



# Utah Water Supply Outlook Report

## January, 2014



**Top of Clear Creek Canyon, (Spanish Fork)- December, 2013.  
Not much snow.**

Photo by Jordan Clayton, 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

January 1, 2014

## SUMMARY

2014 may not be the year we all want and have hoped for. The state has had basically a couple of good storms down south and only one up north thus far in the water year. The storms across southern Utah had snowpacks up above 200% of normal but since those, times have turned lean and dry. Northern Utah has been behind all along with dinky storms and stinky air. However, it is only January and a lot of things can happen between now and April 1 – our typical snowpack peak – that said, statistics are not on our side. Given snowpacks 75% or lower on January 1, the probability is that we will improve but the chance of getting back to normal – 100% or higher, are low. Possible – yes, probable – no. So, with that gut punch, let's take a couple more body blows for northern Utah – reservoir storage is very low and soil moisture on the Weber and Bear is low as well. Not particularly promising at this point. Both reservoir storage and soil moisture are much better in southern Utah. Soil moisture is extremely high which promises higher runoff potential. December precipitation in northern Utah was a pretty uniform 70% of average. In southern Utah it ranged from 60% to about 80% of average which bring the seasonal accumulation to about 70% in the north and 75% to 110% in the south. The final bit of bad news is that the Climate Prediction Center is forecasting above normal temperatures and average to below average precipitation for the remainder of the winter months. Overall, water supply conditions are below normal in the north and below to near normal in the south. While the news is a bit of gloom and doom – remember that bases loaded home runs are hit in the ninth inning – just not very often.

## SNOWPACK

January first snowpacks as measured by the NRCS SNOTEL system range from 75% of median across northern Utah to the 90%-100% of median in southern Utah.

## PRECIPITATION

Mountain precipitation during December was 60% to 80% of average which brings the seasonal accumulation (Oct-Dec) to about 75% of normal.

## SOIL MOISTURE

Soil Moisture has improved substantially from summer lows and is much above normal in southern Utah and near to below normal in the north.

## RESERVOIRS

Storage in 46 of Utah's key irrigation reservoirs is at 55% of capacity compared to 64% last year. Reservoir storage two years ago was 84% of capacity.

## STREAMFLOW

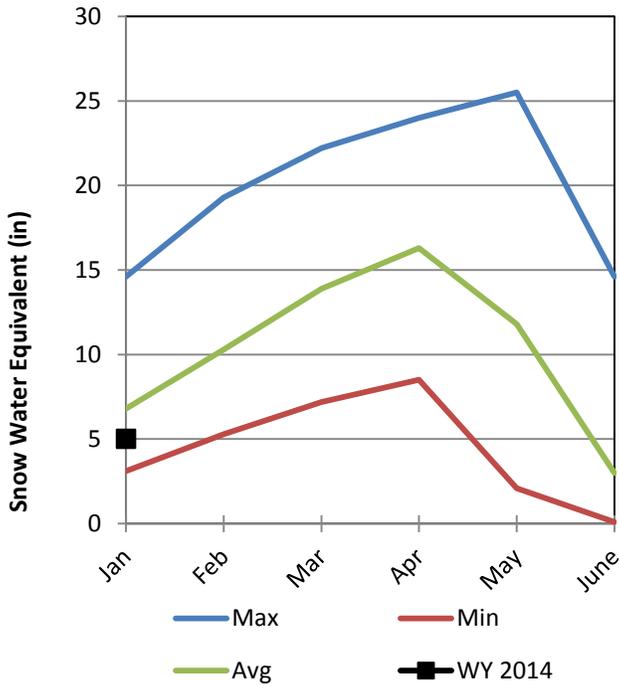
Snowmelt stream flows are forecast to be below to much below normal in northern Utah and near to below normal in southern Utah.

# Statewide Utah

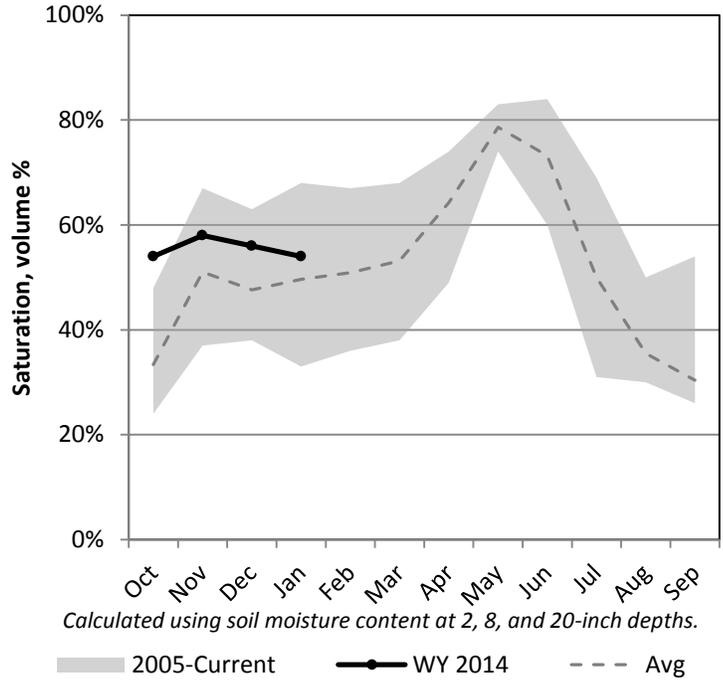
1/1/2014

Snowpack in Utah is below average at 83% of normal, compared to 106% last year. Precipitation in December was below average at 74%, which brings the seasonal accumulation (Oct-Dec) to 75% of average. Soil moisture is at 54% compared to 46% last year. Reservoir storage is at 65% of capacity, compared to 86% last year. Forecast streamflow volumes range from 42% to 125% of average.

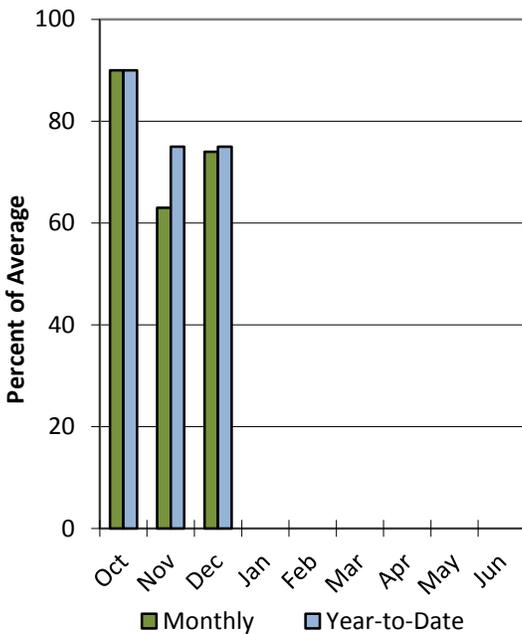
## Snowpack



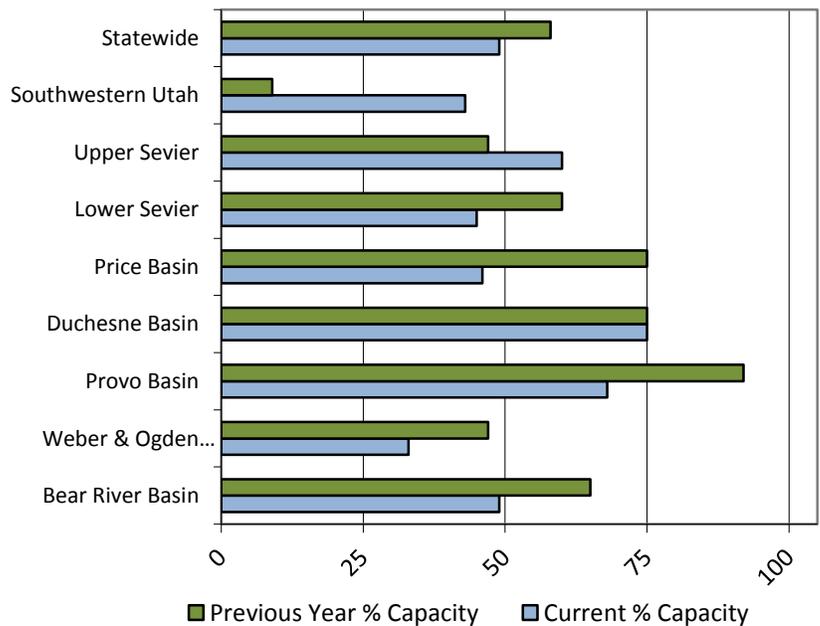
## Soil Moisture



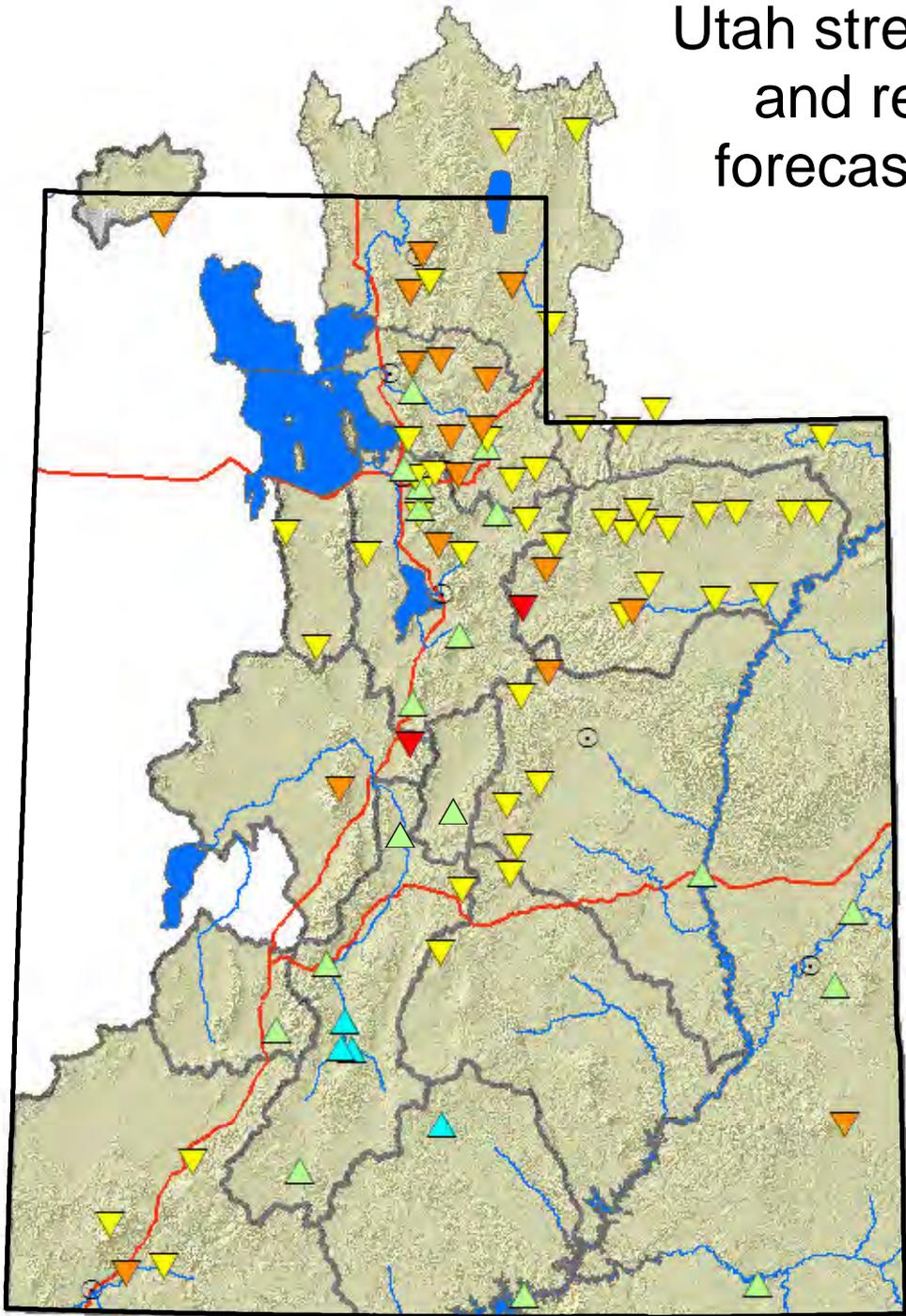
## Precipitation



## Reservoir Storage



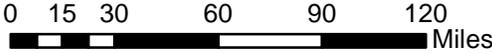
# Utah streamflow and reservoir forecast points



## Percent normal

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


  
 United States Department of Agriculture  
 Natural Resources Conservation Service

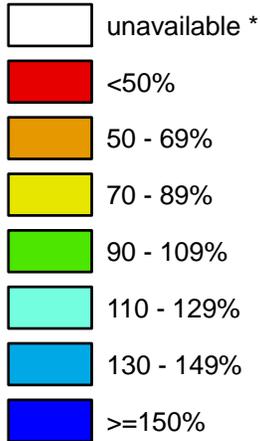


# Utah

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

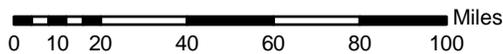
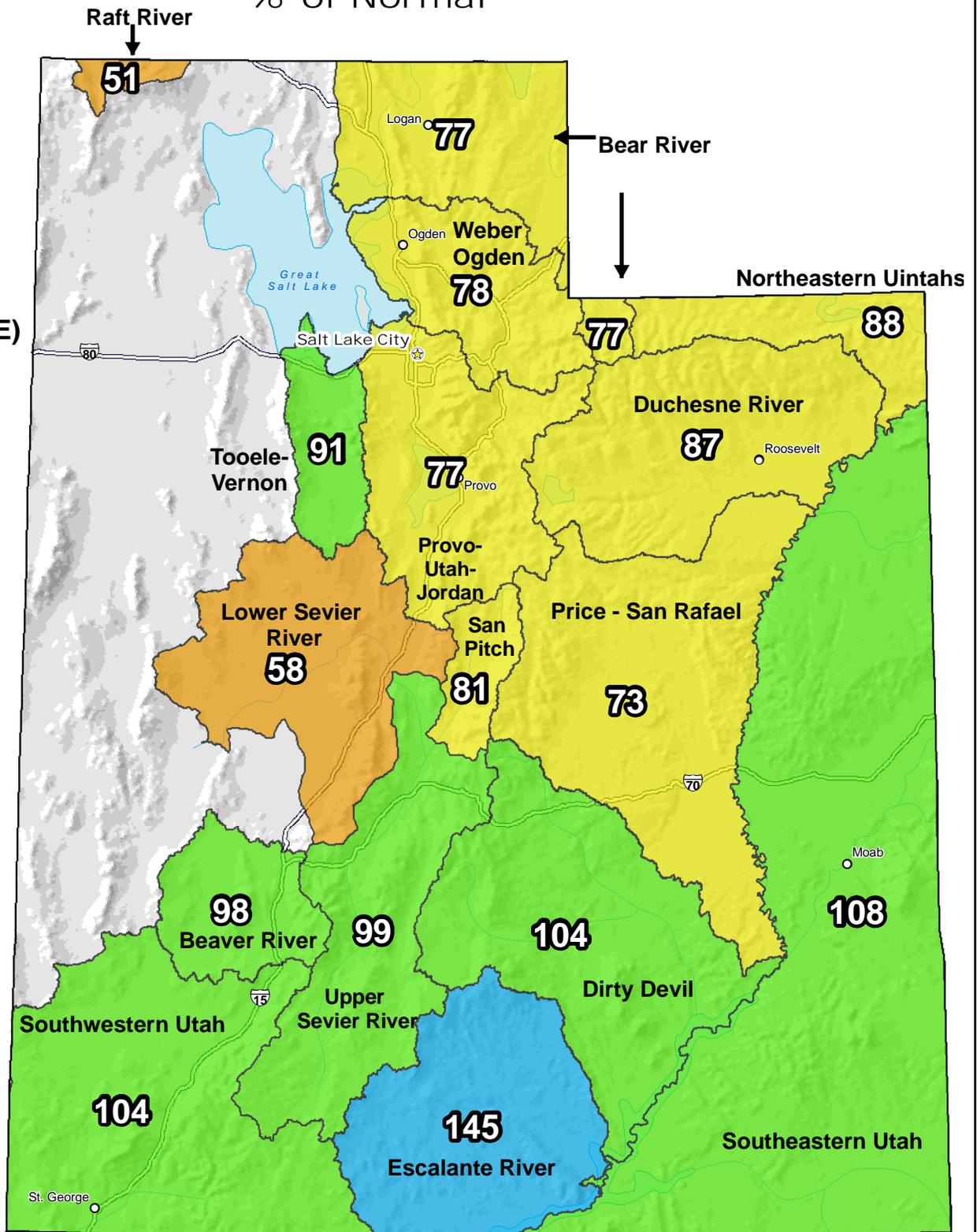
Jan 01, 2014

**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).

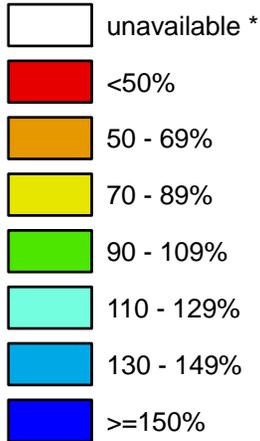
Prepared by the USDA/NRCS National Water and Climate Center  
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: Jim.Marron@por.usda.gov 503 414 3047

# Utah

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

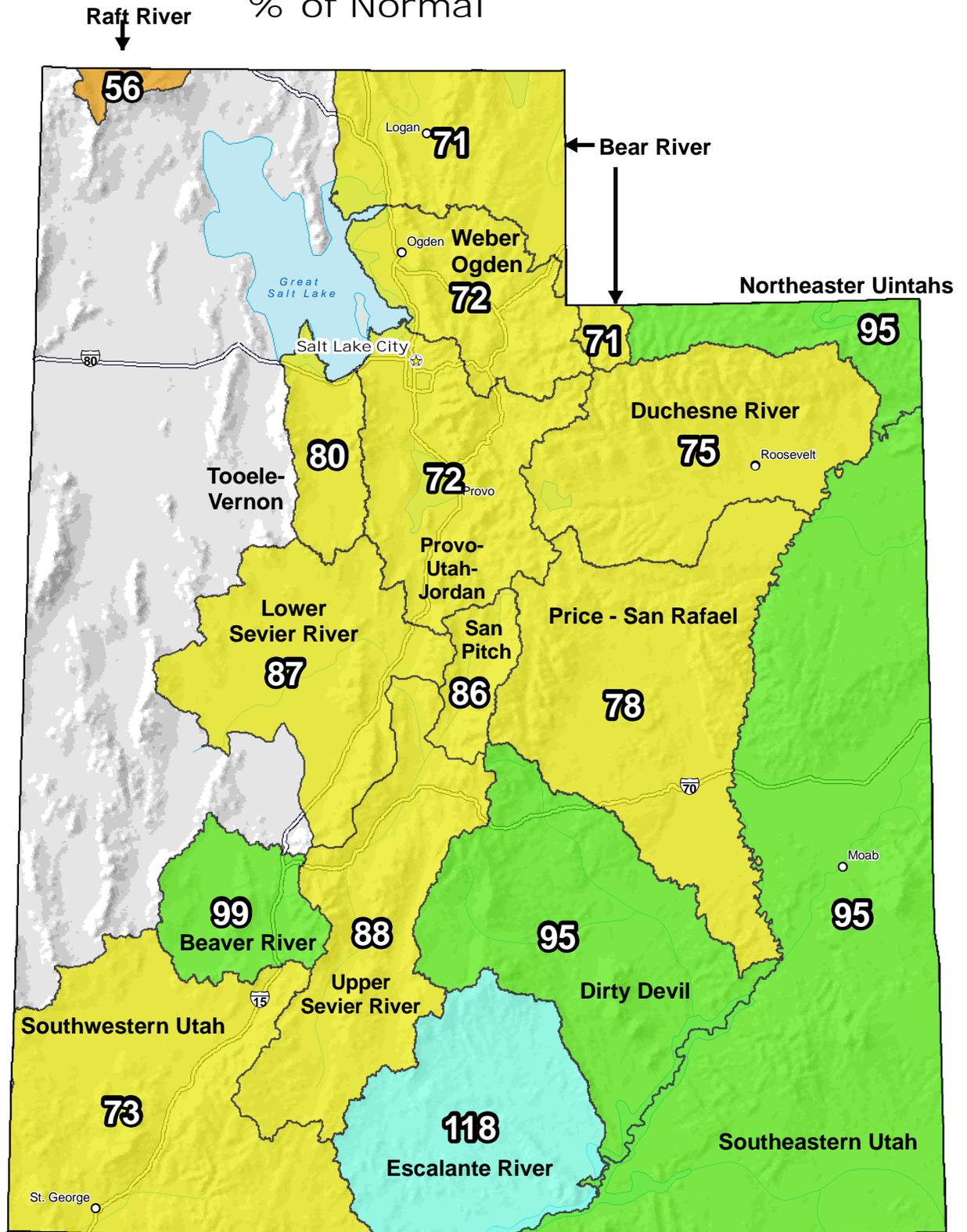
Jan 01, 2014

**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).

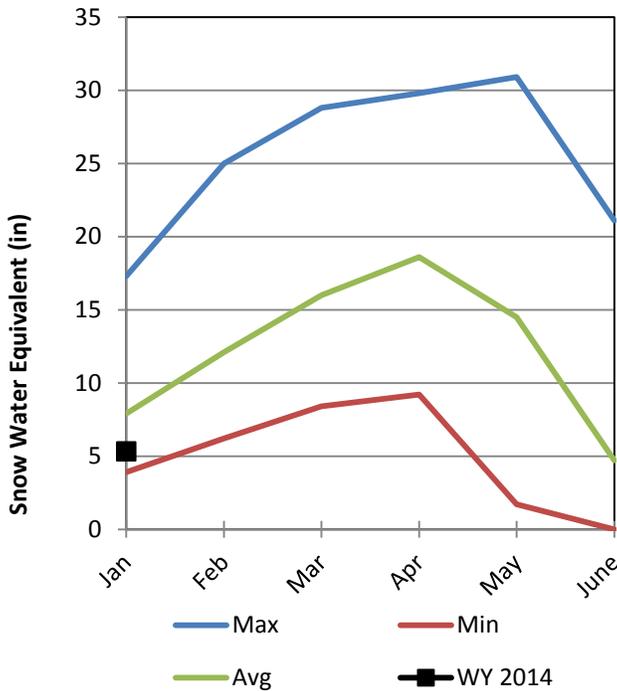
Prepared by the USDA/NRCS National Water and Climate Center  
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: [Jim.Marron@por.usda.gov](mailto:Jim.Marron@por.usda.gov) 503 414 3047

# Bear River Basin

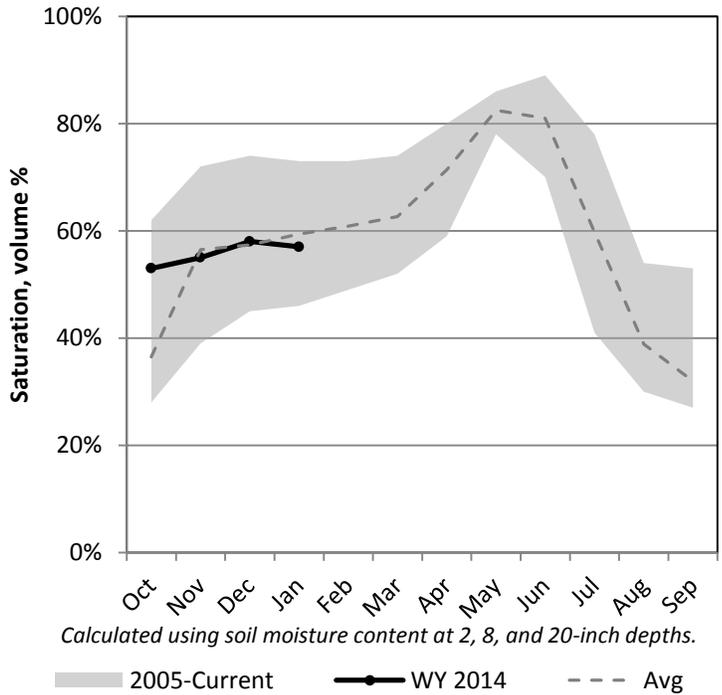
1/1/2014

Snowpack in the Bear River Basin is below average at 78% of normal, compared to 100% last year. Precipitation in December was below average at 74%, which brings the seasonal accumulation (Oct-Dec) to 71% of average. Soil moisture is at 57% compared to 65% last year. Reservoir storage is at 49% of capacity, compared to 65% last year. Forecast streamflow volumes range from 65% to 86% of average. The surface water supply index is 38% for the Bear River, 35% for the Woodruff Narrows, 48% for the Little Bear.

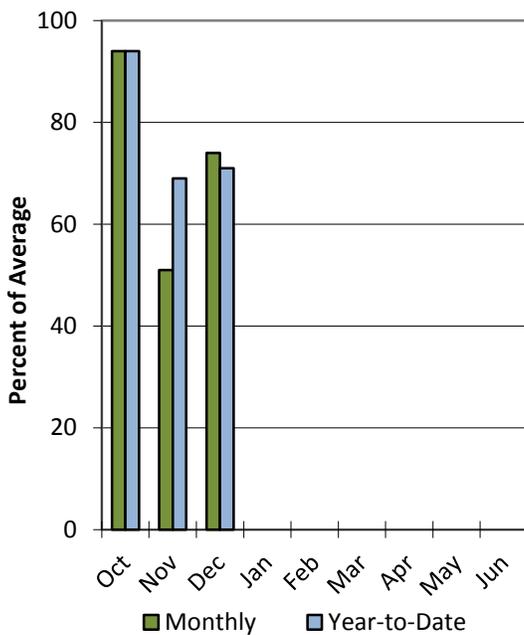
## Snowpack



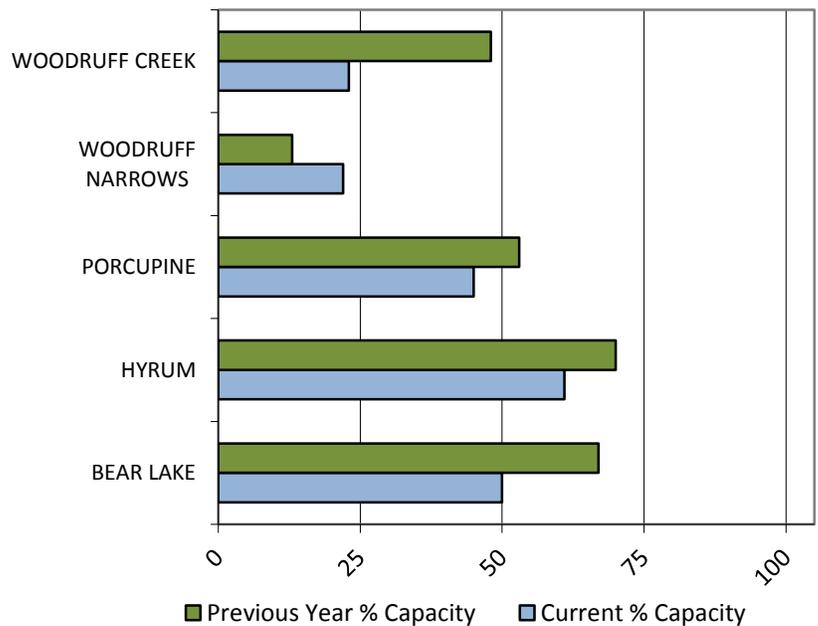
## Soil Moisture



## Precipitation



## Reservoir Storage



## Bear River Streamflow Forecasts - January 1, 2014

Bear 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)
Bear R nr UT-WY State Line	APR-JUL	59	85	96	86%	121	147	112
Bear R ab Resv nr Woodruff	APR-JUL	45	82	103	85%	132	169	121
Big Ck nr Randolph	APR-JUL	0.08	1.43	2.5	66%	3.6	5.1	3.8
Smiths Fk nr Border	APR-JUL	33	55	70	79%	85	107	89
Bear R bl Stewart Dam <sup>2</sup>	APR-JUL	2.8	96	140	77%	224	317	183
Little Bear at Paradise	APR-JUL	0.82	15.9	28	68%	40	58	41
Logan R nr Logan <sup>2</sup>	APR-JUL	17.2	50	72	65%	94	127	111
Blacksmith Fk nr Hyrum	APR-JUL	7.5	23	32	74%	44	60	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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BEAR LAKE	650.7	875.1	584.8	1421.0
HYRUM RESERVOIR	9.3	10.8	10.2	15.3
PORCUPINE RESERVOIR	5.1	6.0	6.0	11.3
WOODRUFF NARROWS RESERVOIR	12.7	7.5	29.0	57.3
WOODRUFF CREEK	0.9	1.9	2.4	4.0
Basin-wide Total	678.7	901.2	632.4	1508.9
# of reservoirs	5	5	5	5

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Upper Bear	3	85%	107%
Middle Bear	7	84%	100%
Lower Bear	3	58%	84%
Logan	7	75%	103%

January 1, 2014

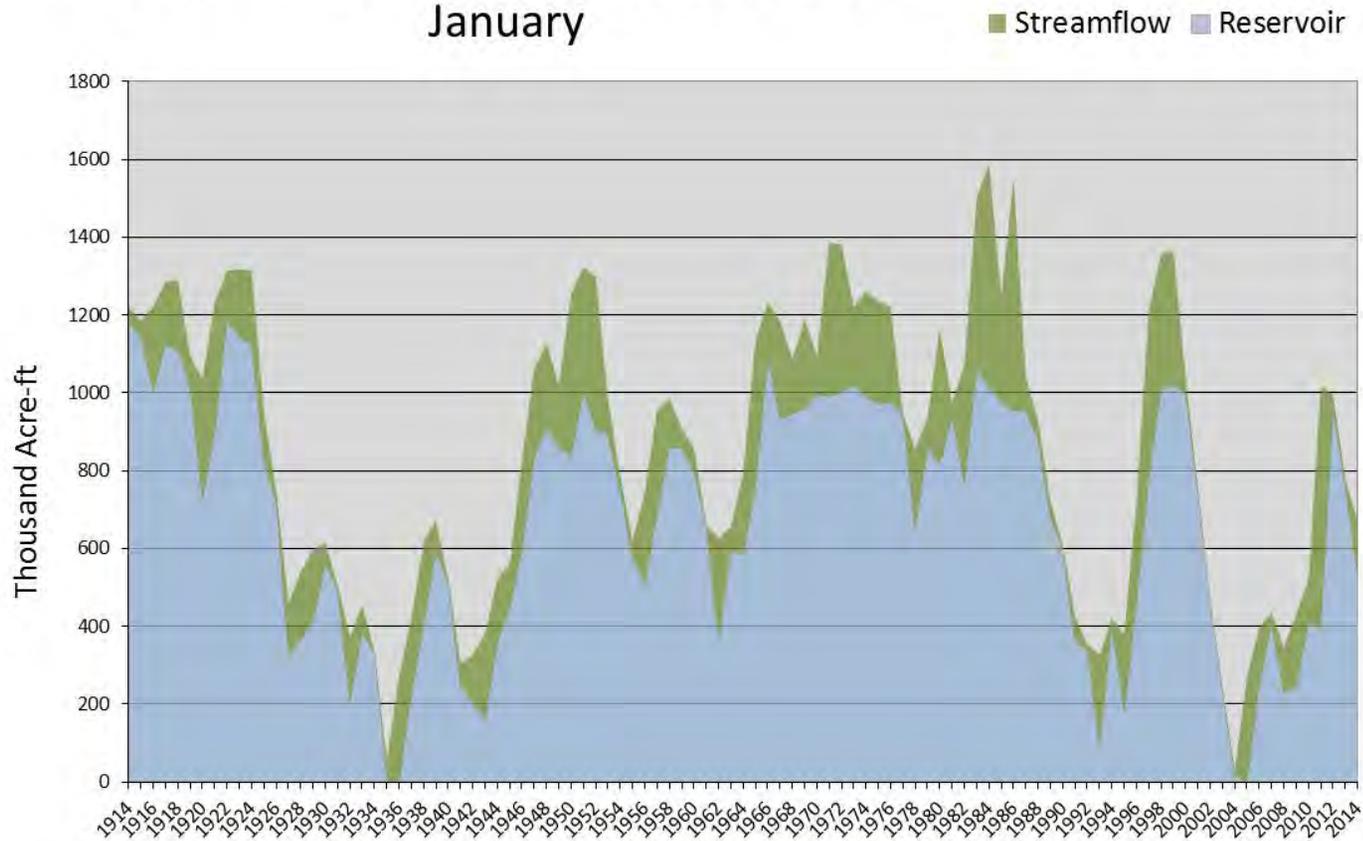
## Surface Water Supply Index

Basin or Region	December EOM* Bear Lake	April-July Forecast below Stewart Dam	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Bear River</b>	<b>532</b>	<b>140</b>	<b>672</b>	<b>-0.98</b>	<b>38</b>	<b>61, 39, 96, 89</b>

