



Utah Water Supply Outlook Report

May 1, 2014



Jason Bradshaw at Yankee Reservoir SNOTEL – 4/14.
Photo by Lynn Kitchen

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

May 1, 2014

SUMMARY

April was not kind to southern Utah – a carbon copy of last year – warm and dry. Snowpacks melted quickly and did not generate near the stream flow hoped for. Lower elevation basins such as in the Enterprise area produced very little flow and reservoir storage declined. Preliminary USGS flow figures show the Virgin River at Virgin at 29% of normal for the month – and it's all downhill from here. Central Utah did not fare much better with minimal early month snow accumulation in the higher elevations and substantial melt the remainder of the month. April flow figures are a bit better ranging from 20% to about 90% of normal with most in the 50% to 70% range. Higher elevation snowpacks in central Utah should still produce additional flow but that will be short lived going to recession flow very quickly. Northern Utah continues to have a little below to near average snowpacks that should produce reasonable stream flow. That said, the north is not entirely in a good position. Lower elevation watersheds such as Parleys, Emigration and even some mid-elevation basins (American Fork, Payson) have or are close to snow melt out and recession flow. Overall – a disappointing runoff season for much of the state with few bright spots and even those are losing a bit of luster. Snow packs are close to or have substantially melted out from I-70 south, in central Utah – snowpacks are in the 70% range and in northern Utah, 80% to 120% of normal. April precipitation was fairly uniform statewide ranging from 70% to 80% of average, which brings the year to date precipitation to below normal statewide at 84%. Current soil moisture saturation levels in runoff producing areas are: Bear – 84%, Weber – 81%, Provo – 80%, Uintah Basin – 74%, SE Utah – 74%, Sevier – 77% and SW Utah – 64% of saturation. Reservoir storage is currently at 68% of capacity statewide which is 6% less than last year at this time. General runoff conditions are extremely poor in southern Utah, below normal in central Utah and below to near normal in the north. May-July stream flow forecasts range from 14% for South Creek nr Monticello to 138% of average for the inflow to Flaming Gorge. Water Supply Indices range from essentially a tie for last place at the bottom: 6% - Eastern Uintah Basin, 8% - San Pitch and 10% - Price River to a high of 83% on the Smiths Fork of the north slope of the Uintah's. Water users with reservoir storage may have short supplies this year across much of the state and those reliant on direct stream flow will experience shortages.

SNOWPACK

May first snowpacks as measured by the NRCS SNOTEL system are as follows: Bear - 120%, Weber - 90%, Provo - 72%, Duchesne - 84%, Price – 74%, southeast Utah - 27%, upper Sevier - 45%, San Pitch – 71% and southwest Utah - 23% and the statewide figure is 82% of average. Given current conditions, most watersheds will have melted out this month or in early June.

PRECIPITATION

Mountain precipitation as measured by the NRCS SNOTEL system during April was: Bear – 70%, Weber – 78%, Provo – 77%, Uintahs – 76%, SE Utah – 82%, Sevier – 69%, SW Utah – 73% and the statewide figure is 74% of average. This brings the seasonal accumulation (Oct-April) to 84% of average statewide.

RESERVOIRS

Storage in 46 of Utah's key irrigation reservoirs is at 66% of capacity, 8% less than last year. Reservoir storage by Basin: Bear – 49%, Weber – 59%, Provo – 74%, Uintah Basin – 77%, SE Utah – 56%, Sevier – 81%, SW Utah – 40% of capacity.

STREAMFLOW

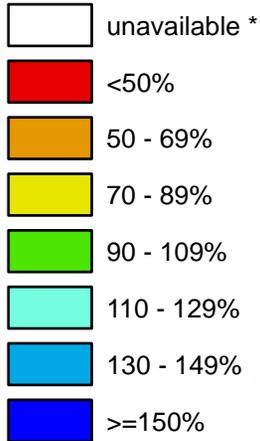
Snowmelt streamflows are expected to be below to much below average across southern Utah and below to near average in the north.

Utah

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

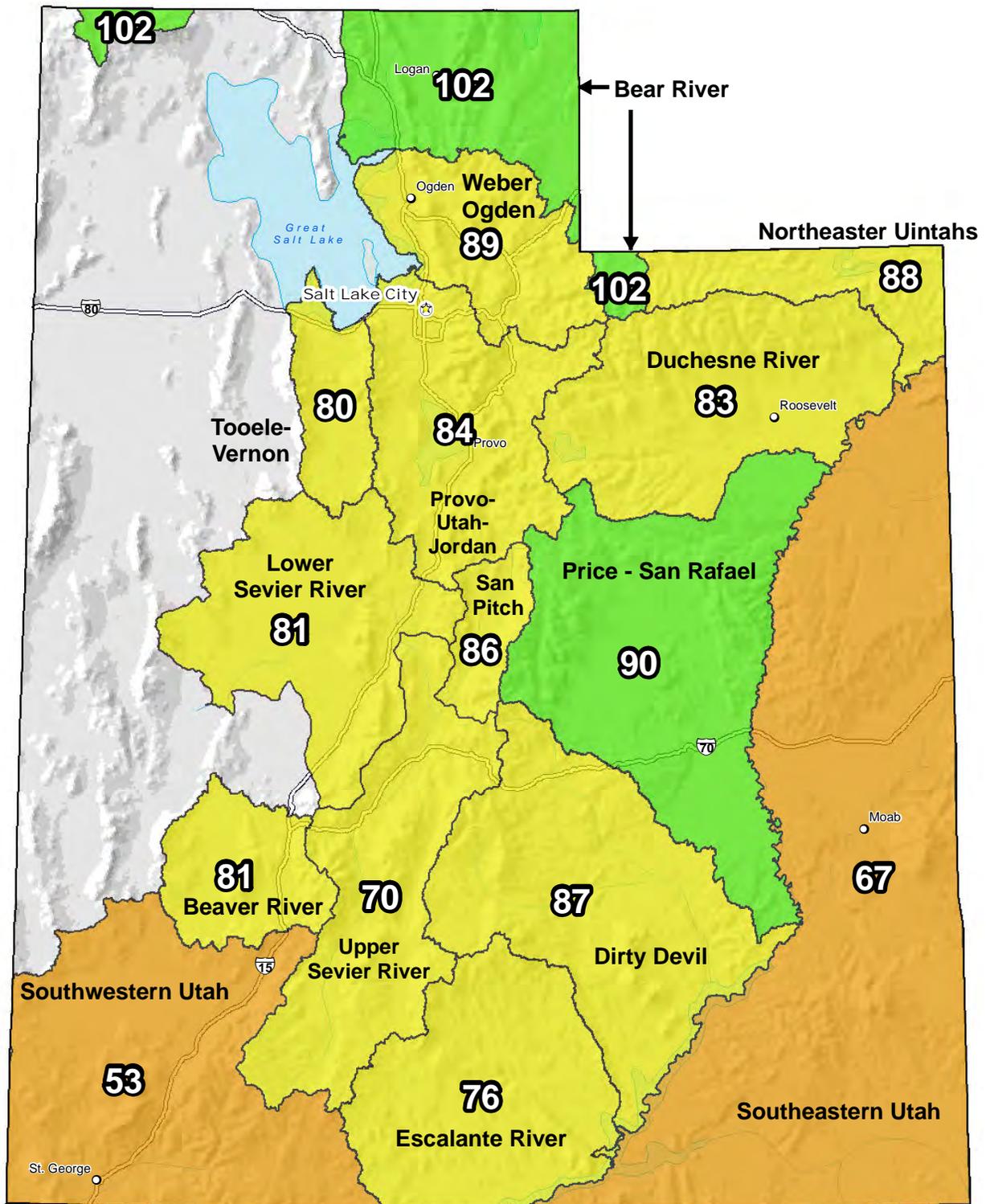
May 01, 2014

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).

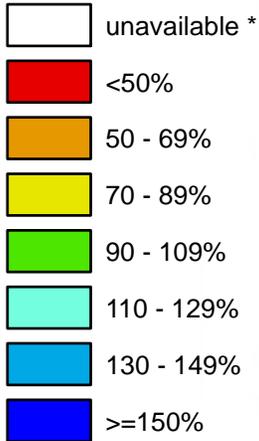
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Utah

SNOTEL Current Snow Water Equivalent (SWE) % of Normal

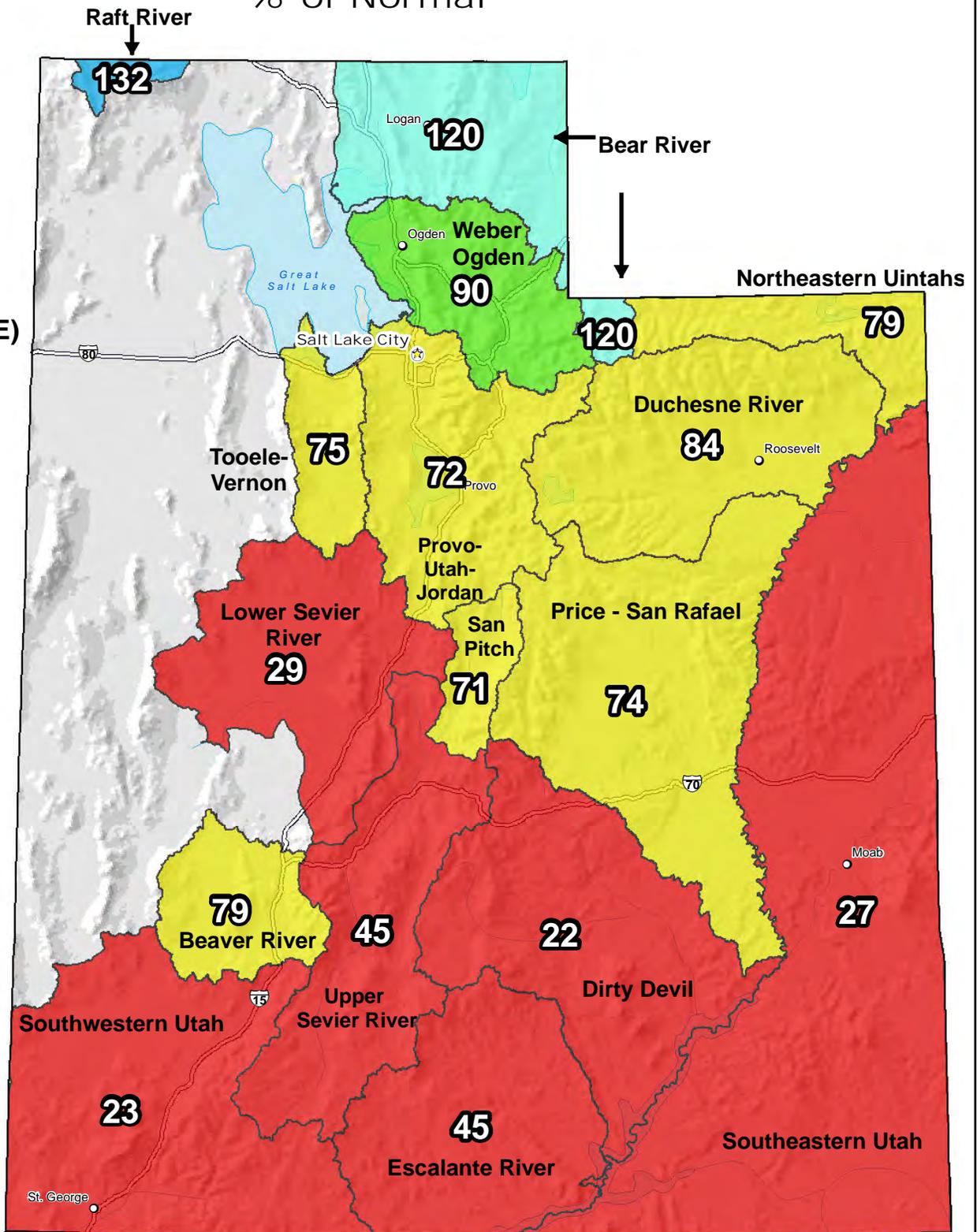
May 01, 2014

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

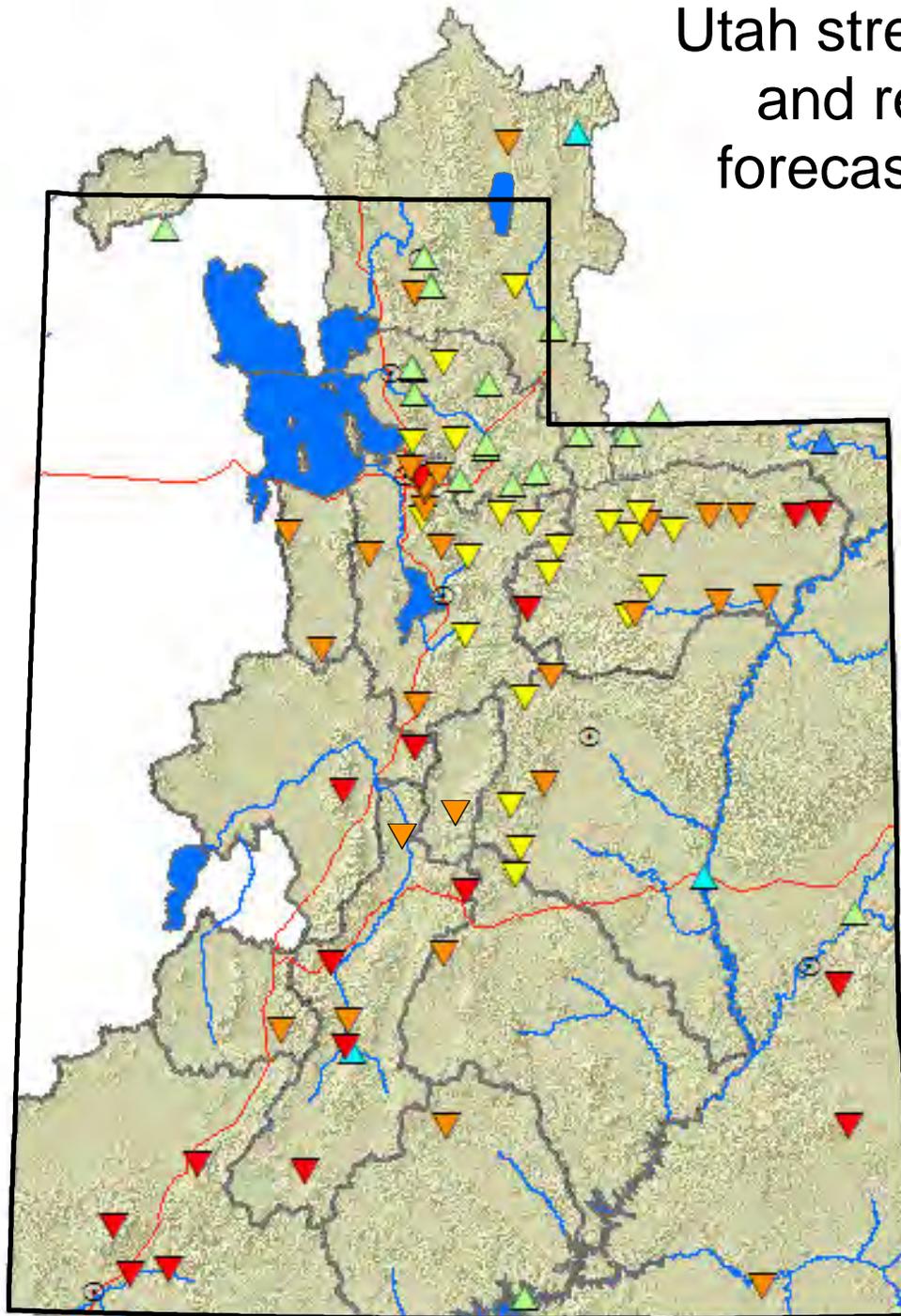
**Provisional Data
Subject to Revision**



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:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

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. | | |

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service



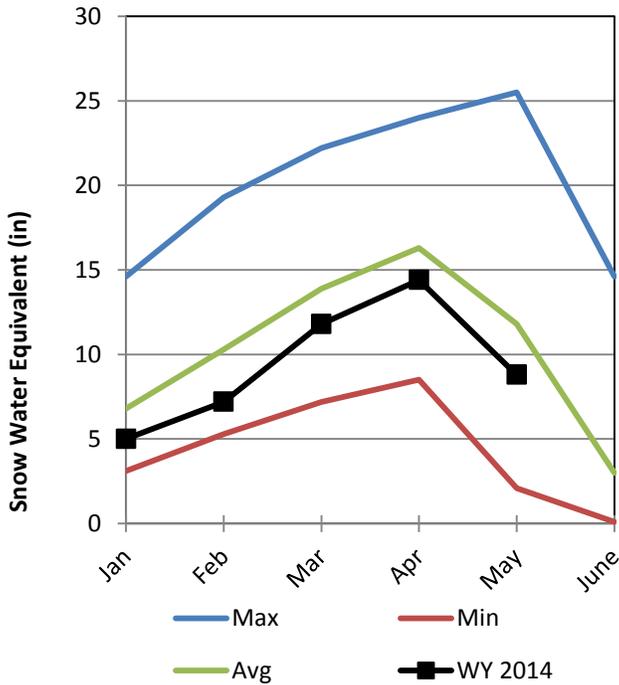
0 15 30 60 90 120
Miles

Statewide Utah

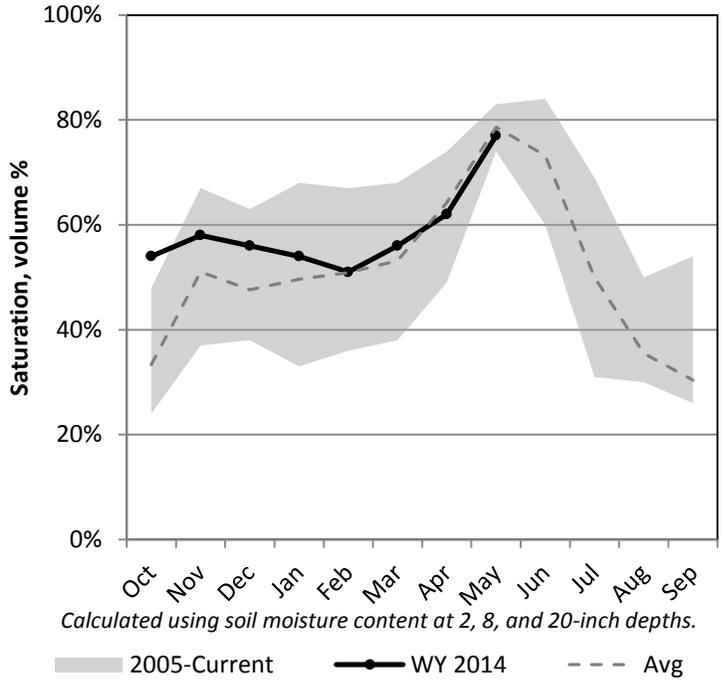
5/1/2014

Snowpack in Utah is below average at 83% of normal, compared to 72% last year. Precipitation in April was below average at 76%, which brings the seasonal accumulation (Oct-Apr) to 84% of average. Soil moisture is at 77% compared to 76% last year. Reservoir storage is at 68% of capacity, compared to 74% last year. Forecast streamflow volumes range from 14% to 138% of average.

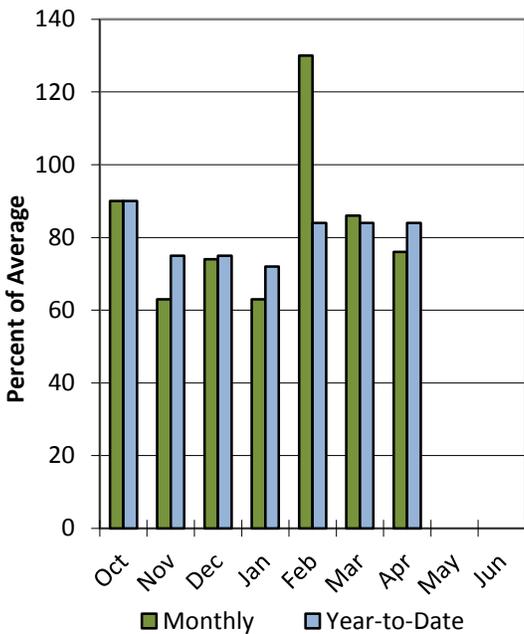
Snowpack



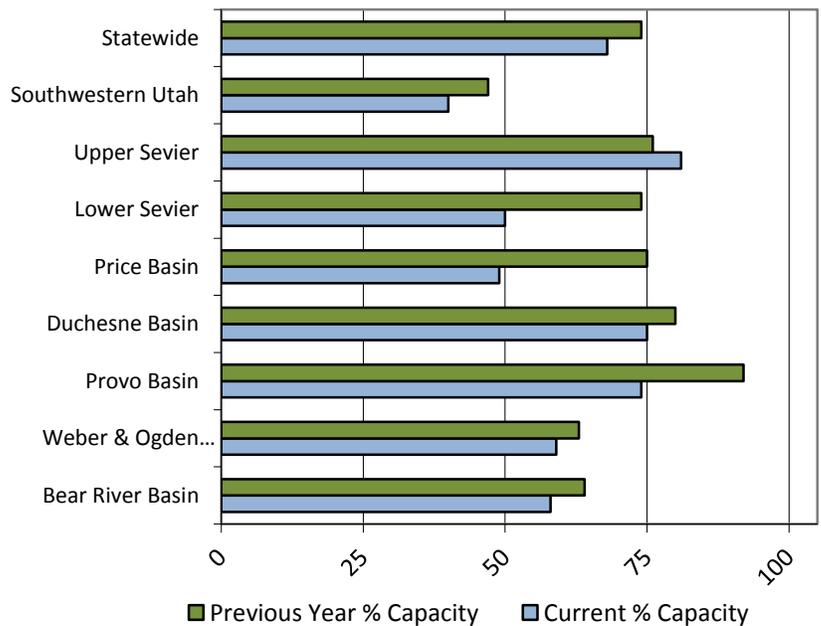
Soil Moisture



Precipitation



Reservoir Storage

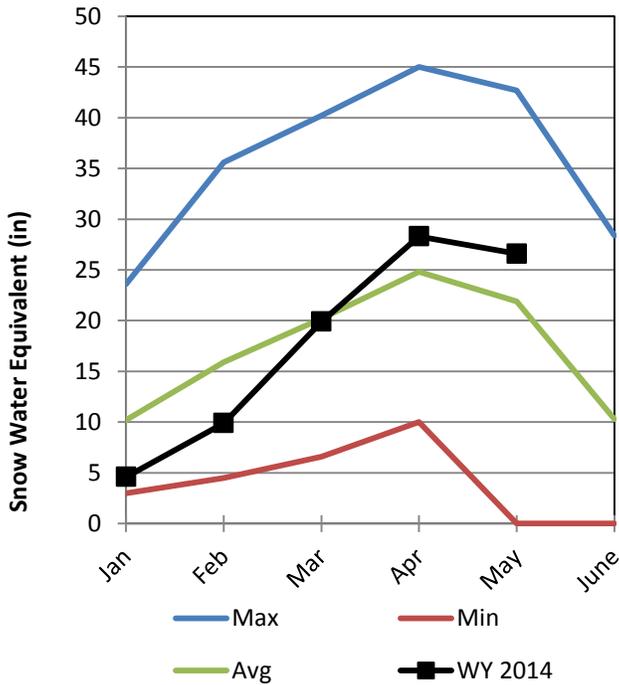


Raft River Basin

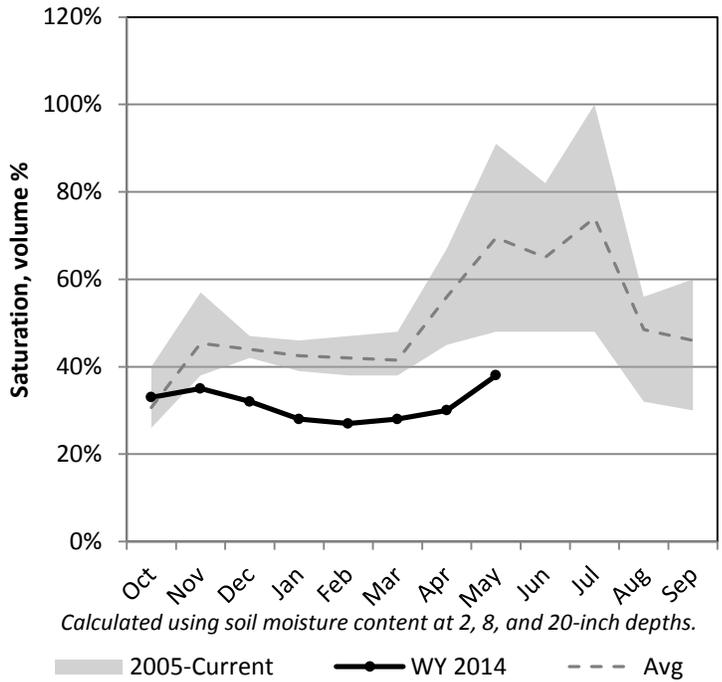
5/1/2014

Snowpack in the Raft River Basin is much above average at 132% of normal, compared to 101% last year. Precipitation in April was near average at 91%, which brings the seasonal accumulation (Oct-Apr) to 102% of average. Soil moisture is at 38% compared to 69% last year. The forecast streamflow volume for Dunn Creek is 104% of average.

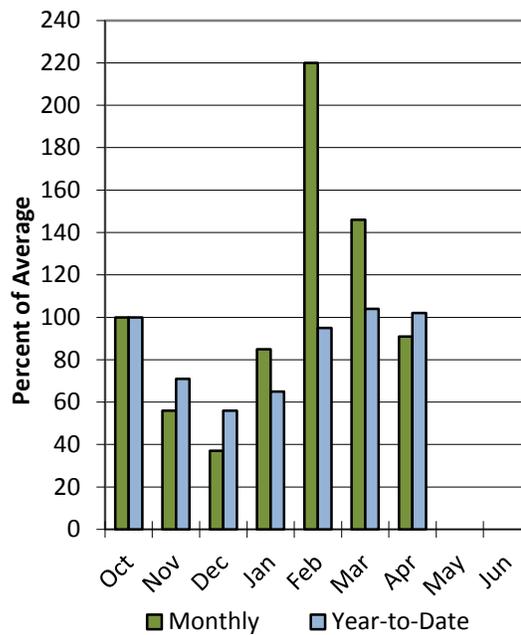
Snowpack



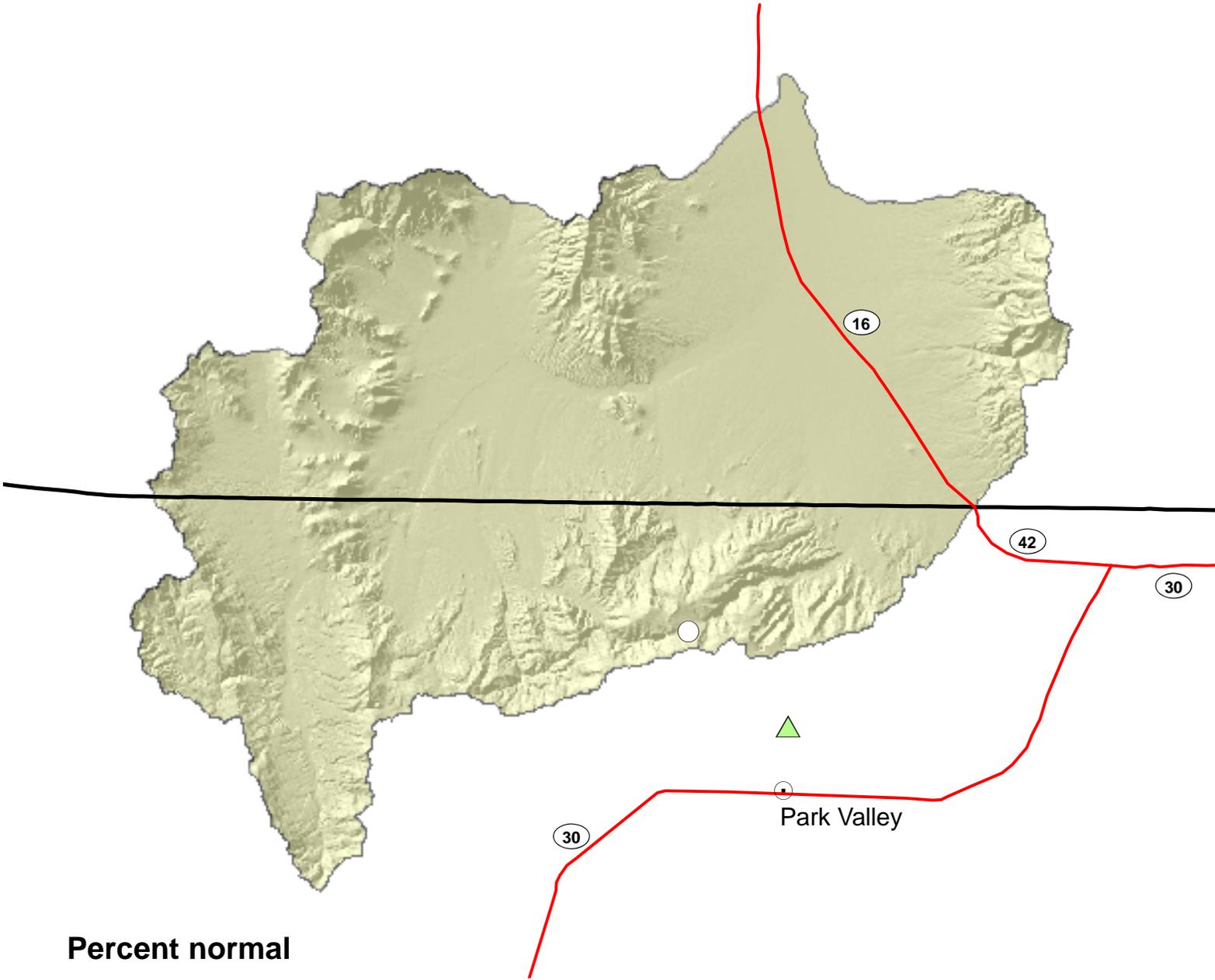
Soil Moisture



Precipitation

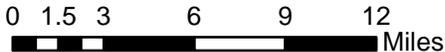
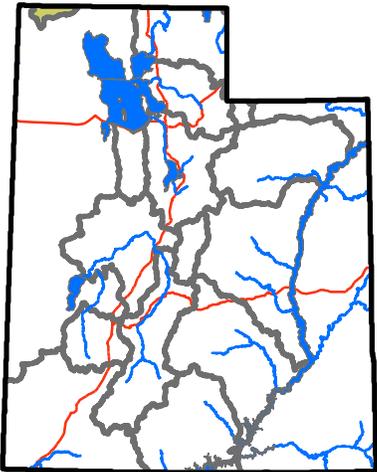


Raft basin



Percent normal

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



Raft River Streamflow Forecasts - May 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	1.8	2.5	3.1	107%	3.7	4.3	2.9
	MAY-JUL	1.3	2.2	2.7	104%	3.2	4	2.6

- 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

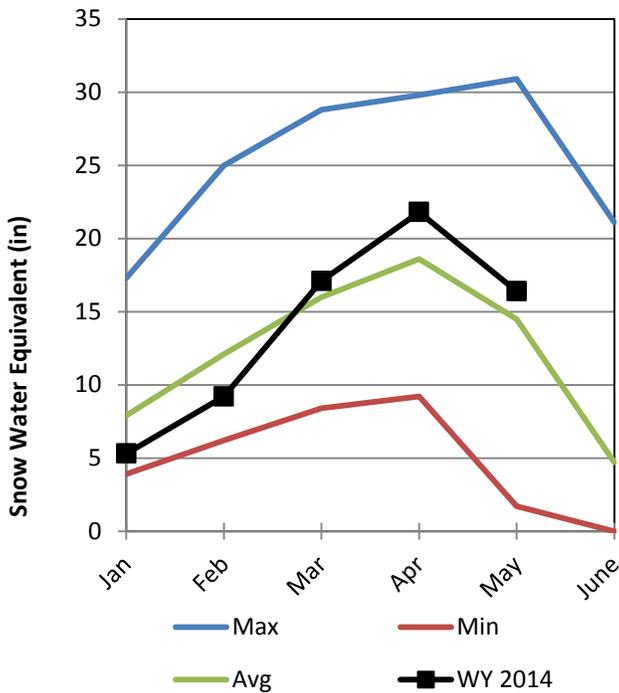
Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Raft	1	132%	101%

Bear River Basin

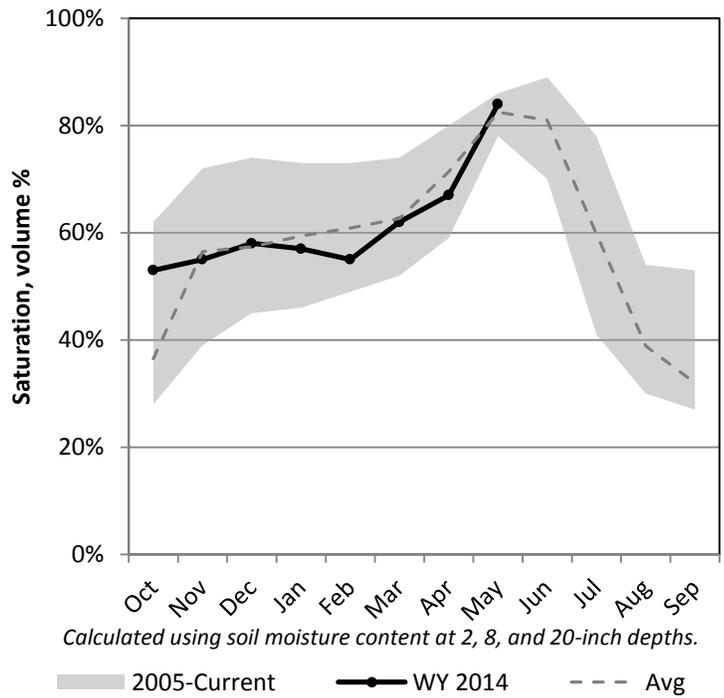
5/1/2014

Snowpack in the Bear River Basin is above average at 120% of normal, compared to 80% last year. Precipitation in April was below average at 78%, which brings the seasonal accumulation (Oct-Apr) to 102% of average. Soil moisture is at 84% compared to 80% last year. Reservoir storage is at 58% of capacity, compared to 64% last year. Forecast streamflow volumes range from 64% to 124% of average. The surface water supply index is 35% for the Bear River, 52% for the Woodruff Narrows, 43% for the Little Bear.

