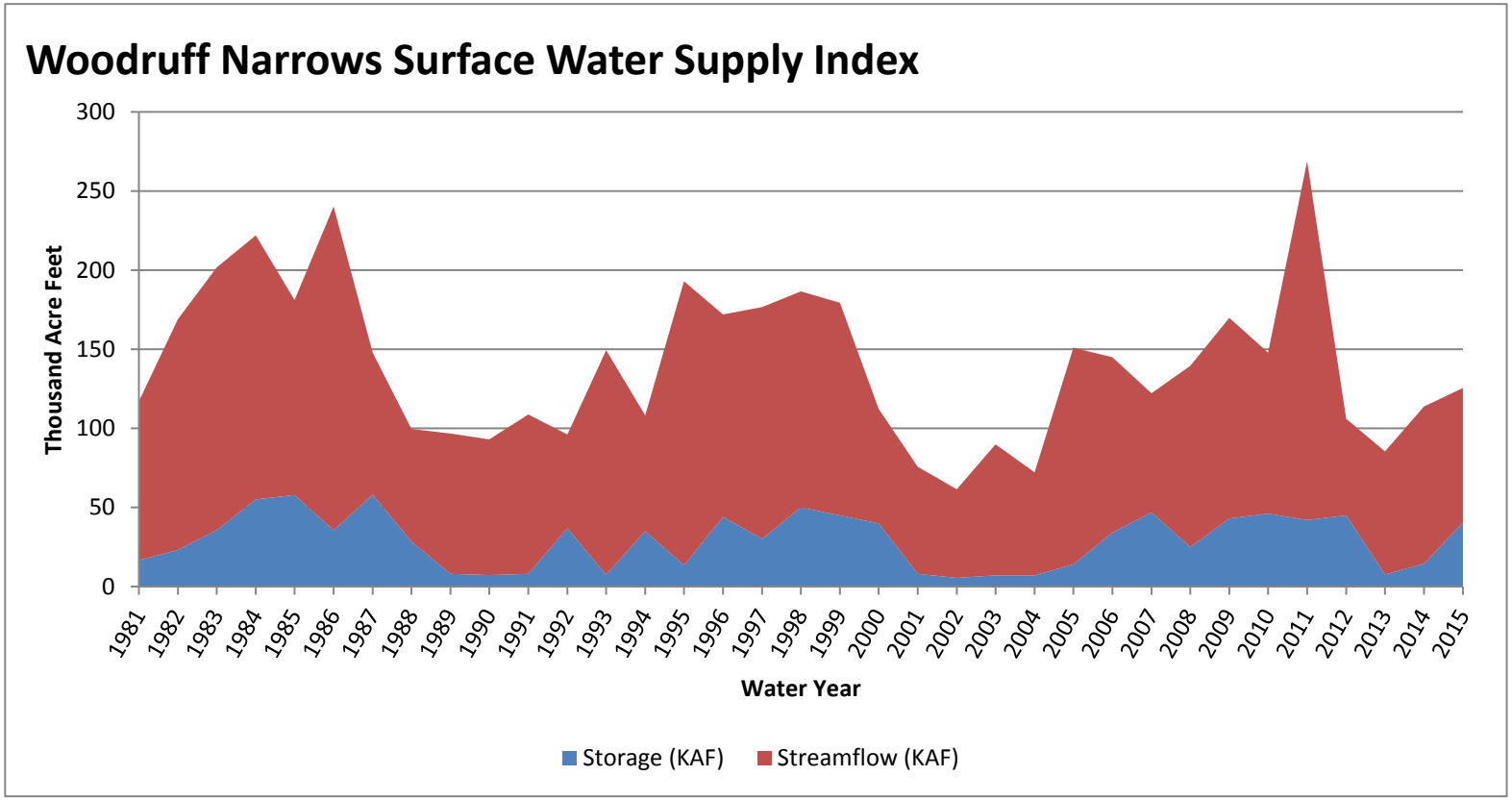


February 1, 2015

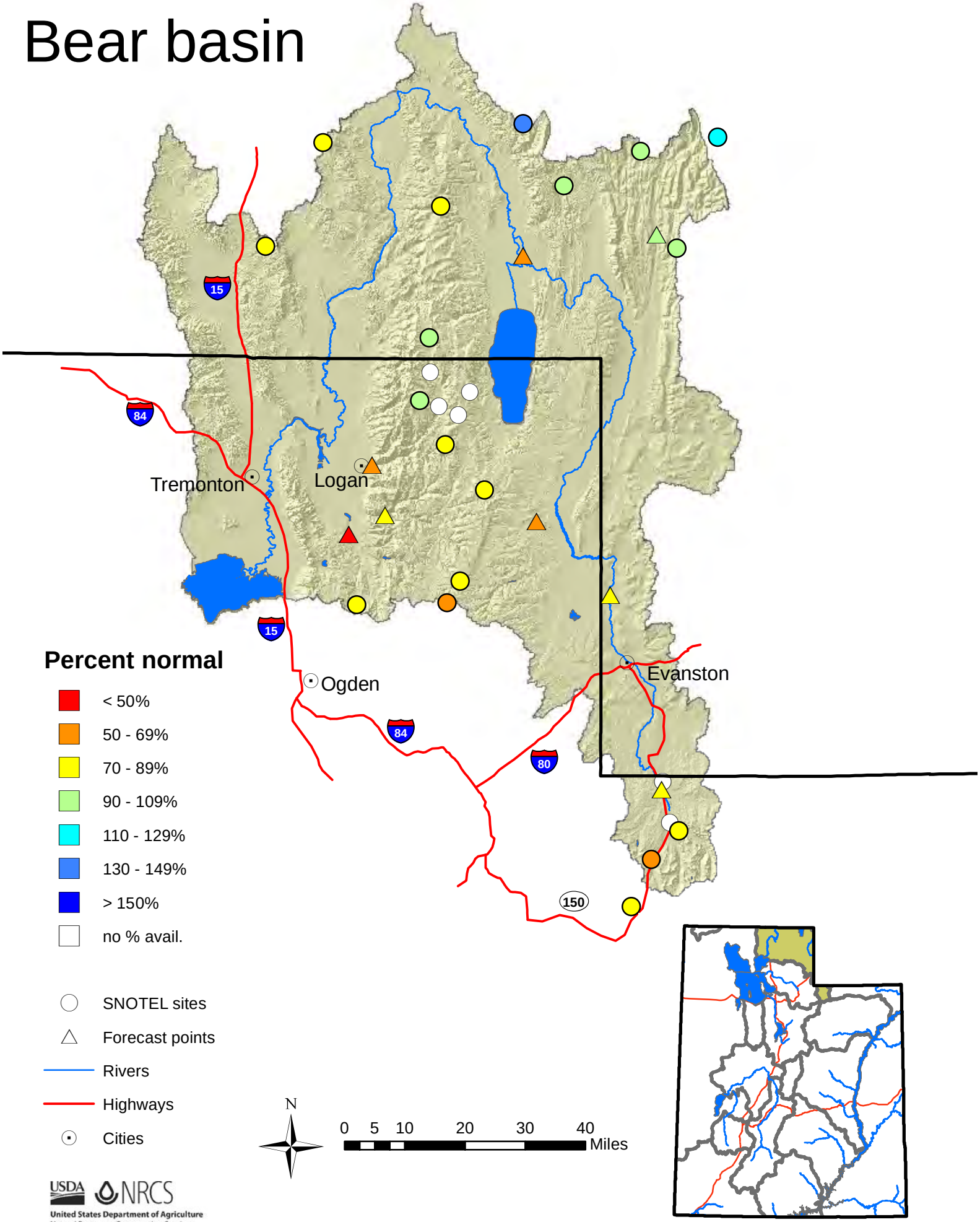
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Woodruff Narrows	**40.42**	**85.00**	**125.42**	**47**	**-0.23**	**81, 07, 08, 06**

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



Bear basin

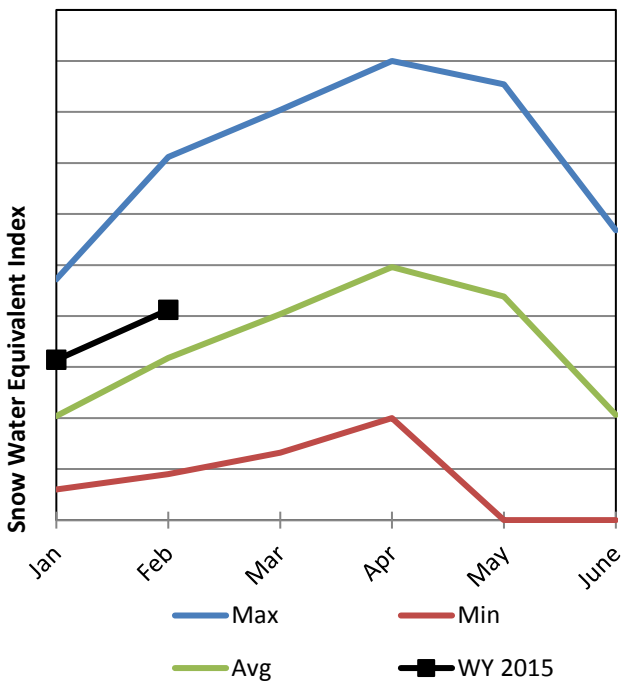

Tremonton
Logan
Ogden
Evanston
15
84
80
150
Percent normal
< 50%
50 - 69%
70 - 89%
90 - 109%
110 - 129%
130 - 149%
> 150%
no % avail.
SNOTEL sites
Forecast points
Rivers
Highways
Cities
N
0 5 10 20 30 40
Miles
USDA
NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Raft River Basin

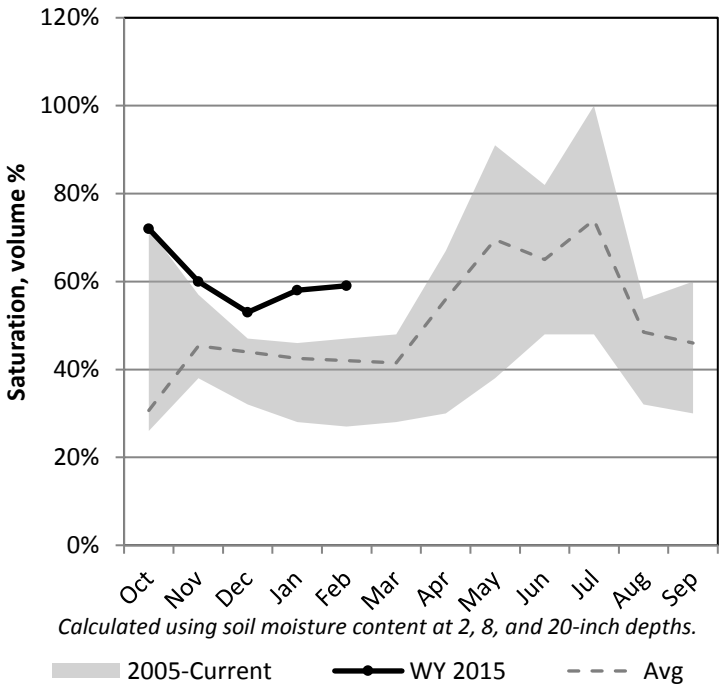
2/1/2015

Snowpack in the Raft River Basin is much above average at 143% of normal, compared to 69% last year. Precipitation in January was much below average at 47%, which brings the seasonal accumulation (Oct-Jan) to 111% of average. Soil moisture is at 59% compared to 27% last year. The forecast streamflow volume for Dunn Creek is 83% of average.

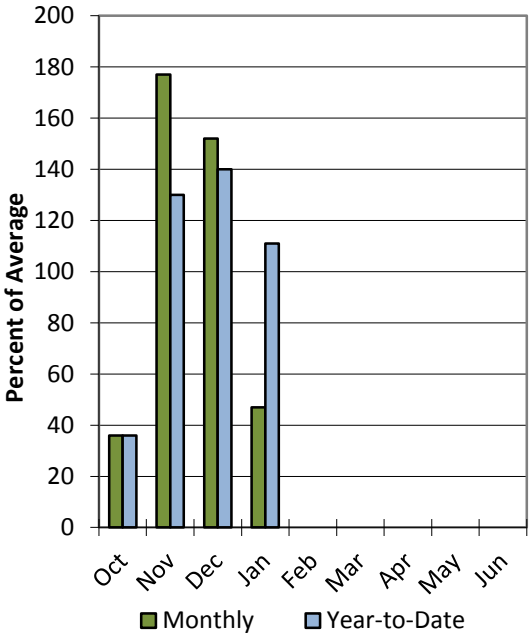
Snowpack



Soil Moisture



Precipitation



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Raft River

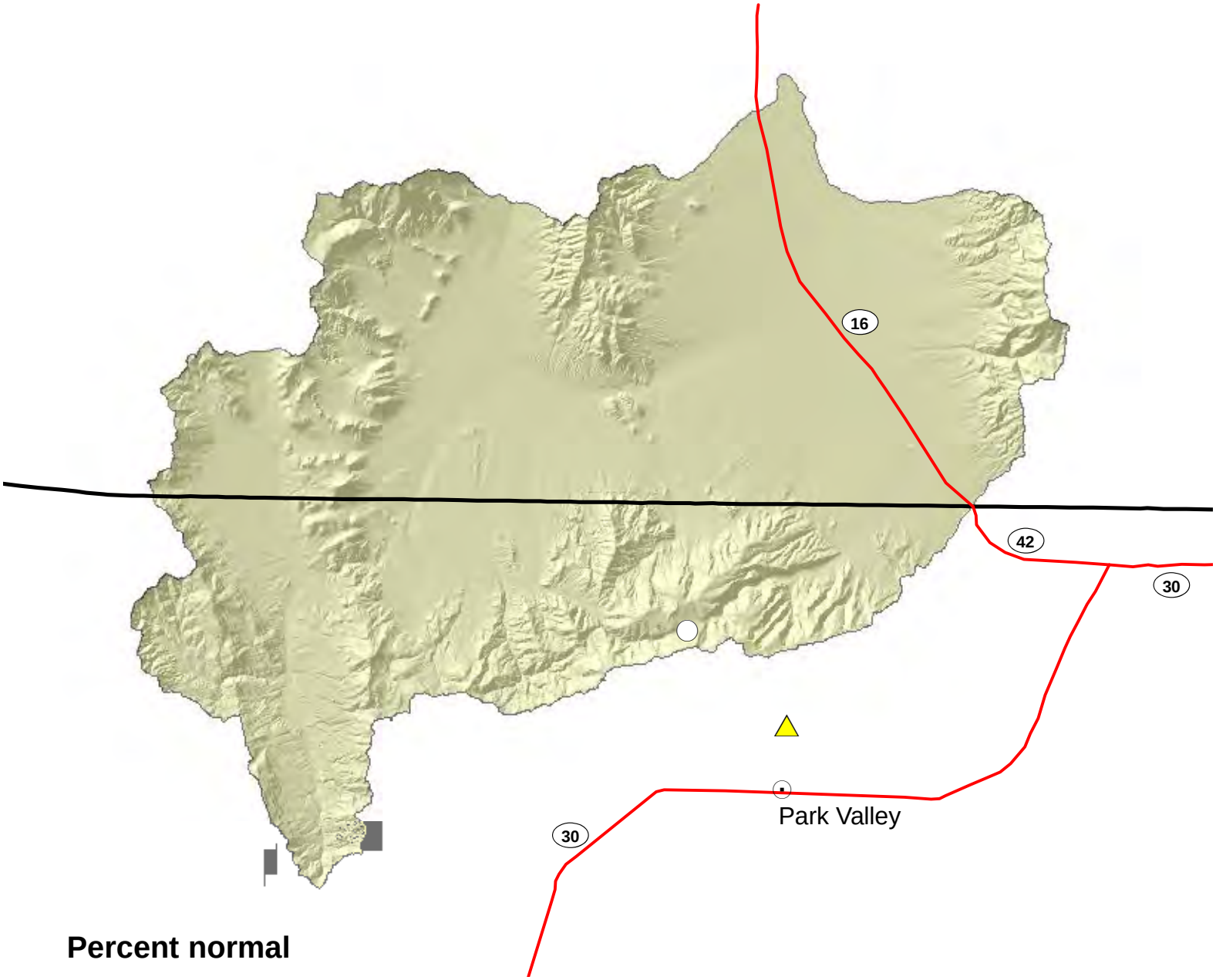
Streamflow Forecasts - February 1, 2015

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	0.029	0.2	2.4	83%	3.6	5.1	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, 2015	# of Sites	% Median	Last Year % Median
Raft	1	143%	69%

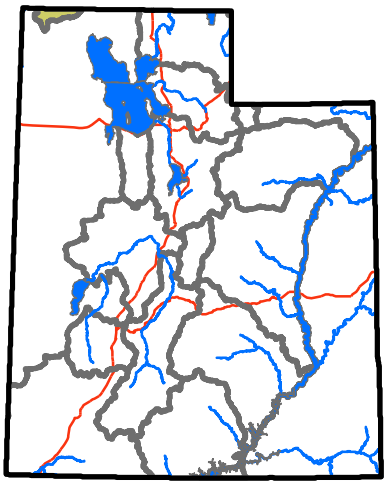
Raft basin



Percent normal

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

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



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

N

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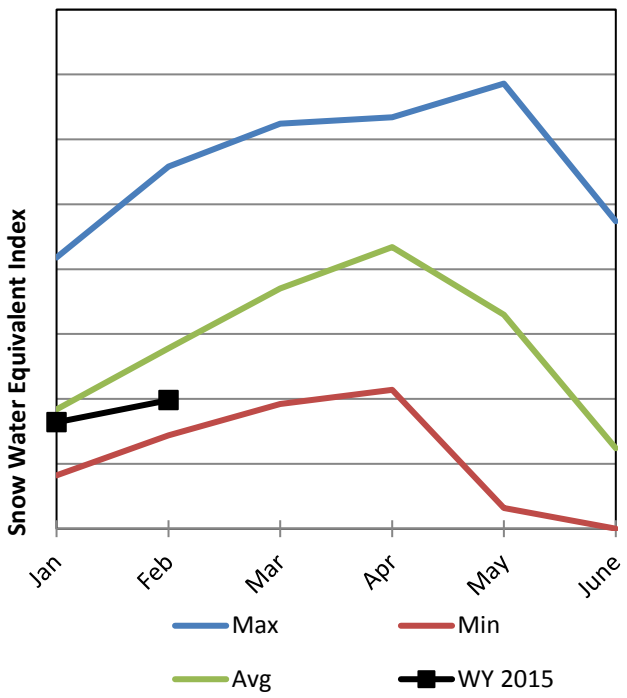
Weber & Ogden River Basins

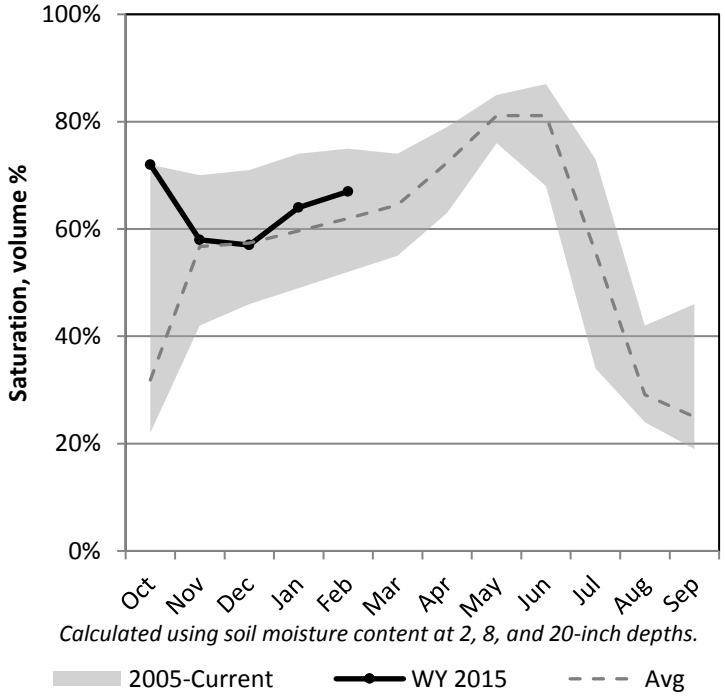
2/1/2015

Snowpack in the Weber & Ogden River Basins is below average at 75% of normal, compared to 75% last year. Precipitation in January was much below average at 42%, which brings the seasonal accumulation (Oct-Jan) to 66% of average. Soil moisture is at 67% compared to 54% last year. Reservoir storage is at 49% of capacity, compared to 37% last year. Forecast streamflow volumes range from 57% to 93% of average. The surface water supply index is 42% for the Ogden River, 36% for the Weber River.

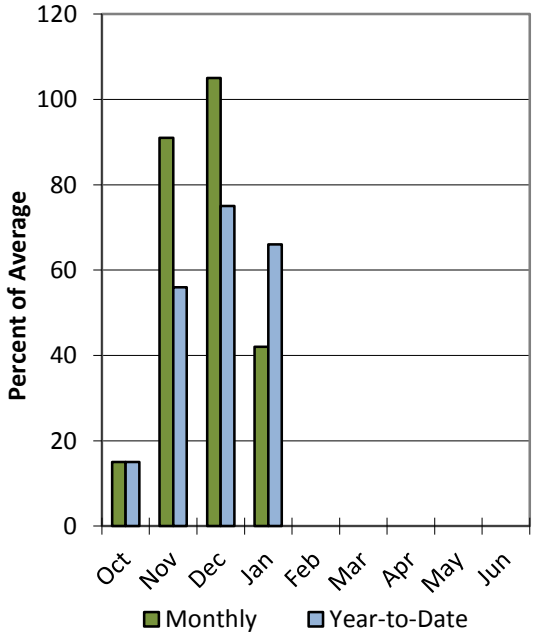
Snowpack



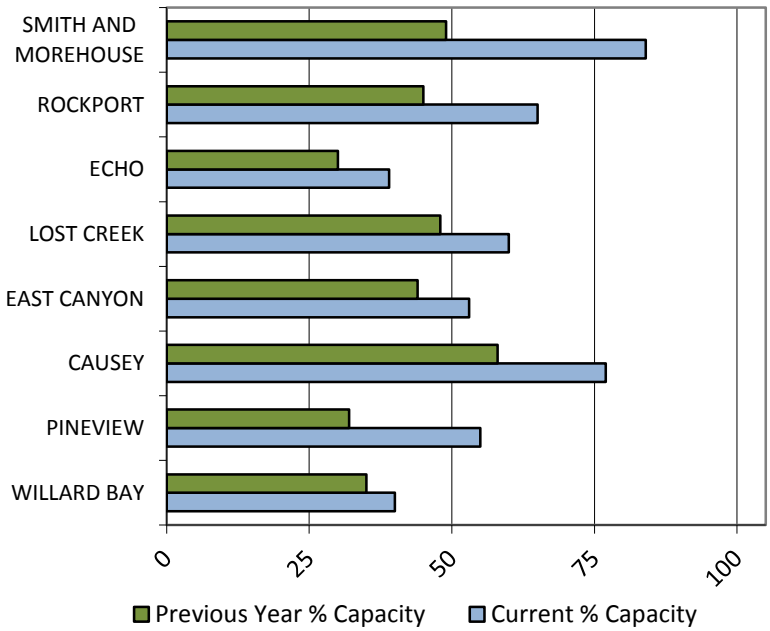
Soil Moisture



Precipitation



Reservoir Storage



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Weber Ogden Rivers
Streamflow Forecasts - February 1, 2015

Weber Ogden Rivers	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						
Smith & Morehouse Resv Inflow	APR-JUL	20	25	29	85%	33	38	34
Weber R at Gateway	APR-JUL	6.3	115	210	67%	305	445	315
Weber R nr Coalville	APR-JUL	55	92	117	93%	142	179	126
Weber R nr Oakley	APR-JUL	62	88	106	91%	124	150	117
Rockport Reservoir Inflow	APR-JUL	49	85	110	89%	135	171	123
Chalk Ck at Coalville	APR-JUL	8.1	24	35	85%	46	62	41
Echo Reservoir Inflow	APR-JUL	6.6	67	108	65%	149	209	166
Lost Ck Reservoir Inflow	APR-JUL	0.36	5.1	9	74%	12.9	18.7	12.1
East Canyon Ck nr Jeremy Ranch	APR-JUL	0.31	7	11.6	76%	16.2	23	15.2
East Canyon Ck nr Morgan	APR-JUL	1.18	11.2	18	64%	25	35	28
SF Ogden R nr Huntsville	APR-JUL	0.56	19.4	33	59%	47	67	56
Pineview Reservoir Inflow	APR-JUL	0.86	25	55	64%	85	128	86
Wheeler Ck nr Huntsville	APR-JUL	0.24	2.2	3.6	57%	5	7	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Causey Reservoir	5.5	4.1	3.2	7.1
East Canyon Reservoir	26.3	21.9	34.7	49.5
Echo Reservoir	28.5	21.9	46.3	73.9
Lost Creek Reservoir	13.5	10.8	12.3	22.5
Pineview Reservoir	60.2	34.9	51.4	110.1
Rockport Reservoir	39.7	27.6	34.5	60.9
Willard Bay	85.1	75.5	133.7	215.0
Smith And Morehouse Reservoir	6.8	4.0	3.6	81.0
Basin-wide Total	265.6	200.7	319.7	620.0
# of reservoirs	8	8	8	8

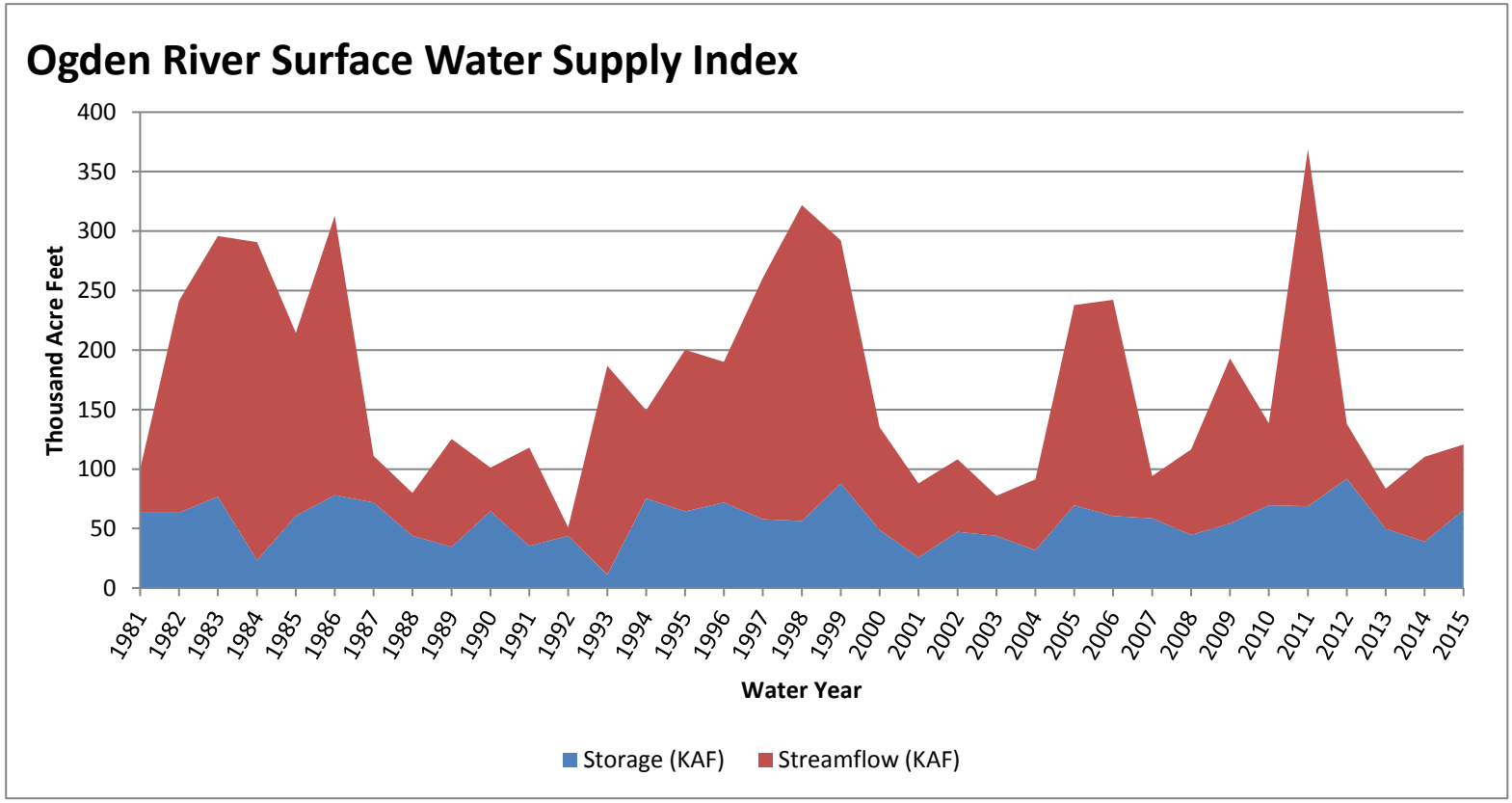
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Upper Weber	9	82%	82%
Lower Weber	7	79%	76%
Ogden	5	67%	67%
Lost Creek	3	85%	83%