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

### Bear Lake - Surface Water Supply Index

January



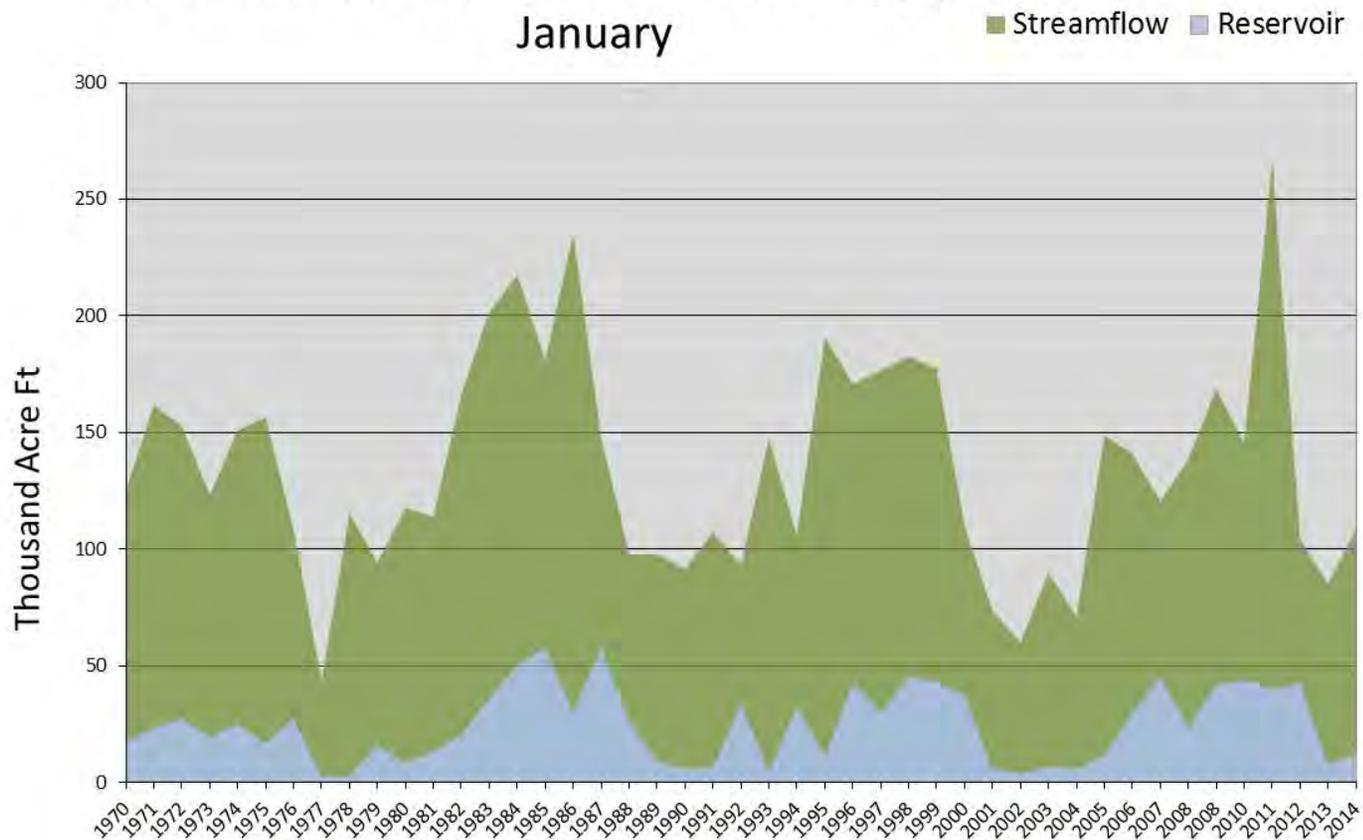
January 1, 2014

## Surface Water Supply Index

Basin or Region	December 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>12.7</b>	<b>96.0</b>	<b>108.7</b>	<b>-1.27</b>	<b>35</b>	<b>91, 76, 00, 81</b>

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

### Woodruff Narrows - Surface Water Supply Index January



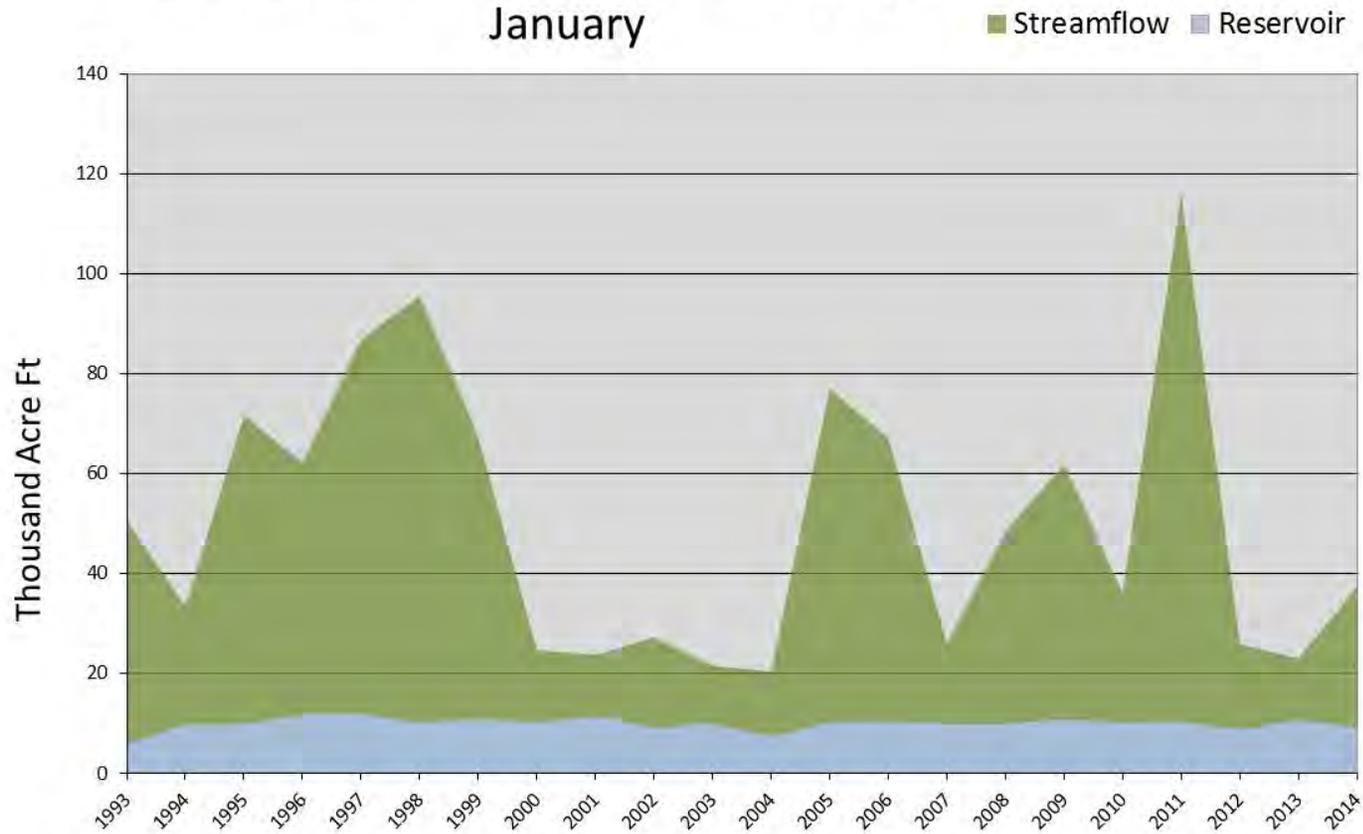
January 1, 2014

## Surface Water Supply Index

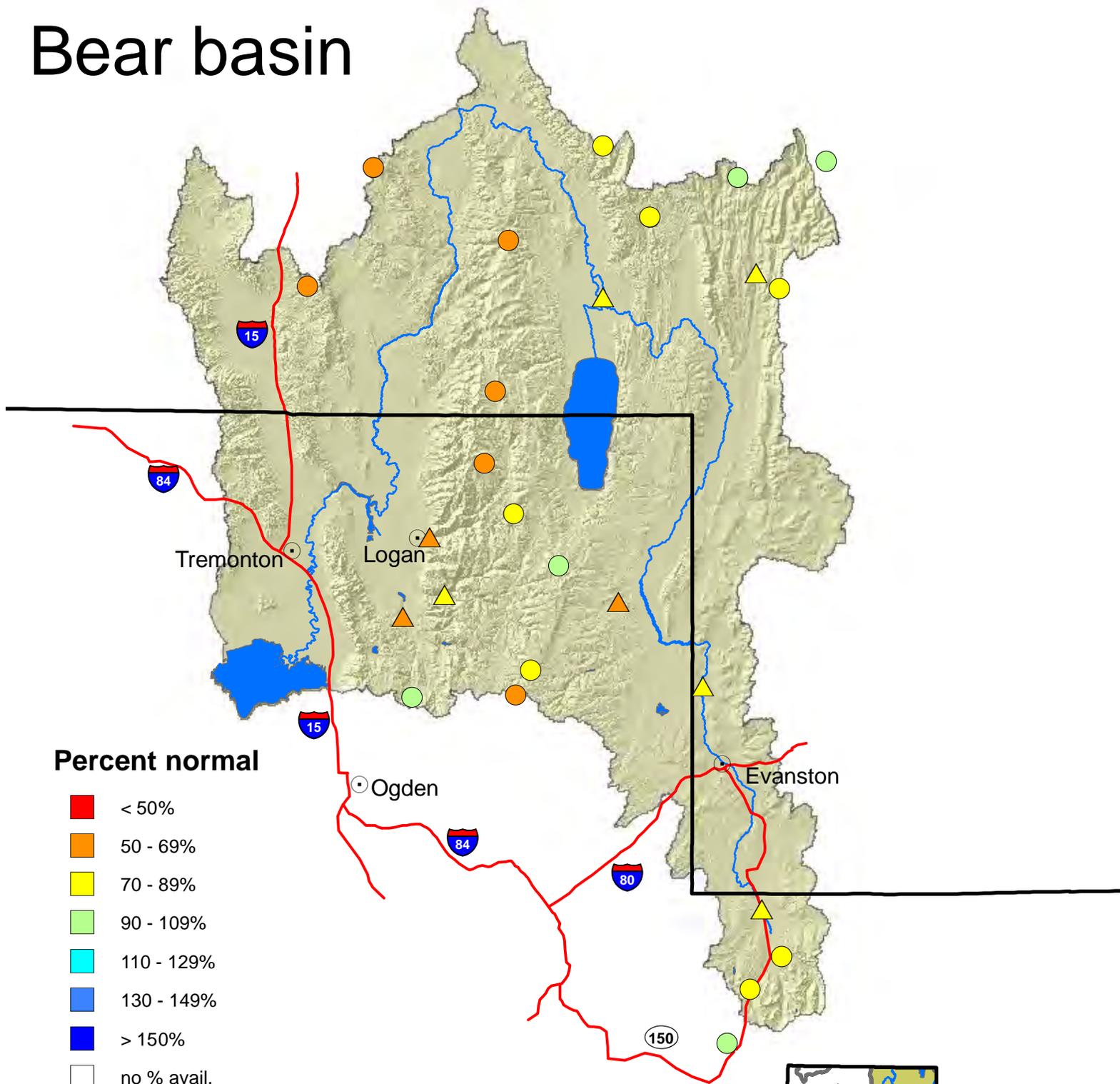
Basin or Region	December EOM* Hyrum Reservoir	April-July forecast Little Bear Nr Paradise	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Little Bear</b>	<b>9.3</b>	<b>28.0</b>	<b>37.3</b>	<b>-0.18</b>	<b>48</b>	<b>94, 10, 08, 93</b>

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

Little Bear River - Surface Water Supply Index  
January



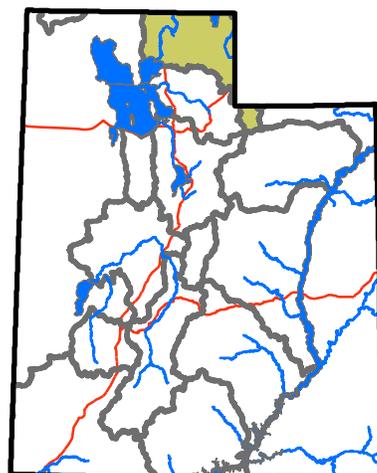
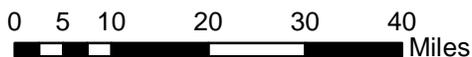
# Bear basin



## Percent normal

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

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

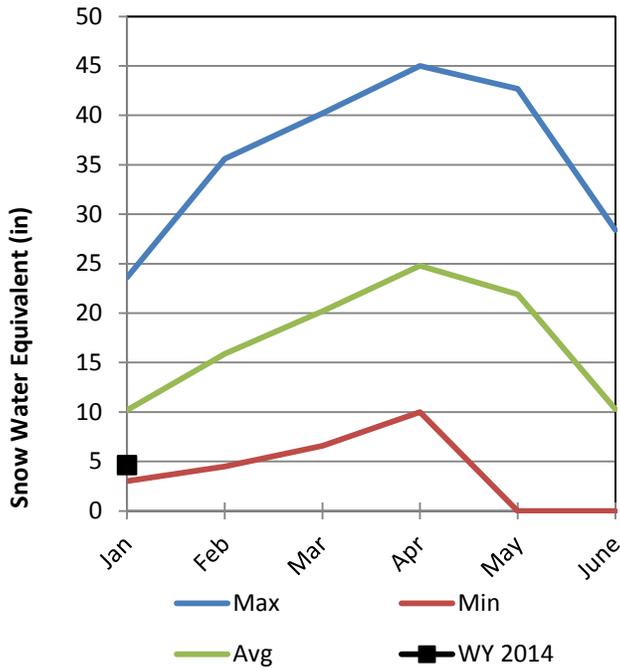


# Raft River Basin

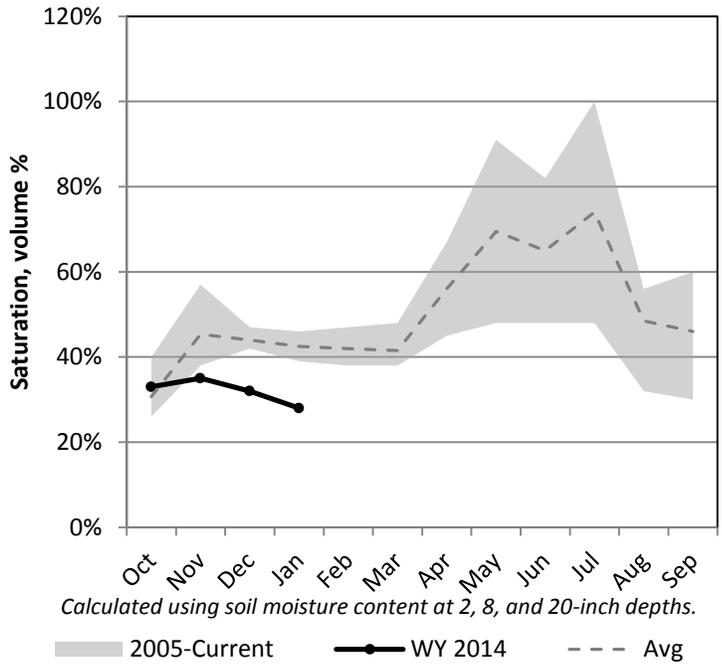
1/1/2014

Snowpack in the Raft River Basin is much below average at 51% of normal, compared to 103% last year. Precipitation in December was much below average at 37%, which brings the seasonal accumulation (Oct-Dec) to 56% of average. Soil moisture is at 28% compared to 46% last year. The forecast streamflow volume for Dunn Creek is 62% of average.

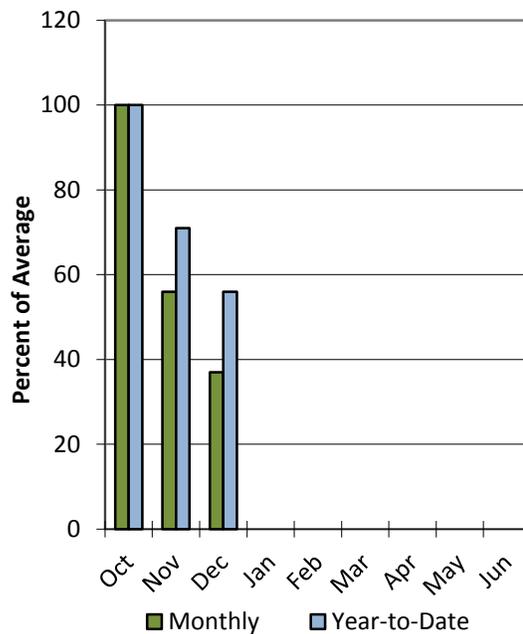
## Snowpack



## Soil Moisture



## Precipitation



Data Current as of: 1/8/2014 2:58:37 PM

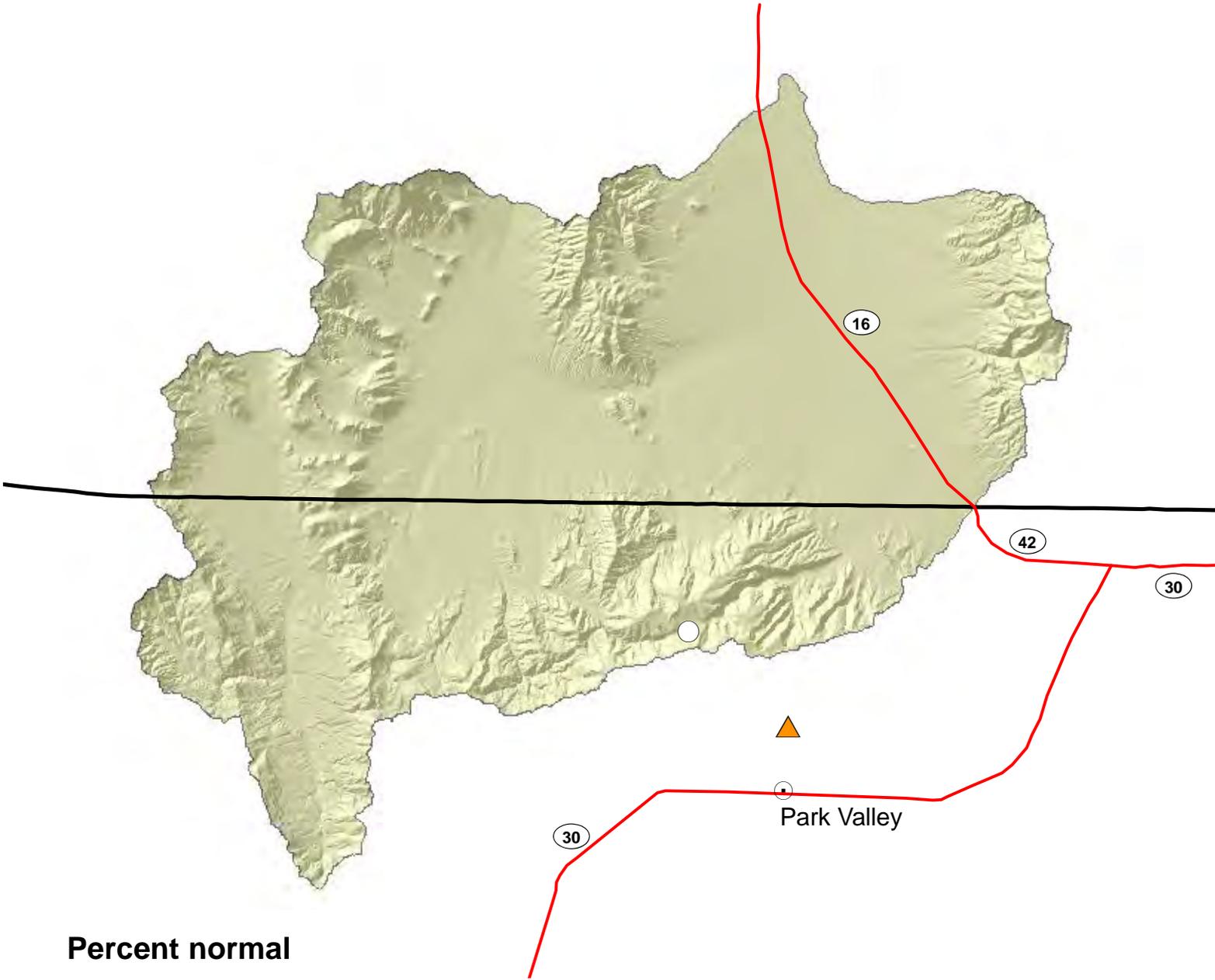
**Raft River**  
**Streamflow Forecasts - January 1, 2014**

<b>Raft River</b>	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	0.1	0.8	1.8	62%	2.8	4.5	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

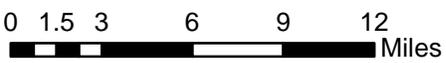
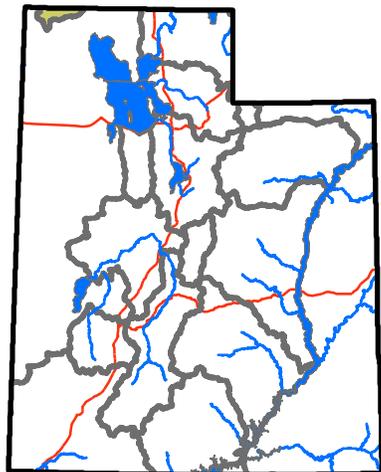
<b>Watershed Snowpack Analysis January 1, 2014</b>	# of Sites	% Median	Last Year % Median
Raft	1	51%	103%

# 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

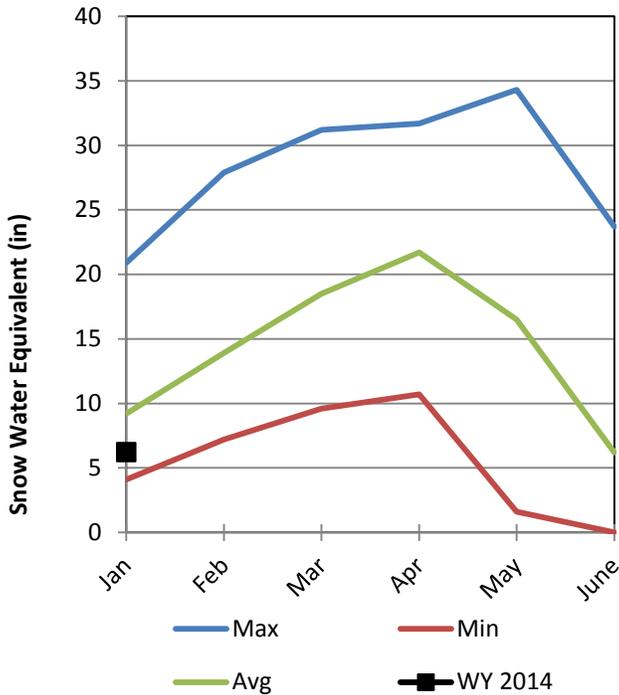


# Weber & Ogden River Basins

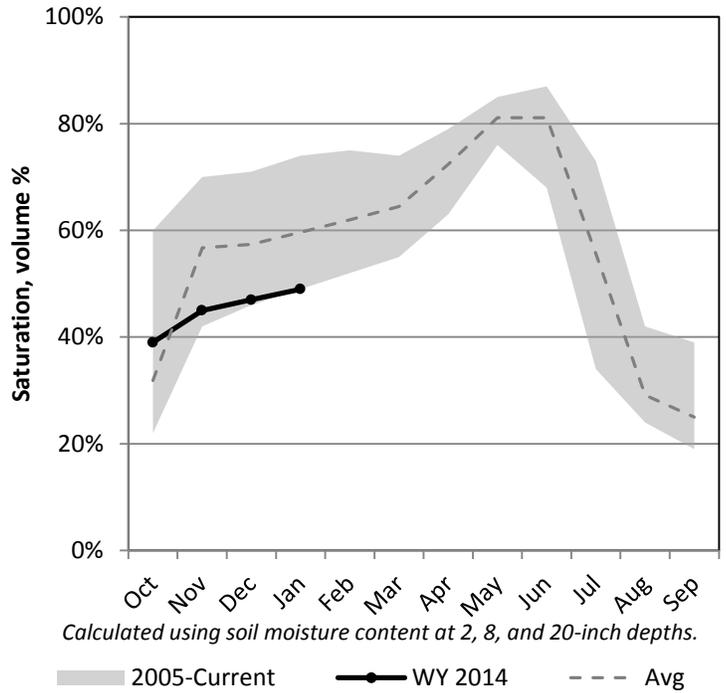
1/1/2014

Snowpack in the Weber & Ogden River Basins is below average at 79% of normal, compared to 95% last year. Precipitation in December was below average at 77%, which brings the seasonal accumulation (Oct-Dec) to 72% of average. Soil moisture is at 49% compared to 61% last year. Reservoir storage is at 33% of capacity, compared to 47% last year. Forecast streamflow volumes range from 57% to 97% of average. The surface water supply index is 24% for the Ogden River, 33% for the Weber River.

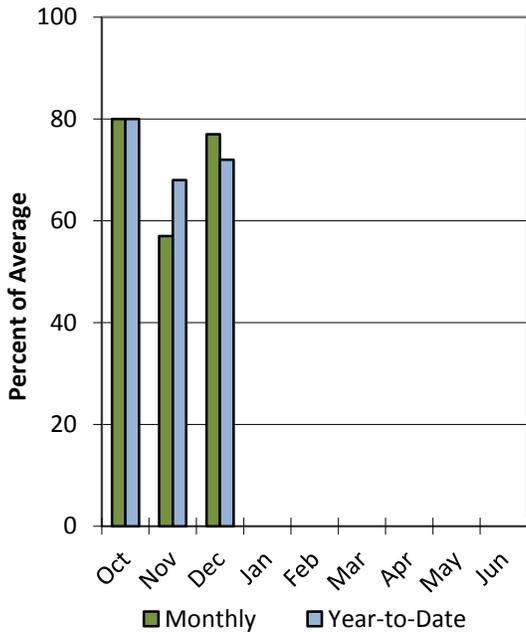
## Snowpack



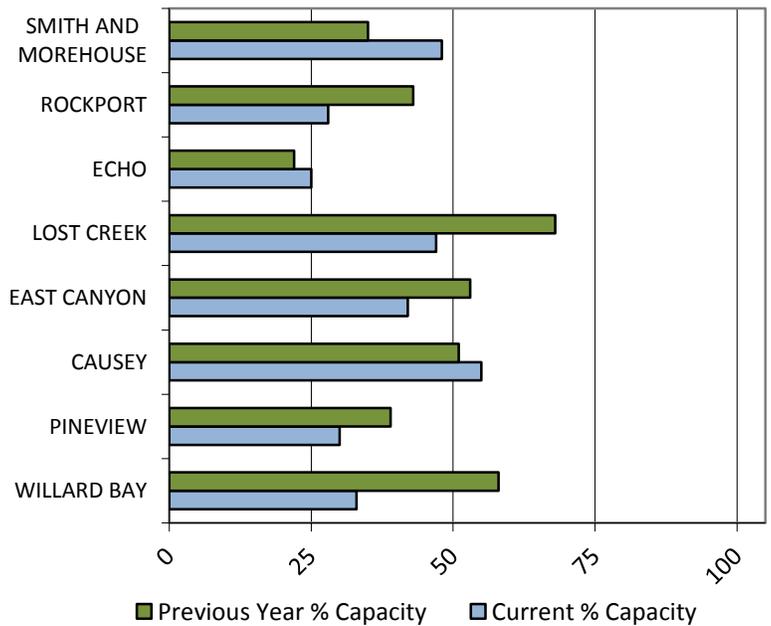
## Soil Moisture



## Precipitation



## Reservoir Storage



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

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast
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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	17.6	24	29	88%	33	40	33
Weber R at Gateway <sup>2</sup>	APR-JUL	86	206	285	90%	369	489	315
Weber R nr Coalville <sup>2</sup>	APR-JUL	55	94	121	96%	148	187	126
Weber R nr Oakley <sup>2</sup>	APR-JUL	52	83	104	89%	125	156	117
Rockport Reservoir Inflow <sup>2</sup>	APR-JUL	54	93	119	97%	145	184	123
Chalk Ck at Coalville	APR-JUL	10	26	36	88%	47	63	41
Echo Reservoir Inflow <sup>2</sup>	APR-JUL	49	93	123	74%	154	198	166
Lost Ck Reservoir Inflow	APR-JUL	0.48	3.1	7.8	64%	12.6	19.6	12.1
East Canyon Ck nr Jeremy Ranch	APR-JUL	0.1	4	9	59%	14	20	15.2
East Canyon Ck nr Morgan <sup>2</sup>	APR-JUL	0.56	8.3	16	57%	24	35	28
SF Ogden R nr Huntsville <sup>2</sup>	APR-JUL	1.12	20	35	63%	49	71	56
Pineview Reservoir Inflow <sup>2</sup>	APR-JUL	2.6	30	66	77%	102	155	86
Wheeler Ck nr Huntsville	APR-JUL	0.06	1.97	3.6	62%	5.2	7.6	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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
CAUSEY RESERVOIR	3.9	3.6	3.2	7.1
EAST CANYON RESERVOIR	20.7	26.1	34.7	49.5
ECHO RESERVOIR	18.8	16.5	46.3	73.9
LOST CREEK RESERVOIR	10.5	15.3	12.3	22.5
PINEVIEW RESERVOIR	33.0	43.3	51.4	110.1
ROCKPORT RESERVOIR	17.1	25.9	34.5	60.9
WILLARD BAY	72.0	124.5	133.7	215.0
SMITH AND MOREHOUSE RESERVOIR	3.9	2.9	3.6	81.0
Basin-wide Total	179.9	258.1	319.7	620.0
# of reservoirs	8	8	8	8

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Upper Weber	9	85%	101%
Lower Weber	7	83%	98%
Ogden	17	79%	95%
Lost Creek	3	86%	93%

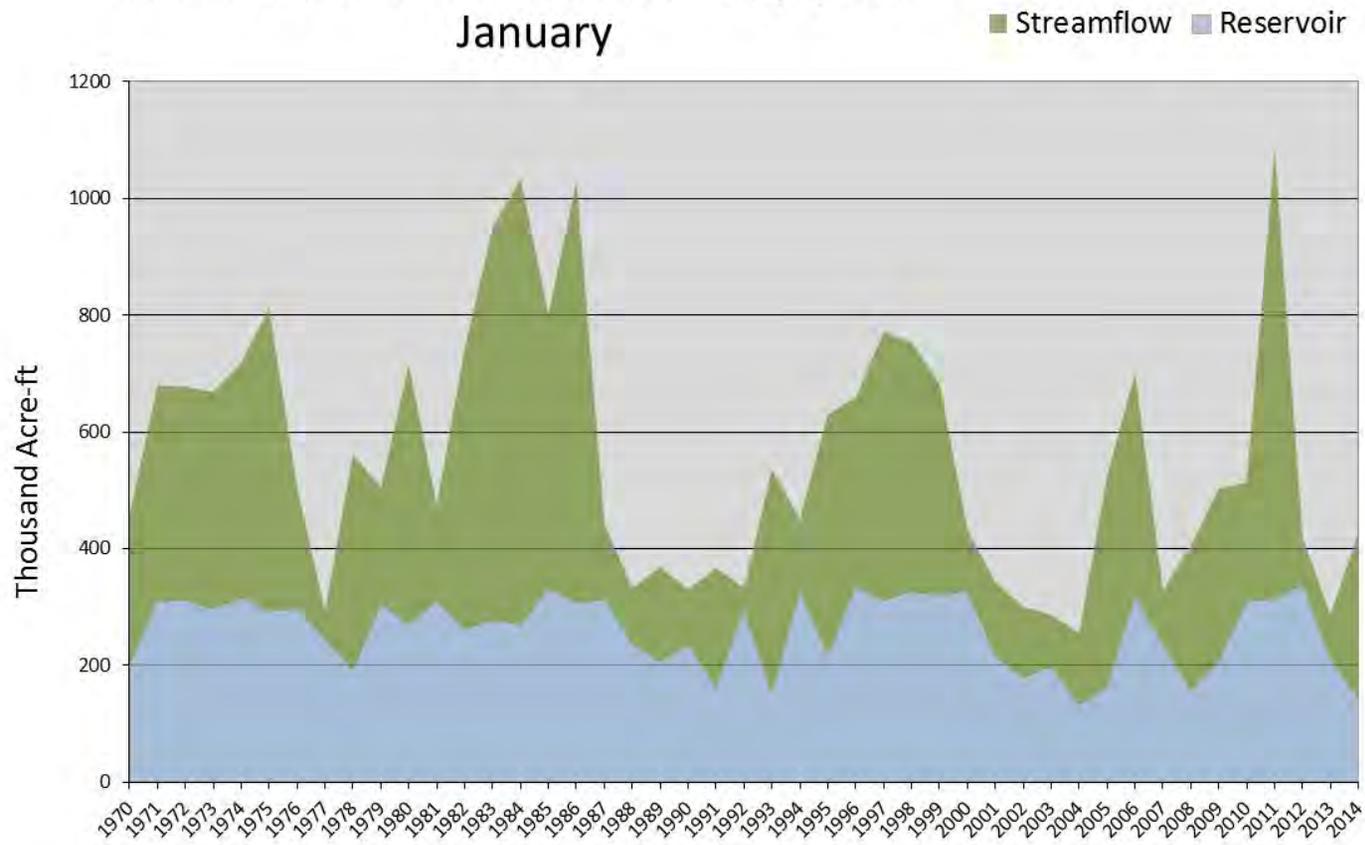
January 1, 2014

## Surface Water Supply Index

Basin or Region	December 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>143</b>	<b>285</b>	<b>428</b>	<b>-1.45</b>	<b>33</b>	<b>08, 12, 00, 87</b>

