



# Utah Water Supply Outlook Report

February, 2014



**From Brown Duck Ridge (10,000 ft) looking across Lake Fork, January, 2014**

**Photo by Kent Sutcliffe, NRCS**

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

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*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/>

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## *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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# STATE OF UTAH GENERAL OUTLOOK

February 1, 2014

## SUMMARY

January wasn't much when it comes to snow accumulation. For northern Utah there were essentially 2 storms, one at the beginning, one at the end. In southern Utah there was only one storm at the end of the month – and the one previous to that was in early December. Few storms equates to little snow. The Bear and the Weber are slightly higher than January but the rest of the state declined 6% to 37% compared to January 1. The biggest declines were in southeast Utah, the Upper Sevier and southwest Utah, down 25% to 37%. Central Utah, Provo and Uintah Basin declined 6% to 10% relative to January 1. If you want to get out of a hole, the first thing you have to do is quit diggin' and it doesn't appear we have put the shovel down. Lower elevation southern sites have actually been melting snow. 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 near normal for most of northern Utah and above normal in the south. 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 59% of median on the lower Sevier to 108% on the Escalante. Most areas are in the 60% to 80% of median range.

## PRECIPITATION

Mountain precipitation during January was 68% of average which brings the seasonal accumulation (Oct-Jan) 90% of normal.

## SOIL MOISTURE

Soil Moisture is close to what it was last month, characteristic of winter trends. Dry on the Weber, close to normal across the remainder of northern Utah and above average over southern Utah.

## RESERVOIRS

Storage in 46 of Utah's key irrigation reservoirs is at 48% of capacity compared to 57% 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 60% to 80% range.

## SURFACE WATER SUPPLY INDEX

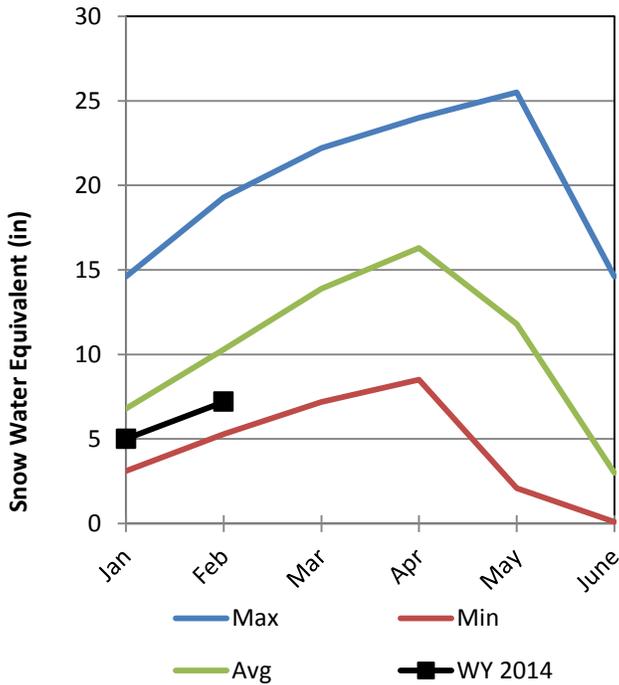
Surface Water Supply indexes range from 6% on the Provo to 87% on the North Slope of the Uintahs.

# Statewide Utah

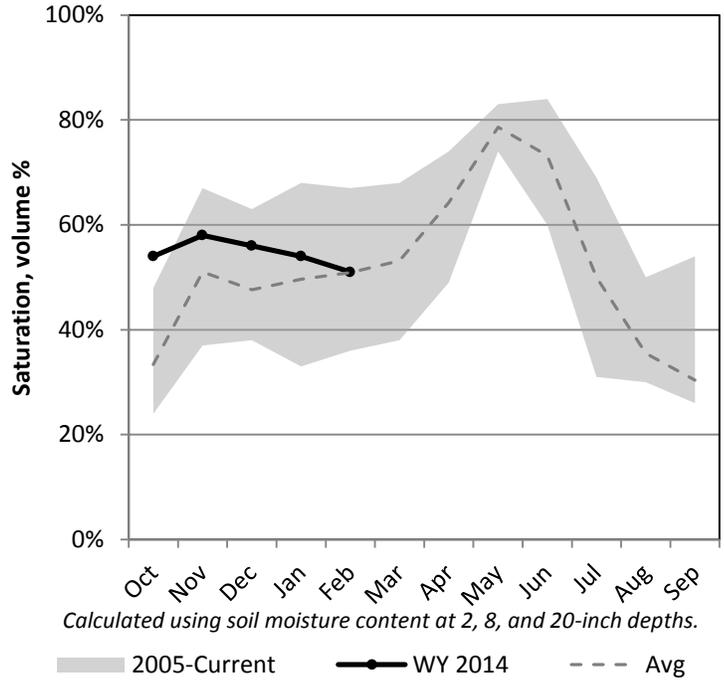
2/1/2014

Snowpack in Utah is below average at 75% of normal, compared to 92% last year. Precipitation in January was much below average at 63%, which brings the seasonal accumulation (Oct-Jan) to 72% of average. Soil moisture is at 51% compared to 46% last year. Reservoir storage is at 48% of capacity, compared to 57% last year. Forecast streamflow volumes range from 28% to 104% of average.

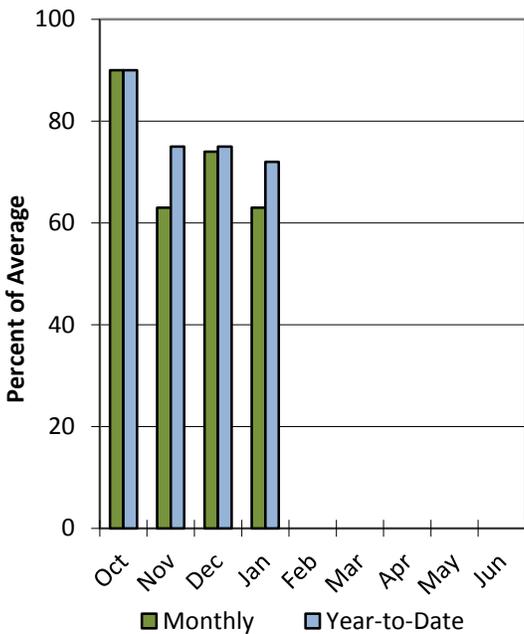
## Snowpack



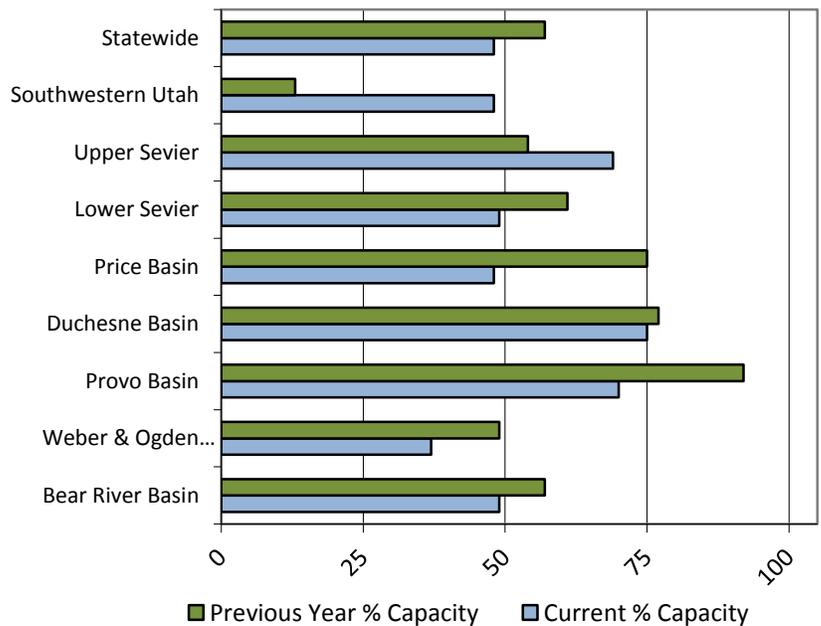
## Soil Moisture



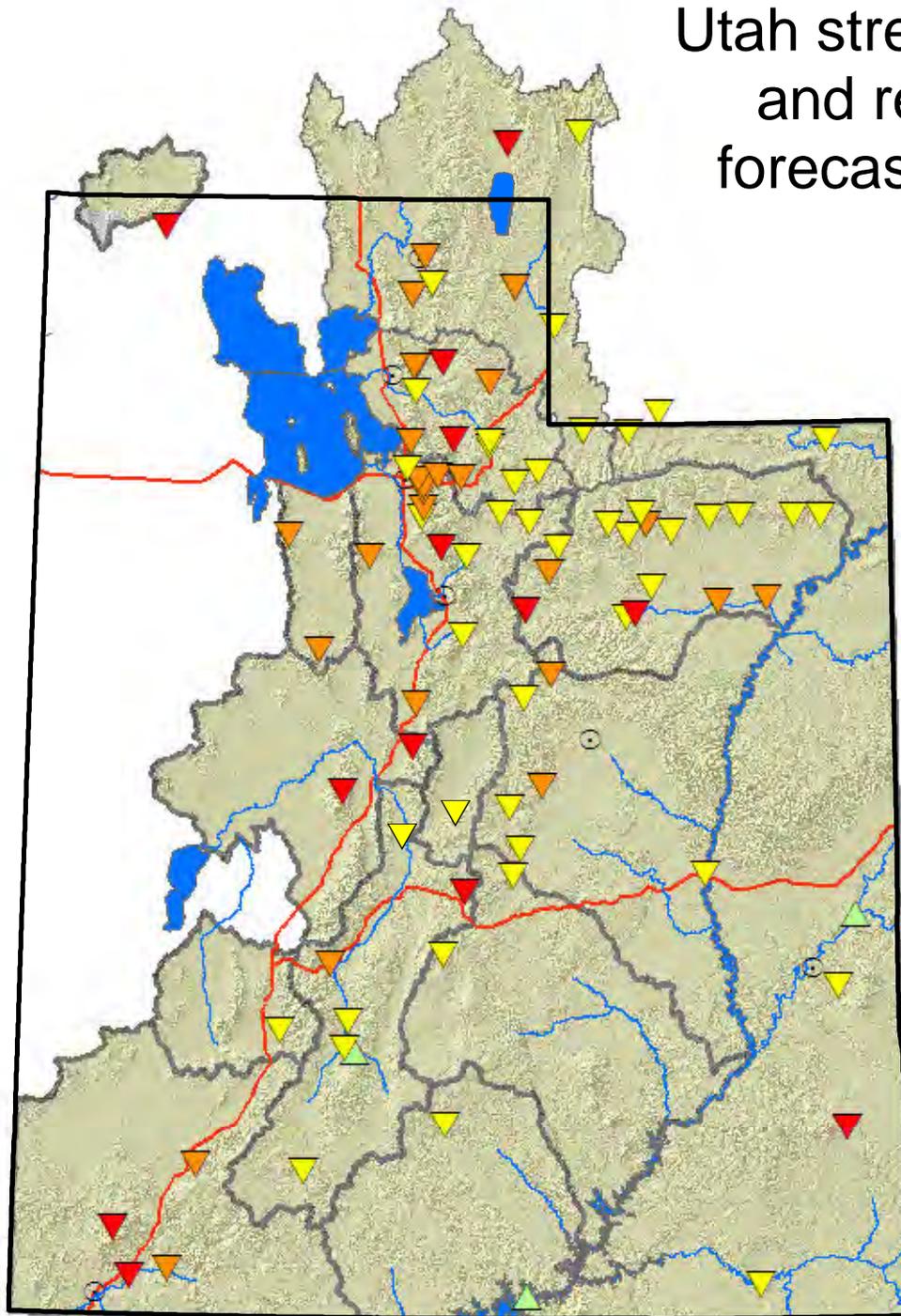
## Precipitation



## Reservoir Storage

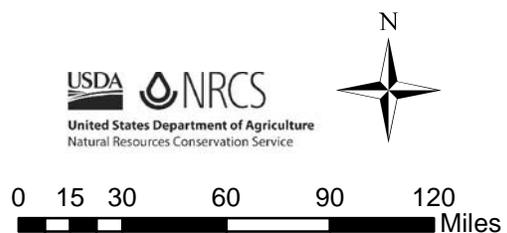


# Utah streamflow and reservoir forecast points



## Percent normal

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

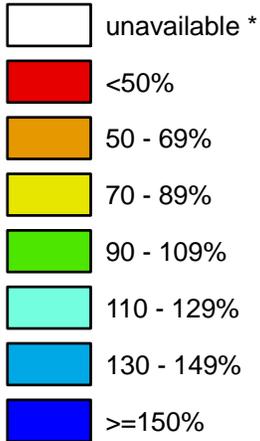


# Utah

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

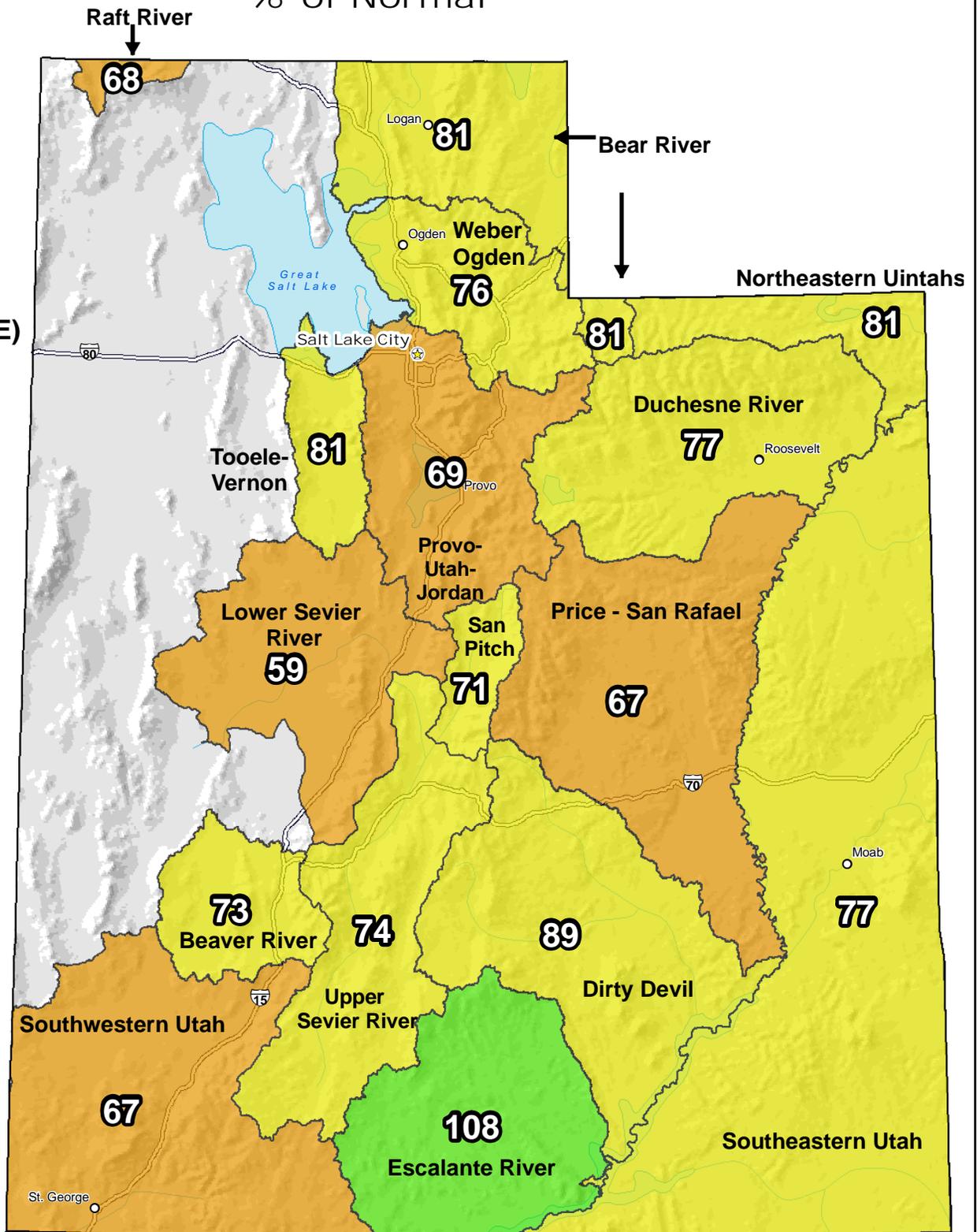
Feb 01, 2014

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



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

**Provisional Data  
Subject to Revision**



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

Prepared by the USDA/NRCS National Water and Climate Center  
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: [Jim.Marron@por.usda.gov](mailto:Jim.Marron@por.usda.gov) 503 414 3047

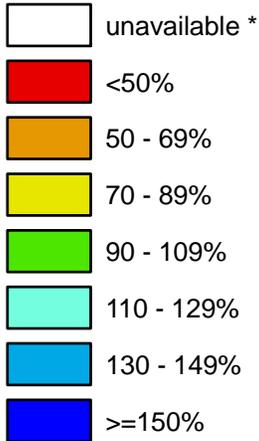
# Utah

## SNOTEL Water Year (Oct 1) to Date Precipitation

### % of Normal

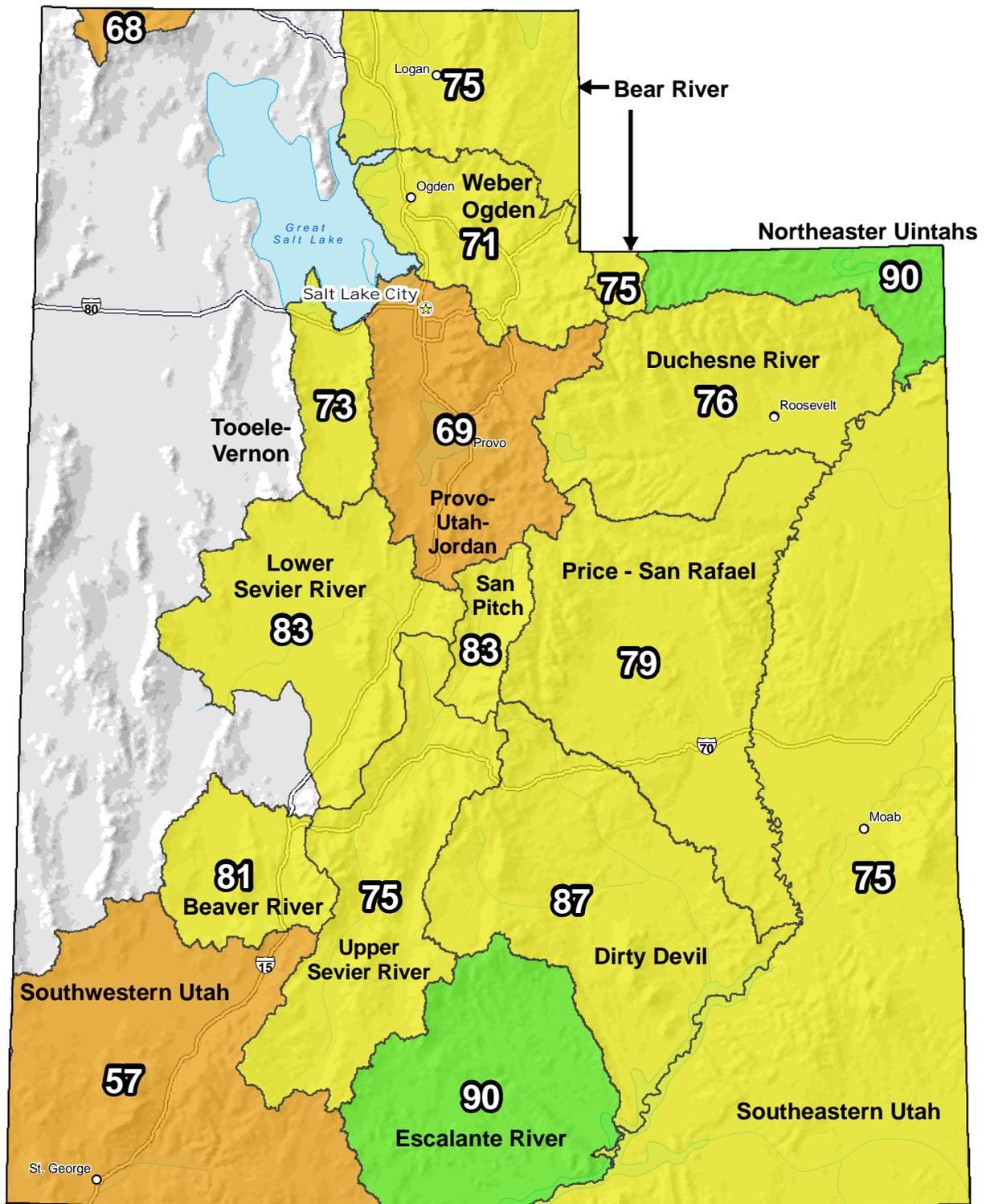
Feb 05, 2014

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



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

**Provisional Data  
Subject to Revision**



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

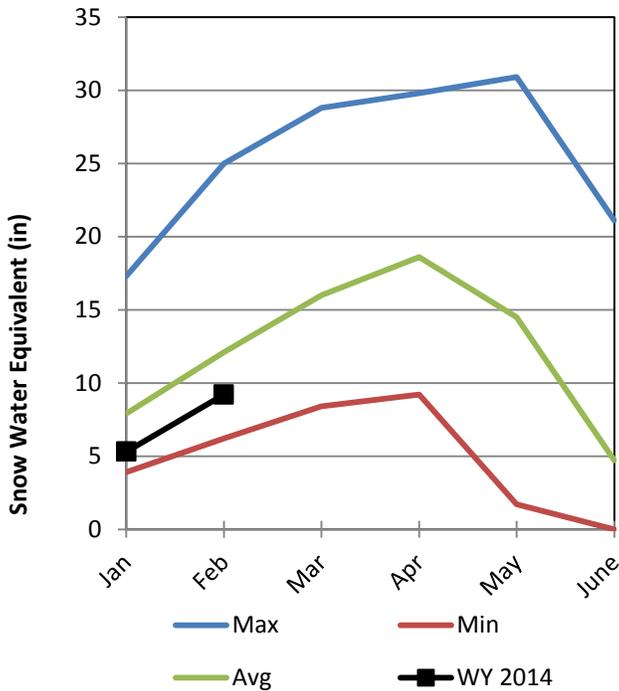
Prepared by the USDA/NRCS National Water and Climate Center  
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: [Jim.Marron@por.usda.gov](mailto:Jim.Marron@por.usda.gov) 503 414 3047

# Bear River Basin

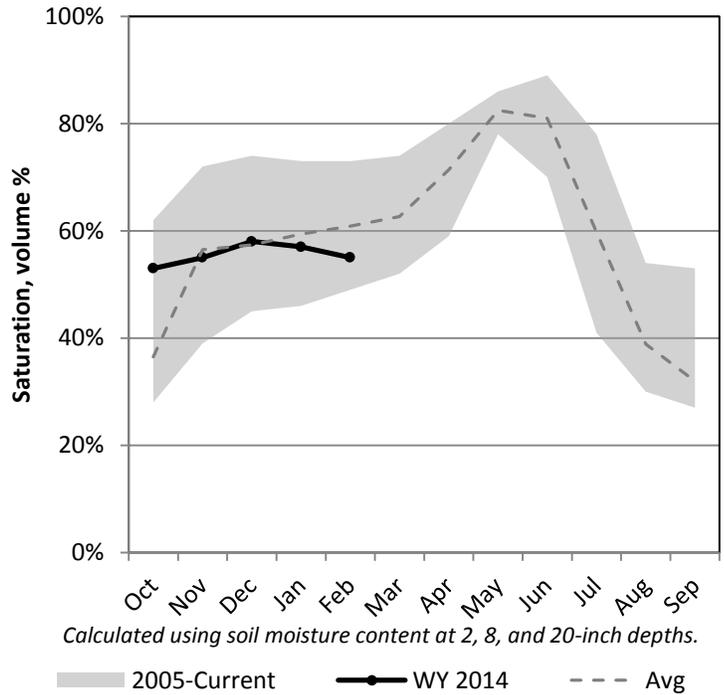
2/1/2014

Snowpack in the Bear River Basin is below average at 81% of normal, compared to 84% last year. Precipitation in January was below average at 86%, which brings the seasonal accumulation (Oct-Jan) to 75% of average. Soil moisture is at 55% compared to 64% last year. Reservoir storage is at 49% of capacity, compared to 57% last year. Forecast streamflow volumes range from 30% to 88% of average. The surface water supply index is 29% for the Bear River, 33% for the Woodruff Narrows, 39% for the Little Bear.

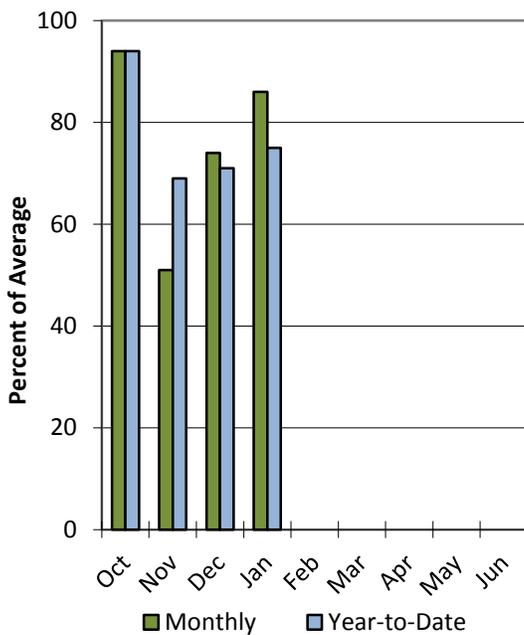
## Snowpack



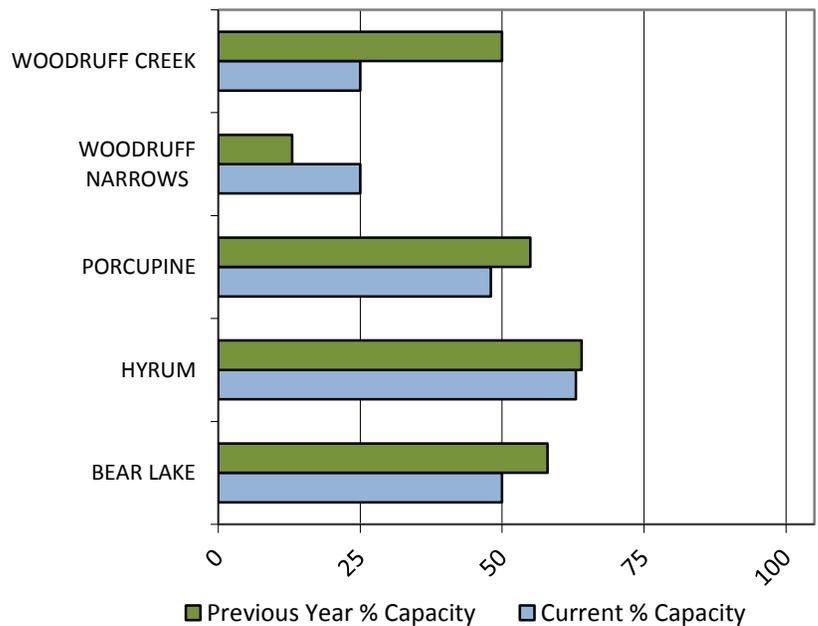
## Soil Moisture



## Precipitation



## Reservoir Storage



## Bear River Streamflow Forecasts - February 1, 2014

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

Bear River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Bear R nr UT-WY State Line	APR-JUL	58	82	94	84%	115	139	112
Bear R ab Resv nr Woodruff	APR-JUL	28	84	106	88%	161	217	121
Big Ck nr Randolph	APR-JUL	0.44	1.73	2.5	66%	3.5	4.8	3.8
Smiths Fk nr Border	APR-JUL	40	61	71	80%	90	111	89
Bear R bl Stewart Dam <sup>2</sup>	APR-JUL	1.83	11	55	30%	110	192	183
Little Bear at Paradise	APR-JUL	1.23	13.8	24	59%	34	49	41
Logan R nr Logan <sup>2</sup>	APR-JUL	14.3	44	64	58%	84	114	111
Blacksmith Fk nr Hyrum	APR-JUL	7.5	22	30	70%	42	56	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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BEAR LAKE	655.3	761.4	584.8	1421.0
HYRUM RESERVOIR	9.7	9.7	10.2	15.3
PORCUPINE RESERVOIR	5.4	6.2	6.0	11.3
WOODRUFF CREEK	1.0	2.0	2.4	4.0
WOODRUFF NARROWS RESERVOIR	14.4	7.7	29.0	57.3
Basin-wide Total	685.7	787.1	632.4	1508.9
# of reservoirs	5	5	5	5

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Upper Bear	3	89%	89%
Middle Bear	7	88%	87%
Lower Bear	3	63%	79%
Logan	7	78%	81%

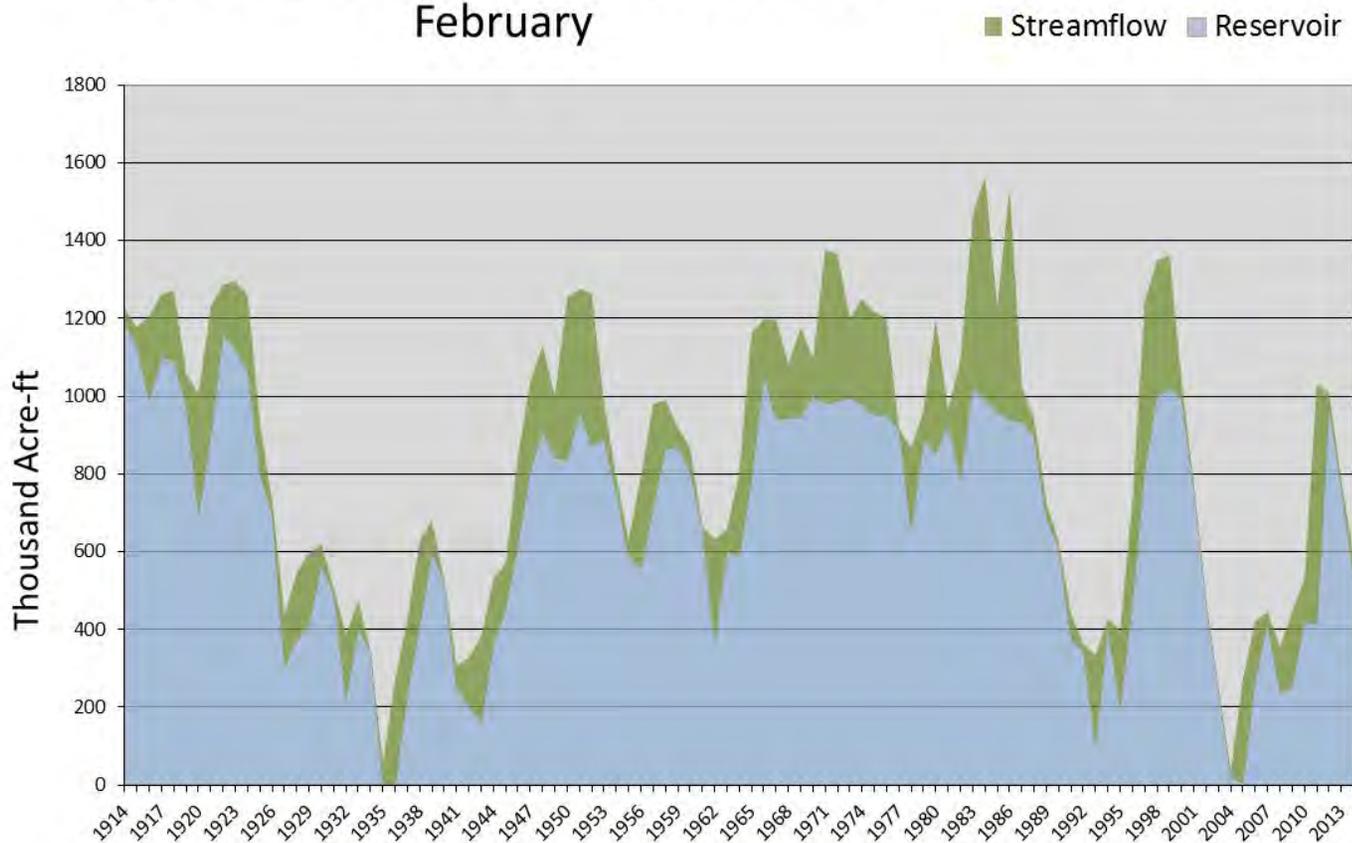
February 1, 2014

## Surface Water Supply Index

Basin or Region	January EOM* Bear Lake	April-July Forecast below Stewart Dam	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Bear River</b>	<b>536</b>	<b>55</b>	<b>591</b>	<b>-1.72</b>	<b>29</b>	<b>28, 45, 29, 30</b>

