



Utah Water Supply Outlook Report

April, 2014



View from Thistle Flat SNOTEL, March 26, 2014

Photo by Randy Julander, 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

April 1, 2014

SUMMARY

Northern Utah continues to get storms and southern Utah remains shut out. April 1 is the normal peak of seasonal snowpack where lower elevations have begun melting and higher elevations continue to accumulate for a few more weeks. In southern Utah, lower elevation snowpacks are long since done and gone with active melt at many of the remaining sites. Runoff volumes and peaks will be lower and earlier than normal. Northern Utah snowpacks, on the other hand, continue to increment slightly upward in response to a few storms. Snowpacks as of April 1 range from 120% on the Bear and 100% on the Weber to 46% over southwest Utah. The remainder of the state, basically from the Provo to the Sevier is in the 70% to 90% of median range. Not great but much better than last year when many areas were in the 60% to 70% range. March precipitation was below normal statewide ranging from 34% in the southwest to 122% of average on the Bear. This brings the year to date precipitation to below normal statewide at 84%. Current soil moisture saturation levels in runoff producing areas are: Bear – 67%, Weber – 66%, Provo – 70%, Uintah Basin – 60%, Duchesne – 44%, SE Utah – 75%, Sevier – 65% and SW Utah – 63% of saturation. Soil moisture values are near normal in northern Utah and moist (for this time of year) in southern Utah where snowpacks have been melting out. Reservoir storage is down 8% from last year's figures and similar to 2010 and 2011. General runoff conditions are near average in northern Utah and below to much below average in the south. Surface Water Supply Indices range from 8% for the East Uintah Basin and San Pitch to 87% for Smith's Fork. Water managers in southern Utah should prepare for early, short duration stream flow, a longer irrigation season, and low stream flow volumes with low peak flows and poor runoff efficiency.

SNOWPACK

April first snow packs as measured by the NRCS SNOTEL system range from 46% of median in the Virgin to 120% in the Bear River watersheds. There is a strong north to south gradient in snowpacks this year with the north at average or above and declining as you go farther south. Much of snowpacks in central Utah are in the 75% to 90% range.

PRECIPITATION

Mountain precipitation during March was 86% of average which brings the seasonal accumulation (Oct-Mar) 84% of normal. Precipitation ranged from 122% on the Bear to 34% on the Virgin.

SOIL MOISTURE

Soil moisture is rising rapidly in response to melting snowpacks. Last month it was very dry in southeast Utah and near average in the remainder of the state.

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 expected to be below to much below average for the central and southern portions of the state this year, and near average for the northern portion of Utah. Forecast streamflows range from 14% on the Virgin River near Hurricane to 110% on Smith's Fork near the border. Most flows are forecast to be in the 55% to 95% range.

SURFACE WATER SUPPLY INDEX

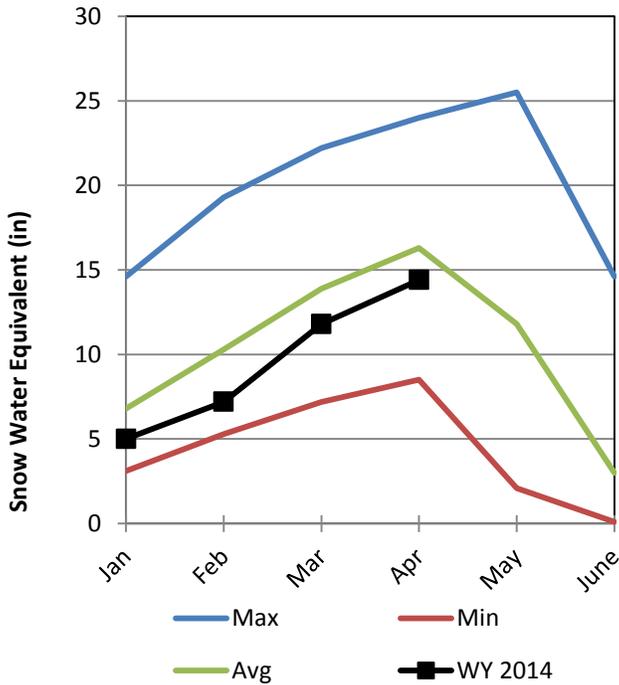
Surface Water Supply indexes range from 8% for the East Uintah Basin and San Pitch to 87% for Smith's Fork.

Statewide Utah

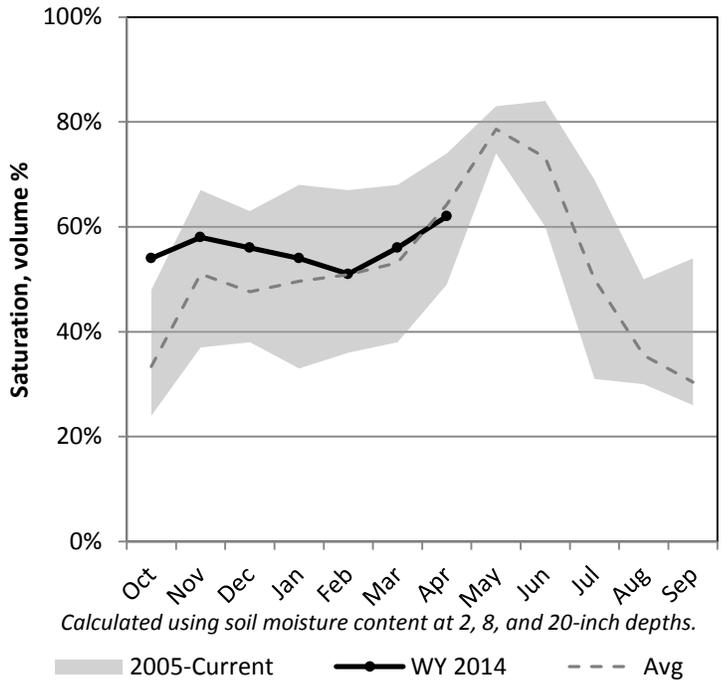
4/1/2014

Snowpack in Utah is near average at 91% of normal, compared to 66% last year. Precipitation in March was below average at 86%, which brings the seasonal accumulation (Oct-Mar) to 84% of average. Soil moisture is at 62% compared to 64% last year. Reservoir storage is at 48% of capacity, compared to 56% last year. Forecast streamflow volumes range from 13% to 148% of average.

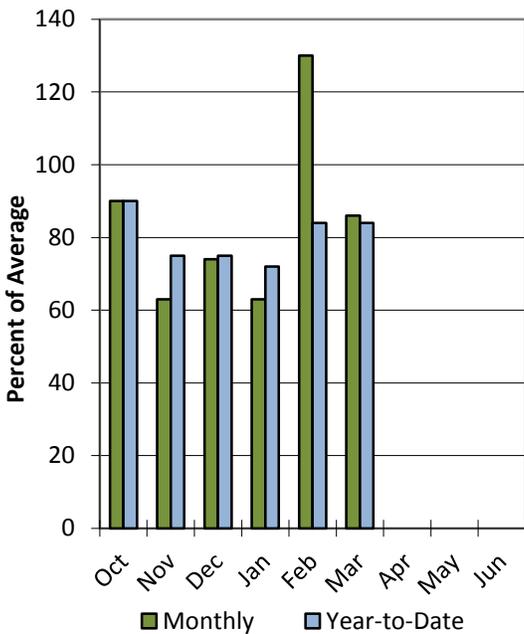
Snowpack



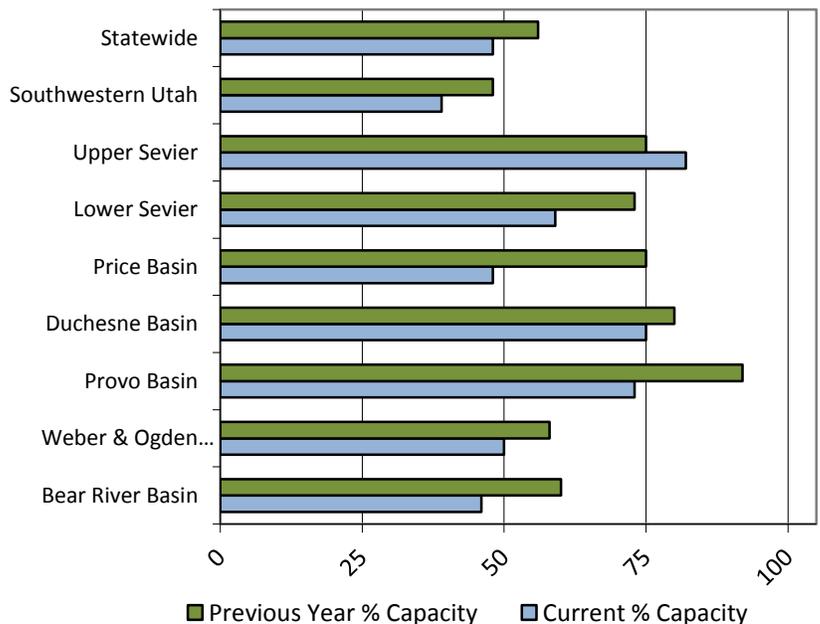
Soil Moisture



Precipitation



Reservoir Storage

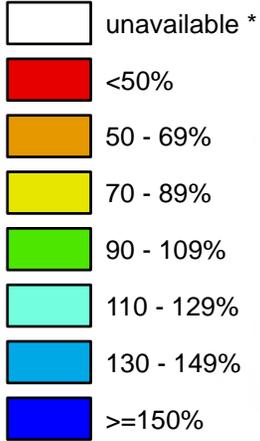


Utah

SNOTEL Current Snow Water Equivalent (SWE) % of Normal

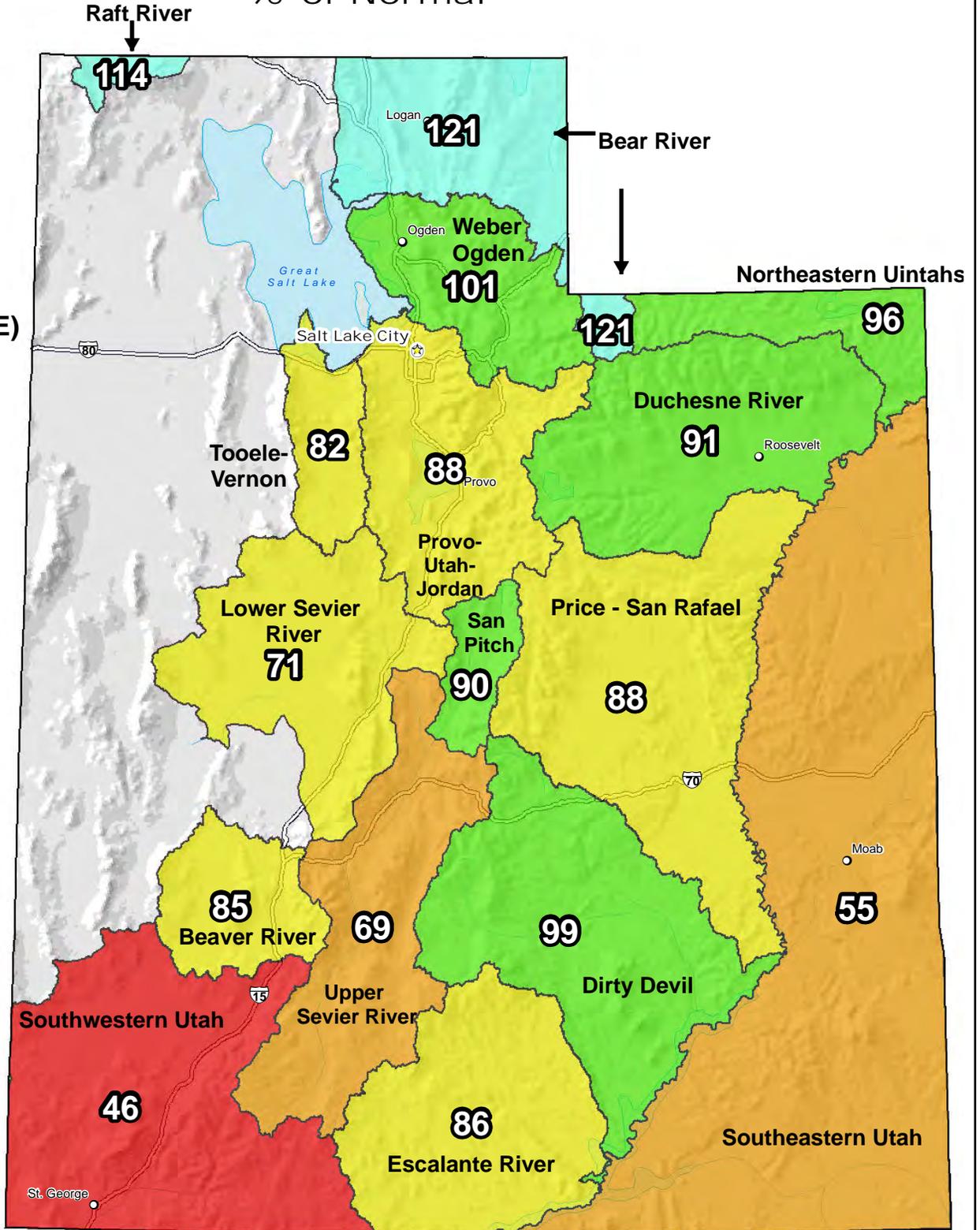
Apr 01, 2014

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

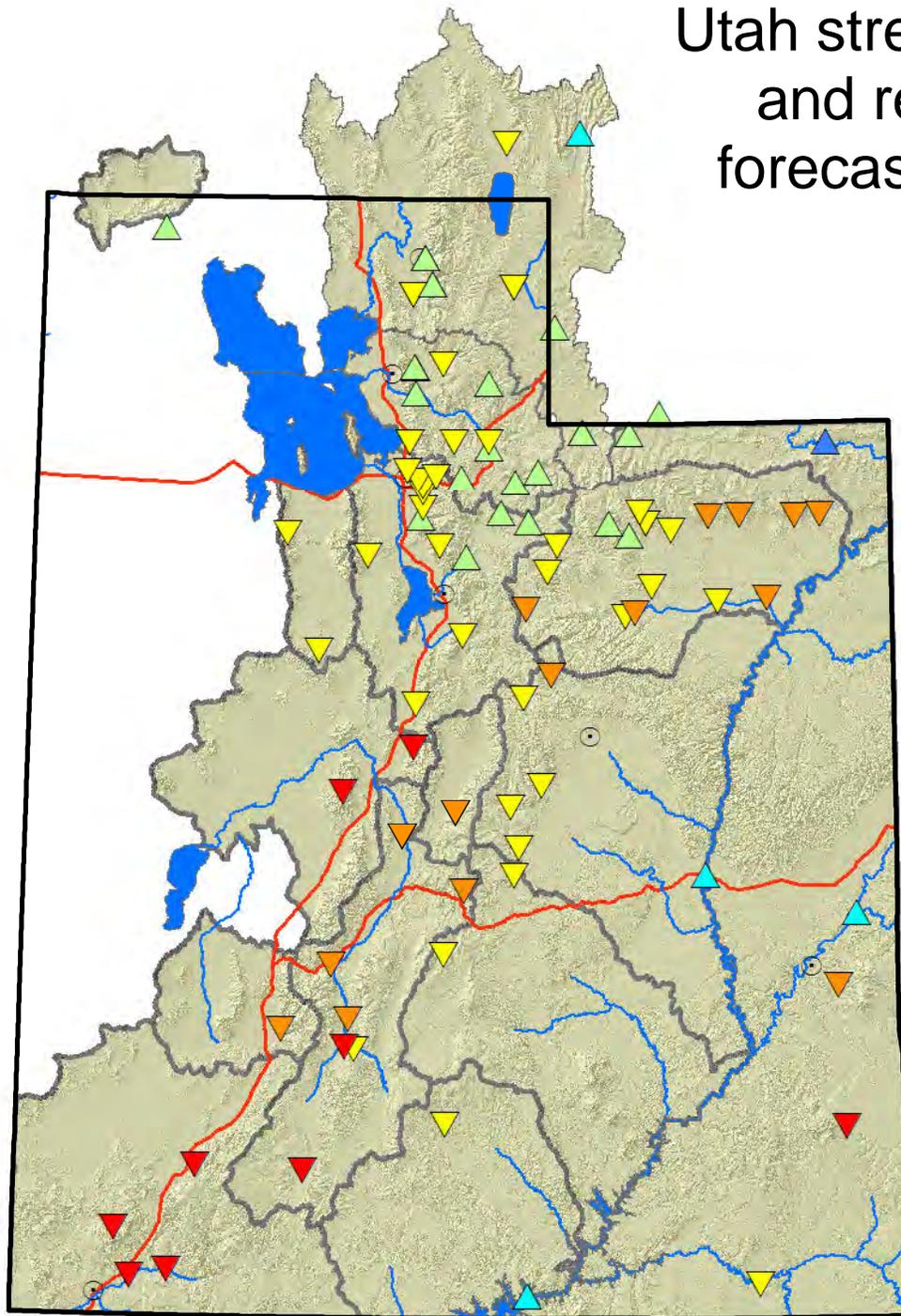
**Provisional Data
Subject to Revision**



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).

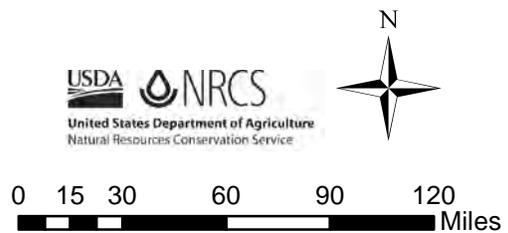
Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>
Science contact: Jim.Marron@por.usda.gov 503 414 3047

Utah streamflow and reservoir forecast points



Percent normal

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

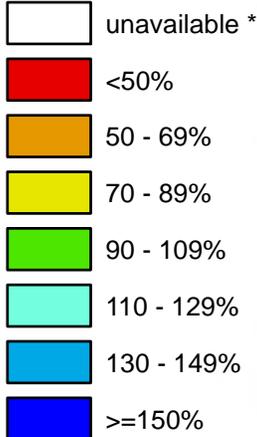


Utah

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

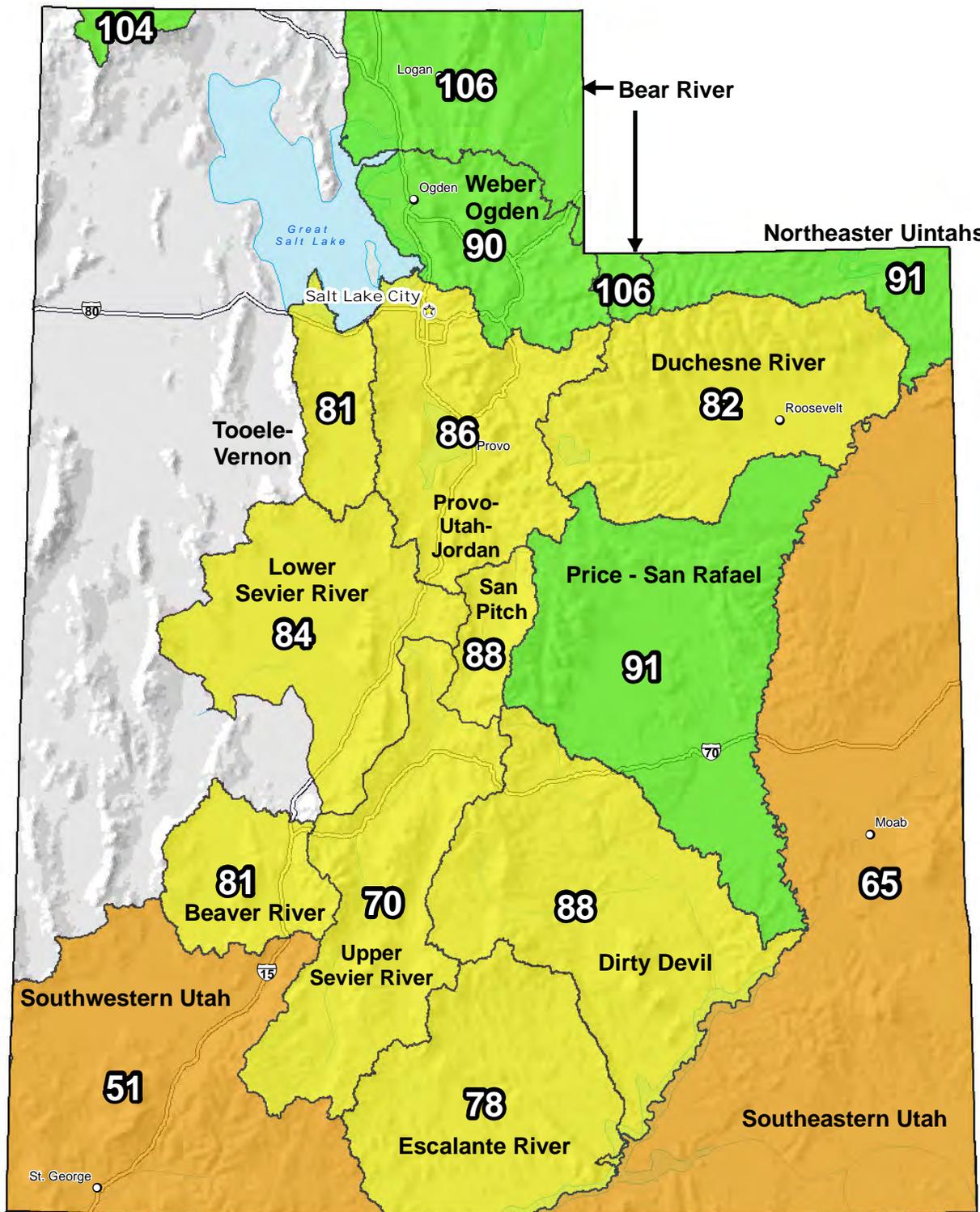
Apr 01, 2014

**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).

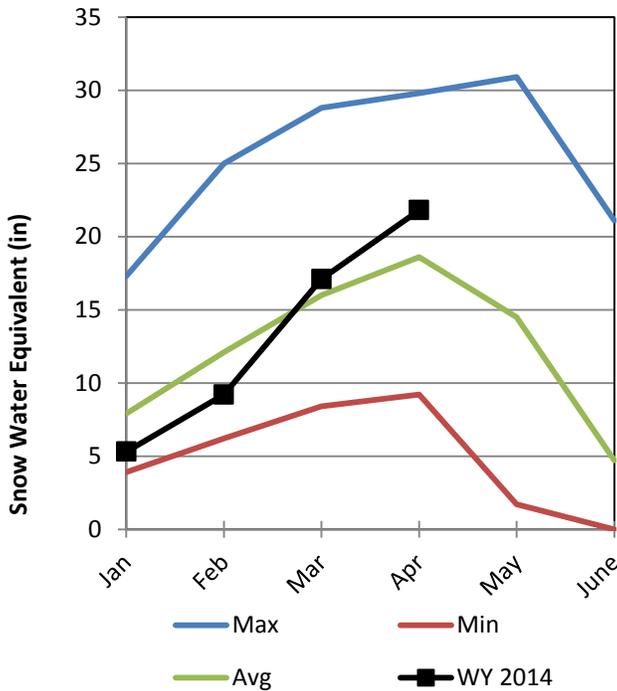
Prepared by the USDA/NRCS National Water and Climate Center
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Science contact: Jim.Marron@por.usda.gov 503 414 3047

Bear River Basin

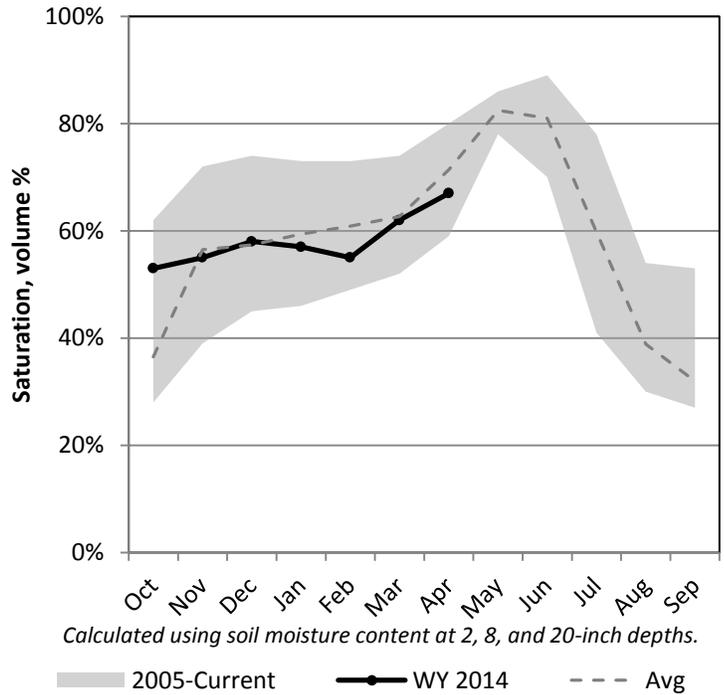
4/1/2014

Snowpack in the Bear River Basin is above average at 115% of normal, compared to 66% last year. Precipitation in March was above average at 122%, which brings the seasonal accumulation (Oct-Mar) to 100% of average. Soil moisture is at 67% compared to 73% last year. Reservoir storage is at 46% of capacity, compared to 60% last year. Forecast streamflow volumes range from 71% to 110% of average. The surface water supply index is 43% for the Bear River, 43% for the Woodruff Narrows, 48% for the Little Bear.

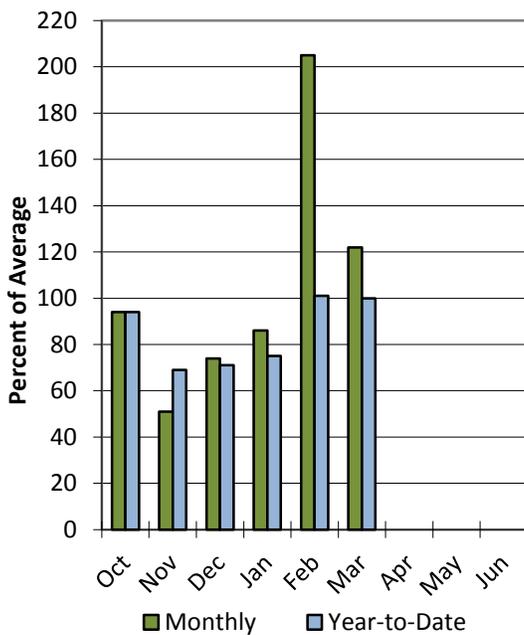
Snowpack



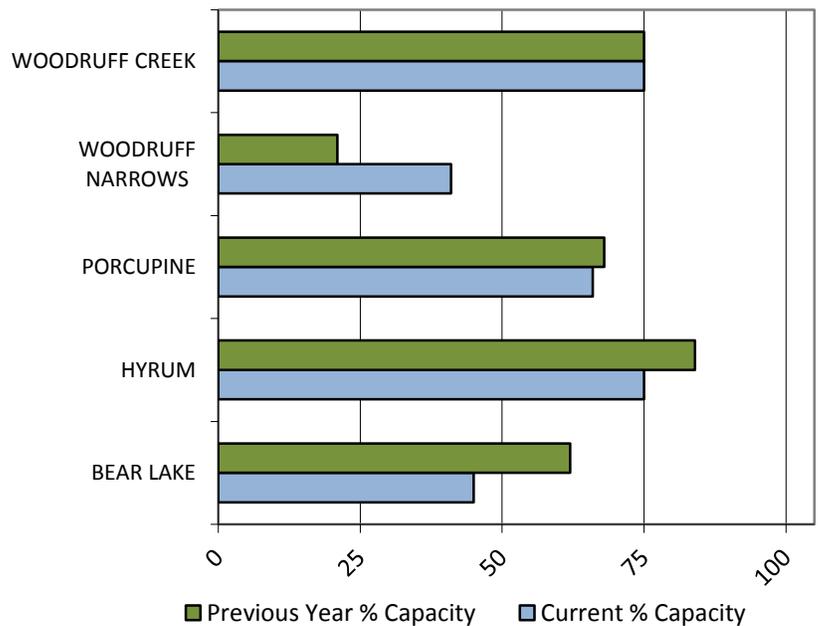
Soil Moisture



Precipitation



Reservoir Storage



Bear River Streamflow Forecasts - April 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	79	96	108	96%	120	137	112
	APR-SEP	87	106	119	97%	132	151	123
Bear R ab Resv nr Woodruff	APR-JUL	78	103	120	99%	137	162	121
	APR-SEP	82	108	125	98%	143	168	128
Big Ck nr Randolph	APR-JUL	1.35	2.6	3.4	89%	4.3	5.6	3.8
Smiths Fk nr Border	APR-JUL	76	89	98	110%	107	120	89
	APR-SEP	87	102	112	108%	122	137	104
Bear R bl Stewart Dam	APR-JUL	18.6	85	130	71%	175	241	183
	APR-SEP	19.5	94	144	70%	194	269	205
Little Bear at Paradise	APR-JUL	12.9	24	32	78%	40	51	41
Logan R nr Logan	APR-JUL	82	99	110	99%	121	138	111
Blacksmith Fk nr Hyrum	APR-JUL	15.9	31	42	98%	53	68	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 March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BEAR LAKE	710.7	801.0	611.9	1421.0
HYRUM RESERVOIR	11.5	12.8	13.0	15.3
PORCUPINE RESERVOIR	7.5	7.7	8.2	11.3
WOODRUFF CREEK	3.0	3.0	3.3	4.0
WOODRUFF NARROWS RESERVOIR	23.2	12.0	38.4	57.3
Basin-wide Total	756.0	836.5	674.8	1508.9
# of reservoirs	5	5	5	5

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Upper Bear	6	110%	71%
Middle Bear	7	137%	70%
Lower Bear	3	100%	65%
Logan	9	117%	61%

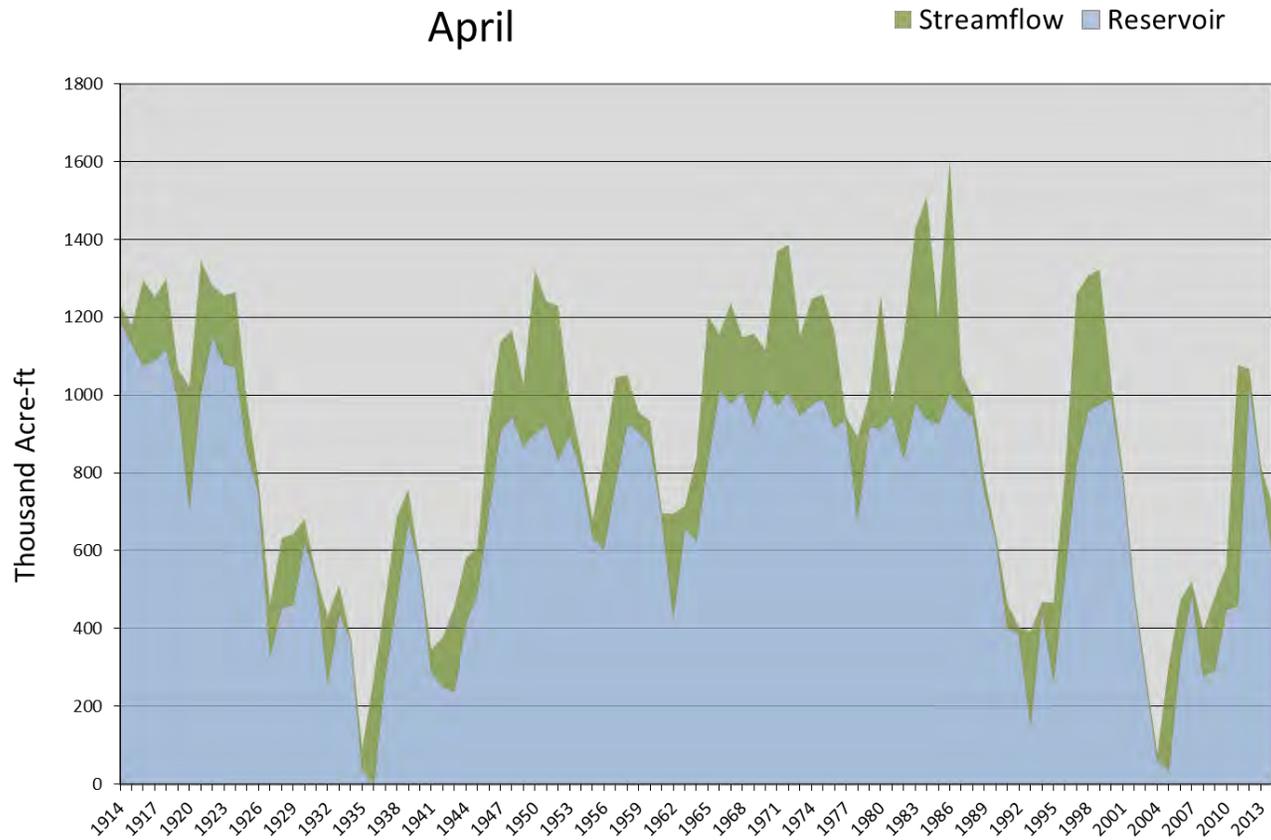
April 1, 2014

Surface Water Supply Index

Basin or Region	March EOM* Bear Lake	April-July Forecast below Stewart Dam	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Bear River	590	130	720	-0.62	43	96, 01, 64, 56