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

Weber River - Surface Water Supply Index  
January



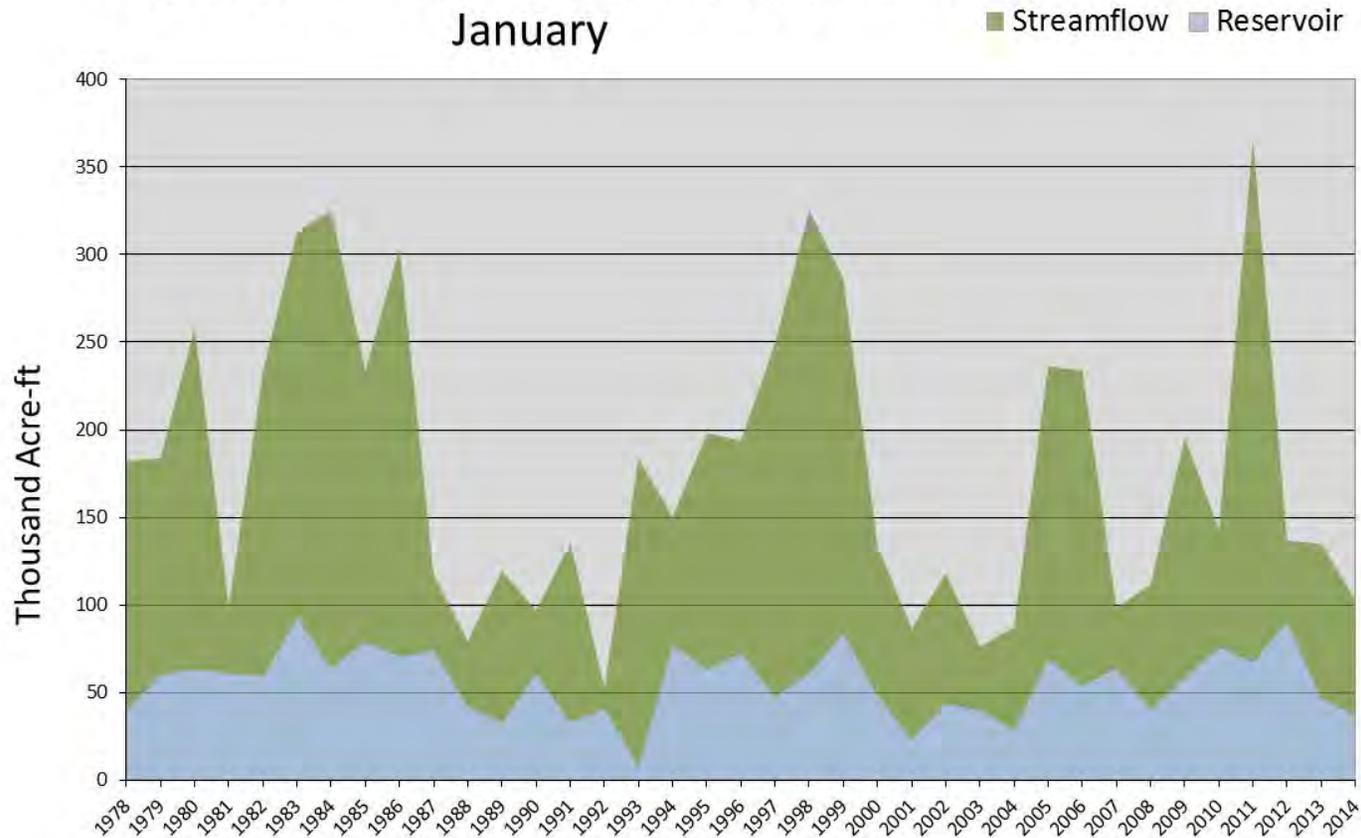
January 1, 2014

## Surface Water Supply Index

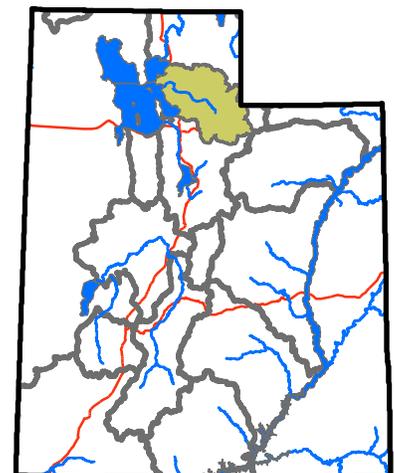
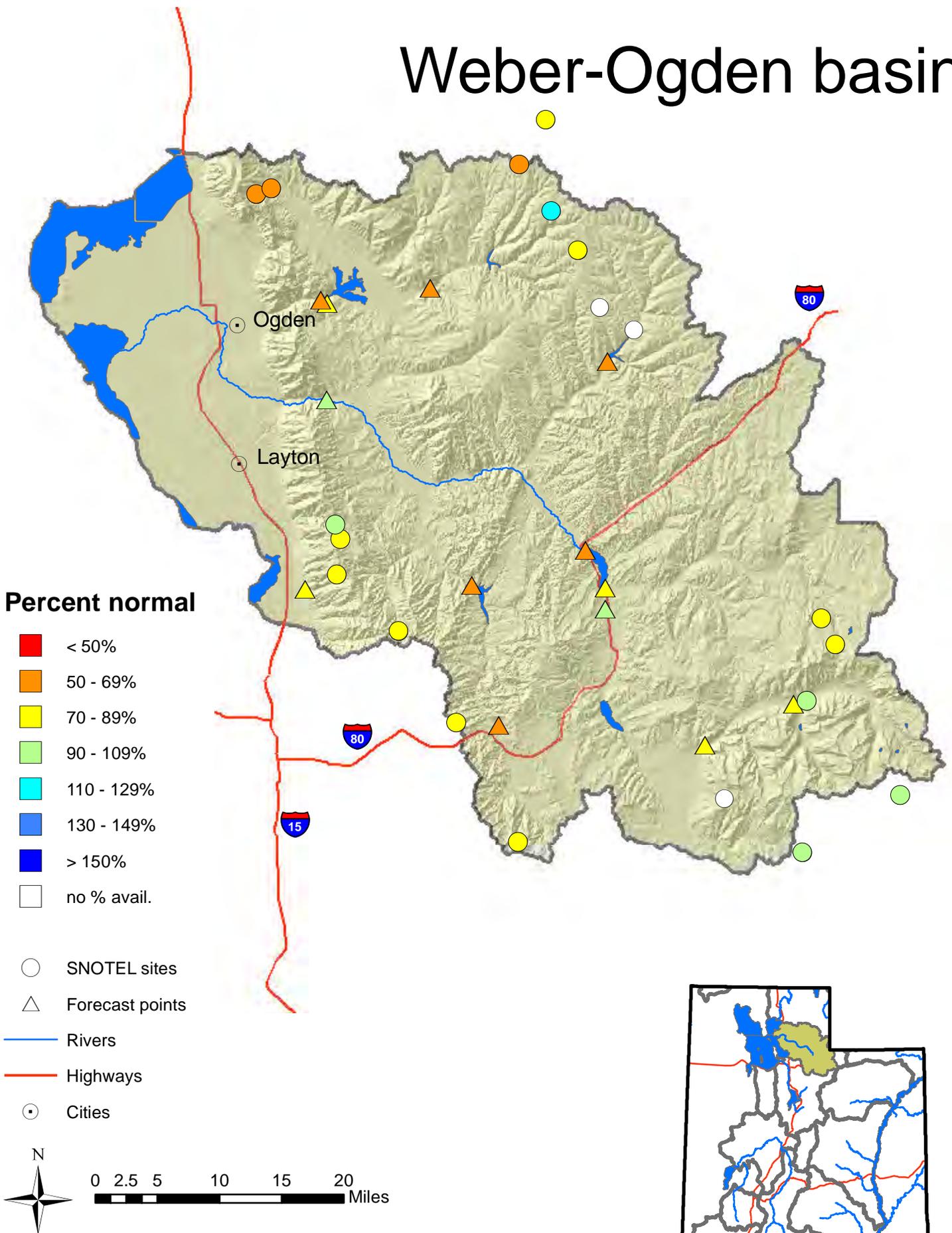
Basin or Region	December EOM* Pine View & Causey	April-July Forecast Pineview Reservoir Inflow	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Ogden River</b>	<b>37</b>	<b>66</b>	<b>103</b>	<b>-2.19</b>	<b>24</b>	<b>07, 81, 08, 87</b>

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

Ogden River - Surface Water Supply Index  
January



# Weber-Ogden basin

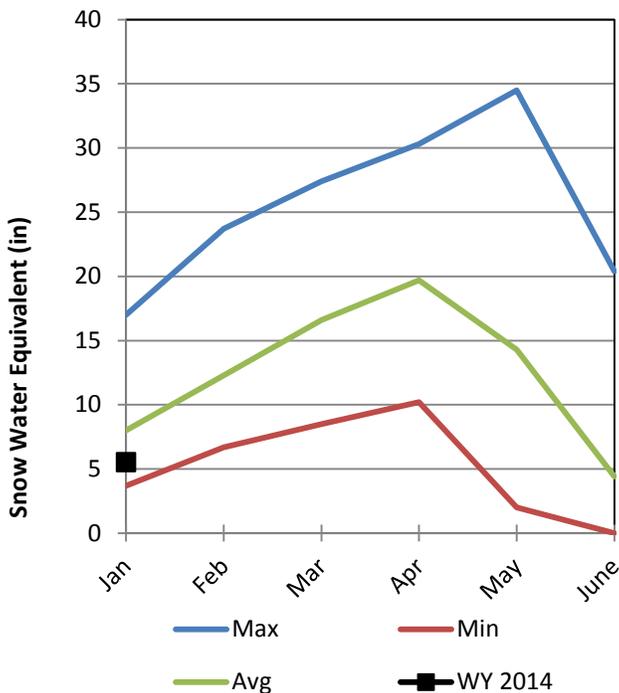


# Provo & Jordan River Basins

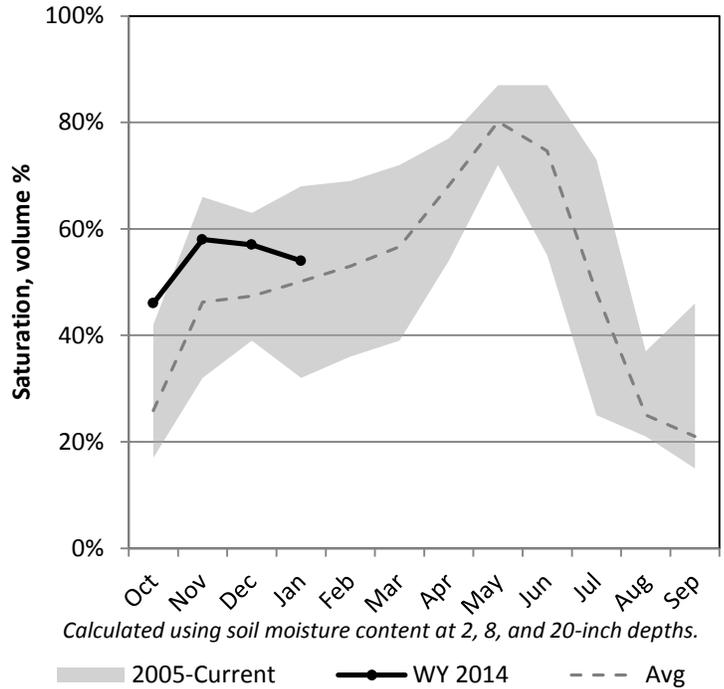
1/1/2014

Snowpack in the Provo & Jordan River Basins is below average at 78% of normal, compared to 116% last year. Precipitation in December was below average at 76%, which brings the seasonal accumulation (Oct-Dec) to 72% of average. Soil moisture is at 54% compared to 49% last year. Reservoir storage is at 68% of capacity, compared to 75% last year. Forecast streamflow volumes range from 63% to 96% of average. The surface water supply index is 8% for the Provo River.

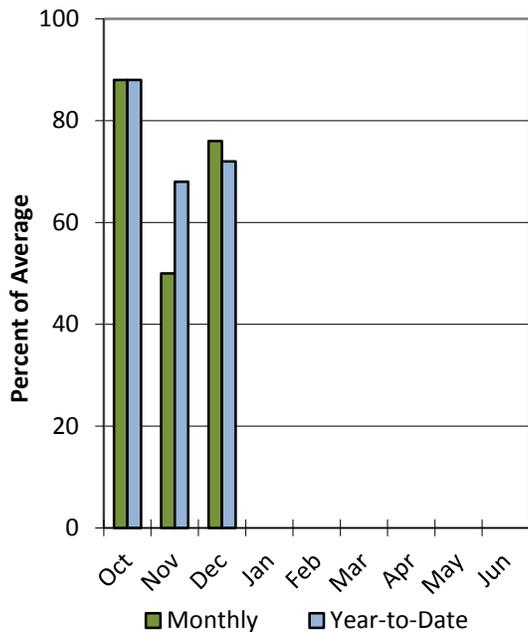
## Snowpack



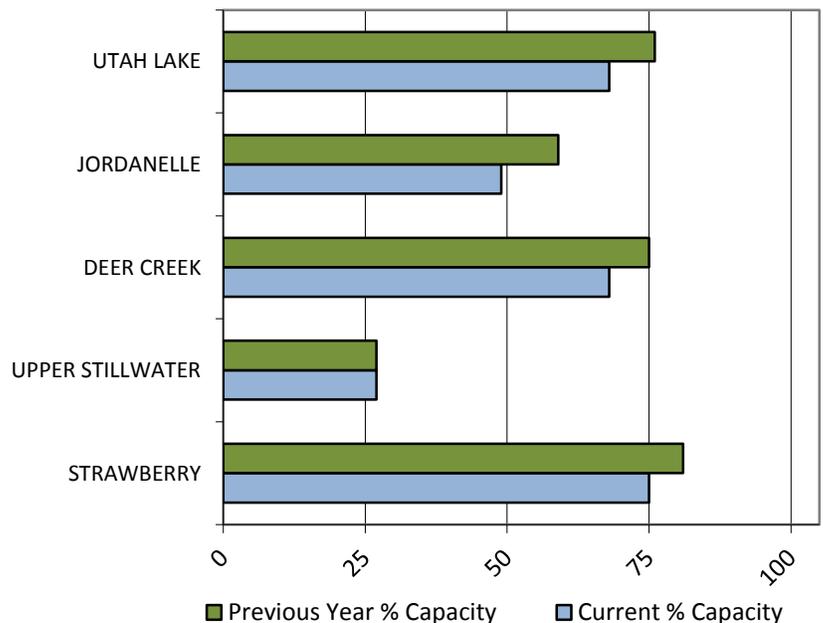
## Soil Moisture



## Precipitation



## Reservoir Storage



### Provo R Utah Lake Jordan R Streamflow Forecasts - January 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	1.69	6	9	95%	12	16.3	9.5
Spanish Fk at Castilla <sup>2</sup>	APR-JUL	1.38	36	66	96%	96	140	69
Provo R at Woodland <sup>2</sup>	APR-JUL	49	71	88	88%	107	139	100
Provo R at Hailstone <sup>2</sup>	APR-JUL	58	81	100	93%	120	153	108
Provo R bl Deek Ck Dam <sup>2</sup>	APR-JUL	30	72	95	82%	128	170	116
American Fk ab Upper Powerplant	APR-JUL	0.64	9	20	63%	26	38	32
Utah Lake Inflow <sup>2</sup>	APR-JUL	13.2	151	210	79%	437	959	265
W Canyon Ck nr Cedar Fort	APR-JUL	0.3	1	1.4	80%	2.5	5.1	1.76
Little Cottonwood Ck nr SLC <sup>2</sup>	APR-JUL	19.7	27	33	87%	39	49	38
Big Cottonwood Ck nr SLC <sup>2</sup>	APR-JUL	22	29	34	94%	39	46	36
Mill Ck nr SLC	APR-JUL	2.5	4.3	5.6	88%	6.8	8.7	6.4
Parleys Ck nr SLC <sup>2</sup>	APR-JUL	2.9	8.9	13	92%	17.1	23	14.2
Dell Fk nr SLC	APR-JUL	0.11	1.64	4.1	75%	6.6	10.3	5.5
Emigration Ck nr SLC	APR-JUL	0.08	1.49	3	75%	4.5	6.7	4
City Ck nr SLC <sup>2</sup>	APR-JUL	2.2	5.1	7	91%	8.9	11.8	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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
DEER CREEK RESERVOIR	102.3	112.5	107.7	149.7
STRAWBERRY RESERVOIR	830.8	896.3	658.4	1105.9
UTAH LAKE	592.8	665.2	752.5	870.9
JORDANELLE RESERVOIR	158.2	188.1	242.0	320.0
Basin-wide Total	1684.1	1862.2	1760.6	2446.5
# of reservoirs	4	4	4	4

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Upper Provo	6	74%	121%
Jordan	15	78%	116%
Utah Lake	15	78%	116%
Spanish Fork	5	72%	124%
Six Creeks	15	74%	99%
Cottonwoods	7	70%	108%

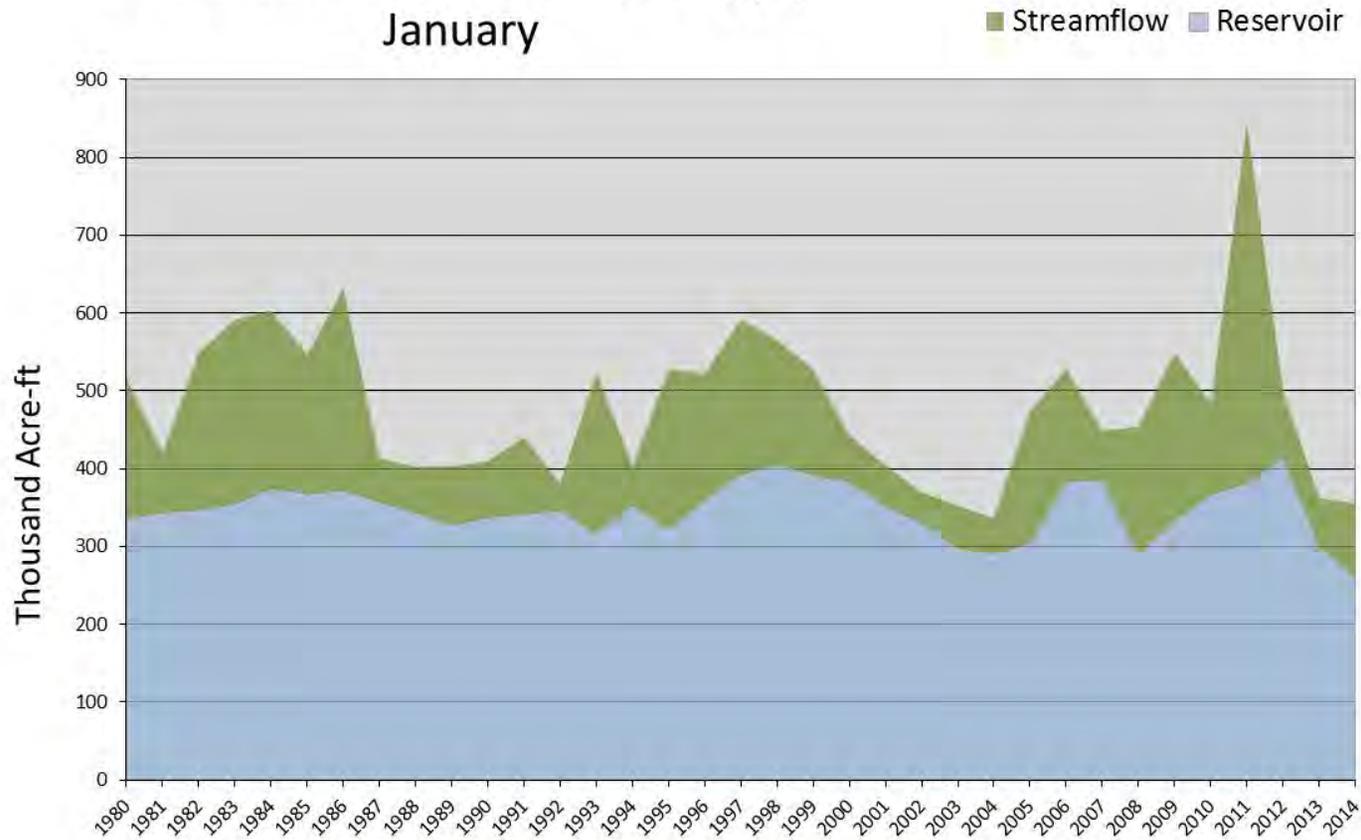
January 1, 2014

## Surface Water Supply Index

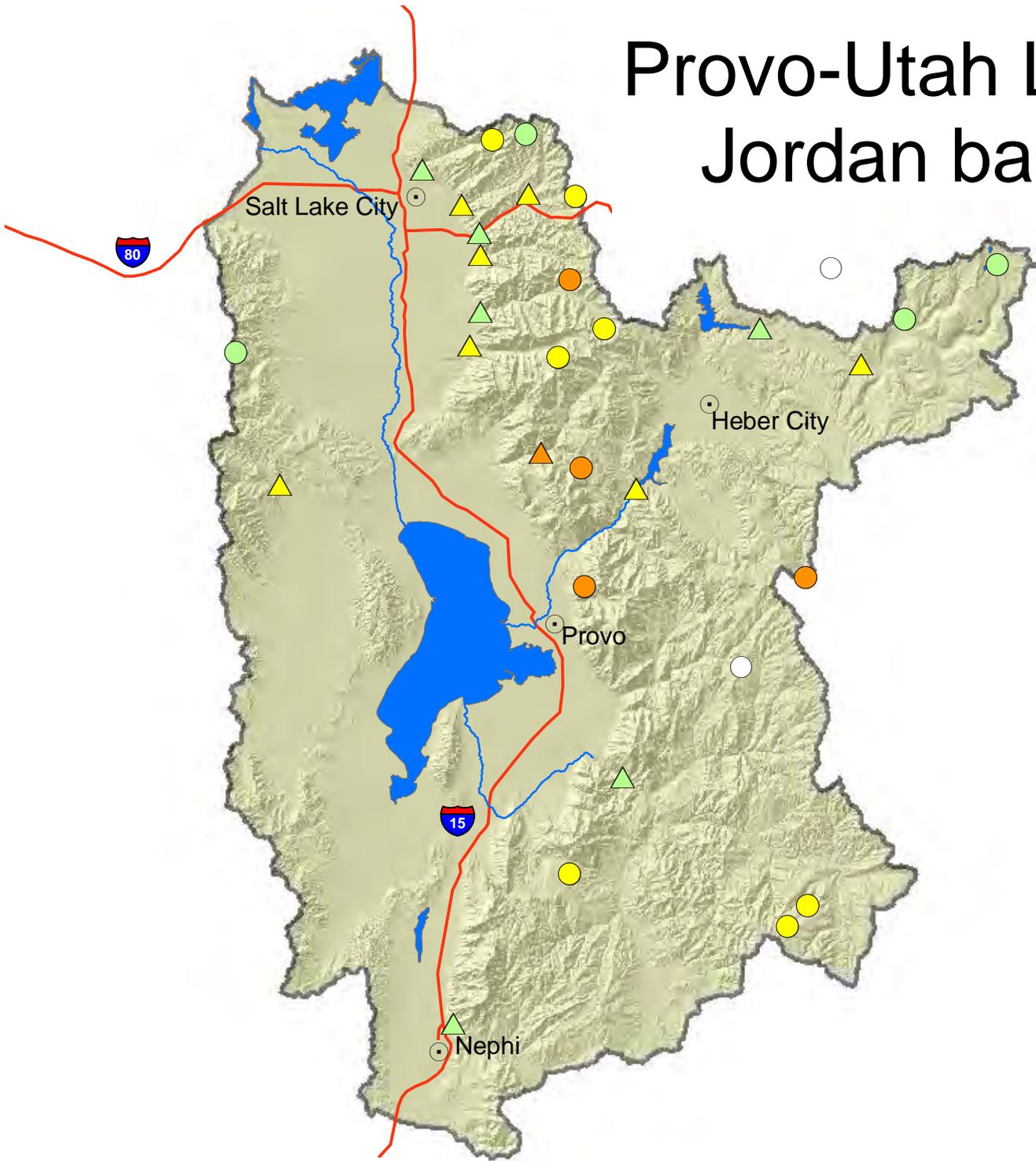
Basin or Region	December EOM* Deer Creek, Jordanelle	April - July Forecast Provo River below Deer Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Provo River</b>	<b>260</b>	<b>95</b>	<b>355</b>	<b>-3.47</b>	<b>8</b>	<b>04, 03, 13, 02</b>

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

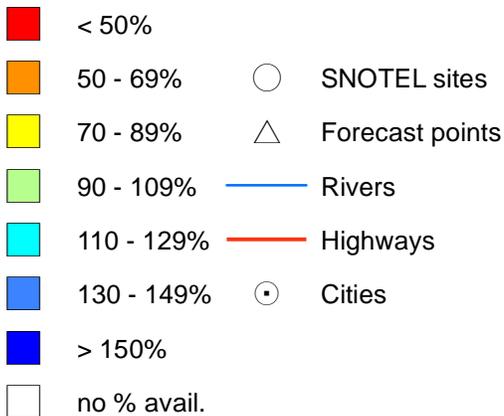
Provo River - Surface Water Supply  
January



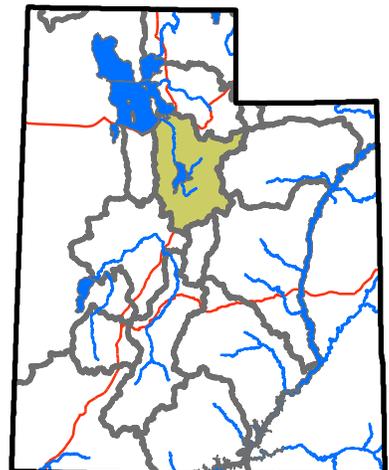
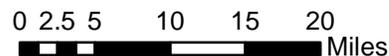
# Provo-Utah Lake-Jordan basin



## Percent normal



United States Department of Agriculture  
 Natural Resources Conservation Service

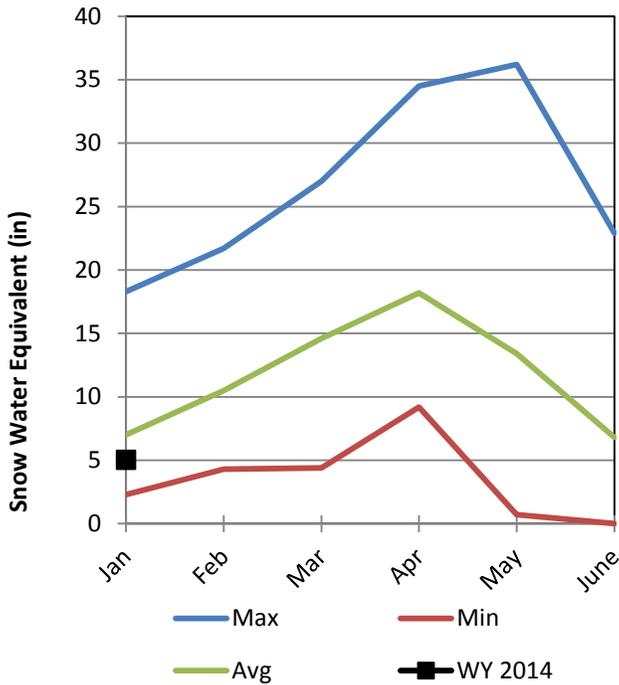


# Tooele & Vernon Creek Basins

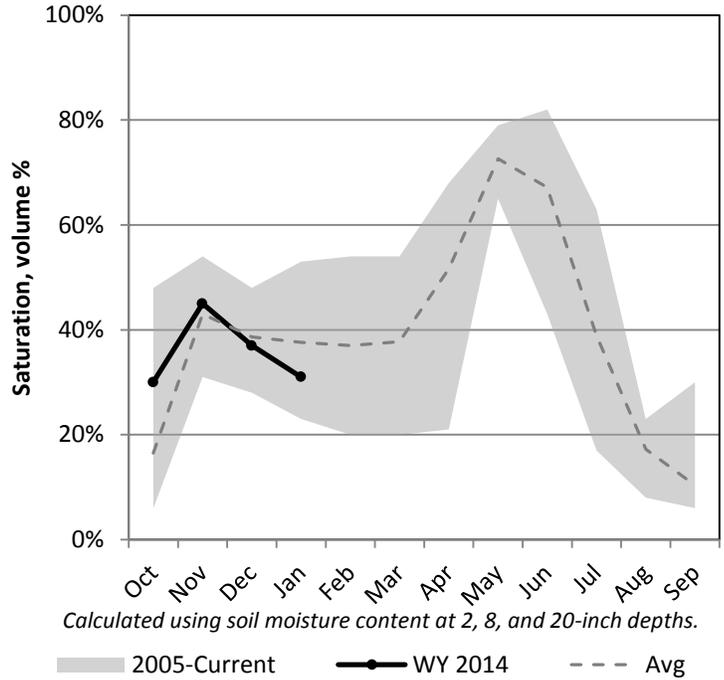
1/1/2014

Snowpack in the Tooele & Vernon Creek Basins is near average at 91% of normal, compared to 124% last year. Precipitation in December was near average at 101%, which brings the seasonal accumulation (Oct-Dec) to 80% of average. Soil moisture is at 31% compared to 38% last year. Reservoir storage is at 24% of capacity, compared to 27% last year. Forecast streamflow volumes range from 77% to 86% of average.

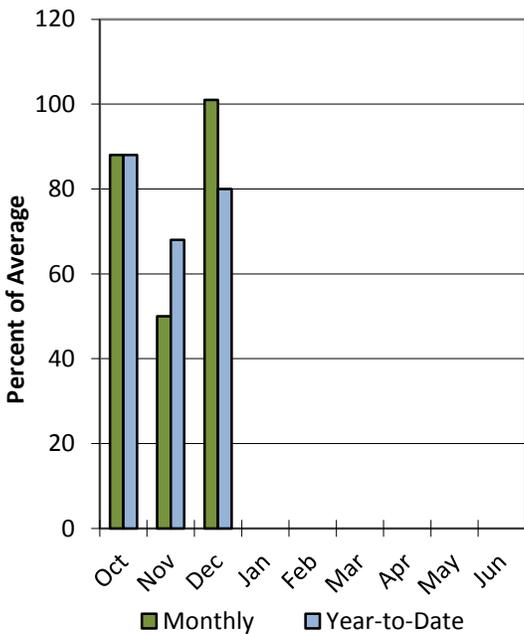
## Snowpack



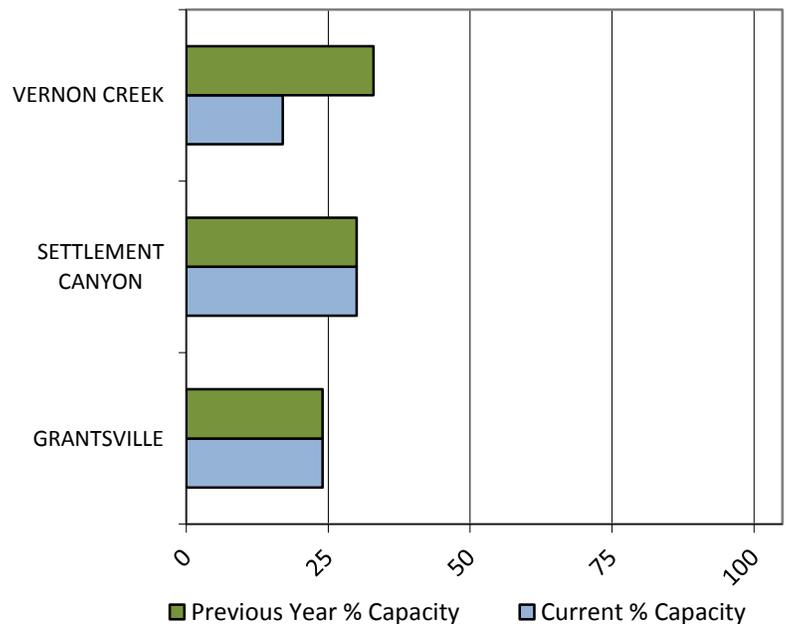
## Soil Moisture



## Precipitation



## Reservoir Storage



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

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast
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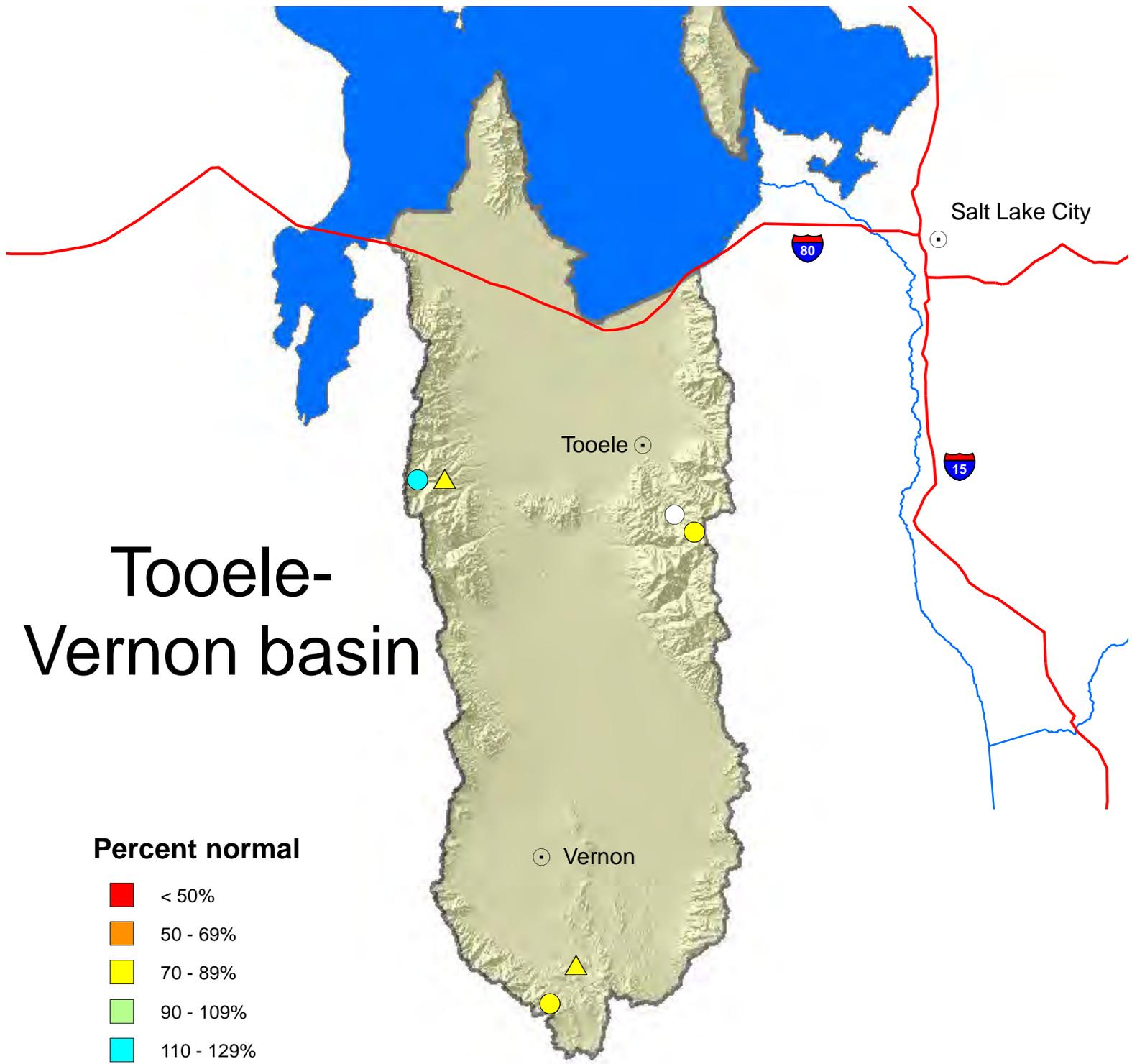
Tooele Valley Vernon Creek	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Vernon Ck nr Vernon	APR-JUL	0.03	0.65	1.2	86%	1.75	2.6	1.39
S Willow Ck nr Grantsville	APR-JUL	0.06	0.56	2.4	77%	1.82	2.8	3.1

- 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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
VERNON CREEK RESERVOIR	0.1	0.2	0.5	0.6
SETTLEMENT CANYON RESERVOIR	0.3	0.3	0.7	1.0
GRANTSVILLE RESERVOIR	0.8	0.8	1.8	3.3
Basin-wide Total	1.2	1.3	2.9	4.9
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Tooele	3	91%	124%
NW Utah	2	100%	145%

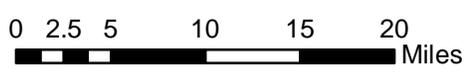
# Tooele- Vernon basin



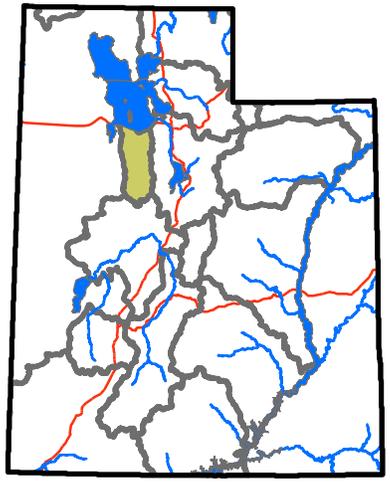
## Percent normal

- < 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

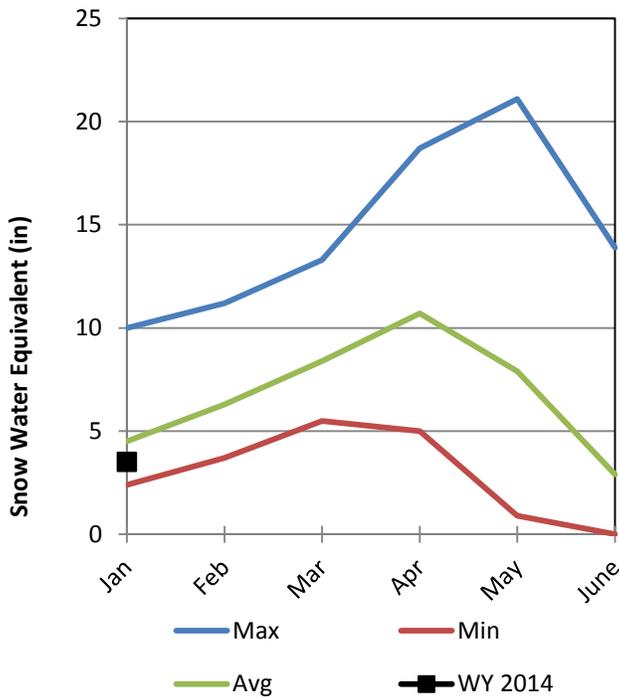


# Northeastern Uintah Basin

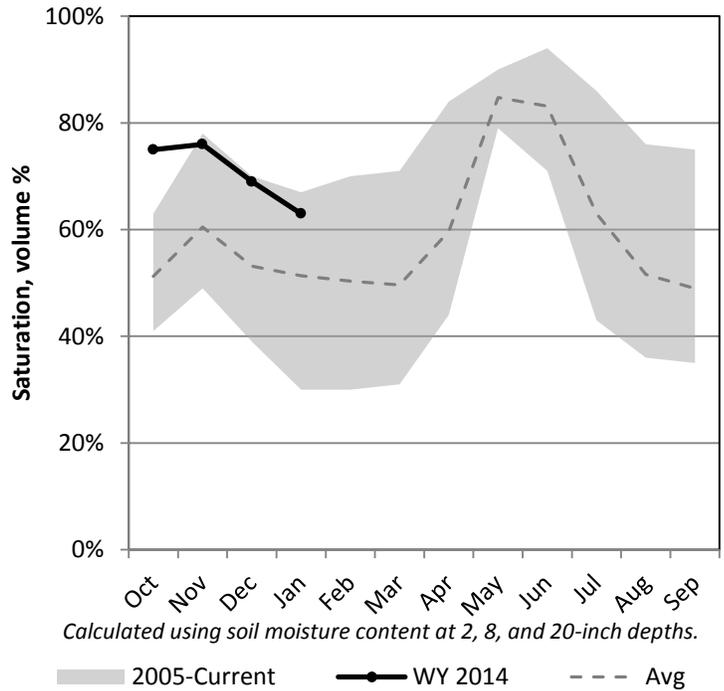
1/1/2014

Snowpack in the Northeastern Uintah Basin is near average at 90% of normal, compared to 102% last year. Precipitation in December was near average at 98%, which brings the seasonal accumulation (Oct-Dec) to 95% of average. Soil moisture is at 63% compared to 44% last year. Reservoir storage is at 75% 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.

