



Utah Water Supply Outlook Report

March, 2014



Return from the Chalk Creek Snow Survey, February 25, 2014

Photo by Kent Sutcliffe, NRCS

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

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

Snow Surveys

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

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

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snowcourses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in statistical and simulation models to prepare runoff forecasts. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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STATE OF UTAH GENERAL OUTLOOK

March 1, 2014

SUMMARY

Folks in northern Utah are saying, Wow! What a month this February was! Folks down south are saying – glad it's gone, share some snow. The Bear and the Weber Rivers have substantially increased snowpacks – from around 75% at the end of January to 100-110% at the end of February. Tony Grove SNOTEL, up Logan Canyon has received 20 inches of snow water equivalent in the last 30 days – more than the average annual precipitation of Salt Lake City. That is a bases loaded bottom of the ninth home run! Over that same period of time, Midway Valley SNOTEL above Cedar City received just 1.8 inches of snow water equivalent, about 10% of the Tony Grove accumulation. That was three called strikes and out. South of I 70, dry conditions prevail and north of that, the farther north you go, the wetter the February pattern was. The month was also warm which has begun the melt process in southern Utah with sites like Little Grassy and Long Valley Jct melting out. It has also advanced snow densities across the state 2% to 7% greater than normal. This is an indication that snowpacks are closer to isothermal melting conditions than normal and given a continuation of that warmth, snowmelt could start a few weeks early across the northern part of the state as it already has in the south. The change in percentages over the past month are: Bear (+30%), Weber (+20%), Provo (+14%), Tooele (0%), Northeastern Uintahs (0%), Duchesne (+9%), Price/San Rafael (+15%), Dirty Devil (+4%), Southeastern Utah (-6%), Upper Sevier (-11%), San Pitch (+11%), Lower Sevier (+6%), Beaver (+13%), Escalante (-25%) and Southwest Utah (-28%). Soil moisture conditions are near normal for northern Utah and above normal in the south and southeast. Reservoir storage continues to incrementally improve as water managers are storing as much as possible but is nearly 8% less than last year. Surface Water Supply indexes are near to below average across the state. The water supply outlook for northern Utah has substantially improved and has substantially declined for southern Utah.

SNOWPACK

March first snow packs as measured by the NRCS SNOTEL system range from 112% of median in northern Utah to 47% in southern Utah.

PRECIPITATION

Mountain precipitation during February was 149% of average in the north and 84% in the south. This brings the seasonal accumulation for the state (Oct-Feb) to 84% of normal.

SOIL MOISTURE

Soil Moisture conditions are at or near normal in the north and above normal in the south with 62% of saturation in southeast Utah.

RESERVOIRS

Storage in 46 of Utah's key irrigation reservoirs is at 48% of capacity compared to 56% last year.

STREAMFLOW

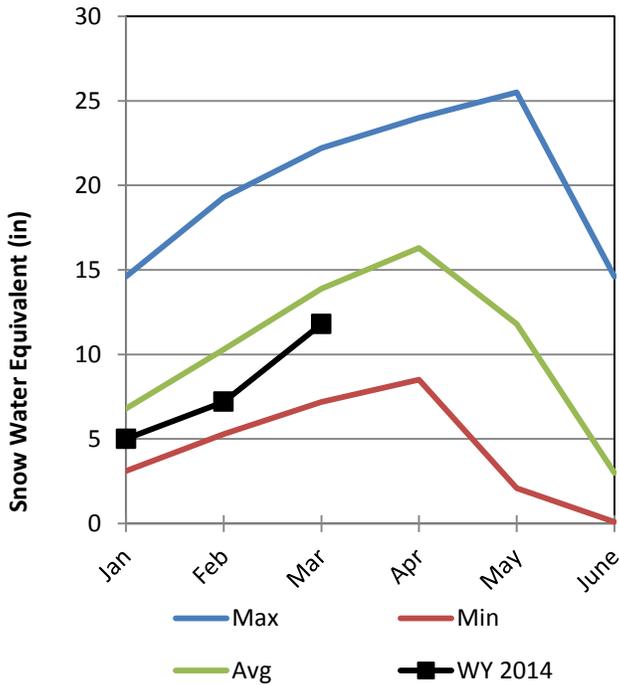
Snowmelt stream flows are forecast to be below to near normal across the state this year. Most flows are forecast to be in the 50% to 80% range.

Statewide Utah

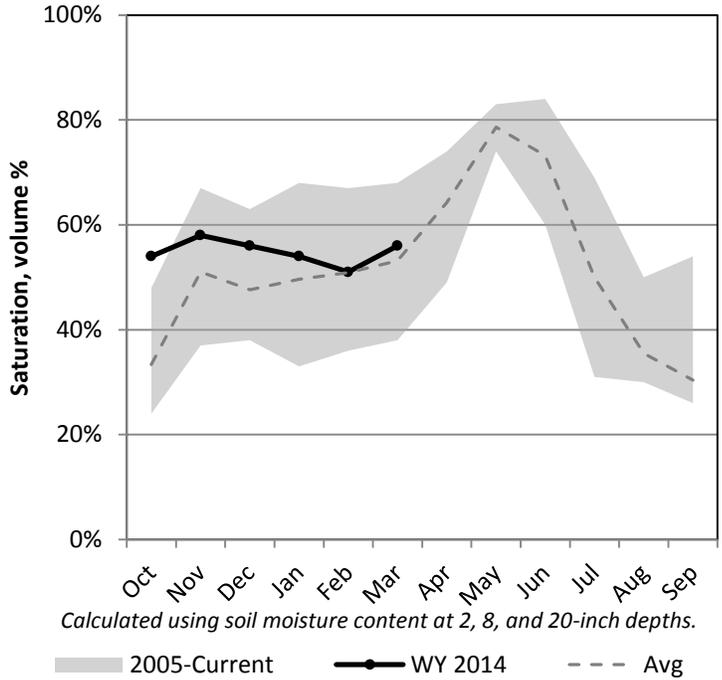
3/1/2014

Snowpack in Utah is near average at 90% of normal, compared to 81% last year. Precipitation in February was above average at 130%, which brings the seasonal accumulation (Oct-Feb) to 84% of average. Soil moisture is at 56% compared to 47% last year. Reservoir storage is at 48% of capacity, compared to 56% last year. Forecast streamflow volumes range from 21% to 134% of average.

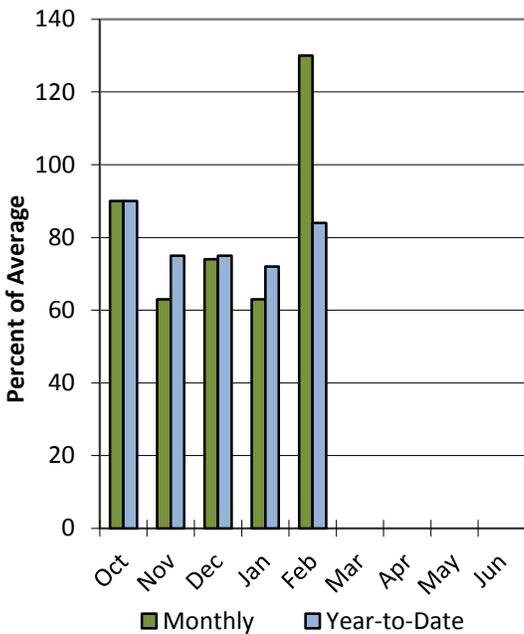
Snowpack



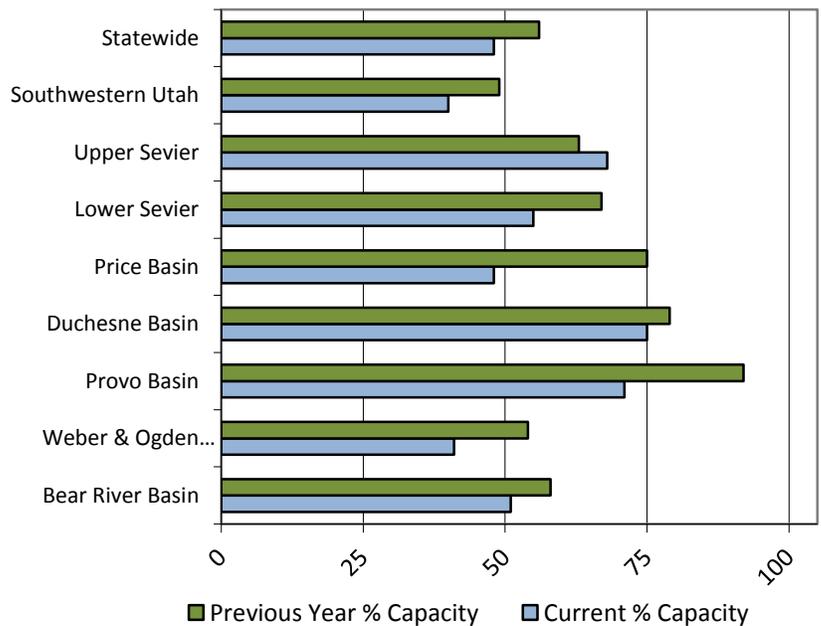
Soil Moisture



Precipitation



Reservoir Storage

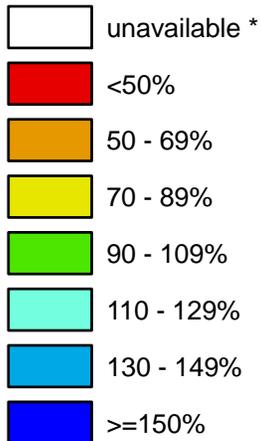


Utah

SNOTEL Current Snow Water Equivalent (SWE) % of Normal

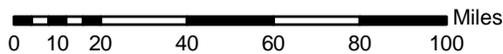
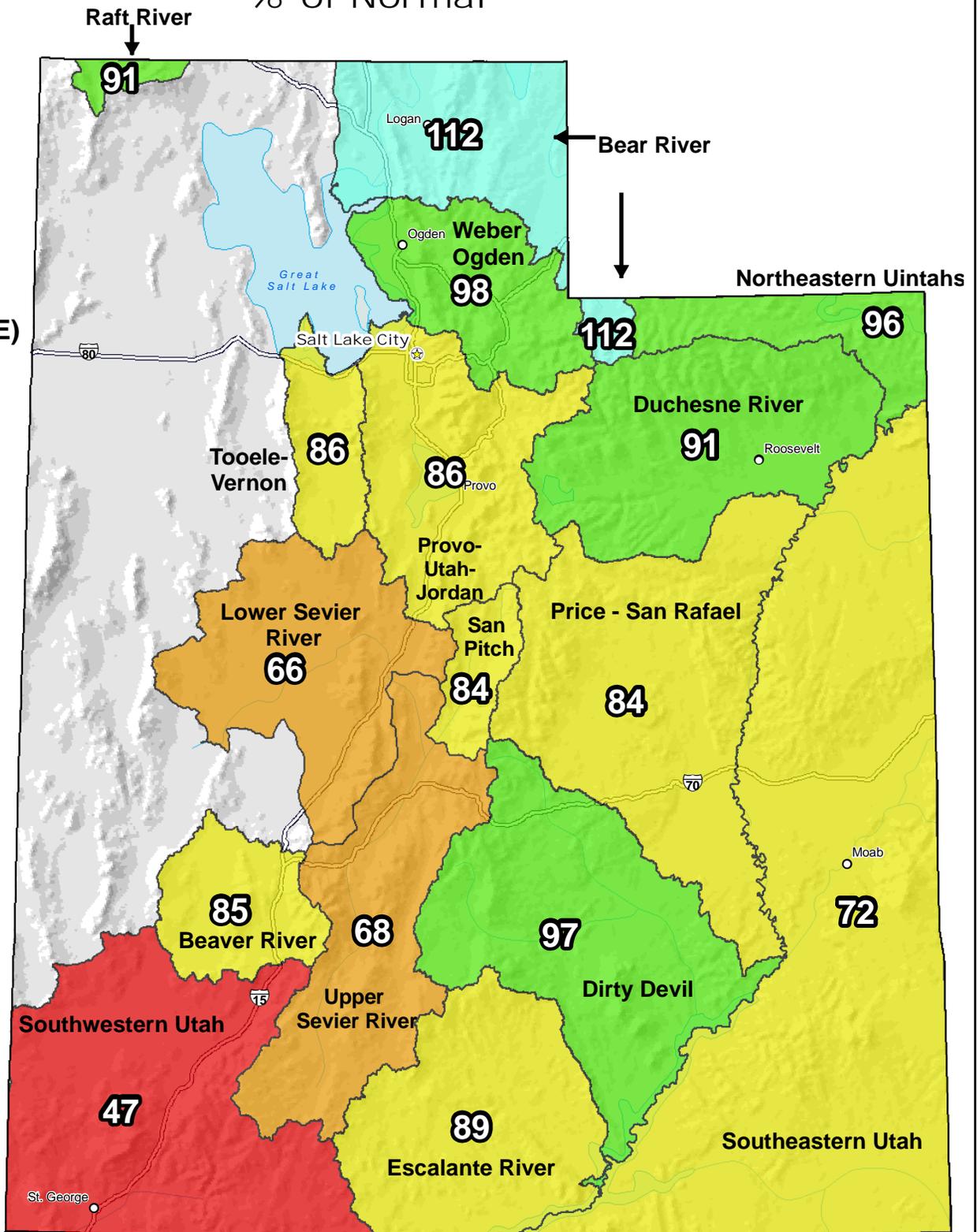
Mar 01, 2014

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).

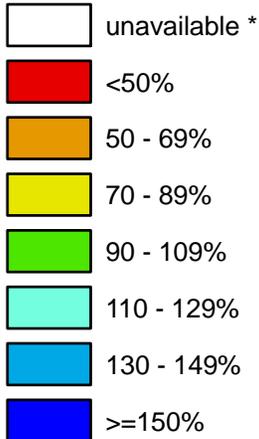
Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>
Science contact: Jim.Marron@por.usda.gov 503 414 3047

Utah

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

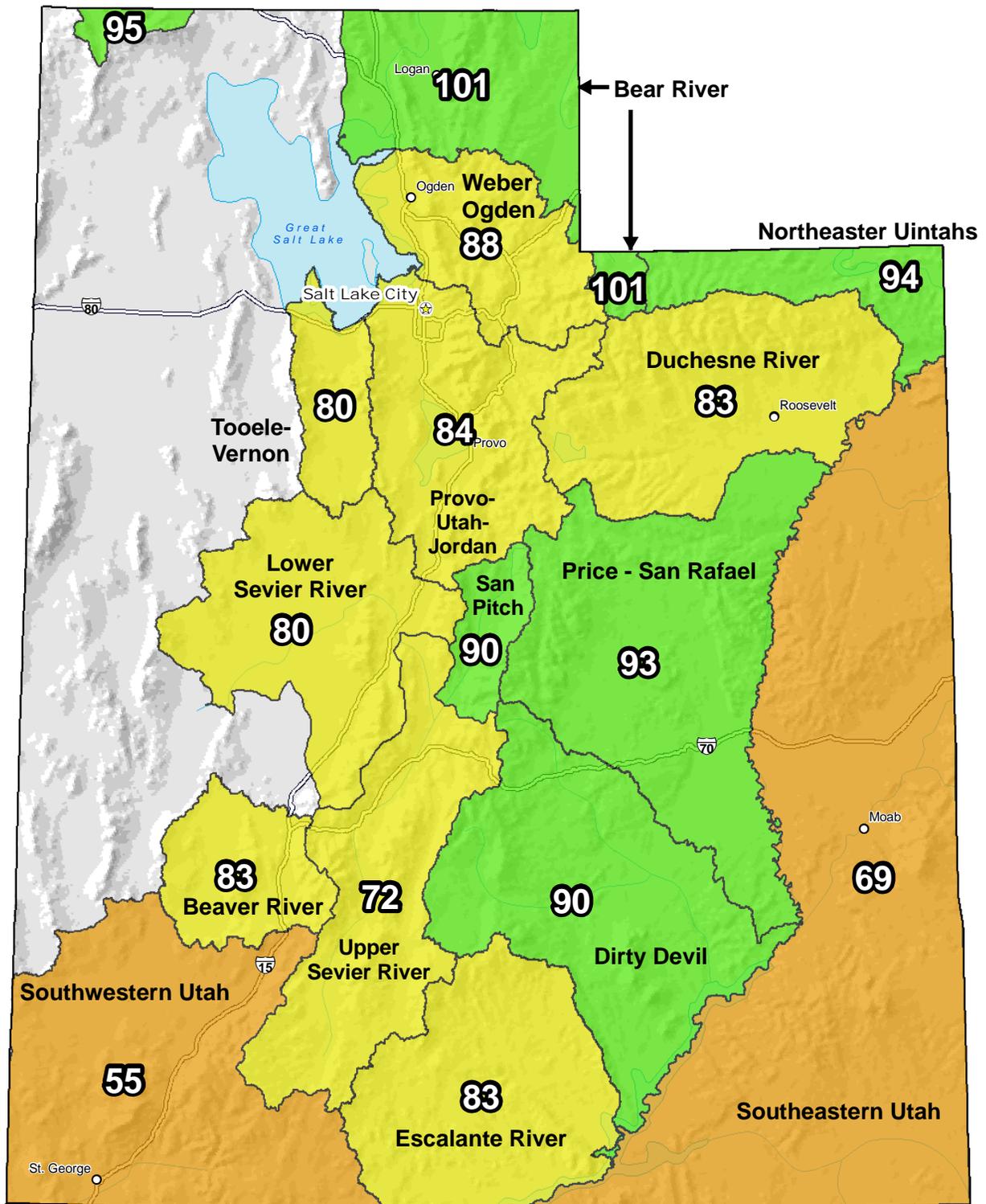
Mar 01, 2014

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).

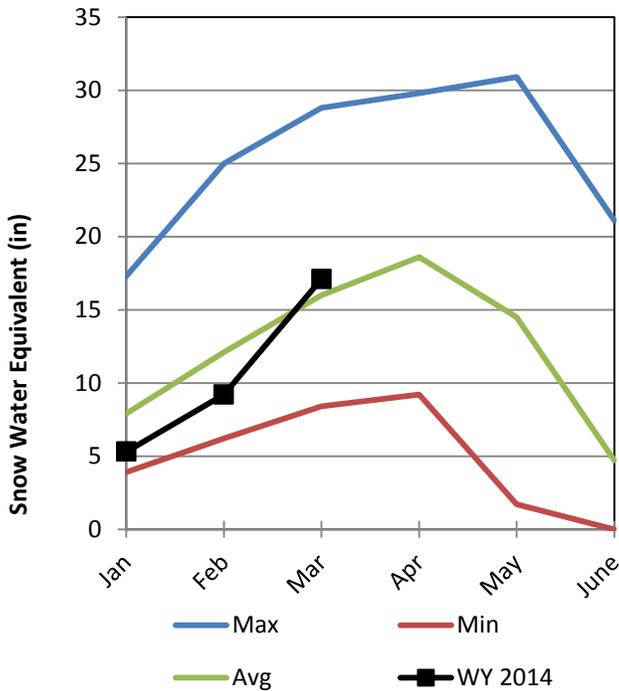
Prepared by the USDA/NRCS National Water and Climate Center
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Based on data from <http://www.wcc.nrcs.usda.gov/reports/>
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Bear River Basin

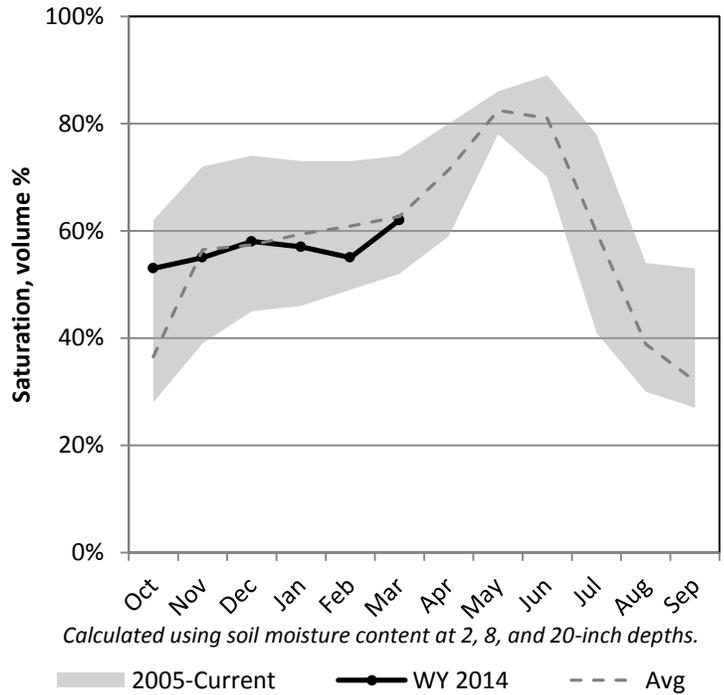
3/1/2014

Snowpack in the Bear River Basin is above average at 112% of normal, compared to 74% last year. Precipitation in February was much above average at 205%, which brings the seasonal accumulation (Oct-Feb) to 101% of average. Soil moisture is at 62% compared to 66% last year. Reservoir storage is at 51% of capacity, compared to 58% last year. Forecast streamflow volumes range from 55% to 96% of average. The surface water supply index is 69% for the Bear River, 39% for the Woodruff Narrows, 48% for the Little Bear.

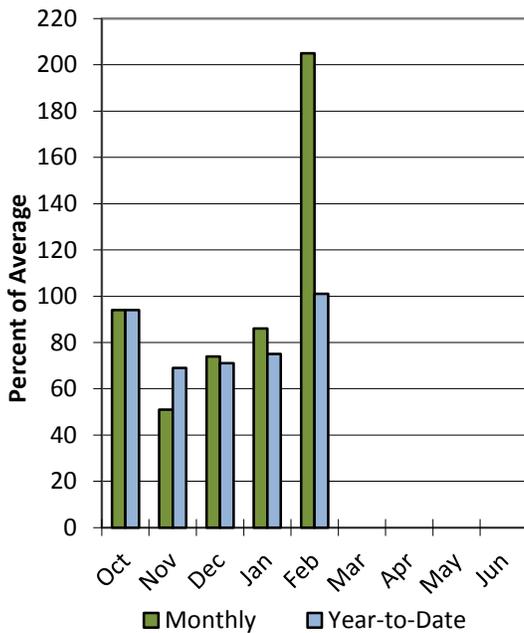
Snowpack



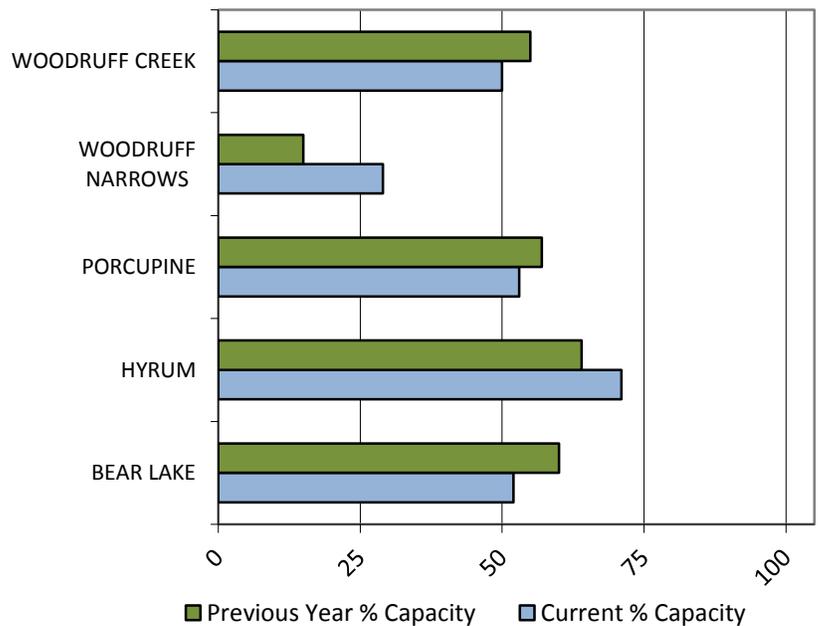
Soil Moisture



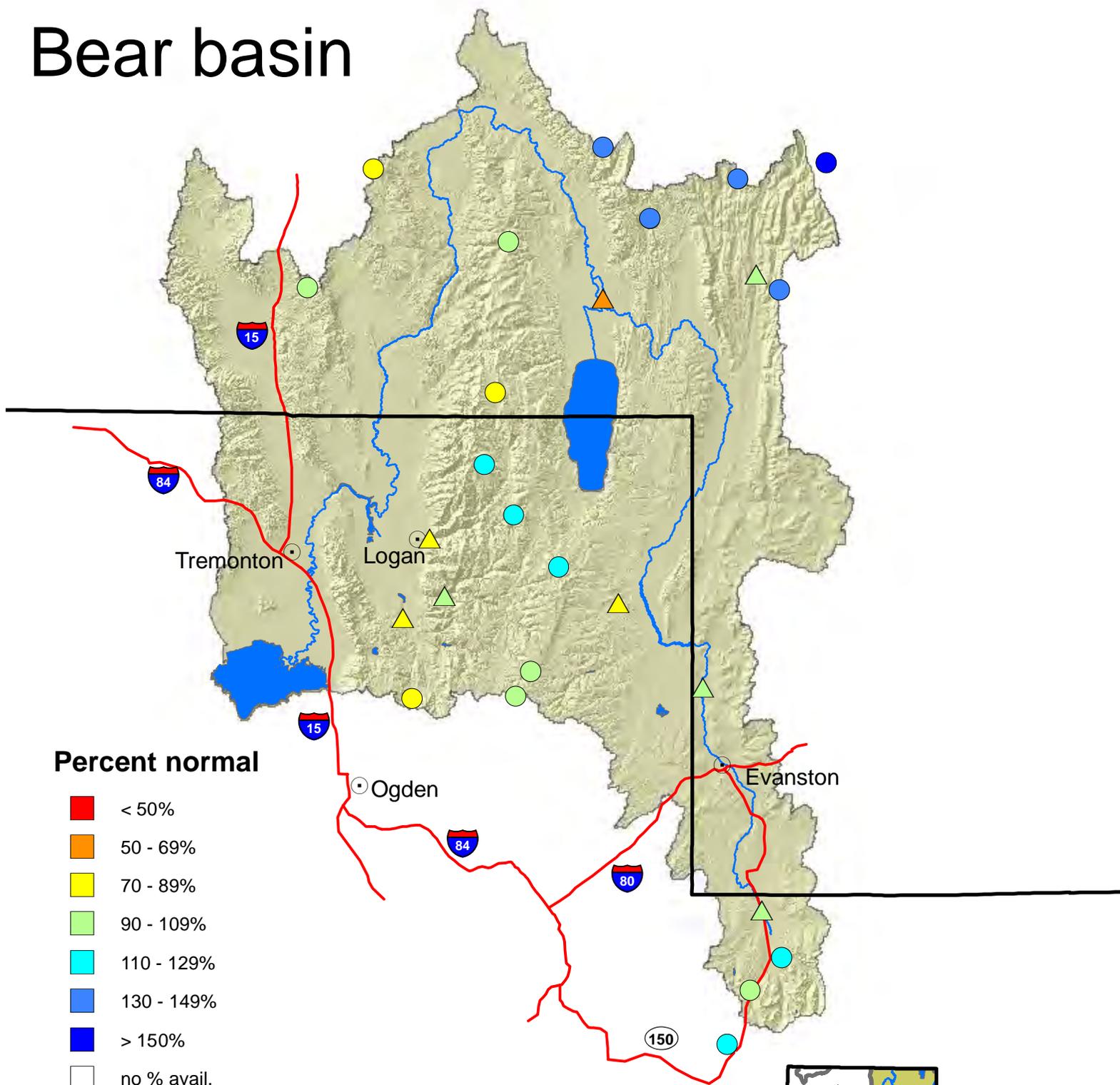
Precipitation



Reservoir Storage



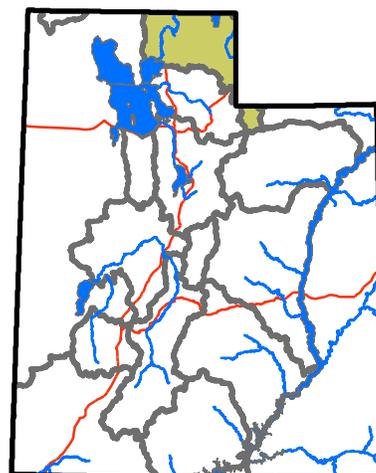
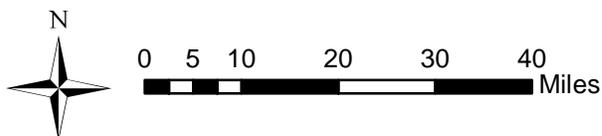
Bear basin



Percent normal

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

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



Bear River Streamflow Forecasts - March 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	73	92	105	94%	118	137	112
Bear R ab Resv nr Woodruff	APR-JUL	68	96	115	95%	134	162	121
Big Ck nr Randolph	APR-JUL	1.05	2.2	3	79%	3.8	5	3.8
Smiths Fk nr Border	APR-JUL	75	91	85	96%	113	129	89
Bear R bl Stewart Dam	APR-JUL	1.83	53	100	55%	147	216	183
Little Bear at Paradise	APR-JUL	10.4	23	32	78%	41	54	41
Logan R nr Logan	APR-JUL	62	81	94	85%	107	126	111
Blacksmith Fk nr Hyrum	APR-JUL	15.9	30	40	93%	50	64	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 February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BEAR LAKE	679.6	783.2	594.1	1421.0
HYRUM RESERVOIR	10.9	9.8	11.2	15.3
PORCUPINE RESERVOIR	6.0	6.4	7.0	11.3
WOODRUFF CREEK	2.0	2.2	2.6	4.0
WOODRUFF NARROWS RESERVOIR	16.6	8.7	31.6	57.3
Basin-wide Total	715.1	810.3	646.5	1508.9
# of reservoirs	5	5	5	5

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Upper Bear	6	100%	72%
Middle Bear	7	131%	77%
Lower Bear	3	92%	75%
Logan	9	108%	69%

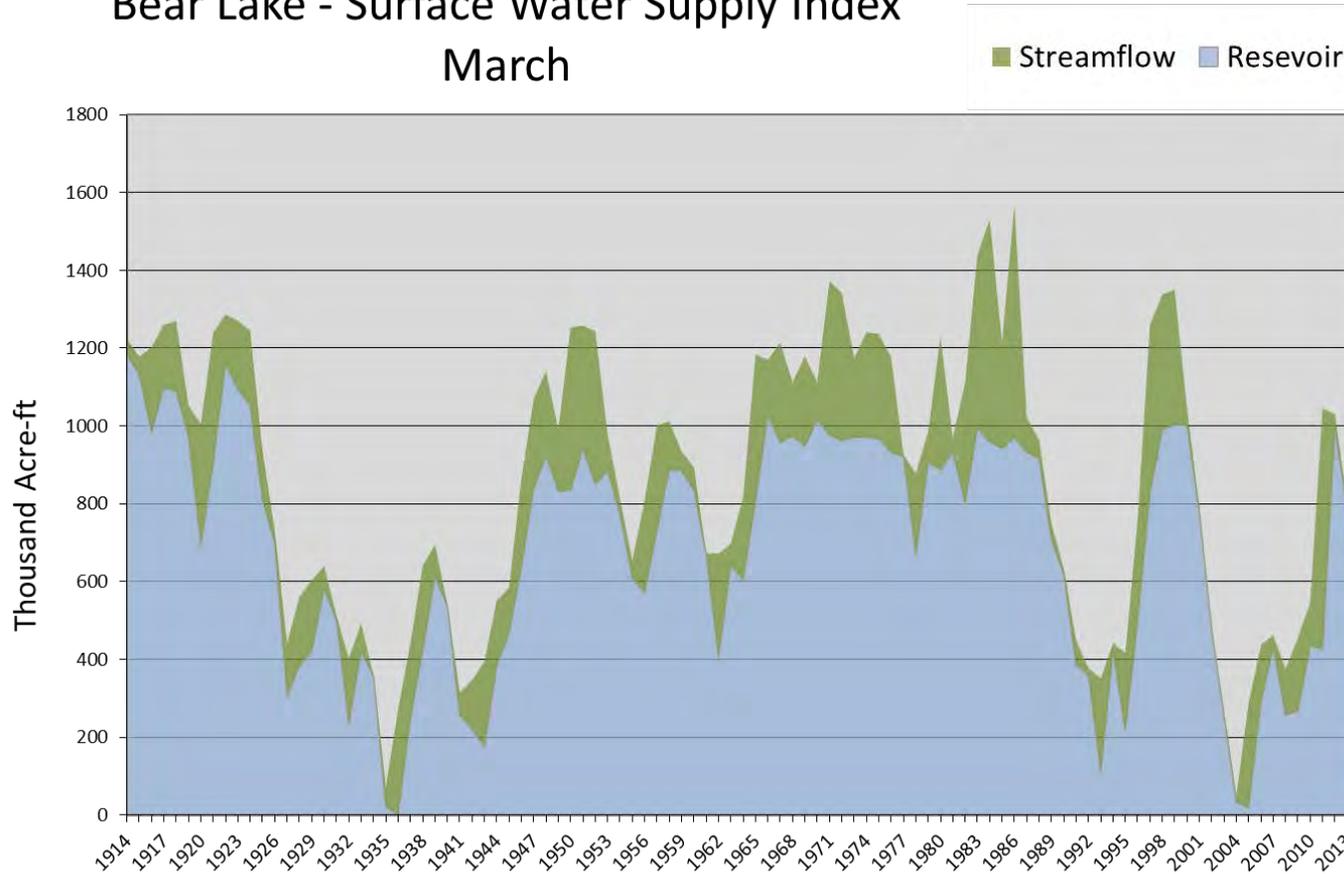
March 1, 2014

Surface Water Supply Index

Basin or Region	February EOM* Bear Lake	April-July Forecast below Stewart Dam	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Bear River	559	100	659	1.55	69	10, 90, 89, 96