February 1, 2015

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	**65.66**	**55.00**	**120.66**	**42**	**-0.69**	**08, 91, 89, 00**

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

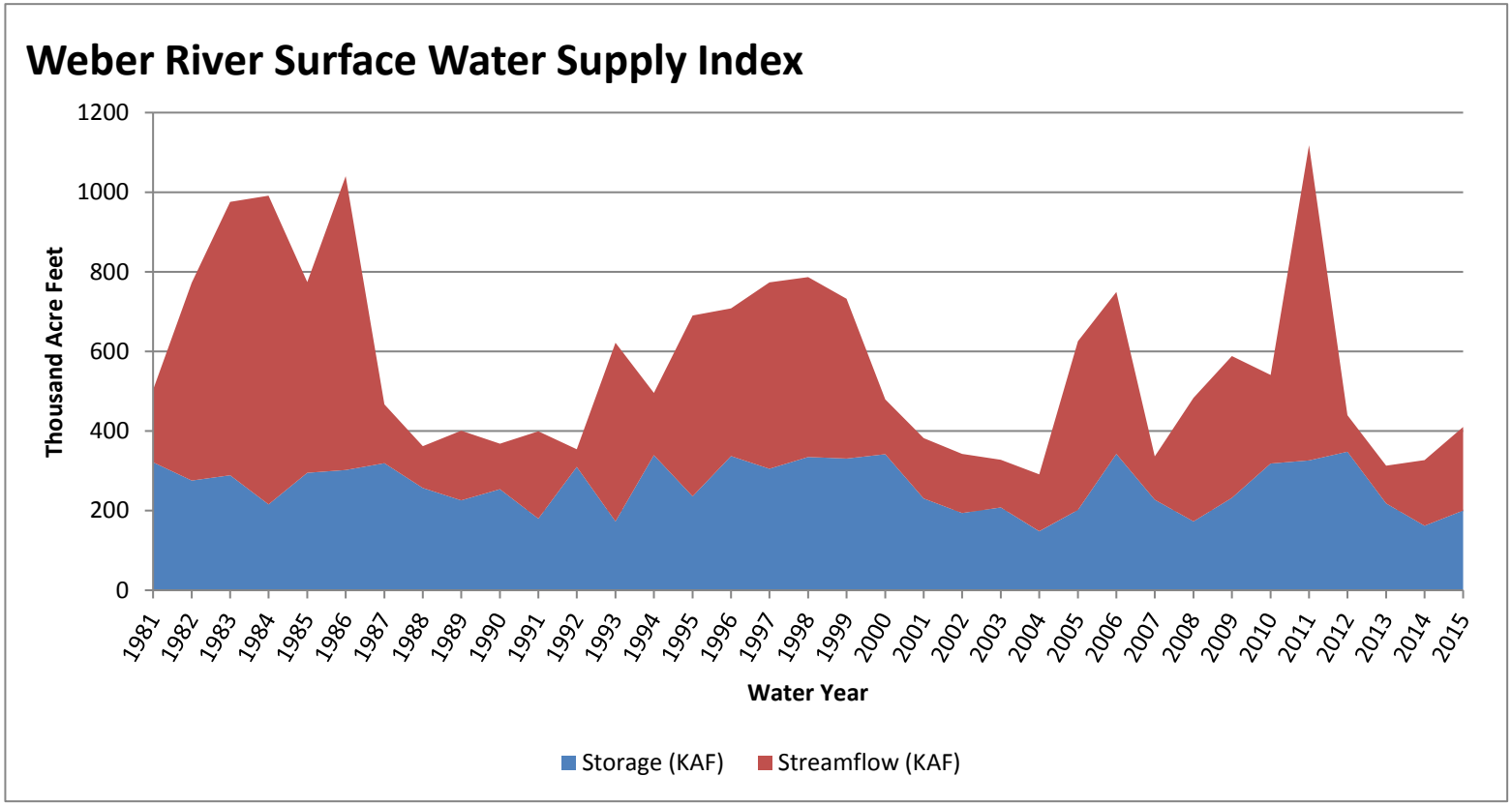


February 1, 2015

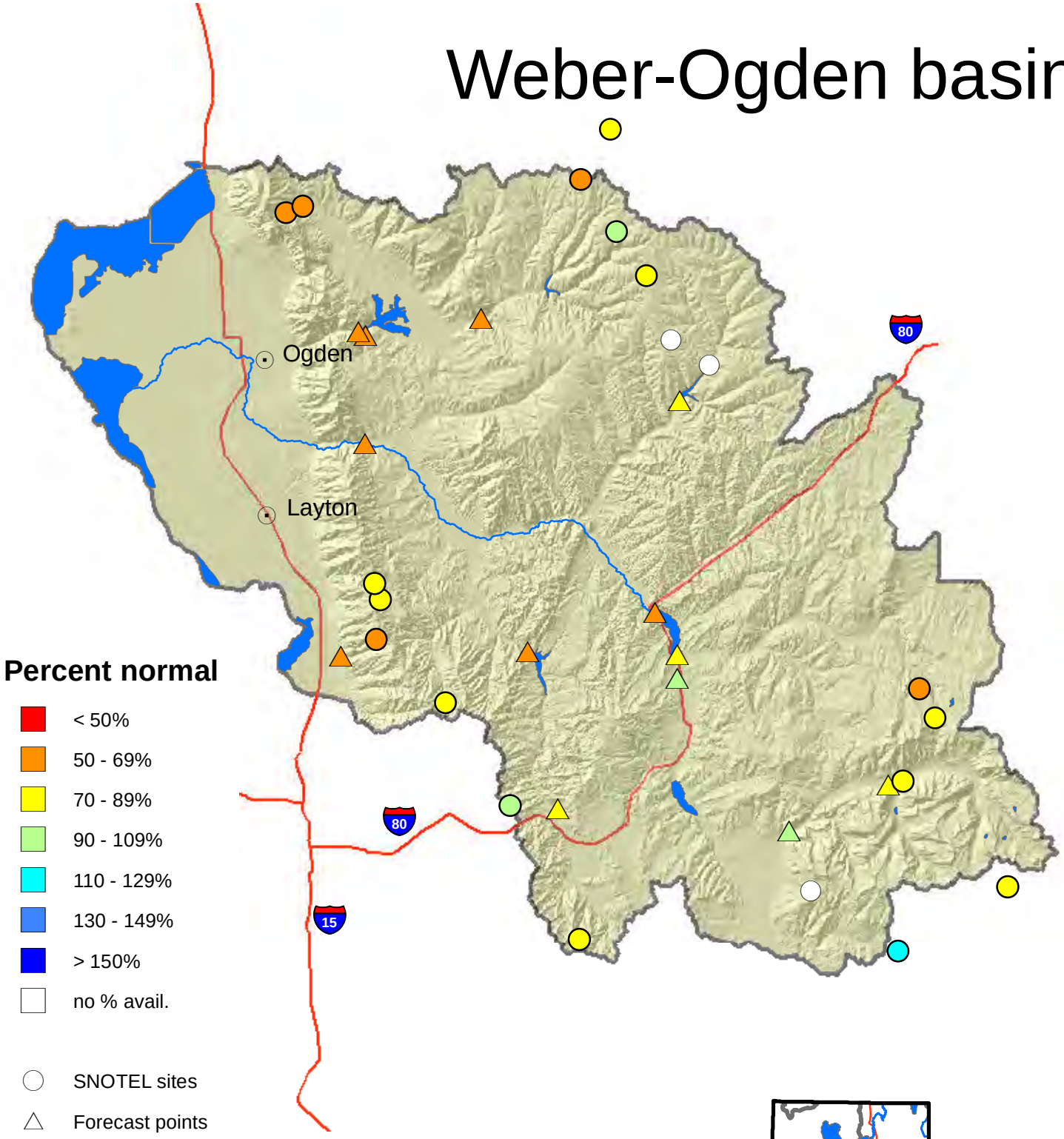
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Weber River	**199.95**	**210.00**	**409.95**	**36**	**-1.16**	**91, 89, 12, 87**

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



Weber-Ogden basin



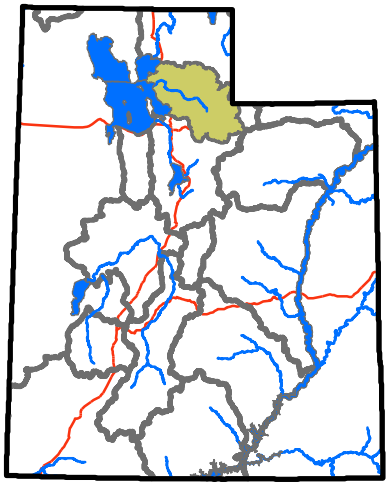
Percent normal

- < 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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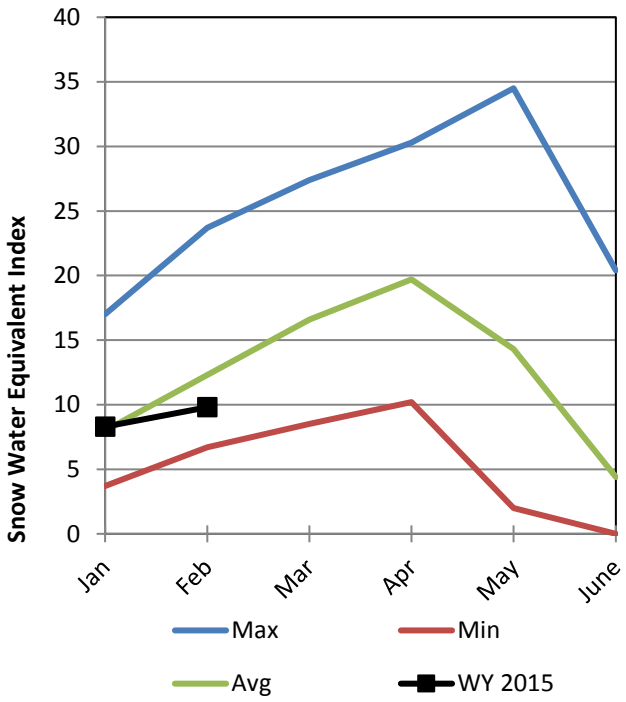
Provo & Jordan River Basins

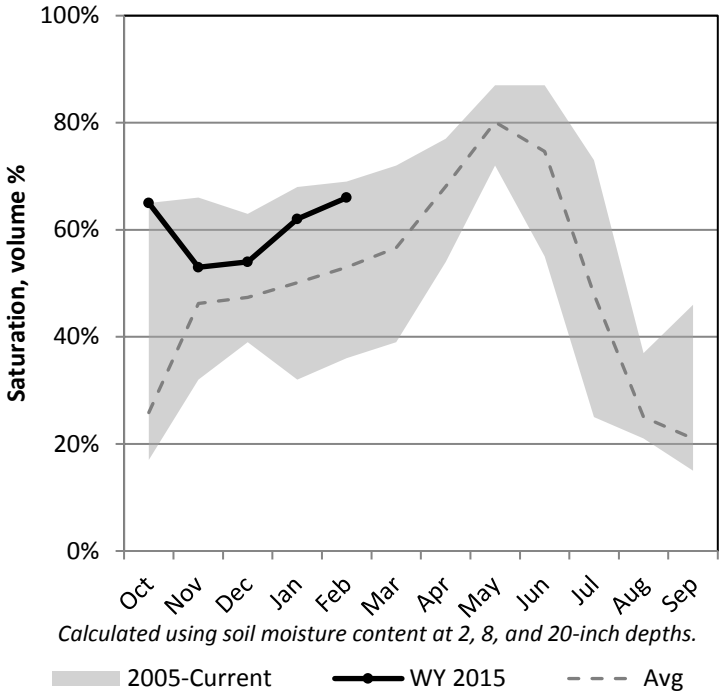
2/1/2015

Snowpack in the Provo & Jordan River Basins is below average at 82% of normal, compared to 69% last year. Precipitation in January was much below average at 42%, which brings the seasonal accumulation (Oct-Jan) to 70% of average. Soil moisture is at 66% compared to 55% last year. Reservoir storage is at 70% of capacity, compared to 70% last year. Forecast streamflow volumes range from 55% to 87% of average. The surface water supply index is 23% for the Provo River.

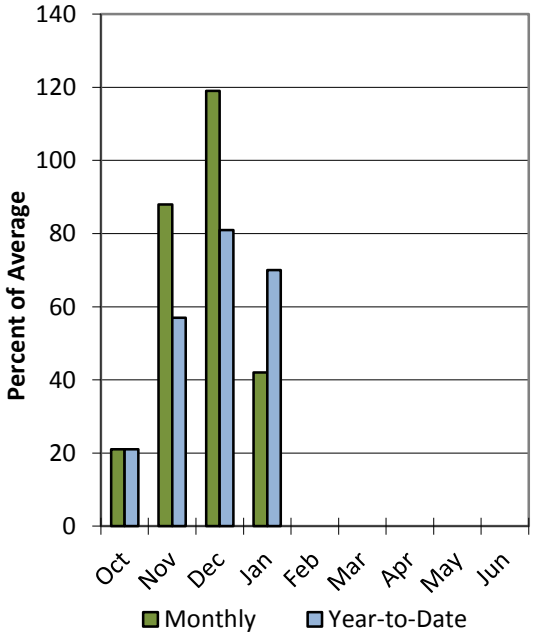
Snowpack



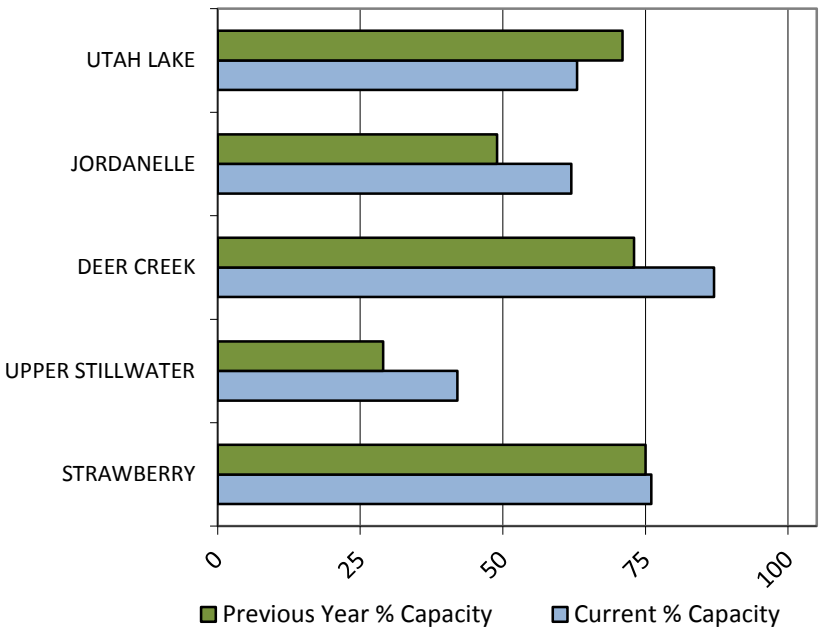
Soil Moisture



Precipitation



Reservoir Storage



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Provo R Utah Lake Jordan R
Streamflow Forecasts - February 1, 2015

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	0.19	4	8.1	85%	12.2	18.3	9.5
Spanish Fk at Castilla								
	APR-JUL	2.1	24	60	87%	96	148	69
Provo R at Woodland								
	APR-JUL	38	57	72	72%	89	117	100
Provo R at Hailstone								
	APR-JUL	39	58	74	69%	92	121	108
Provo R bl Deer Ck Dam								
	APR-JUL	31	57	75	65%	93	119	116
American Fk ab Upper Powerplant								
	APR-JUL	7.2	16.6	23	72%	29	39	32
Utah Lake Inflow								
	APR-JUL	5.3	53	200	75%	347	501	265
W Canyon Ck nr Cedar Fort								
	APR-JUL	0.035	0.57	1.1	63%	1.63	2.4	1.76
Little Cottonwood Ck nr SLC								
	APR-JUL	21	27	32	84%	37	44	38
Big Cottonwood Ck nr SLC								
	APR-JUL	10.3	18	23	64%	29	36	36
Mill Ck nr SLC								
	APR-JUL	0.128	2.3	3.8	59%	5.3	7.6	6.4
Parleys Ck nr SLC								
	APR-JUL	0.28	4.3	8.1	57%	11.9	17.6	14.2
Dell Fk nr SLC								
	APR-JUL	0.11	0.76	3.3	60%	5.8	9.6	5.5
Emigration Ck nr SLC								
	APR-JUL	0.08	1.9	2.2	55%	2.5	4.7	4
City Ck nr SLC								
	APR-JUL	0.16	2.9	4.8	62%	6.7	9.5	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Deer Creek Reservoir	130.8	109.9	107.7	149.7
Strawberry Reservoir	837.4	830.3	658.4	1105.9
Utah Lake	548.3	619.6	752.5	870.9
Jordanelle Reservoir	199.5	155.4	242.0	320.0
Basin-wide Total	1716.1	1715.3	1760.6	2446.5
# of reservoirs	4	4	4	4

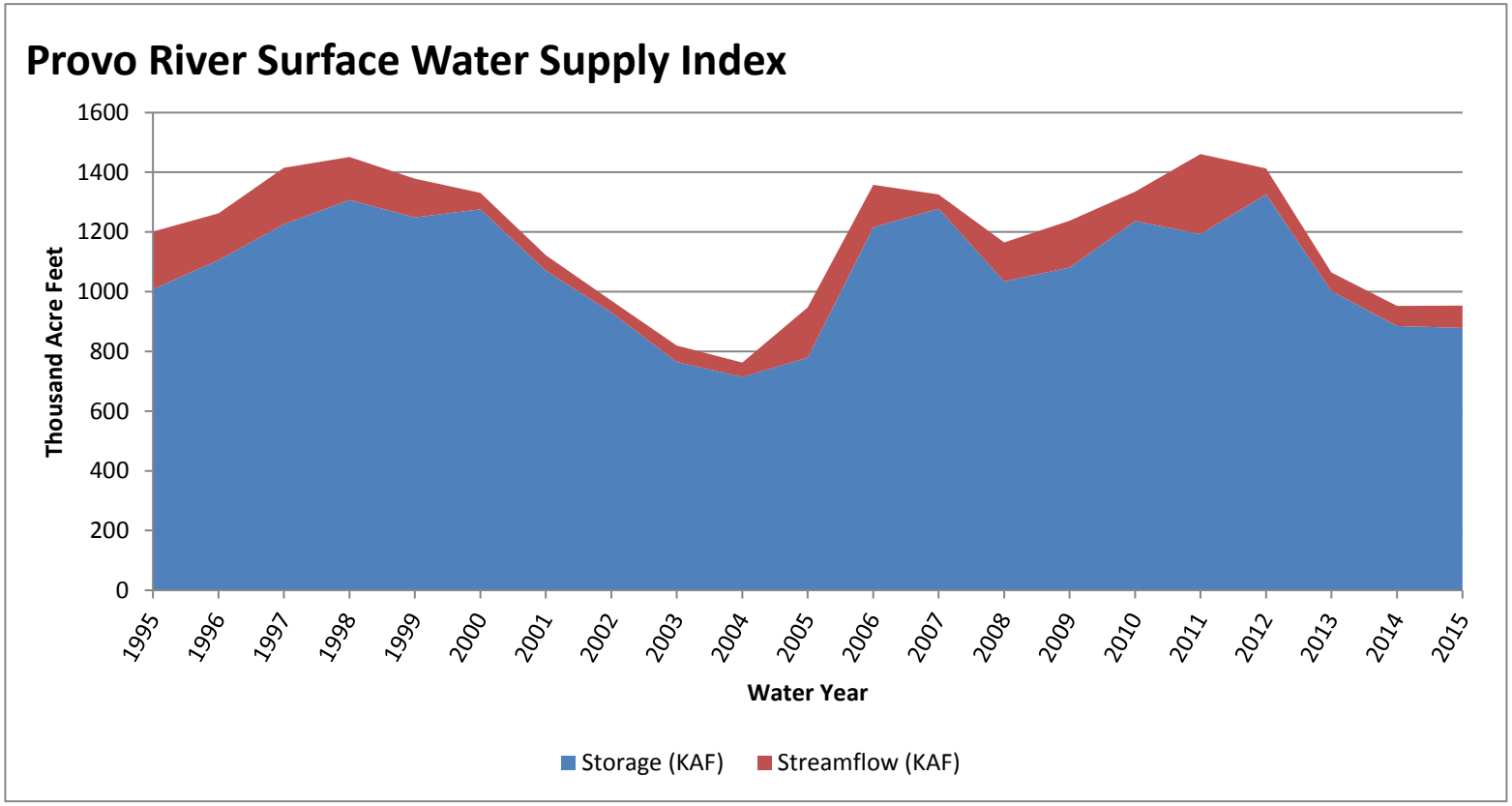
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Upper Provo	6	77%	66%
Jordan	16	78%	67%
Utah Lake	13	81%	64%
Spanish Fork	5	83%	64%
Six Creeks	15	77%	67%
Cottonwoods	7	77%	61%

February 1, 2015

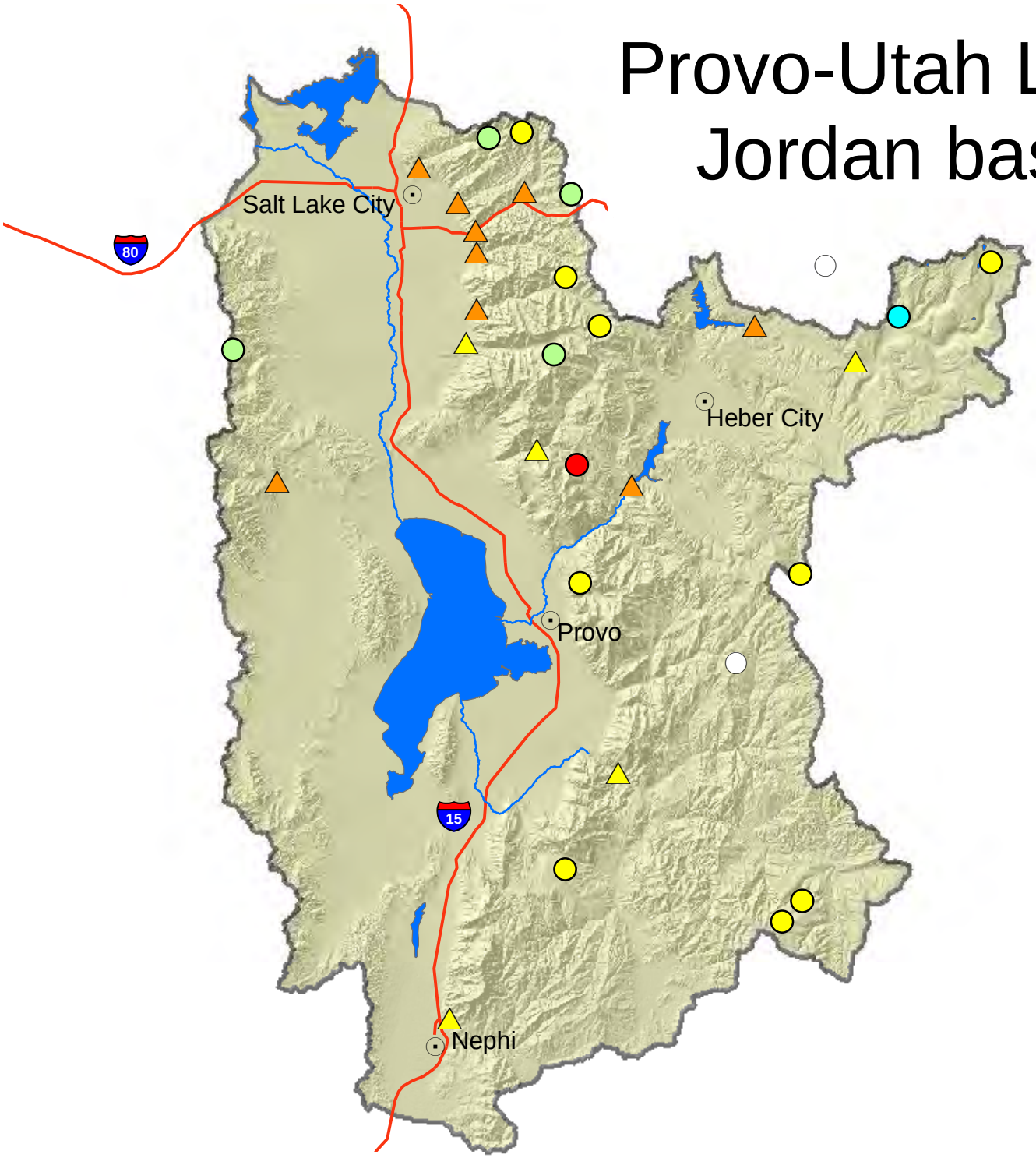
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Provo River	**878.65**	**75.00**	**953.65**	**23**	**-2.27**	**05, 14, 02, 13**

*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%
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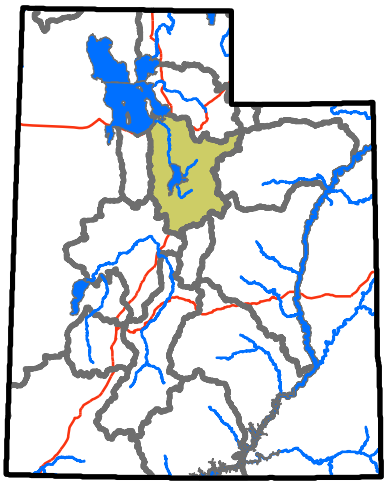
- > 150%
- no % avail.

- 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

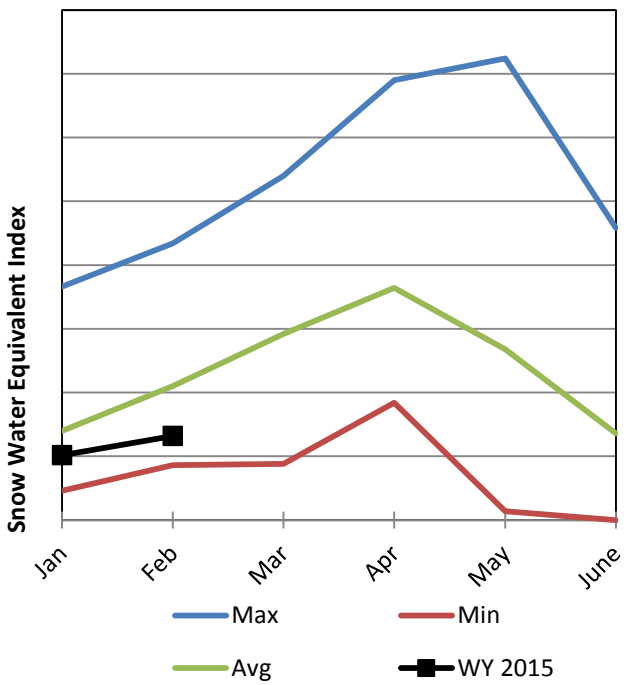


Tooele & Vernon Creek Basins

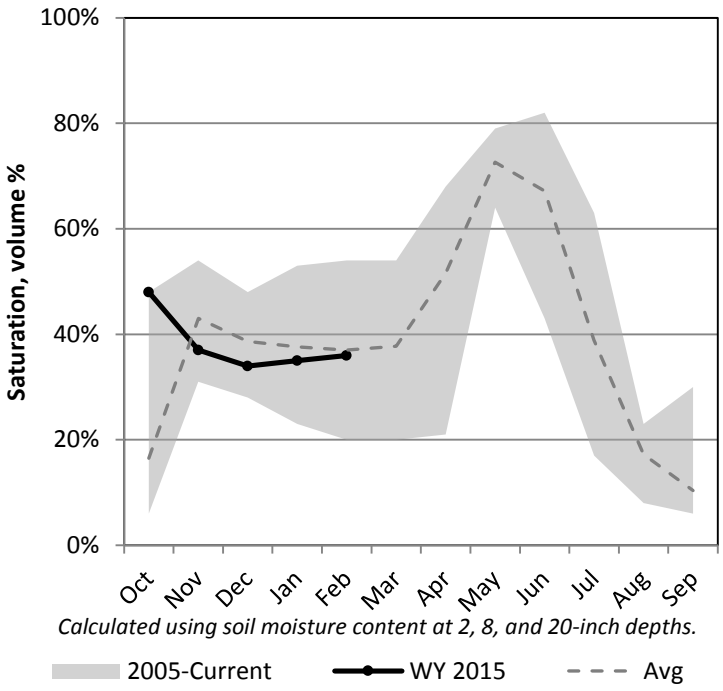
2/1/2015

Snowpack in the Tooele & Vernon Creek Basins is below average at 72% of normal, compared to 81% last year. Precipitation in January was much below average at 44%, which brings the seasonal accumulation (Oct-Jan) to 60% of average. Soil moisture is at 36% compared to 28% last year. Reservoir storage is at 37% of capacity, compared to 53% last year. Forecast streamflow volumes range from 58% to 63% of average.