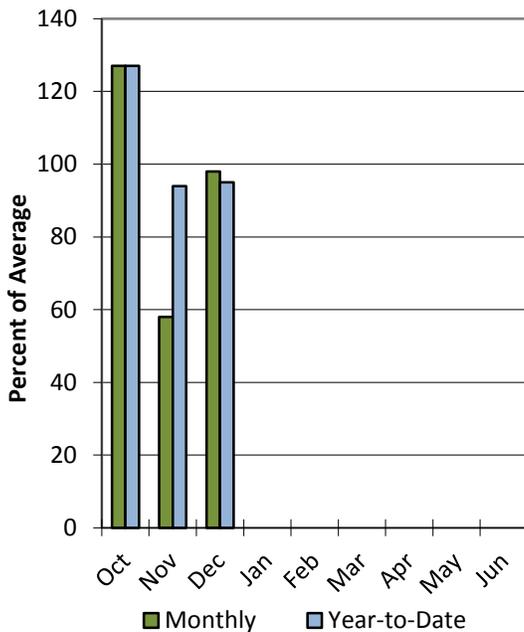
## Snowpack



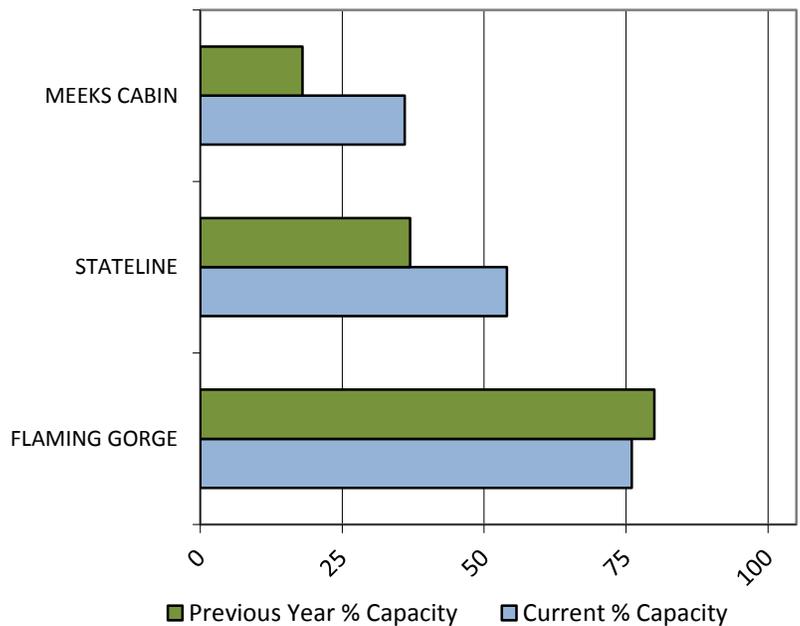
## Soil Moisture



## Precipitation



## Reservoir Storage



## Northeastern Uintahs Streamflow Forecasts - January 1, 2014

Northeastern Uintahs	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)	
Blacks Fk nr Robertson	APR-JUL	46	63	76	85%	90	113	89
EF of Smiths Fork nr Robertson <sup>2</sup>	APR-JUL	14.7	20	24	89%	28	36	27
Flaming Gorge Reservoir Inflow <sup>2</sup>	APR-JUL	380	605	785	80%	990	1330	980
Uinta R bl Powerplant Diversion nr Neola	APR-JUL	27	47	63	85%	82	113	74
Whiterocks R nr Whiterocks	APR-JUL	24	36	46	85%	57	74	54
Ashley Ck nr Vernal	APR-JUL	24	34	42	84%	51	64	50
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	11.1	15	18	86%	21	26	21
Lake Fork R ab Moon Lake Reservoir	APR-JUL	29	42	53	87%	65	84	61
Currant Ck Reservoir Inflow <sup>2</sup>	APR-JUL	4.8	9.2	13	65%	17.4	25	20

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

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

3) Median value used in place of average

Reservoir Storage End of December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
FLAMING GORGE RESERVOIR	2834.3	3003.3	3049.0	3749.0
STATELINE RESERVOIR	6.5	4.5	5.4	12.0
MEEKS CABIN RESERVOIR	11.6	6.0	11.9	32.5
Basin-wide Total	2852.3	3013.8	3066.3	3793.5
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Blacks Fk	3	86%	98%
Upper Green	2	114%	126%
Lower Green	2	86%	110%
Ashley Brush	4	98%	118%

January 1, 2014

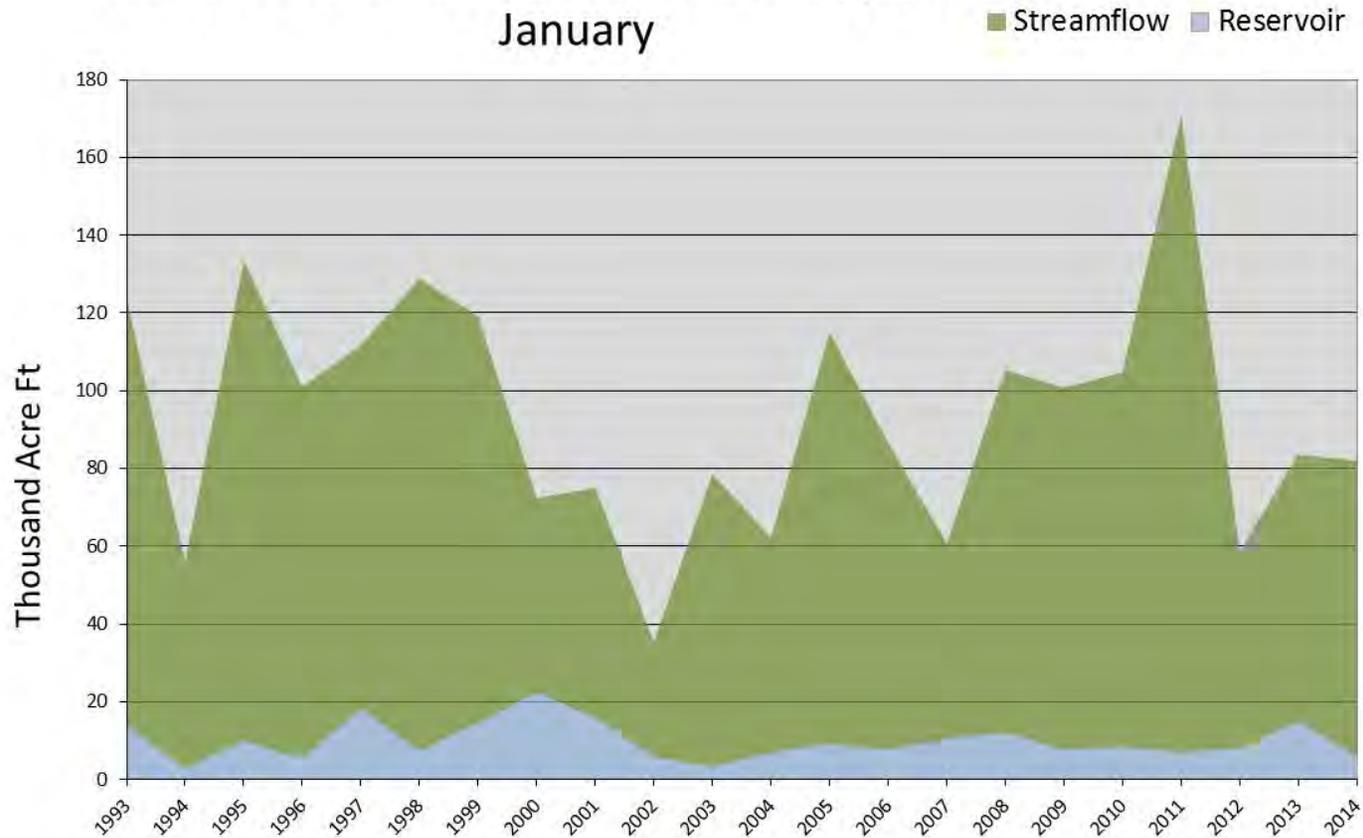
## Surface Water Supply Index

Basin or Region	December 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>6.0</b>	<b>76.0</b>	<b>82.0</b>	<b>-0.90</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 River - Surface Water Supply Index

January



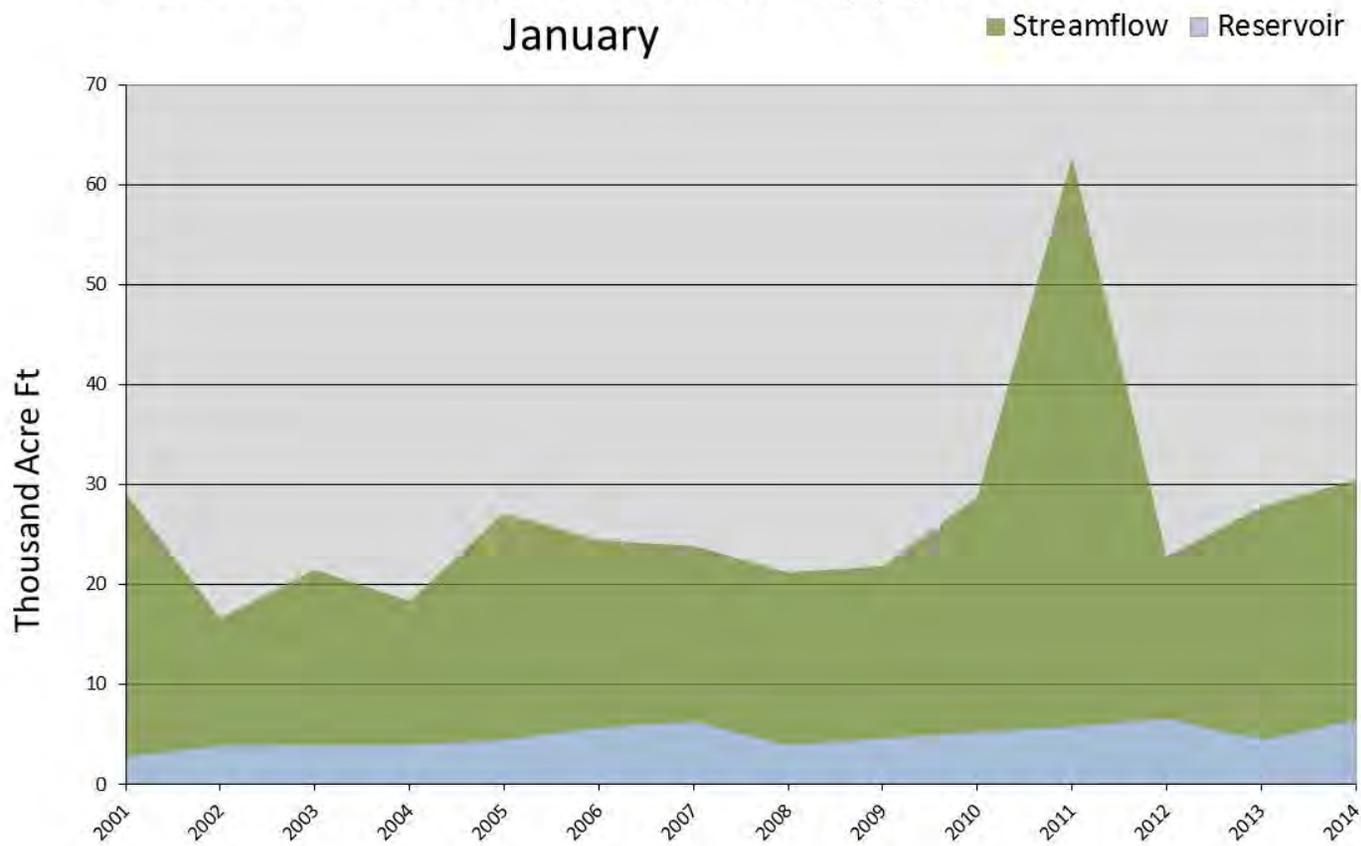
January 1, 2014

## Surface Water Supply Index

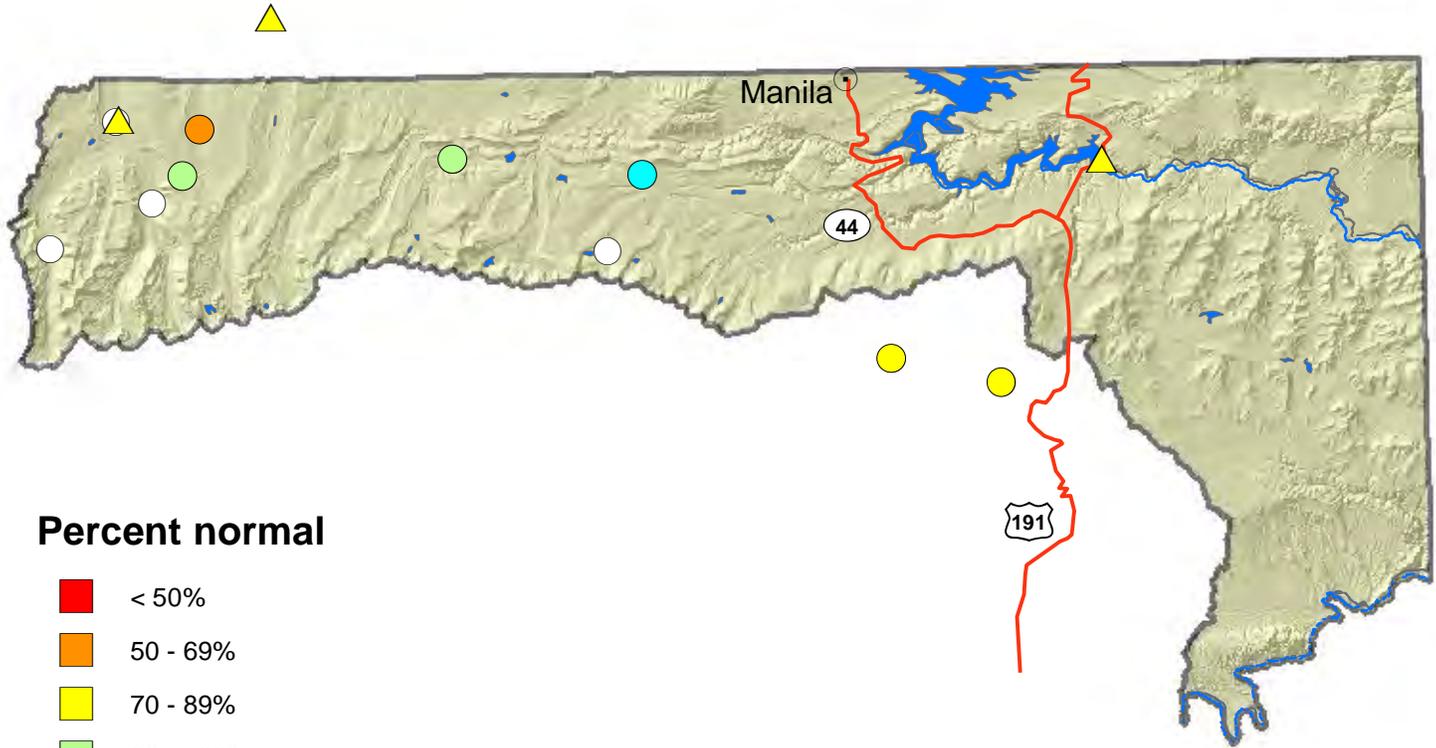
Basin or Region	December EOM* Stateline Reservoir	April-July forecast EF Smiths Fork nr Robertson	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Smiths Fork</b>	<b>6.5</b>	<b>24.0</b>	<b>30.5</b>	<b>3.06</b>	<b>87</b>	<b>10, 01, 11</b>

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

Smiths Fork River - Surface Water Supply Index  
January



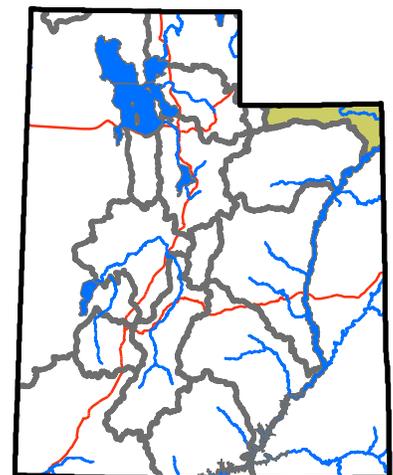
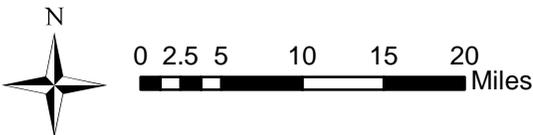
# Northeastern Utah



## Percent normal

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

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

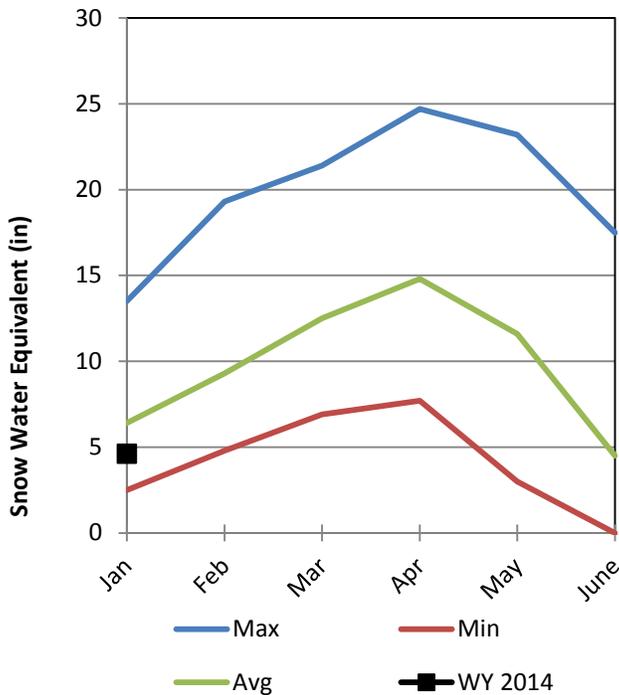


# Duchesne River Basin

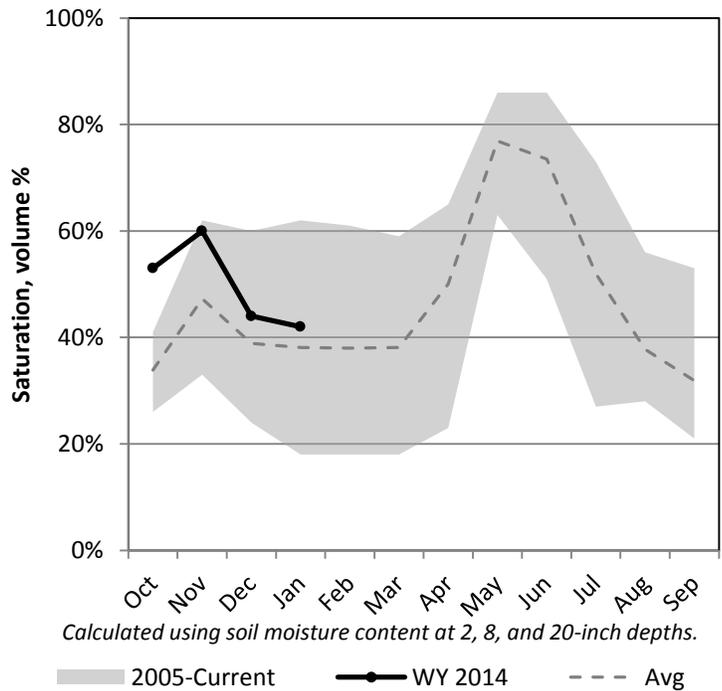
1/1/2014

Snowpack in the Duchesne River Basin is below average at 78% of normal, compared to 121% last year. Precipitation in December was below average at 77%, which brings the seasonal accumulation (Oct-Dec) to 68% of average. Soil moisture is at 42% compared to 31% last year. Reservoir storage is at 73% of capacity, compared to 75% last year. Forecast streamflow volumes range from 42% to 87% of average. The surface water supply index is 49% for the Western Uintahs, 22% for the Eastern Uintahs.

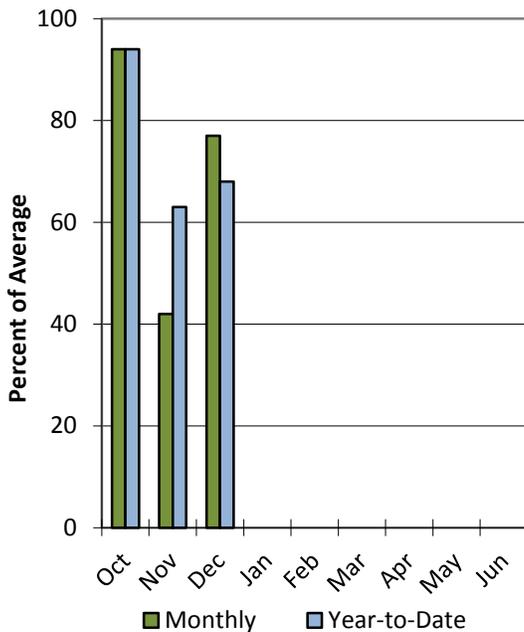
## Snowpack



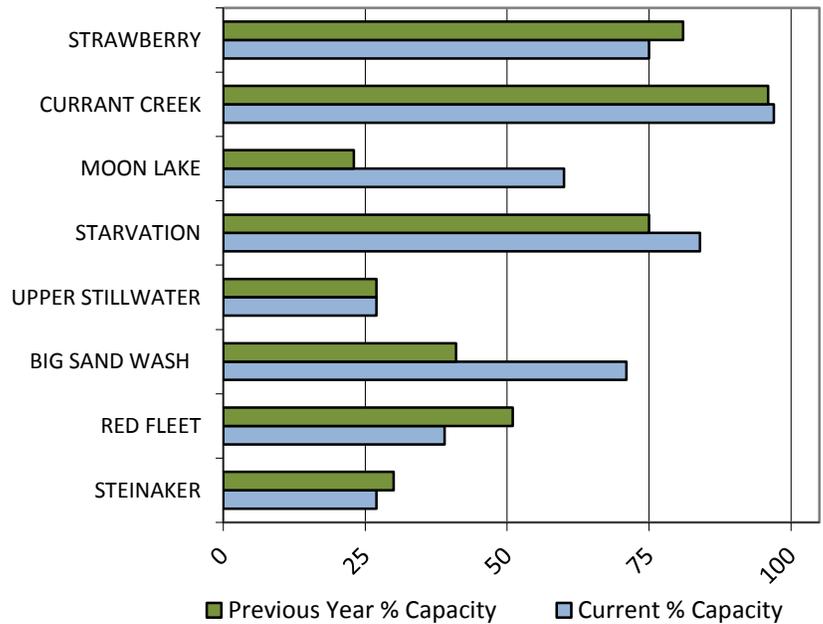
## Soil Moisture



## Precipitation



## Reservoir Storage



## Duchesne River Streamflow Forecasts - January 1, 2014

Duchesne 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)	
Duchesne R nr Tabiona <sup>2</sup>	APR-JUL	49	69	85	79%	103	131	108
Strawberry R nr Duchesne <sup>2</sup>	APR-JUL	13.8	36	58	52%	85	133	112
Strawberry R nr Soldier Springs <sup>2</sup>	APR-JUL	2.7	12.3	23	42%	37	63	55
Duchesne R at Myton <sup>2</sup>	APR-JUL	95	171	235	71%	310	435	330
Duchesne R nr Randlett <sup>2</sup>	APR-JUL	94	188	270	70%	365	535	385
Duchesne R ab Knight Diversion <sup>2</sup>	APR-JUL	94	130	157	81%	187	235	195
WF Duchesne R at VAT Diversion	APR-JUL	7.1	10.8	13.7	74%	17	23	18.6
Rock Ck nr Mountain Home <sup>2</sup>	APR-JUL	46	62	75	85%	89	111	88
Yellowstone R nr Altonah	APR-JUL	30	42	52	85%	63	80	61
Upper Stillwater Reservoir Inflow	APR-JUL	37	52	63	85%	75	95	74
Lake Fk R BI Moon Lk nr Mountain Home <sup>2</sup>	APR-JUL	33	46	56	85%	67	85	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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
STEINAKER RESERVOIR	9.2	10.1	21.7	33.4
RED FLEET RESERVOIR	10.1	13.2	17.9	25.7
BIG SAND WASH RESERVOIR	18.3	10.6		25.7
UPPER STILLWATER RESERVOIR	8.8	8.9	8.6	32.5
STARVATION RESERVOIR	138.5	123.6	138.8	165.3
MOON LAKE RESERVOIR	21.5	8.2	24.4	35.8
CURRANT CREEK RESERVOIR	15.0	14.9	14.9	15.5
STRAWBERRY RESERVOIR	830.8	896.3	658.4	1105.9
Basin-wide Total	1052.2	1085.9	884.7	1439.8
# of reservoirs	8	8	7	8

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Strawberry	5	70%	132%
Lakefork Yellowstone	6	89%	109%
Uintah Whiterocks	2	108%	137%

January 1, 2014

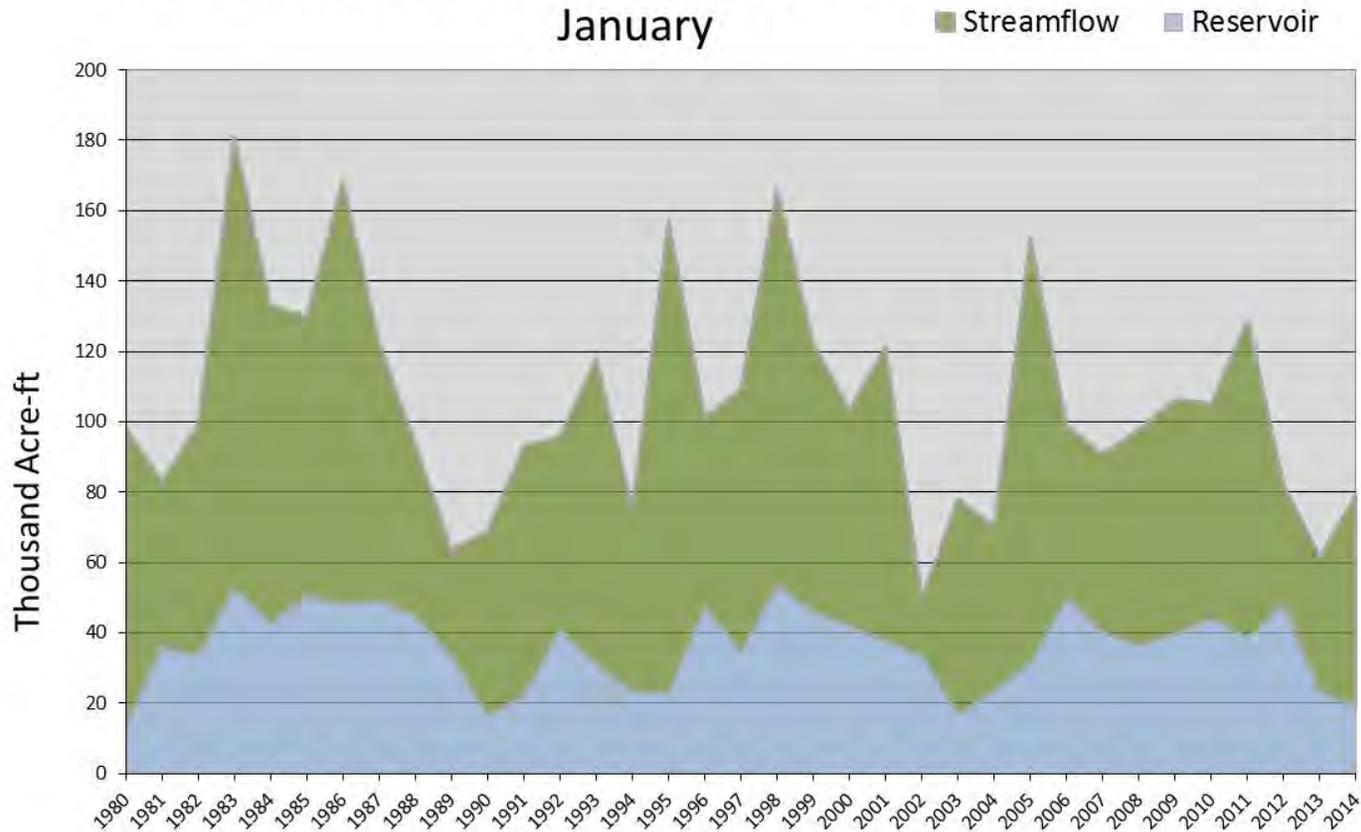
## Surface Water Supply Index

Basin or Region	December 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>19.3</b>	<b>60.0</b>	<b>79.3</b>	<b>-2.31</b>	<b>22</b>	<b>94, 03, 12, 81</b>

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

### Eastern Uintah Basin - Surface Water Supply Index

January



January 1, 2014

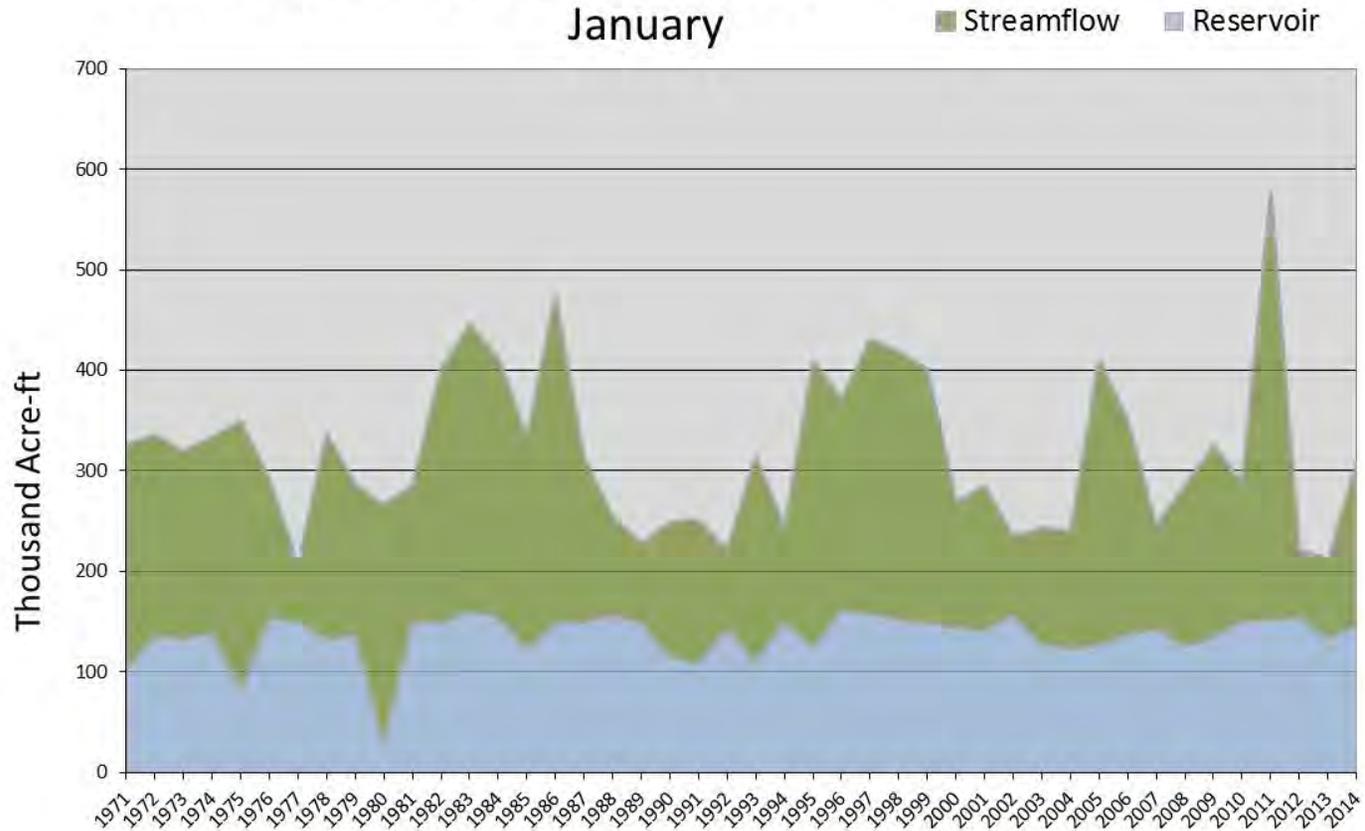
## Surface Water Supply Index

Basin or Region	December 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>147</b>	<b>160</b>	<b>307</b>	<b>-0.09</b>	<b>49</b>	<b>10, 76, 87, 93</b>

