



Utah Water Supply Outlook Report

April, 2016



East Fork of Blacks Fork Snow Course, April 1, 2016

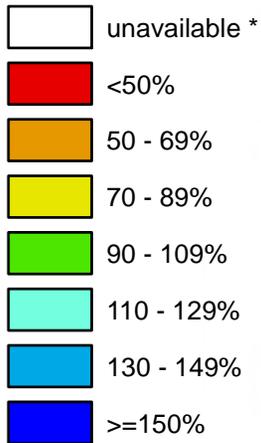
Photo by Randy Julander, NRCS

Utah

SNOTEL Current Snow Water Equivalent (SWE) % of Normal

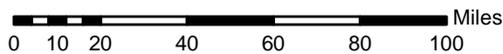
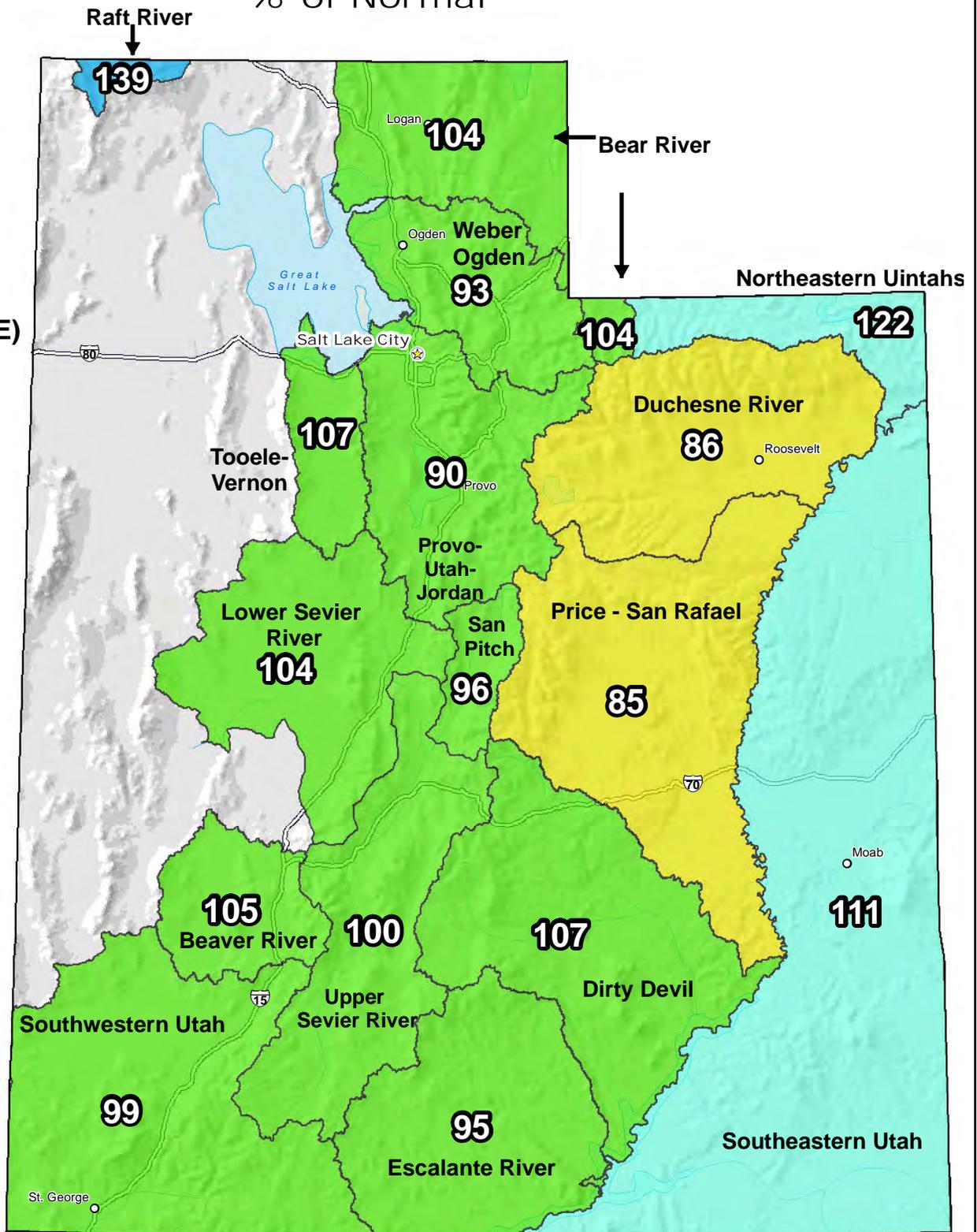
Apr 01, 2016

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).

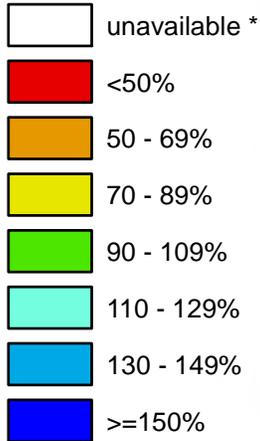
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Utah

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

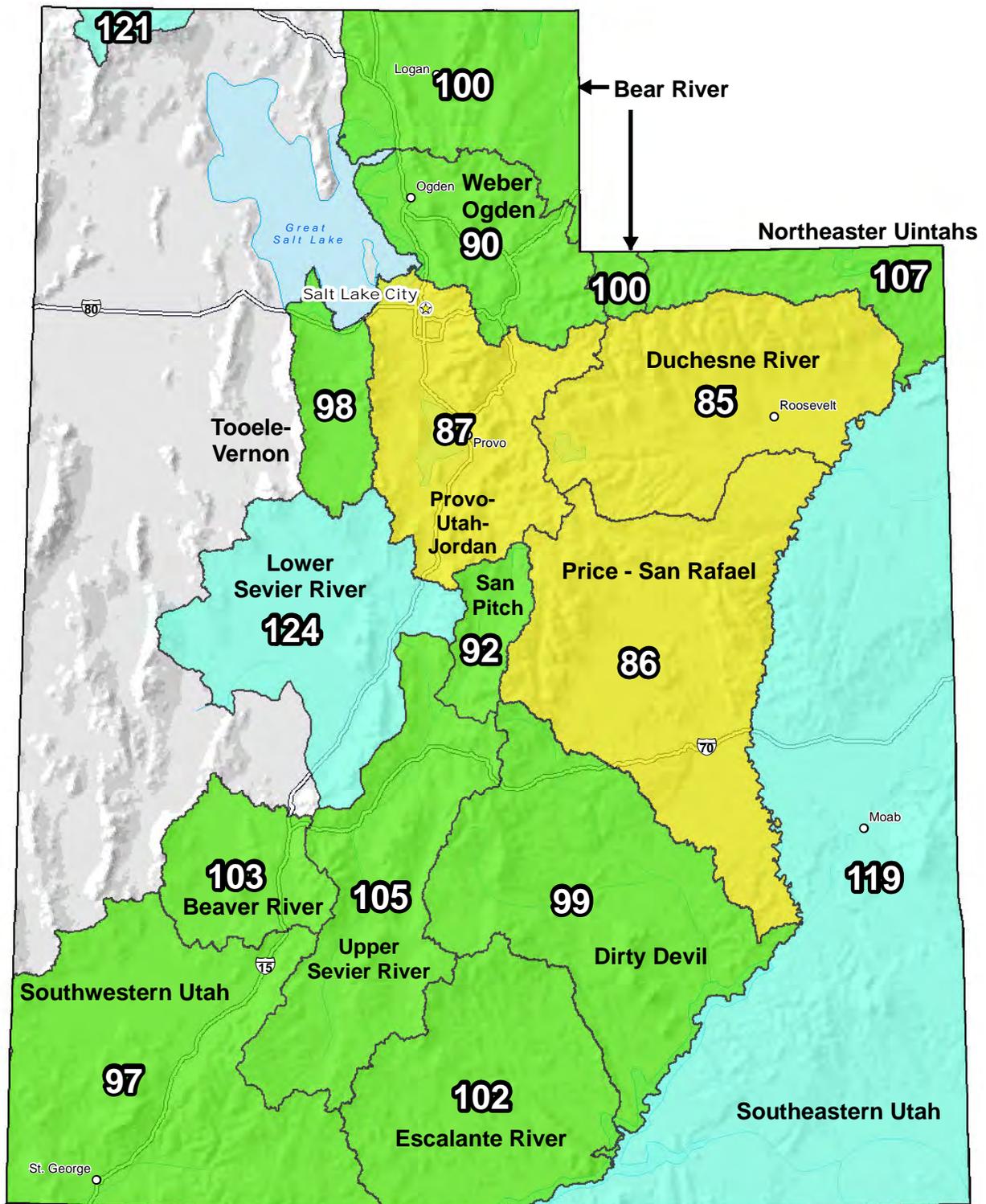
Apr 01, 2016

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>

STATE OF UTAH GENERAL OUTLOOK

April 1, 2016

SUMMARY

April 1 – the peak of seasonal snow accumulation and across the state of Utah we have as close to an average snowpack as we may see. Almost all areas are between 90% and 110% of normal with few exceptions – the north slope of the Uintah Mountains have a little more at about 120% and the Duchesne and Price/San Rafael basins are a little lower at about 85% of normal. Given the past 4 years of drought and especially last year’s exceptionally poor water year, average snowpack seems nice. As of April 1 – the normal peak of snowpack accumulation, Utah watersheds stand at: Bear – 104%, Weber – 93%, Provo -90%, Duchesne – 86%, Price -85%, Upper Sevier -100%, San Pitch -96%, and southwestern Utah -100% of normal. These values are double to triple last year’s snowpack. March precipitation was near normal statewide ranging from 51% on the Escalante to 149% on the Bear. The statewide average was 102% which brings the seasonal accumulation (Oct-Mar) to 94% of average. Current soil moisture saturation levels in runoff producing areas are slightly below normal in northern Utah and well above average in the south. Reservoir storage is at 57% of capacity a little less than last year at 62% of capacity. General runoff conditions are below to near normal across the entire state.

SNOWPACK

April first snow packs of 2015 as measured by the NRCS SNOTEL system ranged from 18% of median in the Tooele area to 56% on the Bear River watersheds. Most areas had between 30% and 45% of normal. Snowpacks as of April 1, 2016 range from 85% on the Price/San Rafael to 104% on the Bear with most watersheds in the 90% to 110% range. Current conditions are much improved over those of last year.

PRECIPITATION

Mountain precipitation during March was 102% of average which brings the seasonal accumulation (Oct-Mar) 94% of normal. Precipitation ranged from 51% on the Escalante to 149% on the Bear River watershed.

SOIL MOISTURE

Soil moisture is rising rapidly in response to melting snow packs but was below normal in northern Utah and above normal in the south going into the melt season. Soil moisture at lower elevations is rising quickly in response to snowmelt. At higher elevations where snowmelt is minimal, soil moisture levels are holding steady.

RESERVOIRS

Storage in 48 of Utah’s key irrigation reservoirs is at 57% of capacity compared to 62% last year.

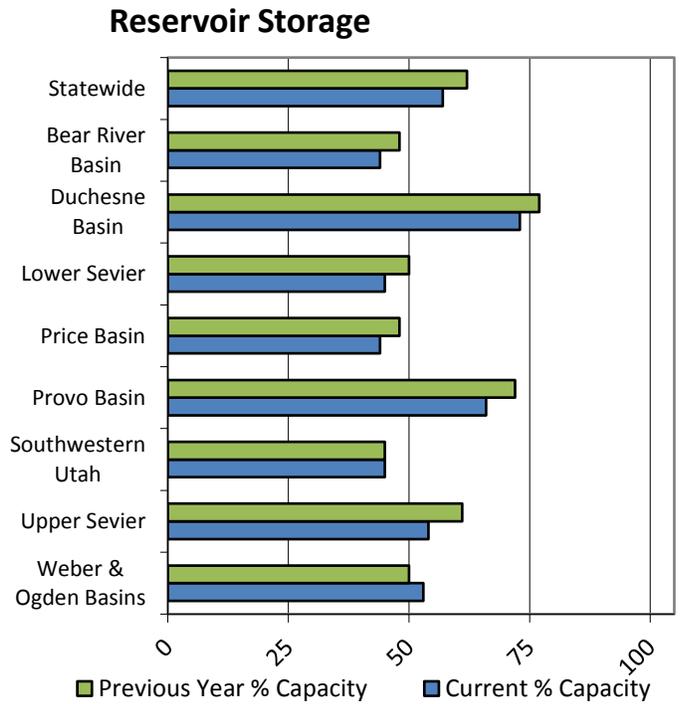
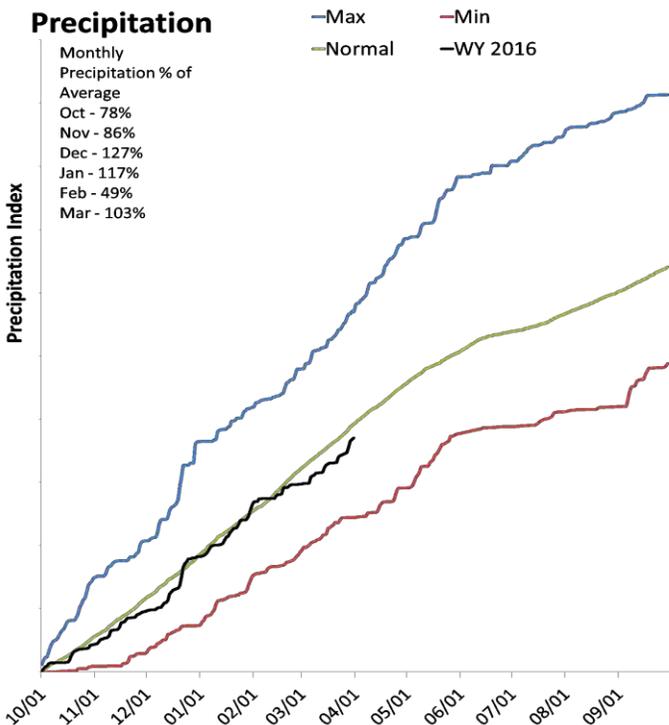
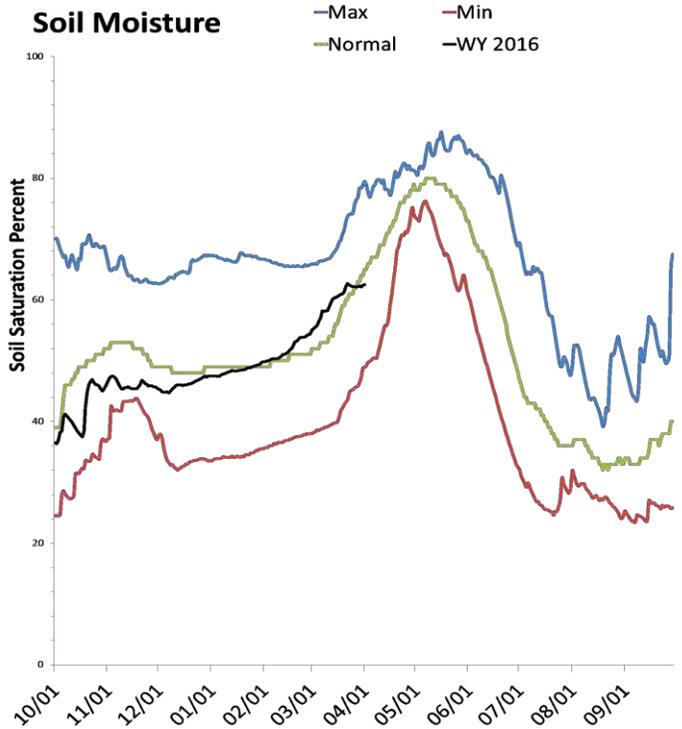
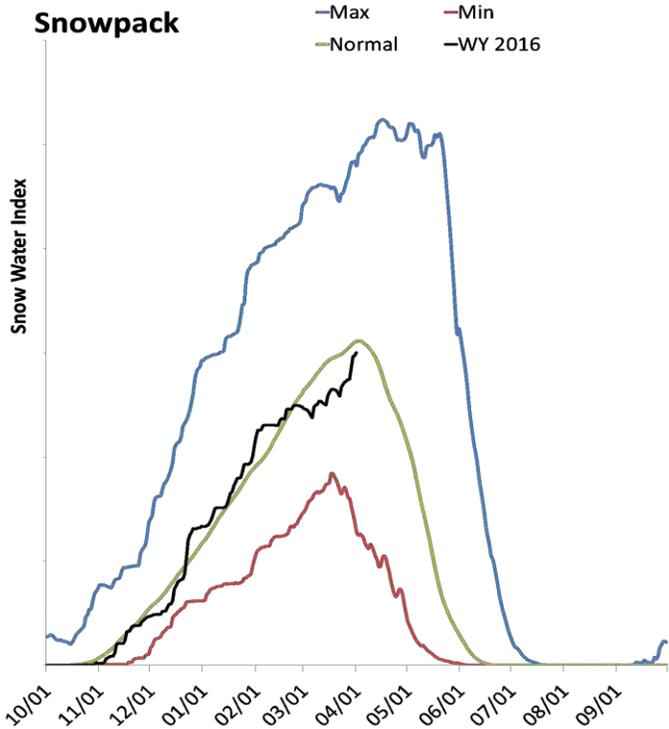
STREAMFLOW

Snowmelt stream flows are expected to be below to near average for the entire state. Forecast stream flows range from 46% on the Strawberry River near Duchesne to 140% on Mill Creek near Sheley Tunnel which is near Moab. Most flows are forecast to be in the 70% to 100% range.

Statewide Utah

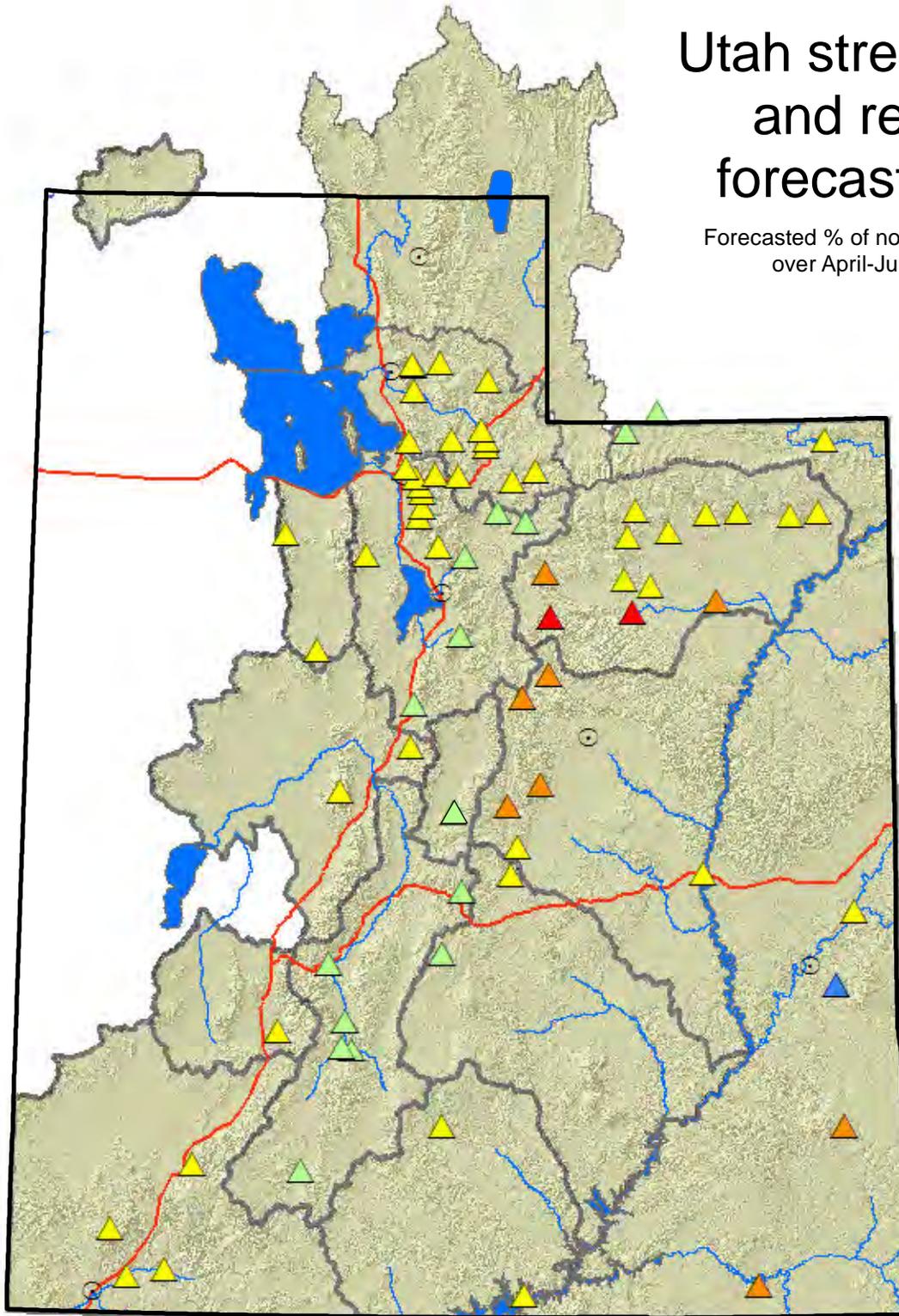
4/1/2016

Snowpack in Utah is near normal at 97% of normal, compared to 41% last year. Precipitation in March was near average at 102%, which brings the seasonal accumulation (Oct-Mar) to 94% of average. Soil moisture is at 64% compared to 62% last year. Reservoir storage is at 57% of capacity, compared to 62% last year. Forecast streamflow volumes range from 46% to 140% of average.