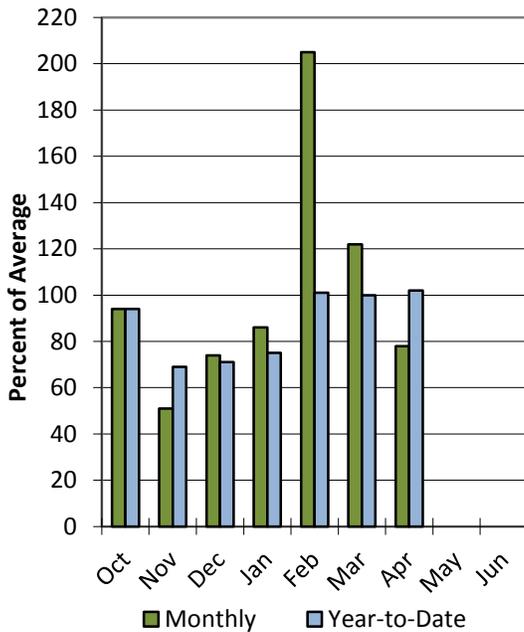
Snowpack



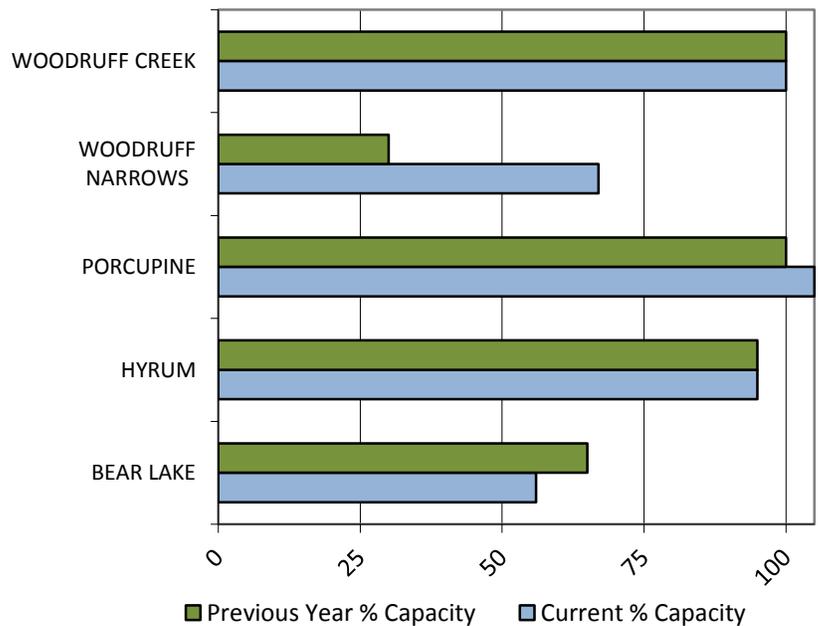
Soil Moisture



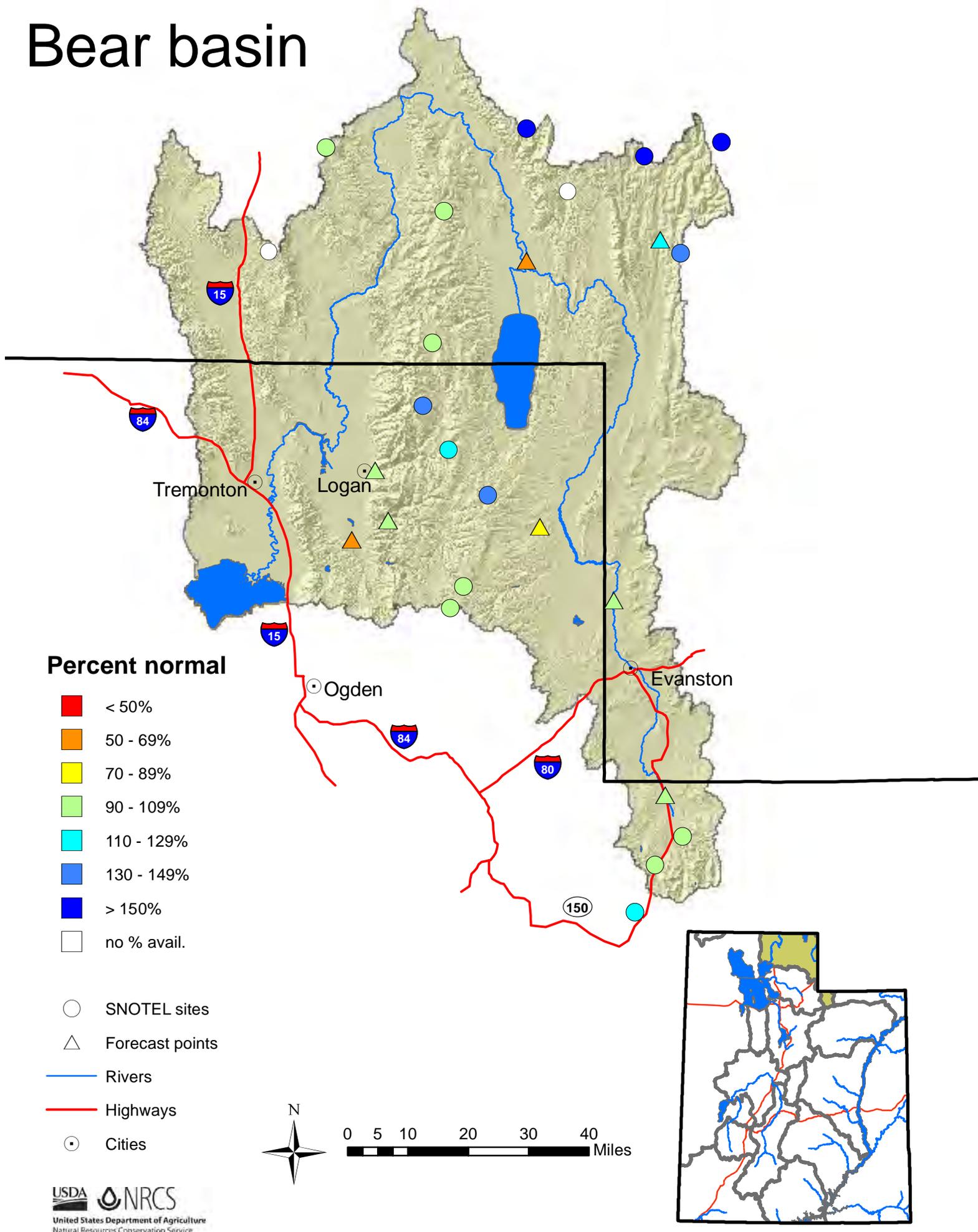
Precipitation



Reservoir Storage



Bear basin



Bear River Streamflow Forecasts - May 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	85	98	108	96%	117	131	112
	APR-SEP	95	110	120	98%	130	145	123
	MAY-JUL	81	93	102	98%	110	122	104
	MAY-SEP	89	103	113	97%	122	136	116
Bear R ab Resv nr Woodruff	APR-JUL	88	107	120	99%	132	151	121
	APR-SEP	94	112	125	98%	138	156	128
	MAY-JUL	74	91	103	98%	114	132	105
	MAY-SEP	79	97	108	97%	120	137	111
Big Ck nr Randolph	APR-JUL	1.68	2.56	3.06	81%	3.66	4.56	3.8
	MAY-JUL	1.22	2.1	2.6	84%	3.2	4.1	3.1
Smiths Fk nr Border	APR-JUL	94	102	108	121%	113	121	89
	APR-SEP	106	115	122	117%	128	138	104
	MAY-JUL	84.84	92.84	98.84	124%	103.84	111.84	80
	MAY-SEP	96.84	105.84	112.84	119%	118.84	128.84	95
Bear R bl Stewart Dam	APR-JUL	37	89	124	68%	159	211	183
	APR-SEP	49	104	141	69%	178	233	205
	MAY-JUL	30	71	99	68%	127	168	146
	MAY-SEP	33	82	115	68%	148	197	169
Little Bear at Paradise	APR-JUL	14.9	24	30	73%	37	46	41
	MAY-JUL	3.4	12.1	18	64%	24	33	28
Logan R nr Logan	APR-JUL	91	105	112	101%	123	136	111
	MAY-JUL	75	88	98	102%	107	120	96
Blacksmith Fk nr Hyrum	APR-JUL	28	41	44	102%	58	71	43
	MAY-JUL	13.4	25	33	106%	41	53	31

- 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 April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BEAR LAKE	732.7	841.1	651.7	1421.0
HYRUM RESERVOIR	14.6	14.5	14.1	15.3
PORCUPINE RESERVOIR	11.9	11.3	10.1	11.3
WOODRUFF CREEK	4.0	4.0	3.8	4.0
WOODRUFF NARROWS RESERVOIR	38.1	17.3	45.5	57.3
Basin-wide Total	801.2	888.1	725.2	1508.9
# of reservoirs	5	5	5	5

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Upper Bear	5	102%	92%
Middle Bear	7	143%	86%
Lower Bear	3	99%	73%
Logan	9	111%	68%

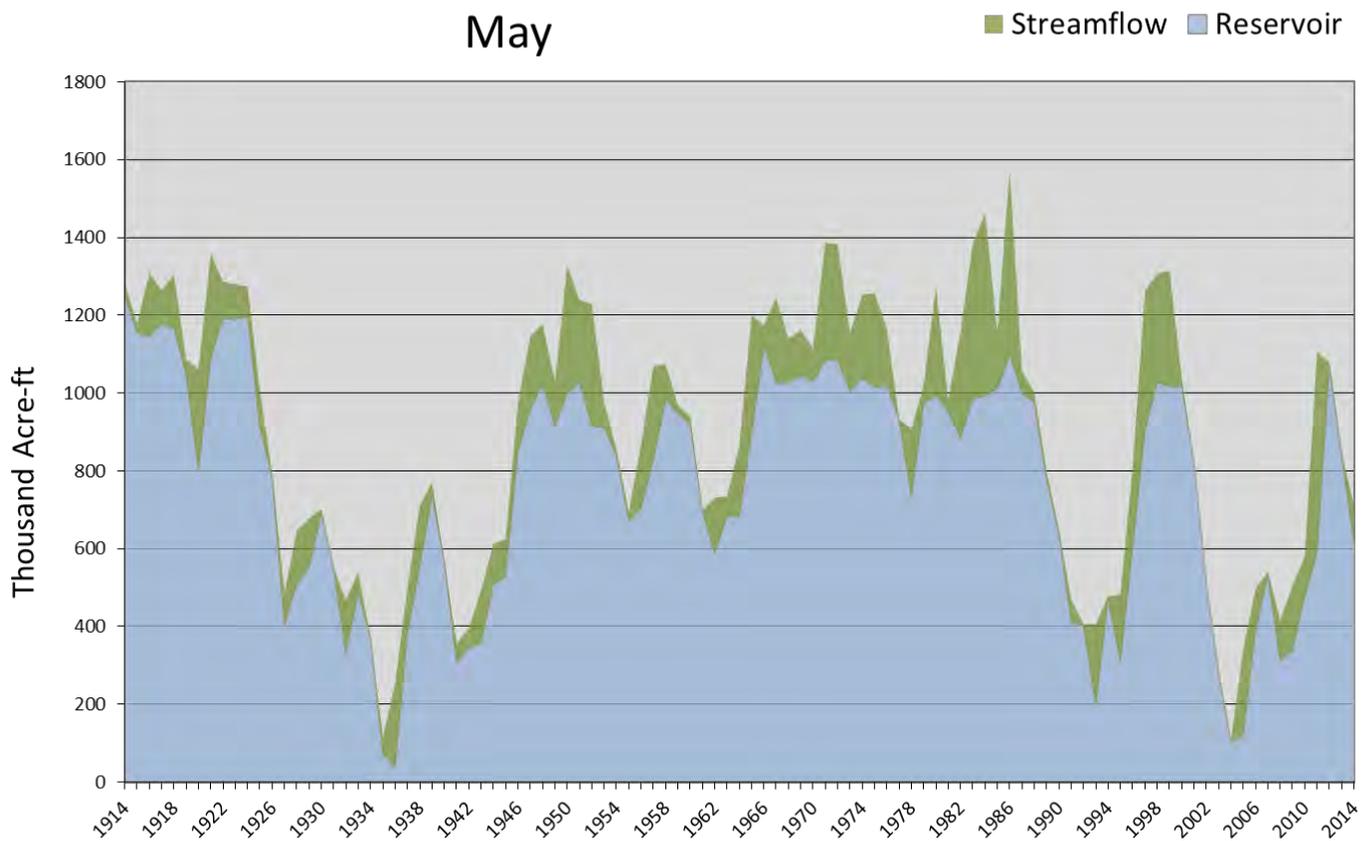
May 1, 2014

Surface Water Supply Index

Basin or Region	April EOM* Bear Lake	May-July Forecast below Stewart Dam	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Bear River	614	99	713	-1.23	35	30, 38, 62, 63

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

Bear River - Surface Water Supply Index May



May 1, 2014

Surface Water Supply Index

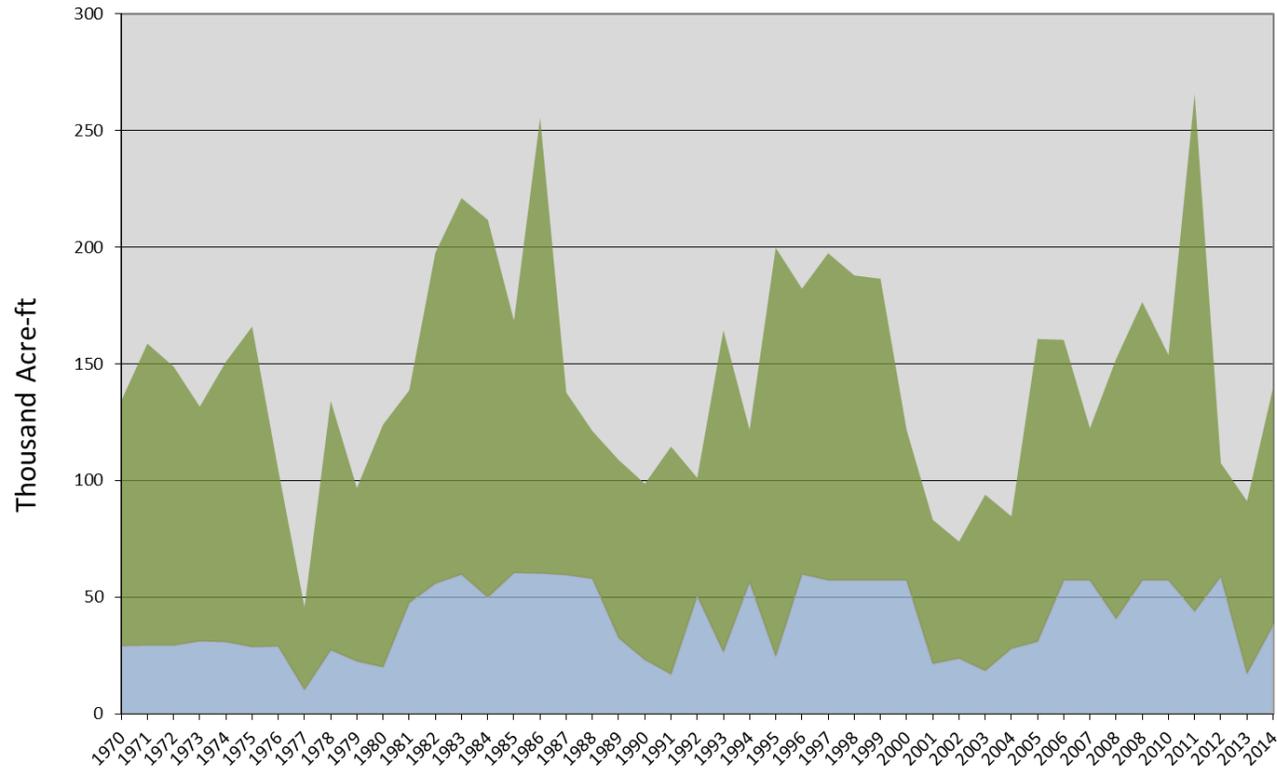
Basin or Region	April EOM* Woodruff Narrows Reservoir	May-July forecast Bear at Stateline	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Woodruff Narrows	38.1	102.0	140.1	0.18	52	87, 81, 72, 74

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

Woodruff Narrows - Surface Water Supply Index

May

■ Streamflow ■ Reservoir

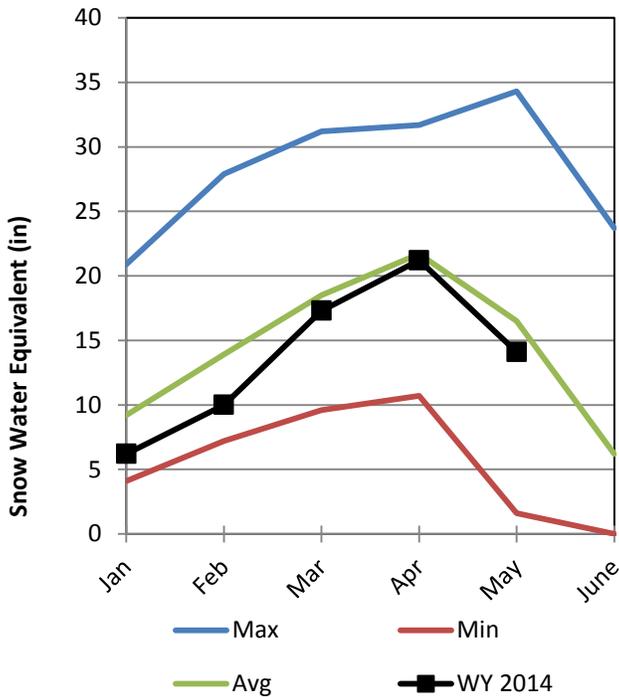


Weber & Ogden River Basins

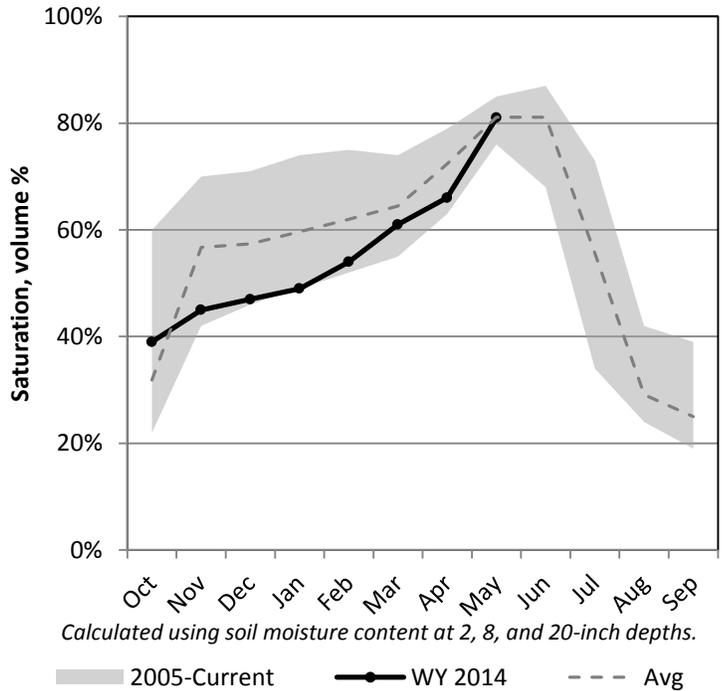
5/1/2014

Snowpack in the Weber & Ogden River Basins is below average at 89% of normal, compared to 70% last year. Precipitation in April was below average at 77%, which brings the seasonal accumulation (Oct-Apr) to 89% of average. Soil moisture is at 81% compared to 79% last year. Reservoir storage is at 59% of capacity, compared to 63% last year. Forecast streamflow volumes range from 82% to 98% of average. The surface water supply index is 37% for the Ogden River, 41% for the Weber River.

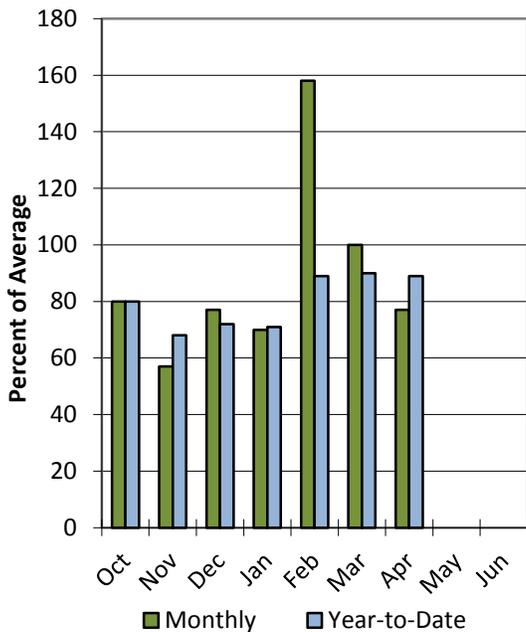
Snowpack



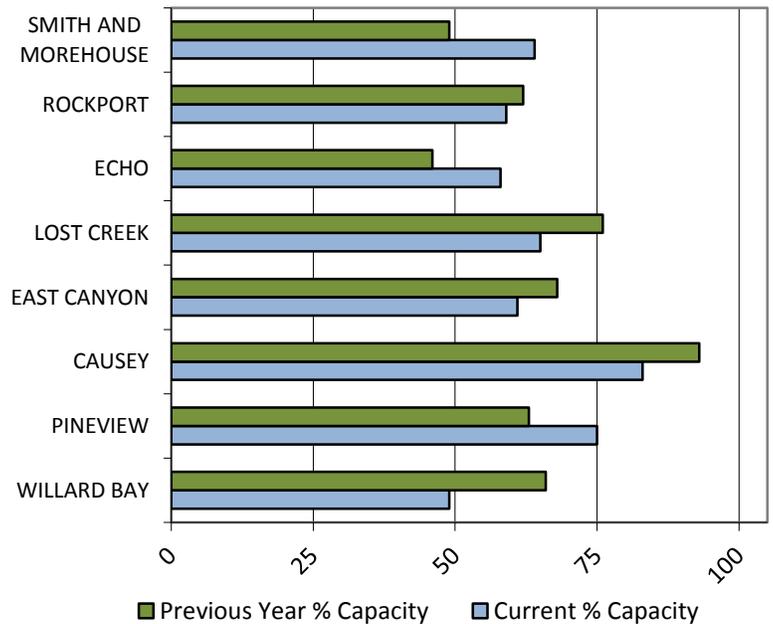
Soil Moisture



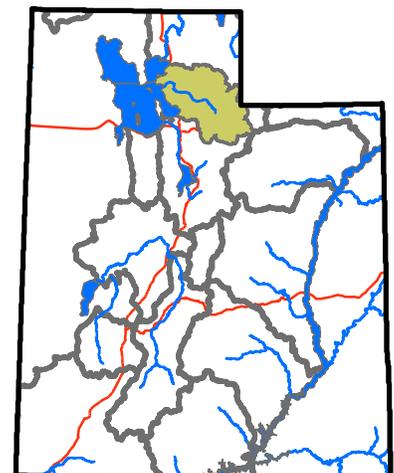
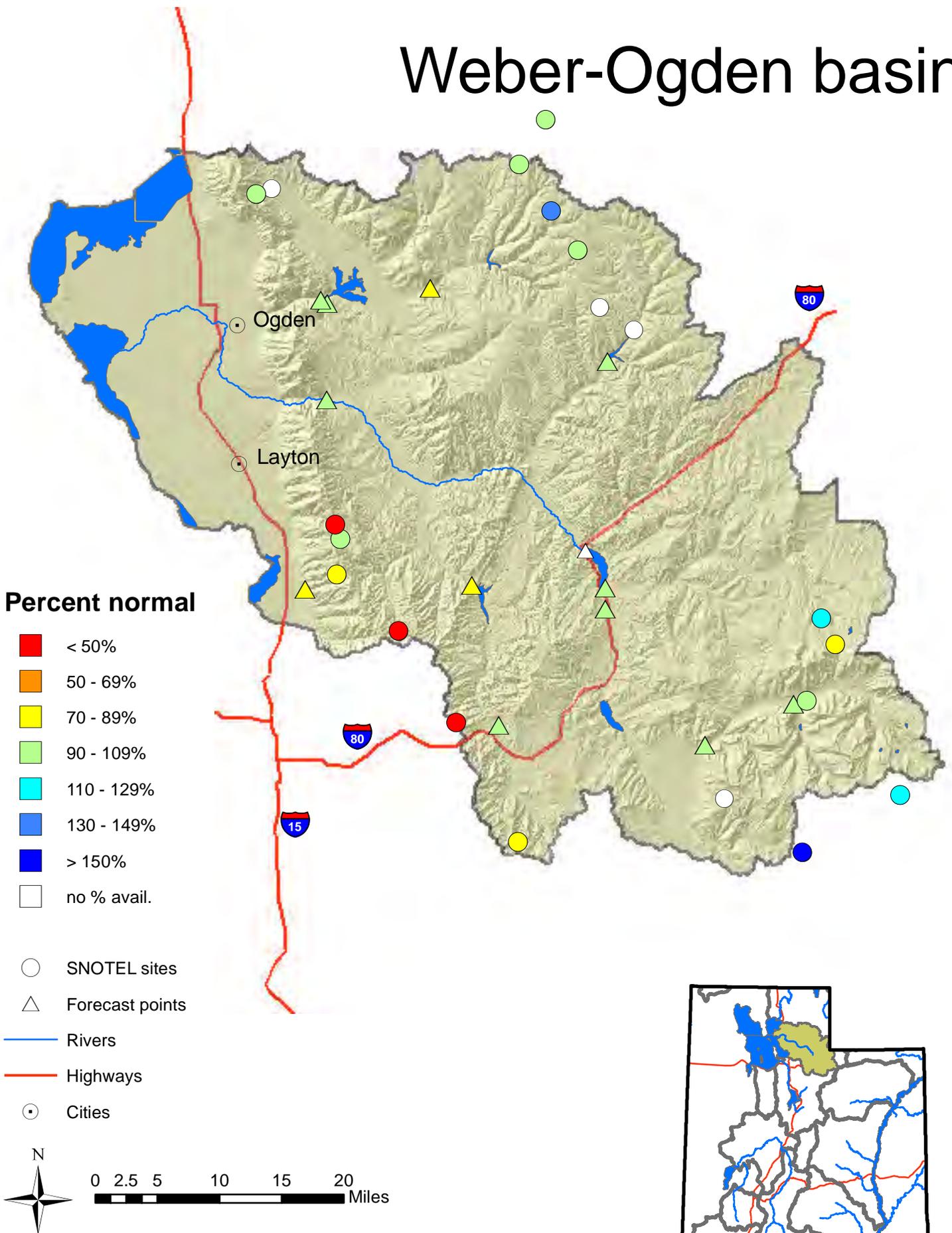
Precipitation



Reservoir Storage



Weber-Ogden basin



Weber Ogden Rivers Streamflow Forecasts - May 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	27	30	32	94%	33	36	34
	MAY-JUL	25	27	29	94%	31	33	31
Weber R at Gateway	APR-JUL	151	239	300	95%	360	449	315
	MAY-JUL	116	187	236	98%	284	355	240
Weber R nr Coalville	APR-JUL	89	108	121	96%	134	153	126
	MAY-JUL	78	95	104	98%	117	133	106
Weber R nr Oakley	APR-JUL	95	107	115	98%	124	136	117
	MAY-JUL	82	95	104	98%	113	126	106
Rockport Reservoir Inflow	APR-JUL	93	109	120	98%	131	147	123
	MAY-JUL	77	93	103	97%	113	128	106
Chalk Ck at Coalville	APR-JUL	17.3	29	36	88%	44	56	41
	MAY-JUL	12.5	24	31	91%	38	50	34
Echo Reservoir Inflow	APR-JUL	78	118	145	87%	172	212	166
	MAY-JUL	72	107	131	86%	154	189	152
Lost Ck Reservoir Inflow	APR-JUL	4.6	9	12	99%	15	19.4	12.1
	MAY-JUL	1.7	5.6	8.2	96%	10.8	14.7	8.5
East Canyon Ck nr Jeremy Ranch	APR-JUL	3.2	9.8	14.2	93%	19.2	25	15.2
	MAY-JUL	2.7	7.1	9.4	92%	11.3	16.4	10.2
East Canyon Ck nr Morgan	APR-JUL	12.1	18	22	79%	26	32	28
	MAY-JUL	8.6	13	16	82%	19	23	19.4
SF Ogden R nr Huntsville	APR-JUL	36	44	49	88%	55	62	56
	MAY-JUL	24	30	35	88%	39	46	40
Pineview Reservoir Inflow	APR-JUL	34	64	84	98%	105	135	86
	MAY-JUL	13.9	37	52	98%	68	91	53
Wheeler Ck nr Huntsville	APR-JUL	3.4	4.4	5.5	87%	6.6	7.5	6.3
	MAY-JUL	1.56	2.9	3.9	91%	4.8	6.1	4.3

- 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 April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
CAUSEY RESERVOIR	5.9	6.6	5.0	7.1
EAST CANYON RESERVOIR	30.4	33.7	40.4	49.5
ECHO RESERVOIR	42.7	33.9	54.4	73.9
LOST CREEK RESERVOIR	14.6	17.1	14.6	22.5
PINEVIEW RESERVOIR	82.5	68.9	79.9	110.1
ROCKPORT RESERVOIR	36.1	37.6	40.1	60.9
WILLARD BAY	106.2	142.1	158.7	215.0
SMITH AND MOREHOUSE RESERVOIR	5.2	4.0	4.5	81.0
Basin-wide Total	323.6	343.8	397.6	620.0
# of reservoirs	8	8	8	8

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Upper Weber	11	99%	80%
Lower Weber	7	72%	69%
Ogden	17	89%	70%
Lost Creek	3	107%	64%

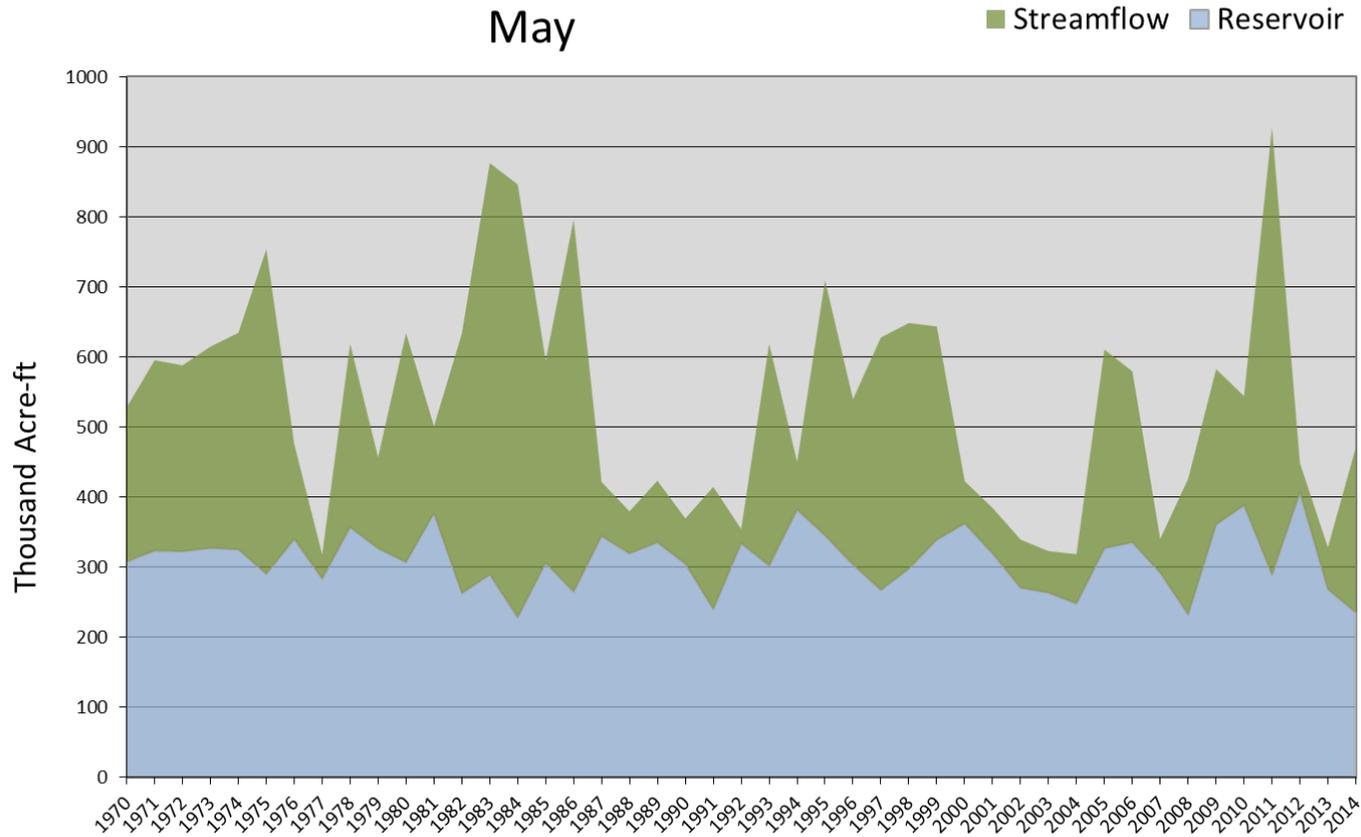
May 1, 2014

Surface Water Supply Index

Basin or Region	April EOM* Reservoirs	May-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	235	236	471	-0.72	41	94, 79, 76, 81