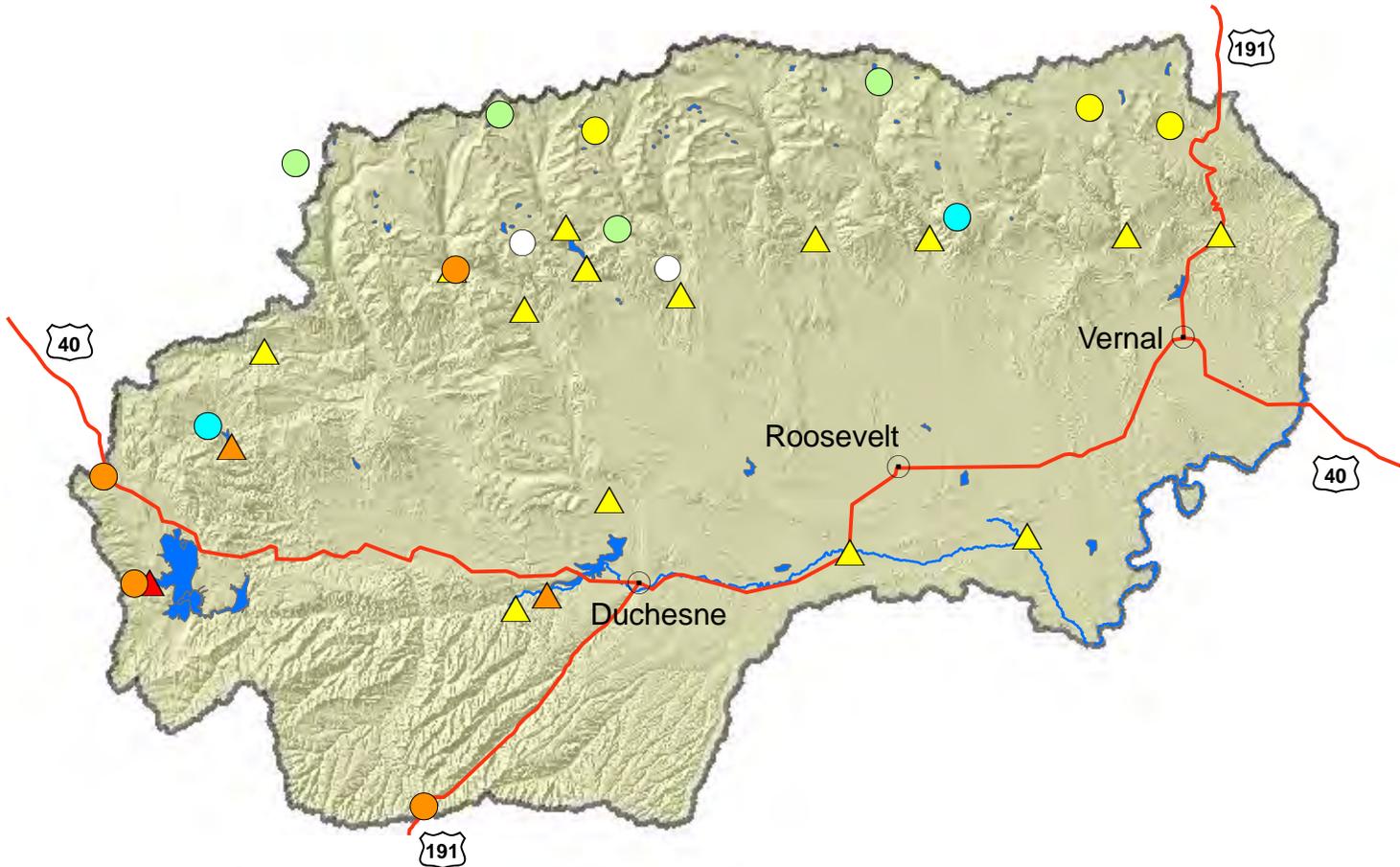
\*EOM, end of month; # SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

### Western Uintah Basin - Surface Water Supply Index

January

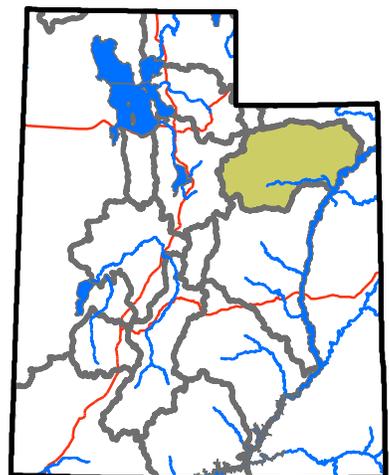
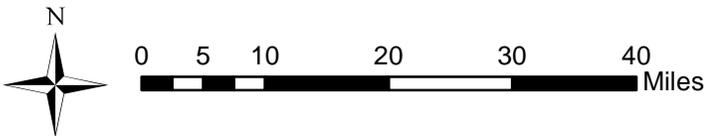


# Duchesne basin



## Percent normal

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

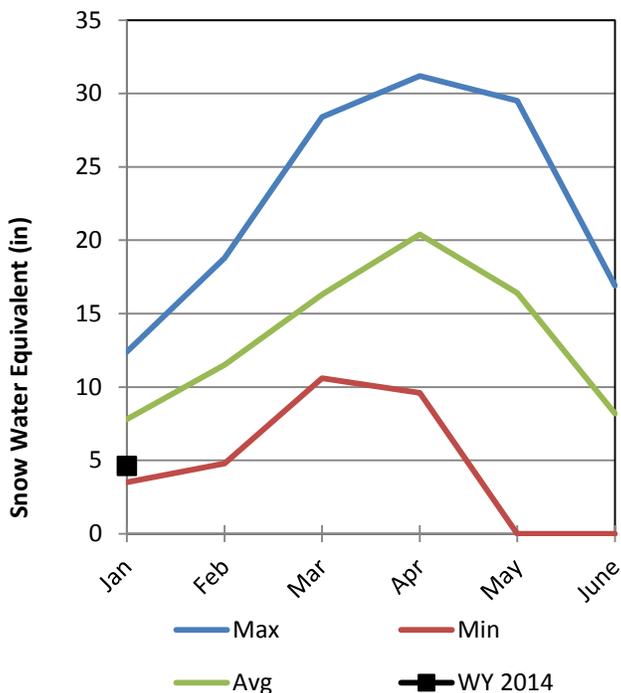


# Lower Sevier River Basin

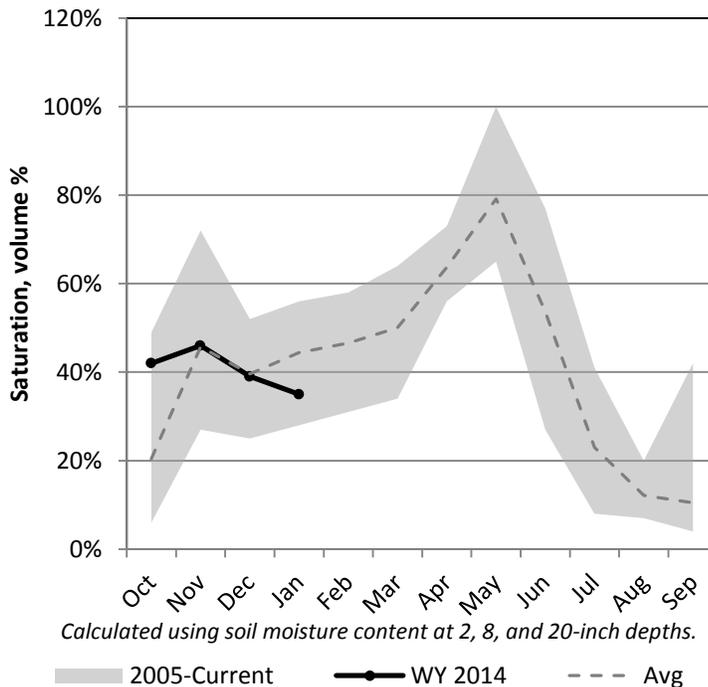
1/1/2014

Snowpack in the Lower Sevier River Basin is much below average at 60% of normal, compared to 114% last year. Precipitation in December was below average at 87%, which brings the seasonal accumulation (Oct-Dec) to 86% of average. Soil moisture is at 35% compared to 33% last year. Reservoir storage is at 45% of capacity, compared to 60% last year. Forecast streamflow volumes range from 48% to 105% of average. The surface water supply index is 59% for the Lower Sevier.

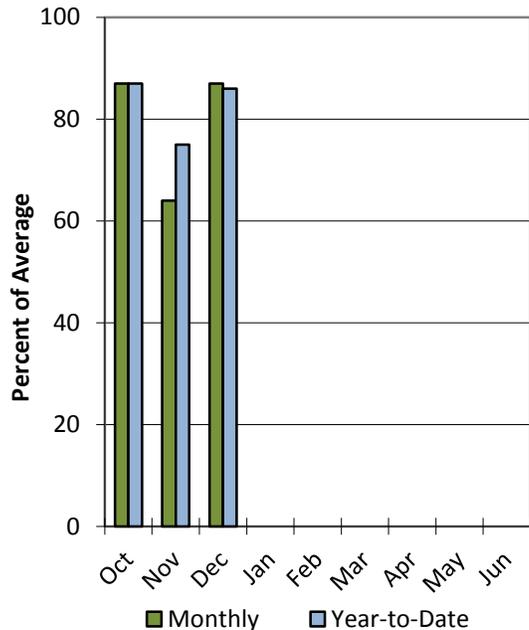
## Snowpack



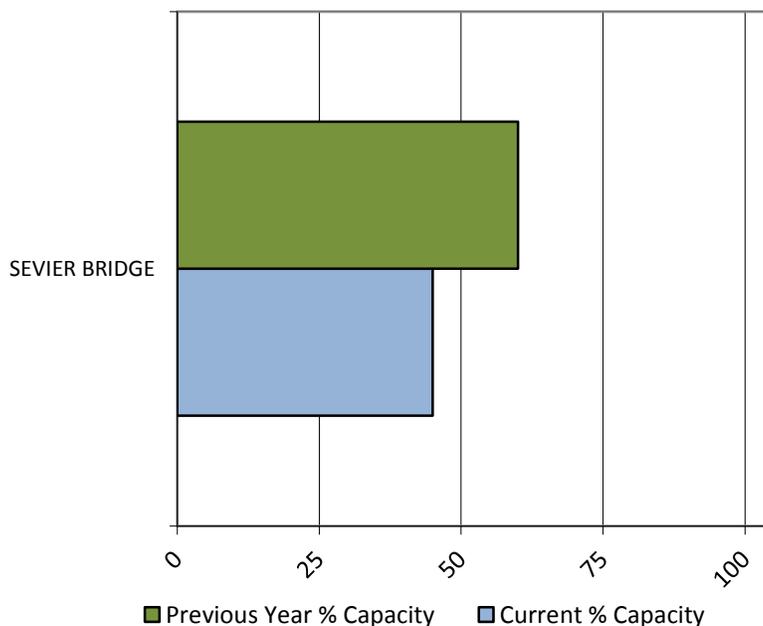
## Soil Moisture



## Precipitation



## Reservoir Storage



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

Lower Sevier 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)	
Chicken Ck nr Levan	APR-JUL	0.66	1.61	2.6	48%	3.9	6.6	5.4
Oak Ck nr Oak City	APR-JUL	0.33	0.61	0.86	53%	1.15	1.64	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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
SEVIER BRIDGE RESERVOIR	105.7	141.1	155.7	236.0
Basin-wide Total	105.7	141.1	155.7	236.0
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Lower Sevier	1	60%	114%

January 1, 2014

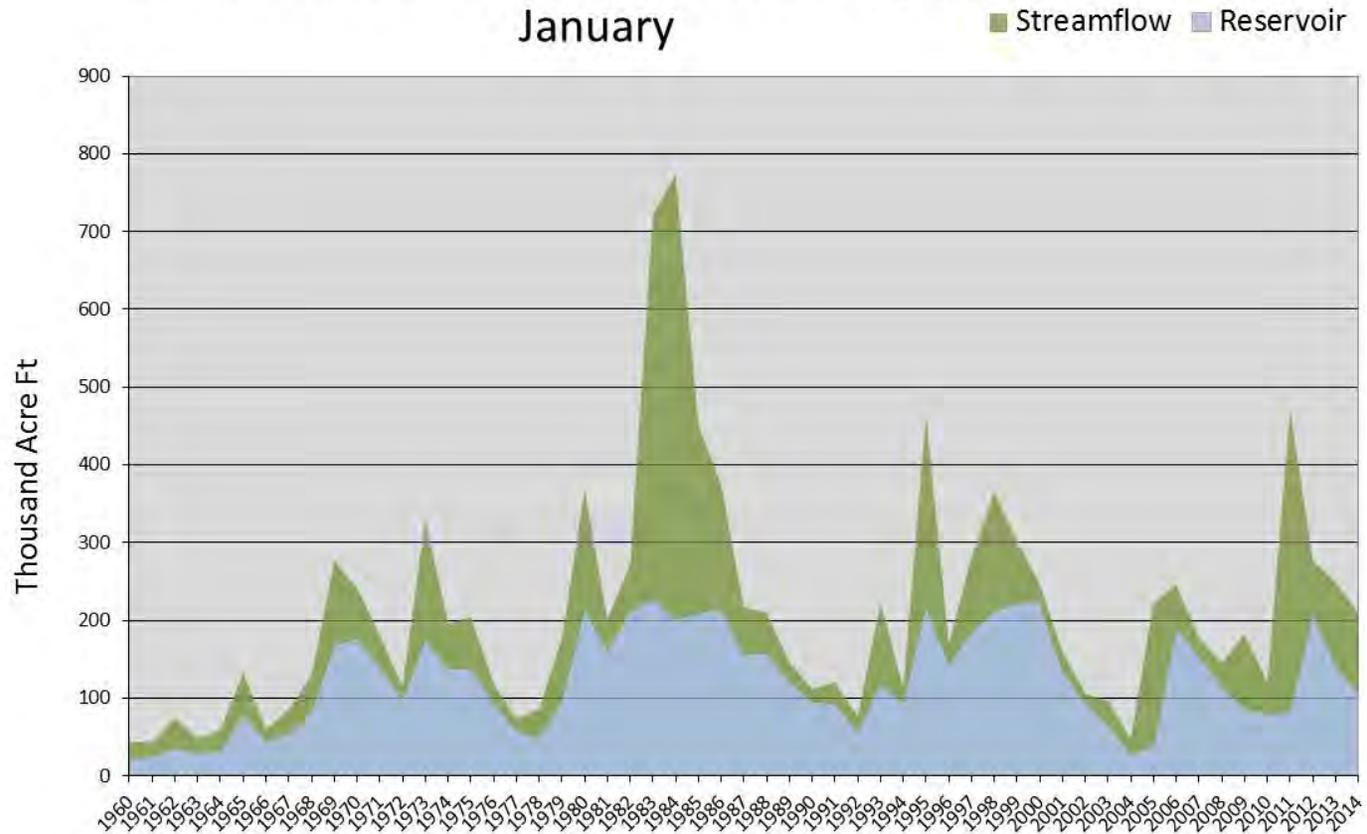
## Surface Water Supply Index

Basin or Region	December 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>105.7</b>	<b>104</b>	<b>210</b>	<b>0.74</b>	<b>59</b>	<b>81,75,88,87</b>

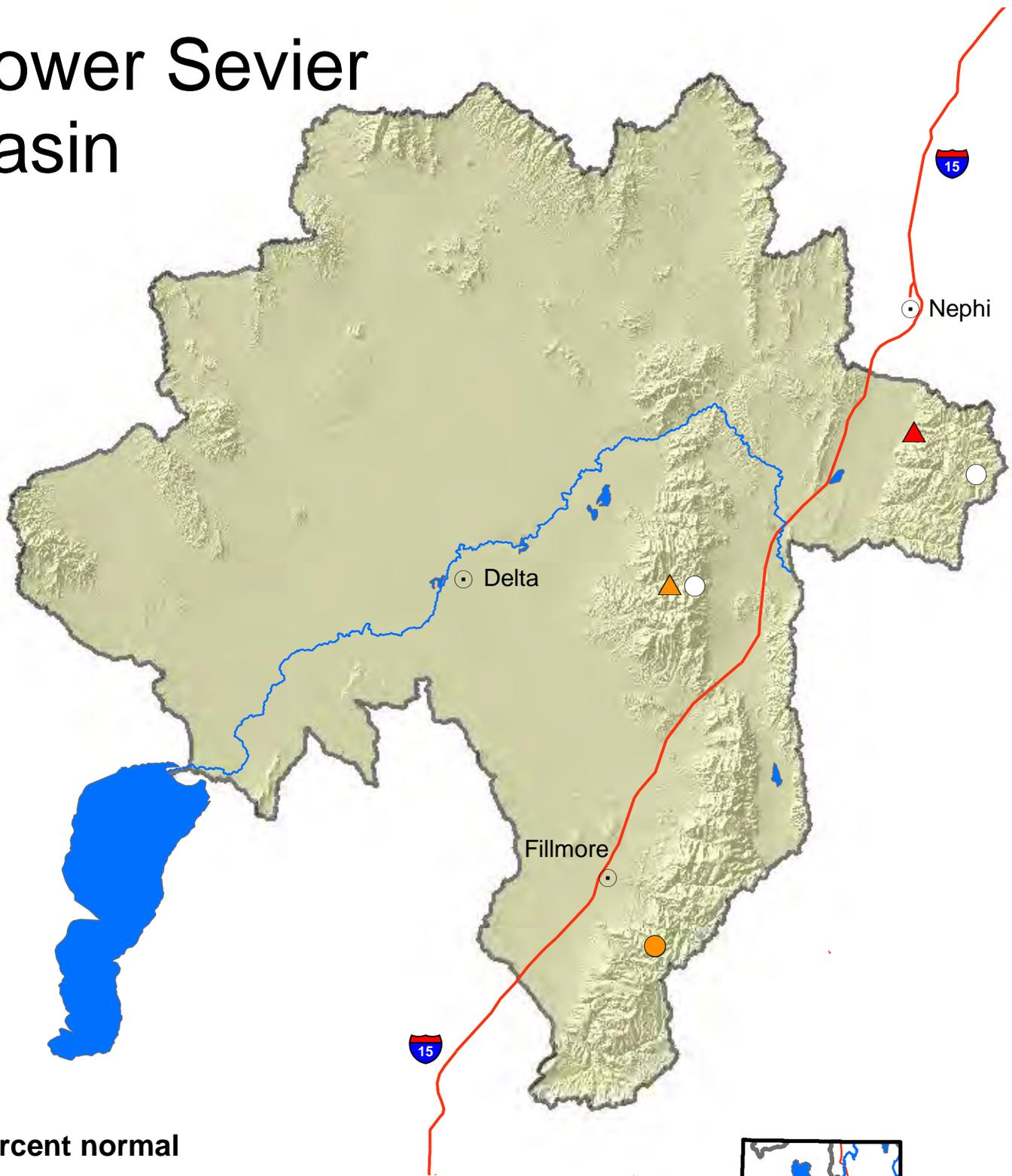
\*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

### Lower Sevier River - Surface Water Supply Index

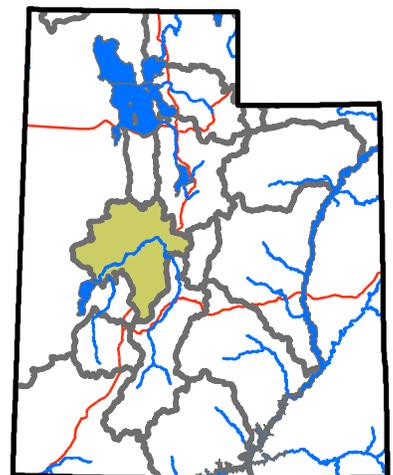
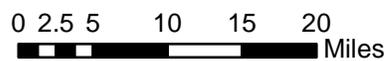
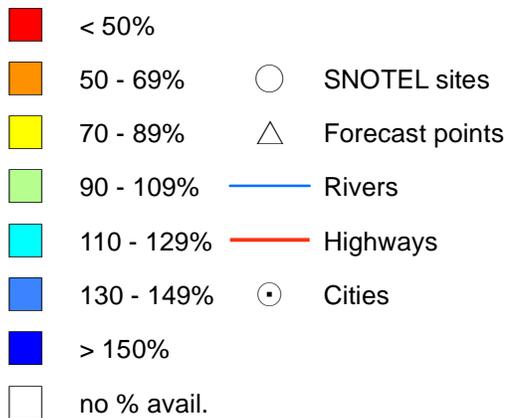
January



# Lower Sevier basin



## Percent normal

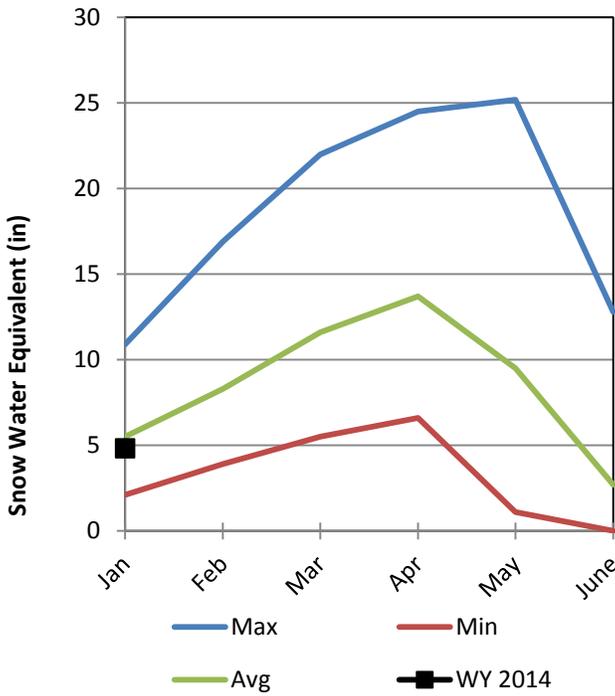


# Upper Sevier River Basin

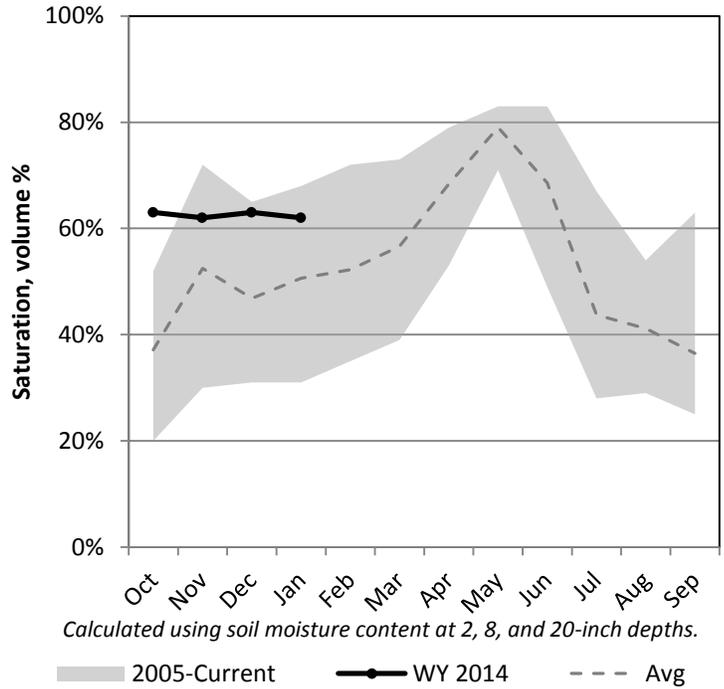
1/1/2014

Snowpack in the Upper Sevier River Basin is near average at 100% of normal, compared to 108% last year. Precipitation in December was below average at 72%, which brings the seasonal accumulation (Oct-Dec) to 88% of average. Soil moisture is at 62% compared to 43% last year. Reservoir storage is at 60% of capacity, compared to 47% last year. Forecast streamflow volumes range from 76% to 113% of average. The surface water supply index is 42% for the Upper Sevier.

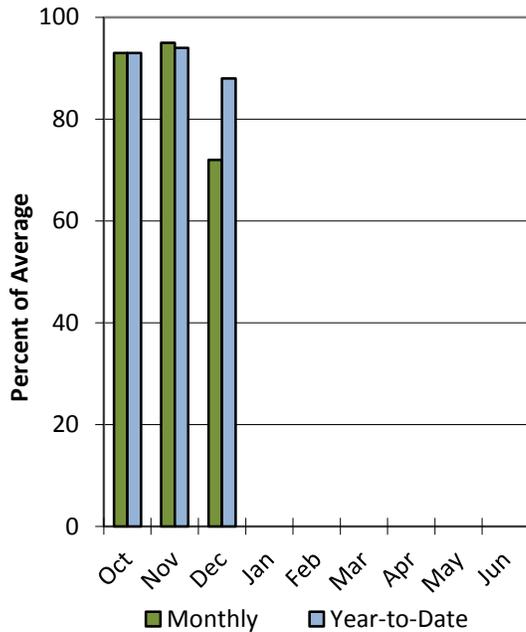
## Snowpack



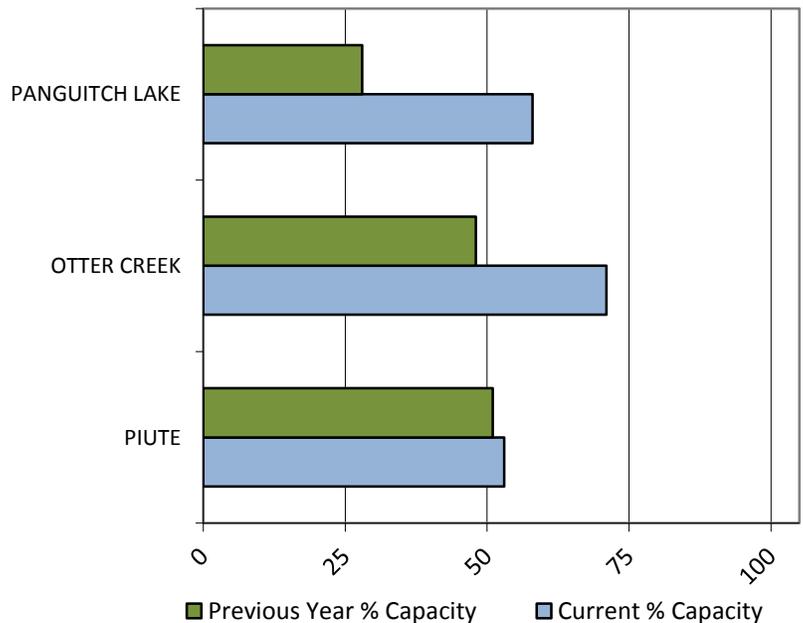
## Soil Moisture



## Precipitation



## Reservoir Storage



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

Upper Sevier 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)	
Sevier R at Hatch	APR-JUL	15.6	36	47	98%	63	84	48
EF Sevier R nr Kingston	APR-JUL	24	35	26	113%	51	62	23
Sevier R nr Kingston	APR-JUL	-4.9	17.7	36	109%	48	71	33
Sevier R bl Piute Dam	APR-JUL	5.9	38	59	109%	80	112	54
Clear Ck ab Diversions nr Sevier	APR-JUL	9.3	16.3	20	95%	26	33	21
Salina Ck nr Emery	APR-JUL	0.52	3.8	6	76%	8.2	11.5	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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
PIUTE RESERVOIR	37.8	36.8	49.2	71.8
OTTER CREEK RESERVOIR	37.3	25.2	35.0	52.5
PANGUITCH LAKE	12.9	6.3	12.7	22.3
Basin-wide Total	88.0	68.3	96.9	146.6
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Upper Sevier	13	100%	108%
Middle Sevier	8	80%	103%
E Fk Sevier	4	130%	112%

January 1, 2014

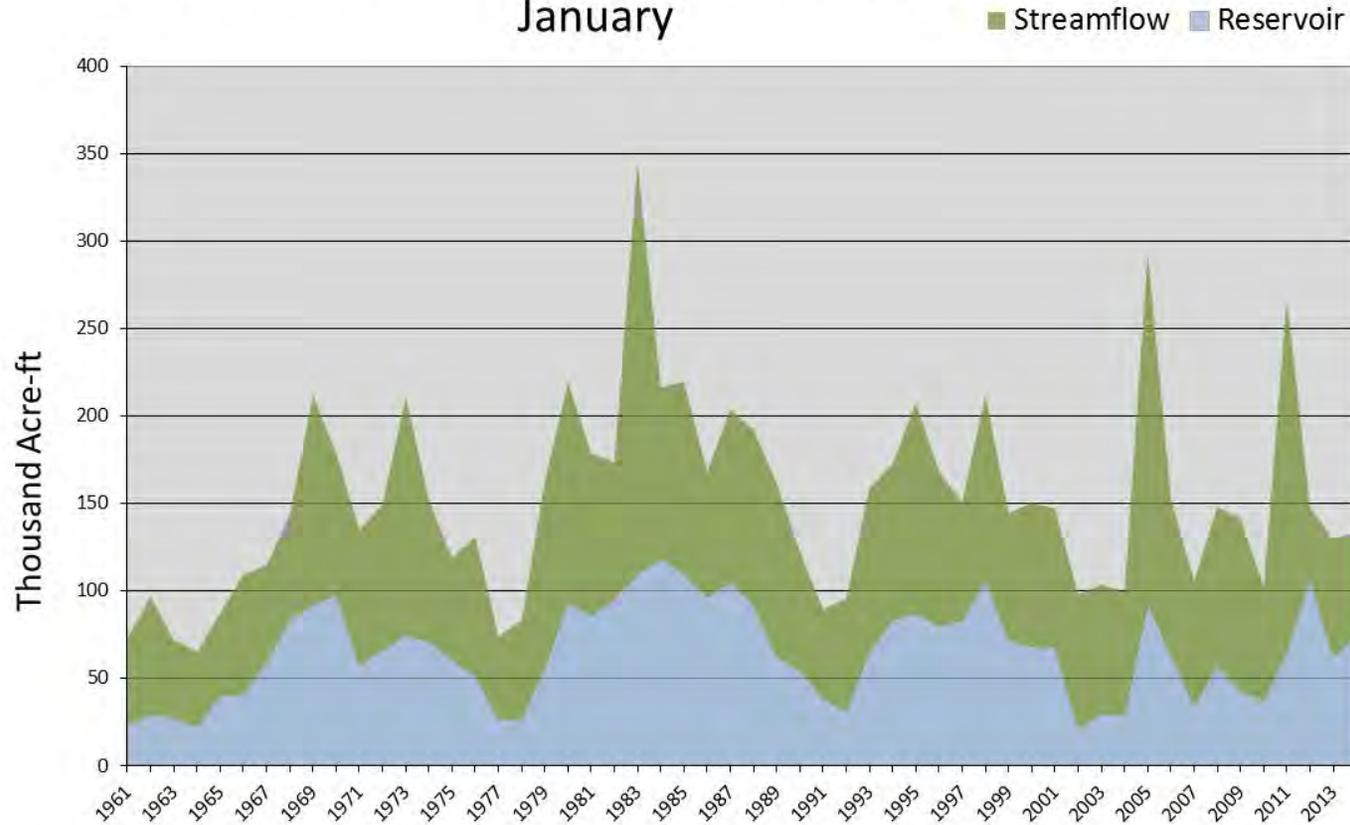
## Surface Water Supply Index

Basin or Region	December 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>74.1</b>	<b>59</b>	<b>133</b>	<b>-0.65</b>	<b>42</b>	<b>59,76,71,53</b>