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

Bear Lake - Surface Water Supply Index March



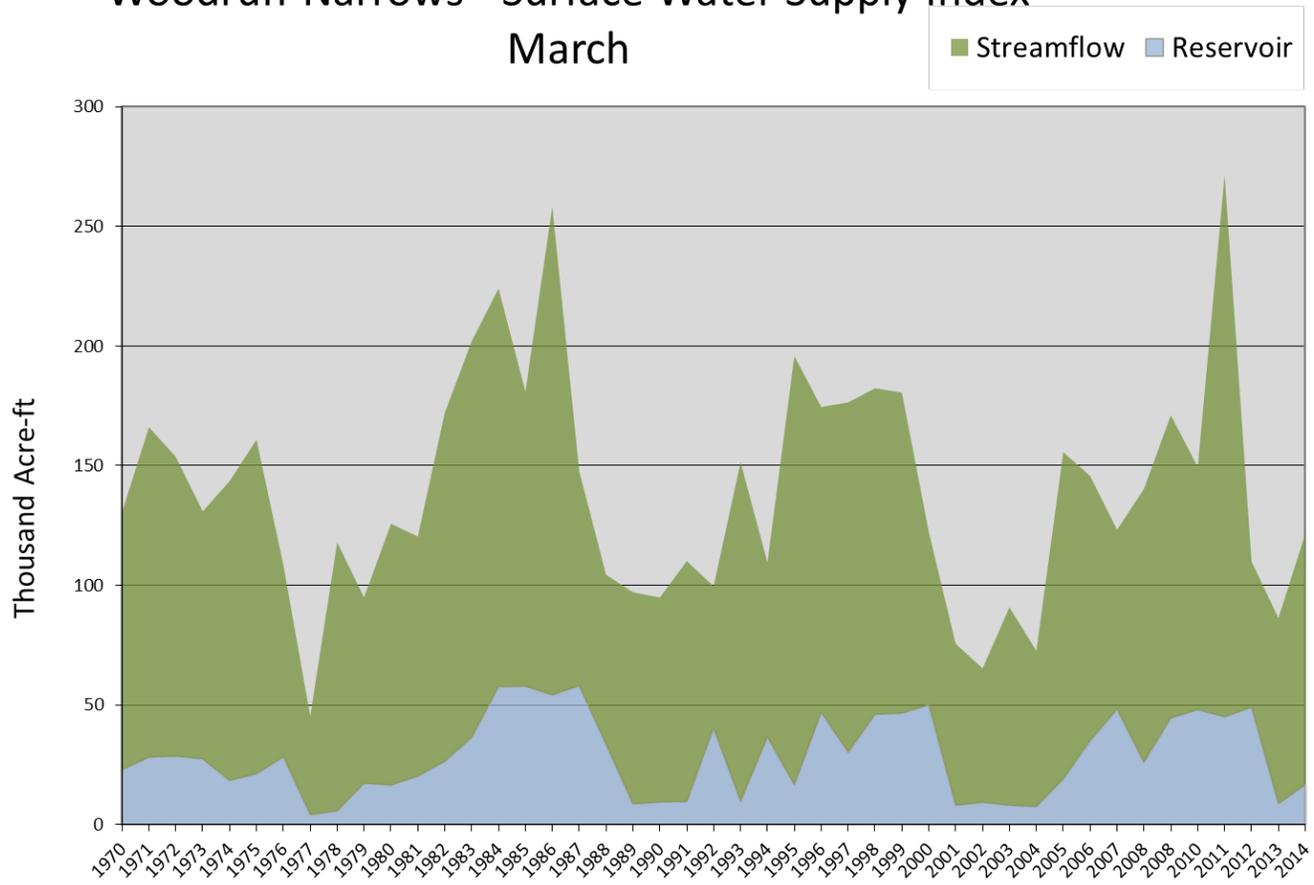
March 1, 2014

Surface Water Supply Index

Basin or Region	February EOM*			SWSI [#]	Percentile	Years with similar SWSI
	Woodruff Narrows Reservoir	April-July forecast Bear at Stateline	Reservoir + Streamflow			
	KAF [^]	KAF	KAF		%	
Woodruff Narrows	16.6	105.0	121.6	-0.91	39	78, 81, 00, 07

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

Woodruff Narrows - Surface Water Supply Index
March



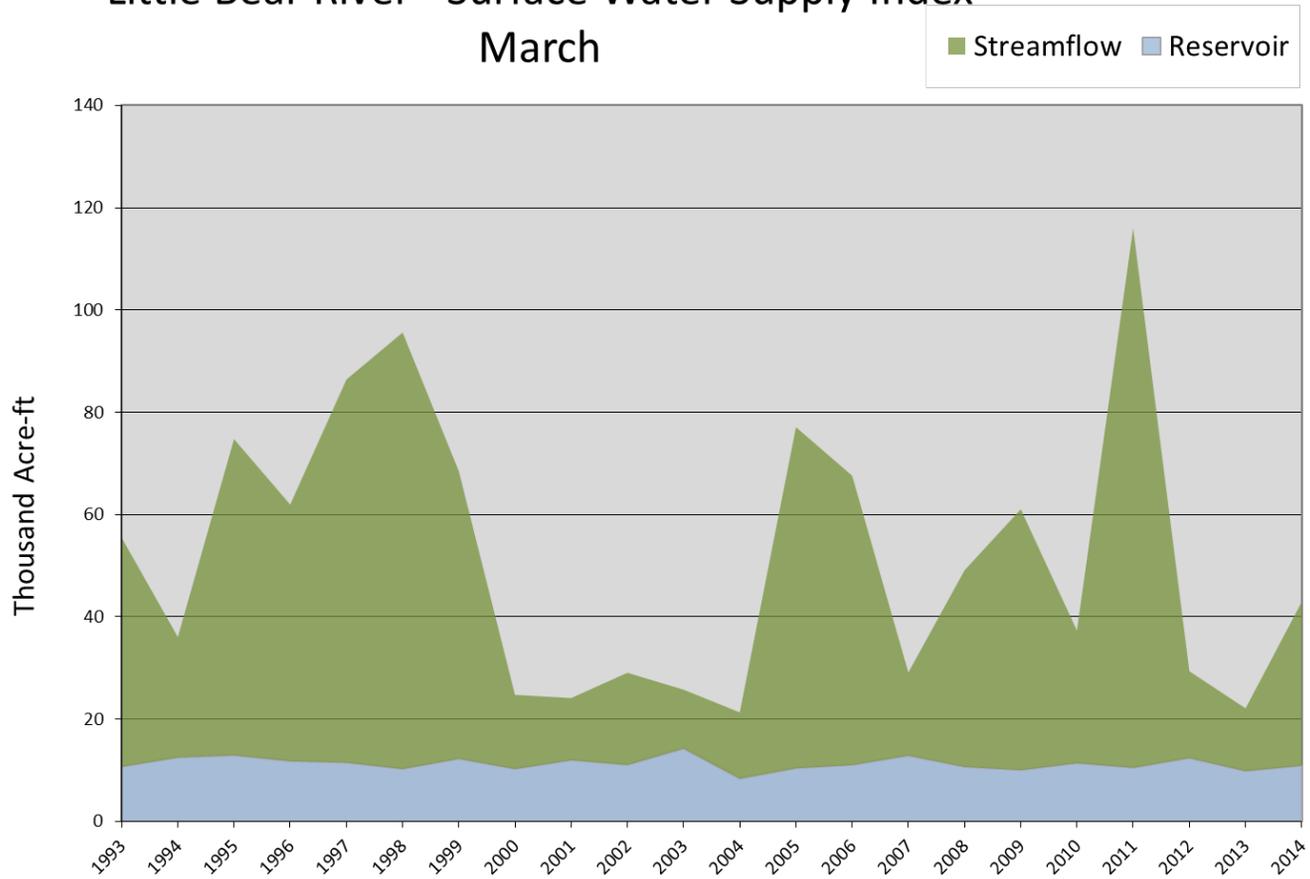
March 1, 2014

Surface Water Supply Index

Basin or Region	February EOM* Hyrum Reservoir	April-July forecast Little Bear at Paradise	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Little Bear	10.9	32.0	42.9	-0.18	48	94, 10, 08, 93

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

Little Bear River - Surface Water Supply Index
March

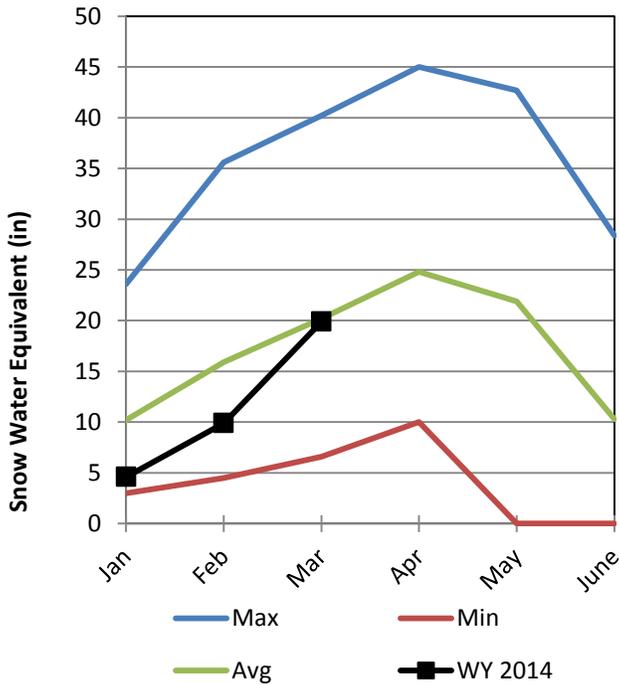


Raft River Basin

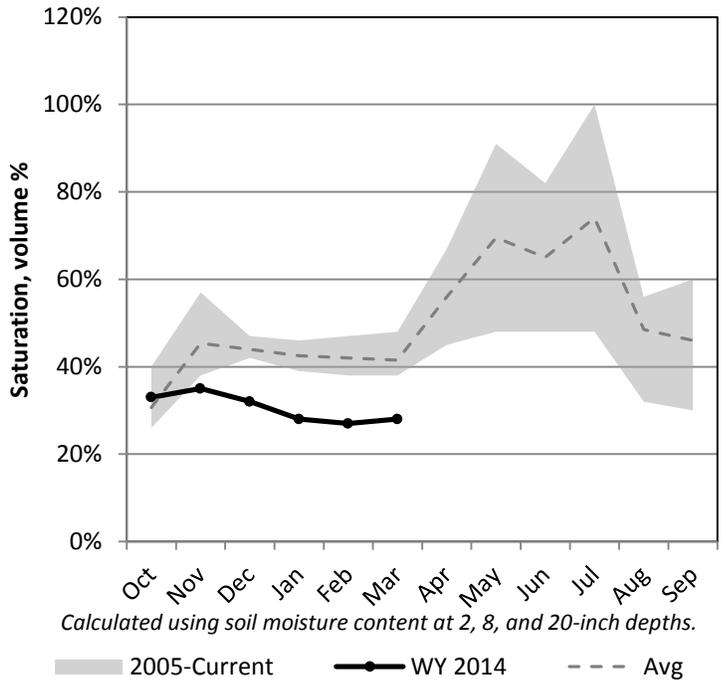
3/1/2014

Snowpack in the Raft River Basin is near average at 91% of normal, compared to 84% last year. Precipitation in February was much above average at 220%, which brings the seasonal accumulation (Oct-Feb) to 95% of average. Soil moisture is at 28% compared to 48% last year. The forecast streamflow volume for Dunn Creek is 90% of average.

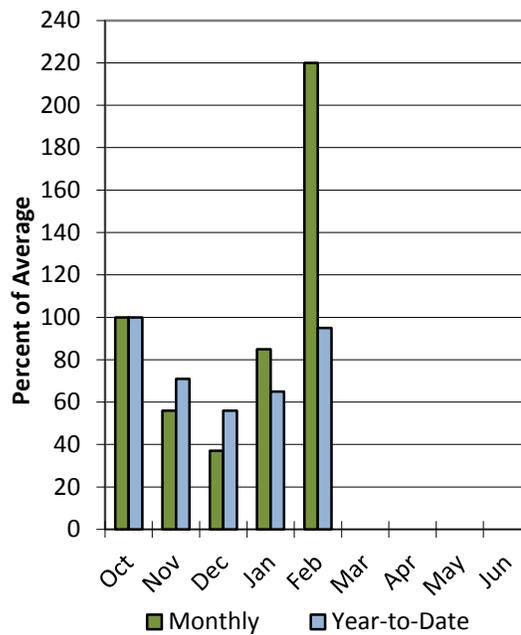
Snowpack



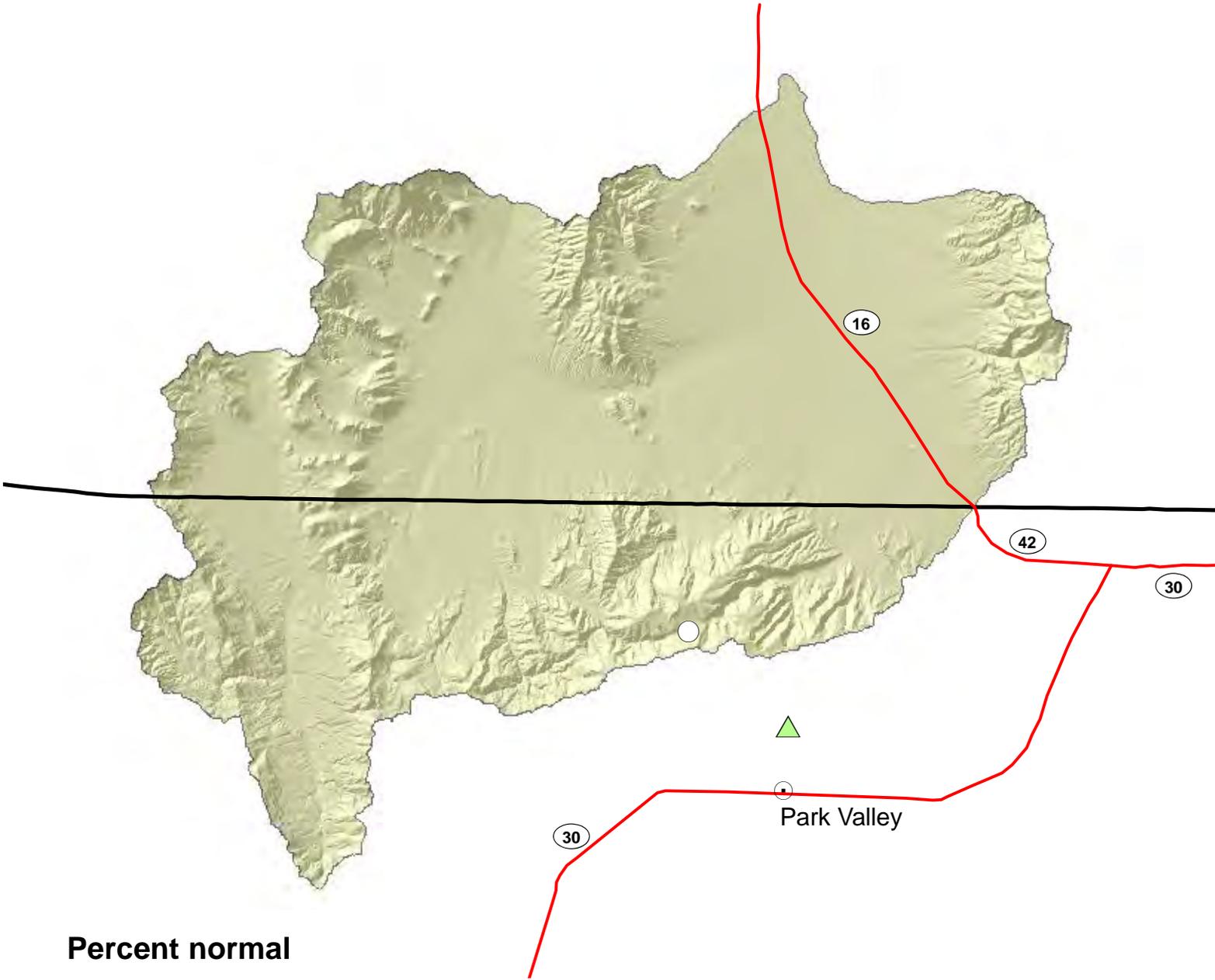
Soil Moisture



Precipitation

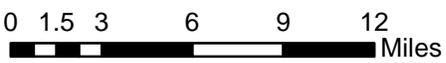
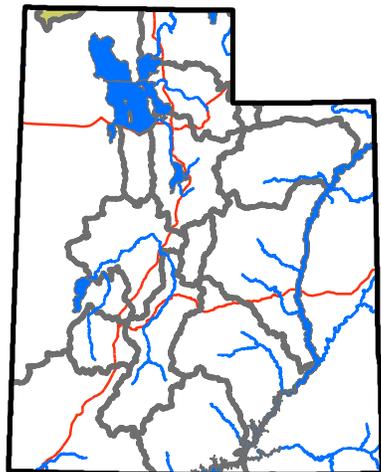


Raft basin



Percent normal

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



Data Current as of: 3/5/2014 3:40:45 PM

Raft River
Streamflow Forecasts - March 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	0.029	0.67	2.6	90%	4	5.2	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

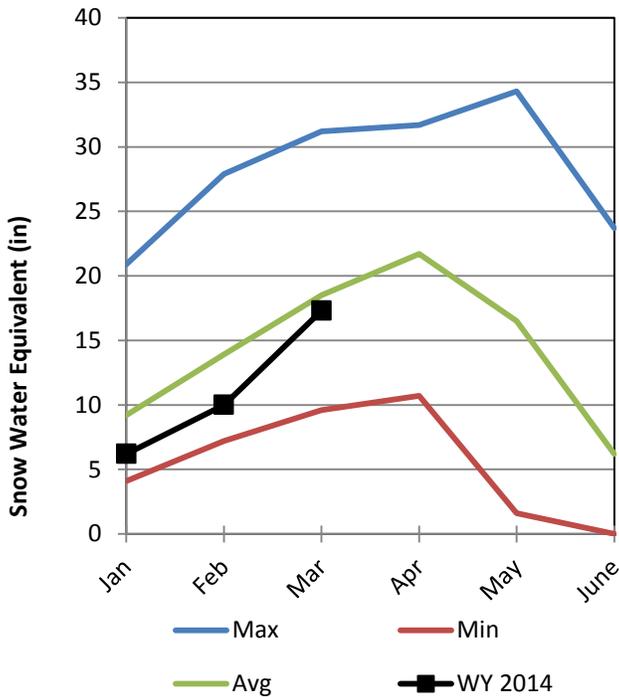
Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Raft	1	91%	84%

Weber & Ogden River Basins

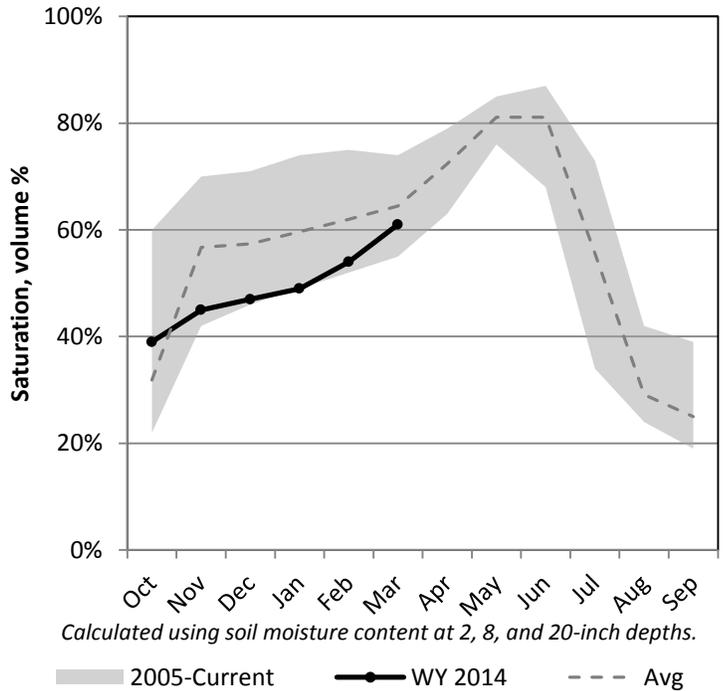
3/1/2014

Snowpack in the Weber & Ogden River Basins is near average at 98% of normal, compared to 73% last year. Precipitation in February was much above average at 158%, which brings the seasonal accumulation (Oct-Feb) to 89% of average. Soil moisture is at 61% compared to 62% last year. Reservoir storage is at 41% of capacity, compared to 54% last year. Forecast streamflow volumes range from 79% to 98% of average. The surface water supply index is 37% for the Ogden River, 35% for the Weber River.

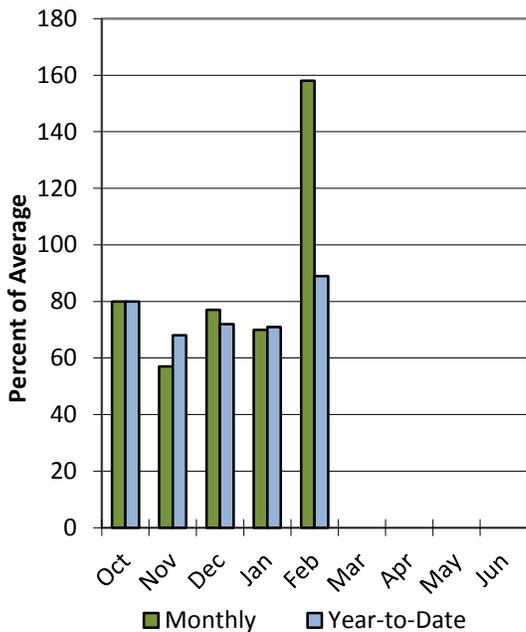
Snowpack



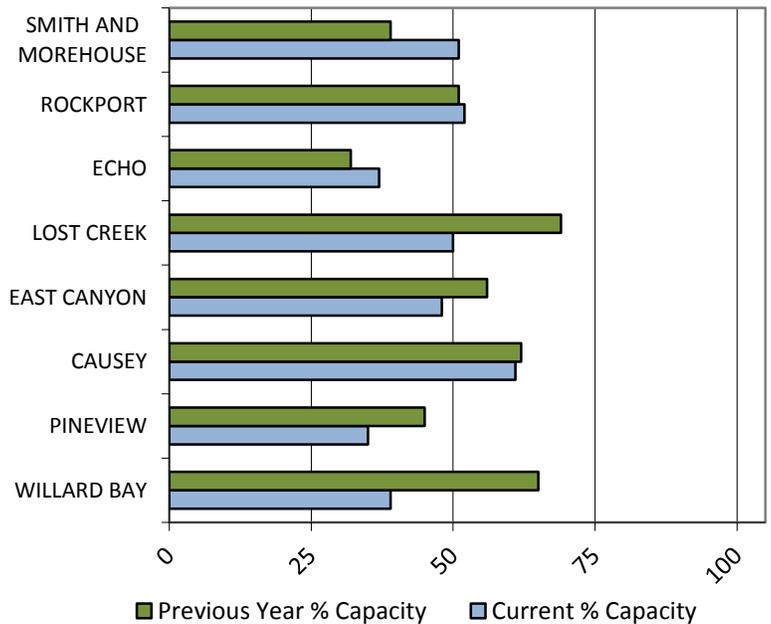
Soil Moisture



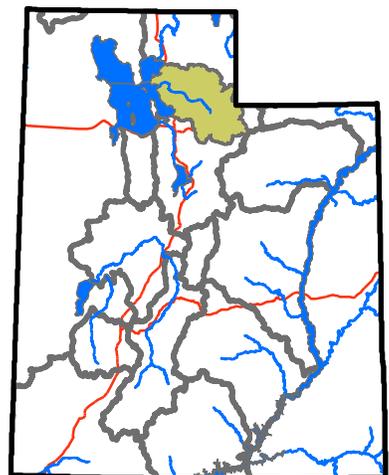
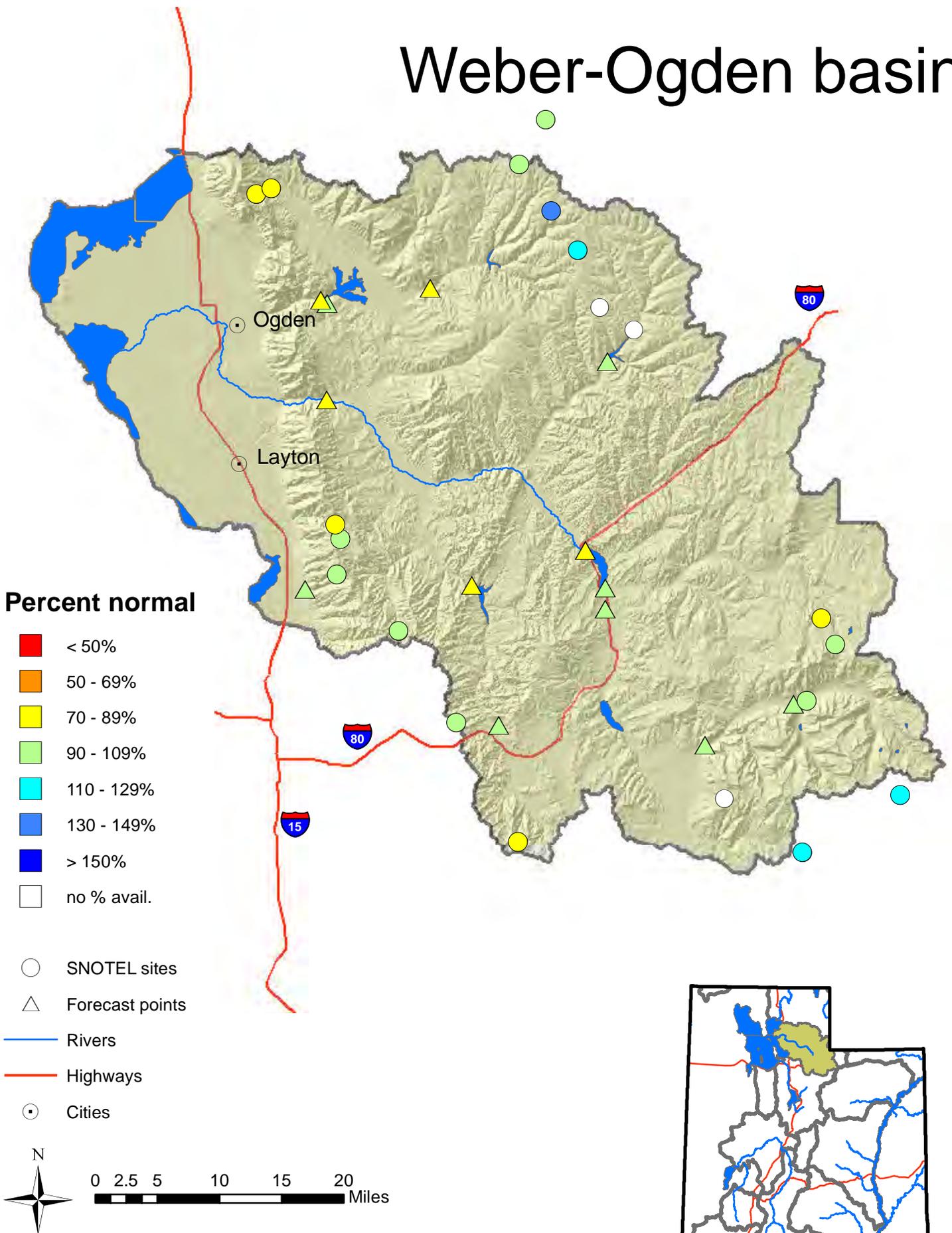
Precipitation



Reservoir Storage



Weber-Ogden basin



Weber Ogden Rivers Streamflow Forecasts - March 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	23	28	31	94%	34	39	33
Weber R at Gateway	APR-JUL	65	187	270	86%	353	475	315
Weber R nr Coalville	APR-JUL	82	108	121	96%	144	171	126
Weber R nr Oakley	APR-JUL	84	101	112	96%	123	139	117
Rockport Reservoir Inflow	APR-JUL	82	105	120	98%	135	157	123
Chalk Ck at Coalville	APR-JUL	17.6	30	39	95%	48	60	41
Echo Reservoir Inflow	APR-JUL	85	133	160	89%	199	247	179
Lost Ck Reservoir Inflow	APR-JUL	4.5	8.8	11.8	98%	14.8	19.1	12.1
East Canyon Ck nr Jeremy Ranch	APR-JUL	3.9	9.9	14	92%	18.1	24	15.2
East Canyon Ck nr Morgan	APR-JUL	5.9	15.5	22	79%	29	38	28
SF Ogden R nr Huntsville	APR-JUL	29	42	50	89%	59	72	56
Pineview Reservoir Inflow	APR-JUL	26	58	80	93%	102	134	86
Wheeler Ck nr Huntsville	APR-JUL	1.84	3.8	5.1	88%	6.4	8.4	5.8

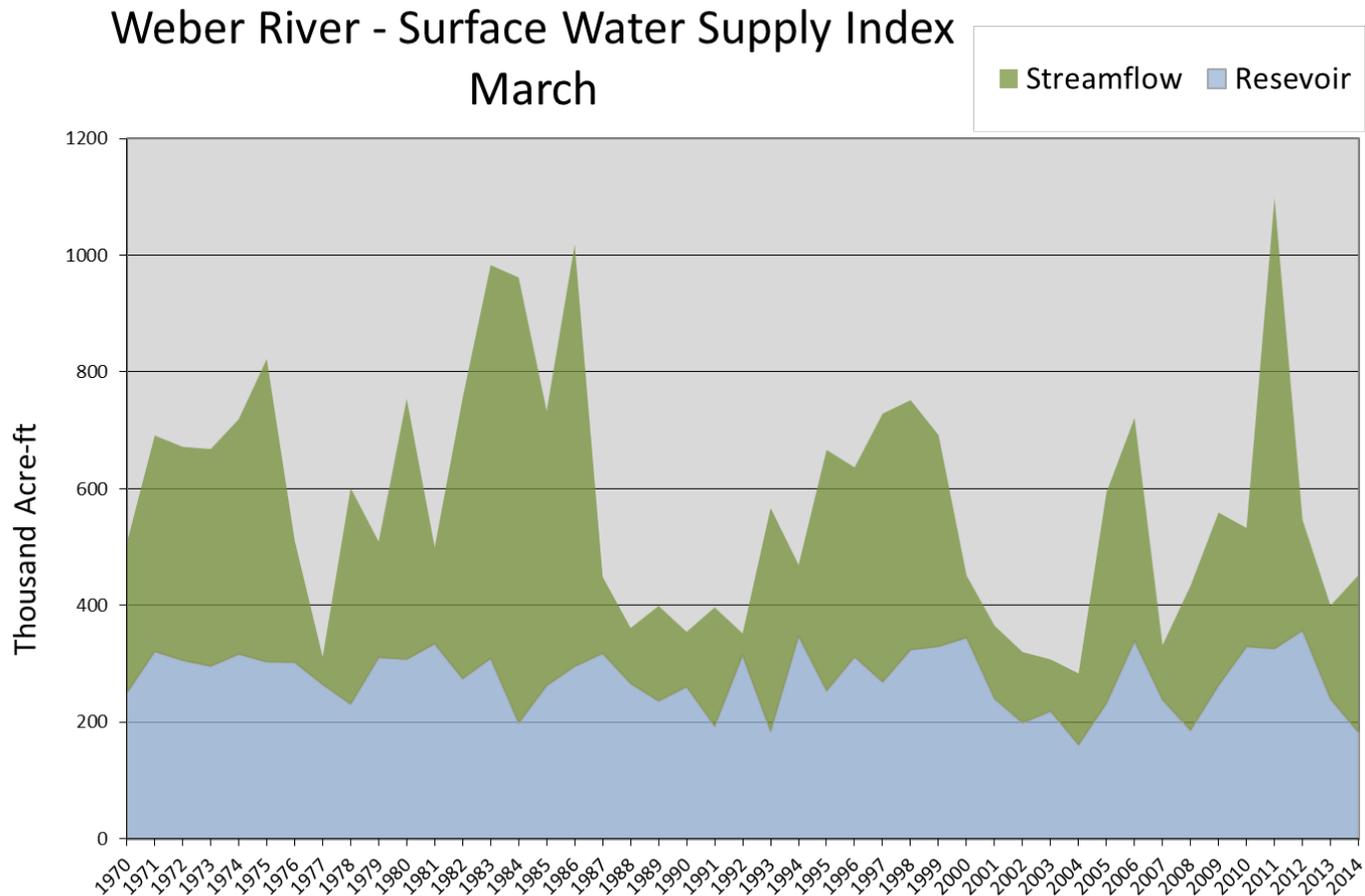
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- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
CAUSEY RESERVOIR	4.3	4.4	3.2	7.1
EAST CANYON RESERVOIR	23.7	27.8	34.9	49.5
ECHO RESERVOIR	27.5	23.5	47.9	73.9
LOST CREEK RESERVOIR	11.2	15.6	12.2	22.5
PINEVIEW RESERVOIR	38.8	49.4	53.0	110.1
ROCKPORT RESERVOIR	31.9	30.9	34.8	60.9
WILLARD BAY	84.0	138.7	138.4	215.0
SMITH AND MOREHOUSE RESERVOIR	4.1	3.2	3.6	81.0
Basin-wide Total	225.5	293.6	328.0	620.0
# of reservoirs	8	8	8	8

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Upper Weber	11	102%	73%
Lower Weber	7	94%	80%
Ogden	17	98%	73%
Lost Creek	3	116%	66%