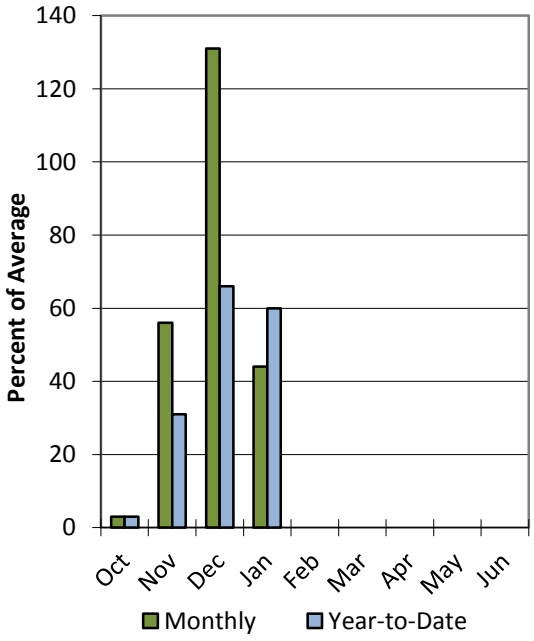
Snowpack



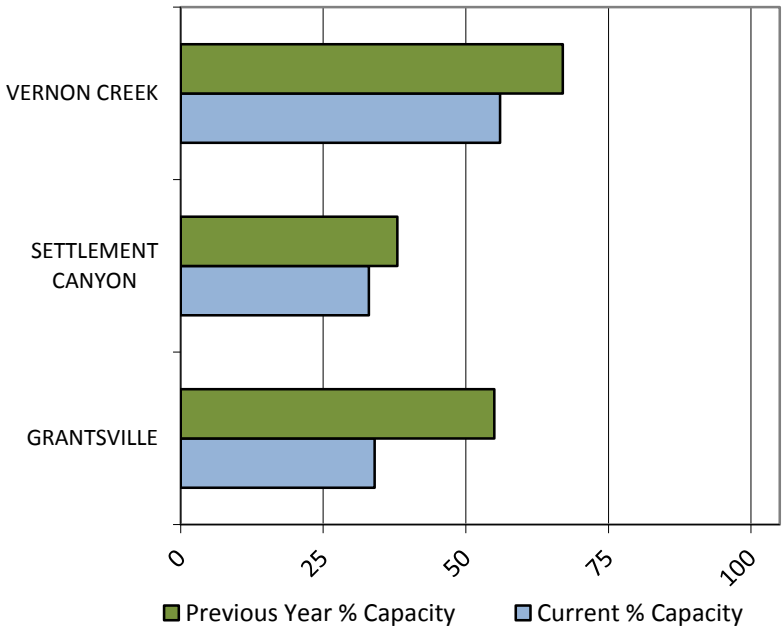
Soil Moisture



Precipitation



Reservoir Storage



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Tooele Valley Vernon Creek
Streamflow Forecasts - February 1, 2015

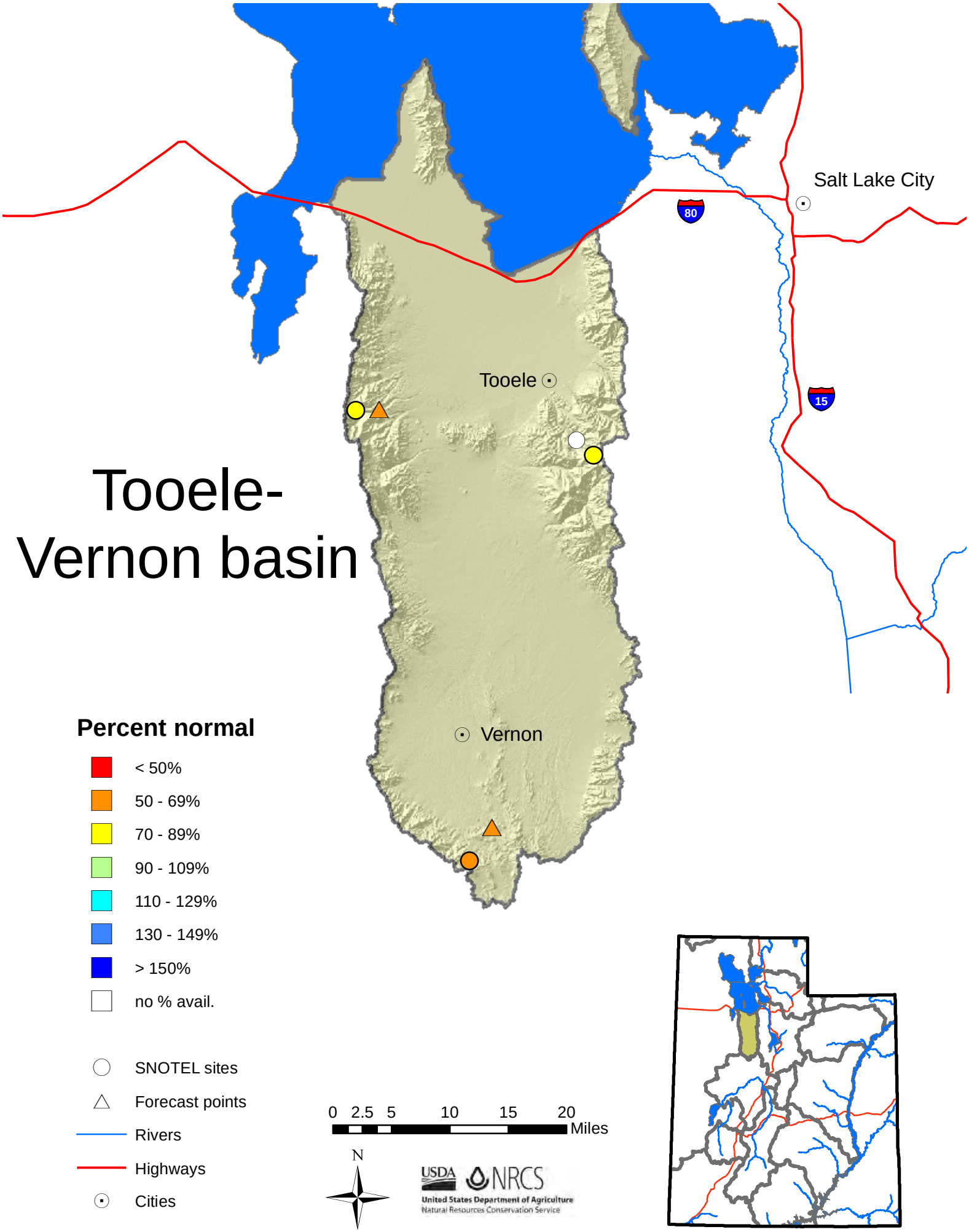
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

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	0.028	0.17	0.8	58%	1.43	2.3	1.39
S Willow Ck nr Grantsville								
	APR-JUL	0.21	1.31	1.8	58%	2.8	3.9	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Vernon Creek Reservoir	0.3	0.4	0.5	0.6
Settlement Canyon Reservoir	0.3	0.4	0.7	1.0
Grantsville Reservoir	1.1	1.8	1.8	3.3
Basin-wide Total	1.8	2.6	2.9	4.9
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Tooele	3	78%	83%
NW Utah	2	70%	85%

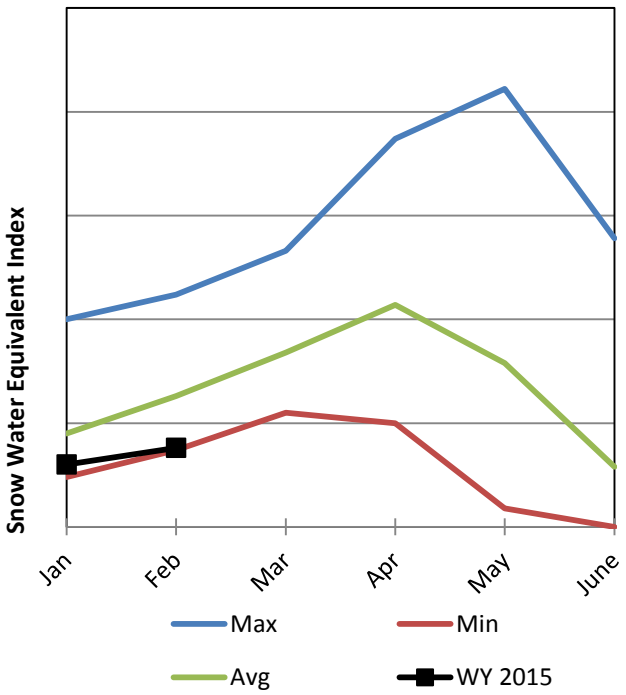

Tooele-
Vernon basin
Salt Lake City
80
15
Tooele
Vernon
Percent normal
< 50%
50 - 69%
70 - 89%
90 - 109%
110 - 129%
130 - 149%
> 150%
no % avail.
SNOTEL sites
Forecast points
Rivers
Highways
Cities
0 2.5 5 10 15 20
Miles
N
USDA
NRCS
United States Department of Agriculture
Natural Resources Conservation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

Northeastern Uintah Basin

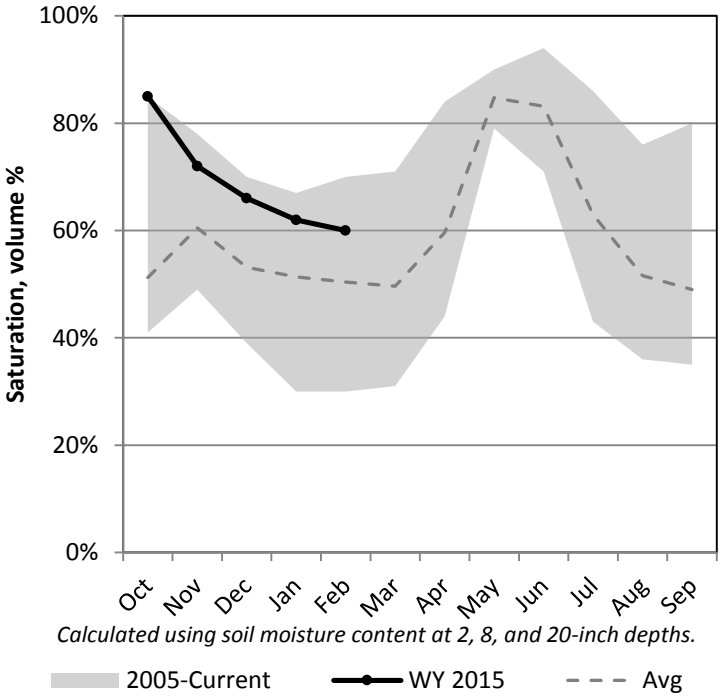
2/1/2015

Snowpack in the Northeastern Uintah Basin is much below average at 68% of normal, compared to 94% last year. Precipitation in January was much below average at 41%, which brings the seasonal accumulation (Oct-Jan) to 65% of average. Soil moisture is at 60% compared to 62% last year. Reservoir storage is at 86% of capacity, compared to 76% last year. Forecast streamflow volumes range from 72% to 86% of average. The surface water supply index is 45% for the Blacks Fork, 47% for the Smiths Creek.

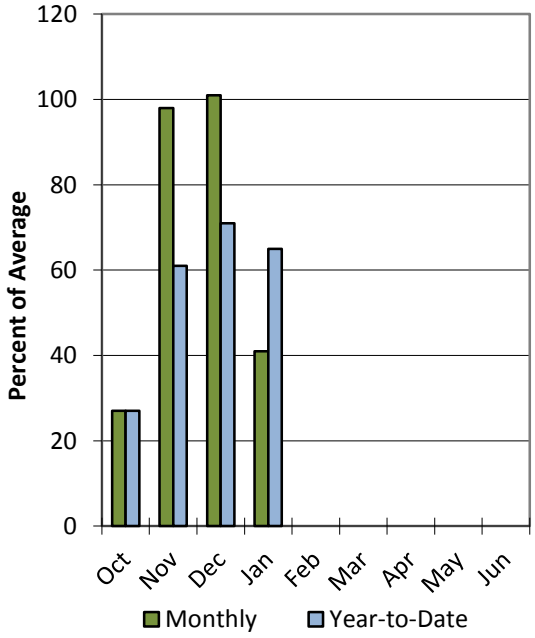
Snowpack



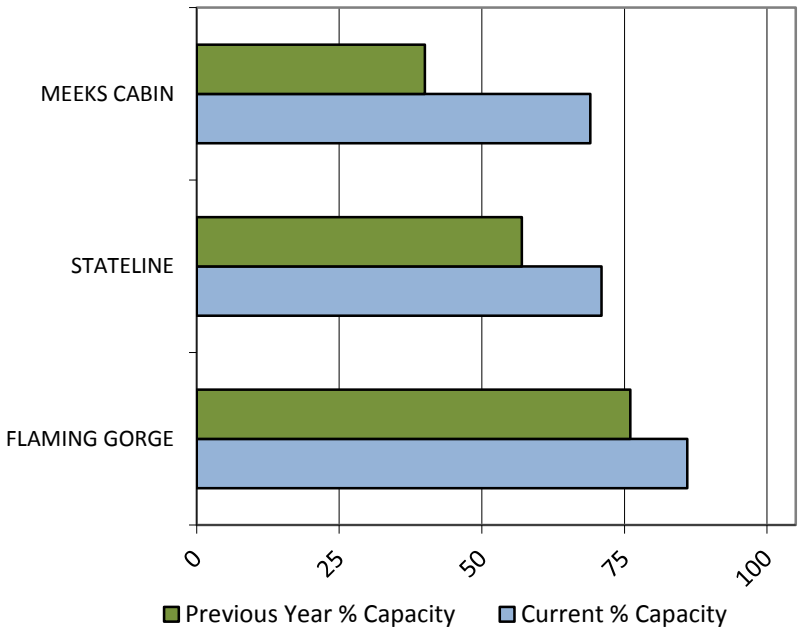
Soil Moisture



Precipitation



Reservoir Storage



Data Current as of: 2/4/2015 2:17:11 PM

Northeastern Uintahs
Streamflow Forecasts - February 1, 2015

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	38	53	64	72%	77	97	89
EF of Smiths Fork nr Robertson [2]	APR-JUL	13	16.7	20	74%	24	31	27
Flaming Gorge Reservoir Inflow [2]	APR-JUL	430	660	840	86%	1050	1390	980
Uinta R bl Powerplant Diversion nr Neola[2]	APR-JUL	19.8	35	48	65%	63	88	74
Whiterocks R nr Whiterocks	APR-JUL	17.5	28	36	67%	45	61	54
Ashley Ck nr Vernal	APR-JUL	15.5	25	32	64%	40	54	50
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	4.9	10.3	14	67%	17.7	23	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Flaming Gorge Reservoir	3234.4	2849.3	3049.0	3749.0
Stateline Reservoir	8.5	6.8	5.4	12.0
Meeks Cabin Reservoir	22.5	13.1	11.9	32.5
Basin-wide Total	3265.4	2869.1	3066.3	3793.5
# of reservoirs	3	3	3	3

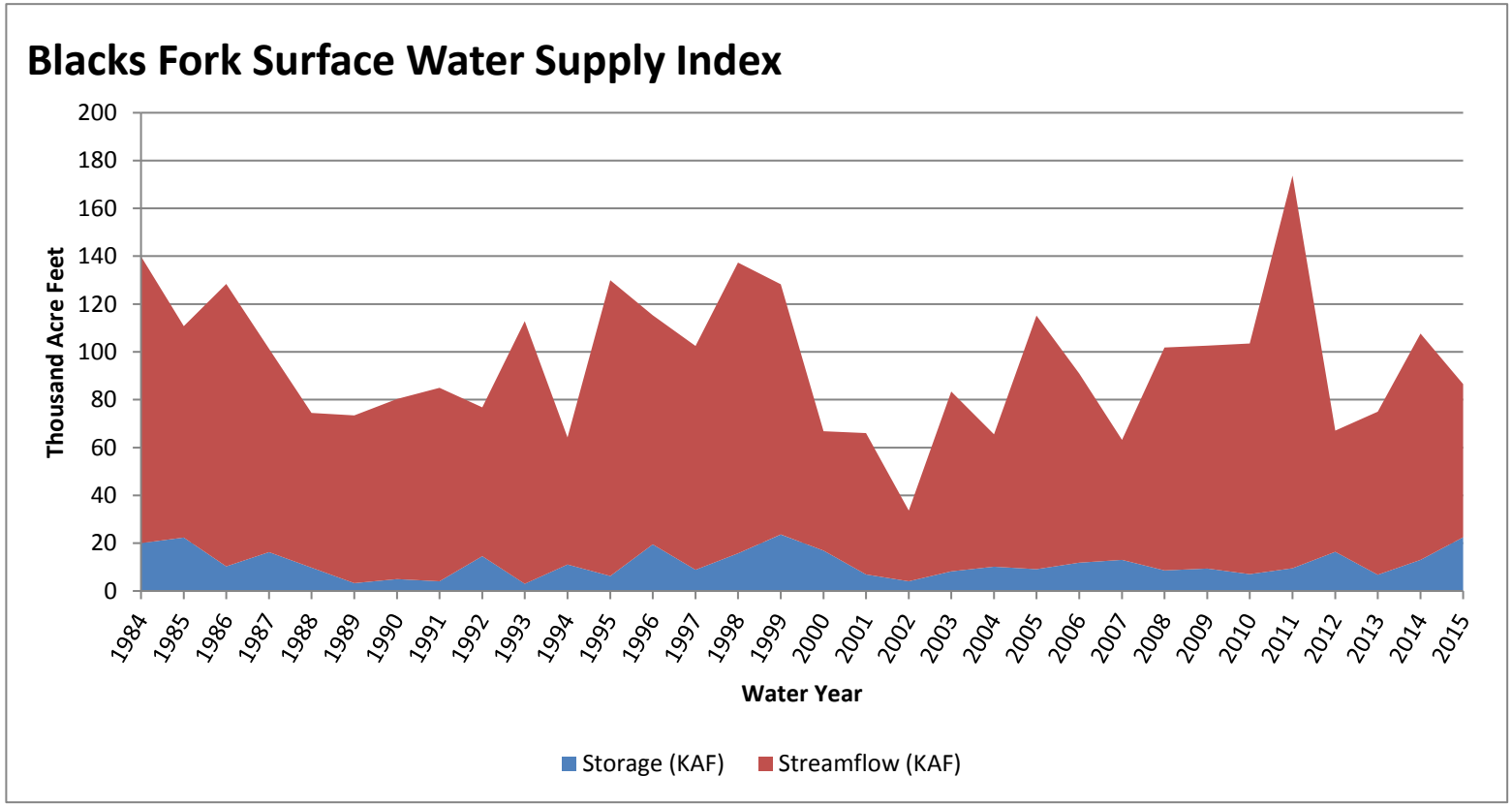
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Blacks Fk	3	73%	94%
Upper Green	2	101%	114%
Lower Green	2	87%	76%
Ashley Brush	4	52%	80%

February 1, 2015

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	**22.51**	**64.00**	**86.51**	**45**	**-0.38**	**03, 91, 06, 87**

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

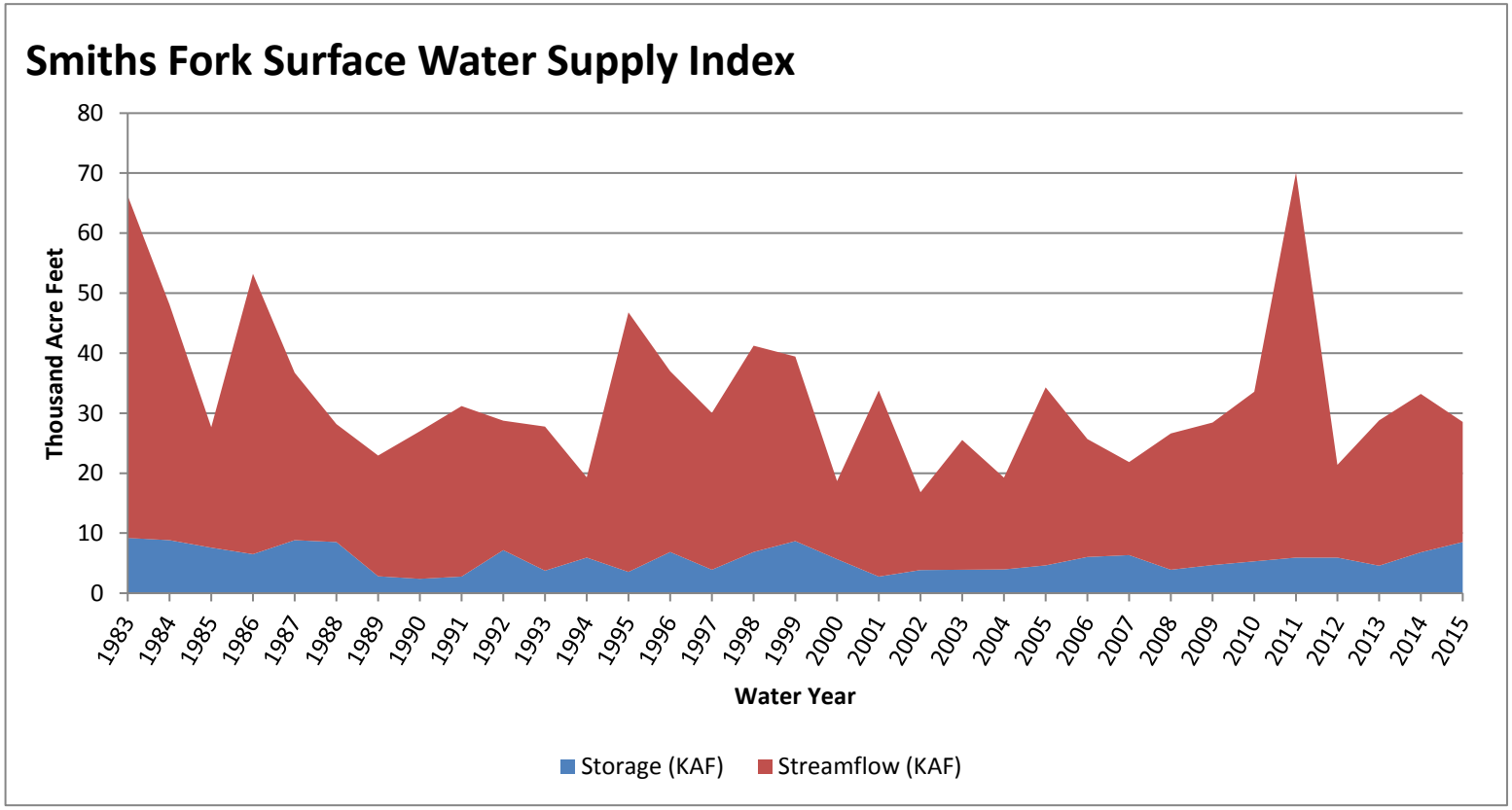


February 1, 2015

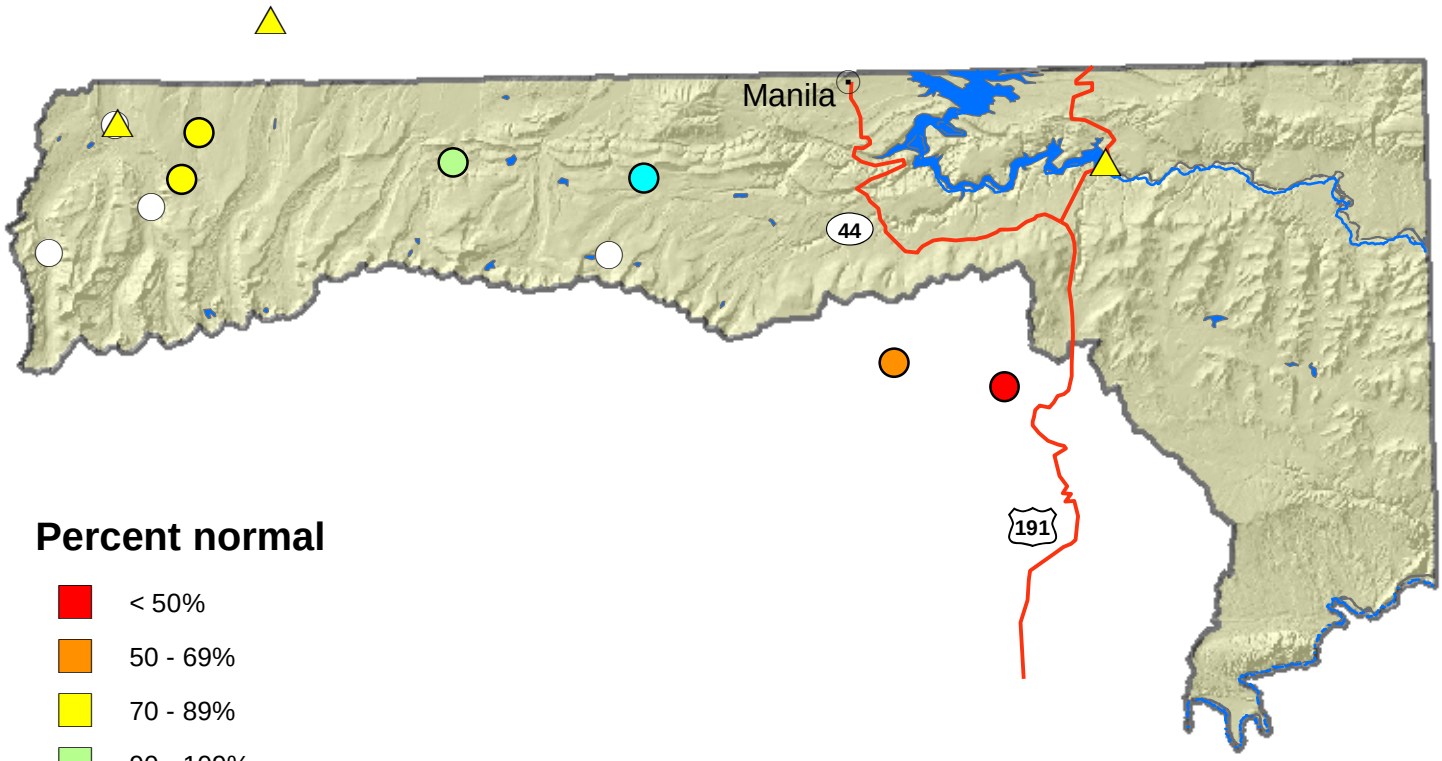
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Smiths Fork	**8.54**	**20.00**	**28.54**	**47**	**-0.25**	**88, 09, 92, 13**

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



Northeastern Utah



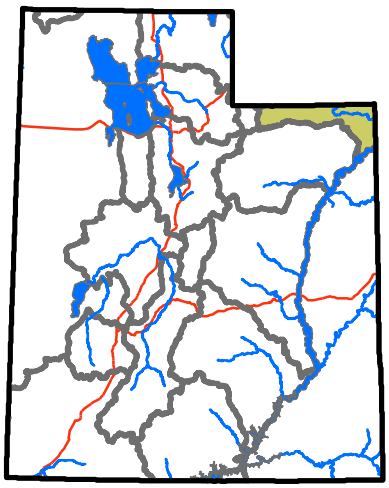
Percent normal

- < 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



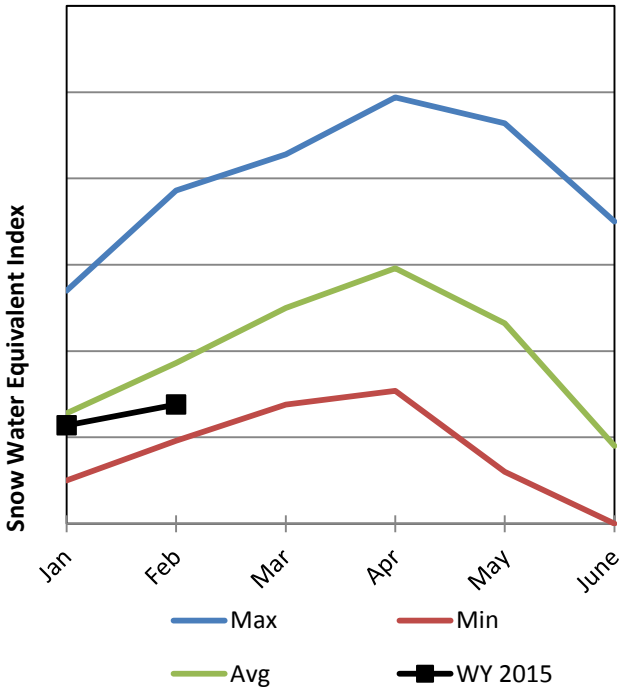
USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Duchesne River Basin

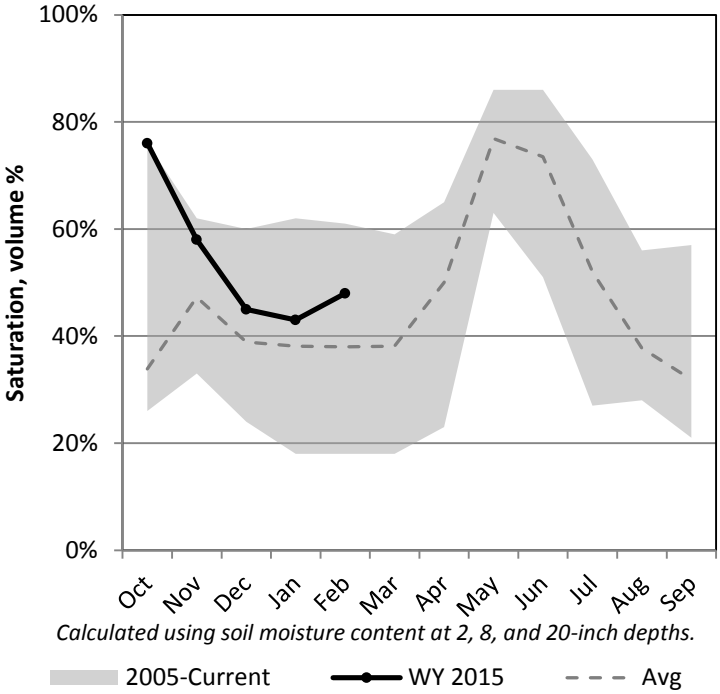
2/1/2015

Snowpack in the Duchesne River Basin is below average at 80% of normal, compared to 78% last year. Precipitation in January was much below average at 41%, which brings the seasonal accumulation (Oct-Jan) to 65% of average. Soil moisture is at 48% compared to 33% last year. Reservoir storage is at 76% of capacity, compared to 74% last year. Forecast streamflow volumes range from 58% to 78% of average. The surface water supply index is 61% for the Western Uintahs, 19% for the Eastern Uintahs.