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

Bear Lake - Surface Water Supply Index
April



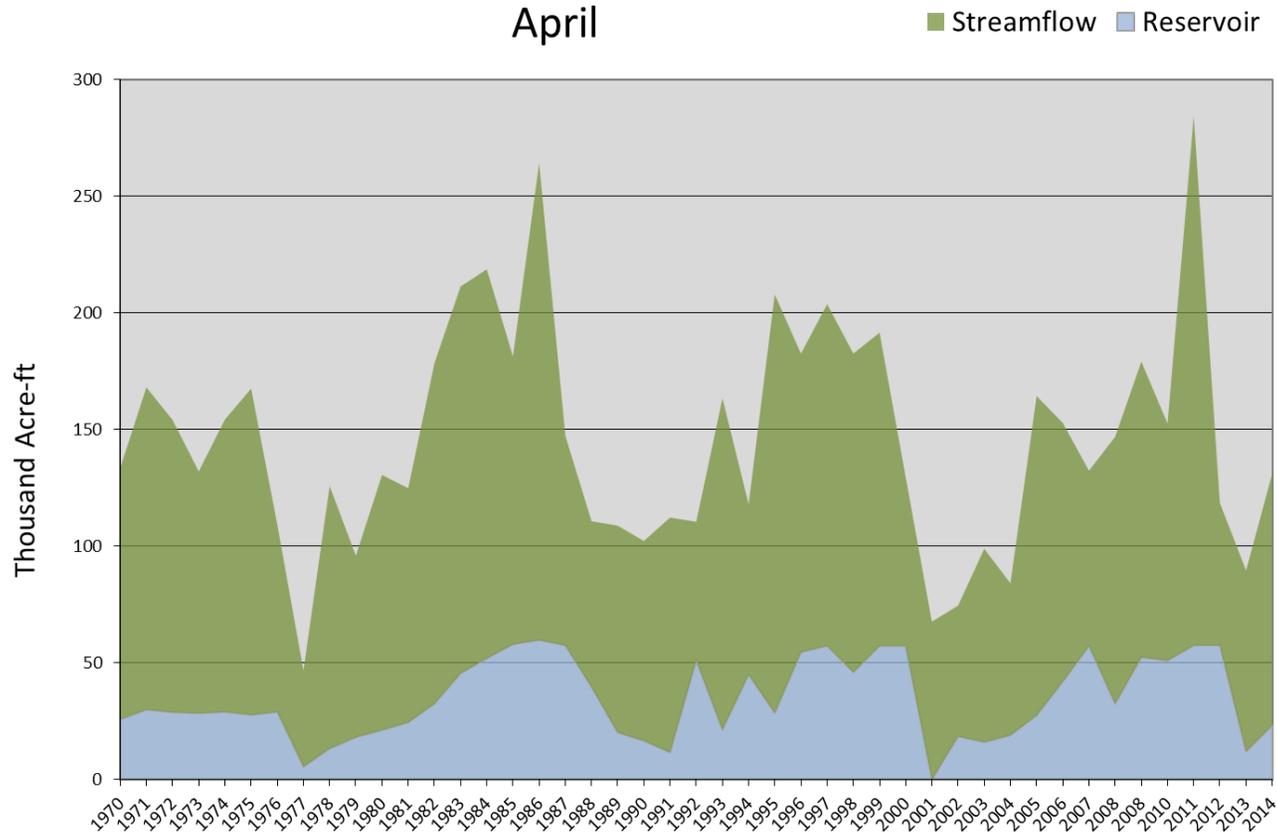
April 1, 2014

Surface Water Supply Index

Basin or Region	March EOM*		Reservoir + Streamflow	SWSI [#]	Percentile	Years with similar SWSI
	Woodruff Narrows Reservoir	April-July forecast Bear at Stateline				
	KAF [^]	KAF	KAF	%		
Woodruff Narrows	23.2	108	131	-0.54	43	00, 80, 73, 07

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

Woodruff Narrows - Surface Water Supply Index April



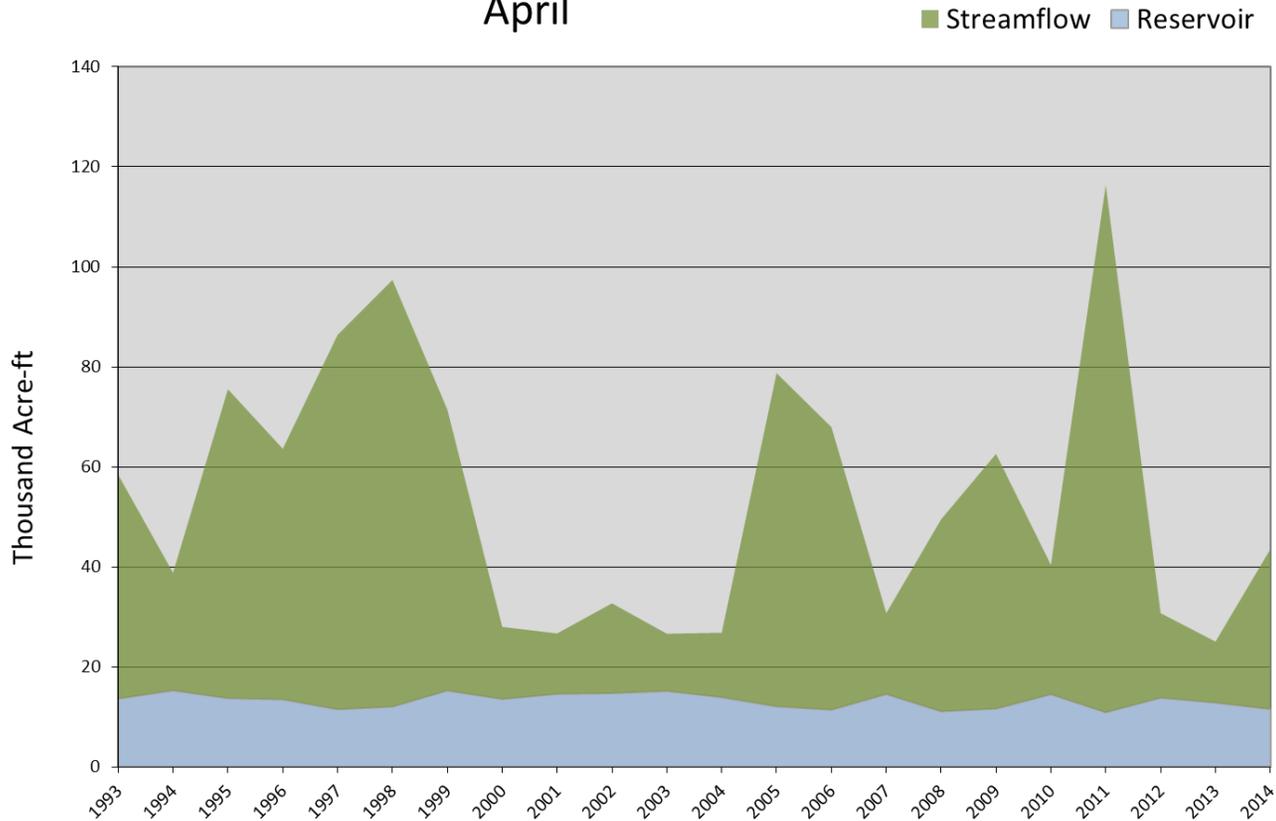
April 1, 2014

Surface Water Supply Index

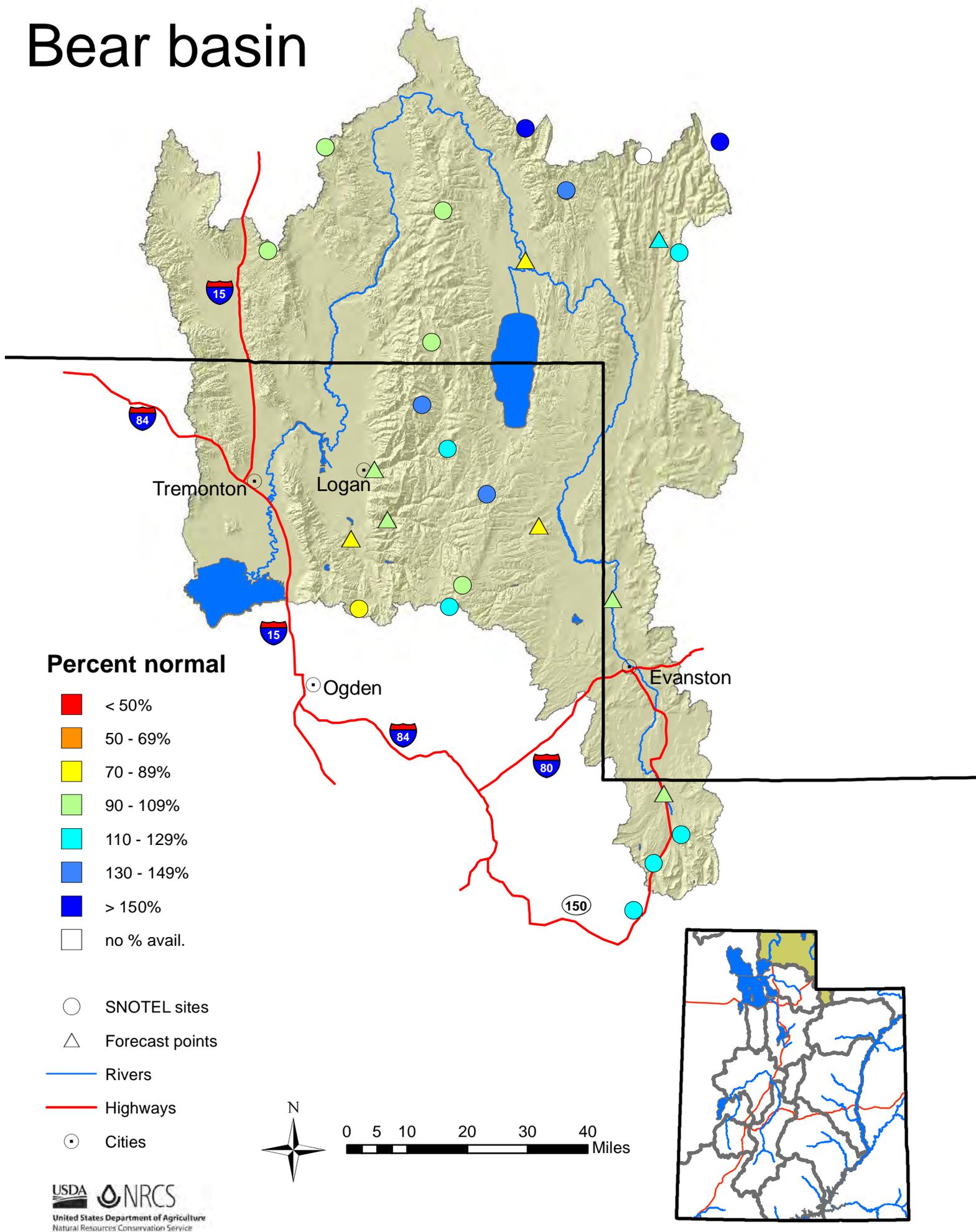
Basin or Region	March EOM* Hyrum Reservoir	April-July forecast Little Bear at Paradise	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Little Bear	11.5	32.0	43.5	-0.18	48	94, 10, 08, 93

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

Little Bear River - Surface Water Supply Index
April



Bear basin

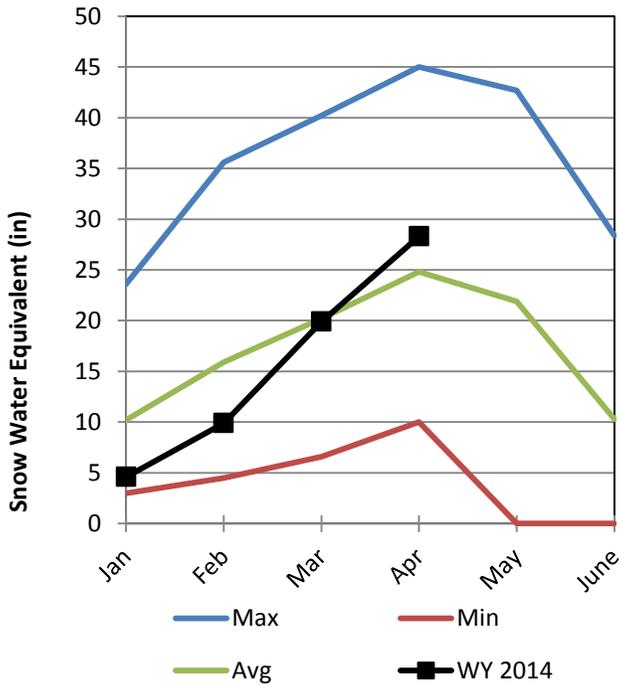


Raft River Basin

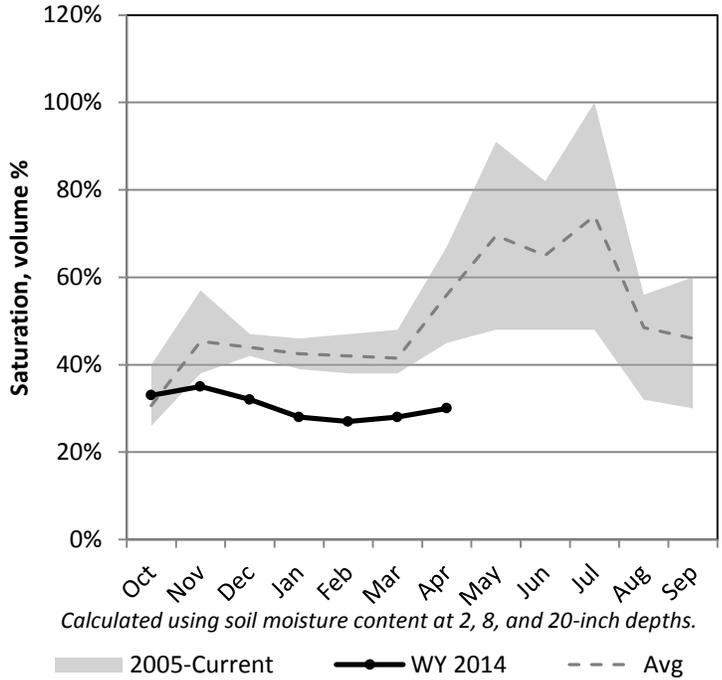
4/1/2014

Snowpack in the Raft River Basin is above average at 114% of normal, compared to 87% last year. Precipitation in March was much above average at 146%, which brings the seasonal accumulation (Oct-Mar) to 104% of average. Soil moisture is at 30% compared to 62% last year. The forecast streamflow volume for Dunn Creek is 103% of average.

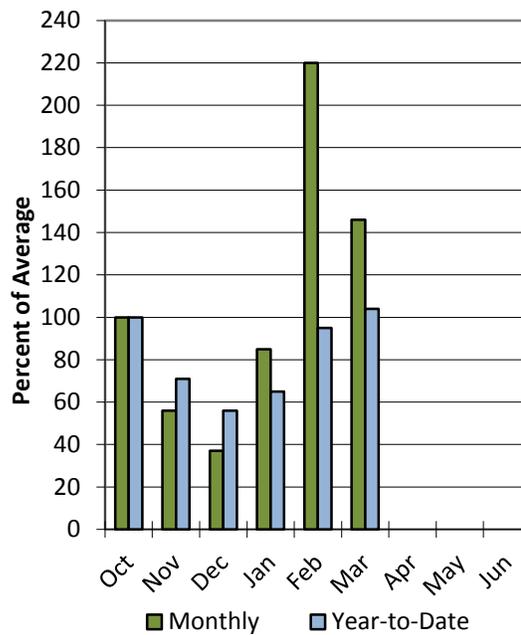
Snowpack



Soil Moisture



Precipitation



Data Current as of: 4/4/2014 7:56:20 AM

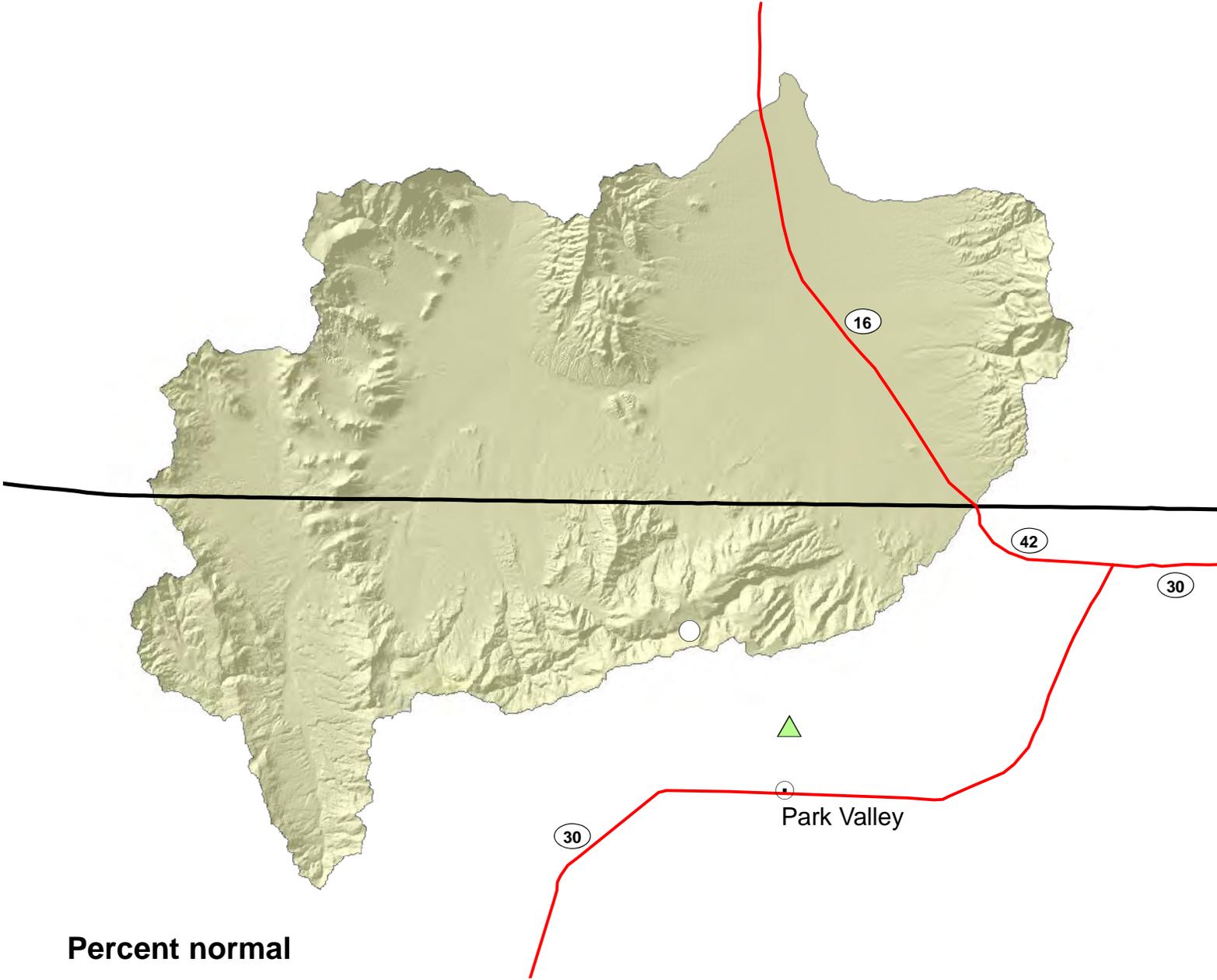
Raft River Streamflow Forecasts - April 1, 2014

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	0.058	1.5	3	103%	4.5	6.1	2.9

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

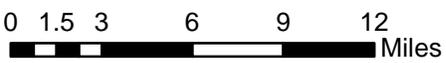
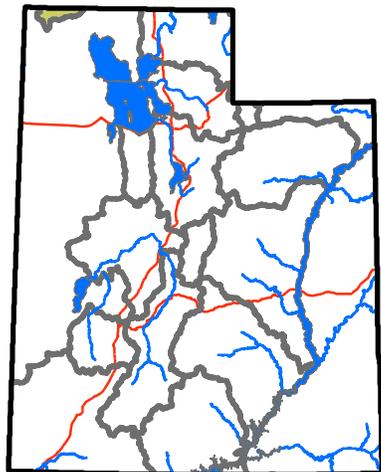
Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Raft	1	114%	87%

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

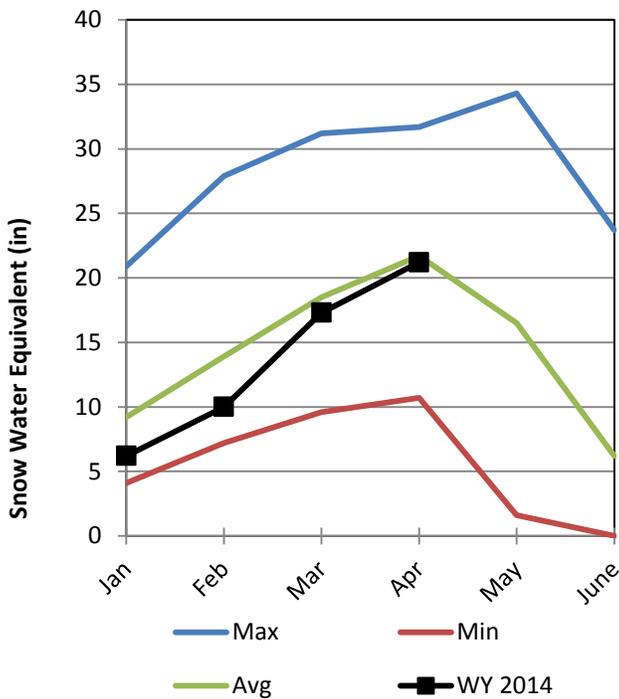


Weber & Ogden River Basins

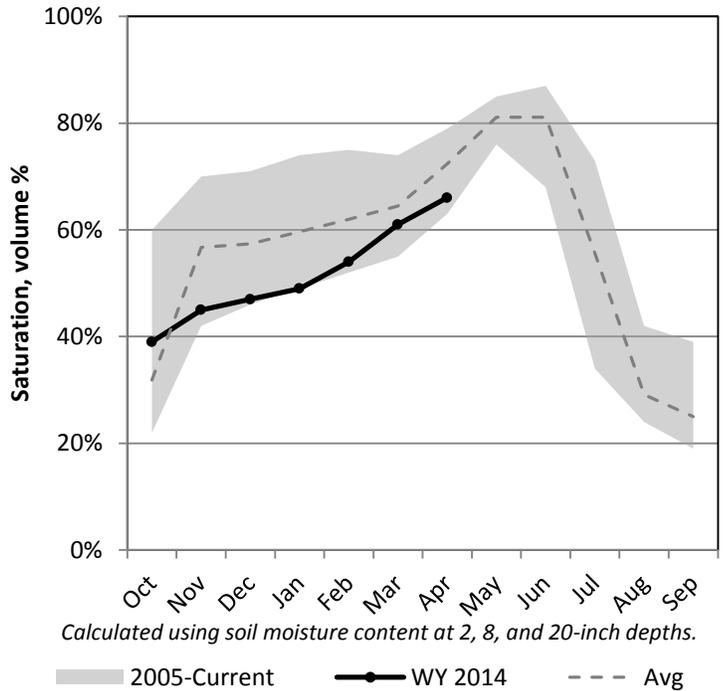
4/1/2014

Snowpack in the Weber & Ogden River Basins is near average at 101% of normal, compared to 62% last year. Precipitation in March was near average at 100%, which brings the seasonal accumulation (Oct-Mar) to 90% of average. Soil moisture is at 66% compared to 72% last year. Reservoir storage is at 50% of capacity, compared to 58% last year. Forecast streamflow volumes range from 75% to 98% of average. The surface water supply index is 34% for the Ogden River, 43% for the Weber River.

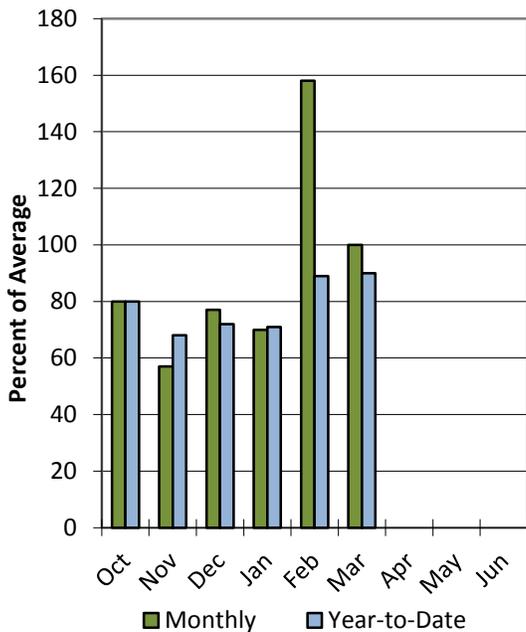
Snowpack



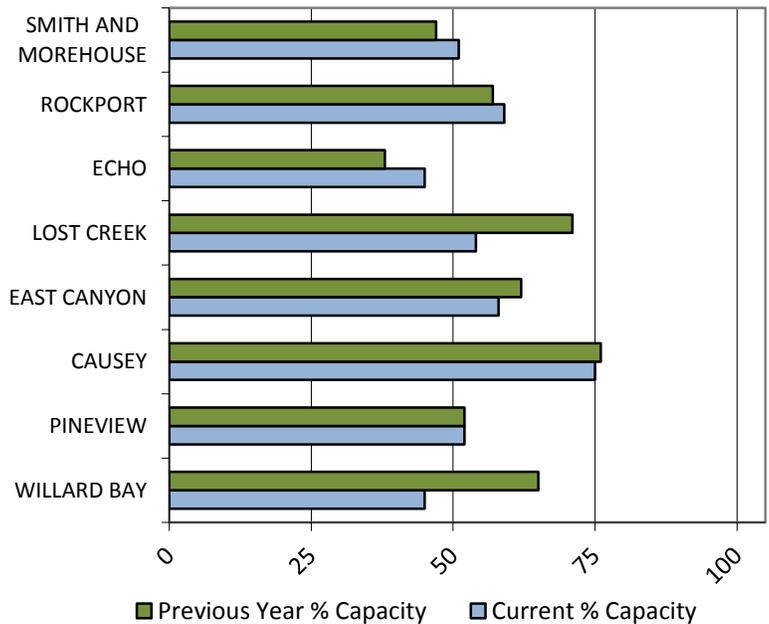
Soil Moisture



Precipitation



Reservoir Storage



Weber Ogden Rivers Streamflow Forecasts - April 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	24	28	31	91%	34	38	34
Weber R at Gateway	APR-JUL	150	255	310	98%	390	495	315
Weber R nr Coalville	APR-JUL	79	102	118	94%	134	158	126
Weber R nr Oakley	APR-JUL	82	100	112	96%	124	142	117
Rockport Reservoir Inflow	APR-JUL	82	105	120	98%	135	158	123
Chalk Ck at Coalville	APR-JUL	15.3	28	36	88%	44	57	41
Echo Reservoir Inflow	APR-JUL	82	125	155	93%	185	228	166
Lost Ck Reservoir Inflow	APR-JUL	2.7	8	11.5	95%	15	20	12.1
East Canyon Ck nr Jeremy Ranch	APR-JUL	6.7	11	14	92%	17	21	15.2
East Canyon Ck nr Morgan	APR-JUL	9.1	16.2	21	75%	26	33	28
SF Ogden R nr Huntsville	APR-JUL	32	43	50	89%	58	69	56
Pineview Reservoir Inflow	APR-JUL	30	60	80	93%	100	130	86
Wheeler Ck nr Huntsville	APR-JUL	2.5	4.2	5.3	84%	6.4	8.1	6.3

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

Reservoir Storage End of March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
CAUSEY RESERVOIR	5.3	5.4	3.2	7.1
EAST CANYON RESERVOIR	28.5	30.6	36.4	49.5
ECHO RESERVOIR	33.0	28.2	50.2	73.9
LOST CREEK RESERVOIR	12.0	16.0	12.6	22.5
PINEVIEW RESERVOIR	57.7	57.8	62.8	110.1
ROCKPORT RESERVOIR	35.8	34.7	37.6	60.9
WILLARD BAY	96.9	140.4	147.7	215.0
SMITH AND MOREHOUSE RESERVOIR	4.1	3.8	3.6	8.1
Basin-wide Total	273.4	317.0	354.1	539.0
# of reservoirs	8	8	8	7

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Upper Weber	12	107%	67%
Lower Weber	7	91%	68%
Ogden	17	101%	62%
Lost Creek	3	120%	57%

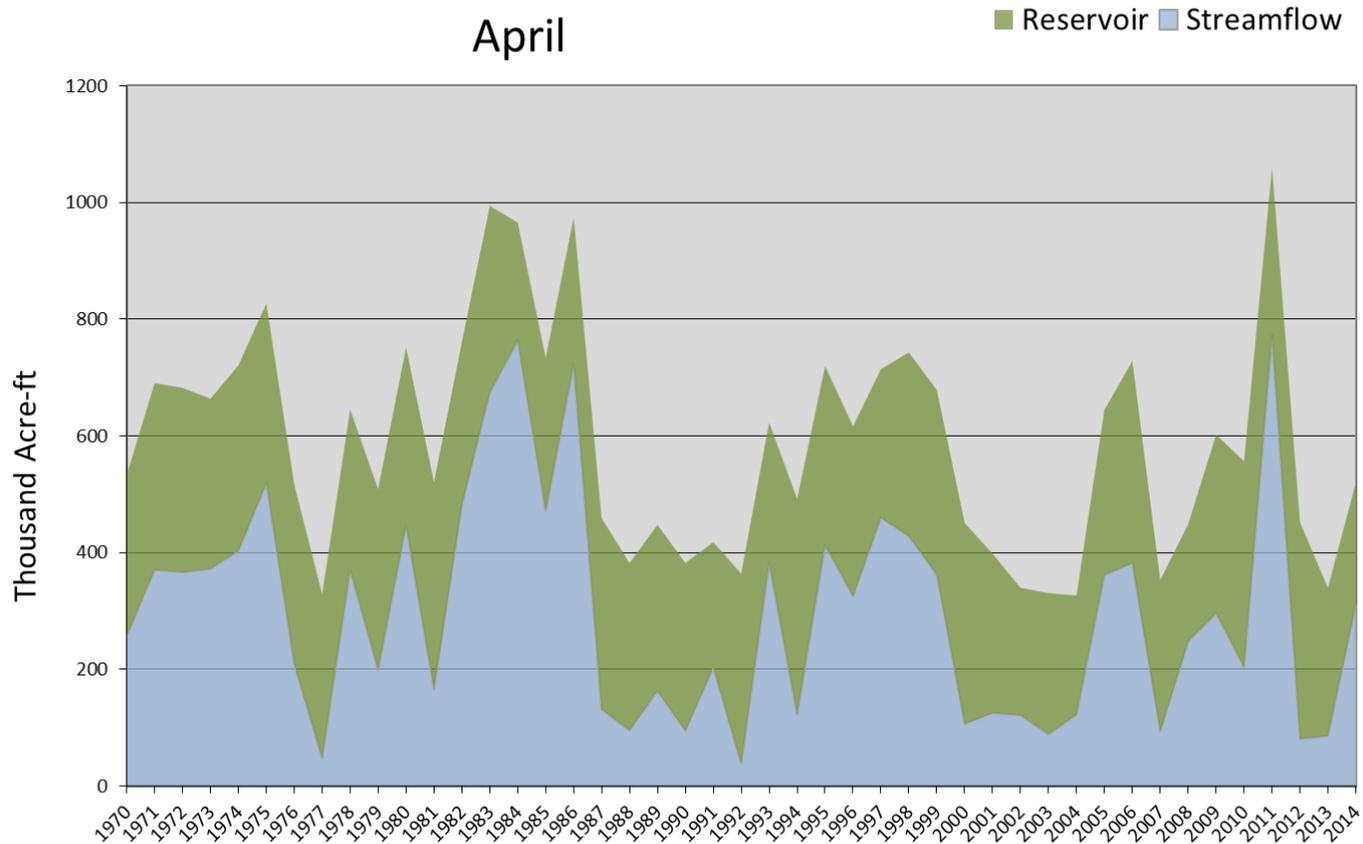
April 1, 2014

Surface Water Supply Index

Basin or Region	March 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	210	310	520	-0.54	43	79, 76, 81, 70