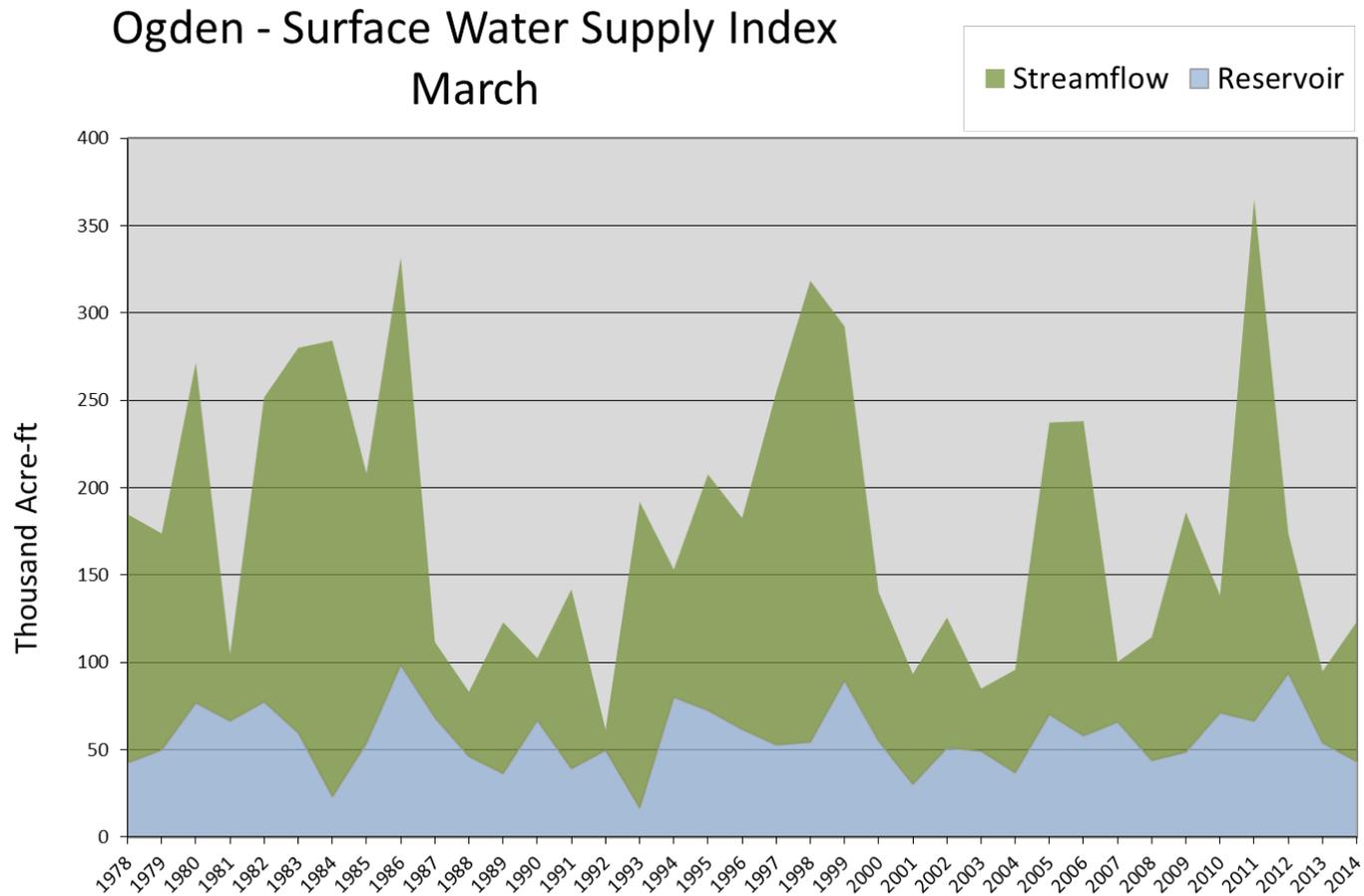
March 1, 2014		Surface Water Supply Index				
Basin or Region	February EOM* Reservoirs	April-July Forecast Weber River at Gateway	Reservoirs + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Weber River	182	270	452	-1.27	35	87, 00, 94, 81

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



March 1, 2014		Surface Water Supply Index				
Basin or Region	February EOM* Pine View & Causey	April-July Forecast Pineview Reservoir Inflow	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Ogden River	43	80	123	-1.10	37	08, 89, 02, 10

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

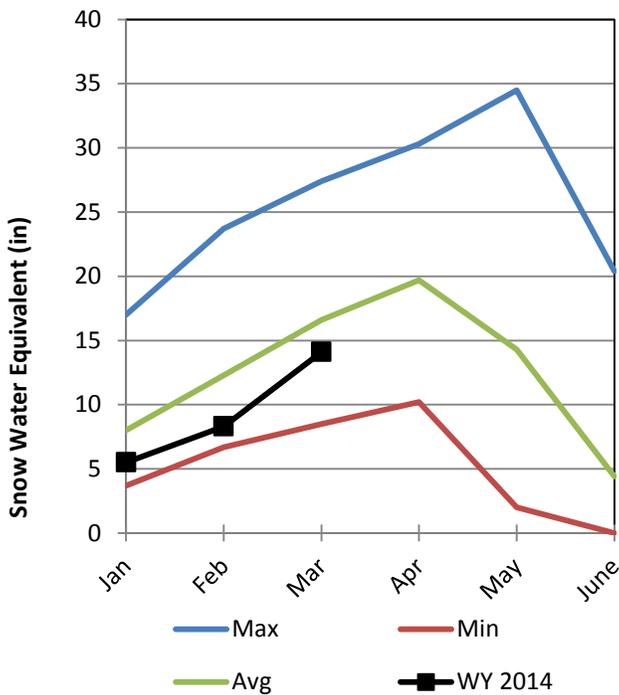


Provo & Jordan River Basins

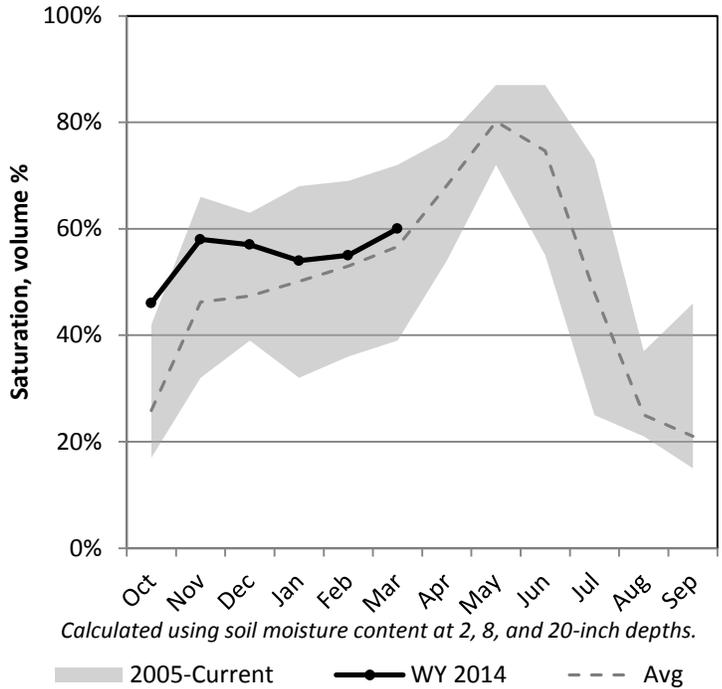
3/1/2014

Snowpack in the Provo & Jordan River Basins is below average at 85% of normal, compared to 79% last year. Precipitation in February was much above average at 139%, which brings the seasonal accumulation (Oct-Feb) to 84% of average. Soil moisture is at 60% compared to 53% last year. Reservoir storage is at 71% of capacity, compared to 79% last year. Forecast streamflow volumes range from 74% to 100% of average. The surface water supply index is 11% for the Provo River.

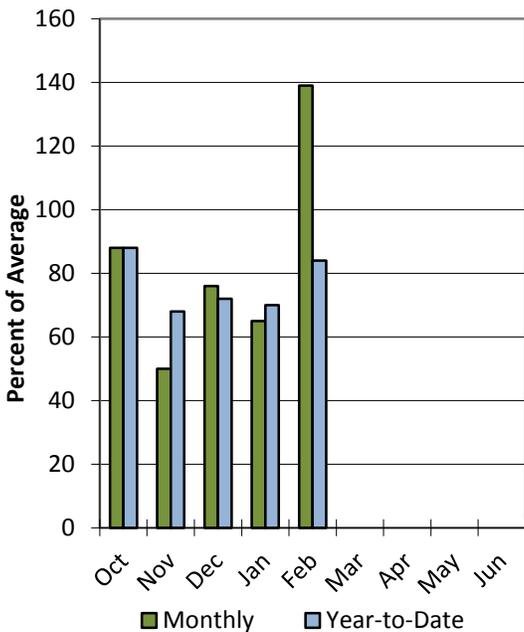
Snowpack



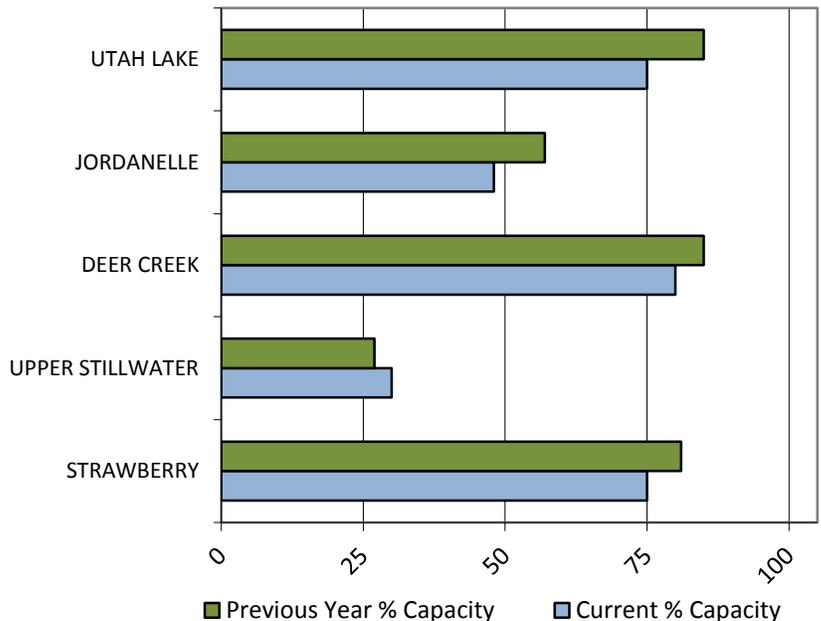
Soil Moisture



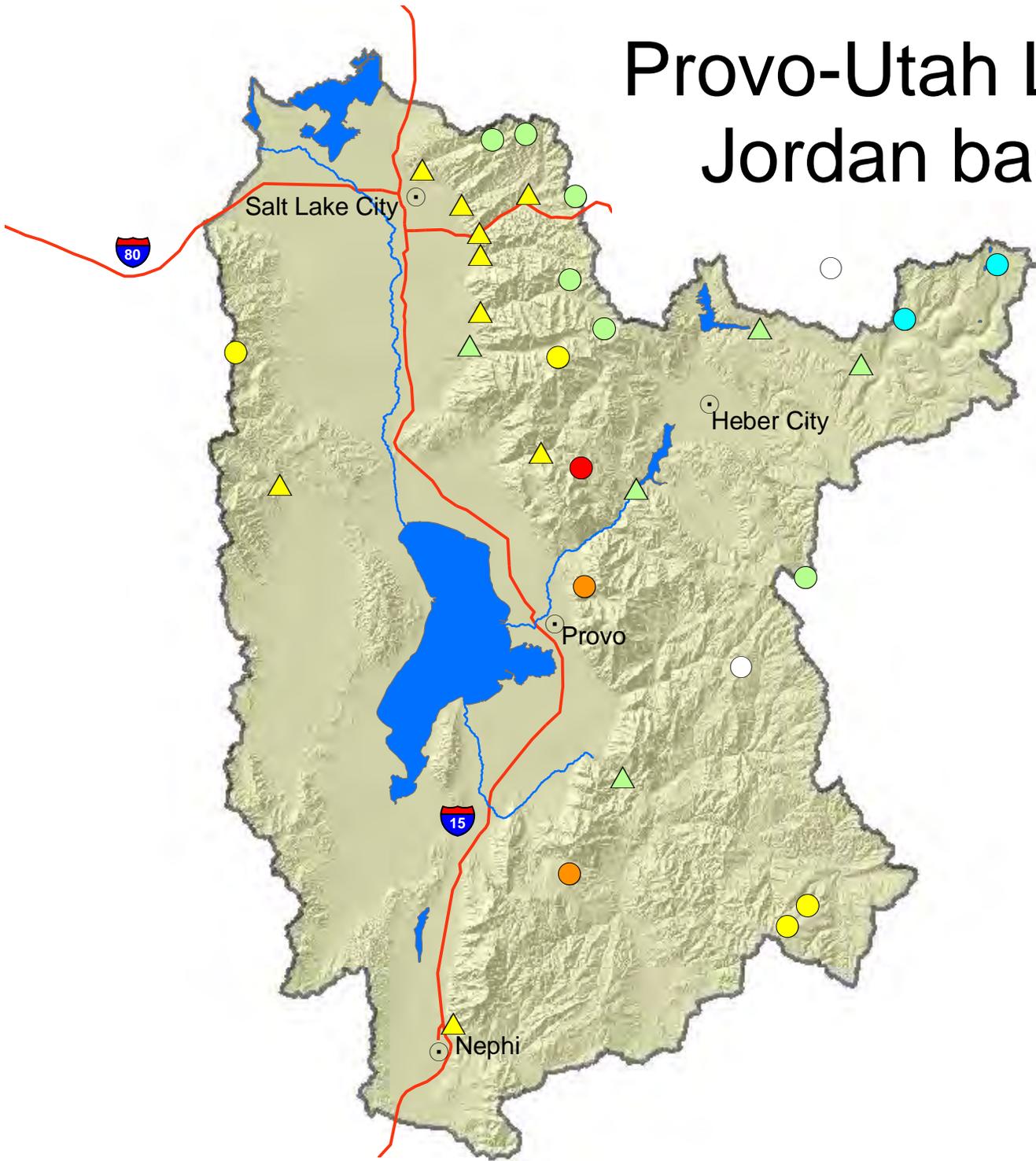
Precipitation



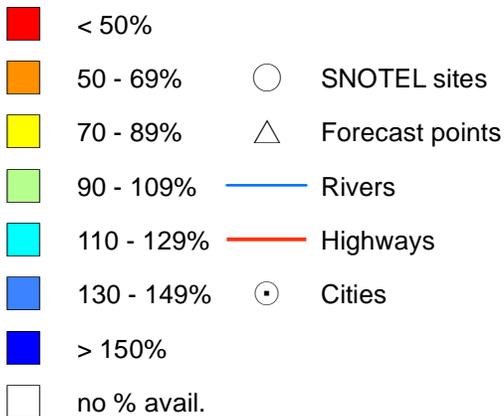
Reservoir Storage



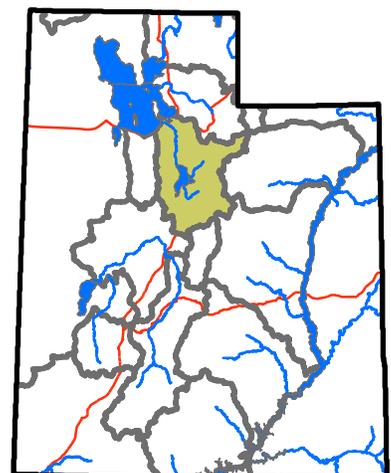
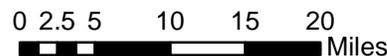
Provo-Utah Lake-Jordan basin



Percent normal



United States Department of Agriculture
 Natural Resources Conservation Service



Provo R Utah Lake Jordan R Streamflow Forecasts - March 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	3.6	7	74%	10.4	15.4	9.5
Spanish Fk at Castilla	APR-JUL	2.1	28	63	91%	98	149	69
Provo R at Woodland	APR-JUL	63	84	100	100%	118	146	100
Provo R at Hailstone	APR-JUL	65	88	105	97%	125	156	108
Provo R bl Deek Ck Dam	APR-JUL	66	89	104	90%	119	142	116
American Fk ab Upper Powerplant	APR-JUL	11.1	18.8	26	81%	29	37	32
Utah Lake Inflow	APR-JUL	2.6	61	215	81%	321	403	265
W Canyon Ck nr Cedar Fort	APR-JUL	0.5	1.09	1.5	85%	1.91	2.5	1.76
Little Cottonwood Ck nr SLC	APR-JUL	25	31	35	92%	40	47	38
Big Cottonwood Ck nr SLC	APR-JUL	16.8	24	29	81%	34	41	36
Mill Ck nr SLC	APR-JUL	1.58	3.8	5.3	83%	6.8	9.1	6.4
Parleys Ck nr SLC	APR-JUL	3.4	8.6	12.1	85%	15.7	21	14.2
Dell Fk nr SLC	APR-JUL	0.22	2.4	4.8	87%	7.6	11.5	5.5
Emigration Ck nr SLC	APR-JUL	0.2	2.2	3.5	88%	4.8	6.8	4
City Ck nr SLC	APR-JUL	2.3	4.9	6.7	87%	8.5	11.1	7.7

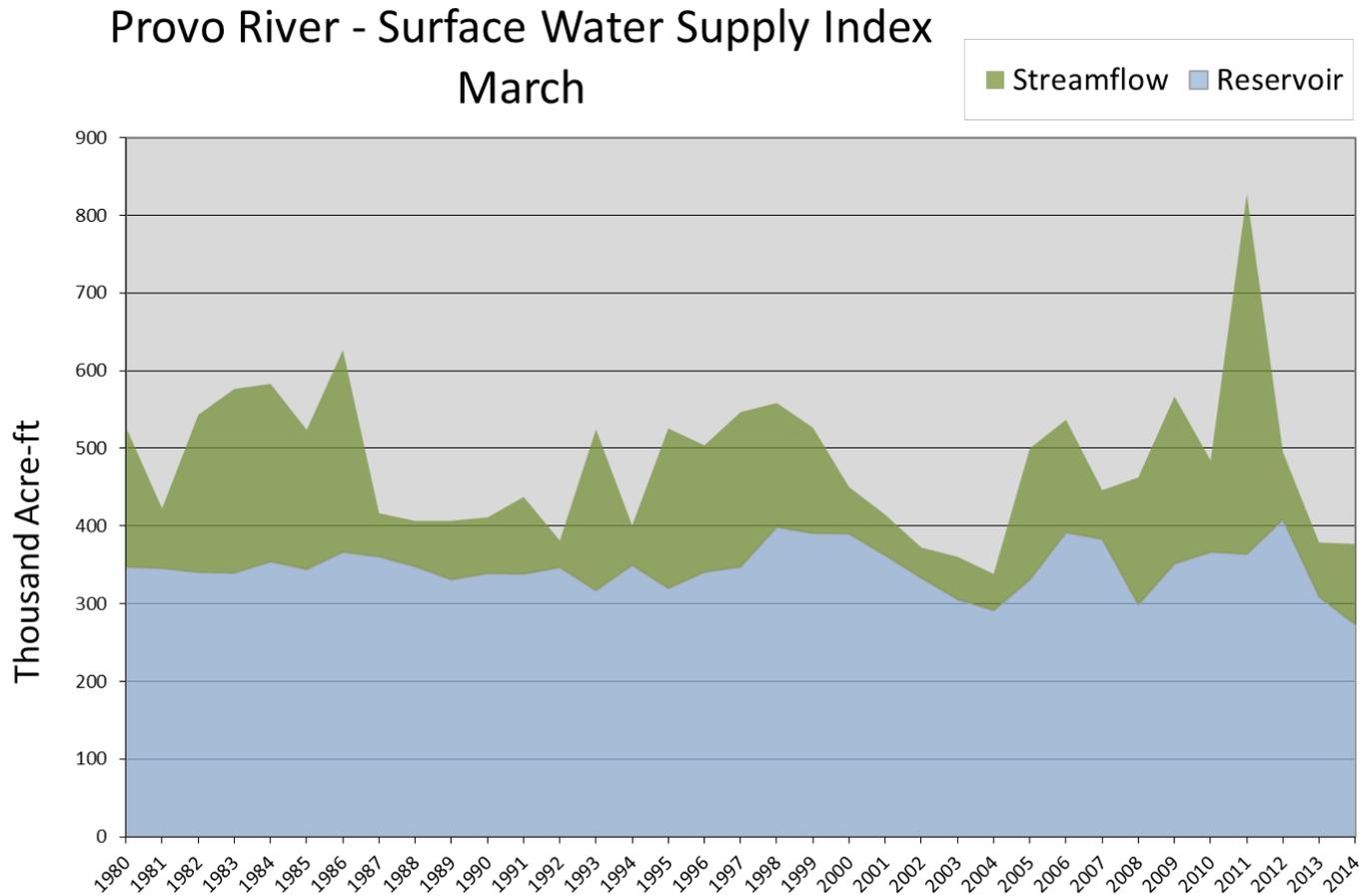
- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
DEER CREEK RESERVOIR	119.1	127.8	112.0	149.7
STRAWBERRY RESERVOIR	832.3	895.5	660.5	1105.9
UTAH LAKE	655.5	742.1	785.8	870.9
JORDANELLE RESERVOIR	154.0	181.1	239.4	320.0
Basin-wide Total	1760.9	1946.5	1797.7	2446.5
# of reservoirs	4	4	4	4

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Upper Provo	7	85%	76%
Jordan	15	85%	79%
Utah Lake	15	85%	79%
Spanish Fork	6	81%	77%
Six Creeks	15	88%	76%
Cottonwoods	7	89%	75%

March 1, 2014		Surface Water Supply Index				
Basin or Region	February 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>		%	
Provo River	273	104	377	-3.24	11	03, 02, 13, 92

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

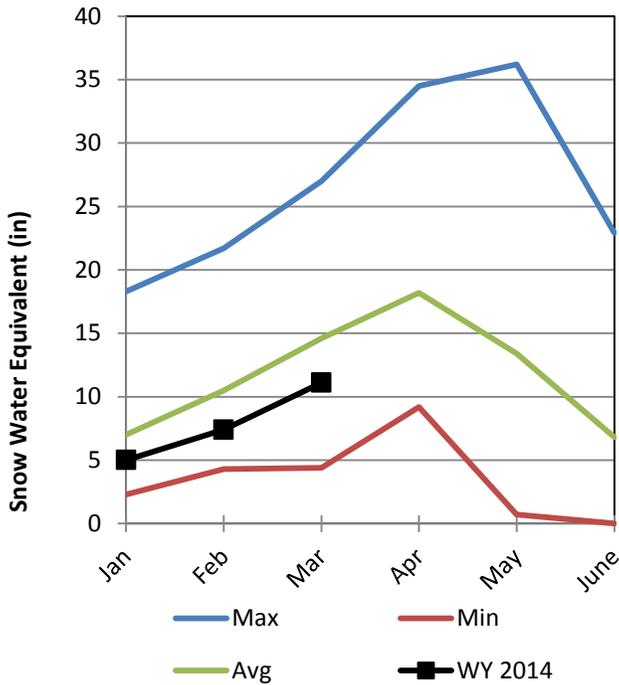


Tooele & Vernon Creek Basins

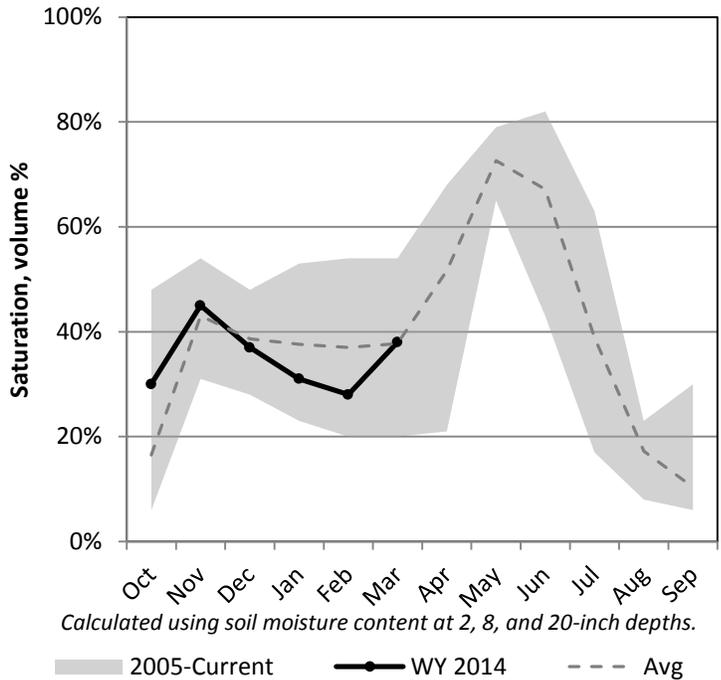
3/1/2014

Snowpack in the Tooele & Vernon Creek Basins is below average at 85% of normal, compared to 97% last year. Precipitation in February was near average at 97%, which brings the seasonal accumulation (Oct-Feb) to 79% of average. Soil moisture is at 38% compared to 36% last year. Reservoir storage is at 57% of capacity, compared to 37% last year. Forecast streamflow volumes range from 81% to 86% of average.

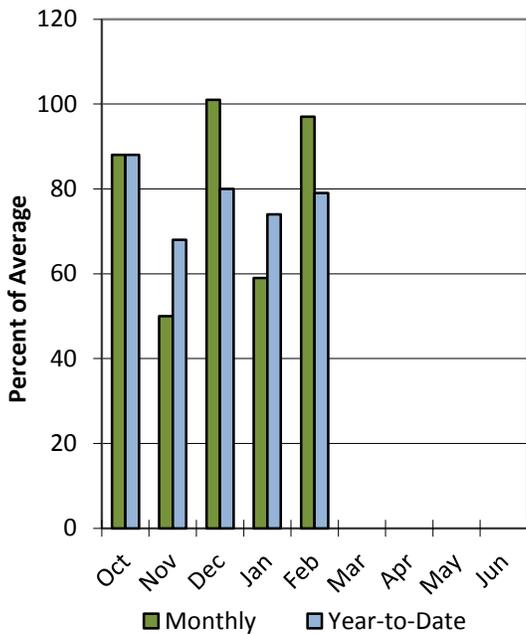
Snowpack



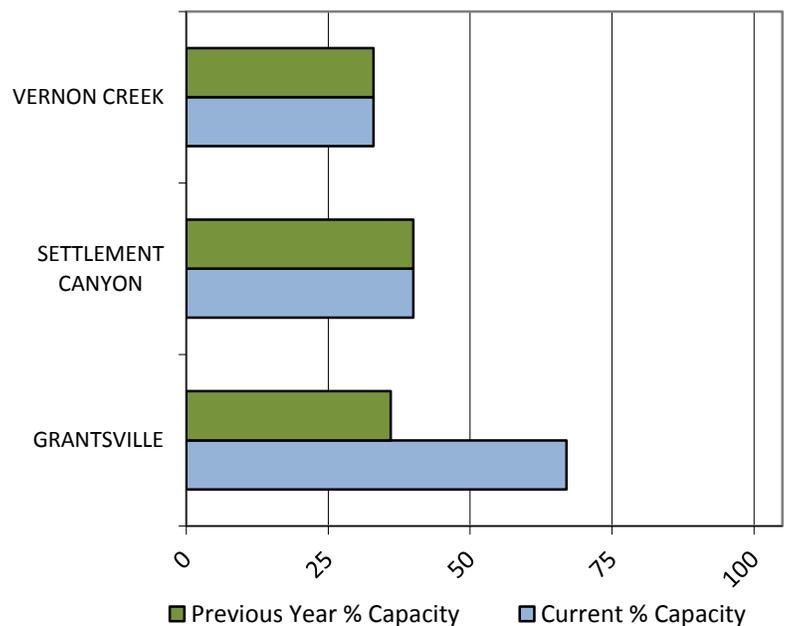
Soil Moisture



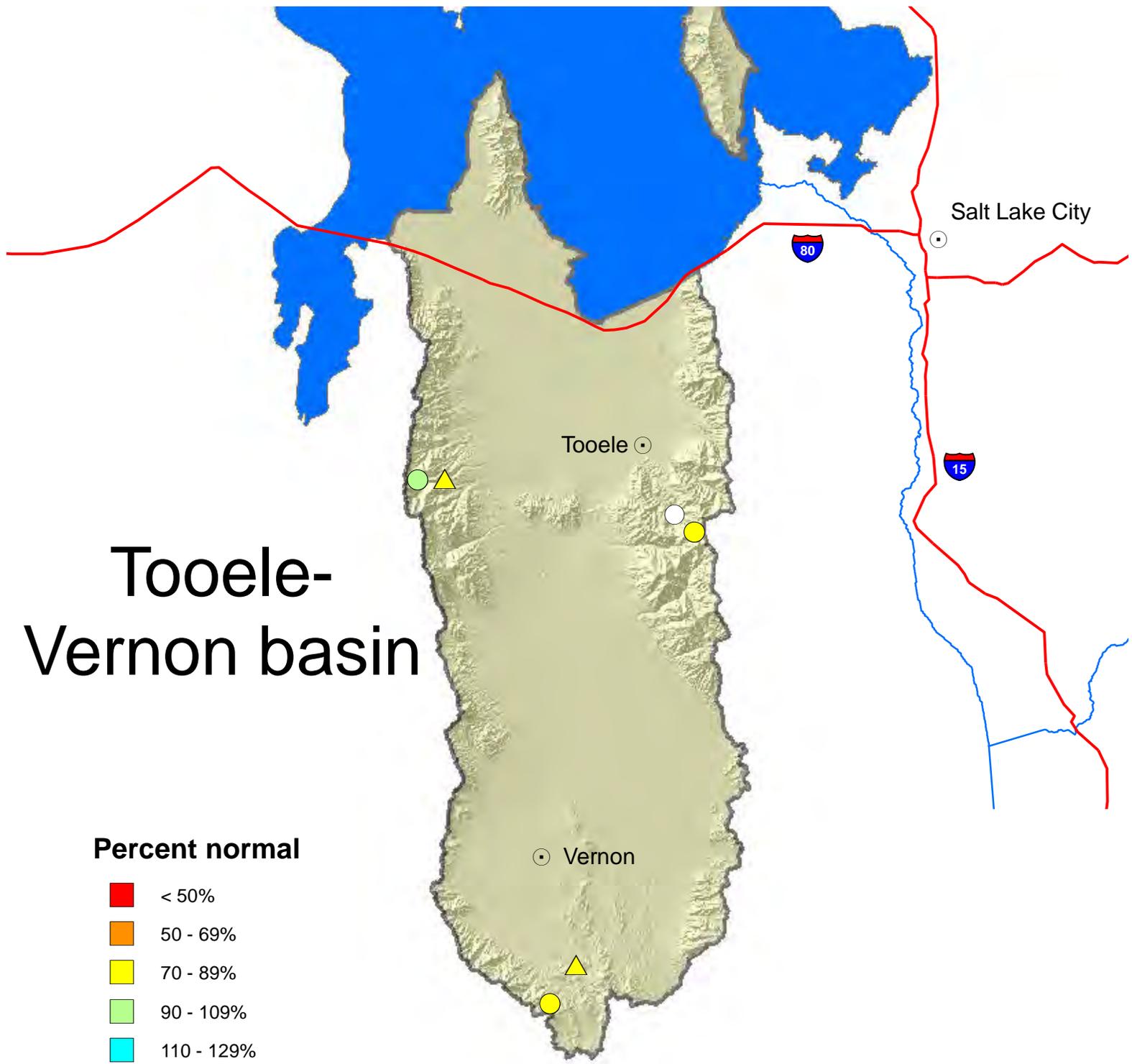
Precipitation



Reservoir Storage



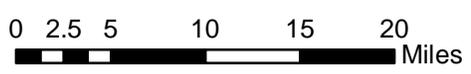
Tooele- Vernon basin



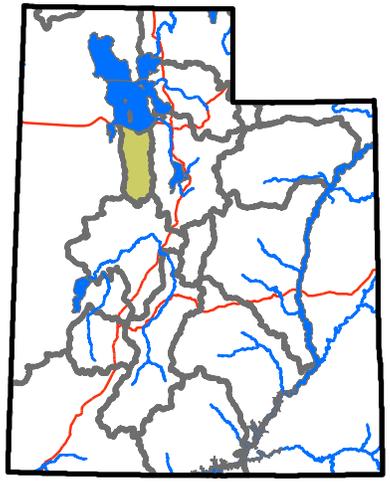
Percent normal

- < 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



Tooele Valley Vernon Creek Streamflow Forecasts - March 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	0.02	0.72	1.2	86%	1.68	2.4	1.39
S Willow Ck nr Grantsville	APR-JUL	0.97	1.88	2.5	81%	3.1	4	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 February, 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	0.4	0.7	1.0
GRANTSVILLE RESERVOIR	2.2	1.2	2.1	3.3
Basin-wide Total	2.8	1.8	3.3	4.9
# of reservoirs	3	3	3	3

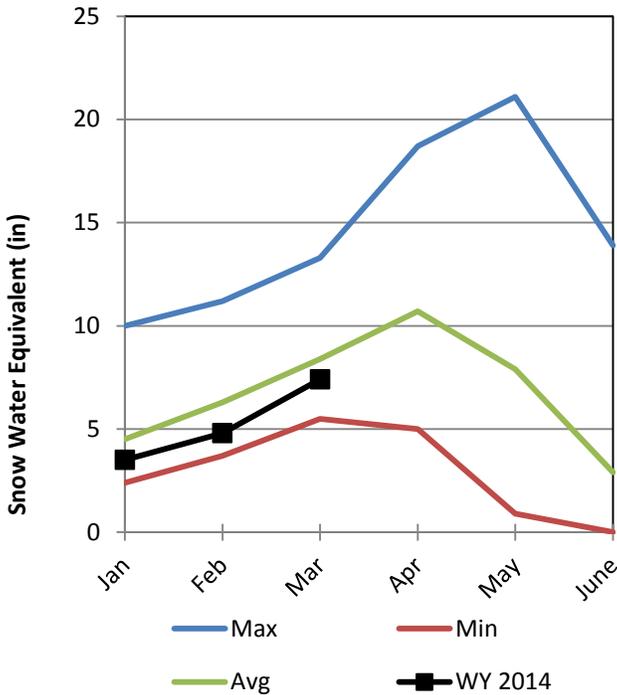
Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Tooele	3	85%	97%
NW Utah	3	81%	95%

Northeastern Uintah Basin

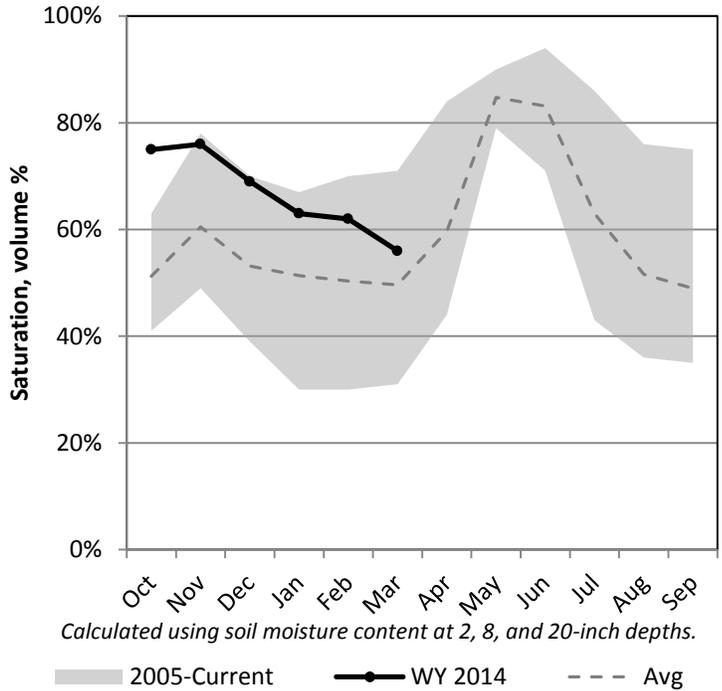
3/1/2014

Snowpack in the Northeastern Uintah Basin is near average at 96% of normal, compared to 80% last year. Precipitation in February was near average at 97%, which brings the seasonal accumulation (Oct-Feb) to 94% of average. Soil moisture is at 56% compared to 42% last year. Reservoir storage is at 76% of capacity, compared to 79% last year. Forecast streamflow volumes range from 101% to 134% of average. The surface water supply index is 57% for the Blacks Fork, 87% for the Smiths Creek.