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

Weber River - Surface Water Supply Index May

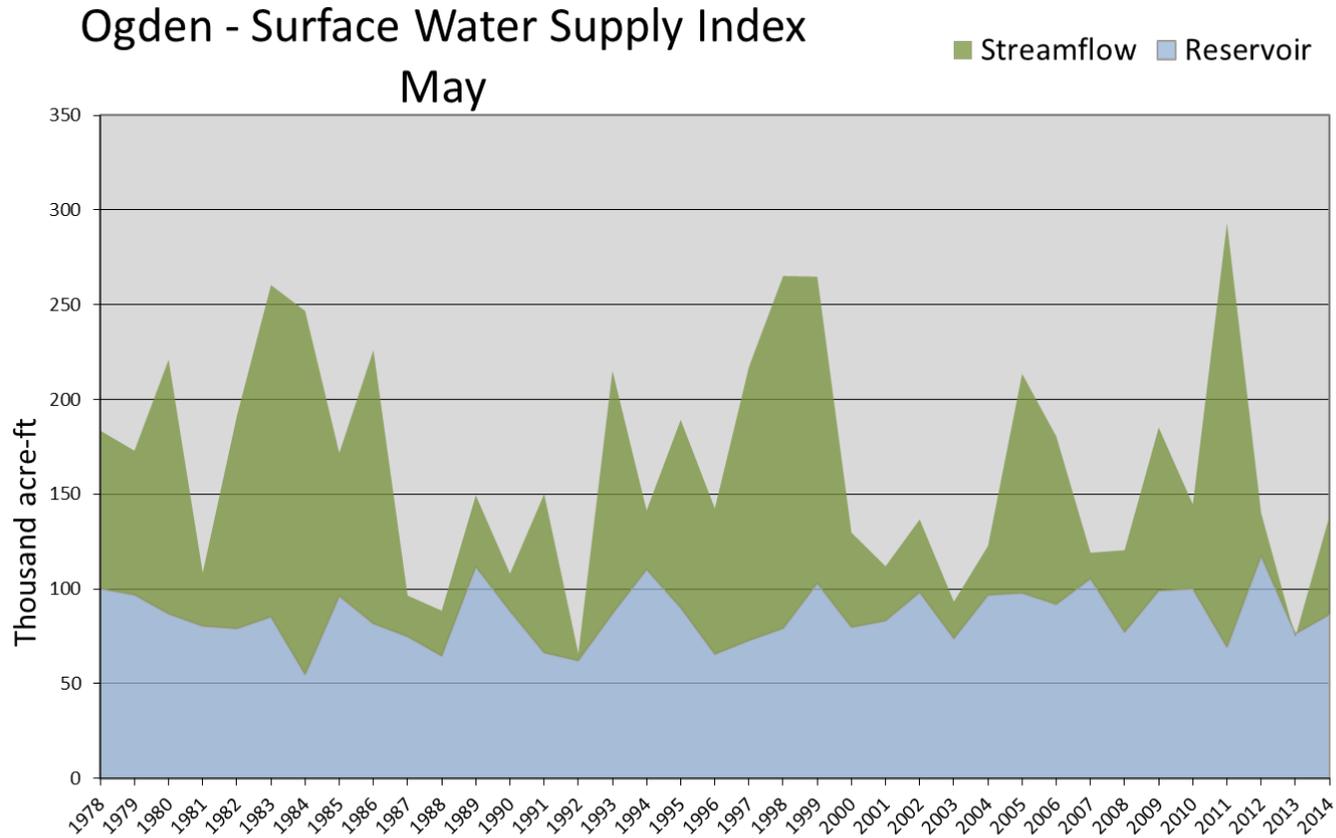


May 1, 2014

Surface Water Supply Index

Basin or Region	April EOM* Pine View & Causey	May-July Forecast Pineview Reservoir Inflow	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Ogden River	86.4	52.0	138.4	-1.10	37	00, 02, 12, 94

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

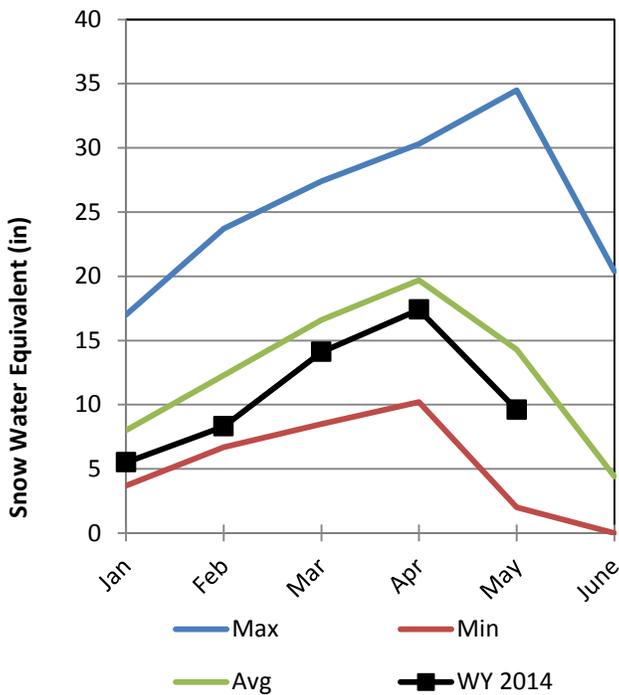


Provo & Jordan River Basins

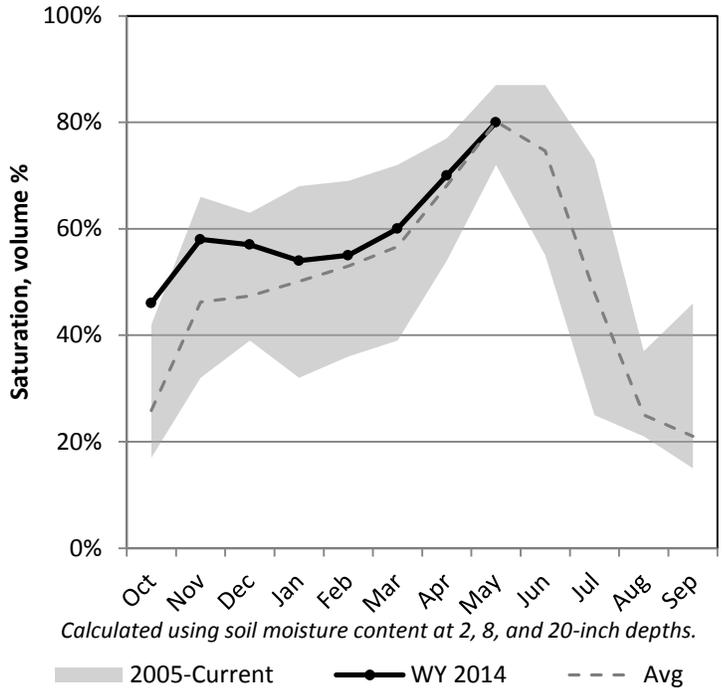
5/1/2014

Snowpack in the Provo & Jordan River Basins is below average at 72% of normal, compared to 66% last year. Precipitation in April was below average at 77%, which brings the seasonal accumulation (Oct-Apr) to 85% of average. Soil moisture is at 80% compared to 77% last year. Reservoir storage is at 74% of capacity, compared to 80% last year. Forecast streamflow volumes range from 44% to 83% of average. The surface water supply index is 11% for the Provo River.

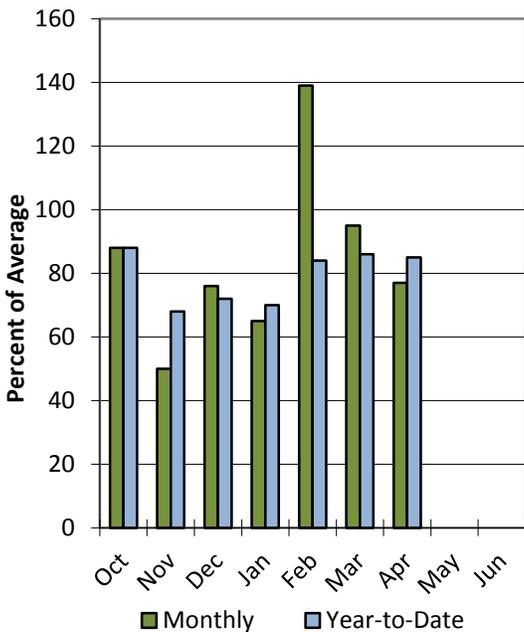
Snowpack



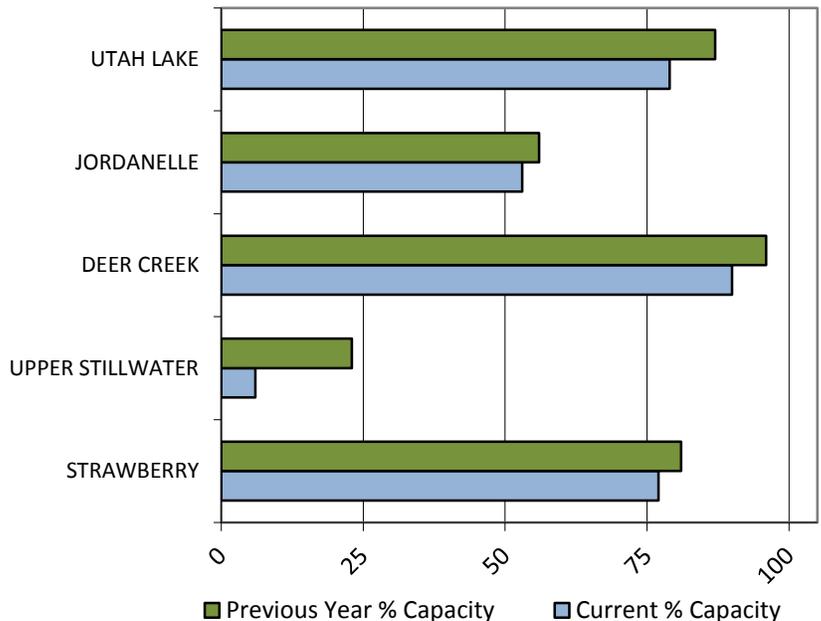
Soil Moisture



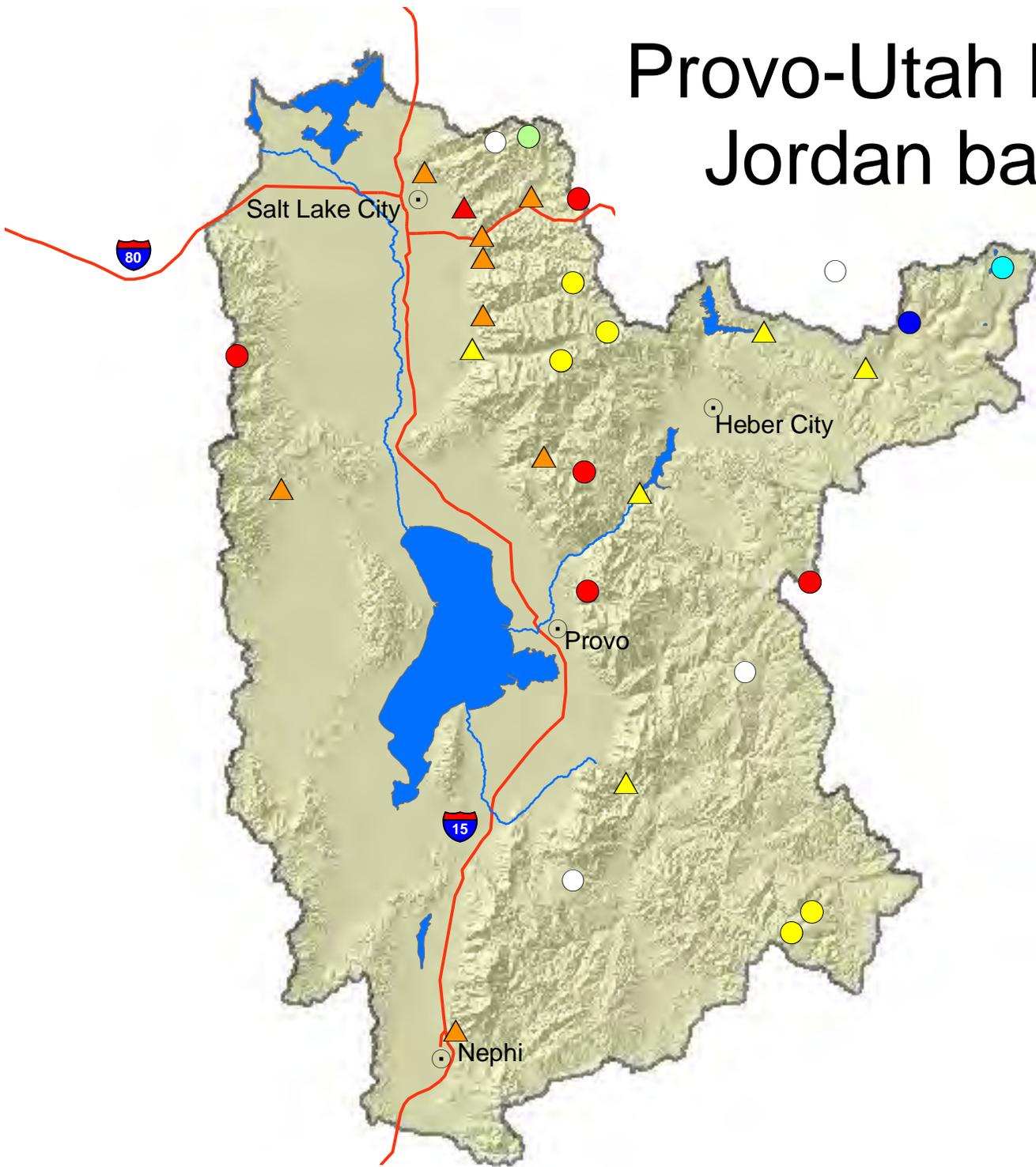
Precipitation



Reservoir Storage



Provo-Utah Lake-Jordan basin

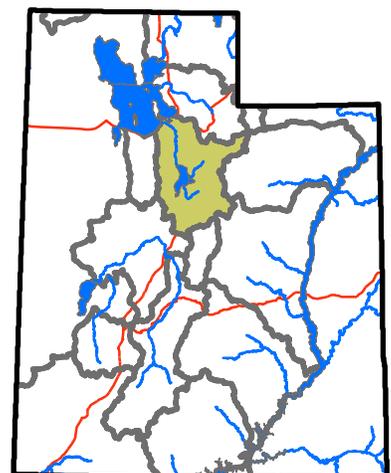
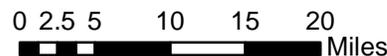


Percent normal

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



United States Department of Agriculture
 Natural Resources Conservation Service



Provo R Utah Lake Jordan R Streamflow Forecasts - May 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	2.7	4.7	6	63%	7.3	9.3	9.5
	MAY-JUL	0.92	2.5	4.8	63%	4.7	6.3	7.6
Spanish Fk at Castilla	APR-JUL	5.3	48	59	86%	105	148	69
	MAY-JUL	1.62	35	45	83%	74	100	54
Provo R at Woodland	APR-JUL	57	71	82	82%	93	112	100
	MAY-JUL	47	61	70	79%	79	93	89
Provo R at Hailstone	APR-JUL	59	76	88	81%	101	123	108
	MAY-JUL	49	62	72	77%	82	99	94
Provo R bl Deek Ck Dam	APR-JUL	64	82	95	82%	108	126	116
	MAY-JUL	44	61	72	77%	83	100	94
American Fk ab Upper Powerplant	APR-JUL	13.7	19.2	23	72%	27	32	32
	MAY-JUL	10.3	15.5	19	63%	23	28	30
Utah Lake Inflow	APR-JUL	2.6	85	200	75%	289	411	265
	MAY-JUL	1.92	40	140	73%	238	303	192
W Canyon Ck nr Cedar Fort	APR-JUL	0.26	0.76	1.1	63%	1.44	1.94	1.76
	MAY-JUL	0.11	0.58	0.9	58%	1.22	1.69	1.54
Little Cottonwood Ck nr SLC	APR-JUL	22	27	31	82%	35	41	38
	MAY-JUL	20	24	27	73%	30	34	37
Big Cottonwood Ck nr SLC	APR-JUL	17.4	23	27	75%	31	37	36
	MAY-JUL	13.8	19	22	67%	26	31	33
Mill Ck nr SLC	APR-JUL	0.06	2.1	3.5	55%	4.9	6.9	6.4
	MAY-JUL	0.48	2.2	3.4	58%	4.6	6.3	5.9
Parleys Ck nr SLC	APR-JUL	2.4	6.2	8.8	62%	11.4	15.2	14.2
	MAY-JUL	0.46	3.8	6	47%	8.2	11.5	12.8
Dell Fk nr SLC	APR-JUL	0.11	2.2	3	55%	5.4	7.9	5.5
	MAY-JUL	0.08	0.81	2.3	59%	3.8	6	3.9
Emigration Ck nr SLC	APR-JUL	0.08	0.72	1.8	45%	2.9	4.5	4
	MAY-JUL	0.03	0.26	1.2	39%	2.1	3.5	3.1
City Ck nr SLC	APR-JUL	0.85	3	4.5	58%	6	8.1	7.7
	MAY-JUL	0.68	2.7	4	55%	5.3	7.3	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

Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
DEER CREEK RESERVOIR	134.6	143.1	122.0	149.7
STRAWBERRY RESERVOIR	850.8	900.1	678.4	1105.9
UTAH LAKE	687.4	755.7	830.9	870.9
JORDANELLE RESERVOIR	170.0	180.6	247.1	320.0
Basin-wide Total	1842.7	1979.5	1878.4	2446.5
# of reservoirs	4	4	4	4

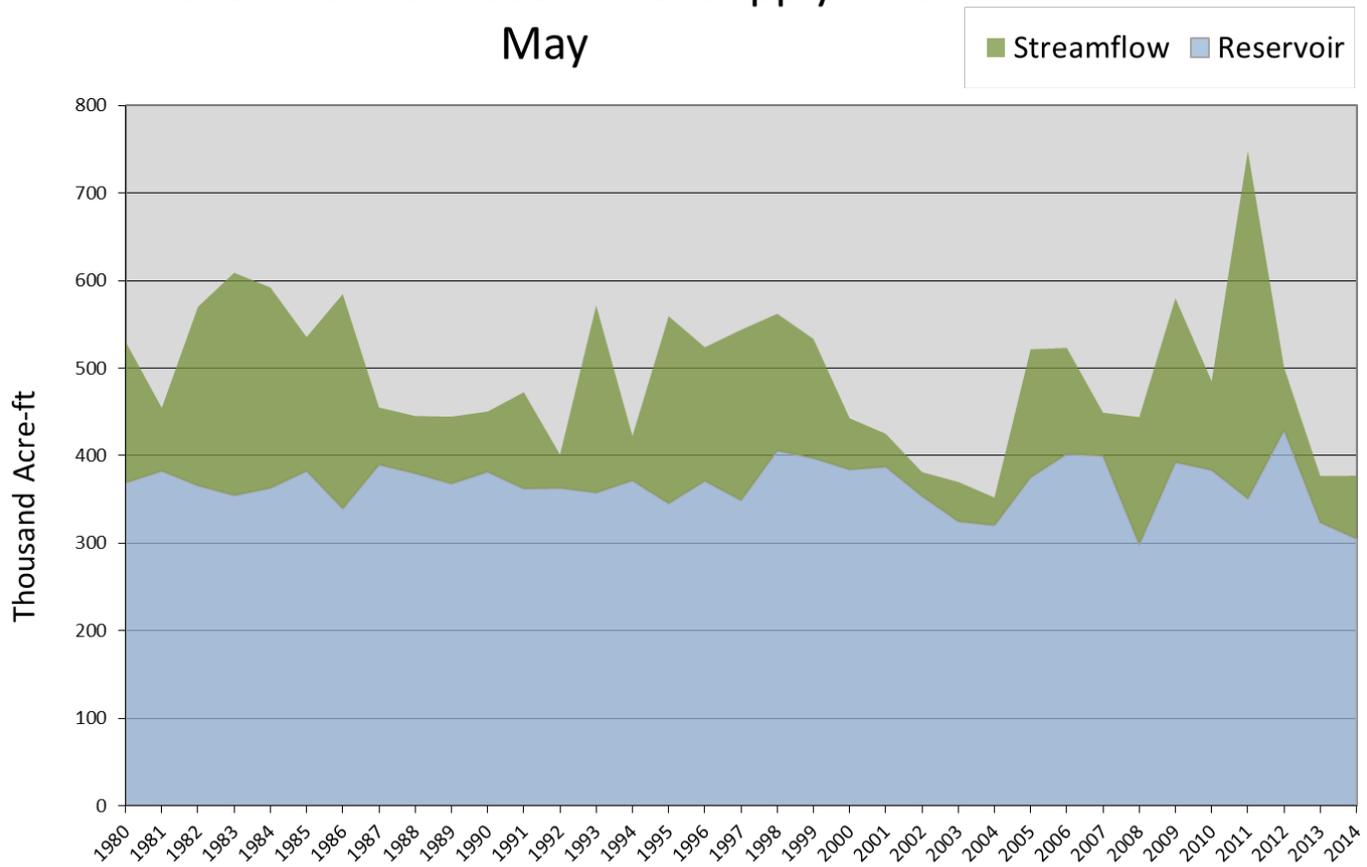
Watershed Snowpack Analysis
May 1, 2014

	# of Sites	% Median	Last Year % Median
Upper Provo	7	82%	65%
Jordan	15	72%	66%
Utah Lake	15	72%	66%
Spanish Fork	7	53%	32%
Six Creeks	15	72%	79%
Cottonwoods	7	76%	83%

5/1/2014		Surface Water Supply Index				
Basin or Region	April EOM* Deer Creek, Jordanelle	May - 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	305	72	377	-3.24	11	03, 13, 02, 92

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

Provo River - Surface Water Supply Index
May

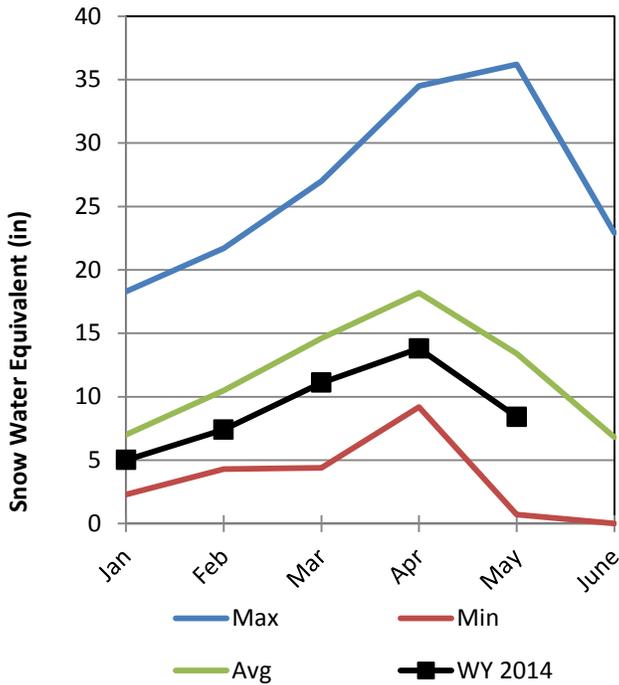


Tooele & Vernon Creek Basins

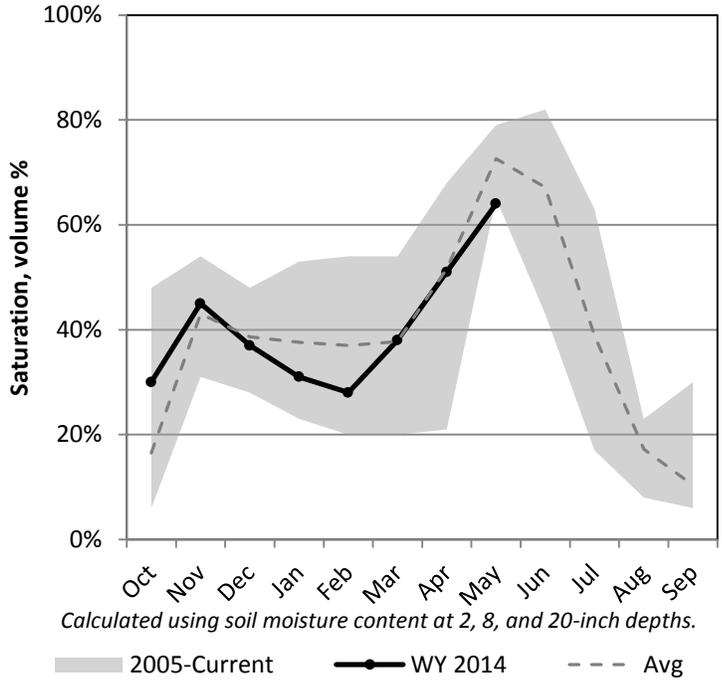
5/1/2014

Snowpack in the Tooele & Vernon Creek Basins is below average at 75% of normal, compared to 98% last year. Precipitation in April was below average at 79%, which brings the seasonal accumulation (Oct-Apr) to 80% of average. Soil moisture is at 64% compared to 65% last year. Reservoir storage is at 67% of capacity, compared to 69% last year. Forecast streamflow volumes range from 58% to 59% of average.

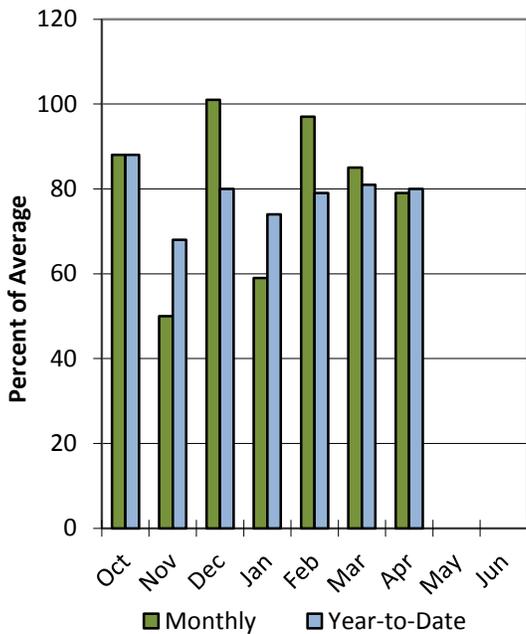
Snowpack



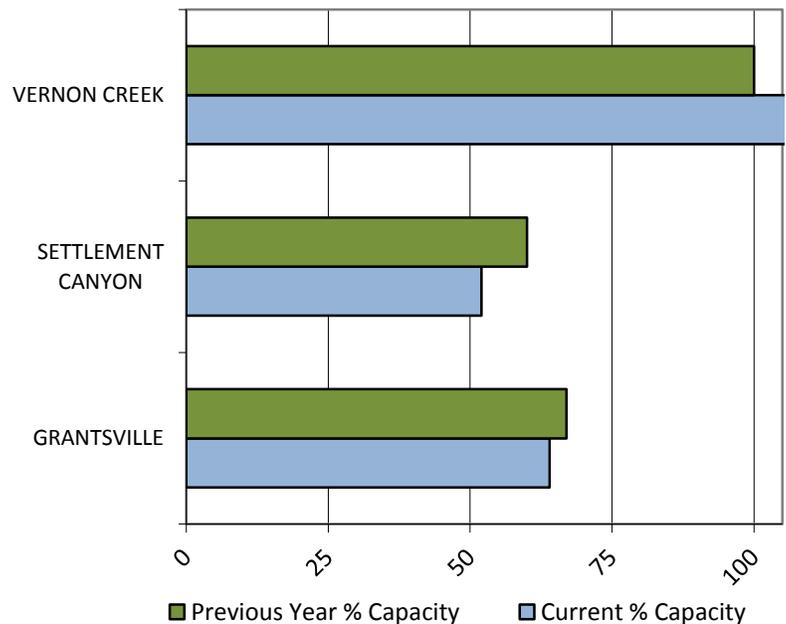
Soil Moisture



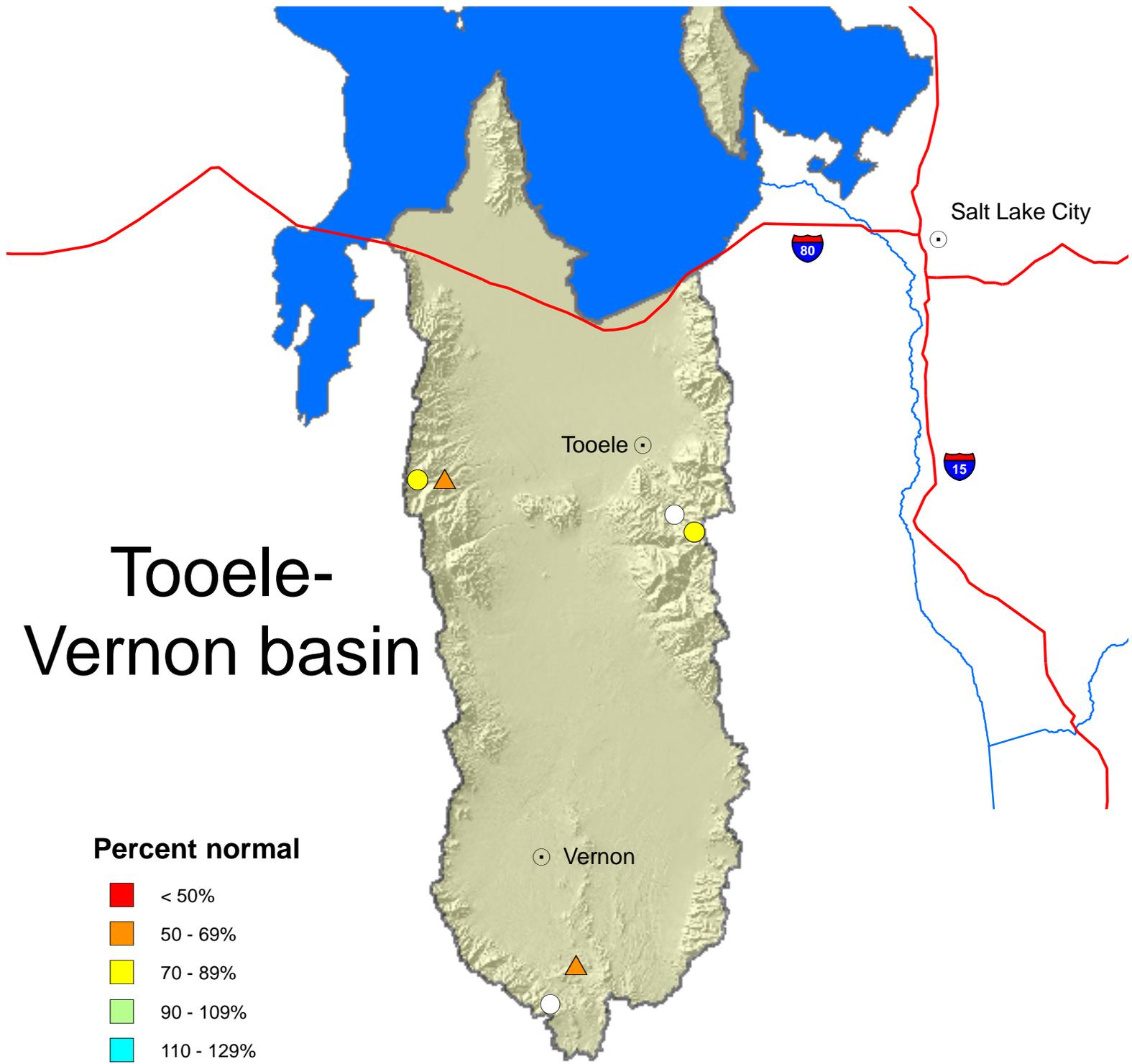
Precipitation



Reservoir Storage



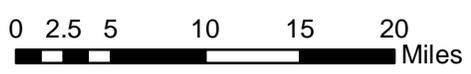
Tooele- Vernon basin



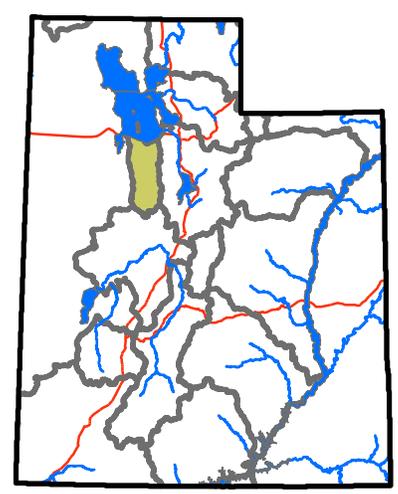
Percent normal

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

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



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service



Tooele Valley Vernon Creek Streamflow Forecasts - May 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	0.03	0.5	0.9	65%	1.3	1.89	1.39
	MAY-JUL	0.02	0.3	0.6	59%	0.9	1.35	1.01
S Willow Ck nr Grantsville	APR-JUL	1.04	1.61	1.9	61%	2.4	2.9	3.1
	MAY-JUL	0.75	1.26	1.6	59%	1.94	2.5	2.7

- 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 April, 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	0.6	0.8	1.0
GRANTSVILLE RESERVOIR	2.1	2.2	2.8	3.3
Basin-wide Total	3.3	3.4	4.2	4.9
# of reservoirs	3	3	3	3

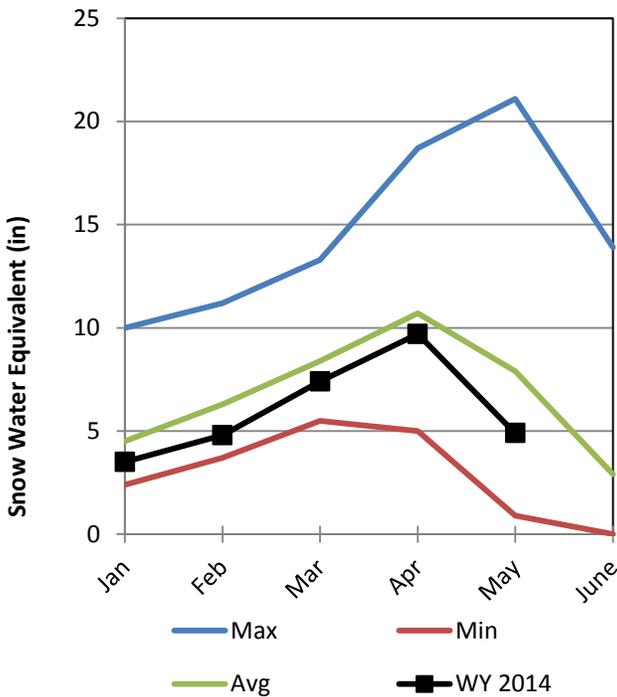
Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Tooele	3	75%	98%
NW Utah	2	74%	96%

Northeastern Uintah Basin

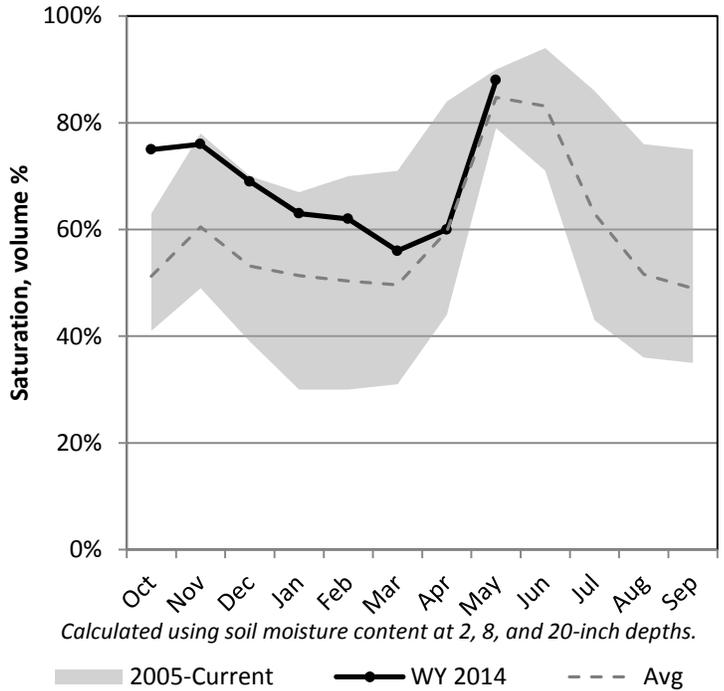
5/1/2014

Snowpack in the Northeastern Uintah Basin is below average at 79% of normal, compared to 131% last year. Precipitation in April was below average at 70%, which brings the seasonal accumulation (Oct-Apr) to 88% of average. Soil moisture is at 88% compared to 81% last year. Reservoir storage is at 79% of capacity, compared to 80% last year. Forecast streamflow volumes range from 93% to 138% of average. The surface water supply index is 48% for the Blacks Fork, 83% for the Smiths Creek.