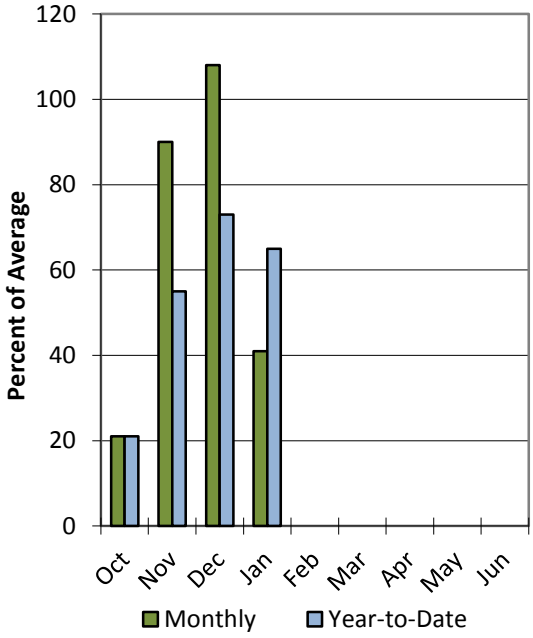
Snowpack



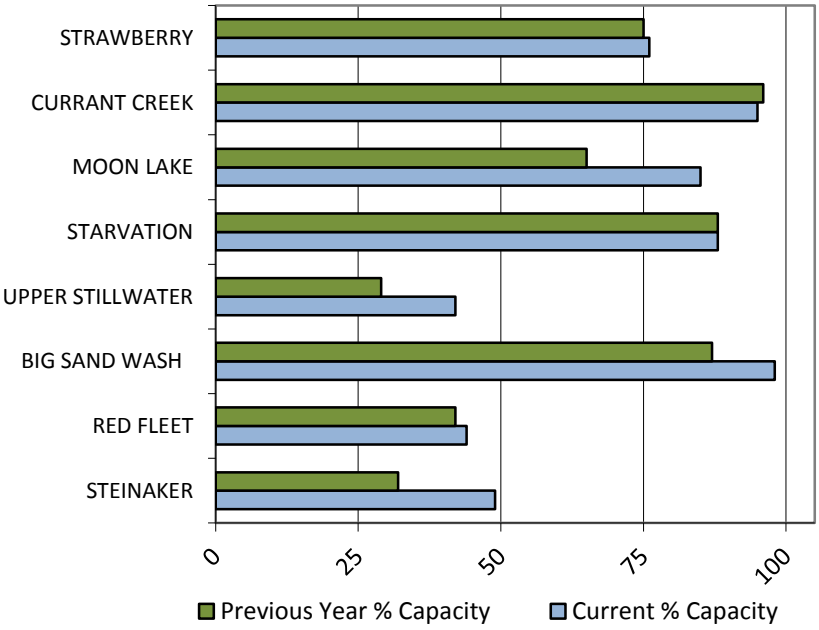
Soil Moisture



Precipitation



Reservoir Storage



Data Current as of: 2/4/2015 2:17:13 PM

Duchesne River
Streamflow Forecasts - February 1, 2015

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	52	70	84	78%	99	123	108
Strawberry R nr Duchesne [2]	APR-JUL	29	52	71	63%	93	132	112
Strawberry R nr Soldier Springs [2]	APR-JUL	22	37	49	68%	63	86	72
Duchesne R at Myton [2]	APR-JUL	99	160	210	64%	265	365	330
Duchesne R nr Randlett [2]	APR-JUL	72	153	225	58%	310	465	385
Duchesne R ab Knight Diversion [2]	APR-JUL	95	126	149	76%	175	215	195
WF Duchesne R at VAT Diversion	APR-JUL	7.4	10.7	13.4	72%	16.3	21	18.6
Rock Ck nr Mountain Home [2]	APR-JUL	43	56	66	75%	76	93	88
Yellowstone R nr Altonah	APR-JUL	27	38	46	75%	55	70	61
Upper Stillwater Reservoir Inflow[2]	APR-JUL	36	47	55	74%	65	79	74
Lake Fk R Bl Moon Lk nr Mountain Home[2]	APR-JUL	31	42	50	76%	59	73	66
Lake Fork R ab Moon Lake Reservoir	APR-JUL	26	37	46	75%	55	71	61
Currant Ck Reservoir Inflow[2]	APR-JUL	6.7	10.7	14	70%	17.7	24	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Steinaker Reservoir	16.3	10.6	21.7	33.4
Red Fleet Reservoir	11.4	10.7	17.9	25.7
Big Sand Wash Reservoir	25.2	22.3		25.7
Upper Stillwater Reservoir	13.6	9.3	8.6	32.5
Starvation Reservoir	144.9	146.1	138.8	165.3
Moon Lake Reservoir	30.6	23.1	24.4	35.8
Currant Creek Reservoir	14.8	14.8	14.9	15.5
Strawberry Reservoir	837.4	830.3	658.4	1105.9
Basin-wide Total	1068.9	1045.0	884.7	1414.1
# of reservoirs	7	7	7	7

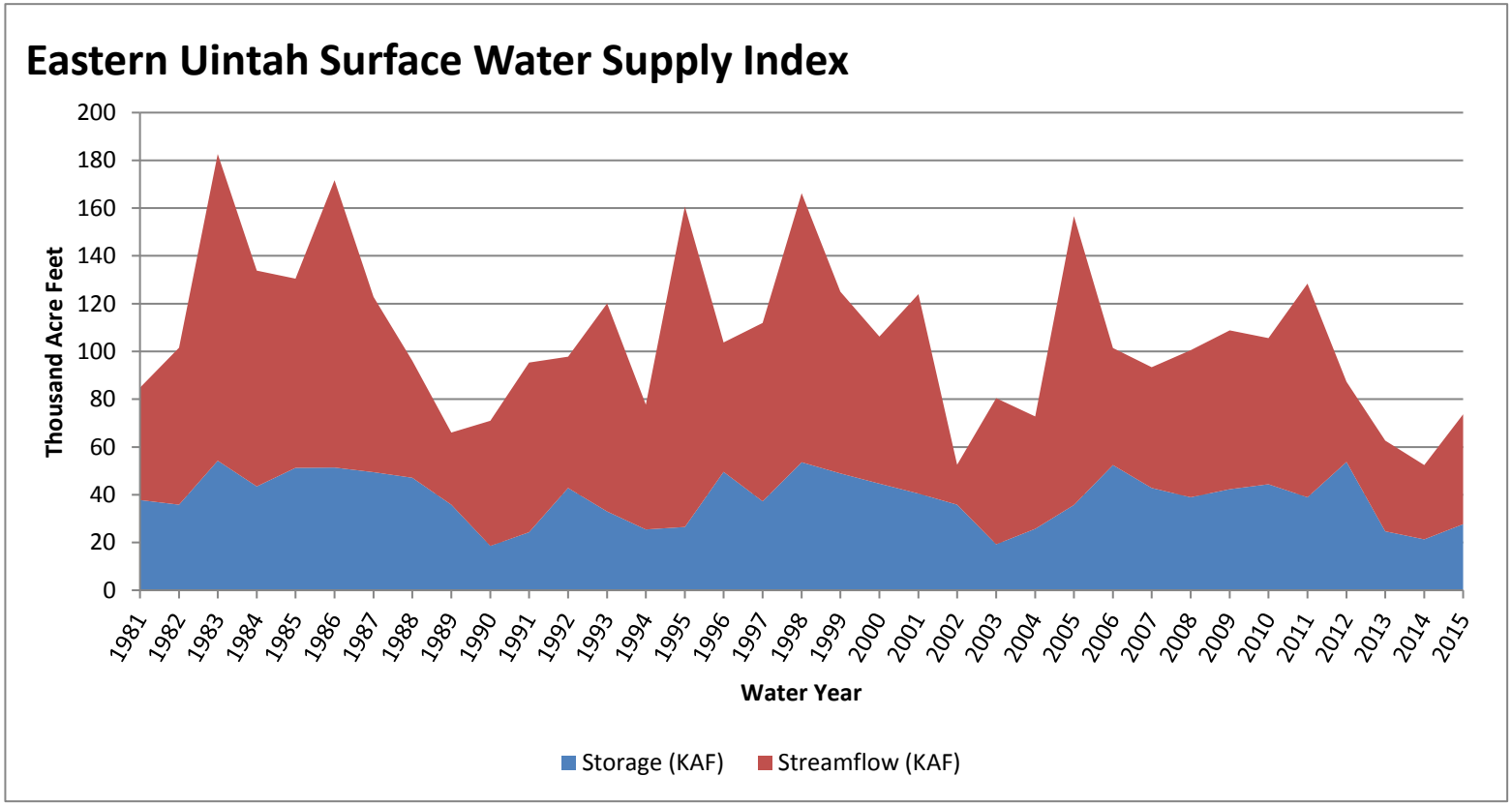
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Strawberry	5	91%	68%
Lakefork Yellowstone	6	80%	80%
Uintah Whiterocks	2	60%	89%

February 1, 2015

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	**27.65**	**46.00**	**73.65**	**19**	**-2.55**	**90, 04, 94, 03**

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

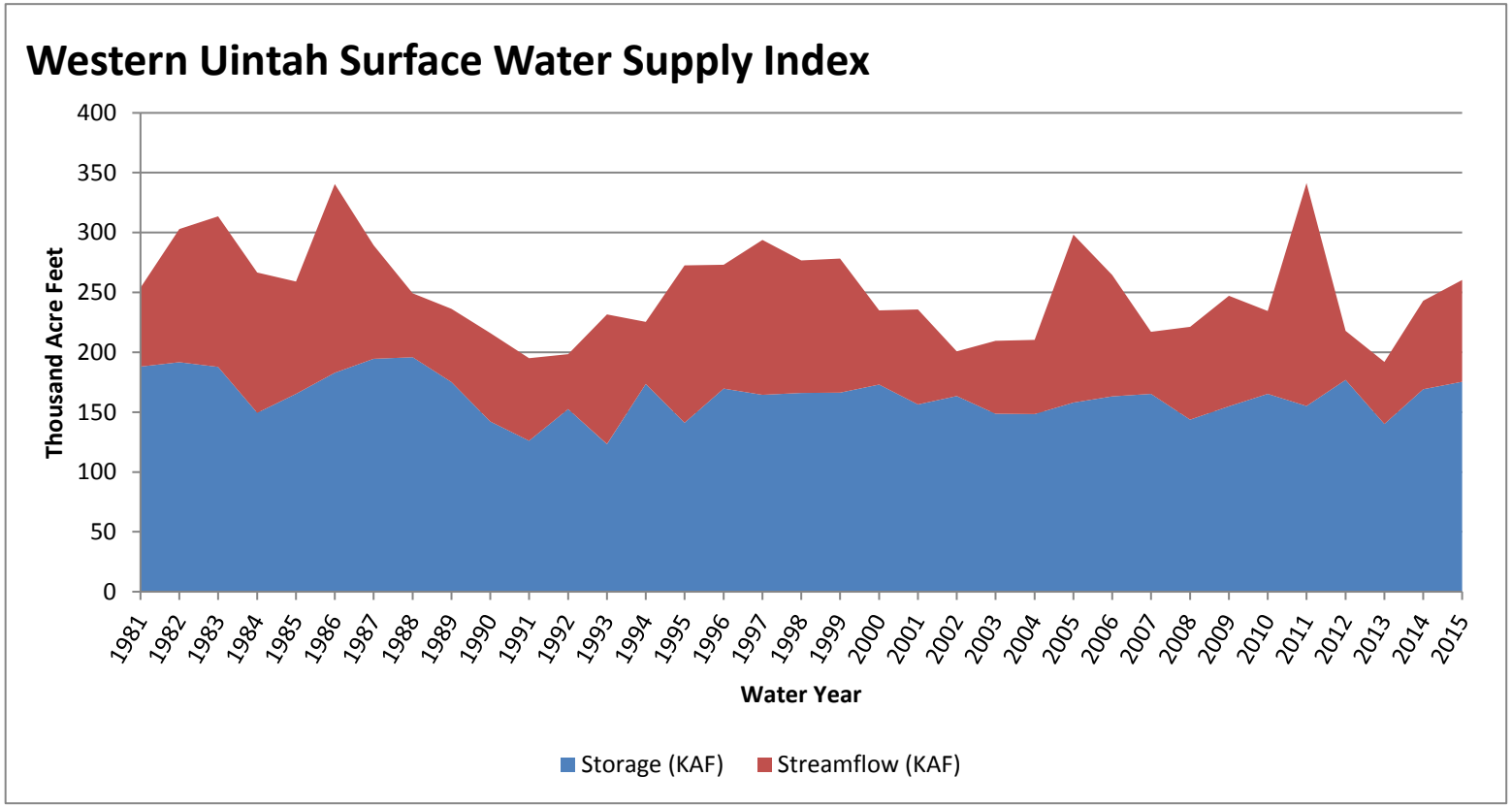


February 1, 2015

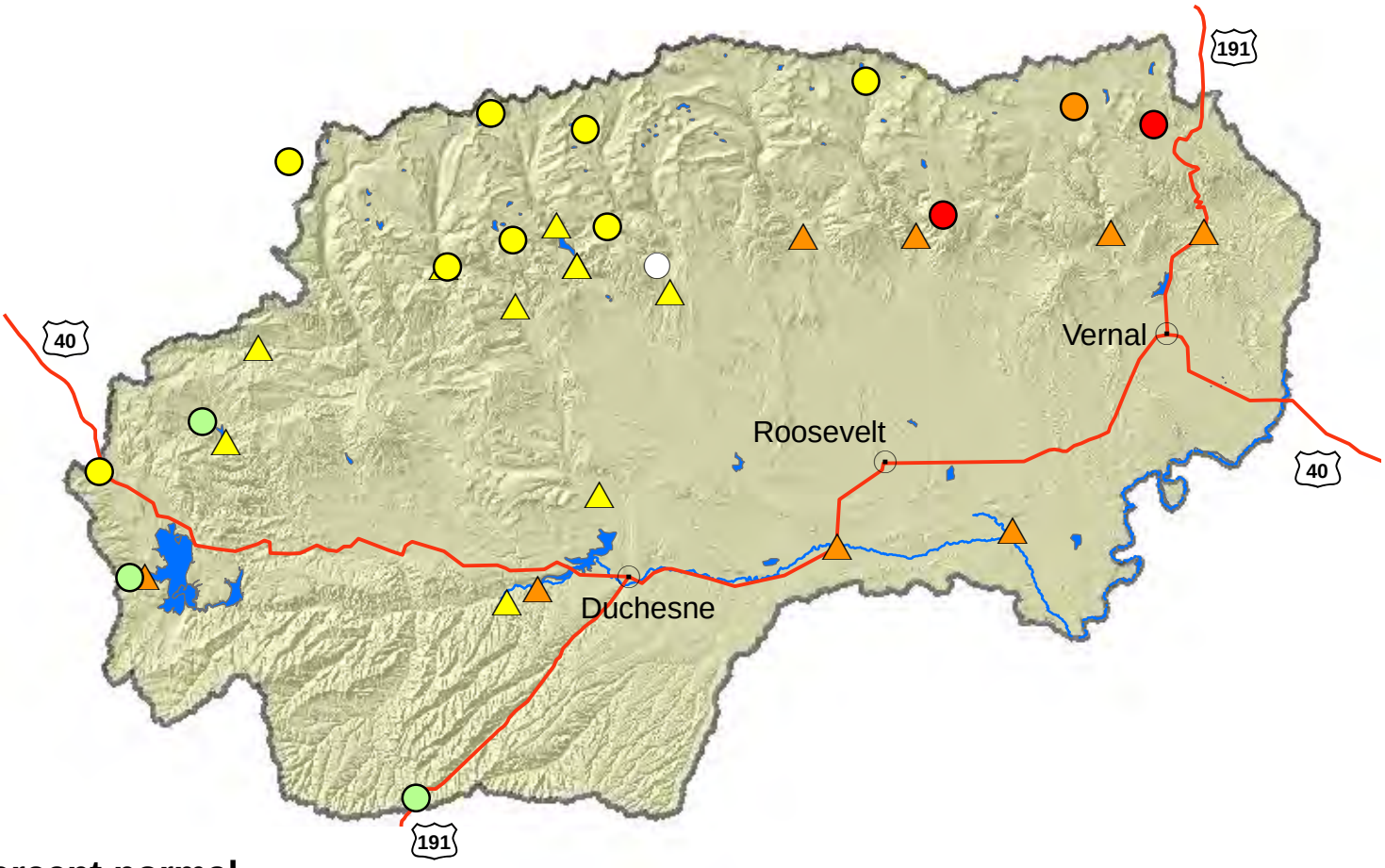
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Western Uintah	**175.46**	**85.00**	**260.46**	**61**	**0.93**	**81, 85, 06, 84**

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



Duchesne basin



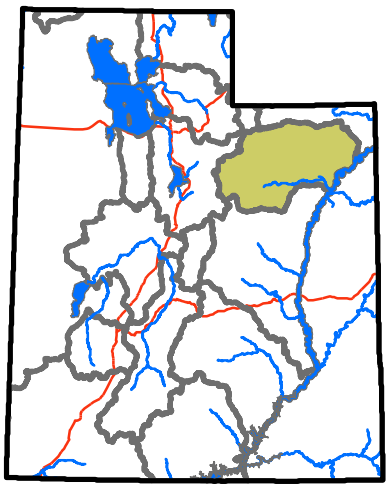
Percent normal

- < 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



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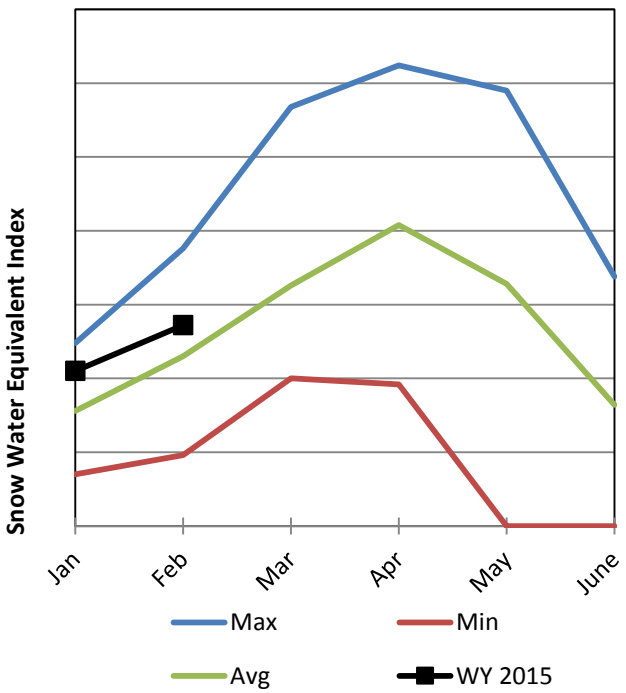
Lower Sevier River Basin

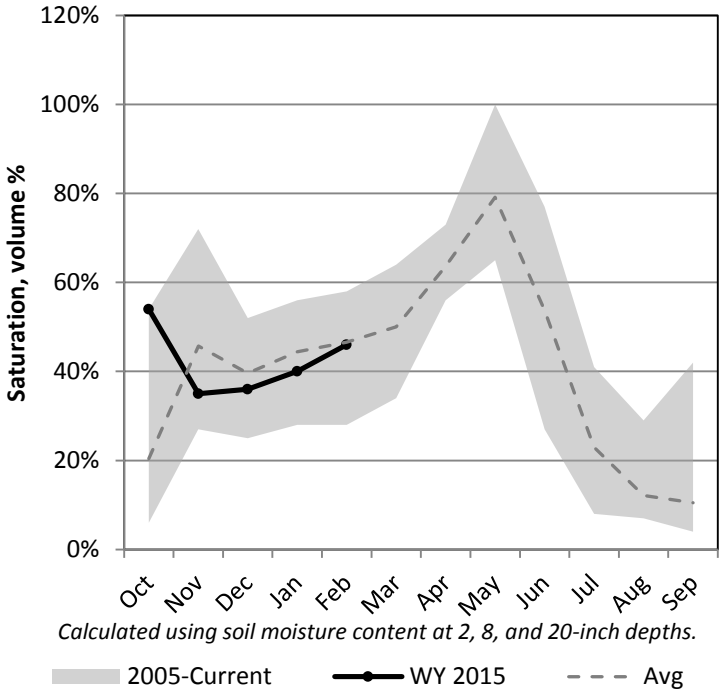
2/1/2015

Snowpack in the Lower Sevier River Basin is above average at 116% of normal, compared to 59% last year. Precipitation in January was below average at 82%, which brings the seasonal accumulation (Oct-Jan) to 98% of average. Soil moisture is at 46% compared to 28% last year. Reservoir storage is at 39% of capacity, compared to 49% last year. Forecast streamflow volumes range from 90% to 96% of average. The surface water supply index is 42% for the Lower Sevier.

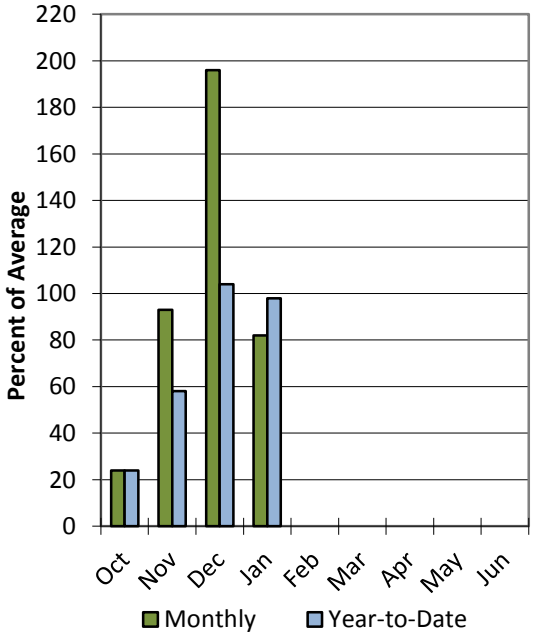
Snowpack



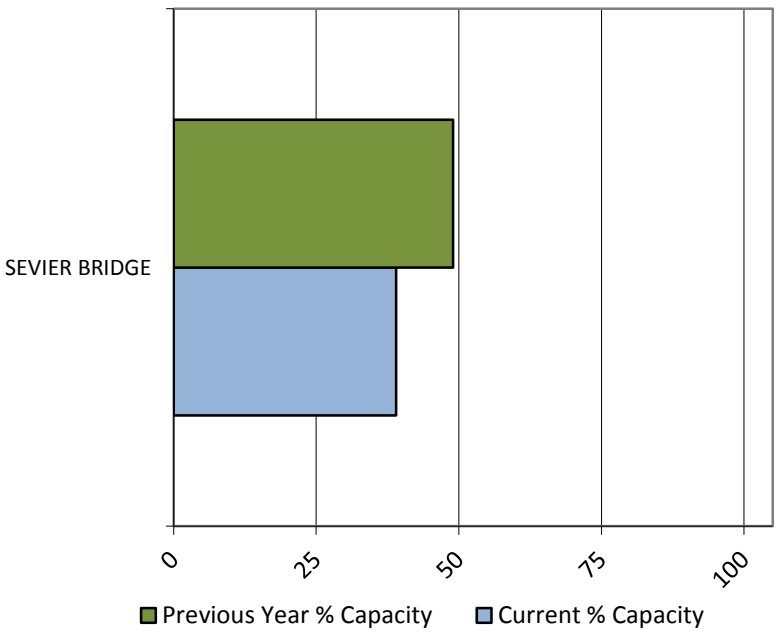
Soil Moisture



Precipitation



Reservoir Storage



Data Current as of: 2/4/2015 2:17:28 PM

Lower Sevier River
Streamflow Forecasts - February 1, 2015

Lower Sevier 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						
Chicken Ck nr Levan								
	APR-JUL	1.55	2.9	4.1	91%	5.6	8.5	4.5
Oak Ck nr Oak City								
	APR-JUL	0.77	1.18	1.5	90%	1.86	2.5	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Sevier Bridge Reservoir	91.6	116.1	155.7	236.0
Basin-wide Total	91.6	116.1	155.7	236.0
# of reservoirs	1	1	1	1

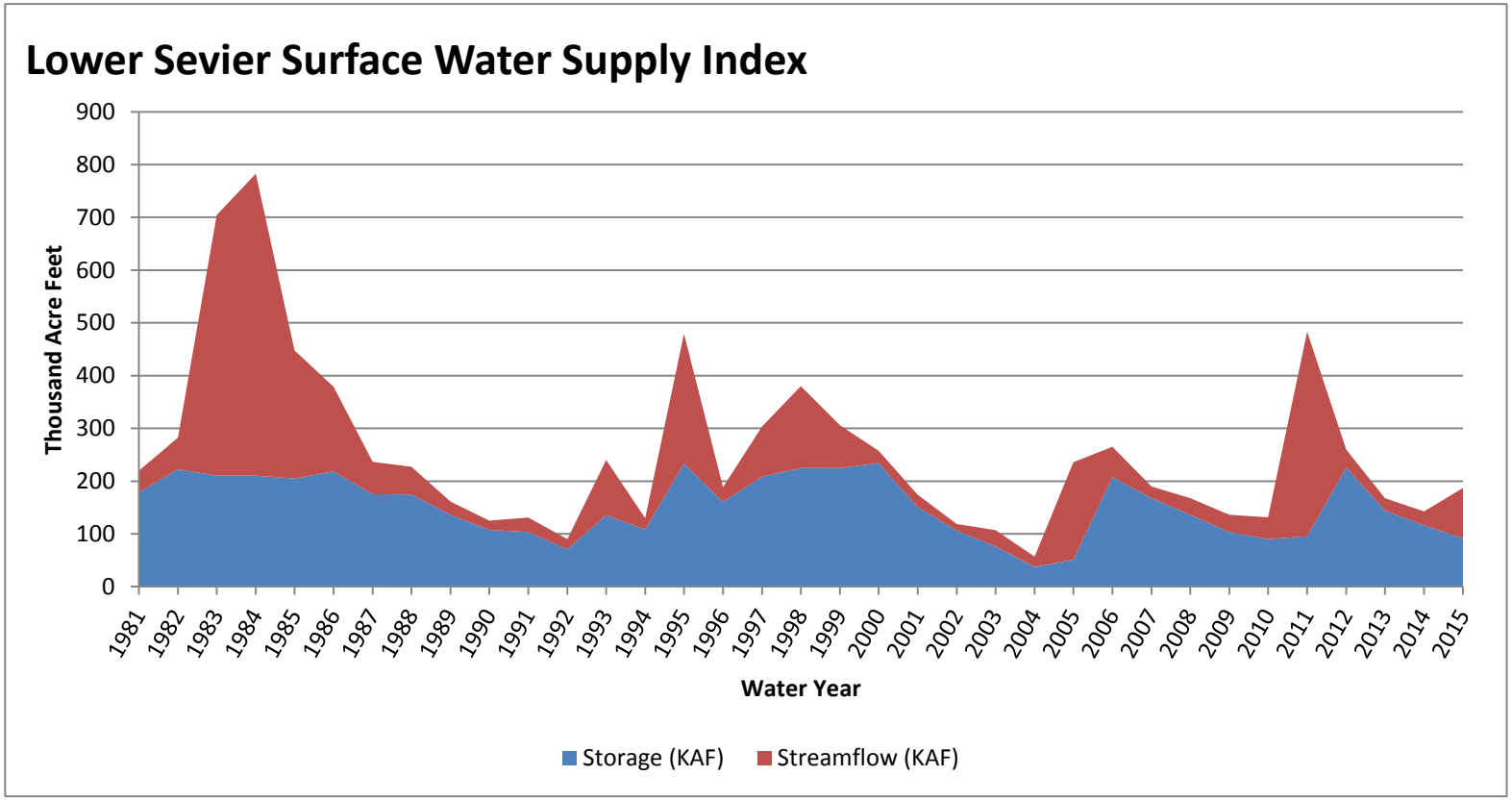
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Lower Sevier	2	99%	65%