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

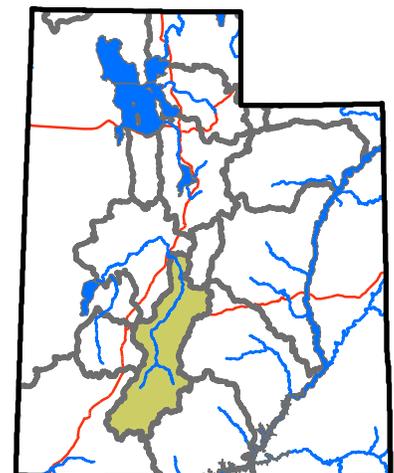
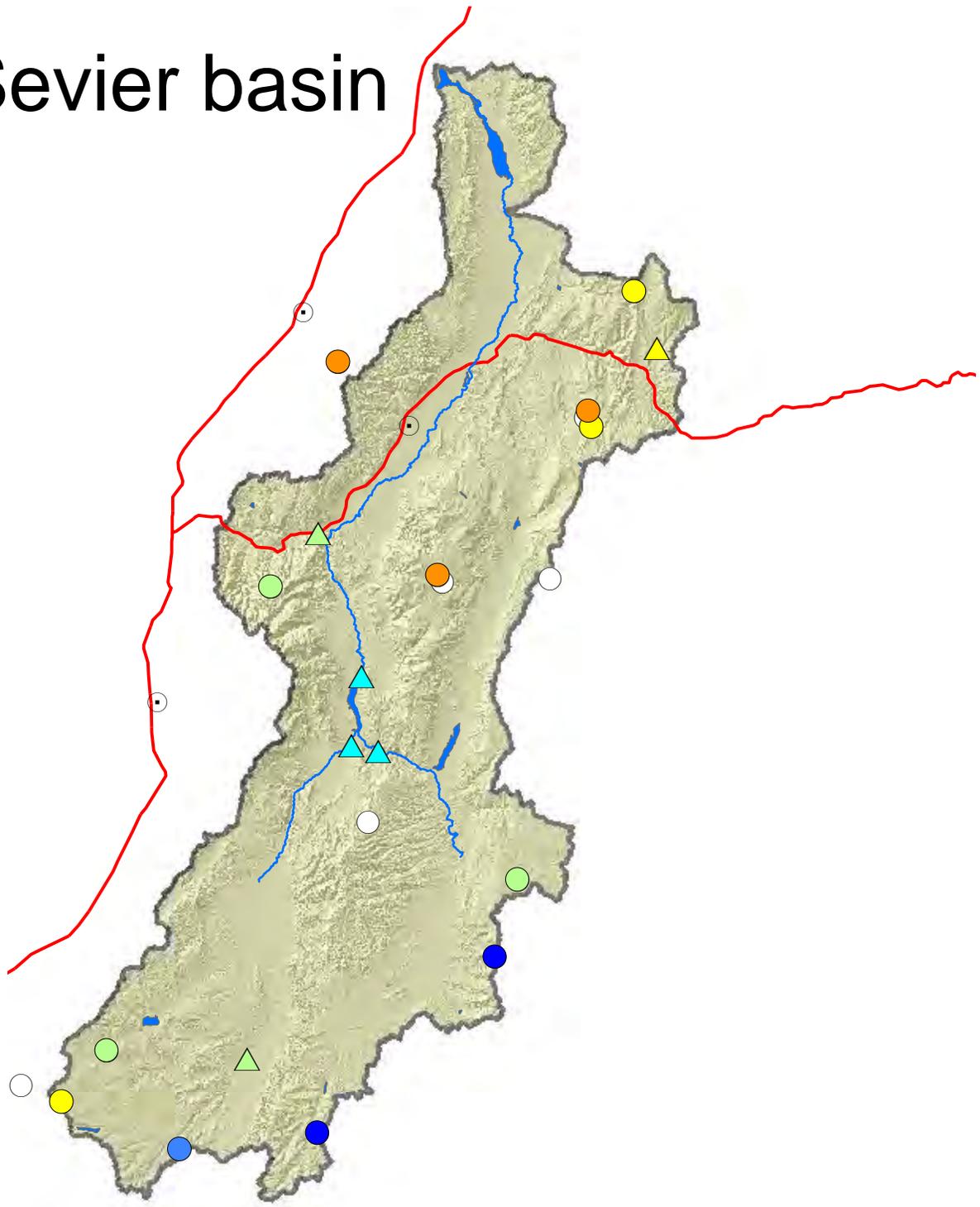
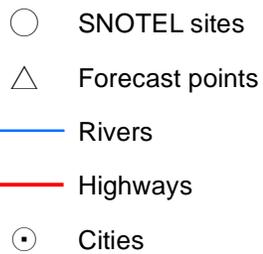
### Upper Sevier River - Surface Water Supply Index

January



# Upper Sevier basin

## Percent normal

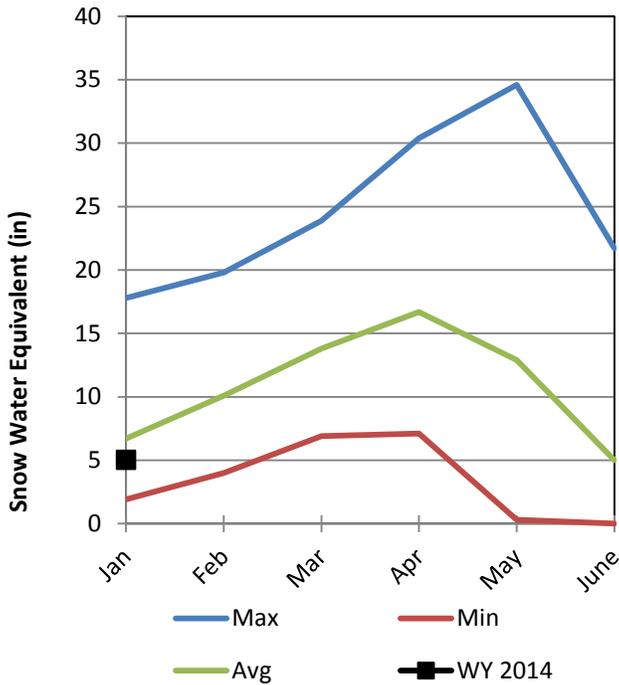


# San Pitch River Basin

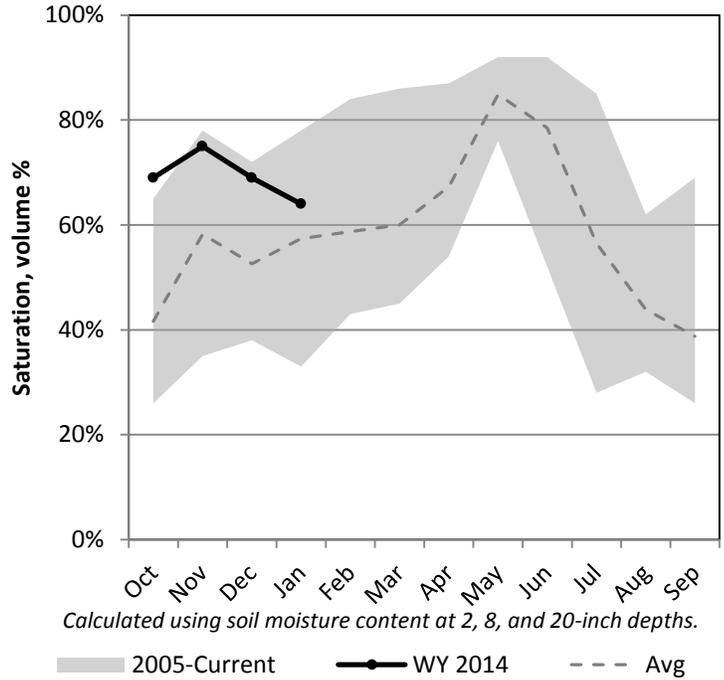
1/1/2014

Snowpack in the San Pitch River Basin is below average at 82% of normal, compared to 100% last year. Precipitation in December was much below average at 62%, which brings the seasonal accumulation (Oct-Dec) to 86% of average. Soil moisture is at 64% compared to 49% last year. Reservoir storage is at 1% of capacity, compared to 2% last year. The forecast streamflow volume for Manti Creek is 90% of average. The surface water supply index is 27% for the San Pitch.

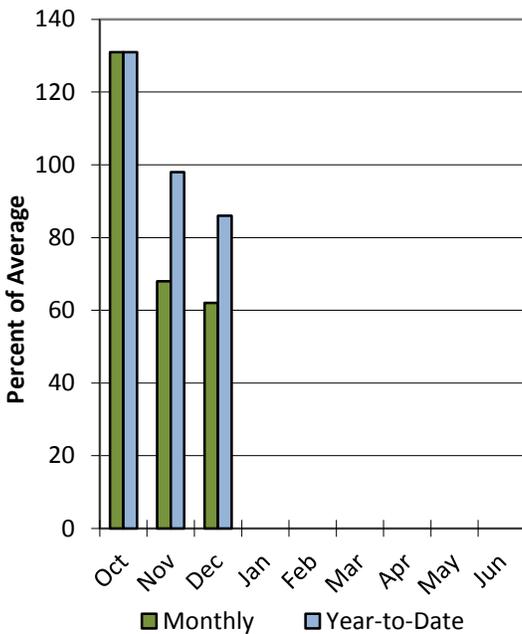
## Snowpack



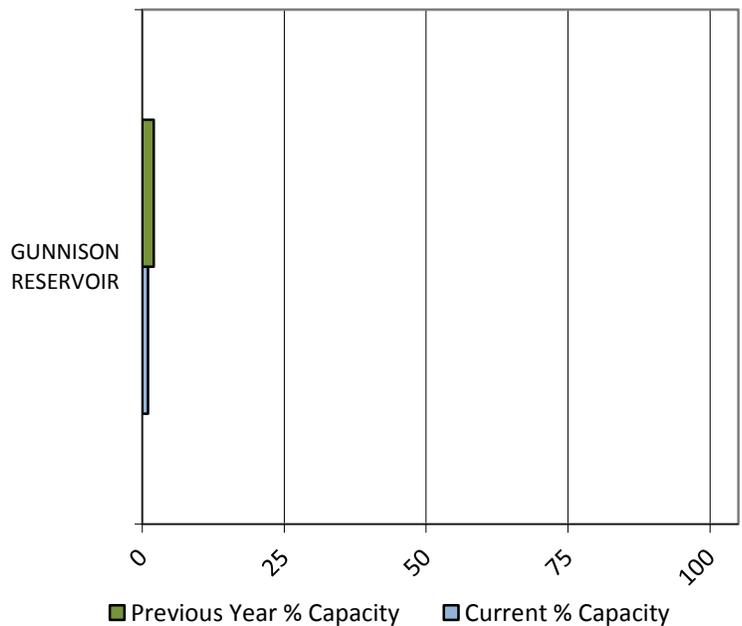
## Soil Moisture



## Precipitation



## Reservoir Storage



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

San Pitch 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)	
Manti Ck bl Dugway Ck nr Manti	APR-JUL	8.5	12.2	15	90%	18.1	23	16.7
Sevier R nr Gunnison	APR-JUL	71	103	104	105%	147	179	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 December, 2013	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 January 1, 2014	# of Sites	% Median	Last Year % Median
Upper San Pitch	2	72%	109%
Lower San Pitch	5	82%	100%

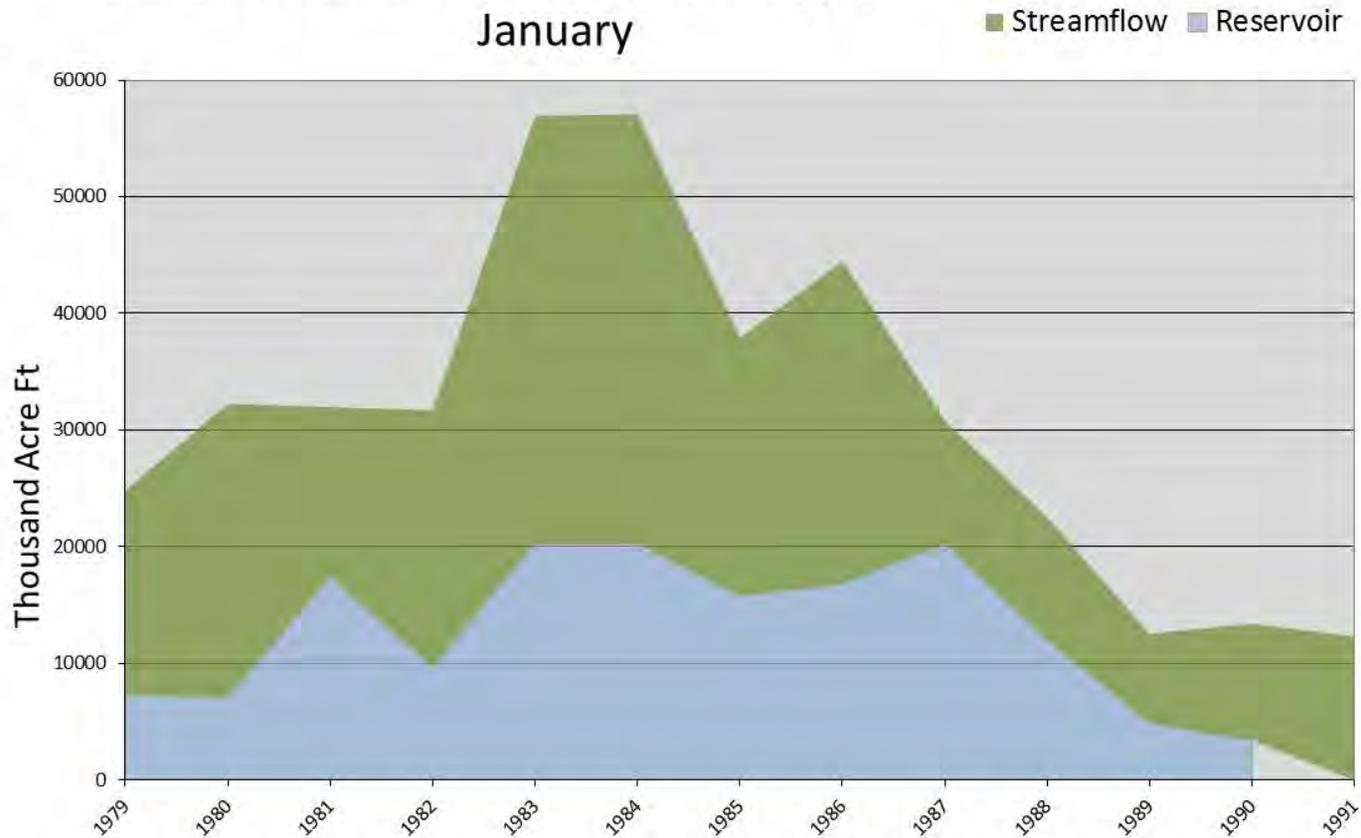
January 1, 2014

## San Pitch Surface Water Supply Index

Basin or Region	December EOM* Gunnison Reservoir	April-July forecast Manti Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>San Pitch</b>	<b>0.2</b>	<b>15.0</b>	<b>15.2</b>	<b>-1.91</b>	<b>27</b>	<b>03,91,08,93</b>

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

### San Pitch River - Surface Water Supply Index January

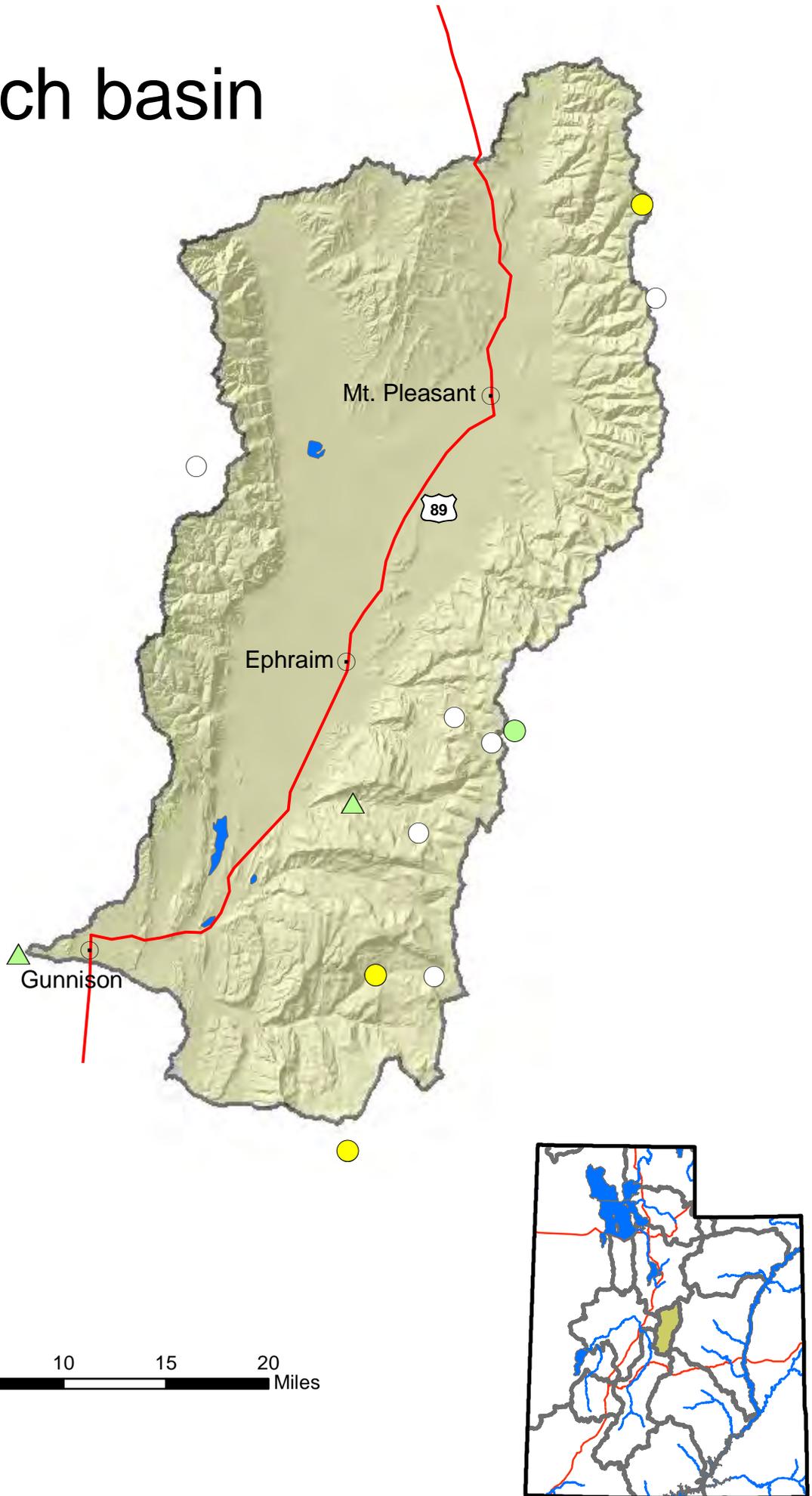
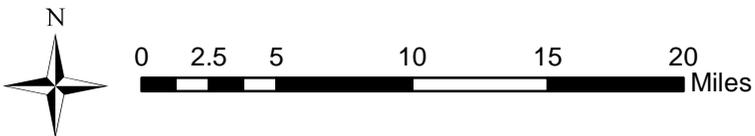


# San Pitch basin

## Percent normal



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

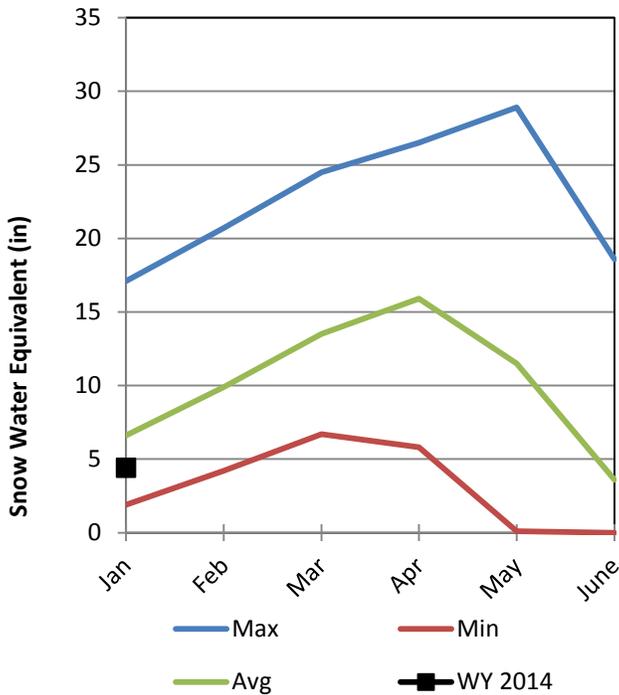


# Price & San Rafael Basins

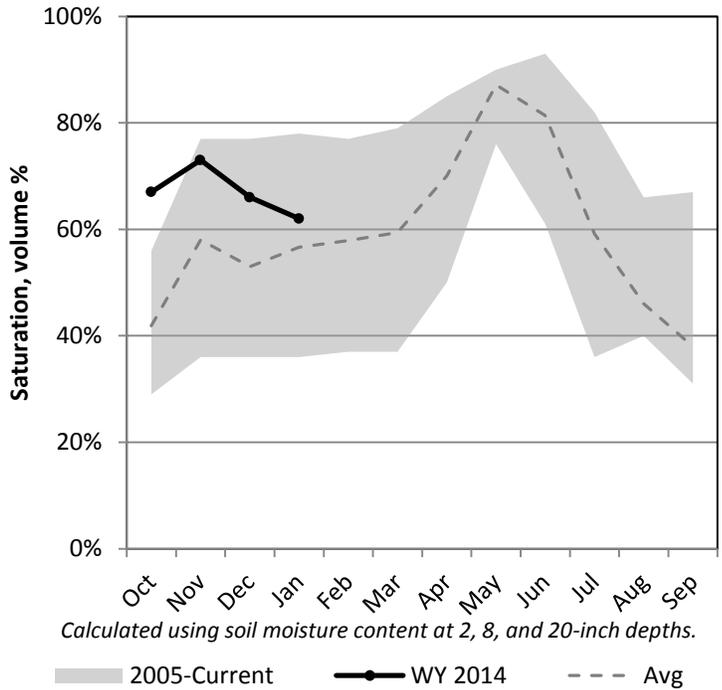
1/1/2014

Snowpack in the Price & San Rafael Basins is below average at 77% of normal, compared to 109% last year. Precipitation in December was much below average at 61%, which brings the seasonal accumulation (Oct-Dec) to 78% of average. Soil moisture is at 62% compared to 38% last year. Reservoir storage is at 39% of capacity, compared to 46% last year. Forecast streamflow volumes range from 65% to 91% of average. The surface water supply index is 15% for the Price River, 30% for Joe's Valley, 52% for Ferron Creek.

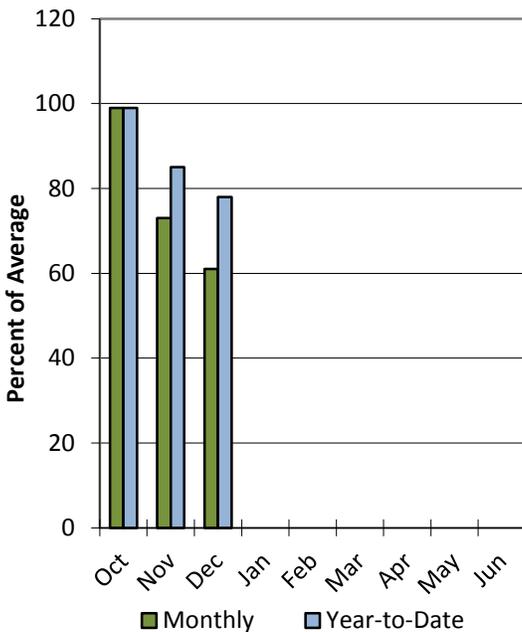
## Snowpack



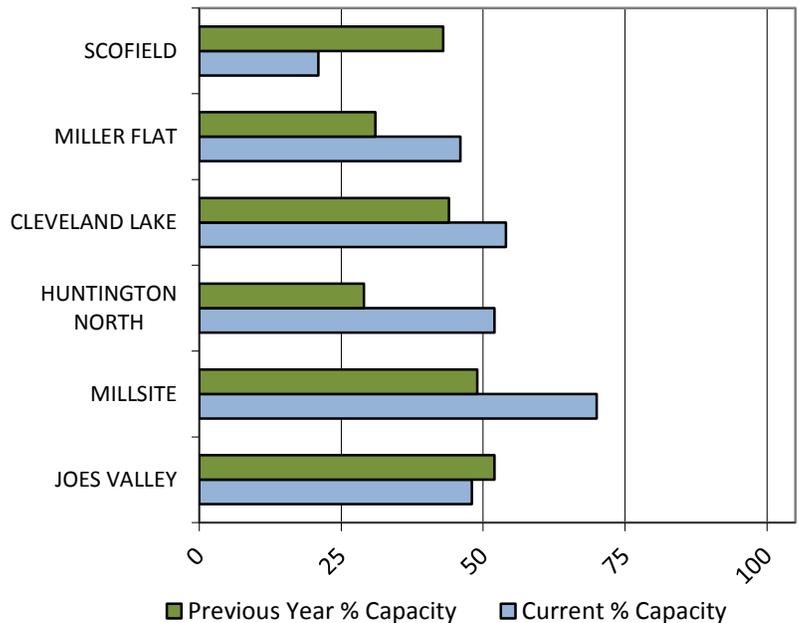
## Soil Moisture



## Precipitation



## Reservoir Storage



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

Price San Rafael	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)	
Fish Ck ab Reservoir nr Scofield	APR-JUL	13.8	20	25	83%	30	40	30
Price R nr Scofield Reservoir <sup>2</sup>	APR-JUL	13.8	23	30	73%	38	53	41
White R bl Tabbyune Creek	APR-JUL	3.2	6.8	10	65%	13.8	21	15.5
Green R at Green River, UT <sup>2</sup>	APR-JUL	1440	2140	2700	91%	3320	4350	2960
Electric Lake Inflow	APR-JUL	4.3	7.4	10	75%	12.9	18	13.3
Huntington Ck nr Huntington <sup>2</sup>	APR-JUL	14.6	23	30	75%	38	51	40
Joes Valley Reservoir Inflow	APR-JUL	24	35	43	77%	52	67	56
Ferron Ck (Upper Station) nr Ferron	APR-JUL	19.5	27	32	84%	38	48	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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
JOES VALLEY RESERVOIR	29.3	32.0	39.9	61.6
MILLSITE	11.7	8.2	10.1	16.7
HUNTINGTON NORTH RESERVOIR	2.2	1.2	2.7	4.2
CLEVELAND LAKE	2.9	2.4		5.4
MILLER FLAT RESERVOIR	2.4	1.6		5.2
SCOFIELD RESERVOIR	13.9	28.4	29.9	65.8
Basin-wide Total	62.4	73.8	82.6	158.9
# of reservoirs	6	6	4	6

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Price	6	77%	109%
San Rafael	6	77%	109%

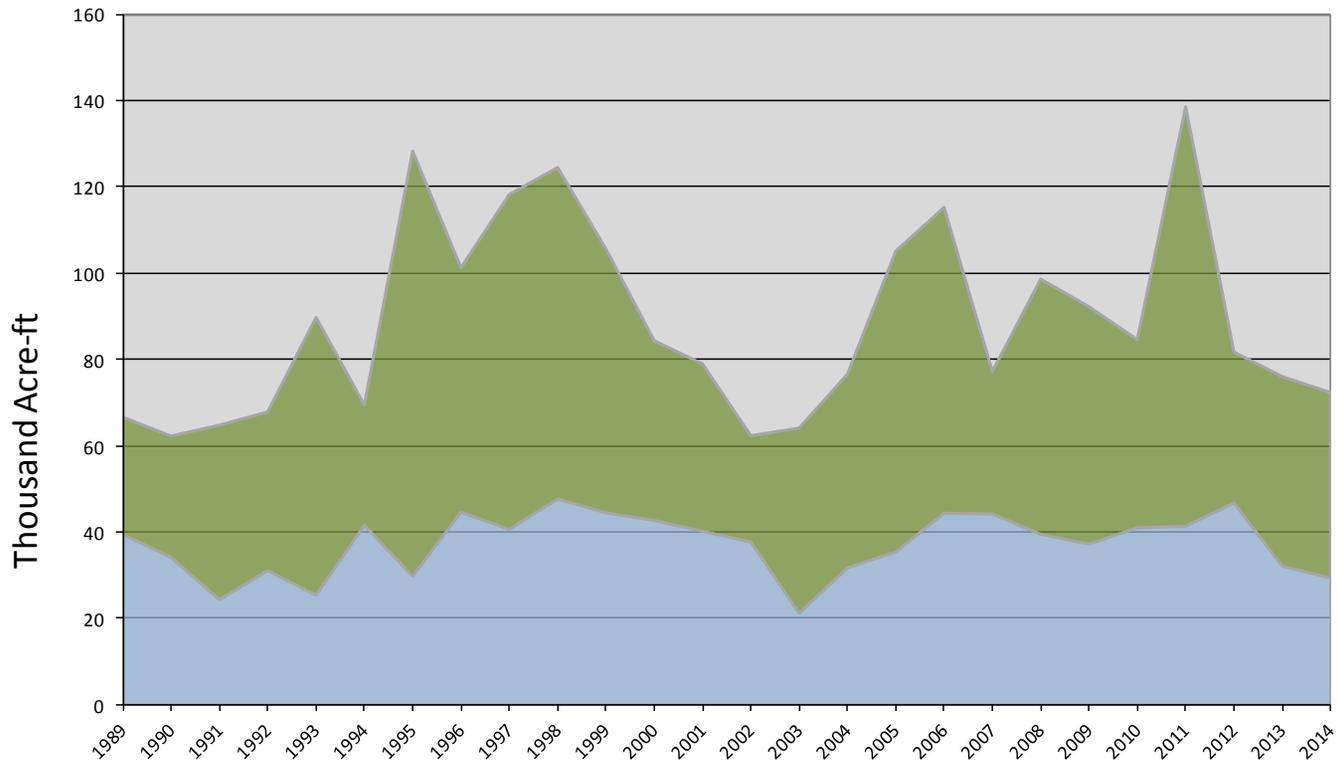
January 1, 2014		Surface Water Supply Index				
Basin or Region	December EOM* Joe's Valley	April-July Forecast Inflow to Joe's Valley	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Joe's Valley</b>	<b>29.3</b>	<b>43.0</b>	<b>72.3</b>	<b>-1.70</b>	<b>30</b>	<b>92, 94, 13, 04</b>

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

### Joe's Valley - Surface Water Availability Index

January

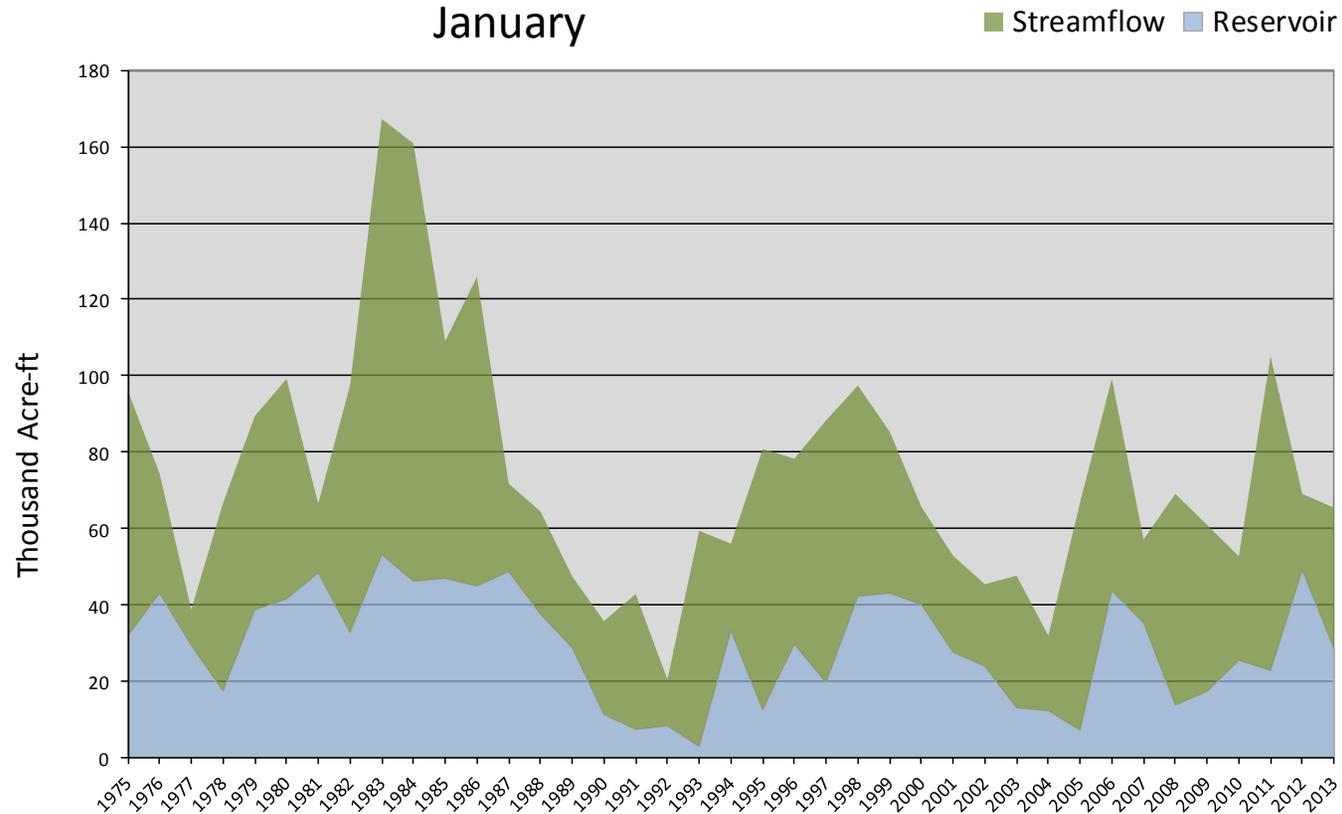
■ Streamflow ■ Reservoir



January 1, 2014		Surface Water Supply Index				
Basin or Region	December EOM* Scofield Reservoir	April-July Forecast @ Scofield	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Price River</b>	<b>13.9</b>	<b>30.0</b>	<b>43.9</b>	<b>-2.95</b>	<b>15</b>	<b>77, 91, 02, 89</b>

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

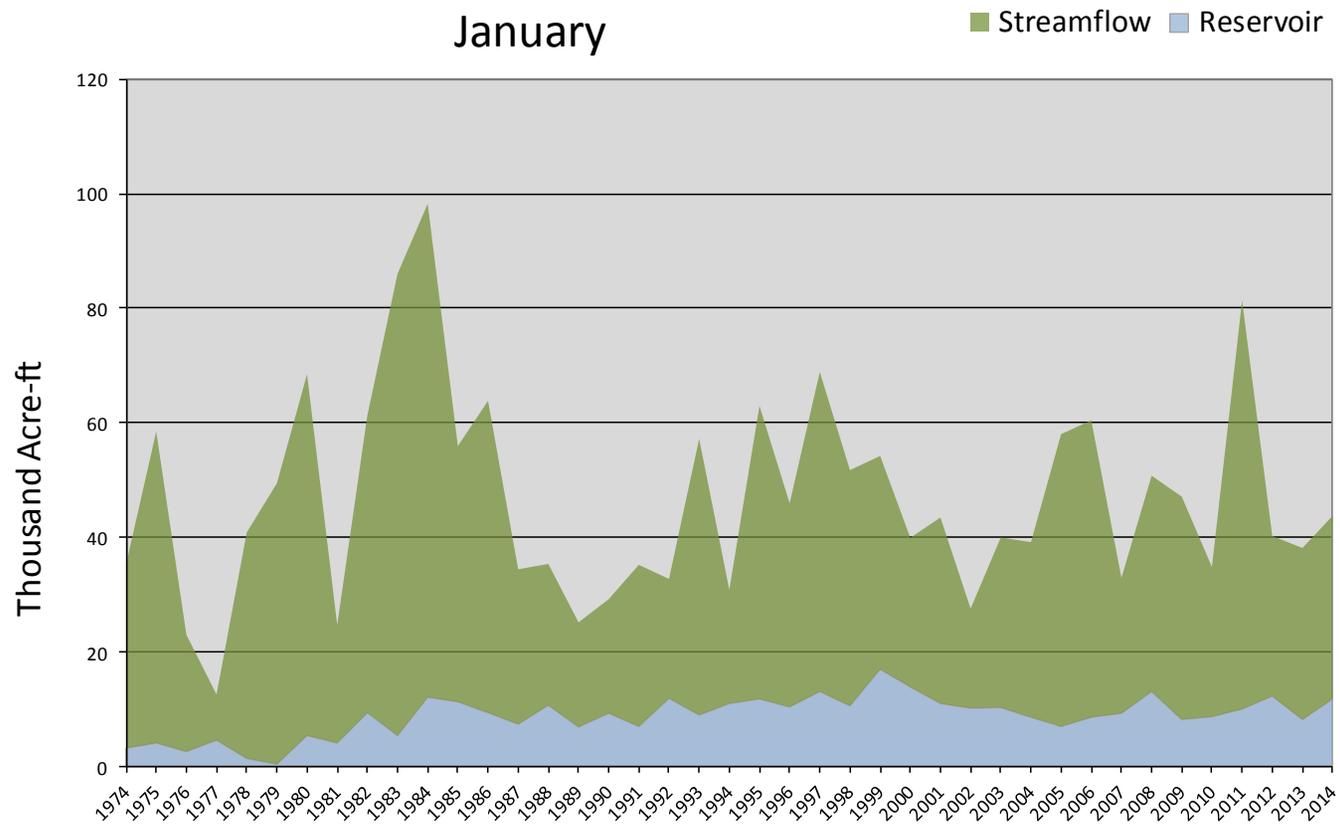
Price River - Surface Water Supply Index  
January