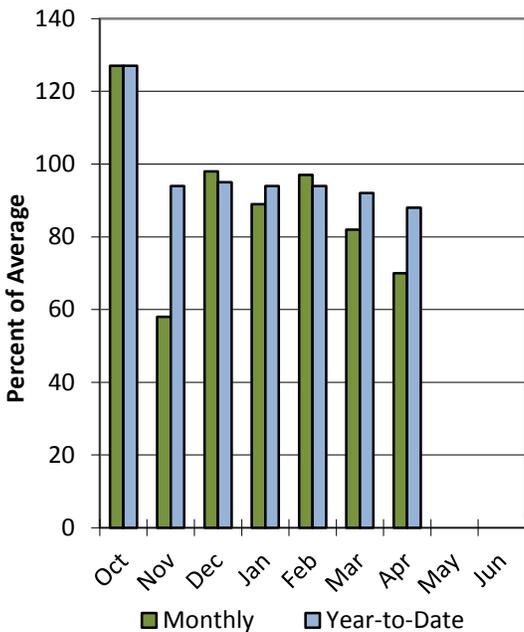
Snowpack



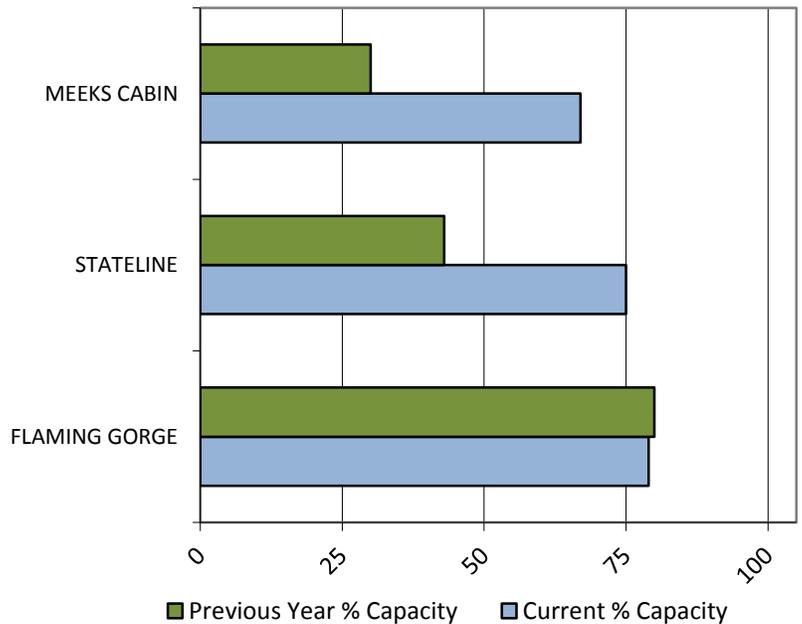
Soil Moisture



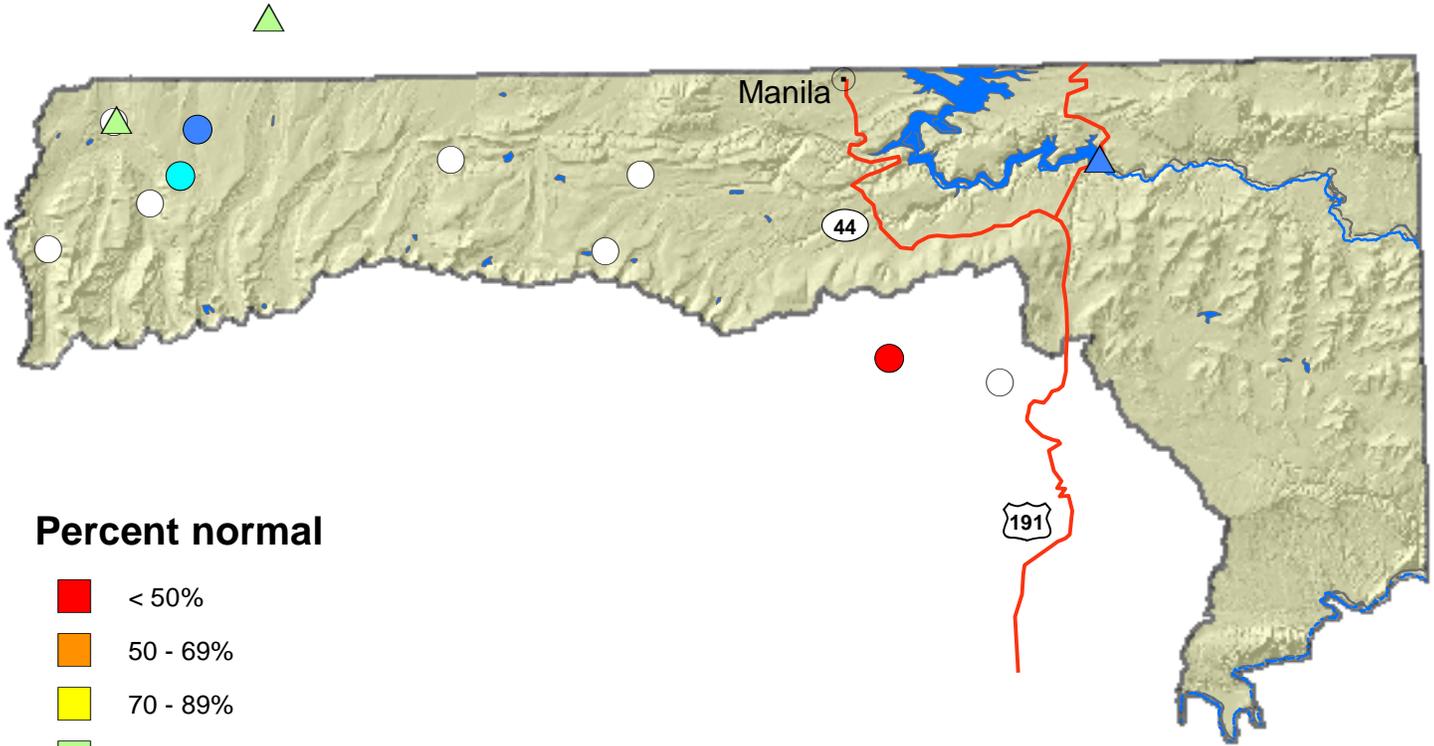
Precipitation



Reservoir Storage



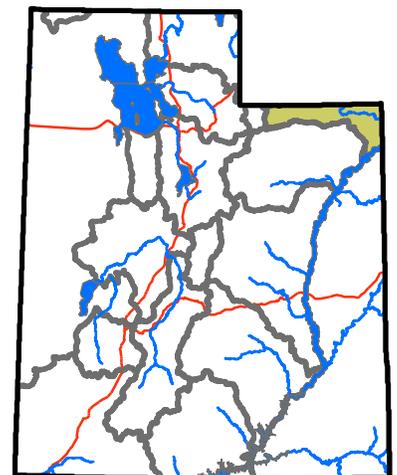
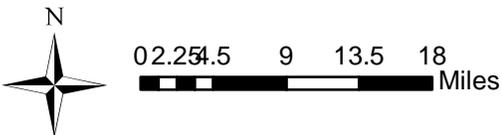
Northeastern Utah



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 - May 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	70	78	86	97%	92	102	89
	MAY-JUL	63	72	79	93%	86	96	85
EF of Smiths Fork nr Robertson ²	APR-JUL	18.3	23	27	100%	31	38	27
	MAY-JUL	16.5	21	25	96%	29	36	26
Flaming Gorge Reservoir Inflow ²	APR-JUL	985	1170	1300	133%	1440	1670	980
	MAY-JUL	855	1040	1170	138%	1310	1540	845
Uinta R bl Powerplant Diversion nr Neola ²	APR-JUL	31	39	45	61%	52	63	74
	MAY-JUL	28	36	42	59%	49	60	71
Whiterocks R nr Whiterocks	APR-JUL	18.7	25	29	54%	34	42	54
	MAY-JUL	16.8	23	27	53%	32	40	51
Ashley Ck nr Vernal	APR-JUL	16.6	22	26	52%	31	38	50
	MAY-JUL	14	19.4	23	49%	28	35	47
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	7.2	9.1	10.6	50%	12.2	14.7	21
	MAY-JUL	5.6	7.5	9	49%	10.6	13.1	18.4

- 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

Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
FLAMING GORGE RESERVOIR	2968.0	3006.9	3039.0	3749.0
STATELINE RESERVOIR	9.0	5.1	6.3	12.0
MEEKS CABIN RESERVOIR	21.9	9.7	16.5	32.5
Basin-wide Total	2998.9	3021.7	3061.8	3793.5
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Blacks Fk	5	110%	112%
Upper Green	2	0%	207%
Lower Green	2	33%	18%
Ashley Brush	4	45%	108%

May 1, 2014

Surface Water Supply Index

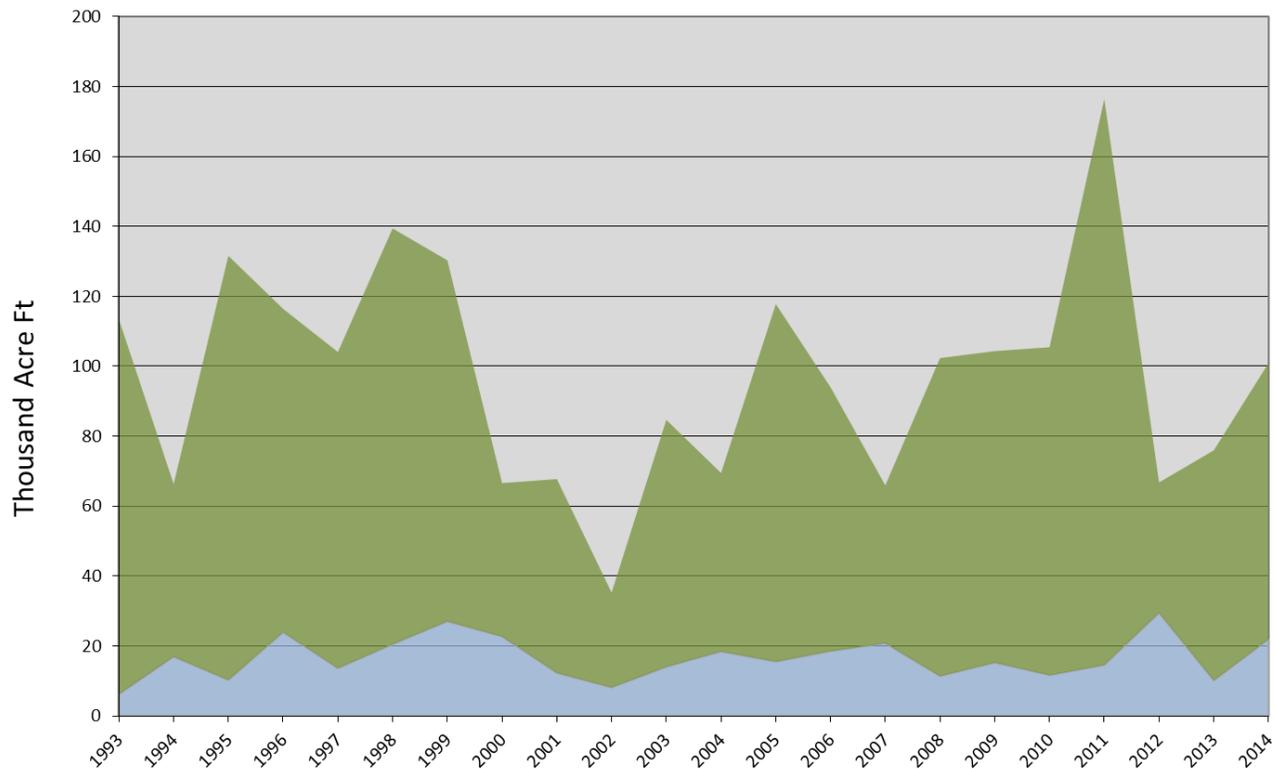
Basin or Region	April EOM* Meeks Cabin Reservoir	May-July forecast Blacks Fork nr Robertson	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Blacks Fork	21.9	79.0	100.9	-0.18	48	03, 06, 08, 97

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

Blacks Fork River - Surface Water Supply Index

May

■ Streamflow ■ Reservoir



May 1, 2014

Surface Water Supply Index

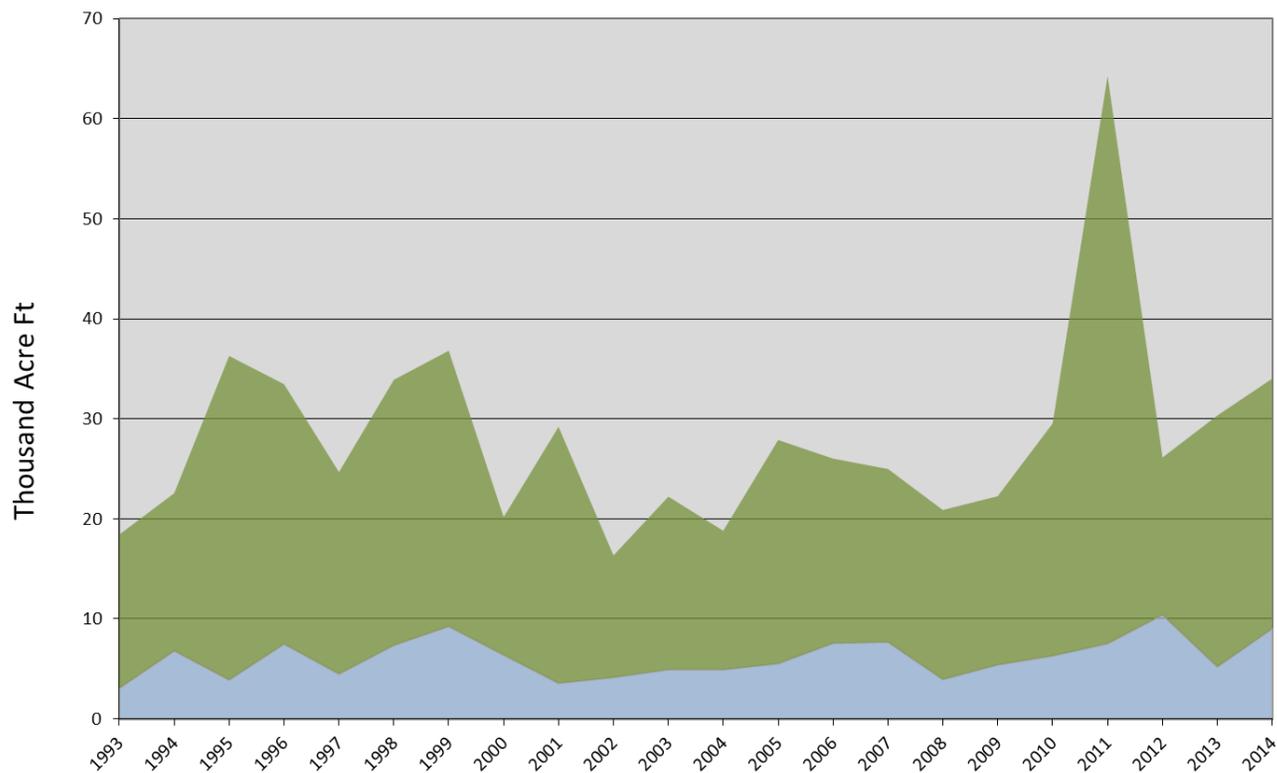
Basin or Region	April EOM* Stateline Reservoir	May-July forecast EF Smiths Fork nr Robertson	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Smiths Fork	9.0	25.0	34.0	2.72	83	96, 98, 95, 99

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

Smiths Fork River - Surface Water Supply Index

May

■ Streamflow ■ Reservoir

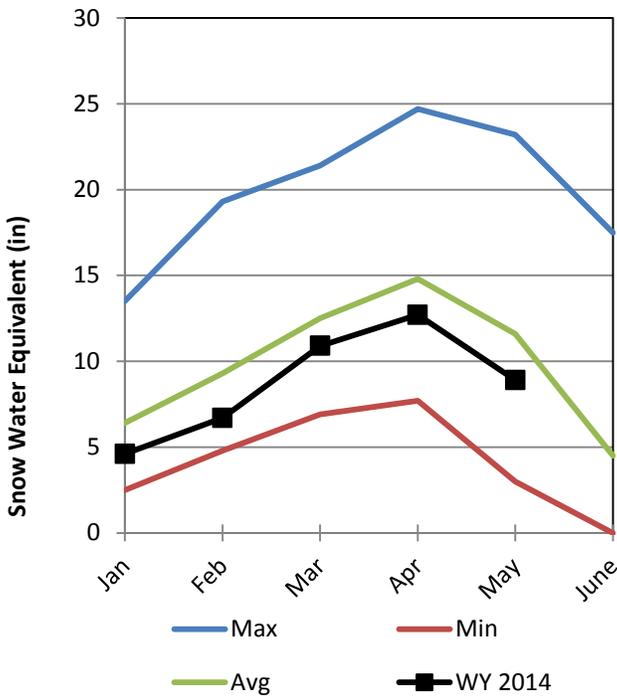


Duchesne River Basin

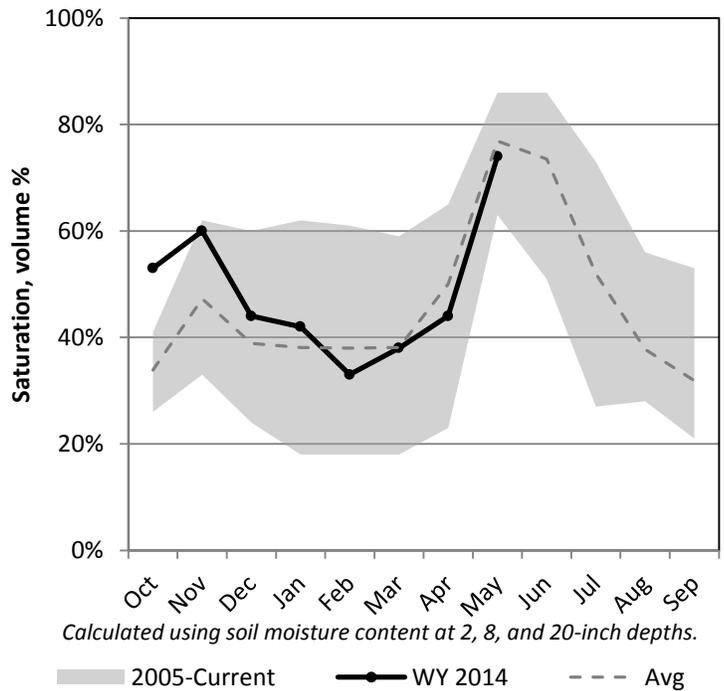
5/1/2014

Snowpack in the Duchesne River Basin is below average at 84% of normal, compared to 86% last year. Precipitation in April was below average at 87%, which brings the seasonal accumulation (Oct-Apr) to 83% of average. Soil moisture is at 74% compared to 71% last year. Reservoir storage is at 77% of capacity, compared to 80% last year. Forecast streamflow volumes range from 46% to 88% of average. The surface water supply index is 58% for the Western Uintahs, 6% for the Eastern Uintahs.

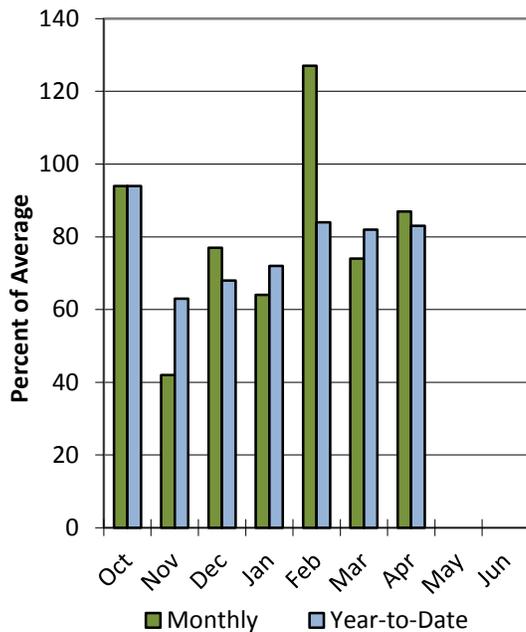
Snowpack



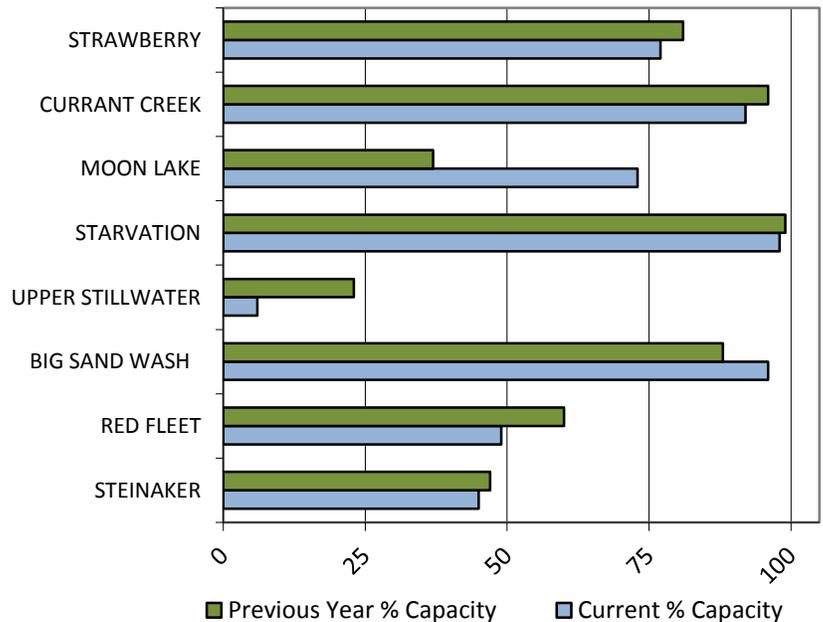
Soil Moisture



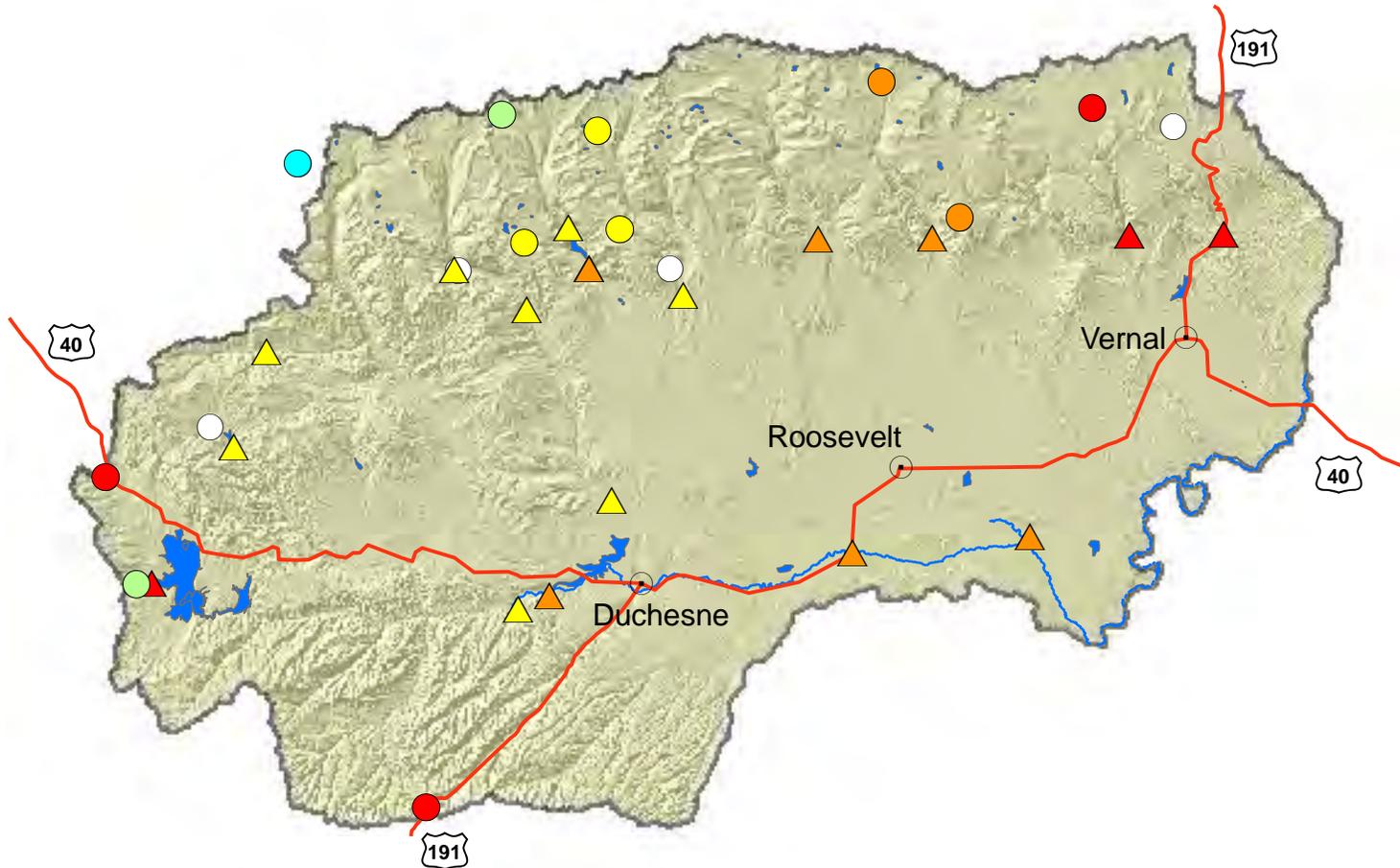
Precipitation



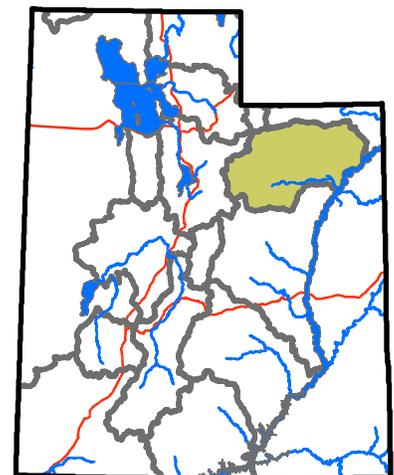
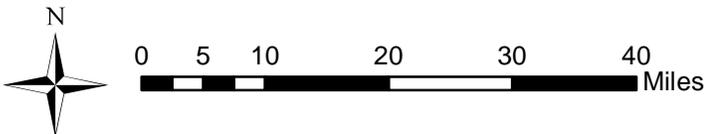
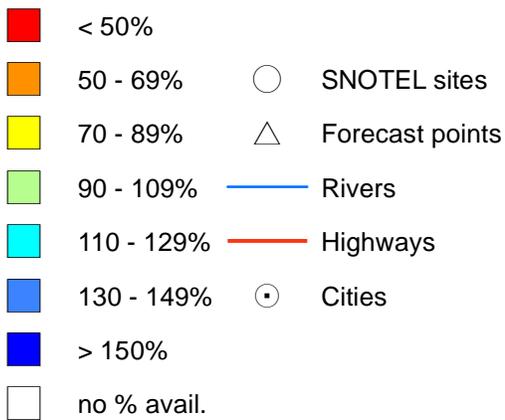
Reservoir Storage



Duchesne basin



Percent normal



Duchesne River Streamflow Forecasts - May 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	78	87	81%	96	110	108
	MAY-JUL	57	69	78	80%	87	101	98
Strawberry R nr Duchesne ²	APR-JUL	40	54	65	58%	78	99	112
	MAY-JUL	25	39	50	55%	63	84	91
Strawberry R nr Soldier Springs ²	APR-JUL	17.4	24	30	55%	37	48	55
	MAY-JUL	7.2	13.8	19.8	46%	27	38	43
Duchesne R at Myton ²	APR-JUL	143	187	220	67%	260	320	330
	MAY-JUL	114	158	191	66%	230	290	290
Duchesne R nr Randlett ²	APR-JUL	129	180	220	57%	265	340	385
	MAY-JUL	100	151	191	55%	235	310	345
Duchesne R ab Knight Diversion ²	APR-JUL	130	150	165	85%	181	205	195
	MAY-JUL	114	134	149	83%	165	189	179
WF Duchesne R at VAT Diversion	APR-JUL	11.6	13.9	15.6	84%	17.5	20	18.6
	MAY-JUL	10.5	12.8	14.5	84%	16.4	18.9	17.3
Rock Ck nr Mountain Home ²	APR-JUL	70	76	80	91%	85	92	88
	MAY-JUL	64	70	74	88%	79	86	84
Yellowstone R nr Altonah	APR-JUL	34	41	46	75%	51	59	61
	MAY-JUL	31	38	43	75%	48	56	57
Upper Stillwater Reservoir Inflow ²	APR-JUL	53	60	66	89%	71	79	74
	MAY-JUL	49	56	62	87%	67	75	71
Lake Fk R BI Moon Lk nr Mountain Home ²	APR-JUL	43	49	53	80%	58	65	66
	MAY-JUL	40	46	50	79%	55	62	63
Lake Fork R ab Moon Lake Reservoir	APR-JUL	35	43	48	79%	54	64	61
	MAY-JUL	32	40	45	78%	51	61	58
Currant Ck Reservoir Inflow ²	APR-JUL	9.7	12.2	14.2	71%	16.4	19.8	20
	MAY-JUL	7.5	10	12	70%	14.2	17.6	17.1

- 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 April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
STEINAKER RESERVOIR	15.0	15.6	25.3	33.4
RED FLEET RESERVOIR	12.5	15.3	19.8	25.7
BIG SAND WASH RESERVOIR	24.6	22.7		25.7
UPPER STILLWATER RESERVOIR	1.8	7.4	2.9	32.5
STARVATION RESERVOIR	162.7	163.1	151.9	165.3
MOON LAKE RESERVOIR	26.1	13.3	27.6	35.8
CURRANT CREEK RESERVOIR	14.3	14.9	14.9	15.5
STRAWBERRY RESERVOIR	850.8	900.1	678.4	1105.9
Basin-wide Total	1107.8	1152.4	920.8	1439.8
# of reservoirs	8	8	7	8

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Strawberry	5	60%	16%
Lakefork Yellowstone	7	94%	88%
Uintah Whiterocks	2	60%	105%

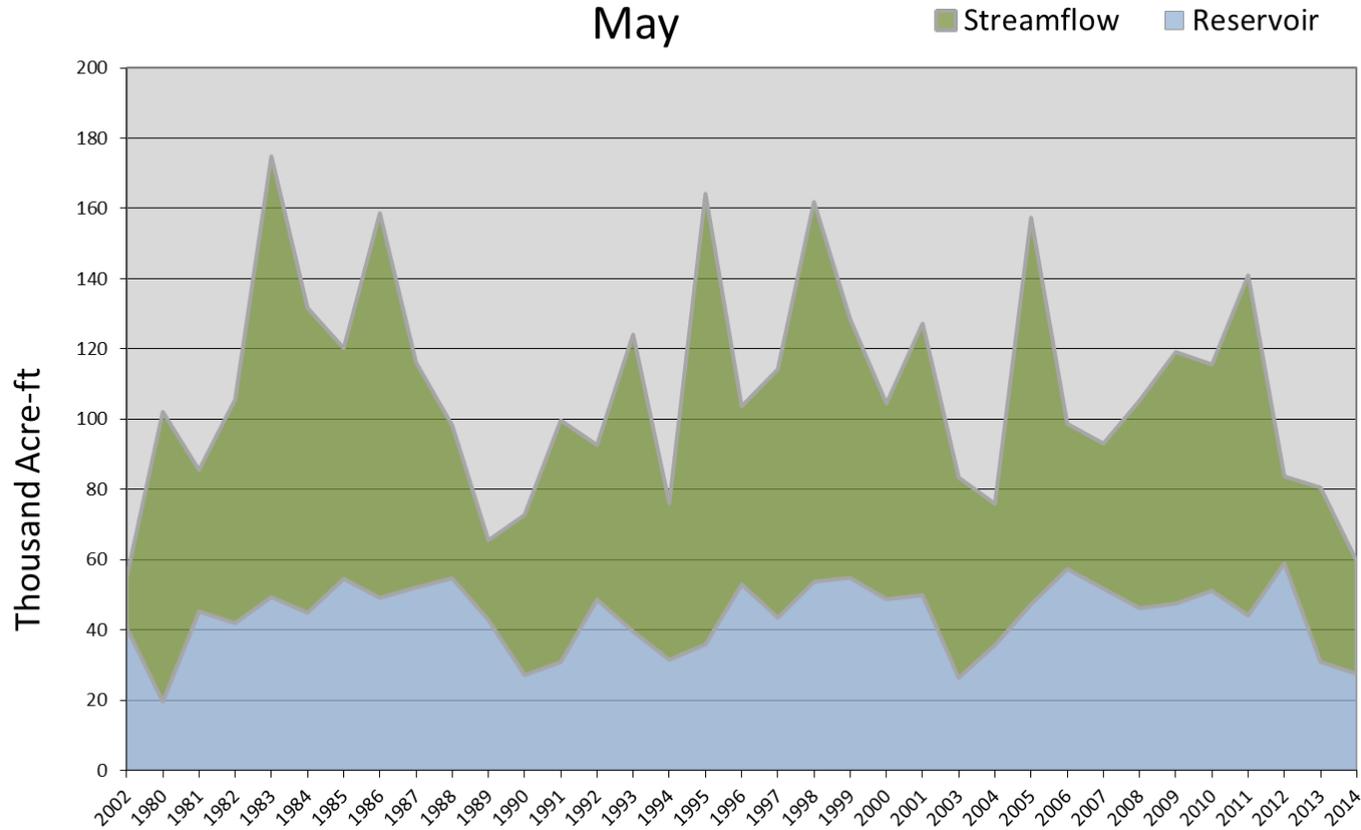
May 1, 2014

Surface Water Supply Index

Basin or Region	April EOM* Red Fleet & Steinaker	May-July Forecast Big Brush & Ashley Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Eastern Uintah	27.5	32.0	59.5	-3.70	6	02, 89, 90