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

Weber River Surface Water Supply Index April



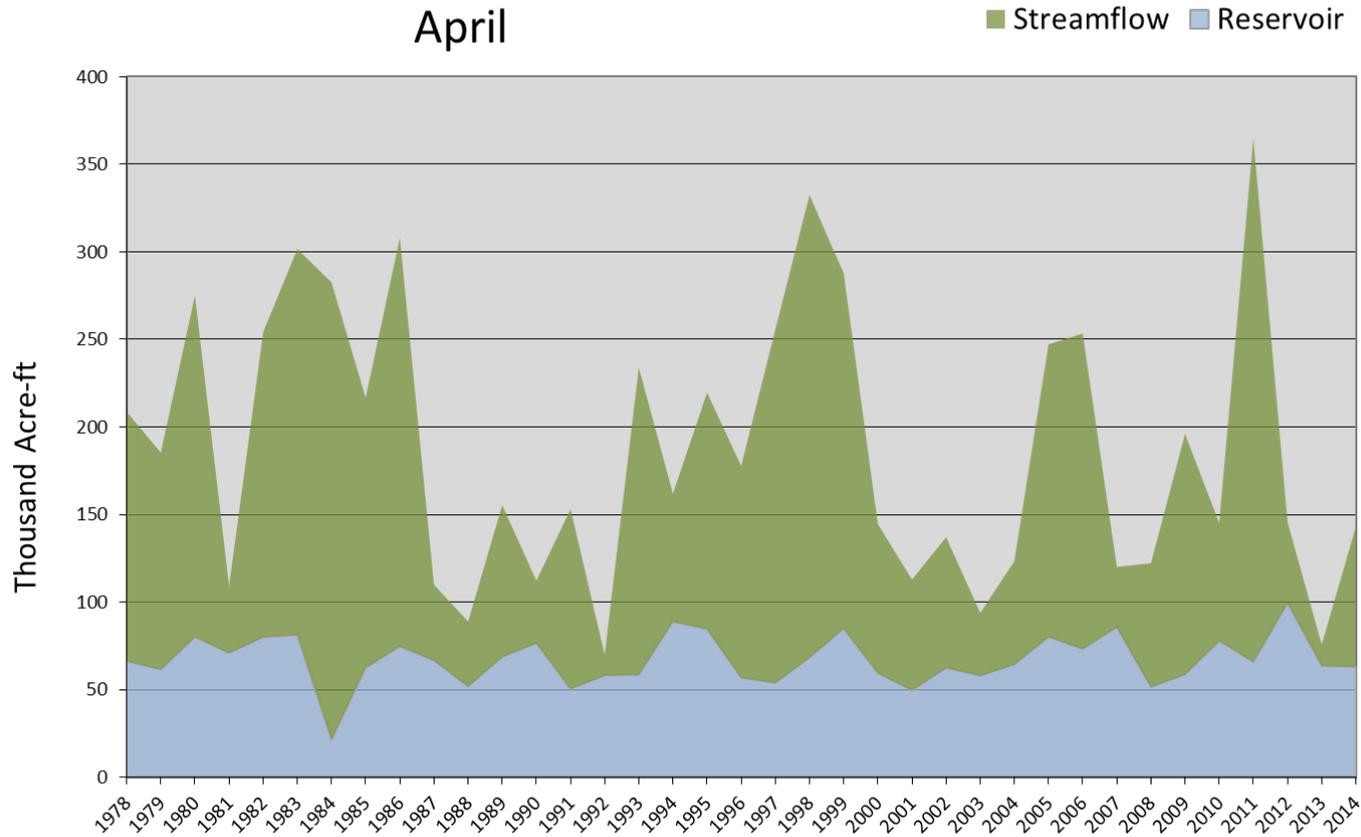
April 1, 2014

Surface Water Supply Index

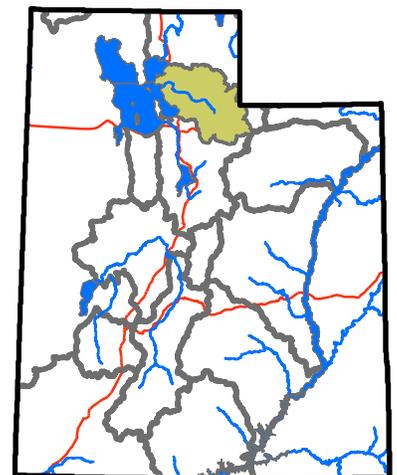
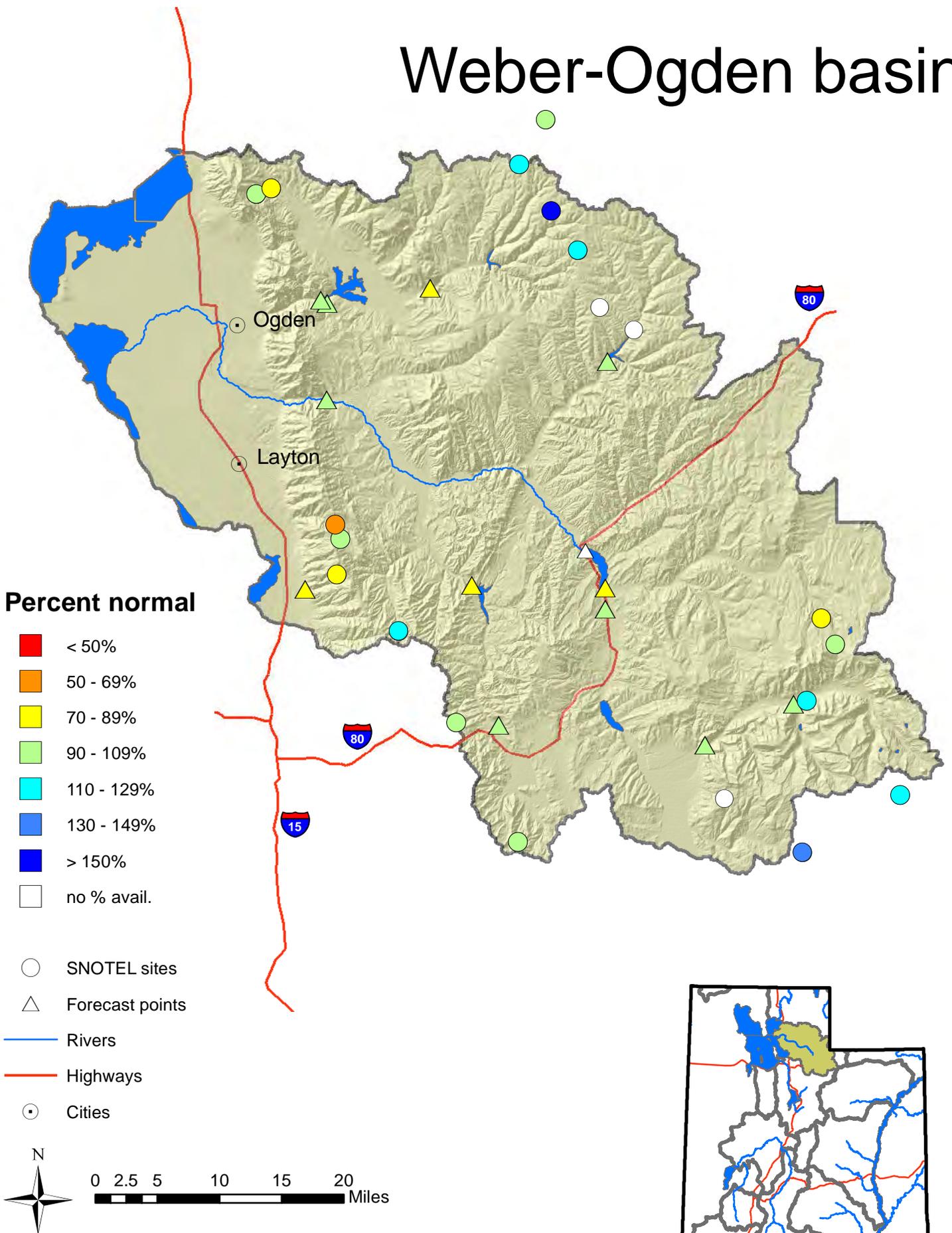
Basin or Region	March EOM* Pine View & Causey	April-July Forecast Pineview Reservoir Inflow	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Ogden River	63.0	80.0	143.0	-1.32	34	04, 02, 00, 10

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

Ogden Surface Water Supply Index April



Weber-Ogden basin

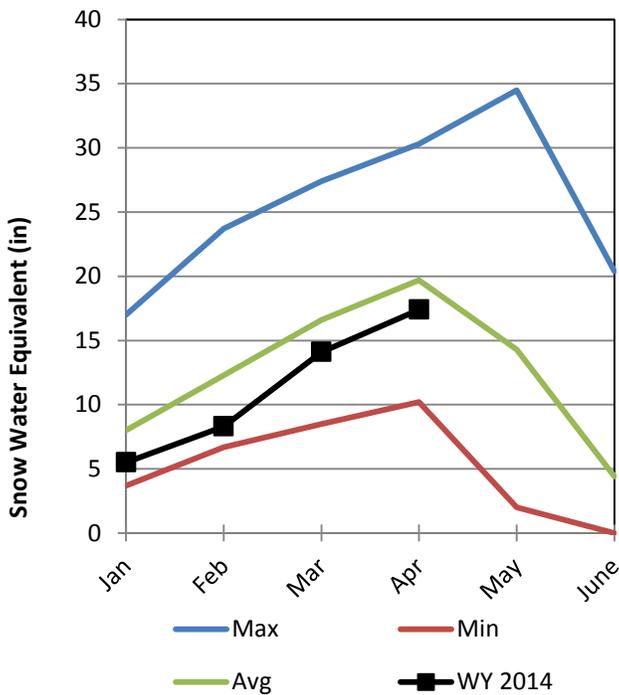


Provo & Jordan River Basins

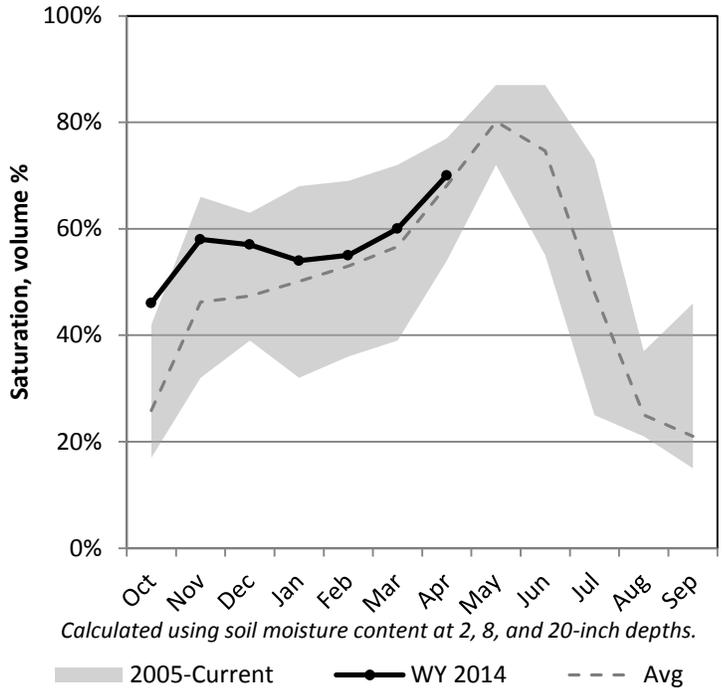
4/1/2014

Snowpack in the Provo & Jordan River Basins is below average at 88% of normal, compared to 62% last year. Precipitation in March was near average at 95%, which brings the seasonal accumulation (Oct-Mar) to 86% of average. Soil moisture is at 70% compared to 73% last year. Reservoir storage is at 73% of capacity, compared to 80% last year. Forecast streamflow volumes range from 77% to 103% of average. The surface water supply index is 17% for the Provo River.

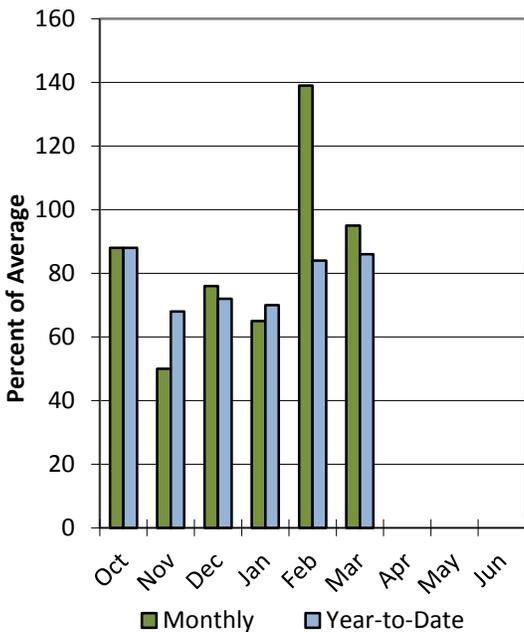
Snowpack



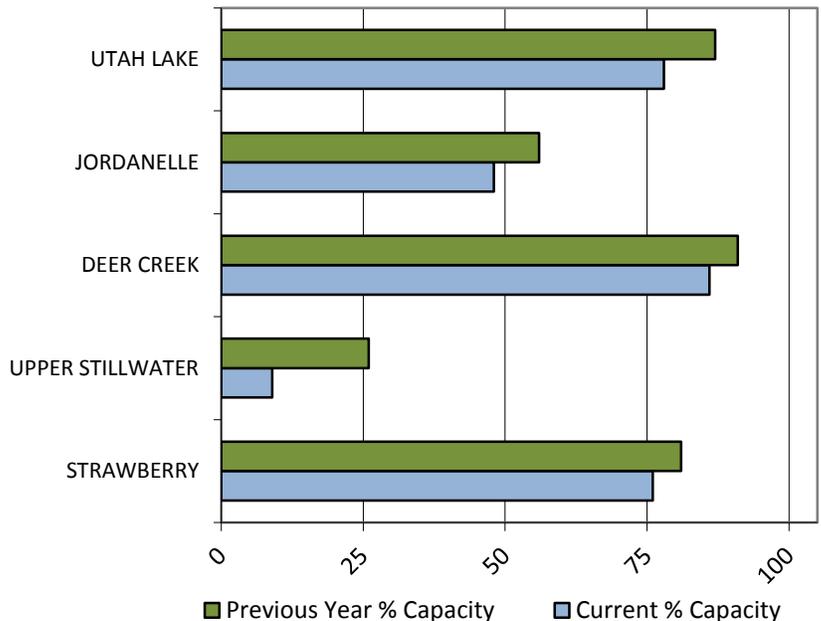
Soil Moisture



Precipitation



Reservoir Storage



Provo R Utah Lake Jordan R Streamflow Forecasts - April 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	0.65	4.6	7.3	77%	10	14	9.5
Spanish Fk at Castilla	APR-JUL	1.38	26	57	83%	88	133	69
Provo R at Woodland	APR-JUL	70	89	103	103%	118	142	100
Provo R at Hailstone	APR-JUL	66	89	106	98%	125	156	108
Provo R bl Deek Ck Dam	APR-JUL	69	93	109	94%	125	149	116
American Fk ab Upper Powerplant	APR-JUL	14.2	22	27	84%	32	40	32
Utah Lake Inflow	APR-JUL	8	98	225	85%	358	480	265
W Canyon Ck nr Cedar Fort	APR-JUL	0.69	1.2	1.55	88%	1.9	2.4	1.76
Little Cottonwood Ck nr SLC	APR-JUL	27	32	36	95%	40	46	38
Big Cottonwood Ck nr SLC	APR-JUL	18.6	25	29	81%	33	39	36
Mill Ck nr SLC	APR-JUL	2.1	4.1	5.5	86%	6.9	8.9	6.4
Parleys Ck nr SLC	APR-JUL	3.6	8.4	11.6	82%	14.8	19.6	14.2
Dell Fk nr SLC	APR-JUL	0.11	1.64	4.5	82%	7.2	11.2	5.5
Emigration Ck nr SLC	APR-JUL	0.09	1.94	3.2	80%	4.5	6.3	4
City Ck nr SLC	APR-JUL	1.82	4.3	6	78%	7.7	10.2	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 March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
DEER CREEK RESERVOIR	128.7	136.0	116.8	149.7
STRAWBERRY RESERVOIR	839.1	895.4	665.1	1105.9
UTAH LAKE	678.5	760.0	816.5	870.9
JORDANELLE RESERVOIR	154.2	179.4	239.4	320.0
Basin-wide Total	1800.5	1970.8	1837.8	2446.5
# of reservoirs	4	4	4	4

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Upper Provo	7	94%	64%
Jordan	15	88%	62%
Utah Lake	15	88%	62%
Spanish Fork	7	79%	52%
Six Creeks	14	88%	68%
Cottonwoods	7	87%	72%

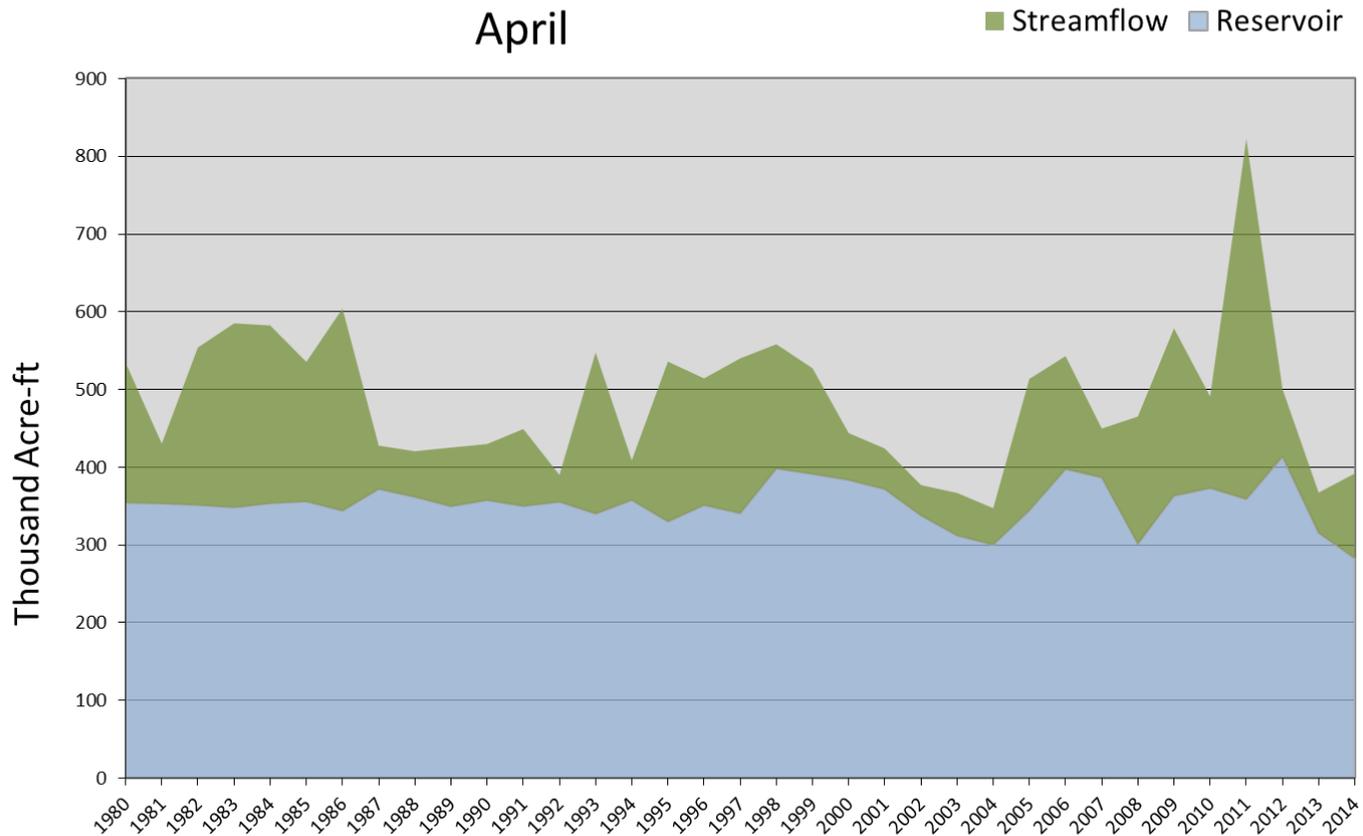
April 1, 2014

Surface Water Supply Index

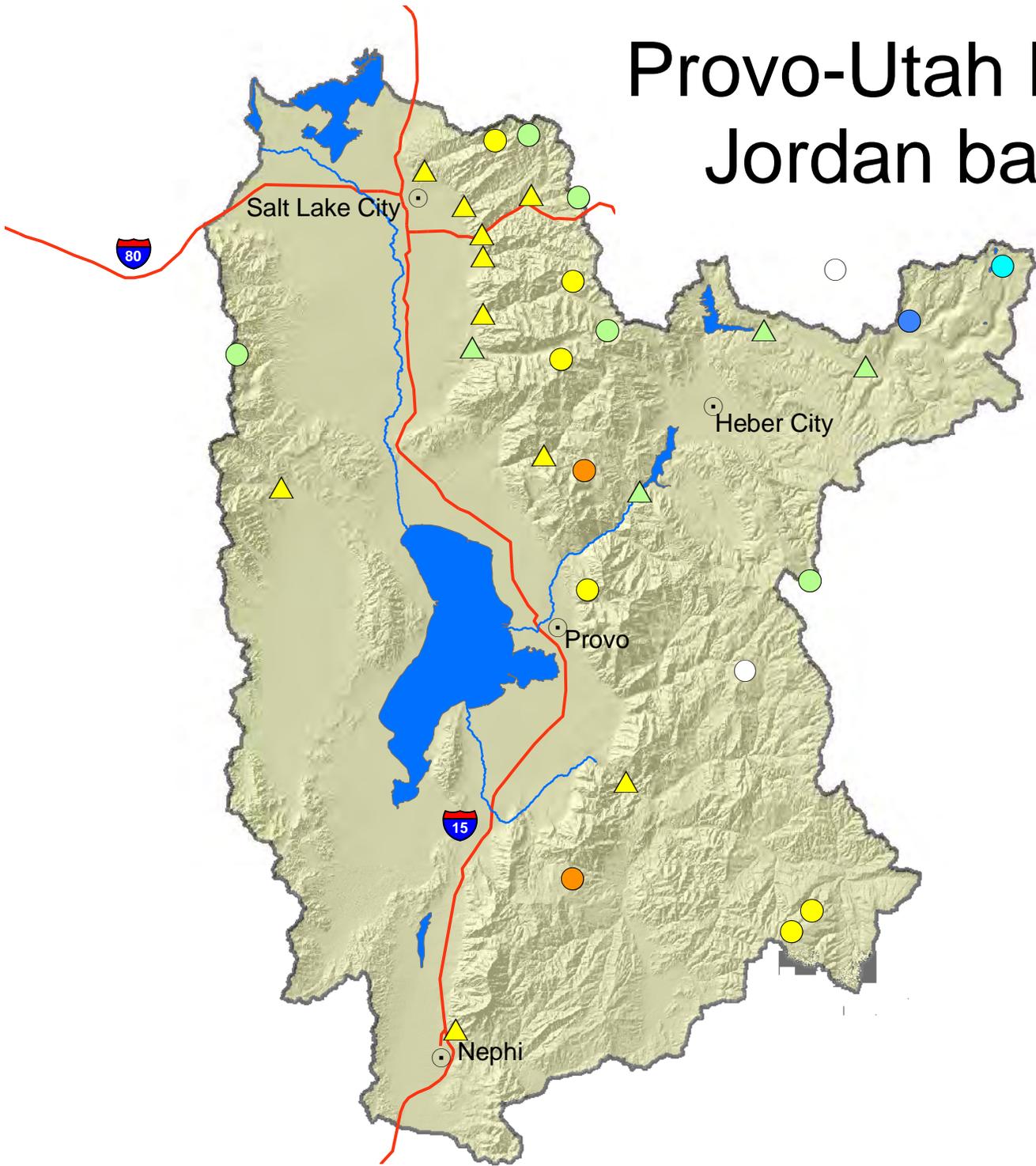
Basin or Region	March EOM* Deer Creek, Jordanelle	April - July Forecast Provo River below Deer Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Provo River	283	109	392	-2.78	17	02, 92, 94, 88

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

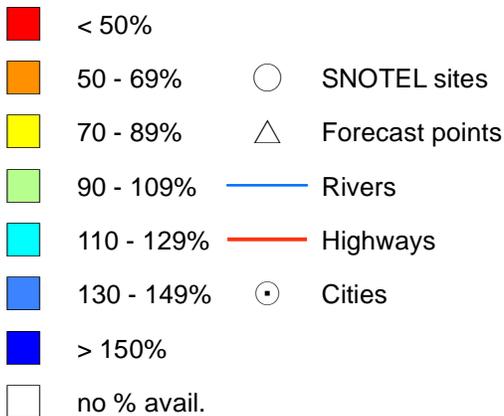
Provo River - Surface Water Supply Index April



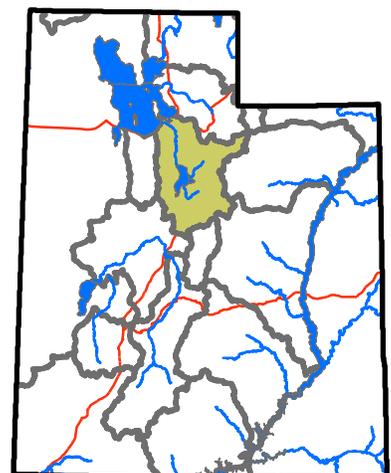
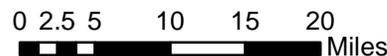
Provo-Utah Lake-Jordan basin



Percent normal



United States Department of Agriculture
 Natural Resources Conservation Service

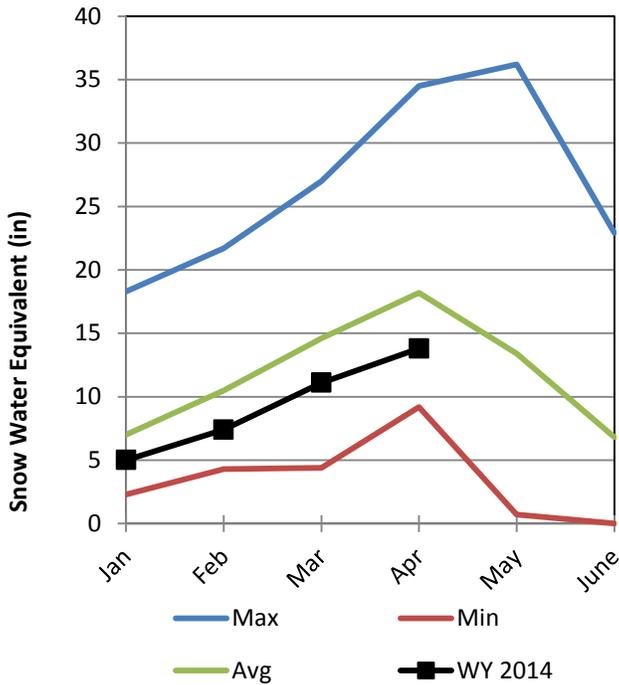


Tooele & Vernon Creek Basins

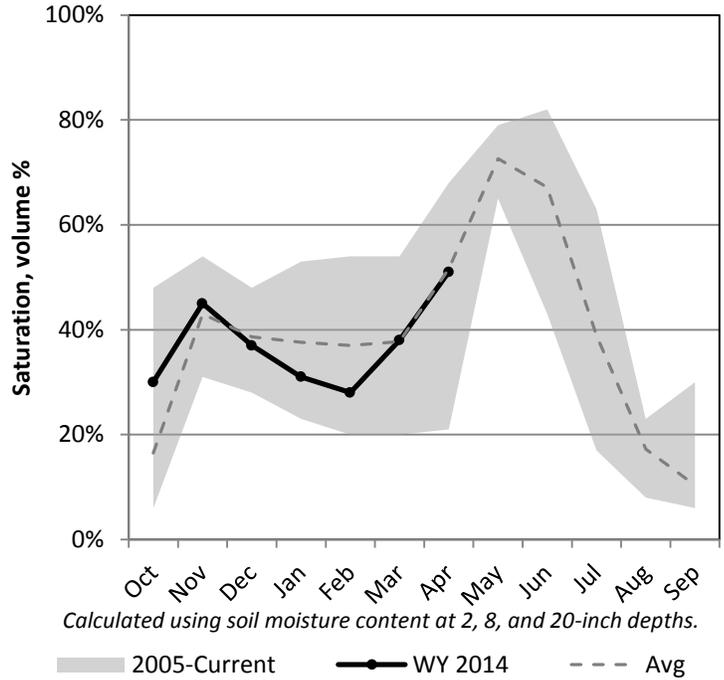
4/1/2014

Snowpack in the Tooele & Vernon Creek Basins is below average at 82% of normal, compared to 71% last year. Precipitation in March was below average at 85%, which brings the seasonal accumulation (Oct-Mar) to 81% of average. Soil moisture is at 51% compared to 58% last year. Reservoir storage is at 62% of capacity, compared to 59% last year. Forecast streamflow volumes range from 79% to 88% of average.

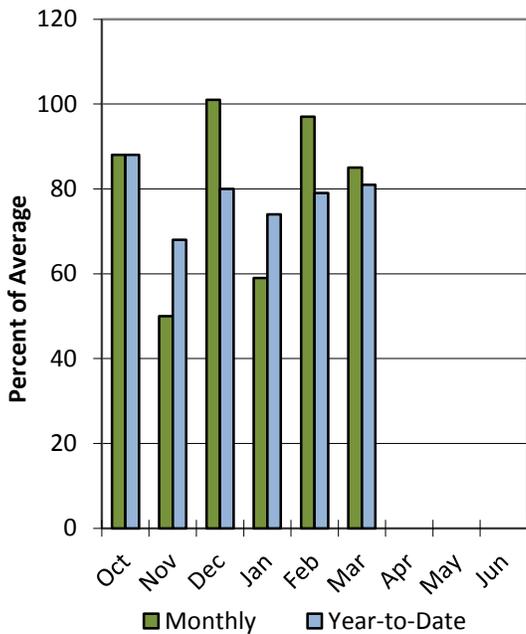
Snowpack



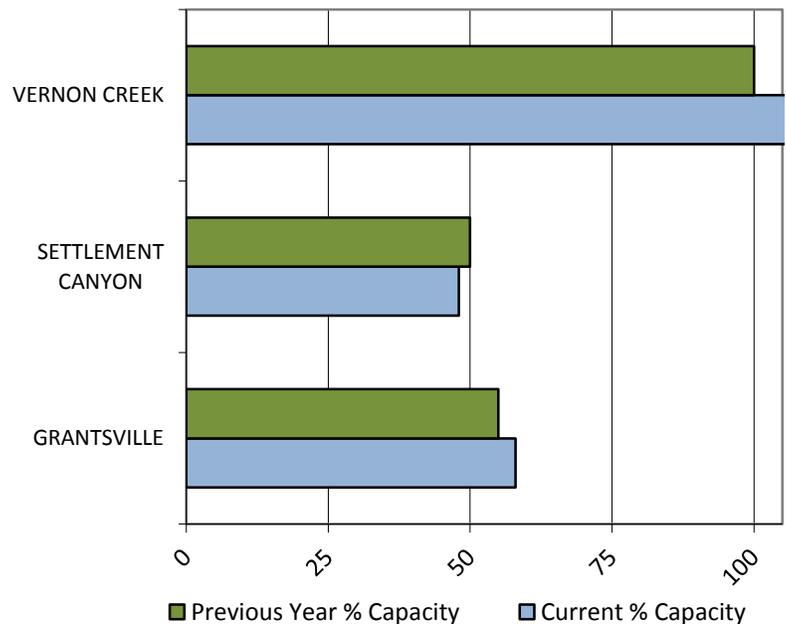
Soil Moisture



Precipitation



Reservoir Storage



Tooele Valley Vernon Creek Streamflow Forecasts - April 1, 2014

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

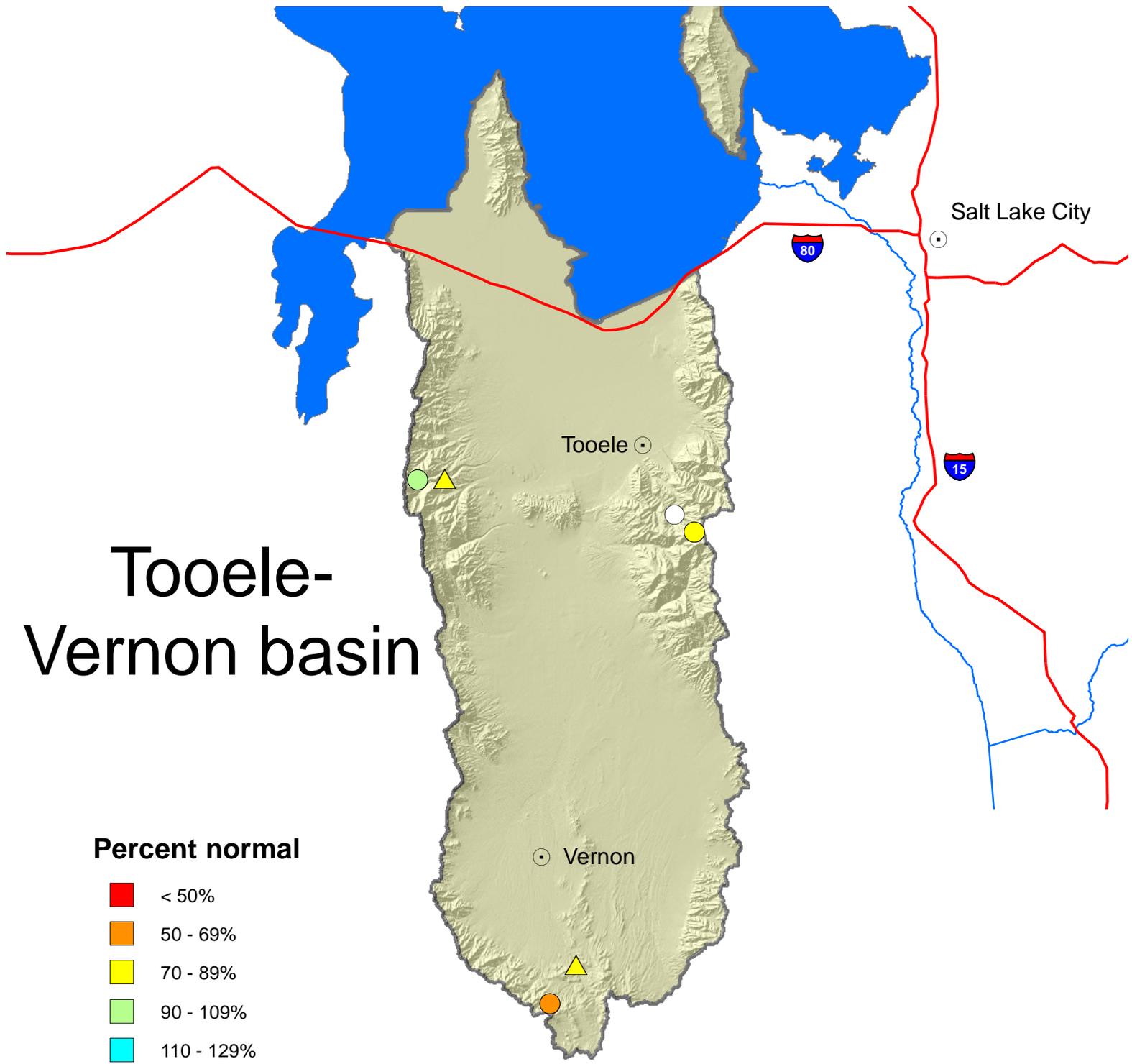
Tooele Valley Vernon Creek	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Vernon Ck nr Vernon	APR-JUL	0.08	0.67	1.1	79%	1.49	2.1	1.39
S Willow Ck nr Grantsville	APR-JUL	1.39	2.1	2.5	81%	2.9	3.6	3.1

- 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 March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
VERNON CREEK RESERVOIR	0.7	0.6	0.6	0.6
SETTLEMENT CANYON RESERVOIR	0.5	0.5	0.8	1.0
GRANTSVILLE RESERVOIR	1.9	1.8	2.5	3.3
Basin-wide Total	3.0	2.9	3.8	4.9
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Tooele	3	82%	71%
NW Utah	3	79%	80%

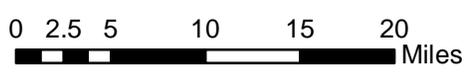
Tooele- Vernon basin



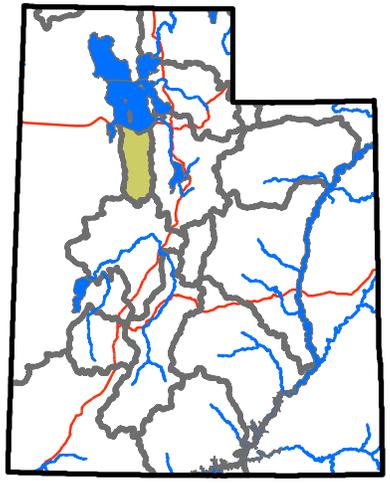
Percent normal

- < 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

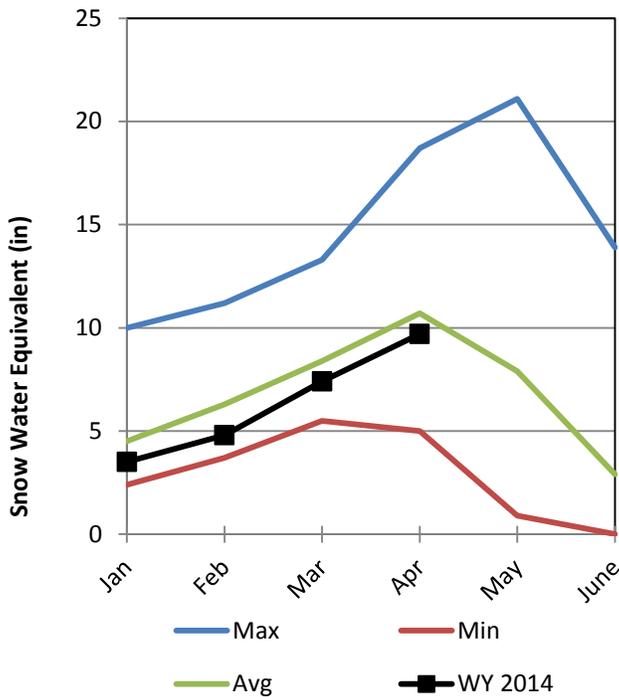


Northeastern Uintah Basin

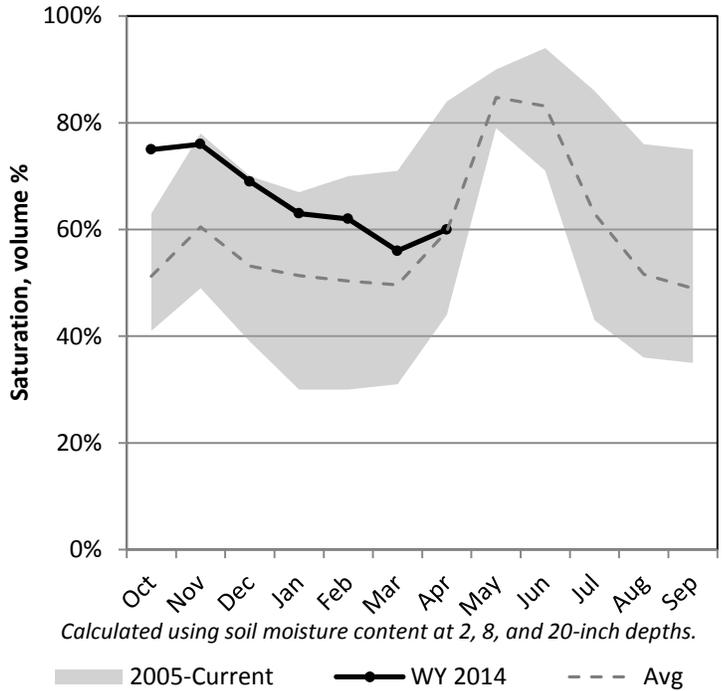
4/1/2014

Snowpack in the Northeastern Uintah Basin is near average at 96% of normal, compared to 79% last year. Precipitation in March was below average at 82%, which brings the seasonal accumulation (Oct-Mar) to 92% of average. Soil moisture is at 60% compared to 52% last year. Reservoir storage is at 77% of capacity, compared to 79% last year. Forecast streamflow volumes range from 101% to 148% of average. The surface water supply index is 65% for the Blacks Fork, 87% for the Smiths Creek.