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

### Bear Lake - Surface Water Supply Index February



February 1, 2014

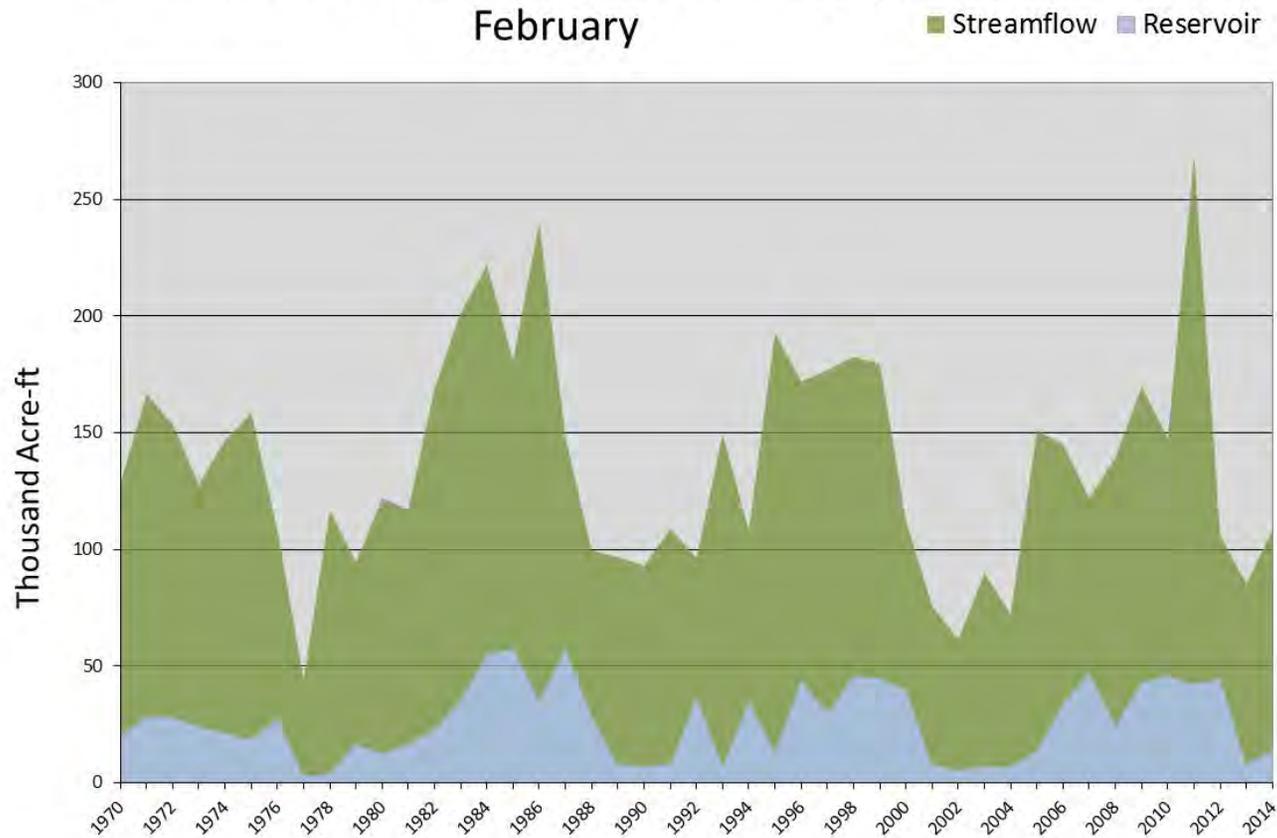
## Surface Water Supply Index

Basin or Region	January EOM*			SWSI <sup>#</sup>	Percentile	Years with similar SWSI
	Woodruff Narrows Reservoir	April-July forecast Bear at Stateline	Reservoir + Streamflow			
	KAF <sup>^</sup>	KAF	KAF		%	
<b>Woodruff Narrows</b>	<b>14.4</b>	<b>94.0</b>	<b>108.4</b>	<b>-1.45</b>	<b>33</b>	<b>94, 76, 91, 00</b>

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

### Woodruff Narrows - Surface Water Supply Index

February



February 1, 2014

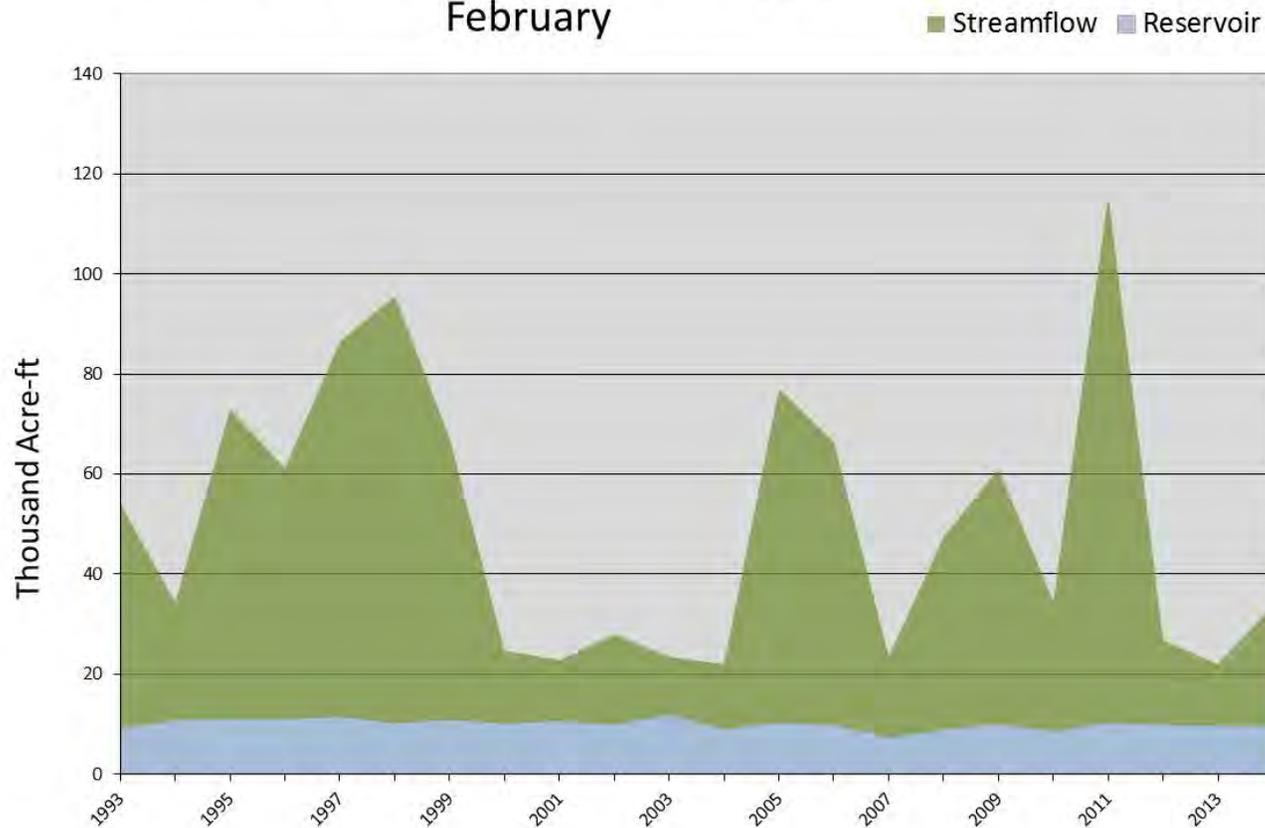
## Surface Water Supply Index

Basin or Region	January EOM* Hyrum Reservoir	April-July forecast Little Bear at Paradise	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Little Bear</b>	<b>9.7</b>	<b>24.0</b>	<b>33.7</b>	<b>-0.91</b>	<b>39</b>	<b>12, 02, 94, 10</b>

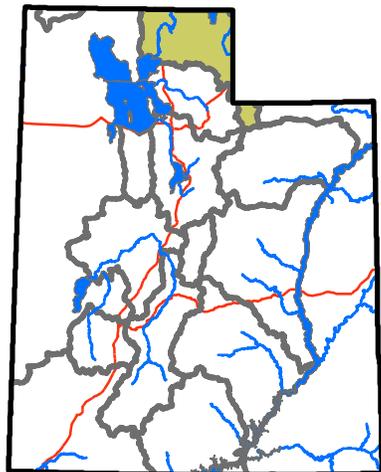
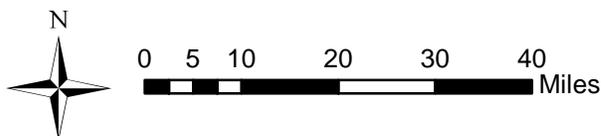
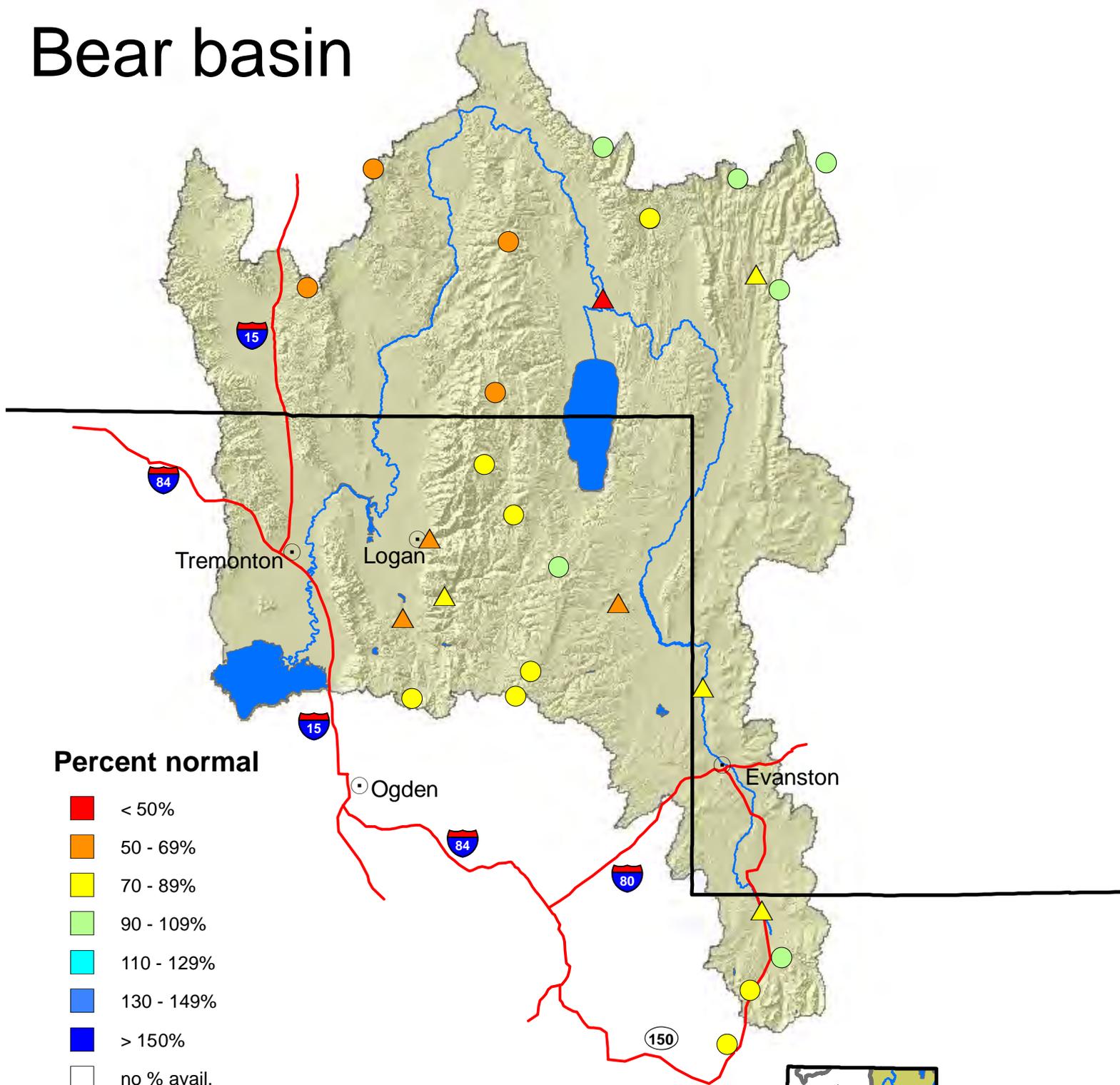
\*EOM, end of month; # SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

### Little Bear River - Surface Water Supply Index

February



# Bear basin

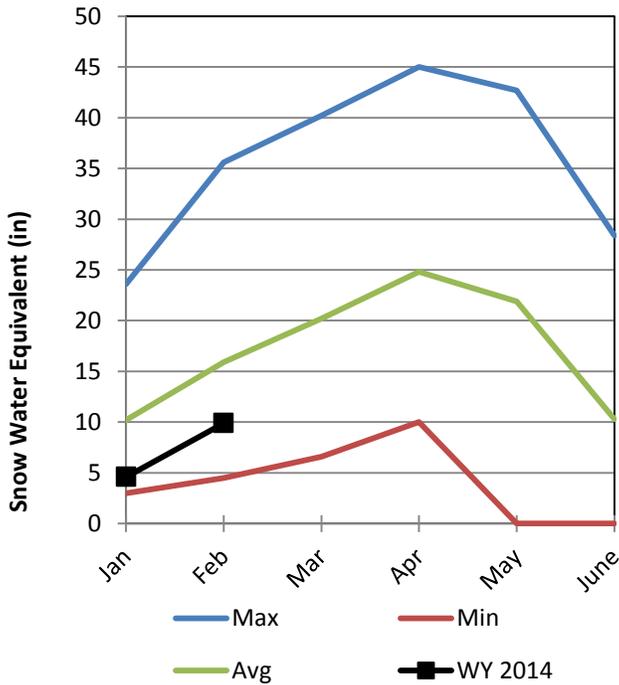


# Raft River Basin

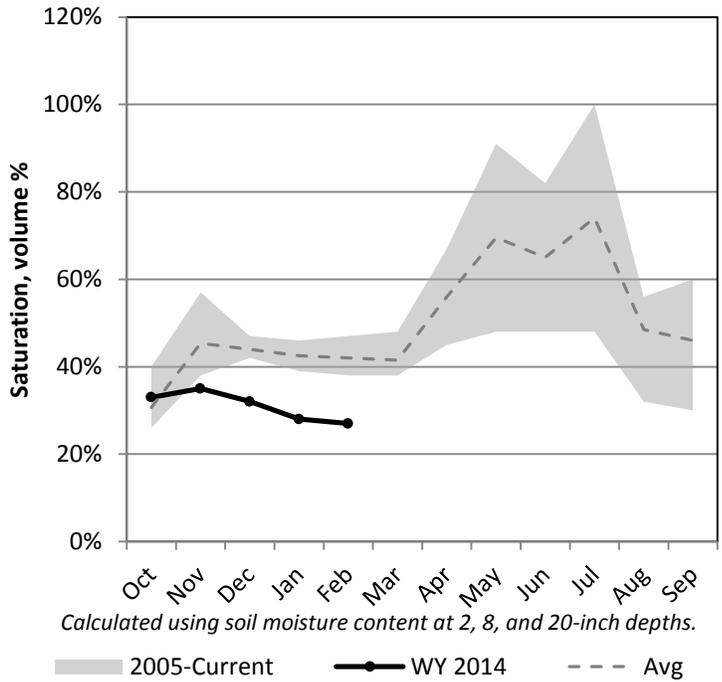
2/1/2014

Snowpack in the Raft River Basin is much below average at 69% of normal, compared to 103% last year. Precipitation in January was below average at 85%, which brings the seasonal accumulation (Oct-Jan) to 65% of average. Soil moisture is at 27% compared to 47% last year. The forecast streamflow volume for Dunn Creek is 48% of average.

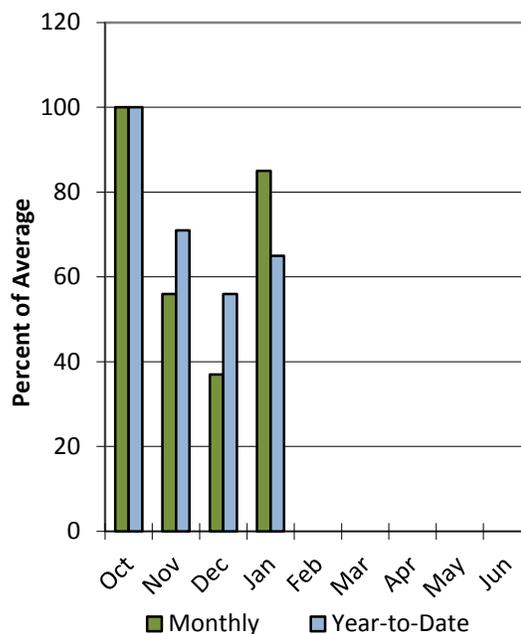
## Snowpack



## Soil Moisture



## Precipitation



Data Current as of: 2/5/2014 9:47:08 AM

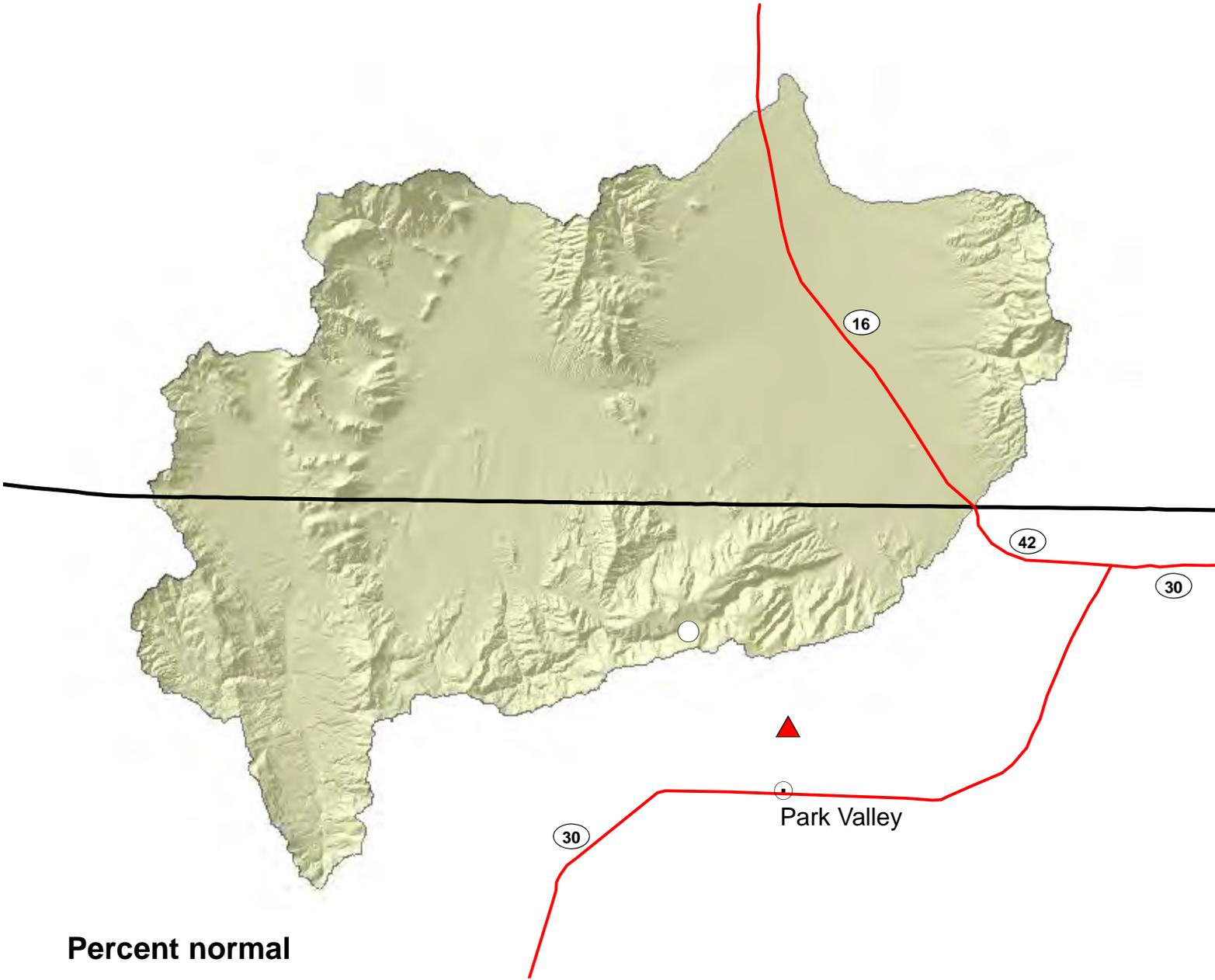
### Raft River Streamflow Forecasts - February 1, 2014

Raft River	Forecast Period	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						30yr Avg (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Dunn Ck nr Park Valley	APR-JUL	0.03	0.4	1.4	48%	2.1	2.8	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

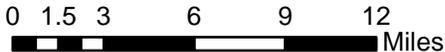
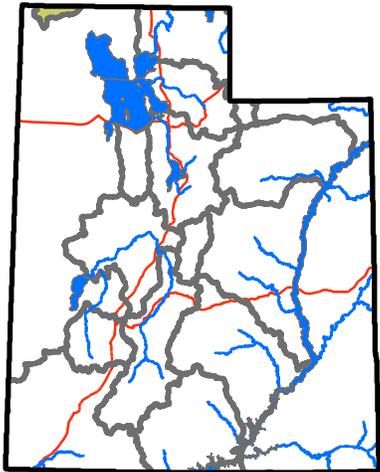
Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Raft	1	69%	103%

# 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

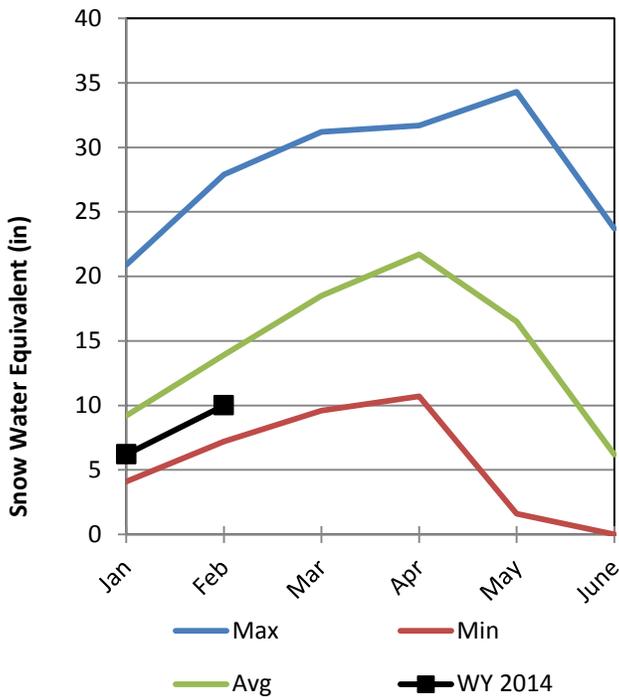


# Weber & Ogden River Basins

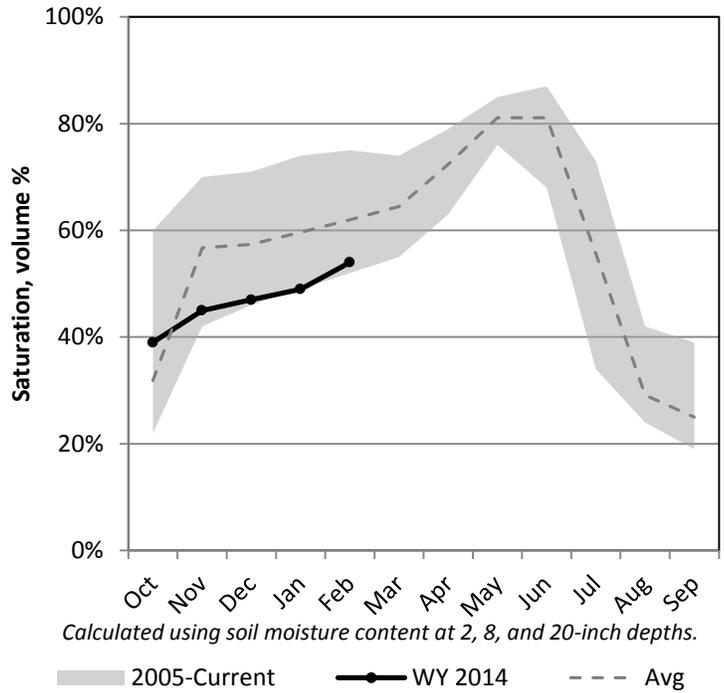
2/1/2014

Snowpack in the Weber & Ogden River Basins is below average at 76% of normal, compared to 83% last year. Precipitation in January was below average at 70%, which brings the seasonal accumulation (Oct-Jan) to 71% of average. Soil moisture is at 54% compared to 61% last year. Reservoir storage is at 37% of capacity, compared to 49% last year. Forecast streamflow volumes range from 43% to 85% of average. The surface water supply index is 11% for the Ogden River, 28% for the Weber River.

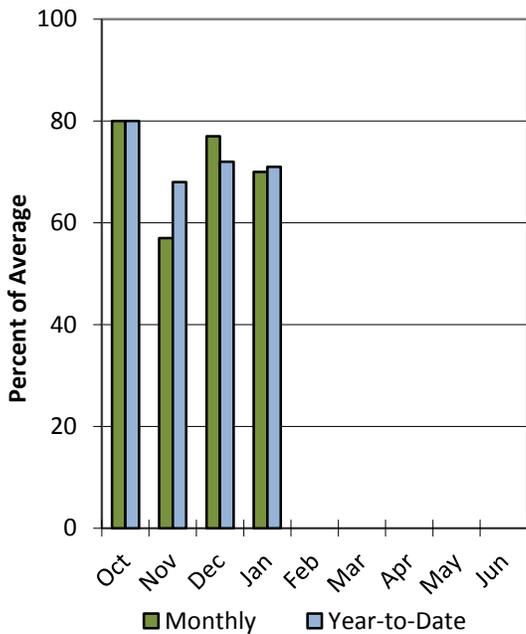
## Snowpack



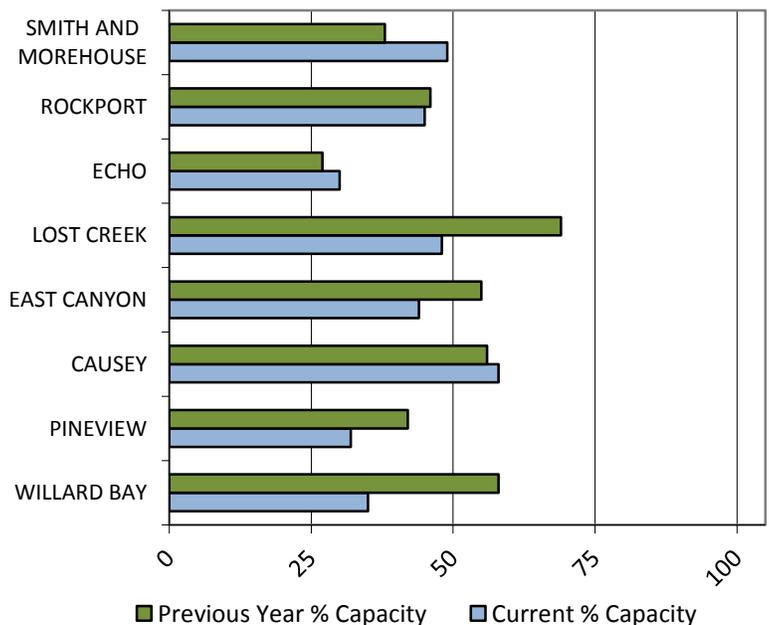
## Soil Moisture



## Precipitation



## Reservoir Storage



## Weber Ogden Rivers Streamflow Forecasts - February 1, 2014

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	17.7	23	27	82%	30	36	33
Weber R at Gateway <sup>2</sup>	APR-JUL	14.7	155	250	79%	345	485	315
Weber R nr Coalville <sup>2</sup>	APR-JUL	45	81	106	84%	131	168	126
Weber R nr Oakley <sup>2</sup>	APR-JUL	51	77	95	81%	113	139	117
Rockport Reservoir Inflow <sup>2</sup>	APR-JUL	44	80	105	85%	130	166	123
Chalk Ck at Coalville	APR-JUL	5.1	21	32	78%	43	59	41
Echo Reservoir Inflow <sup>2</sup>	APR-JUL	17.4	78	119	66%	160	220	179
Lost Ck Reservoir Inflow	APR-JUL	0.36	3.8	7.7	64%	11.6	17.4	12.1
East Canyon Ck nr Jeremy Ranch	APR-JUL	0.3	3.6	8.2	54%	12.8	19.5	15.2
East Canyon Ck nr Morgan <sup>2</sup>	APR-JUL	0.56	1.86	12	43%	15.5	25	28
SF Ogden R nr Huntsville <sup>2</sup>	APR-JUL	1.12	13.7	27	48%	41	61	56
Pineview Reservoir Inflow <sup>2</sup>	APR-JUL	2.6	16.5	46	53%	76	119	86
Wheeler Ck nr Huntsville	APR-JUL	0.13	1.79	3.2	55%	4.5	6.5	5.8

- 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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
CAUSEY RESERVOIR	4.1	4.0	3.2	7.1
EAST CANYON RESERVOIR	21.9	27.3	34.7	49.5
ECHO RESERVOIR	21.9	19.7	46.3	73.9
LOST CREEK RESERVOIR	10.8	15.4	12.3	22.5
PINEVIEW RESERVOIR	34.9	45.9	51.4	110.1
ROCKPORT RESERVOIR	27.6	28.2	34.5	60.9
WILLARD BAY	75.5	124.8	133.7	215.0
SMITH AND MOREHOUSE RESERVOIR	4.0	3.0	3.6	81.0
Basin-wide Total	200.7	268.3	319.7	620.0
# of reservoirs	8	8	8	8

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Upper Weber	9	82%	85%
Lower Weber	7	76%	92%
Ogden	17	76%	83%
Lost Creek	3	83%	75%

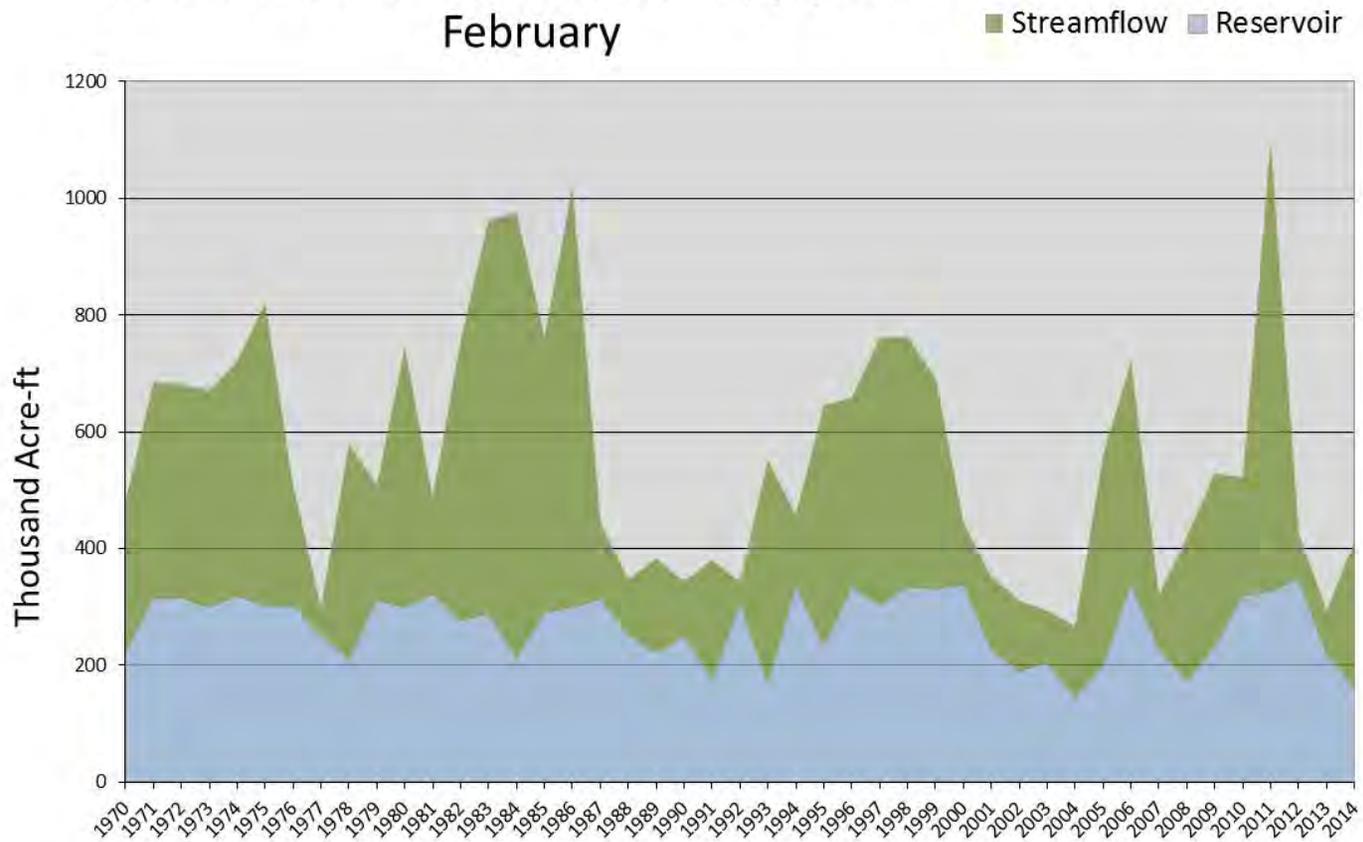
February 1, 2014

## Surface Water Supply Index

Basin or Region	January EOM* Reservoirs	April-July Forecast Weber River at Gateway	Reservoirs + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Weber River</b>	<b>162</b>	<b>250</b>	<b>412</b>	<b>-1.81</b>	<b>28</b>	<b>91, 89, 08, 12</b>