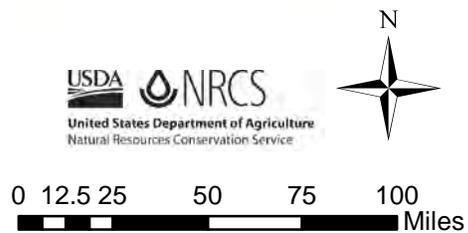
Utah streamflow and reservoir forecast points

Forecasted % of normal flow volume over April-July forecast period



Percent normal

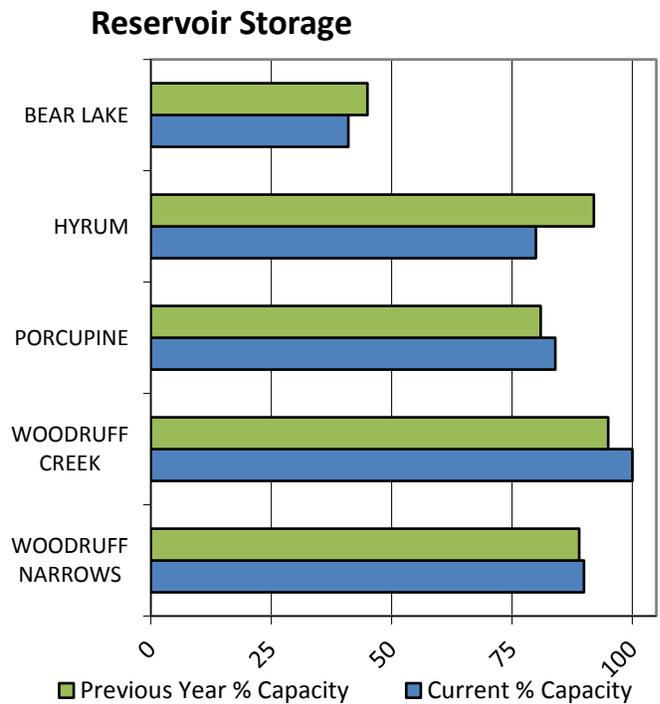
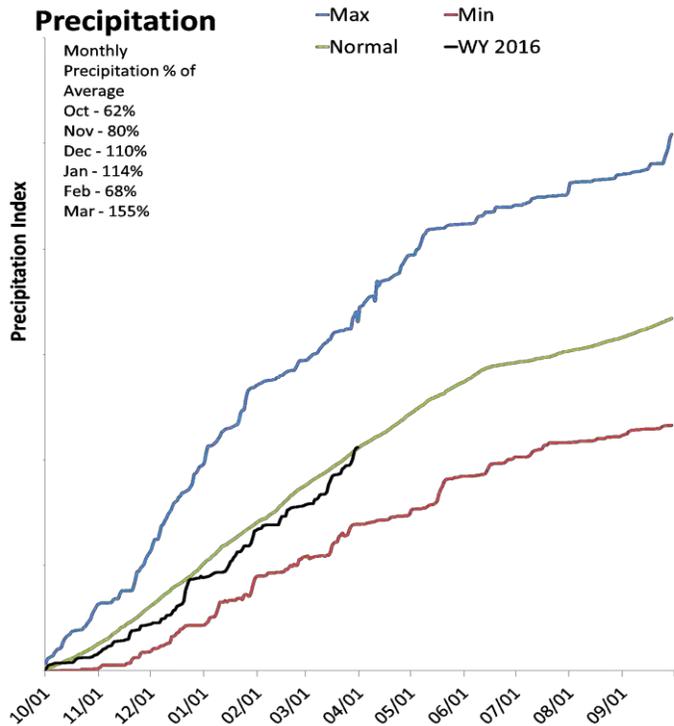
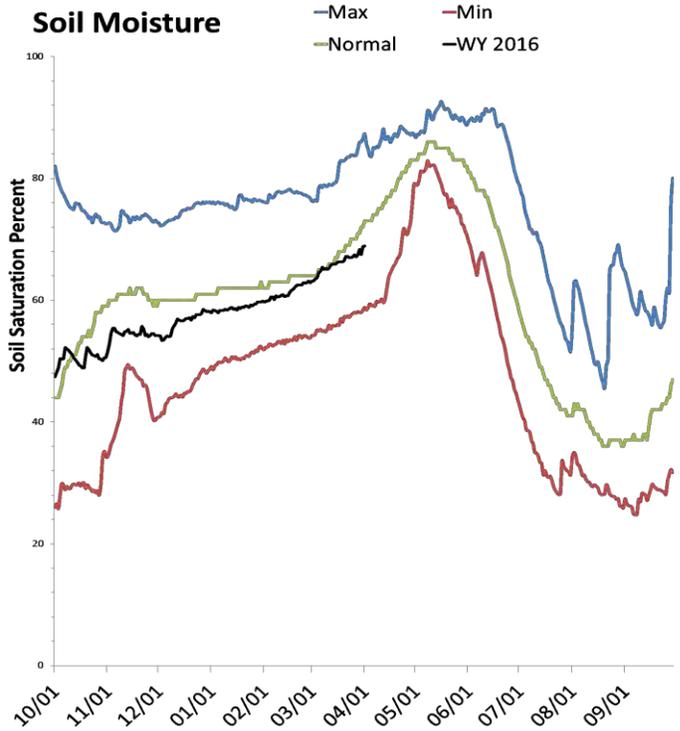
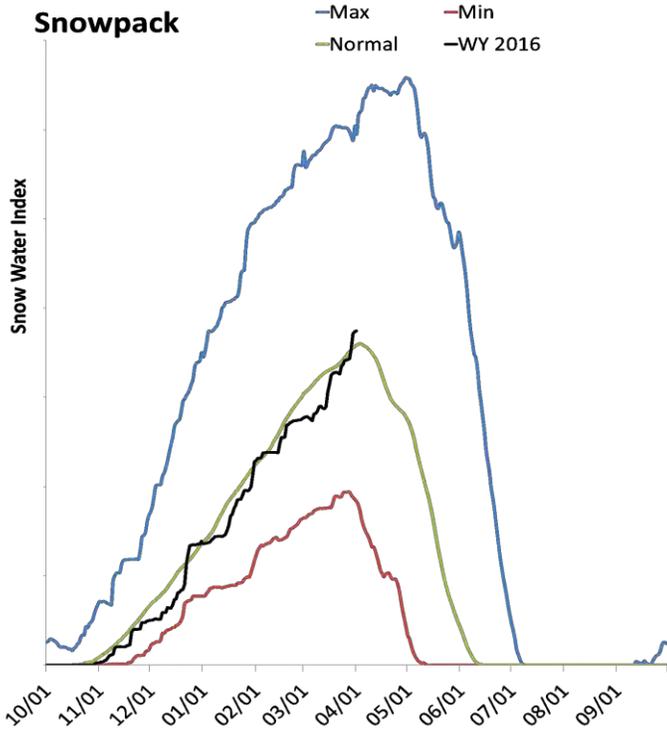
- | | |
|-------------|-----------------|
| < 50% | Forecast points |
| 50 - 69% | Cities |
| 70 - 89% | Rivers |
| 90 - 109% | Highways |
| 110 - 129% | |
| 130 - 149% | |
| > 150% | |
| no % avail. | |



Bear River Basin

4/1/2016

Snowpack in the Bear River Basin is near normal at 104% of normal, compared to 57% last year. Precipitation in March was much above average at 150%, which brings the seasonal accumulation (Oct-Mar) to 100% of average. Soil moisture is at 69% compared to 67% last year. Reservoir storage is at 44% of capacity, compared to 48% last year. Forecast streamflow volumes range from 68% to 102% of average. The surface water supply index is 43% for the Bear River, 49% for the Woodruff Narrows, 52% for the Little Bear.



Bear River Streamflow Forecasts - April 1, 2016

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	62	80	91	81%	103	121	112
	APR-SEP	69	88	101	82%	114	133	123
Bear R ab Resv nr Woodruff	APR-JUL	50	75	92	76%	109	134	121
	APR-SEP	52	78	95	74%	112	138	128
Big Ck nr Randolph	APR-JUL	1.5	2.7	3.6	95%	4.5	5.7	3.8
Smiths Fk nr Border	APR-JUL	60	73	82	92%	91	104	89
	APR-SEP	70	85	95	91%	105	120	104
Bear R bl Stewart Dam	APR-JUL	13.6	80	125	68%	170	235	183
	APR-SEP	16.5	91	141	69%	191	265	205
Little Bear at Paradise	APR-JUL	15.4	27	34	83%	42	53	41
Logan R nr Logan	APR-JUL	79	96	107	96%	118	135	111
Blacksmith Fk nr Hyrum	APR-JUL	17.9	33	44	102%	55	70	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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bear Lake	530.9	583.8	611.9	1302.0
Hyrum Reservoir	12.3	14.1	13.0	15.3
Porcupine Reservoir	9.5	9.2	8.2	11.3
Woodruff Creek	4.0	3.8	3.3	4.0
Woodruff Narrows Reservoir	51.6	50.9	38.4	57.3
Basin-wide Total	608.3	661.8	674.8	1389.9
# of reservoirs	5	5	5	5

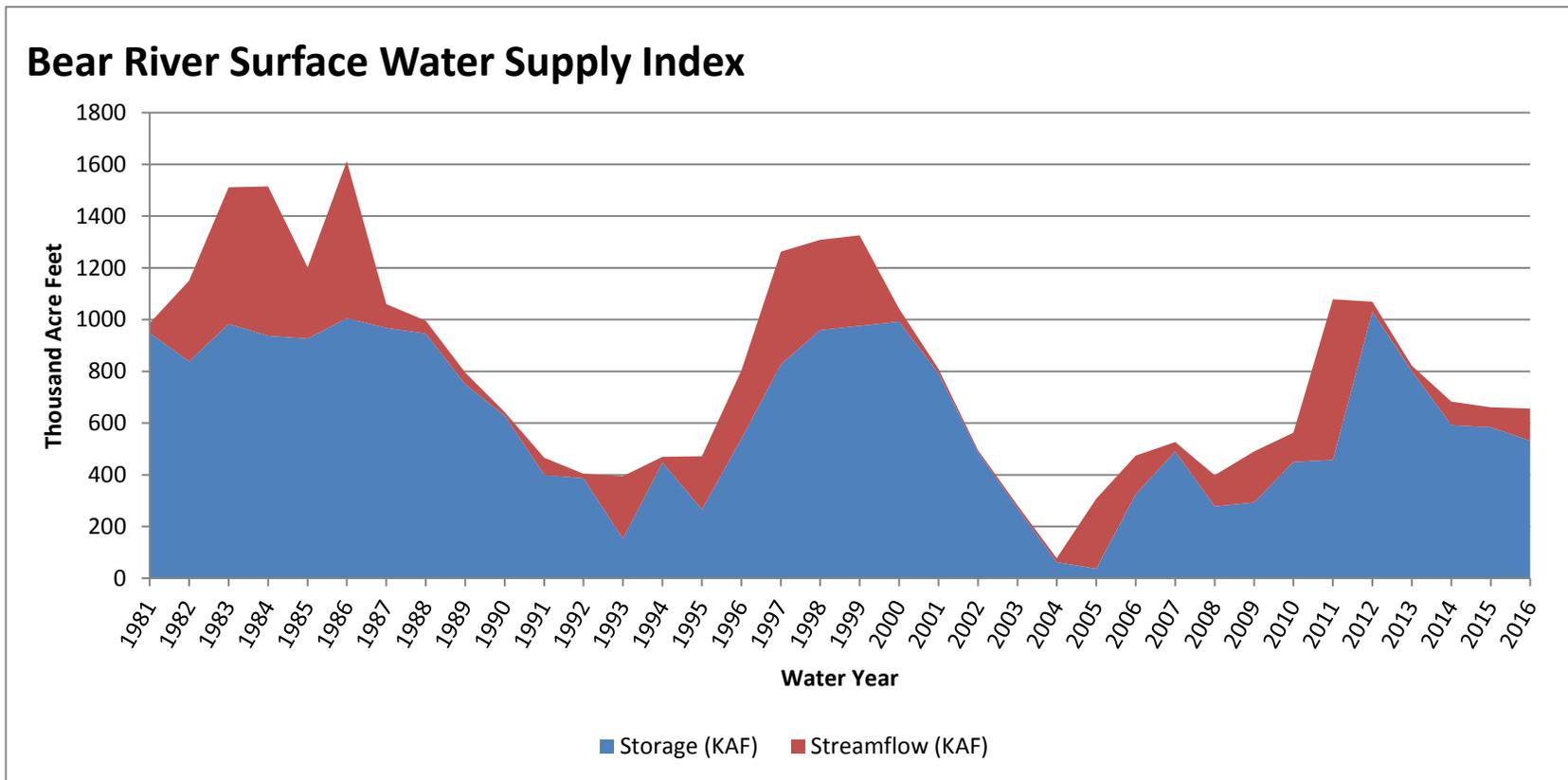
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Upper Bear	4	102%	45%
Middle Bear	7	105%	69%
Lower Bear	3	98%	47%
Logan	8	104%	55%

April 1, 2016

Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Bear River	530.93	125.00	655.93	43	-0.56	10, 90, 15, 14

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

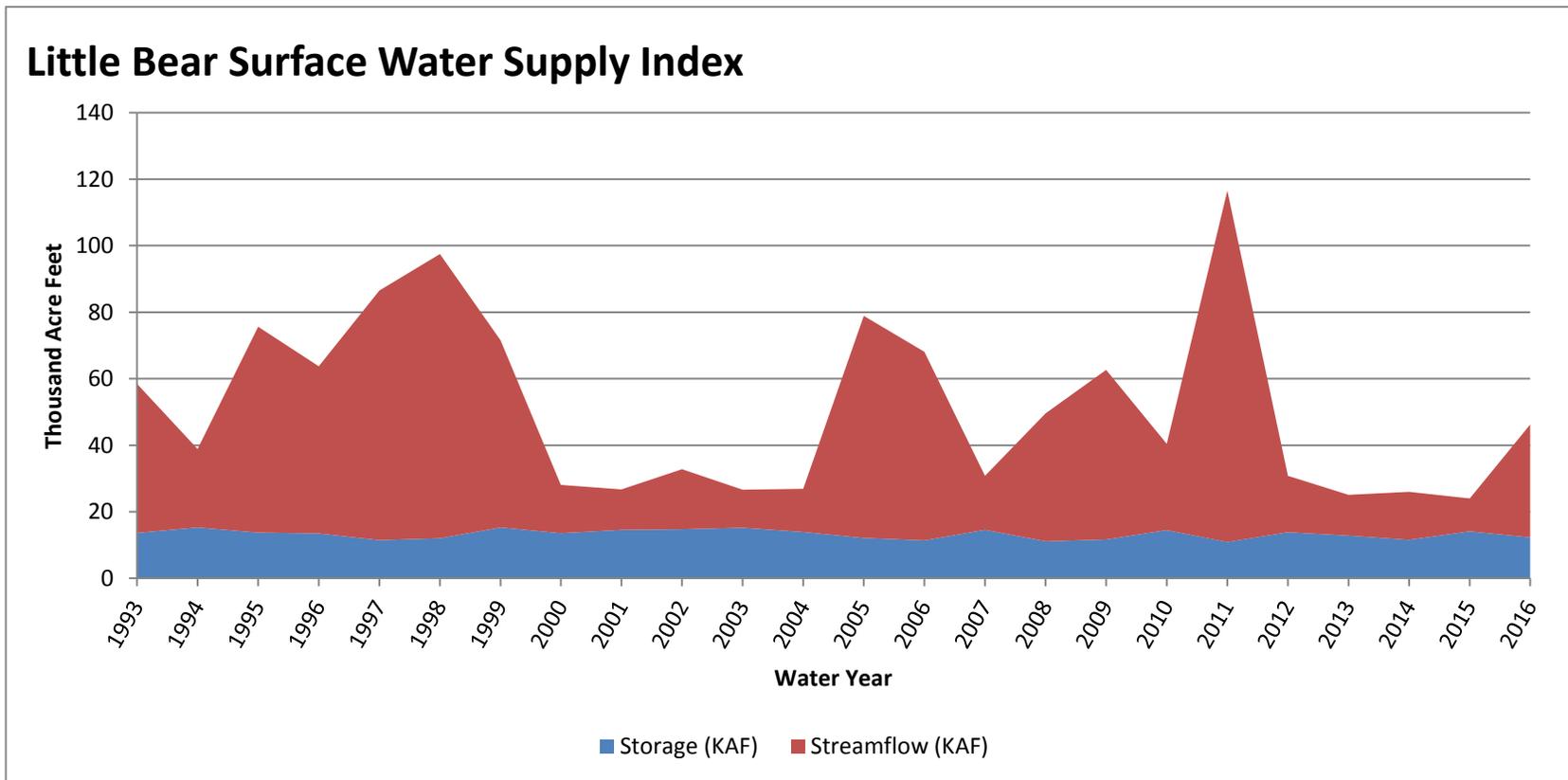


April 1, 2016

Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Little Bear	12.26	34.00	46.26	52	0.17	94, 10, 08, 93