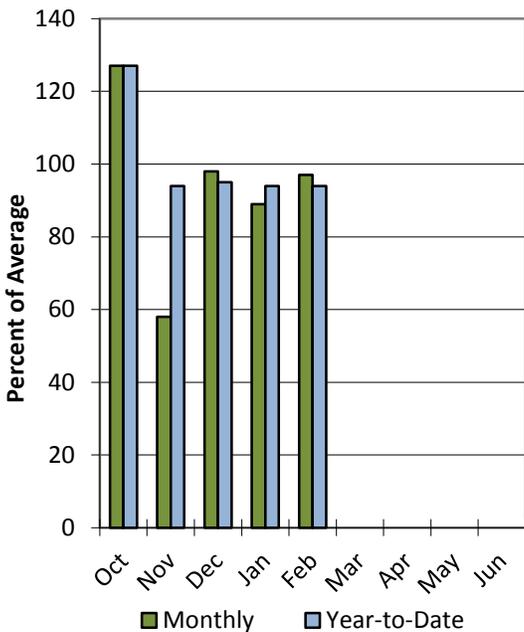
Snowpack



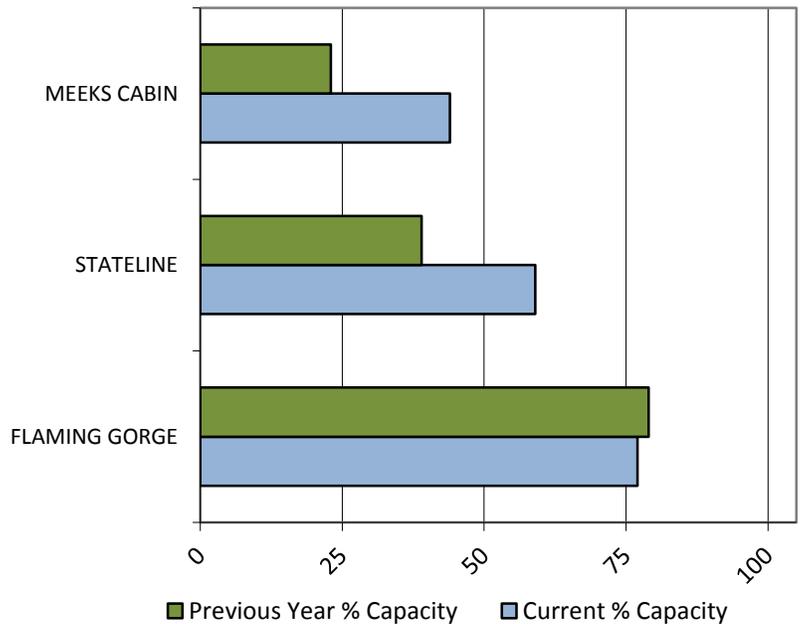
Soil Moisture



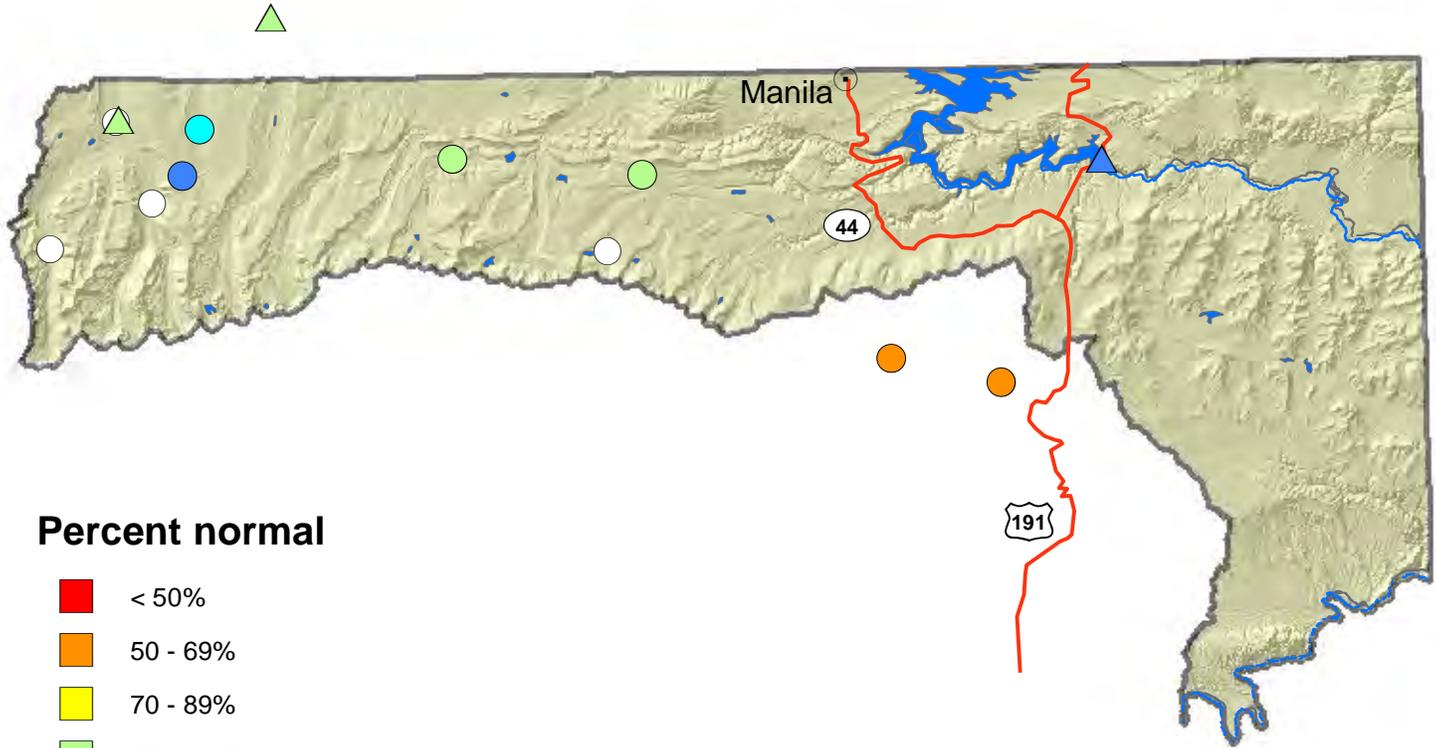
Precipitation



Reservoir Storage



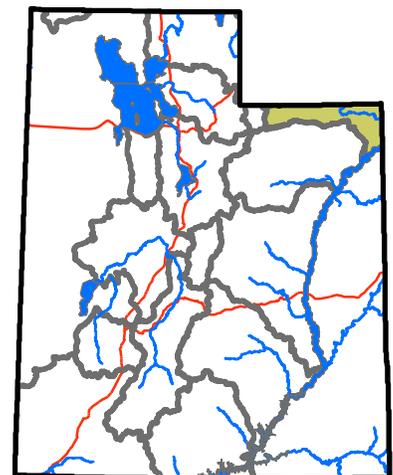
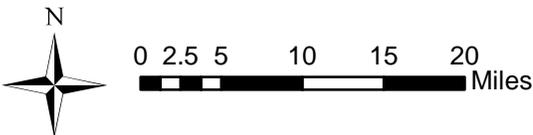
Northeastern Utah



Percent normal

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

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



Northeastern Uintahs Streamflow Forecasts - March 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	60	77	90	101%	104	126	89
EF of Smiths Fork nr Robertson ²	APR-JUL	16.6	23	28	104%	33	42	27
Flaming Gorge Reservoir Inflow ²	APR-JUL	805	1090	1310	134%	1550	1940	980
Uinta R bl Powerplant Diversion nr Neola ²	APR-JUL	24	40	53	72%	68	93	74
Whiterocks R nr Whiterocks	APR-JUL	18.2	28	37	69%	46	61	54
Ashley Ck nr Vernal	APR-JUL	16.7	26	33	66%	41	55	50
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	8	11.4	14	67%	16.9	22	21
Lake Fork R ab Moon Lake Reservoir	APR-JUL	32	43	52	85%	61	77	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 February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
FLAMING GORGE RESERVOIR	2868.5	2968.0	3014.0	3749.0
STATELINE RESERVOIR	7.1	4.7	5.2	12.0
MEEKS CABIN RESERVOIR	14.4	7.6	11.9	32.5
Basin-wide Total	2890.0	2980.2	3031.1	3793.5
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Blacks Fk	4	115%	77%
Upper Green	2	100%	93%
Lower Green	2	75%	81%
Ashley Brush	4	71%	92%

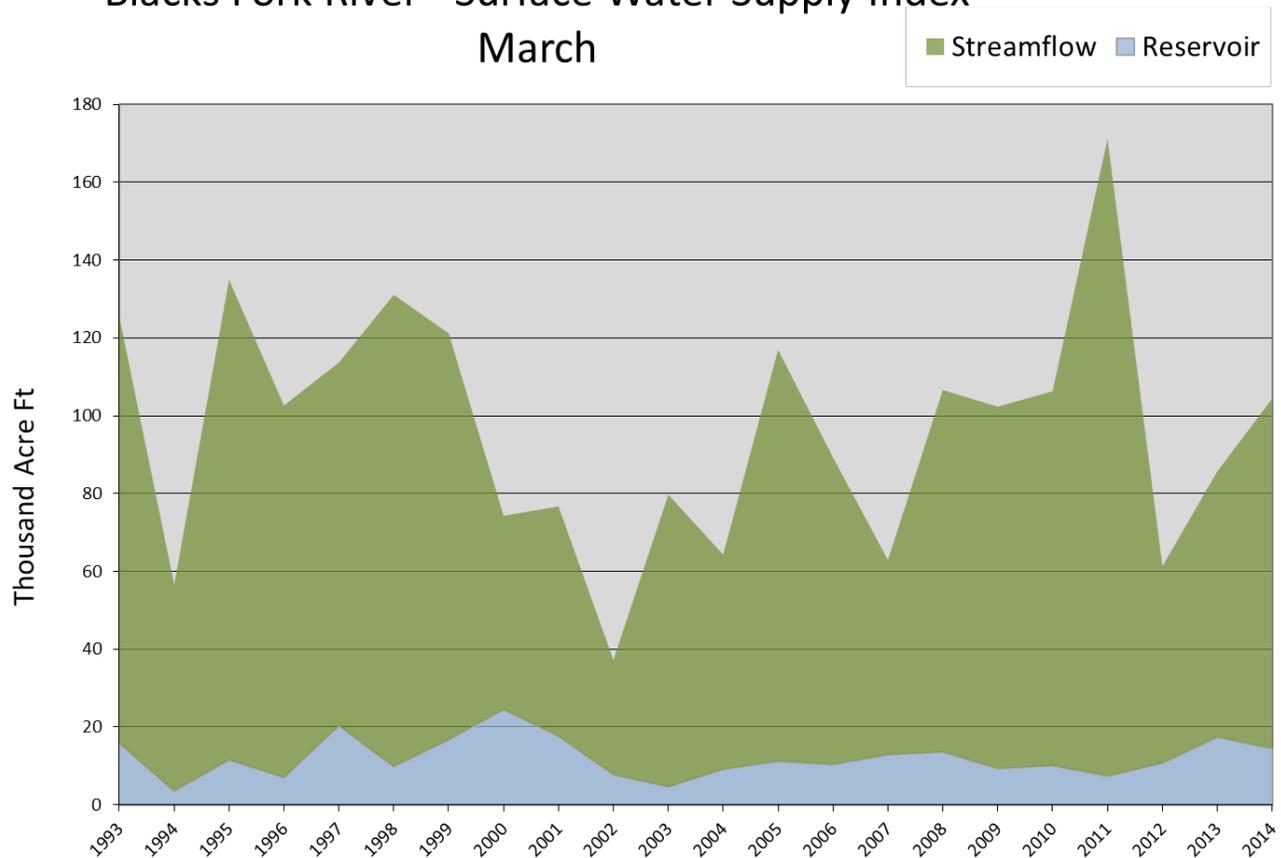
March 1, 2014

Blacks Fork Surface Water Supply Index

Basin or Region	February EOM* Meeks Cabin Reservoir	April-July forecast Blacks Fork nr Robertson	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Blacks Fork	14.4	90.0	104.4	0.54	57	09, 96, 10, 08

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

Blacks Fork River - Surface Water Supply Index
March

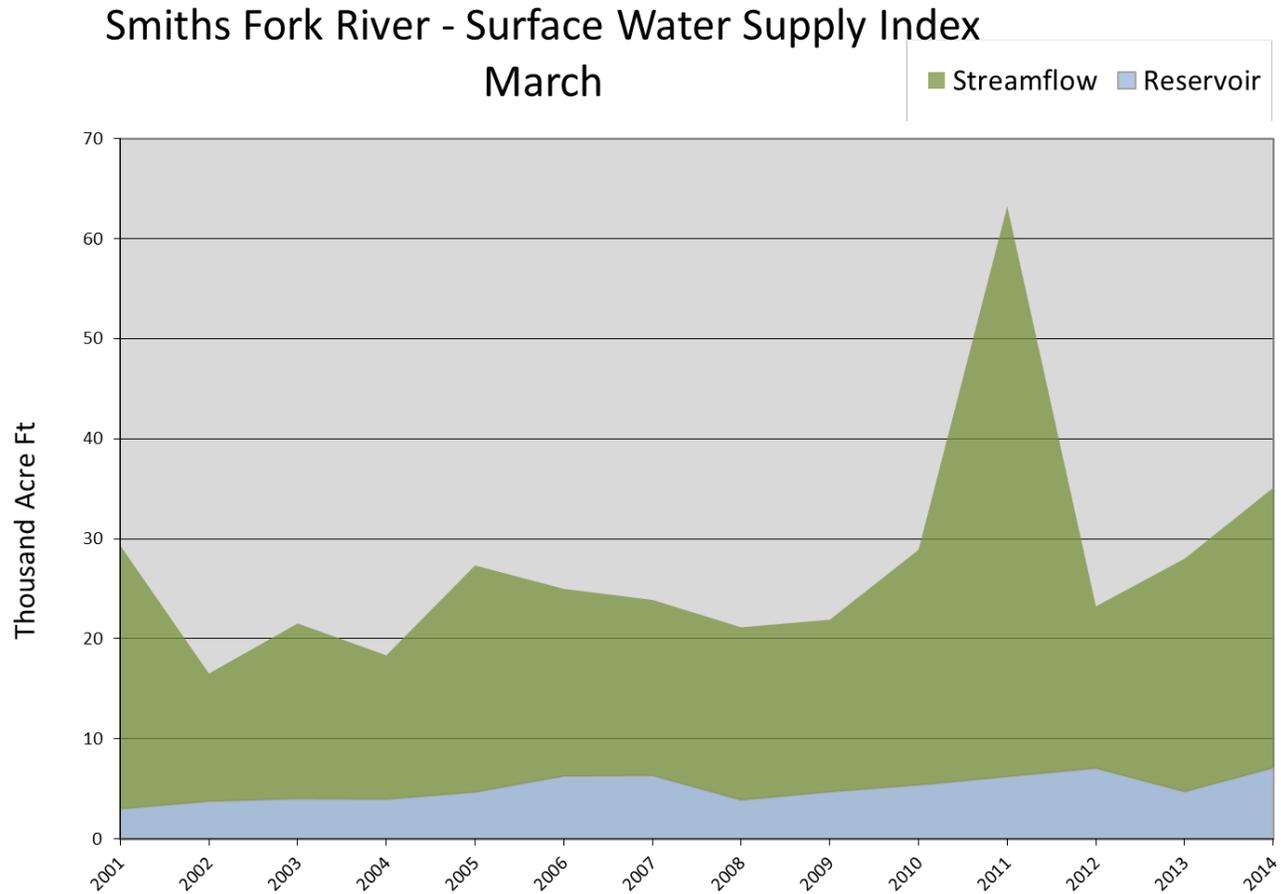


March 1, 2014

Smiths Fork Surface Water Supply Index

Basin or Region	February EOM* Stateline Cabin Reservoir	April-July forecast EF Smiths Fork nr Robertson	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Smiths Fork	7.1	28.0	35.1	3.06	87	10, 01, 11

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

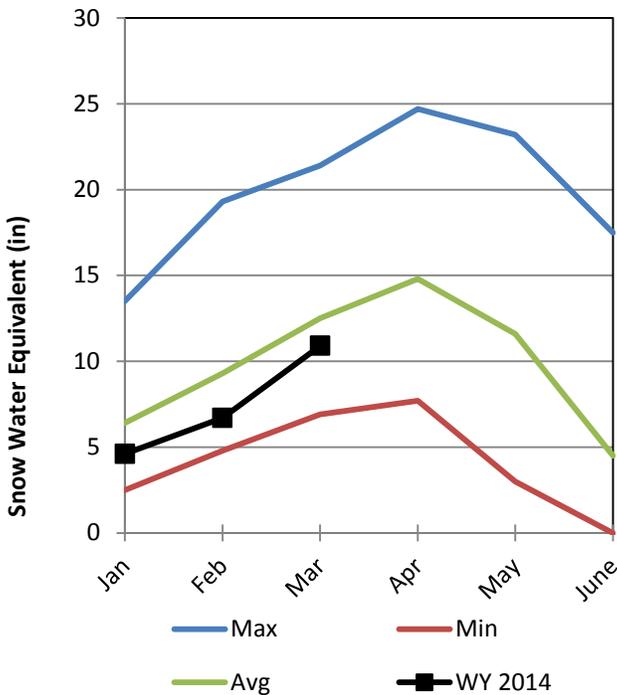


Duchesne River Basin

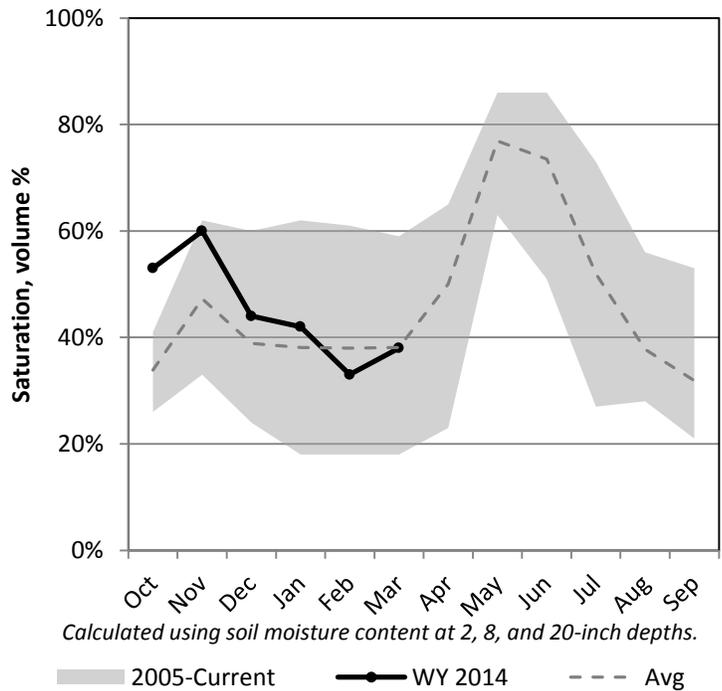
3/1/2014

Snowpack in the Duchesne River Basin is near average at 91% of normal, compared to 82% last year. Precipitation in February was above average at 127%, which brings the seasonal accumulation (Oct-Feb) to 84% of average. Soil moisture is at 38% compared to 28% last year. Reservoir storage is at 75% of capacity, compared to 78% last year. Forecast streamflow volumes range from 64% to 91% of average. The surface water supply index is 58% for the Western Uintahs, 11% for the Eastern Uintahs.

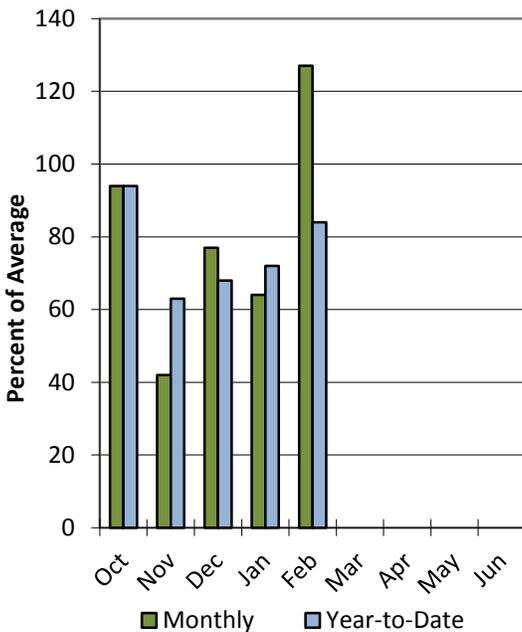
Snowpack



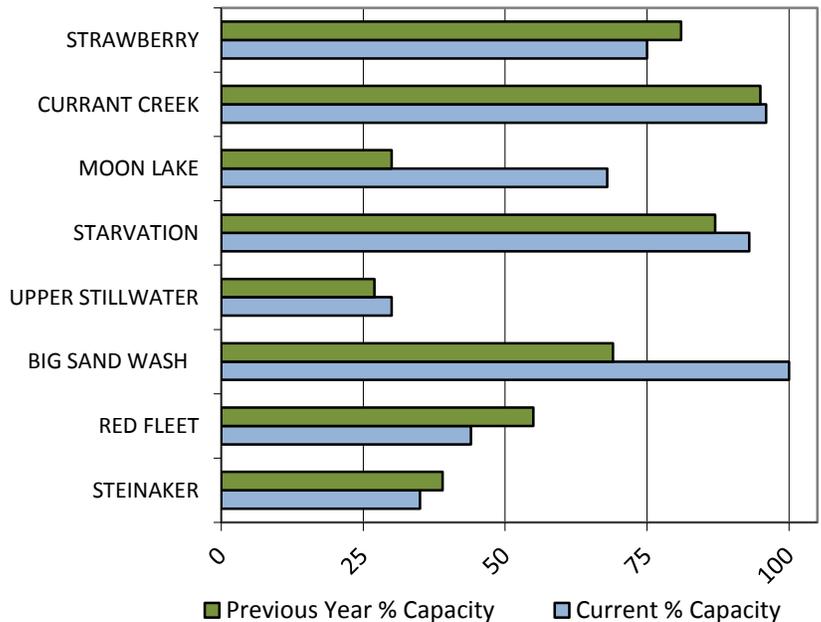
Soil Moisture



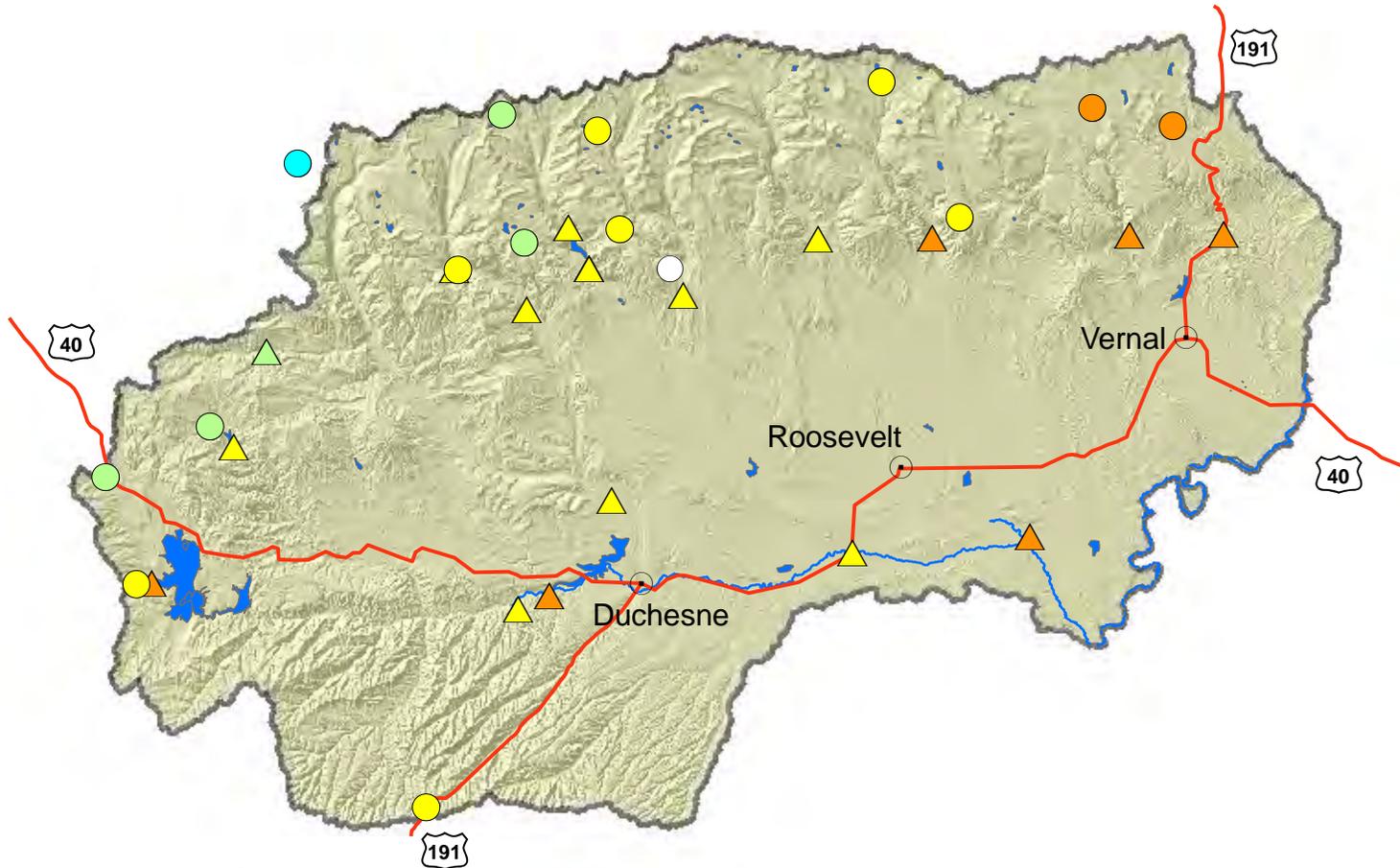
Precipitation



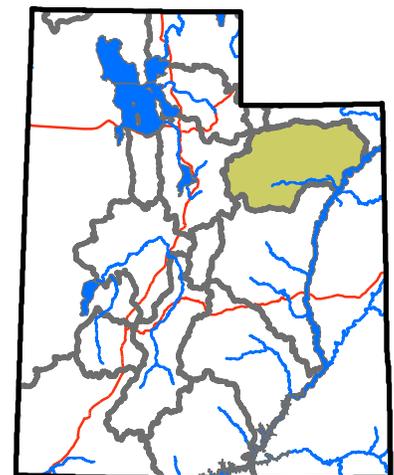
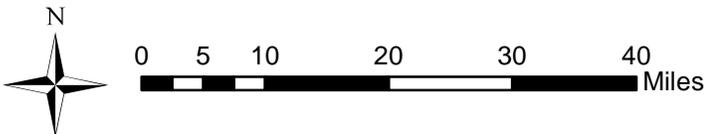
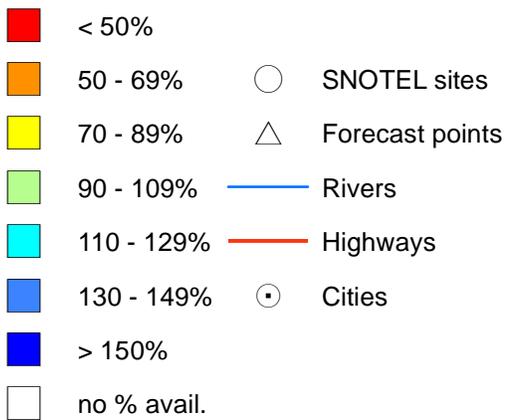
Reservoir Storage



Duchesne basin



Percent normal



Duchesne River Streamflow Forecasts - March 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 ²	APR-JUL	61	79	93	86%	107	131	108
Strawberry R nr Duchesne ²	APR-JUL	32	55	75	67%	98	136	112
Strawberry R nr Soldier Springs ²	APR-JUL	10.6	23	35	64%	49	74	55
Duchesne R at Myton ²	APR-JUL	130	195	245	74%	305	400	330
Duchesne R nr Randlett ²	APR-JUL	115	195	260	68%	335	460	385
Duchesne R ab Knight Diversion ²	APR-JUL	117	147	170	87%	194	235	195
WF Duchesne R at VAT Diversion	APR-JUL	10.9	14.3	17	91%	19.9	25	18.6
Rock Ck nr Mountain Home ²	APR-JUL	56	69	78	89%	88	104	88
Yellowstone R nr Altonah	APR-JUL	30	41	50	82%	59	74	61
Upper Stillwater Reservoir Inflow ²	APR-JUL	46	57	66	89%	75	90	74
Lake Fk R BI Moon Lk nr Mountain Home ²	APR-JUL	36	46	54	82%	63	77	66
Currant Ck Reservoir Inflow ²	APR-JUL	8.7	12.8	16	80%	19.6	25	20

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

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

3) Median value used in place of average

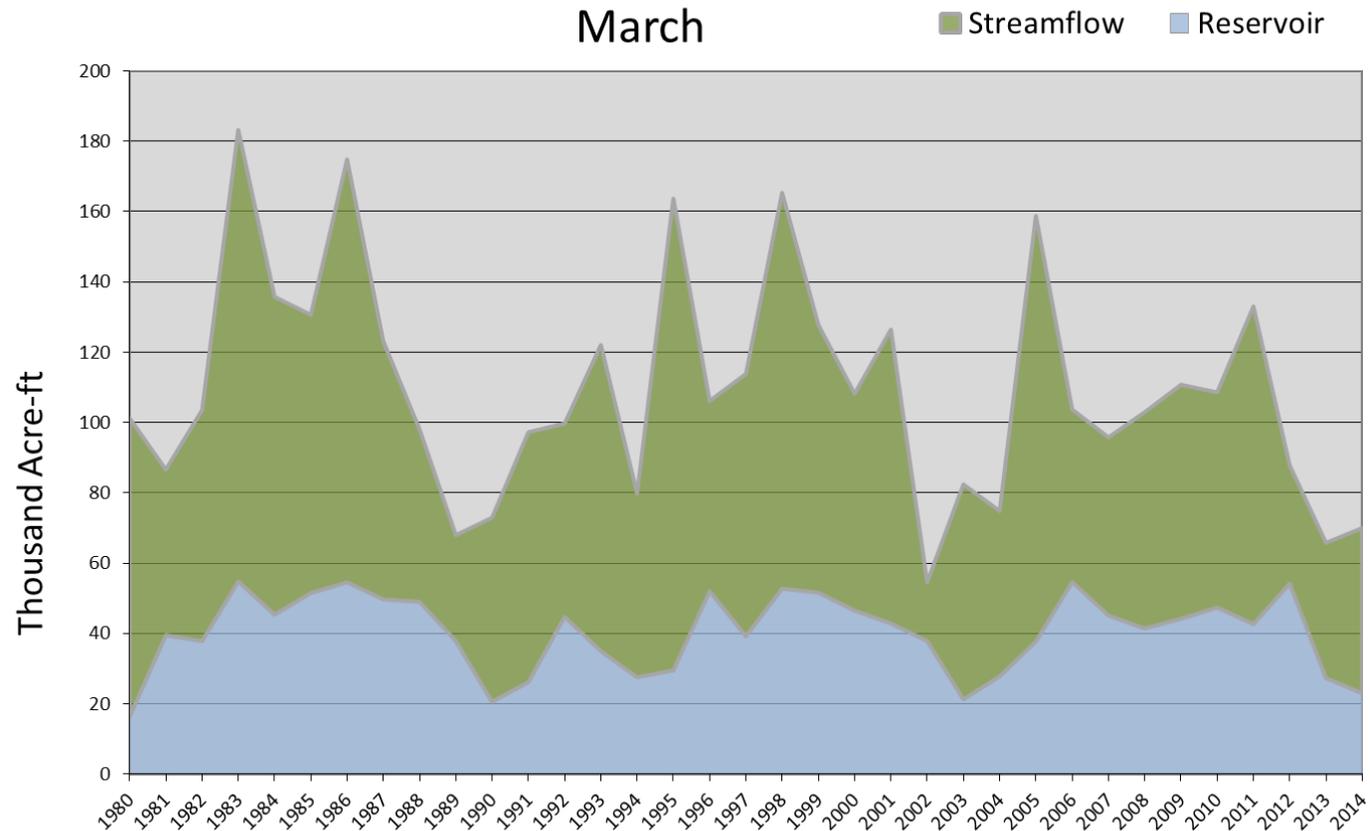
Reservoir Storage End of February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
STEINAKER RESERVOIR	11.8	13.0	23.1	33.4
RED FLEET RESERVOIR	11.2	14.3	18.3	25.7
BIG SAND WASH RESERVOIR	25.6	17.8		25.7
UPPER STILLWATER RESERVOIR	9.7	8.6	7.6	32.5
STARVATION RESERVOIR	153.9	143.1	144.5	165.3
MOON LAKE RESERVOIR	24.3	10.6	26.3	35.8
CURRANT CREEK RESERVOIR	15.0	14.7	14.8	15.5
STRAWBERRY RESERVOIR	832.3	895.5	660.5	1105.9
Basin-wide Total	1083.8	1117.6	895.1	1439.8
# of reservoirs	8	8	7	8