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

Weber River - Surface Water Supply Index  
February



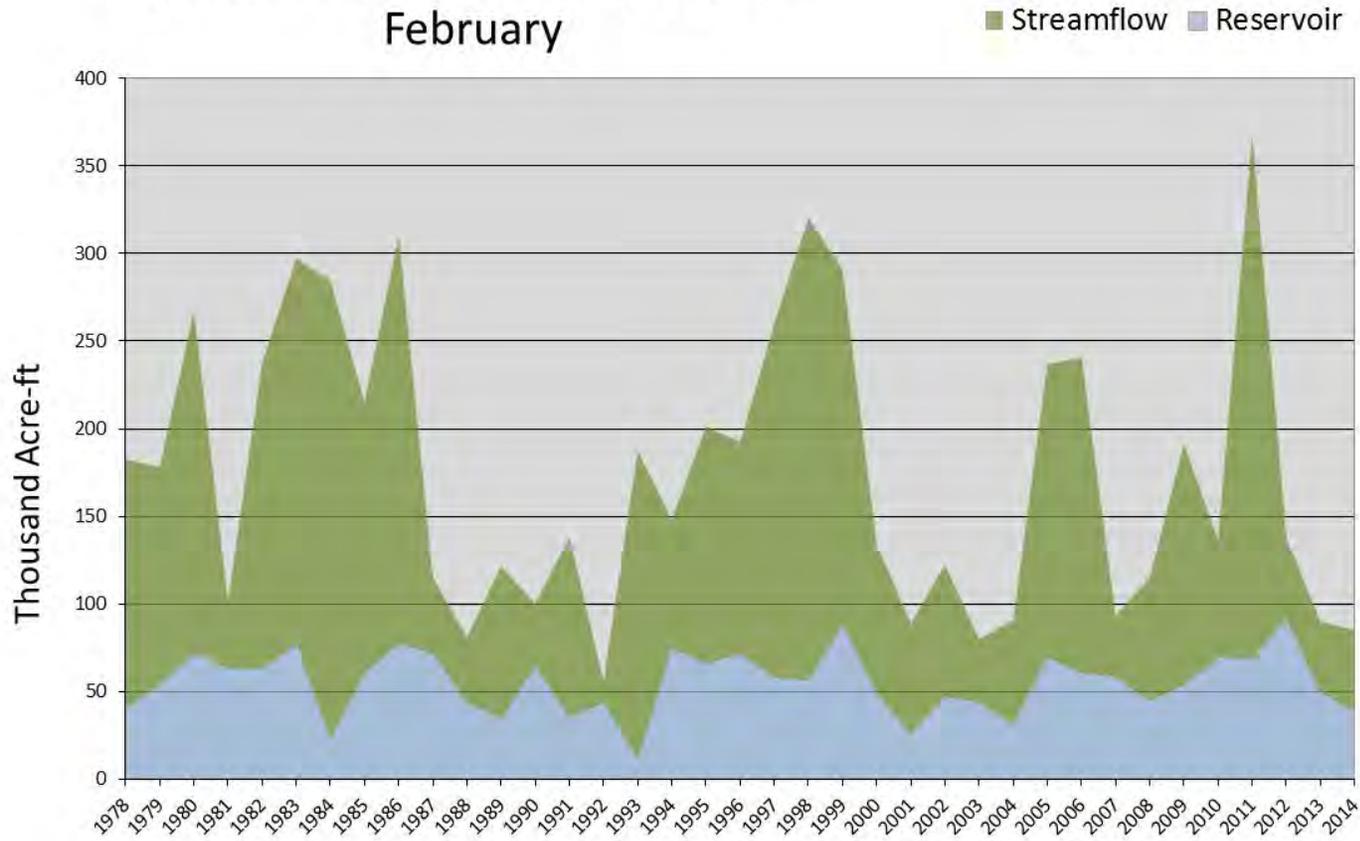
February 1, 2014

## Surface Water Supply Index

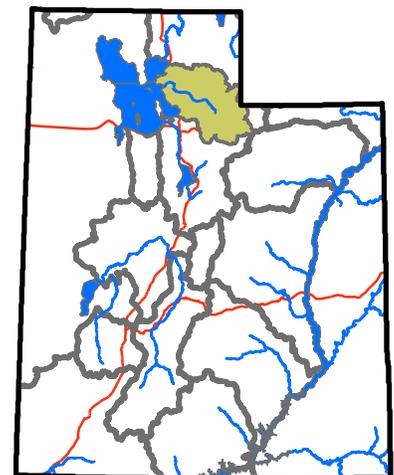
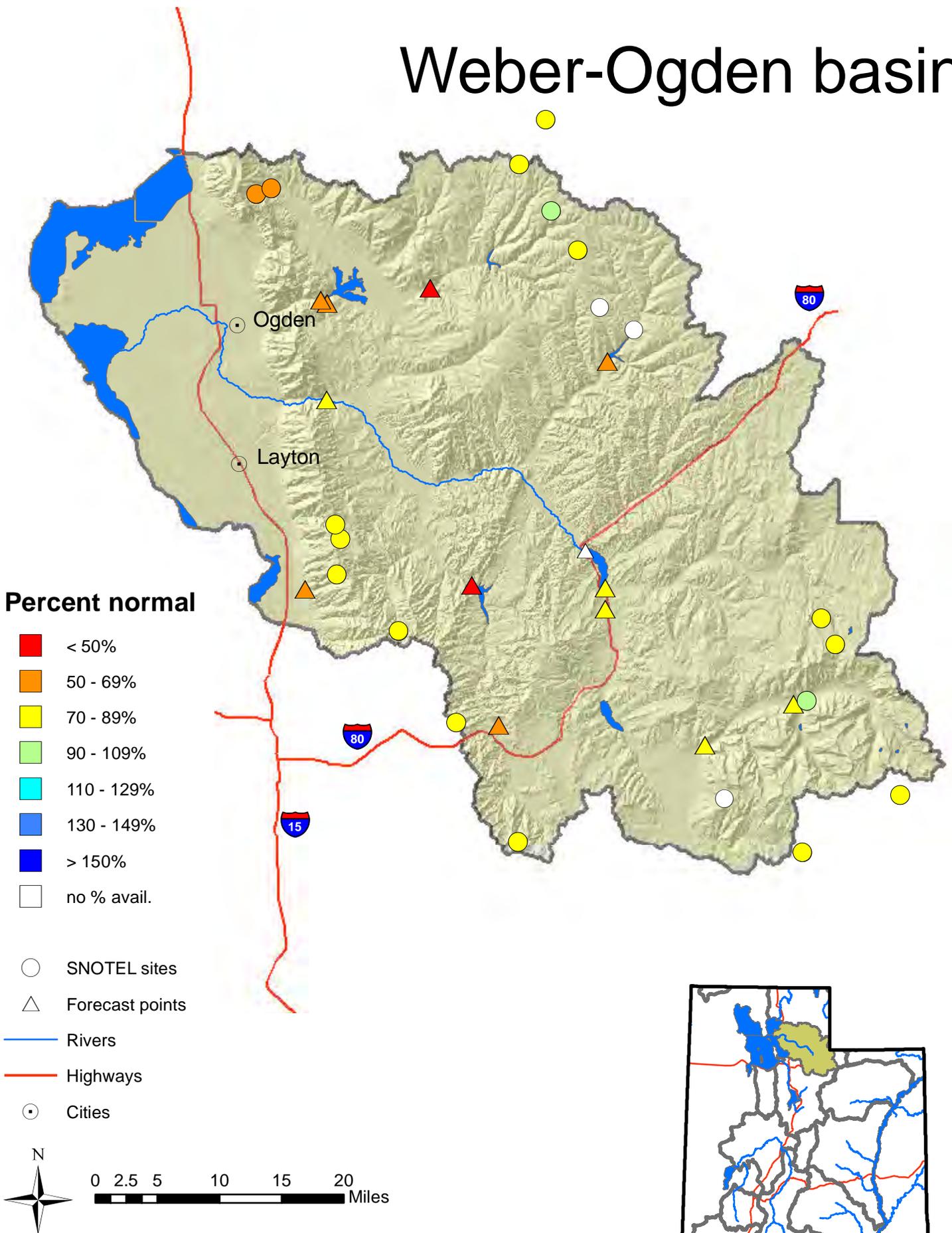
Basin or Region	January EOM* Pine View & Causey	April-July Forecast Pineview Reservoir Inflow	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Ogden River</b>	<b>39.0</b>	<b>46.0</b>	<b>85.0</b>	<b>-2.39</b>	<b>11</b>	<b>03, 88, 01, 13</b>

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

Ogden - Surface Water Supply Index  
February



# Weber-Ogden basin

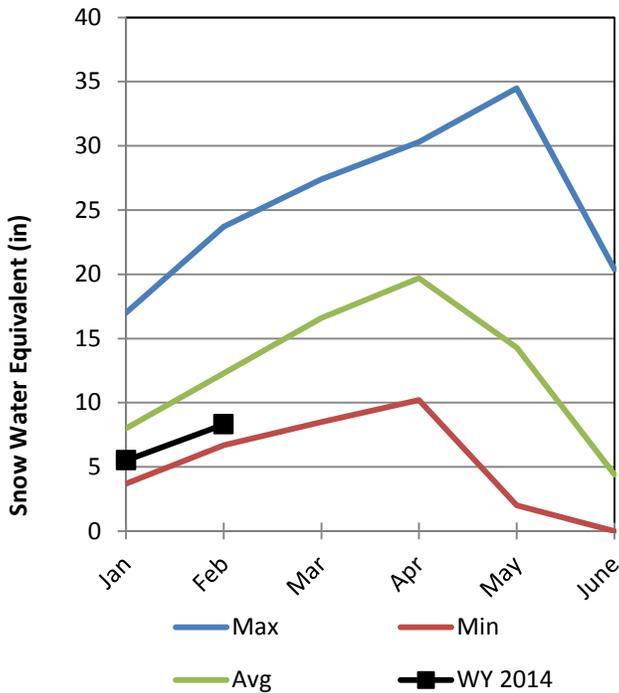


# Provo & Jordan River Basins

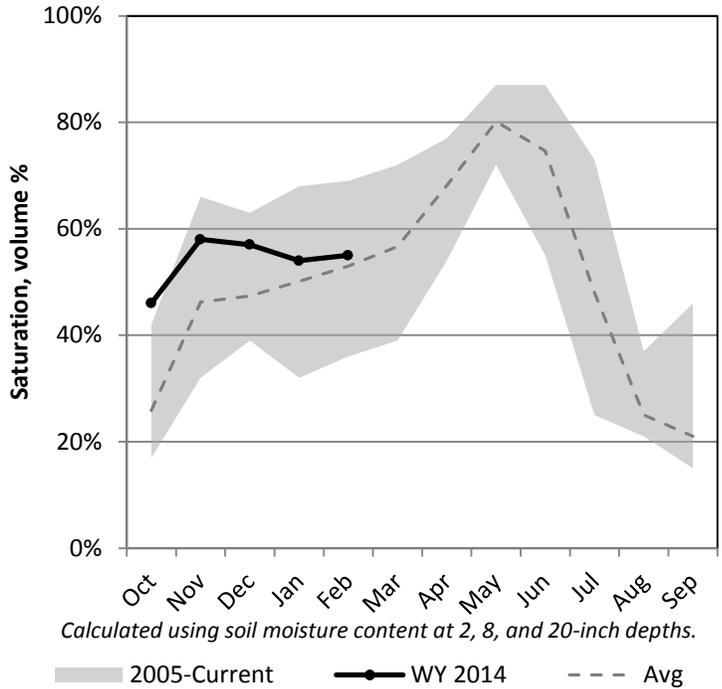
2/1/2014

Snowpack in the Provo & Jordan River Basins is much below average at 69% of normal, compared to 93% last year. Precipitation in January was much below average at 65%, which brings the seasonal accumulation (Oct-Jan) to 70% of average. Soil moisture is at 55% compared to 52% last year. Reservoir storage is at 70% of capacity, compared to 77% last year. Forecast streamflow volumes range from 44% to 81% of average. The surface water supply index is 6% for the Provo River.

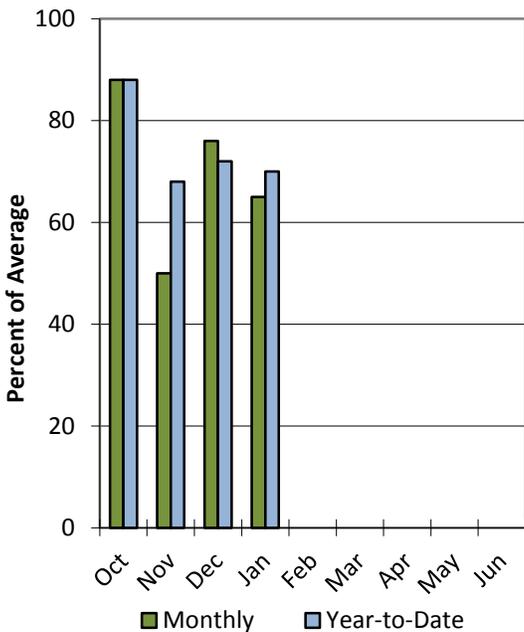
## Snowpack



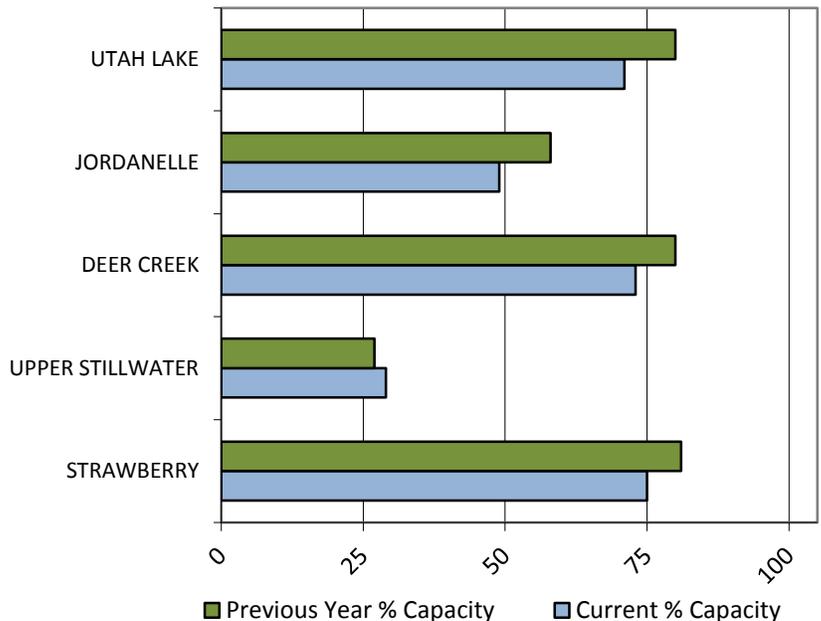
## Soil Moisture



## Precipitation



## Reservoir Storage



## Provo R Utah Lake Jordan R Streamflow Forecasts - February 1, 2014

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	0.28	2.9	6	63%	11.1	17.2	9.5
Spanish Fk at Castilla <sup>2</sup>	APR-JUL	2.8	12.4	48	70%	84	136	69
Provo R at Woodland <sup>2</sup>	APR-JUL	45	65	81	81%	99	128	100
Provo R at Hailstone <sup>2</sup>	APR-JUL	41	62	78	72%	96	126	108
Provo R bl Deek Ck Dam <sup>2</sup>	APR-JUL	37	63	81	70%	99	125	116
American Fk ab Upper Powerplant	APR-JUL	0.23	9.6	14	44%	22	32	32
Utah Lake Inflow <sup>2</sup>	APR-JUL	5.3	95	165	62%	199	278	265
W Canyon Ck nr Cedar Fort	APR-JUL	0.04	0.67	1.2	68%	1.73	2.5	1.76
Little Cottonwood Ck nr SLC <sup>2</sup>	APR-JUL	19.9	26	30	79%	35	42	38
Big Cottonwood Ck nr SLC <sup>2</sup>	APR-JUL	11.3	19	24	67%	29	37	36
Mill Ck nr SLC	APR-JUL	0.192	1.17	4.4	69%	4.3	6.6	6.4
Parleys Ck nr SLC <sup>2</sup>	APR-JUL	0.32	6	9.8	69%	13.6	19.2	14.2
Dell Fk nr SLC	APR-JUL	0.165	1.26	3.2	58%	4.9	8.6	5.5
Emigration Ck nr SLC	APR-JUL	0.04	0.16	2.2	55%	3	5.2	4
City Ck nr SLC <sup>2</sup>	APR-JUL	0.79	3.6	5.5	71%	7.4	10.1	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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
DEER CREEK RESERVOIR	109.9	119.7	107.7	149.7
STRAWBERRY RESERVOIR	830.3	896.5	658.4	1105.9
UTAH LAKE	619.6	698.1	752.5	870.9
JORDANELLE RESERVOIR	155.4	184.9	242.0	320.0
Basin-wide Total	1715.3	1899.1	1760.6	2446.5
# of reservoirs	4	4	4	4

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Upper Provo	6	66%	96%
Jordan	15	69%	93%
Utah Lake	15	69%	93%
Spanish Fork	5	64%	92%
Six Creeks	15	67%	86%
Cottonwoods	7	61%	83%

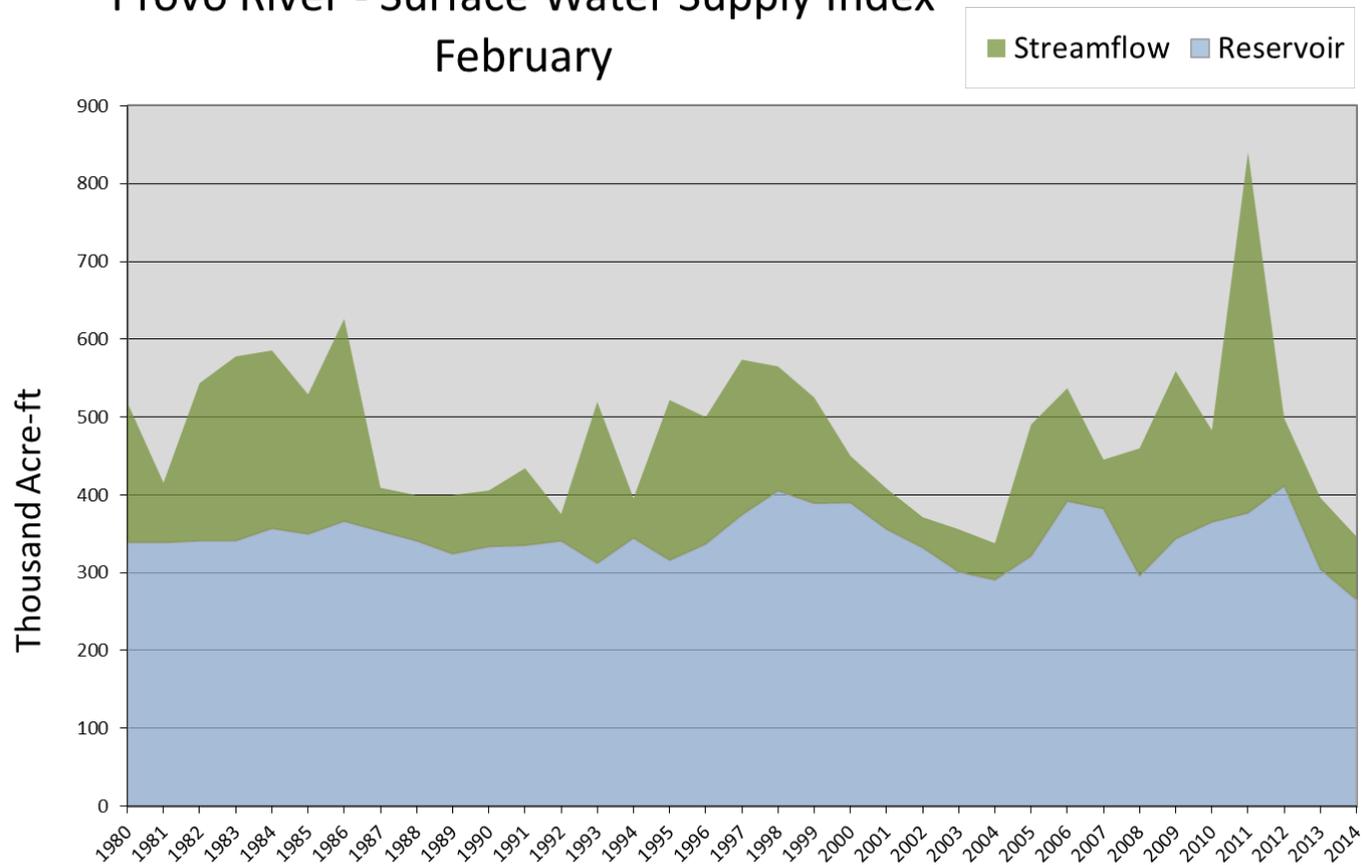
February 1, 2014

## Surface Water Supply Index

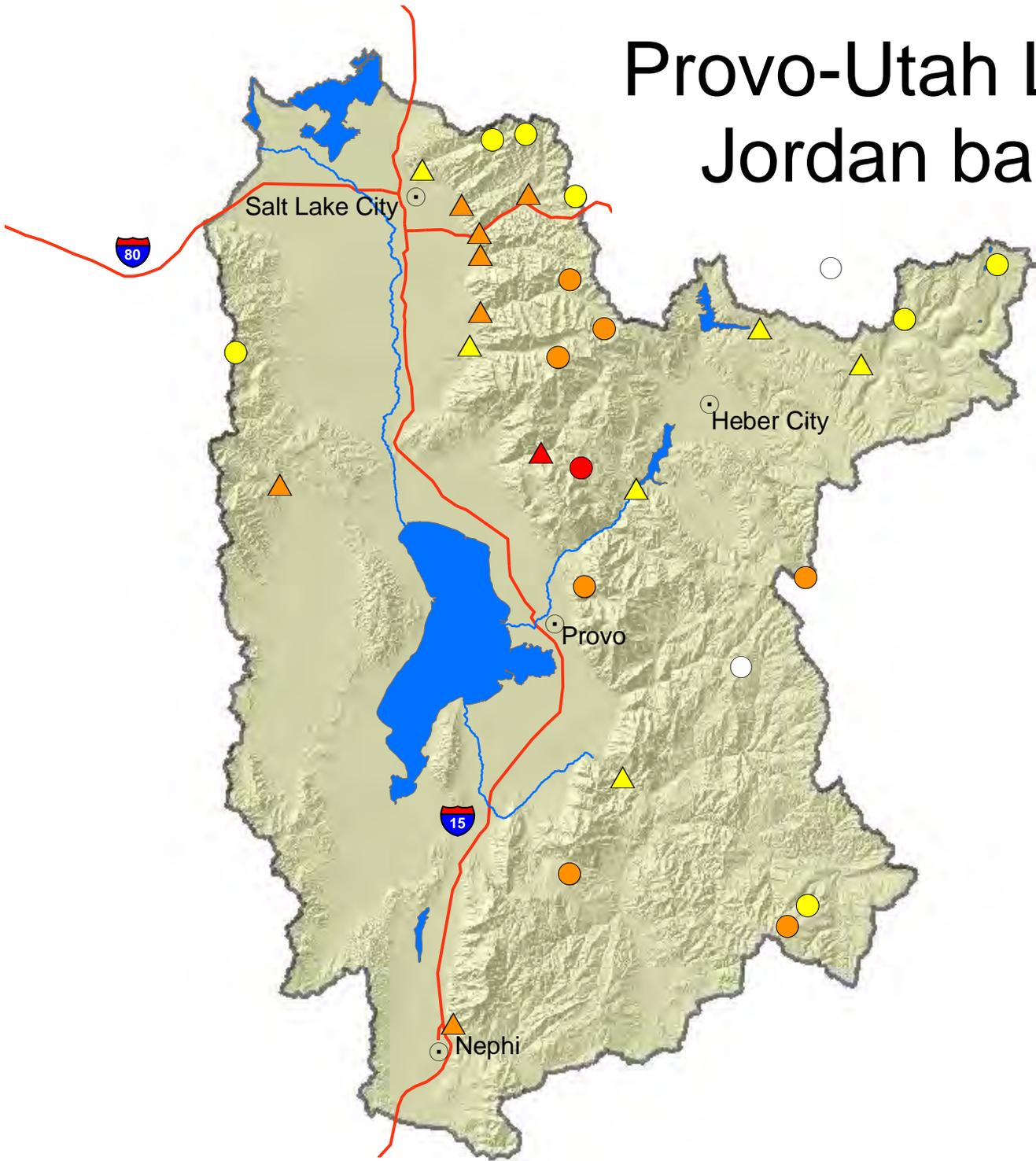
Basin or Region	January EOM* Deer Creek, Jordanelle	April - July Forecast Provo River below Deer Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF^</i>	<i>KAF</i>	<i>KAF</i>		%	
<b>Provo River</b>	<b>265</b>	<b>81</b>	<b>346</b>	<b>-3.70</b>	<b>6</b>	<b>04,03,02,92</b>

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

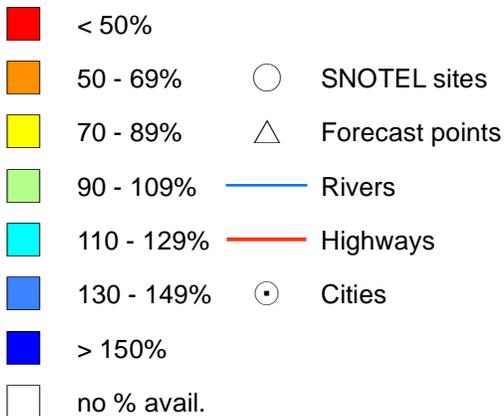
### Provo River - Surface Water Supply Index February



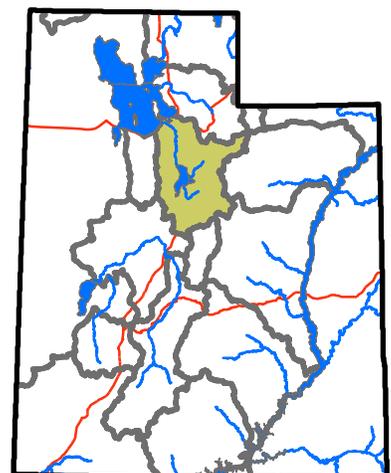
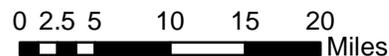
# Provo-Utah Lake-Jordan basin



## Percent normal



United States Department of Agriculture  
 Natural Resources Conservation Service

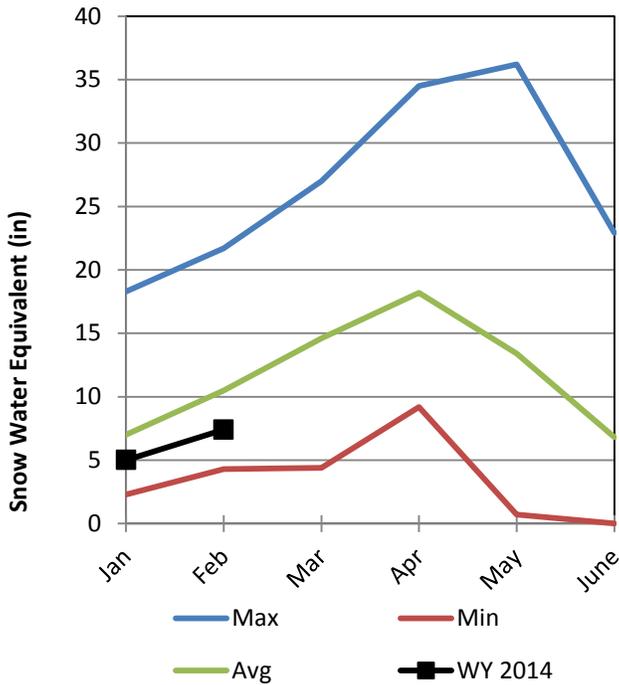


# Tooele & Vernon Creek Basins

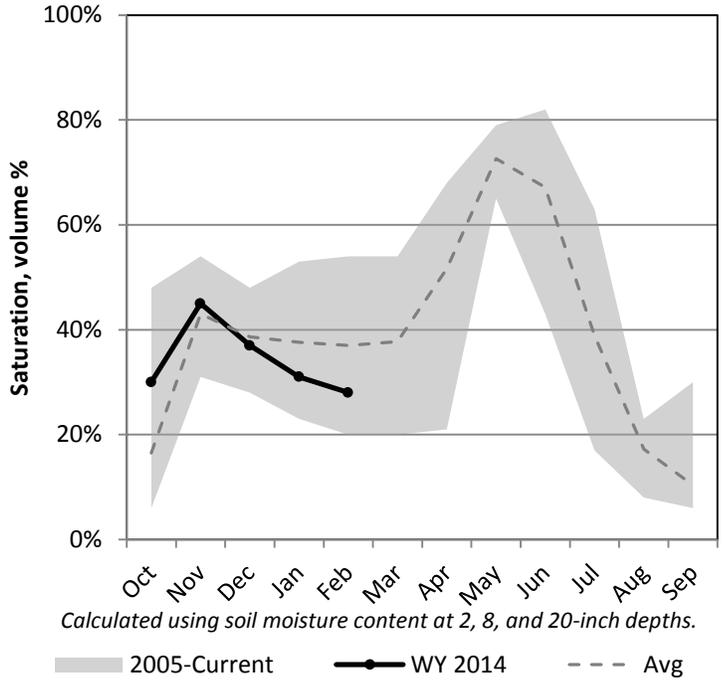
2/1/2014

Snowpack in the Tooele & Vernon Creek Basins is below average at 81% of normal, compared to 113% last year. Precipitation in January was much below average at 59%, which brings the seasonal accumulation (Oct-Jan) to 74% of average. Soil moisture is at 28% compared to 37% last year. Reservoir storage is at 48% of capacity, compared to 27% last year. Forecast streamflow volumes range from 50% to 68% of average.

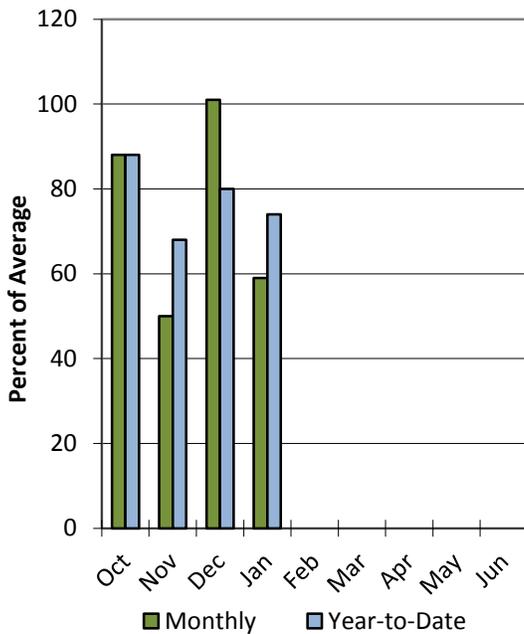
## Snowpack



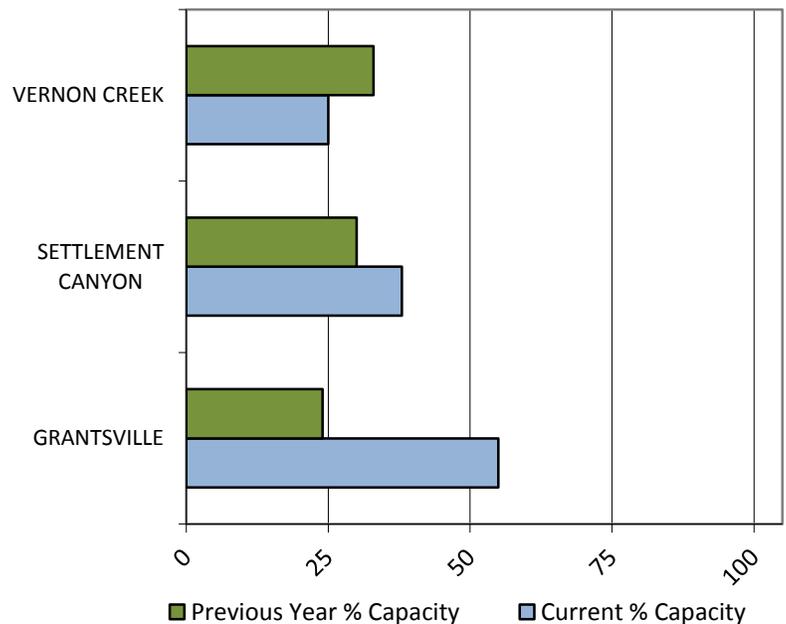
## Soil Moisture



## Precipitation



## Reservoir Storage



## Tooele Valley Vernon Creek Streamflow Forecasts - February 1, 2014

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

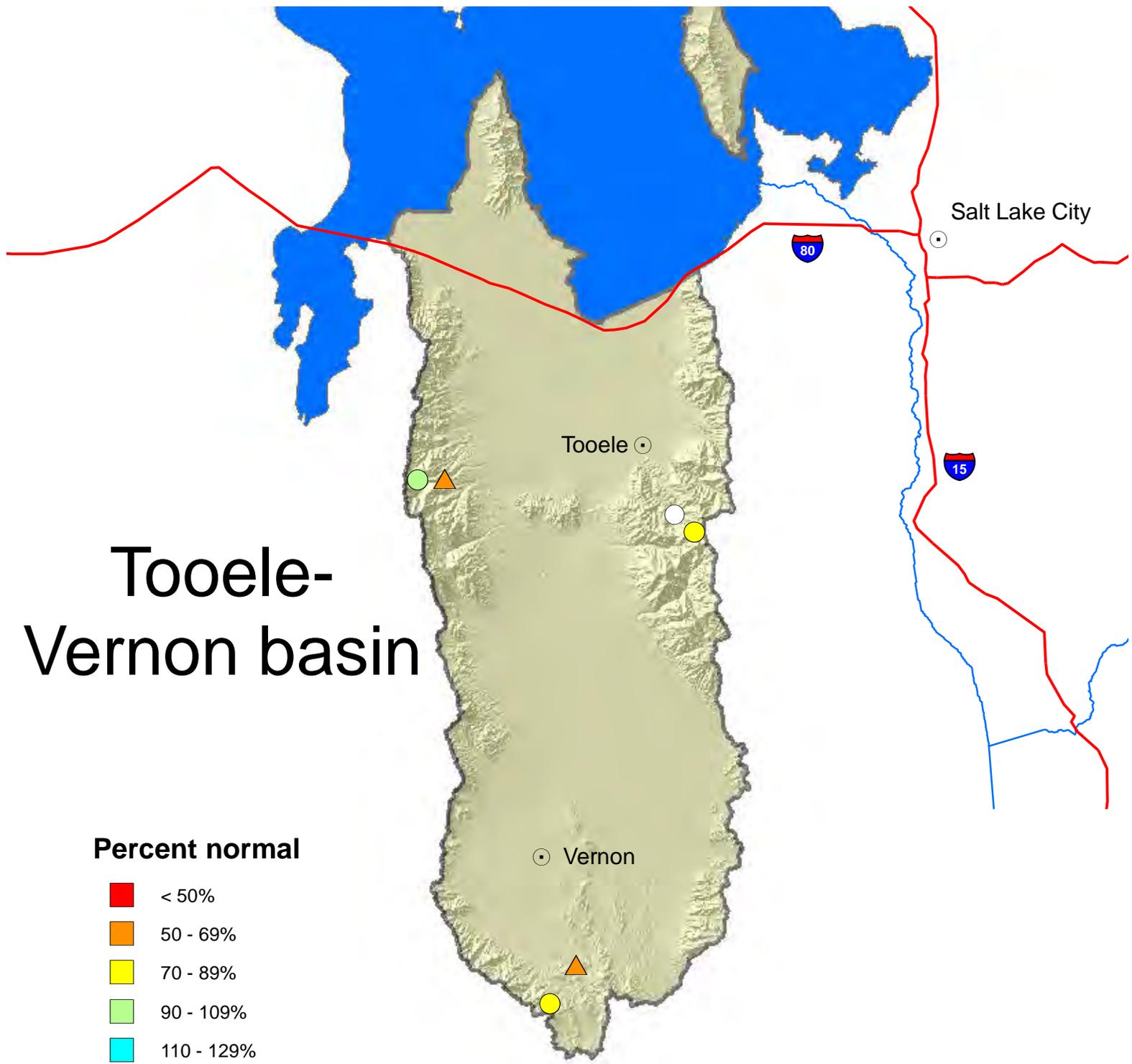
Tooele Valley Vernon Creek	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Vernon Ck nr Vernon	APR-JUL	0.028	0.31	0.7	50%	1.23	2.1	1.39
S Willow Ck nr Grantsville	APR-JUL	0.12	1.21	1.8	58%	2.7	3.8	3.1

- 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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
VERNON CREEK RESERVOIR	0.2	0.2	0.5	0.6
SETTLEMENT CANYON RESERVOIR	0.4	0.3	0.7	1.0
GRANTSVILLE RESERVOIR	1.8	0.8	1.8	3.3
Basin-wide Total	2.3	1.3	2.9	4.9
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Tooele	3	81%	113%
NW Utah	2	85%	120%

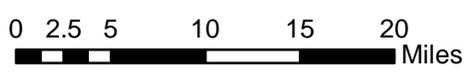
# Tooele- Vernon basin



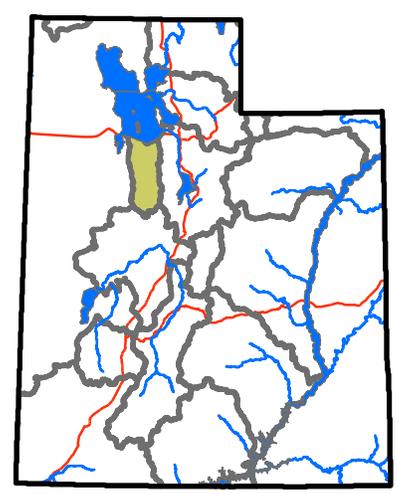
## Percent normal

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

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



United States Department of Agriculture  
 Natural Resources Conservation Service

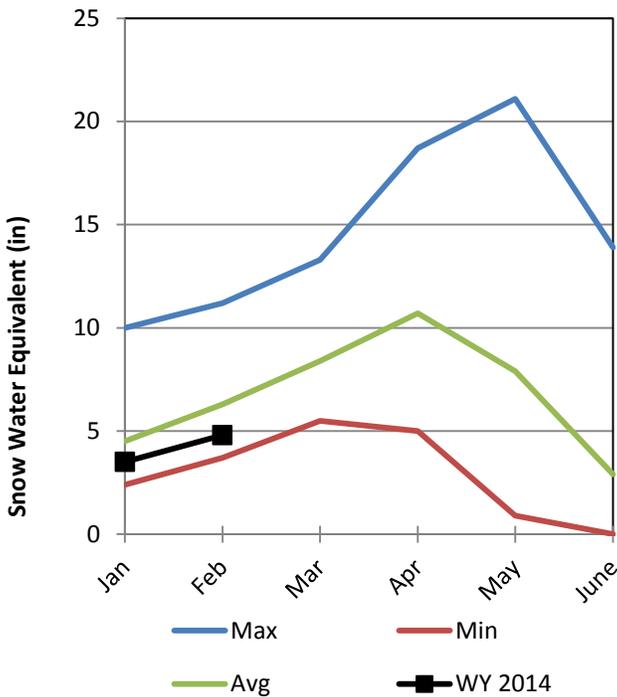


# Northeastern Uintah Basin

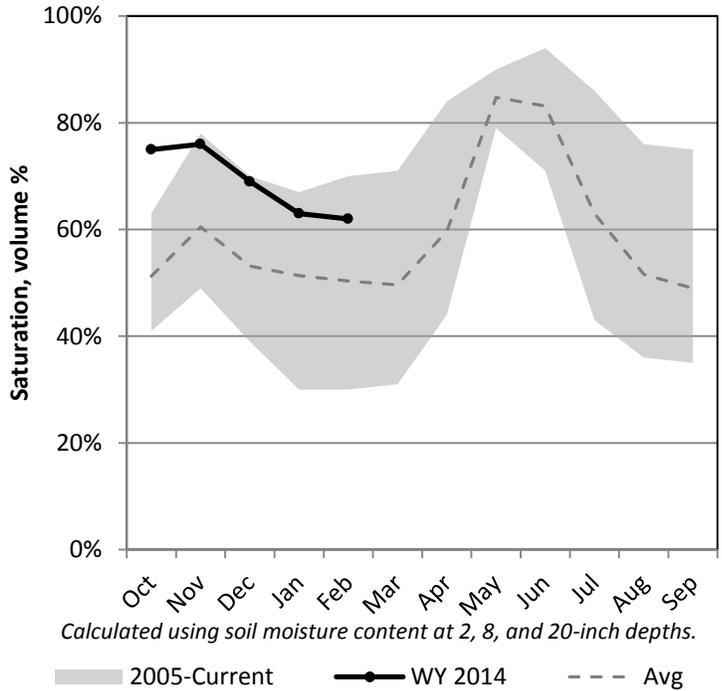
2/1/2014

Snowpack in the Northeastern Uintah Basin is below average at 87% of normal, compared to 93% last year. Precipitation in January was below average at 89%, which brings the seasonal accumulation (Oct-Jan) to 94% of average. Soil moisture is at 62% compared to 42% last year. Reservoir storage is at 76% of capacity, compared to 79% last year. Forecast streamflow volumes range from 80% to 89% of average. The surface water supply index is 39% for the Blacks Fork, 87% for the Smiths Creek.