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

Eastern Uintah Basin - Surface Water Supply Index May



May 1, 2014

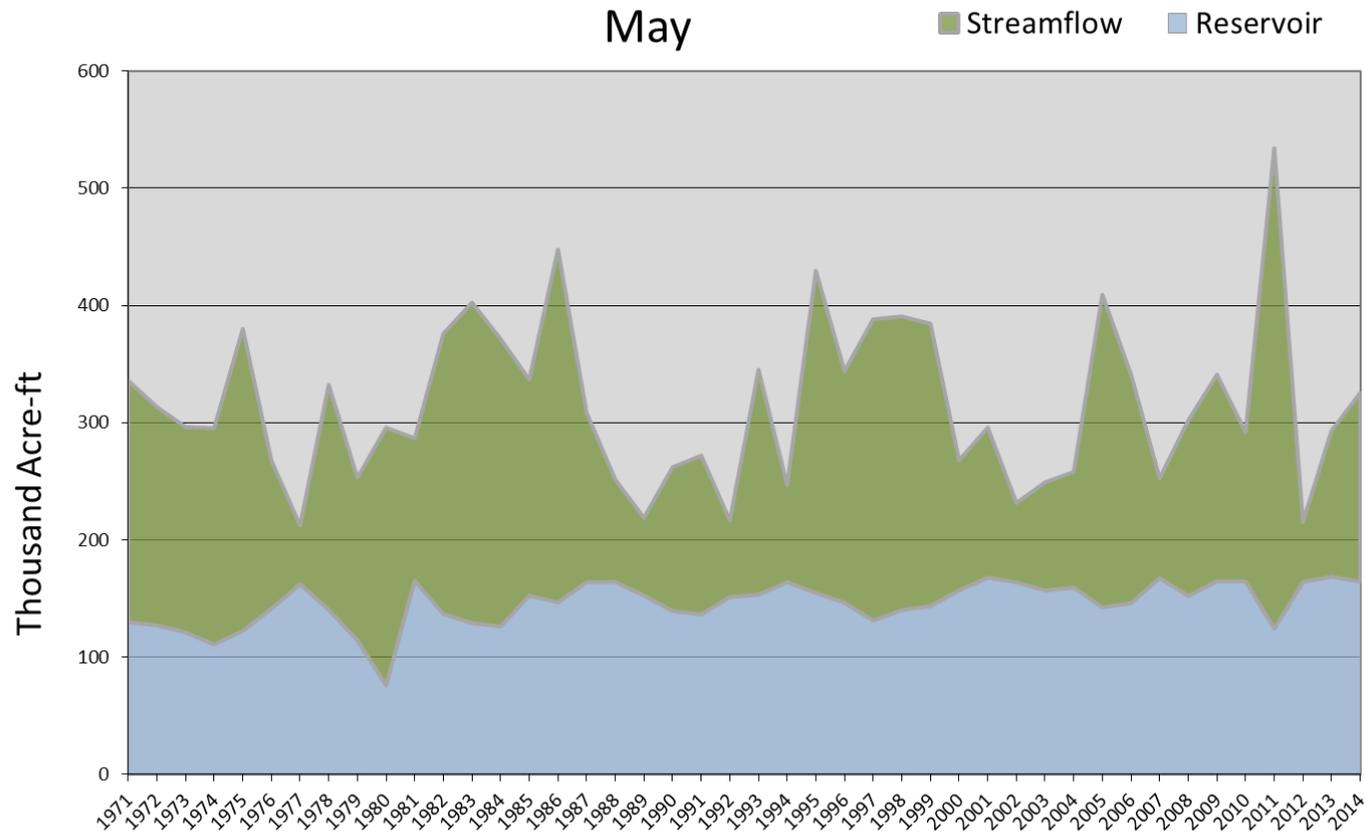
Surface Water Supply Index

Basin or Region	April EOM* Starvation & Upper Stillwater	May-July Forecast Rock Creek & Duchesne River	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Western Uintah	164	152	316	0.65	58	87, 72, 78, 71

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

Western Uintah Basin - Surface Water Supply Index

May

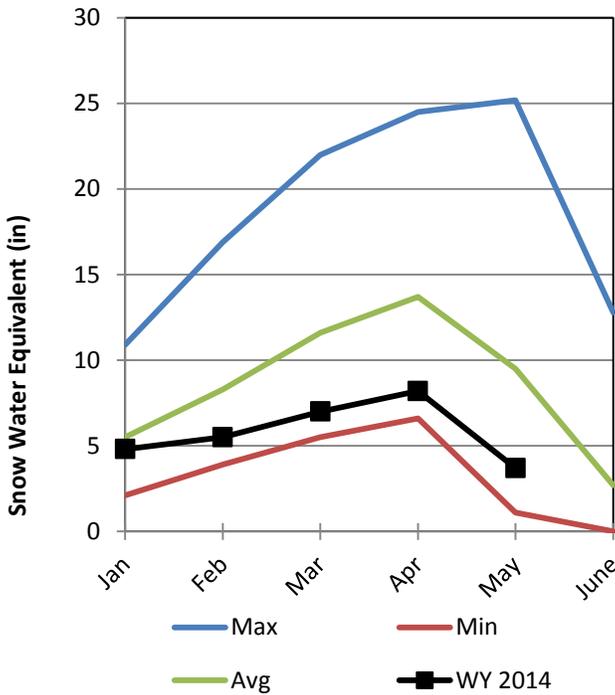


Upper Sevier River Basin

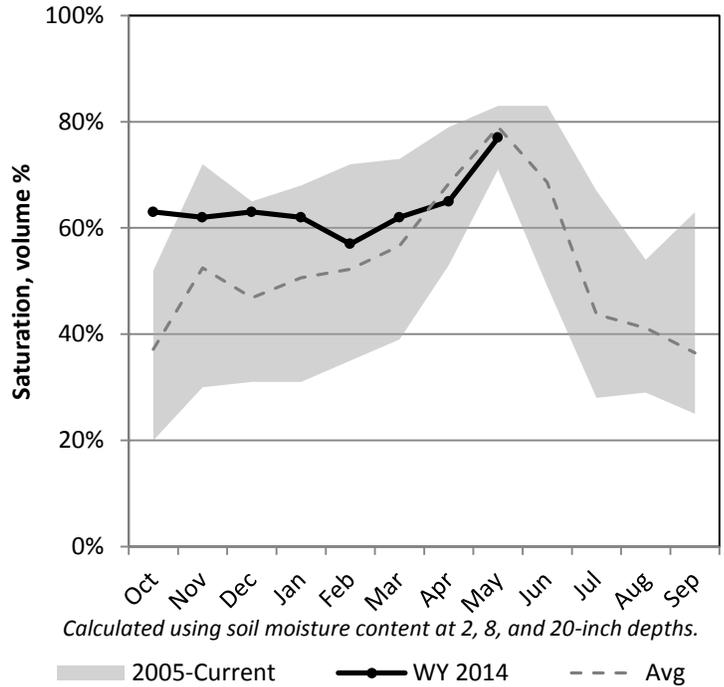
5/1/2014

Snowpack in the Upper Sevier River Basin is much below average at 45% of normal, compared to 67% last year. Precipitation in April was much below average at 66%, which brings the seasonal accumulation (Oct-Apr) to 69% of average. Soil moisture is at 77% compared to 78% last year. Reservoir storage is at 81% of capacity, compared to 76% last year. Forecast streamflow volumes range from 34% to 55% of average. The surface water supply index is 30% for the Upper Sevier.

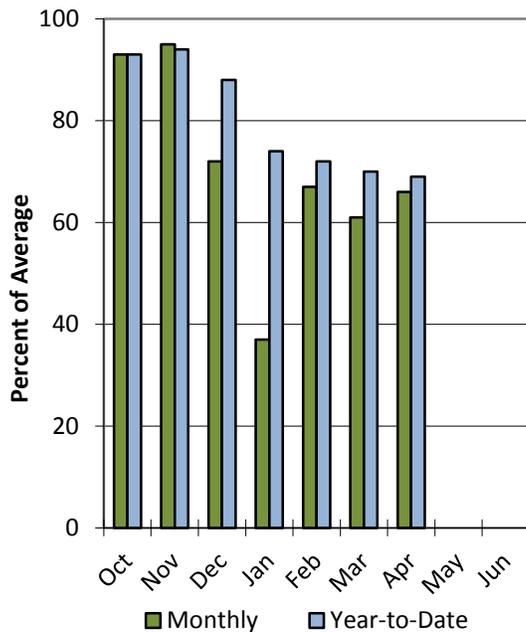
Snowpack



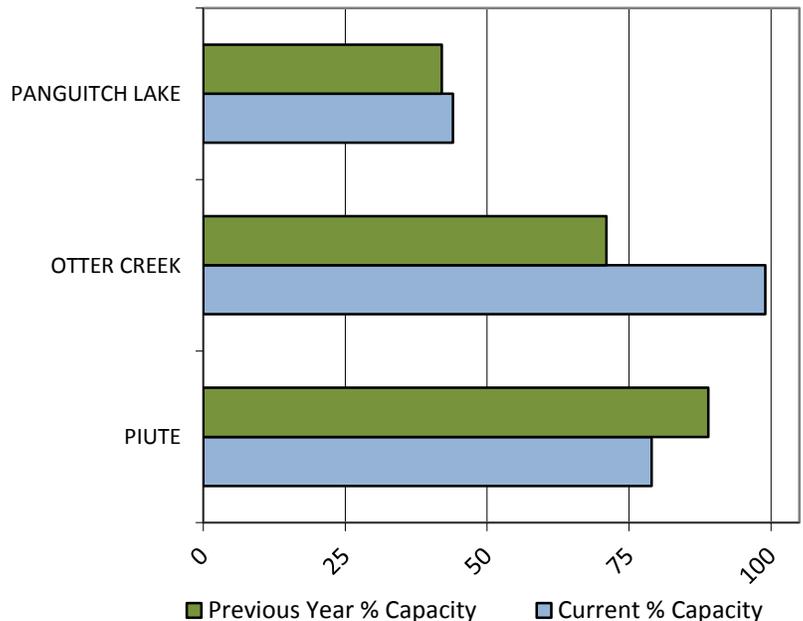
Soil Moisture



Precipitation

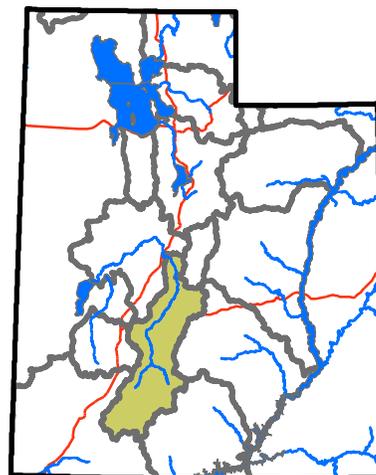
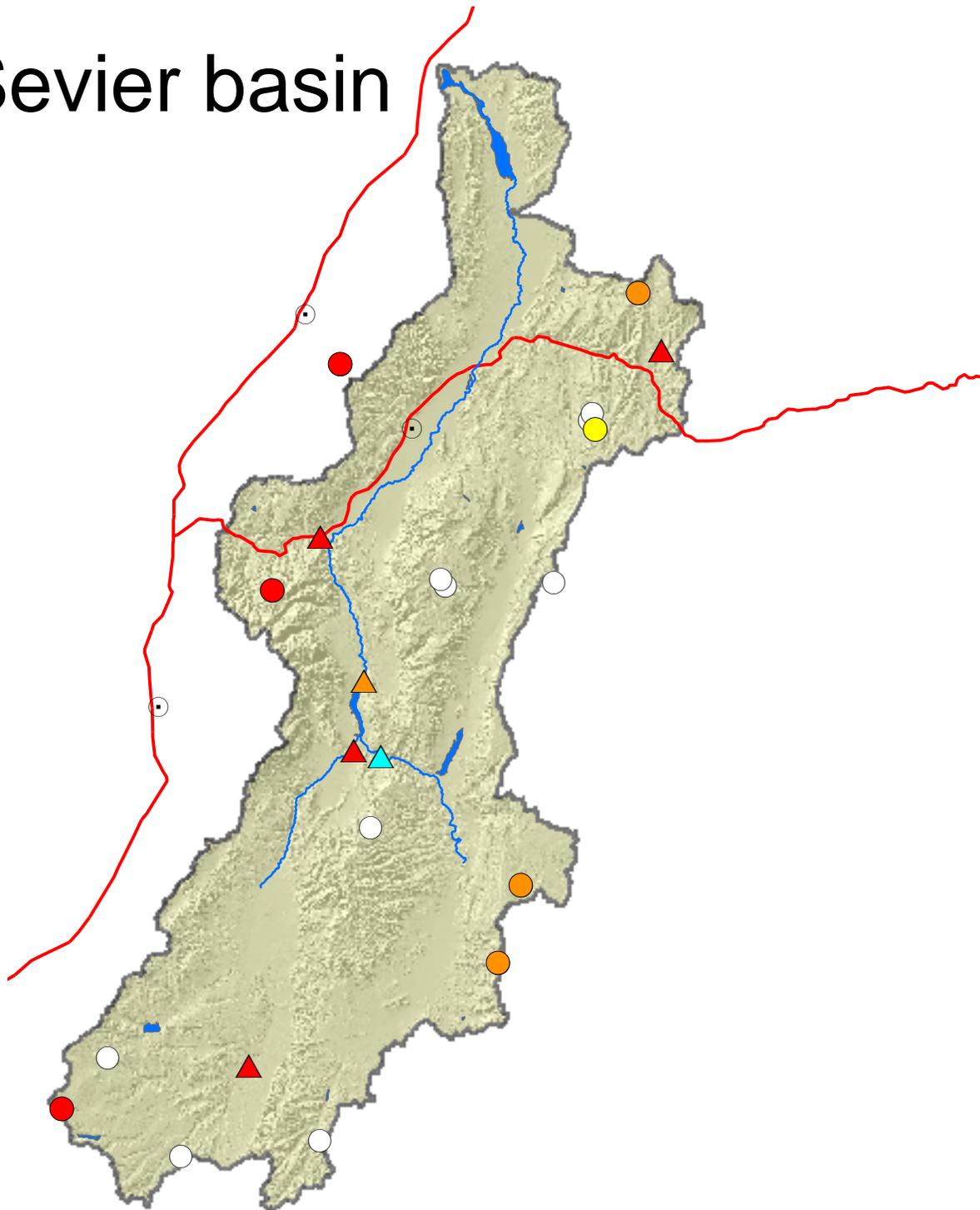
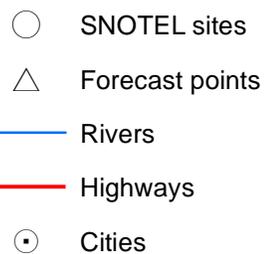
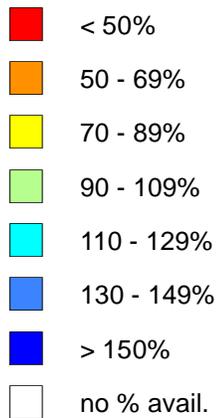


Reservoir Storage



Upper Sevier basin

Percent normal



Upper Sevier River Streamflow Forecasts - May 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	4.4	13.1	19	40%	25	34	48
	MAY-JUL	3	9.6	14.1	34%	18.7	25	42
EF Sevier R nr Kingston	APR-JUL	0.25	10.9	18.2	52%	25	36	35
	MAY-JUL	0.6	10.1	16.5	55%	26	38	30
Sevier R nr Kingston	APR-JUL	1	12	14.5	44%	30	48	33
	MAY-JUL	0.26	3.8	12	46%	20	32	26
Sevier R bl Piute Dam	APR-JUL	1.32	14.3	33	50%	52	79	66
	MAY-JUL	0.55	2.1	24	44%	15.6	34	55
Clear Ck ab Diversions nr Sevier	APR-JUL	4.1	8.4	11.4	54%	14.4	18.8	21
	MAY-JUL	4.5	6.3	7.7	45%	9.3	11.9	17
Salina Ck nr Emery	APR-JUL	0.16	2.4	4	51%	5.6	8	7.9
	MAY-JUL	0.14	1.63	3.1	44%	4.6	6.7	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

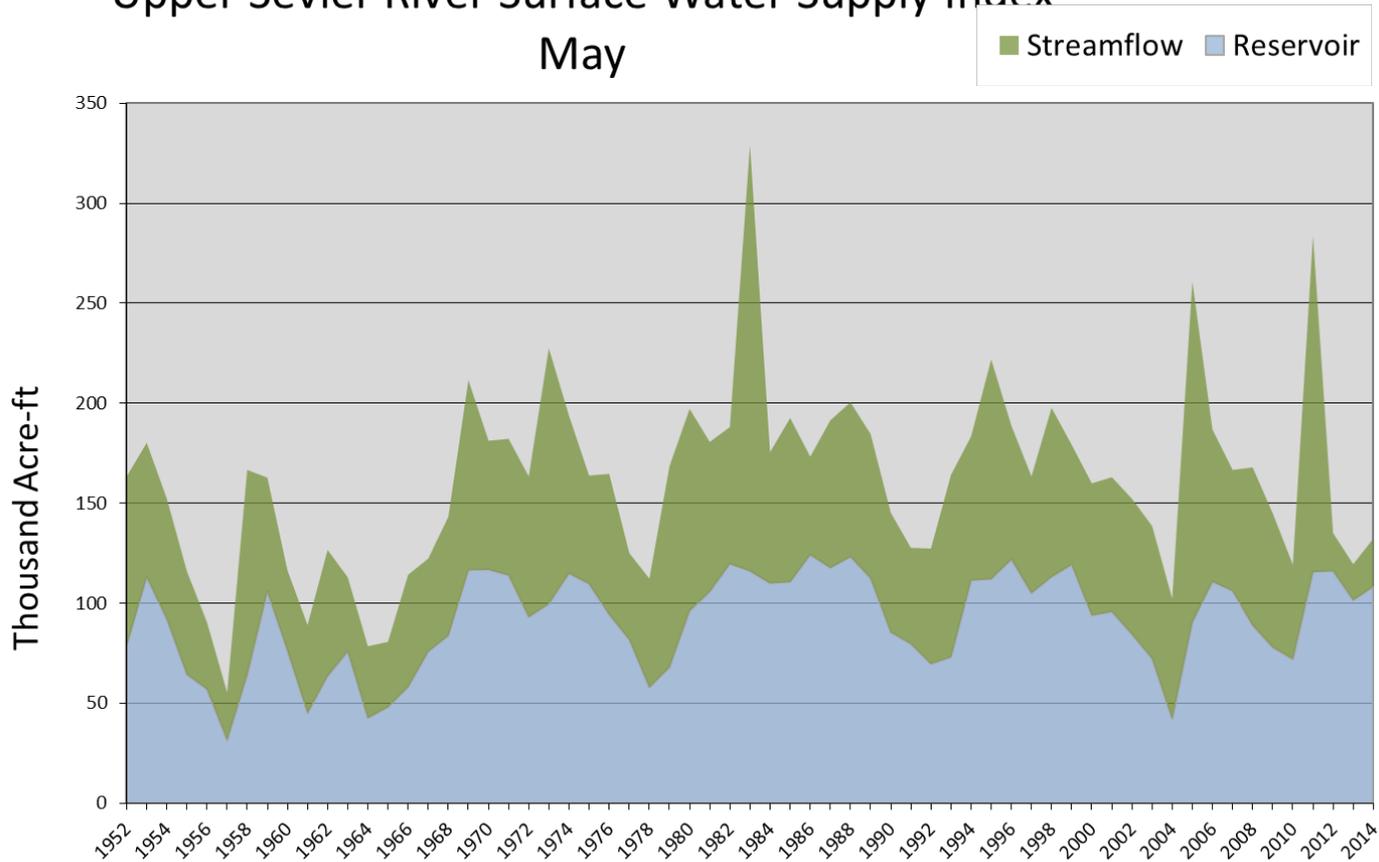
Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
PIUTE RESERVOIR	56.5	64.1	54.4	71.8
OTTER CREEK RESERVOIR	52.1	37.4	44.8	52.5
PANGUITCH LAKE	9.9	9.4	15.9	22.3
Basin-wide Total	118.5	111.0	115.1	146.6
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Upper Sevier	13	45%	67%
Middle Sevier	8	56%	76%
E Fk Sevier	4	32%	8%

May 1, 2014		Upper Sevier Surface Water Supply Index				
Basin or Region	April EOM* Piute & Otter Creek Reservoir	May-July Forecast Inflow to Piute Reservoir	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Upper Sevier	108	24.0	132	-1.69	30	92,91,12,03

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

Upper Sevier River Surface Water Supply Index
May

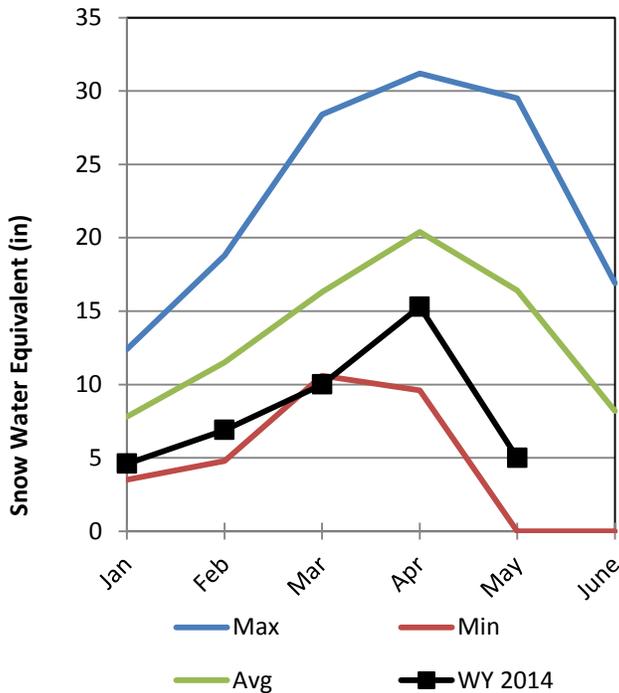


Lower Sevier River Basin

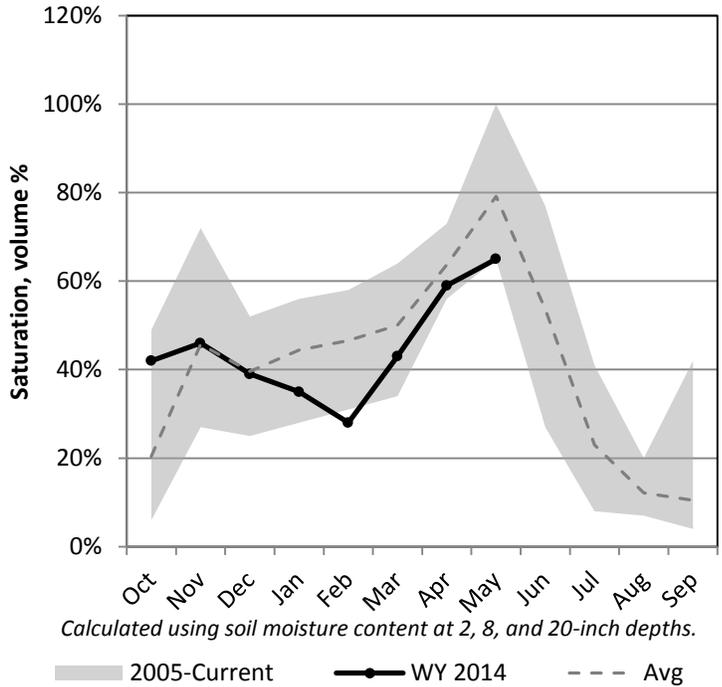
5/1/2014

Snowpack in the Lower Sevier River Basin is much below average at 29% of normal, compared to 102% last year. Precipitation in April was much below average at 63%, which brings the seasonal accumulation (Oct-Apr) to 80% of average. Soil moisture is at 65% compared to 66% last year. Reservoir storage is at 50% of capacity, compared to 74% last year. Forecast streamflow volumes range from 32% to 52% of average. The surface water supply index is 34% for the Lower Sevier.

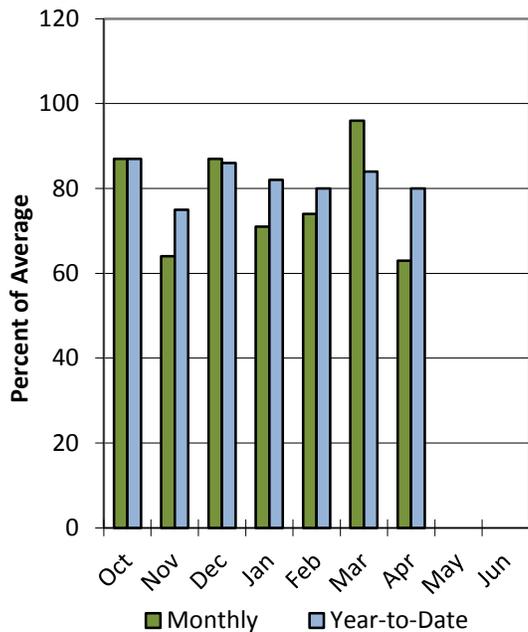
Snowpack



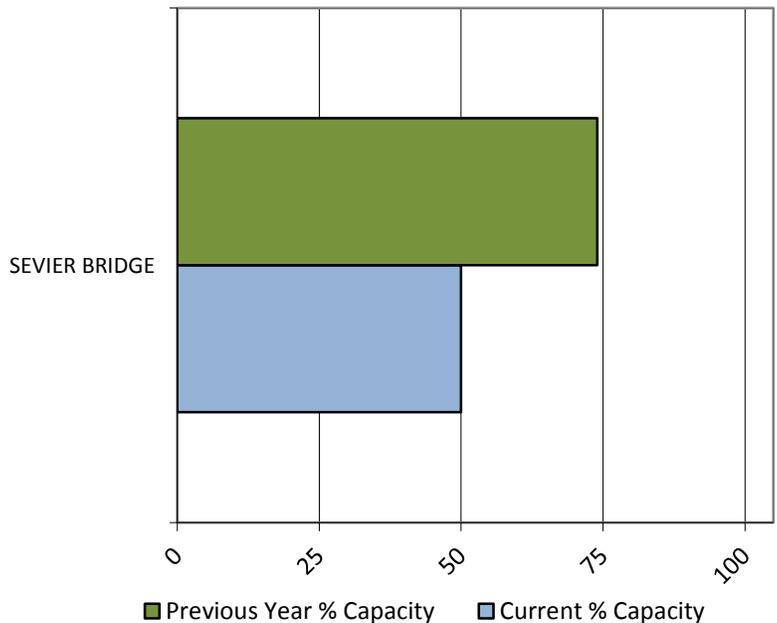
Soil Moisture



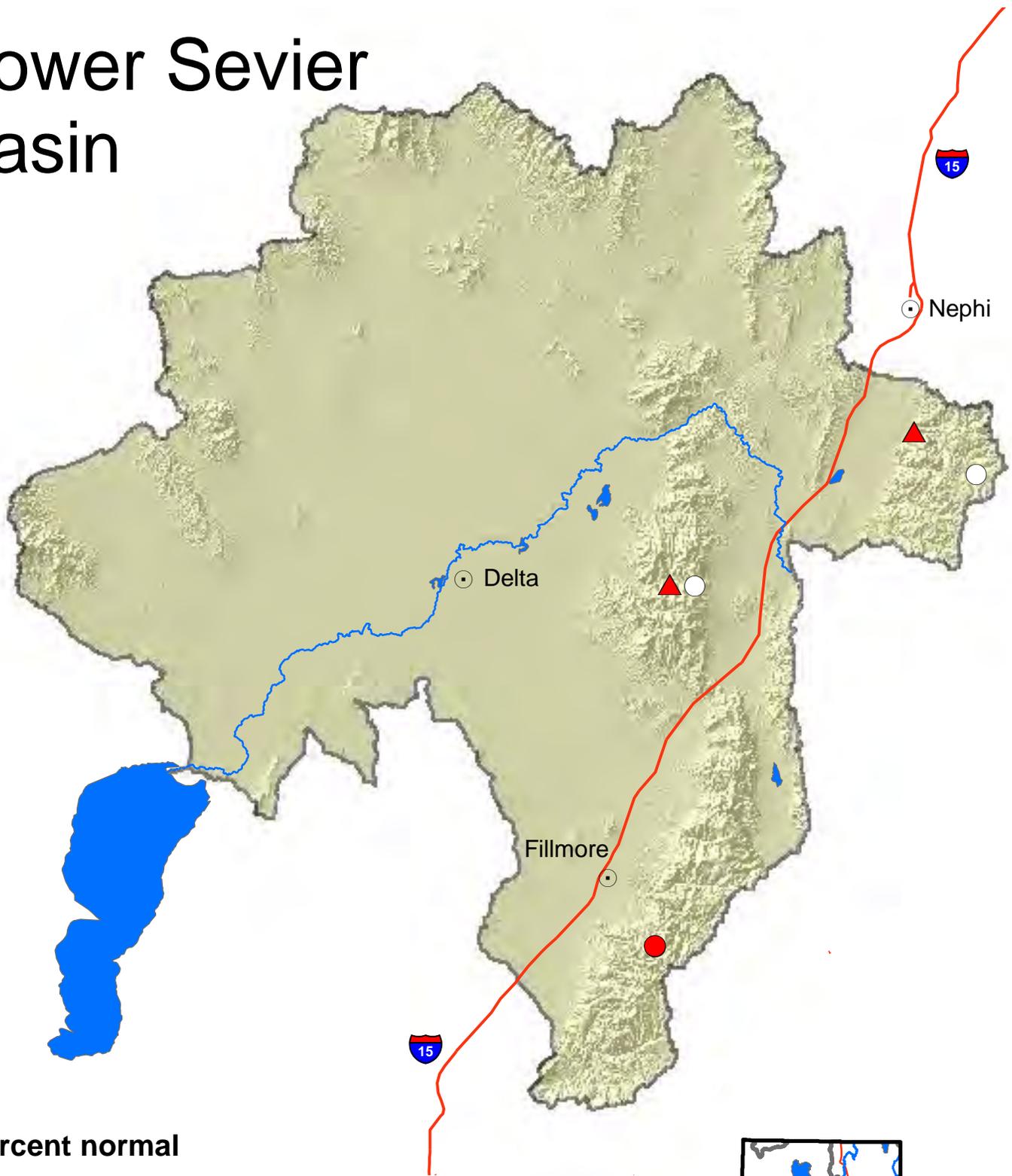
Precipitation



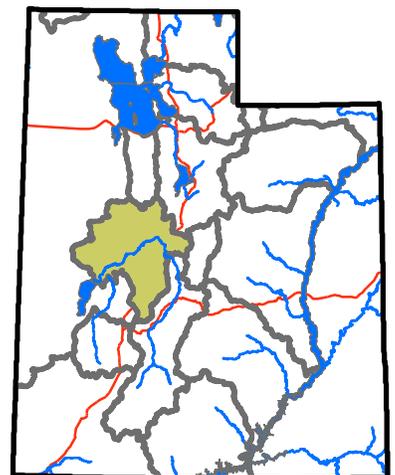
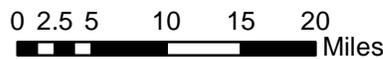
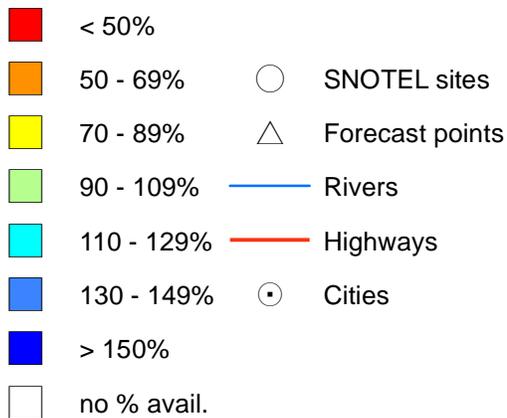
Reservoir Storage



Lower Sevier basin



Percent normal



Lower Sevier River Streamflow Forecasts - May 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	1.59	1.99	2.3	51%	2.6	3.2	4.5
	MAY-JUL	0.44	0.99	1.5	44%	2.1	3.2	3.4
Oak Ck nr Oak City	APR-JUL	0.29	0.42	0.53	32%	0.65	0.85	1.66
	MAY-JUL	0.1	0.23	0.34	32%	0.48	0.72	1.07

- 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 April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
SEVIER BRIDGE RESERVOIR	118.3	174.5	172.9	236.0
Basin-wide Total	118.3	174.5	172.9	236.0
# of reservoirs	1	1	1	1