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Strawberry	5	89%	81%
Lakefork Yellowstone	7	95%	75%
Uintah Whiterocks	2	80%	103%

March 1, 2014		Surface Water Supply Index				
Basin or Region	February EOM* Red Fleet & Steinaker	April-July Forecast Big Brush & Ashley Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Eastern Uintah	23.0	47.0	70.0	-3.21	11	13, 89, 90, 04

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

Eastern Uintah Basin - Surface Water Supply Index
March



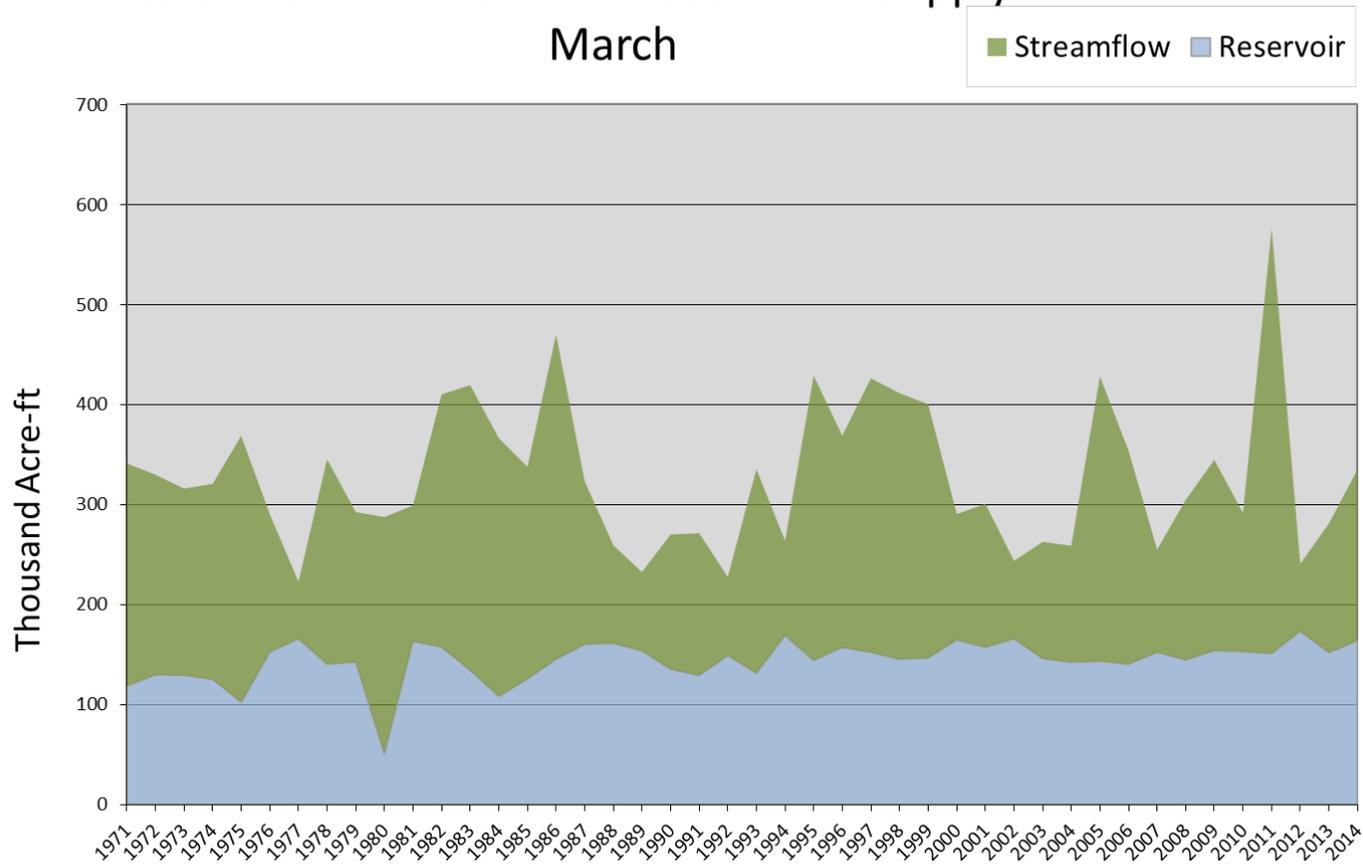
March 1, 2014

Surface Water Supply Index

Basin or Region	February EOM* Starvation & Upper Stillwater	April-July Forecast Rock Creek & Duchesne River	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Western Uintah	164	171	335	0.65	58	87, 72, 93, 85

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

Western Uintah Basin - Surface Water Supply Index
March

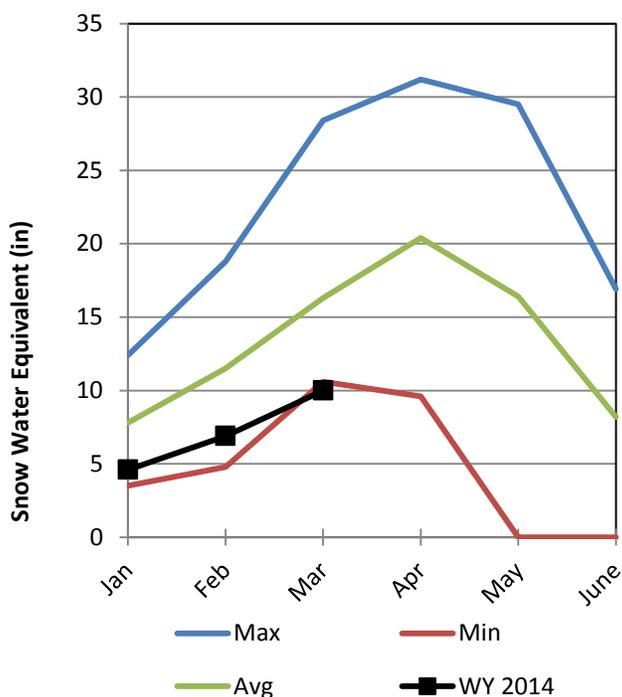


Lower Sevier River Basin

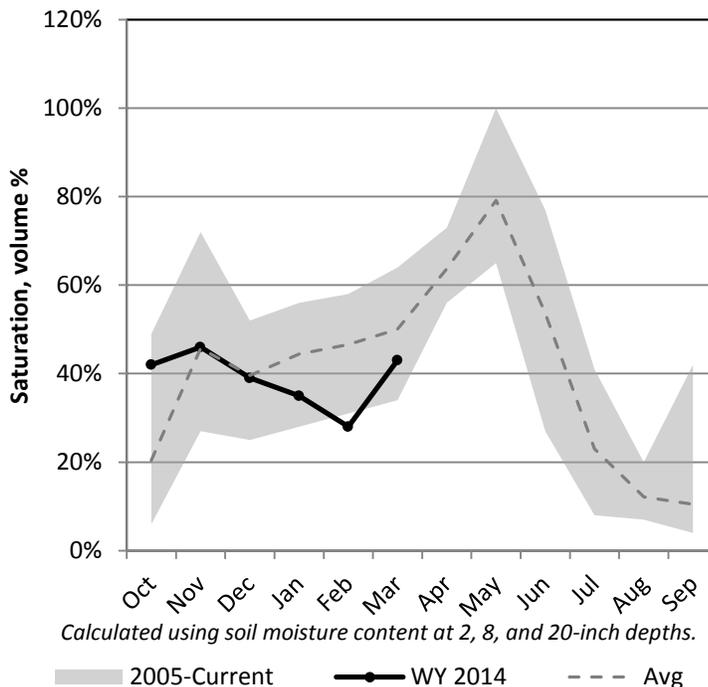
3/1/2014

Snowpack in the Lower Sevier River Basin is much below average at 66% of normal, compared to 115% last year. Precipitation in February was below average at 74%, which brings the seasonal accumulation (Oct-Feb) to 80% of average. Soil moisture is at 43% compared to 37% last year. Reservoir storage is at 55% of capacity, compared to 67% last year. Forecast streamflow volumes range from 35% to 63% of average. The surface water supply index is 46% for the Lower Sevier.

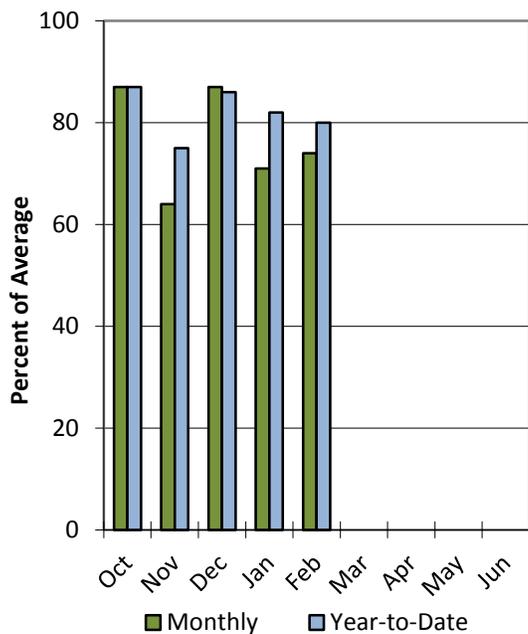
Snowpack



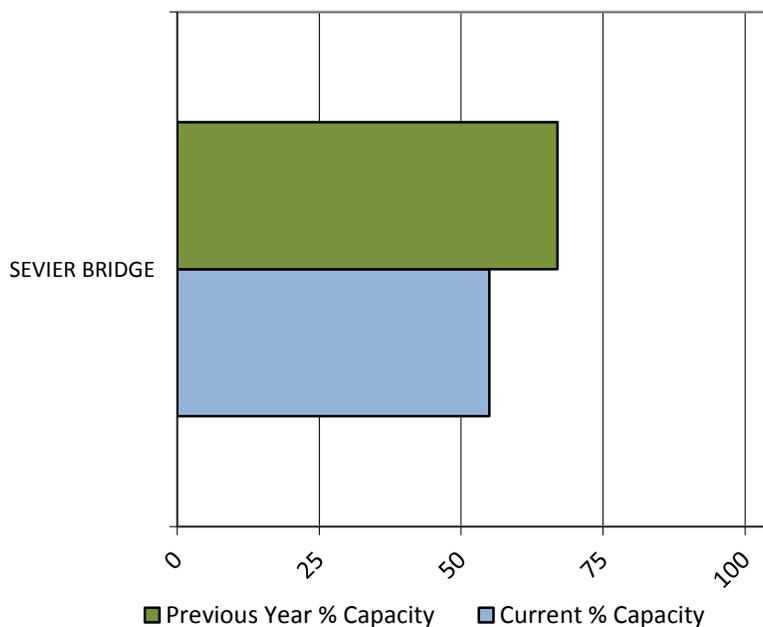
Soil Moisture



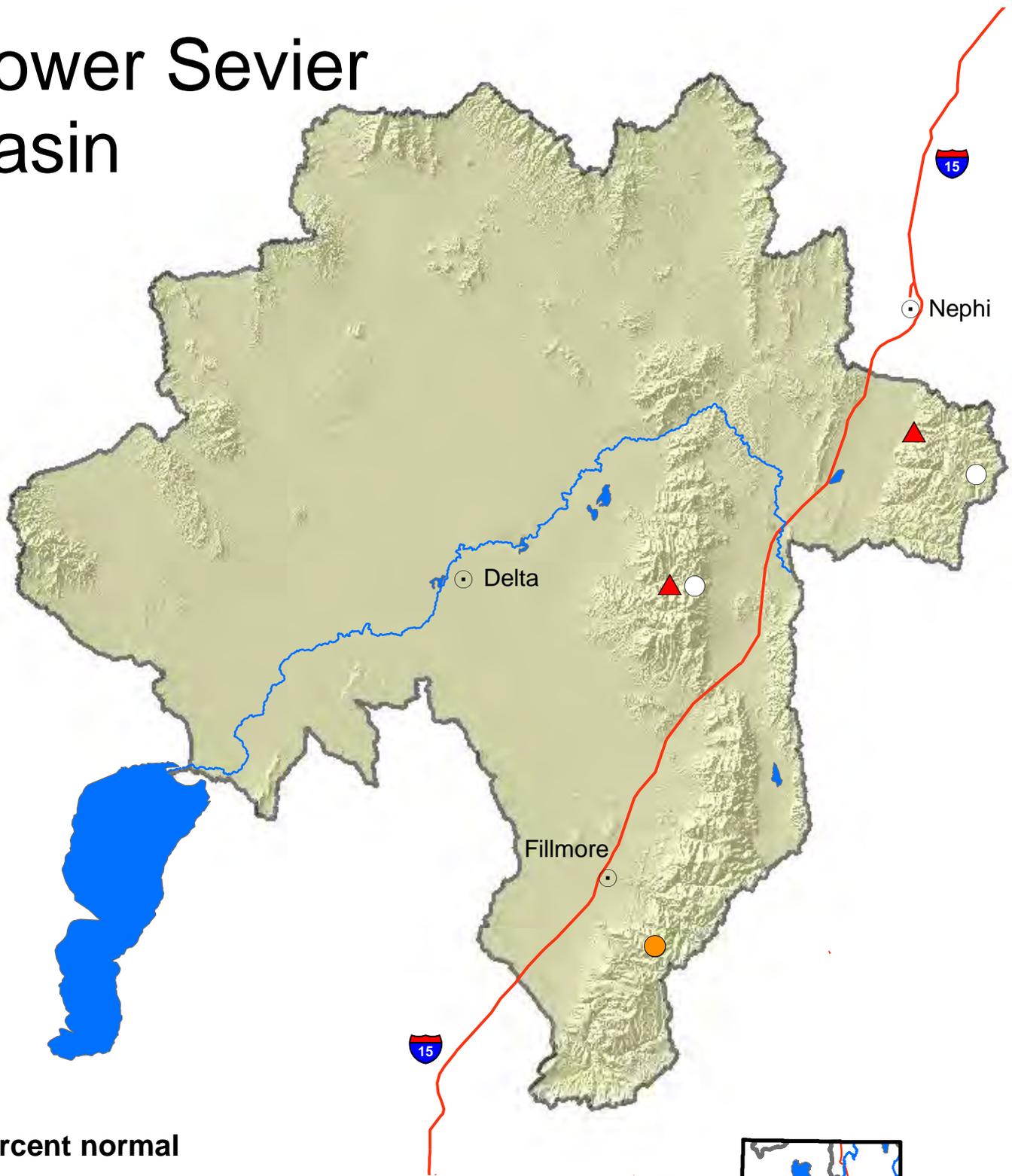
Precipitation



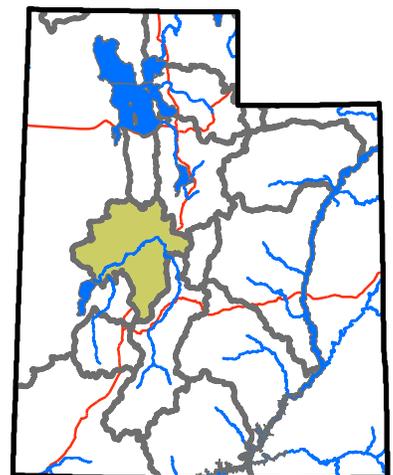
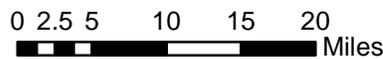
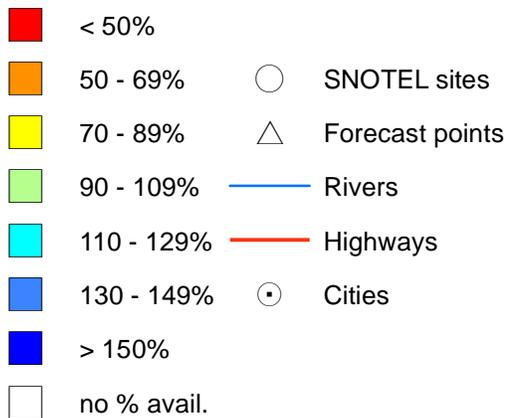
Reservoir Storage



Lower Sevier basin



Percent normal



Lower Sevier River Streamflow Forecasts - March 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	0.62	1.27	1.9	35%	2.7	4.3	5.4
Oak Ck nr Oak City	APR-JUL	0.29	0.51	0.7	43%	0.92	1.29	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 February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
SEVIER BRIDGE RESERVOIR	129.9	157.8	169.0	236.0
Basin-wide Total	129.9	157.8	169.0	236.0
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Lower Sevier	1	66%	115%

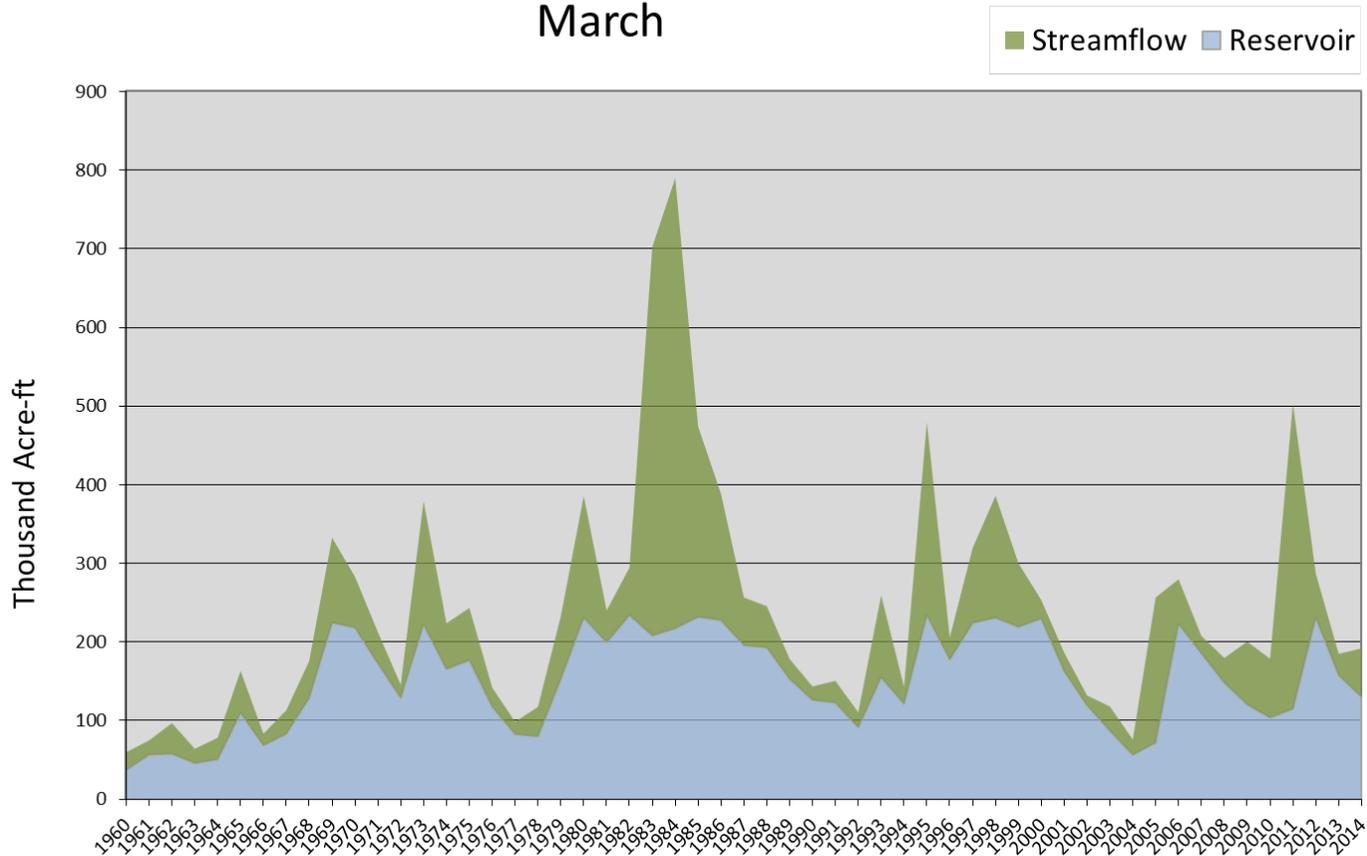
March 1, 2014

Lower Sevier Surface Water Supply Index

Basin or Region	February EOM* Sevier Bridge Reservoir	April-July Forecast Inflow to Sevier Bridge Reservoir	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Lower Sevier	129.9	62	191.9	-0.30	46	13, 01, 09, 96

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

Lower Sevier River - Surface Water Supply Index March

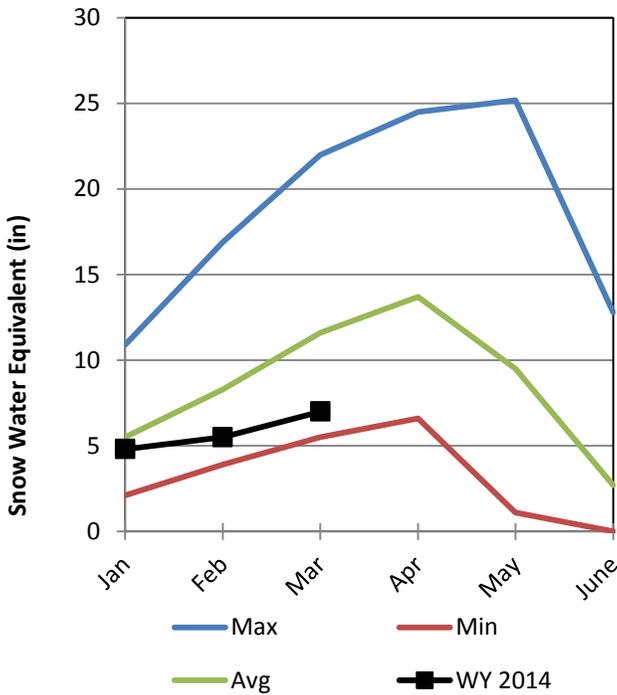


Upper Sevier River Basin

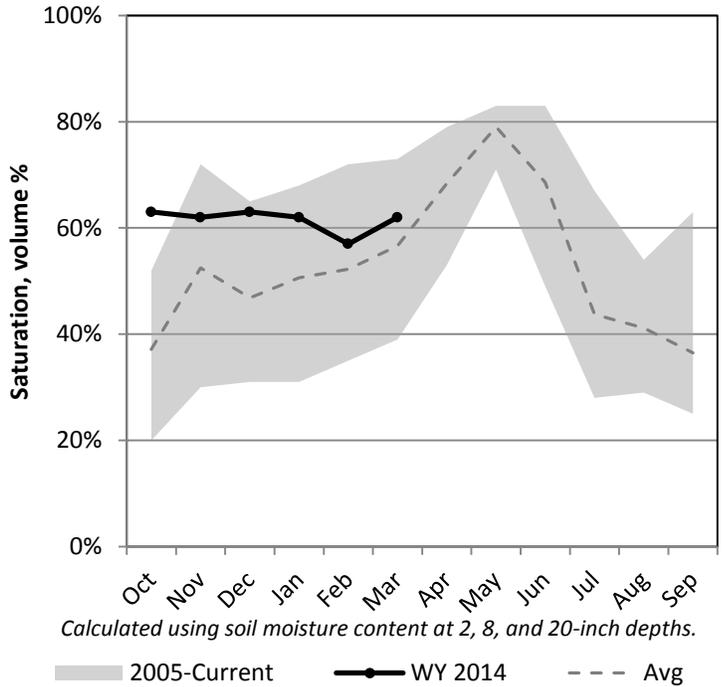
3/1/2014

Snowpack in the Upper Sevier River Basin is much below average at 67% of normal, compared to 96% last year. Precipitation in February was much below average at 67%, which brings the seasonal accumulation (Oct-Feb) to 72% of average. Soil moisture is at 62% compared to 45% last year. Reservoir storage is at 68% of capacity, compared to 63% last year. Forecast streamflow volumes range from 38% to 72% of average. The surface water supply index is 28% for the Upper Sevier.

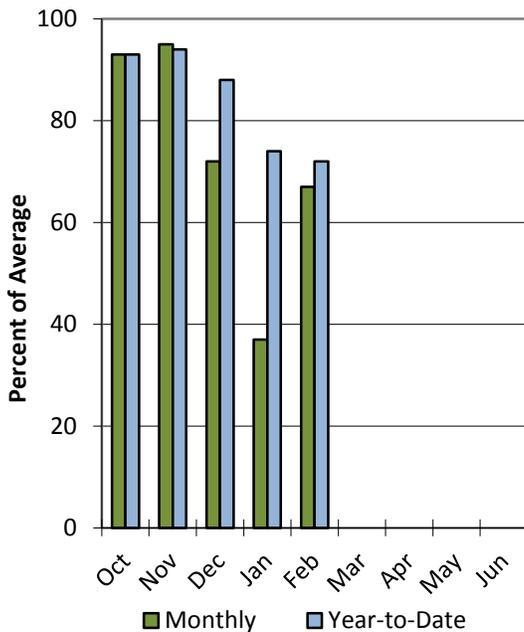
Snowpack



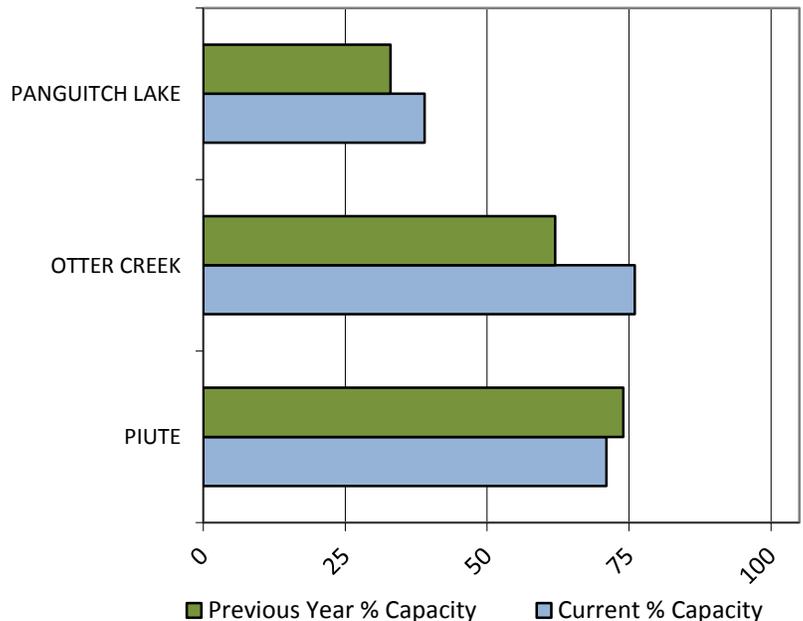
Soil Moisture



Precipitation

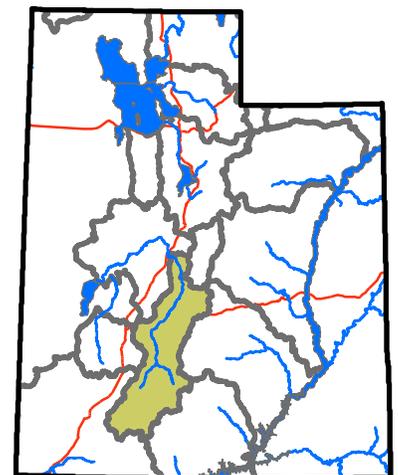
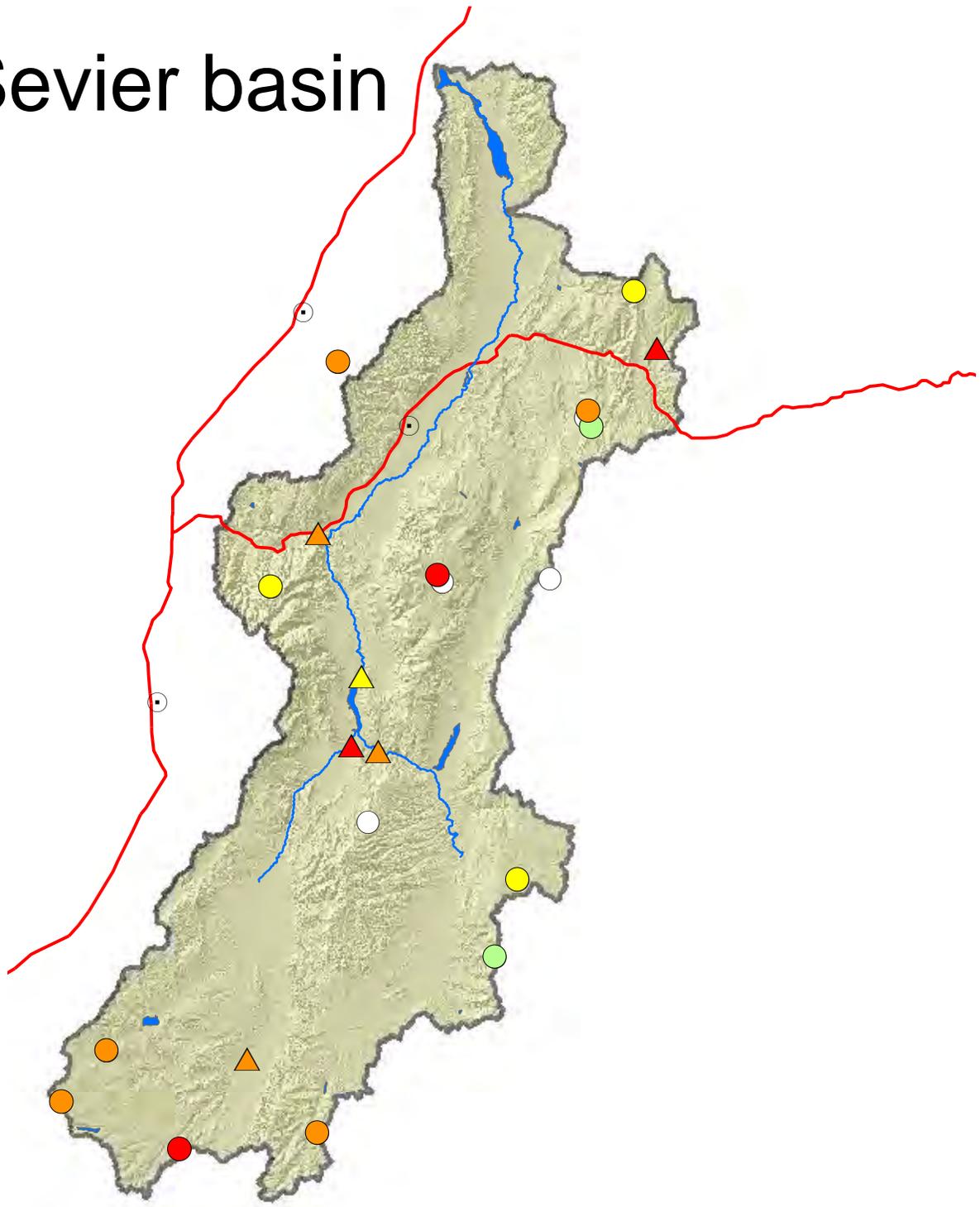
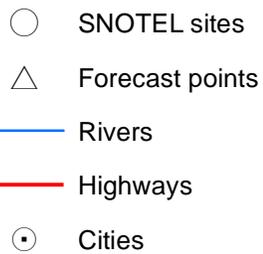
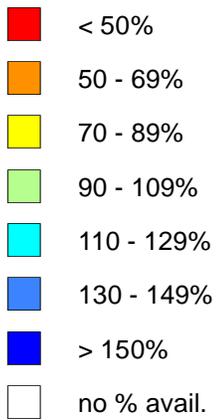


Reservoir Storage



Upper Sevier basin

Percent normal



Upper Sevier River Streamflow Forecasts - March 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	2.5	15.3	24	50%	33	46	48
EF Sevier R nr Kingston	APR-JUL	0.35	10.7	20	57%	29	43	35
Sevier R nr Kingston	APR-JUL	0.33	1.98	16	48%	31	53	33
Sevier R bl Piute Dam	APR-JUL	1.32	17.7	39	72%	60	92	54
Clear Ck ab Diversions nr Sevier	APR-JUL	0.5	7.3	12	57%	16.7	23	21
Salina Ck nr Emery	APR-JUL	0.079	0.48	3	38%	5.6	9.3	7.9

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

Reservoir Storage End of February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
PIUTE RESERVOIR	50.9	53.2	53.6	71.8
OTTER CREEK RESERVOIR	40.2	32.4	38.6	52.5
PANGUITCH LAKE	8.7	7.3	13.7	22.3
Basin-wide Total	99.8	93.0	105.9	146.6
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Upper Sevier	13	67%	96%
Middle Sevier	9	75%	98%
E Fk Sevier	6	59%	81%