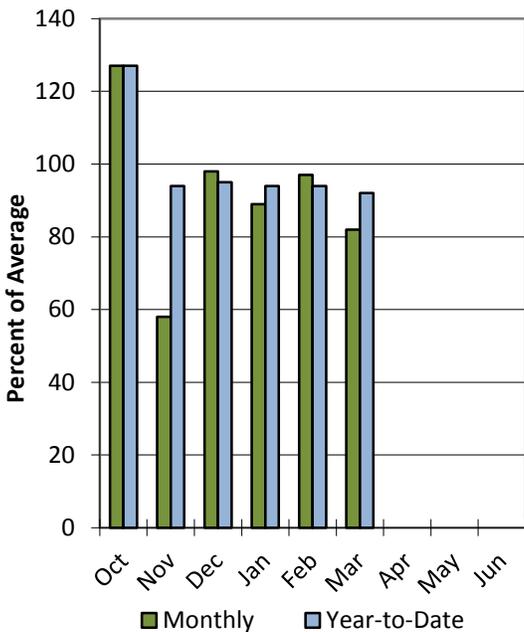
Snowpack



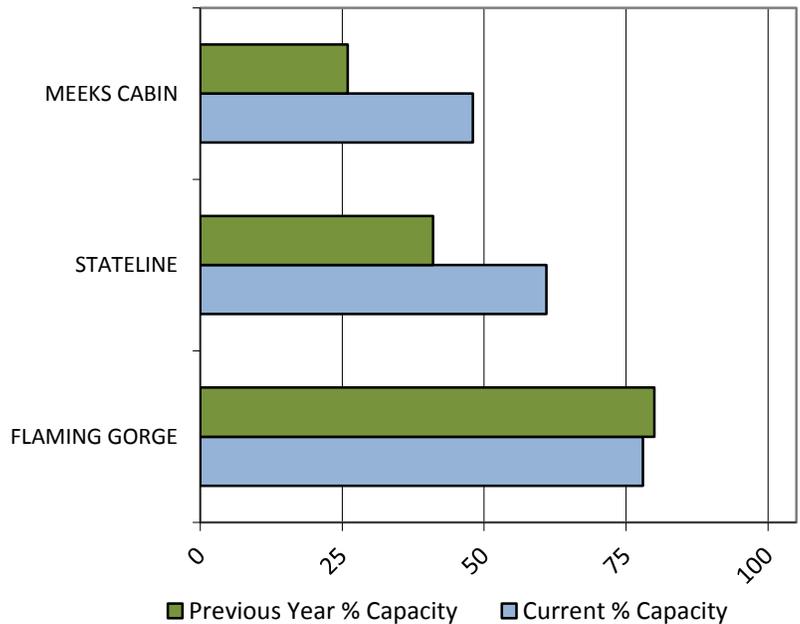
Soil Moisture



Precipitation



Reservoir Storage



Northeastern Uintahs Streamflow Forecasts - April 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	66	80	90	101%	101	117	89
EF of Smiths Fork nr Robertson ²	APR-JUL	17.6	23	28	104%	33	41	27
Flaming Gorge Reservoir Inflow ²	APR-JUL	965	1240	1450	148%	1670	2040	980
Uinta R bl Powerplant Diversion nr Neola ²	APR-JUL	23	36	46	62%	58	77	74
Whiterocks R nr Whiterocks	APR-JUL	17	25	32	59%	39	52	54
Ashley Ck nr Vernal	APR-JUL	15.4	24	30	60%	37	49	50
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	8	11.1	13.5	64%	16.1	20	21

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

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

3) Median value used in place of average

Reservoir Storage End of March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
FLAMING GORGE RESERVOIR	2914.1	2985.6	3020.0	3749.0
STATELINE RESERVOIR	7.4	4.9	5.3	12.0
MEEKS CABIN RESERVOIR	15.7	8.4	13.4	32.5
Basin-wide Total	2937.1	2998.9	3038.7	3793.5
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Blacks Fk	5	115%	82%
Upper Green	2	95%	88%
Lower Green	2	65%	53%
Ashley Brush	4	73%	78%

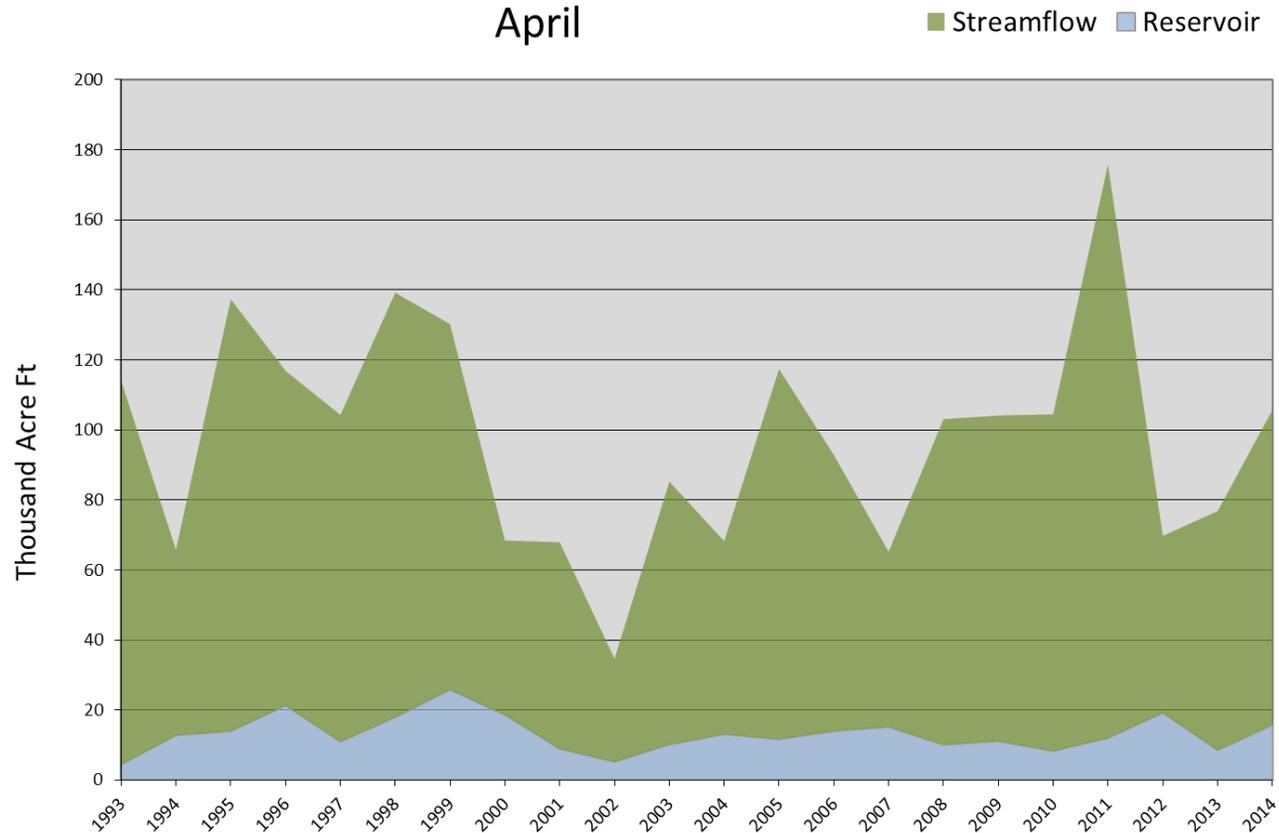
April 1, 2014

Blacks Fork Surface Water Supply Index

Basin or Region	March 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	15.7	90.0	106	1.27	65	97, 10, 93, 96

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

Blacks Fork River - Surface Water Supply Index April



April 1, 2014

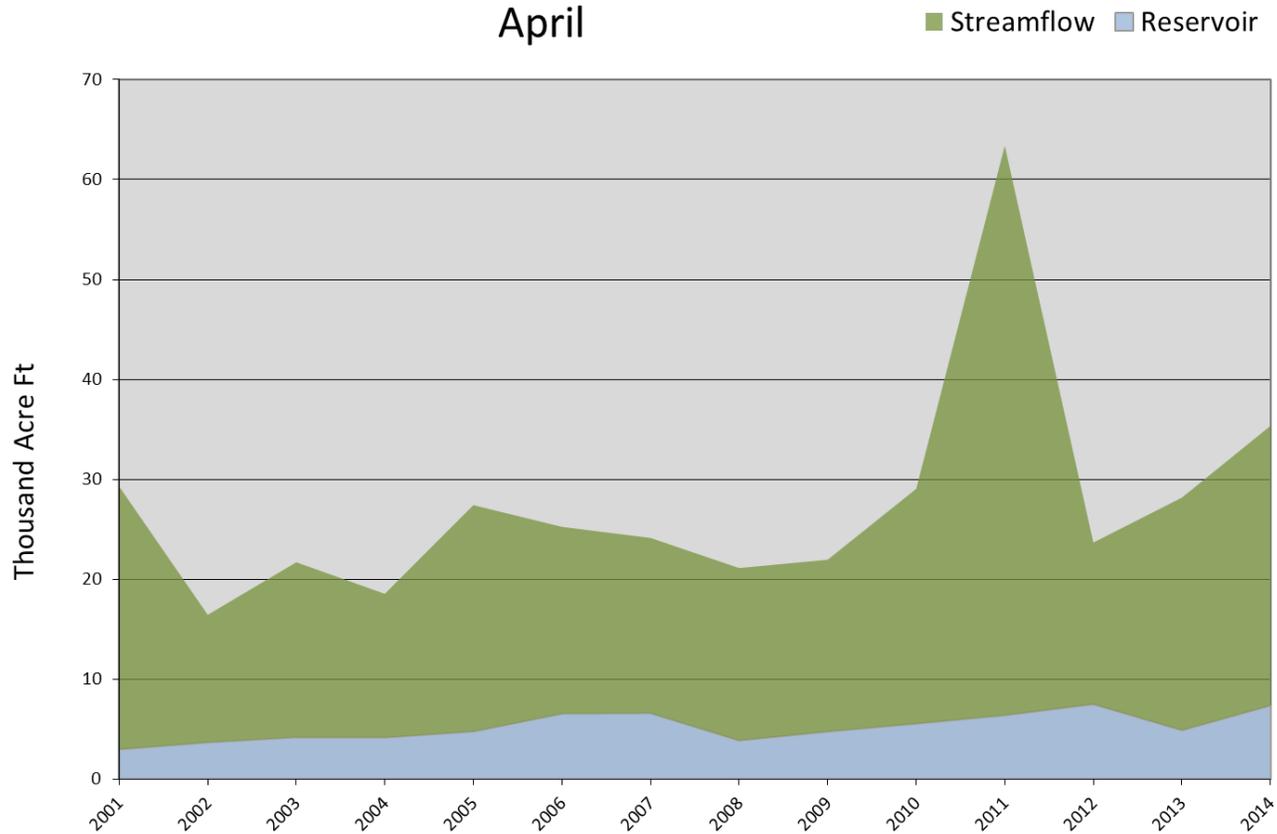
Smiths Fork Surface Water Supply Index

Basin or Region	March EOM* Stateline 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	7.4	28.0	35.4	3.06	87	10, 01, 11

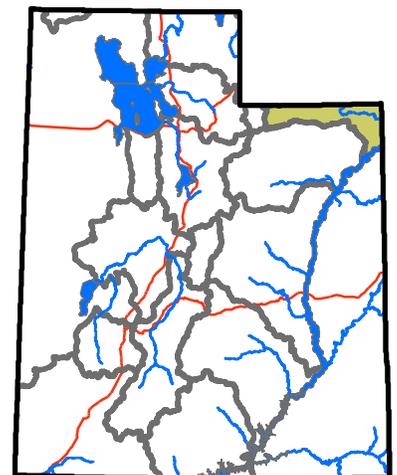
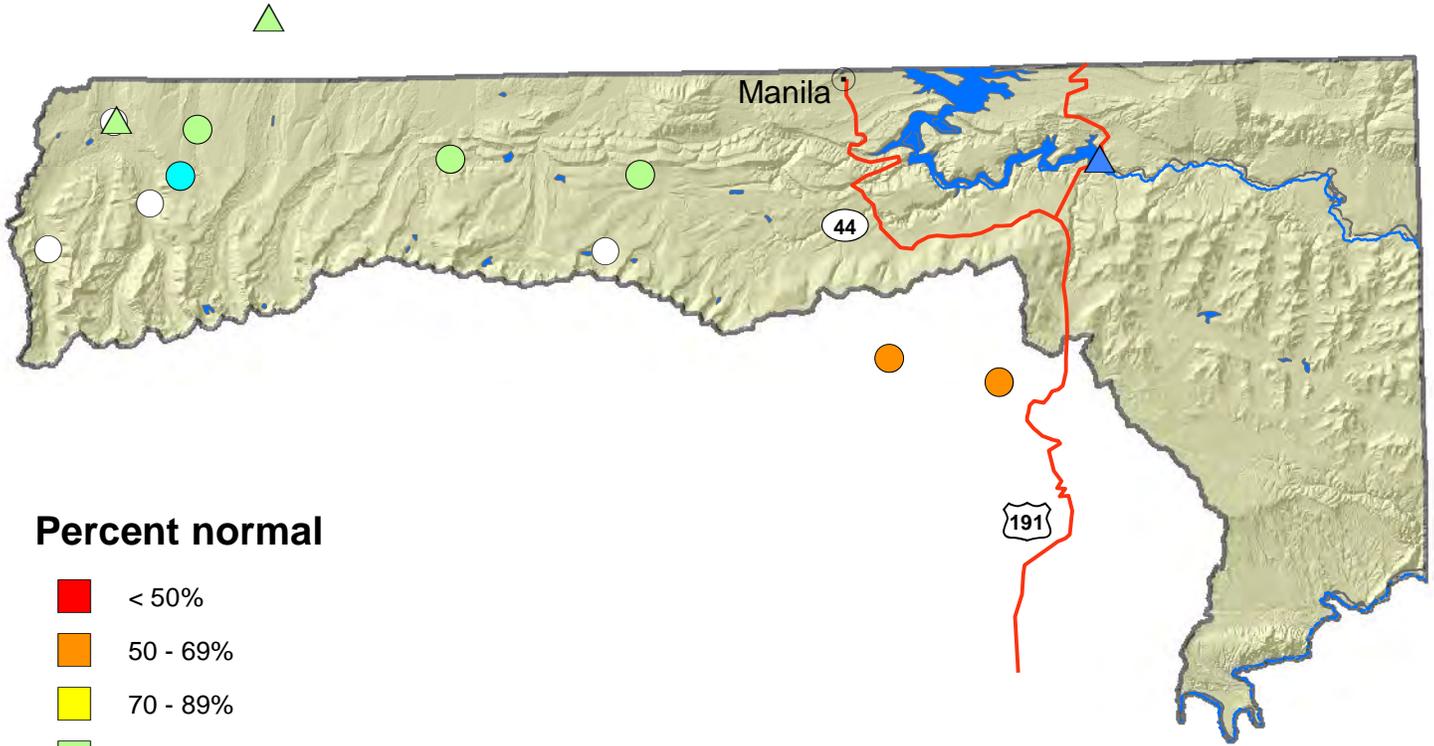
**EOM, end of month; # SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.*

Smiths Fork River - Surface Water Supply Index

April



Northeastern Utah

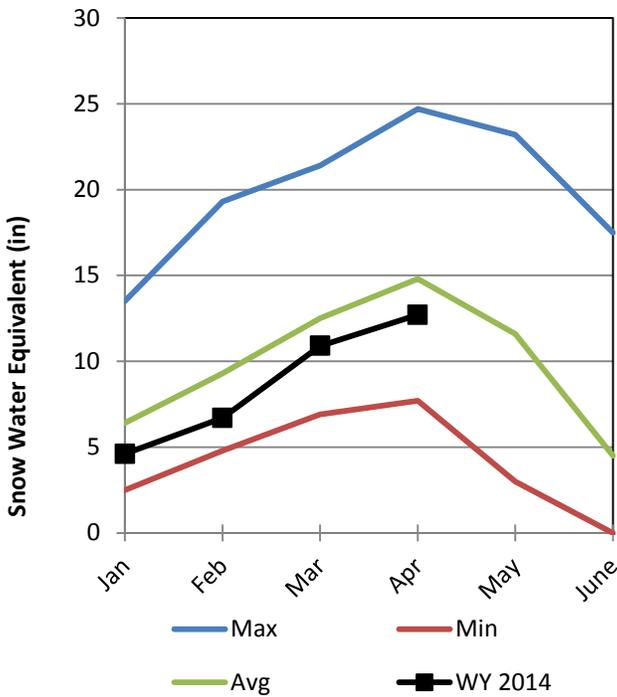


Duchesne River Basin

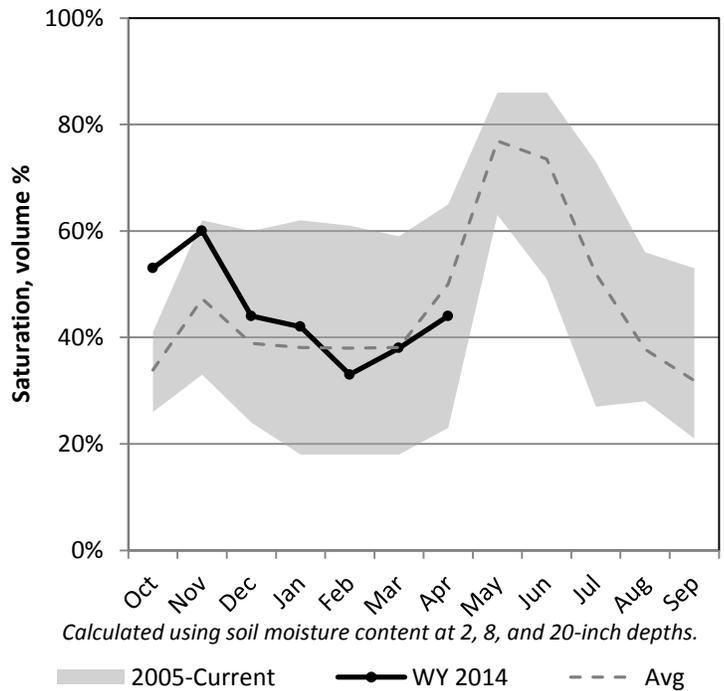
4/1/2014

Snowpack in the Duchesne River Basin is near average at 91% of normal, compared to 68% last year. Precipitation in March was below average at 74%, which brings the seasonal accumulation (Oct-Mar) to 82% of average. Soil moisture is at 44% compared to 51% last year. Reservoir storage is at 76% of capacity, compared to 79% last year. Forecast streamflow volumes range from 58% to 91% of average. The surface water supply index is 59% for the Western Uintahs, 8% for the Eastern Uintahs.

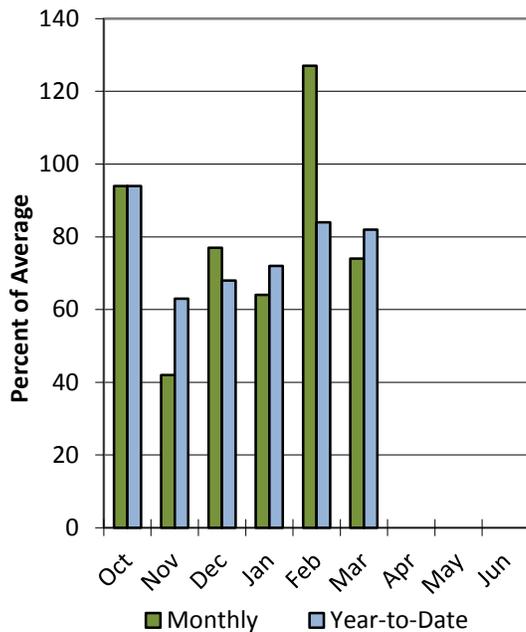
Snowpack



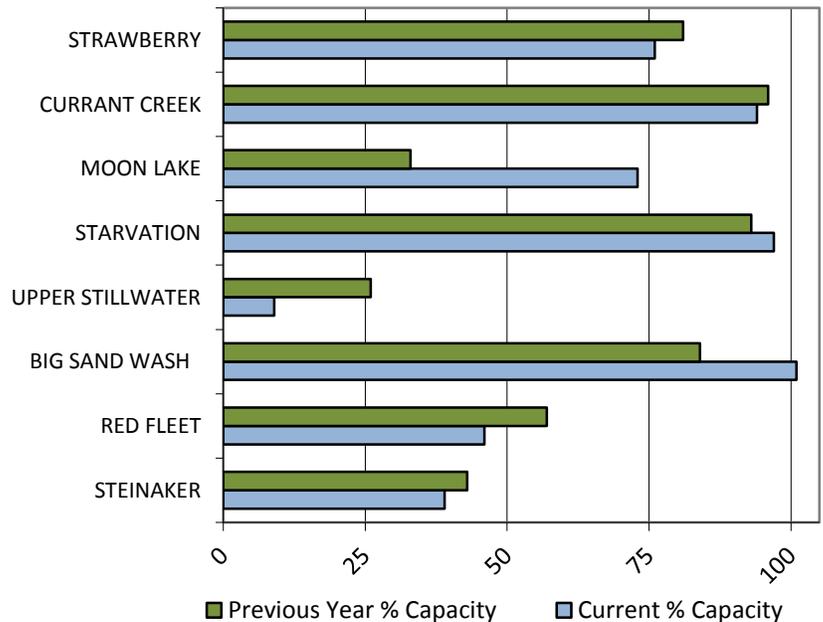
Soil Moisture



Precipitation



Reservoir Storage



Duchesne River Streamflow Forecasts - April 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	66	81	92	85%	104	123	108
Strawberry R nr Duchesne ²	APR-JUL	35	55	72	64%	91	122	112
Strawberry R nr Soldier Springs ²	APR-JUL	13.4	24	32	58%	42	59	55
Duchesne R at Myton ²	APR-JUL	129	185	230	70%	280	360	330
Duchesne R nr Randlett ²	APR-JUL	111	179	235	61%	300	405	385
Duchesne R ab Knight Diversion ²	APR-JUL	123	149	168	86%	188	220	195
WF Duchesne R at VAT Diversion	APR-JUL	11.4	14	16	86%	18.1	21	18.6
Rock Ck nr Mountain Home ²	APR-JUL	62	72	80	91%	88	100	88
Yellowstone R nr Altonah	APR-JUL	31	40	47	77%	55	67	61
Upper Stillwater Reservoir Inflow ²	APR-JUL	50	60	67	91%	75	87	74
Lake Fk R BI Moon Lk nr Mountain Home ²	APR-JUL	37	46	53	80%	60	70	66
Lake Fork R ab Moon Lake Reservoir	APR-JUL	33	42	50	82%	58	71	61
Currant Ck Reservoir Inflow ²	APR-JUL	9	12.4	15	75%	17.8	22	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

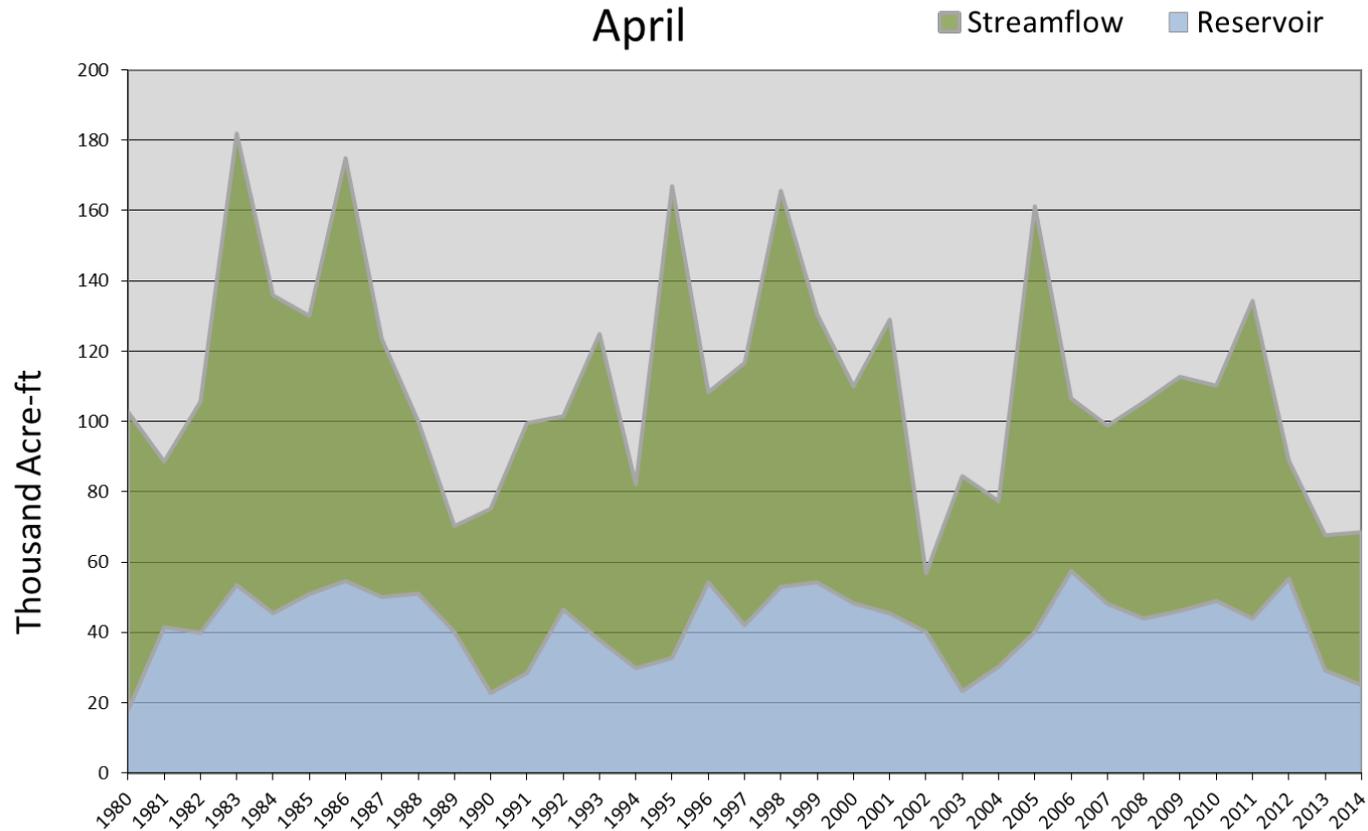
Reservoir Storage End of March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
STEINAKER RESERVOIR	13.1	14.5	24.5	33.4
RED FLEET RESERVOIR	11.9	14.7	18.8	25.7
BIG SAND WASH RESERVOIR	25.9	21.6		25.7
UPPER STILLWATER RESERVOIR	2.9	8.4	4.5	32.5
STARVATION RESERVOIR	160.2	154.1	149.7	165.3
MOON LAKE RESERVOIR	26.0	11.8	27.3	35.8
CURRANT CREEK RESERVOIR	14.5	14.9	14.8	15.5
STRAWBERRY RESERVOIR	839.1	895.4	665.1	1105.9
Basin-wide Total	1093.7	1135.4	904.7	1439.8
# of reservoirs	8	8	7	8

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Strawberry	5	86%	54%
Lakefork Yellowstone	7	99%	71%
Uintah Whiterocks	2	78%	82%

April 1, 2014		Surface Water Supply Index				
Basin or Region	March EOM* Red Fleet & Steinaker	April-July Forecast Big Brush & Ashley Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Eastern Uintah	25.0	43.5	68.5	-3.47	8	02, 13, 89, 90