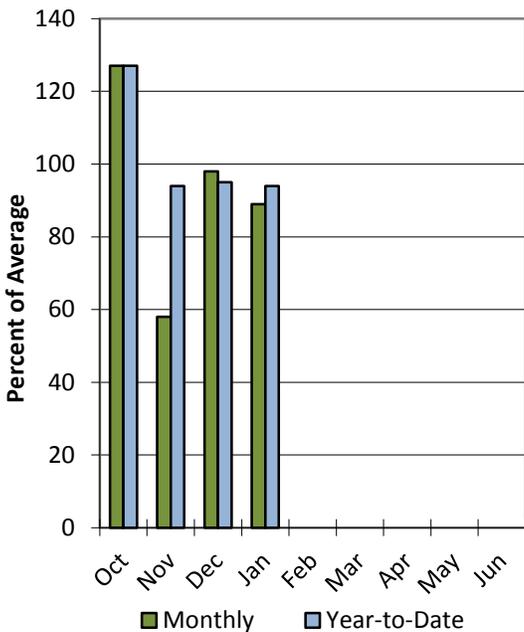
## Snowpack



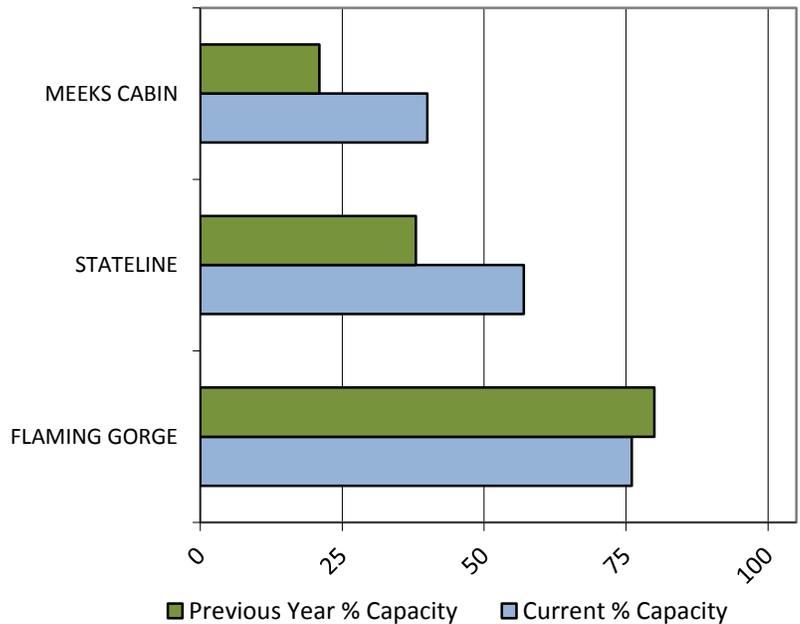
## Soil Moisture



## Precipitation



## Reservoir Storage



## Northeastern Uintahs Streamflow Forecasts - February 1, 2014

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

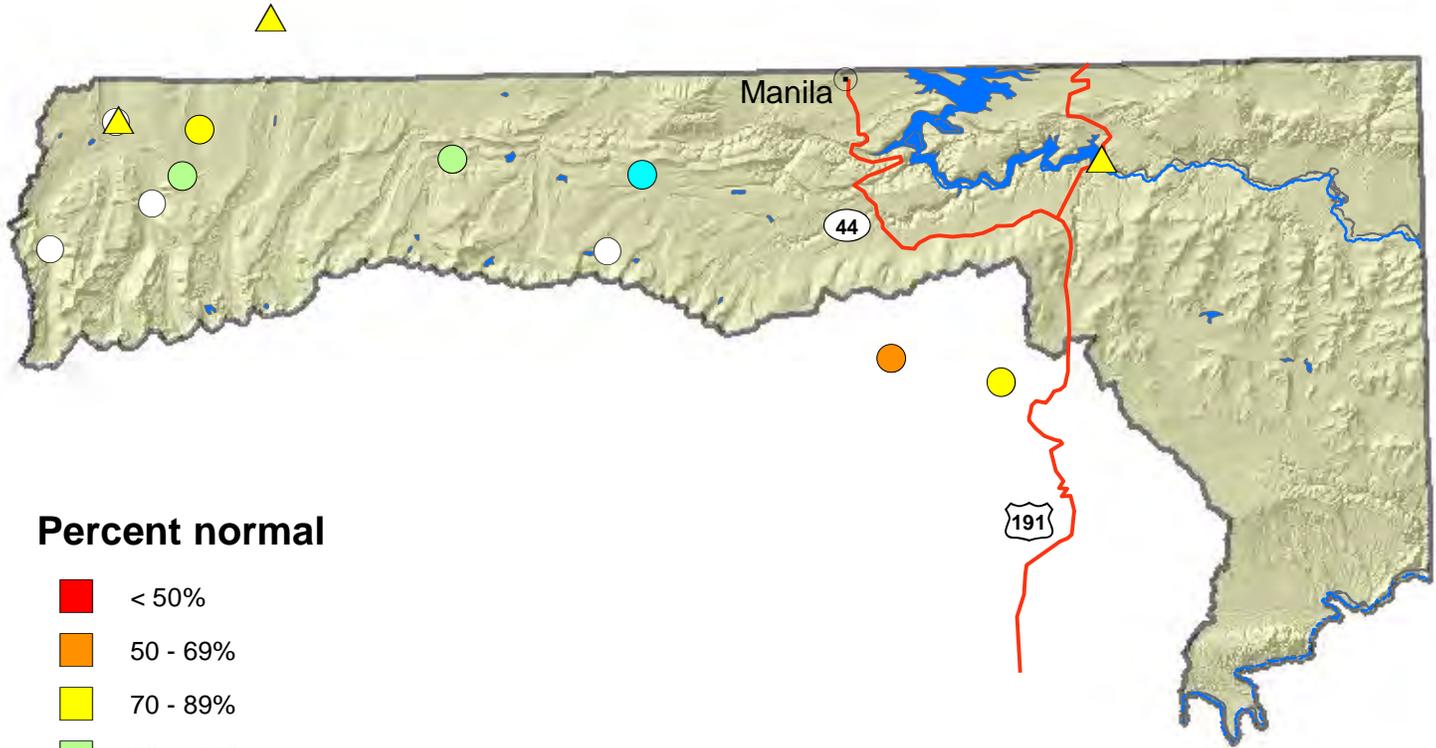
Northeastern Uintahs	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Blacks Fk nr Robertson	APR-JUL	46	62	74	83%	87	109	89
EF of Smiths Fork nr Robertson <sup>2</sup>	APR-JUL	14.8	20	24	89%	28	35	27
Flaming Gorge Reservoir Inflow <sup>2</sup>	APR-JUL	370	595	780	80%	990	1340	980
Uinta R bl Powerplant Diversion nr Neola	APR-JUL	24	41	55	74%	71	98	74
Whiterocks R nr Whiterocks	APR-JUL	22	33	42	78%	52	69	54
Ashley Ck nr Vernal	APR-JUL	21	30	38	76%	47	61	50
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	9.3	13.1	16	76%	19.2	24	21
Lake Fork R ab Moon Lake Reservoir	APR-JUL	28	39	48	79%	58	74	61

- 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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
FLAMING GORGE RESERVOIR	2849.3	2982.8	3049.0	3749.0
STATELINE RESERVOIR	6.8	4.6	5.4	12.0
MEEKS CABIN RESERVOIR	13.1	6.7	11.9	32.5
Basin-wide Total	2869.1	2994.1	3066.3	3793.5
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Blacks Fk	3	86%	86%
Upper Green	2	115%	114%
Lower Green	2	76%	98%
Ashley Brush	4	80%	108%

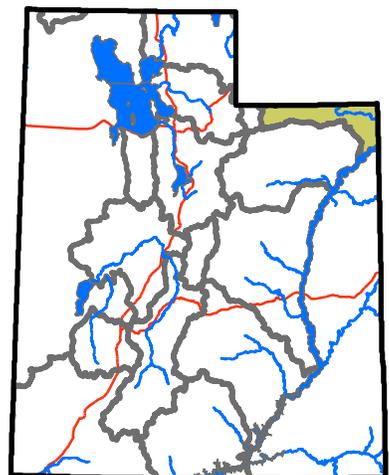
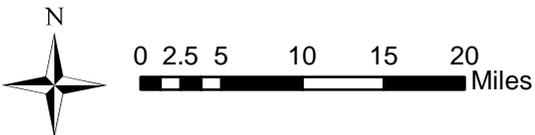
# Northeastern Utah



## Percent normal

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

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



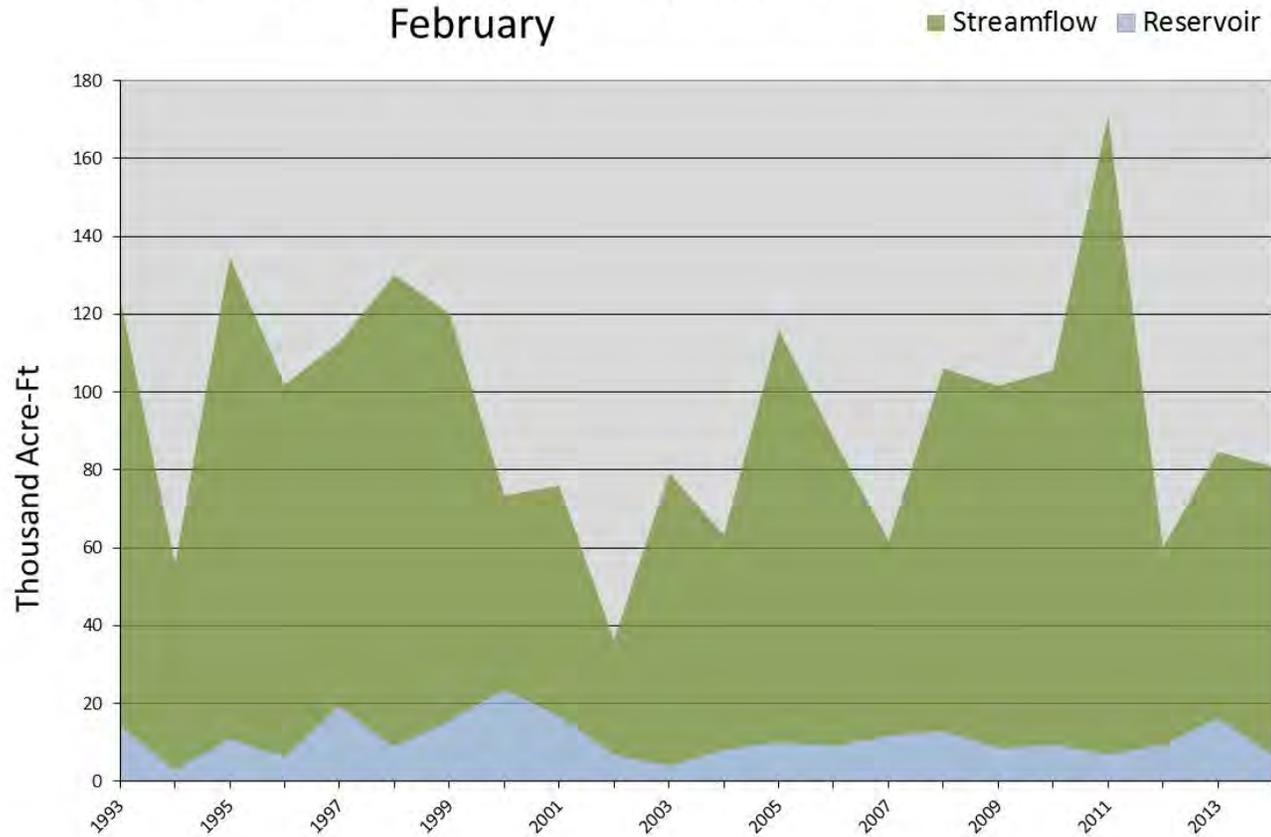
February 1, 2014

## Blacks Fork Surface Water Supply Index

Basin or Region	January EOM* Meeks Cabin Reservoir	April-July forecast Blacks Fork nr Robertson	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Blacks Fork</b>	<b>6.9</b>	<b>74.0</b>	<b>80.9</b>	<b>-0.91</b>	<b>39</b>	<b>01, 03, 13, 06</b>

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

### Blacks Fork Surface Water Supply Index February

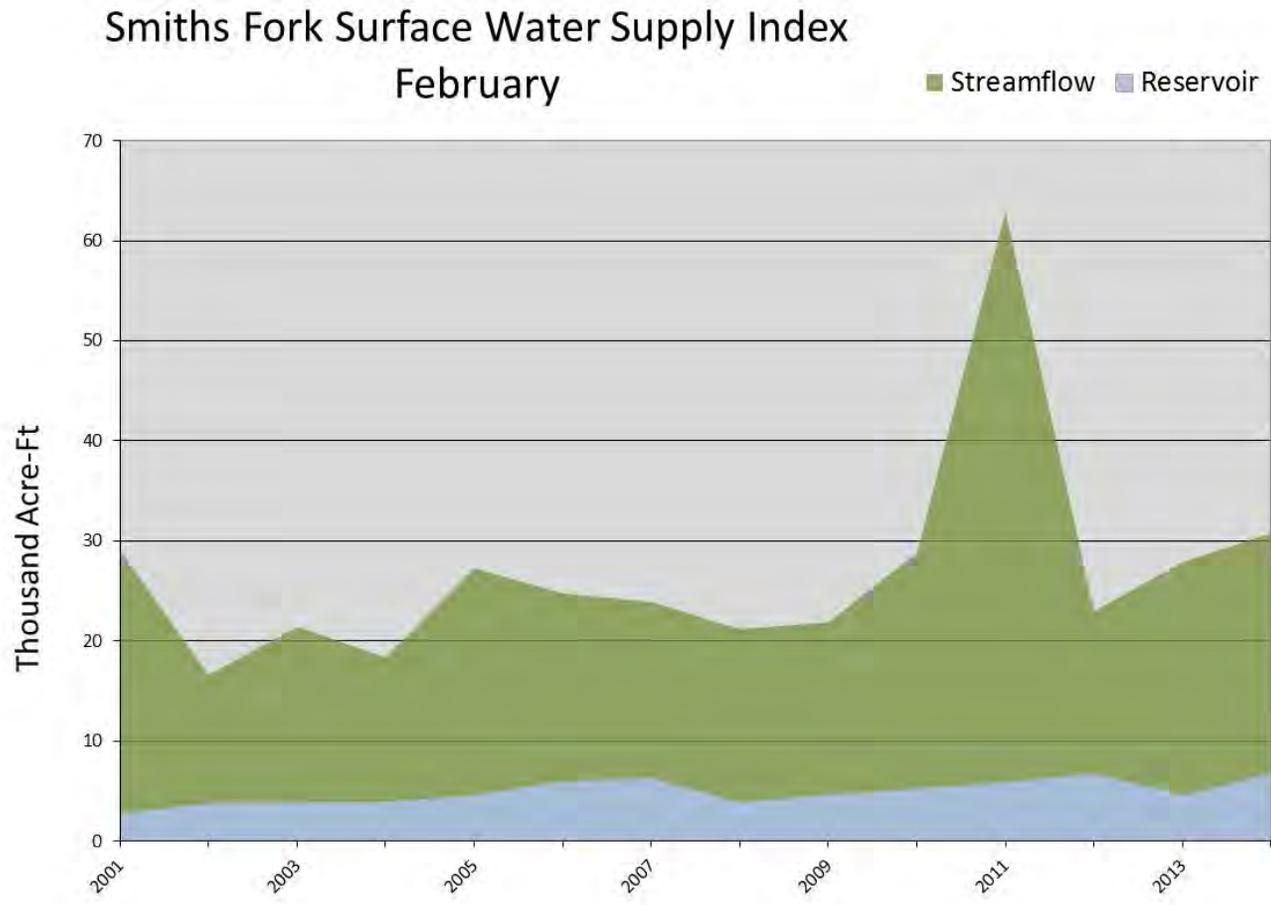


February 1, 2014

## Smiths Fork Surface Water Supply Index

Basin or Region	January EOM* Stateline Reservoir	April-July forecast EF Smiths Fork nr Robertson	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Smiths Fork</b>	<b>6.8</b>	<b>24.0</b>	<b>30.8</b>	<b>3.06</b>	<b>87</b>	<b>10, 01, 11</b>

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

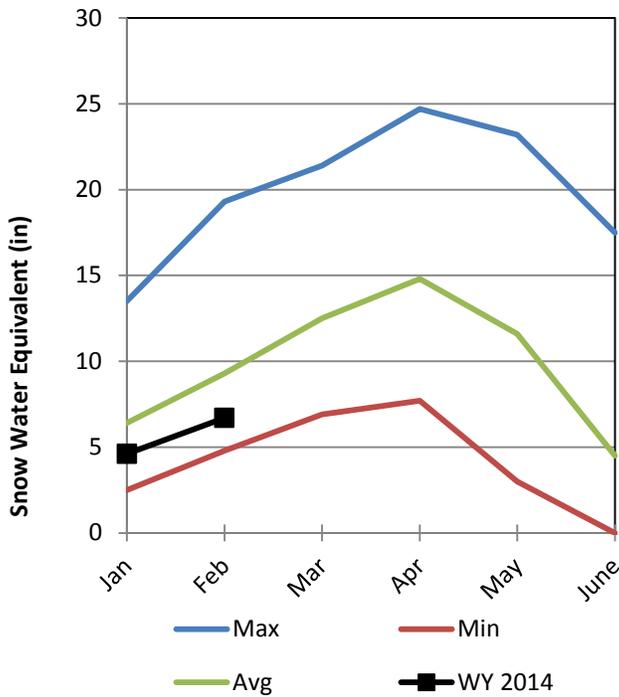


# Duchesne River Basin

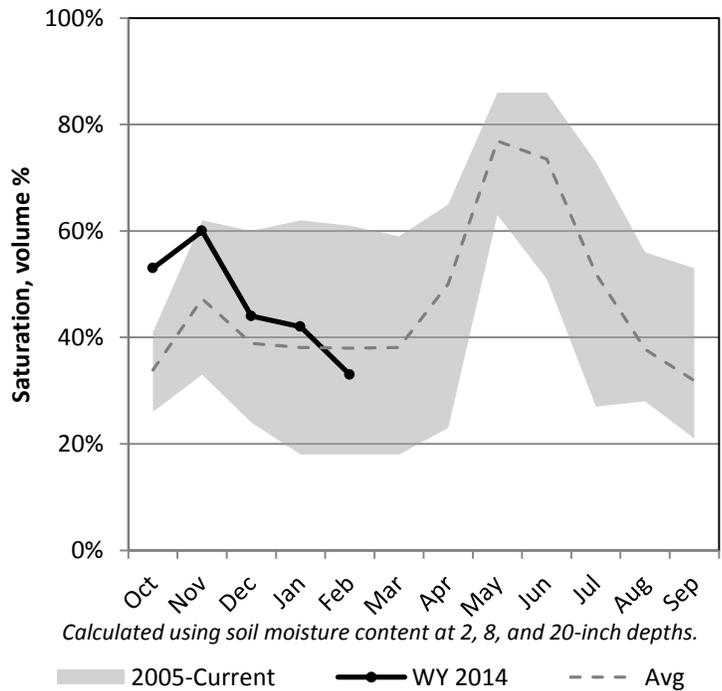
2/1/2014

Snowpack in the Duchesne River Basin is below average at 78% of normal, compared to 98% last year. Precipitation in January was much below average at 64%, which brings the seasonal accumulation (Oct-Jan) to 72% of average. Soil moisture is at 33% compared to 33% last year. Reservoir storage is at 74% of capacity, compared to 76% last year. Forecast streamflow volumes range from 36% to 79% of average. The surface water supply index is 49% for the Western Uintahs, 17% for the Eastern Uintahs.

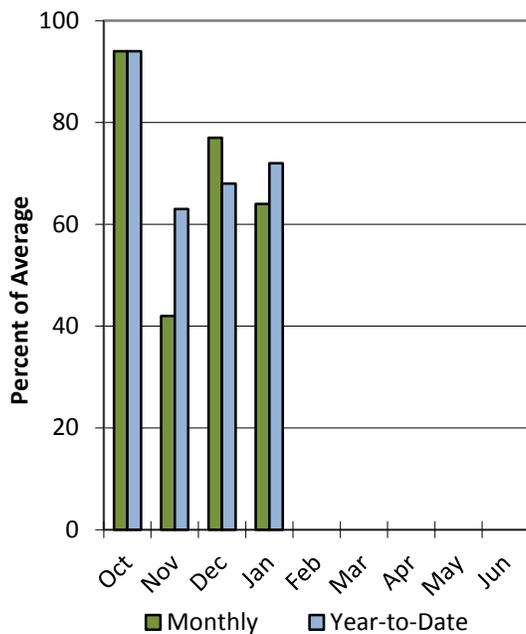
## Snowpack



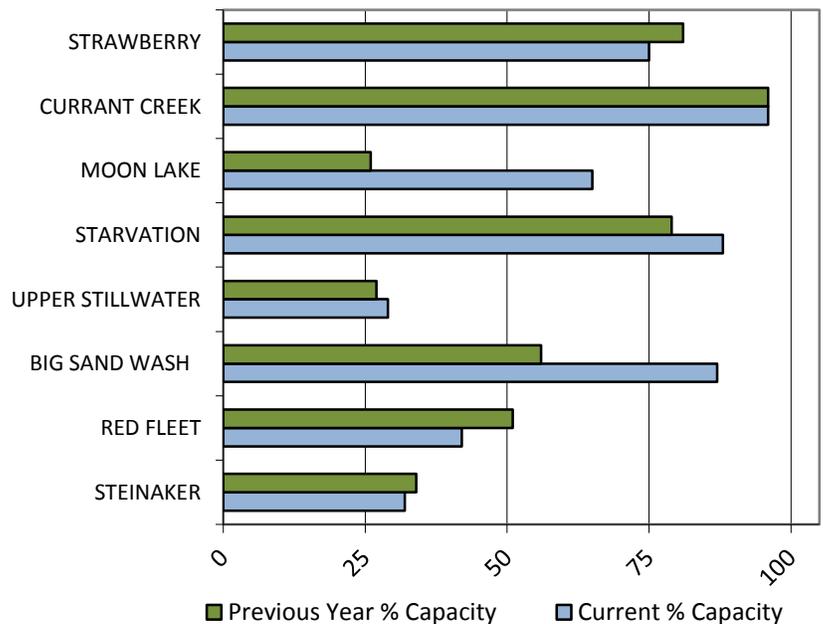
## Soil Moisture



## Precipitation



## Reservoir Storage



## Duchesne River Streamflow Forecasts - February 1, 2014

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

Duchesne River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Duchesne R nr Tabiona <sup>2</sup>	APR-JUL	47	65	78	72%	93	116	108
Strawberry R nr Duchesne <sup>2</sup>	APR-JUL	17.3	36	52	46%	71	105	112
Strawberry R nr Soldier Springs <sup>2</sup>	APR-JUL	3.1	11.4	20	36%	31	52	55
Duchesne R at Myton <sup>2</sup>	APR-JUL	92	151	200	61%	255	350	330
Duchesne R nr Randlett <sup>2</sup>	APR-JUL	72	153	225	58%	310	465	385
Duchesne R ab Knight Diversion <sup>2</sup>	APR-JUL	91	121	144	74%	169	210	195
WF Duchesne R at VAT Diversion	APR-JUL	7.7	10.7	13	70%	15.5	19.6	18.6
Rock Ck nr Mountain Home <sup>2</sup>	APR-JUL	46	59	69	78%	79	96	88
Yellowstone R nr Altonah	APR-JUL	28	39	47	77%	56	71	61
Upper Stillwater Reservoir Inflow	APR-JUL	38	49	58	78%	67	83	74
Lake Fk R BI Moon Lk nr Mountain Home <sup>2</sup>	APR-JUL	32	43	51	77%	60	74	66
Currant Ck Reservoir Inflow <sup>2</sup>	APR-JUL	5.4	9	12	60%	15.4	21	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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
STEINAKER RESERVOIR	10.6	11.5	21.7	33.4
RED FLEET RESERVOIR	10.7	13.2	17.9	25.7
BIG SAND WASH RESERVOIR	22.3	14.4	18.5	25.7
UPPER STILLWATER RESERVOIR	9.3	8.9	8.6	32.5
STARVATION RESERVOIR	146.1	130.7	138.8	165.3
MOON LAKE RESERVOIR	23.1	9.4	24.4	35.8
CURRANT CREEK RESERVOIR	14.8	14.9	14.9	15.5
STRAWBERRY RESERVOIR	830.3	896.5	658.4	1105.9
Basin-wide Total	1067.2	1099.4	903.2	1439.8
# of reservoirs	8	8	8	8

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Strawberry	5	68%	100%
Lakefork Yellowstone	6	80%	90%
Uintah Whiterocks	2	89%	123%

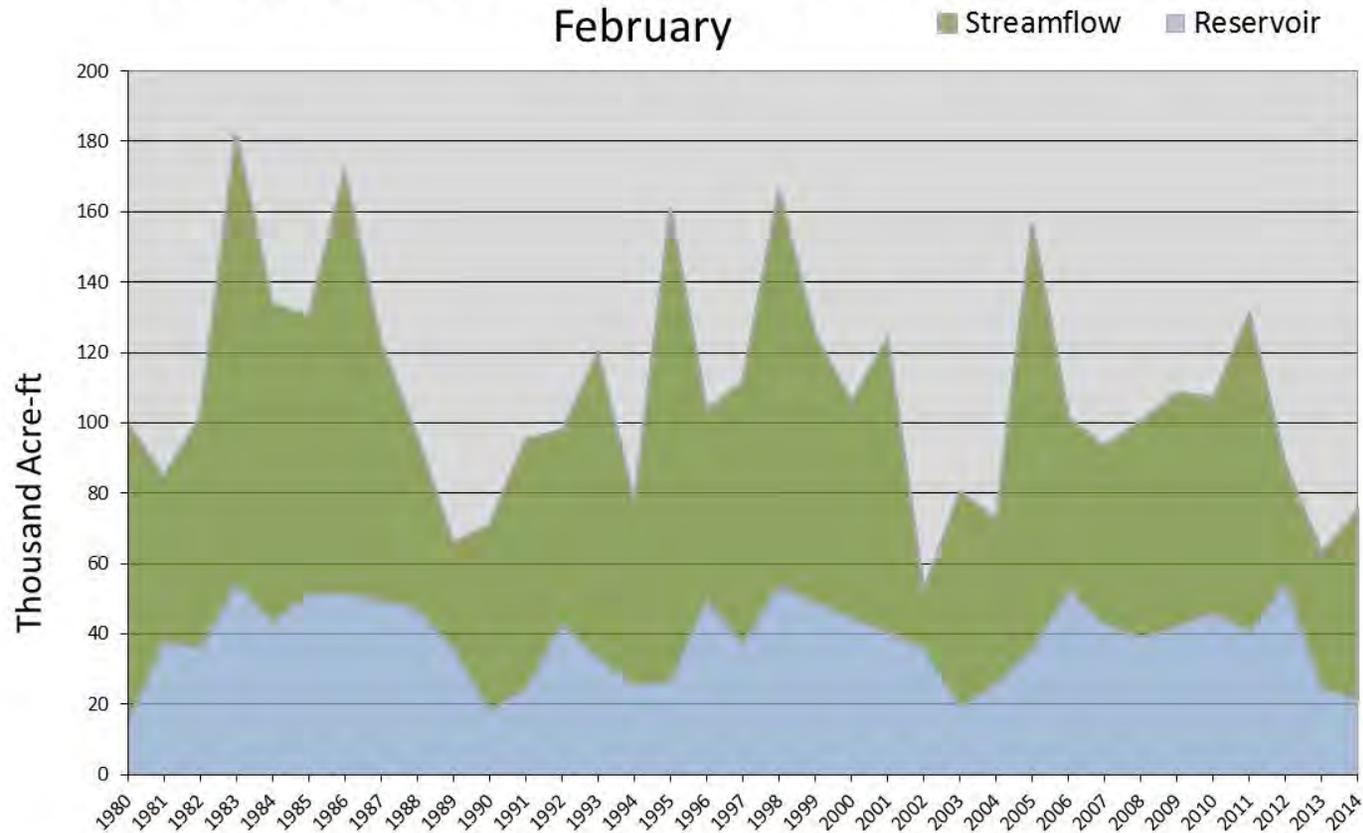
February 1, 2014

## Surface Water Supply Index

Basin or Region	January EOM* Red Fleet & Steinaker	April-July Forecast Big Brush & Ashley Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Eastern Uintah</b>	<b>21.3</b>	<b>54.0</b>	<b>75.3</b>	<b>-2.74</b>	<b>17</b>	<b>94, 04, 94, 03</b>