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

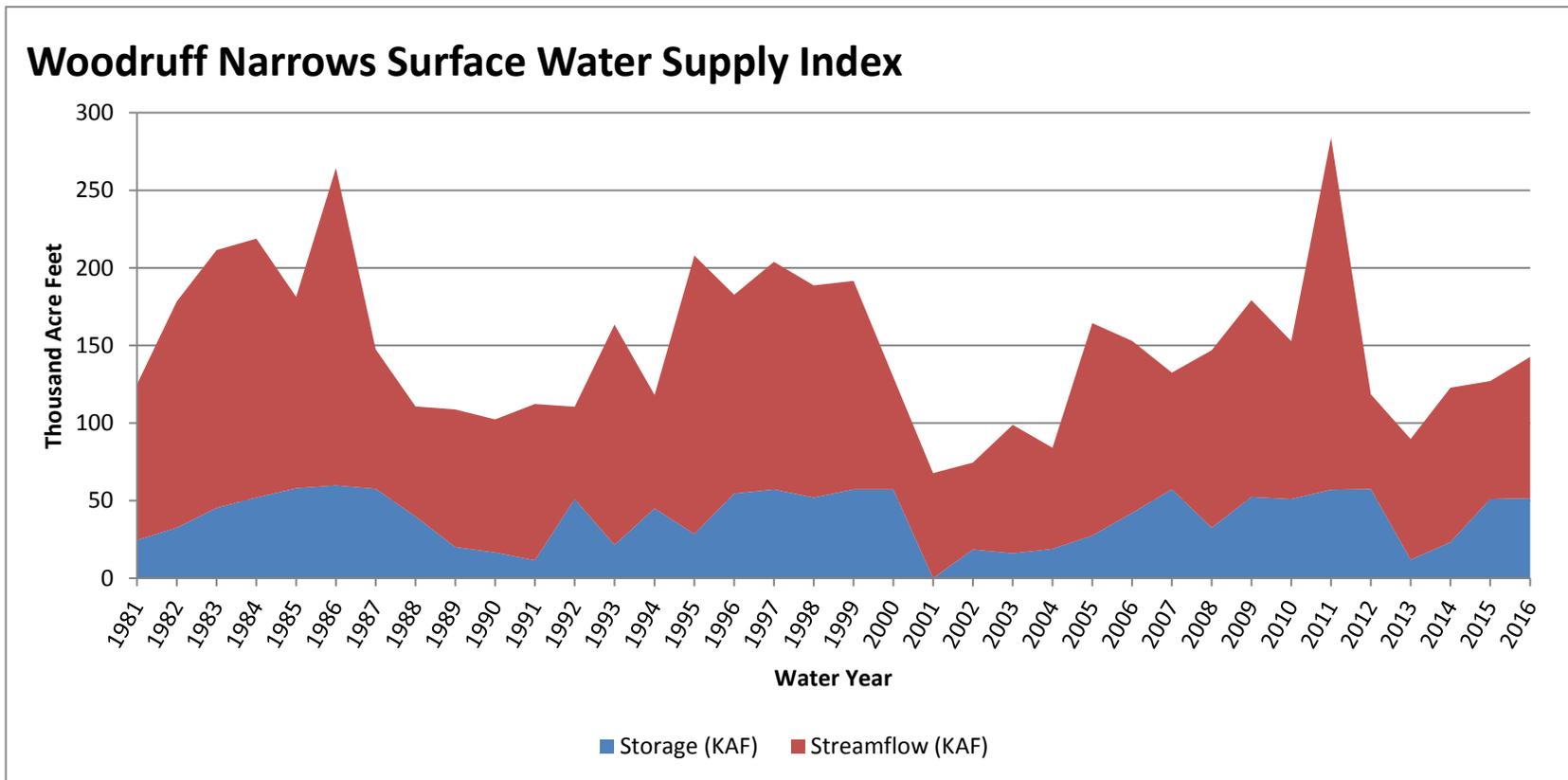


April 1, 2016

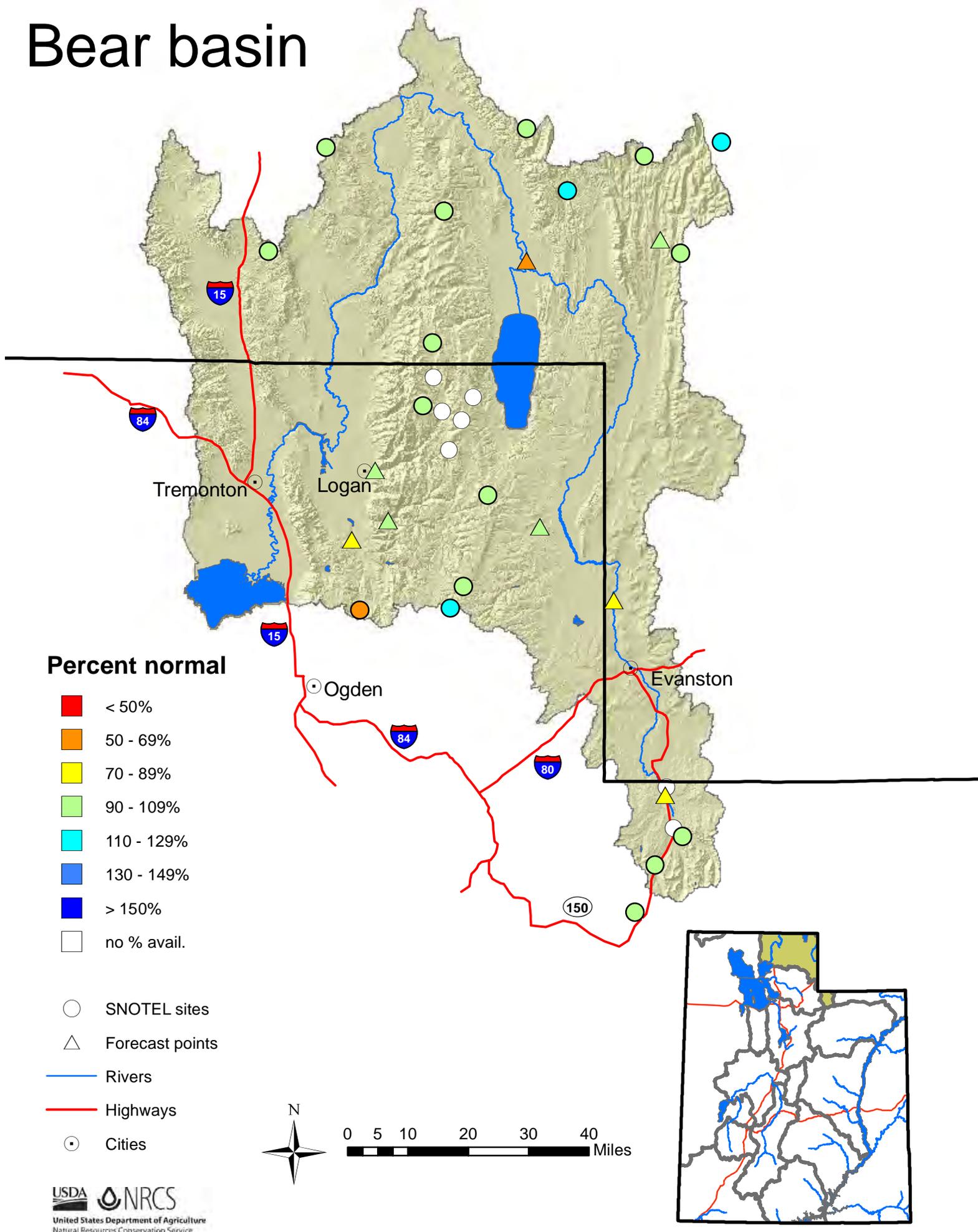
Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Woodruff Narrows	51.64	91.00	142.64	49	-0.11	00, 07, 08, 87

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



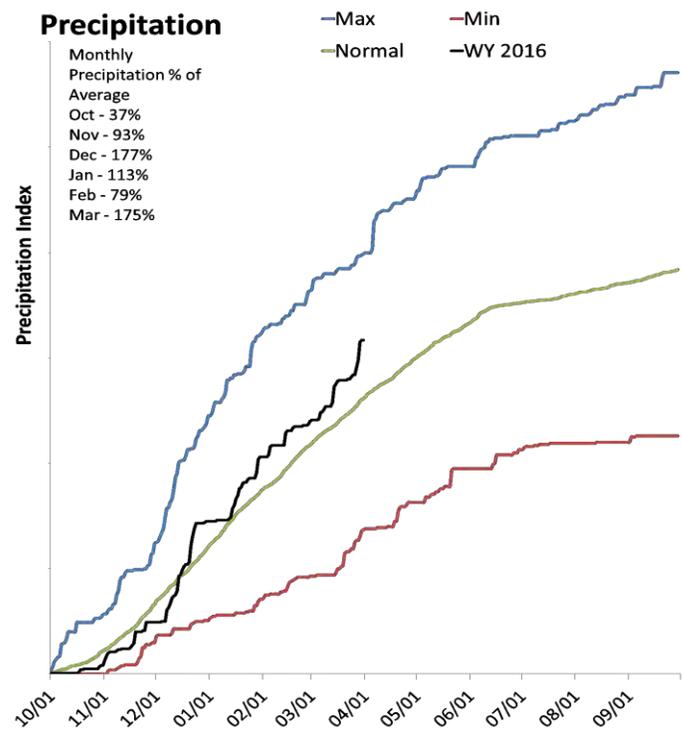
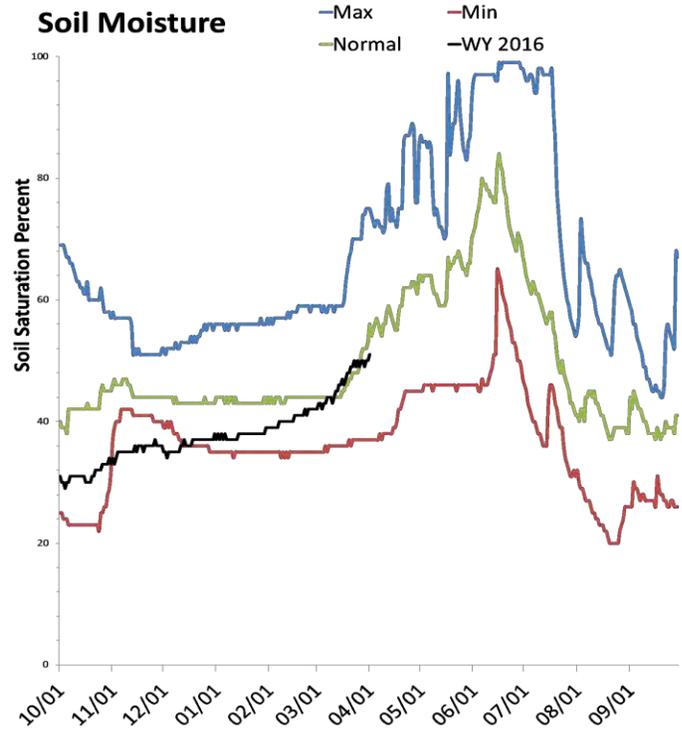
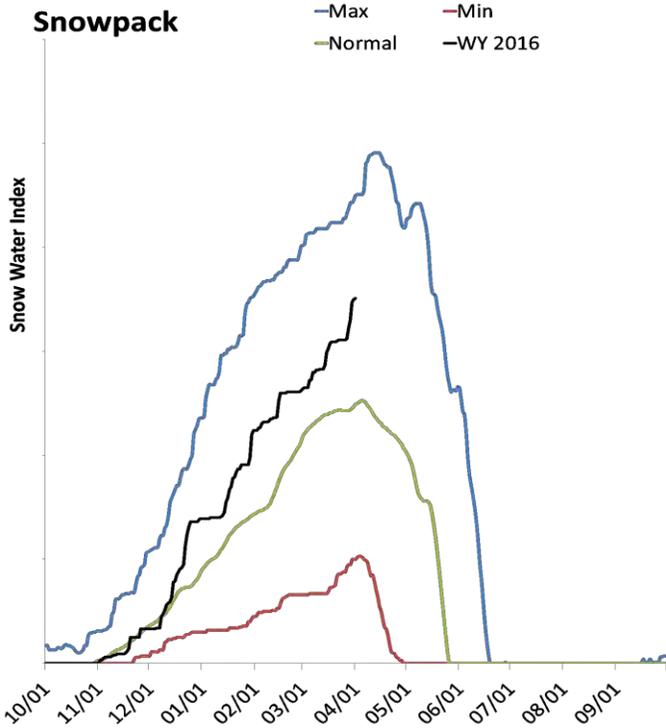
Bear basin



Raft River Basin

4/1/2016

Snowpack in the Raft River Basin is much above normal at 141% of normal, compared to 98% last year. Precipitation in March was much above average at 175%, which brings the seasonal accumulation (Oct-Mar) to 121% of average. Soil moisture is at 50% compared to 30% last year. The forecast streamflow volume for Dunn Creek is 100% of average.



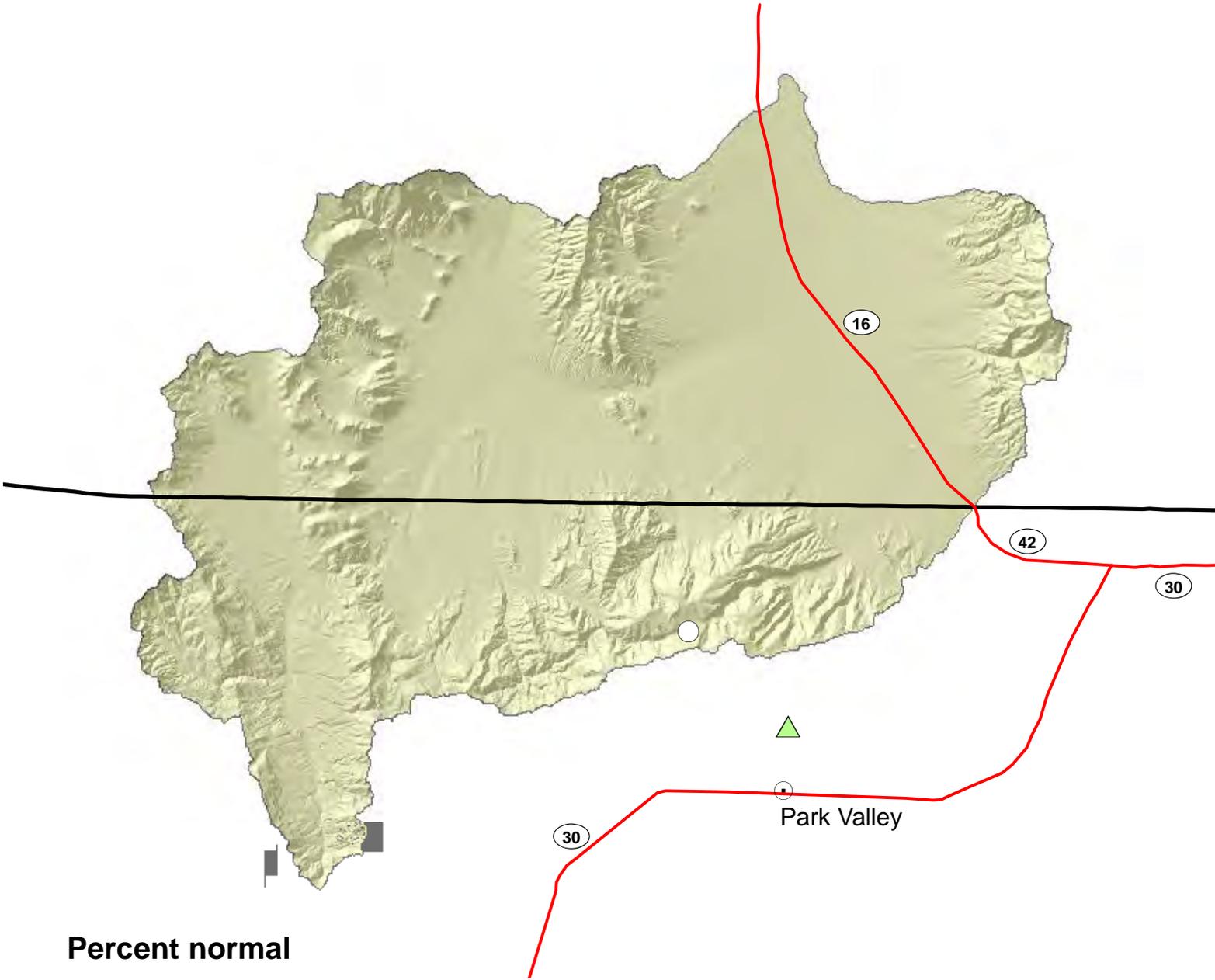
**Raft River
Streamflow Forecasts - April 1, 2016**

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	0.2	1.71	2.9	100%	4.1	5.8	2.9

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

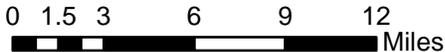
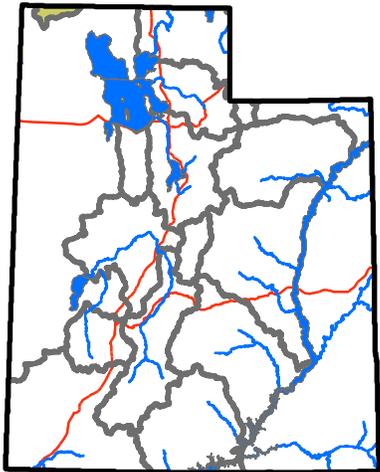
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Raft	2	121%	79%

Raft basin



Percent normal

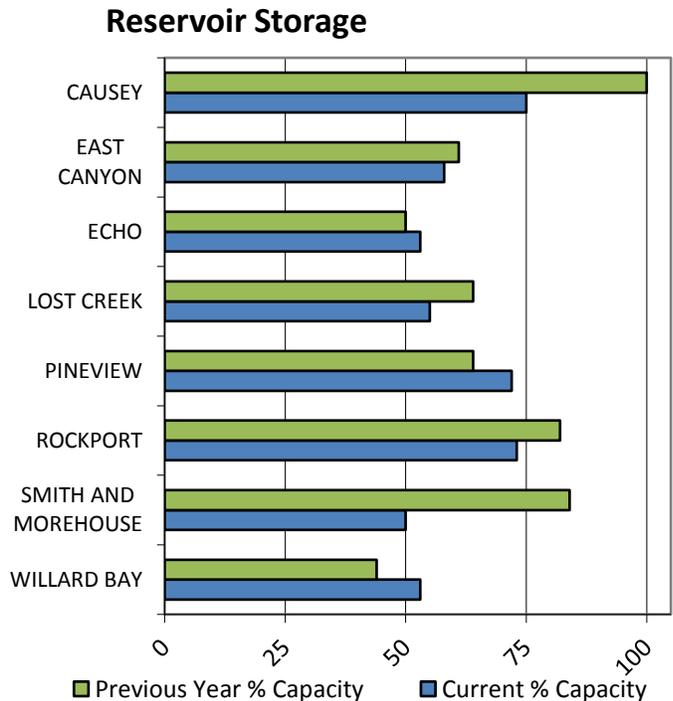
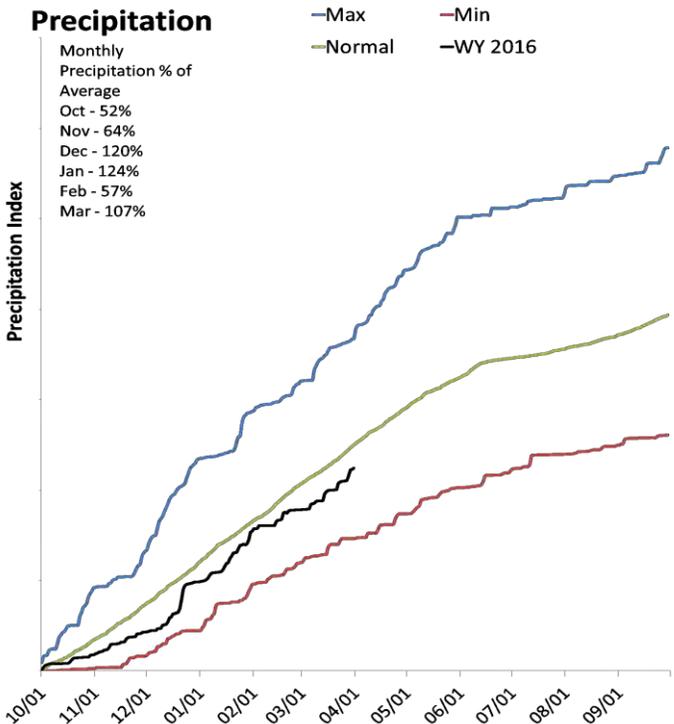
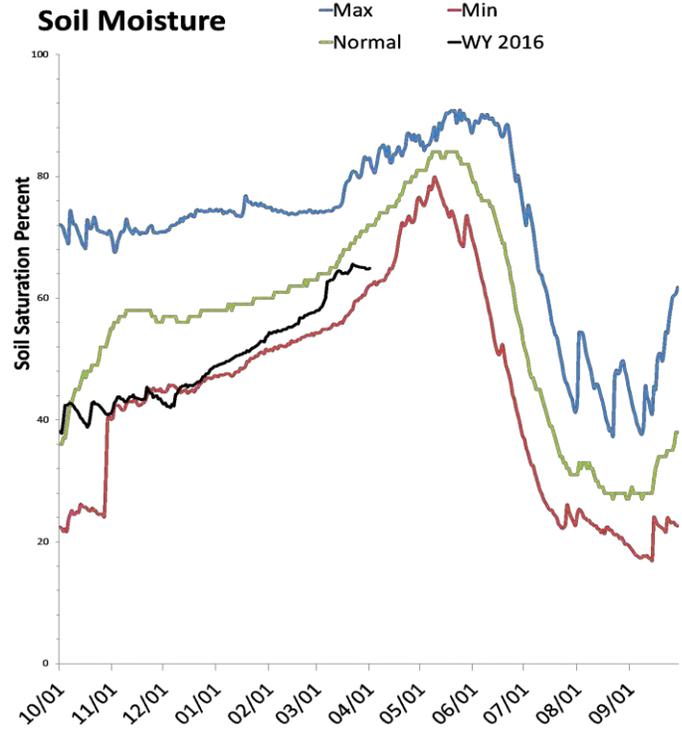
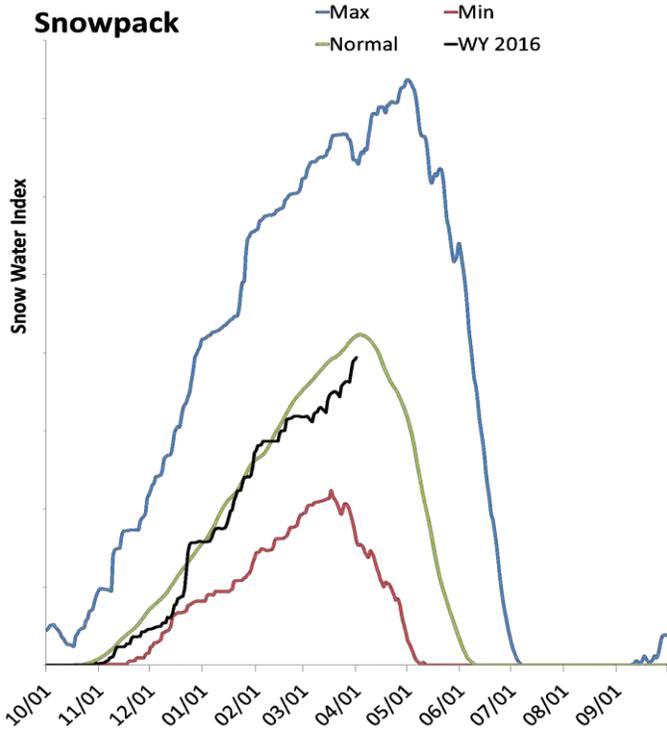
- < 50%
 - 50 - 69%
 - 70 - 89%
 - 90 - 109%
 - 110 - 129%
 - 130 - 149%
 - > 150%
 - no % avail.
- SNOTEL sites
 - Forecast points
 - Rivers
 - Highways
 - Cities



Weber & Ogden River Basins

4/1/2016

Snowpack in the Weber & Ogden River Basins is near normal at 93% of normal, compared to 37% last year. Precipitation in March was near average at 106%, which brings the seasonal accumulation (Oct-Mar) to 90% of average. Soil moisture is at 65% compared to 66% last year. Reservoir storage is at 53% of capacity, compared to 50% last year. Forecast streamflow volumes range from 78% to 83% of average. The surface water supply index is 51% for the Ogden River, 46% for the Weber River.