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

Eastern Uintah Basin - Surface Water Supply Index
April



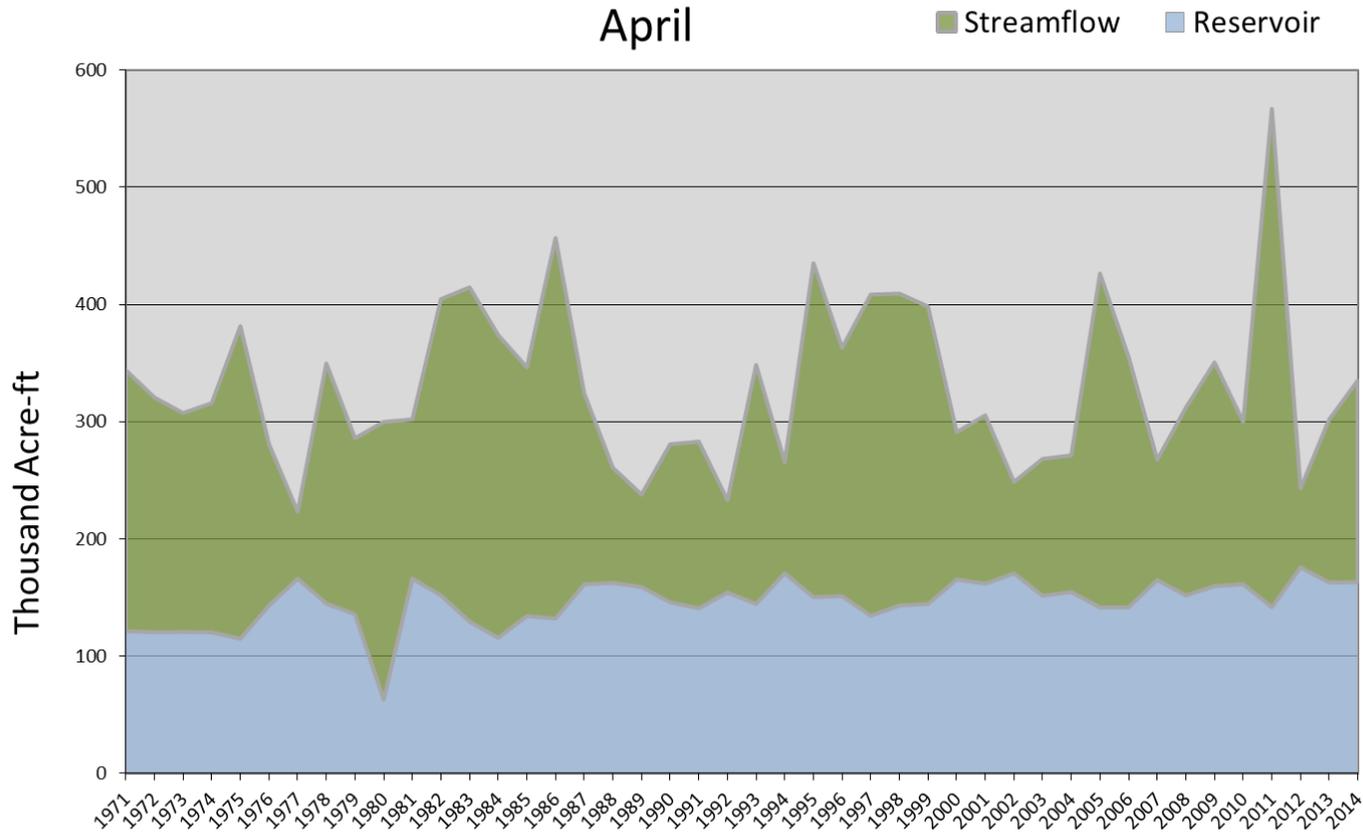
April 1, 2014

Surface Water Supply Index

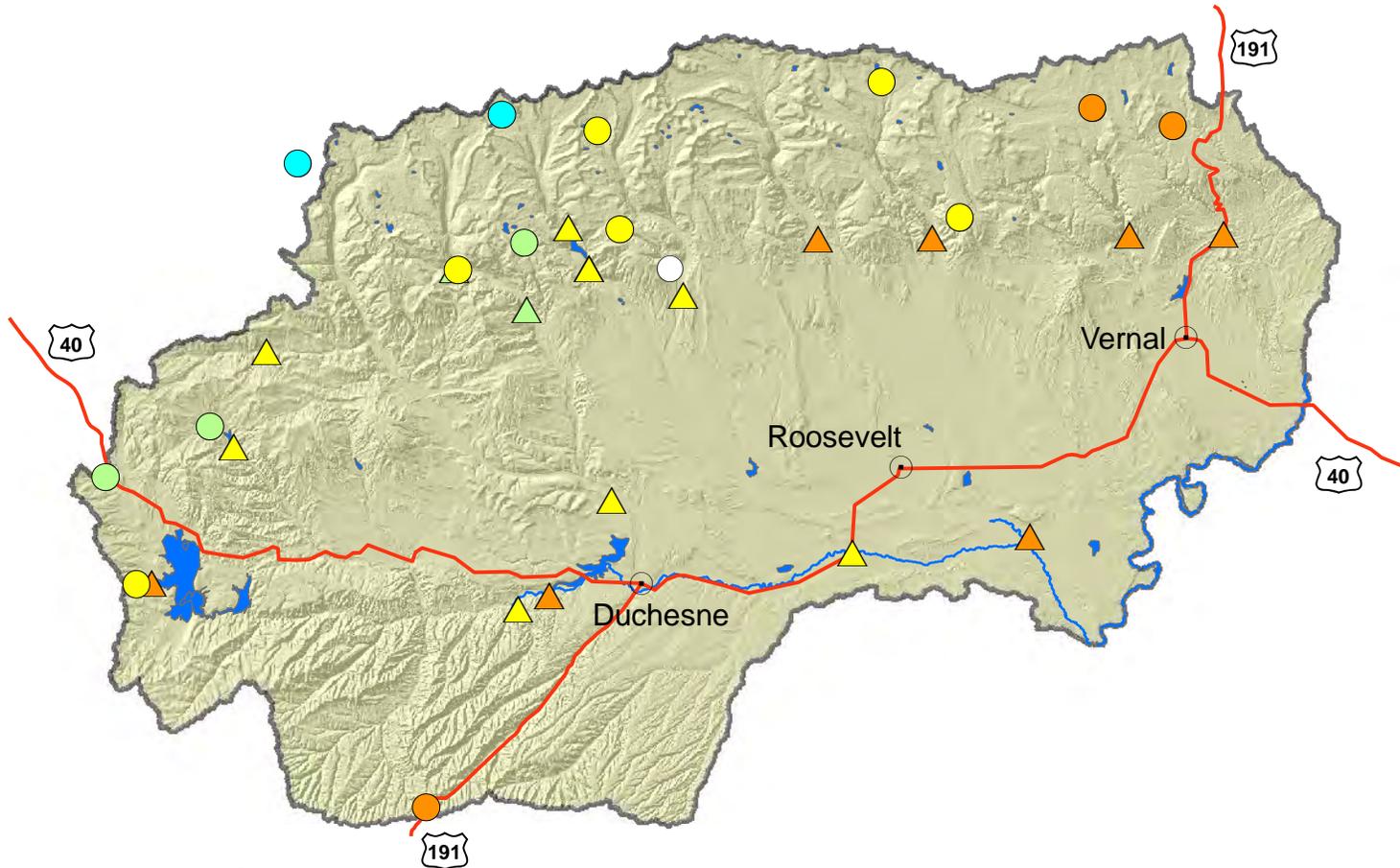
Basin or Region	March EOM* Starvation & Upper Stillwater	April-July Forecast Rock Creek & Duchesne River	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Western Uintah	163	172	335	0.76	59	72, 87, 71, 85

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

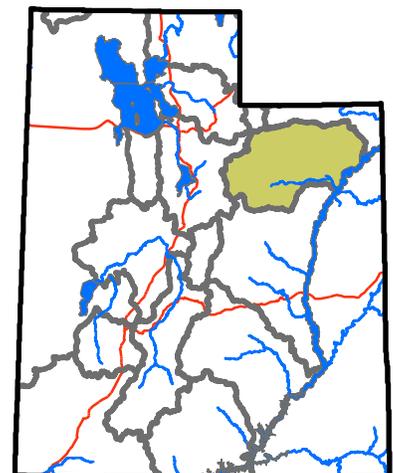
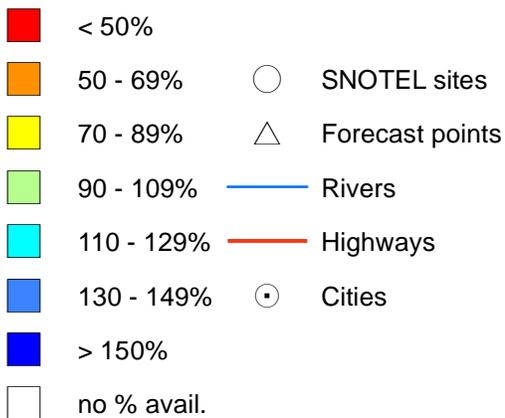
Western Uintah Basin - Surface Water Supply Index April



Duchesne basin



Percent normal

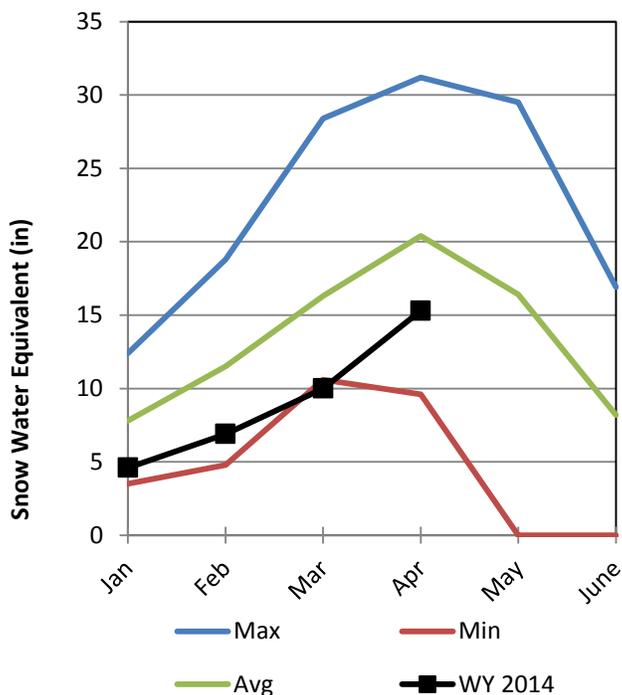


Lower Sevier River Basin

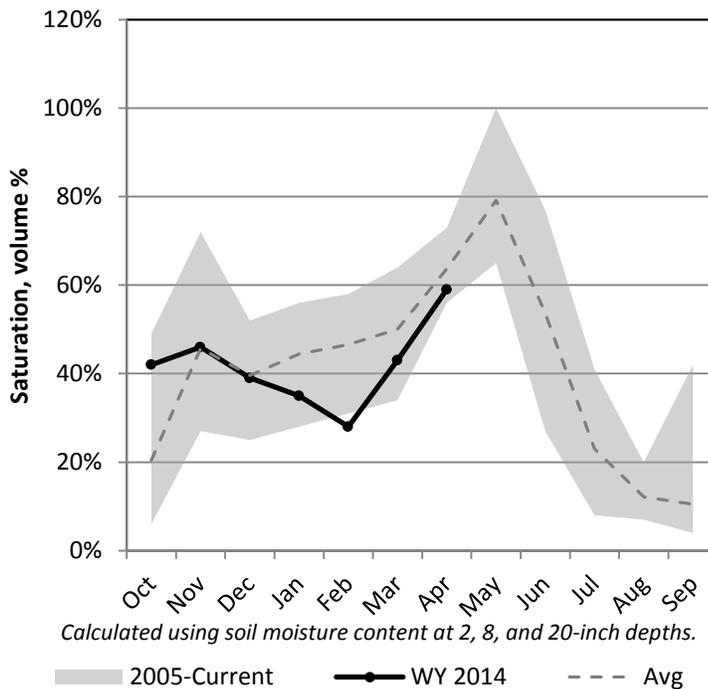
4/1/2014

Snowpack in the Lower Sevier River Basin is below average at 71% of normal, compared to 87% last year. Precipitation in March was near average at 96%, which brings the seasonal accumulation (Oct-Mar) to 84% of average. Soil moisture is at 59% compared to 65% last year. Reservoir storage is at 59% of capacity, compared to 73% last year. Forecast streamflow volumes range from 31% to 60% of average. The surface water supply index is 39% for the Lower Sevier.

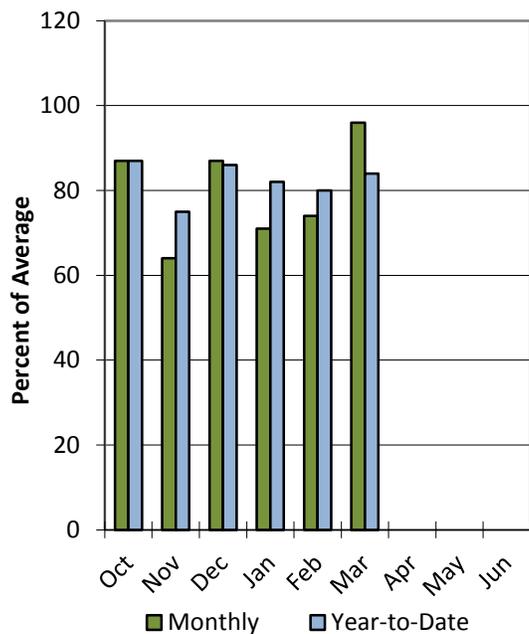
Snowpack



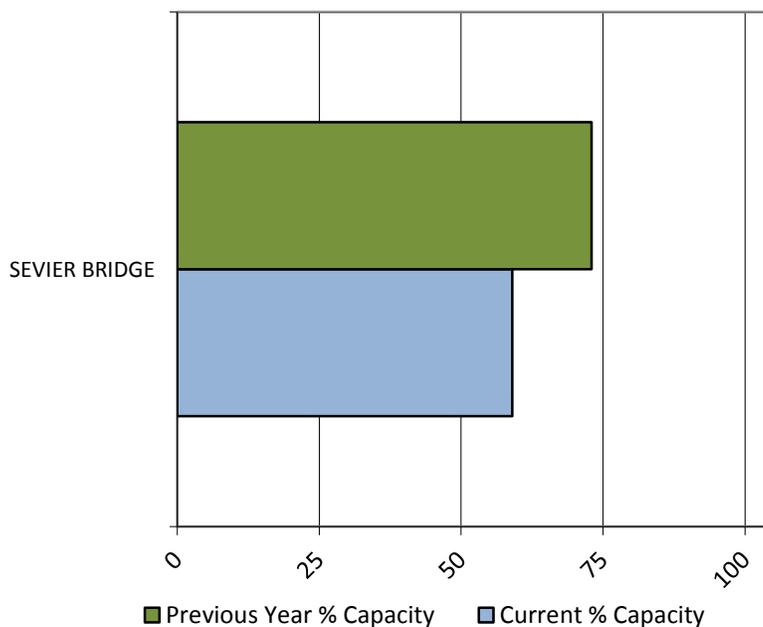
Soil Moisture



Precipitation



Reservoir Storage



Lower Sevier River Streamflow Forecasts - April 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	1.26	1.93	2.5	56%	3.2	4.4	4.5
Oak Ck nr Oak City	APR-JUL	0.21	0.37	0.5	30%	0.65	0.91	1.66

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

Reservoir Storage End of March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
SEVIER BRIDGE RESERVOIR	138.8	172.0	181.9	236.0
Basin-wide Total	138.8	172.0	181.9	236.0
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Lower Sevier	1	71%	87%

April 1, 2014

Surface Water Supply Index

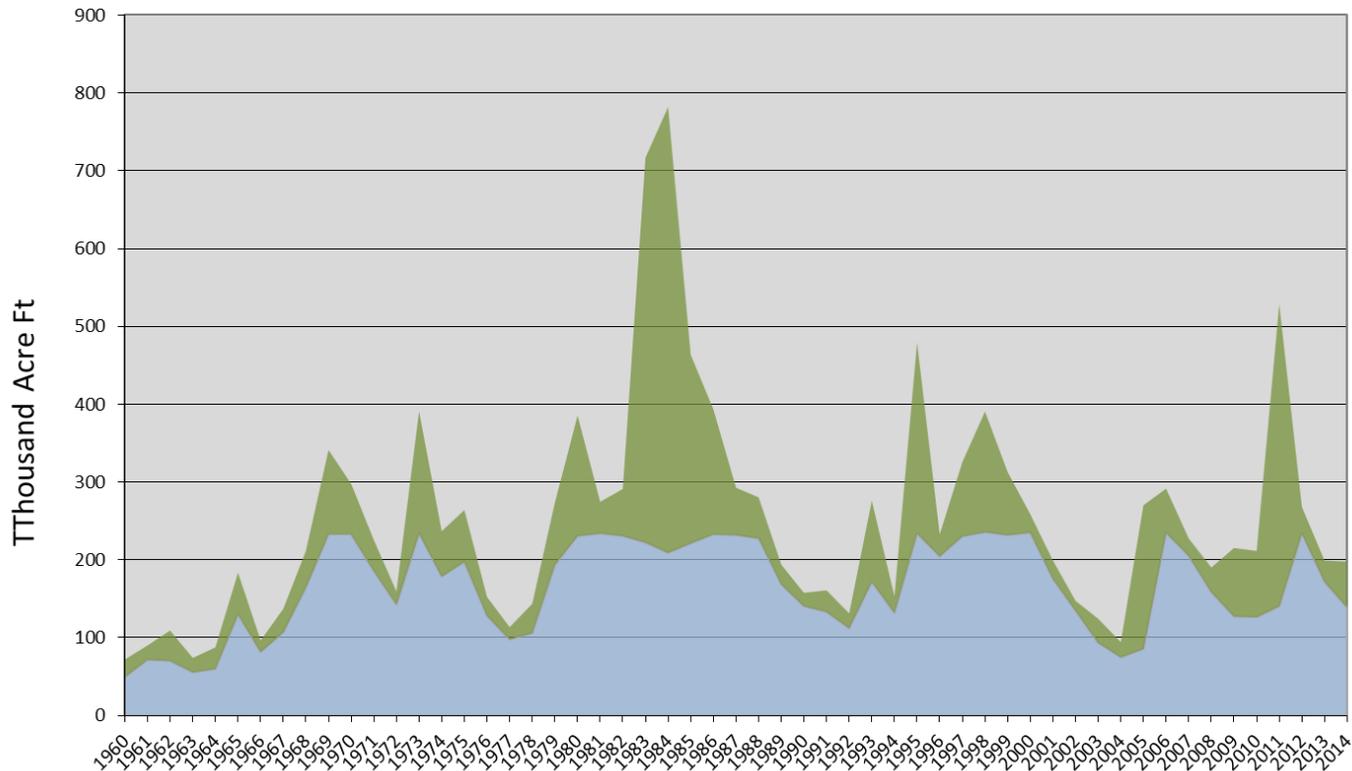
Basin or Region	March EOM* Sevier Bridge Reservoir	April-July Forecast Inflow to Sevier Bridge Reservoir	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Lower Sevier	139	59.0	198	-0.89	39	08, 89, 13, 01

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

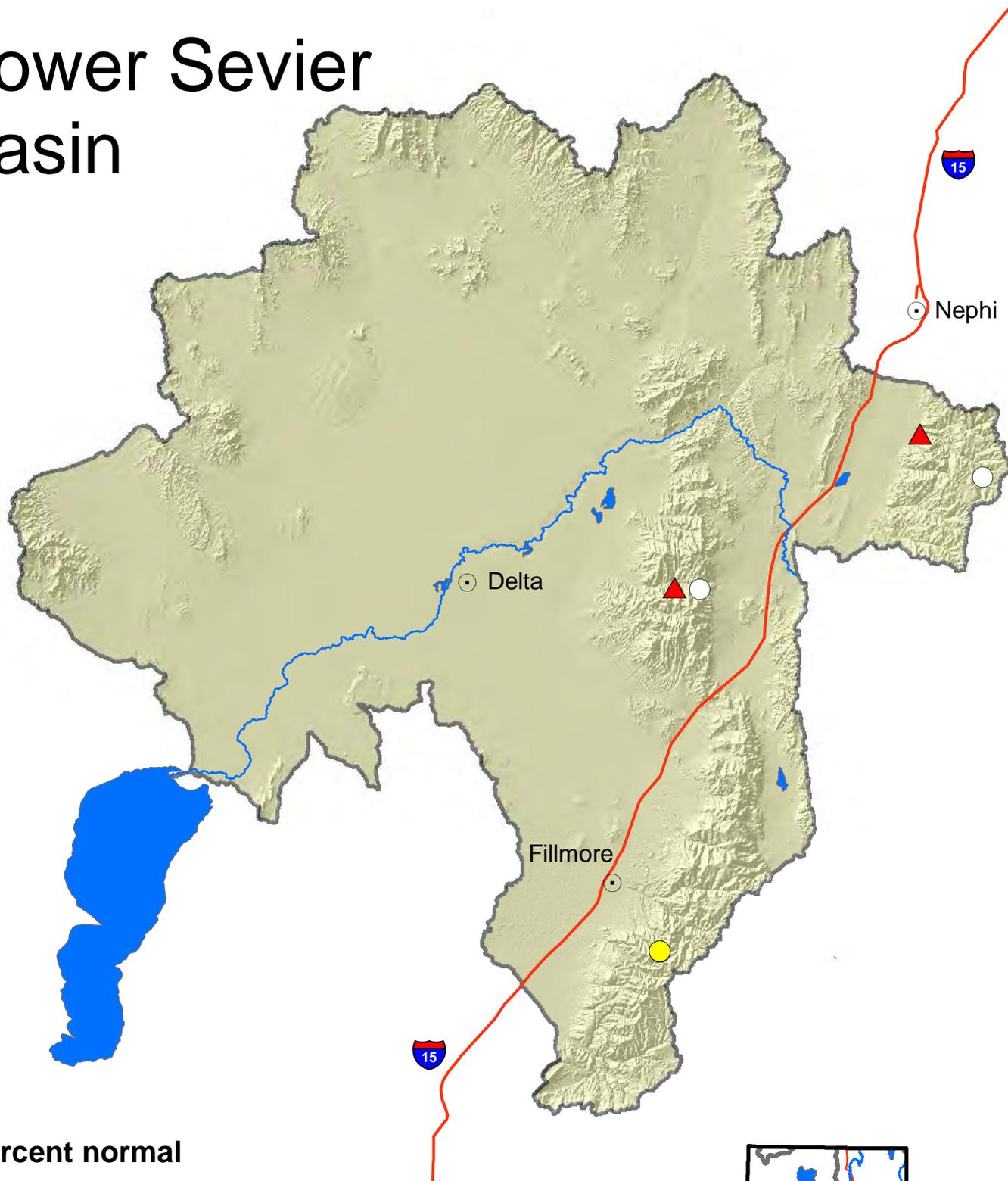
Lower Sevier River - Surface Water Supply Index

April

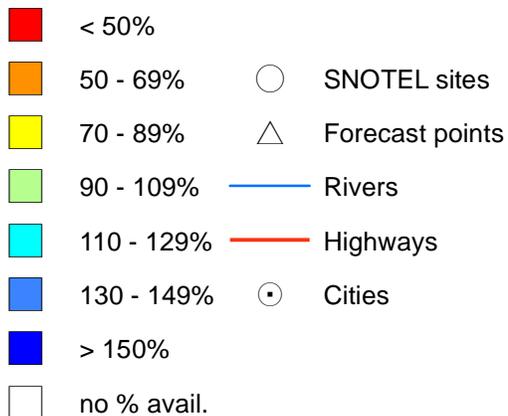
■ Streamflow ■ Reservoir



Lower Sevier basin

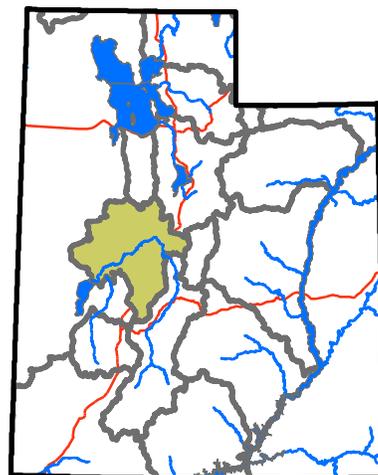


Percent normal



United States Department of Agriculture
 Natural Resources Conservation Service

0 2.5 5 10 15 20 Miles

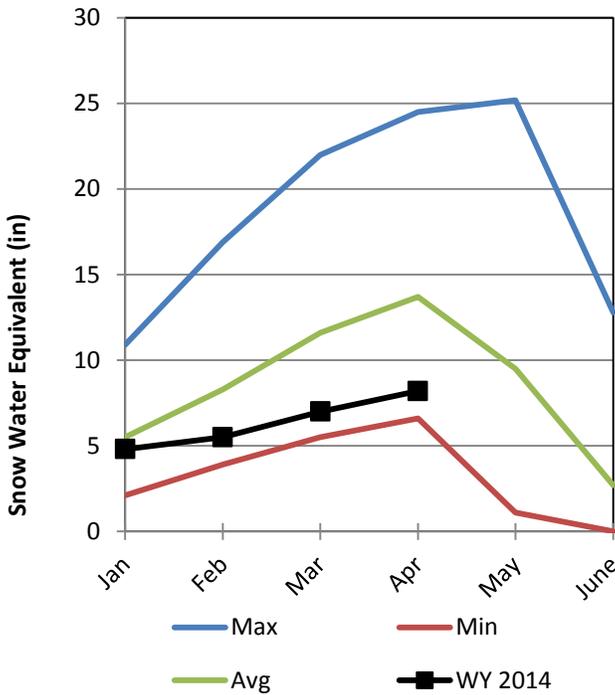


Upper Sevier River Basin

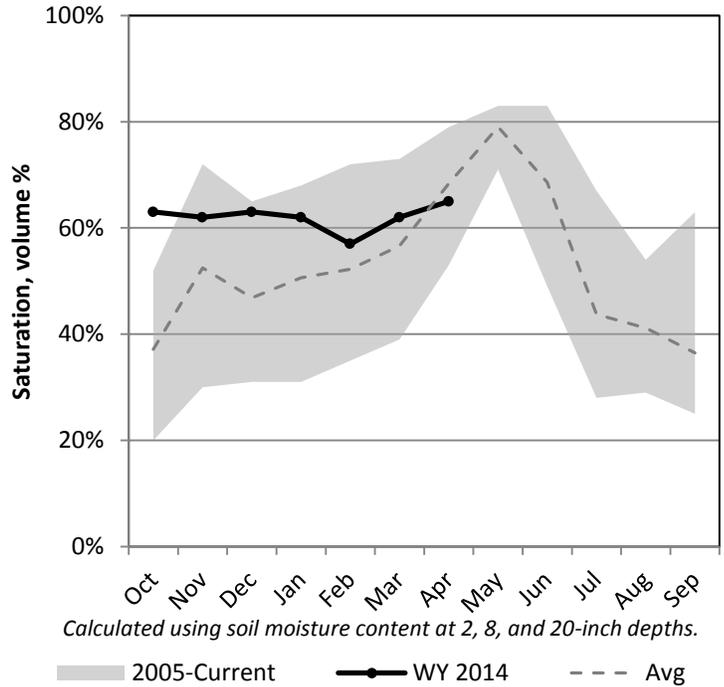
4/1/2014

Snowpack in the Upper Sevier River Basin is much below average at 69% of normal, compared to 75% last year. Precipitation in March was much below average at 61%, which brings the seasonal accumulation (Oct-Mar) to 70% of average. Soil moisture is at 65% compared to 64% last year. Reservoir storage is at 82% of capacity, compared to 75% last year. Forecast streamflow volumes range from 42% to 79% of average. The surface water supply index is 31% for the Upper Sevier.

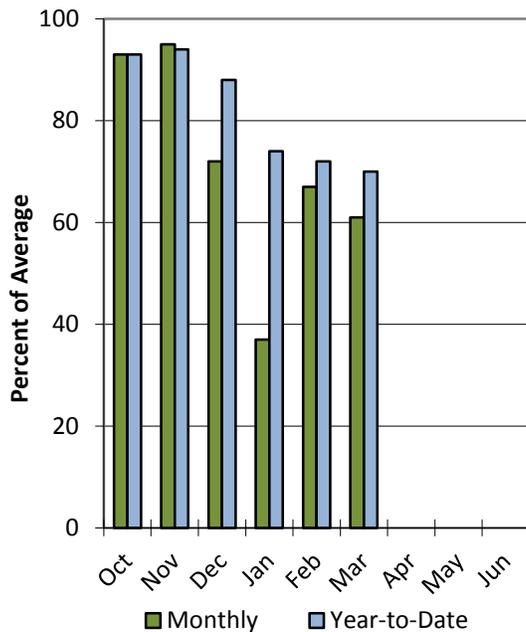
Snowpack



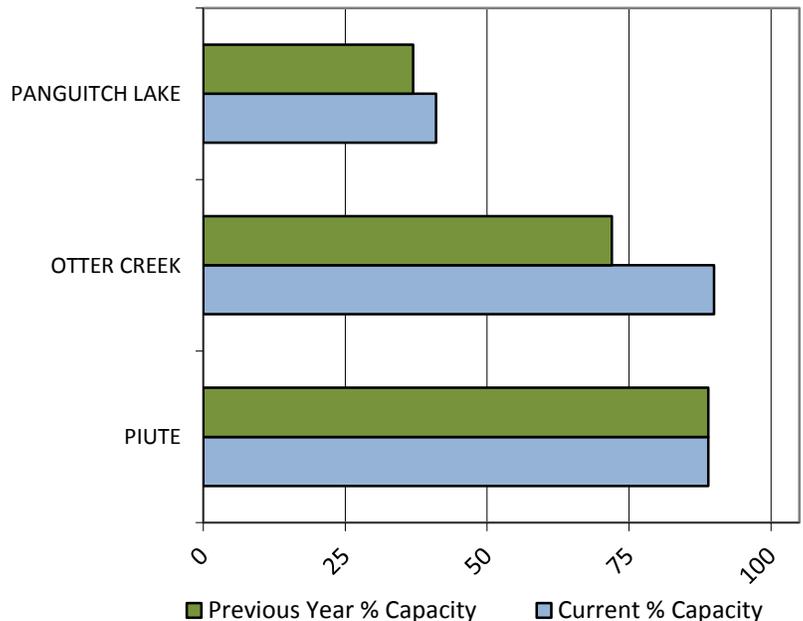
Soil Moisture



Precipitation



Reservoir Storage



Upper Sevier River Streamflow Forecasts - April 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	10.2	19	22	46%	31	40	48
EF Sevier R nr Kingston	APR-JUL	0.7	10.4	18.2	52%	26	38	35
Sevier R nr Kingston	APR-JUL	0.33	5.1	14	42%	23	36	33
Sevier R bl Piute Dam	APR-JUL	1.32	13.4	33	50%	53	81	66
Clear Ck ab Diversions nr Sevier	APR-JUL	2.8	7.7	11	52%	14.3	19.2	21
Salina Ck nr Emery	APR-JUL	0.24	2.1	4	51%	5.9	8.8	7.9

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

Reservoir Storage End of March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
PIUTE RESERVOIR	64.0	64.1	58.2	71.8
OTTER CREEK RESERVOIR	47.4	37.9	42.2	52.5
PANGUITCH LAKE	9.2	8.3	14.5	22.3
Basin-wide Total	120.7	110.3	114.9	146.6
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Upper Sevier	13	69%	75%
Middle Sevier	9	78%	78%
E Fk Sevier	6	56%	65%

April 1, 2014

Surface Water Supply Index

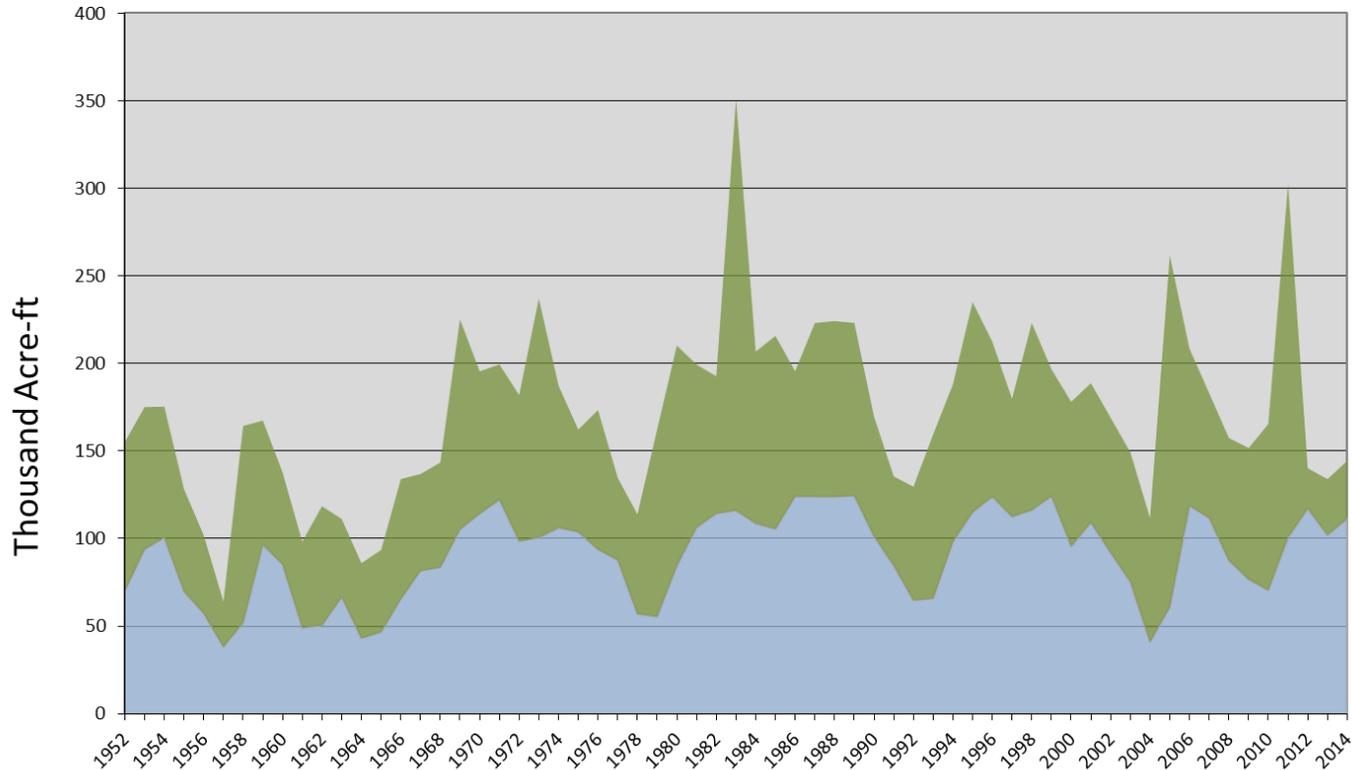
Basin or Region	March EOM* Piute & Otter Creek Reservoir	April-July Forecast Inflow to Piute Reservoir	Reservoir + Streamflow	SWSI [#]	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Upper Sevier	111	33.0	144	-1.56	31	12, 68, 03, 09