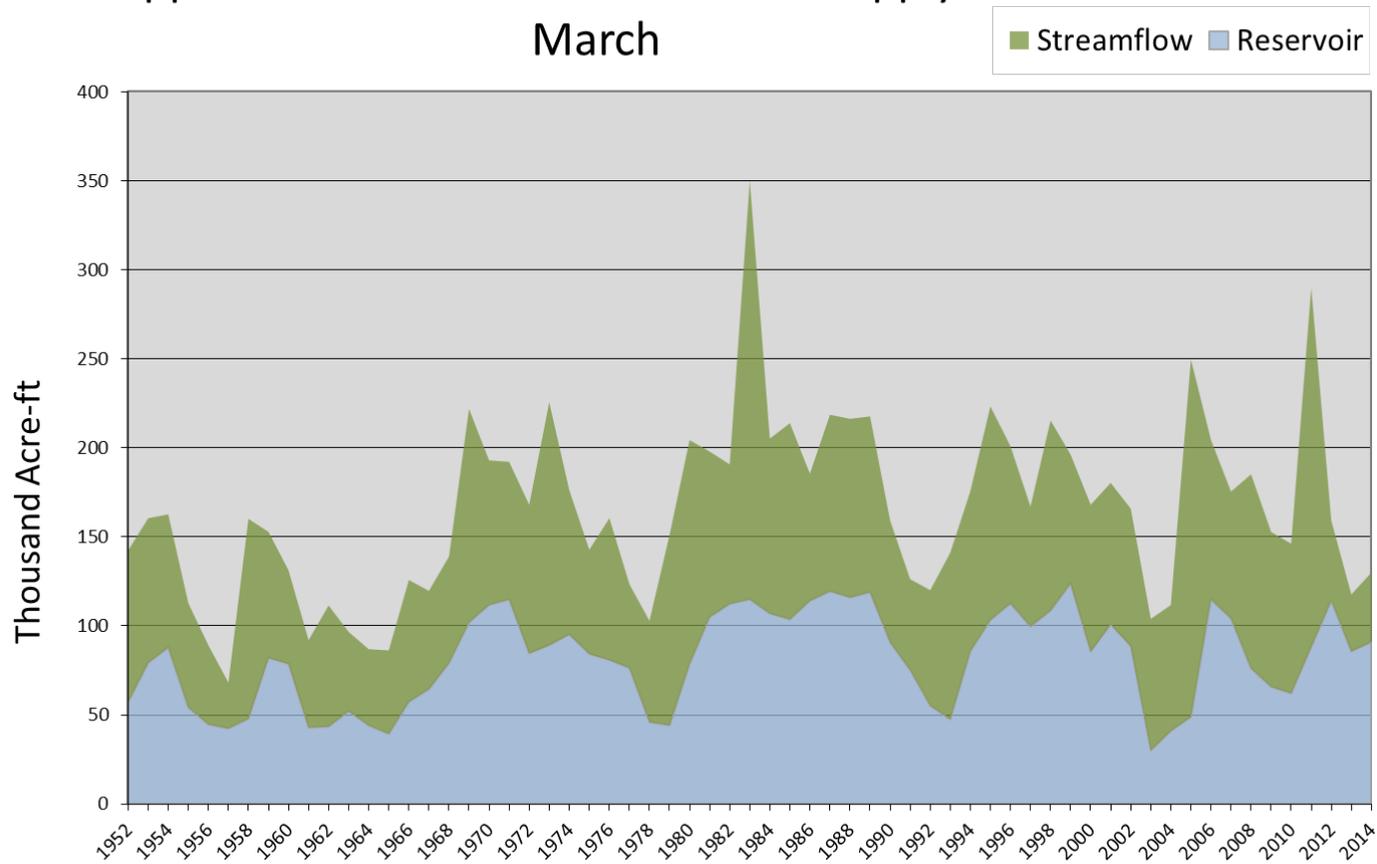
March 1, 2014

Surface Water Supply Index

Basin or Region	February EOM* Piute & Otter Creek Reservoir	April-July Forecast Inflow to Piute Reservoir	Reservoir + Streamflow	SWSI [#]	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Upper Sevier	91.0	39	130	-1.82	28	66, 91, 60, 68

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

Upper Sevier River - Surface Water Supply Index
March

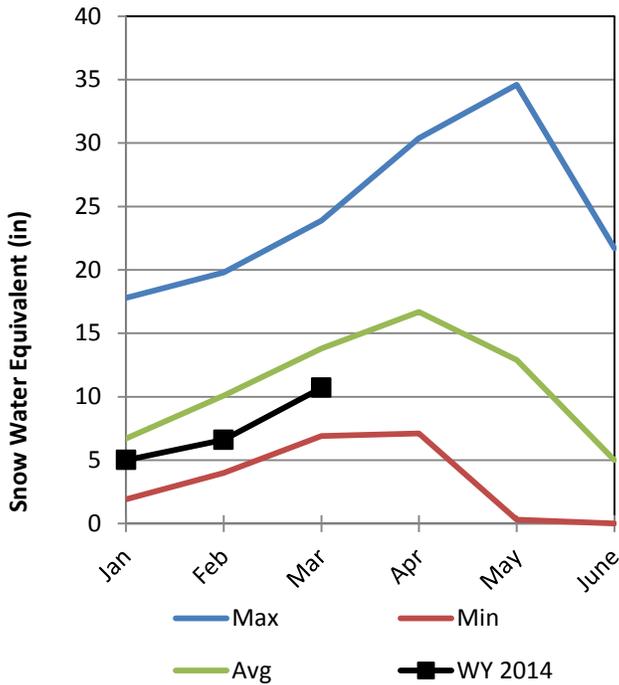


San Pitch River Basin

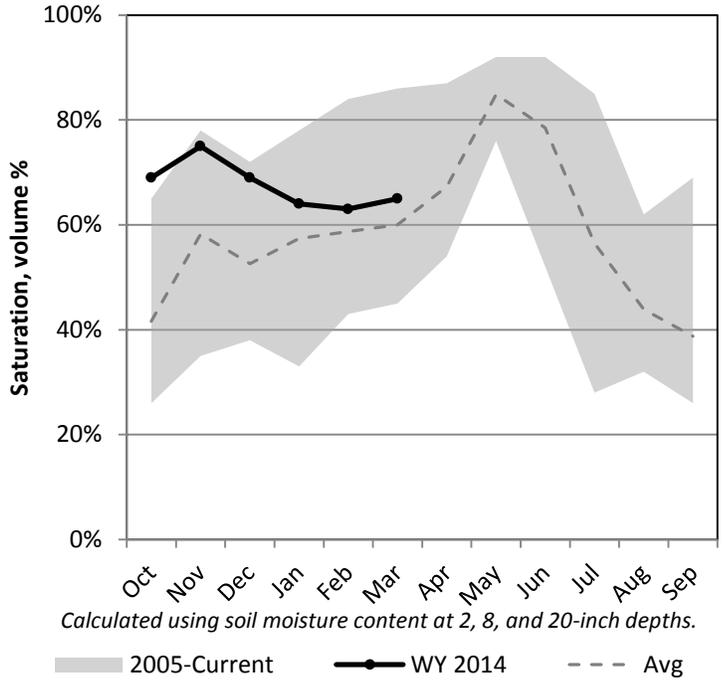
3/1/2014

Snowpack in the San Pitch River Basin is below average at 83% of normal, compared to 89% last year. Precipitation in February was above average at 126%, which brings the seasonal accumulation (Oct-Feb) to 91% of average. Soil moisture is at 65% compared to 47% last year. Reservoir storage is at 5% of capacity, compared to 30% last year. The forecast streamflow volume for Manti Creek is 75% of average. The surface water supply index is 8% for the San Pitch.

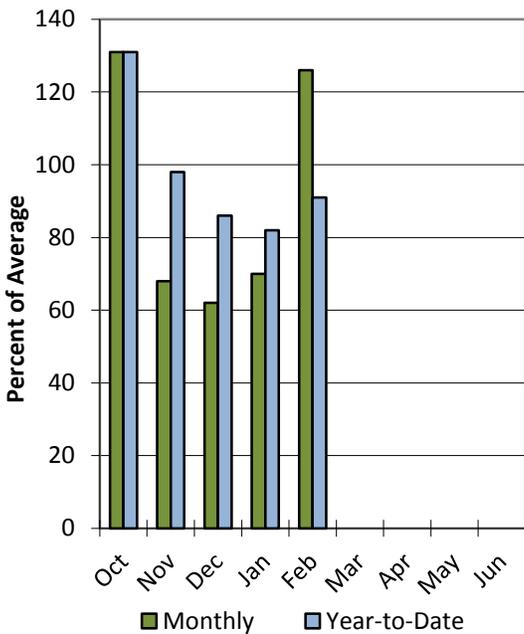
Snowpack



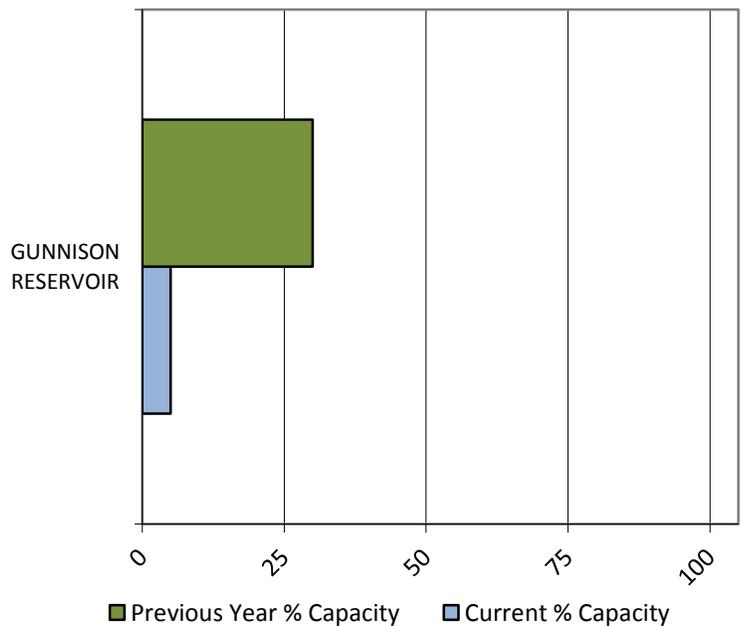
Soil Moisture



Precipitation

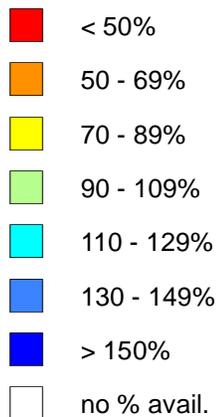


Reservoir Storage

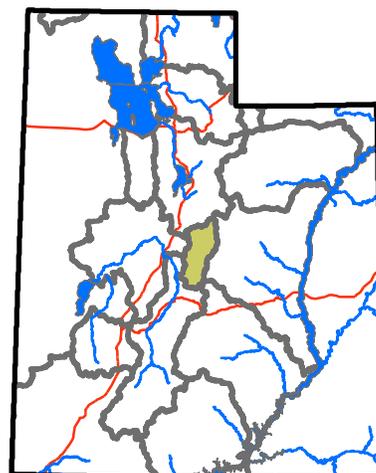
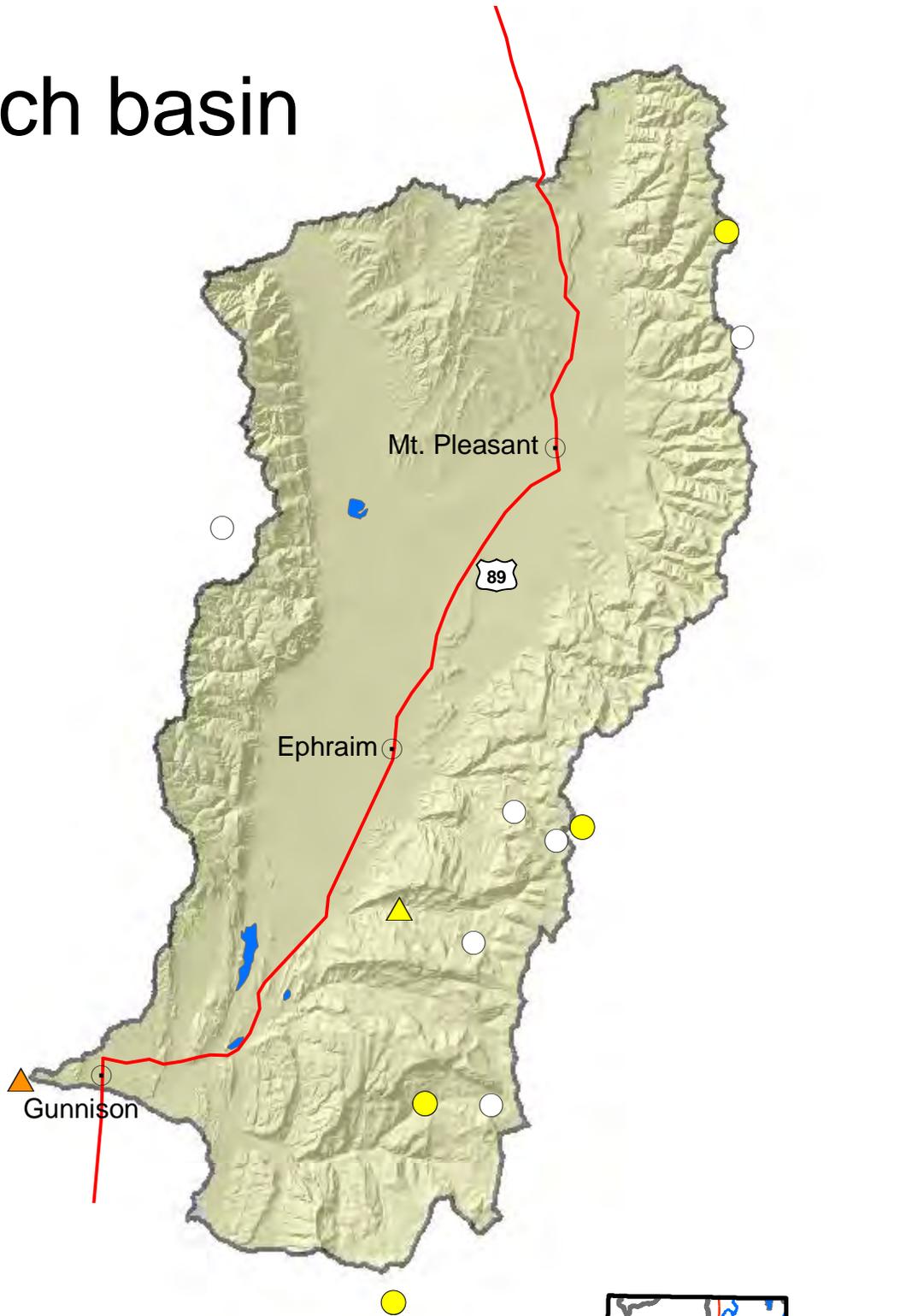


San Pitch basin

Percent normal



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



San Pitch River Streamflow Forecasts - March 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	7.2	10.2	12.5	75%	15.1	19.3	16.7
Sevier R nr Gunnison	APR-JUL	10.5	41	62	63%	83	113	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 February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
GUNNISON RESERVOIR	1.0	6.0	13.0	20.3
Basin-wide Total	1.0	6.0	13.0	20.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Upper San Pitch	4	78%	86%
Lower San Pitch	8	82%	90%

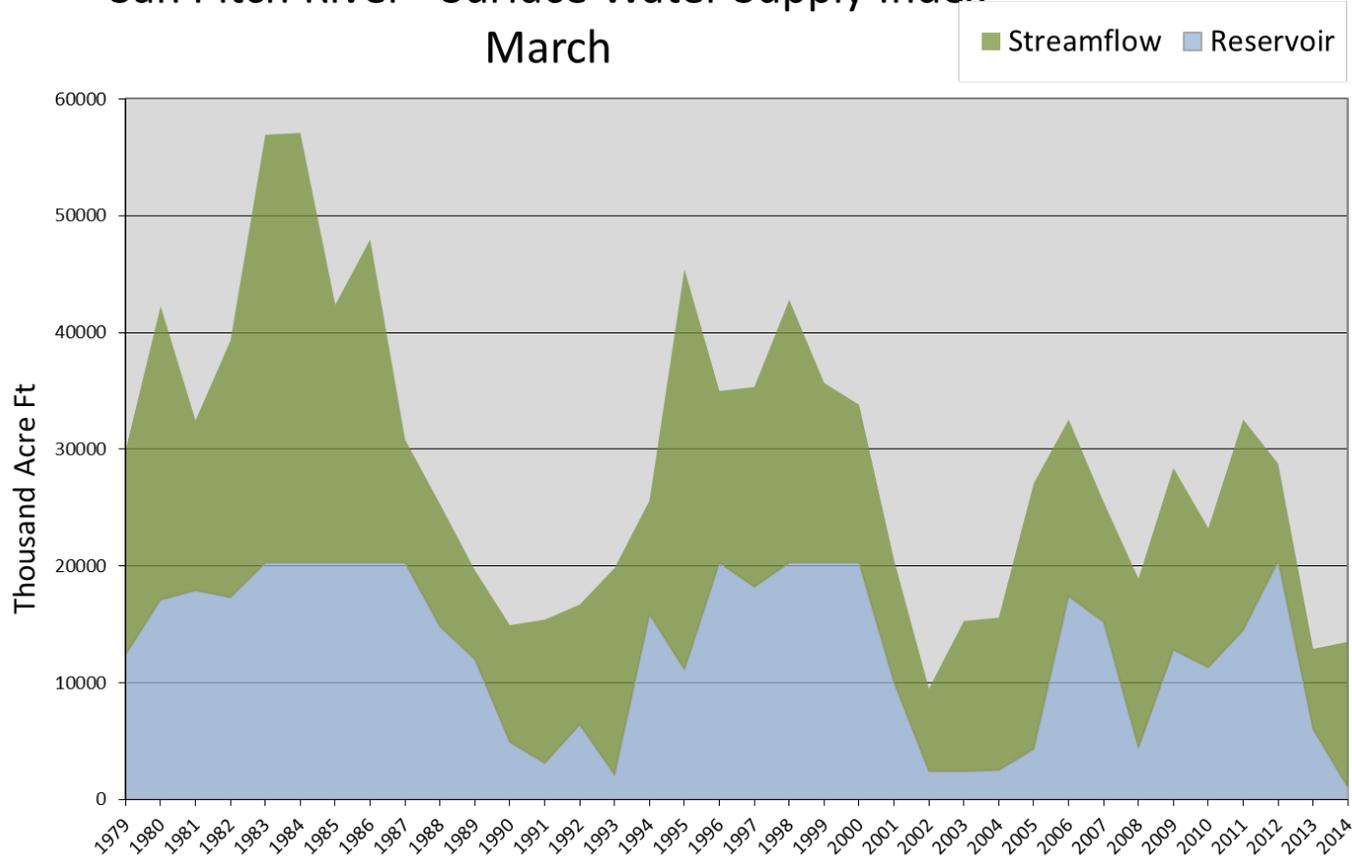
March 1, 2014

San Pitch Surface Water Supply Index

Basin or Region	February EOM* Gunnison Reservoir	April-July forecast Manti Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
San Pitch	1.0	12.5	13.5	-3.49	8	02, 13, 90, 03

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

San Pitch River - Surface Water Supply Index March

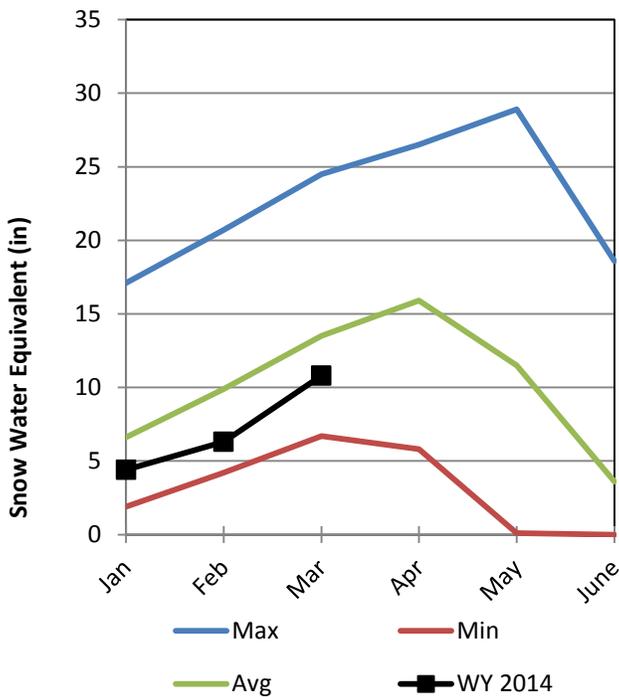


Price & San Rafael Basins

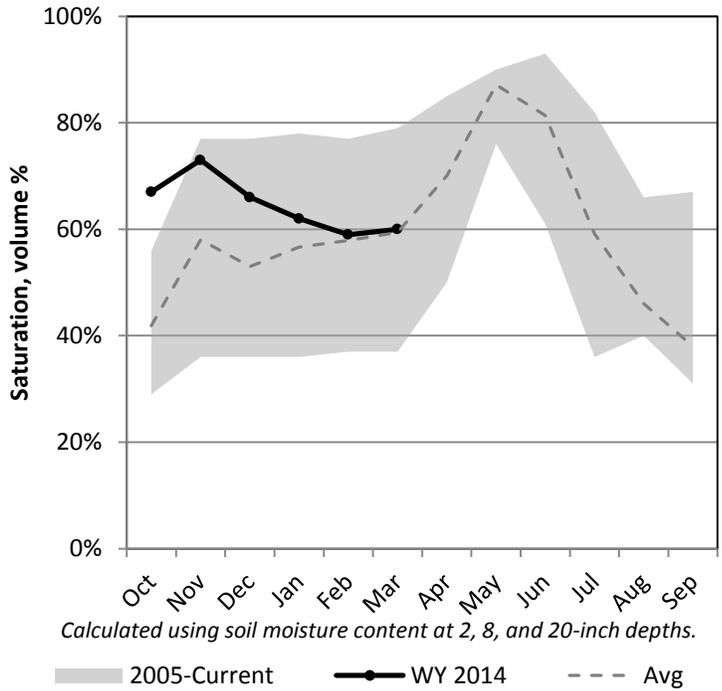
3/1/2014

Snowpack in the Price & San Rafael Basins is below average at 84% of normal, compared to 81% last year. Precipitation in February was much above average at 147%, which brings the seasonal accumulation (Oct-Feb) to 92% of average. Soil moisture is at 60% compared to 37% last year. Reservoir storage is at 43% of capacity, compared to 48% last year. Forecast streamflow volumes range from 65% to 108% of average. The surface water supply index is 15% for the Price River, 33% for Joe's Valley, 47% for Ferron Creek.

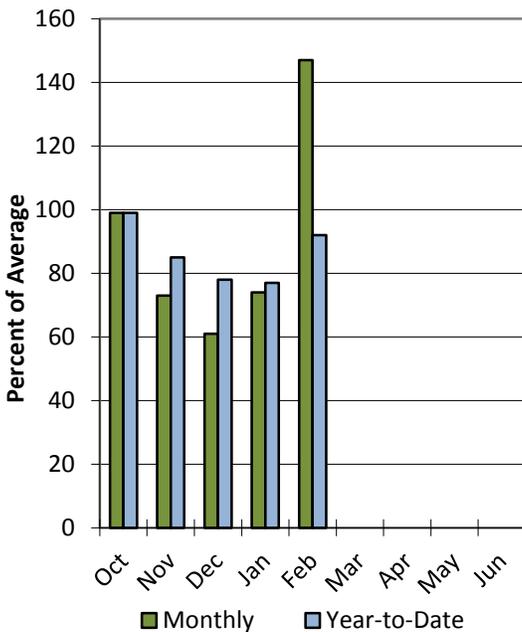
Snowpack



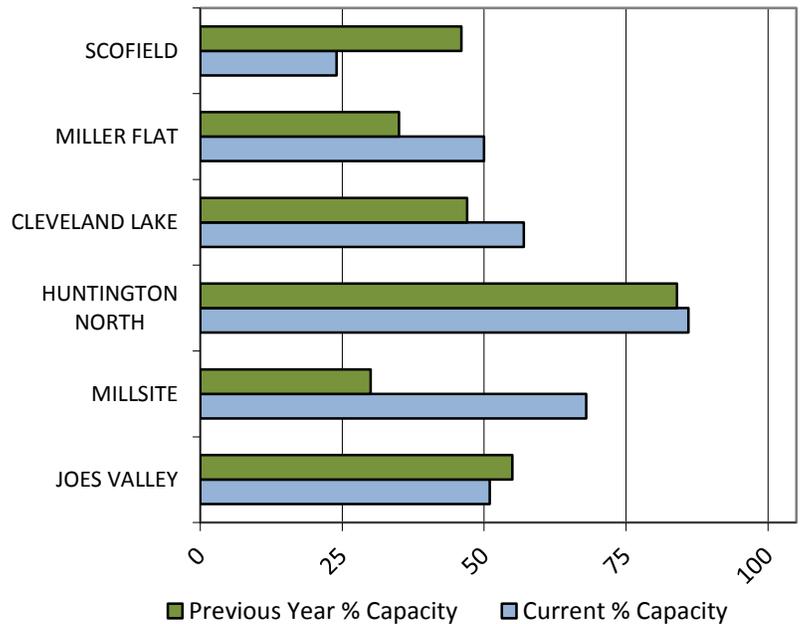
Soil Moisture



Precipitation



Reservoir Storage



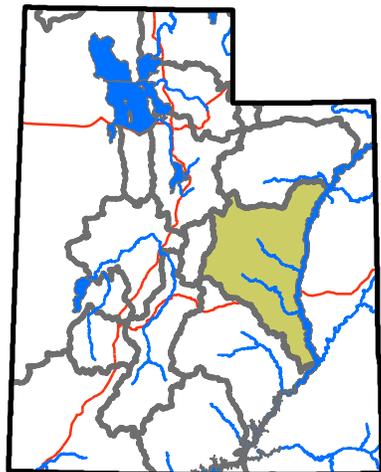
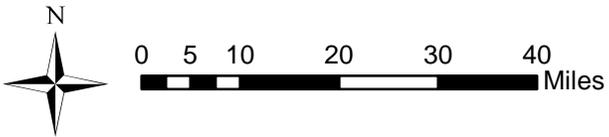
Price-San Rafael basin



Percent normal

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

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



Price San Rafael Streamflow Forecasts - March 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	14.2	19.9	24	80%	29	37	30
Price R nr Scofield Reservoir ²	APR-JUL	14.6	23	30	73%	38	51	41
White R bl Tabbyune Creek	APR-JUL	4.8	7.7	10	65%	12.6	17	15.5
Green R at Green River, UT ²	APR-JUL	2060	2710	3210	108%	3740	4610	2960
Electric Lake Inflow ²	APR-JUL	5.4	8	10	75%	12.3	16	13.3
Huntington Ck nr Huntington ²	APR-JUL	19	26	31	78%	37	46	40
Joes Valley Reservoir Inflow ²	APR-JUL	27	37	45	80%	53	66	56
Ferron Ck (Upper Station) nr Ferron	APR-JUL	19.8	25	29	76%	34	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

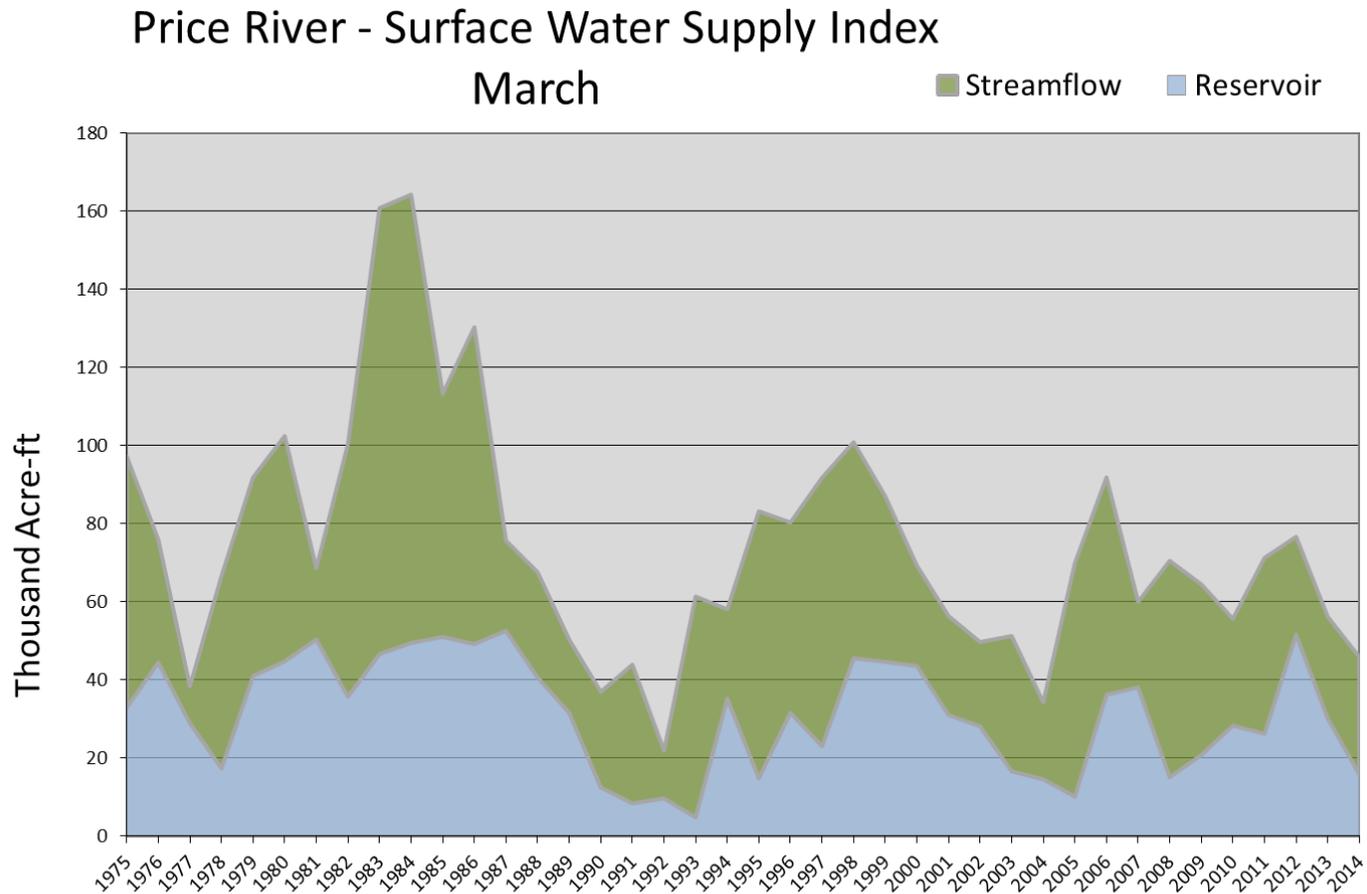
3) Median value used in place of average

Reservoir Storage End of February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
JOES VALLEY RESERVOIR	31.1	33.7	40.0	61.6
MILLSITE	11.3	5.0	10.2	16.7
HUNTINGTON NORTH RESERVOIR	3.6	3.5	3.3	4.2
CLEVELAND LAKE	3.1	2.5		5.4
MILLER FLAT RESERVOIR	2.6	1.8		5.2
SCOFIELD RESERVOIR	15.8	30.1	30.7	65.8
Basin-wide Total	67.6	76.7	84.2	158.9
# of reservoirs	6	6	4	6

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Price	6	84%	81%
San Rafael	6	84%	81%

March 1, 2014		Surface Water Supply Index				
Basin or Region	February EOM* Scofield Reservoir	April-July Forecast Scofield	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Price River	15.8	30.0	45.8	-2.95	15	92, 94, 04, 07

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



March 1, 2014

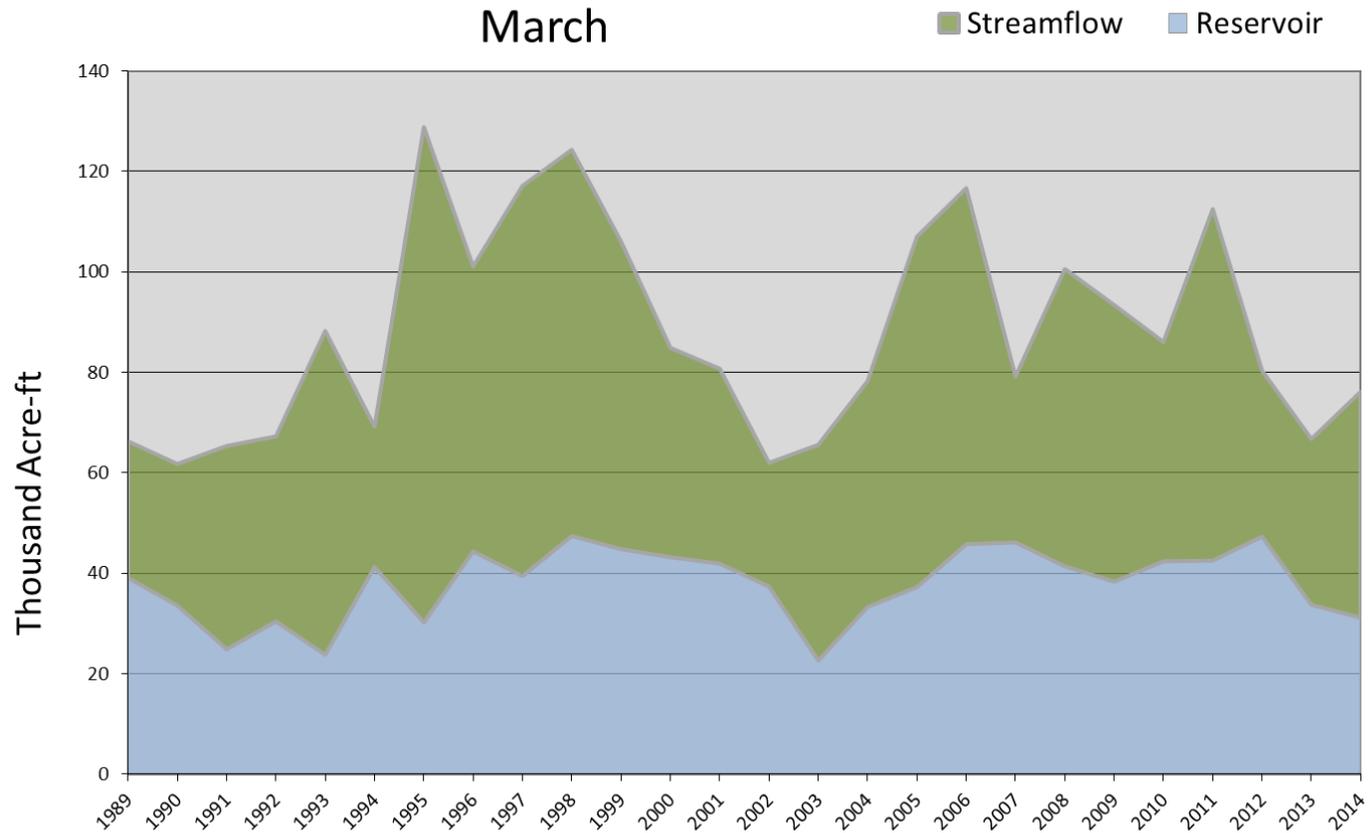
Surface Water Supply Index

Basin or Region	February EOM* Joe's Valley	April-July Forecast Inflow to Joe's Valley	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Joe's Valley	31.1	45.0	76.1	-1.39	33	92, 94, 04, 07