February 1, 2015

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	**91.61**	**95.00**	**186.61**	**42**	**-0.69**	**13, 01, 96, 07**

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



Lower Sevier basin

Percent normal

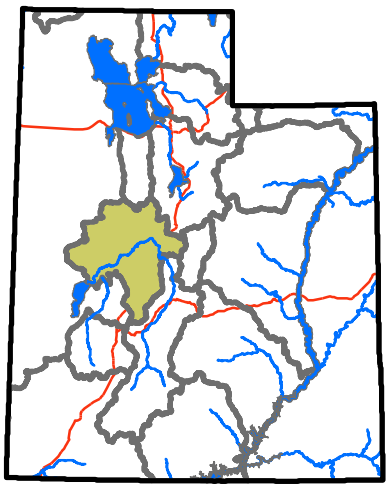
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

- 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

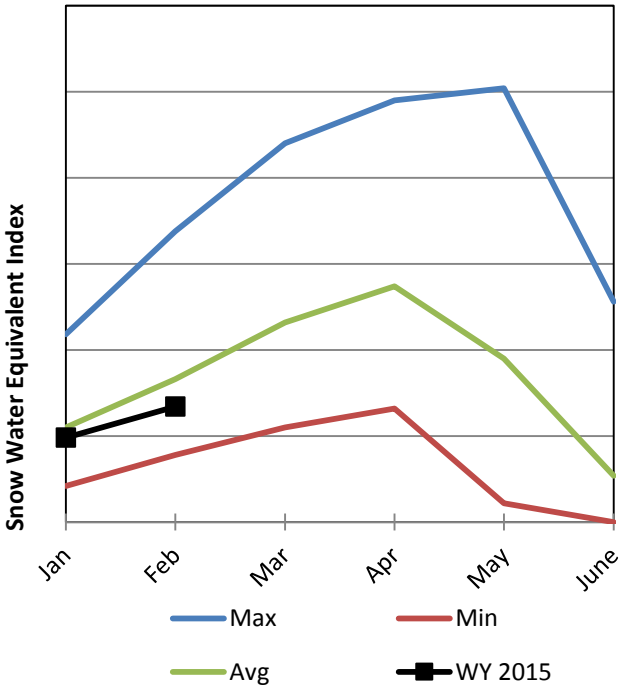


Upper Sevier River Basin

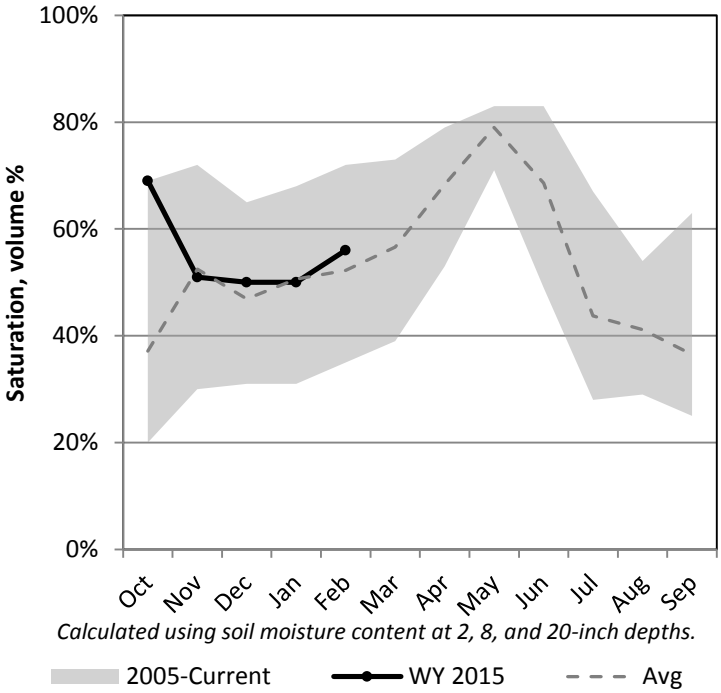
2/1/2015

Snowpack in the Upper Sevier River Basin is near average at 91% of normal, compared to 74% last year. Precipitation in January was much below average at 64%, which brings the seasonal accumulation (Oct-Jan) to 74% of average. Soil moisture is at 56% compared to 57% last year. Reservoir storage is at 53% of capacity, compared to 69% last year. Forecast streamflow volumes range from 58% to 89% of average. The surface water supply index is 31% for the Upper Sevier.

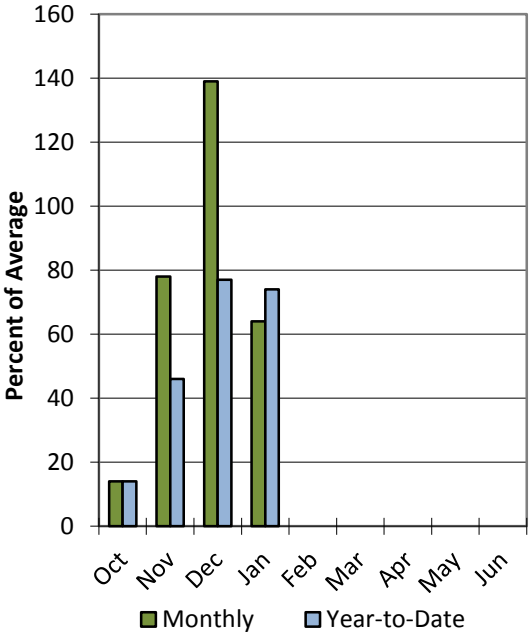
Snowpack



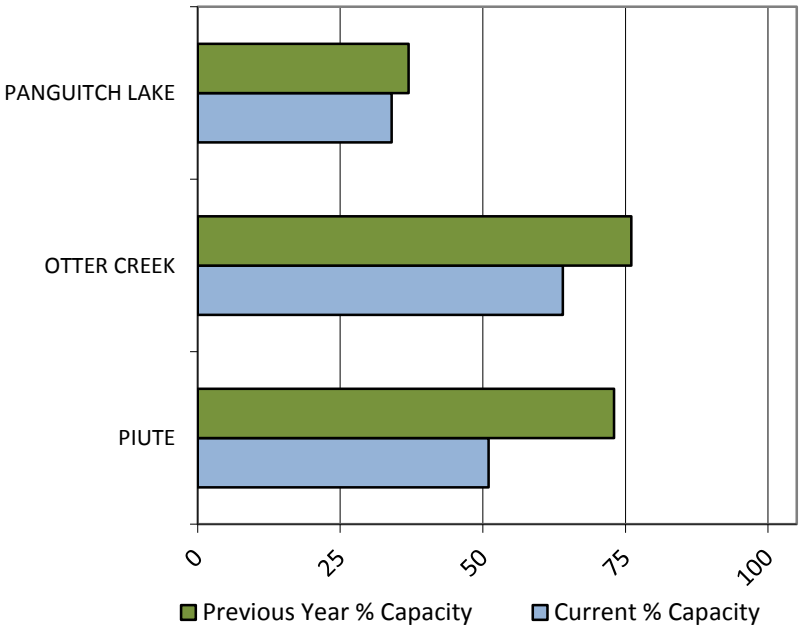
Soil Moisture



Precipitation



Reservoir Storage



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Upper Sevier River
Streamflow Forecasts - February 1, 2015

Upper Sevier 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						
Sevier R at Hatch								
	APR-JUL	5.5	20	30	63%	40	54	48
EF Sevier R nr Kingston								
	APR-JUL	0.63	13.9	23	66%	32	45	35
Sevier R nr Kingston								
	APR-JUL	0.33	5.7	20	61%	34	55	33
Sevier R bl Piute Dam								
	APR-JUL	1.32	21	43	65%	65	97	66
Clear Ck ab Diversions nr Sevier								
	APR-JUL	1.89	9.1	14	67%	18.9	26	21
Salina Ck nr Emery								
	APR-JUL	0.74	4.5	7	89%	9.5	13.3	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Piute Reservoir	36.3	52.7	49.2	71.8
Otter Creek Reservoir	33.7	39.7	35.0	52.5
Panguitch Lake	7.6	8.2	12.7	22.3
Basin-wide Total	77.6	100.6	96.9	146.6
# of reservoirs	3	3	3	3

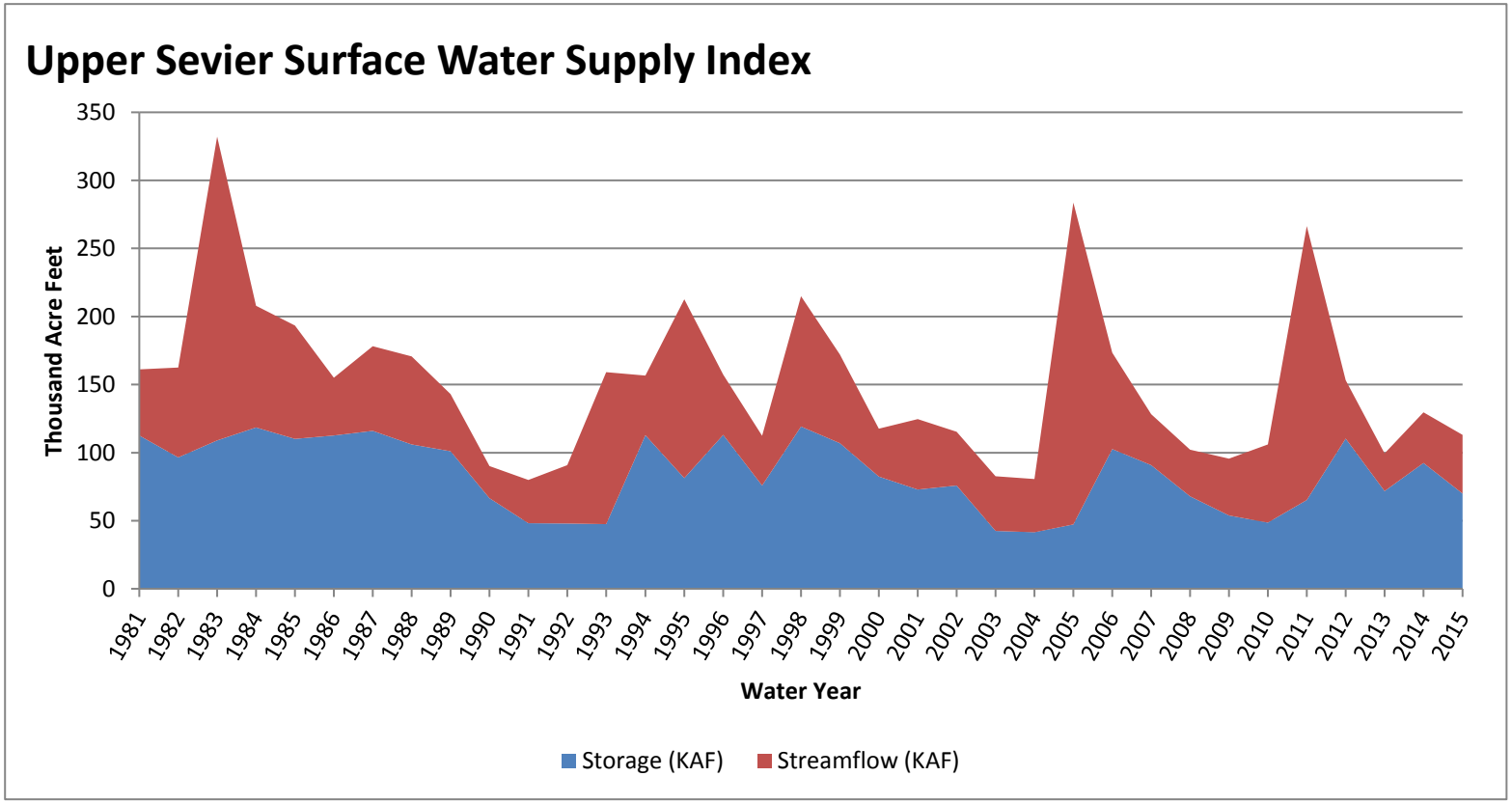
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Upper Sevier	6	57%	67%
Middle Sevier	8	101%	67%
E Fk Sevier	4	89%	86%

February 1, 2015

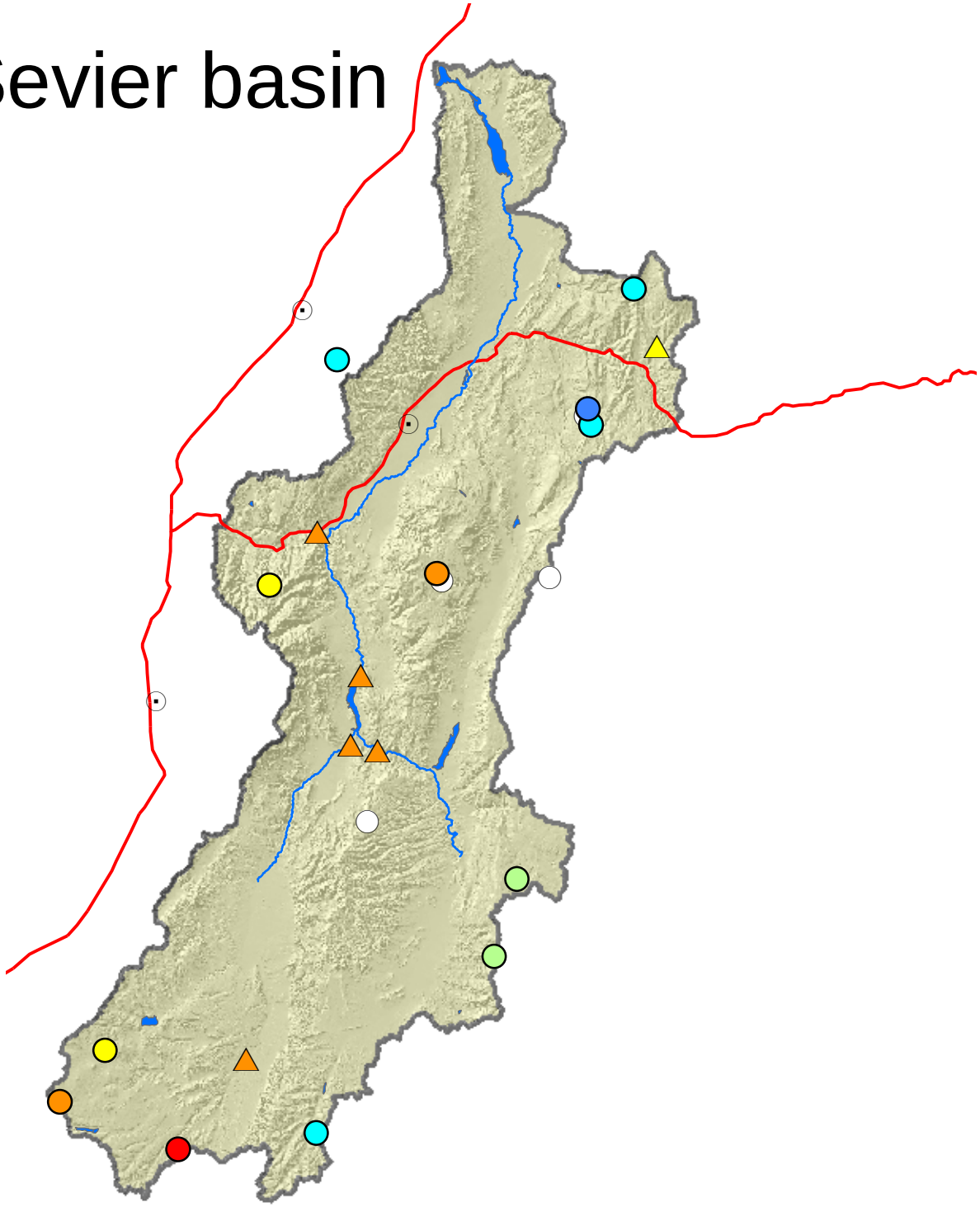
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Upper Sevier	**70.05**	**43.00**	**113.05**	**31**	**-1.62**	**10, 97, 02, 00**

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



Upper Sevier basin



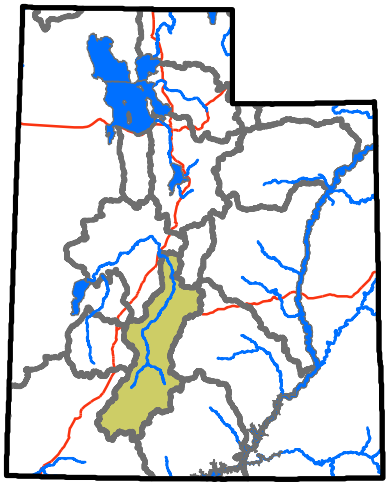
Percent normal

- < 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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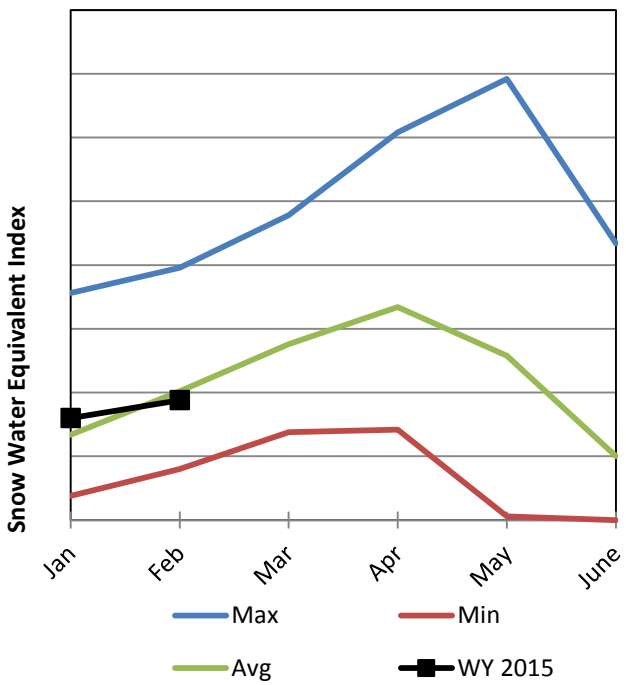
San Pitch River Basin

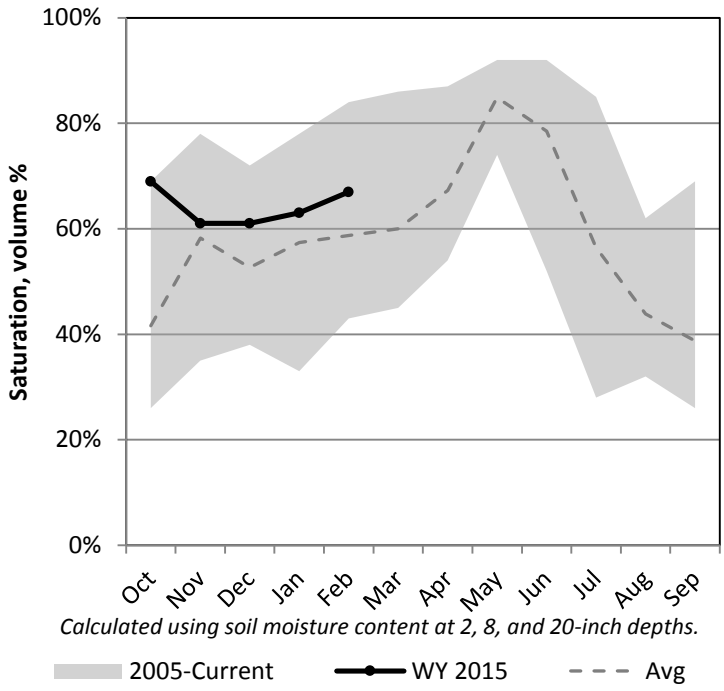
2/1/2015

Snowpack in the San Pitch River Basin is near average at 109% of normal, compared to 71% last year. Precipitation in January was much below average at 47%, which brings the seasonal accumulation (Oct-Jan) to 89% of average. Soil moisture is at 67% compared to 63% last year. Reservoir storage is at 1% of capacity, compared to 2% last year. The forecast streamflow volume for Manti Creek is 96% of average. The surface water supply index is 25% for the San Pitch.

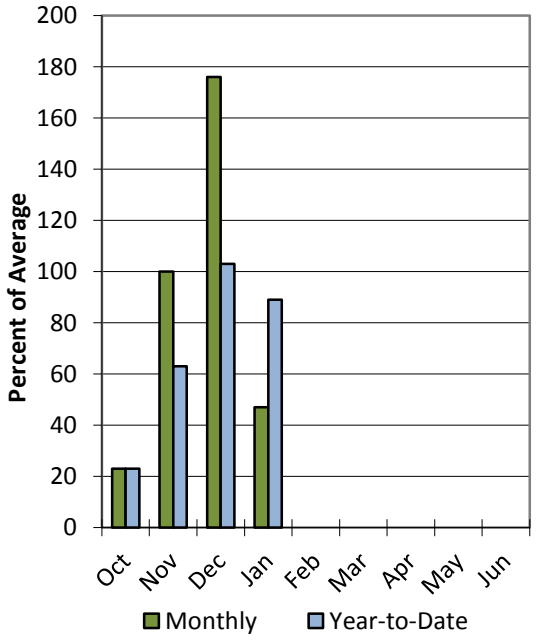
Snowpack



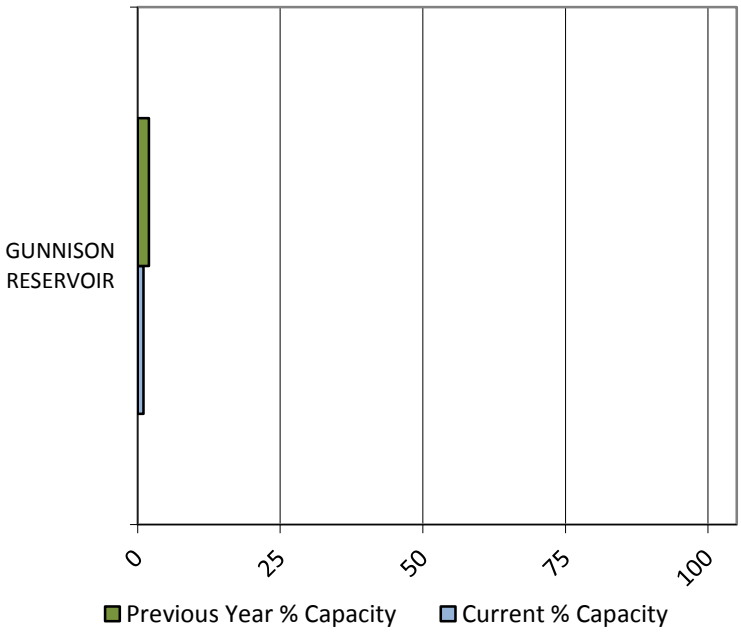
Soil Moisture



Precipitation



Reservoir Storage



Data Current as of: 2/4/2015 2:17:26 PM

San Pitch River
Streamflow Forecasts - February 1, 2015

San Pitch 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						
Manti Ck bl Dugway Ck nr Manti								
	APR-JUL	9.3	13.1	16	96%	19.2	24	16.7
Sevier R nr Gunnison								
	APR-JUL	42	74	95	96%	116	148	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Gunnison Reservoir	0.2	0.5	11.4	20.3
Basin-wide Total	0.2	0.5	11.4	20.3
# of reservoirs	1	1	1	1

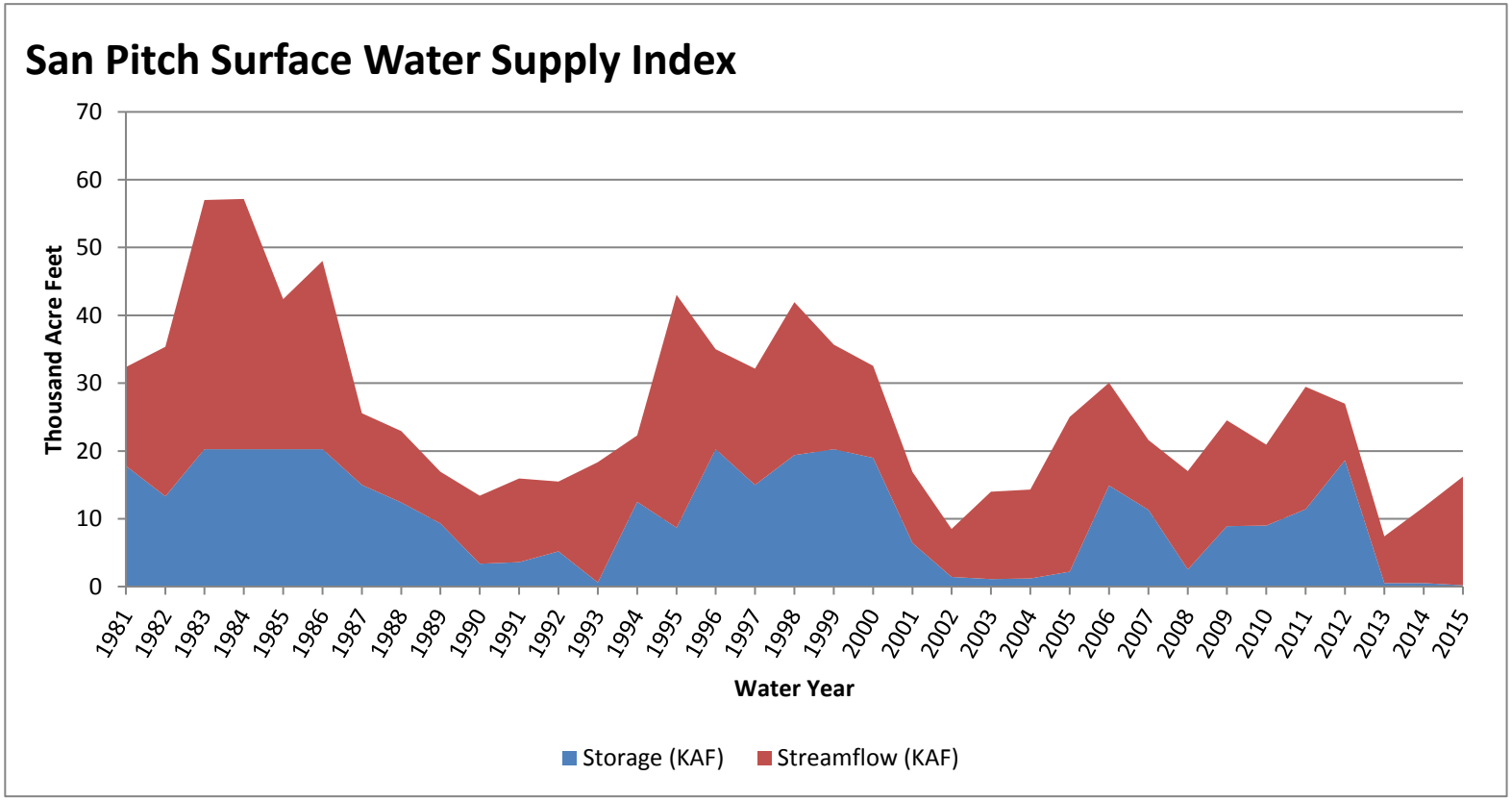
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Upper San Pitch	2	90%	64%
Lower San Pitch	5	120%	74%