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

Upper Sevier River - Surface Water Supply Index

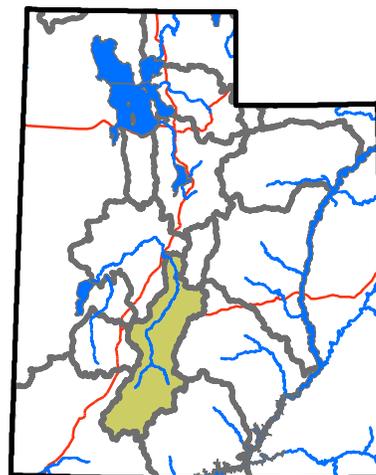
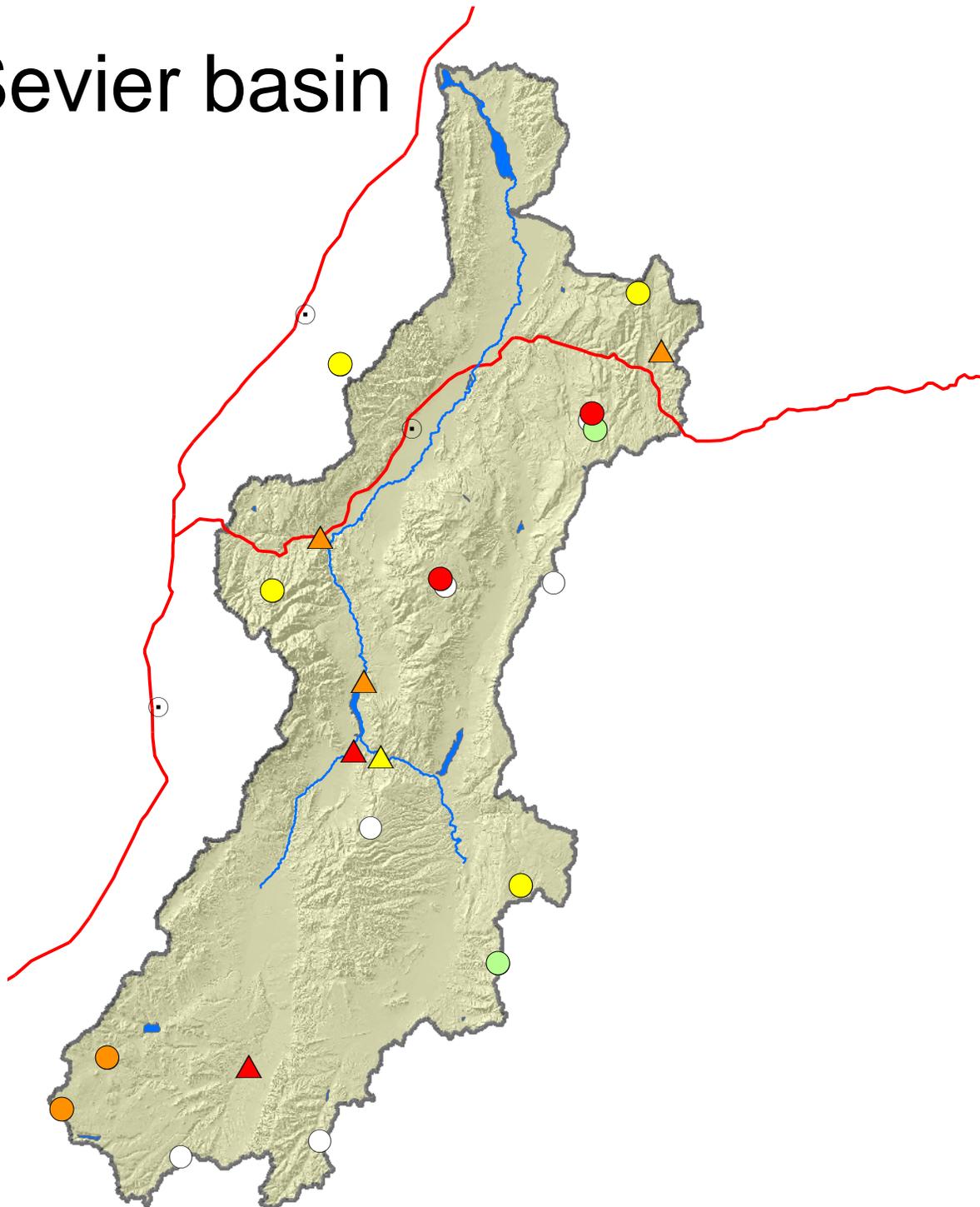
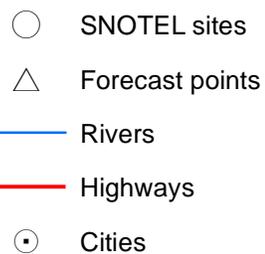
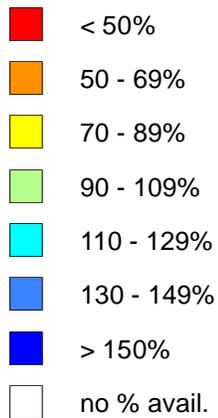
April

■ Streamflow ■ Reservoir



Upper Sevier basin

Percent normal

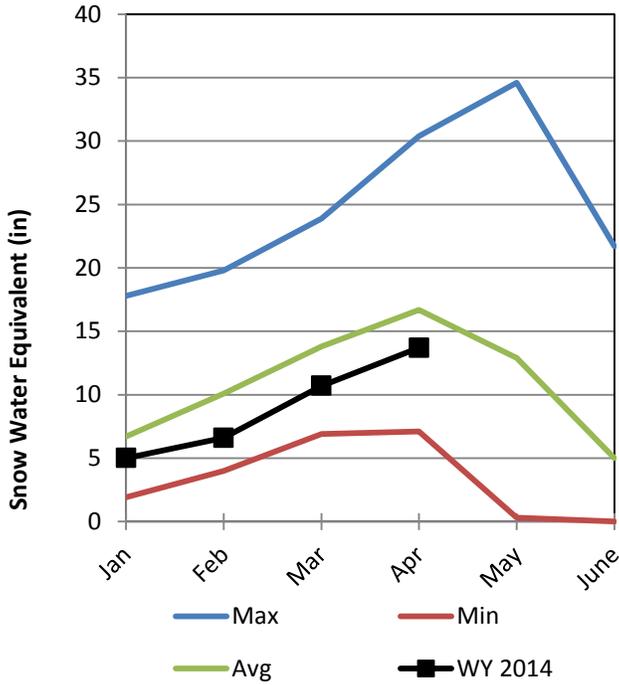


San Pitch River Basin

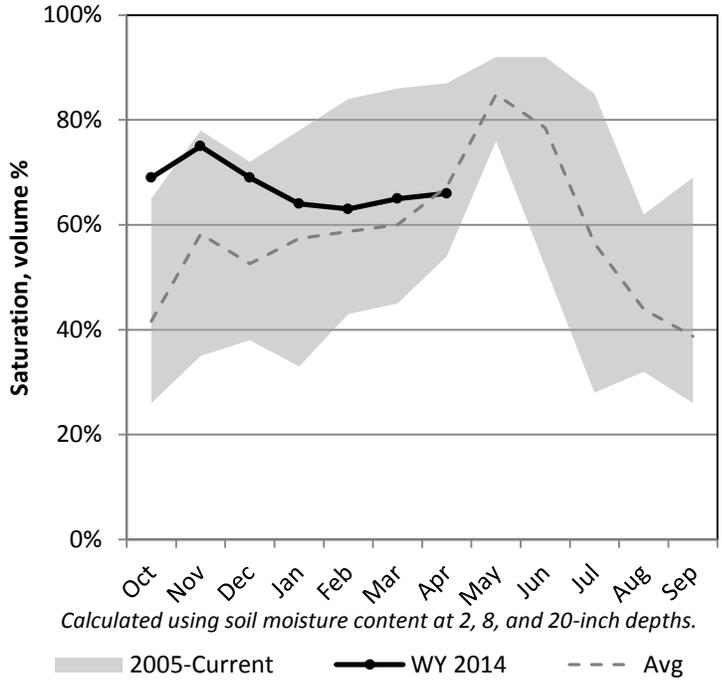
4/1/2014

Snowpack in the San Pitch River Basin is below average at 88% of normal, compared to 72% last year. Precipitation in March was below average at 81%, which brings the seasonal accumulation (Oct-Mar) to 89% of average. Soil moisture is at 66% compared to 63% last year. Reservoir storage is at 24% of capacity, compared to 43% last year. The forecast streamflow volume for Manti Creek is 66% of average. The surface water supply index is 8% for the San Pitch.

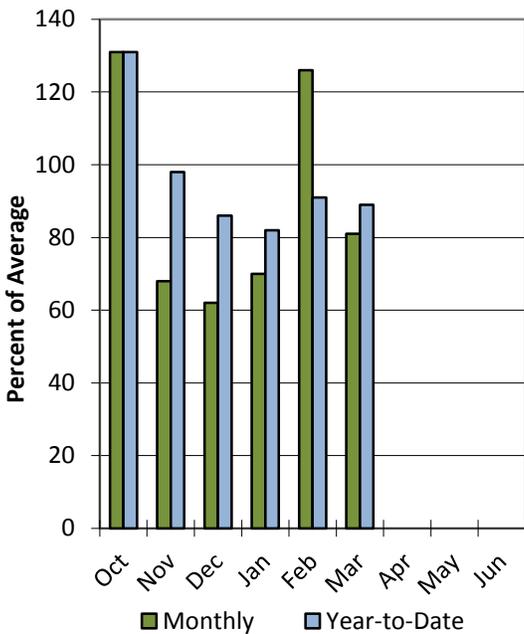
Snowpack



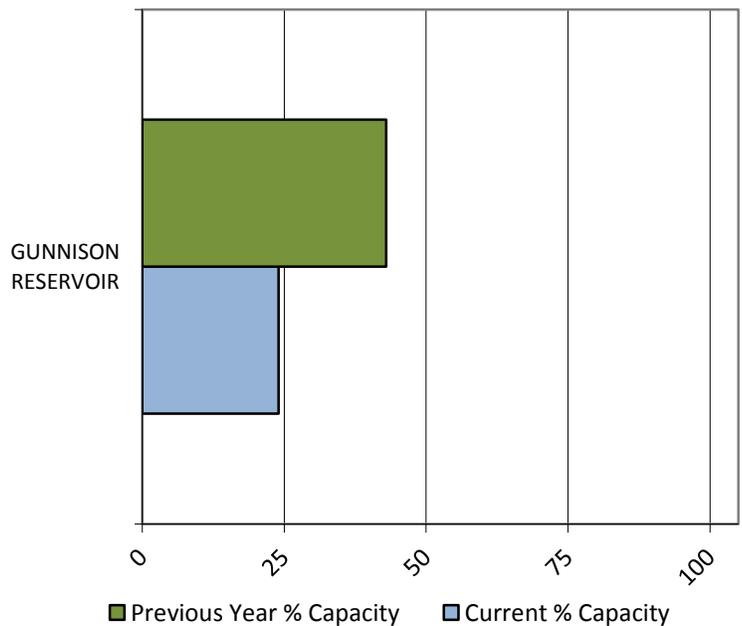
Soil Moisture



Precipitation



Reservoir Storage



San Pitch River Streamflow Forecasts - April 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	6.8	9.2	11	66%	13	16.3	16.7
Sevier R nr Gunnison	APR-JUL	13.5	41	59	60%	77	105	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 March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
GUNNISON RESERVOIR	5.0	8.7	14.7	20.3
Basin-wide Total	5.0	8.7	14.7	20.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Upper San Pitch	4	79%	66%
Lower San Pitch	9	88%	76%

April 1, 2014

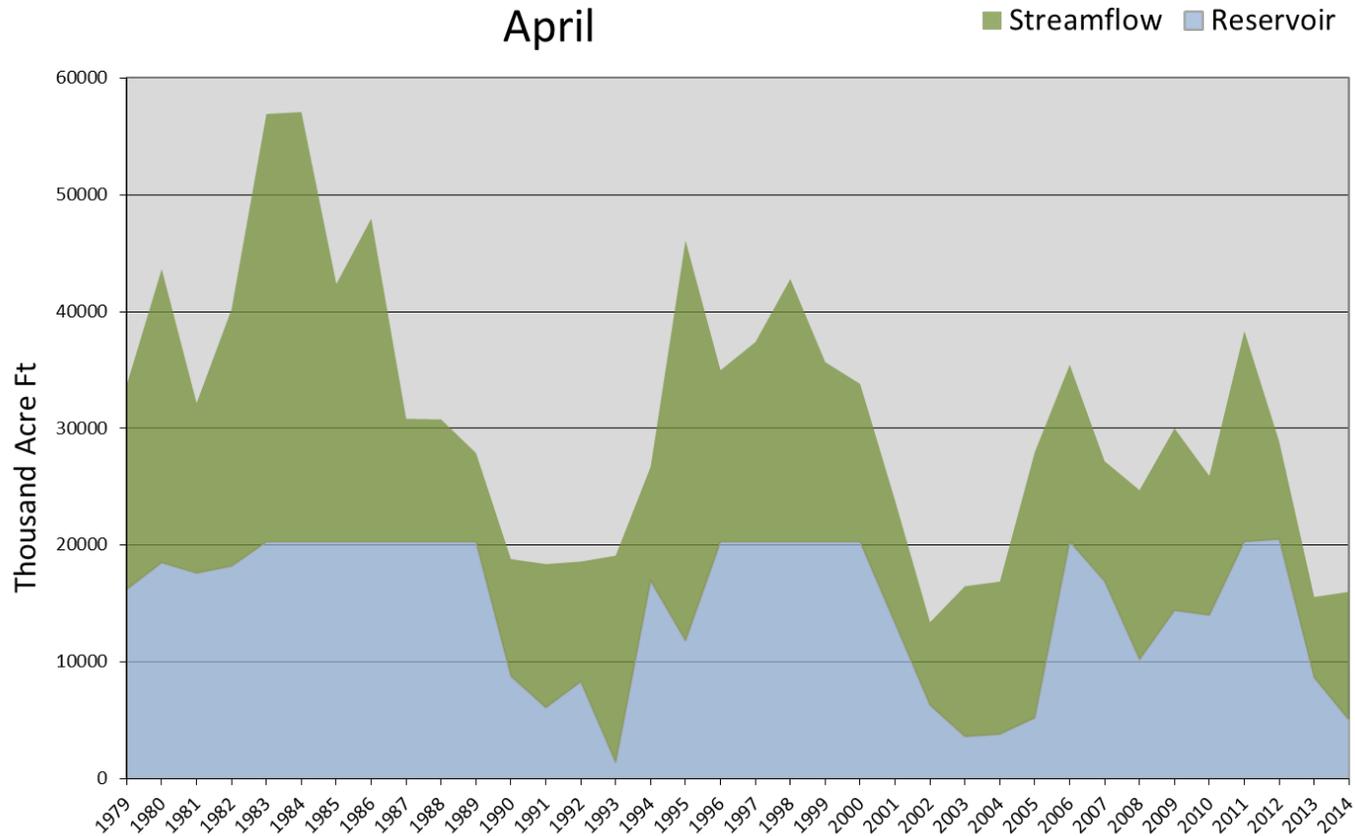
Surface Water Supply Index

Basin or Region	March EOM* Gunnison State 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	5.0	11.0	16.0	-3.49	8	02, 13, 03, 04

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

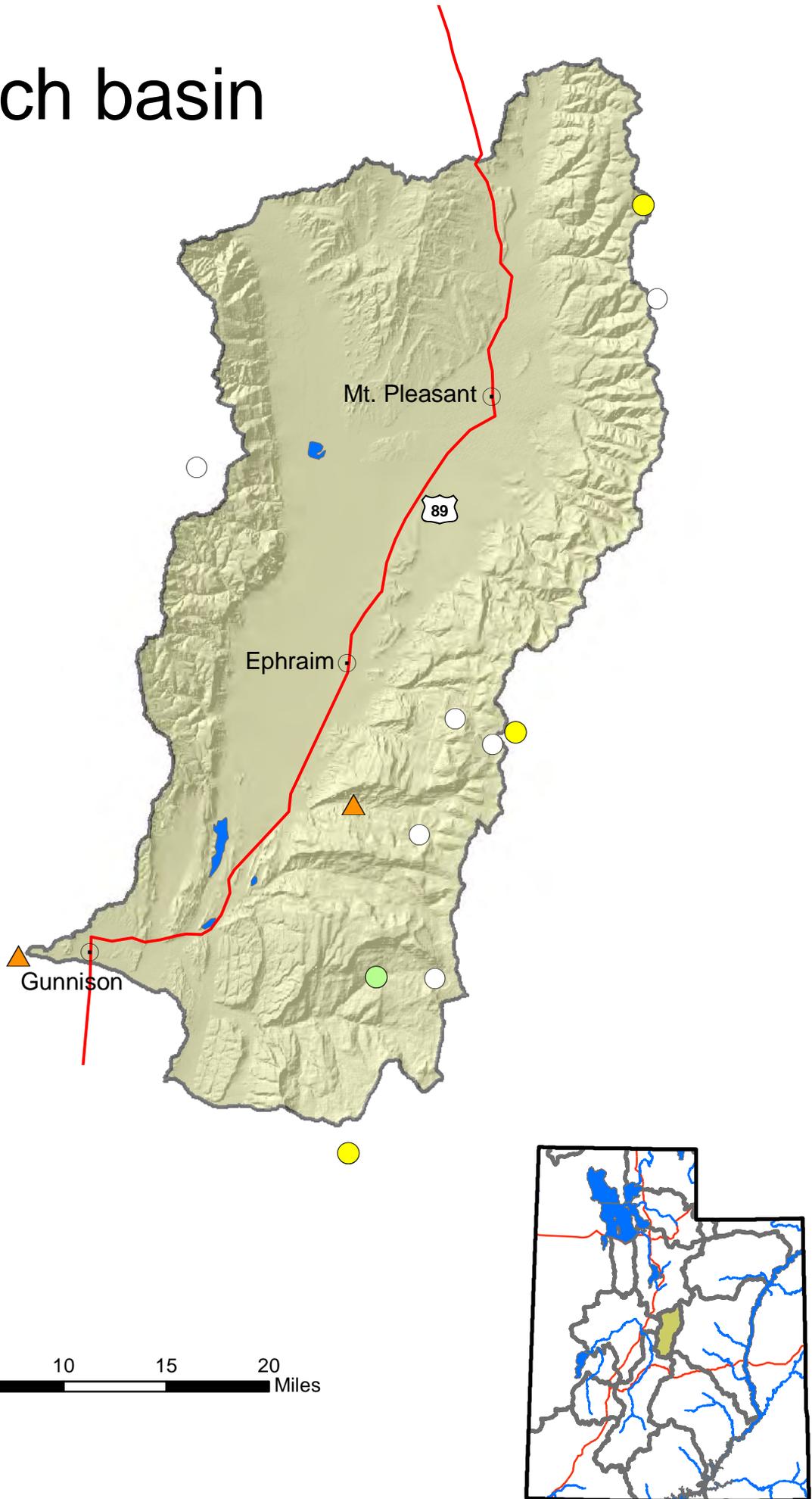
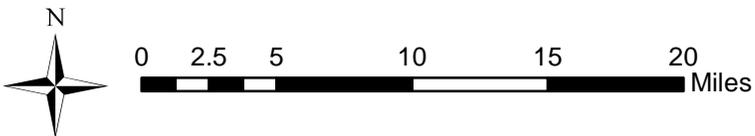
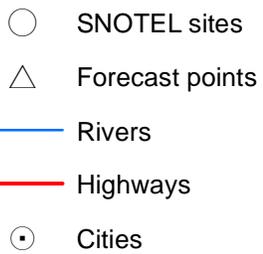
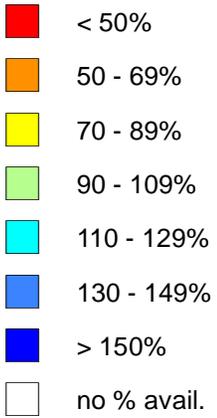
San Pitch River - Surface Water Supply Index

April



San Pitch basin

Percent normal

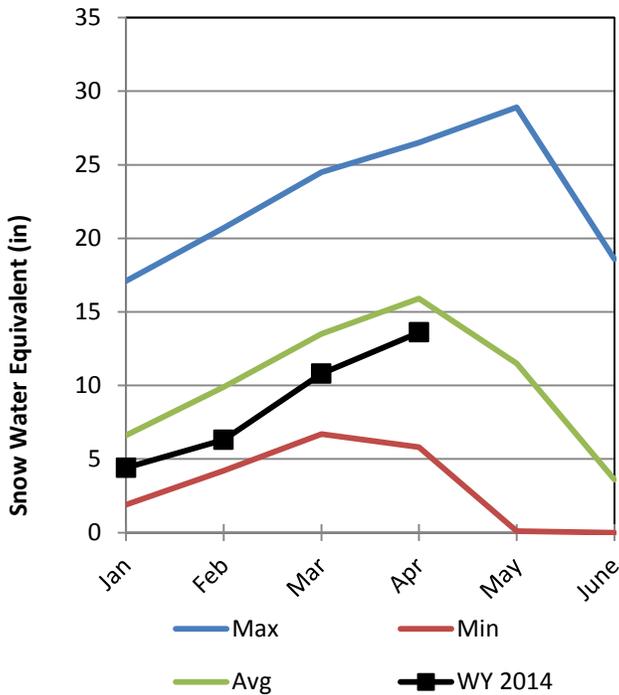


Price & San Rafael Basins

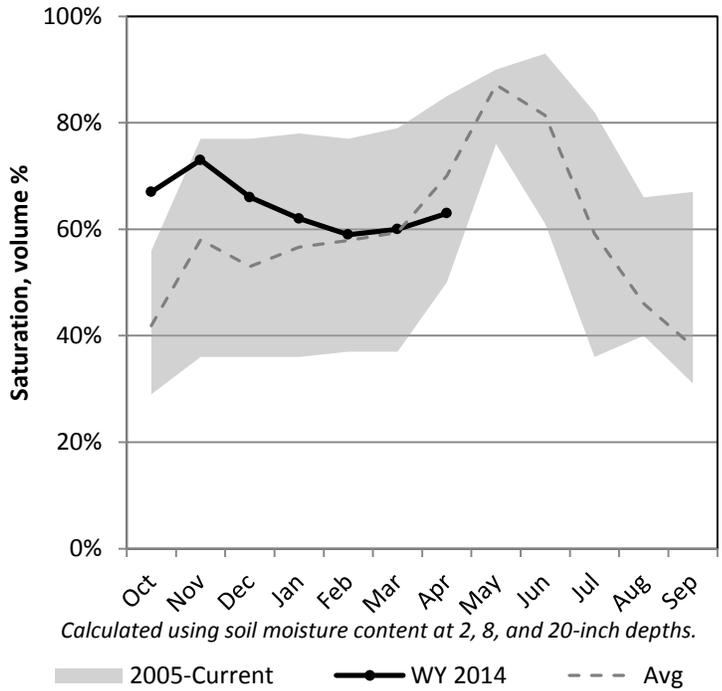
4/1/2014

Snowpack in the Price & San Rafael Basins is below average at 88% of normal, compared to 66% last year. Precipitation in March was below average at 87%, which brings the seasonal accumulation (Oct-Mar) to 91% of average. Soil moisture is at 63% compared to 57% last year. Reservoir storage is at 45% of capacity, compared to 48% last year. Forecast streamflow volumes range from 58% to 113% of average. The surface water supply index is 20% for the Price River, 37% for Joe's Valley, 47% for Ferron Creek.

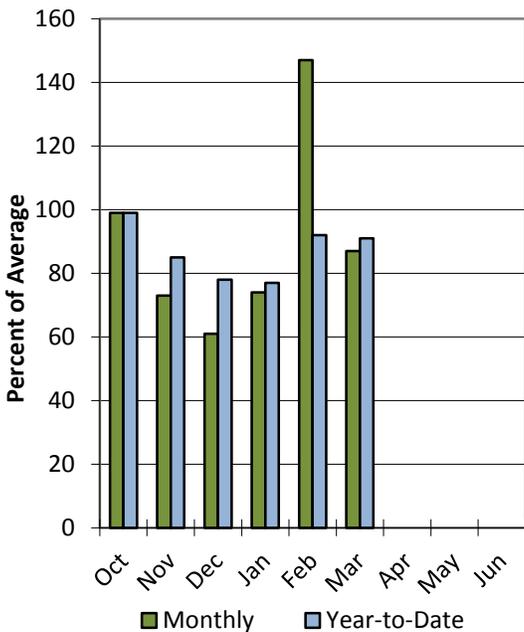
Snowpack



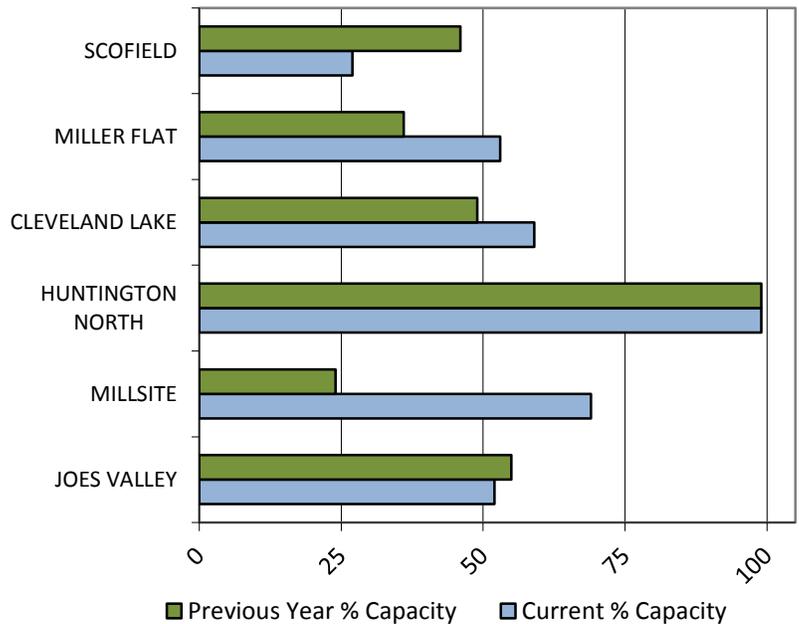
Soil Moisture



Precipitation



Reservoir Storage



Price San Rafael Streamflow Forecasts - April 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	15.8	21	24	80%	28	35	30
Price R nr Scofield Reservoir ²	APR-JUL	17.5	25	30	73%	36	46	41
White R bl Tabbyune Creek	APR-JUL	5.4	7.4	9	58%	10.7	13.5	15.5
Green R at Green River, UT ²	APR-JUL	2300	2890	3330	113%	3800	4550	2960
Electric Lake Inflow ²	APR-JUL	5.6	8.1	10	75%	12.1	15.6	13.3
Huntington Ck nr Huntington ²	APR-JUL	21	27	31	78%	36	43	40
Joes Valley Reservoir Inflow ²	APR-JUL	29	38	45	80%	52	64	56
Ferron Ck (Upper Station) nr Ferron	APR-JUL	21	26	30	79%	33	39	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 March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
JOES VALLEY RESERVOIR	32.2	33.9	40.0	61.6
MILLSITE	11.5	4.0	10.4	16.7
HUNTINGTON NORTH RESERVOIR	4.2	4.2	3.8	4.2
CLEVELAND LAKE	3.2	2.6		5.4
MILLER FLAT RESERVOIR	2.7	1.9		5.2
SCOFIELD RESERVOIR	17.7	30.5	30.7	65.8
Basin-wide Total	71.5	77.0	84.9	158.9
# of reservoirs	6	6	4	6

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Price	6	88%	66%
San Rafael	6	88%	66%

April 1, 2014

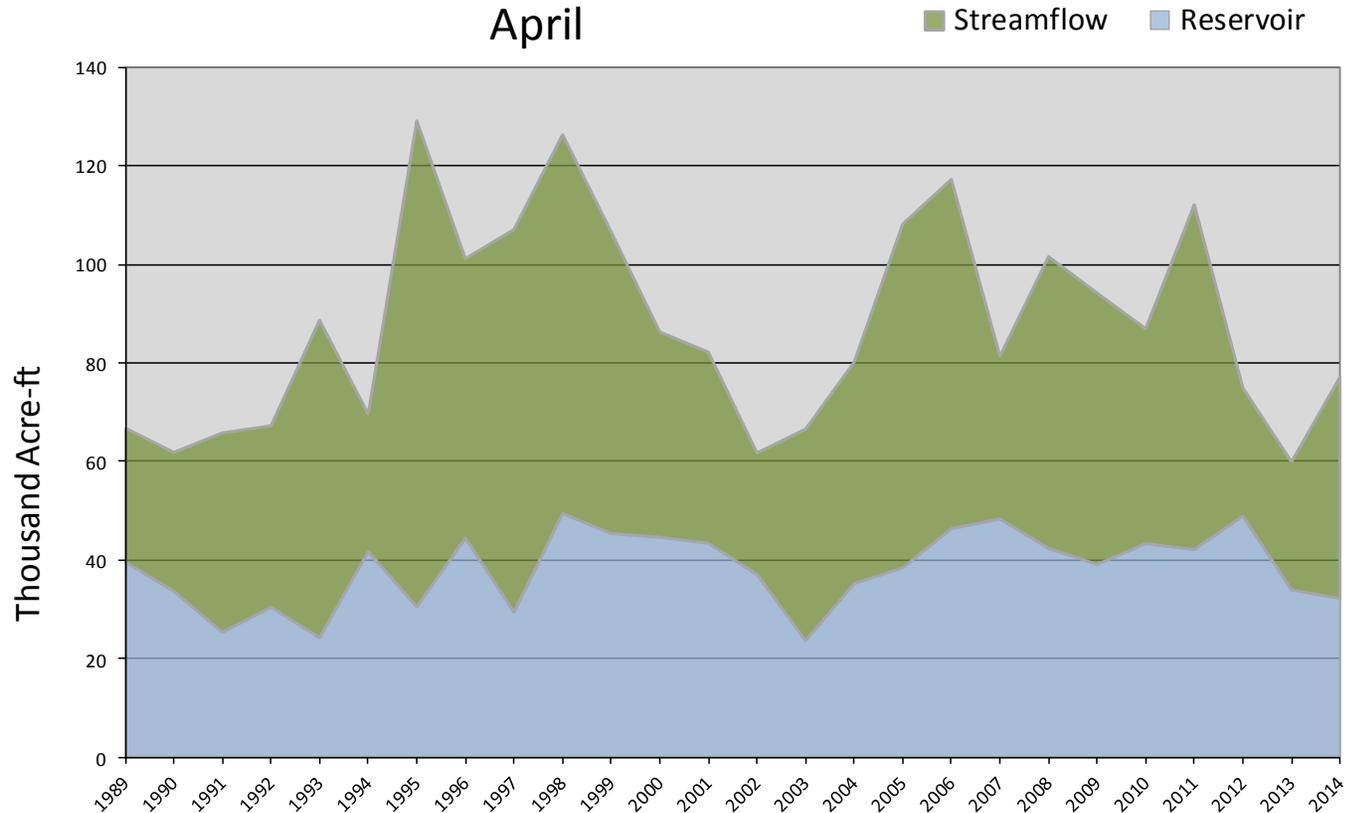
Surface Water Supply Index

Basin or Region	March 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	32.2	45.0	77.2	-1.08	37	94, 12, 04, 07

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

Joe's Valley - Surface Water Supply Index

April



April 1, 2014

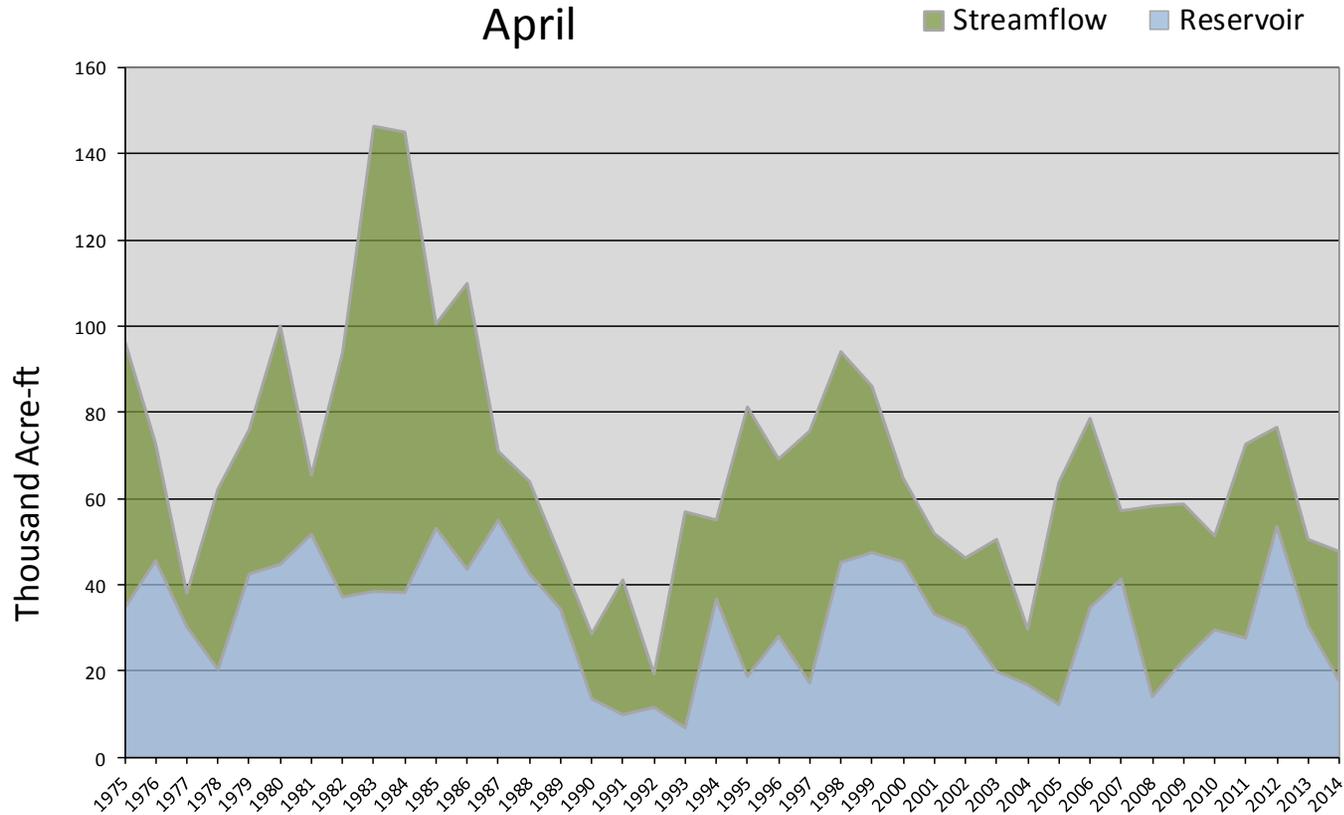
Surface Water Supply Index

Basin or Region	March EOM* Scofield Reservoir	April-July Forecast Scofield	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Price River	17.7	30.0	47.7	-2.54	20	02, 89, 03, 13