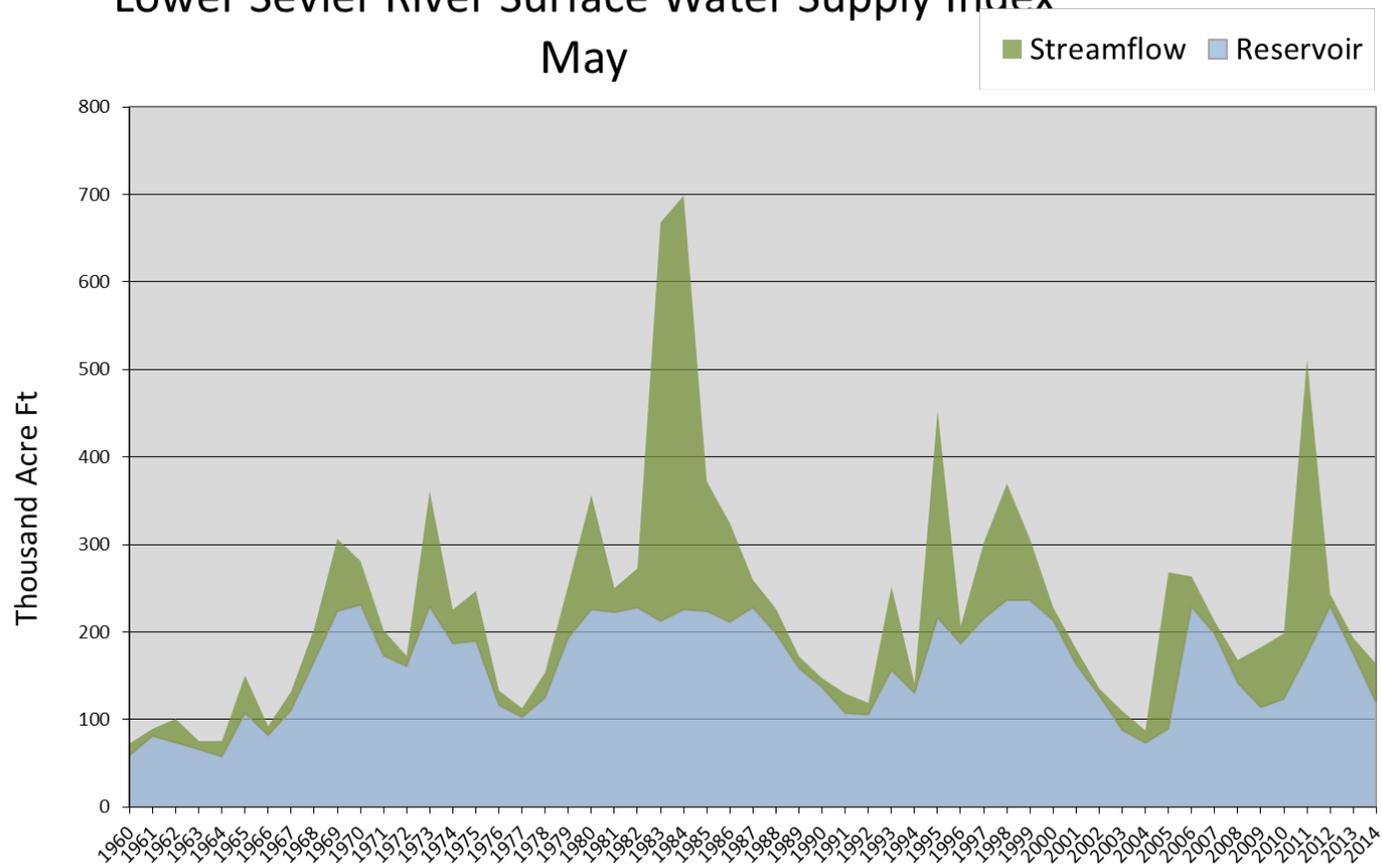
Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Lower Sevier	1	29%	102%

May 1, 2014		Lower Sevier Surface Water Supply Index				
Basin or Region	April EOM* Sevier Bridge Reservoir	May-July Forecast Inflow to Sevier Bridge Reservoir	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Lower Sevier	118	45.0	163	-1.34	34	65,78,08,89

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

Lower Sevier River Surface Water Supply Index

May

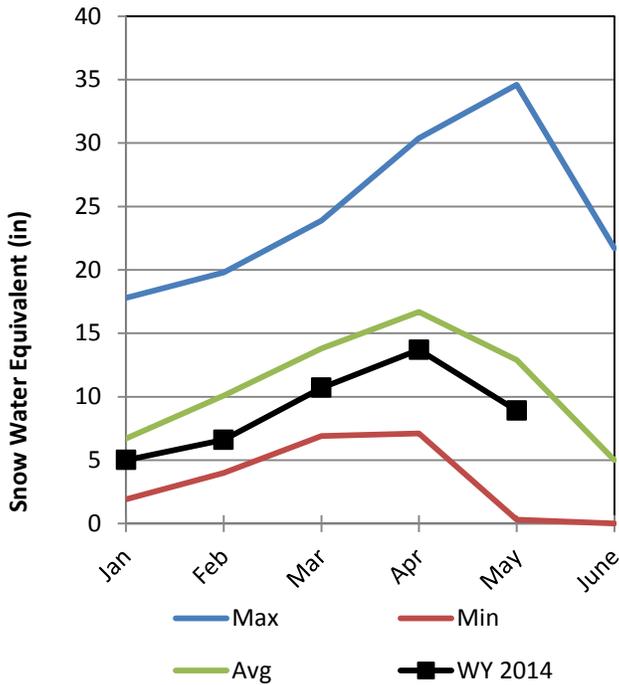


San Pitch River Basin

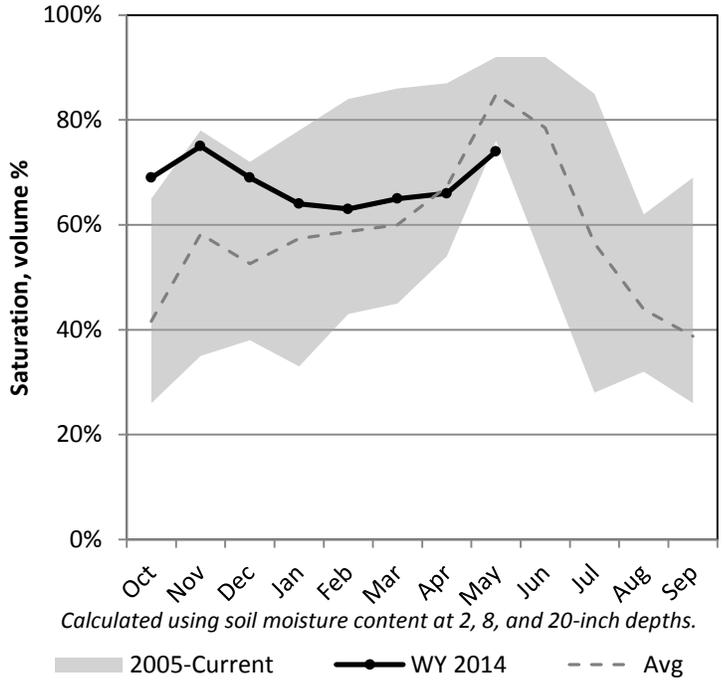
5/1/2014

Snowpack in the San Pitch River Basin is below average at 71% of normal, compared to 65% last year. Precipitation in April was below average at 76%, which brings the seasonal accumulation (Oct-Apr) to 87% of average. Soil moisture is at 74% compared to 76% last year. Reservoir storage is at 16% of capacity, compared to 54% last year. The forecast streamflow volume for Manti Creek is 66% of average. The surface water supply index is 8% for the San Pitch.

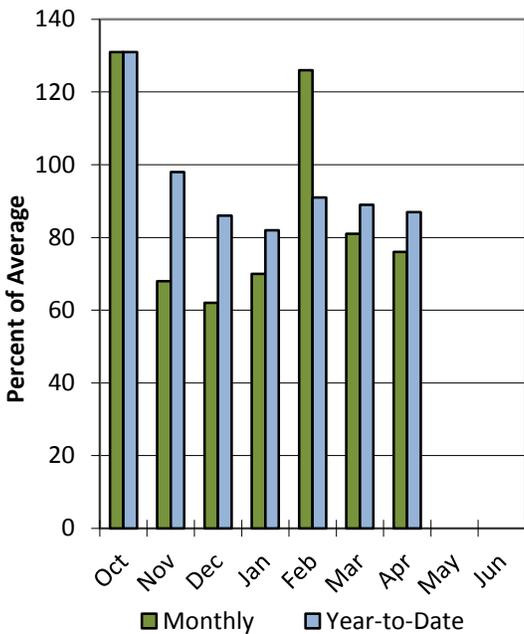
Snowpack



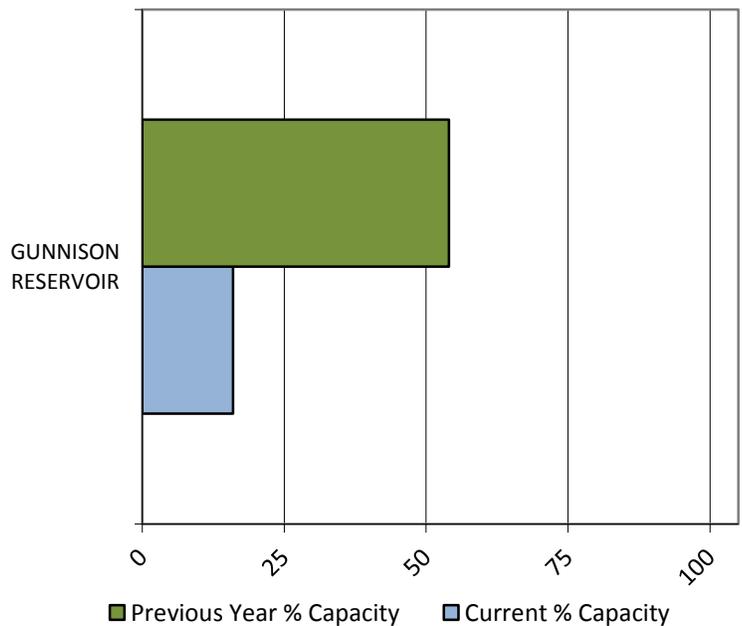
Soil Moisture



Precipitation

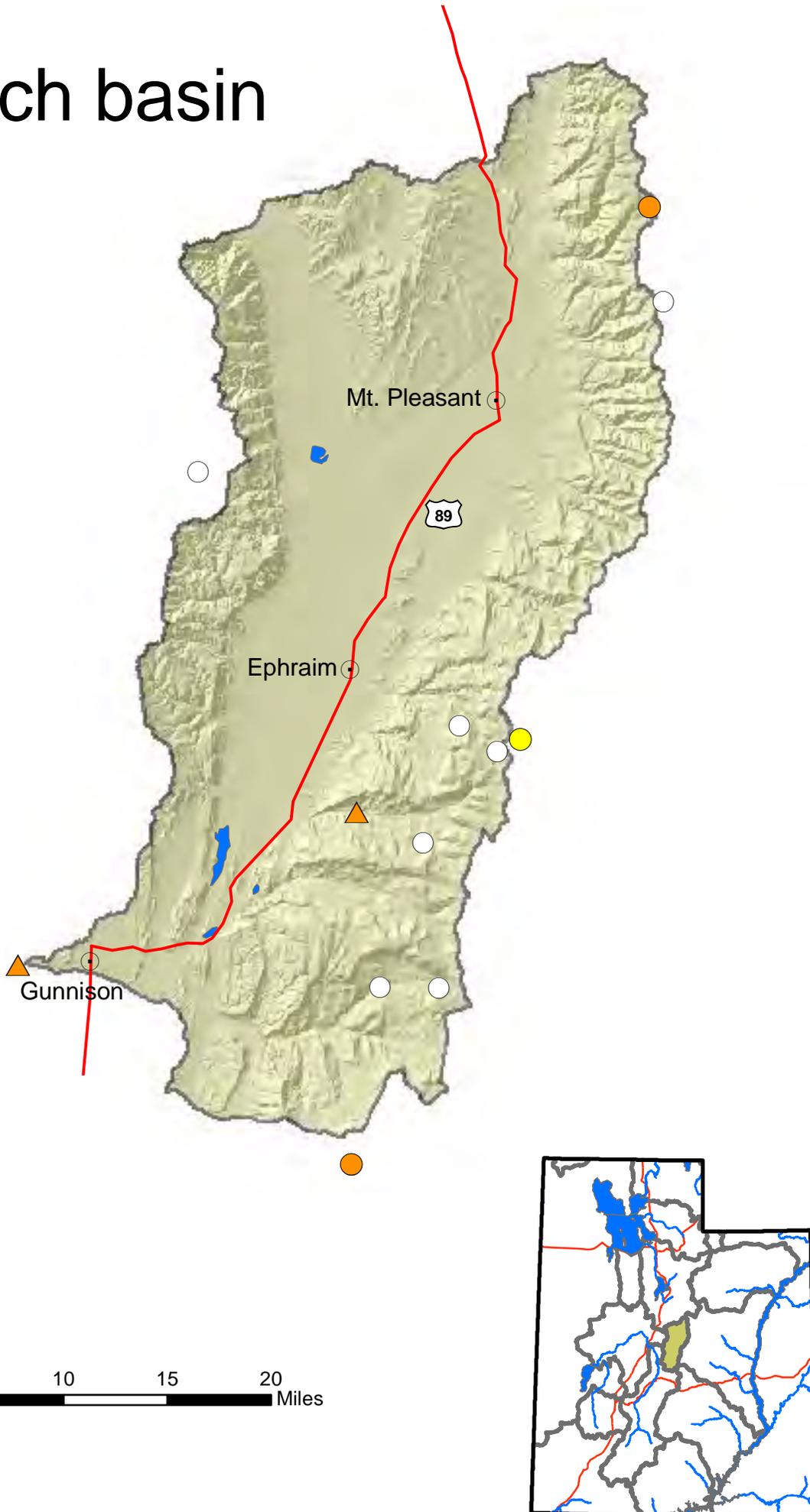
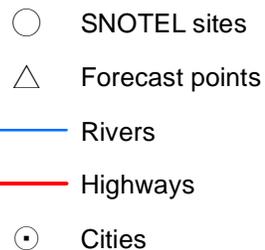
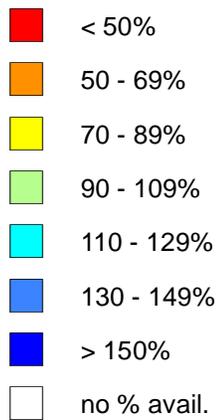


Reservoir Storage



San Pitch basin

Percent normal



San Pitch River Streamflow Forecasts - May 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	7.1	9	10.5	63%	12.1	14.6	16.7
	MAY-JUL	6.9	8.8	10.2	66%	11.7	14.2	15.5
Sevier R nr Gunnison	APR-JUL	4.5	35	55	56%	75	106	99
	MAY-JUL	6.6	29	45	52%	61	83	86

- 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

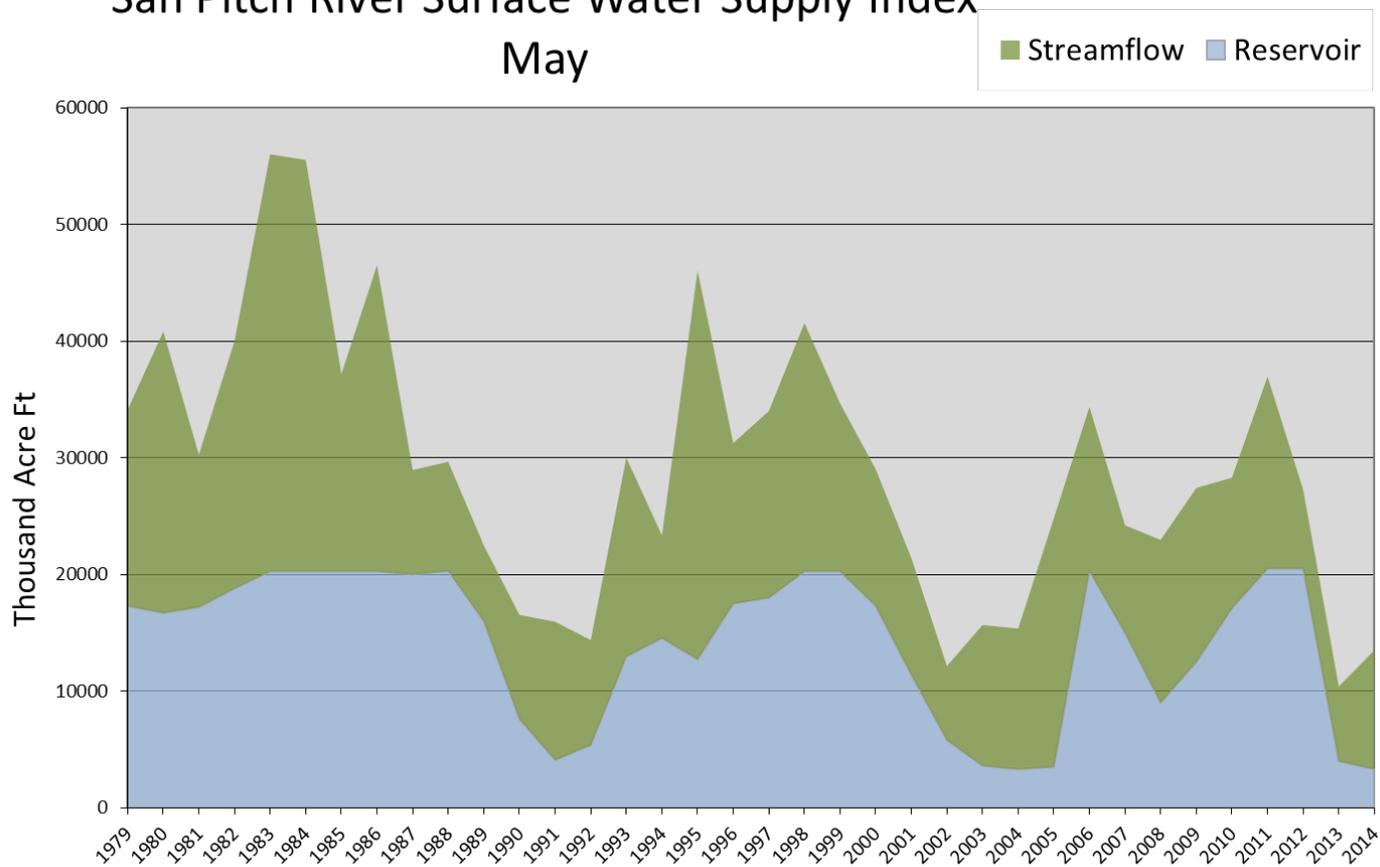
Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
GUNNISON RESERVOIR	3.3	11.0	14.2	20.3
Basin-wide Total	3.3	11.0	14.2	20.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Upper San Pitch	4	57%	61%
Lower San Pitch	8	73%	75%

San Pitch Surface Water Supply Index						
Basin or Region	April EOM* Gunnison Reservoir	May-July forecast Manti Creek	Reservoir + Streamflow	SWSI [#]	Percentile	Years with similar SWSI
	KAF [^]	KAF	KAF		%	
San Pitch	3.3	10.2	13.5	-3.49	8	13,02,92,04

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

San Pitch River Surface Water Supply Index
May

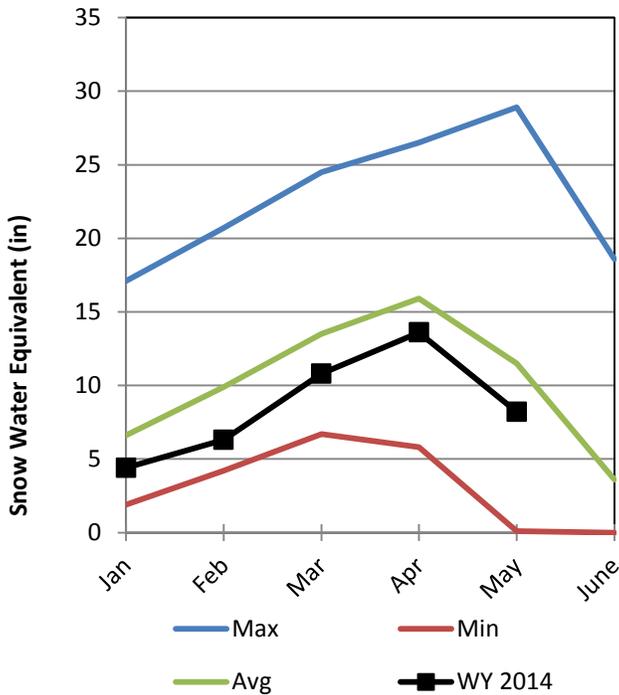


Price & San Rafael Basins

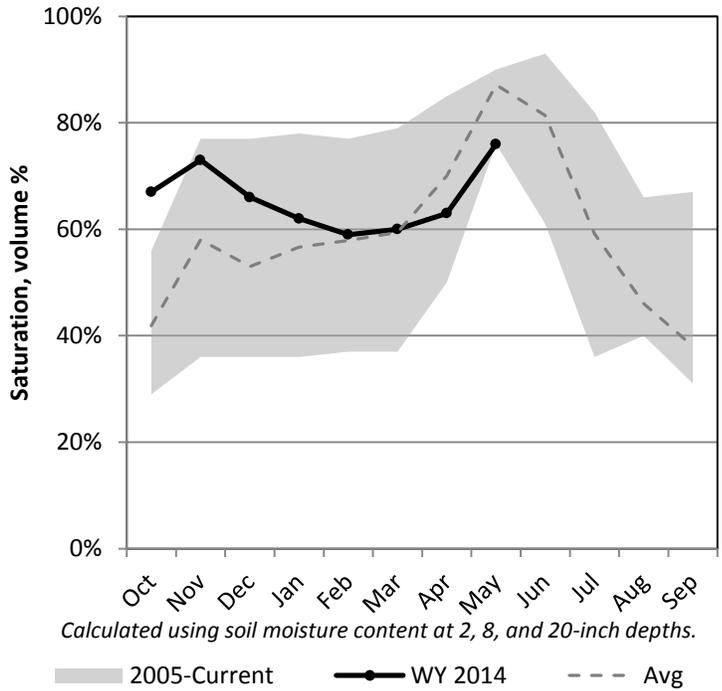
5/1/2014

Snowpack in the Price & San Rafael Basins is below average at 74% of normal, compared to 55% last year. Precipitation in April was below average at 87%, which brings the seasonal accumulation (Oct-Apr) to 90% of average. Soil moisture is at 76% compared to 76% last year. Reservoir storage is at 49% of capacity, compared to 49% last year. Forecast streamflow volumes range from 55% to 112% of average. The surface water supply index is 10% for the Price River, 37% for Joe's Valley, 44% for Ferron Creek.

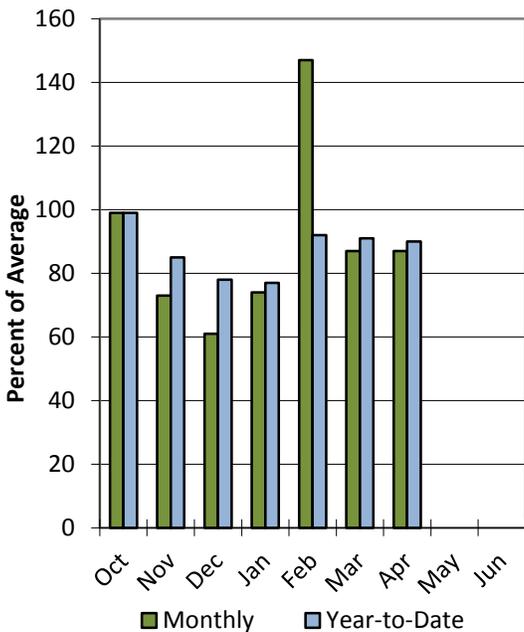
Snowpack



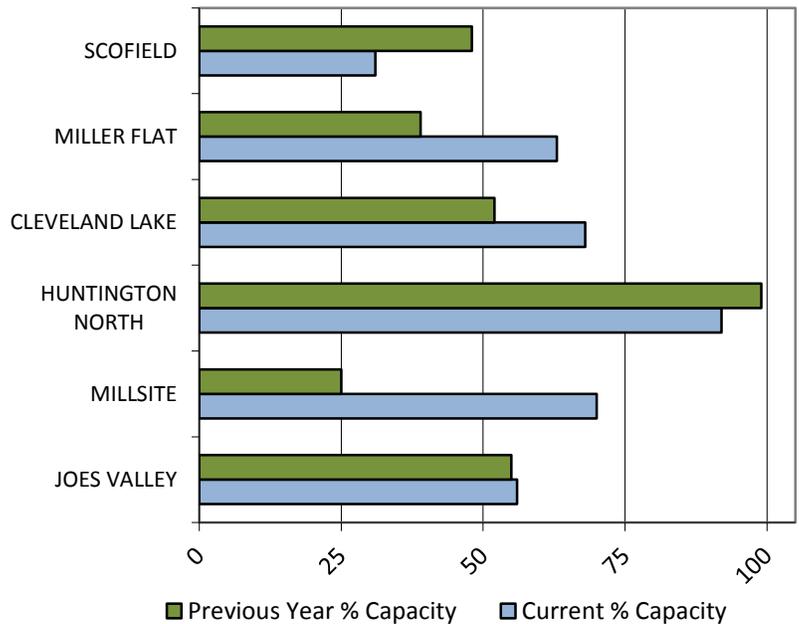
Soil Moisture



Precipitation

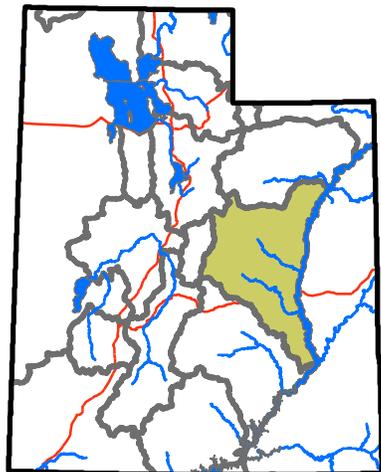
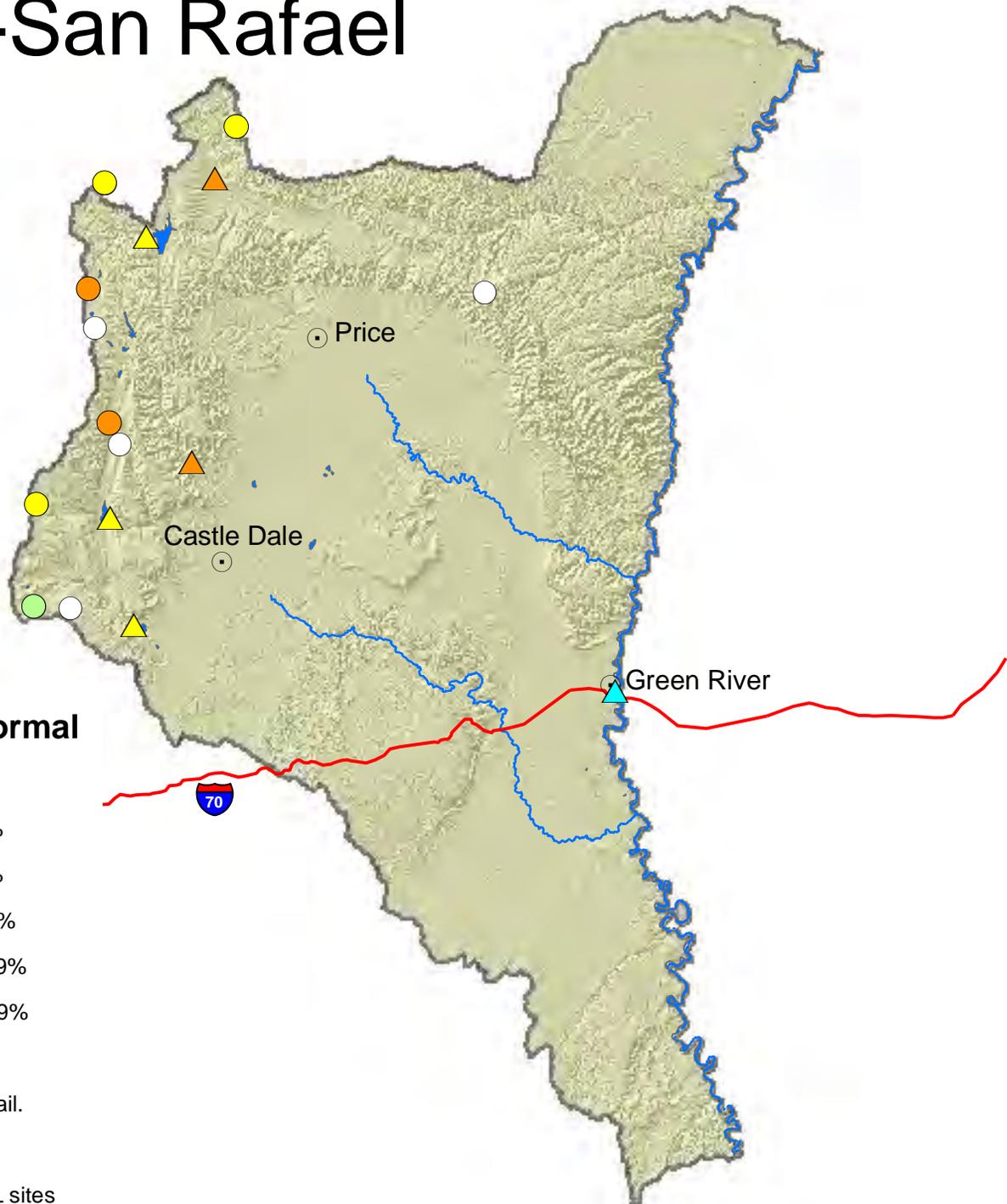
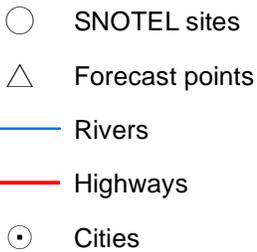
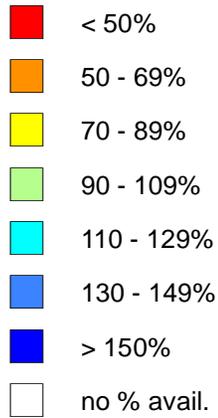


Reservoir Storage



Price-San Rafael basin

Percent normal



Price San Rafael Streamflow Forecasts - May 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	16	19.4	22	73%	25	29	30
	MAY-JUL	13.5	16.9	19.5	75%	22	26	26
Price R nr Scofield Reservoir ²	APR-JUL	17.2	22	25	61%	29	35	41
	MAY-JUL	13	17.8	21	60%	25	31	35
White R bl Tabbyune Creek	APR-JUL	5.7	7.2	8.4	54%	9.6	11.7	15.5
	MAY-JUL	3.8	5.3	6.5	55%	7.7	9.8	11.9
Green R at Green River, UT ²	APR-JUL	2510	2920	3230	109%	3550	4060	2960
	MAY-JUL	2130	2540	2850	112%	3170	3680	2540
Electric Lake Inflow ²	APR-JUL	6	7.4	8.4	63%	9.5	11.2	13.3
	MAY-JUL	4.6	6	7	59%	8.1	9.8	11.8
Huntington Ck nr Huntington ²	APR-JUL	21	24	27	68%	29	34	40
	MAY-JUL	17.6	21	24	65%	26	31	37
Joes Valley Reservoir Inflow ²	APR-JUL	31	37	42	75%	47	55	56
	MAY-JUL	26	32	37	71%	42	50	52
Ferron Ck (Upper Station) nr Ferron	APR-JUL	24	27	29	76%	32	35	38
	MAY-JUL	21	24	26	74%	29	32	35

- 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 April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
JOES VALLEY RESERVOIR	34.4	33.6	40.1	61.6
MILLSITE	11.6	4.2	11.2	16.7
HUNTINGTON NORTH RESERVOIR	3.9	4.2	3.9	4.2
CLEVELAND LAKE	3.7	2.8		5.4
MILLER FLAT RESERVOIR	3.3	2.0		5.2
SCOFIELD RESERVOIR	20.7	31.8	33.2	65.8
Basin-wide Total	77.5	78.6	88.4	158.9
# of reservoirs	6	6	4	6

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Price	6	74%	55%
San Rafael	6	74%	55%

May 1, 2014

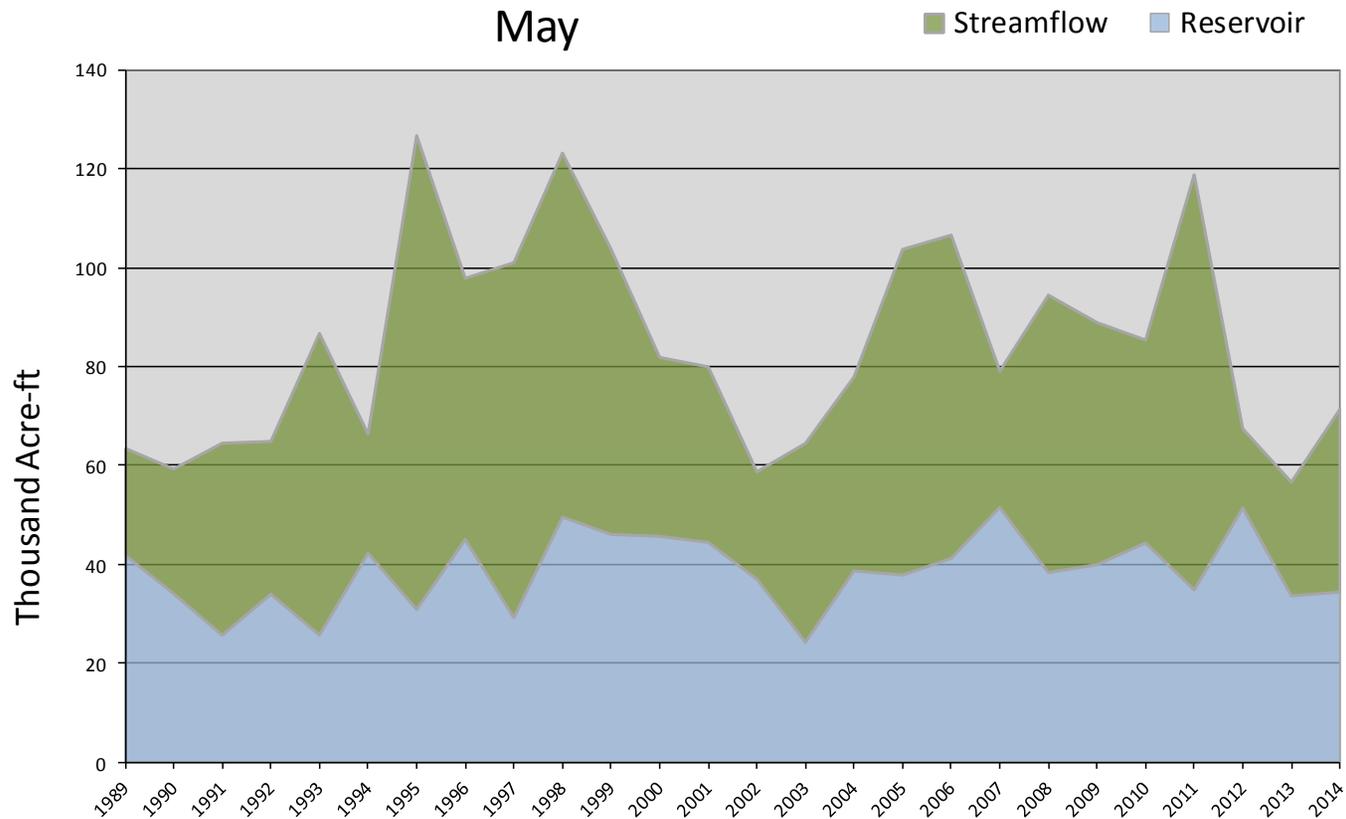
Surface Water Supply Index

Basin or Region	April EOM* Joe's Valley	May-July Forecast Inflow to Joe's Valley	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Joe's Valley	34.4	37.0	71.4	-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