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

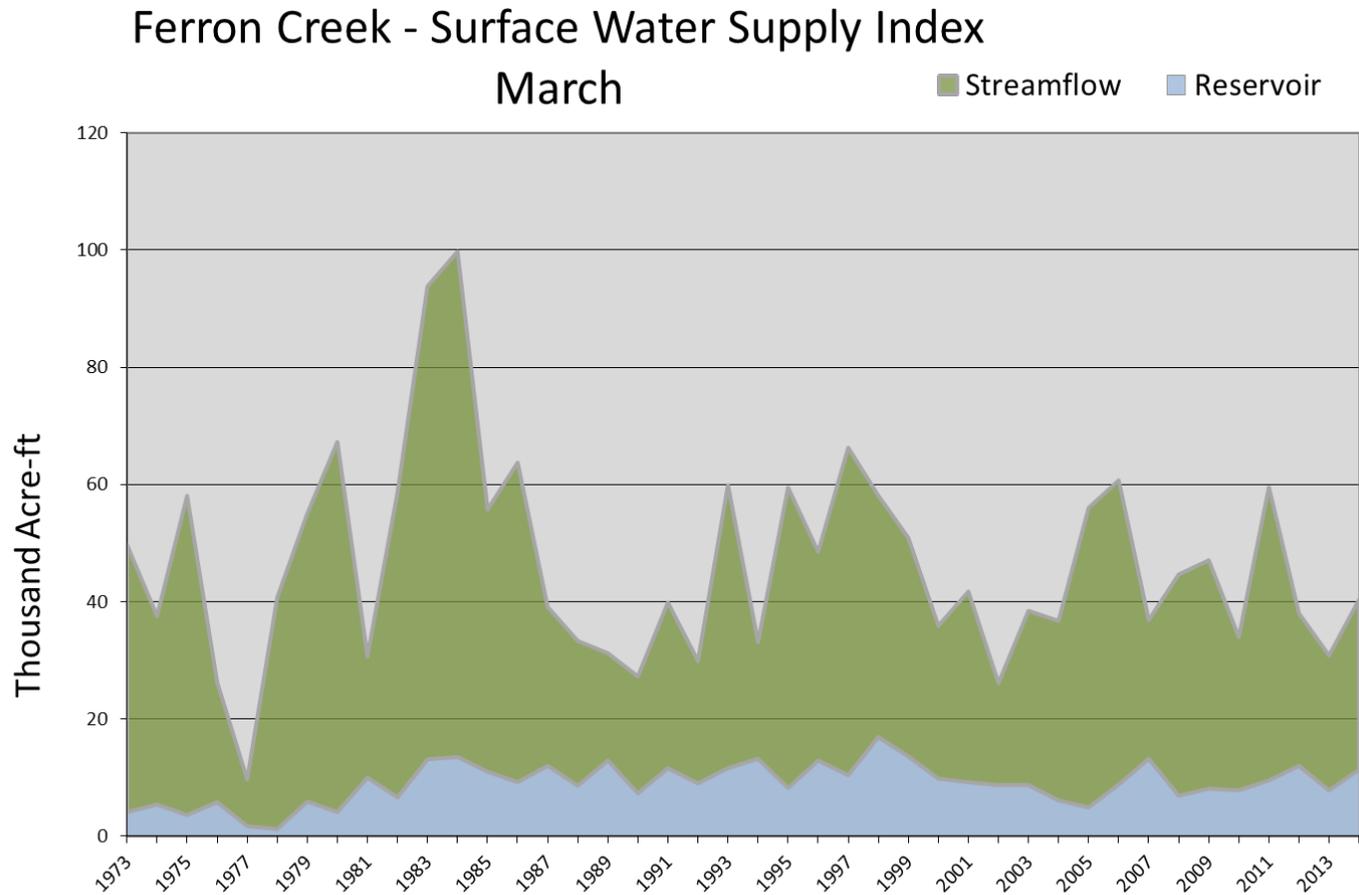
Joe's Valley - Surface Water Supply Index

March



March 1, 2014		Surface Water Supply Index				
Basin or Region	February EOM* Millsite Reservoir	April-July Forecast Ferron creek	Reservoir + Streamflow	SWSI [#]	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Ferron Creek	11.3	29.0	40.3	-0.29	47	87, 91, 78, 01

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

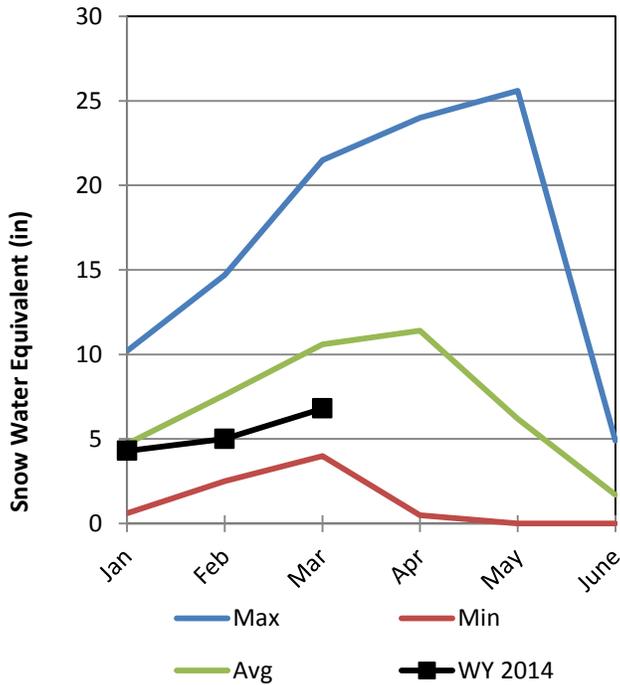


Southeastern Utah Basin

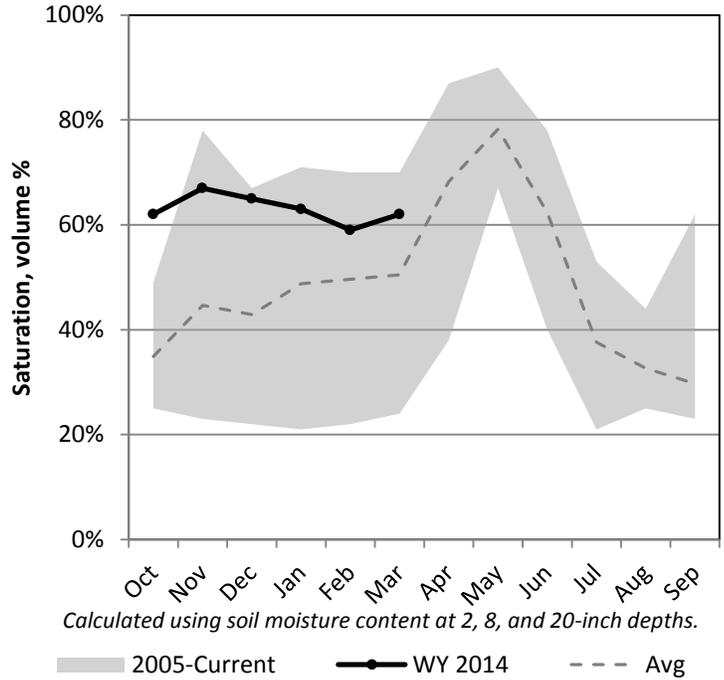
3/1/2014

Snowpack in the Southeastern Utah Basin is below average at 72% of normal, compared to 88% last year. Precipitation in February was much below average at 50%, which brings the seasonal accumulation (Oct-Feb) to 69% of average. Soil moisture is at 62% compared to 24% last year. Reservoir storage is at 49% of capacity, compared to 15% last year. Forecast streamflow volumes range from 21% to 113% of average. The surface water supply index is 36% for Moab.

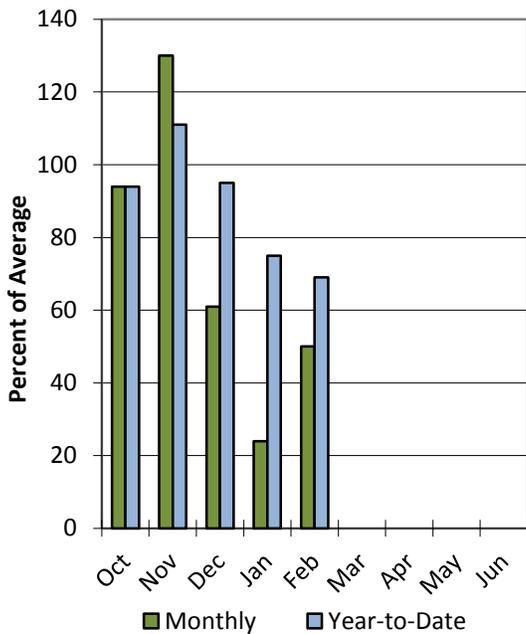
Snowpack



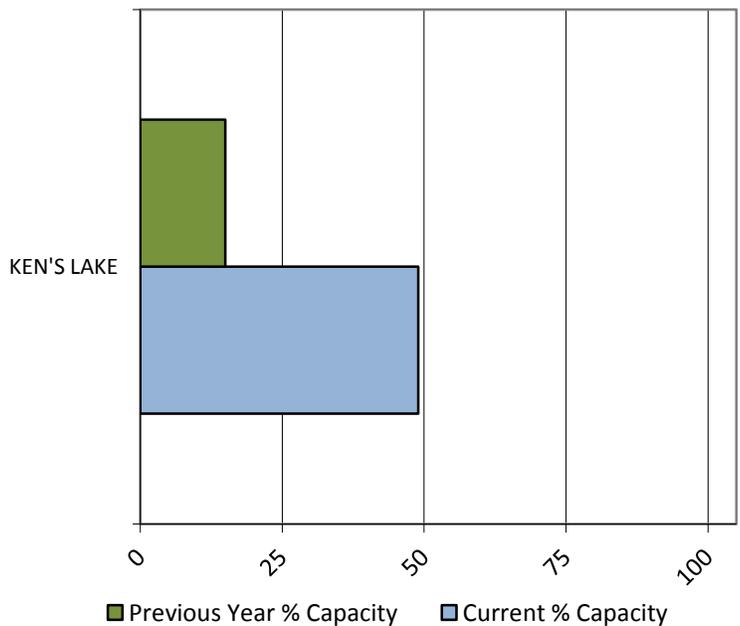
Soil Moisture



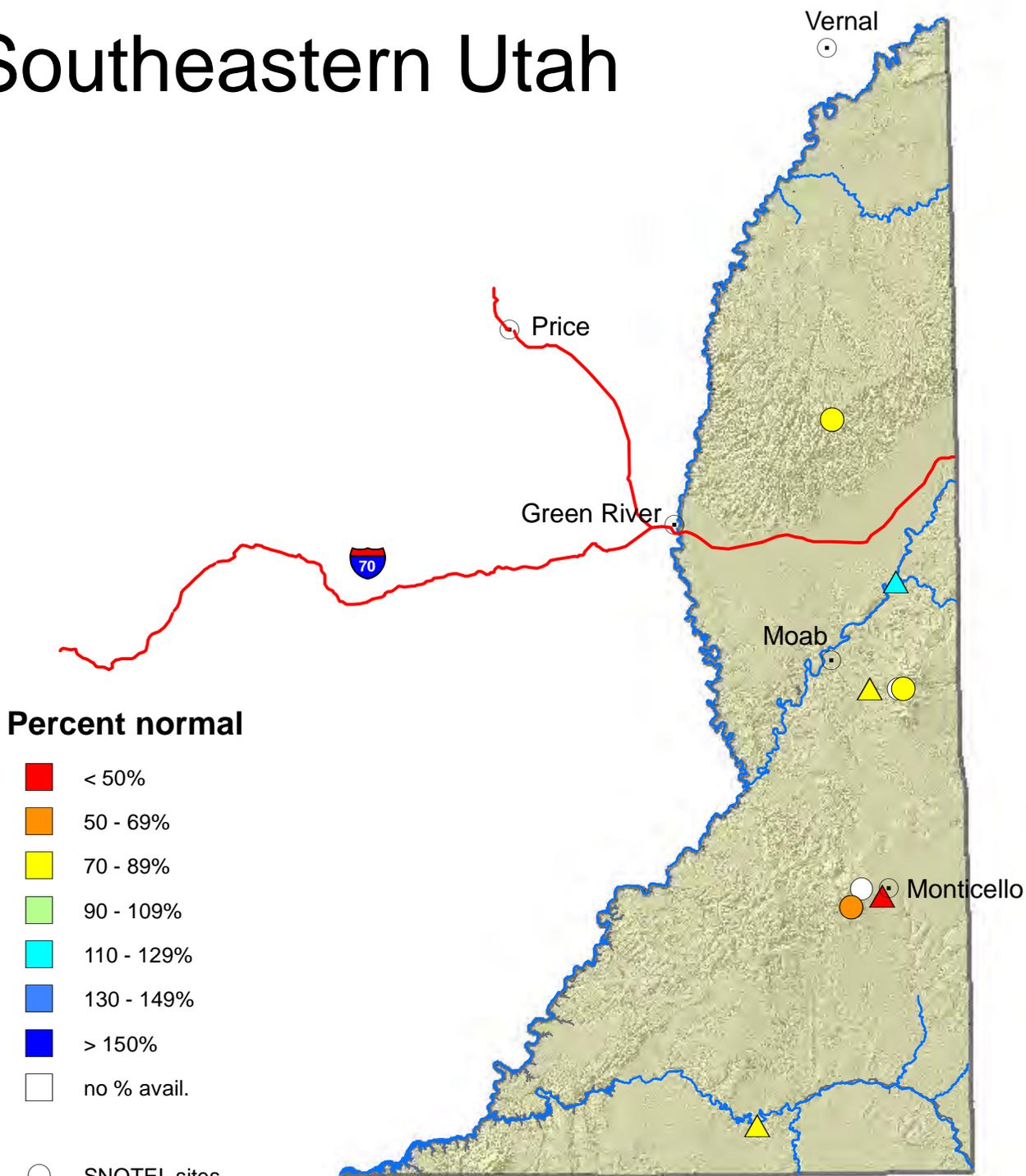
Precipitation



Reservoir Storage



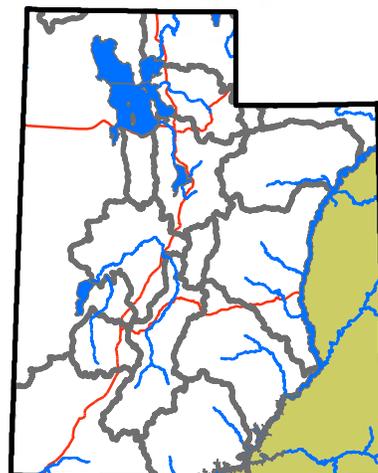
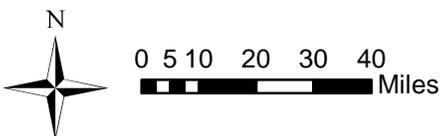
Southeastern Utah



Percent normal

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

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



Southeastern Utah Streamflow Forecasts - March 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	1.55	2.4	3	70%	3.8	5	4.3
South Ck ab Lloyds Reservoir nr Monticello	MAR-JUL	0.03	0.12	0.23	21%	0.38	0.73	1.09
Colorado R nr Cisco ²	APR-JUL	3460	4250	4840	113%	5460	6440	4280
San Juan R near Bluff ²	APR-JUL	580	780	935	85%	1100	1380	1100

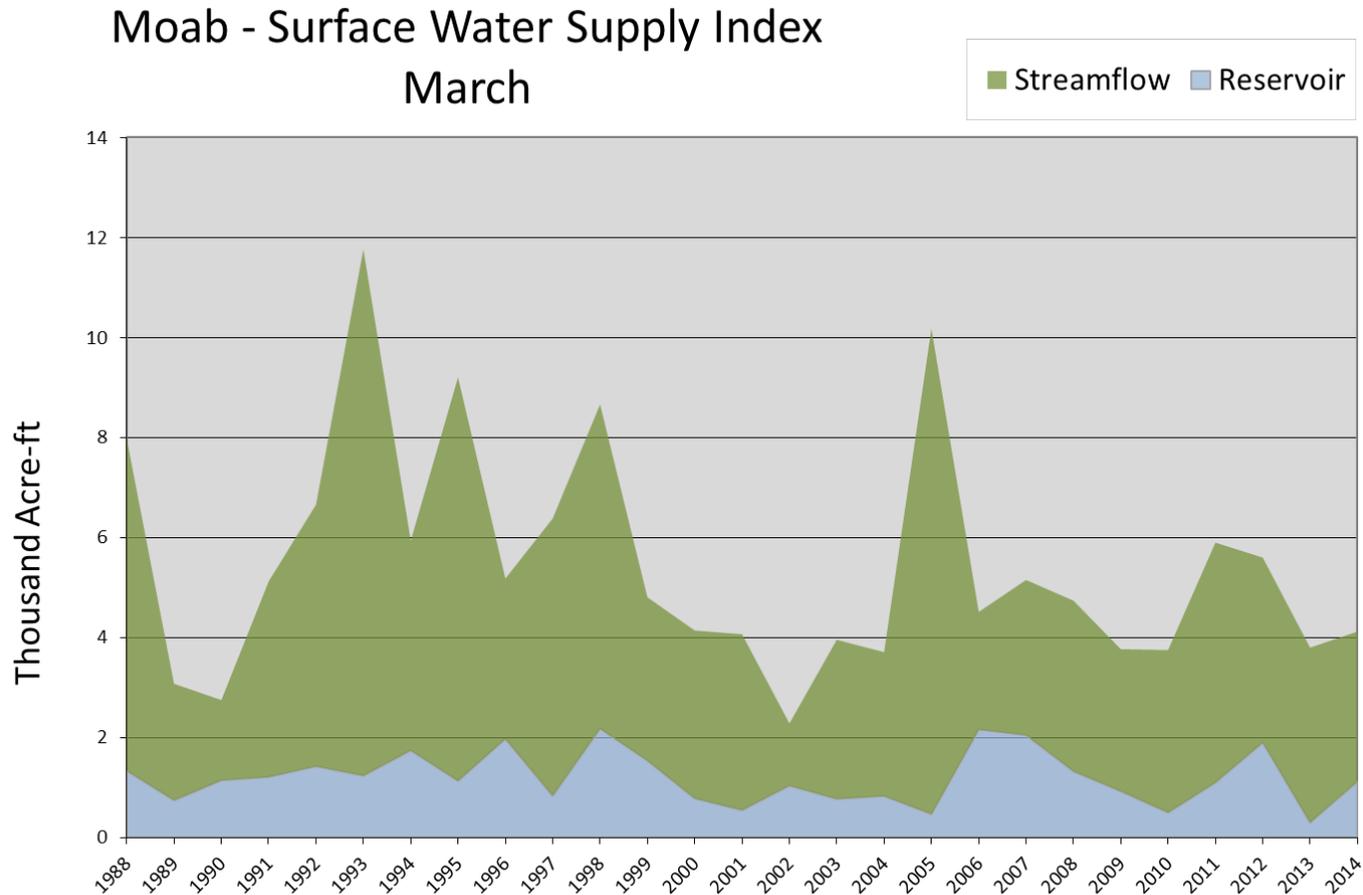
- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
KEN'S LAKE	1.1	0.3	1.3	2.3
Basin-wide Total	1.1	0.4	1.3	2.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Lasal Mtns	2	75%	104%
Lower San Juan	2	65%	72%
Lower Green	2	75%	81%

March 1, 2014		Surface Water Supply Index				
Basin or Region	February EOM* Ken's Lake Reservoir	April-July Forecast Mill Creek at Sheley	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Moab	1.1	3.0	4.1	-1.19	36	03, 01, 00, 06

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

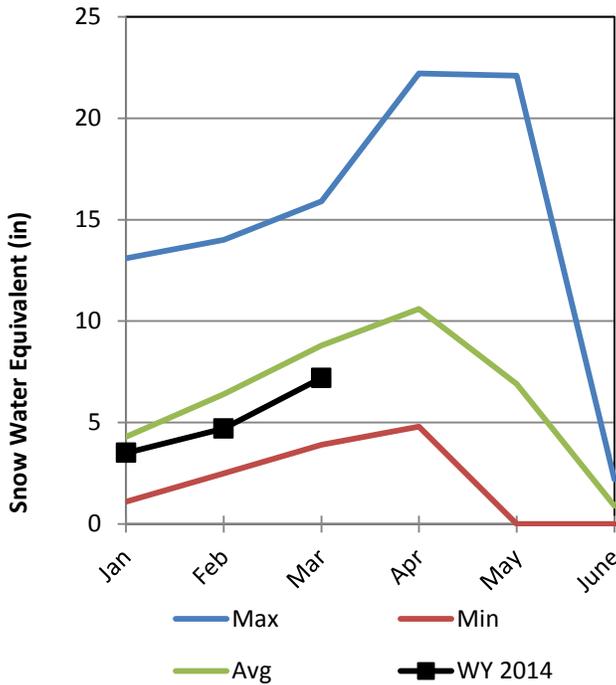


Dirty Devil Basin

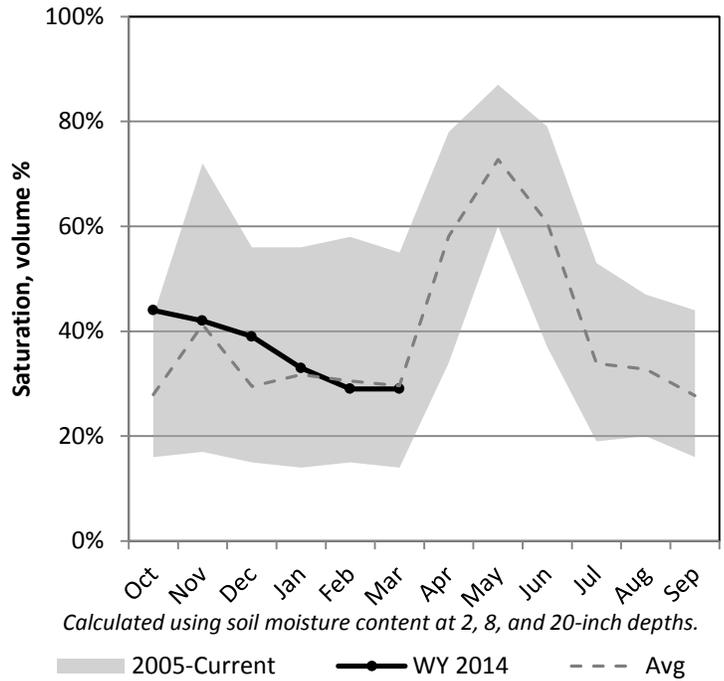
3/1/2014

Snowpack in the Dirty Devil Basin is near average at 97% of normal, compared to 90% last year. Precipitation in February was near average at 103%, which brings the seasonal accumulation (Oct-Feb) to 90% of average. Soil moisture is at 29% compared to 15% last year. Forecast streamflow volumes range from 75% to 81% of average.

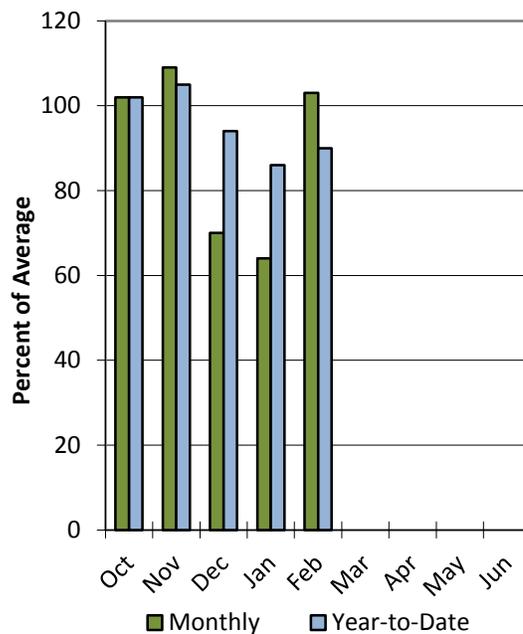
Snowpack



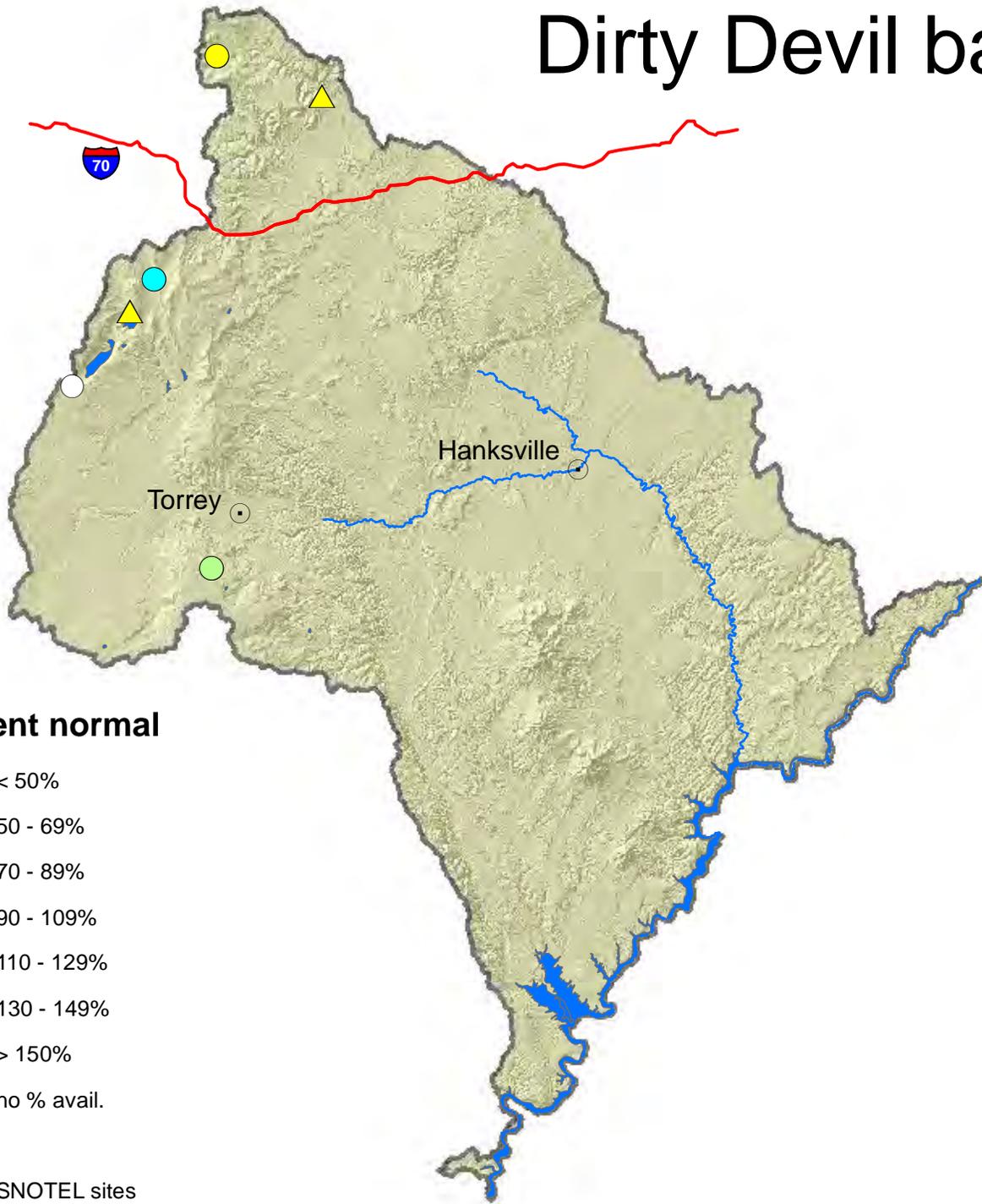
Soil Moisture



Precipitation



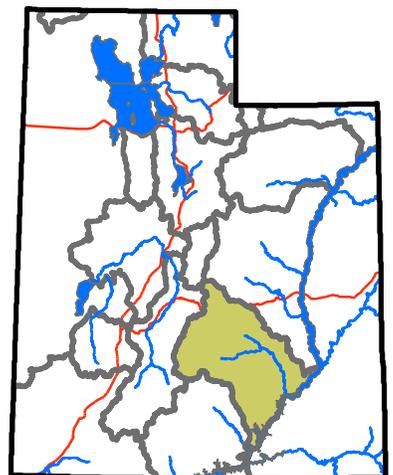
Dirty Devil basin



Percent normal

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

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



Dirty Devil
Streamflow Forecasts - March 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	8.3	12.1	15	75%	18.3	24	19.9
Seven Mile Ck nr Fish Lake	APR-JUL	3.1	4.7	5.9	81%	7.2	9.5	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

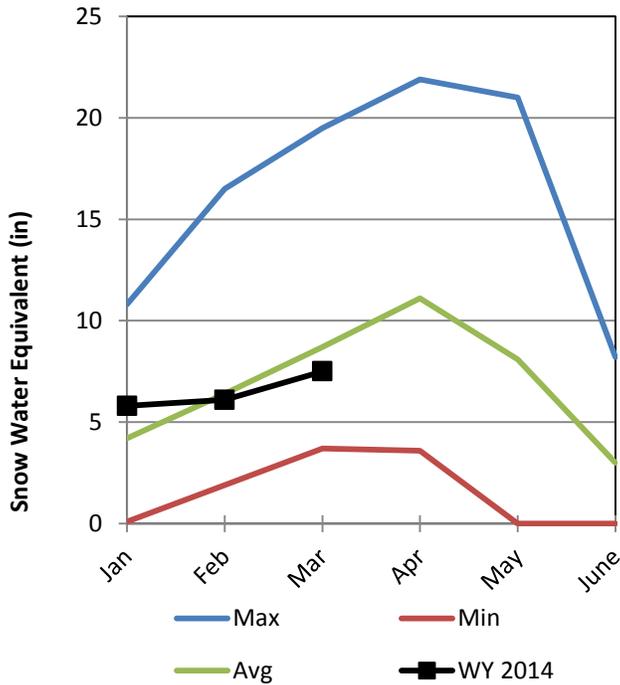
Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Muddy	3	89%	92%
Fremont	4	89%	90%

Escalante River Basin

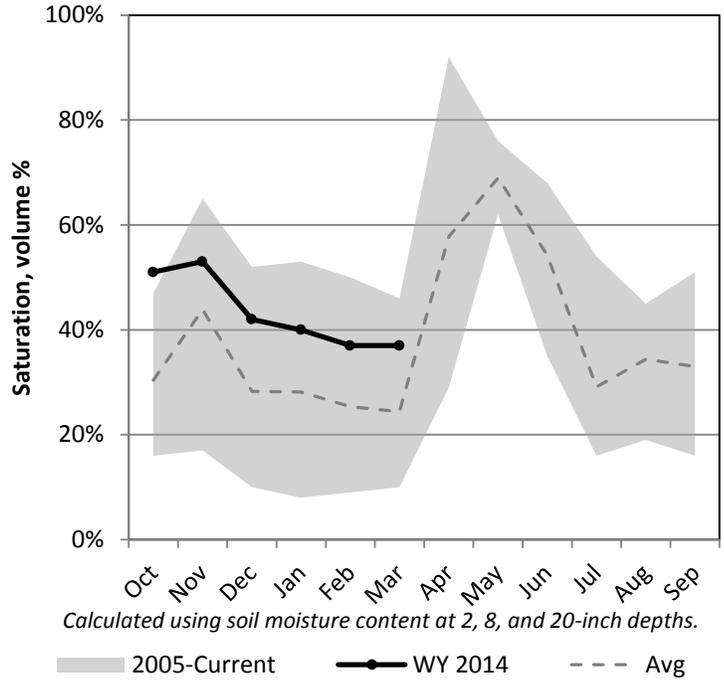
3/1/2014

Snowpack in the Escalante River Basin is below average at 89% of normal, compared to 82% last year. Precipitation in February was much below average at 56%, which brings the seasonal accumulation (Oct-Feb) to 83% of average. Soil moisture is at 37% compared to 19% last year. The forecast streamflow volume for Pine Creek is 83% of average.