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

Price River - Surface Water Supply Index

April



April 1, 2014

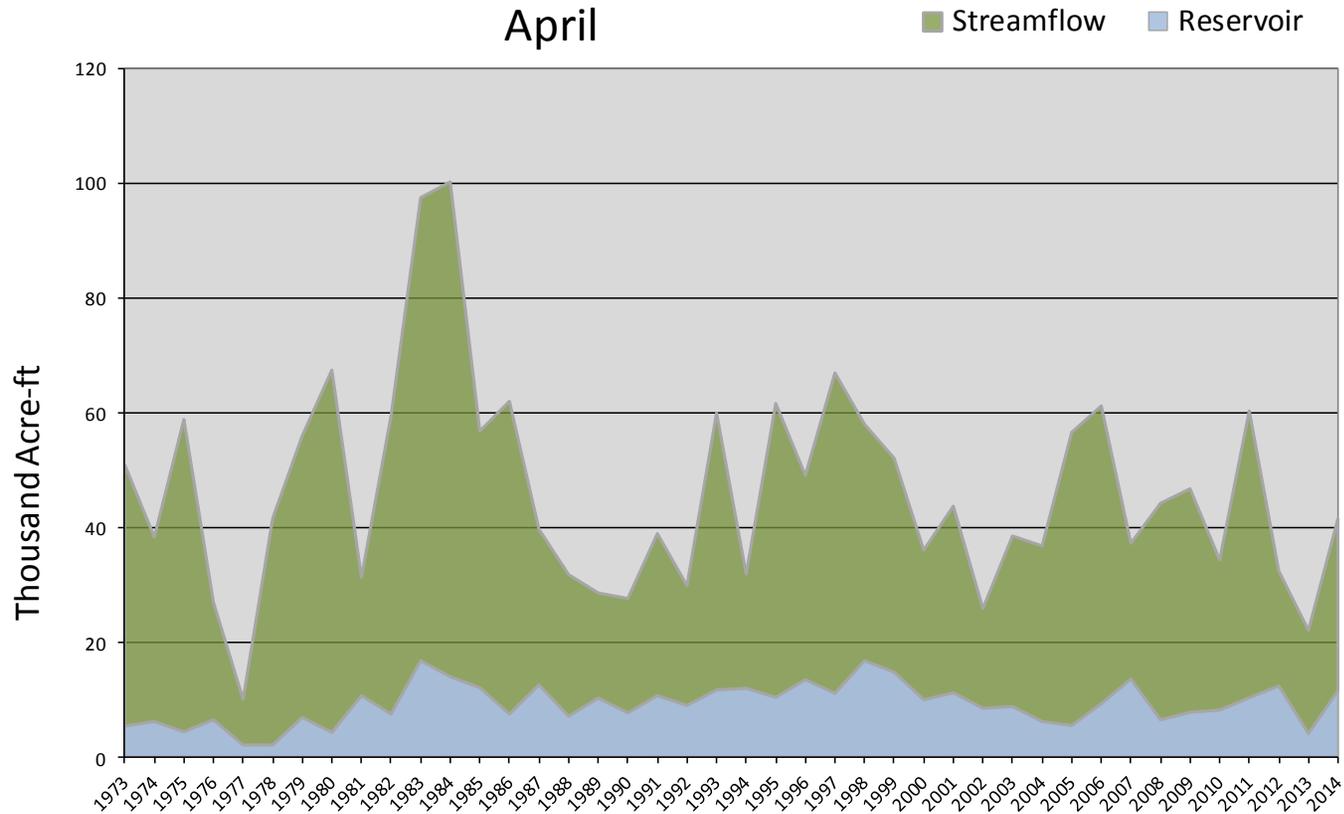
Surface Water Supply Index

Basin or Region	March EOM* Millsite Reservoir	April-July Forecast Ferron creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Ferron Creek	11.5	30.0	41.5	-0.29	47	91, 87, 78, 01

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

Ferron Creek - Surface Water Supply Index

April



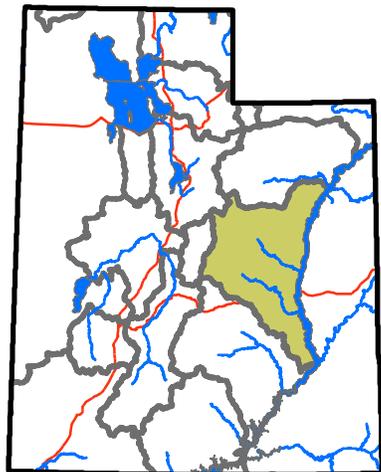
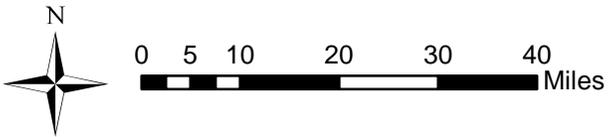
Price-San Rafael basin



Percent normal

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

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

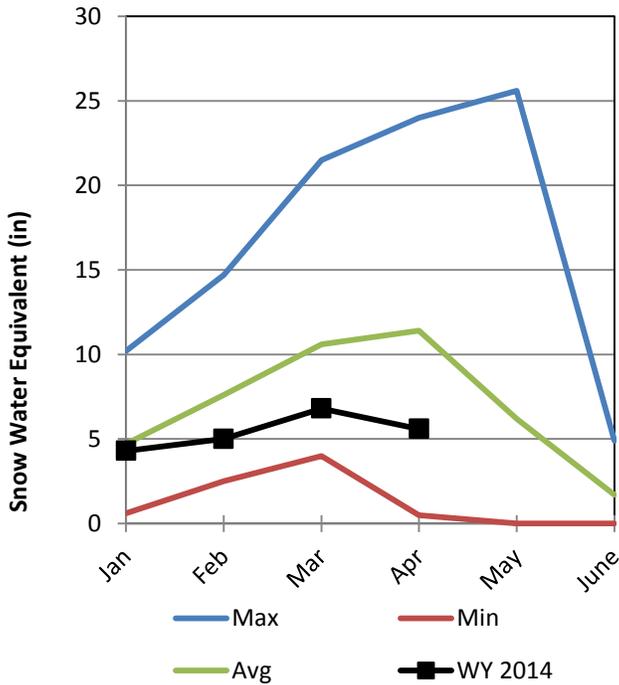


Southeastern Utah Basin

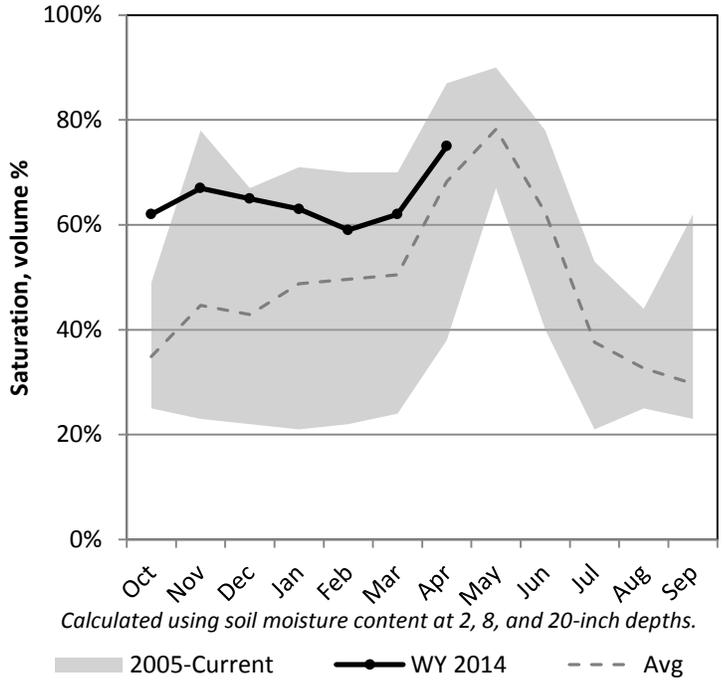
4/1/2014

Snowpack in the Southeastern Utah Basin is much below average at 55% of normal, compared to 67% last year. Precipitation in March was much below average at 46%, which brings the seasonal accumulation (Oct-Mar) to 65% of average. Soil moisture is at 75% compared to 48% last year. Reservoir storage is at 53% of capacity, compared to 18% last year. Forecast streamflow volumes range from 13% to 116% of average. The surface water supply index is 18% for Moab.

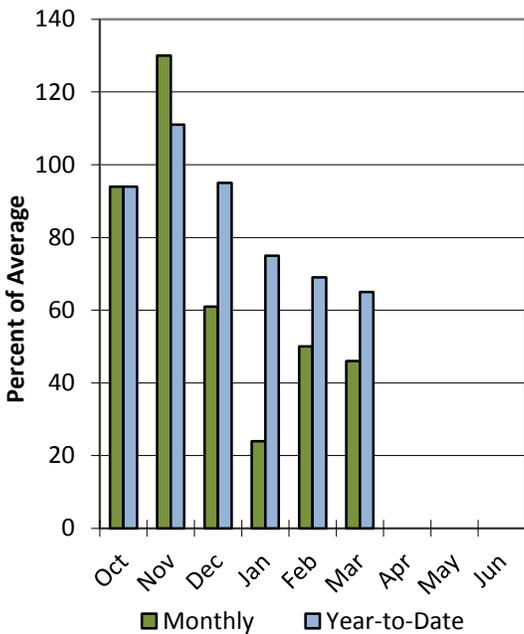
Snowpack



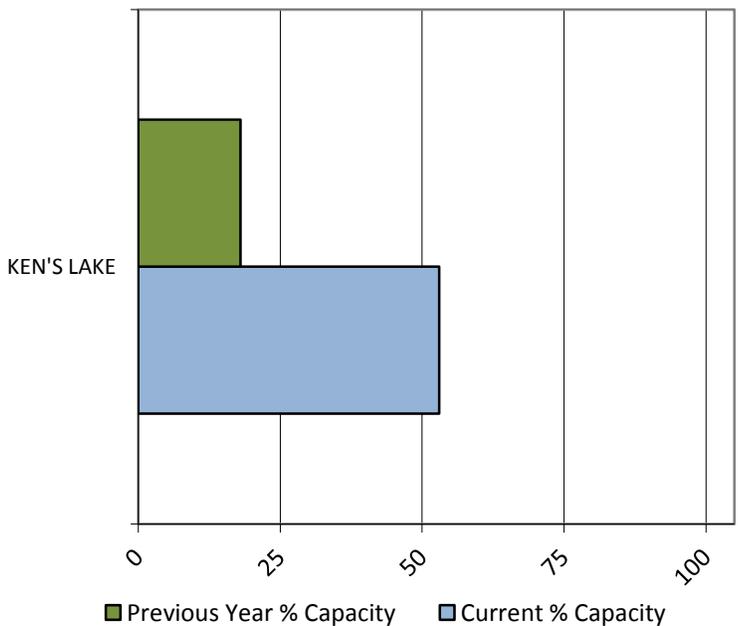
Soil Moisture



Precipitation



Reservoir Storage



Southeastern Utah Streamflow Forecasts - April 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	1.2	1.82	2.3	53%	2.9	3.8	4.3
South Ck ab Resv nr Monticello	MAR-JUL	0.02	0.07	0.13	12%	0.23	0.44	1.09
	APR-JUL	0.02	0.07	0.13	13%	0.23	0.44	0.99
Colorado R nr Cisco ²	APR-JUL	3840	4490	4960	116%	5460	6230	4280
San Juan R near Bluff ²	APR-JUL	570	730	850	77%	980	1190	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 March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
KEN'S LAKE	1.2	0.4	1.3	2.3
Basin-wide Total	1.2	0.4	1.3	2.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Lasal Mtns	2	50%	70%
Lower San Juan	2	54%	60%
Lower Green	2	65%	53%

April 1, 2014

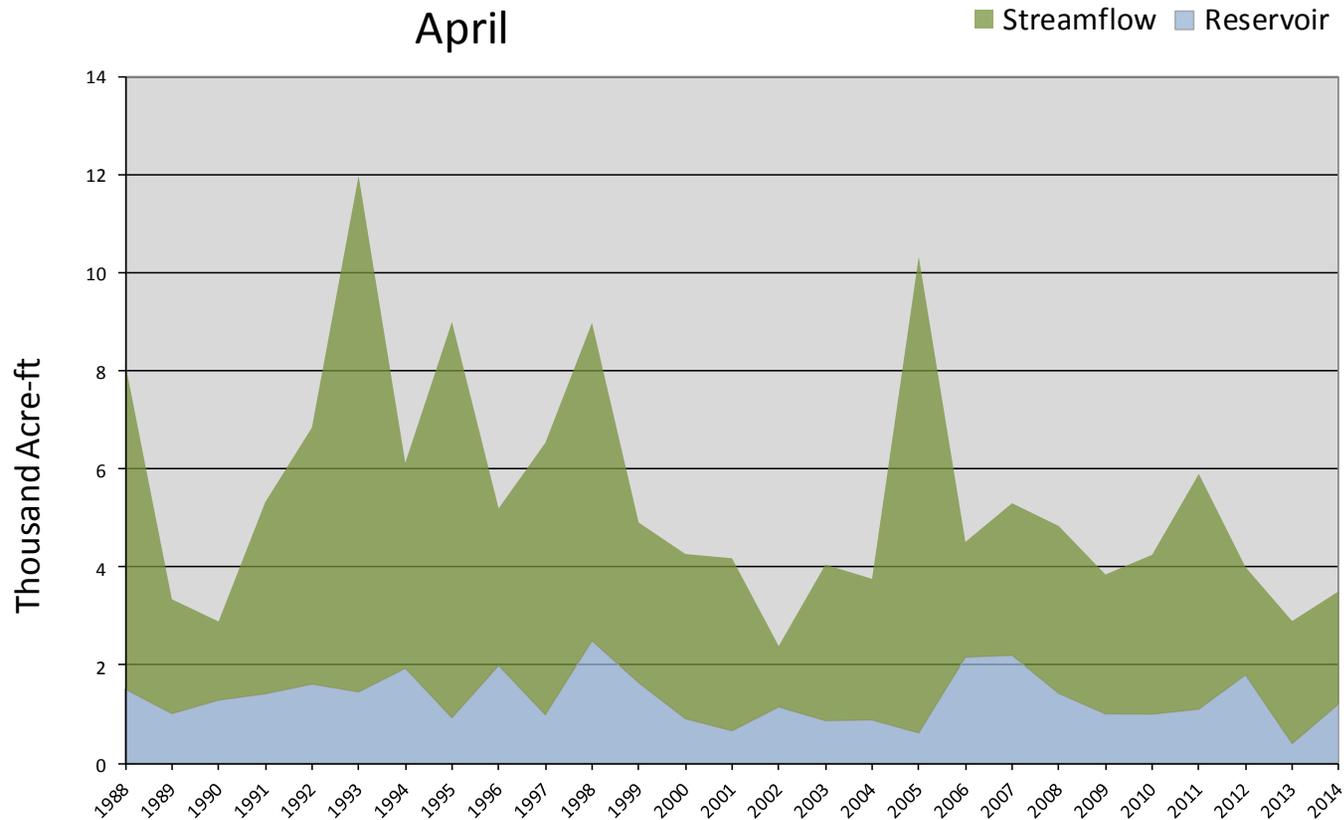
Surface Water Supply Index

Basin or Region	March EOM* Ken's Lake Reservoir	April-July Forecast Mill Creek at Sheley	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Moab	1.2	2.3	3.5	-2.68	18	13, 89, 04, 09

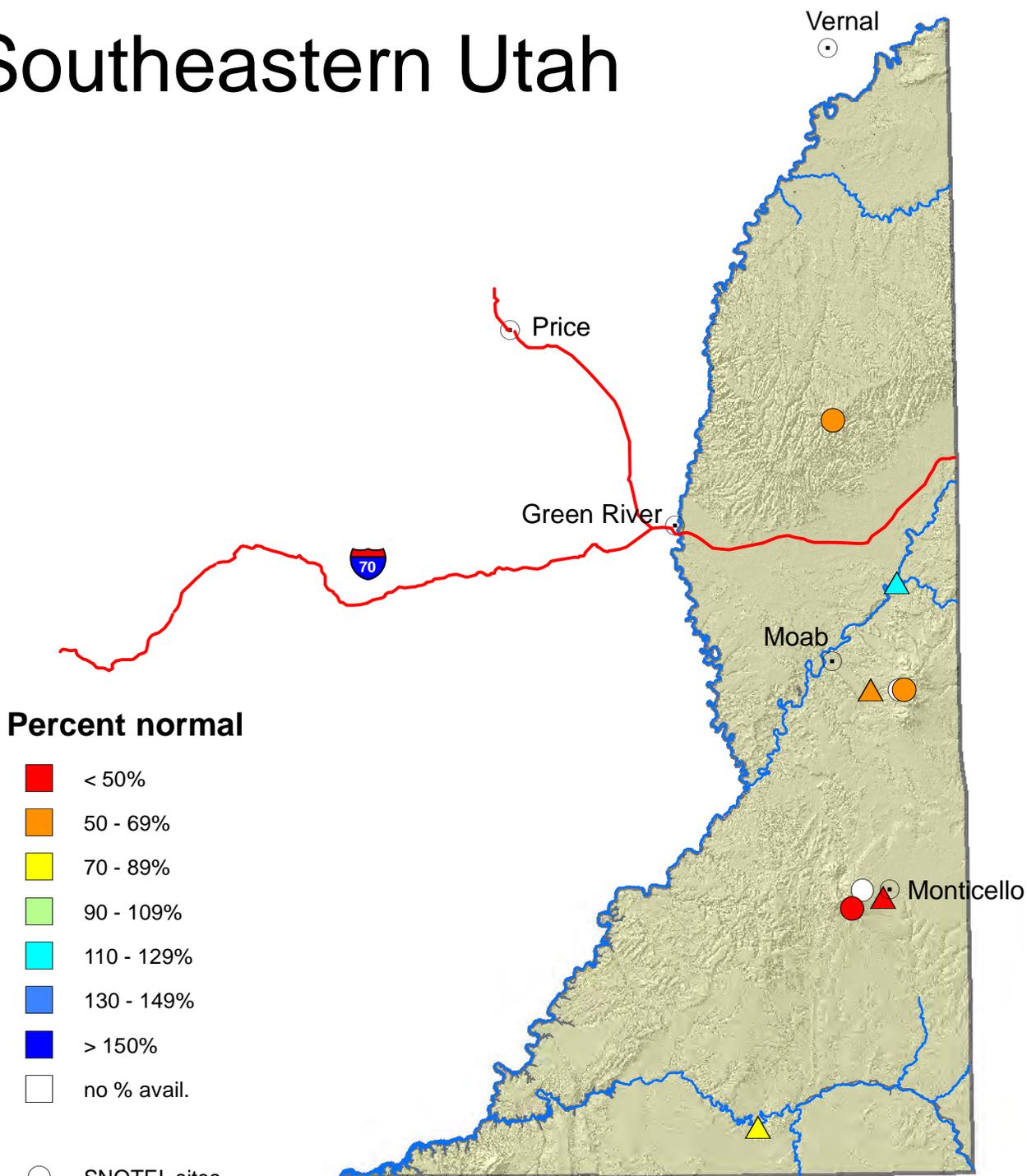
*EOM, end of month; # SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

Moab - Surface Water Supply Index

April



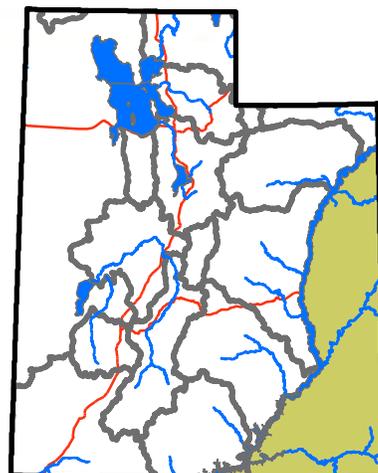
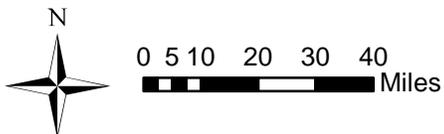
Southeastern Utah



Percent normal

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

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

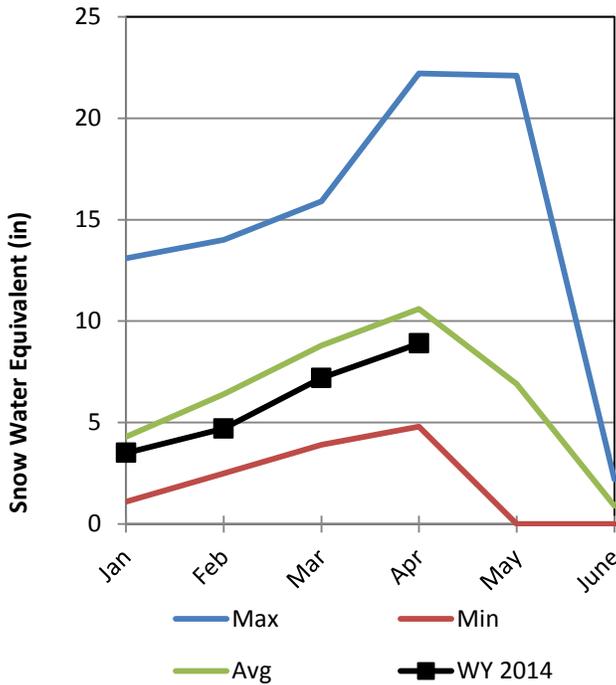


Dirty Devil Basin

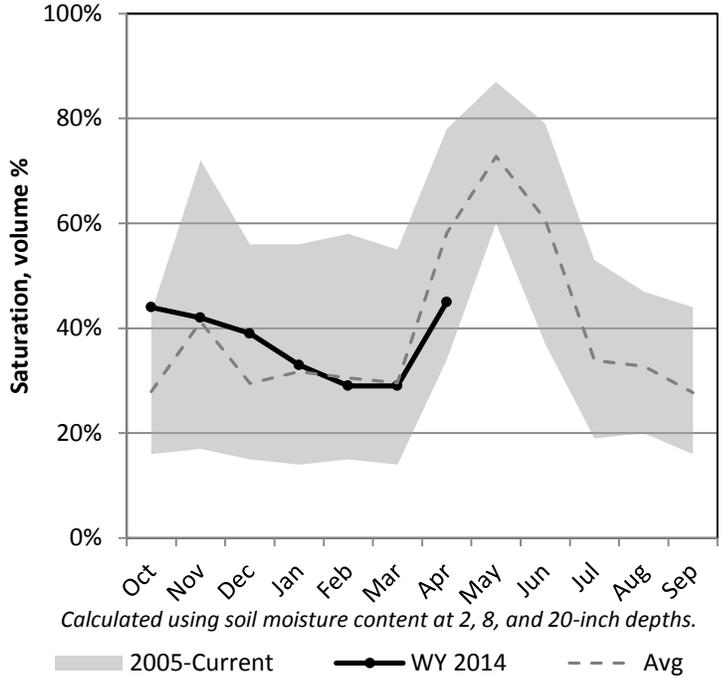
4/1/2014

Snowpack in the Dirty Devil Basin is near average at 99% of normal, compared to 72% last year. Precipitation in March was below average at 79%, which brings the seasonal accumulation (Oct-Mar) to 88% of average. Soil moisture is at 45% compared to 67% last year. Forecast streamflow volumes range from 75% to 78% of average.

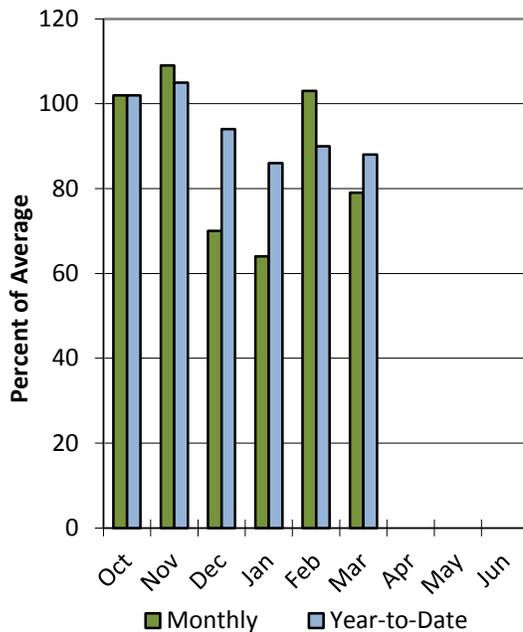
Snowpack



Soil Moisture



Precipitation



Dirty Devil Streamflow Forecasts - April 1, 2014

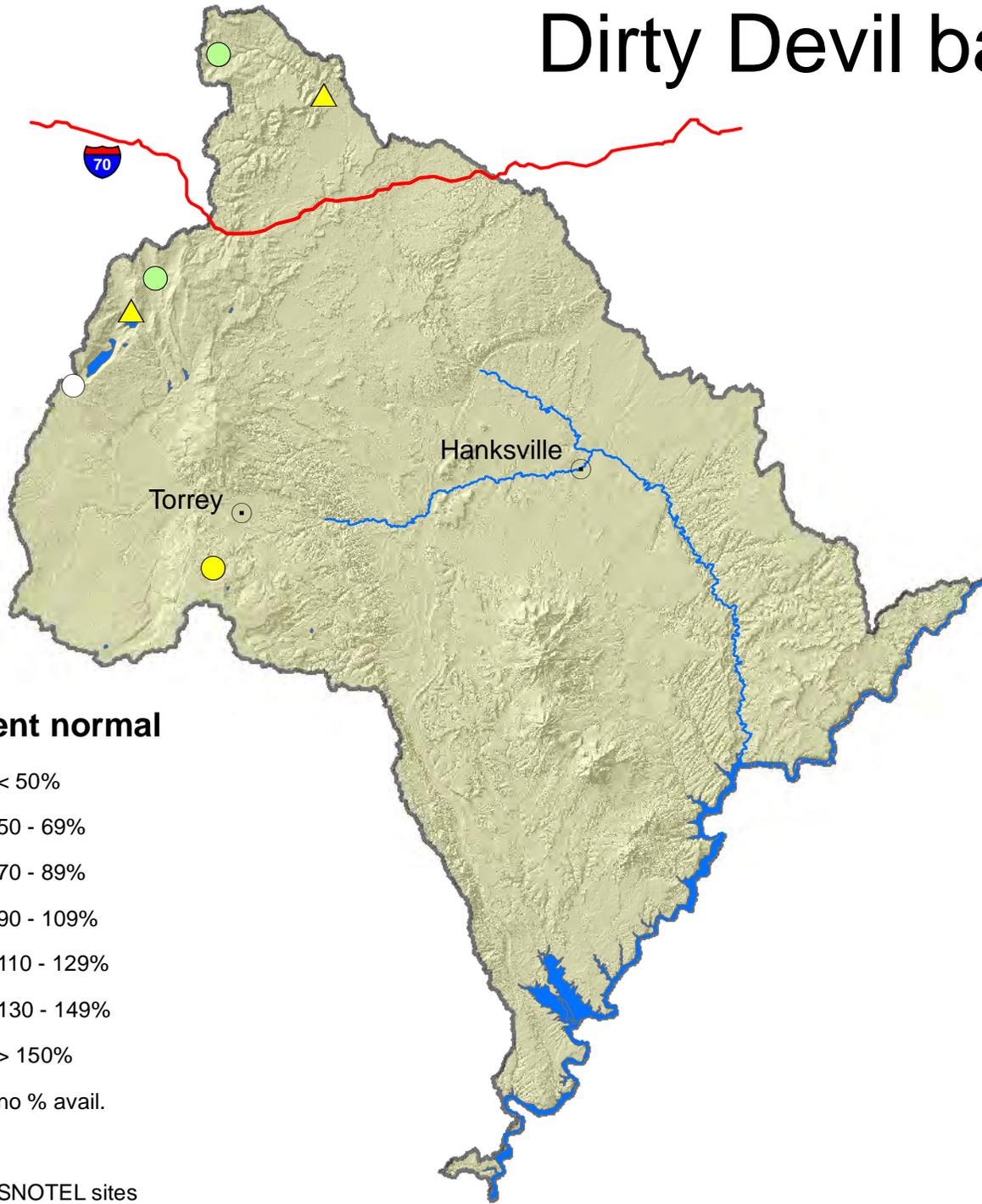
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Dirty Devil	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Muddy Ck nr Emery	APR-JUL	8.9	12.3	15	75%	17.9	23	19.9
Seven Mile Ck nr Fish Lake	APR-JUL	3.4	4.7	5.7	78%	6.8	8.5	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 April 1, 2014	# of Sites	% Median	Last Year % Median
Muddy	4	93%	72%
Fremont	4	84%	75%

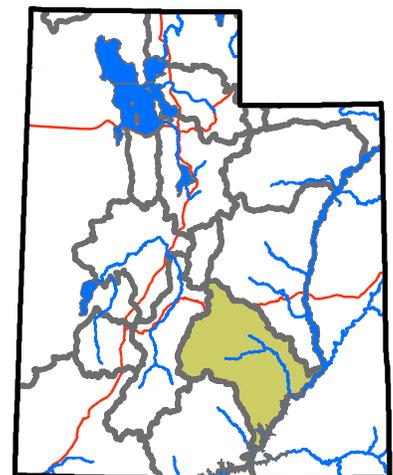
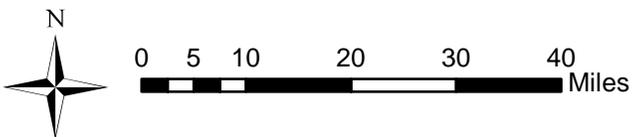
Dirty Devil basin



Percent normal



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

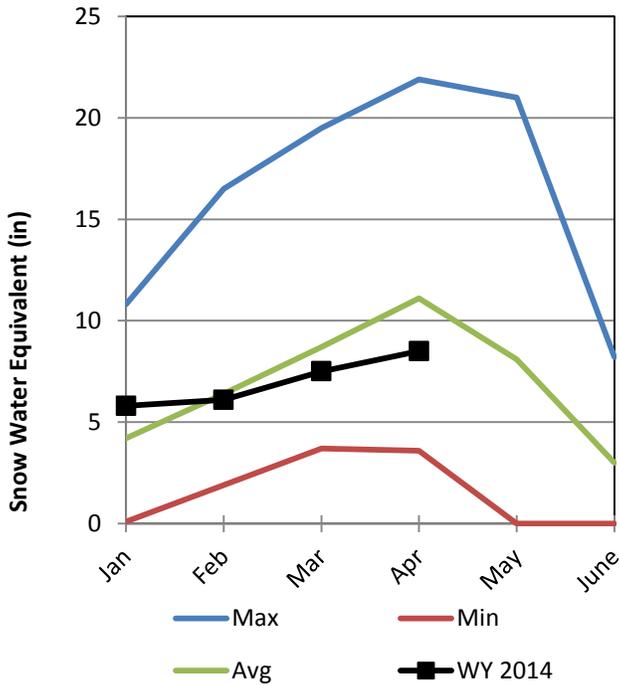


Escalante River Basin

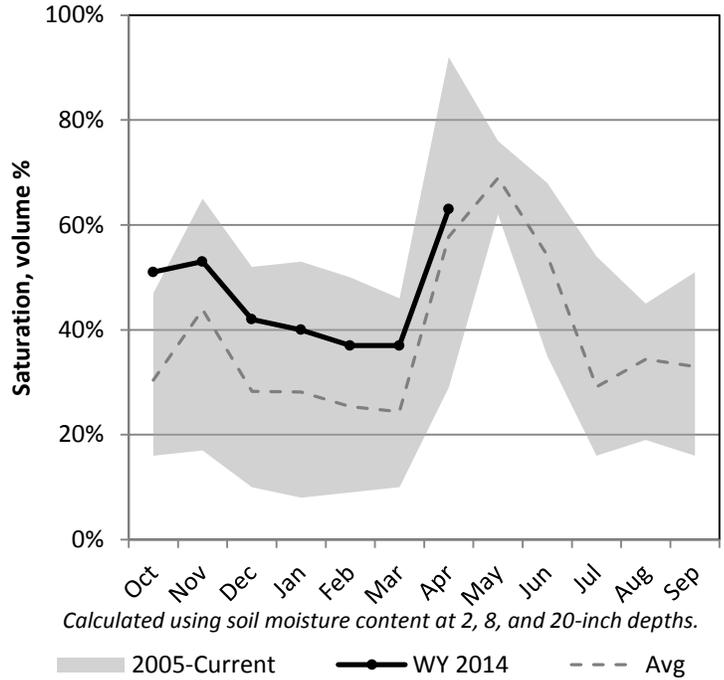
4/1/2014

Snowpack in the Escalante River Basin is below average at 86% of normal, compared to 79% last year. Precipitation in March was much below average at 58%, which brings the seasonal accumulation (Oct-Mar) to 78% of average. Soil moisture is at 63% compared to 58% last year. The forecast streamflow volume for Pine Creek is 72% of average.