January 1, 2014		Surface Water Supply Index				
Basin or Region	December EOM* Millsite Reservoir	April-July Forecast Ferron creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Ferron Creek</b>	<b>11.7</b>	<b>32.0</b>	<b>43.7</b>	<b>0.20</b>	<b>52</b>	<b>78, 01, 96, 09</b>

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

Ferron Creek - Surface Water Supply Index  
January



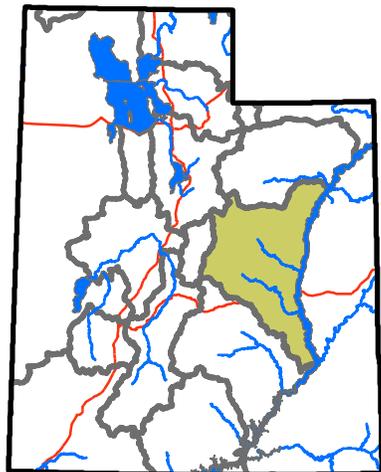
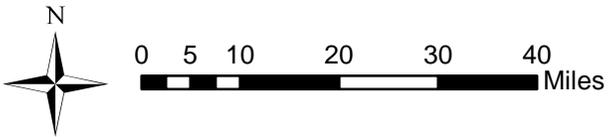
# Price-San Rafael basin



## Percent normal

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

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

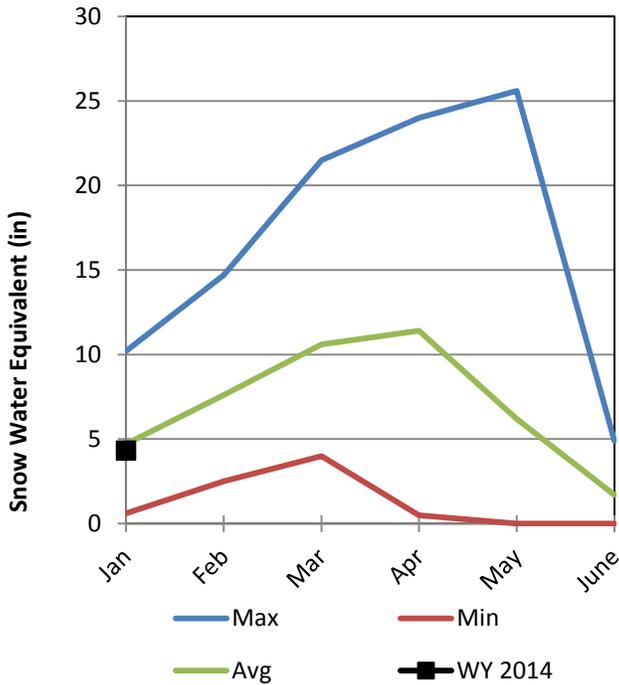


# Southeastern Utah Basin

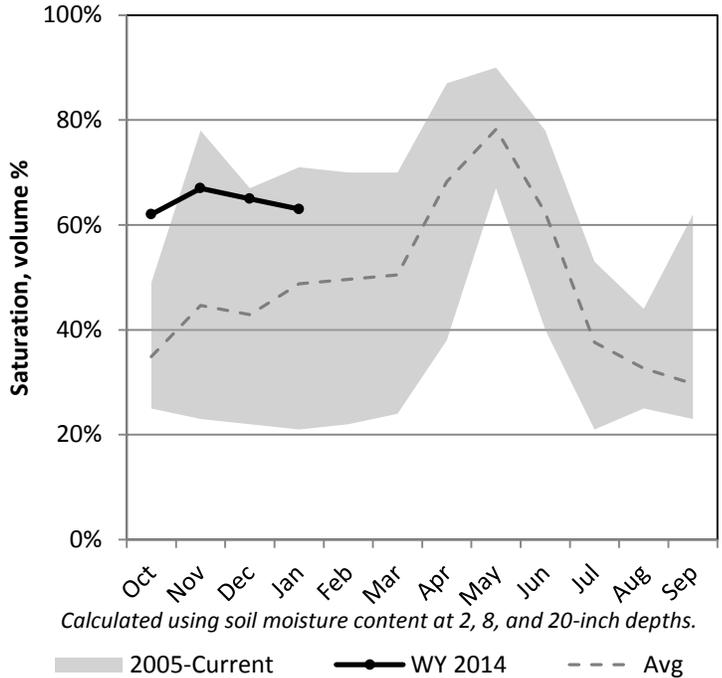
1/1/2014

Snowpack in the Southeastern Utah Basin is near average at 107% of normal, compared to 105% last year. Precipitation in December was much below average at 61%, which brings the seasonal accumulation (Oct-Dec) to 95% of average. Soil moisture is at 63% compared to 21% last year. Reservoir storage is at 43% of capacity, compared to 9% last year. Forecast streamflow volumes range from 63% to 100% of average. The surface water supply index is 61% for Moab.

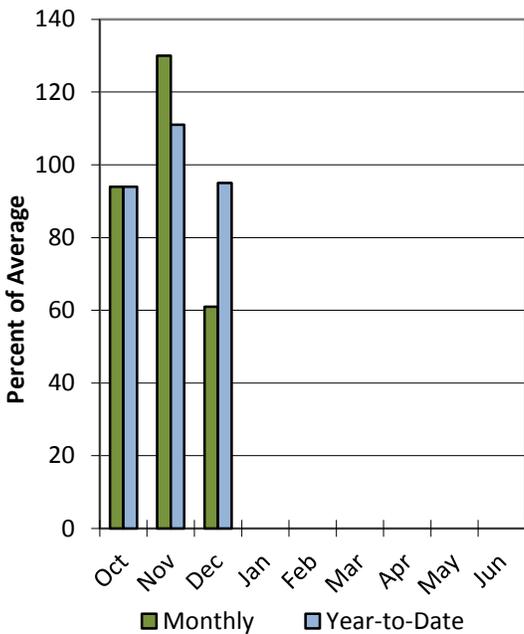
## Snowpack



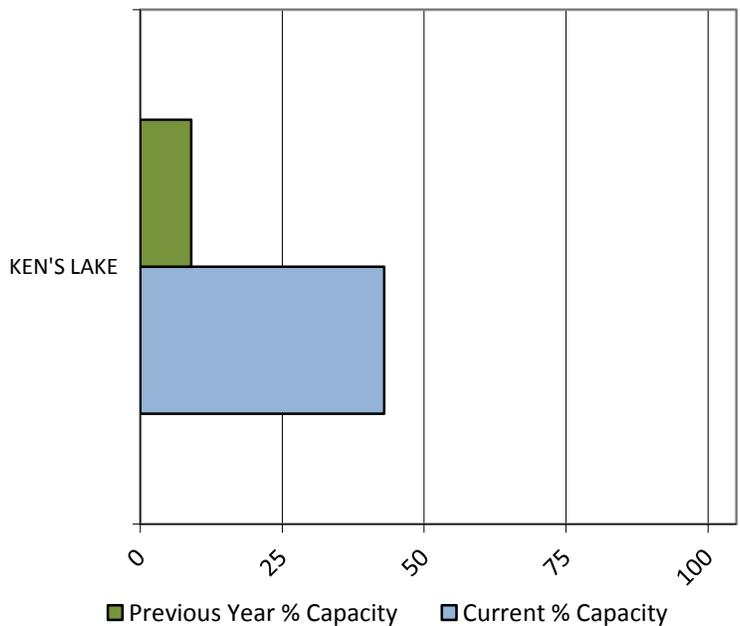
## Soil Moisture



## Precipitation



## Reservoir Storage



## Southeastern Utah Streamflow Forecasts - January 1, 2014

Southeastern Utah	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)	
Mill Ck at Sheley Tunnel nr Moab	APR-JUL	1.82	3.2	4.3	100%	5.6	7.8	4.3
South Ck ab Lloyds Reservoir nr Monticello	MAR-JUL	0.1	0.36	0.69	63%	1.18	2.3	1.09
Colorado R nr Cisco <sup>2</sup>	APR-JUL	2160	3130	3890	91%	4730	6120	4280
San Juan R near Bluff <sup>2</sup>	APR-JUL	610	875	1080	98%	1310	1680	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

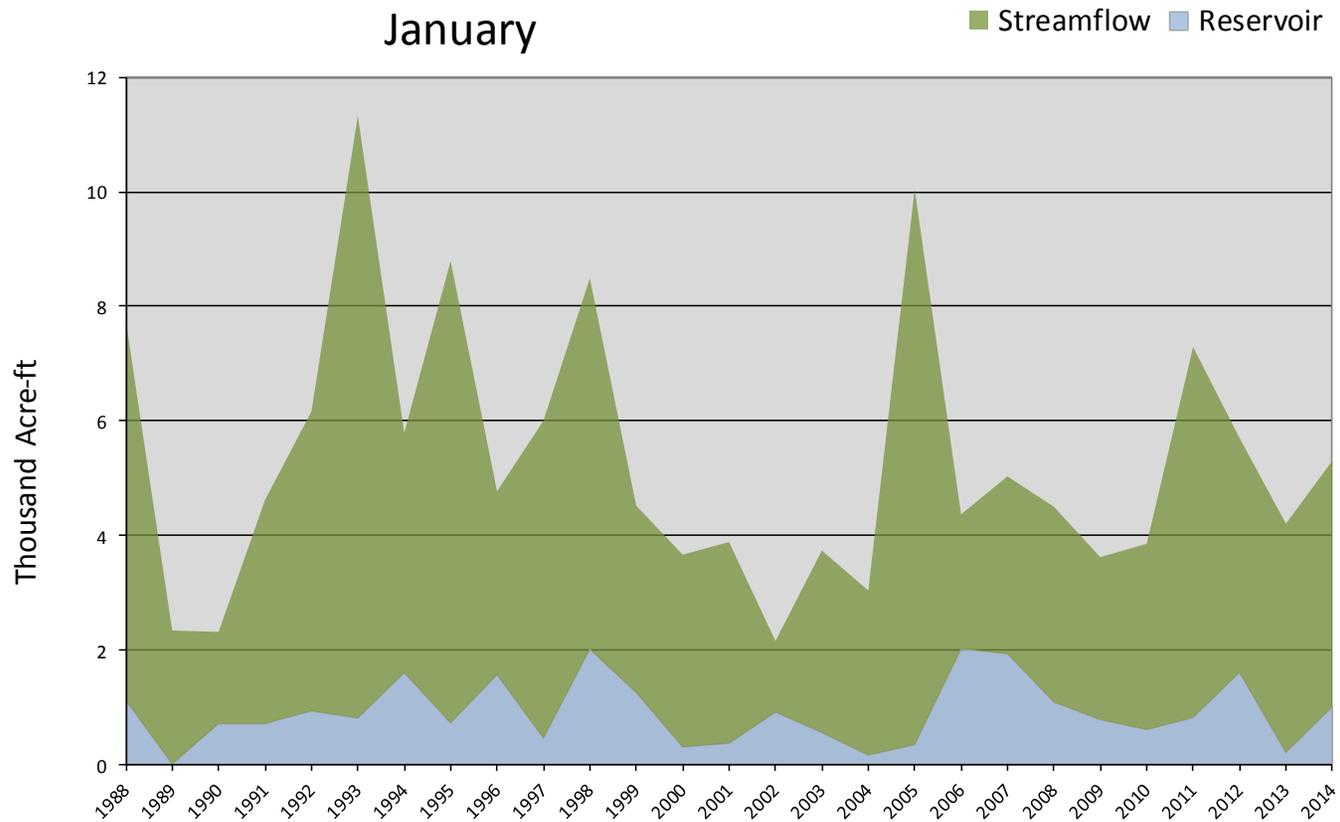
Reservoir Storage End of December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
KEN'S LAKE	1.0	0.2	1.1	2.3
Basin-wide Total	1.0	0.2	1.1	2.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Lasal Mtns	1	98%	130%
Lower San Juan	1	116%	89%
Lower Green	2	86%	110%

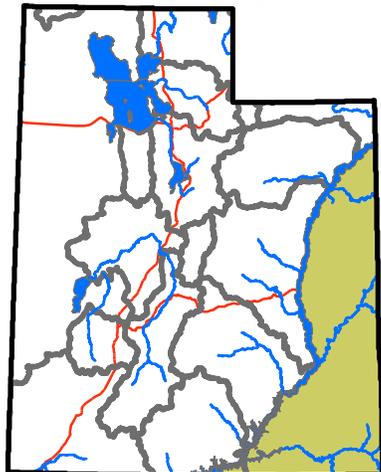
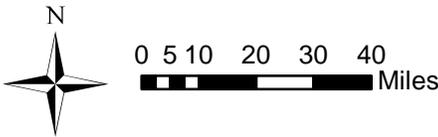
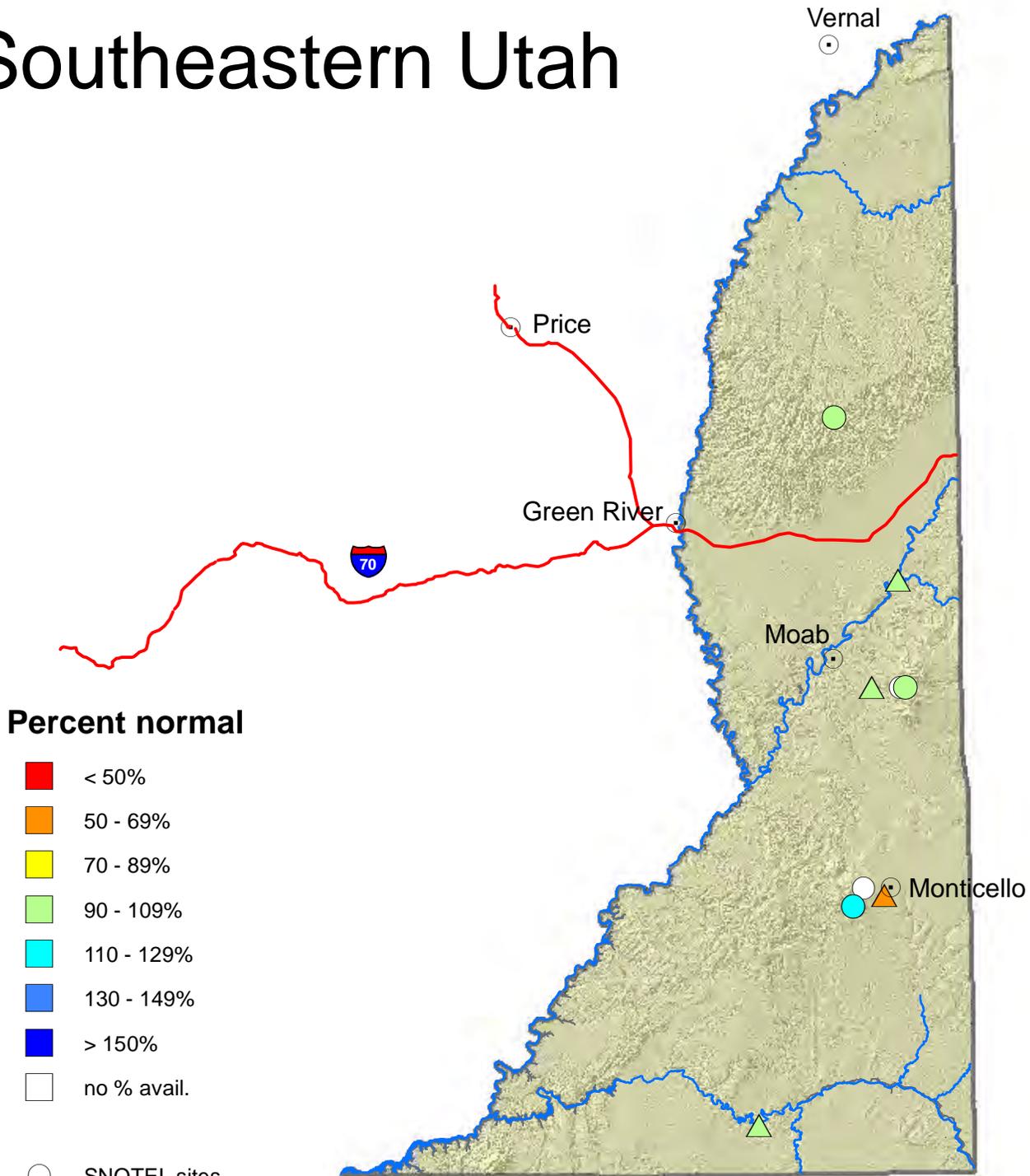
January 1, 2014		Surface Water Supply Index				
Basin or Region	December EOM* Ken's Lake Reservoir	April-July Forecast Mill Creek at Sheley	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Moab</b>	<b>1.0</b>	<b>4.3</b>	<b>5.3</b>	<b>0.89</b>	<b>61</b>	<b>96, 07, 12, 94</b>

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

Moab - Surface Water Supply Index  
January



# Southeastern Utah

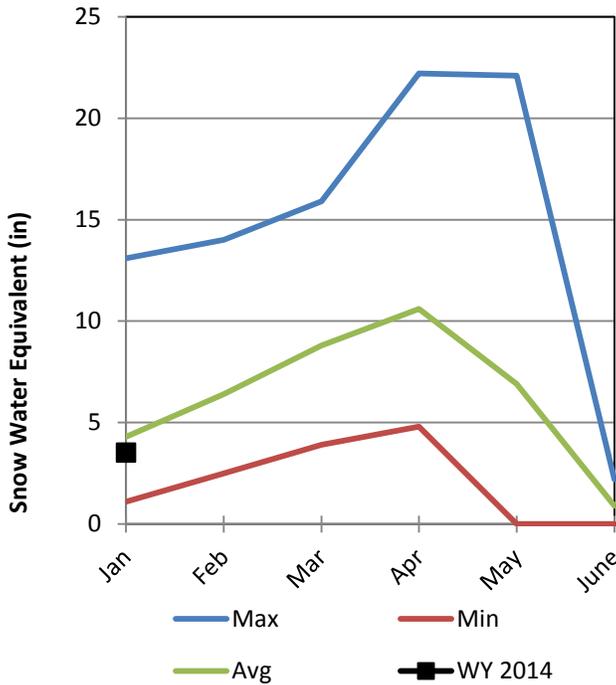


# Dirty Devil Basin

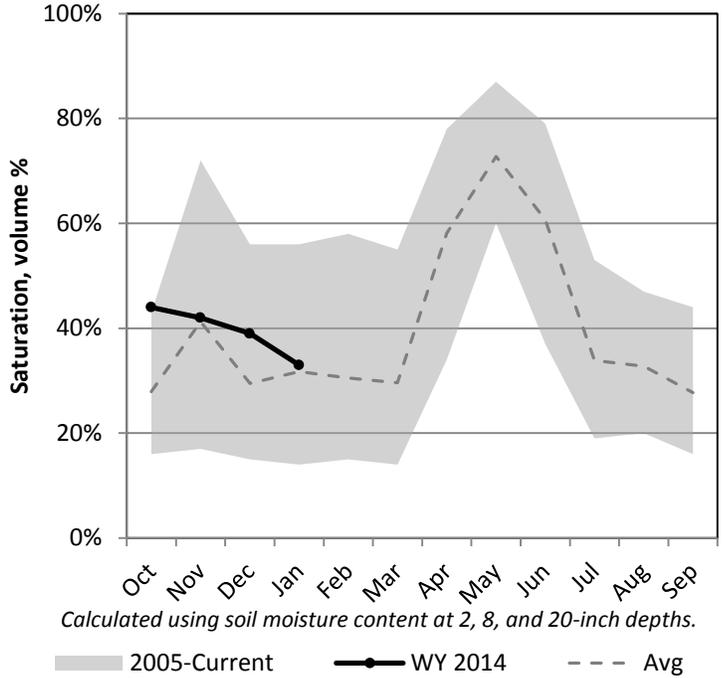
1/1/2014

Snowpack in the Dirty Devil Basin is near average at 102% of normal, compared to 100% last year. Precipitation in December was below average at 70%, which brings the seasonal accumulation (Oct-Dec) to 94% of average. Soil moisture is at 33% compared to 20% last year. Forecast streamflow volumes range from 80% to 84% of average.

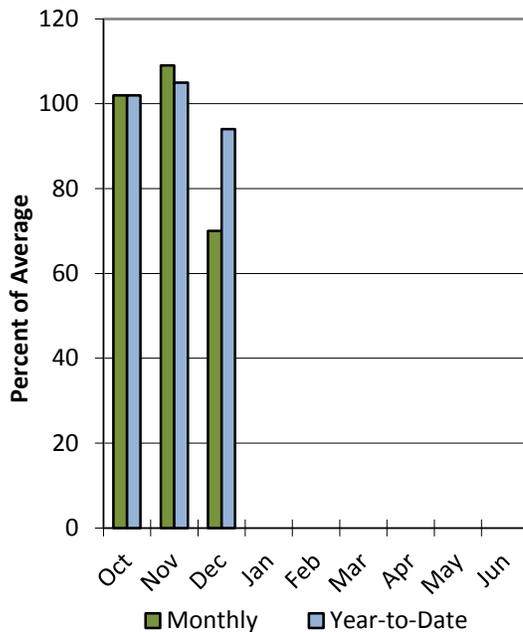
## Snowpack



## Soil Moisture



## Precipitation



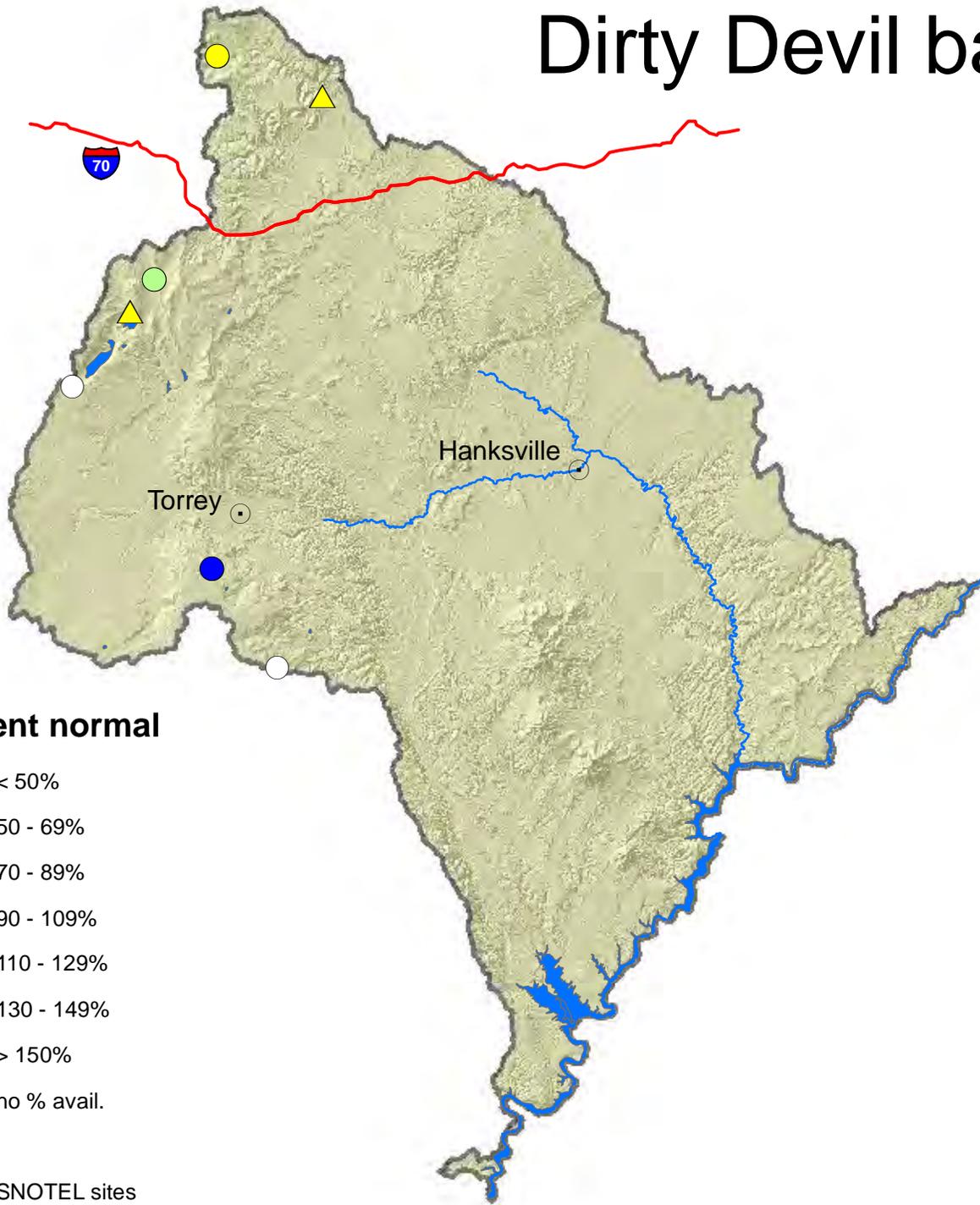
## Dirty Devil Streamflow Forecasts - January 1, 2014

Dirty Devil	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)	
Muddy Ck nr Emery	APR-JUL	8	12.4	16	80%	20	27	19.9
Seven Mile Ck nr Fish Lake	APR-JUL	3.9	5.1	6.1	84%	7.2	8.9	7.3

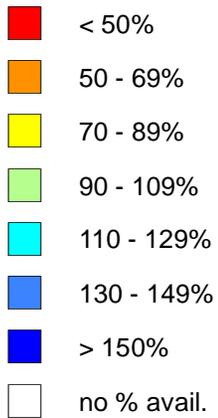
- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Muddy	3	81%	102%
Fremont	3	101%	93%

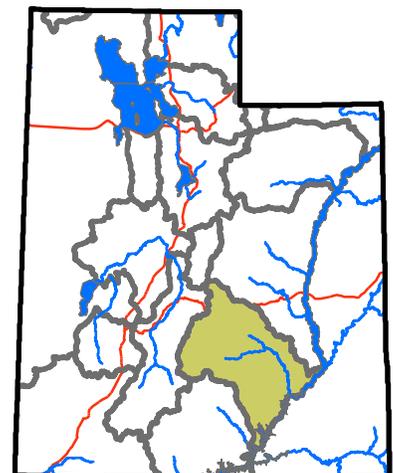
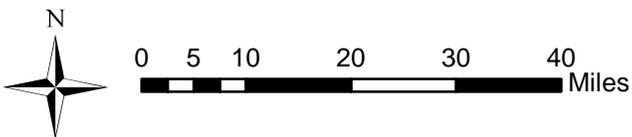
# Dirty Devil basin



## Percent normal



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

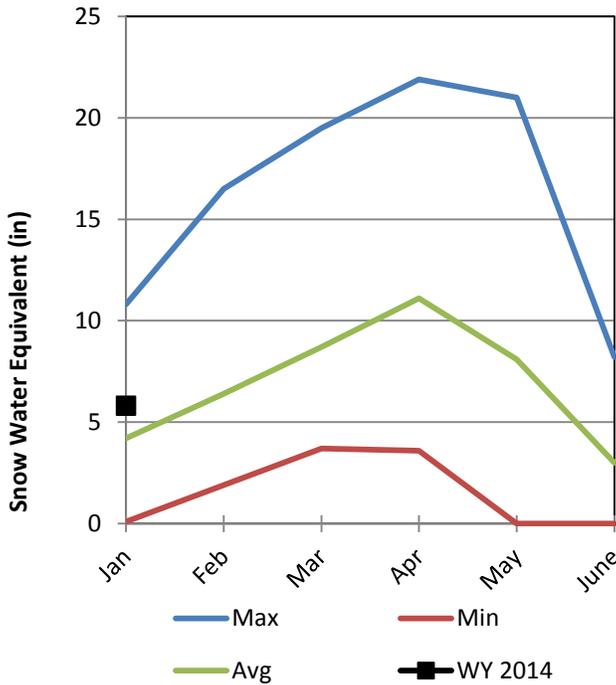


# Escalante River Basin

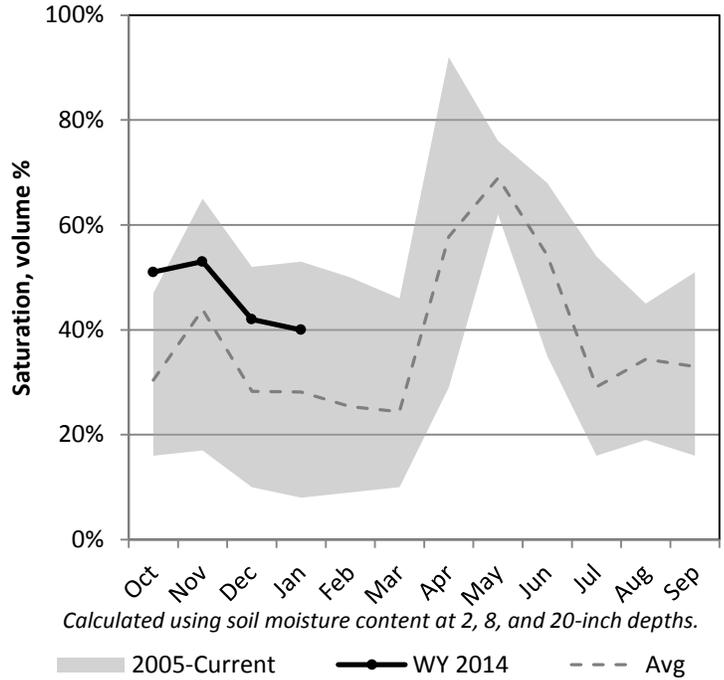
1/1/2014

Snowpack in the Escalante River Basin is much above average at 149% of normal, compared to 91% last year. Precipitation in December was below average at 77%, which brings the seasonal accumulation (Oct-Dec) to 118% of average. Soil moisture is at 40% compared to 22% last year. The forecast streamflow volume for Pine Creek is 125% of average.

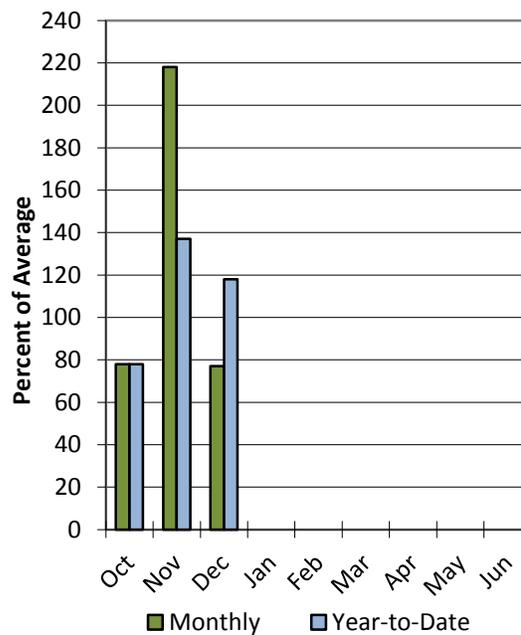
## Snowpack



## Soil Moisture



## Precipitation



## Escalante River Streamflow Forecasts - January 1, 2014

<b>Escalante River</b>	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)	
Pine Ck nr Escalante	APR-JUL	1.33	2.2	3	125%	3.9	5.3	2.4
Lake Powell Inflow <sup>2</sup>	APR-JUL	3200	5030	6500	91%	8160	10900	7160

- 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

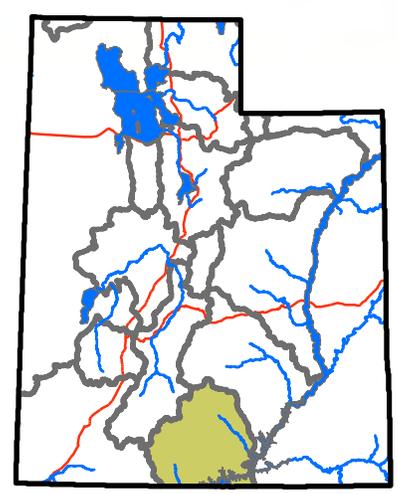
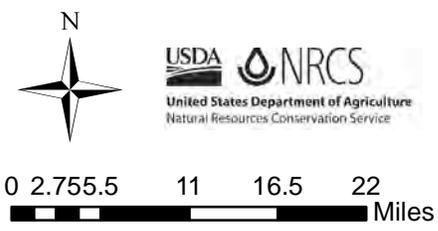
<b>Watershed Snowpack Analysis January 1, 2014</b>	# of Sites	% Median	Last Year % Median
Escalante	3	149%	91%
Paria	2	200%	125%

# 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. |   |                 |

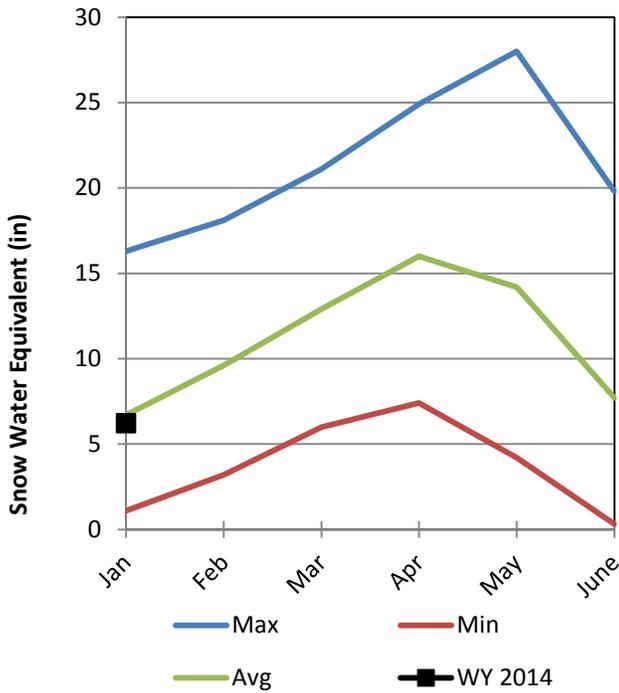


# Beaver River Basin

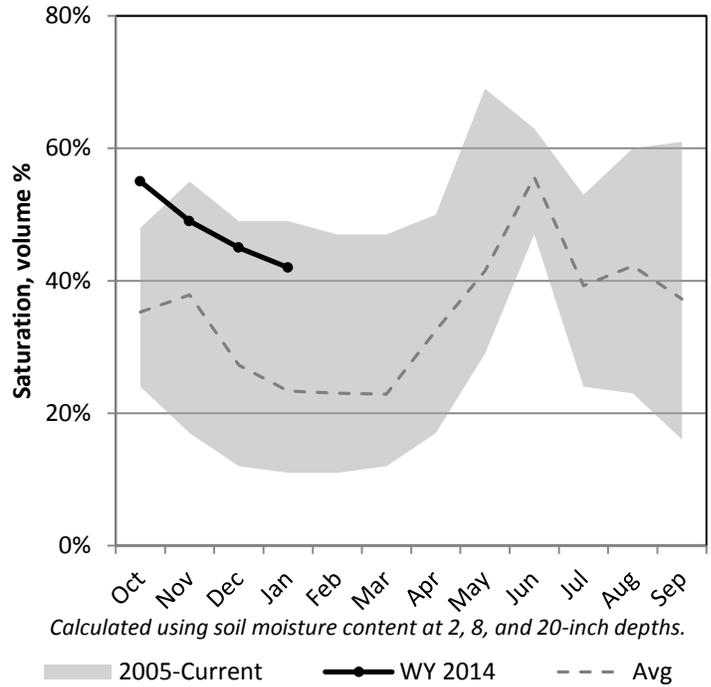
1/1/2014

Snowpack in the Beaver River Basin is near average at 98% of normal, compared to 106% last year. Precipitation in December was near average at 90%, which brings the seasonal accumulation (Oct-Dec) to 100% of average. Soil moisture is at 42% compared to 36% last year. Reservoir storage is at 38% of capacity, compared to 36% last year. The forecast streamflow volume for the Beaver River is 96% of average. The surface water supply index is 50% for the Beaver River.