May



May 1, 2014

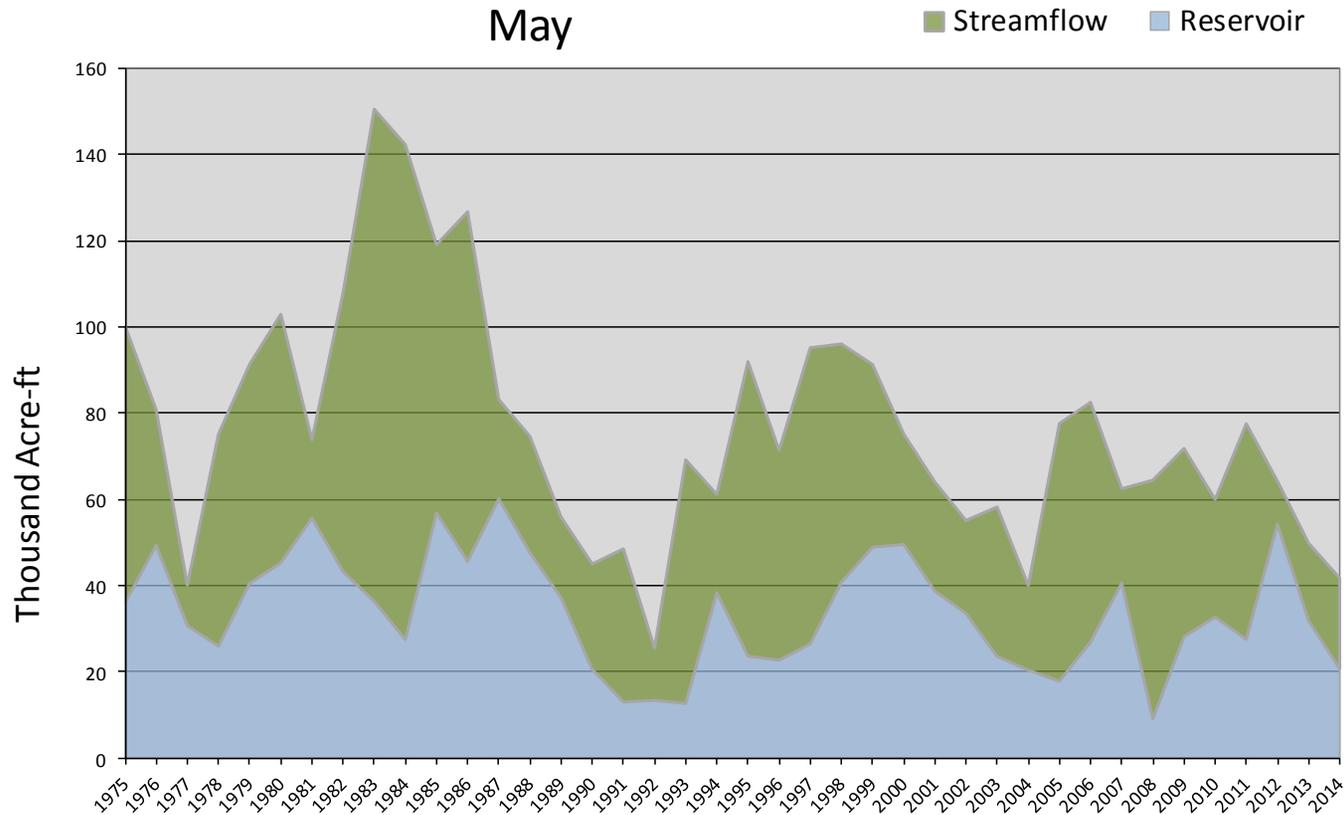
Surface Water Supply Index

Basin or Region	April EOM* Scofield Reservoir	May-July Forecast Scofield	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Price River	20.7	21.0	41.7	-3.35	10	04, 77, 90, 91

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

Price River - Surface Water Supply Index

May



May 1, 2014

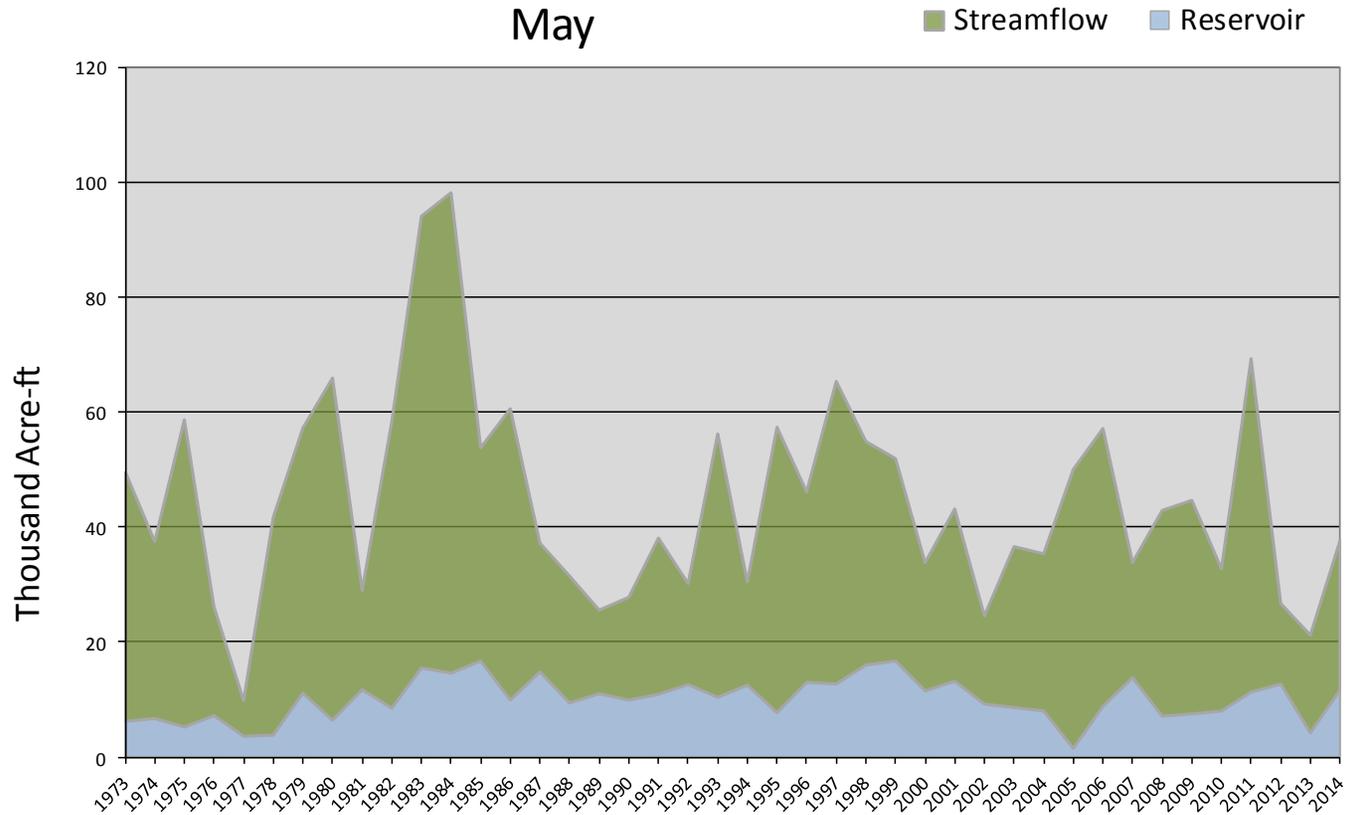
Surface Water Supply Index

Basin or Region	April EOM* Millsite Reservoir	May-July Forecast Ferron creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Ferron Creek	11.6	26.0	37.6	-0.48	44	87, 74, 91, 78

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

Ferron Creek - Surface Water Supply Index

May

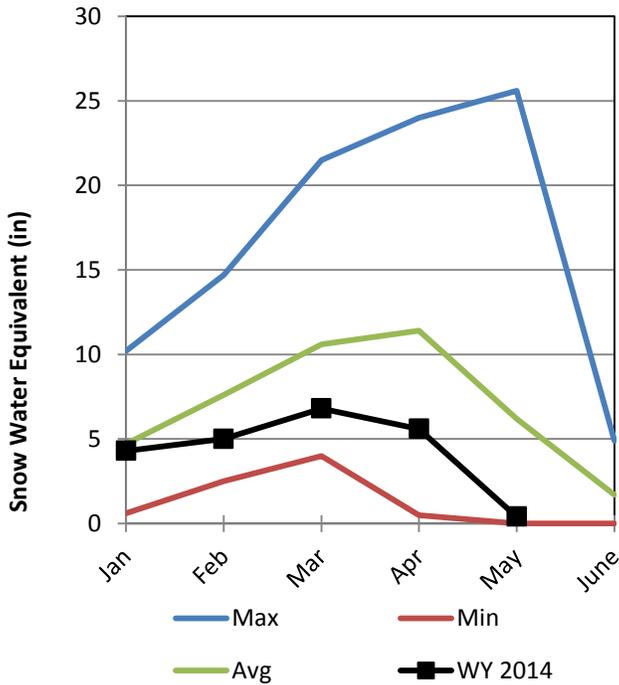


Southeastern Utah Basin

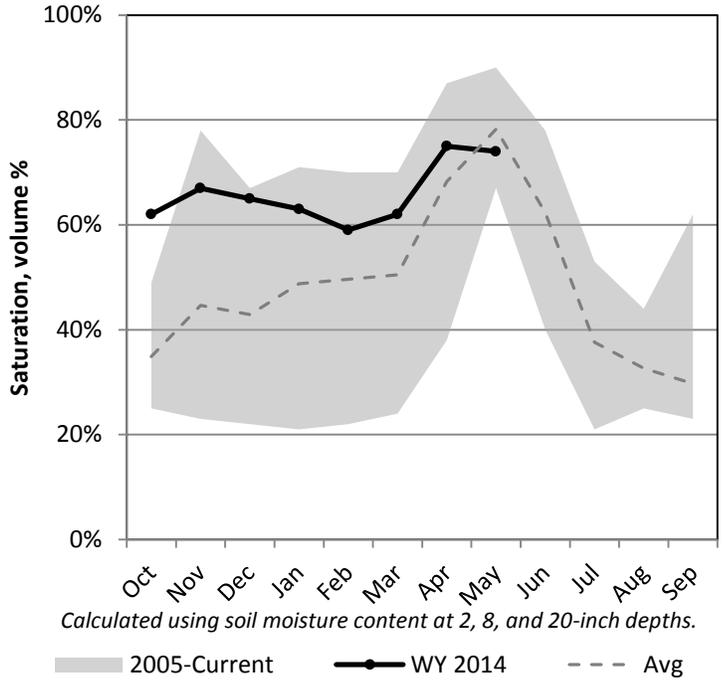
5/1/2014

Snowpack in the Southeastern Utah Basin is much below average at 27% of normal, compared to 0% last year. Precipitation in April was below average at 83%, which brings the seasonal accumulation (Oct-Apr) to 68% of average. Soil moisture is at 74% compared to 71% last year. Reservoir storage is at 56% of capacity, compared to 20% last year. Forecast streamflow volumes range from 14% to 104% of average. The surface water supply index is 18% for Moab.

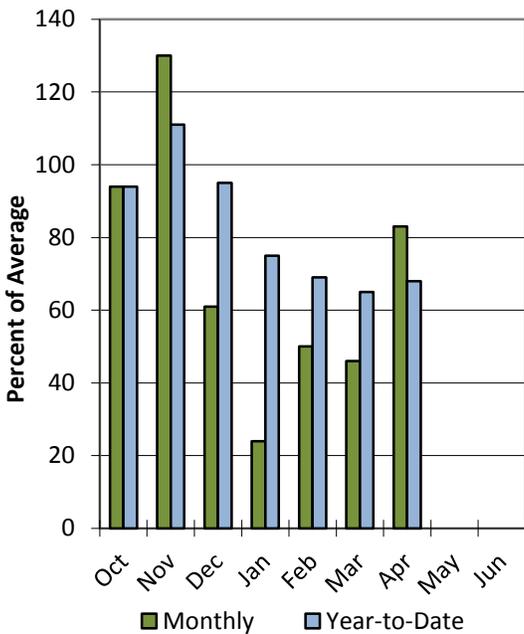
Snowpack



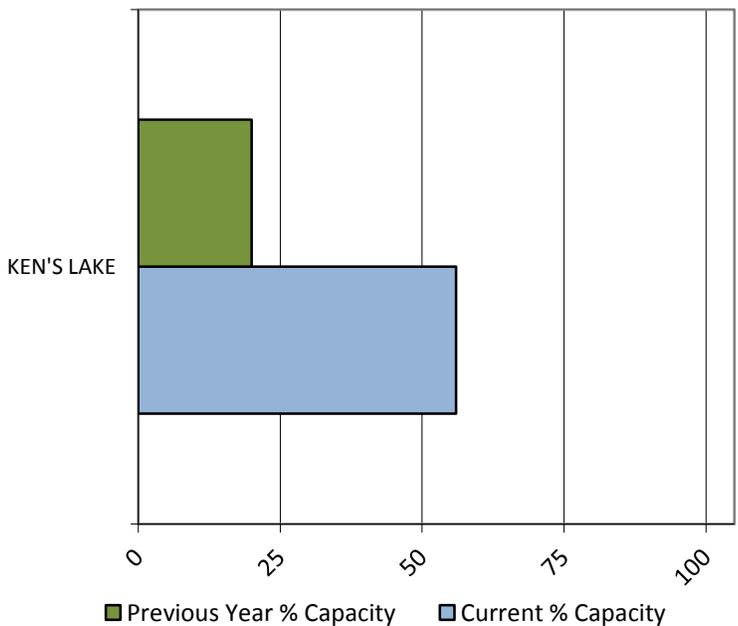
Soil Moisture



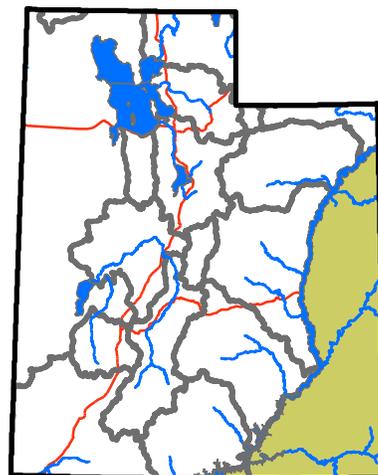
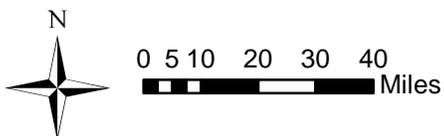
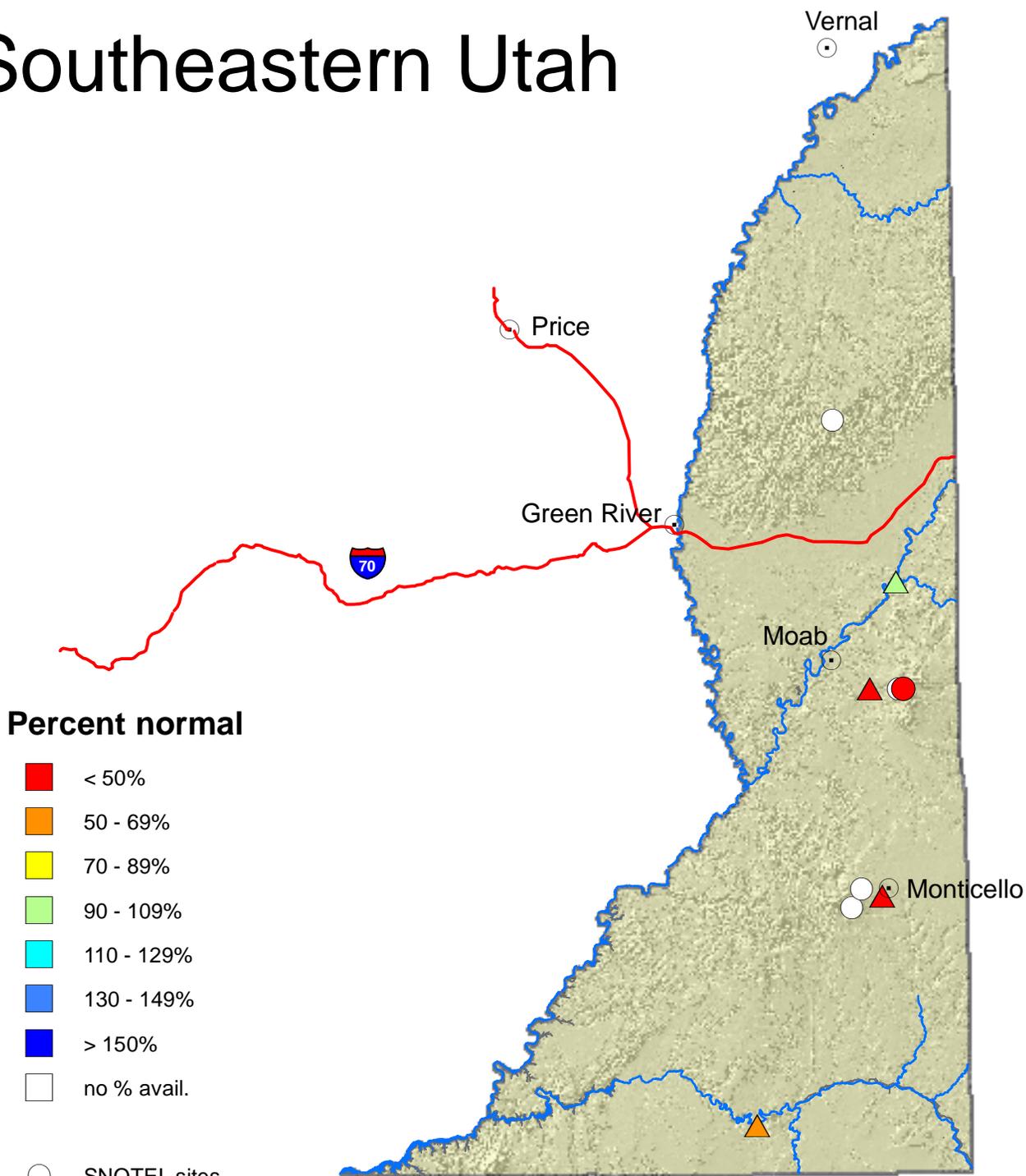
Precipitation



Reservoir Storage



Southeastern Utah



Southeastern Utah Streamflow Forecasts - May 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	1.33	1.77	2.1	49%	2.5	3.2	4.3
	MAY-JUL	0.8	1.24	1.57	42%	1.97	2.7	3.7
South Ck ab Resv nr Monticello	MAR-JUL	0.02	0.06	0.1	9%	0.16	0.29	1.09
	MAY-JUL	0.02	0.06	0.1	14%	0.16	0.29	0.69
Colorado R nr Cisco ²	APR-JUL	3760	4190	4500	105%	4830	5330	4280
	MAY-JUL	3130	3560	3870	104%	4200	4700	3720
San Juan R near Bluff ²	APR-JUL	550	640	710	65%	785	900	1100
	MAY-JUL	390	480	550	64%	625	740	855

- 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 April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
KEN'S LAKE	1.3	0.5	1.5	2.3
Basin-wide Total	1.3	0.5	1.5	2.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Lasal Mtns	1	32%	0%
Lower San Juan	1	0%	0%
Lower Green	2	33%	18%

May 1, 2014

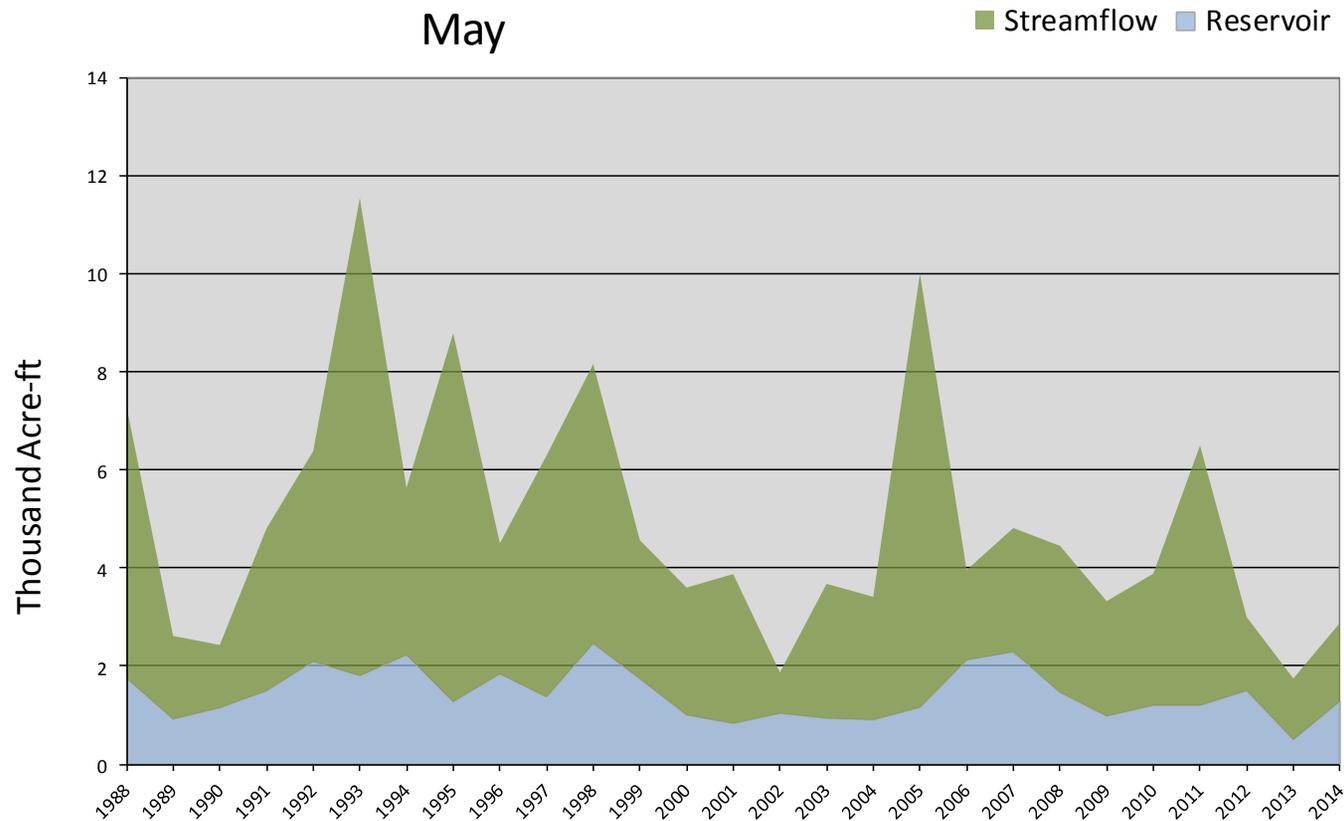
Surface Water Supply Index

Basin or Region	April EOM* Ken's Lake Reservoir	May-July Forecast Mill Creek at Sheley	Reservoir + Streamflow	SWSI [#]	Percentile	Years with similar SWSI
	KAF [^]	KAF	KAF		%	
Moab	1.3	1.6	2.9	-2.68	18	90, 89, 12, 09

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

Moab - Surface Water Supply Index

May

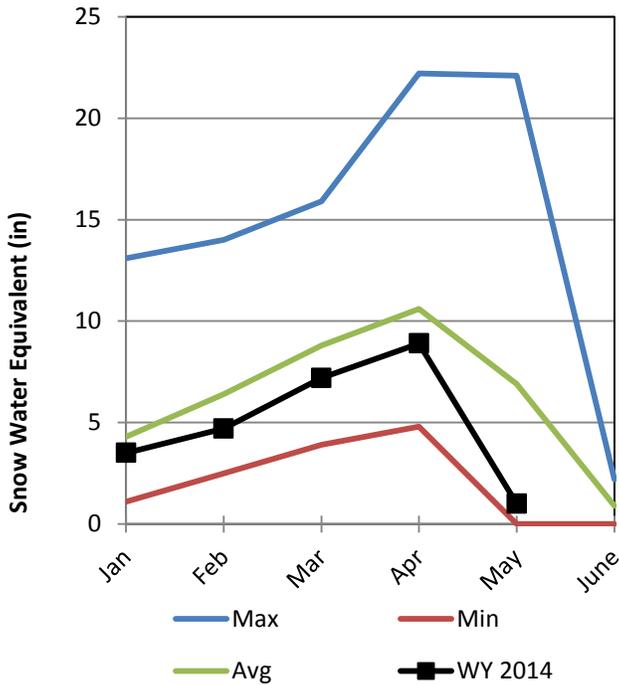


Dirty Devil Basin

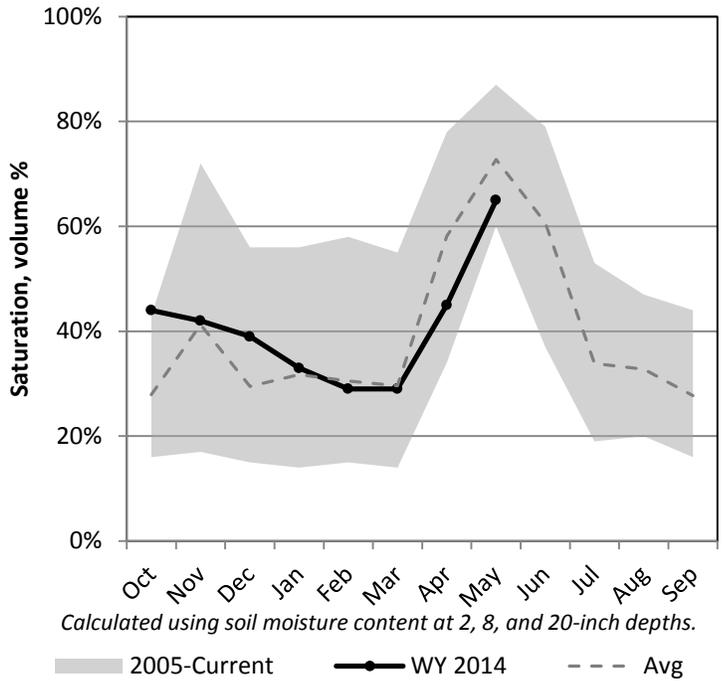
5/1/2014

Snowpack in the Dirty Devil Basin is much below average at 22% of normal, compared to 5% last year. Precipitation in April was below average at 77%, which brings the seasonal accumulation (Oct-Apr) to 86% of average. Soil moisture is at 65% compared to 60% last year. Forecast streamflow volumes range from 52% to 72% of average.

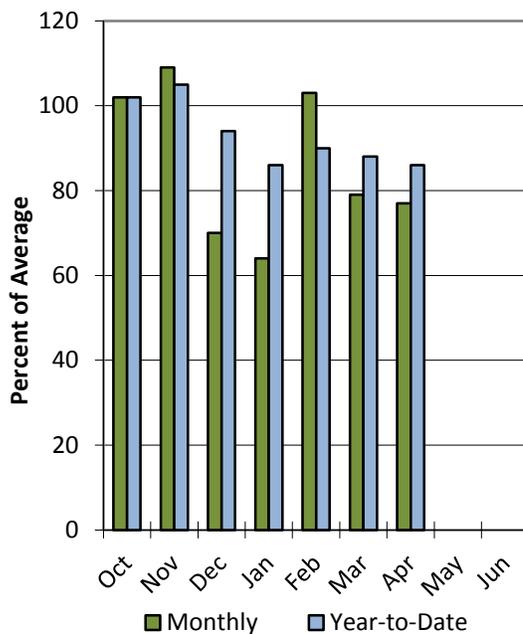
Snowpack



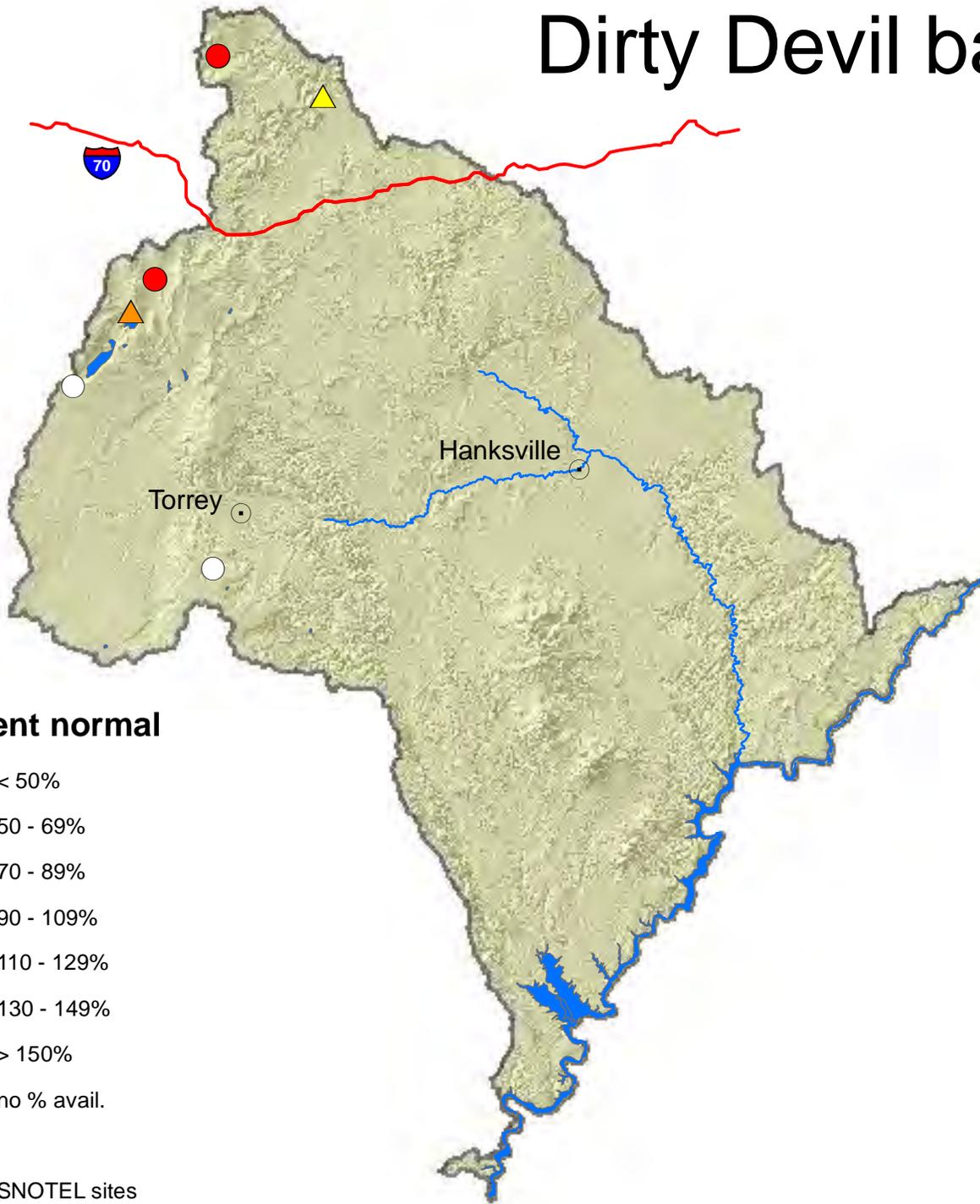
Soil Moisture



Precipitation



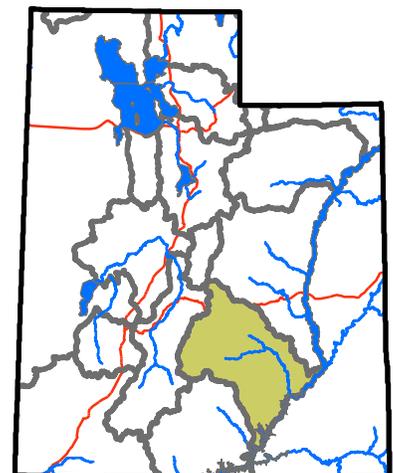
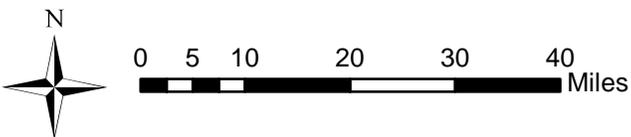
Dirty Devil basin



Percent normal



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



Dirty Devil Streamflow Forecasts - May 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	9.3	12.2	14.5	73%	16.9	21	19.9
	MAY-JUL	7.8	10.7	13	72%	15.4	19.5	18.1
Seven Mile Ck nr Fish Lake	APR-JUL	4.3	4.8	5.3	73%	5.7	6.5	7.3
	MAY-JUL	2.3	2.8	3.3	52%	3.7	4.5	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

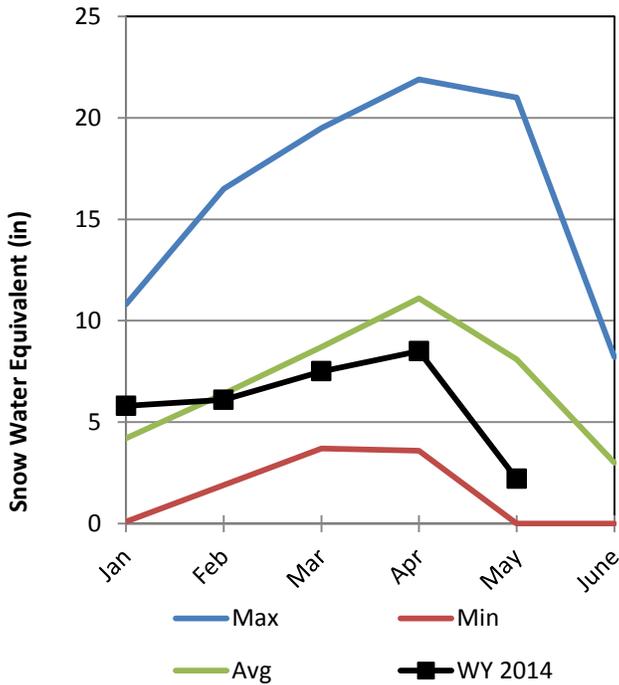
Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Muddy	3	67%	55%
Fremont	3	64%	78%

Escalante River Basin

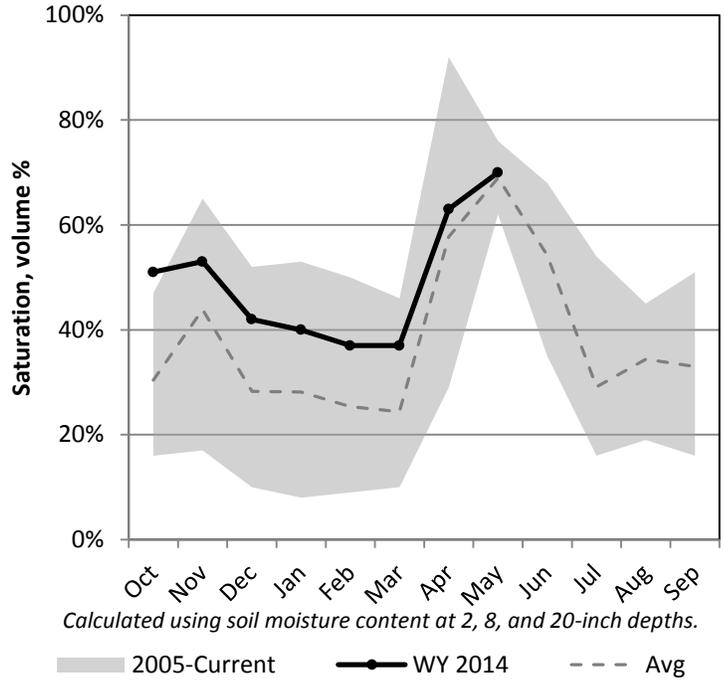
5/1/2014

Snowpack in the Escalante River Basin is much below average at 45% of normal, compared to 12% last year. Precipitation in April was much below average at 64%, which brings the seasonal accumulation (Oct-Apr) to 76% of average. Soil moisture is at 70% compared to 74% last year. The forecast streamflow volume for Pine Creek is 59% of average.