February 1, 2015

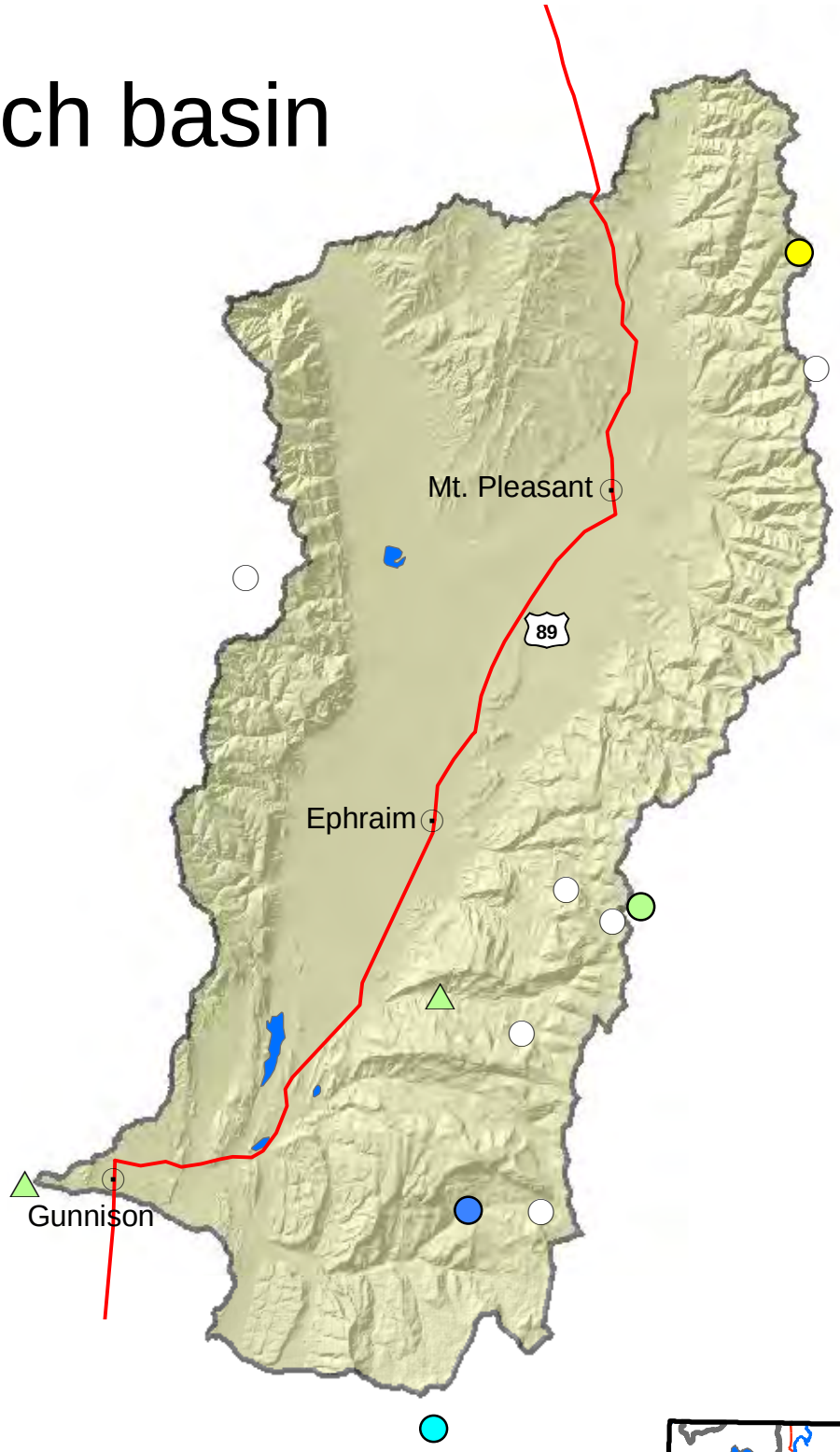
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
San Pitch	**0.20**	**16.00**	**16.20**	**25**	**-2.08**	**92, 91, 01, 89**

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



San Pitch basin



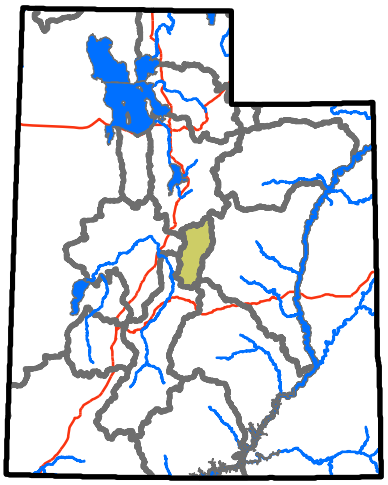
Percent normal

- < 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



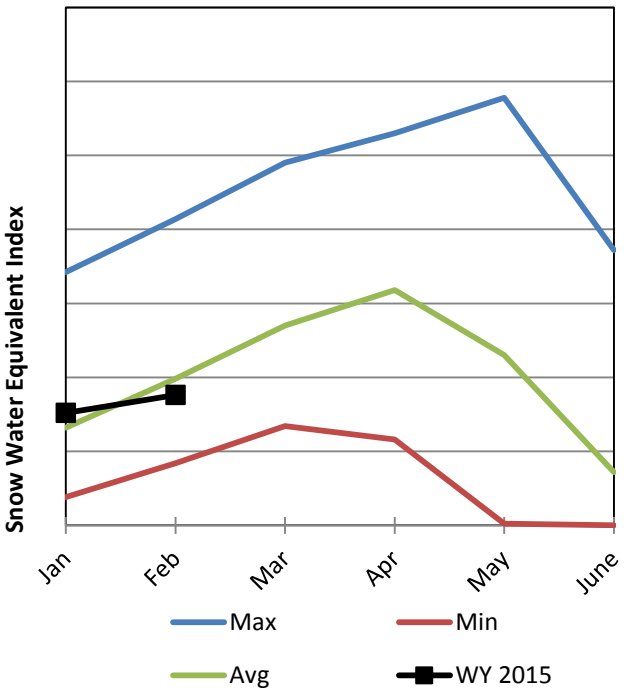
USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Price & San Rafael Basins

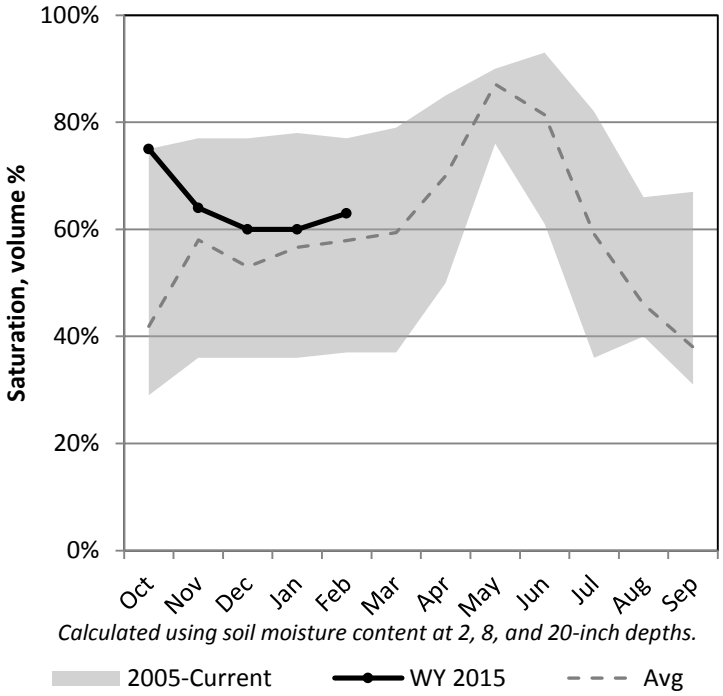
2/1/2015

Snowpack in the Price & San Rafael Basins is near average at 95% of normal, compared to 67% last year. Precipitation in January was much below average at 36%, which brings the seasonal accumulation (Oct-Jan) to 79% of average. Soil moisture is at 63% compared to 59% last year. Reservoir storage is at 48% of capacity, compared to 40% last year. Forecast streamflow volumes range from 65% to 89% of average. The surface water supply index is 22% for the Price River, 53% for Joe's Valley, 53% for Ferron Creek.

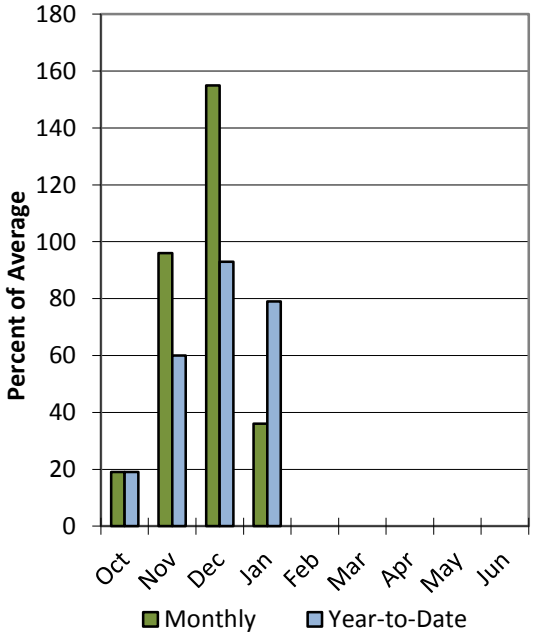
Snowpack



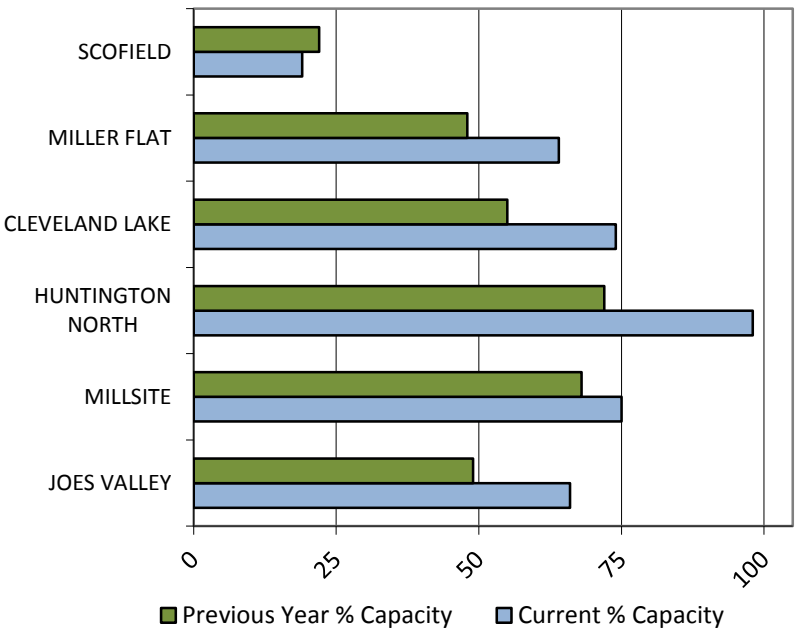
Soil Moisture



Precipitation



Reservoir Storage



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Price San Rafael
Streamflow Forecasts - February 1, 2015

Price San Rafael	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						
Fish Ck ab Reservoir nr Scofield	APR-JUL	10.4	16.3	21	70%	26	35	30
Price R nr Scofield Reservoir[2]	APR-JUL	11	19.7	27	66%	35	50	41
White R bl Tabbyune Creek	APR-JUL	4.7	7.6	10	65%	12.7	17.3	15.5
Green R at Green River, UT [2]	APR-JUL	1180	1710	2120	72%	2580	3340	2960
Electric Lake Inflow [2]	APR-JUL	4.3	6.9	9	68%	11.4	15.5	13.3
Huntington Ck nr Huntington [2]	APR-JUL	15.4	22	28	70%	34	44	40
Joes Valley Reservoir Inflow[2]	APR-JUL	28	37	45	80%	53	67	56
Ferron Ck (Upper Station) nr Ferron	APR-JUL	23	29	34	89%	39	47	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Joes Valley Reservoir	40.7	30.0	39.9	61.6
Millsite	12.5	11.3	10.1	16.7
Huntington North Reservoir	4.1	3.0	2.7	4.2
Cleveland Lake	4.0	3.0		5.4
Miller Flat Reservoir	3.3	2.5		5.2
Scofield Reservoir	12.2	14.5	29.9	65.8
Basin-wide Total	69.5	58.8	82.6	148.3
# of reservoirs	4	4	4	4

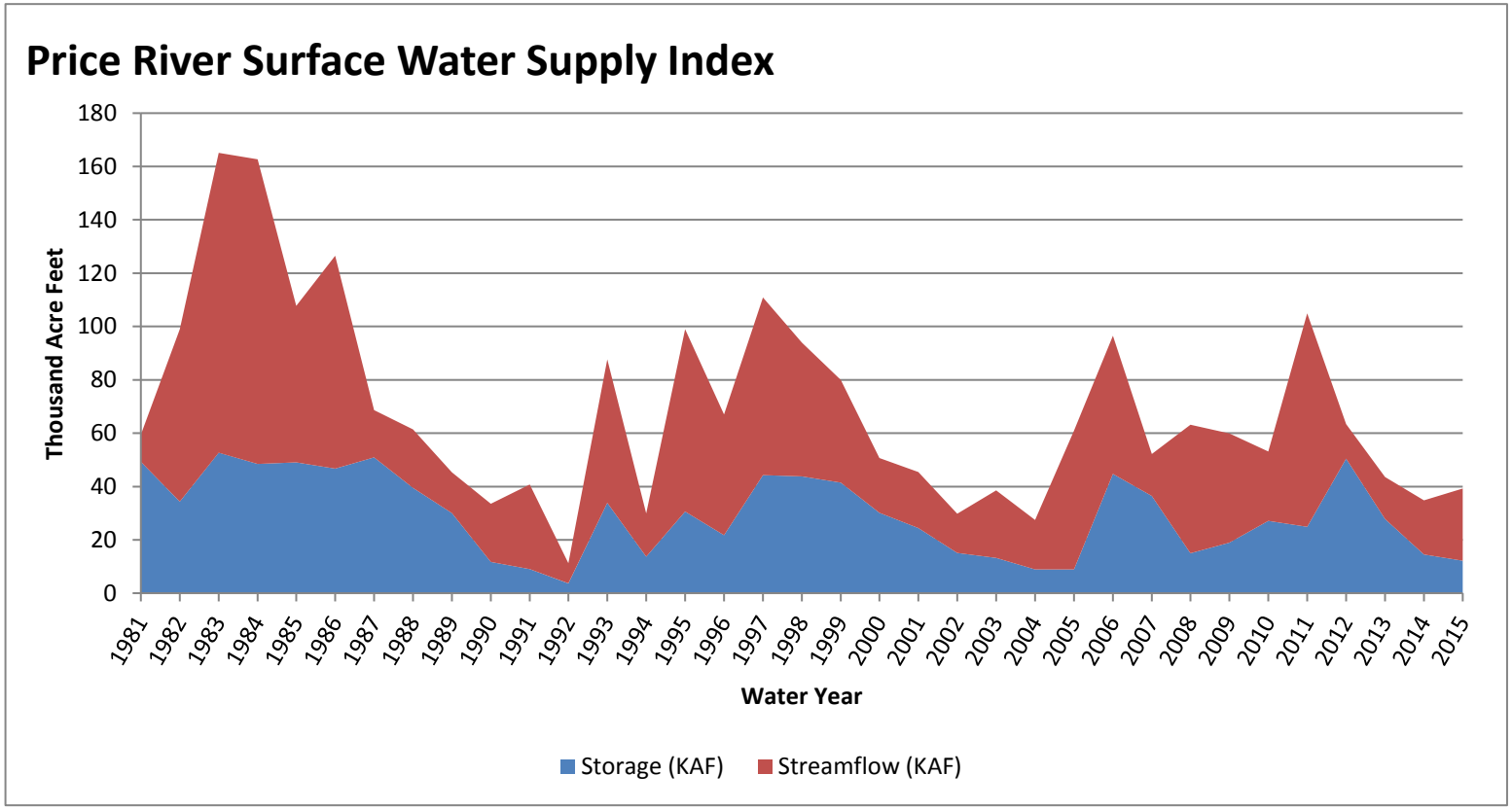
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Price	4	86%	63%
San Rafael	4	100%	70%

February 1, 2015

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	**12.23**	**27.00**	**39.23**	**22**	**-2.31**	**14, 03, 91, 13**

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

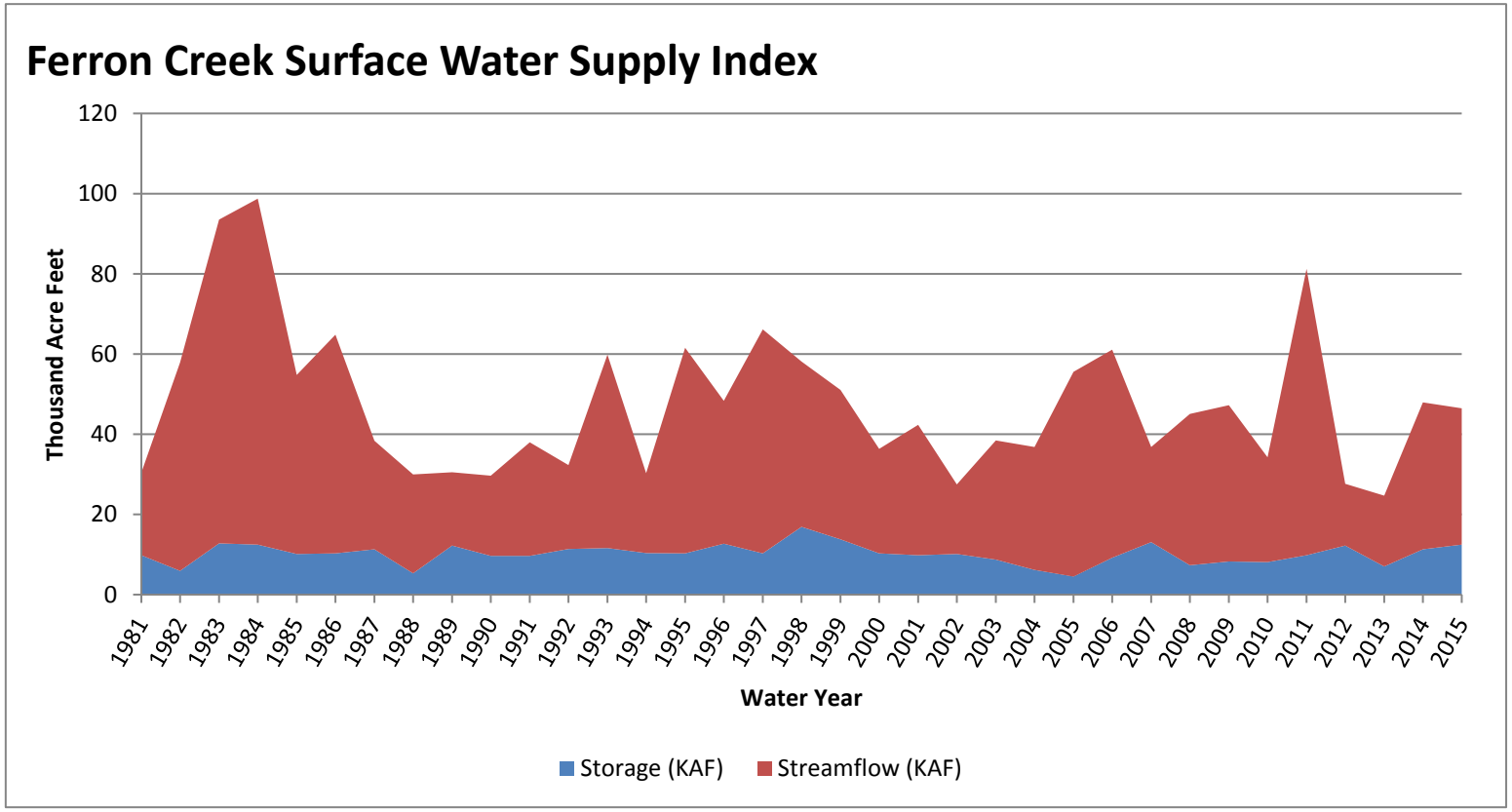


February 1, 2015

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	**12.46**	**34.00**	**46.46**	**53**	**0.23**	**01, 08, 09, 14**

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

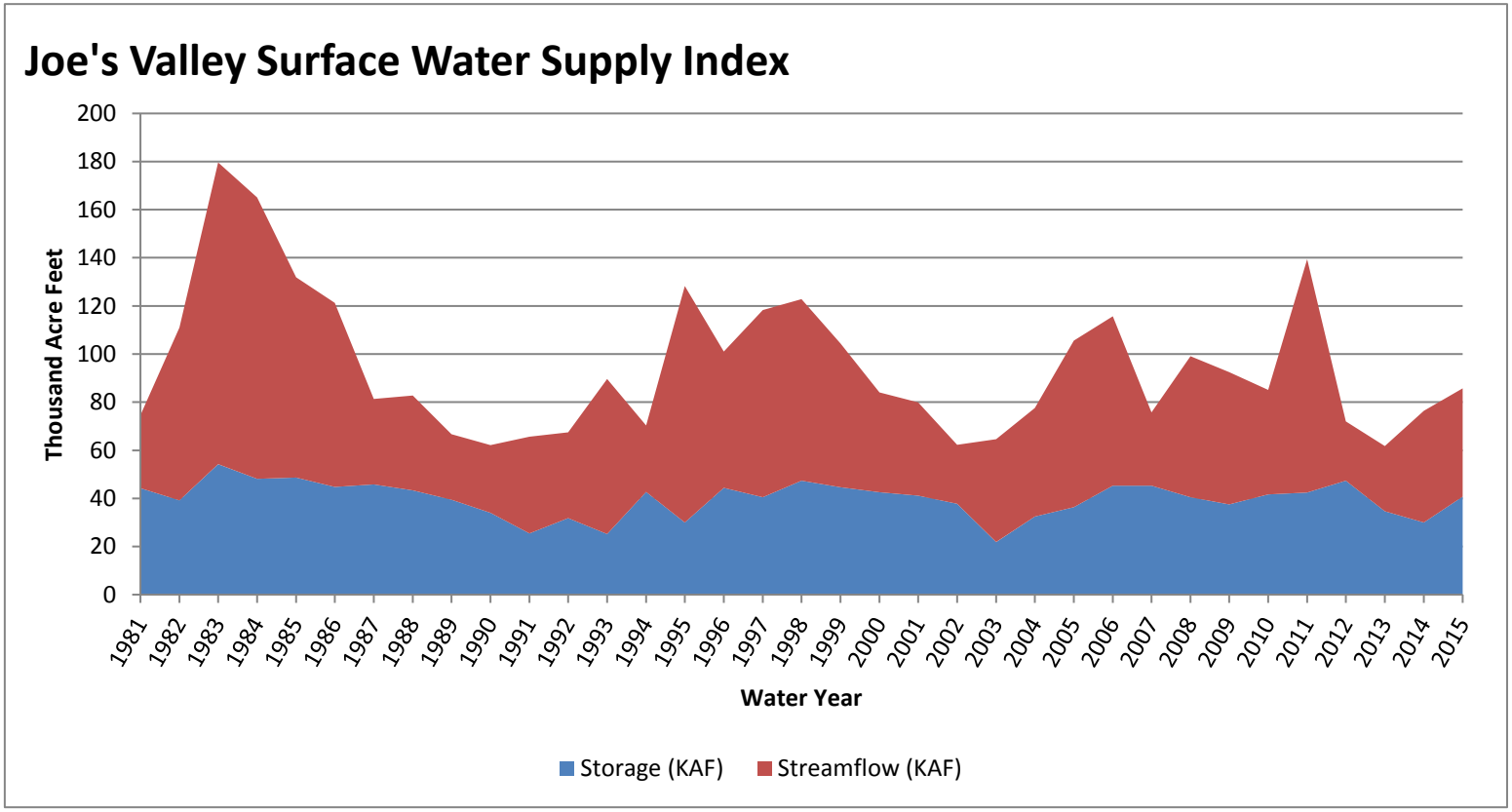


February 1, 2015

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	**40.71**	**45.00**	**85.71**	**53**	**0.23**	**00, 10, 93, 09**

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



Price-San Rafael basin

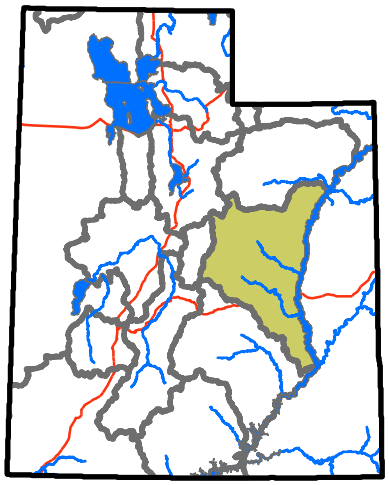
Percent normal

- < 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



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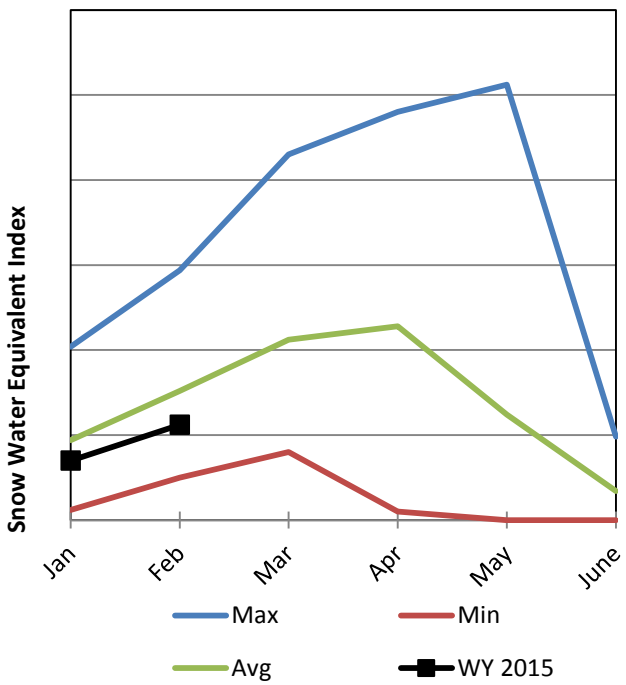
Southeastern Utah Basin

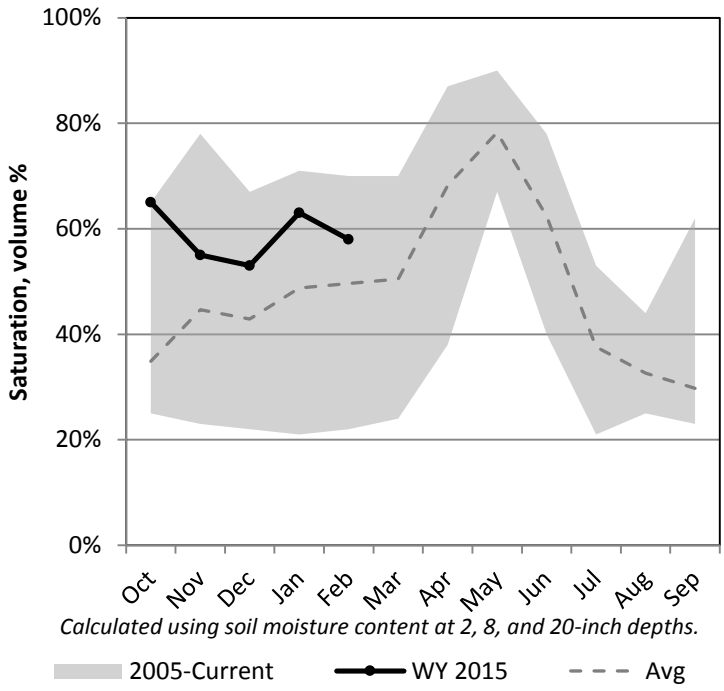
2/1/2015

Snowpack in the Southeastern Utah Basin is below average at 87% of normal, compared to 77% last year. Precipitation in January was below average at 72%, which brings the seasonal accumulation (Oct-Jan) to 73% of average. Soil moisture is at 58% compared to 59% last year. Reservoir storage is at 59% of capacity, compared to 48% last year. Forecast streamflow volumes range from 28% to 93% of average. The surface water supply index is 66% for Moab.