Weber Ogden Rivers Streamflow Forecasts - April 1, 2016

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	19.8	24	27	79%	30	34	34
Weber R nr Oakley	APR-JUL	64	82	94	80%	106	124	117
Rockport Reservoir Inflow	APR-JUL	64	87	102	83%	117	140	123
Chalk Ck at Coalville	APR-JUL	11.3	24	32	78%	40	53	41
Weber R nr Coalville	APR-JUL	62	86	102	81%	118	142	126
Echo Reservoir Inflow	APR-JUL	57	100	130	78%	160	205	166
Lost Ck Reservoir Inflow	APR-JUL	1.23	6.5	10	83%	13.5	18.8	12.1
East Canyon Ck nr Jeremy Ranch	APR-JUL	5.3	9.6	12.6	83%	15.6	19.9	15.2
East Canyon Ck nr Morgan	APR-JUL	10.1	17.2	22	79%	27	34	28
Weber R at Gateway	APR-JUL	72	175	245	78%	315	420	315
SF Ogden R nr Huntsville	APR-JUL	26	37	45	80%	53	64	56
Pineview Reservoir Inflow	APR-JUL	17.8	48	68	79%	88	118	86
Wheeler Ck nr Huntsville	APR-JUL	2.3	4	5.1	81%	6.3	8	6.3
Centerville Ck	APR-JUL	0.64	0.92	1.1	81%	1.29	1.56	1.35

- 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 March, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Causey Reservoir	5.3	7.1	3.2	7.1
East Canyon Reservoir	28.7	30.1	36.4	49.5
Echo Reservoir	39.2	37.1	50.2	73.9
Lost Creek Reservoir	12.4	14.5	12.6	22.5
Pineview Reservoir	79.5	71.0	62.8	110.1
Rockport Reservoir	44.7	49.9	37.6	60.9
Willard Bay	113.2	94.2	147.7	215.0
Smith And Morehouse Reservoir	4.1	6.8	3.6	81.0
Basin-wide Total	327.1	310.6	354.1	620.0
# of reservoirs	8	8	8	8

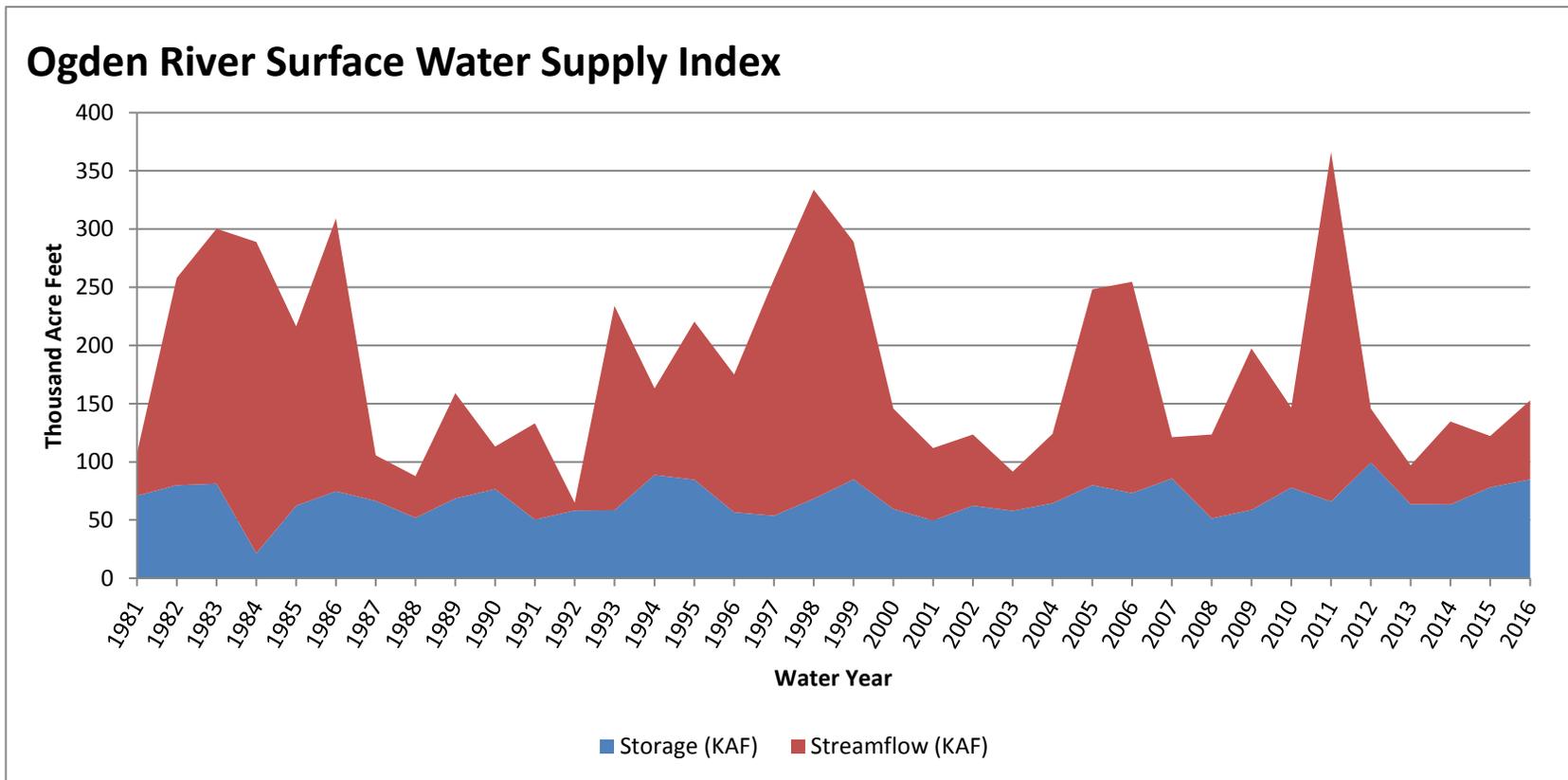
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Upper Weber	11	101%	49%
Lower Weber	7	87%	36%
Ogden	5	98%	30%
Lost Creek	3	110%	48%

April 1, 2016

Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Ogden River	84.86	68.00	152.86	51	0.11	00, 10, 89, 94

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

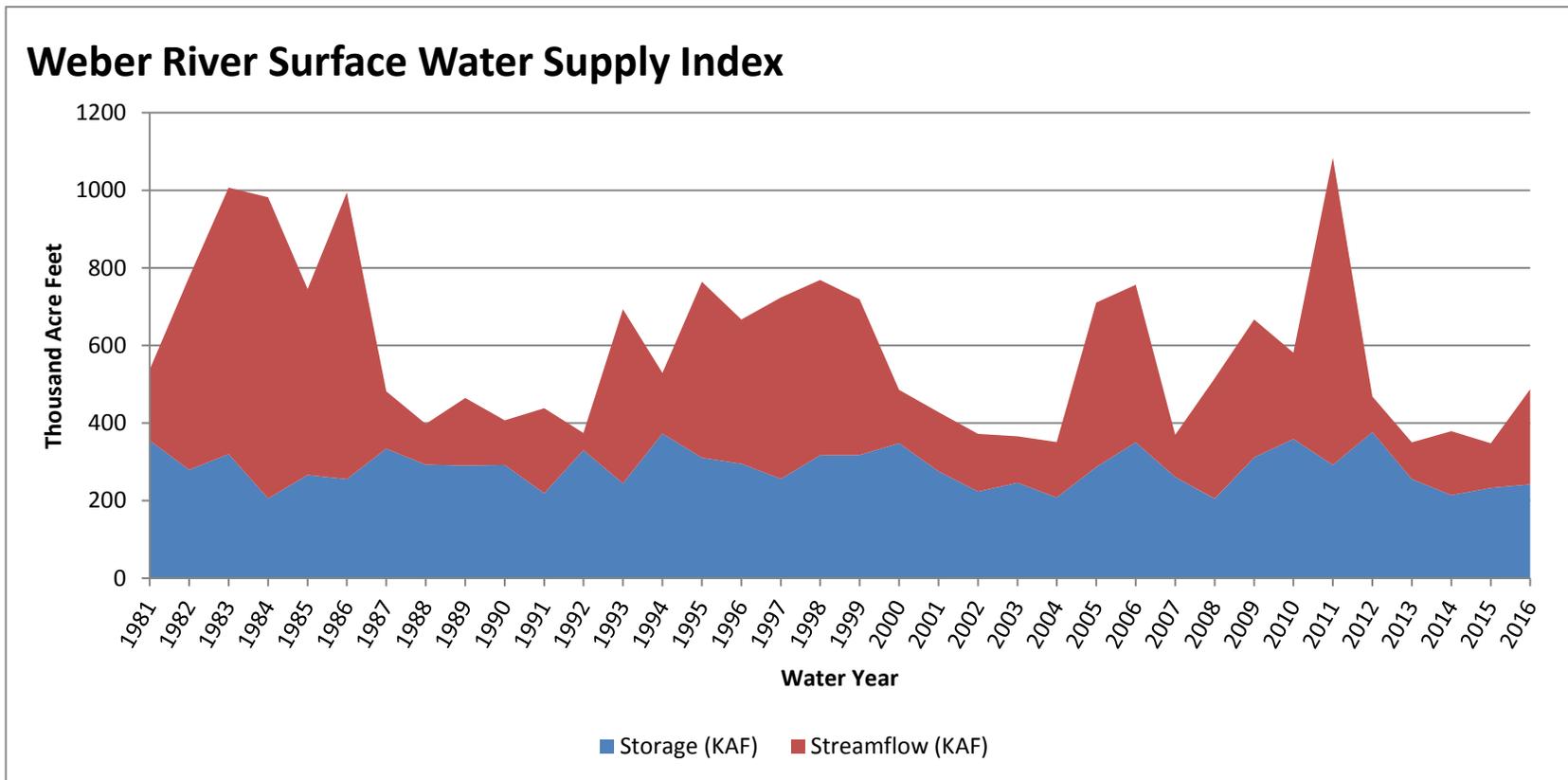


April 1, 2016

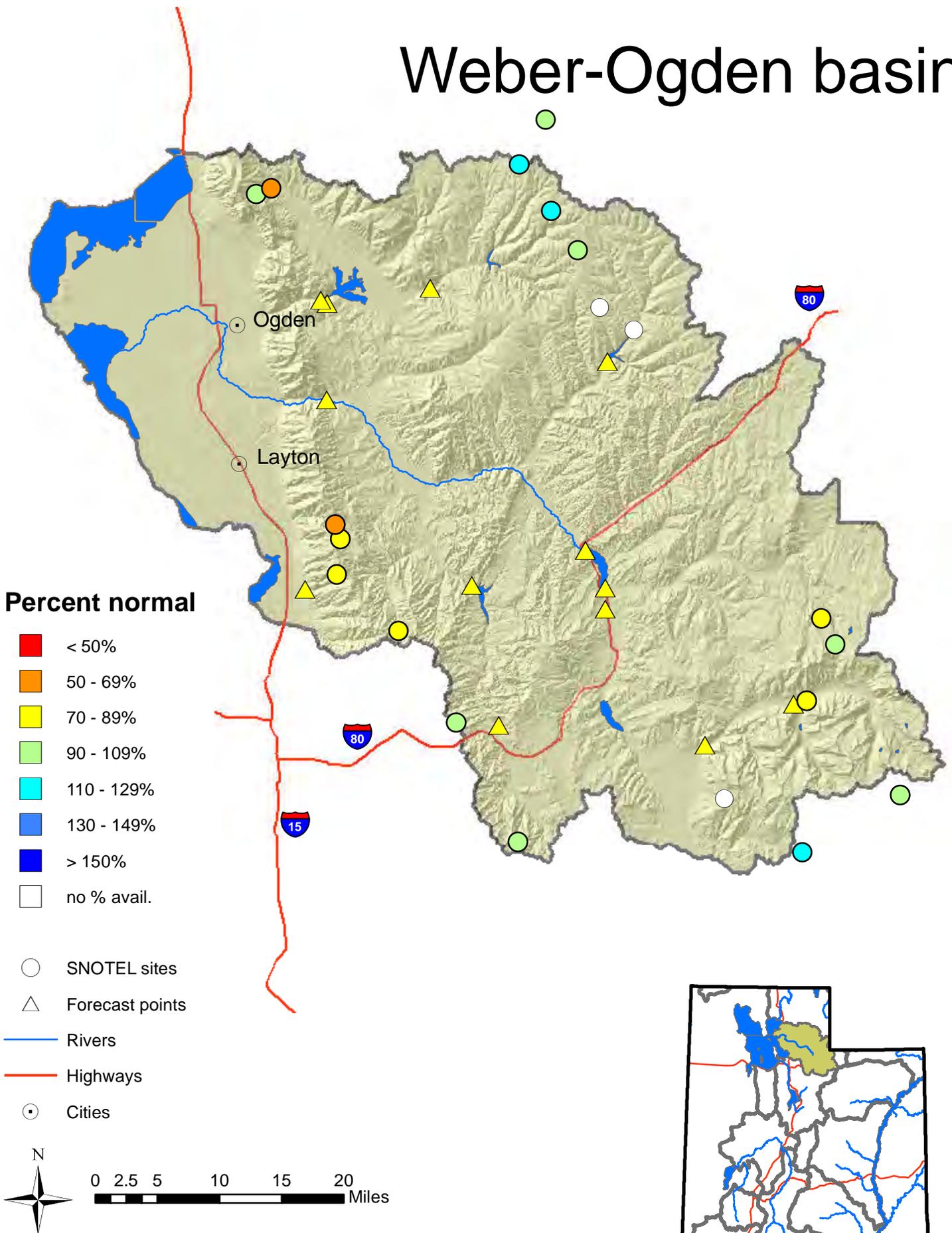
Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Weber River	242.25	245.00	487.25	46	-0.34	87, 00, 08, 94

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



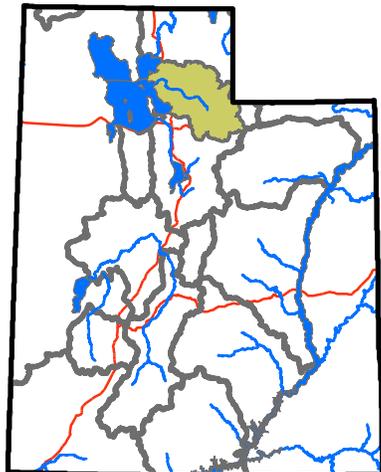
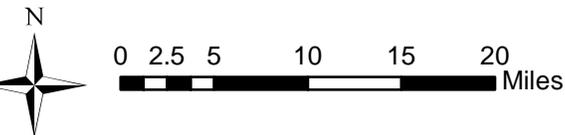
Weber-Ogden basin



Percent normal

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

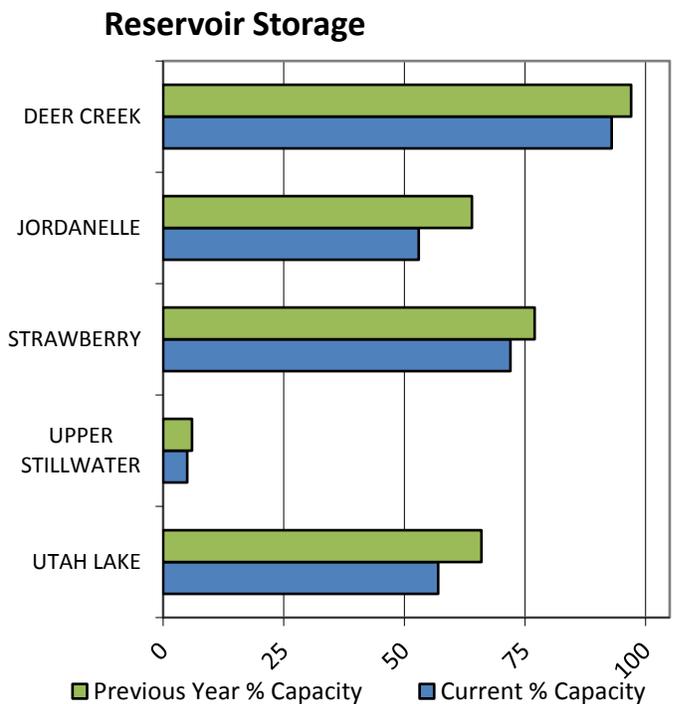
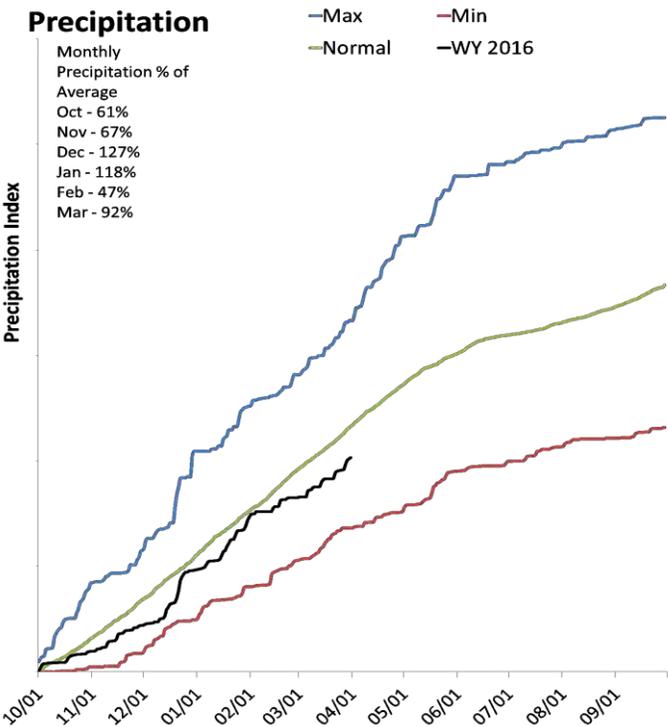
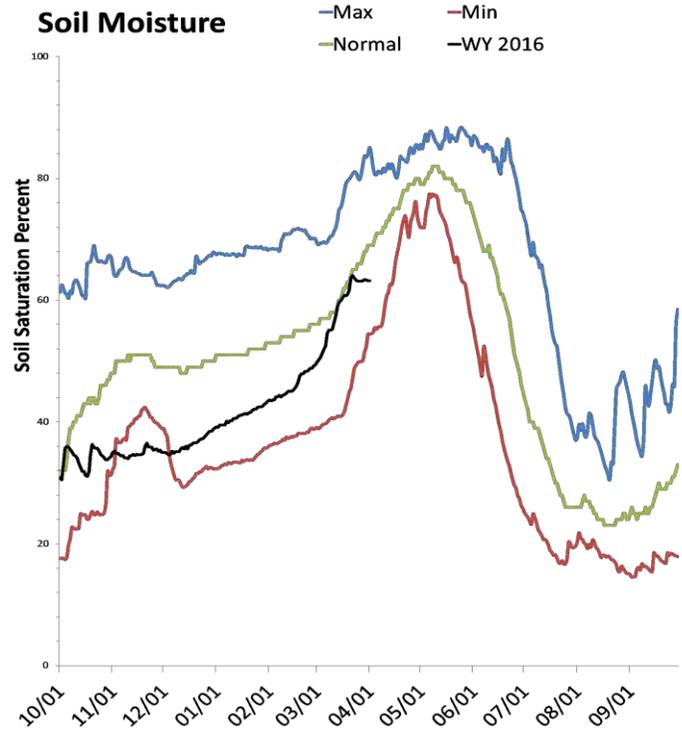
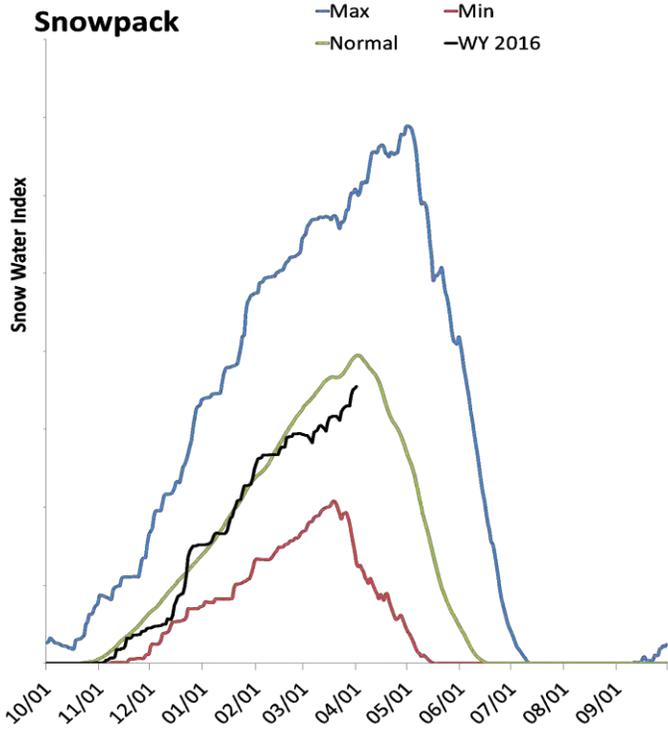
- SNOTEL sites
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Provo & Jordan River Basins

4/1/2016

Snowpack in the Provo & Jordan River Basins is near normal at 90% of normal, compared to 32% last year. Precipitation in March was near average at 92%, which brings the seasonal accumulation (Oct-Mar) to 87% of average. Soil moisture is at 63% compared to 70% last year. Reservoir storage is at 66% of capacity, compared to 72% last year. Forecast streamflow volumes range from 82% to 97% of average. The surface water supply index is 9% for the Provo River.