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

Eastern Uintah Basin - Surface Water Supply Index  
February



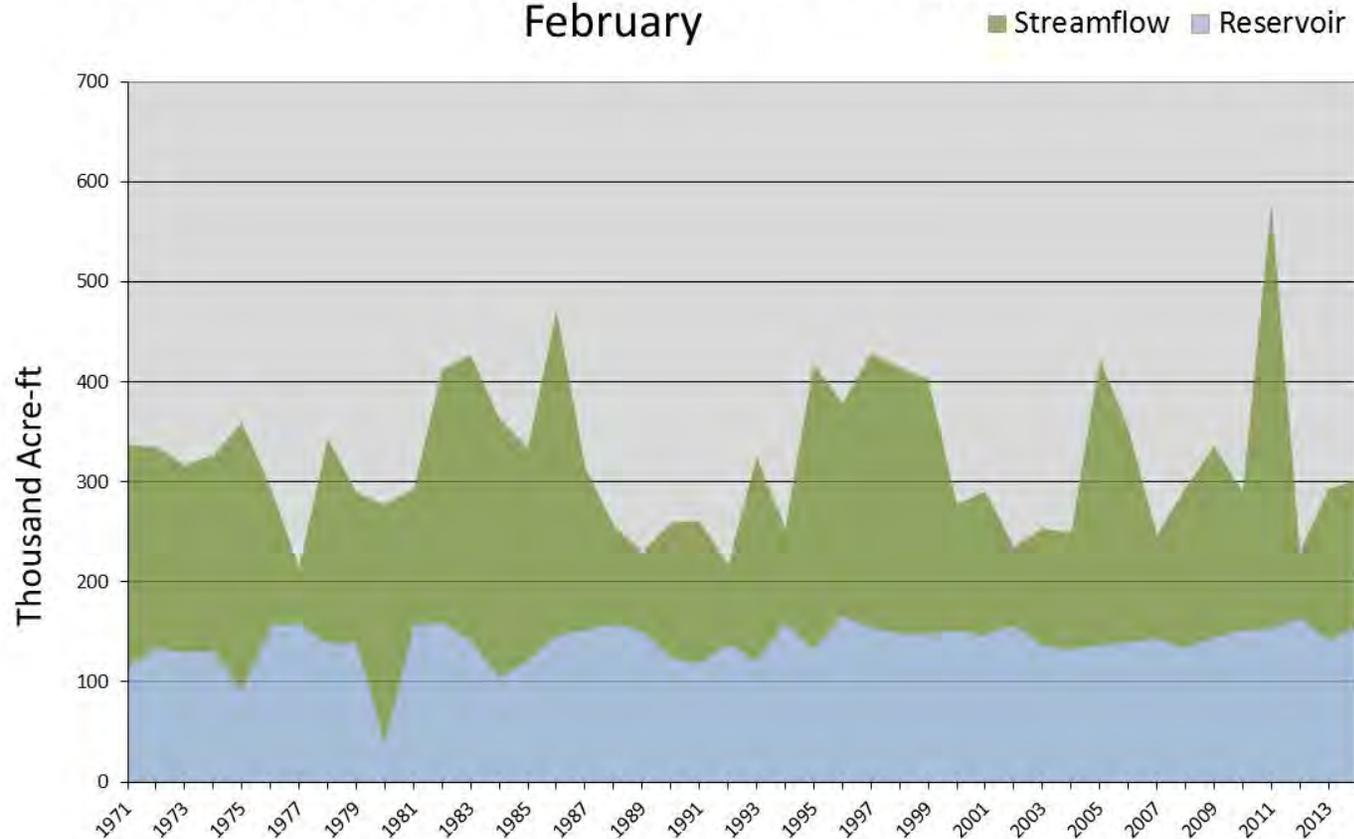
February 1, 2014

## Surface Water Supply Index

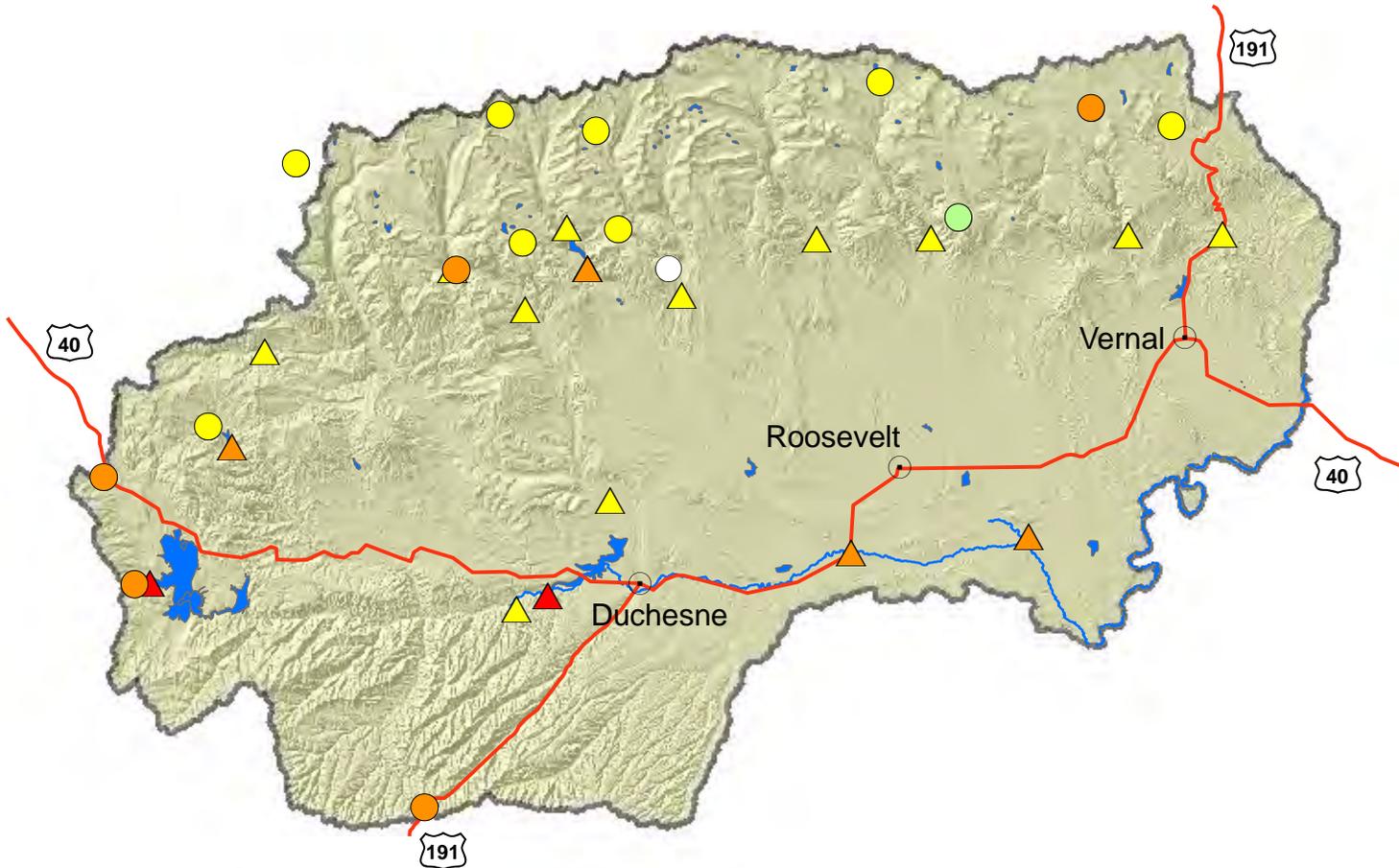
Basin or Region	January EOM* Starvation & Upper Stillwater	April-July Forecast Rock Creek & Duchesne River	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Western Uintah</b>	<b>155</b>	<b>147</b>	<b>302</b>	<b>-0.09</b>	<b>49</b>	<b>76, 08, 87, 73</b>

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

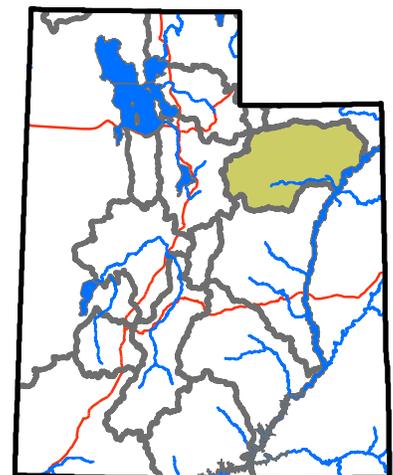
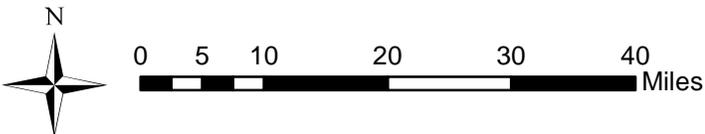
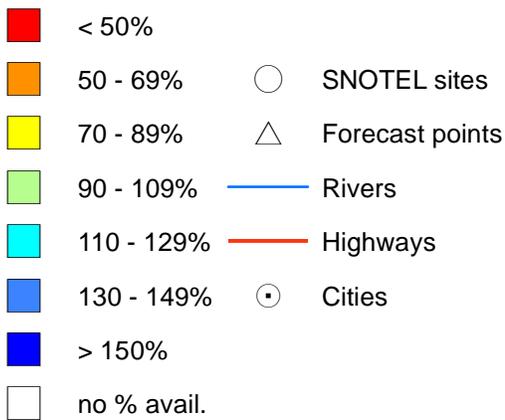
### Western Uintah Basin - Surface Water Supply Index February



# Duchesne basin



## Percent normal

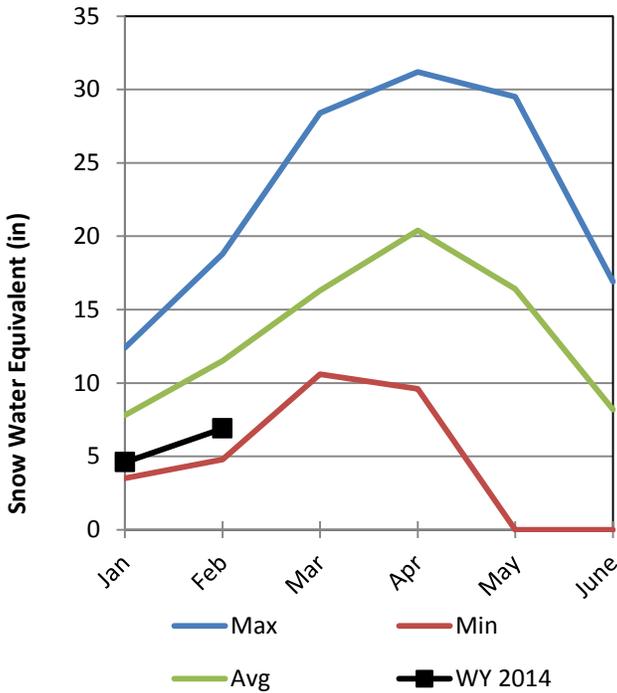


# Lower Sevier River Basin

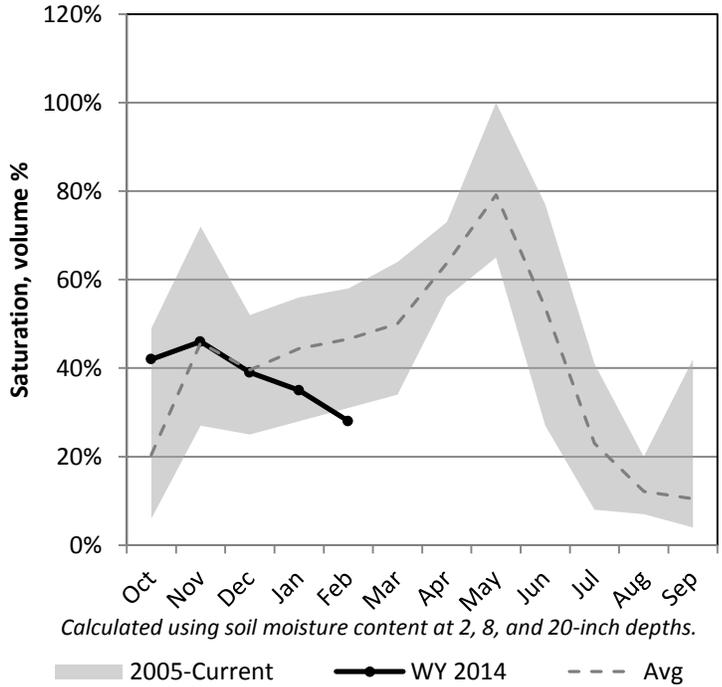
2/1/2014

Snowpack in the Lower Sevier River Basin is much below average at 59% of normal, compared to 100% last year. Precipitation in January was below average at 71%, which brings the seasonal accumulation (Oct-Jan) to 82% of average. Soil moisture is at 28% compared to 32% last year. Reservoir storage is at 49% of capacity, compared to 61% last year. Forecast streamflow volumes range from 28% to 73% of average. The surface water supply index is 46% for the Lower Sevier.

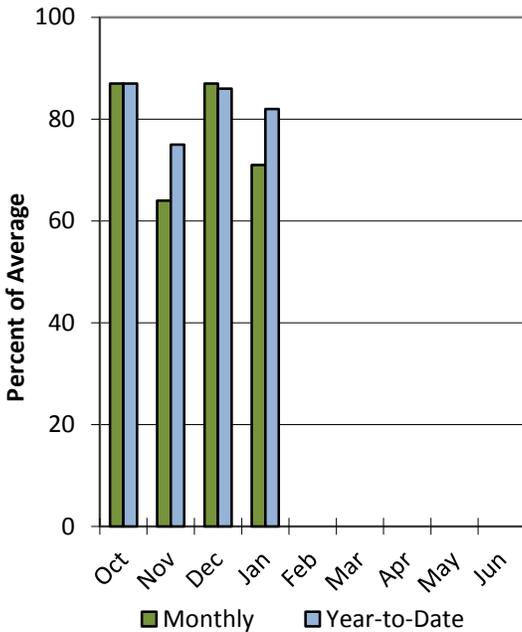
## Snowpack



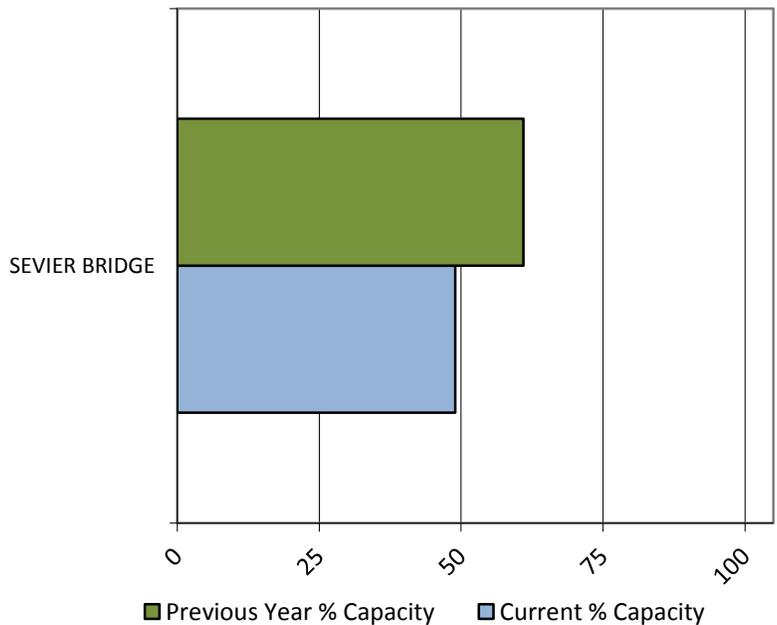
## Soil Moisture



## Precipitation



## Reservoir Storage



## Lower Sevier River Streamflow Forecasts - February 1, 2014

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	0.35	0.9	1.5	28%	2.3	4	5.4
Oak Ck nr Oak City	APR-JUL	0.24	0.49	0.7	43%	0.95	1.4	1.62

- 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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
SEVIER BRIDGE RESERVOIR	116.1	144.2	155.7	236.0
Basin-wide Total	116.1	144.2	155.7	236.0
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Lower Sevier	1	59%	100%

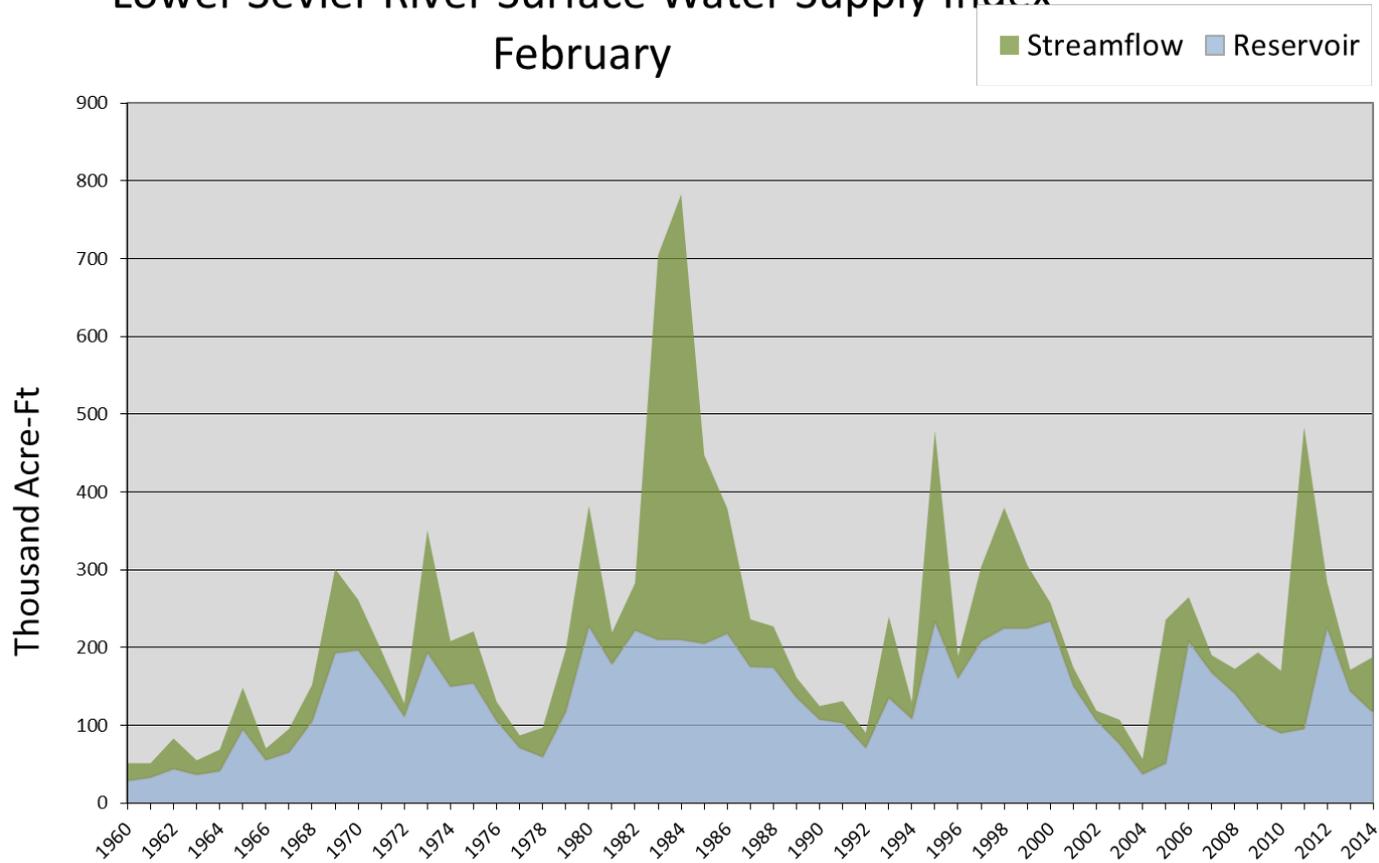
February 1, 2014

## Surface Water Supply Index

Basin or Region	January EOM* Sevier Bridge Reservoir	April-July Forecast Inflow to Sevier Bridge Reservoir	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Lower Sevier</b>	<b>116.1</b>	<b>72</b>	<b>188</b>	<b>-0.30</b>	<b>46</b>	<b>08,01,96,07</b>

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

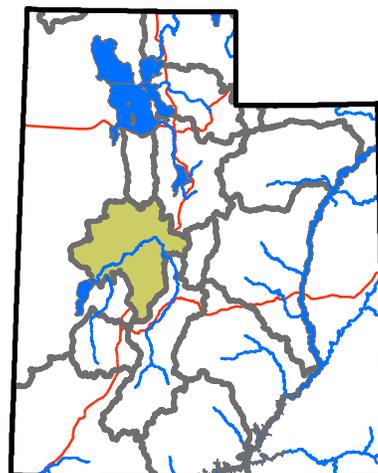
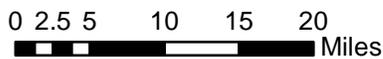
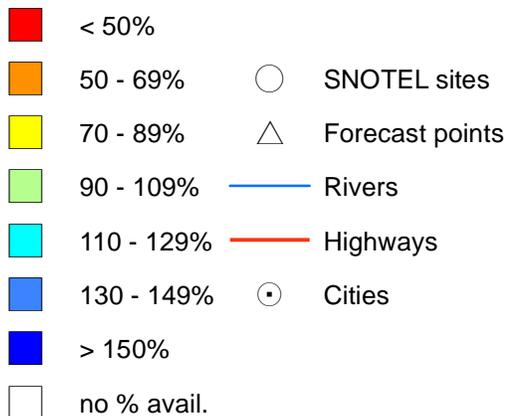
### Lower Sevier River Surface Water Supply Index February



# Lower Sevier basin



## Percent normal

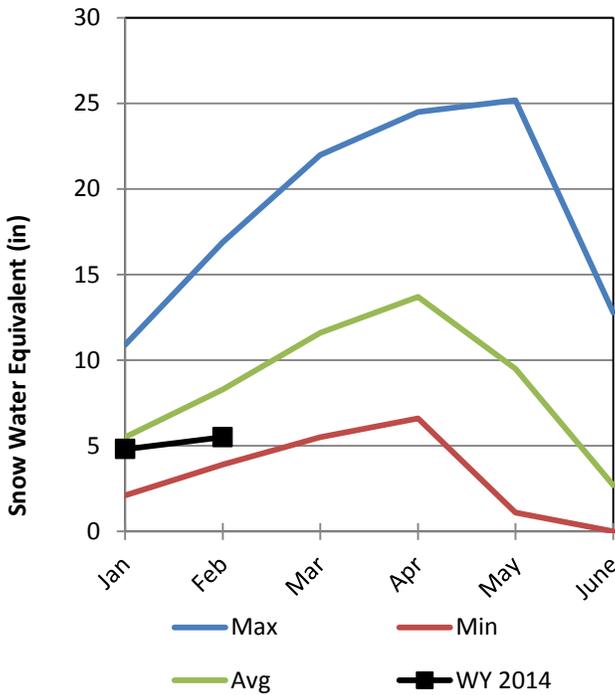


# Upper Sevier River Basin

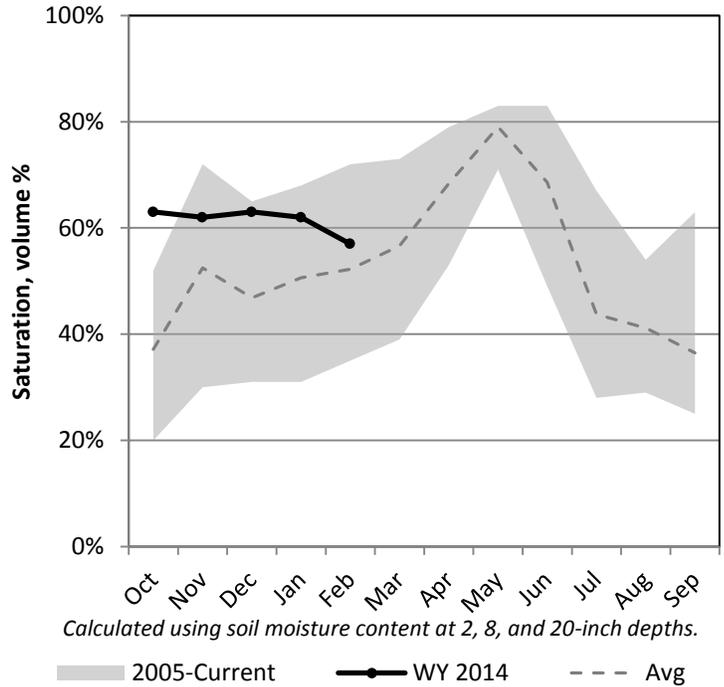
2/1/2014

Snowpack in the Upper Sevier River Basin is below average at 74% of normal, compared to 104% last year. Precipitation in January was much below average at 37%, which brings the seasonal accumulation (Oct-Jan) to 74% of average. Soil moisture is at 57% compared to 45% last year. Reservoir storage is at 69% of capacity, compared to 54% last year. Forecast streamflow volumes range from 38% to 104% of average. The surface water supply index is 36% for the Upper Sevier.

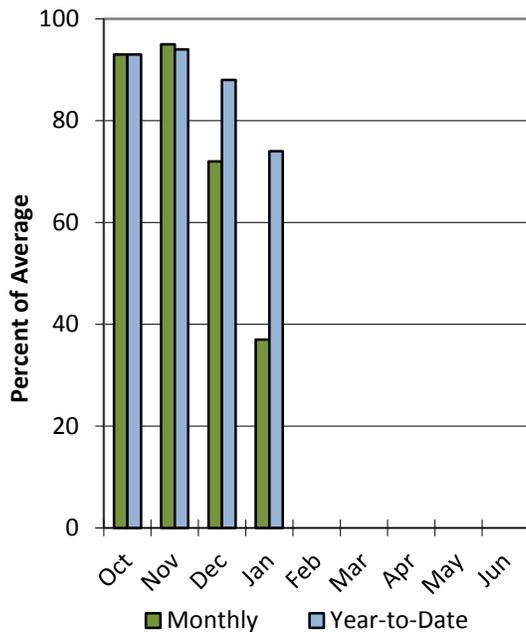
## Snowpack



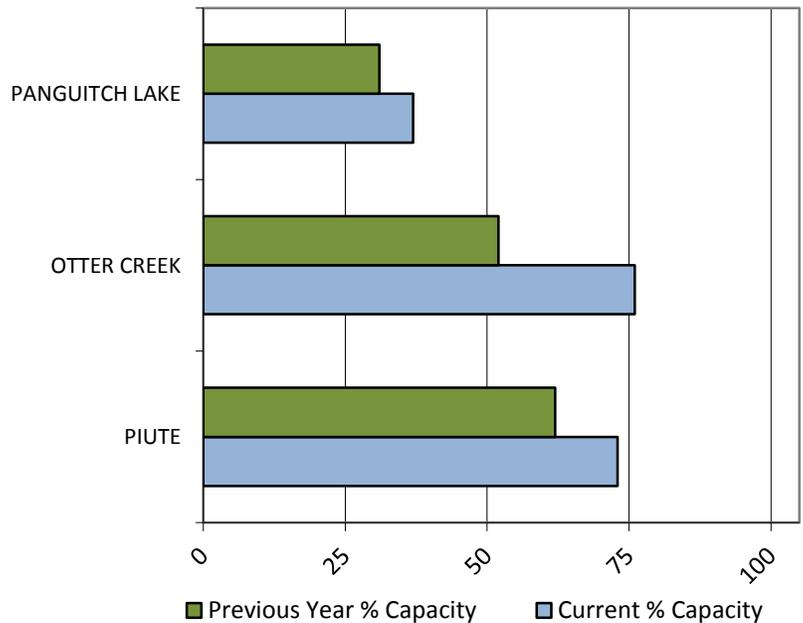
## Soil Moisture



## Precipitation



## Reservoir Storage



## Upper Sevier River Streamflow Forecasts - February 1, 2014

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	9.4	24	34	71%	44	58	48
EF Sevier R nr Kingston	APR-JUL	5.6	18.9	24	104%	37	50	23
Sevier R nr Kingston	APR-JUL	0.66	8.7	23	70%	37	58	33
Sevier R bl Piute Dam	APR-JUL	-9.1	23	45	83%	67	99	54
Clear Ck ab Diversions nr Sevier	APR-JUL	0.82	8	13	62%	17.8	25	21
Salina Ck nr Emery	APR-JUL	0.24	0.45	3	38%	5.5	9.2	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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
PIUTE RESERVOIR	52.7	44.5	49.2	71.8
OTTER CREEK RESERVOIR	39.7	27.4	35.0	52.5
PANGUITCH LAKE	8.2	6.8	12.7	22.3
Basin-wide Total	100.6	78.7	96.9	146.6
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Upper Sevier	13	74%	104%
Middle Sevier	8	67%	99%
E Fk Sevier	4	86%	108%

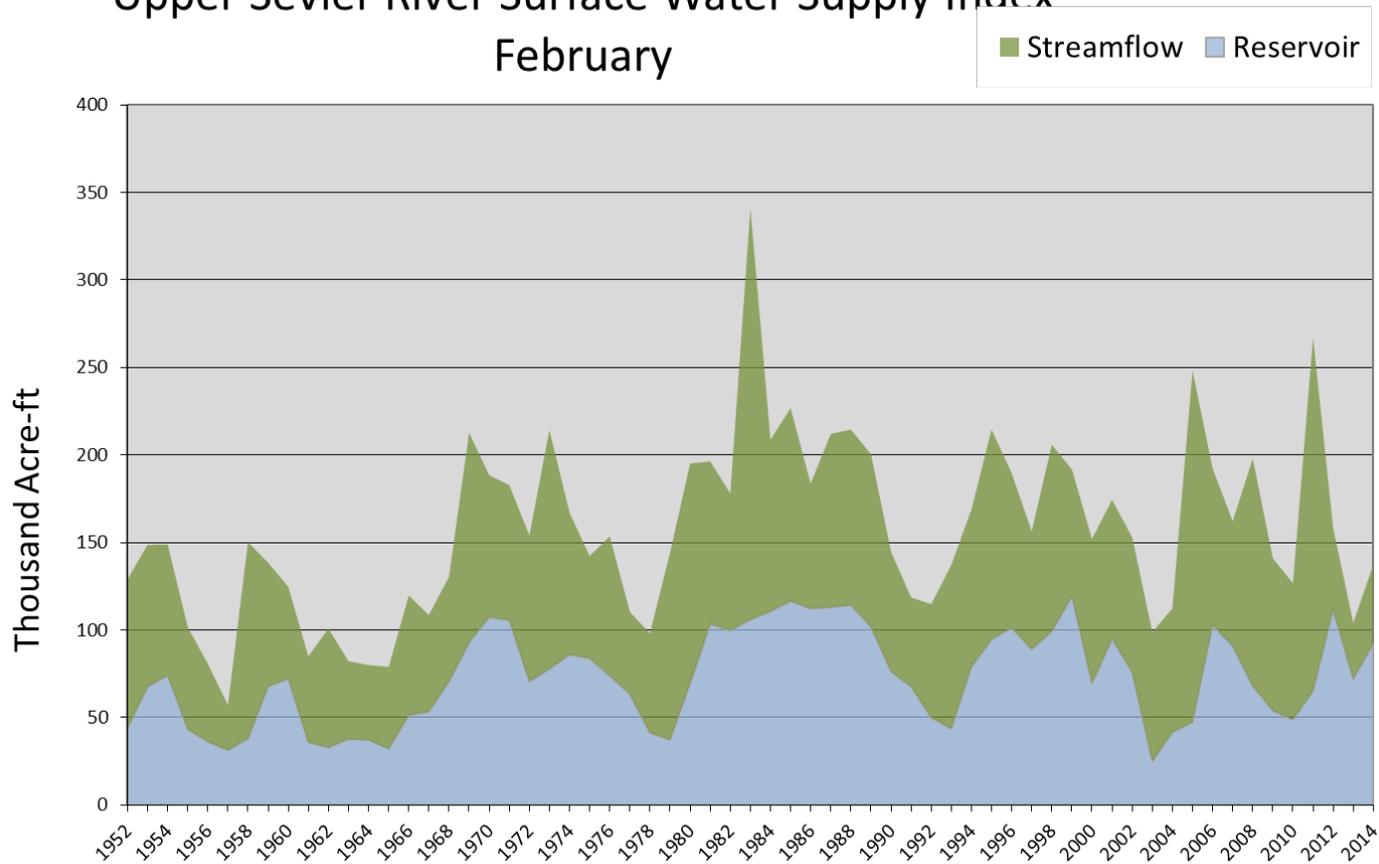
February 1, 2014

## Surface Water Supply Index

Basin or Region	January EOM* Piute & Otter Creek Reservoir	April-July Forecast Inflow to Piute Reservoir	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Upper Sevier</b>	<b>92.3</b>	<b>45</b>	<b>137</b>	<b>-1.17</b>	<b>36</b>	<b>68,93,59,09</b>

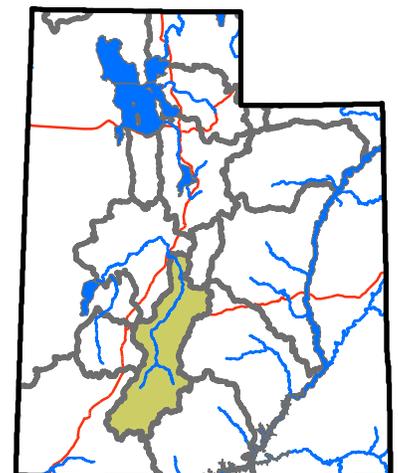
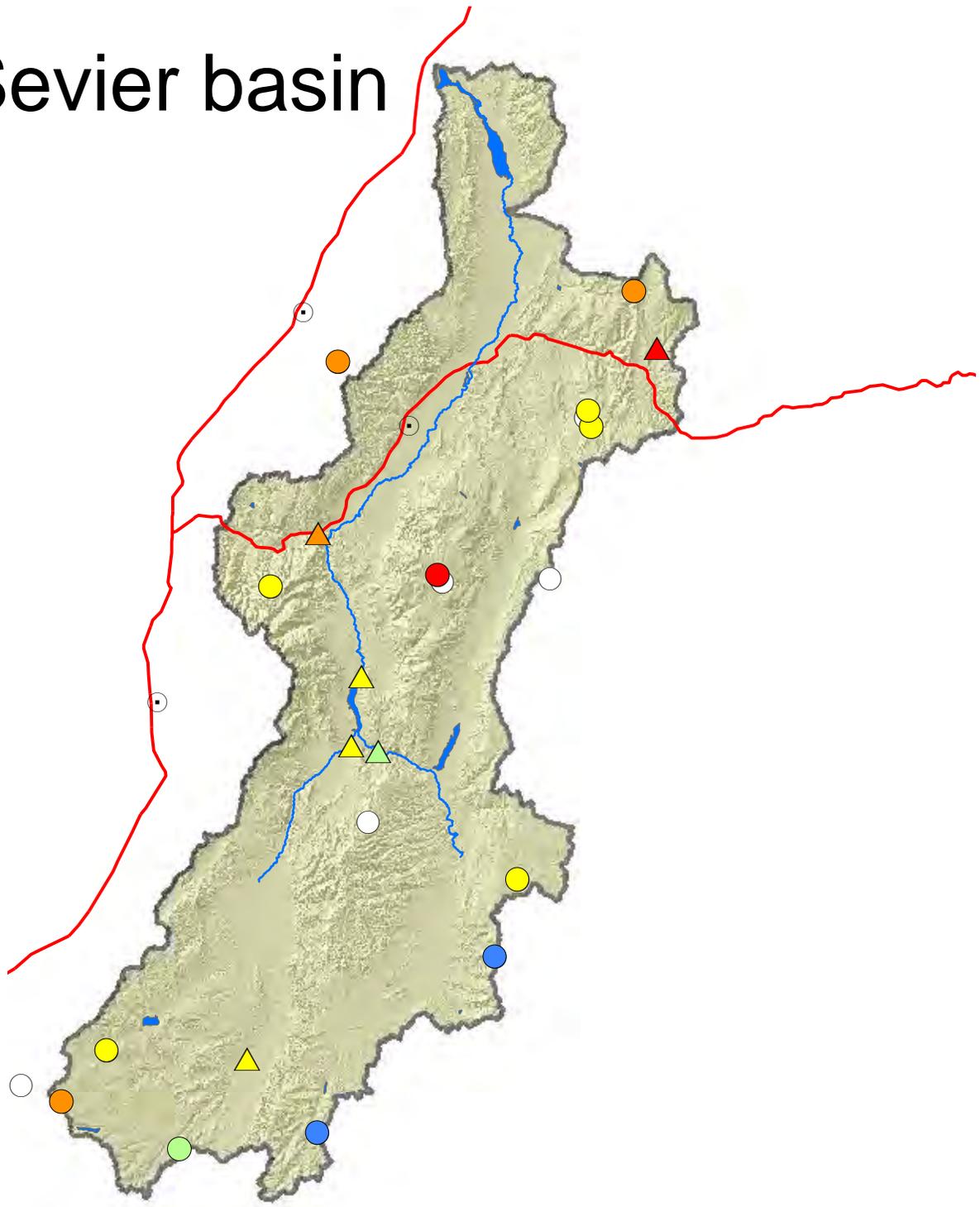
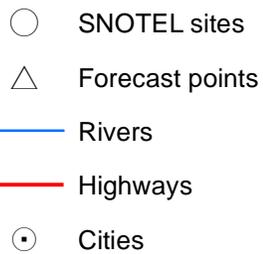
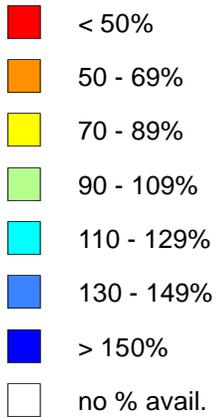
\*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