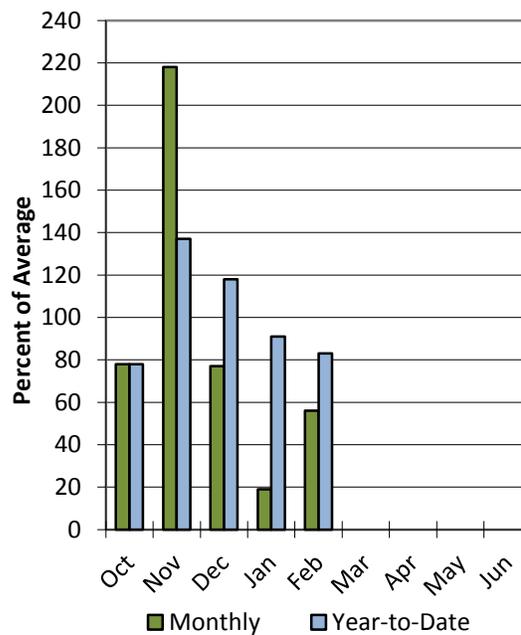
Snowpack



Soil Moisture



Precipitation

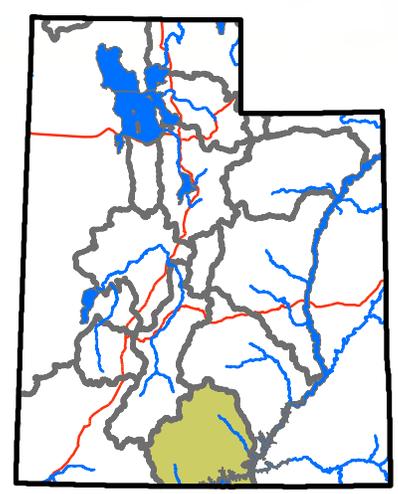


Escalante basin



Percent normal

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



Escalante River Streamflow Forecasts - March 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	0.71	1.42	2	83%	2.8	4	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

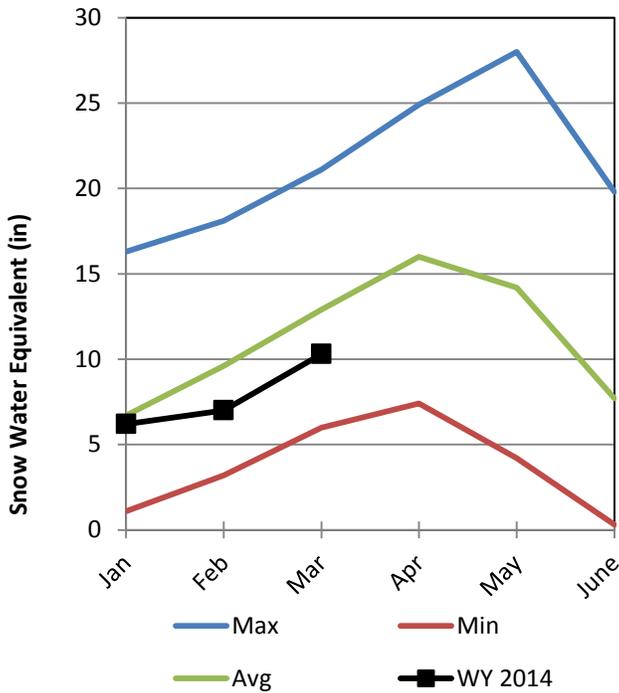
Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Escalante	3	89%	82%
Paria	3	68%	86%

Beaver River Basin

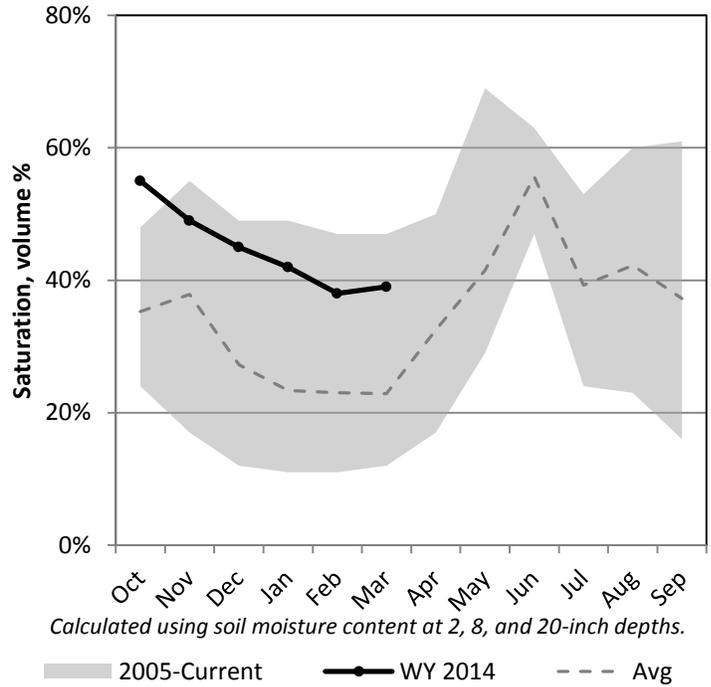
3/1/2014

Snowpack in the Beaver River Basin is below average at 84% of normal, compared to 93% last year. Precipitation in February was near average at 97%, which brings the seasonal accumulation (Oct-Feb) to 83% of average. Soil moisture is at 39% compared to 33% last year. Reservoir storage is at 51% of capacity, compared to 54% last year. The forecast streamflow volume for the Beaver River is 81% of average. The surface water supply index is 43% for the Beaver River.

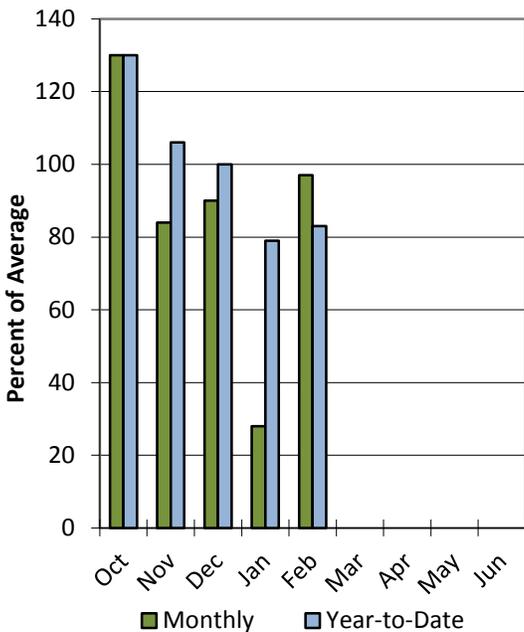
Snowpack



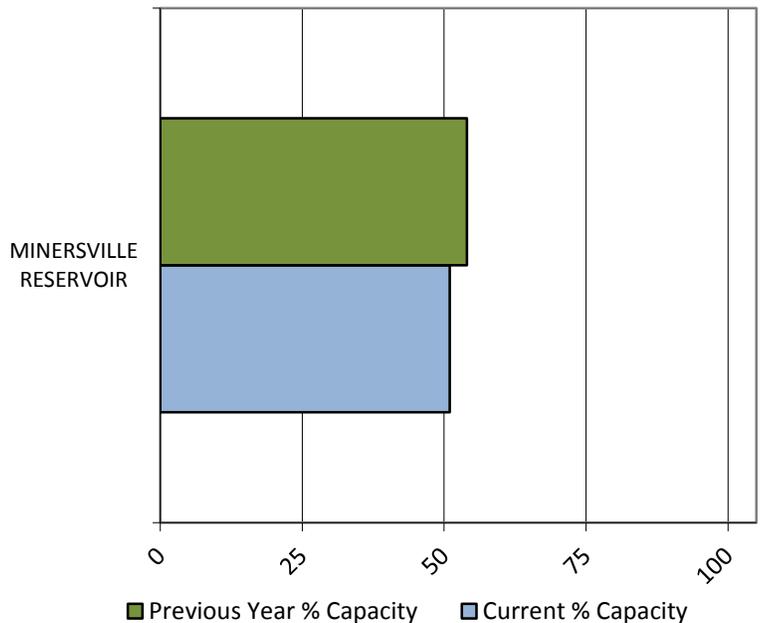
Soil Moisture



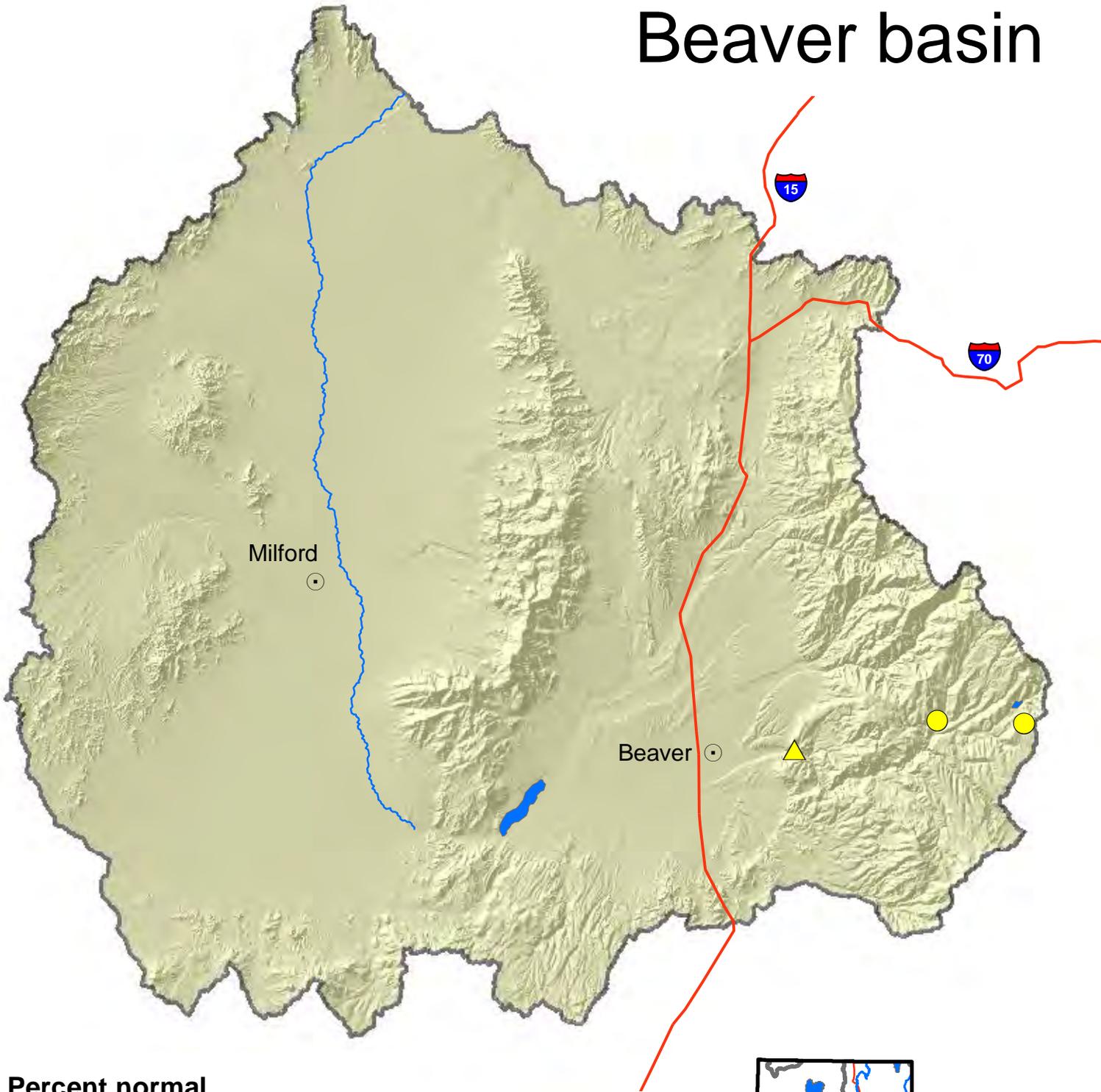
Precipitation



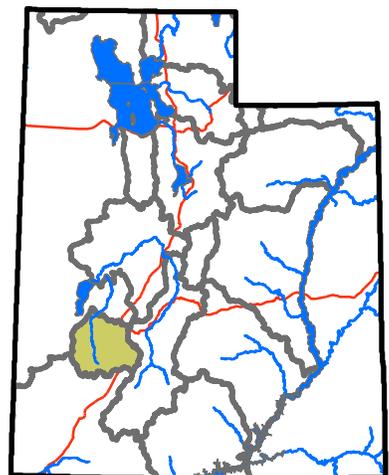
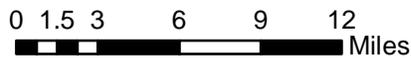
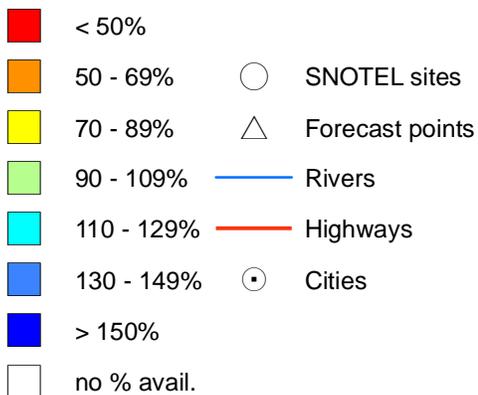
Reservoir Storage



Beaver basin



Percent normal



Beaver River Streamflow Forecasts - March 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	6.5	15.1	21	81%	27	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 February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
MINERSVILLE RESERVOIR	11.8	12.5	15.1	23.3
Basin-wide Total	11.8	12.5	15.1	23.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Beaver	2	84%	93%

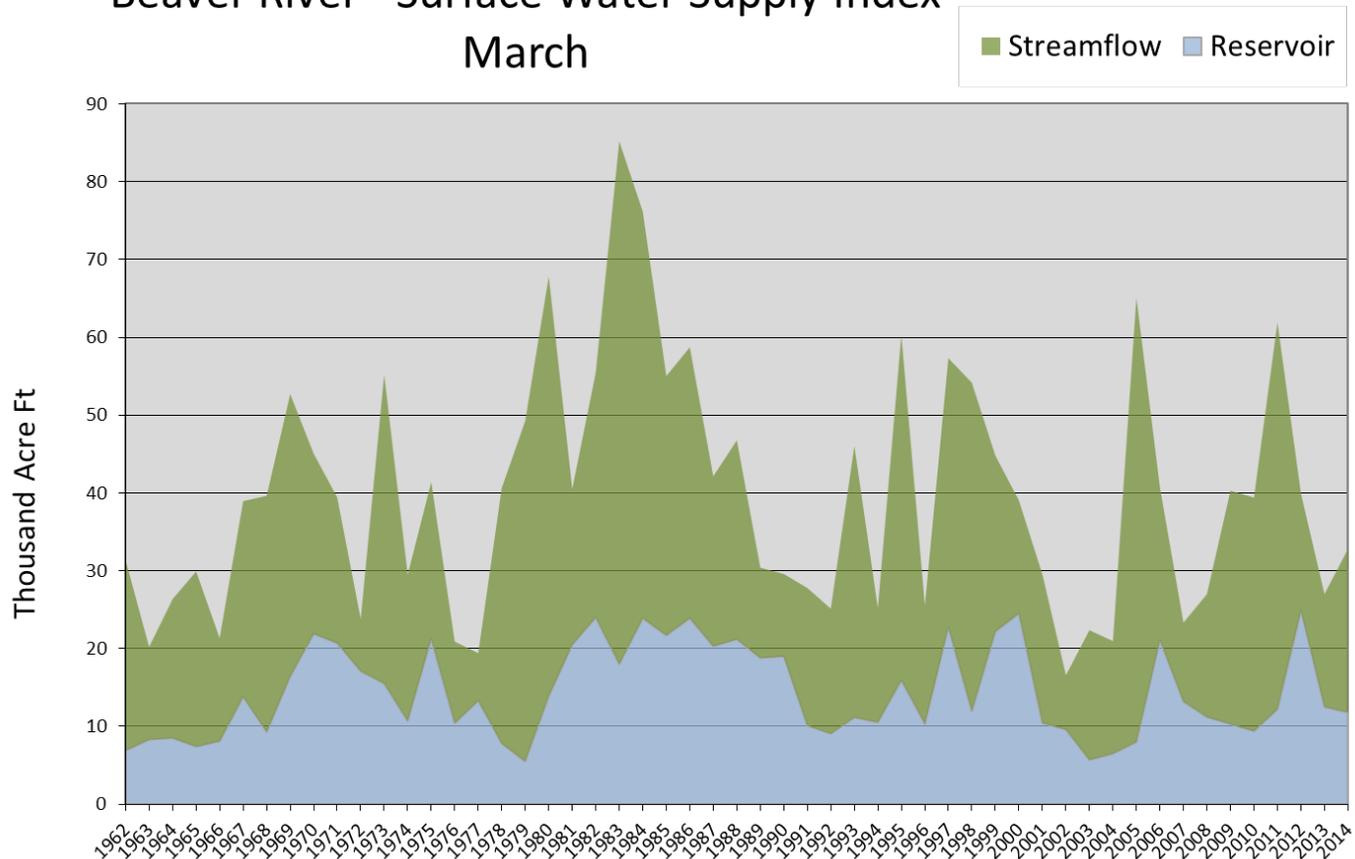
March 1, 2014

Beaver Surface Water Supply Index

Basin or Region	February EOM* Minersville Reservoir	April-July forecast Beaver River at Beaver	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Beaver	11.8	21.0	32.8	-0.62	43	89, 62, 67, 00

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

Beaver River - Surface Water Supply Index
March

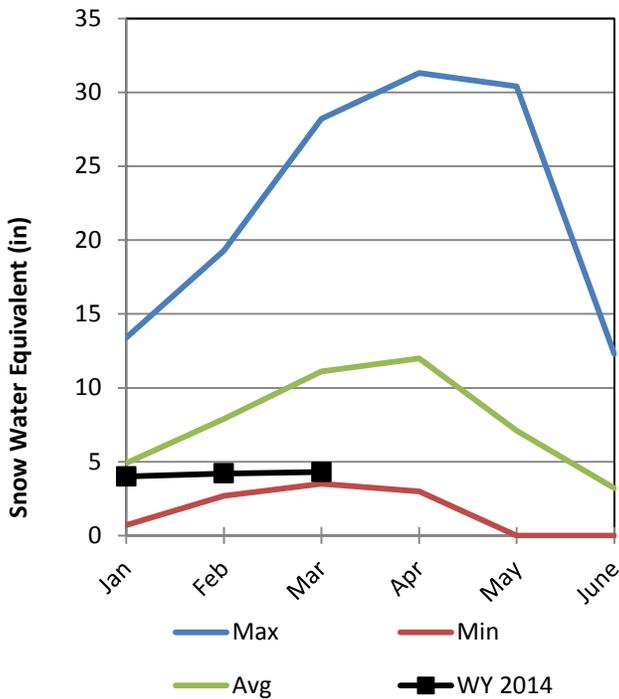


Southwestern Utah Basin

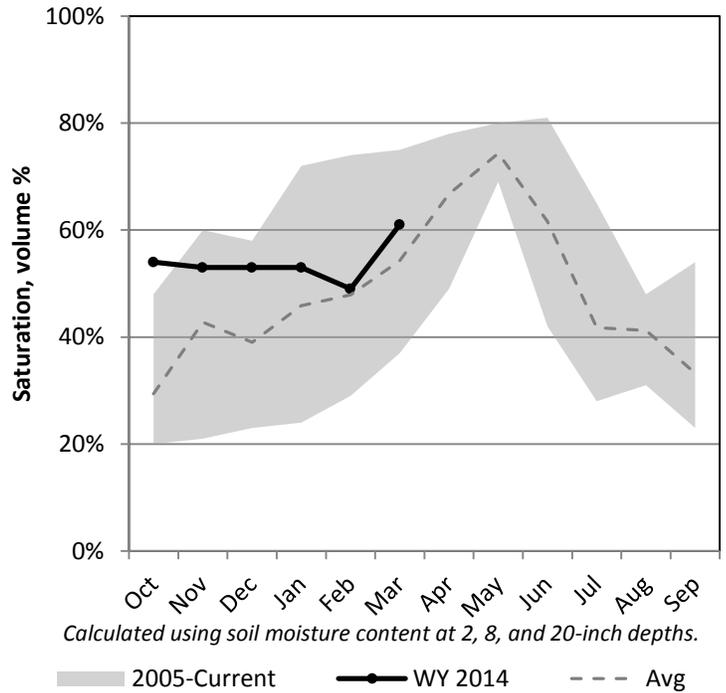
3/1/2014

Snowpack in the Southwestern Utah Basin is much below average at 46% of normal, compared to 86% last year. Precipitation in February was much below average at 46%, which brings the seasonal accumulation (Oct-Feb) to 55% of average. Soil moisture is at 61% compared to 48% last year. Reservoir storage is at 40% of capacity, compared to 49% last year. Forecast streamflow volumes range from 24% to 109% of average. The surface water supply index is 14% for the Virgin River.

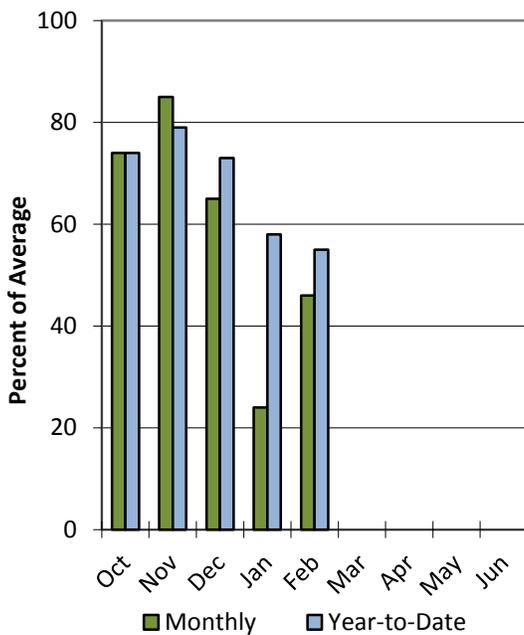
Snowpack



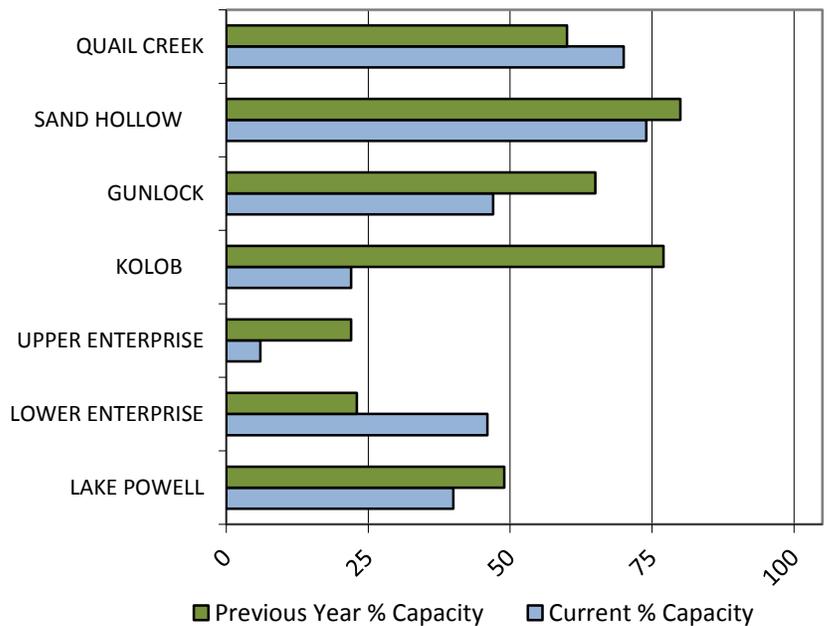
Soil Moisture



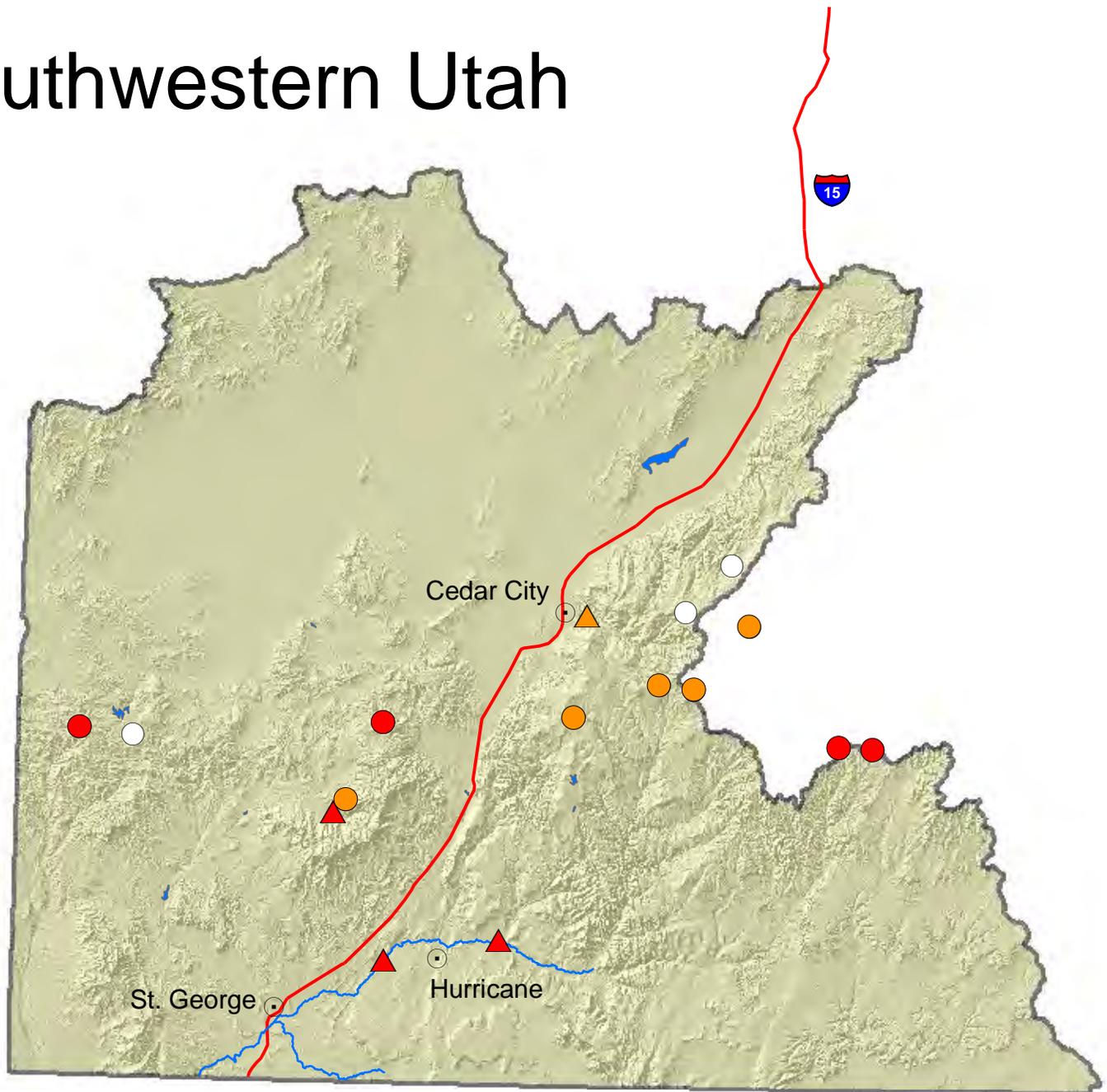
Precipitation



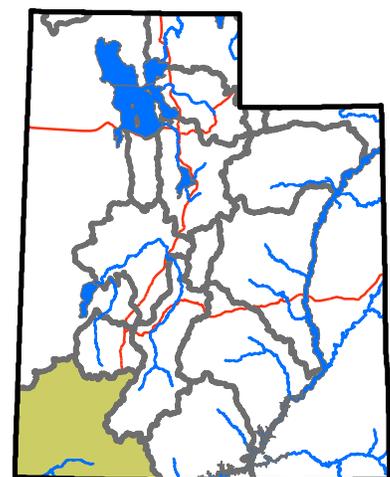
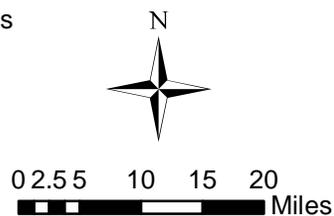
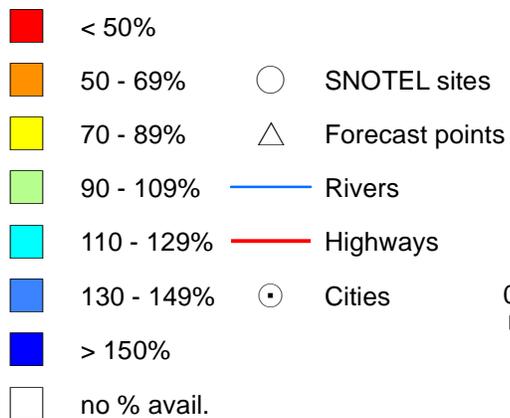
Reservoir Storage



Southwestern Utah



Percent normal



Southwestern Utah Streamflow Forecasts - March 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 ²	APR-JUL	5000	6590	7800	109%	9110	11200	7160
Virgin R nr Hurricane	APR-JUL	6.6	7.7	15.4	24%	26	46	63
Virgin R at Virgin	APR-JUL	15.9	16	23	40%	32	48	58
Santa Clara R nr Pine Valley	APR-JUL	0.21	0.86	1.54	31%	2.4	4.1	5
Coal Ck nr Cedar City	APR-JUL	0.99	6.2	9.8	53%	13.4	18.6	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 February, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
LAKE POWELL	9675.0	11891.0	17055.0	24322.0
LOWER ENTERPRISE	1.2	0.6	1.0	2.6
UPPER ENTERPRISE	0.6	2.2	3.9	10.0
KOLOB RESERVOIR	1.2	4.3		5.6
GUNLOCK	4.9	6.8	6.7	10.4
SAND HOLLOW RESERVOIR	37.0	40.1		50.0
QUAIL CREEK	28.1	24.2	30.0	40.0
Basin-wide Total	9748.0	11969.2	17096.6	24440.6
# of reservoirs	7	7	5	7

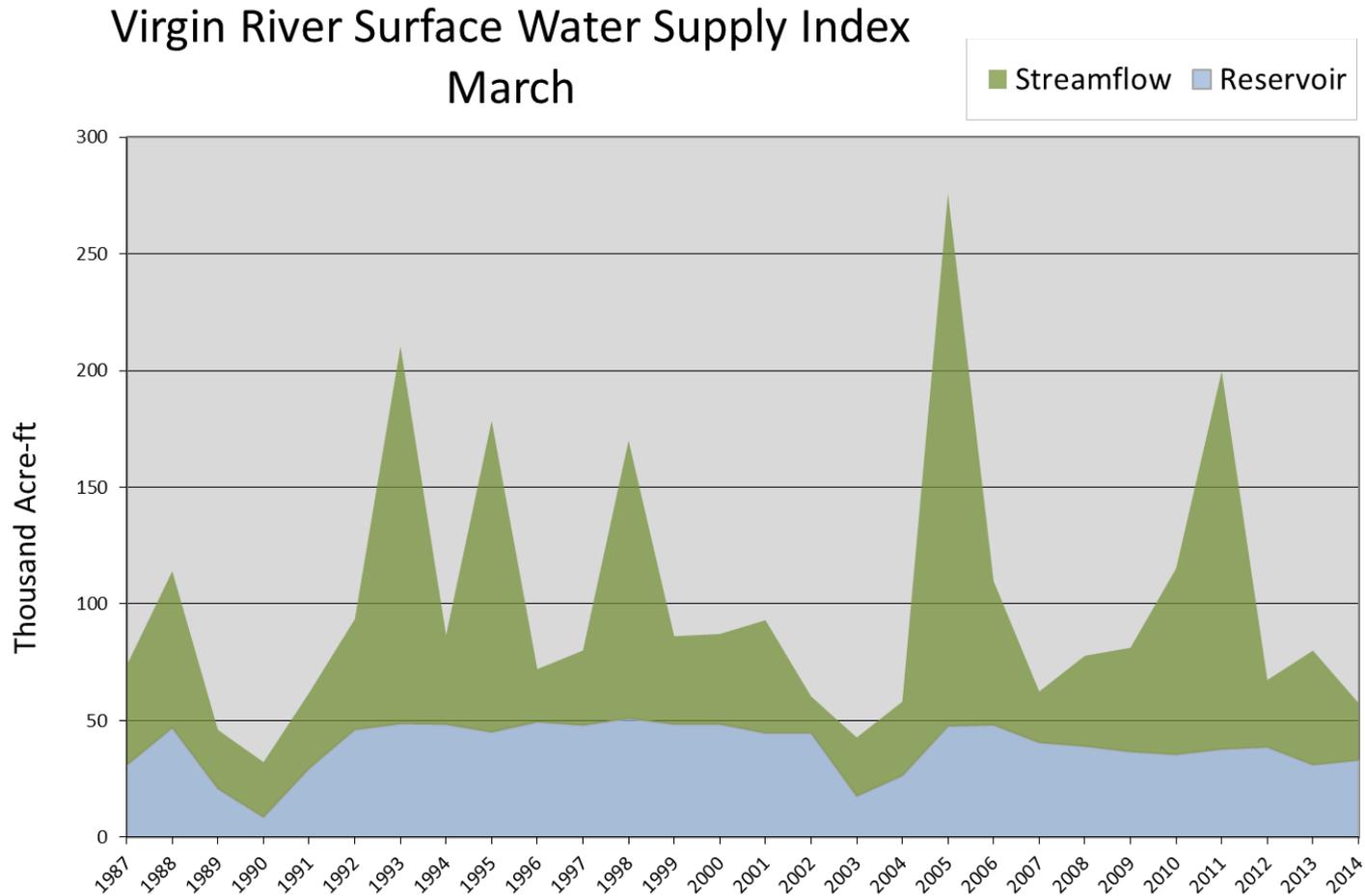
Watershed Snowpack Analysis March 1, 2014	# of Sites	% Median	Last Year % Median
Upper Virgin	8	43%	85%
Lower Virgin	2	1%	64%
Cedar City Parowan	8	65%	94%

March 1, 2014

Surface Water Supply Index

Basin or Region	February 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		%	
Virgin River	33.0	25	58	-3.02	14	03, 89, 04, 02

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



3/1/2014

Surface Water Supply Index

Basin or Region	February EOM* Reservoirs	April-July Stream Forecast	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Bear River	559	100	659	1.55	69	10, 90, 89, 96
Woodruff Narrows	16.6	105	121.6	-0.91	39	78, 81, 00, 07
Little Bear	10.9	32	42.9	-0.18	48	94, 10, 08, 93
Ogden River	43.1	80	123.1	-1.10	37	08, 89, 02, 10
Weber River	182	270	452	-1.27	35	87, 00, 94, 81
Provo	273	104	377	-3.24	11	03, 02, 13, 92
West Uintah Basin	164	171	335	0.65	58	87, 72, 93, 85
East Uintah Basin	23.0	47	70.0	-3.21	11	13, 89, 90, 04
Blacks Fork	14.4	90	104.4	0.54	57	09, 96, 10, 08
Smiths Fork	7.1	28	35.1	3.06	87	10, 01, 11
Price River	15.8	30	45.8	-2.95	15	92, 94, 04, 07
Joe's Valley	31.1	45	76.1	-1.39	33	92, 94, 04, 07
Ferron Creek	11.3	29	40.3	-0.29	47	87, 91, 78, 01
Moab	1.1	3	4.1	-1.19	36	03, 01, 00, 06
Upper Sevier River	91	39	130	-1.82	28	66, 91, 60, 68
San Pitch	1.0	13	14	-3.49	8	02, 13, 90, 03
Lower Sevier River	130	62	192	-0.30	46	13, 01, 09, 96
Beaver River	11.8	21	32.8	-0.62	43	89, 62, 67, 00
Virgin River	33.0	25	58	-3.02	14	03, 89, 04, 02

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

What is a Surface Water Supply Index?

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

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

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

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

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**Utah Water Supply
Outlook Report**
Natural Resources Conservation Service
Salt Lake City, UT