Provo R Utah Lake Jordan R Streamflow Forecasts - April 1, 2016

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)
Provo R at Woodland	APR-JUL	61	79	92	92%	106	129	100
Provo R at Hailstone	APR-JUL	60	81	98	91%	116	146	108
Provo R bl Deer Ck Dam	APR-JUL	64	88	104	90%	120	144	116
Spanish Fk at Castilla	APR-JUL	1.38	36	67	97%	98	143	69
American Fk ab Upper Powerplant	APR-JUL	14.2	22	27	84%	32	40	32
Utah Lake Inflow	APR-JUL	13.2	77	225	85%	375	590	265
W Canyon Ck nr Cedar Fort	APR-JUL	0.64	1.15	1.5	85%	1.85	2.4	1.76
Little Cottonwood Ck nr SLC	APR-JUL	25	30	34	89%	38	44	38
Big Cottonwood Ck nr SLC	APR-JUL	19.6	26	30	83%	34	40	36
Mill Ck nr SLC	APR-JUL	1.99	4	5.4	84%	6.8	8.8	6.4
Parleys Ck nr SLC	APR-JUL	4	8.8	12	85%	15.2	20	14.2
Dell Fk nr SLC	APR-JUL	0.33	1.74	4.5	82%	7.3	11.3	5.5
Emigration Ck nr SLC	APR-JUL	0.19	2	3.3	83%	4.6	6.4	4
City Ck nr SLC	APR-JUL	2.3	4.8	6.5	84%	8.2	10.7	7.7
Salt Ck at Nephi	APR-JUL	2.3	6.3	9	95%	11.7	15.7	9.5

- 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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Deer Creek Reservoir	139.2	145.4	116.8	149.7
Strawberry Reservoir	801.2	849.7	665.1	1105.9
Utah Lake	494.7	571.3	816.5	870.9
Jordanelle Reservoir	169.2	204.3	239.4	320.0
Basin-wide Total	1604.2	1770.7	1837.8	2446.5
# of reservoirs	4	4	4	4

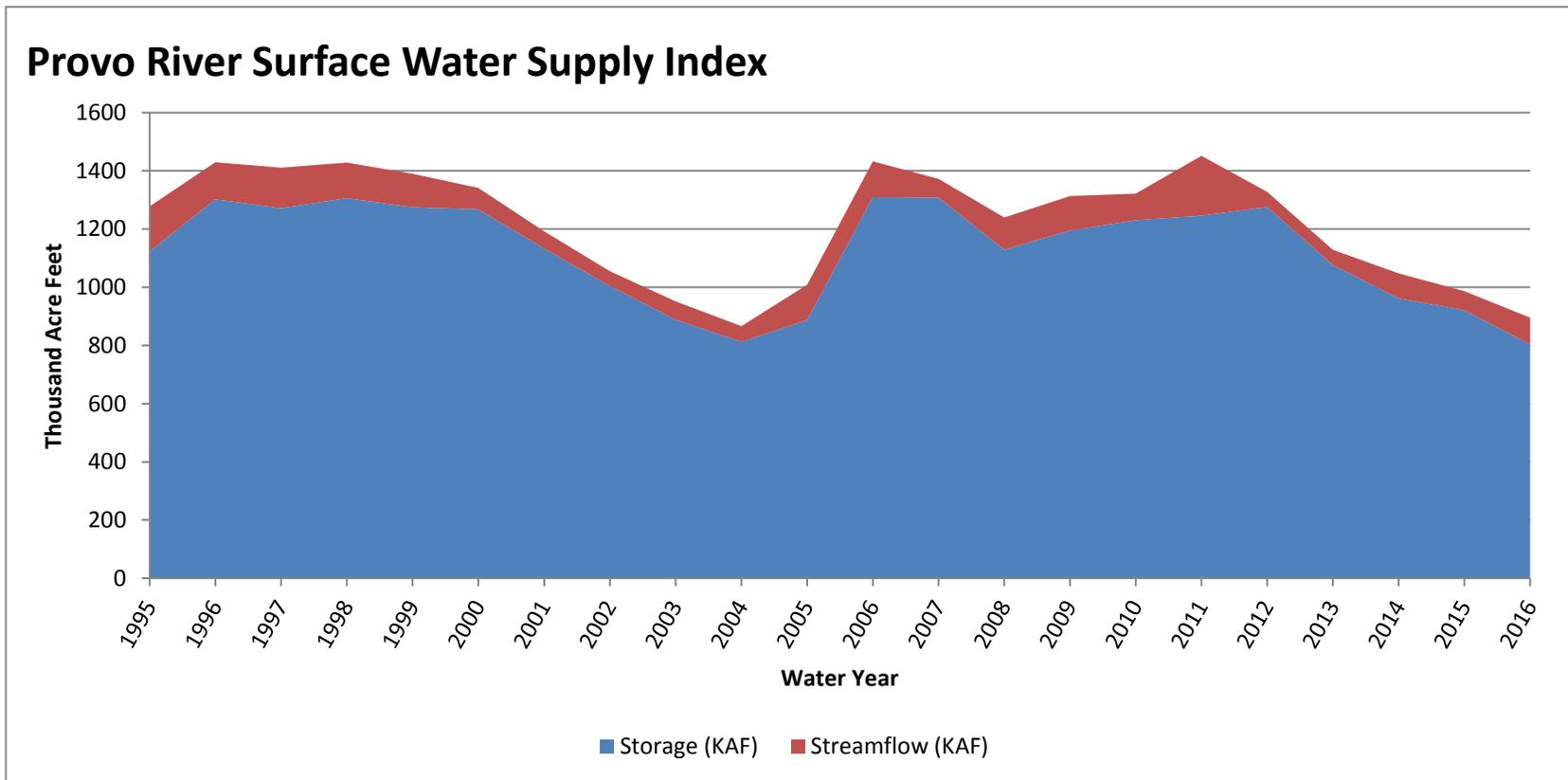
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Upper Provo	7	92%	42%
Jordan	16	91%	39%
Utah Lake	13	85%	38%
Spanish Fork	7	76%	19%
Six Creeks	15	90%	39%
Cottonwoods	7	90%	47%

April 1, 2016

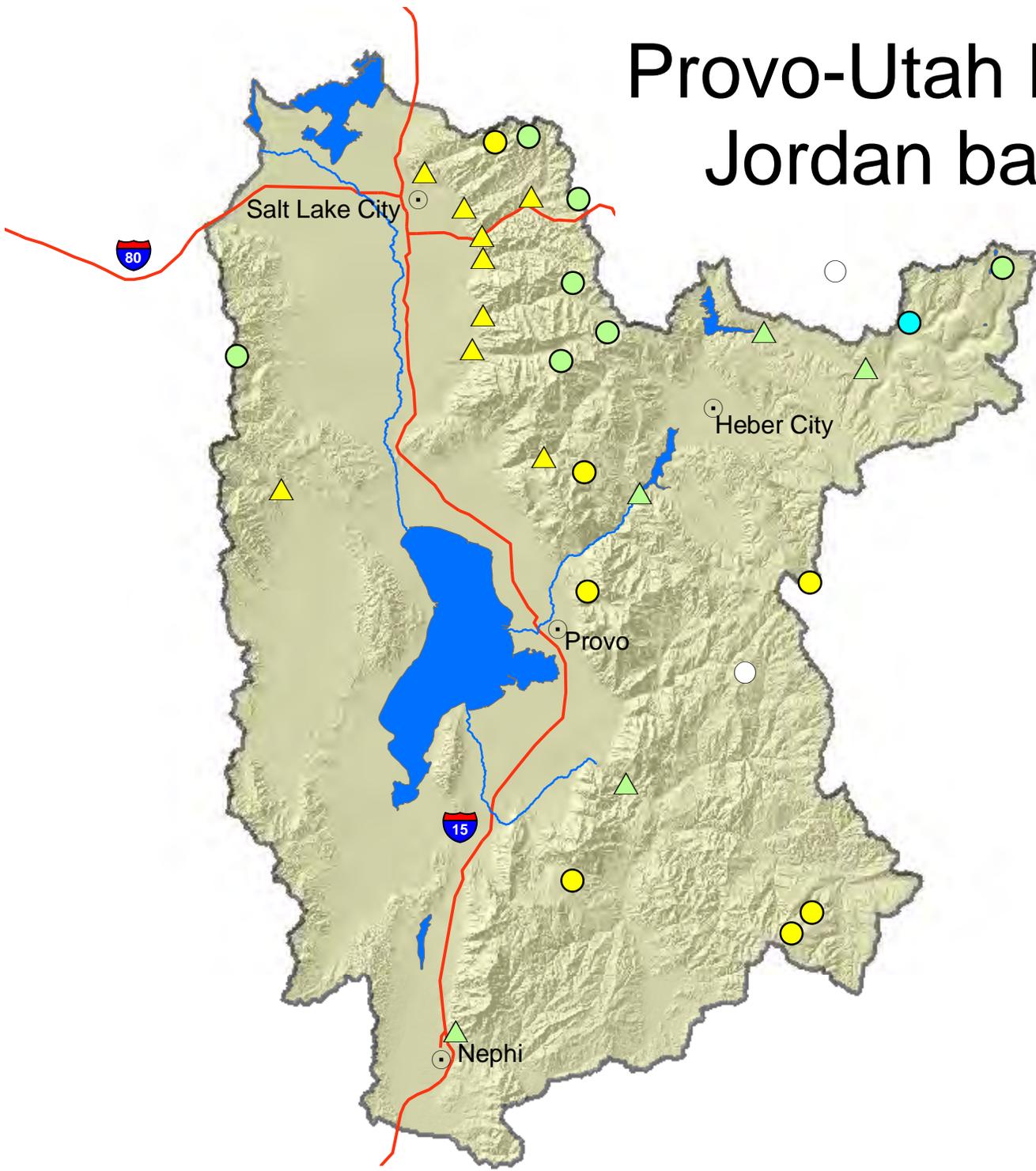
Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Provo River	803.07	92.00	895.07	9	-3.44	04, 03, 15, 05

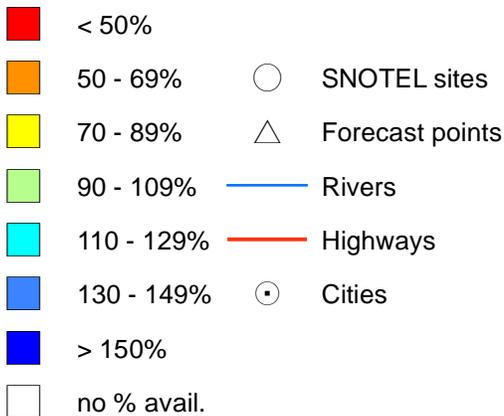
^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



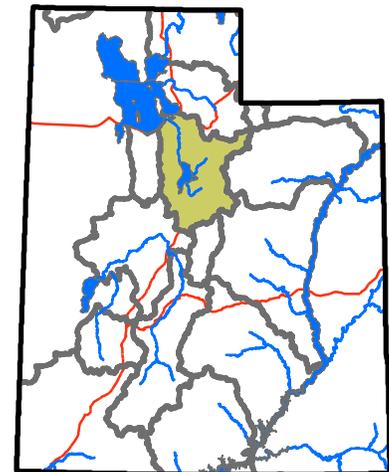
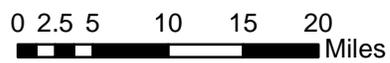
Provo-Utah Lake-Jordan basin



Percent normal



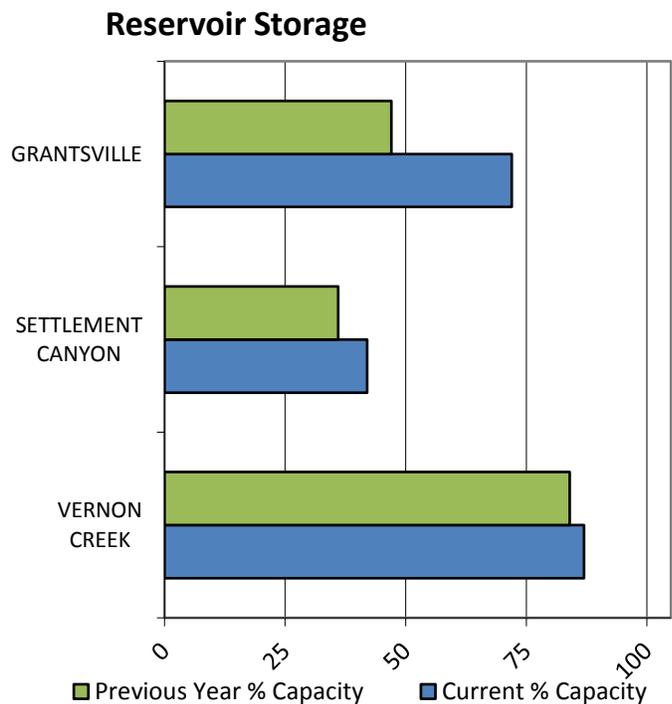
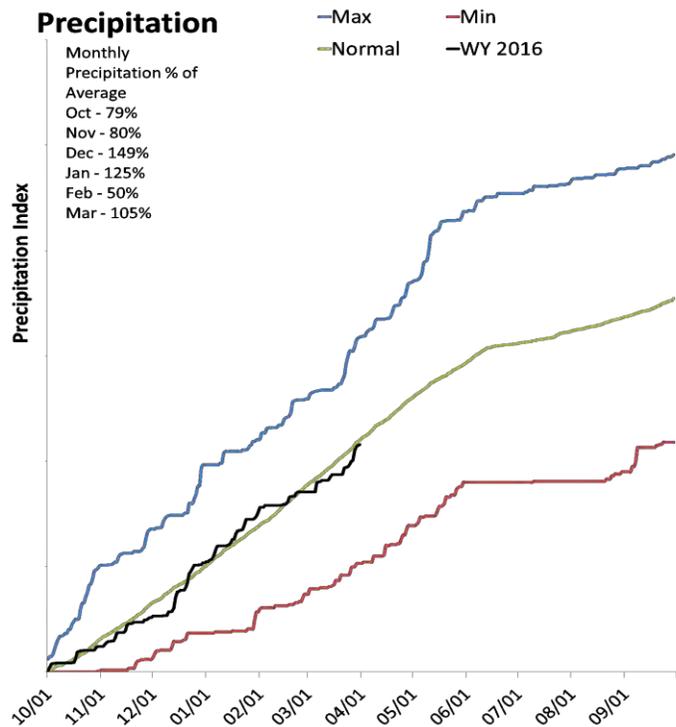
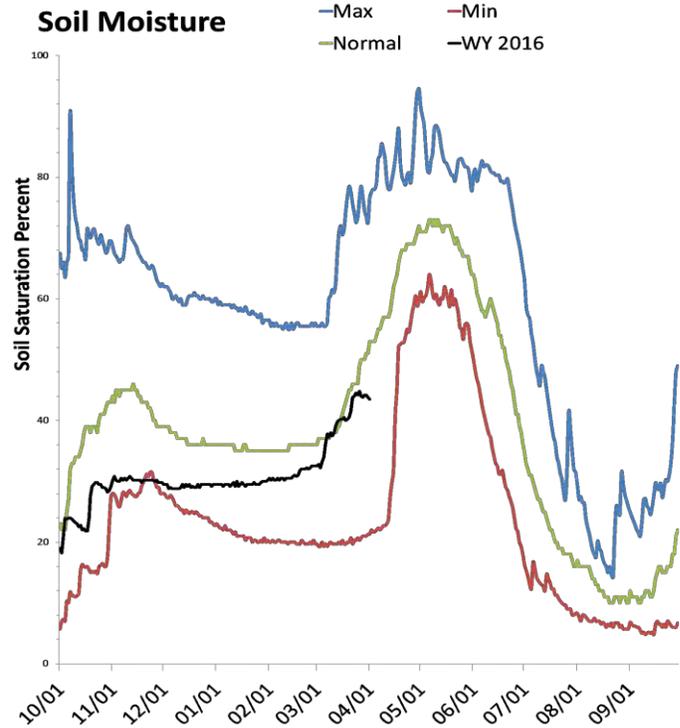
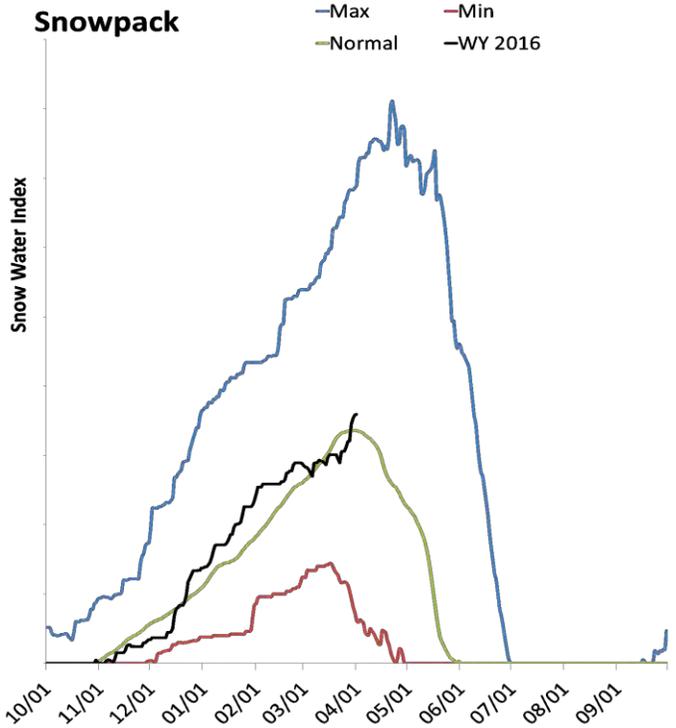
United States Department of Agriculture
 Natural Resources Conservation Service



Tooele & Vernon Creek Basins

4/1/2016

Snowpack in the Tooele & Vernon Creek Basins is near normal at 107% of normal, compared to 18% last year. Precipitation in March was near average at 106%, which brings the seasonal accumulation (Oct-Mar) to 98% of average. Soil moisture is at 44% compared to 51% last year. Reservoir storage is at 68% of capacity, compared to 50% last year. Forecast streamflow volumes range from 79% to 85% of average.