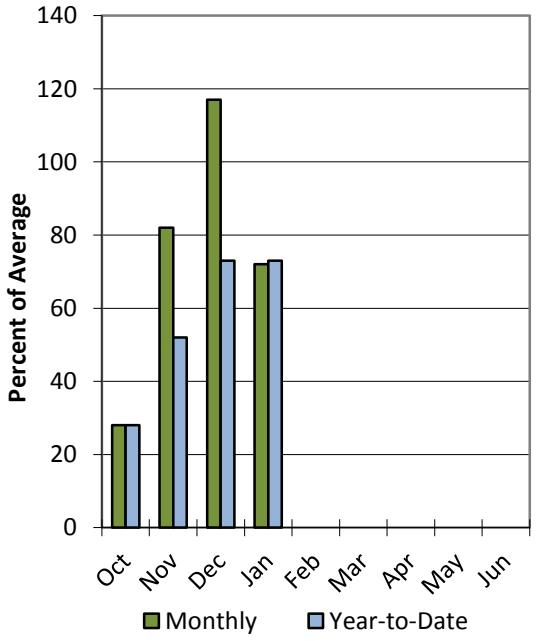
Snowpack



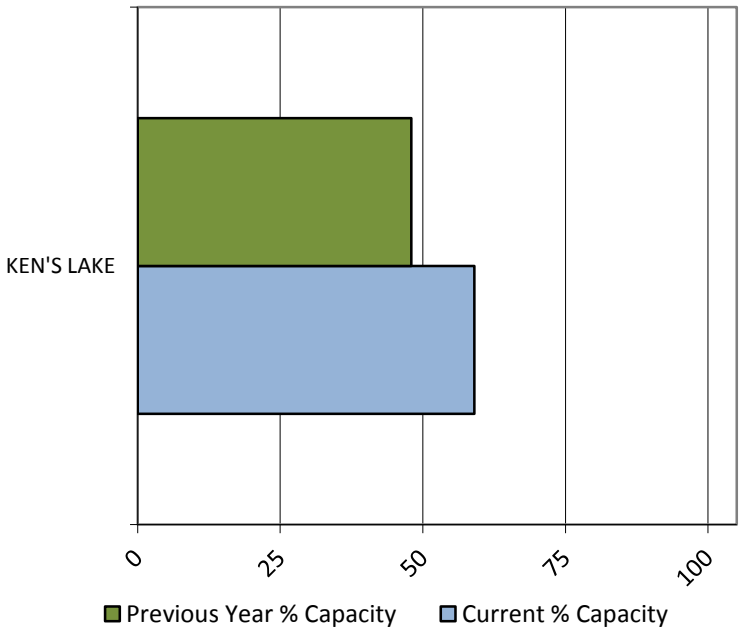
Soil Moisture



Precipitation



Reservoir Storage



Data Current as of: 2/4/2015 2:17:21 PM

Southeastern Utah
Streamflow Forecasts - February 1, 2015

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	2.1	3.1	4	93%	4.9	6.4	4.3
South Ck ab Resv nr Monticello								
	MAR-JUL	0.06	0.17	0.3	28%	0.49	0.88	1.09
Colorado R nr Cisco [2]								
	APR-JUL	2130	2900	3500	82%	4150	5210	4280
San Juan R near Bluff [2]								
	APR-JUL	320	485	615	56%	760	1010	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Ken's Lake	1.4	1.1	1.1	2.3
Basin-wide Total	1.4	1.1	1.1	2.3
# of reservoirs	1	1	1	1

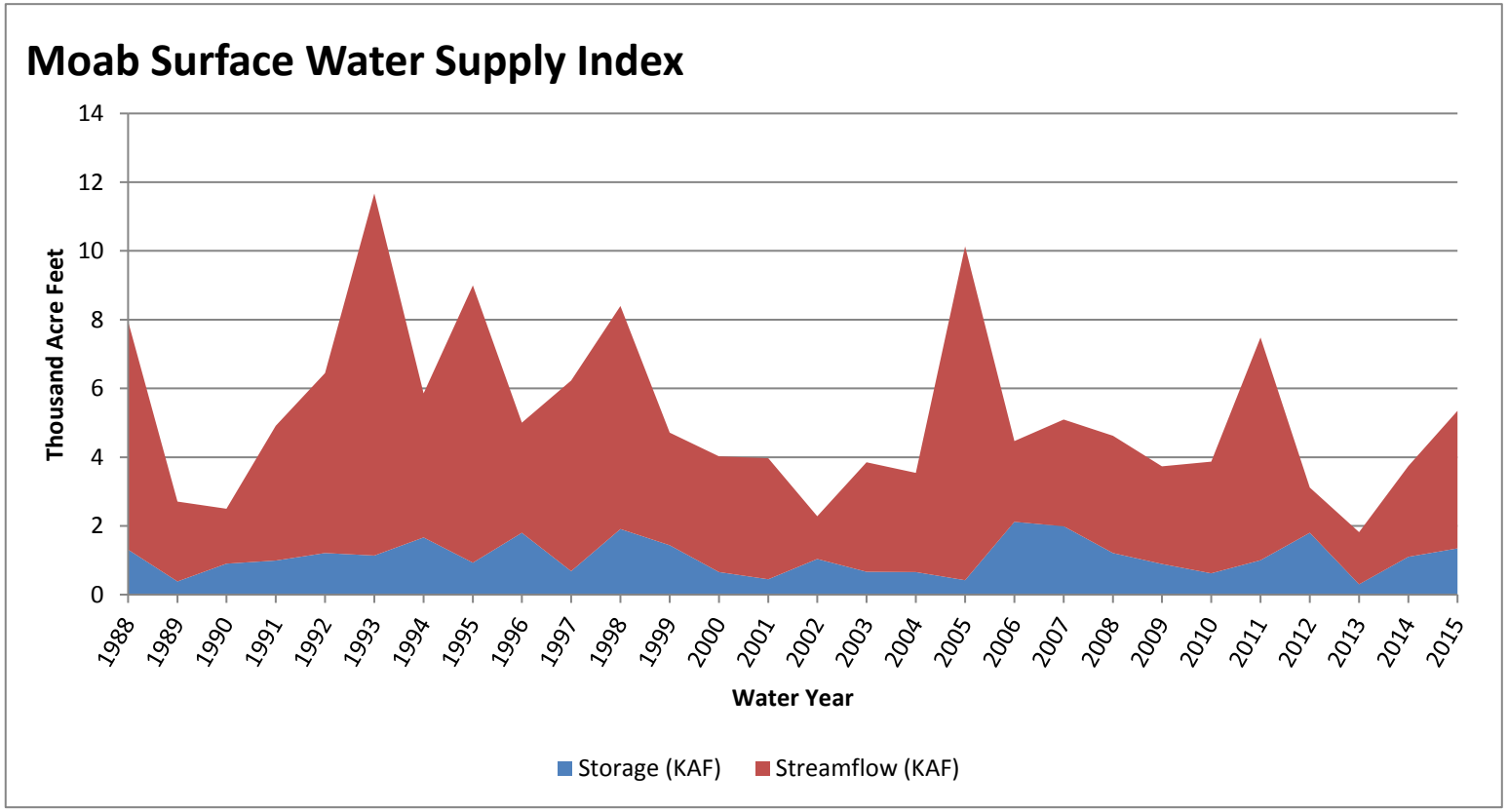
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Lasal Mtns	1	101%	75%
Lower San Juan	1	76%	72%
Lower Green	2	87%	76%

February 1, 2015

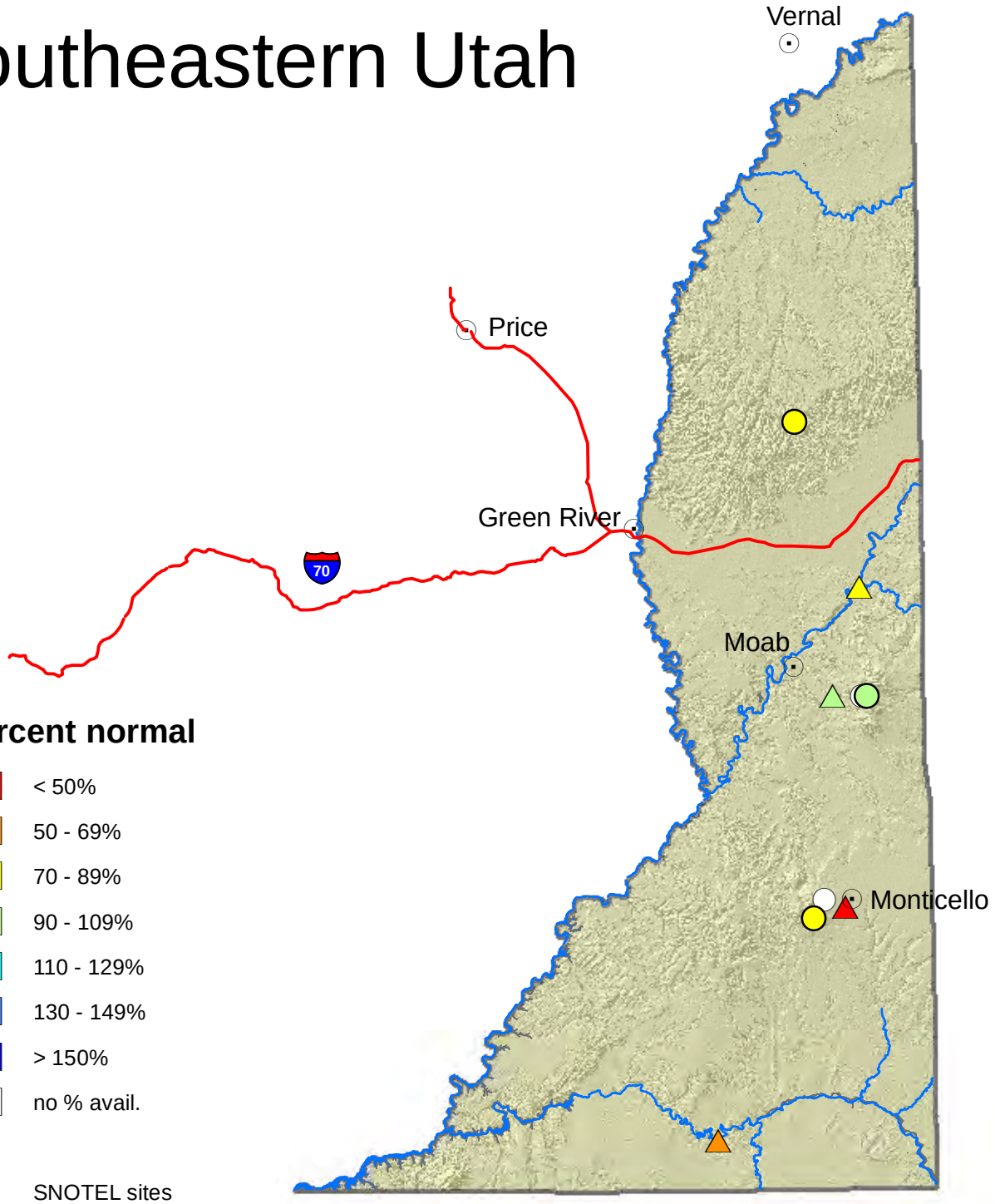
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Moab	**1.35**	**4.00**	**5.35**	**66**	**1.29**	**96, 07, 94, 97**

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



Southeastern Utah



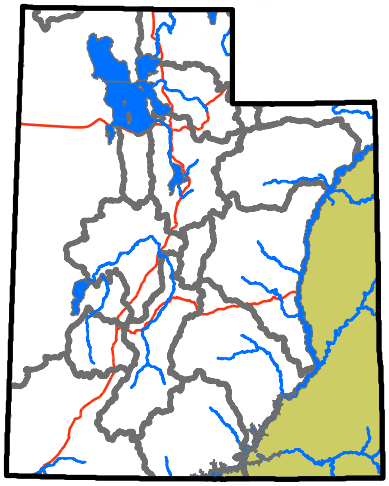
Percent normal

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

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

N

0 5 10 20 30 40 Miles



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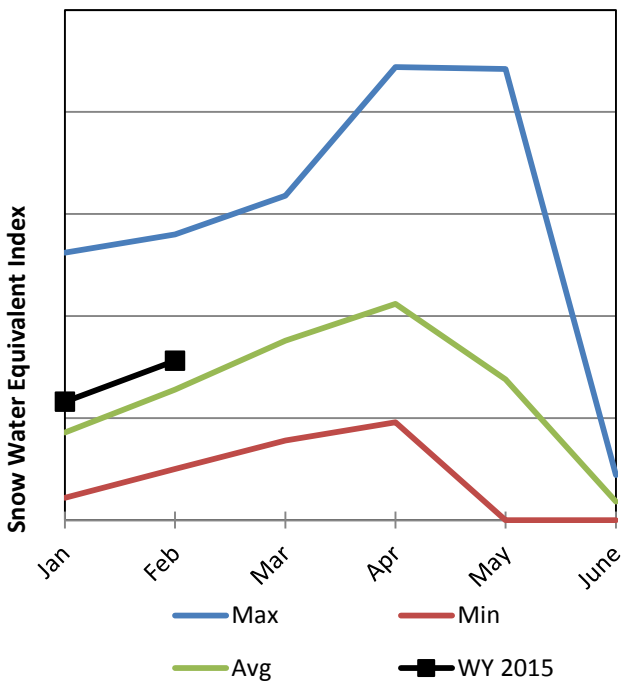
Natural Resources Conservation Service

Dirty Devil Basin

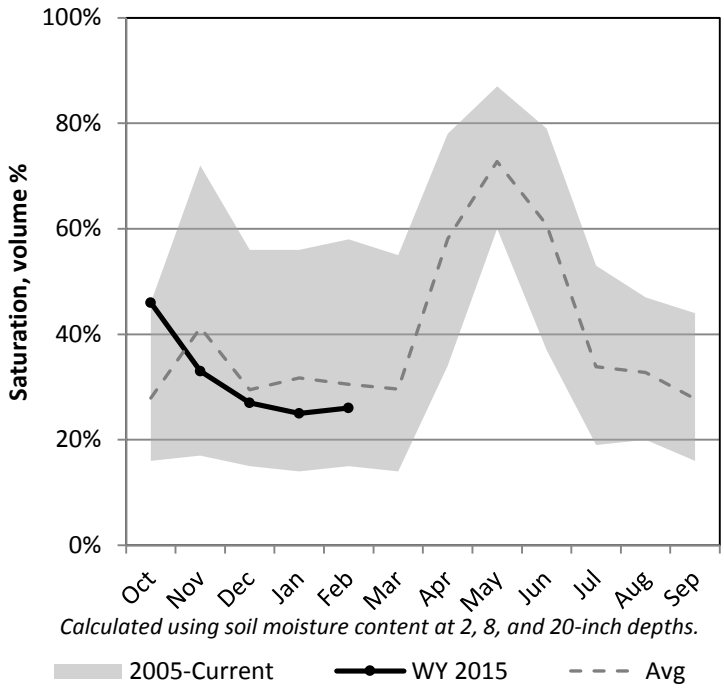
2/1/2015

Snowpack in the Dirty Devil Basin is much above average at 148% of normal, compared to 90% last year. Precipitation in January was below average at 79%, which brings the seasonal accumulation (Oct-Jan) to 100% of average. Soil moisture is at 26% compared to 29% last year. Forecast streamflow volumes range from 93% to 101% of average.

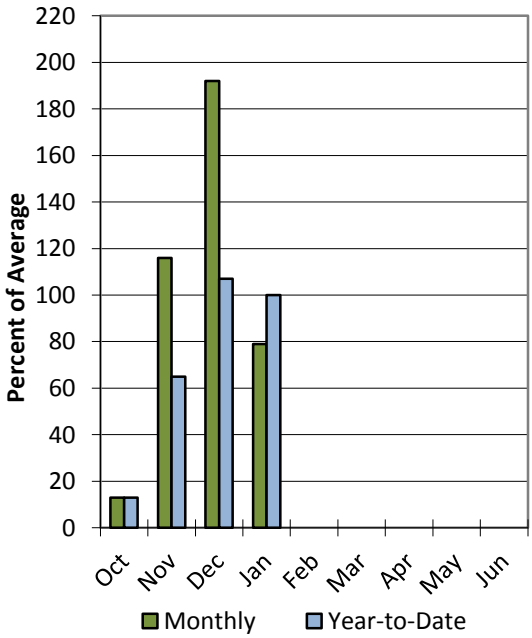
Snowpack



Soil Moisture



Precipitation



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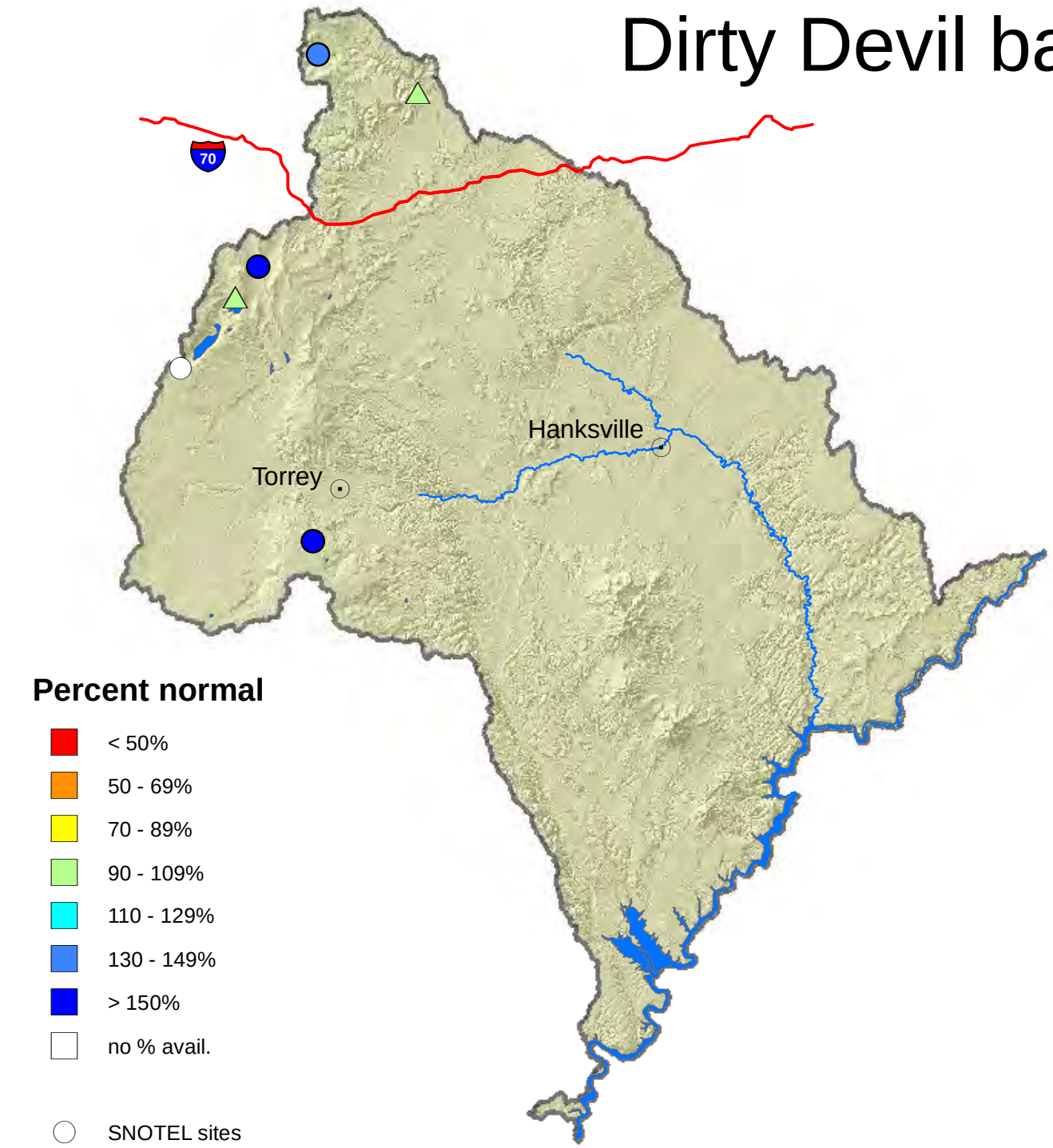
Dirty Devil
Streamflow Forecasts - February 1, 2015

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	11	15.2	18.5	93%	22	28	19.9
Seven Mile Ck nr Fish Lake								
	APR-JUL	4.1	6	7.4	101%	9.1	11.8	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, 2015	# of Sites	% Median	Last Year % Median
Muddy	3	120%	75%
Fremont	3	137%	91%

Dirty Devil basin



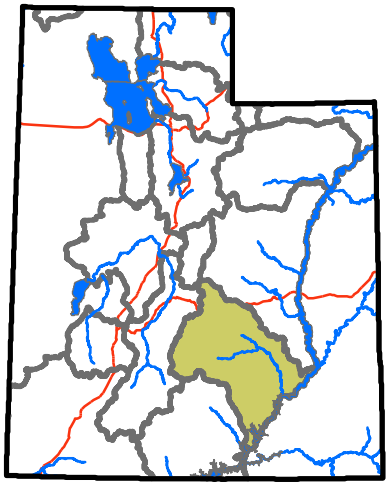
Percent normal

- < 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



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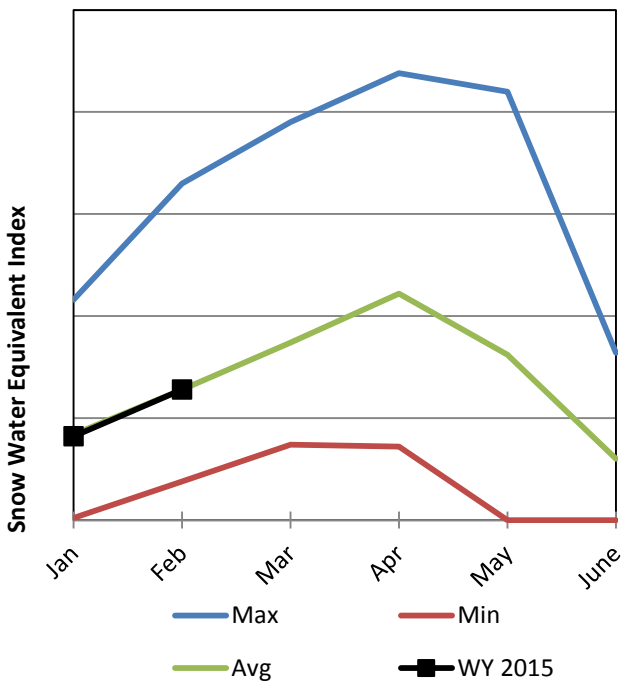
Escalante River Basin

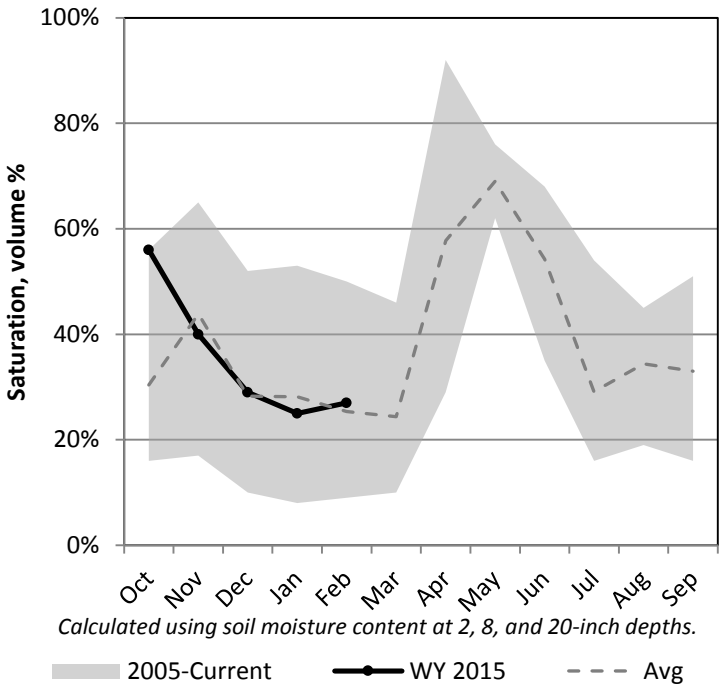
2/1/2015

Snowpack in the Escalante River Basin is above average at 114% of normal, compared to 108% last year. Precipitation in January was near average at 97%, which brings the seasonal accumulation (Oct-Jan) to 81% of average. Soil moisture is at 27% compared to 37% last year. The forecast streamflow volume for Pine Creek is 83% of average.

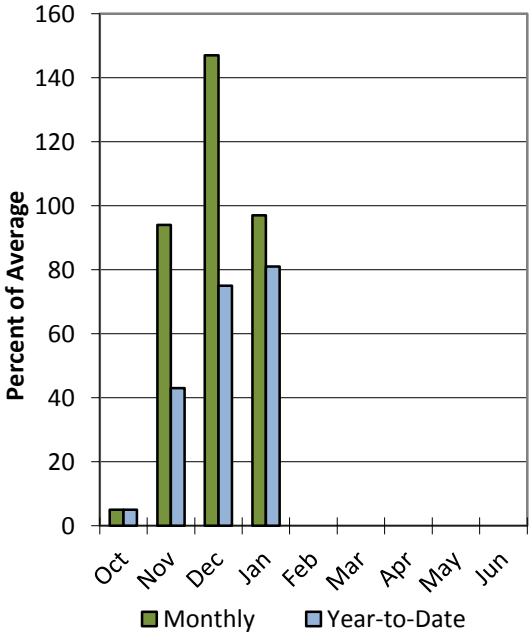
Snowpack



Soil Moisture



Precipitation



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Escalante River
Streamflow Forecasts - February 1, 2015

Escalante 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						
Pine Ck nr Escalante								
	APR-JUL	0.75	1.42	2	83%	2.7	3.8	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, 2015	# of Sites	% Median	Last Year % Median
Escalante	3	114%	108%
Paria	2	110%	132%

Escalante basin

Percent normal

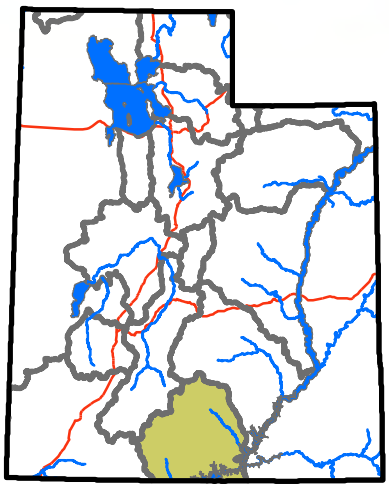
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

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

N

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

0 2.5 5 10 15 20 Miles

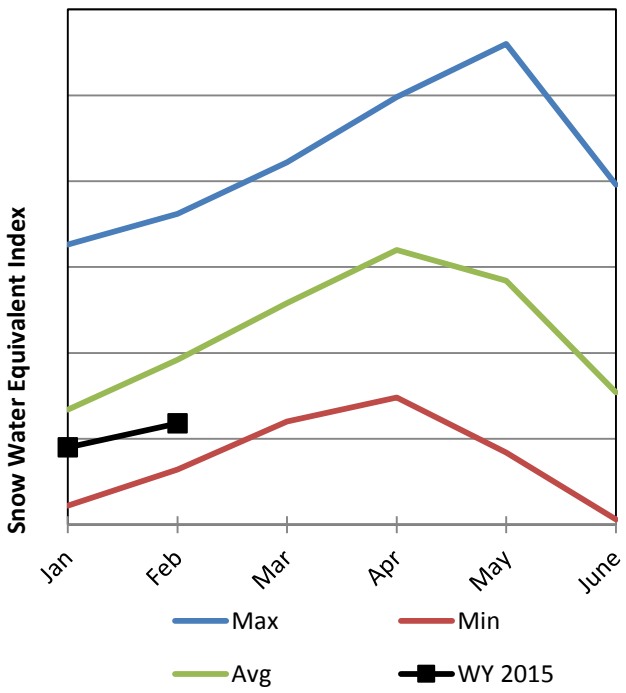


Beaver River Basin

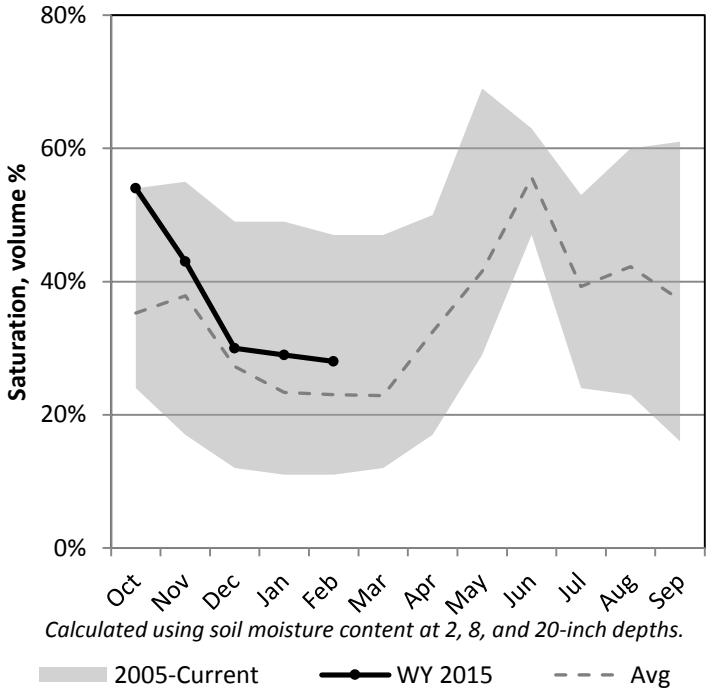
2/1/2015

Snowpack in the Beaver River Basin is much below average at 61% of normal, compared to 72% last year. Precipitation in January was much below average at 48%, which brings the seasonal accumulation (Oct-Jan) to 60% of average. Soil moisture is at 28% compared to 38% last year. Reservoir storage is at 40% of capacity, compared to 46% last year. The forecast streamflow volume for the Beaver River is 60% of average. The surface water supply index is 22% for the Beaver River.