### Upper Sevier River Surface Water Supply Index February



# Upper Sevier basin

## Percent normal

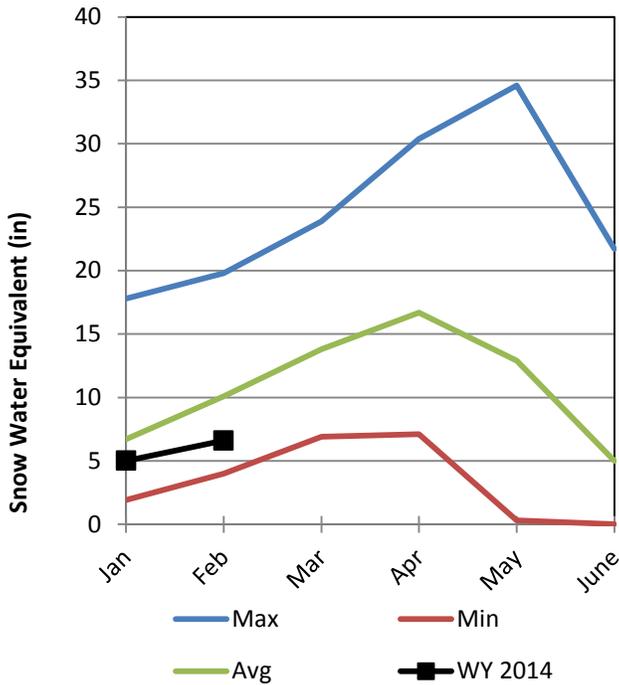


# San Pitch River Basin

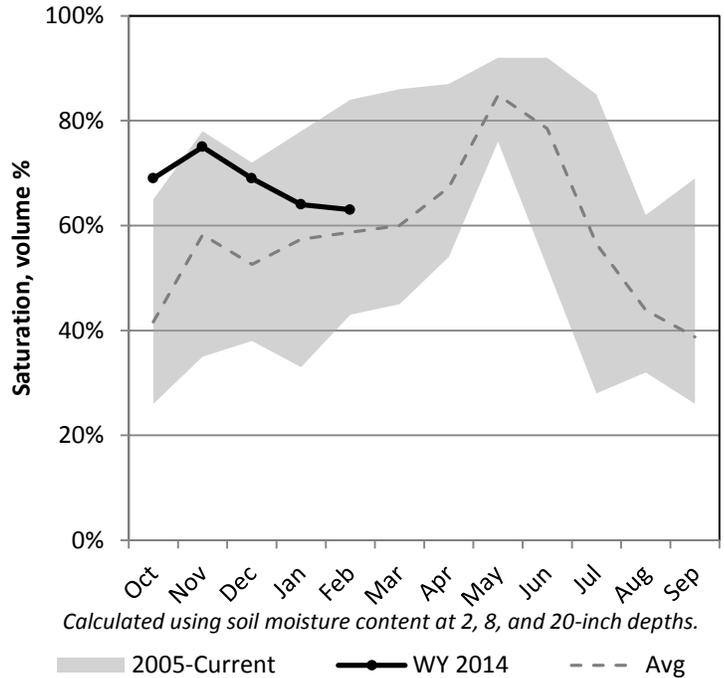
2/1/2014

Snowpack in the San Pitch River Basin is below average at 70% of normal, compared to 94% last year. Precipitation in January was below average at 70%, which brings the seasonal accumulation (Oct-Jan) to 82% of average. Soil moisture is at 63% compared to 49% last year. Reservoir storage is at 2% of capacity, compared to 2% last year. The forecast streamflow volume for Manti Creek is 78% of average. The surface water supply index is 11% for the San Pitch.

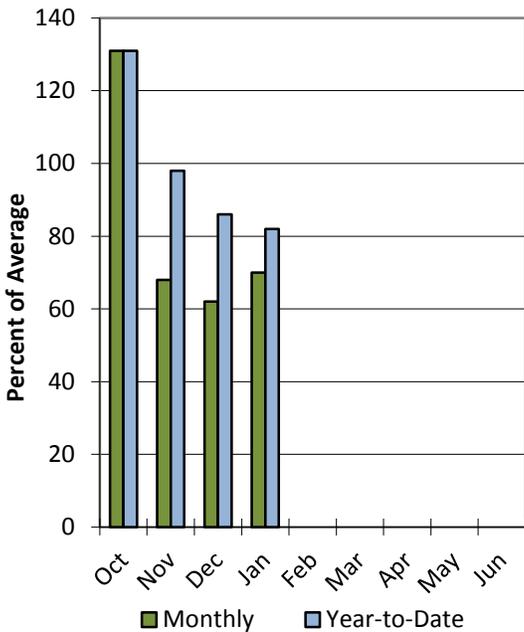
## Snowpack



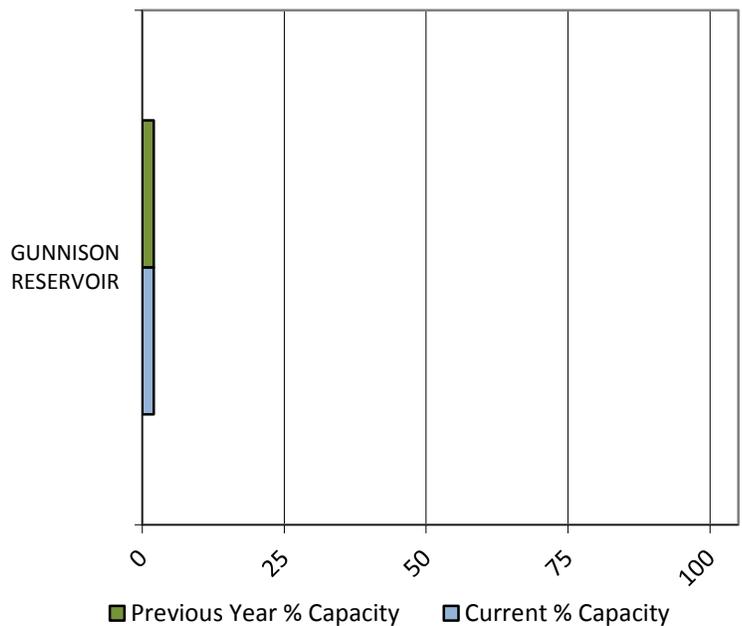
## Soil Moisture



## Precipitation



## Reservoir Storage



## San Pitch River Streamflow Forecasts - February 1, 2014

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	7.3	10.6	13	78%	16.2	21	16.7
Sevier R nr Gunnison	APR-JUL	19.2	51	72	73%	93	125	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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
GUNNISON RESERVOIR	0.5	0.5	11.4	20.3
Basin-wide Total	0.5	0.5	11.4	20.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Upper San Pitch	2	64%	88%
Lower San Pitch	5	74%	97%

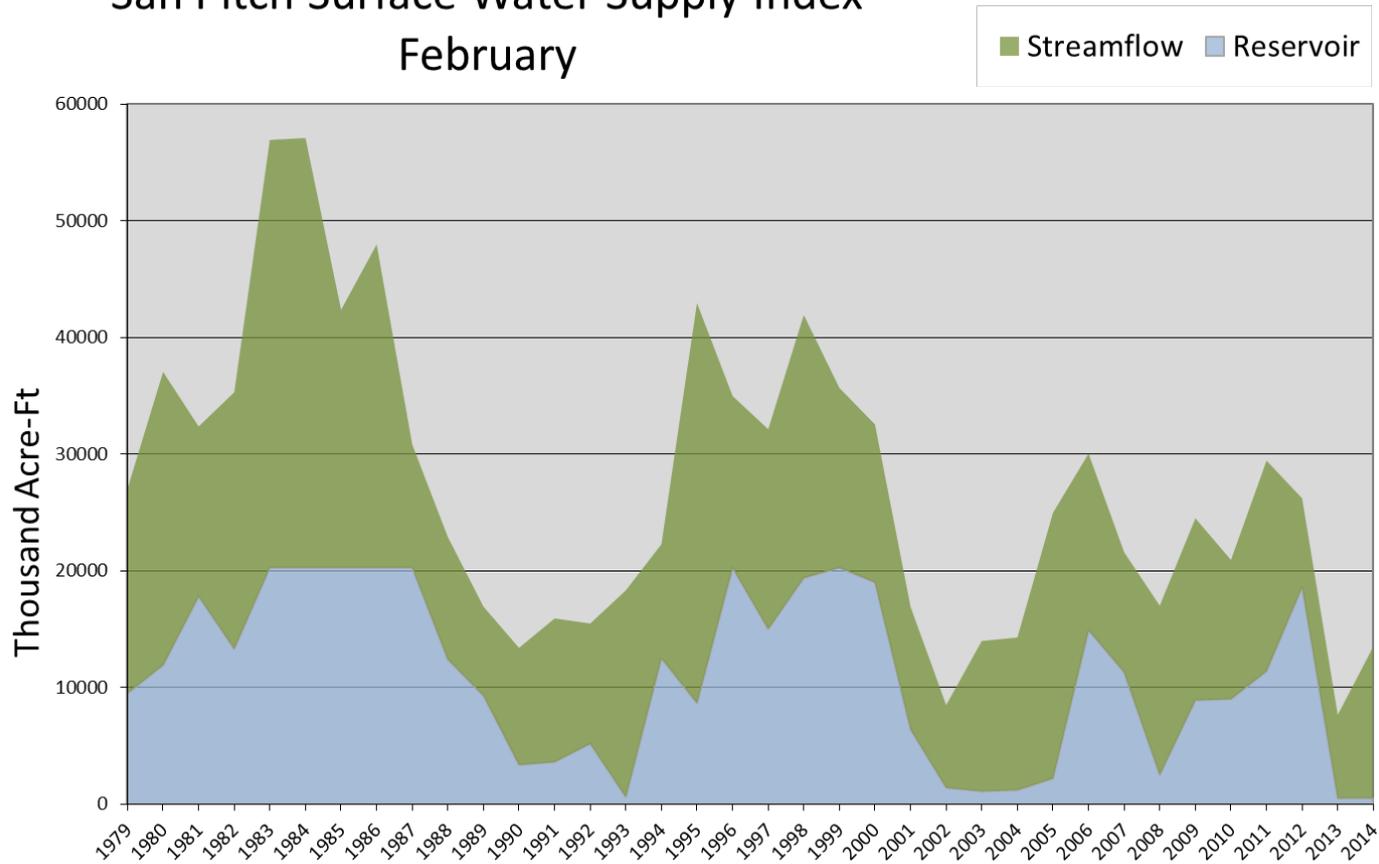
February 1, 2014

## San Pitch Surface Water Supply Index

Basin or Region	January EOM* Gunnison Reservoir	April-July forecast Manti Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>San Pitch</b>	<b>0.5</b>	<b>13.0</b>	<b>13.5</b>	<b>-3.27</b>	<b>11</b>	<b>90,02,03,04</b>

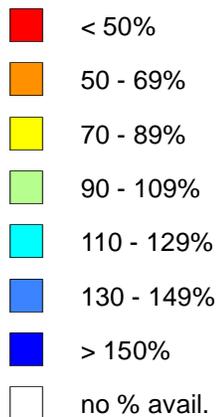
\*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

### San Pitch Surface Water Supply Index February

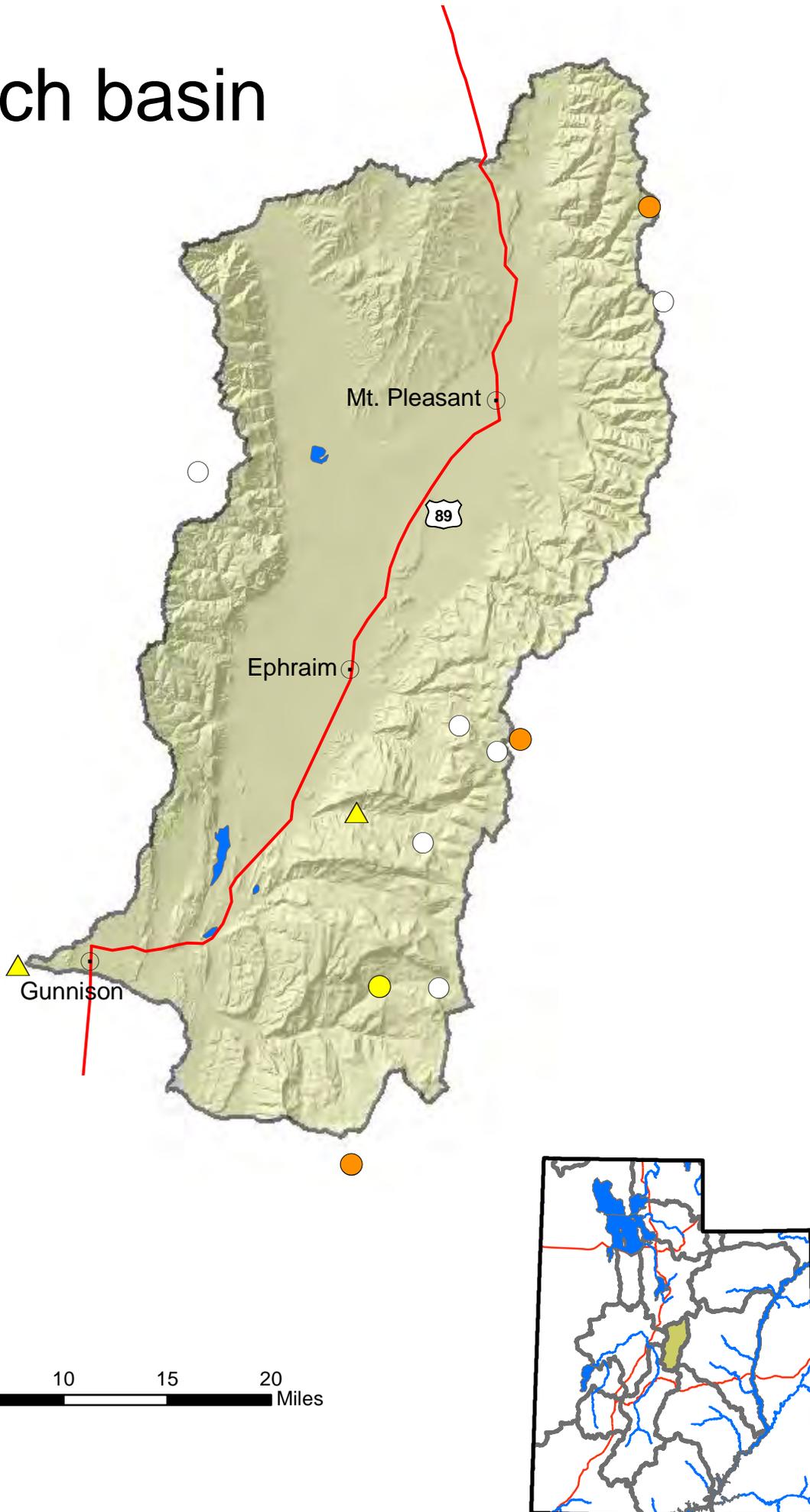


# San Pitch basin

## Percent normal



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

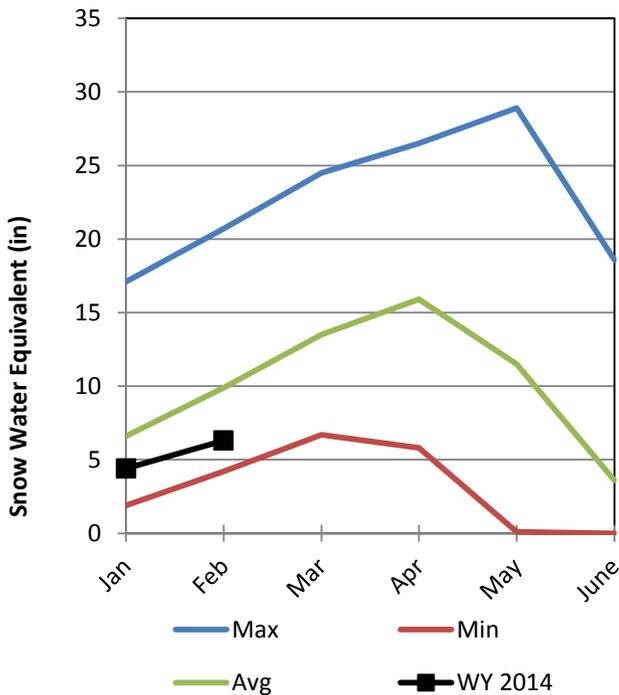


# Price & San Rafael Basins

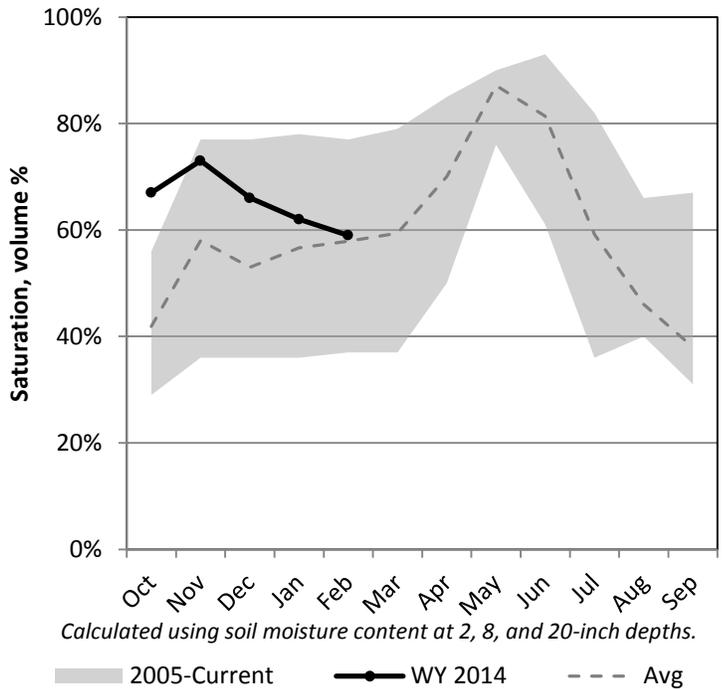
2/1/2014

Snowpack in the Price & San Rafael Basins is much below average at 67% of normal, compared to 91% last year. Precipitation in January was below average at 74%, which brings the seasonal accumulation (Oct-Jan) to 77% of average. Soil moisture is at 59% compared to 37% last year. Reservoir storage is at 40% of capacity, compared to 48% last year. Forecast streamflow volumes range from 52% to 88% of average. The surface water supply index is 12% for the Price River, 30% for Joe's Valley, 47% for Ferron Creek.

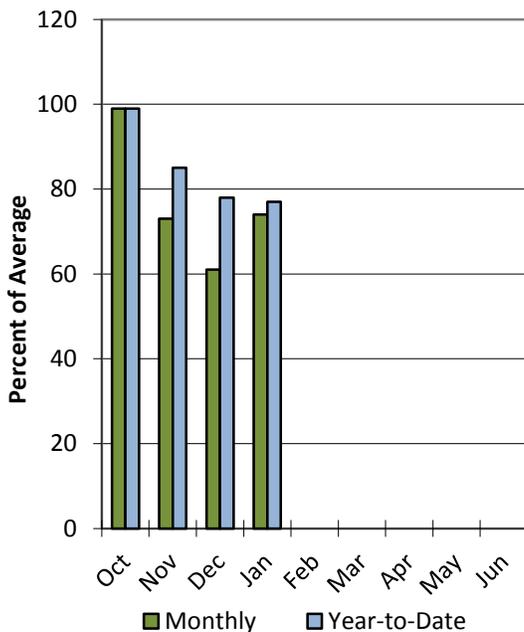
## Snowpack



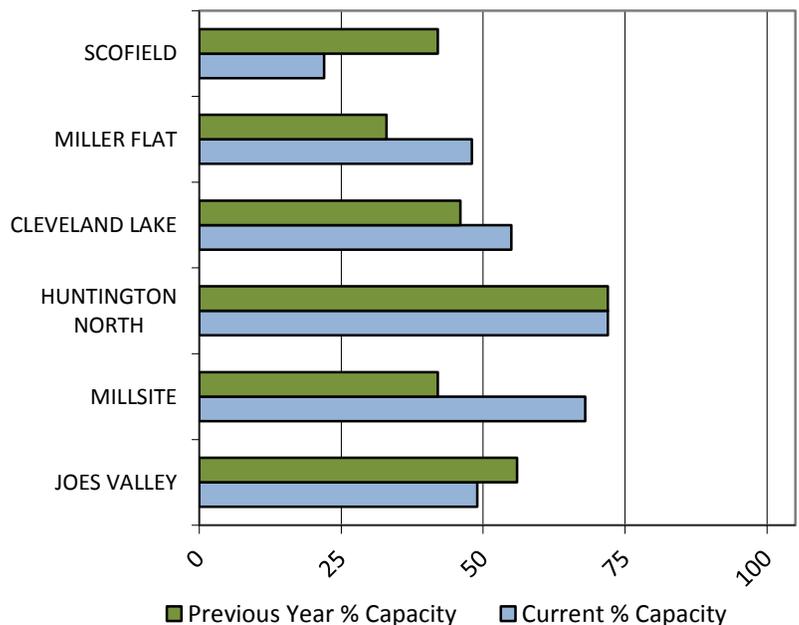
## Soil Moisture



## Precipitation



## Reservoir Storage



## Price San Rafael Streamflow Forecasts - February 1, 2014

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	11.9	17.5	22	73%	27	35	30
Price R nr Scofield Reservoir <sup>2</sup>	APR-JUL	12.4	20	27	66%	34	47	41
White R bl Tabbyune Creek	APR-JUL	3.3	5.9	8	52%	10.4	14.6	15.5
Green R at Green River, UT <sup>2</sup>	APR-JUL	1540	2140	2610	88%	3120	3960	2960
Electric Lake Inflow	APR-JUL	4.3	6.9	9	68%	11.4	15.5	13.3
Huntington Ck nr Huntington <sup>2</sup>	APR-JUL	14.7	22	27	68%	33	43	40
Joes Valley Reservoir Inflow	APR-JUL	24	33	40	71%	48	61	56
Ferron Ck (Upper Station) nr Ferron	APR-JUL	18.4	24	28	74%	32	40	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

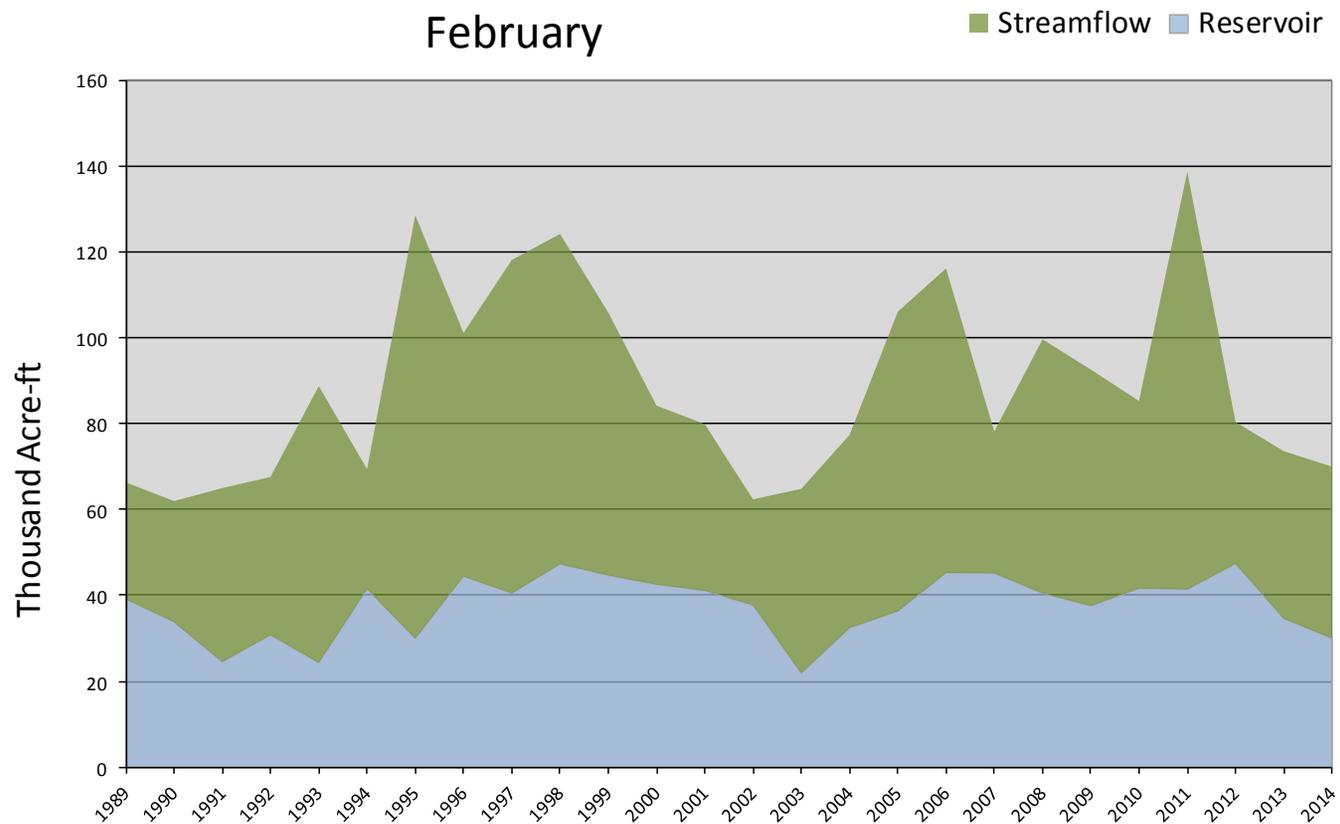
Reservoir Storage End of January, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
JOES VALLEY RESERVOIR	30.0	34.6	39.9	61.6
MILLSITE	11.3	7.0	10.1	16.7
HUNTINGTON NORTH RESERVOIR	3.0	3.0	2.7	4.2
CLEVELAND LAKE	3.0	2.5	3.0	5.4
MILLER FLAT RESERVOIR	2.5	1.7	2.4	5.2
SCOFIELD RESERVOIR	14.5	27.8	29.9	65.8
Basin-wide Total	64.2	76.7	88.1	158.9
# of reservoirs	6	6	6	6

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Price	6	67%	91%
San Rafael	6	67%	91%

February 1, 2014		Surface Water Supply Index				
Basin or Region	January EOM* Joe's Valley	April-July Forecast Inflow to Joe's Valley	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Joe's Valley</b>	<b>30.0</b>	<b>40.0</b>	<b>70.0</b>	<b>-1.70</b>	<b>30</b>	<b>92, 94, 13, 04</b>

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

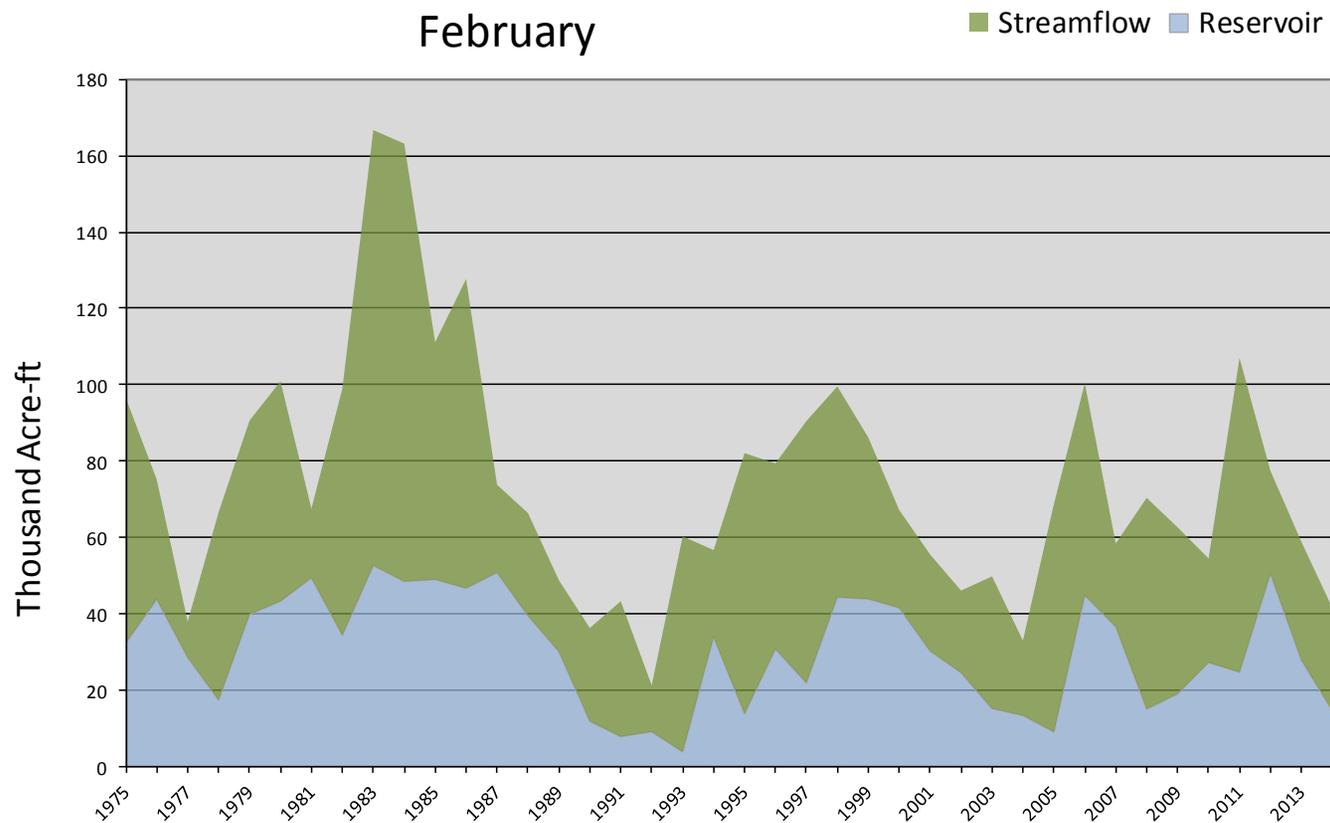
Joe's Valley - Surface Water Supply Index  
February



February 1, 2014		Surface Water Supply Index				
Basin or Region	January EOM* Scofield Reservoir	April-July Forecast @ Scofield	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Price River</b>	<b>14.5</b>	<b>27.0</b>	<b>41.5</b>	<b>-3.15</b>	<b>12</b>	<b>90, 77, 91, 02</b>

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

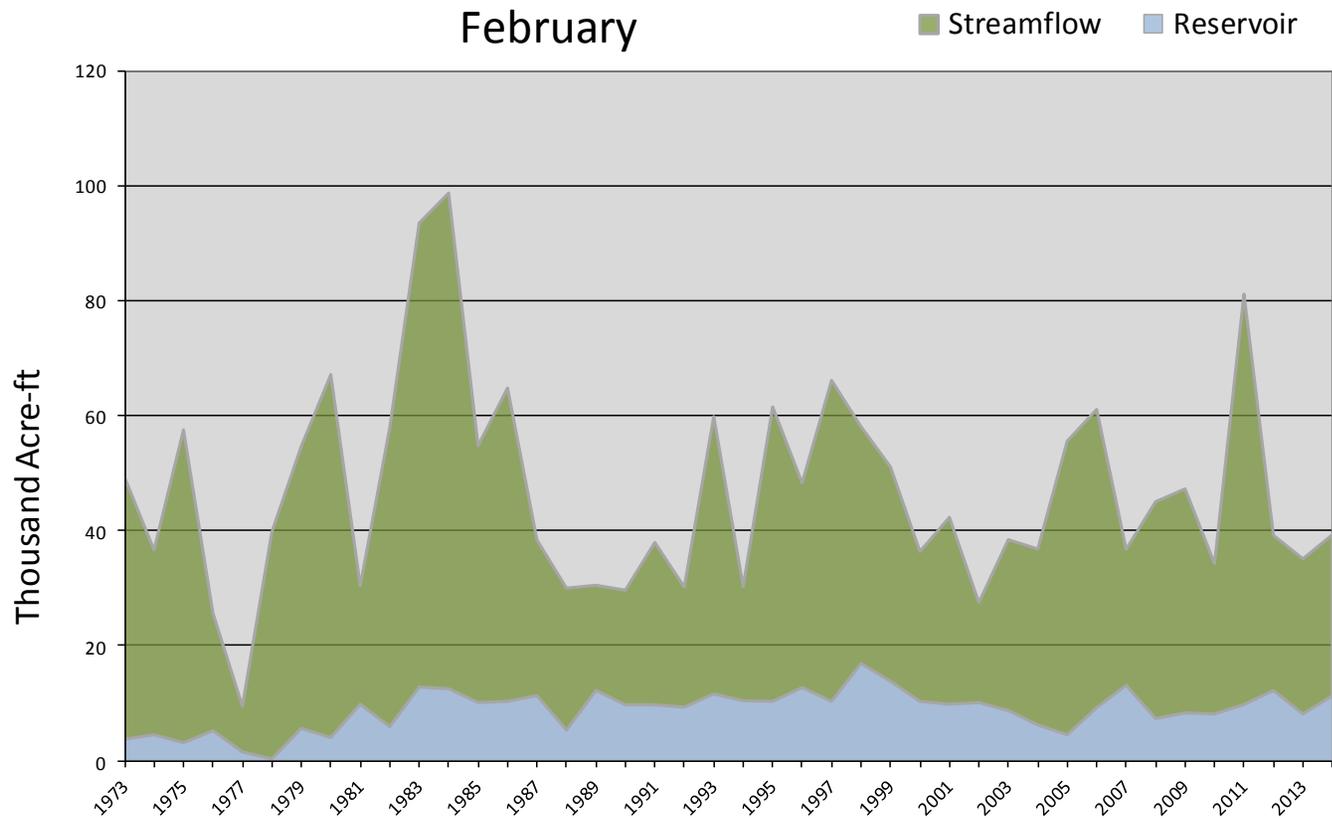
Price River - Surface Water Supply Index  
February