Tooele Valley Vernon Creek Streamflow Forecasts - April 1, 2016

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

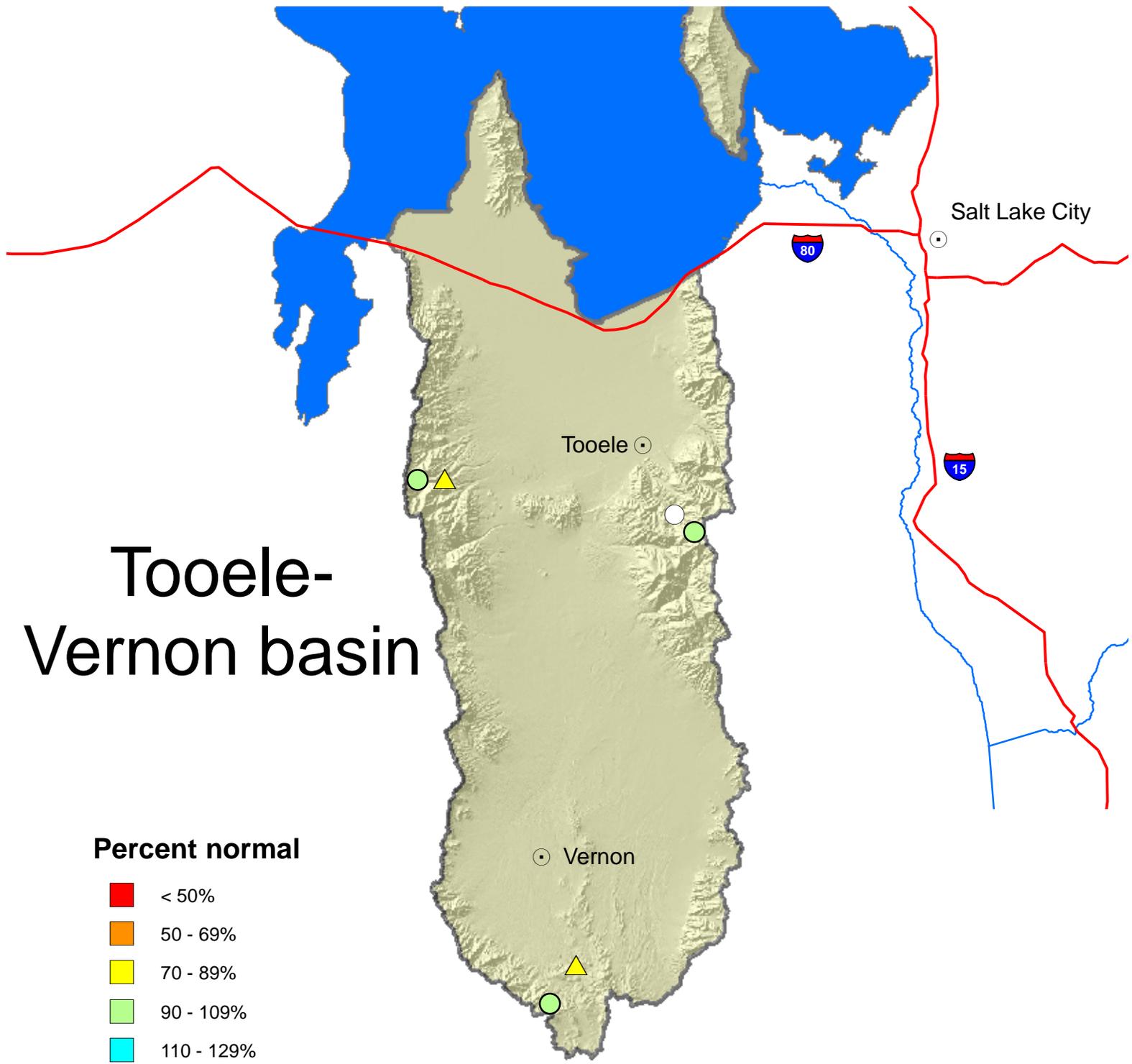
Tooele Valley Vernon Creek	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Vernon Ck nr Vernon	APR-JUL	0.1	0.69	1.1	79%	1.51	2.1	1.39
S Willow Ck nr Grantsville	APR-JUL	1.49	2.2	2.6	84%	3	3.7	3.1

- 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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Vernon Creek Reservoir	0.5	0.5	0.6	0.6
Settlement Canyon Reservoir	0.4	0.4	0.8	1.0
Grantsville Reservoir	2.4	1.6	2.5	3.3
Basin-wide Total	3.3	2.4	3.8	4.9
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Tooele	3	108%	25%
NW Utah	3	102%	34%

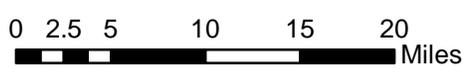
Tooele- Vernon basin



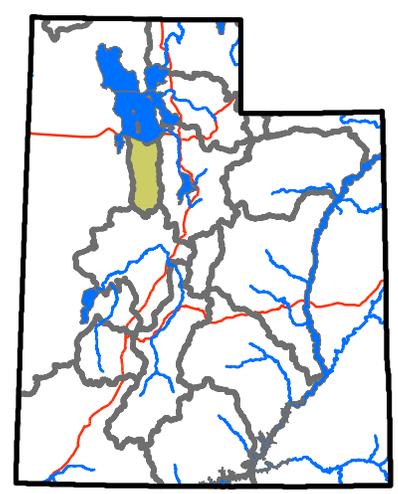
Percent normal

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

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



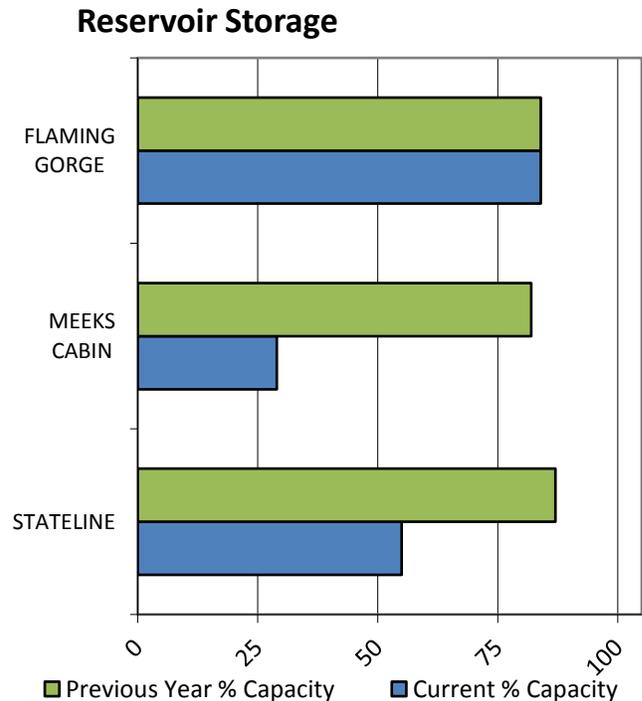
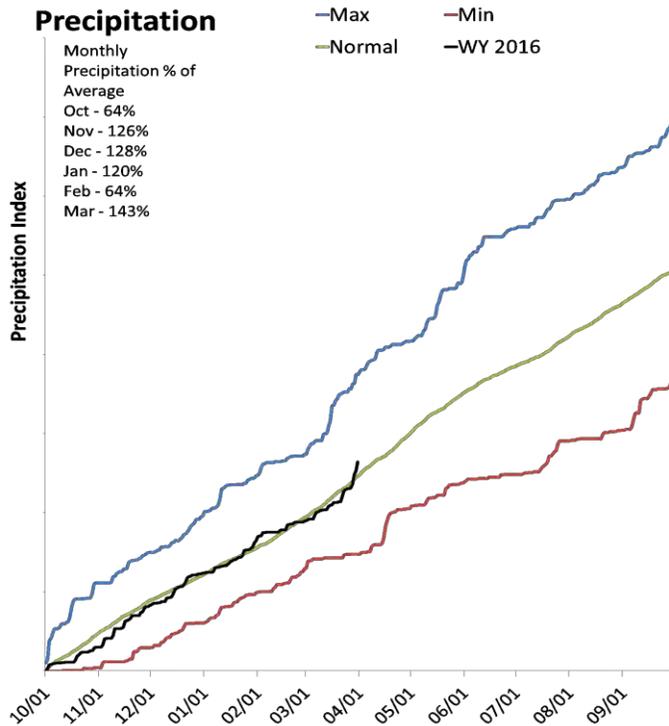
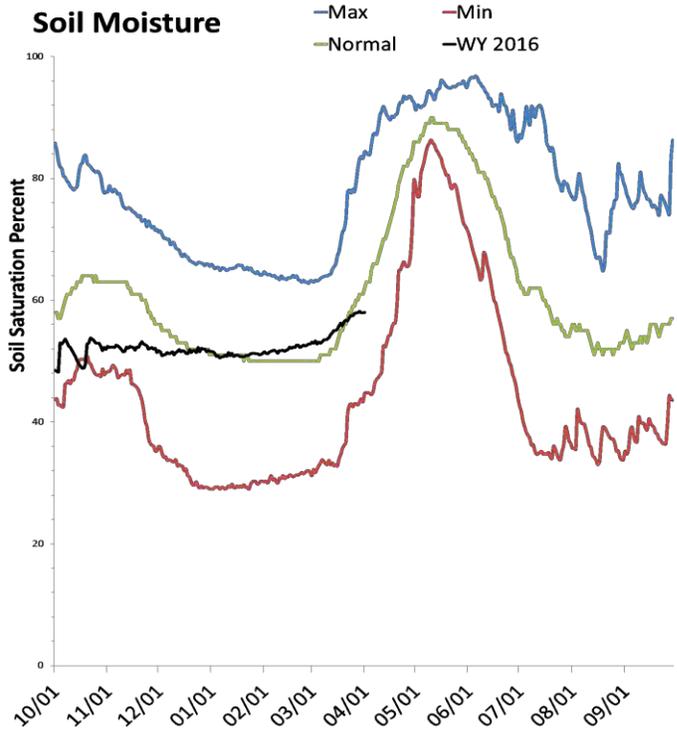
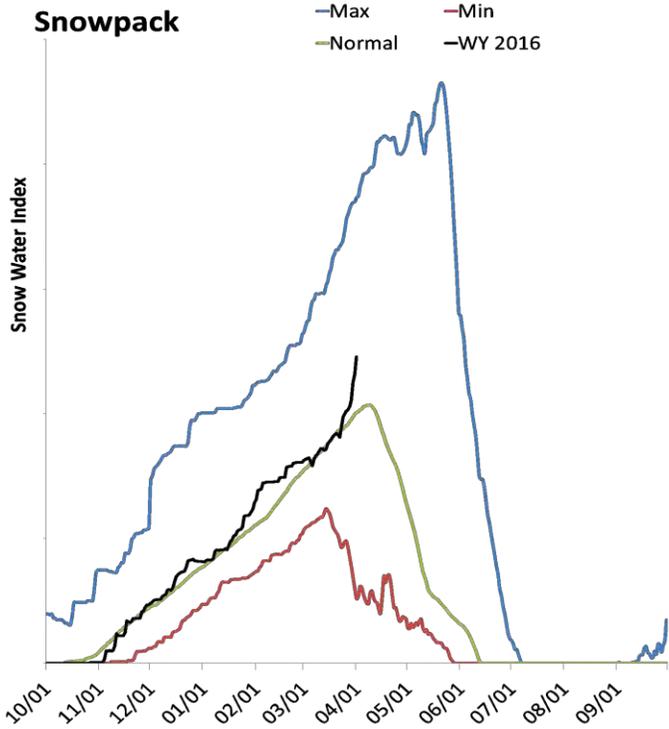
USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service



Northeastern Uintah Basin

4/1/2016

Snowpack in the Northeastern Uintah Basin is above normal at 122% of normal, compared to 26% last year. Precipitation in March was much above average at 142%, which brings the seasonal accumulation (Oct-Mar) to 107% of average. Soil moisture is at 62% compared to 60% last year. Reservoir storage is at 84% of capacity, compared to 84% last year. Forecast streamflow volumes range from 85% to 96% of average. The surface water supply index is 47% for the Blacks Fork, 59% for the Smiths Creek.



Northeastern Uintahs Streamflow Forecasts - April 1, 2016

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	62	75	85	96%	95	112	89
EF of Smiths Fork nr Robertson ²	APR-JUL	17.8	23	26	96%	30	36	27
Flaming Gorge Reservoir Inflow ²	APR-JUL	495	685	830	85%	990	1250	980
Uinta R bl Powerplant Diversion nr Neola ²	APR-JUL	31	46	58	78%	71	93	74
Whiterocks R nr Whiterocks	APR-JUL	26	36	44	81%	52	66	54
Ashley Ck nr Vernal	APR-JUL	24	33	41	82%	49	63	50
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	11	15	18	86%	21	27	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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Flaming Gorge Reservoir	3166.5	3165.7	3020.0	3749.0
Stateline Reservoir	6.6	10.4	5.3	12.0
Meeks Cabin Reservoir	9.5	26.6	13.4	32.5
Basin-wide Total	3182.6	3202.8	3038.7	3793.5
# of reservoirs	3	3	3	3

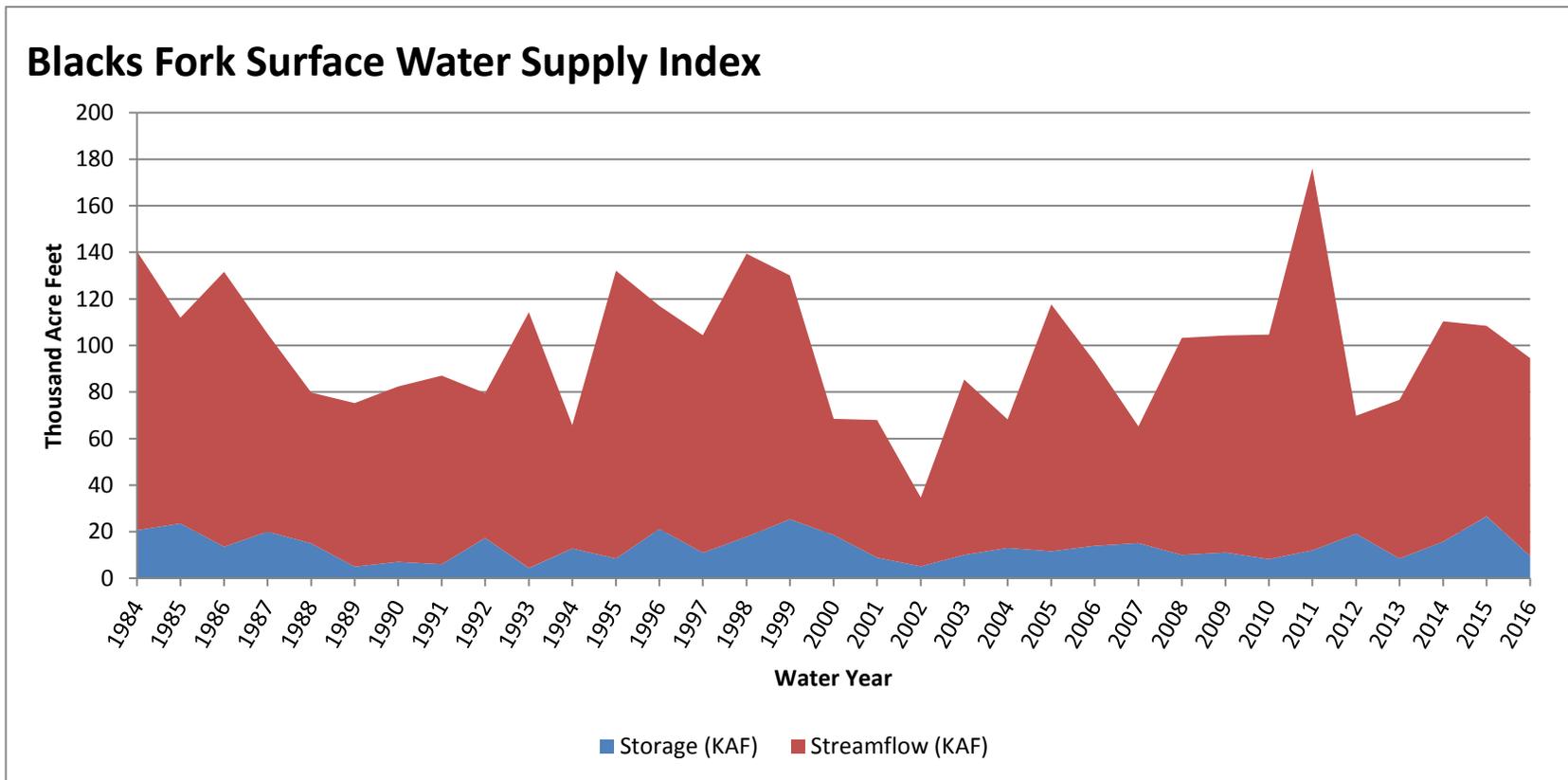
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Blacks Fk	5	112%	58%
Upper Green	2	154%	7%
Lower Green	2	99%	9%
Ashley Brush	4	97%	22%

April 1, 2016

Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Blacks Fork	9.53	85.00	94.53	47	-0.25	91, 06, 08, 09

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

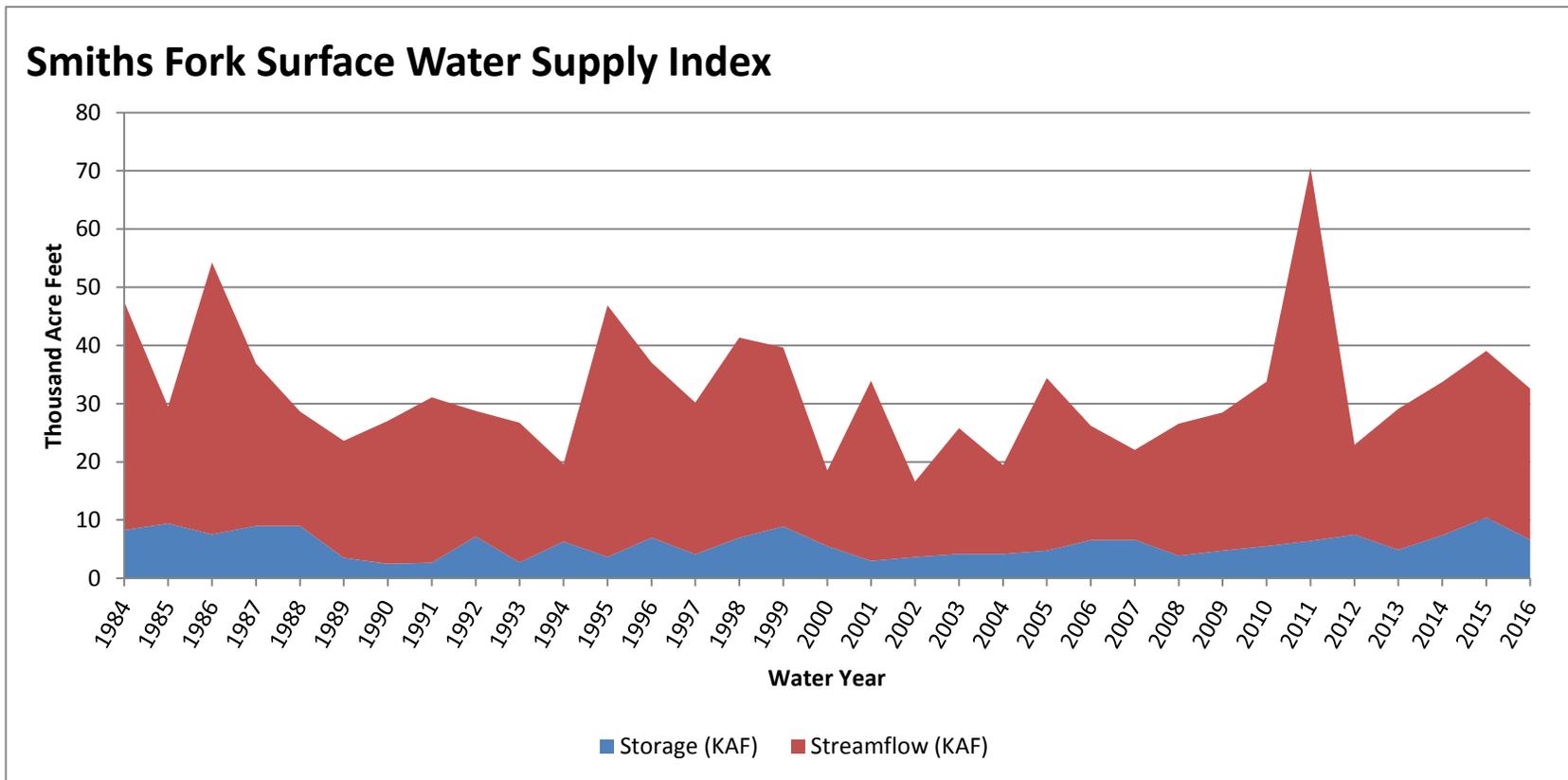


April 1, 2016

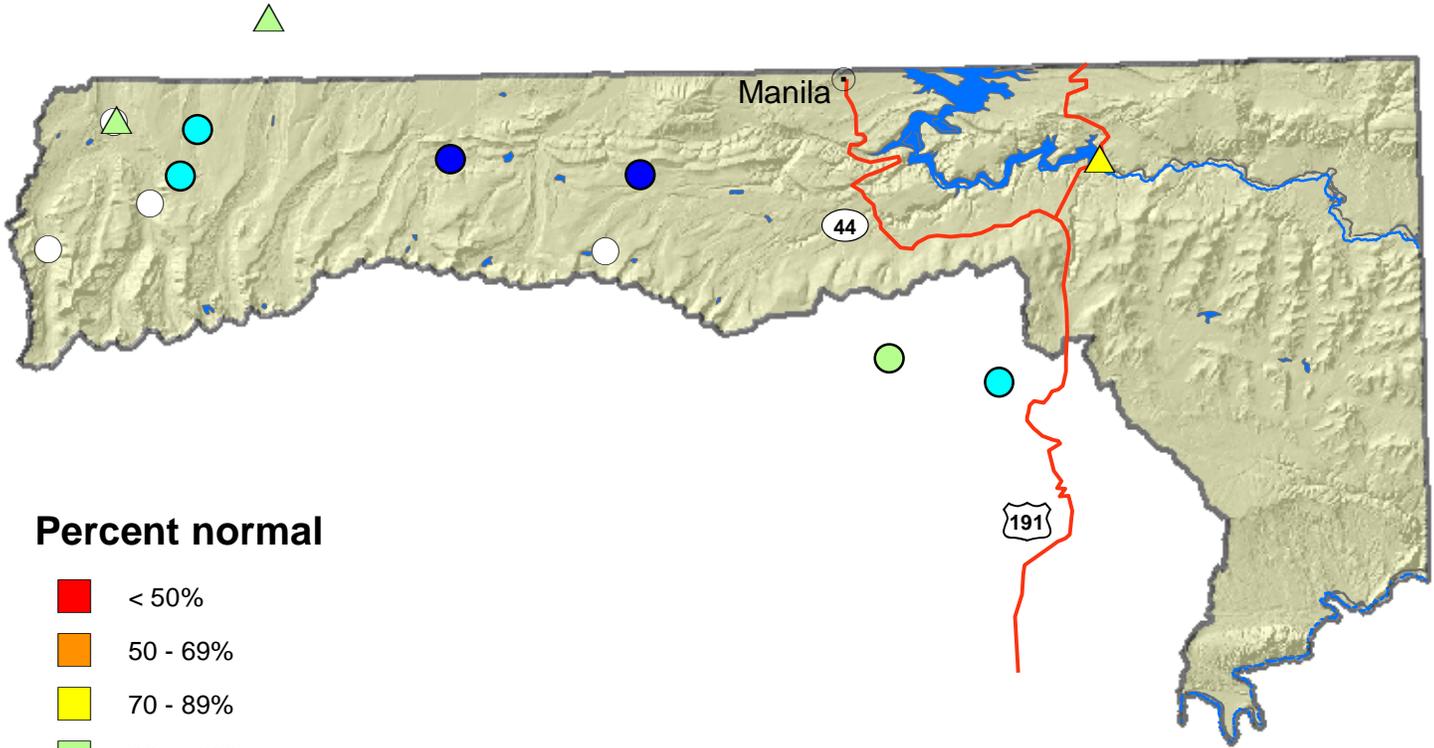
Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Smiths Fork	6.59	26.00	32.59	59	0.74	97, 91, 14, 10