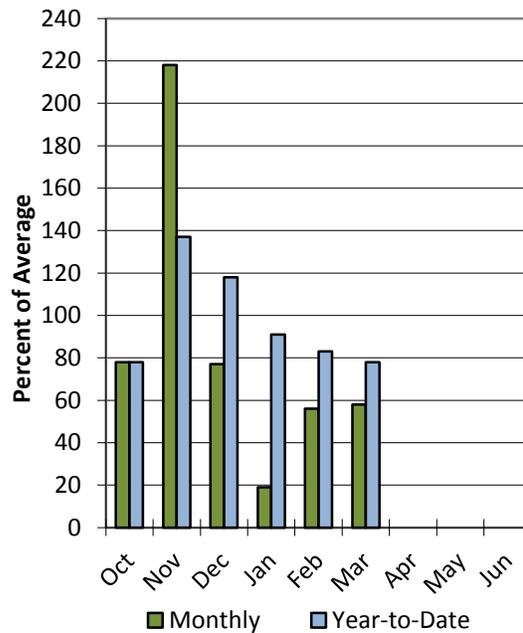
Snowpack



Soil Moisture



Precipitation



Escalante River Streamflow Forecasts - April 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	1.26	1.72	72%	2.3	3.2	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

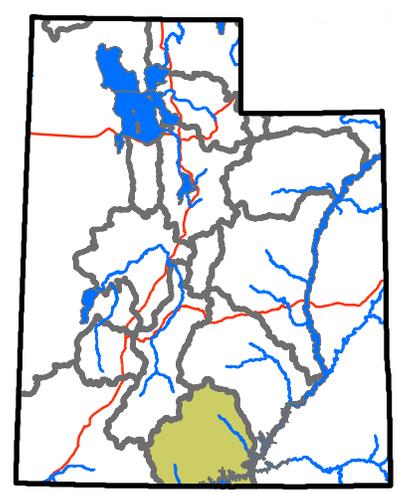
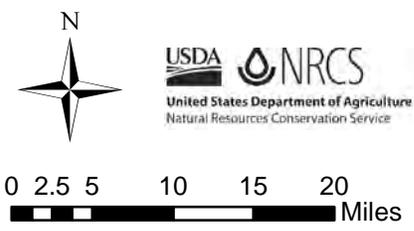
Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Escalante	3	86%	79%
Paria	3	63%	65%

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. | | |

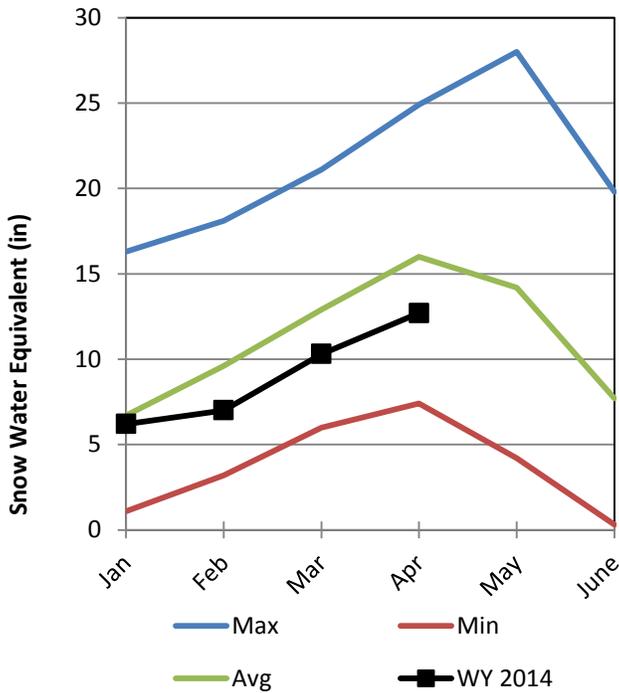


Beaver River Basin

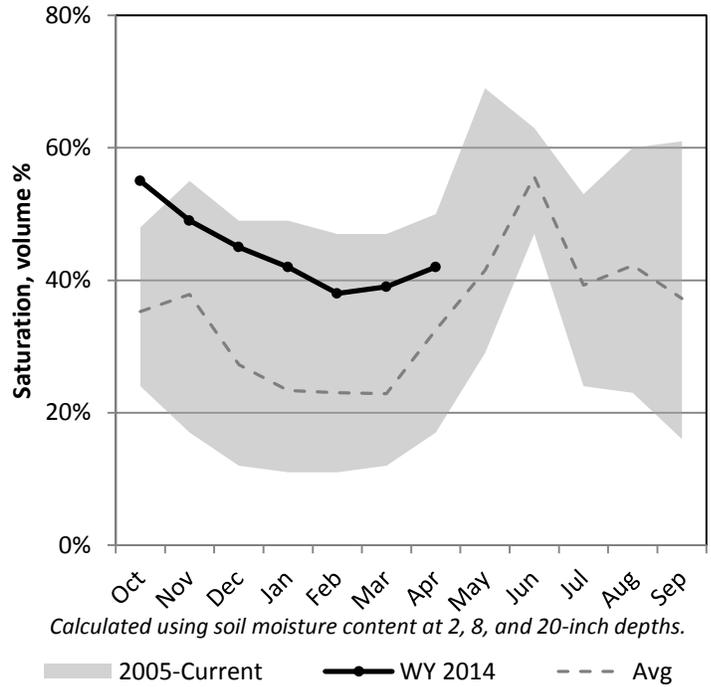
4/1/2014

Snowpack in the Beaver River Basin is below average at 85% of normal, compared to 89% last year. Precipitation in March was below average at 73%, which brings the seasonal accumulation (Oct-Mar) to 81% of average. Soil moisture is at 42% compared to 38% last year. Reservoir storage is at 57% of capacity, compared to 63% last year. The forecast streamflow volume for the Beaver River is 65% of average. The surface water supply index is 31% for the Beaver River.

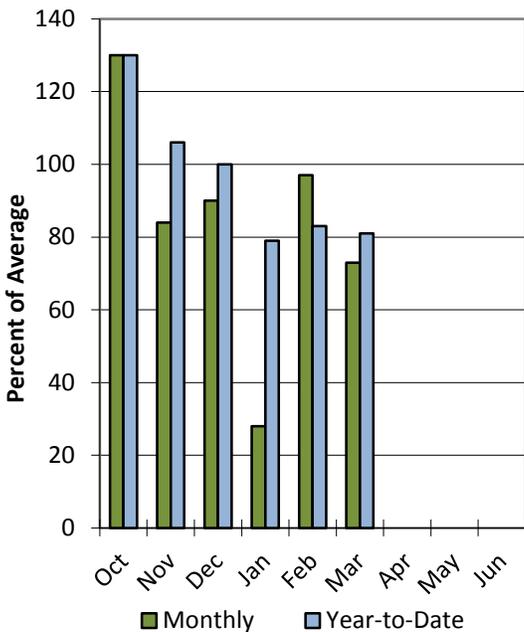
Snowpack



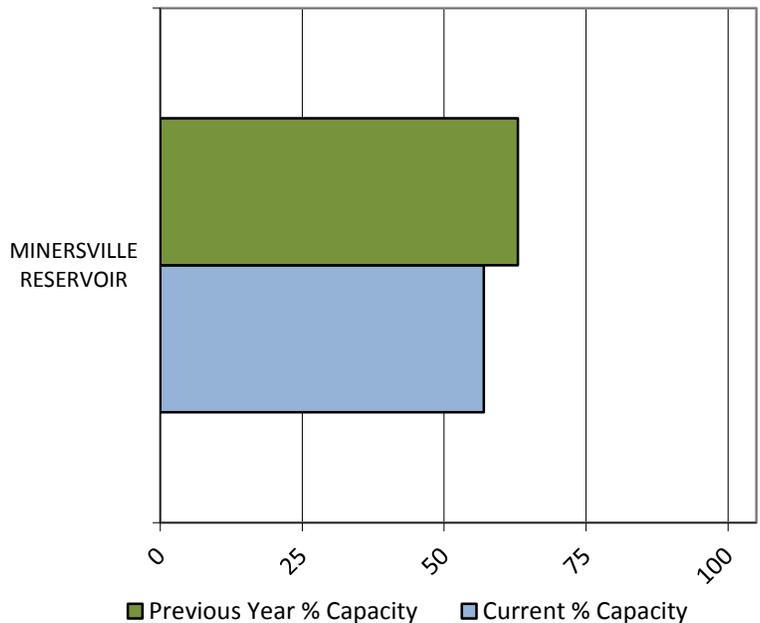
Soil Moisture



Precipitation



Reservoir Storage



Beaver River Streamflow Forecasts - April 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	4	11.7	17	65%	22	30	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 March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
MINERSVILLE RESERVOIR	13.2	14.6	16.8	23.3
Basin-wide Total	13.2	14.6	16.8	23.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Beaver	2	85%	89%

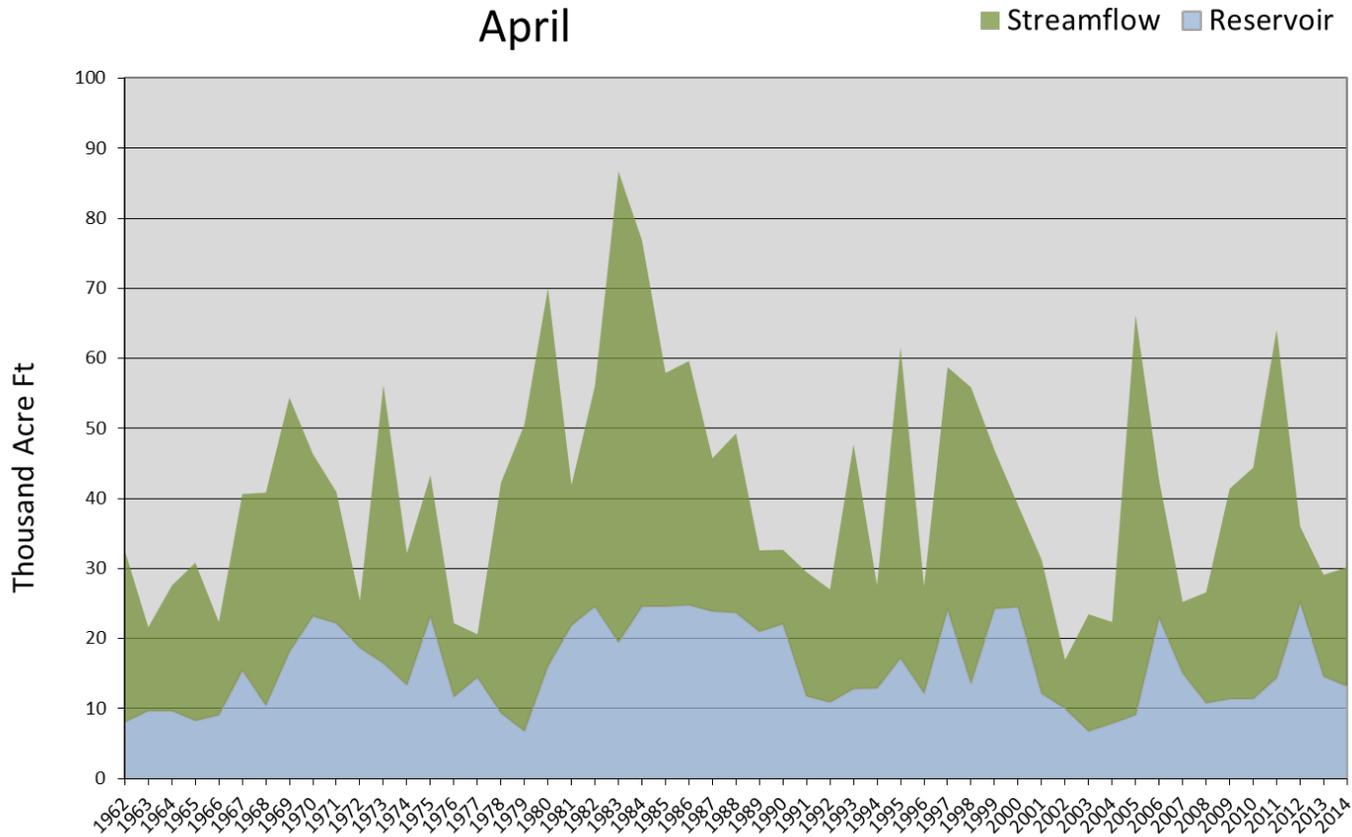
April 1, 2014

Surface Water Supply Index

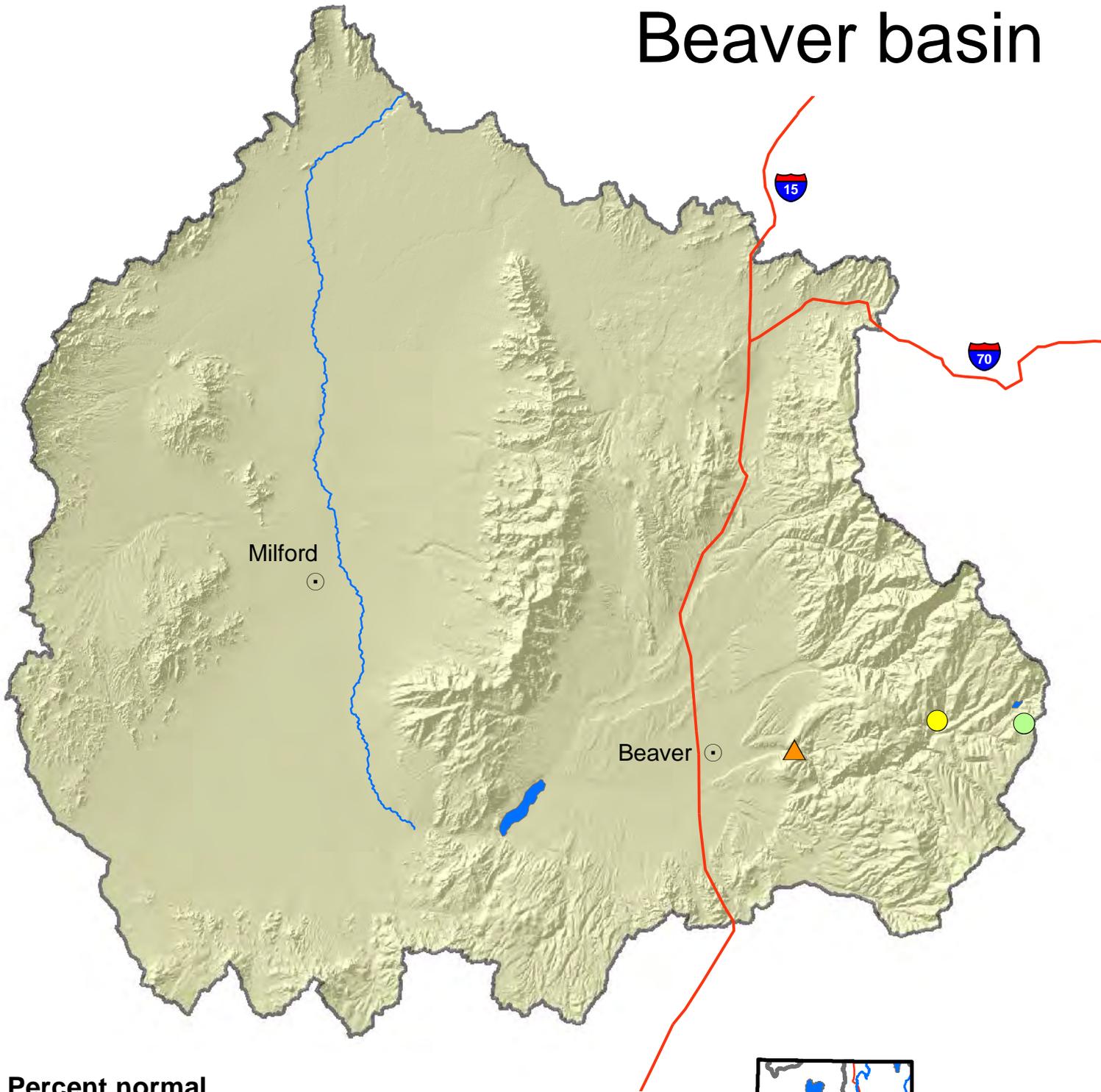
Basin or Region	March EOM* Minersville Reservoir	April-July forecast Beaver River at Beaver	Reservoir + Streamflow	SWSI [#]	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Beaver	13.2	17.0	30.2	-1.54	31	13, 91, 65, 01

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

Beaver River Surface - Water Supply Index April

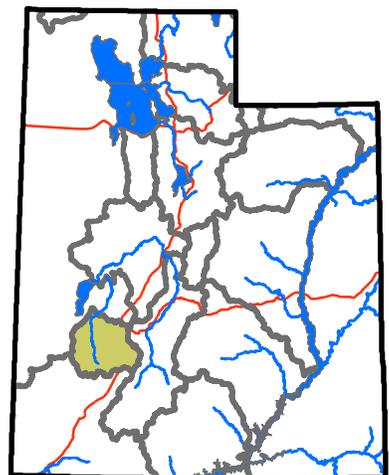
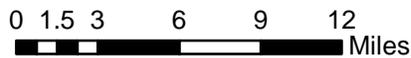


Beaver basin



Percent normal

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

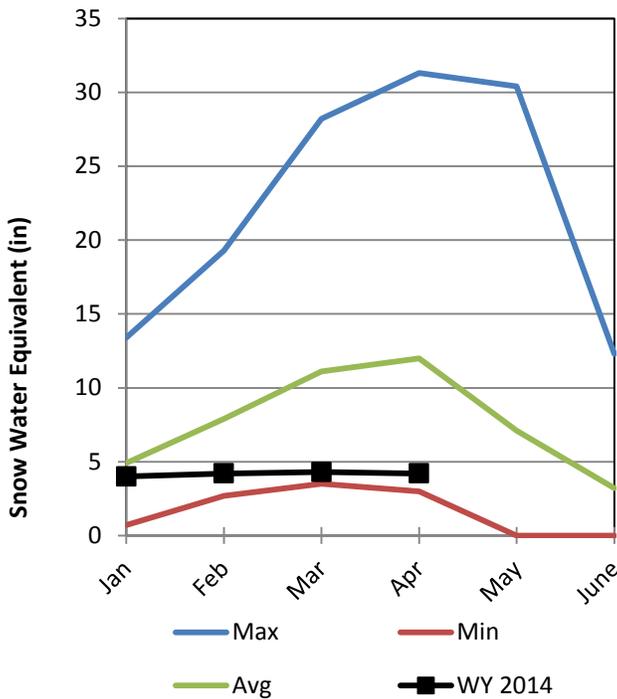


Southwestern Utah Basin

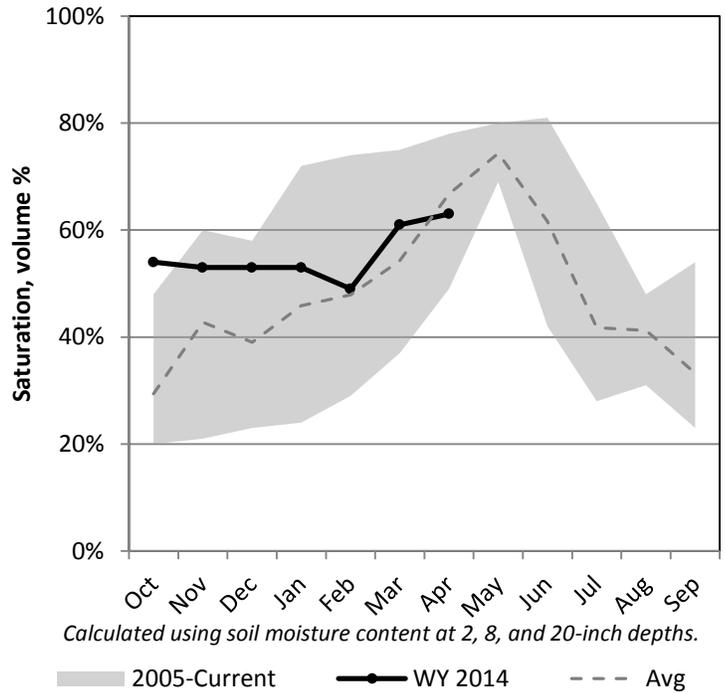
4/1/2014

Snowpack in the Southwestern Utah Basin is much below average at 46% of normal, compared to 61% last year. Precipitation in March was much below average at 34%, which brings the seasonal accumulation (Oct-Mar) to 51% of average. Soil moisture is at 63% compared to 63% last year. Reservoir storage is at 39% of capacity, compared to 48% last year. Forecast streamflow volumes range from 17% to 110% of average. The surface water supply index is 14% for the Virgin River.

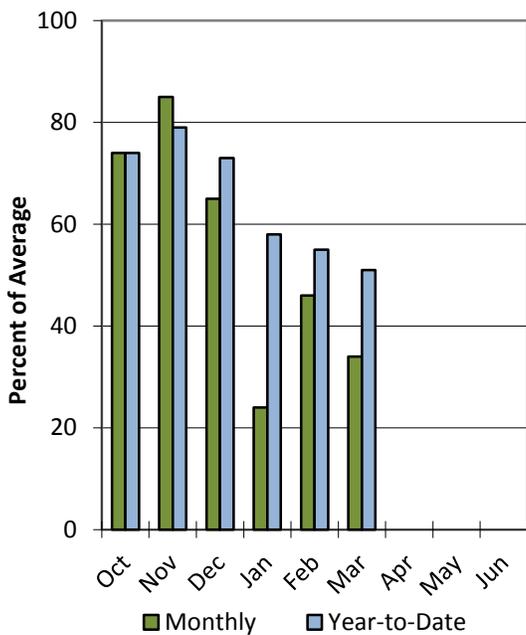
Snowpack



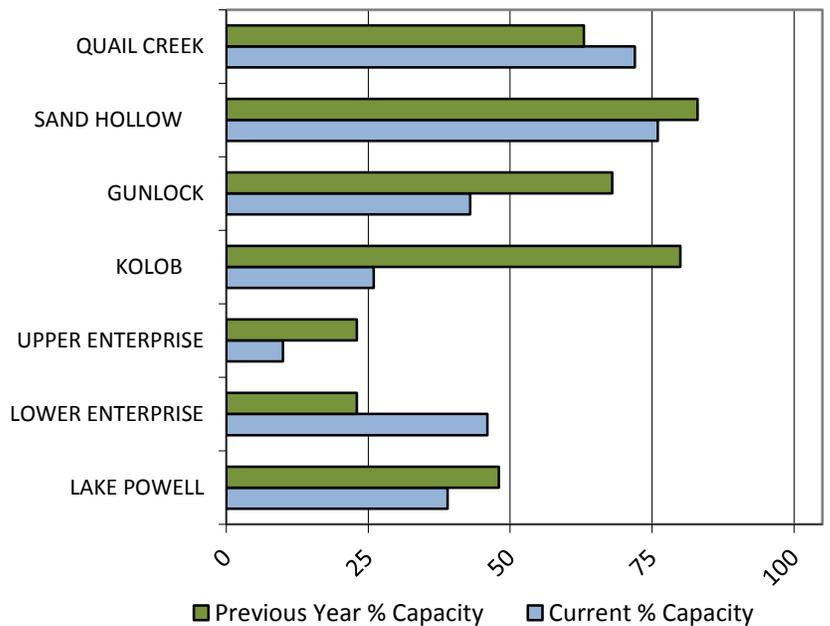
Soil Moisture



Precipitation



Reservoir Storage



Southwestern Utah Streamflow Forecasts - April 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	5530	6890	7900	110%	8980	10700	7160
Virgin R nr Hurricane	APR-JUL	1.55	6.1	11	17%	17.3	29	63
Virgin R at Virgin	APR-JUL	7.9	12.9	17	29%	22	30	58
Santa Clara R nr Pine Valley	APR-JUL	0.3	0.65	0.96	19%	1.34	2	5
Coal Ck nr Cedar City	APR-JUL	0.195	4.2	7	38%	9.8	13.8	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 March, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
LAKE POWELL	9496.0	11658.0	16942.0	24322.0
LOWER ENTERPRISE	1.2	0.6	1.4	2.6
UPPER ENTERPRISE	1.0	2.3	5.3	10.0
KOLOB RESERVOIR	1.5	4.5		5.6
GUNLOCK	4.5	7.1	6.8	10.4
SAND HOLLOW RESERVOIR	37.8	41.5		50.0
QUAIL CREEK	28.6	25.2	31.1	40.0
Basin-wide Total	9570.5	11739.1	16986.6	24440.6
# of reservoirs	7	7	5	7

Watershed Snowpack Analysis April 1, 2014	# of Sites	% Median	Last Year % Median
Upper Virgin	8	47%	63%
Lower Virgin	2	0%	0%
Cedar City Parowan	9	45%	72%

April 1, 2014

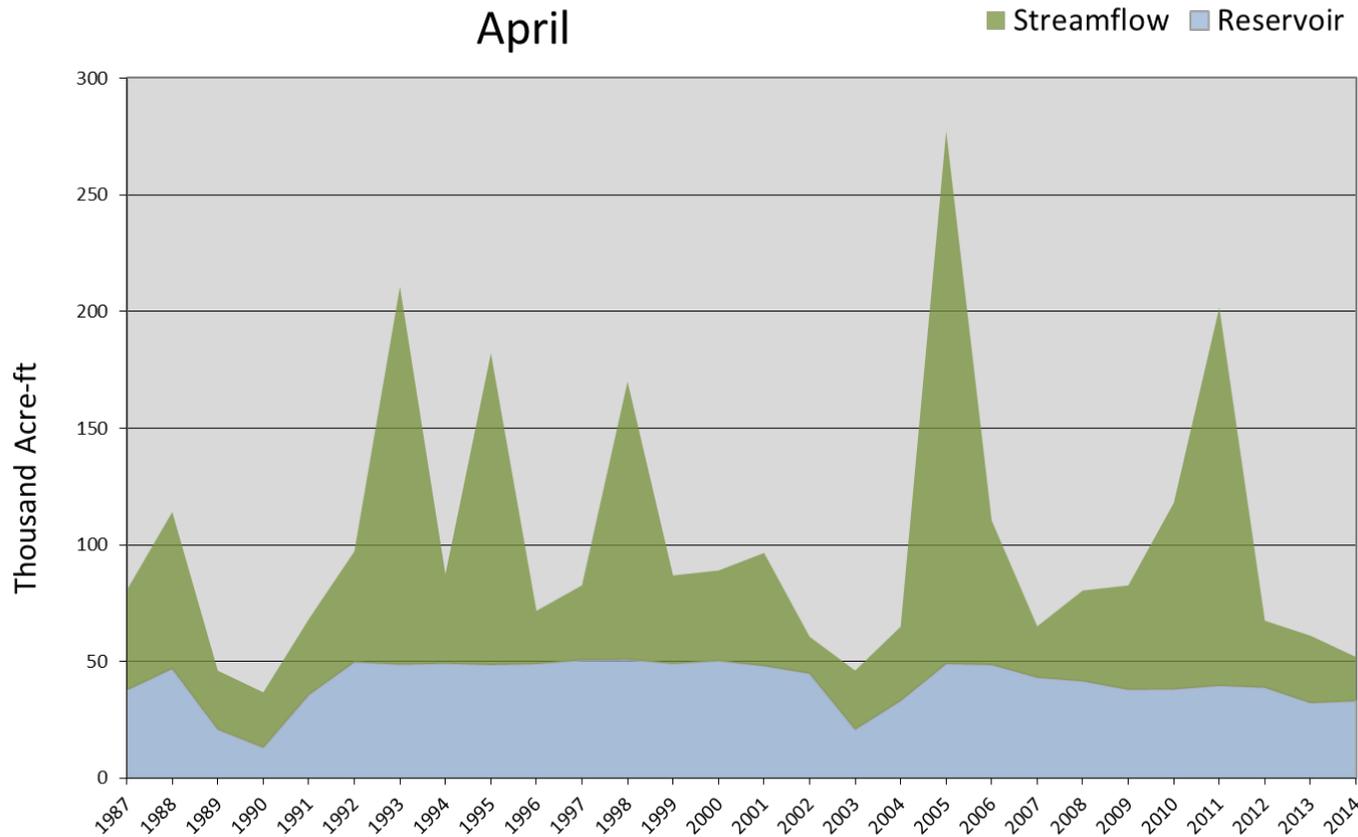
Surface Water Supply Index

Basin or Region	March 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	33.1	18.9	52.0	-3.02	14	89, 03, 02, 13

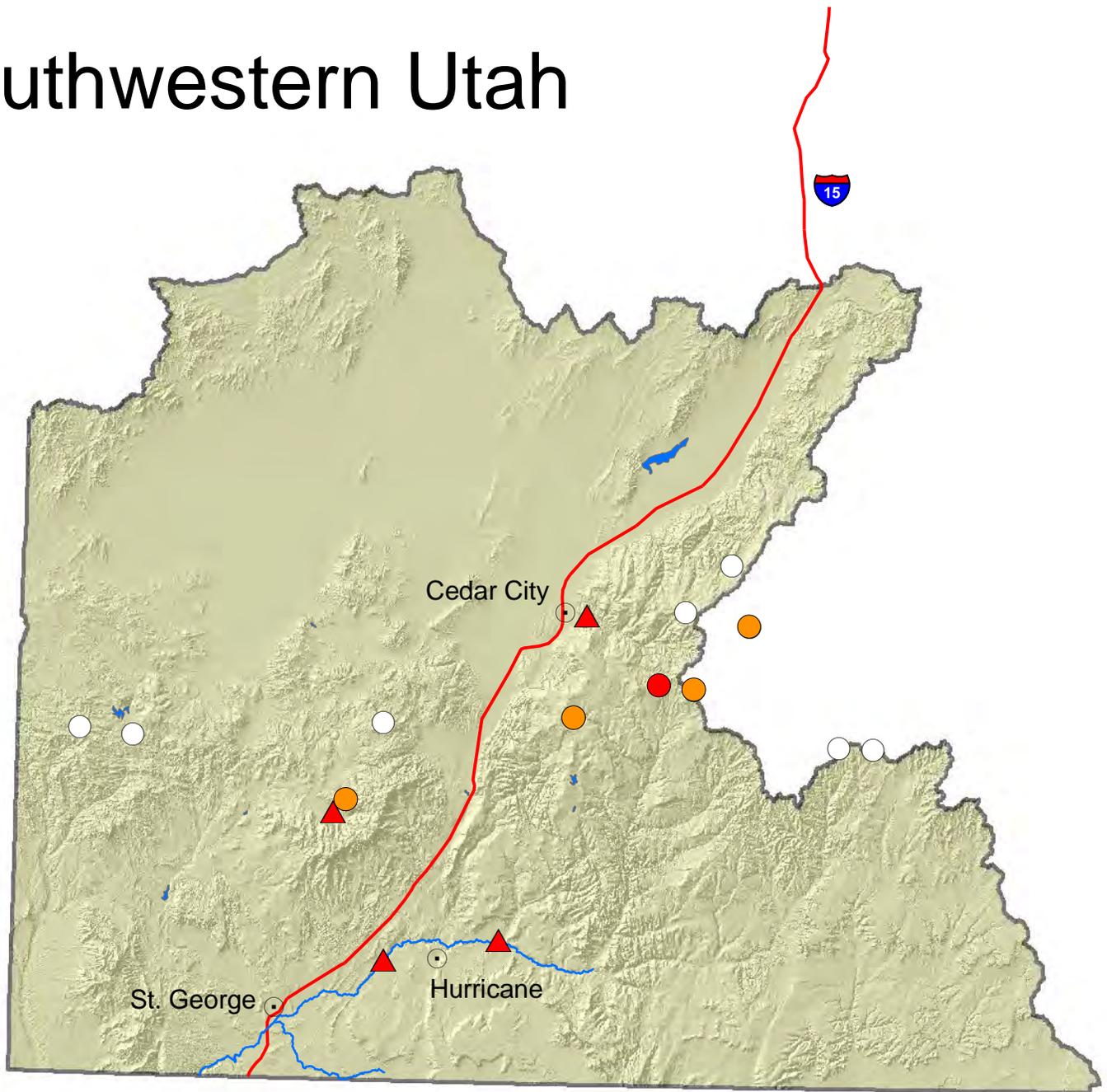
*EOM, end of month; # SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

Virgin River Surface - Water Supply Index

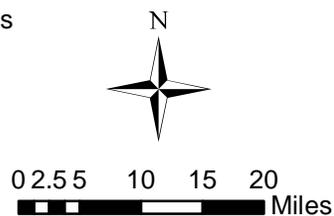
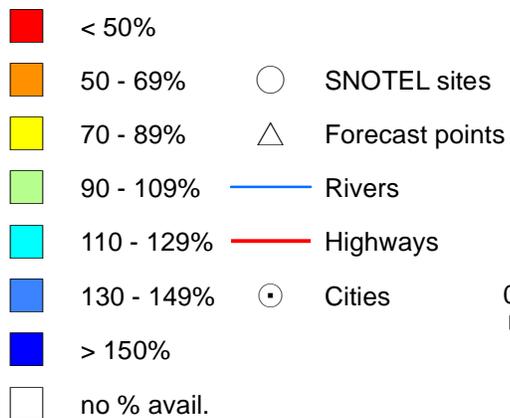
April



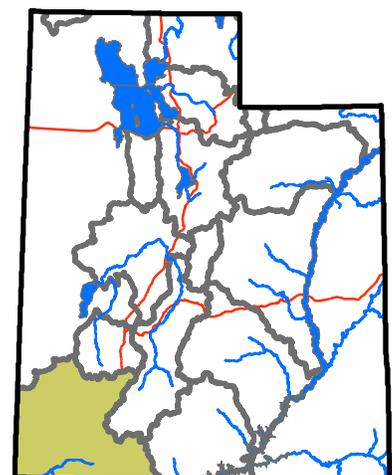
Southwestern Utah



Percent normal



United States Department of Agriculture
 Natural Resources Conservation Service



4/1/2014

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	590	130	720	-0.62	43	96, 01, 64, 56
Woodruff Narrows	23.2	108	131.2	-0.54	43	00, 80, 73, 07
Little Bear	11.5	32	43.5	-0.18	48	94, 10, 08, 93
Ogden River	63.0	80	143.0	-1.32	34	04, 02, 00, 10
Weber River	210	310	520	-0.54	43	79, 76, 81, 70
Provo	283	109	392	-2.78	17	02, 92, 94, 88
West Uintah Basin	163	172	335	0.76	59	72, 87, 71, 85
East Uintah Basin	25.0	44	68.5	-3.47	8	02, 13, 89, 90
Blacks Fork	15.7	90	105.7	1.27	65	97, 10, 93, 96
Smiths Fork	7.4	28	35.4	3.06	87	10, 01, 11
Price River	17.7	30	47.7	-2.54	20	02, 89, 03, 13
Joe's Valley	32.2	45	77.2	-1.08	37	94, 12, 04, 07
Ferron Creek	11.5	30	41.5	-0.29	47	91, 87, 78, 01
Moab	1.2	2	3.5	-2.68	18	13, 89, 04, 09
Upper Sevier River	111	33	144	-1.56	31	12, 68, 03, 09
San Pitch	5.0	11	16	-3.49	8	02, 13, 03, 04
Lower Sevier River	139	59	198	-0.89	39	08, 89, 13, 01
Beaver River	13.2	17	30.2	-1.54	31	13, 91, 65, 01
Virgin River	33.1	19	52	-3.02	14	89, 03, 02, 13

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

What is a Surface Water Supply Index?

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

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

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

Issued by

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

Released by

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

Prepared by

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



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

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



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