February 1, 2014		Surface Water Supply Index				
Basin or Region	January EOM* Millsite Reservoir	April-July Forecast Ferron creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Ferron Creek</b>	<b>11.3</b>	<b>28.0</b>	<b>39.3</b>	<b>-0.29</b>	<b>47</b>	<b>03, 12, 78, 01</b>

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

Ferron Creek - Surface Water Supply Index  
February



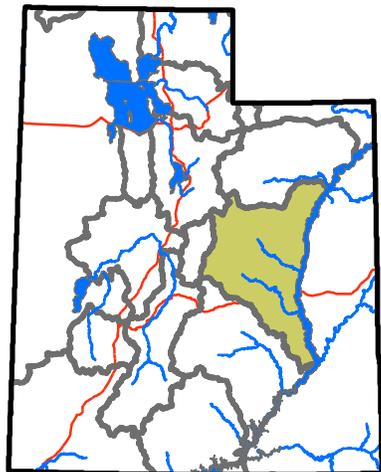
# Price-San Rafael basin



## Percent normal

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

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

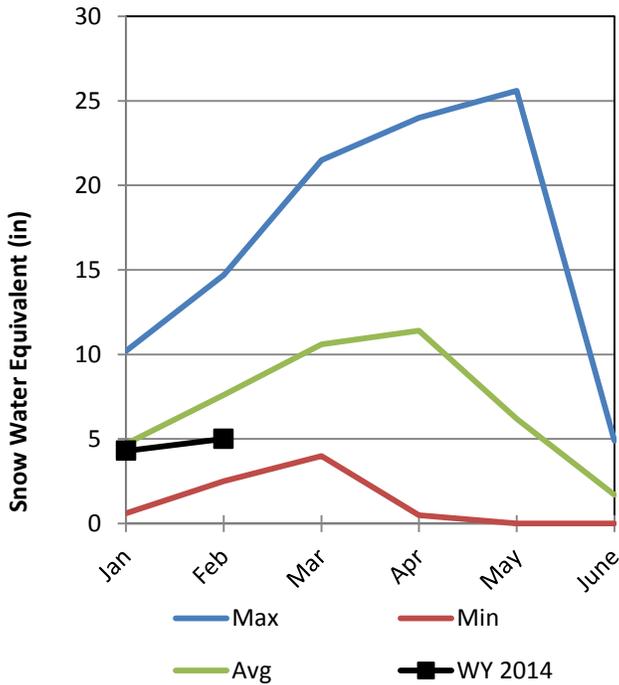


# Southeastern Utah Basin

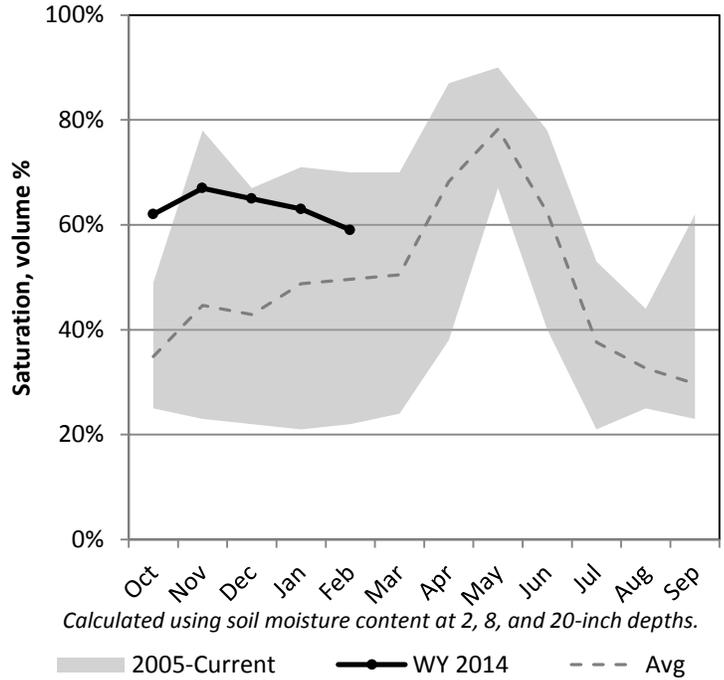
2/1/2014

Snowpack in the Southeastern Utah Basin is below average at 77% of normal, compared to 103% last year. Precipitation in January was much below average at 24%, which brings the seasonal accumulation (Oct-Jan) to 75% of average. Soil moisture is at 59% compared to 22% last year. Reservoir storage is at 48% of capacity, compared to 13% last year. Forecast streamflow volumes range from 28% to 102% of average. The surface water supply index is 39% for Moab.

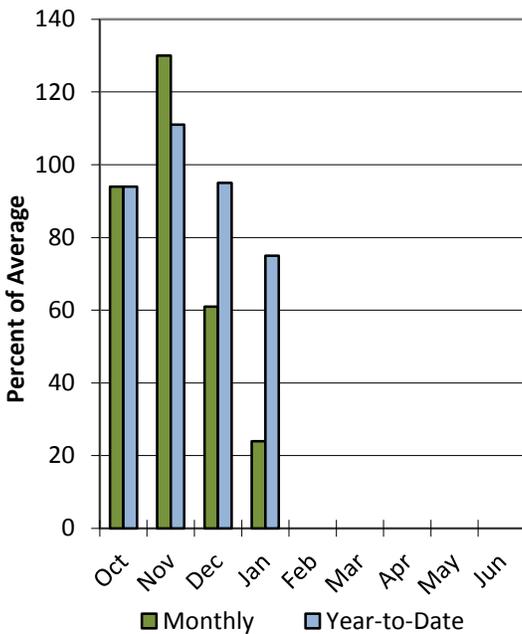
## Snowpack



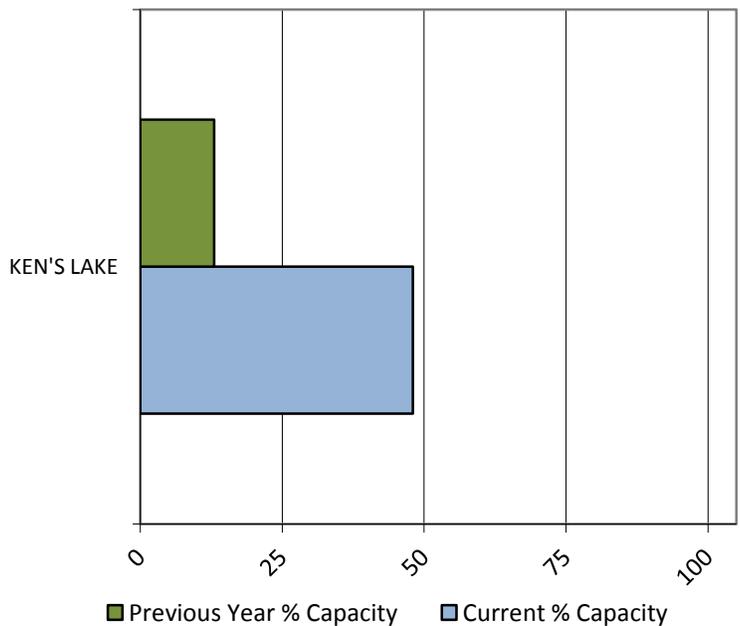
## Soil Moisture



## Precipitation



## Reservoir Storage



## Southeastern Utah Streamflow Forecasts - February 1, 2014

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

Southeastern Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Mill Ck at Sheley Tunnel nr Moab	APR-JUL	1.54	2.5	3.2	74%	4	5.5	4.3
South Ck ab Lloyds Reservoir nr Monticello	MAR-JUL	0.055	0.168	0.3	28%	0.49	0.88	1.09
Colorado R nr Cisco <sup>2</sup>	APR-JUL	2800	3680	4350	102%	5070	6240	4280
San Juan R near Bluff <sup>2</sup>	APR-JUL	550	760	920	84%	1100	1390	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

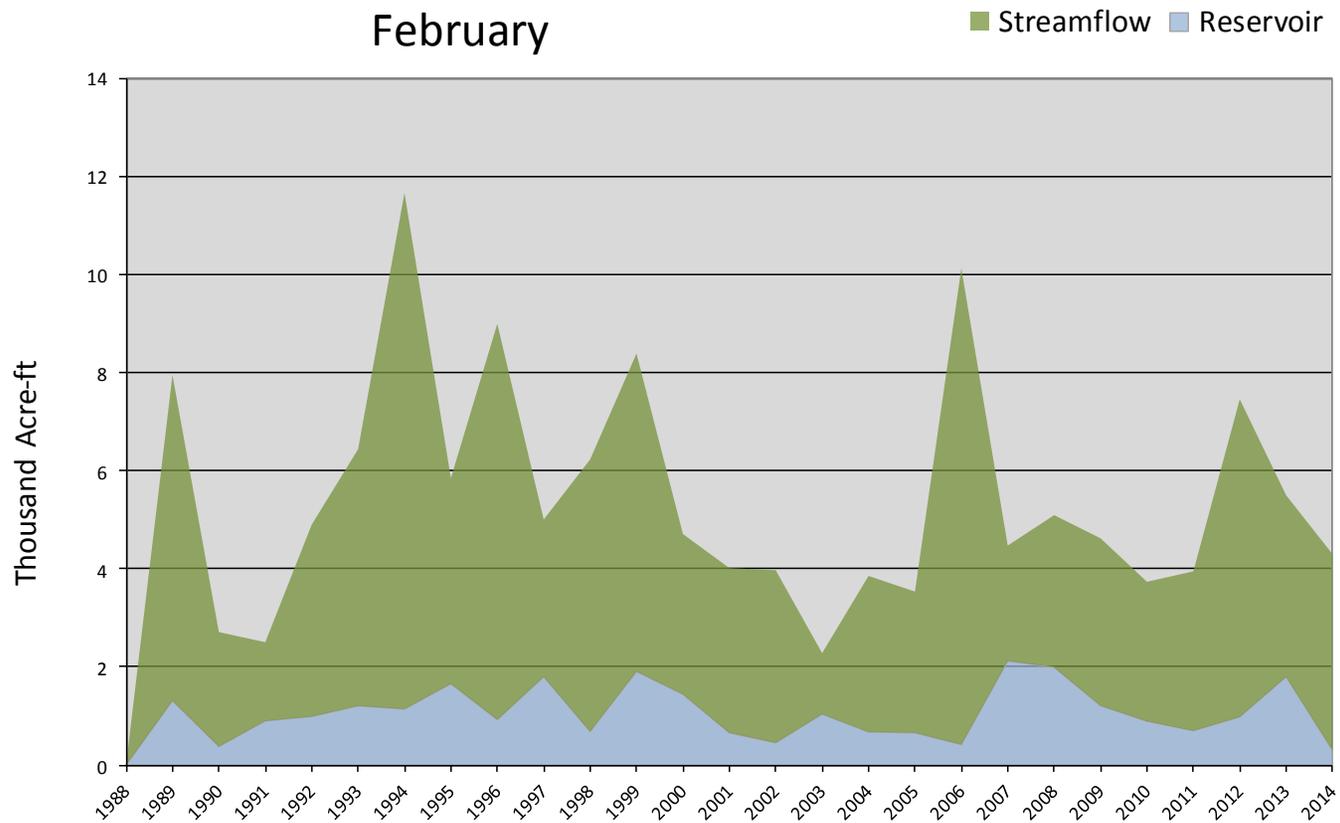
Reservoir Storage End of January, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
KEN'S LAKE	1.1	0.3	1.1	2.3
Basin-wide Total	1.1	0.3	1.1	2.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Lasal Mtns	1	75%	113%
Lower San Juan	1	74%	101%
Lower Green	2	76%	98%

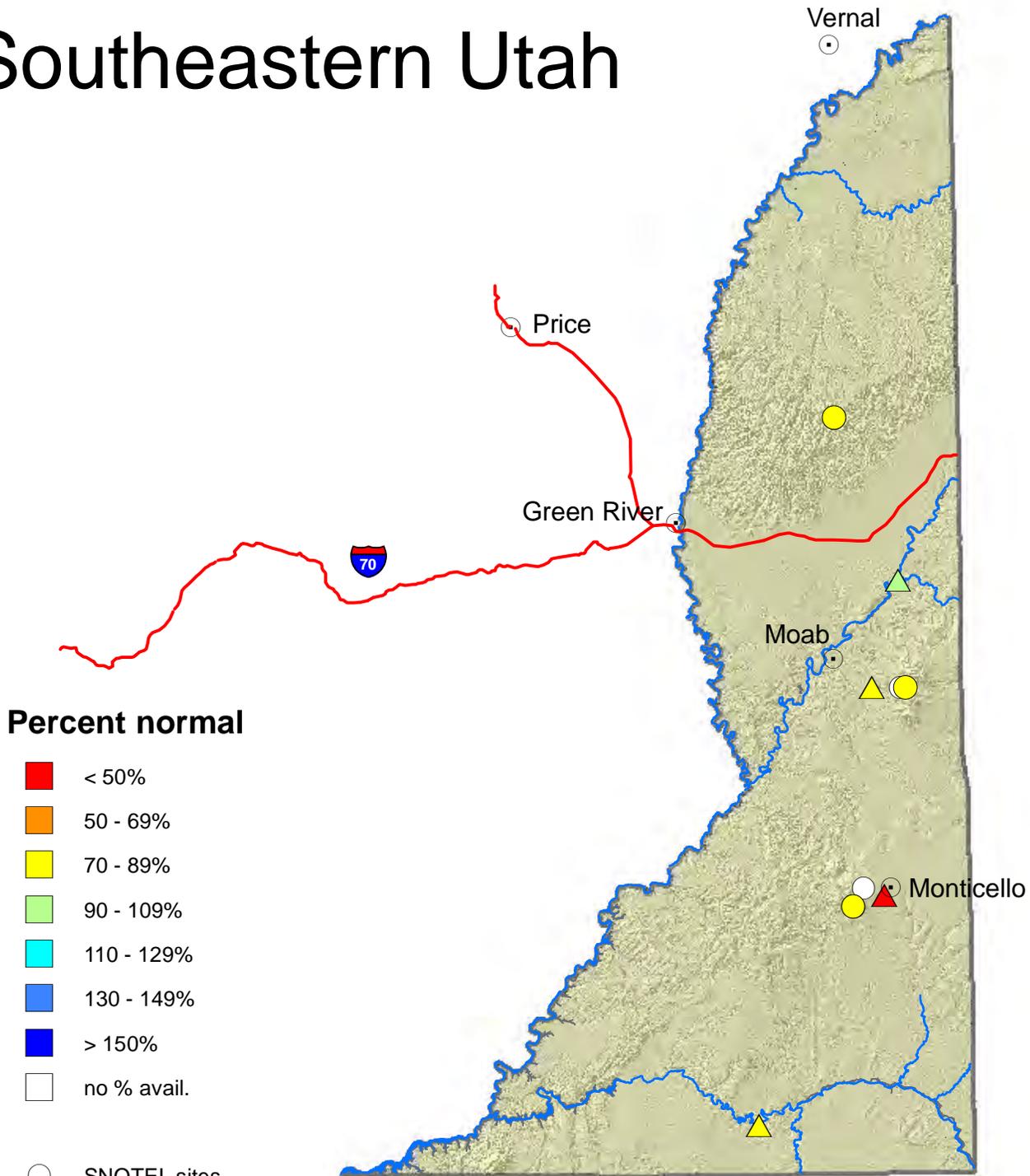
February 1, 2014		Surface Water Supply Index				
Basin or Region	January EOM* Ken's Lake Reservoir	April-July Forecast Mill Creek at Sheley	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Moab</b>	<b>1.1</b>	<b>3.2</b>	<b>4.3</b>	<b>-0.89</b>	<b>39</b>	<b>00, 13, 06, 08</b>

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

Moab - Surface Water Supply Index  
February



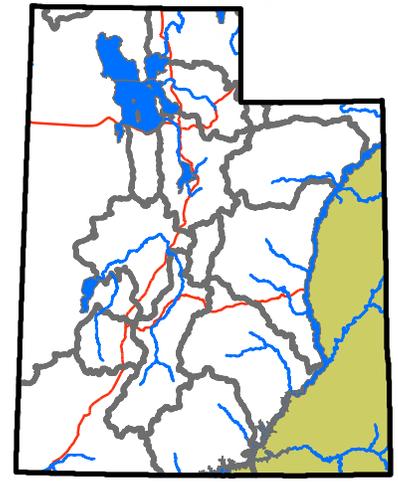
# Southeastern Utah



## Percent normal

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

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

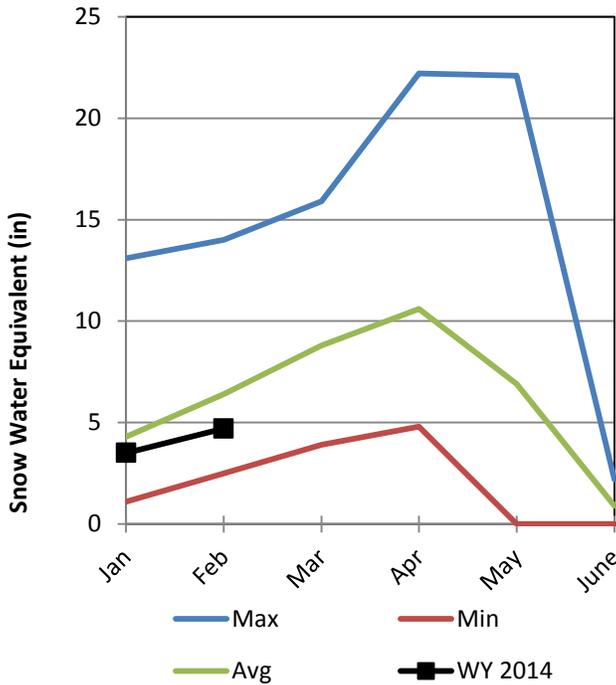


# Dirty Devil Basin

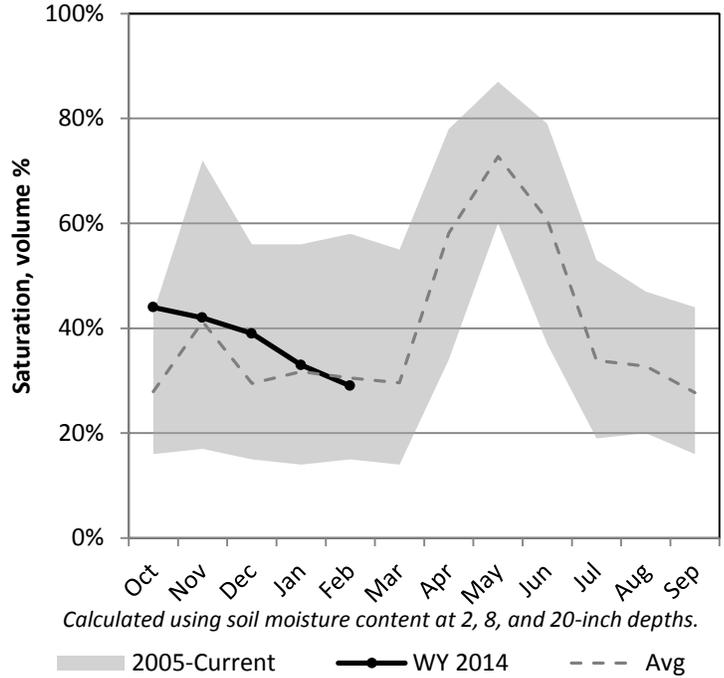
2/1/2014

Snowpack in the Dirty Devil Basin is near average at 90% of normal, compared to 97% last year. Precipitation in January was much below average at 64%, which brings the seasonal accumulation (Oct-Jan) to 86% of average. Soil moisture is at 29% compared to 18% last year. Forecast streamflow volumes range from 70% to 75% of average.

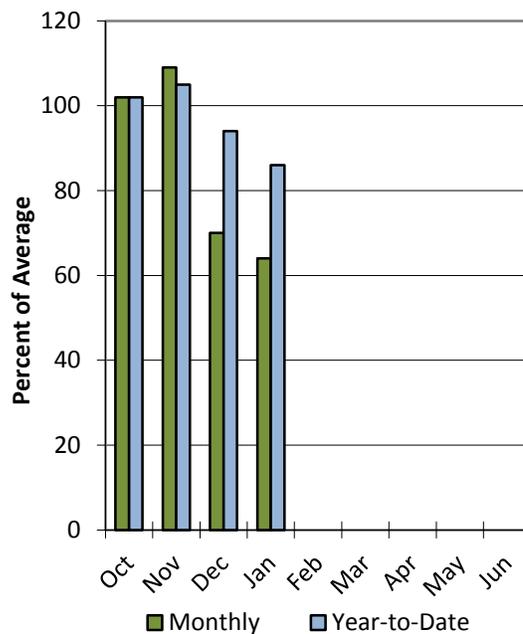
## Snowpack



## Soil Moisture



## Precipitation



## Dirty Devil Streamflow Forecasts - February 1, 2014

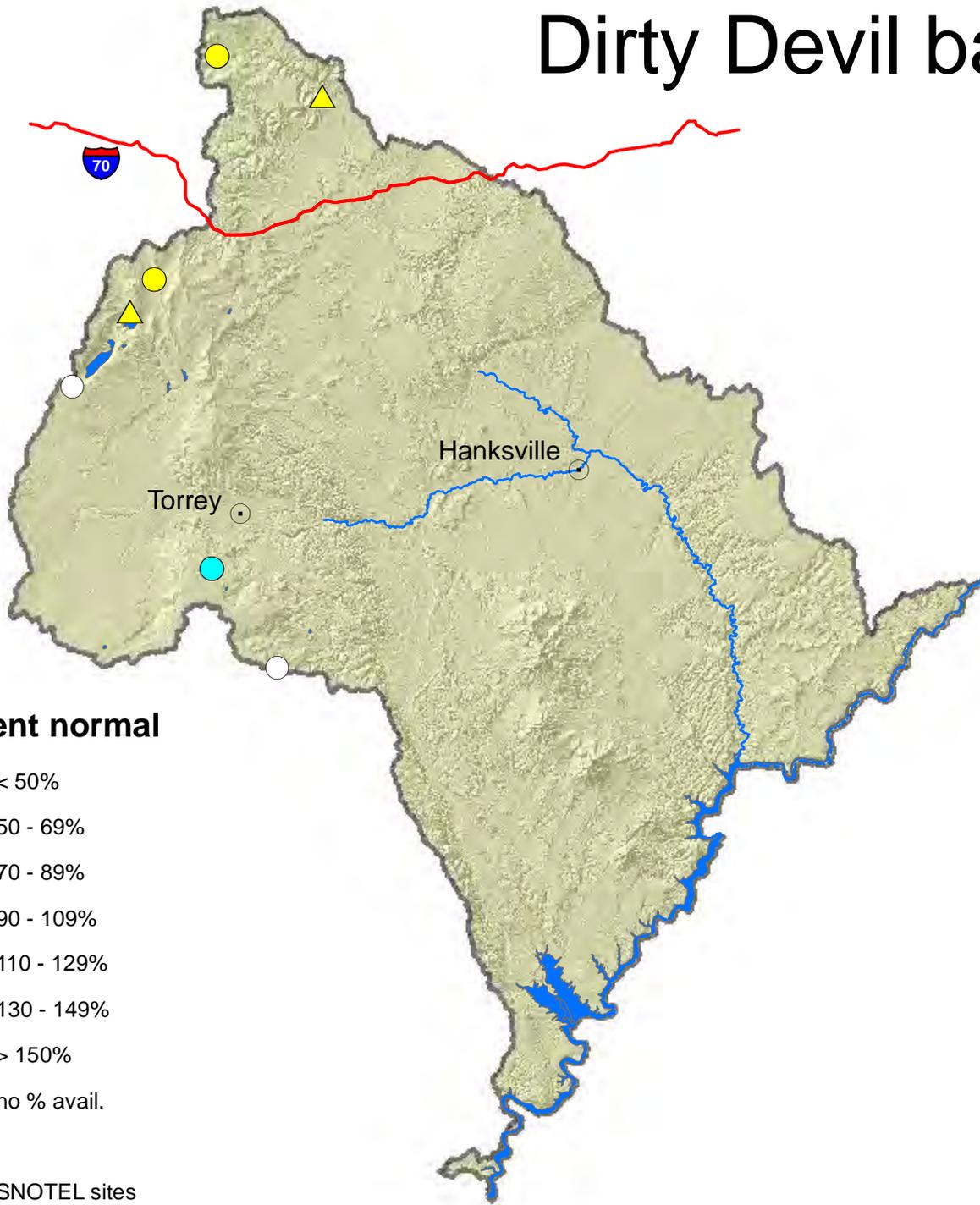
Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

Dirty Devil	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Muddy Ck nr Emery	APR-JUL	7.6	11.2	14	70%	17.1	22	19.9
Seven Mile Ck nr Fish Lake	APR-JUL	2.9	4.4	5.5	75%	6.8	8.8	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, 2014	# of Sites	% Median	Last Year % Median
Muddy	3	75%	96%
Fremont	3	91%	97%

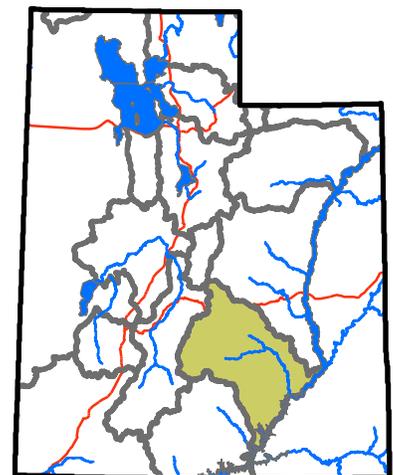
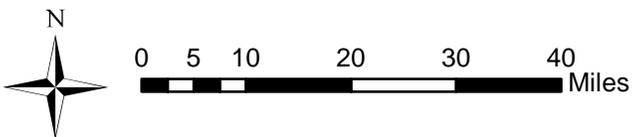
# Dirty Devil basin



## Percent normal



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

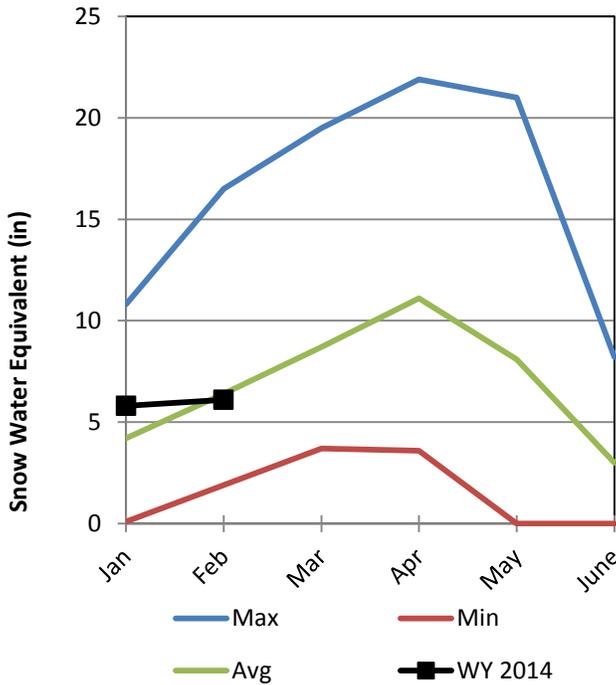


# Escalante River Basin

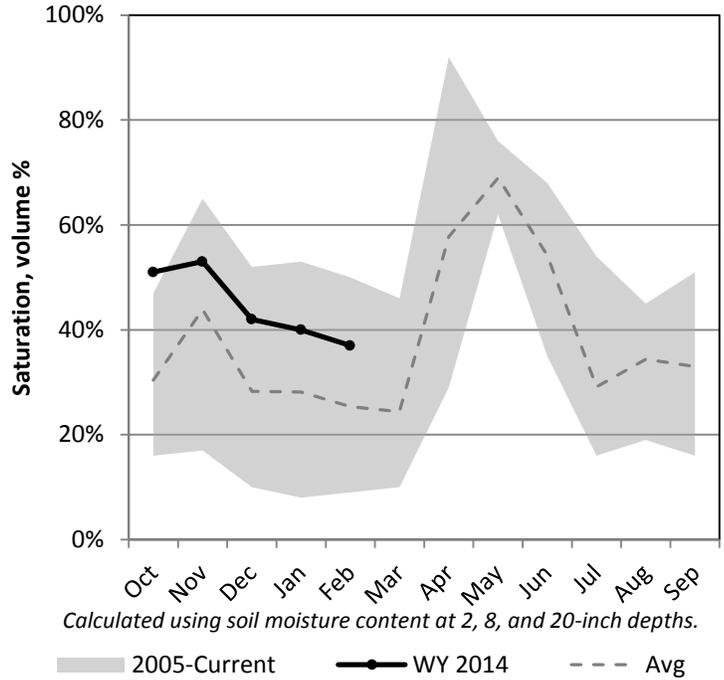
2/1/2014

Snowpack in the Escalante River Basin is near average at 108% of normal, compared to 99% last year. Precipitation in January was much below average at 19%, which brings the seasonal accumulation (Oct-Jan) to 91% of average. Soil moisture is at 37% compared to 20% last year. The forecast streamflow volume for Pine Creek is 83% of average.

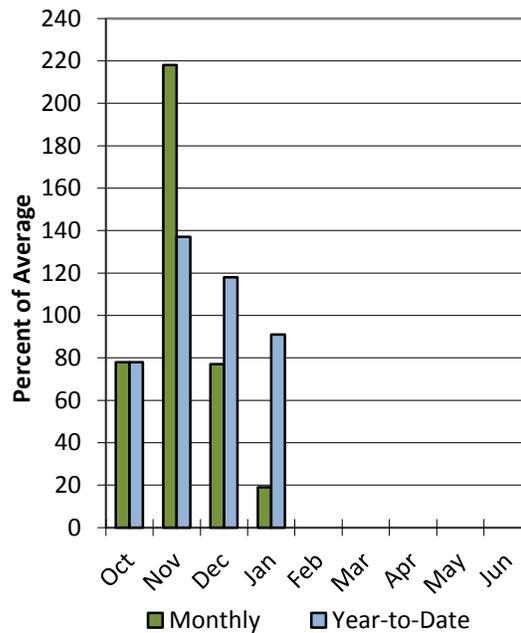
## Snowpack



## Soil Moisture



## Precipitation



## Escalante River Streamflow Forecasts - February 1, 2014

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	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

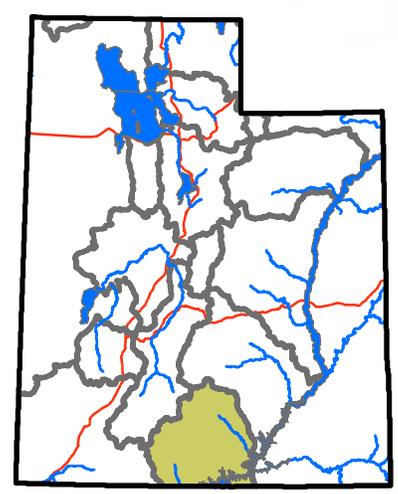
Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Escalante	3	108%	99%
Paria	2	132%	122%

# Escalante basin



## Percent normal

- |  |  |
|--|--|
| <span style="color: red;">■</span> < 50%   | <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">○</span> SNOTEL sites |
| <span style="color: orange;">■</span> 50 - 69%   | <span style="border: 1px solid black; padding: 2px;">△</span> Forecast points                  |
| <span style="color: yellow;">■</span> 70 - 89%   | <span style="color: blue;">—</span> Rivers   |
| <span style="color: lightgreen;">■</span> 90 - 109%  | <span style="color: red;">—</span> Highways  |
| <span style="color: cyan;">■</span> 110 - 129%   | <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">⊙</span> Cities       |
| <span style="color: blue;">■</span> 130 - 149%   |  |
| <span style="color: darkblue;">■</span> > 150%   |  |
| <span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> no % avail. |  |

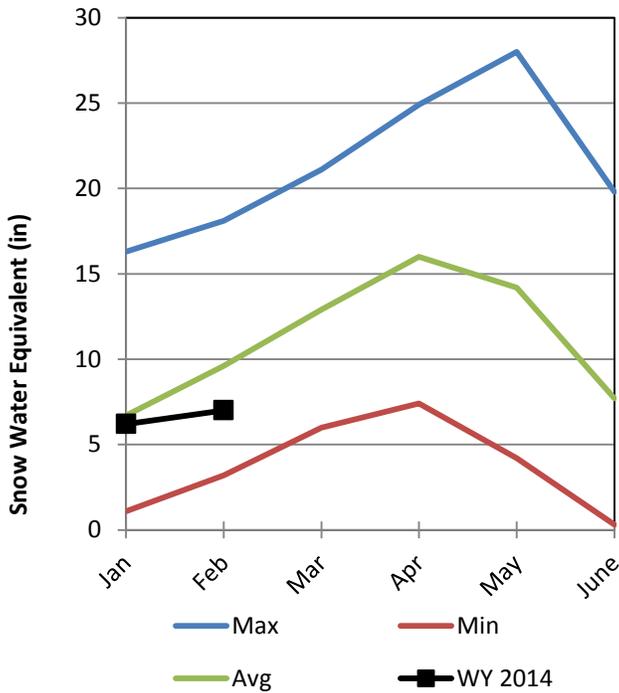


# Beaver River Basin

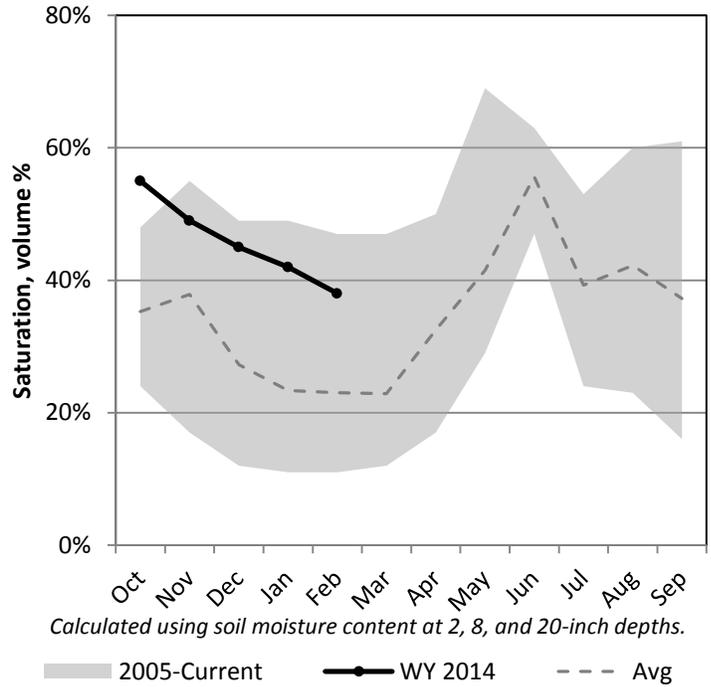
2/1/2014

Snowpack in the Beaver River Basin is below average at 72% of normal, compared to 102% last year. Precipitation in January was much below average at 28%, which brings the seasonal accumulation (Oct-Jan) to 79% of average. Soil moisture is at 38% compared to 35% last year. Reservoir storage is at 46% of capacity, compared to 45% last year. The forecast streamflow volume for the Beaver River is 77% of average. The surface water supply index is 43% for the Beaver River.