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



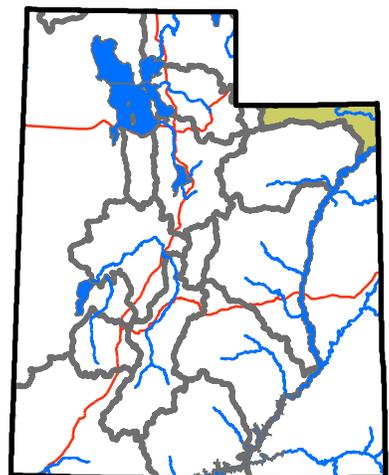
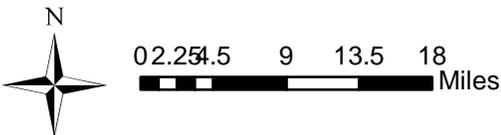
Northeastern Utah



Percent normal

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

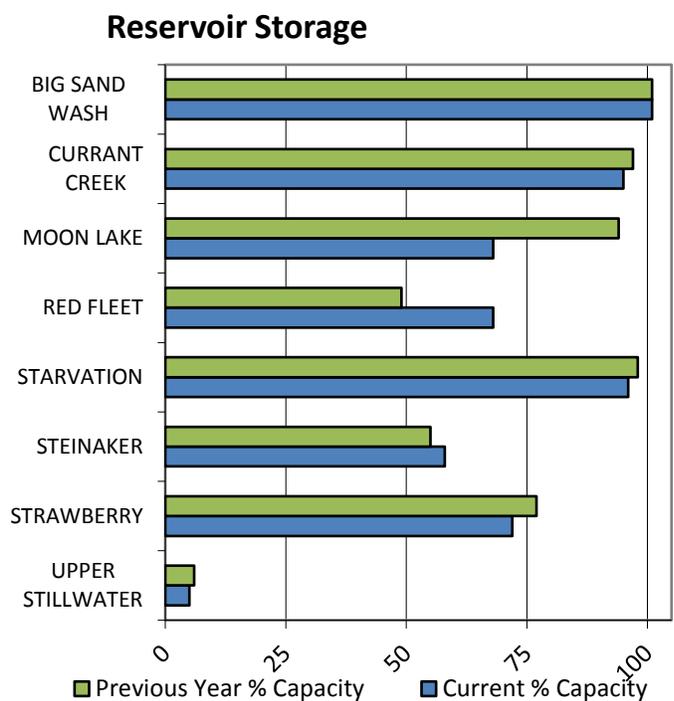
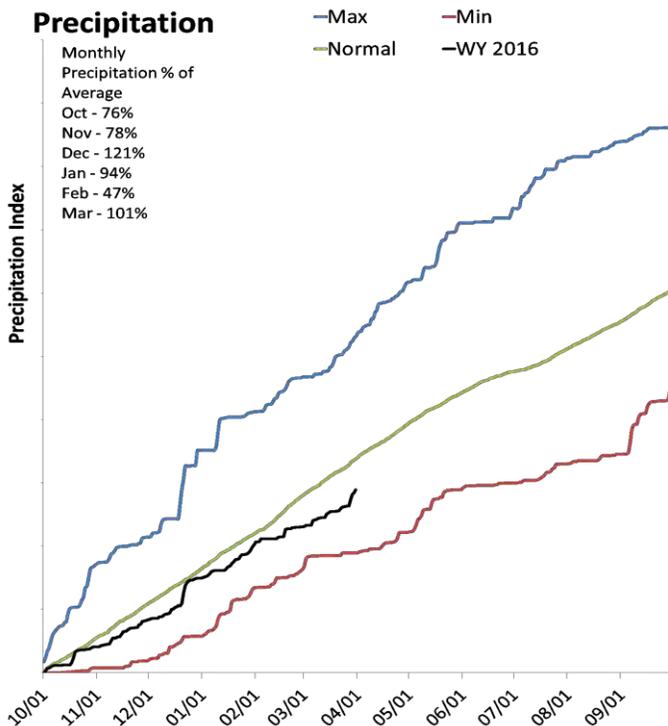
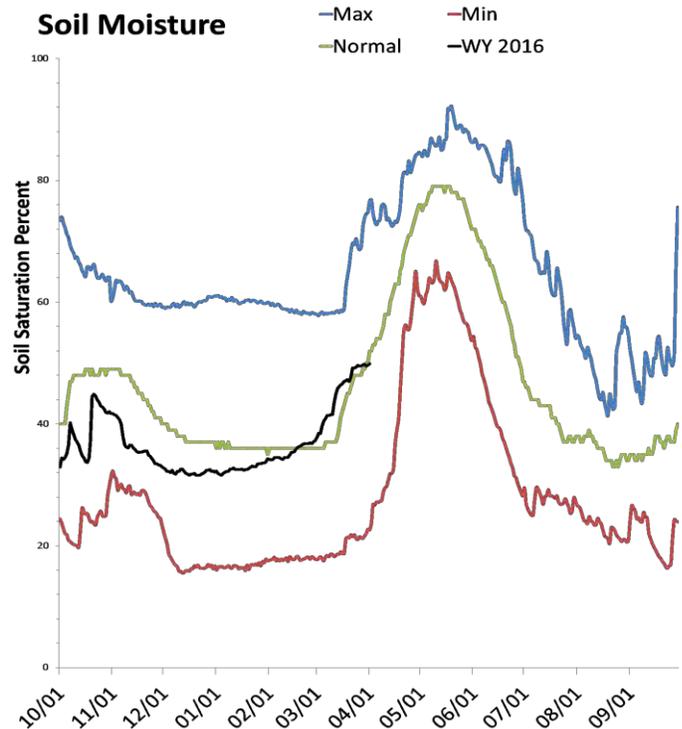
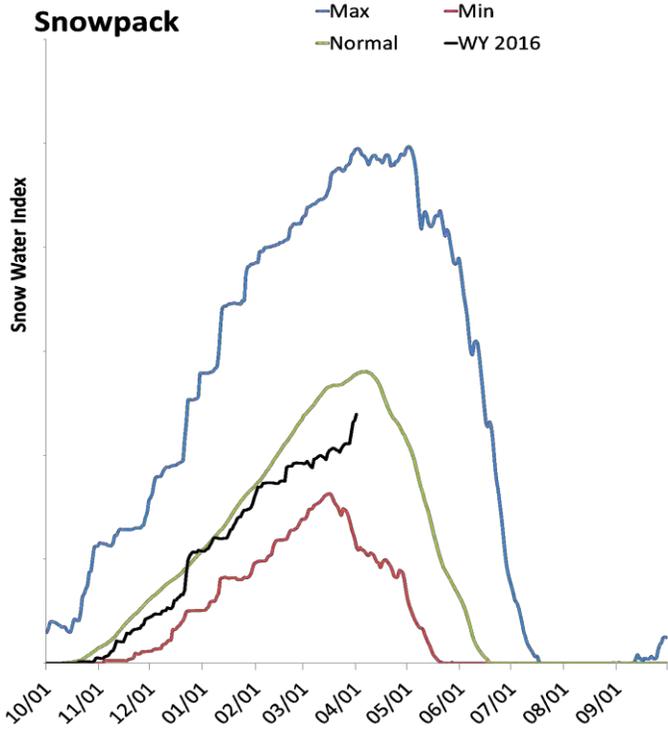
- SNOTEL sites
- △ Forecast points
- Rivers
- Highways
- Cities



Duchesne River Basin

4/1/2016

Snowpack in the Duchesne River Basin is below average at 86% of normal, compared to 40% last year. Precipitation in March was near average at 101%, which brings the seasonal accumulation (Oct-Mar) to 85% of average. Soil moisture is at 56% compared to 44% last year. Reservoir storage is at 73% of capacity, compared to 77% last year. Forecast streamflow volumes range from 46% to 86% of average. The surface water supply index is 68% for the Western Uintahs, 32% for the Eastern Uintahs.



Duchesne River Streamflow Forecasts - April 1, 2016

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)
WF Duchesne R at VAT Diversion	APR-JUL	7.5	10.1	12	65%	14.1	17.5	18.6
Duchesne R nr Tabiona ²	APR-JUL	56	70	80	74%	91	109	108
Upper Stillwater Reservoir Inflow ²	APR-JUL	48	57	64	86%	72	84	74
Rock Ck nr Mountain Home ²	APR-JUL	57	68	76	86%	84	97	88
Duchesne R ab Knight Diversion ²	APR-JUL	111	135	153	78%	172	200	195
Currant Ck Reservoir Inflow ²	APR-JUL	5.6	8.3	10.5	53%	12.9	16.9	20
Strawberry R nr Soldier Springs ²	APR-JUL	17.9	27	35	49%	44	58	72
Strawberry R nr Duchesne ²	APR-JUL	21	37	51	46%	67	94	112
Lake Fork R ab Moon Lake Reservoir	APR-JUL	34	44	51	84%	59	72	61
Lake Fk R BI Moon Lk nr Mountain Home ²	APR-JUL	39	47	54	82%	61	72	66
Yellowstone R nr Altonah	APR-JUL	33	42	49	80%	57	70	61
Duchesne R at Myton ²	APR-JUL	106	159	200	61%	245	325	330
Uinta R bl Powerplant Diversion nr Neola ²	APR-JUL	31	46	58	78%	71	93	74
Whiterocks R nr Whiterocks	APR-JUL	26	36	44	81%	52	66	54
Duchesne R nr Randlett ²	APR-JUL	108	175	230	60%	290	400	385
Ashley Ck nr Vernal	APR-JUL	24	33	41	82%	49	63	50
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	11	15	18	86%	21	27	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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Steinaker Reservoir	19.5	18.3	24.5	33.4
Red Fleet Reservoir	17.5	12.7	18.8	25.7
Big Sand Wash Reservoir	26.0	25.9		25.7
Upper Stillwater Reservoir	1.5	1.9	4.5	32.5
Starvation Reservoir	158.5	162.4	149.7	165.3
Moon Lake Reservoir	24.2	33.6	27.3	35.8
Currant Creek Reservoir	14.7	15.0	14.8	15.5
Strawberry Reservoir	801.2	849.7	665.1	1105.9
Basin-wide Total	1037.1	1093.7	904.7	1414.1
# of reservoirs	7	7	7	7

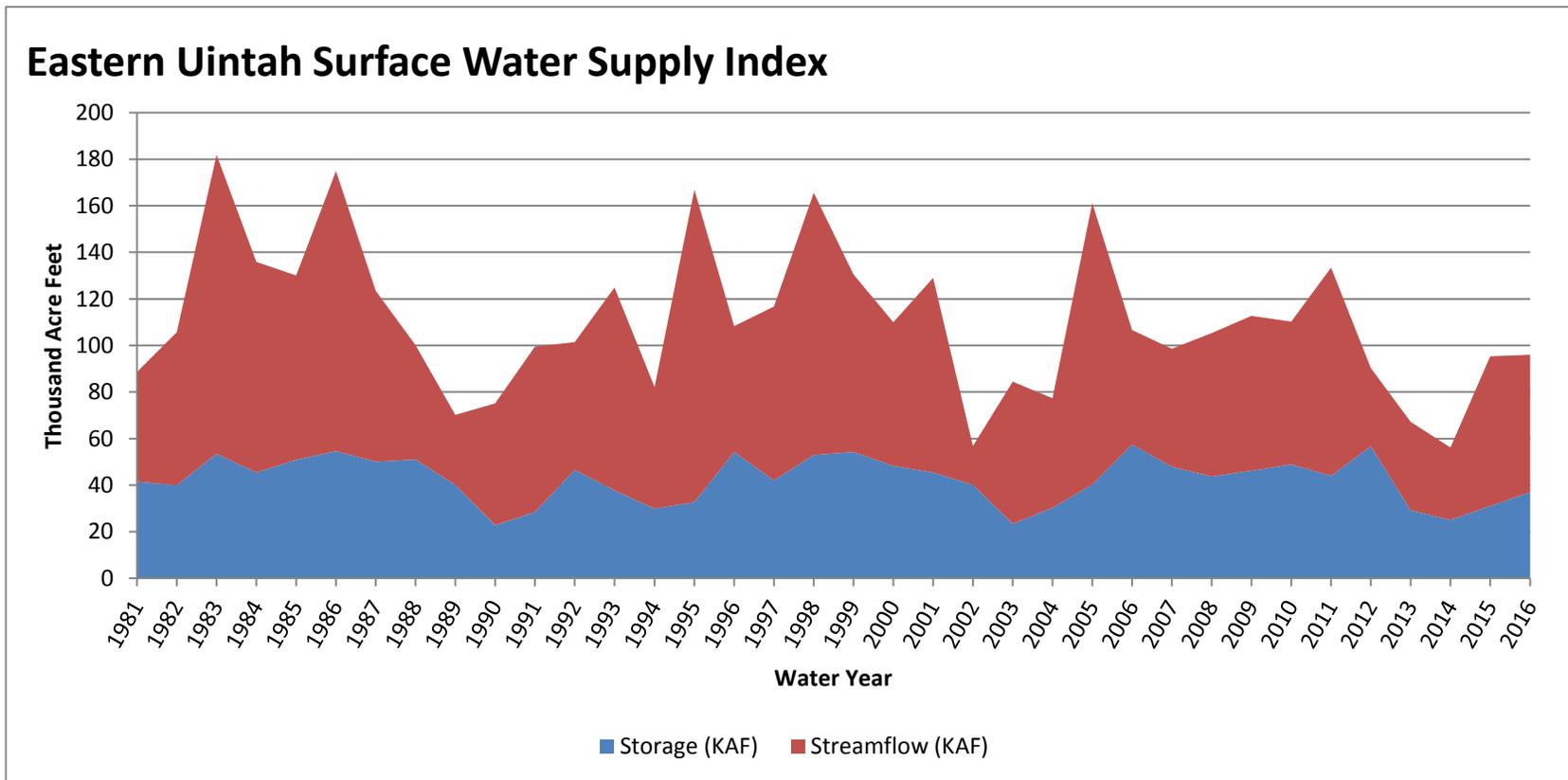
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Strawberry	5	74%	18%
Lakefork Yellowstone	7	95%	54%
Uintah Whiterocks	2	85%	36%

April 1, 2016

Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Eastern Uintah	36.98	59.00	95.98	32	-1.46	12, 15, 07, 91

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

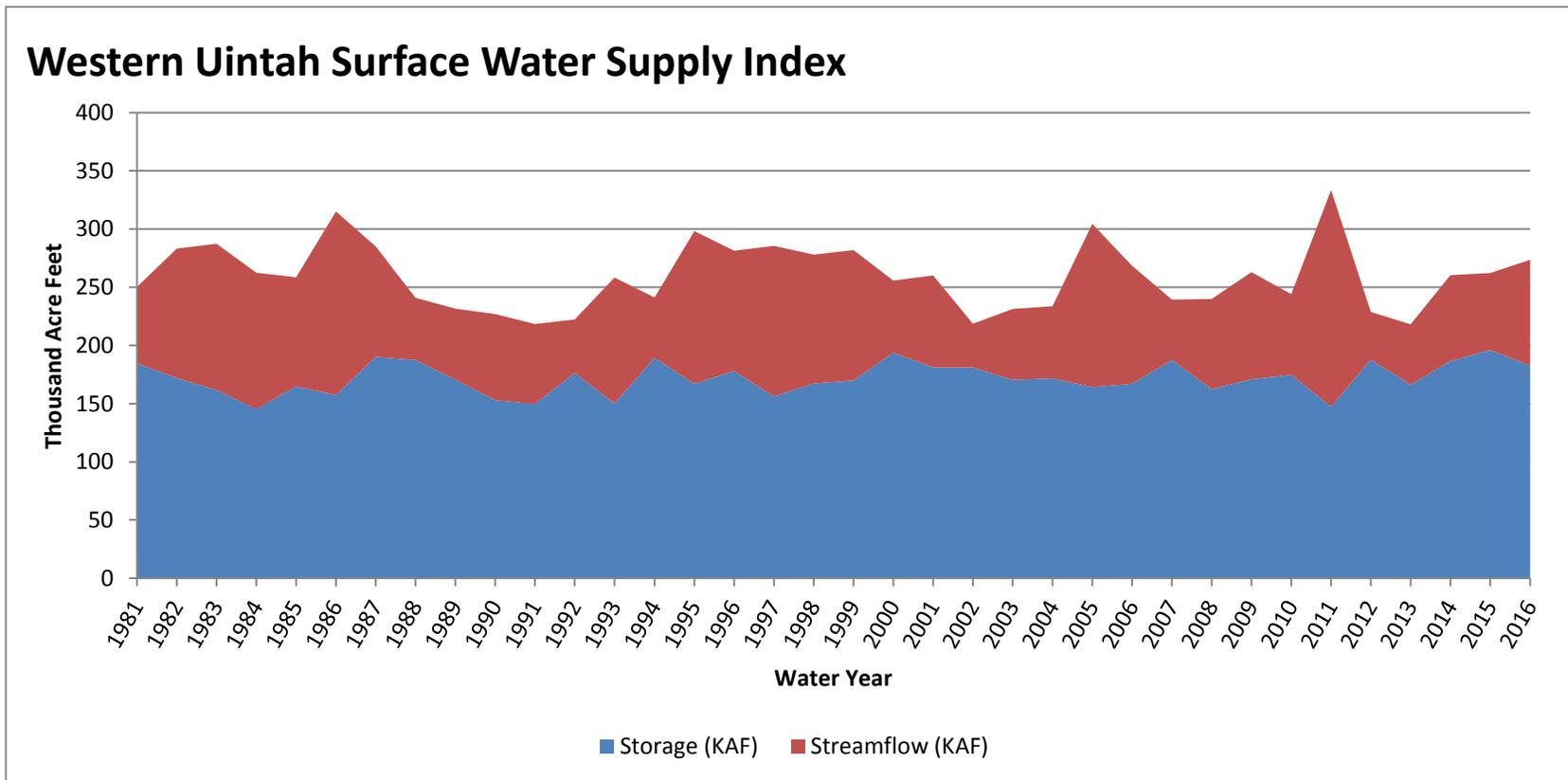


April 1, 2016

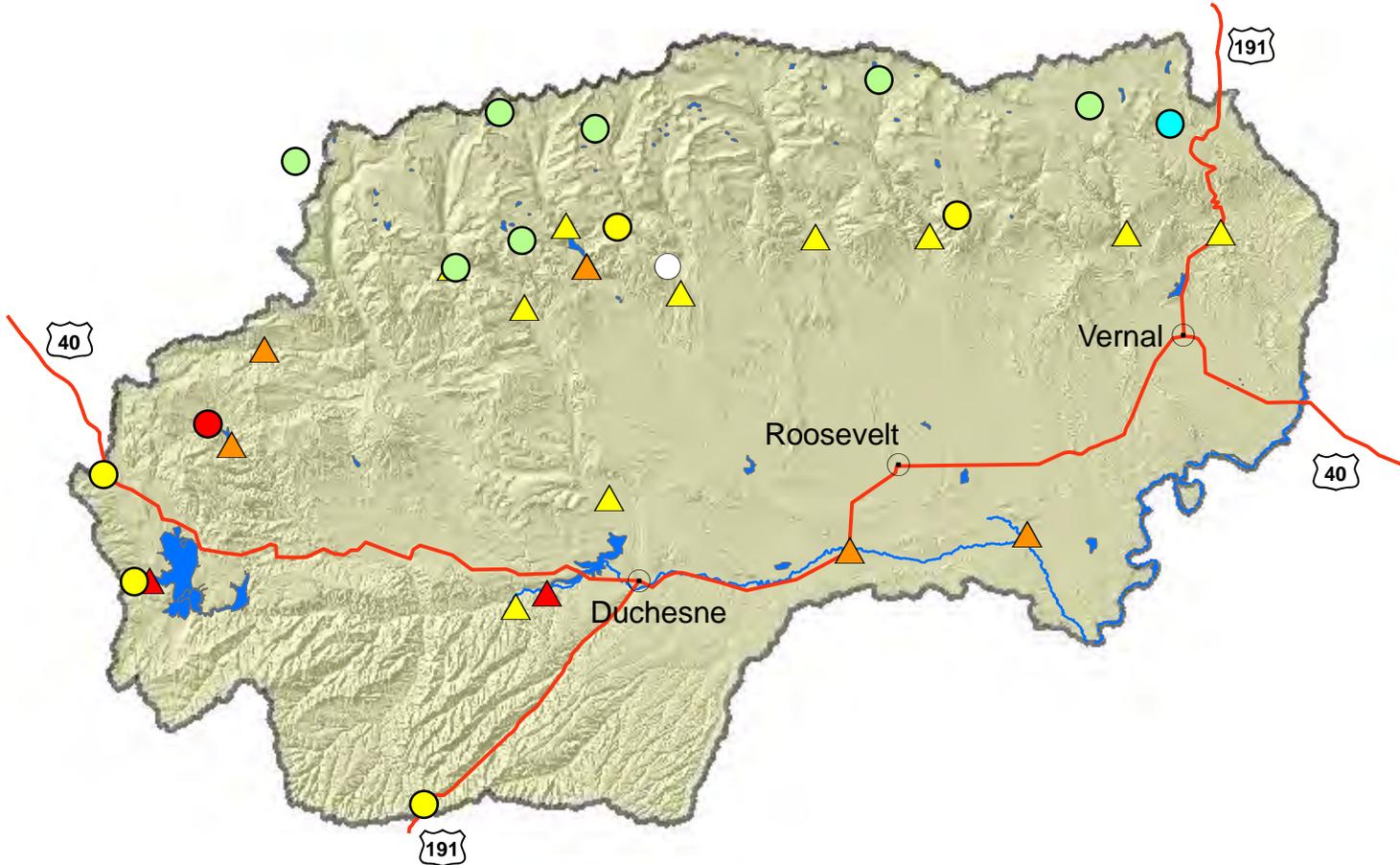
Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Western Uintah	182.75	91.00	273.75	68	1.46	09, 06, 98, 96