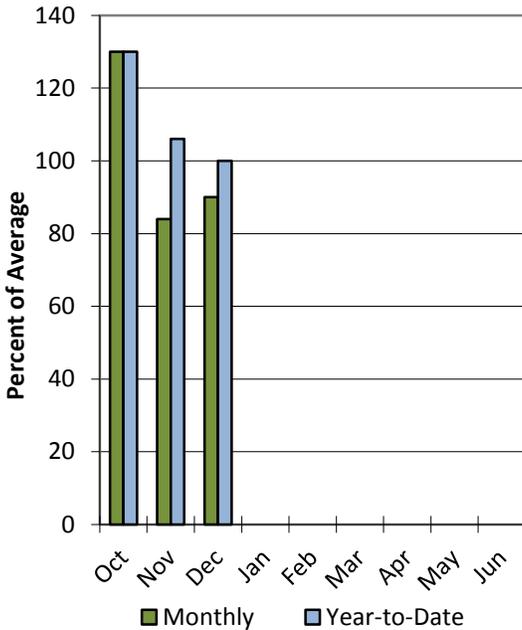
## Snowpack



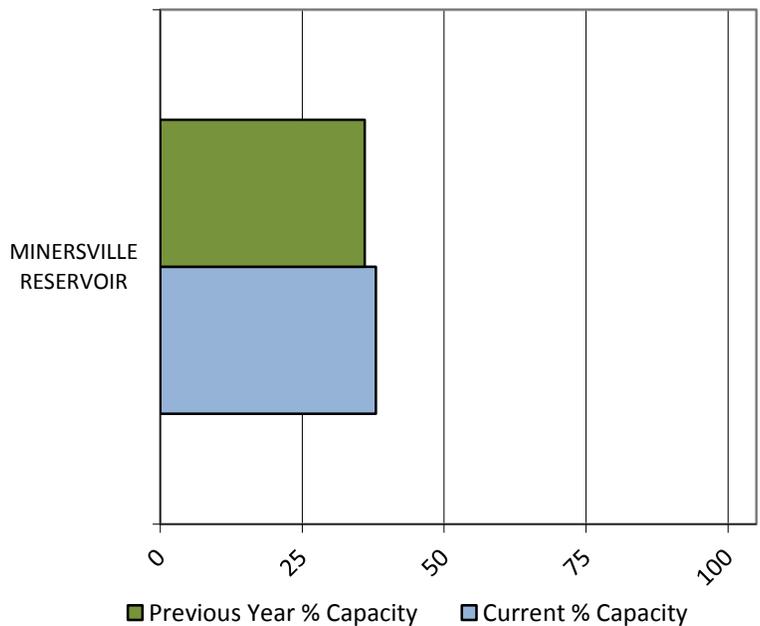
## Soil Moisture



## Precipitation



## Reservoir Storage



## Beaver River Streamflow Forecasts - January 1, 2014

Beaver 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)
Beaver R nr Beaver	APR-JUL	7.8	18	25	96%	32	42	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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
MINERSVILLE RESERVOIR	9.0	8.4	13.4	23.3
Basin-wide Total	9.0	8.4	13.4	23.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Beaver	2	98%	106%

January 1, 2014

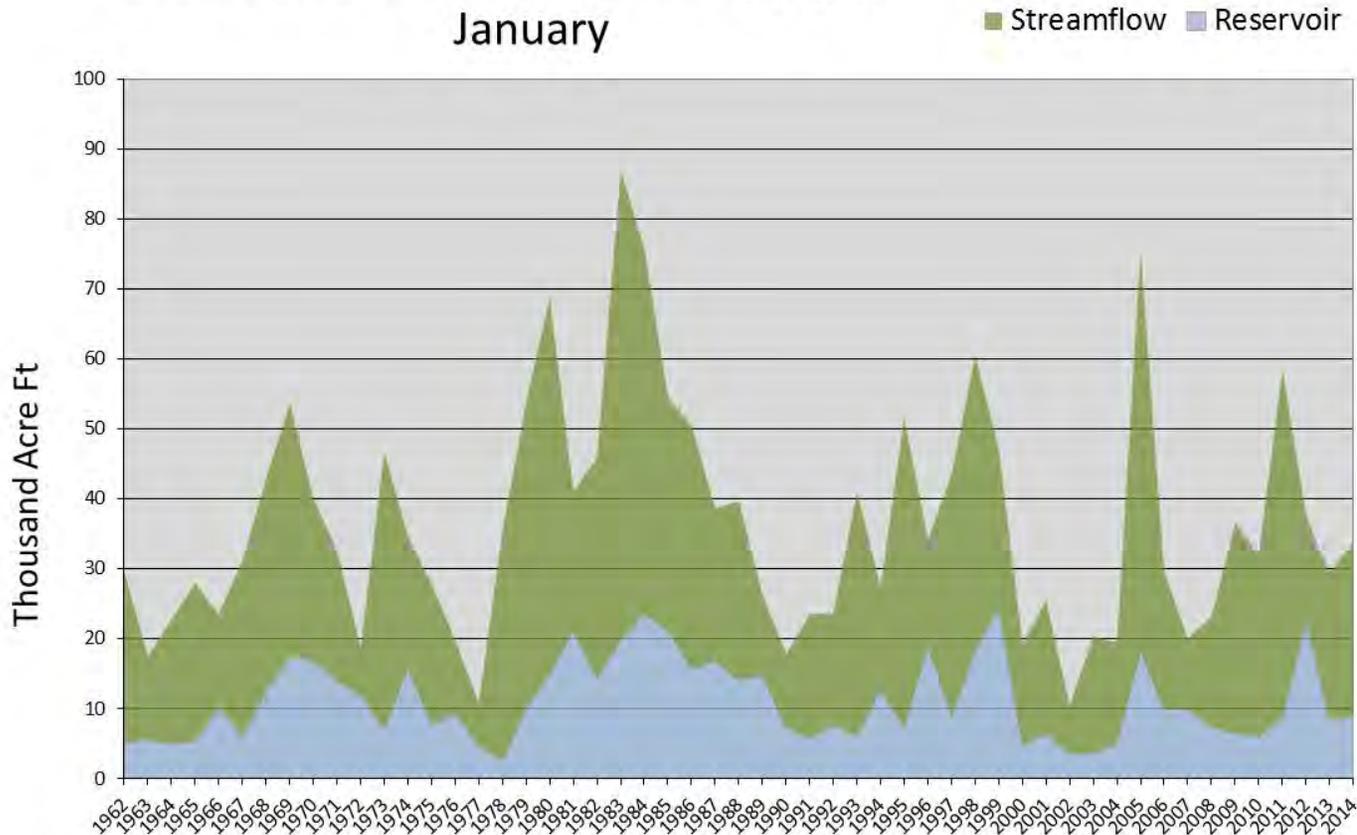
## Surface Water Supply Index

Basin or Region	December 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>8.9</b>	<b>25.0</b>	<b>33.9</b>	<b>0.00</b>	<b>50</b>	<b>10,71,96,74</b>

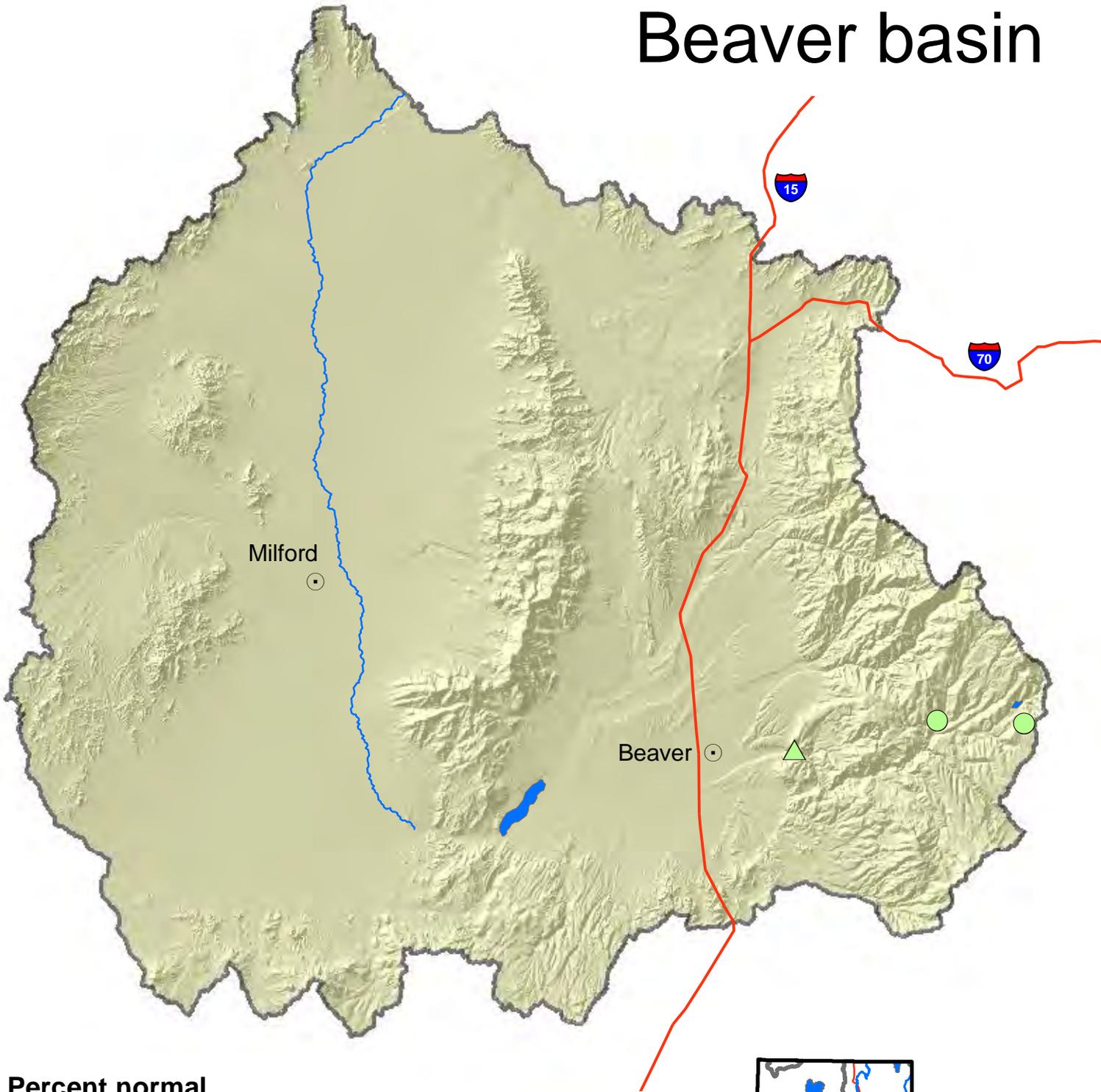
\*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

### Beaver River - Surface Water Supply Index

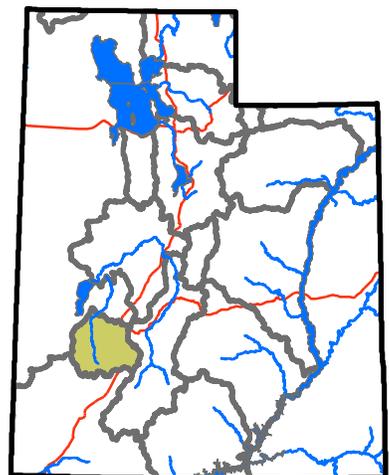
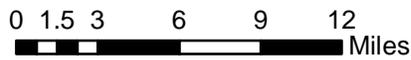
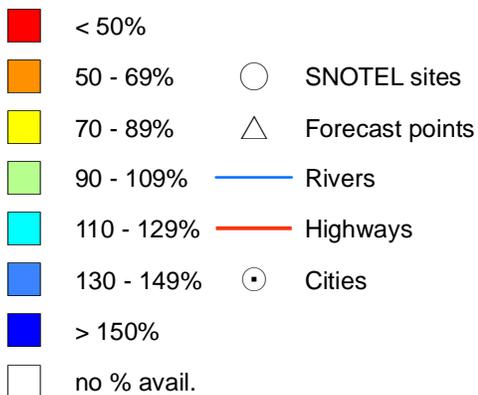
January



# Beaver basin



## Percent normal

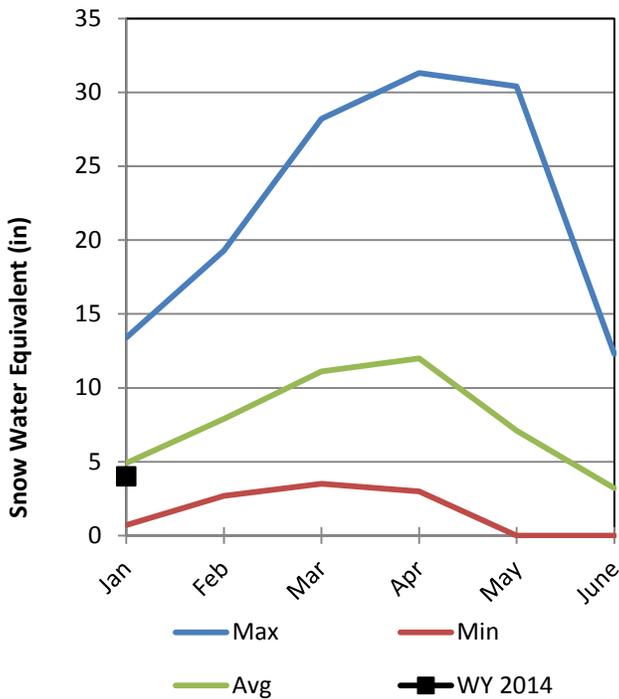


# Southwestern Utah Basin

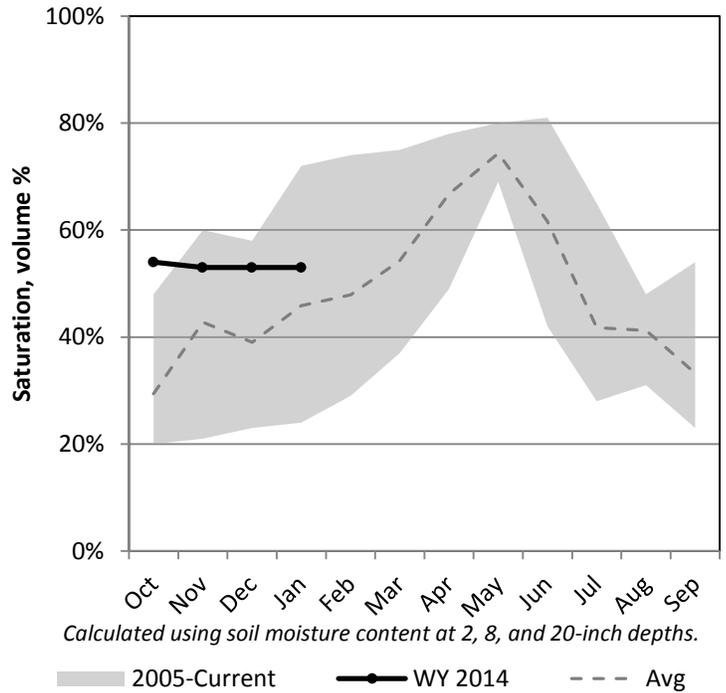
1/1/2014

Snowpack in the Southwestern Utah Basin is near average at 104% of normal, compared to 134% last year. Precipitation in December was much below average at 65%, which brings the seasonal accumulation (Oct-Dec) to 73% of average. Soil moisture is at 53% compared to 44% last year. Reservoir storage is at 42% of capacity, compared to 52% last year. Forecast streamflow volumes range from 60% to 91% of average. The surface water supply index is 48% for the Virgin River.

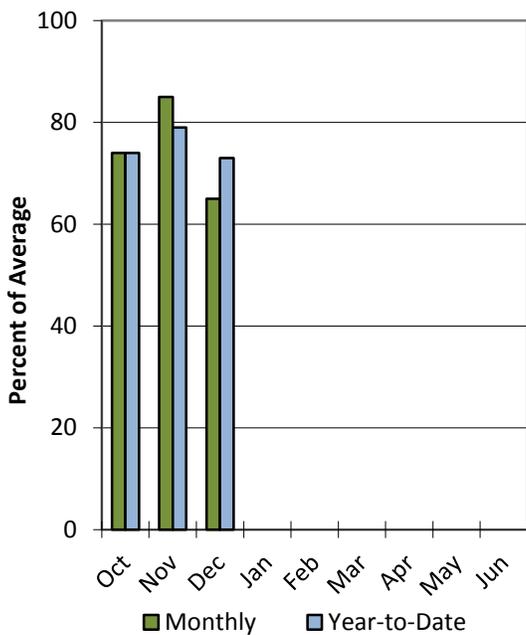
## Snowpack



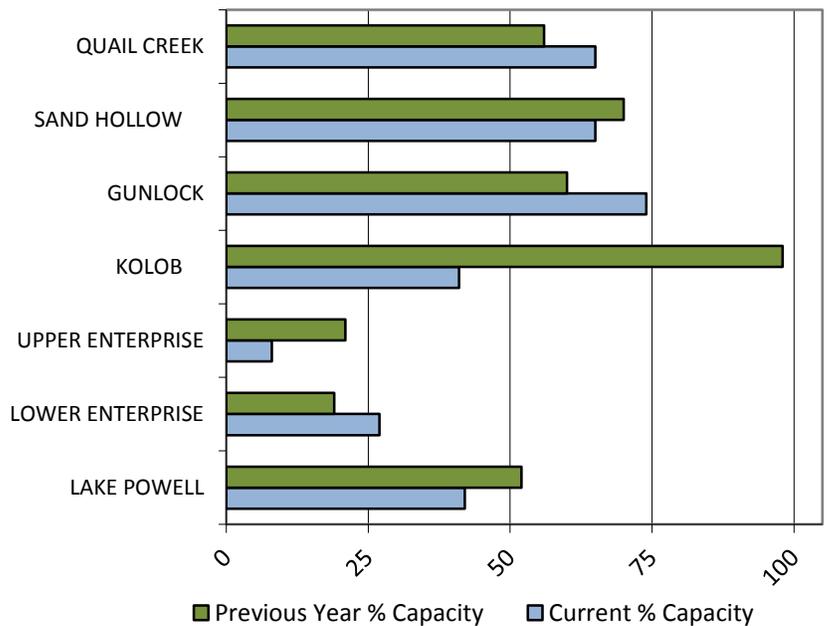
## Soil Moisture



## Precipitation



## Reservoir Storage



## Southwestern Utah Streamflow Forecasts - January 1, 2014

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast
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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	3200	5030	6500	91%	8160	10900	7160
Virgin R nr Hurricane	APR-JUL	6.7	22	38	60%	58	95	63
Virgin R at Virgin	APR-JUL	13.7	28	41	71%	56	83	58
Santa Clara R nr Pine Valley	APR-JUL	0.81	2.3	3.7	74%	5.5	8.7	5
Coal Ck nr Cedar City	APR-JUL	4.6	11.3	16	86%	21	27	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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
LAKE POWELL AT GLEN CANYON DAM	10307.1	12707.2	17338.0	24322.0
LOWER ENTERPRISE	0.7	0.5	0.6	2.6
UPPER ENTERPRISE	0.8	2.1	3.1	10.0
KOLOB RESERVOIR	2.3	5.5		5.6
GUNLOCK	7.6	6.2	6.5	10.4
SAND HOLLOW RESERVOIR	32.3	35.2		50.0
QUAIL CREEK	26.0	22.3	26.0	40.0
Basin-wide Total	10376.9	12779.0	17374.2	24440.6
# of reservoirs	7	7	5	7

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
Upper Virgin	8	112%	141%
Lower Virgin	2	111%	258%
Cedar City Parowan	4	87%	115%

January 1, 2014

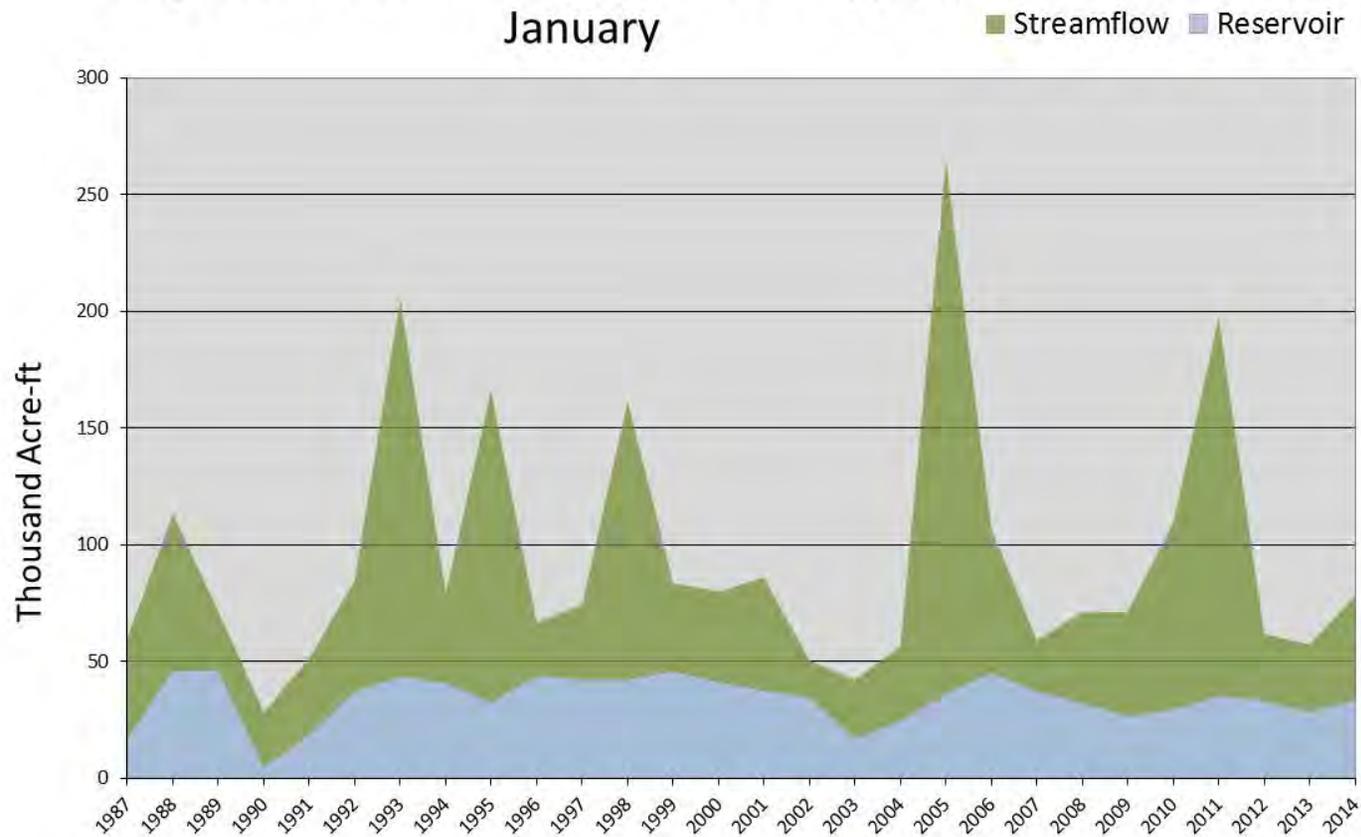
## Surface Water Supply Index

Basin or Region	December EOM* Quail Creek and Gunlock Reservoirs	April-July forecast Virgin and Santa Clara Rivers	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Virgin River</b>	<b>33.6</b>	<b>44.7</b>	<b>78.3</b>	<b>-0.14</b>	<b>48</b>	<b>89,97,94,00</b>

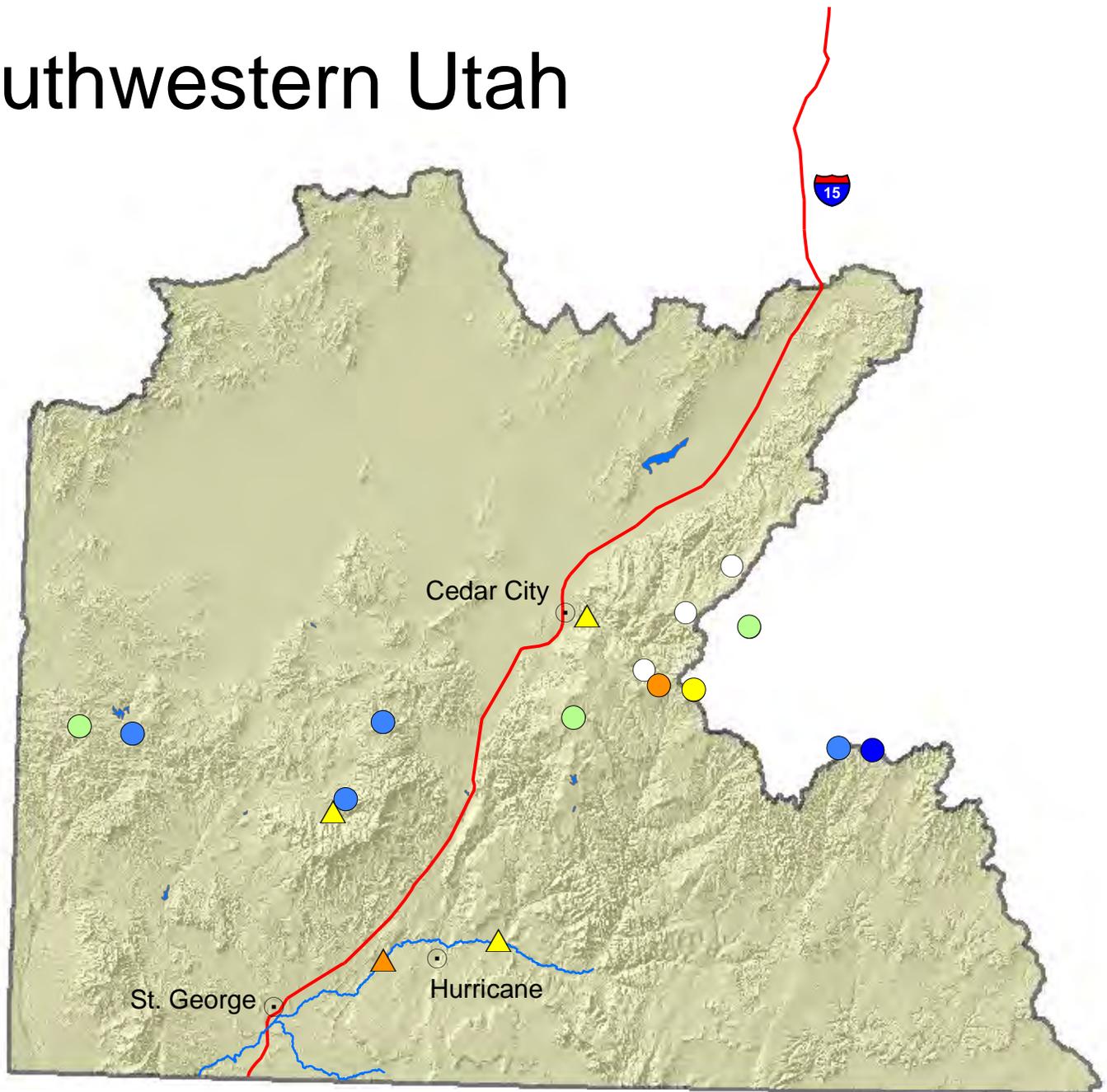
\*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

### Virgin River Basin - Surface Water Supply Index

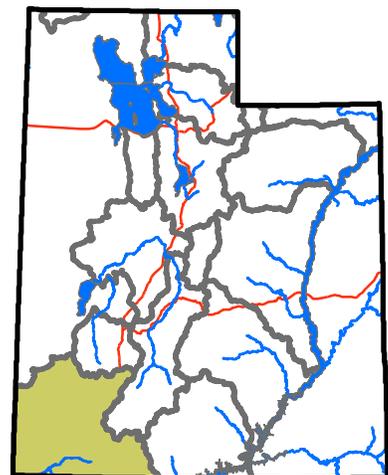
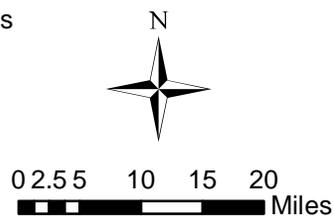
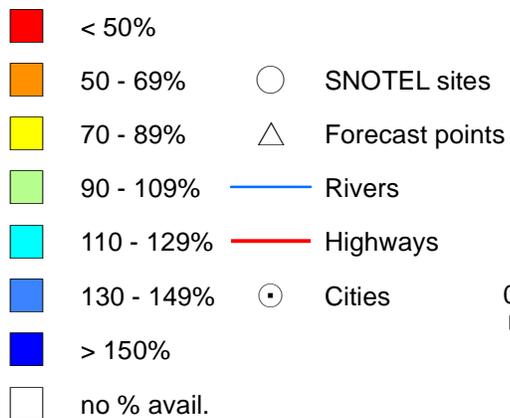
January



# Southwestern Utah



## Percent normal



1/1/2014

## Surface Water Supply Index

Basin or Region	April EOM* Reservoirs	April-July Stream Forecast	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
<b>Bear River</b>	<b>532</b>	<b>140</b>	<b>672</b>	<b>-0.98</b>	<b>38</b>	<b>61, 39, 96, 89</b>
<b>Woodruff Narrows</b>	<b>13</b>	<b>96</b>	<b>109</b>	<b>-1.27</b>	<b>35</b>	<b>91, 76, 00, 81</b>
<b>Little Bear</b>	<b>9</b>	<b>28</b>	<b>37</b>	<b>-0.18</b>	<b>48</b>	<b>94, 10, 08, 93</b>
<b>Ogden River</b>	<b>37</b>	<b>66</b>	<b>103</b>	<b>-2.19</b>	<b>24</b>	<b>07, 81, 08, 87</b>
<b>Weber River</b>	<b>143</b>	<b>285</b>	<b>428</b>	<b>-1.45</b>	<b>33</b>	<b>08, 12, 00, 87</b>
<b>Provo</b>	<b>260</b>	<b>95</b>	<b>355</b>	<b>-3.47</b>	<b>8</b>	<b>04, 03, 13, 02</b>
<b>West Uintah Basin</b>	<b>147</b>	<b>160</b>	<b>307</b>	<b>-0.09</b>	<b>49</b>	<b>10, 76, 87, 93</b>
<b>East Uintah Basin</b>	<b>19.3</b>	<b>60.0</b>	<b>79.3</b>	<b>-2.31</b>	<b>22</b>	<b>94, 03, 12, 81</b>
<b>Blacks Fork</b>	<b>6.0</b>	<b>76.0</b>	<b>82.0</b>	<b>-0.90</b>	<b>39</b>	<b>01, 03, 13, 06</b>
<b>Smiths Fork</b>	<b>6.5</b>	<b>24.0</b>	<b>30.5</b>	<b>3.06</b>	<b>87</b>	<b>10, 01, 11</b>
<b>Price River</b>	<b>13.9</b>	<b>30.0</b>	<b>43.9</b>	<b>-2.95</b>	<b>15</b>	<b>77, 91, 02, 89</b>
<b>Joe's Valley</b>	<b>29.3</b>	<b>43.0</b>	<b>72.3</b>	<b>-1.70</b>	<b>30</b>	<b>92, 94, 13, 04</b>
<b>Ferron Creek</b>	<b>11.7</b>	<b>32.0</b>	<b>43.7</b>	<b>0.20</b>	<b>52</b>	<b>78, 01, 96, 09</b>
<b>Moab</b>	<b>1.0</b>	<b>4.3</b>	<b>5.3</b>	<b>0.89</b>	<b>61</b>	<b>96, 07, 12, 94</b>
<b>Upper Sevier River</b>	<b>74</b>	<b>39</b>	<b>133</b>	<b>-0.65</b>	<b>42</b>	<b>59, 76, 71, 53</b>
<b>San Pitch</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>-1.91</b>	<b>27</b>	<b>03, 91, 08, 93</b>
<b>Lower Sevier River</b>	<b>106</b>	<b>104</b>	<b>210</b>	<b>0.74</b>	<b>59</b>	<b>81, 75, 88, 87</b>
<b>Beaver River</b>	<b>8.9</b>	<b>25.0</b>	<b>33.9</b>	<b>0.00</b>	<b>50</b>	<b>10, 71, 96, 74</b>
<b>Virgin River</b>	<b>33.6</b>	<b>45</b>	<b>78</b>	<b>-0.14</b>	<b>48</b>	<b>89, 97, 94, 00</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.

*Issued by*

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

*Released by*

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

*Prepared by*

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



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

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



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Salt Lake City, UT