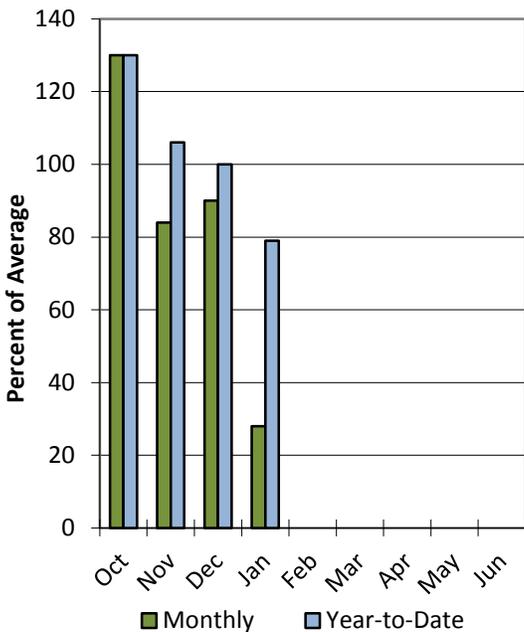
## Snowpack



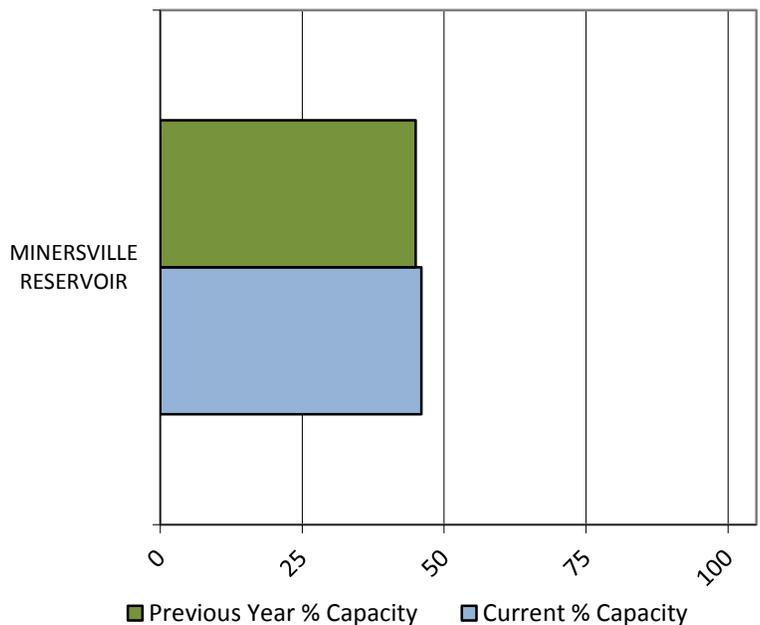
## Soil Moisture



## Precipitation



## Reservoir Storage



## Beaver River Streamflow Forecasts - February 1, 2014

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	5.2	14.1	20	77%	26	35	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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
MINERSVILLE RESERVOIR	10.6	10.6	13.4	23.3
Basin-wide Total	10.6	10.6	13.4	23.3
# of reservoirs	1	1	1	1

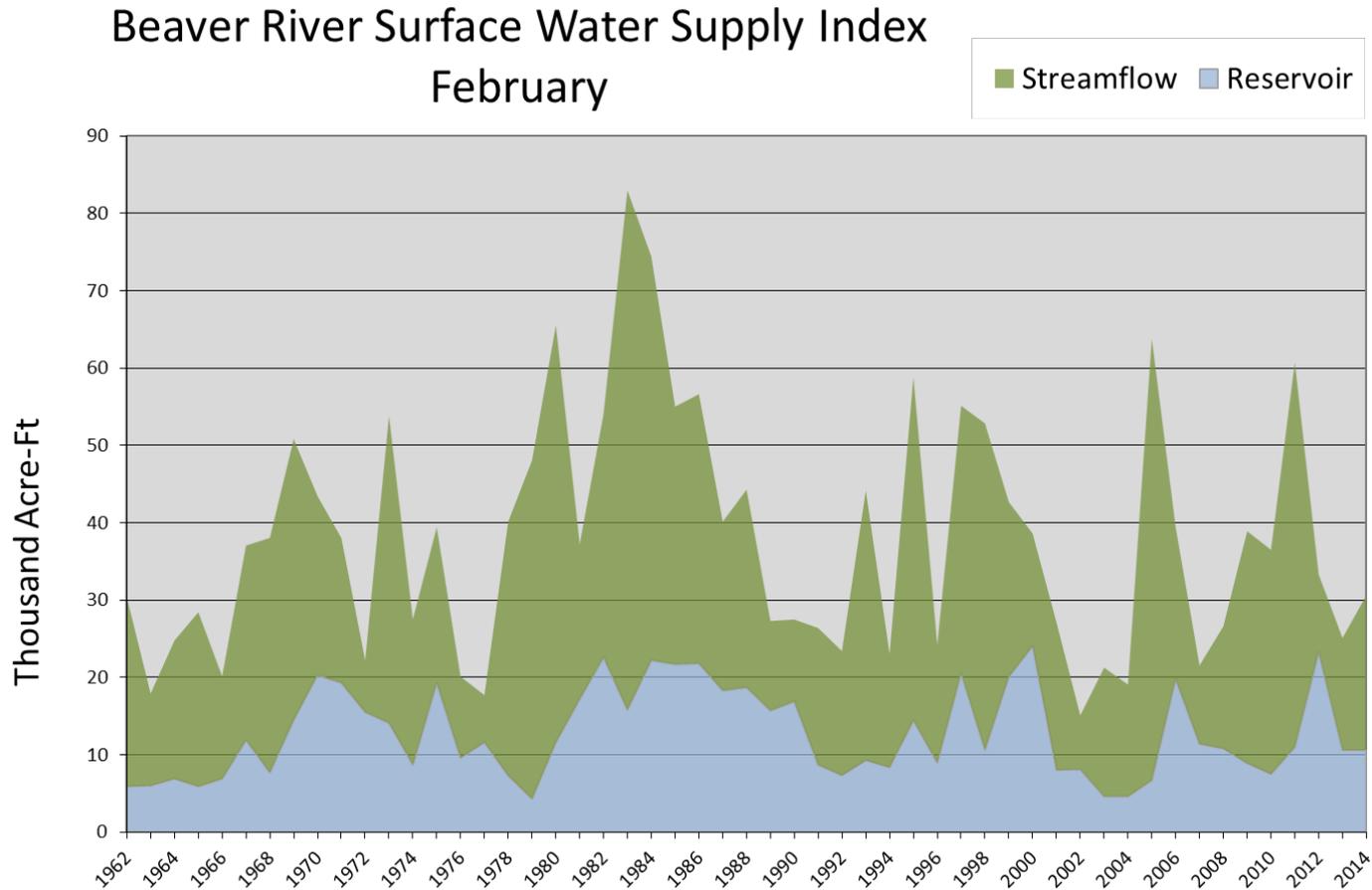
Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Beaver	2	72%	102%

February 1, 2014

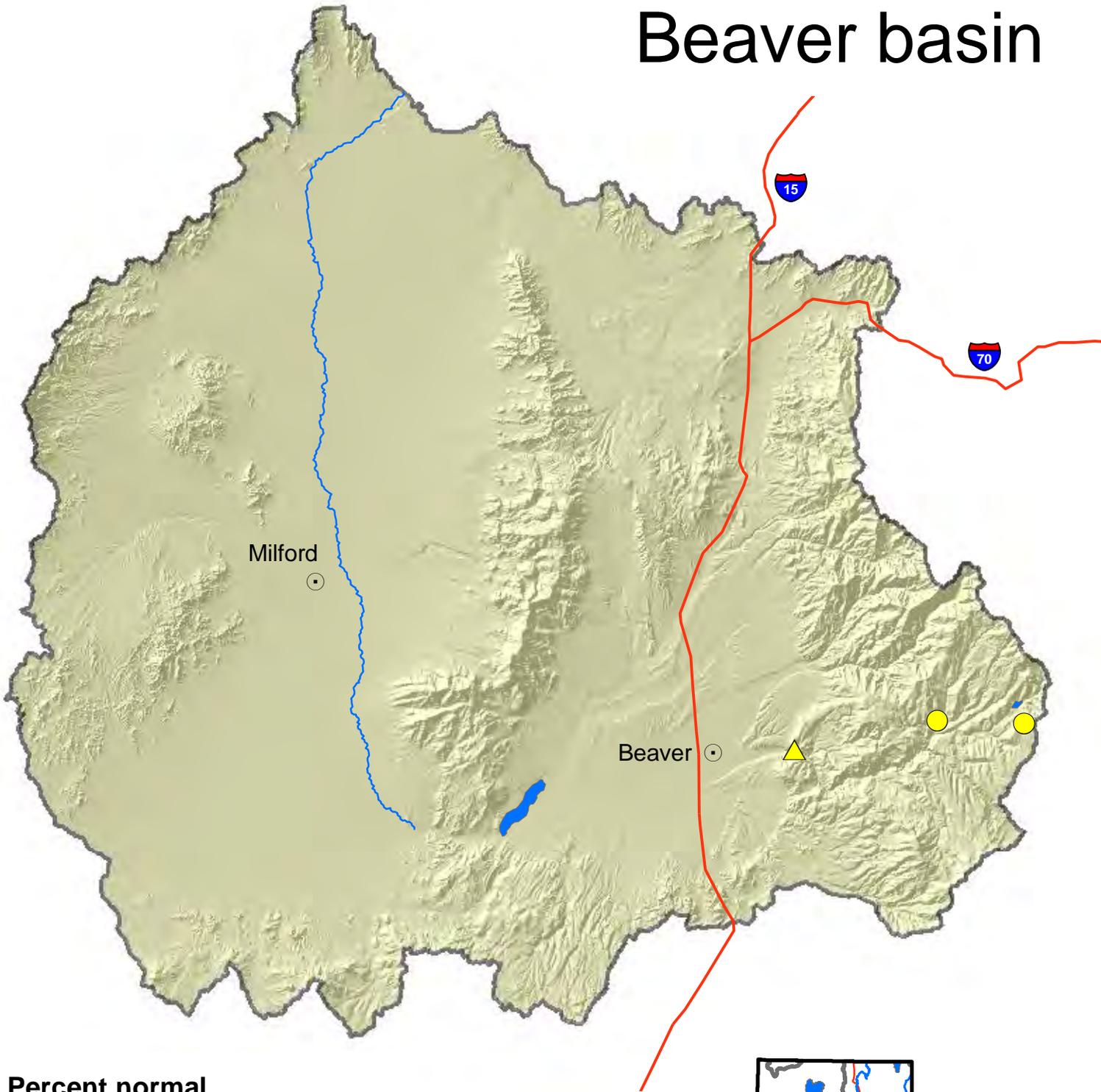
## Surface Water Supply Index

Basin or Region	January EOM* Minersville Reservoir	April-July forecast Beaver River at Beaver	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Beaver</b>	<b>10.6</b>	<b>20.0</b>	<b>30.6</b>	<b>-0.62</b>	<b>43</b>	<b>65,62,12,10</b>

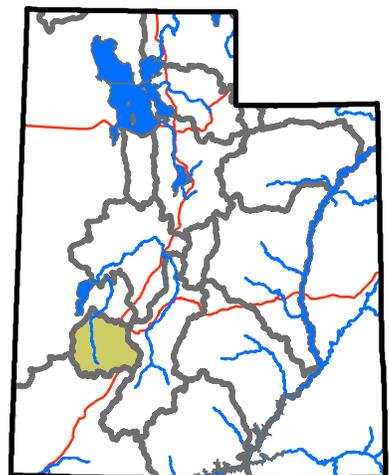
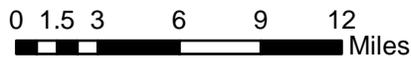
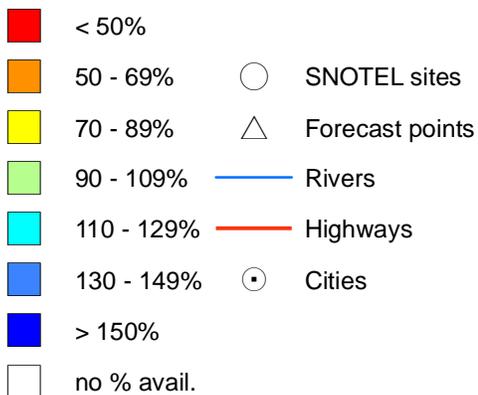
\*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.



# Beaver basin



## Percent normal

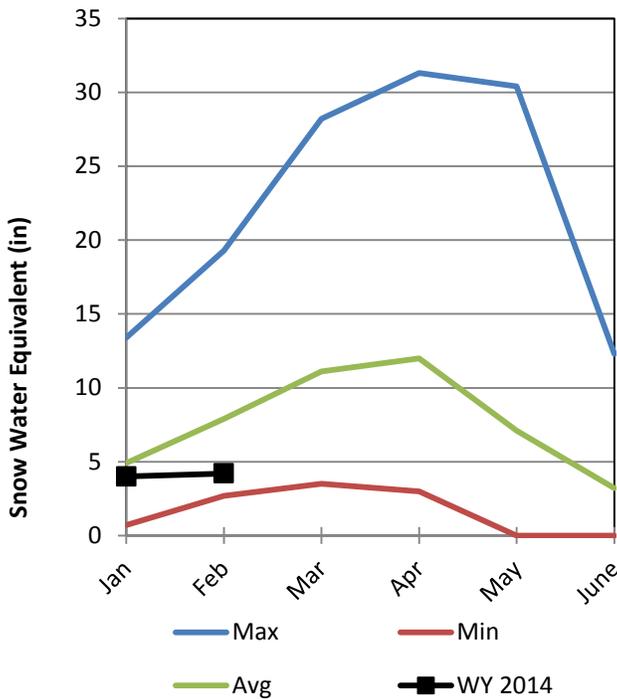


# Southwestern Utah Basin

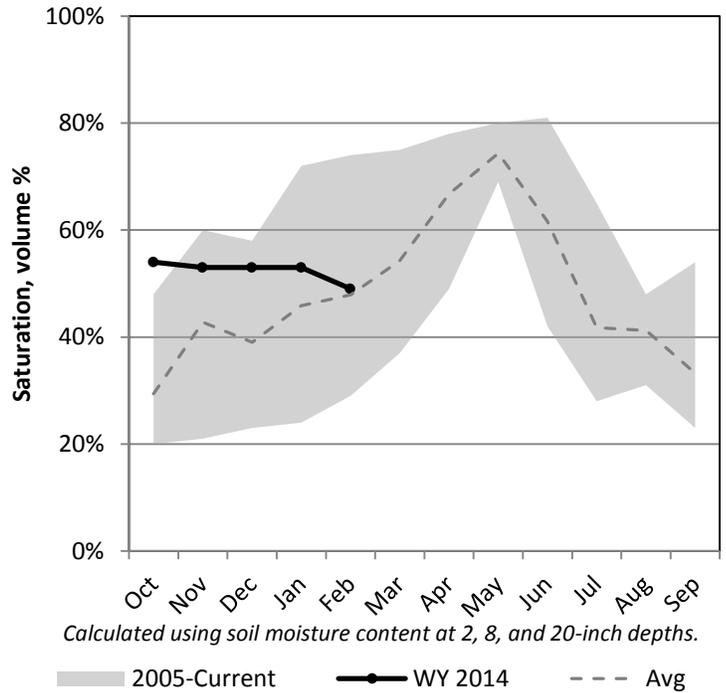
2/1/2014

Snowpack in the Southwestern Utah Basin is much below average at 68% of normal, compared to 110% last year. Precipitation in January was much below average at 24%, which brings the seasonal accumulation (Oct-Jan) to 58% of average. Soil moisture is at 49% compared to 48% last year. Reservoir storage is at 40% of capacity, compared to 50% last year. Forecast streamflow volumes range from 38% to 94% of average. The surface water supply index is 34% for the Virgin River.

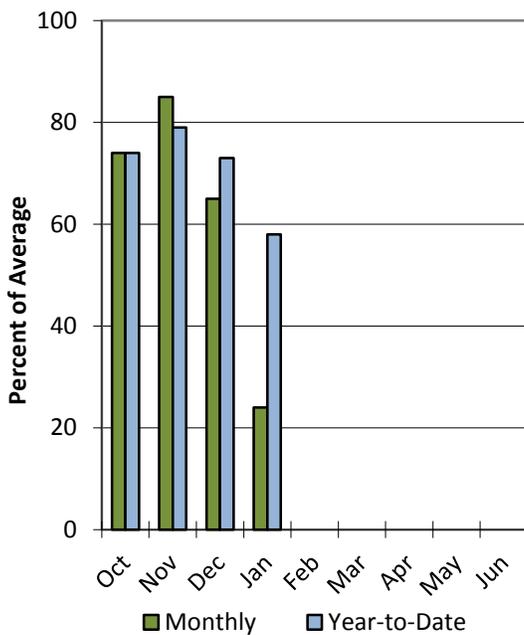
## Snowpack



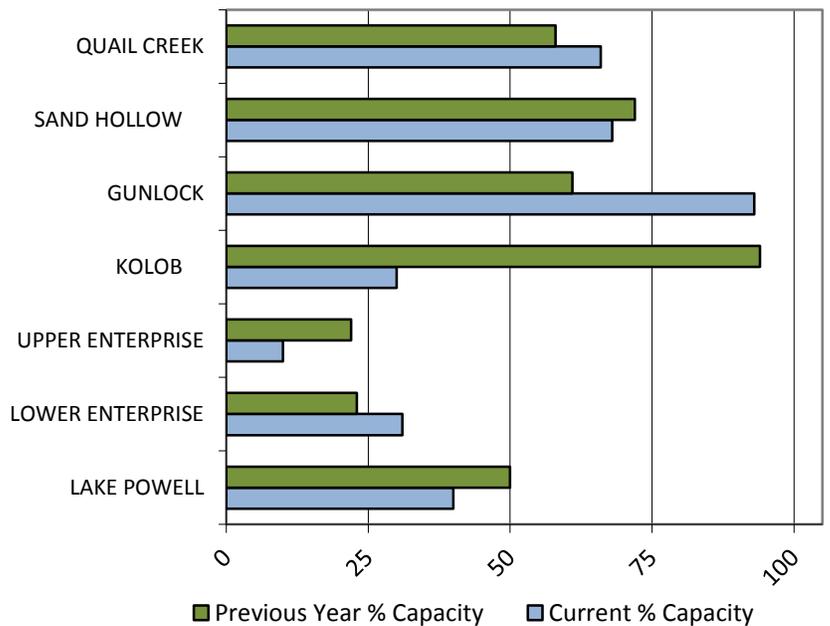
## Soil Moisture



## Precipitation



## Reservoir Storage



### Southwestern Utah Streamflow Forecasts - February 1, 2014

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

Southwestern Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Lake Powell Inflow <sup>2</sup>	APR-JUL	3870	5460	6700	94%	8060	10300	7160
Virgin R nr Hurricane	APR-JUL	3.7	13.7	24	38%	38	63	63
Virgin R at Virgin	APR-JUL	10.7	21	30	52%	41	59	58
Santa Clara R nr Pine Valley	APR-JUL	0.56	1.49	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, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
LAKE POWELL	9843.0	12190.0	17338.0	24322.0
LOWER ENTERPRISE	0.8	0.6	0.6	2.6
UPPER ENTERPRISE	1.0	2.2	3.1	10.0
KOLOB RESERVOIR	1.7	5.3	4.0	5.6
GUNLOCK	9.7	6.4	6.5	10.4
SAND HOLLOW RESERVOIR	34.0	36.0	39.3	50.0
QUAIL CREEK	26.4	23.1	26.0	40.0
Basin-wide Total	9916.6	12263.6	17417.5	24440.6
# of reservoirs	7	7	7	7

Watershed Snowpack Analysis February 1, 2014	# of Sites	% Median	Last Year % Median
Upper Virgin	8	71%	112%
Lower Virgin	2	45%	124%
Cedar City Parowan	4	67%	109%

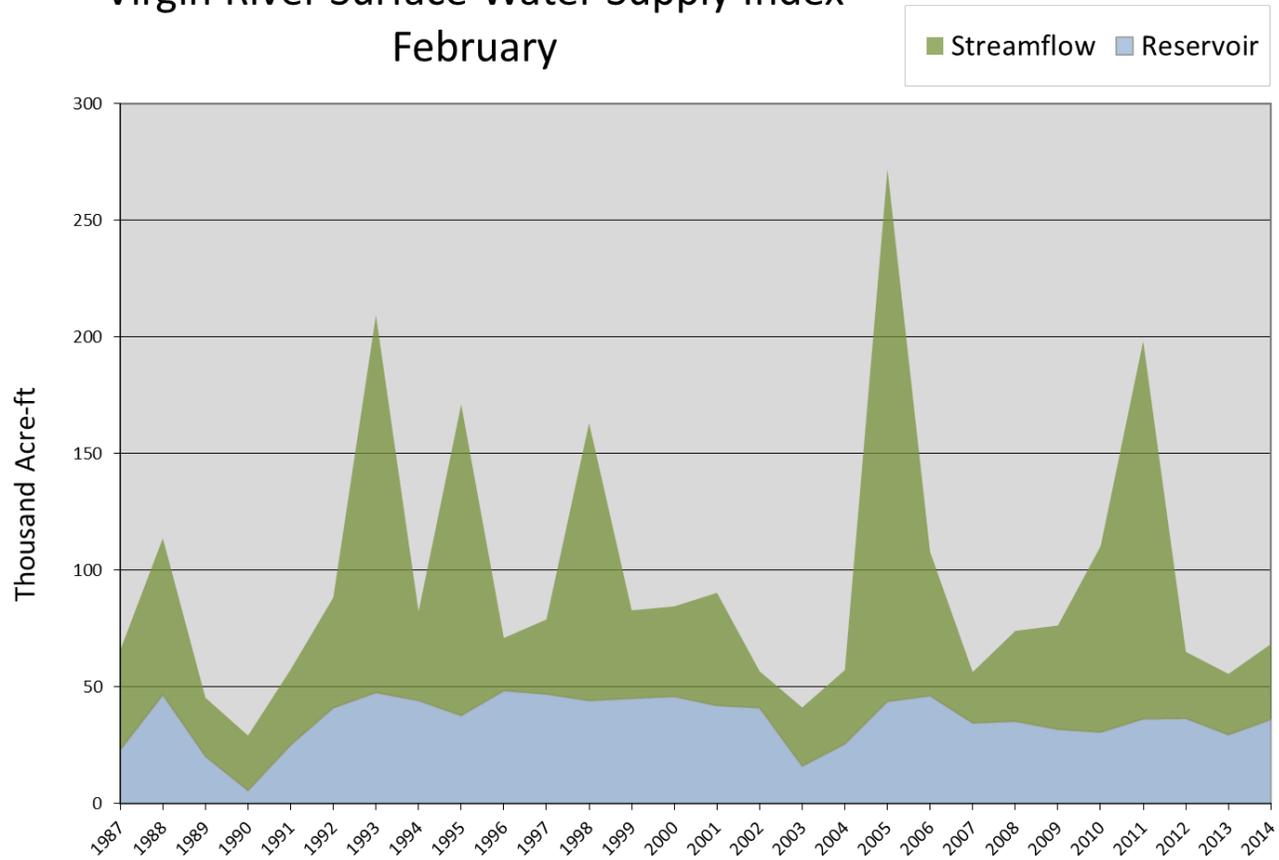
February 1, 2014

## Surface Water Supply Index

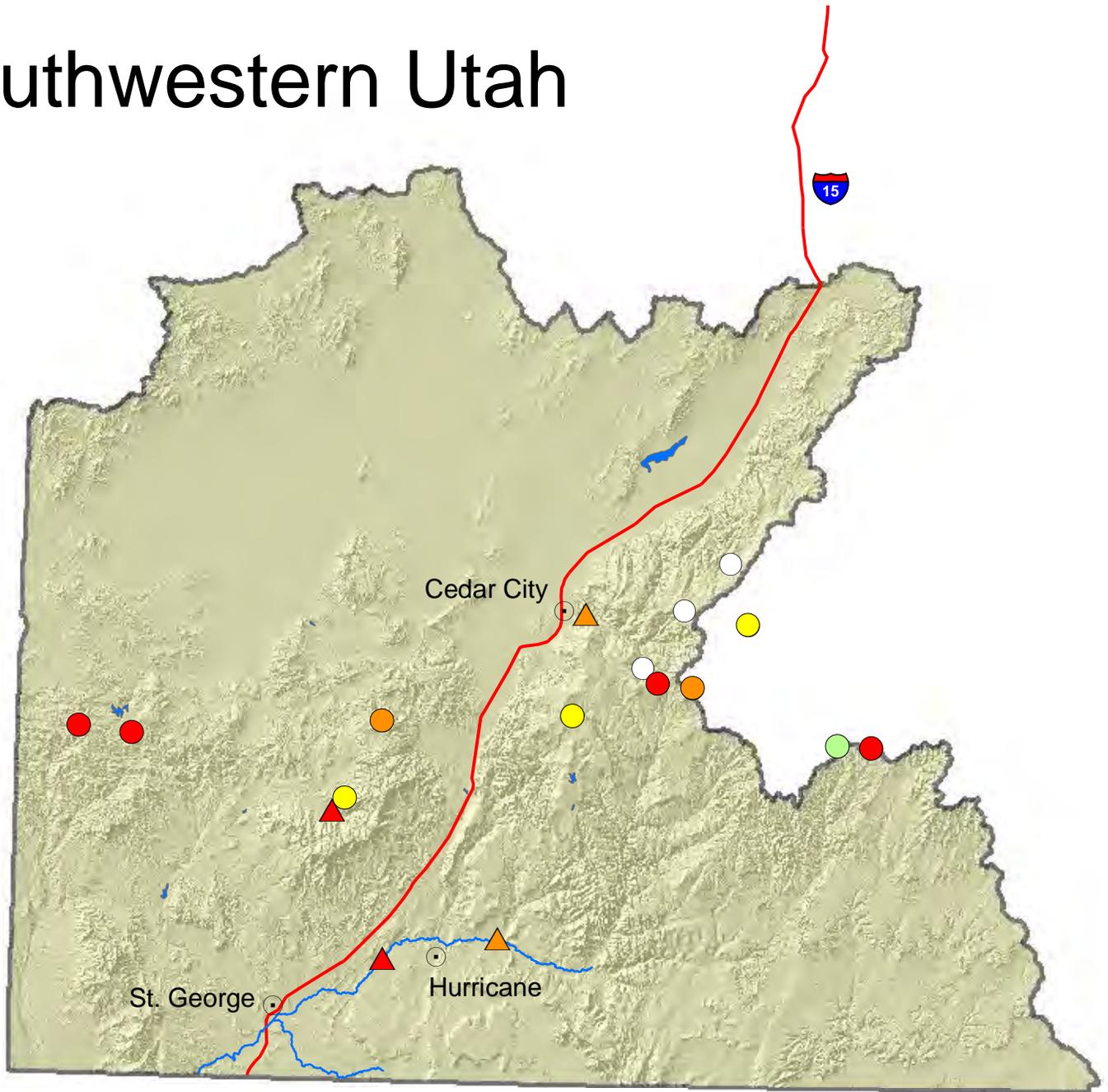
Basin or Region	January EOM* Quail Creek and Gunlock Reservoirs	April-July forecast Virgin and Santa Clara Rivers	Reservoir + Streamflow	SWSI <sup>#</sup>	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Virgin River</b>	<b>36.1</b>	<b>32</b>	<b>69</b>	<b>-1.29</b>	<b>34</b>	<b>12,87,96,08</b>

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

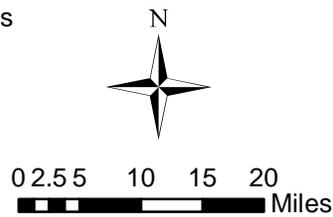
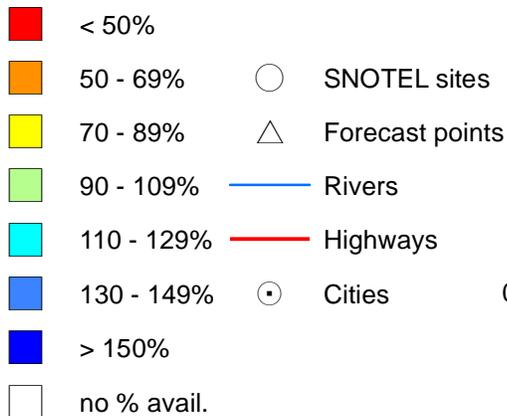
Virgin River Surface Water Supply Index  
February



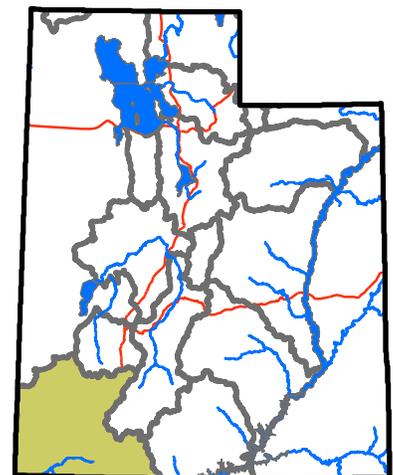
# Southwestern Utah



## Percent normal



United States Department of Agriculture  
 Natural Resources Conservation Service



2/1/2014

## Surface Water Supply Index

Basin or Region	Jan EOM* Reservoirs	April-July Stream Forecast	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Bear River</b>	<b>536</b>	<b>55</b>	<b>591</b>	<b>-1.72</b>	<b>29</b>	<b>28, 45, 29, 30</b>
<b>Woodruff Narrows</b>	<b>14.4</b>	<b>94.0</b>	<b>108.4</b>	<b>-1.45</b>	<b>33</b>	<b>94, 76, 91, 00</b>
<b>Little Bear</b>	<b>9.7</b>	<b>24.0</b>	<b>33.7</b>	<b>-0.91</b>	<b>39</b>	<b>12, 02, 94, 10</b>
<b>Ogden River</b>	<b>39.0</b>	<b>46.0</b>	<b>85.0</b>	<b>-2.39</b>	<b>11</b>	<b>03, 88, 01, 13</b>
<b>Weber River</b>	<b>162</b>	<b>250</b>	<b>412</b>	<b>-1.81</b>	<b>28</b>	<b>91, 89, 08, 12</b>
<b>Provo</b>	<b>265</b>	<b>81</b>	<b>346</b>	<b>-3.70</b>	<b>6</b>	<b>04,03,02,92</b>
<b>West Uintah Basin</b>	<b>155</b>	<b>147</b>	<b>302</b>	<b>-0.09</b>	<b>49</b>	<b>76, 08, 87, 73</b>
<b>East Uintah Basin</b>	<b>21.3</b>	<b>54.0</b>	<b>75.3</b>	<b>-2.74</b>	<b>17</b>	<b>94, 04, 94, 03</b>
<b>Blacks Fork</b>	<b>6.9</b>	<b>74.0</b>	<b>80.9</b>	<b>-0.91</b>	<b>39</b>	<b>01, 03, 13, 06</b>
<b>Smiths Fork</b>	<b>6.8</b>	<b>24.0</b>	<b>30.8</b>	<b>3.06</b>	<b>87</b>	<b>10, 01, 11</b>
<b>Price River</b>	<b>14.5</b>	<b>27.0</b>	<b>41.5</b>	<b>-3.15</b>	<b>12</b>	<b>90, 77, 91, 02</b>
<b>Joe's Valley</b>	<b>30.0</b>	<b>40.0</b>	<b>70.0</b>	<b>-1.70</b>	<b>30</b>	<b>92, 94, 13, 04</b>
<b>Ferron Creek</b>	<b>11.3</b>	<b>28.0</b>	<b>39.3</b>	<b>-0.29</b>	<b>47</b>	<b>03, 12, 78, 01</b>
<b>Moab</b>	<b>1.1</b>	<b>3.2</b>	<b>4.3</b>	<b>-0.89</b>	<b>39</b>	<b>00, 13, 06, 08</b>
<b>Upper Sevier River</b>	<b>92</b>	<b>45</b>	<b>137</b>	<b>-1.17</b>	<b>36</b>	<b>68,93,59,09</b>
<b>San Pitch</b>	<b>0.5</b>	<b>13</b>	<b>14</b>	<b>-3.27</b>	<b>11</b>	<b>90,02,03,04</b>
<b>Lower Sevier River</b>	<b>116</b>	<b>72</b>	<b>188</b>	<b>-0.30</b>	<b>46</b>	<b>08,01,96,07</b>
<b>Beaver River</b>	<b>10.6</b>	<b>20.0</b>	<b>30.6</b>	<b>-0.62</b>	<b>43</b>	<b>65,62,12,10</b>
<b>Virgin River</b>	<b>36.1</b>	<b>32</b>	<b>69</b>	<b>-1.29</b>	<b>34</b>	<b>12,87,96,08</b>

\*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/](http://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.nracs.usda.gov/snow/>

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**Utah Climate and  
Water Report**  
Natural Resources Conservation Service  
Salt Lake City, UT