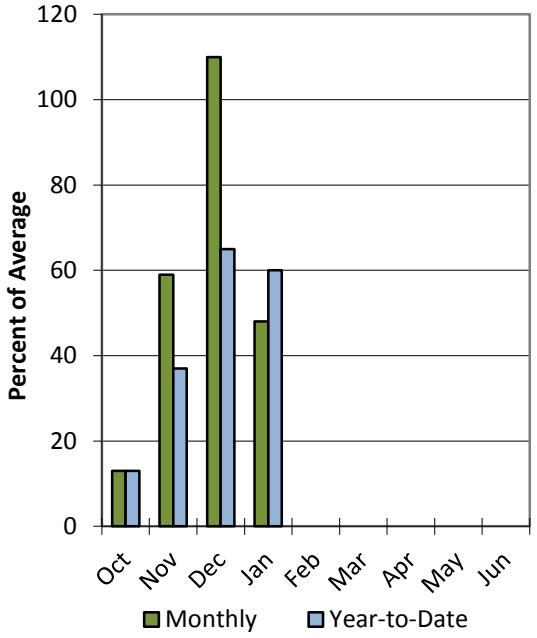
Snowpack



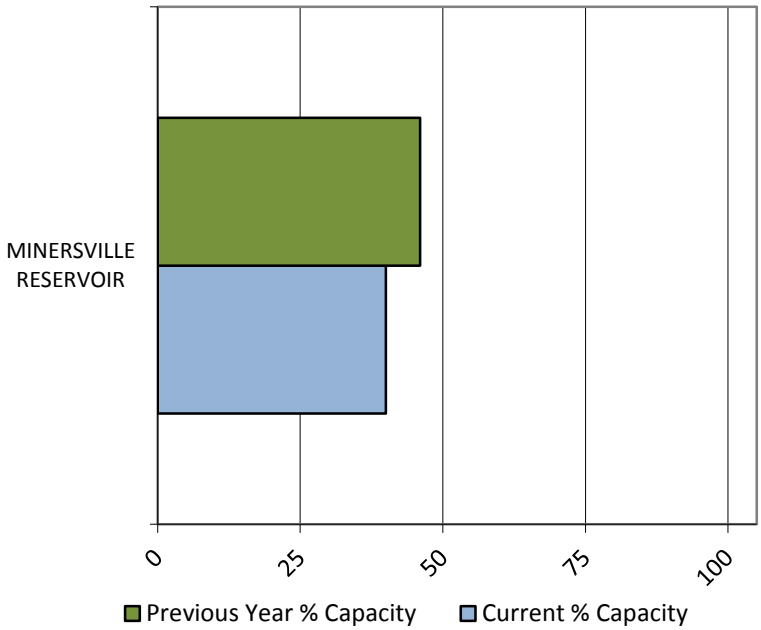
Soil Moisture



Precipitation



Reservoir Storage



Data Current as of: 2/4/2015 2:17:30 PM

Beaver River
Streamflow Forecasts - February 1, 2015

Beaver 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						
Beaver R nr Beaver								
	APR-JUL	0.83	9.7	15.7	60%	22	31	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Minersville Reservoir	9.3	10.6	13.4	23.3
Basin-wide Total	9.3	10.6	13.4	23.3
# of reservoirs	1	1	1	1

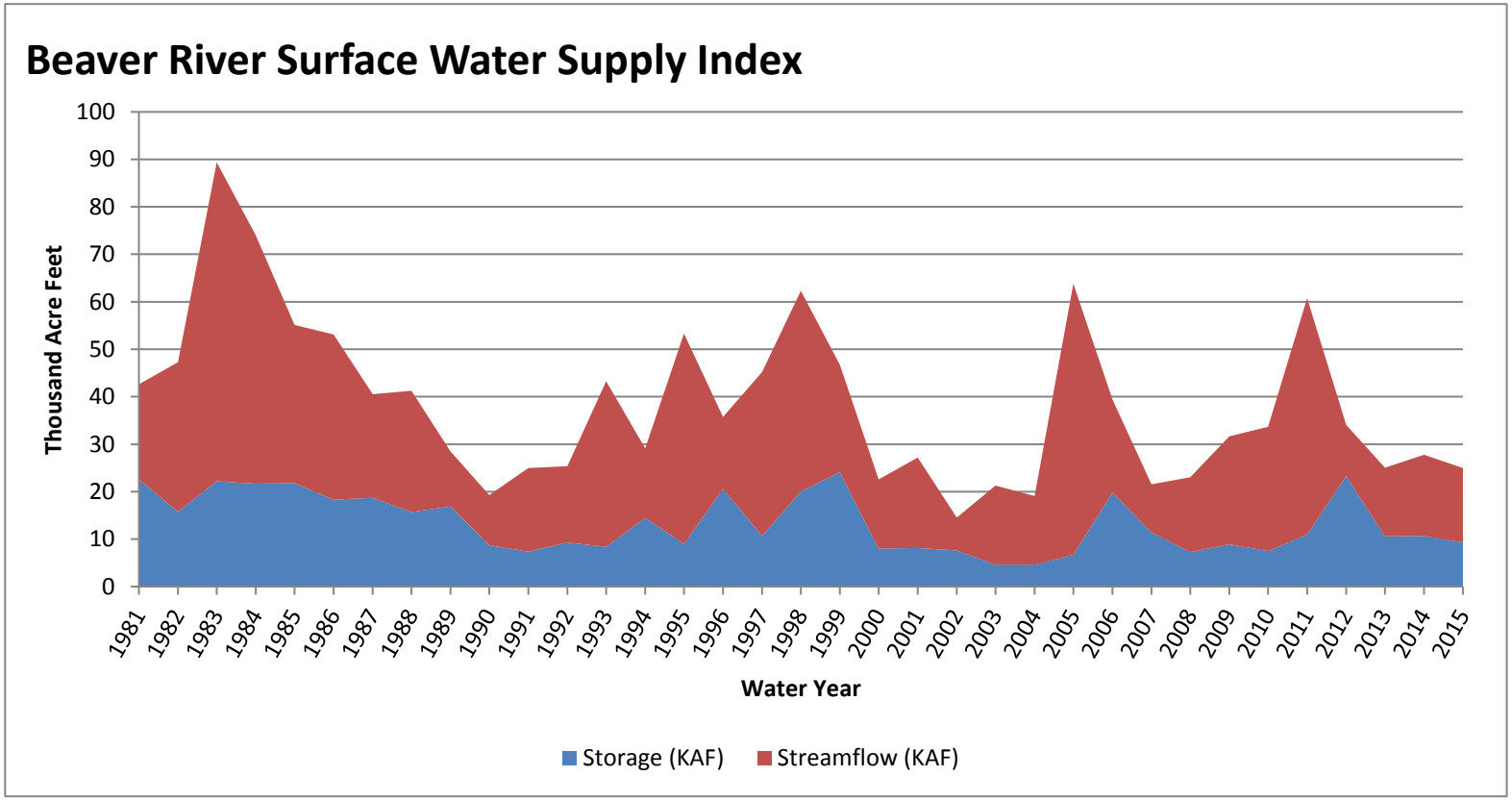
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Beaver	3	69%	73%

February 1, 2015

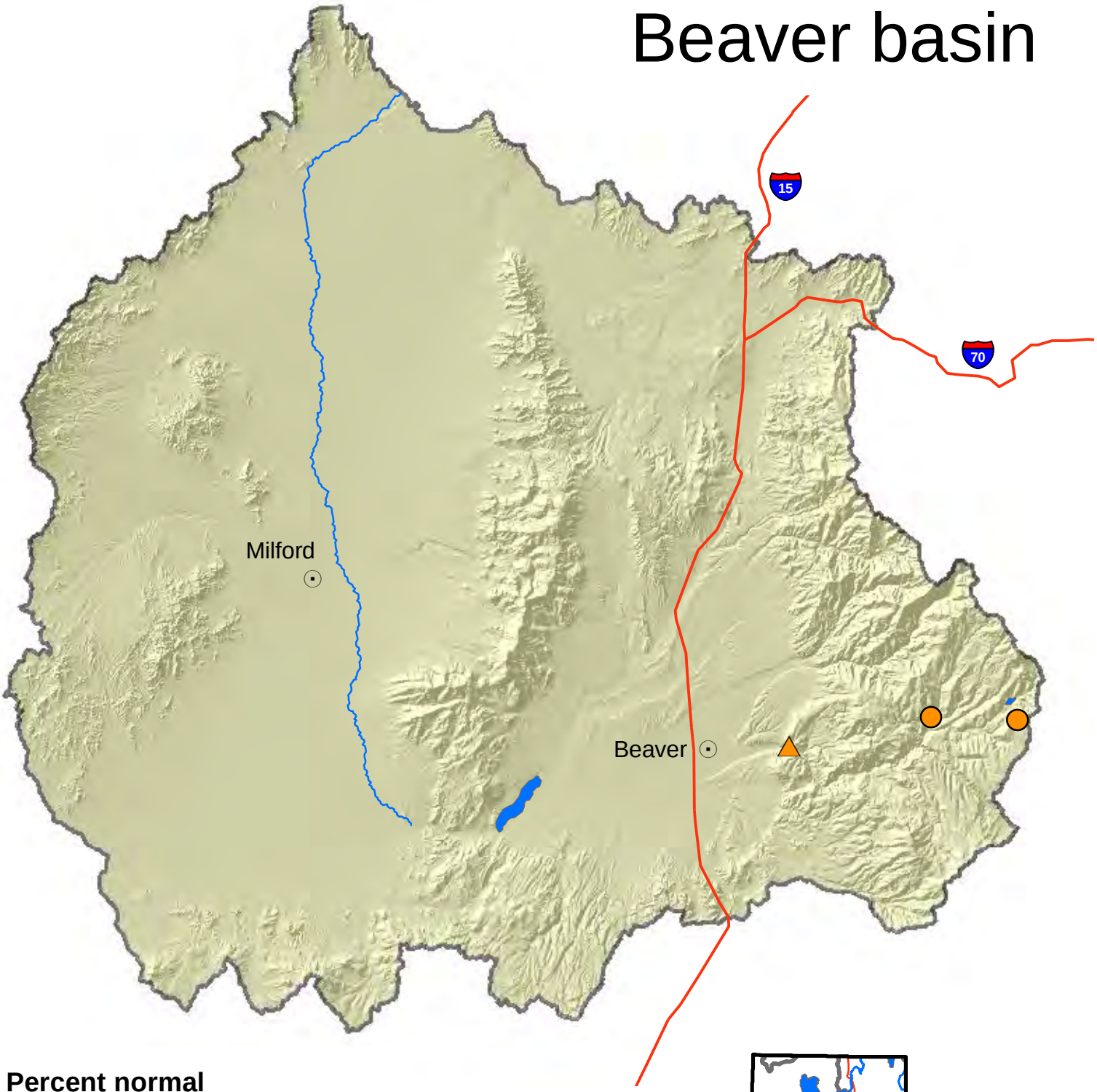
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Beaver River	**9.28**	**15.70**	**24.98**	**22**	**-2.31**	**00, 08, 91, 13**

*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
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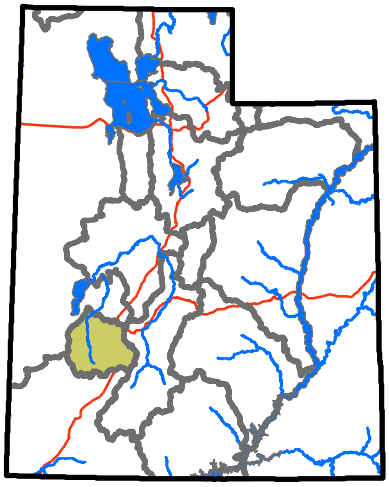
Natural Resources Conservation Service

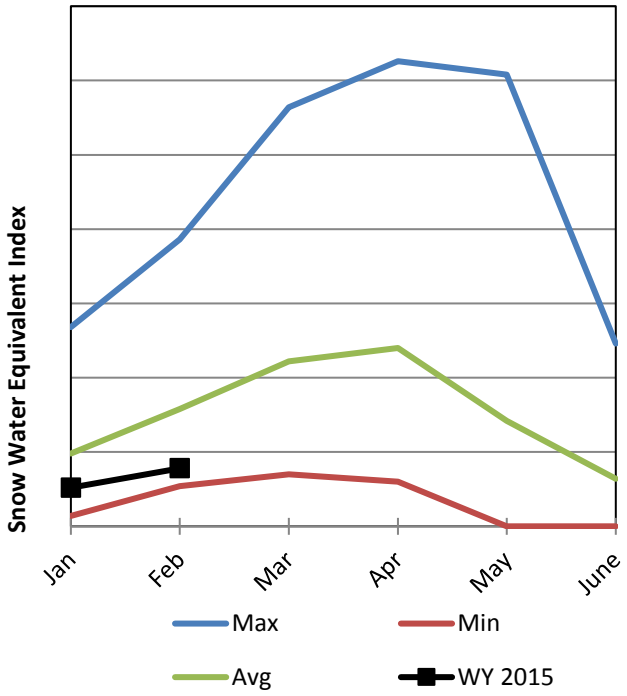


Southwestern Utah Basin

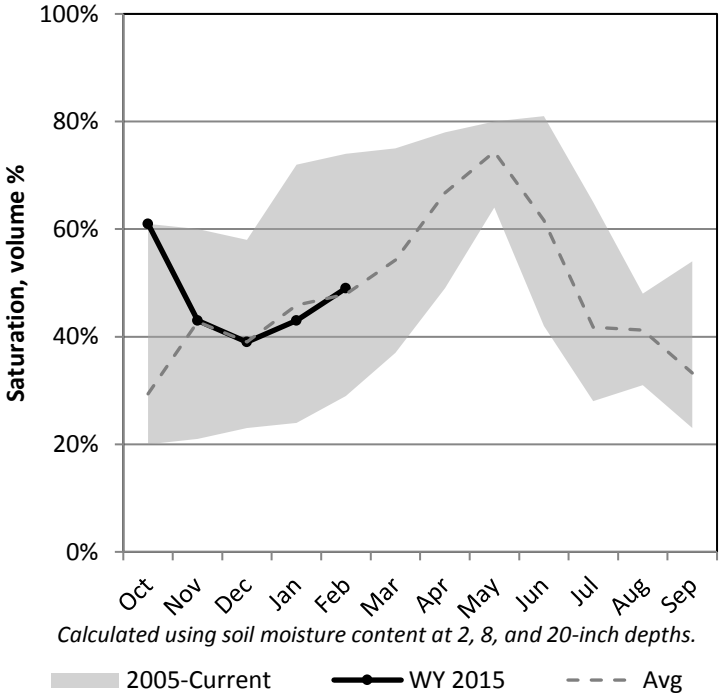
2/1/2015

Snowpack in the Southwestern Utah Basin is much below average at 62% of normal, compared to 68% last year. Precipitation in January was much below average at 47%, which brings the seasonal accumulation (Oct-Jan) to 52% of average. Soil moisture is at 49% compared to 49% last year. Reservoir storage is at 46% of capacity, compared to 40% last year. Forecast streamflow volumes range from 30% to 70% of average. The surface water supply index is 31% for the Virgin River.

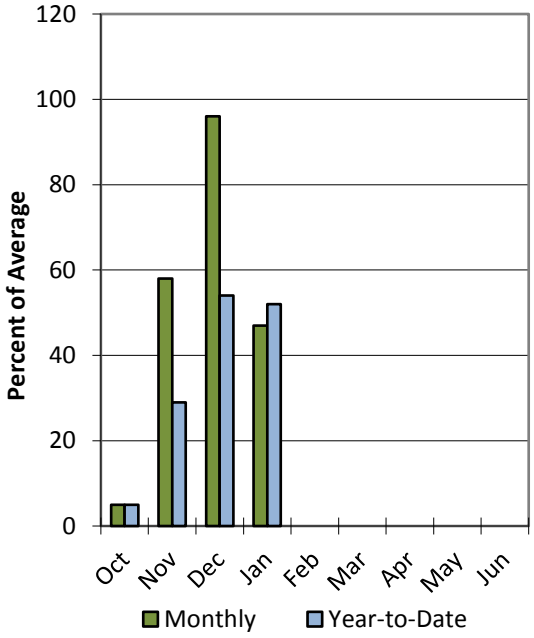
Snowpack



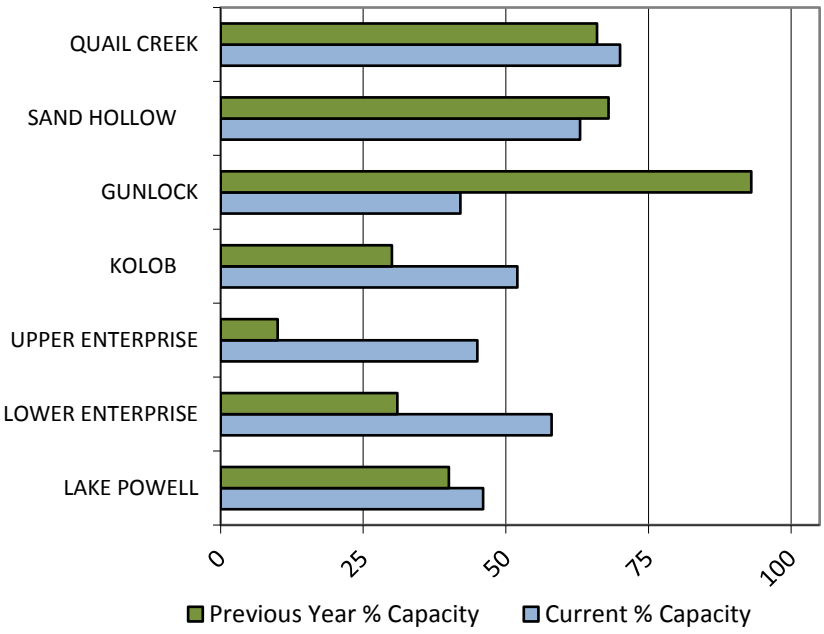
Soil Moisture



Precipitation



Reservoir Storage



Data Current as of: 2/4/2015 2:17:35 PM

Southwestern Utah
Streamflow Forecasts - February 1, 2015

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	2620	3940	5000	70%	6180	8150	7160
Virgin R nr Hurricane								
	APR-JUL	15	17	19.1	30%	31	54	63
Virgin R at Virgin								
	APR-JUL	16	17.4	26	45%	36	53	58
Santa Clara R nr Pine Valley								
	APR-JUL	0.55	1.48	2.4	48%	3.5	5.5	5
Coal Ck nr Cedar City								
	APR-JUL	1.5	7.8	12	65%	16.2	22	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Powell	11146.0	9819.0	17338.0	24322.0
Lower Enterprise	1.5	0.8	0.6	2.6
Upper Enterprise	4.5	1.0	3.1	10.0
Kolob Reservoir	2.9	1.7		5.6
Gunlock	4.4	9.7	6.5	10.4
Sand Hollow Reservoir	31.6	34.0		50.0
Quail Creek	28.0	26.4	26.0	40.0
Basin-wide Total	11184.4	9856.9	17374.2	24385.0
# of reservoirs	5	5	5	5

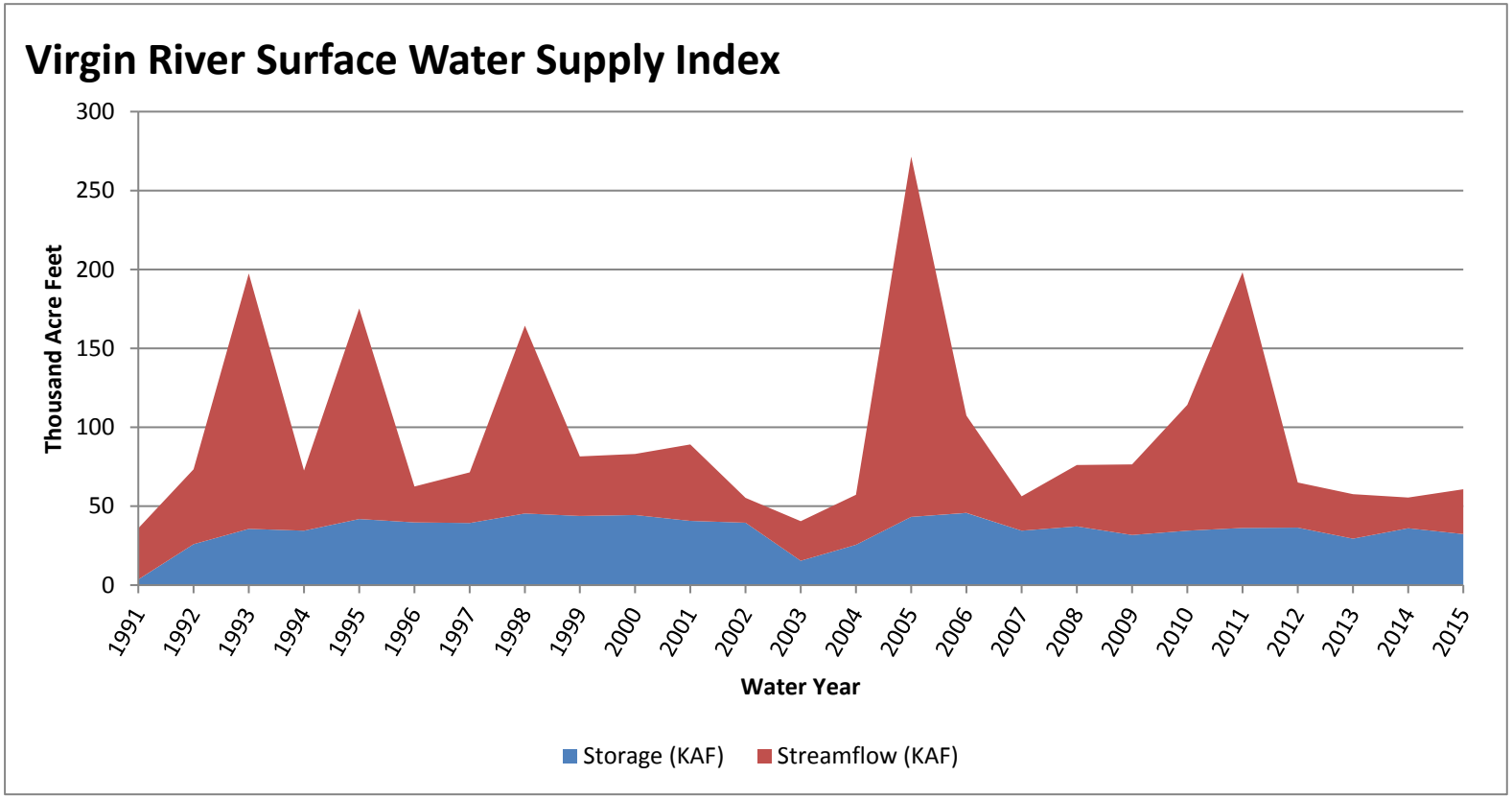
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Upper Virgin	8	62%	71%
Lower Virgin	2	46%	45%
Cedar City Parowan	4	66%	67%

February 1, 2015

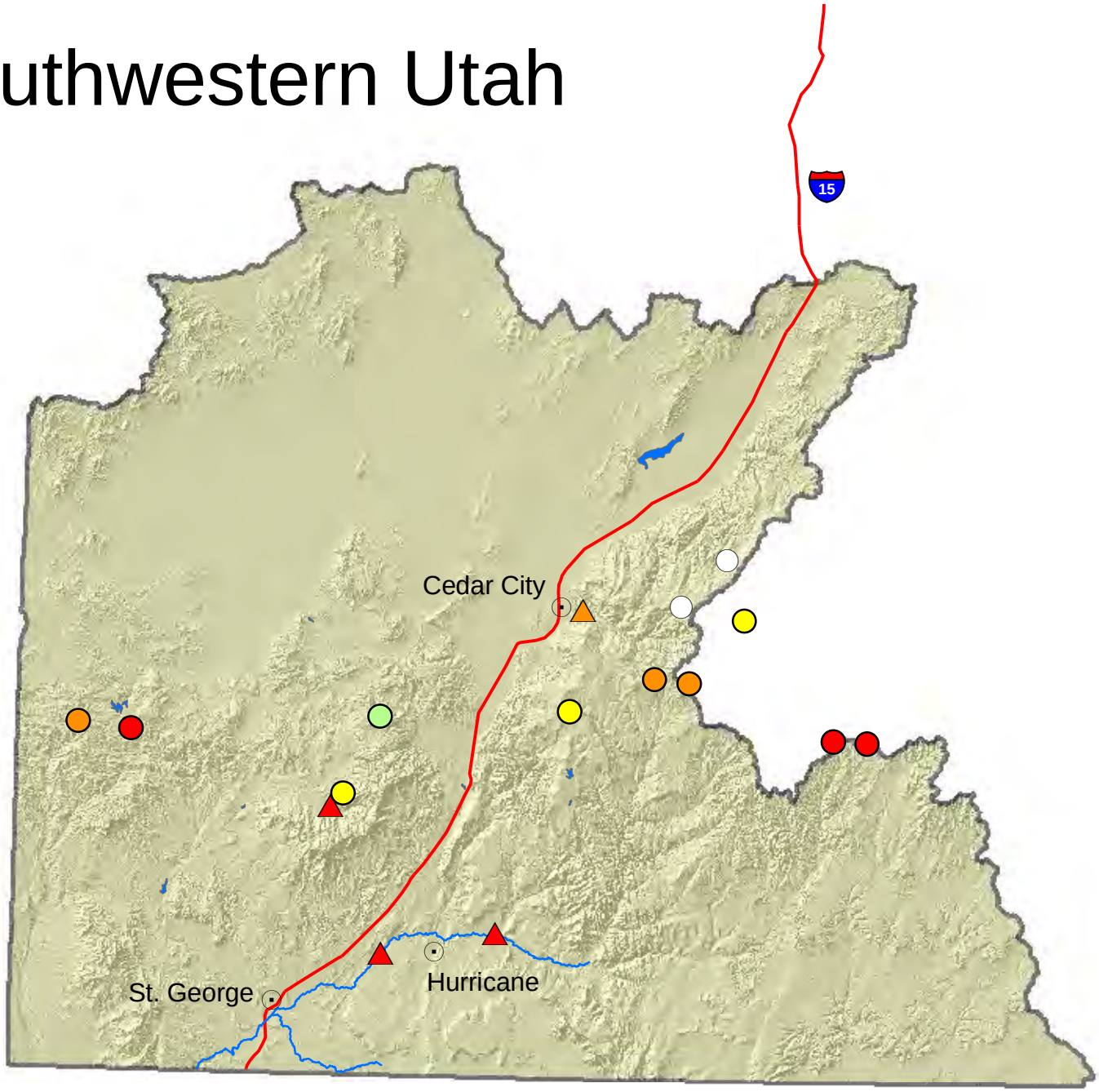
Surface Water Supply Index

Basin or Region	Jan EOM* Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Virgin River	**32.41**	**28.40**	**60.81**	**31**	**-1.6**	**04, 13, 96, 12**

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



Southwestern Utah



Percent normal

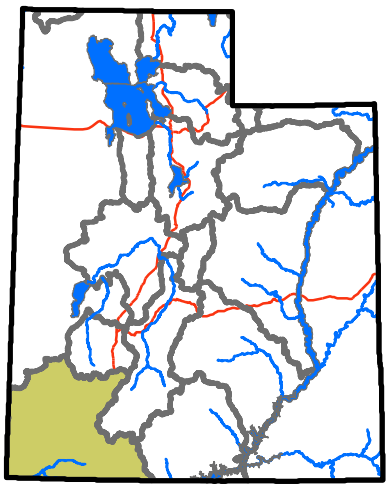
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- no % avail.

- 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, 2015

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	**548.1**	**88.0**	**636.1**	**47**	**-0.23**	**90, 14, 89, 96**
Woodruff Narrows	**40.4**	**85.0**	**125.4**	**47**	**-0.23**	**81, 07, 08, 06**
Little Bear	**10.1**	**17.0**	**27.1**	**38**	**-1.04**	**00, 12, 02, 94**
Ogden River	**65.7**	**55.0**	**120.7**	**42**	**-0.69**	**08, 91, 89, 00**
Weber River	**200.0**	**210.0**	**410.0**	**36**	**-1.16**	**91, 89, 12, 87**
Provo River	**878.7**	**75.0**	**953.7**	**23**	**-2.27**	**05, 14, 02, 13**
Western Uintah	**175.5**	**85.0**	**260.5**	**61**	**0.93**	**81, 85, 06, 84**
Eastern Uintah	**27.7**	**46.0**	**73.7**	**19**	**-2.55**	**90, 04, 94, 03**
Blacks Fork	**22.5**	**64.0**	**86.5**	**45**	**-0.38**	**03, 91, 06, 87**
Smiths Fork	**8.5**	**20.0**	**28.5**	**47**	**-0.25**	**88, 09, 92, 13**
Price River	**12.2**	**27.0**	**39.2**	**22**	**-2.31**	**14, 03, 91, 13**
Joe's Valley	**40.7**	**45.0**	**85.7**	**53**	**0.23**	**00, 10, 93, 09**
Ferron Creek	**12.5**	**34.0**	**46.5**	**53**	**0.23**	**01, 08, 09, 14**
Moab	**1.4**	**4.0**	**5.4**	**66**	**1.29**	**96, 07, 94, 97**
Upper Sevier	**70.1**	**43.0**	**113.1**	**31**	**-1.62**	**10, 97, 02, 00**
San Pitch	**0.2**	**16.0**	**16.2**	**25**	**-2.08**	**92, 91, 01, 89**
Lower Sevier	**91.6**	**95.0**	**186.6**	**42**	**-0.69**	**13, 01, 96, 07**
Beaver River	**9.3**	**15.7**	**25.0**	**22**	**-2.31**	**00, 08, 91, 13**
Virgin River	**32.4**	**28.4**	**60.8**	**31**	**-1.6**	**04, 13, 96, 12**

**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 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/**

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Utah Climate and Water Report

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