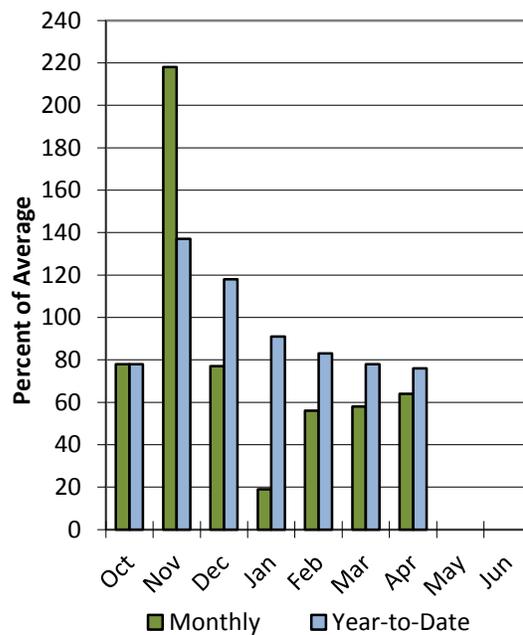
Snowpack



Soil Moisture



Precipitation

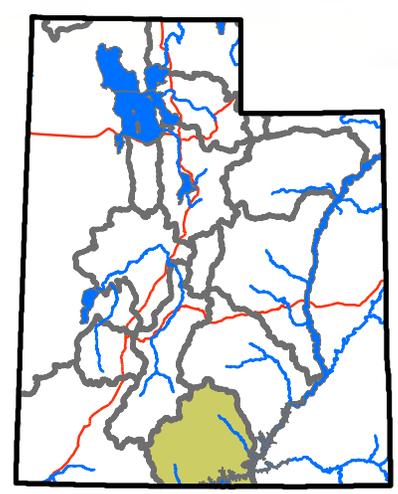


Escalante basin



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 - May 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	0.79	1.15	1.46	61%	1.81	2.5	2.4
	MAY-JUL	0.43	0.79	1.1	59%	1.45	2.1	1.86

- 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

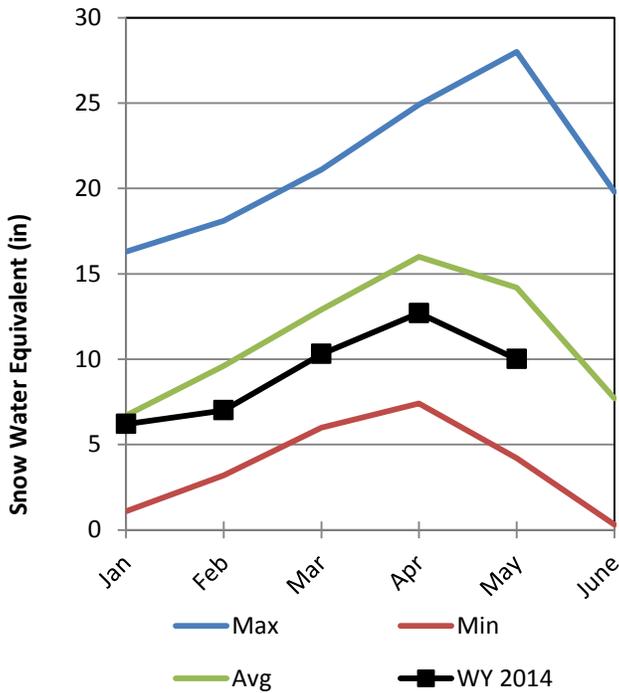
Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Escalante	3	45%	12%
Paria	2	50%	4%

Beaver River Basin

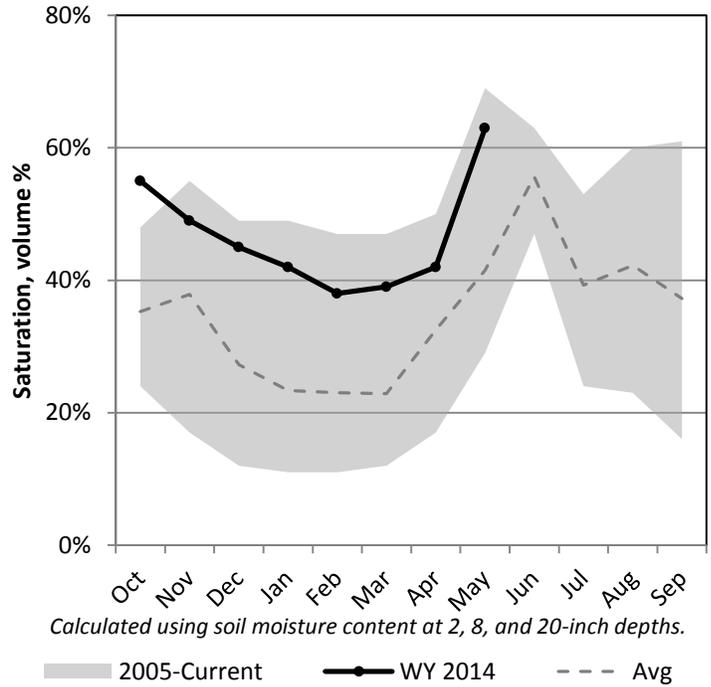
5/1/2014

Snowpack in the Beaver River Basin is below average at 79% of normal, compared to 63% last year. Precipitation in April was below average at 81%, which brings the seasonal accumulation (Oct-Apr) to 81% of average. Soil moisture is at 63% compared to 69% last year. Reservoir storage is at 49% of capacity, compared to 60% last year. The forecast streamflow volume for the Beaver River is 65% of average. The surface water supply index is 30% for the Beaver River.

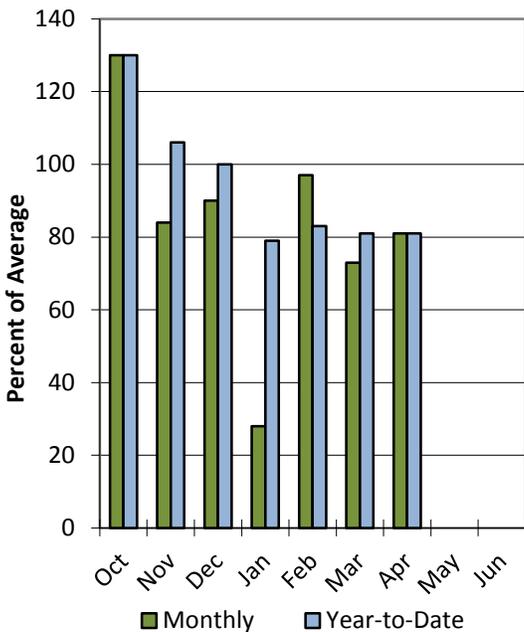
Snowpack



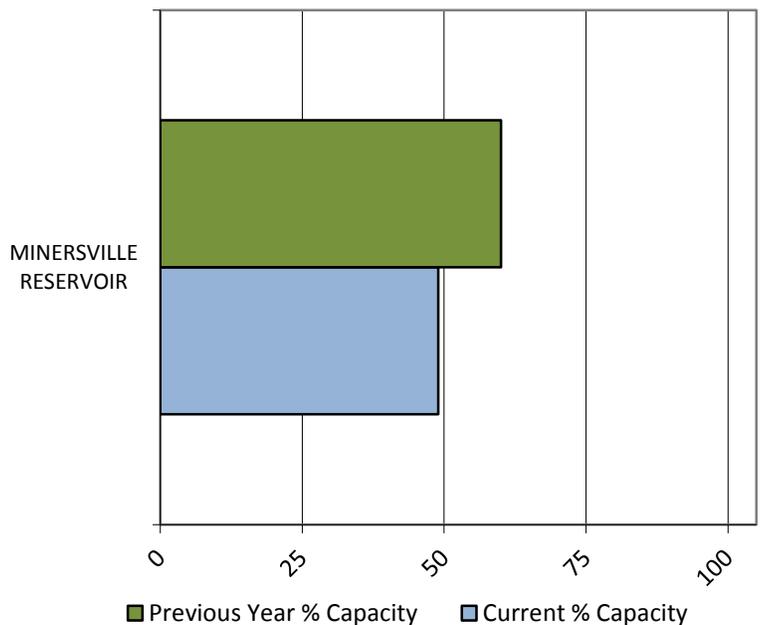
Soil Moisture



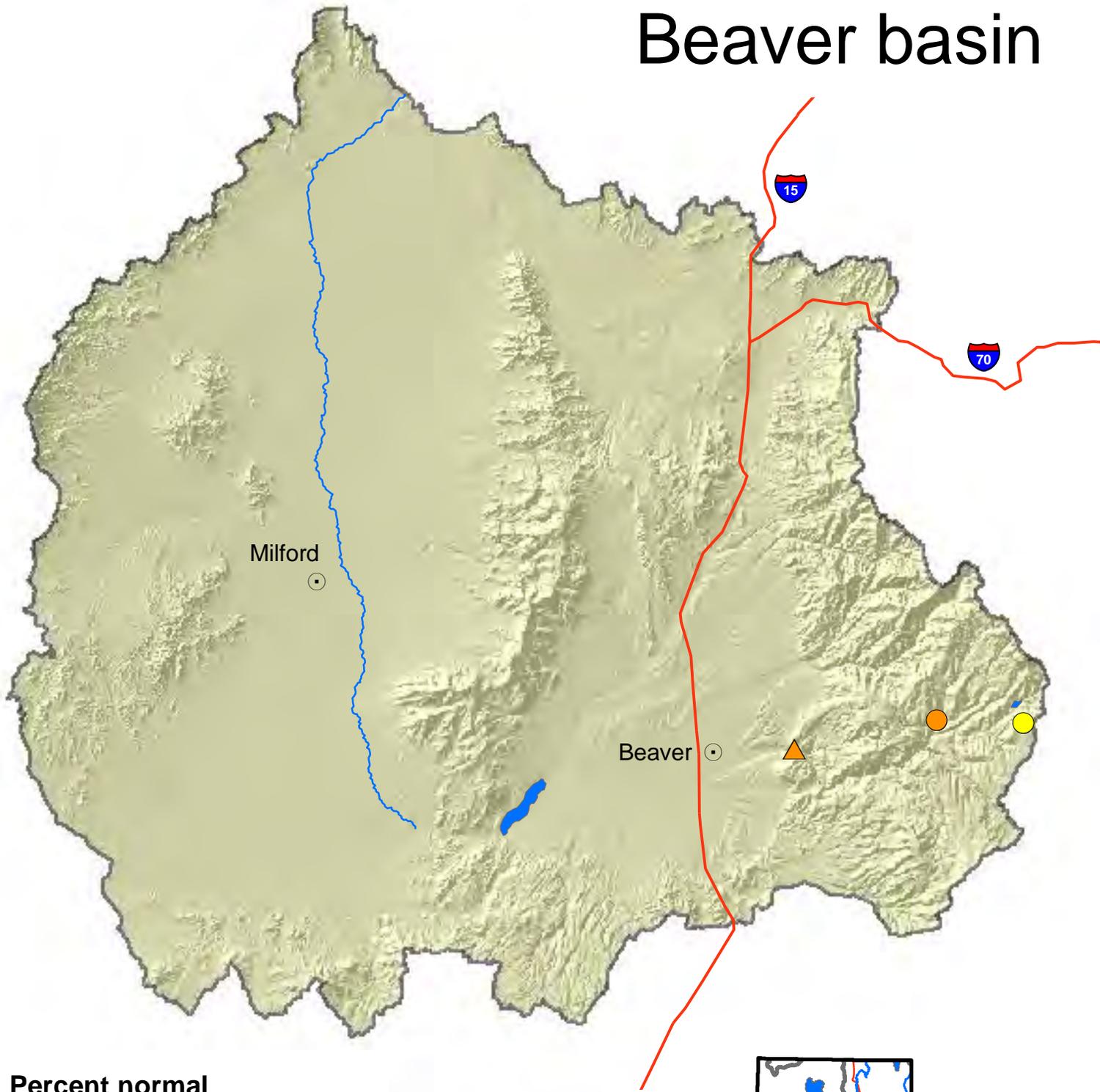
Precipitation



Reservoir Storage

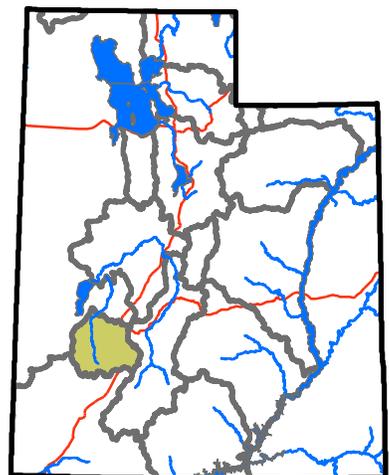
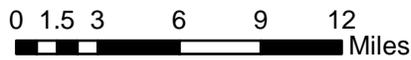


Beaver basin



Percent normal

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



Beaver River Streamflow Forecasts - May 1, 2014

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

Beaver River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Beaver R nr Beaver	APR-JUL	5.2	12.2	16	62%	22	29	26
	MAY-JUL	3.3	11.2	15	65%	22	30	23

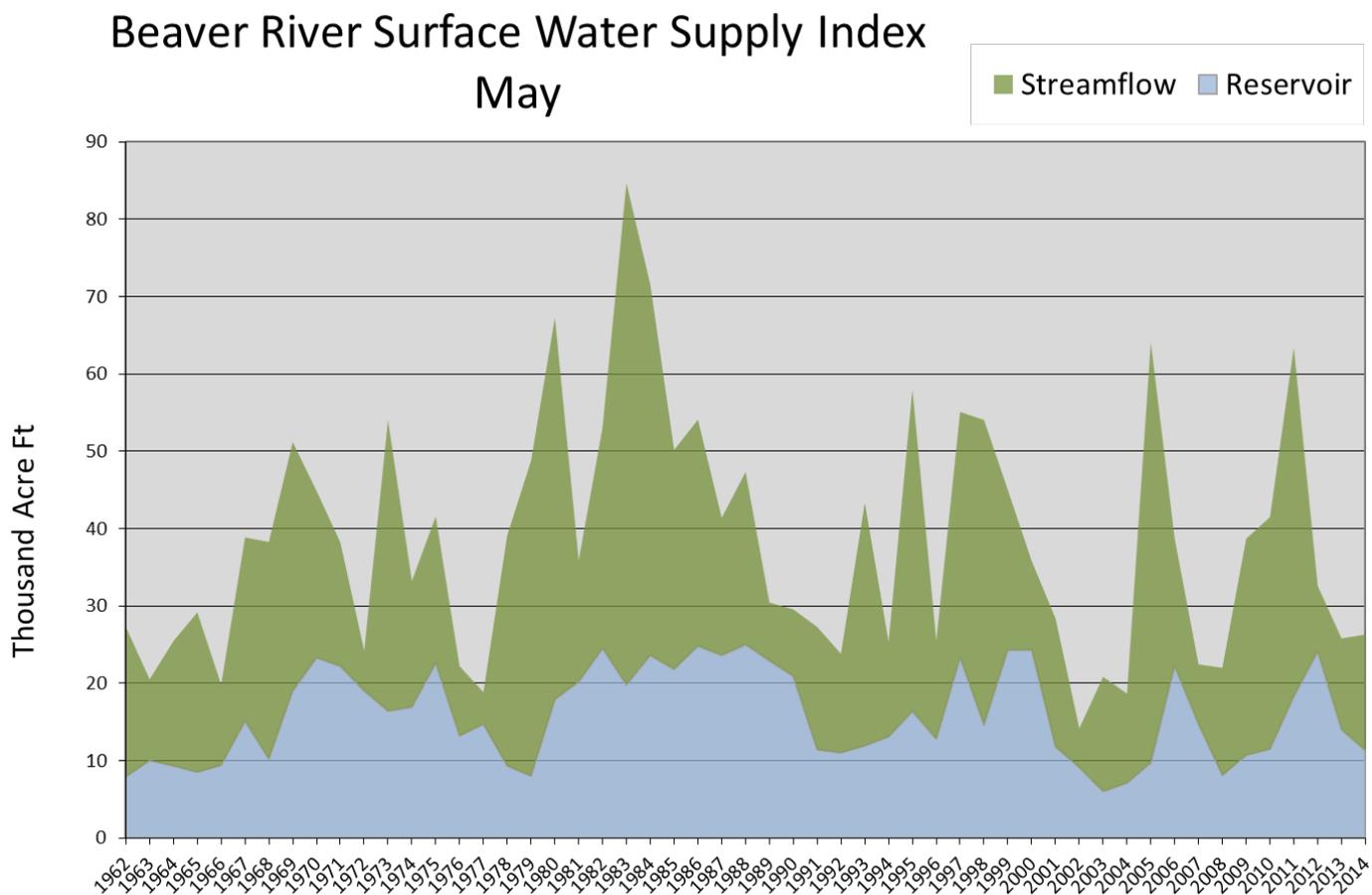
- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
MINERSVILLE RESERVOIR	11.3	14.0	16.5	23.3
Basin-wide Total	11.3	14.0	16.5	23.3
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Beaver	2	79%	63%

May 1, 2014		Beaver Surface Water Supply Index				
Basin or Region	April EOM* Minersville Reservoir	May-July forecast Beaver River at Beaver	Reservoir + Streamflow	SWSI [#]	Percentile	Years with similar SWSI
	<i>KAF</i> [^]	<i>KAF</i>	<i>KAF</i>		%	
Beaver	11.3	15.0	26.3	-1.70	30	96,13,62,91

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

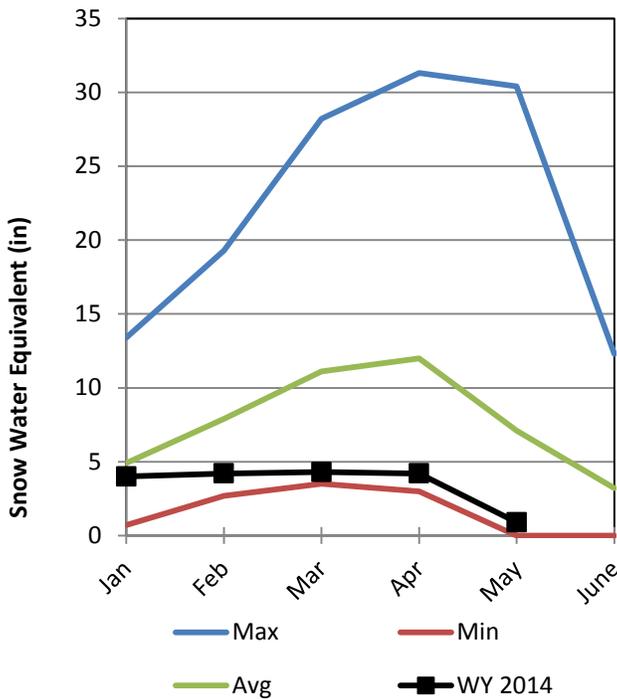


Southwestern Utah Basin

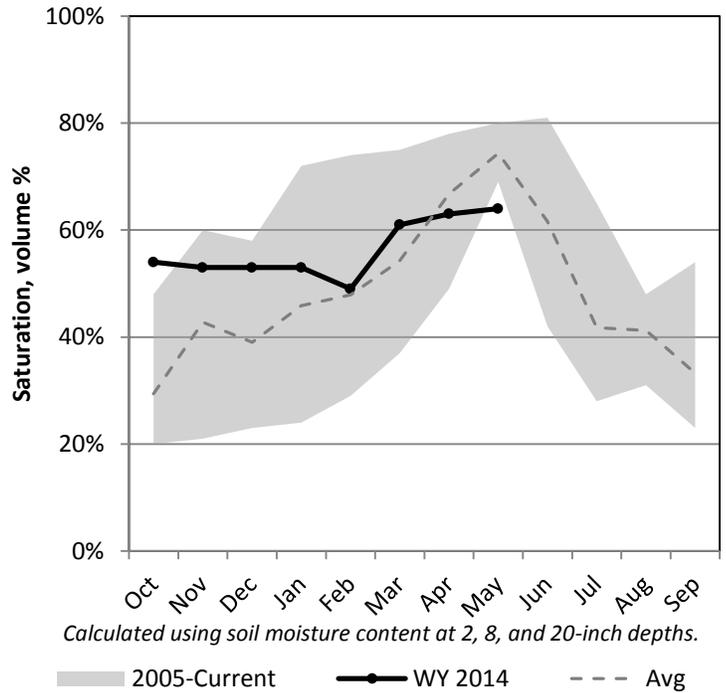
5/1/2014

Snowpack in the Southwestern Utah Basin is much below average at 23% of normal, compared to 38% last year. Precipitation in April was below average at 74%, which brings the seasonal accumulation (Oct-Apr) to 53% of average. Soil moisture is at 64% compared to 69% last year. Reservoir storage is at 40% of capacity, compared to 47% last year. Forecast streamflow volumes range from 20% to 102% of average. The surface water supply index is 17% for the Virgin River.

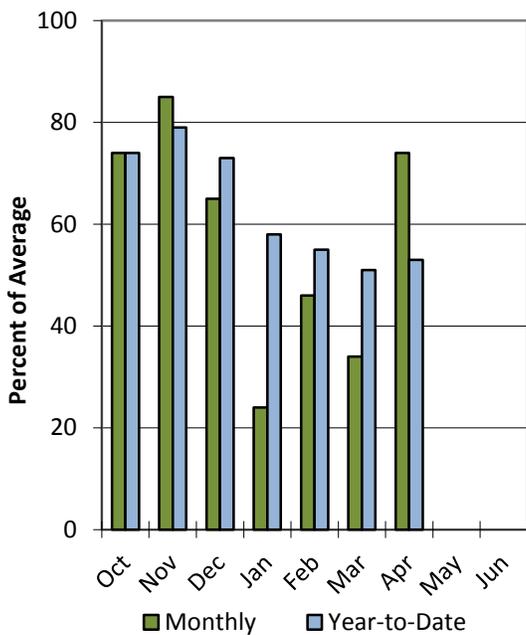
Snowpack



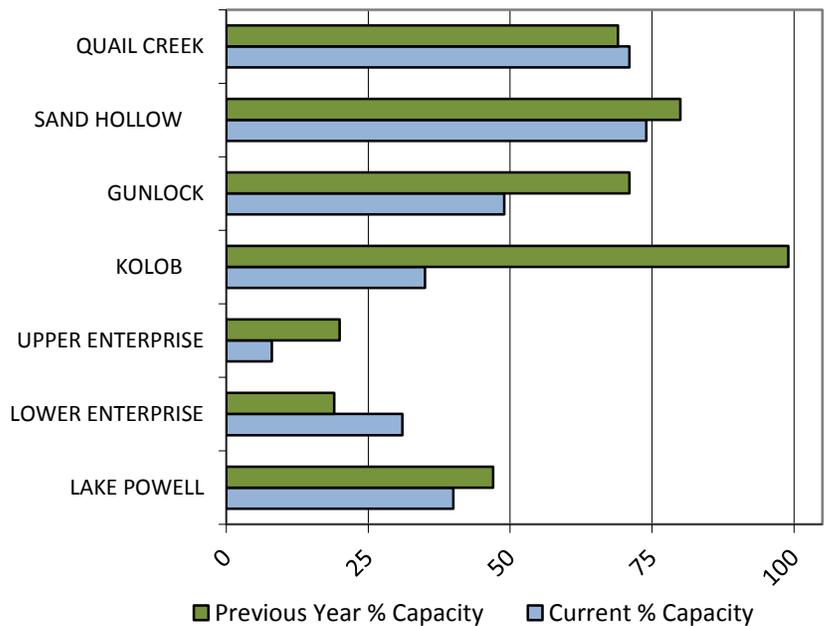
Soil Moisture



Precipitation



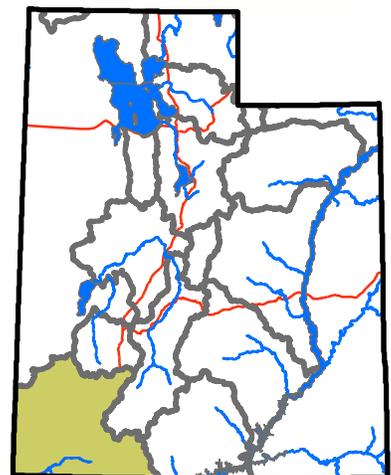
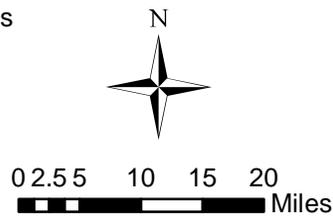
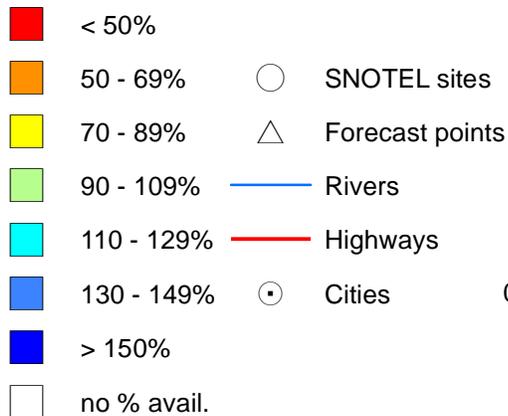
Reservoir Storage



Southwestern Utah



Percent normal



Southwestern Utah Streamflow Forecasts - May 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	5610	6500	7160	100%	7840	8920	7160
	MAY-JUL	4650	5540	6200	102%	6880	7960	6100
Virgin R nr Hurricane	APR-JUL	7.4	10.6	13.3	21%	16.5	22	63
	MAY-JUL	3.2	6.4	9.1	22%	12.3	17.8	41
Virgin R at Virgin	APR-JUL	13.2	16.2	18.6	32%	21	26	58
	MAY-JUL	7.5	10.5	12.9	34%	15.3	20	38
Santa Clara R nr Pine Valley	APR-JUL	0.75	1.01	1.23	25%	1.48	1.92	5
	MAY-JUL	0.32	0.58	0.8	20%	1.05	1.49	4
Coal Ck nr Cedar City	APR-JUL	2.9	4.7	6	32%	7.3	9.1	18.6
	MAY-JUL	0.45	2.5	4.2	28%	6	8.5	14.9

- 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 April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
LAKE POWELL	9703.3	11422.0	17123.0	24322.0
LOWER ENTERPRISE	0.8	0.5	1.4	2.6
UPPER ENTERPRISE	0.8	2.0	5.0	10.0
KOLOB RESERVOIR	2.0	5.6		5.6
GUNLOCK	5.1	7.4	6.8	10.4
SAND HOLLOW RESERVOIR	37.1	40.1		50.0
QUAIL CREEK	28.5	27.5	31.6	40.0
Basin-wide Total	9777.4	11504.9	17167.8	24440.6
# of reservoirs	7	7	5	7

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
Upper Virgin	8	26%	43%
Lower Virgin	2		
Cedar City Parowan	9	20%	46%

5/1/2014

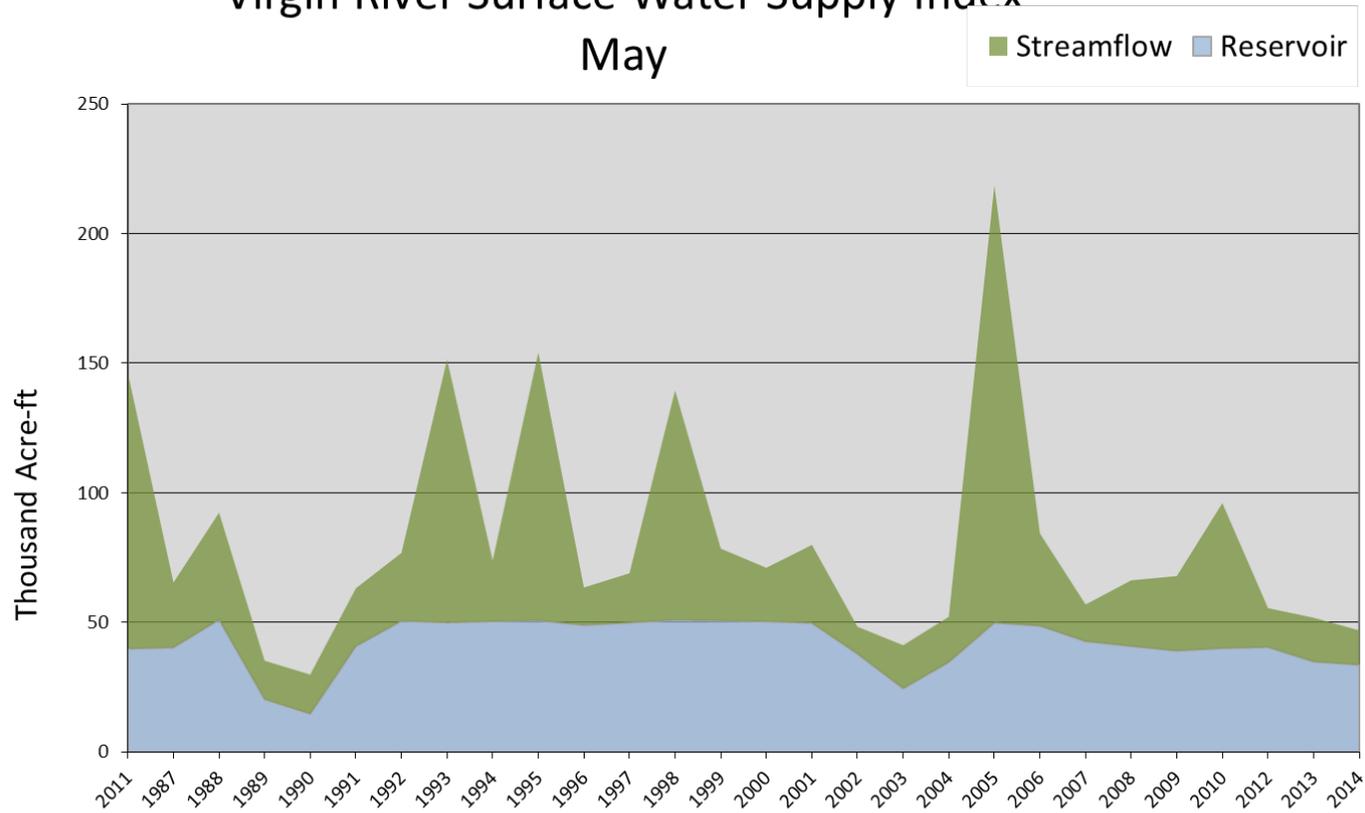
Surface Water Supply Index

Basin or Region	April EOM* Quail Creek and Gunlock Reservoirs	May-July forecast Virgin and Santa Clara Rivers	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	KAF^	KAF	KAF		%	
Virgin River	33.6	13	47	-2.73	17	89, 93, 02, 13

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

Virgin River Surface Water Supply Index

May



5/1/2014

Surface Water Supply Index

Basin or Region	April EOM* Reservoirs	May-July Stream Forecast	Reservoir + Streamflow	SWSI [#]	Percentile	Years with similar SWSI
	KAF [^]	KAF	KAF		%	
Bear River	614	99	713	-1.23	35	30, 38, 62, 63
Woodruff Narrows	38.1	102	140.1	0.18	52	87, 81, 72, 74
Little Bear	14.6	18	32.6	-0.54	43	94, 02, 10, 08
Ogden River	86.4	52	138.4	-1.10	37	00, 02, 12, 94
Weber River	235	236	471	-0.72	41	94, 79, 76, 81
Provo	305	72	377	-3.24	11	03, 13, 02, 92
West Uintah Basin	164	152	316	0.65	58	87, 72, 78, 71
East Uintah Basin	27.5	32	59.5	-3.70	6	02, 89, 90
Blacks Fork	21.9	79	100.9	-0.18	48	03, 06, 08, 97
Smiths Fork	9.0	25	34.0	2.72	83	96, 98, 95, 99
Price River	20.7	21	41.7	-3.35	10	04, 77, 90, 91
Joe's Valley	34.4	37	71.4	-1.08	37	94, 12, 04, 07
Ferron Creek	11.6	26	37.6	-0.48	44	87, 74, 91, 78
Moab	1.3	2	2.9	-2.68	18	90, 89, 12, 09
Upper Sevier River	108	24	132	-1.69	30	92, 91, 12, 03
San Pitch	3.3	10	14	-3.49	8	13, 02, 92, 04
Lower Sevier River	118	45	163	-1.34	34	65, 78, 08, 89
Beaver River	11.3	15	26.3	-1.70	30	96, 13, 62, 91
Virgin River	33.6	13	47	-2.73	17	89, 93, 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.

Glass Plate Images from the late 1800's or early 1900's. If you know where these sites are located, Snow Survey would love to know. Call Randy Julander at 801.524.5213



Possibly near Miller Flat Reservoir?



May be Parrish Creek or Ephraim Canyon ?

Issued by

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

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

Released by

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



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



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