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

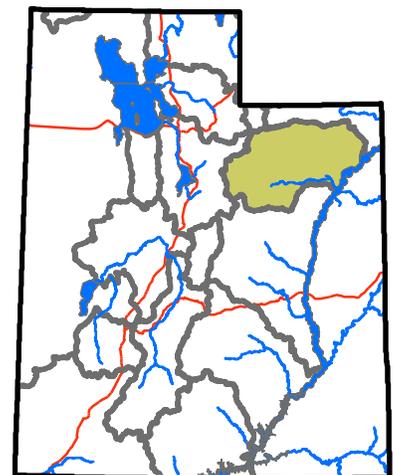
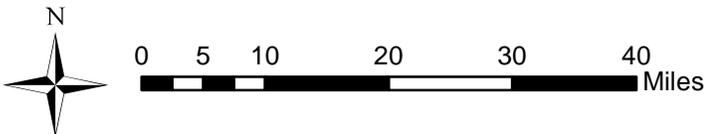


Duchesne basin



Percent normal

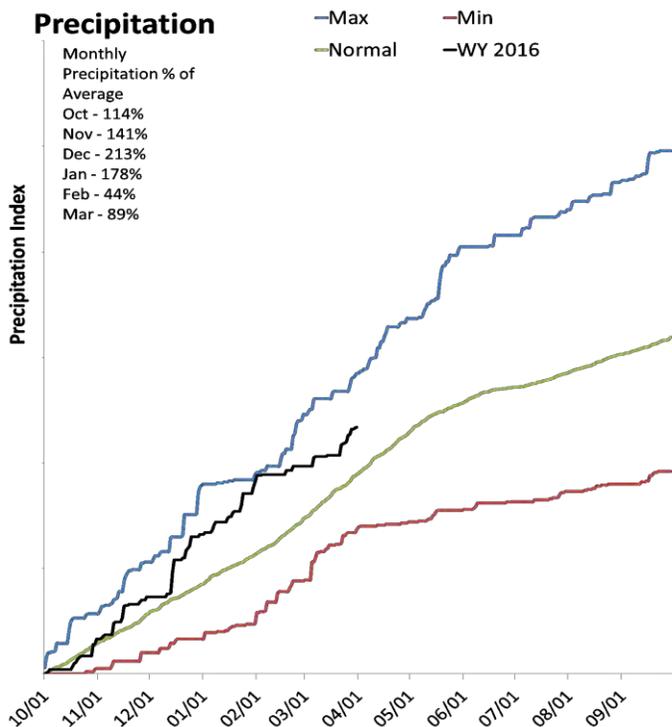
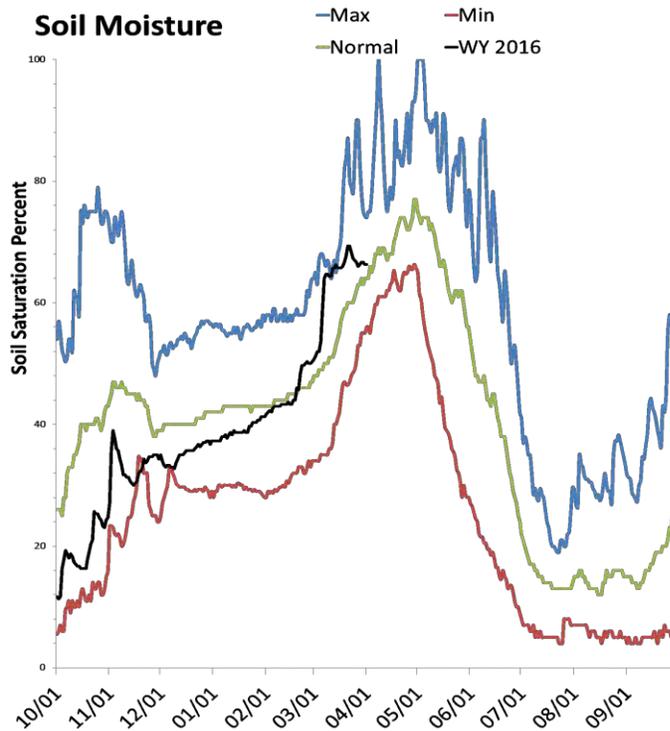
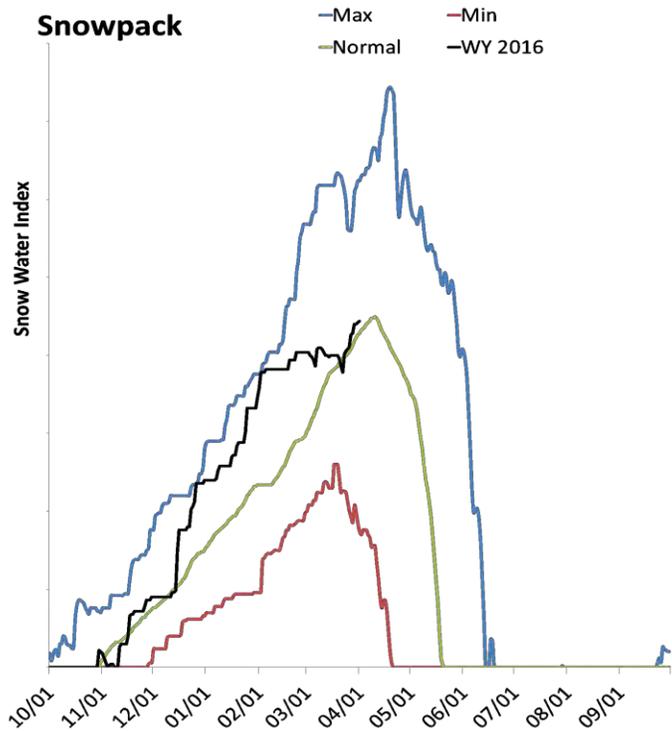
- | | | | |
|--|-------------|--|-----------------|
| ■ | < 50% | | SNOTEL sites |
| ■ | 50 - 69% | | Forecast points |
| ■ | 70 - 89% | | Rivers |
| ■ | 90 - 109% | | Highways |
| ■ | 110 - 129% | | Cities |
| ■ | 130 - 149% | | |
| ■ | > 150% | | |
| | no % avail. | | |



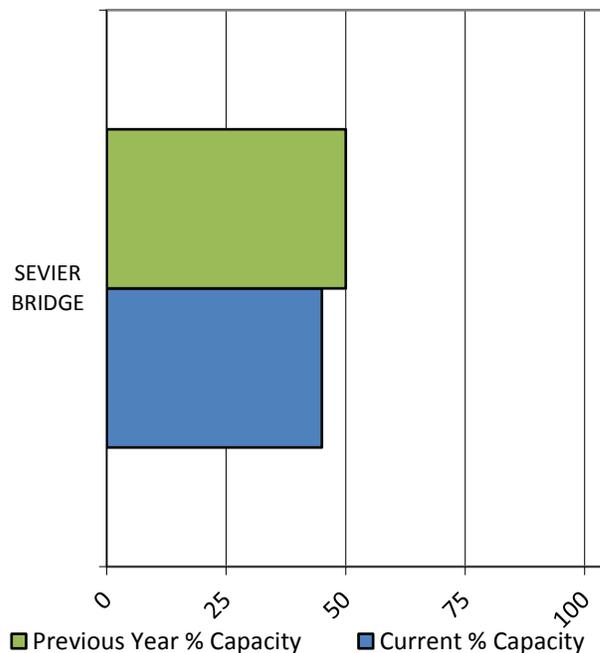
Lower Sevier River Basin

4/1/2016

Snowpack in the Lower Sevier River Basin is near normal at 104% of normal, compared to 41% last year. Precipitation in March was below average at 88%, which brings the seasonal accumulation (Oct-Mar) to 124% of average. Soil moisture is at 66% compared to 59% last year. Reservoir storage is at 45% of capacity, compared to 50% last year. Forecast streamflow volumes range from 75% to 91% of average. The surface water supply index is 41% for the Lower Sevier.



Reservoir Storage



Lower Sevier River Streamflow Forecasts - April 1, 2016

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	2.2	3.2	4	89%	4.9	6.5	4.5
Sevier R nr Gunnison	APR-JUL	44	72	90	91%	108	136	99
Oak Ck nr Oak City	APR-JUL	0.76	1.04	1.25	75%	1.49	1.87	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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Sevier Bridge Reservoir	106.0	117.1	181.9	236.0
Basin-wide Total	106.0	117.1	181.9	236.0
# of reservoirs	1	1	1	1

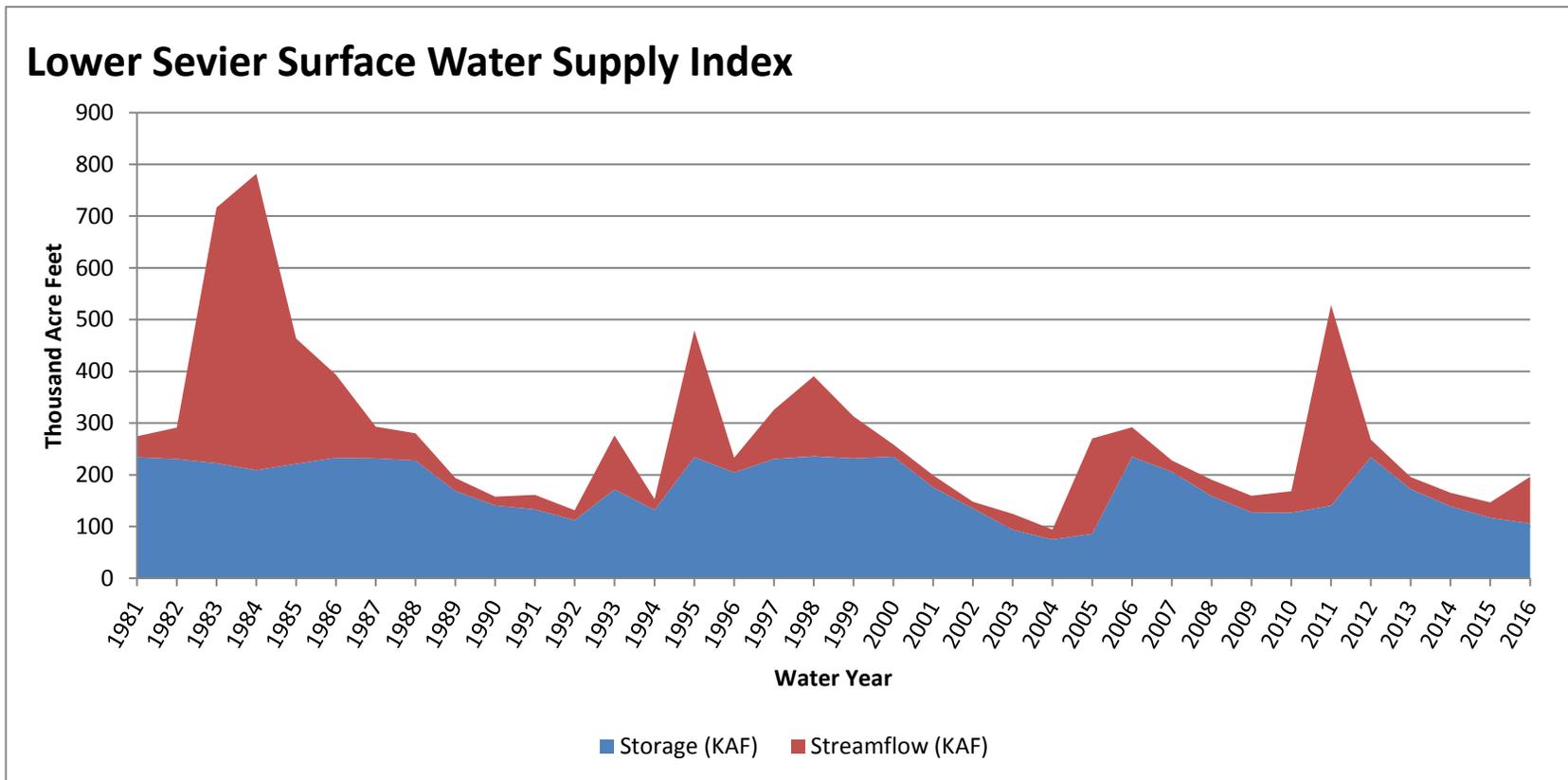
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Lower Sevier	3	103%	26%

April 1, 2016

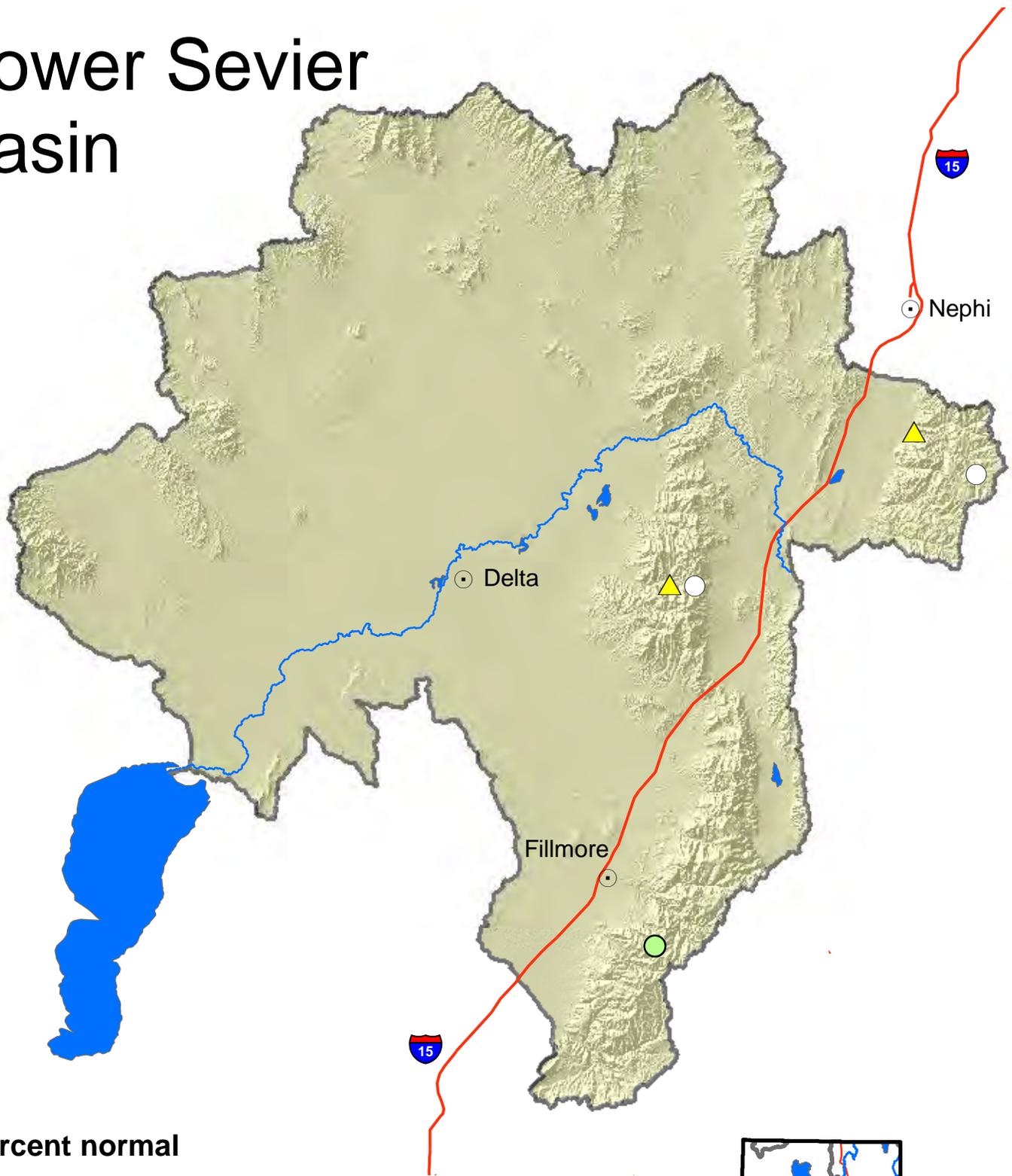
Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Lower Sevier	105.99	90.00	195.99	41	-0.79	89, 13, 01, 07

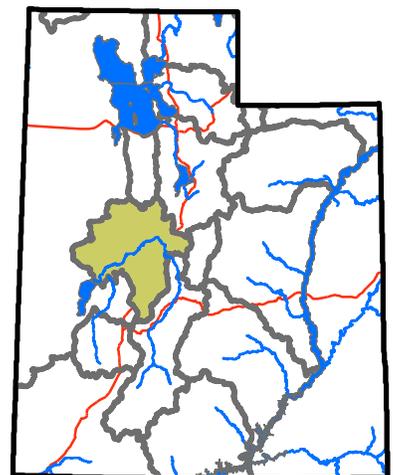
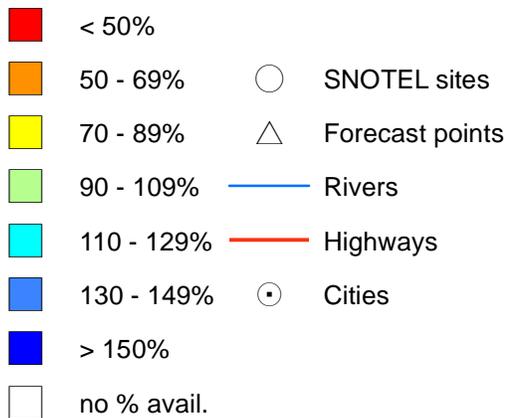
^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



Lower Sevier basin



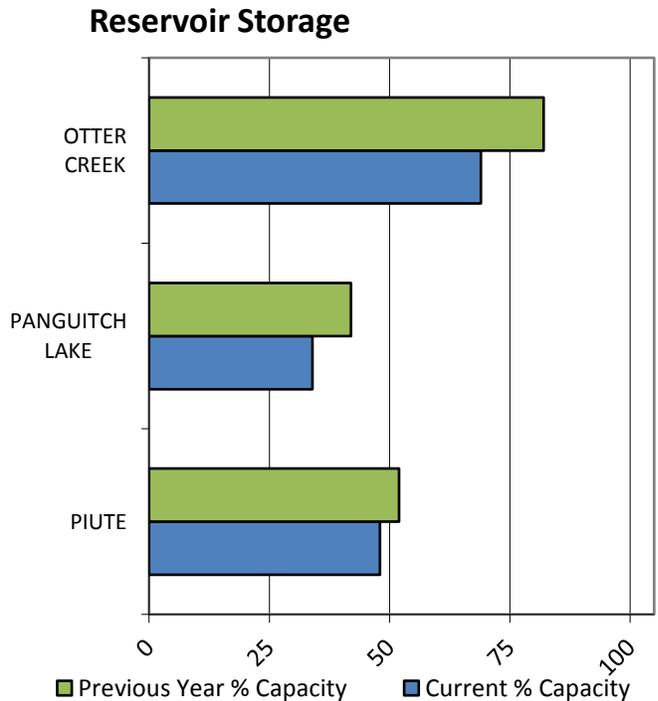
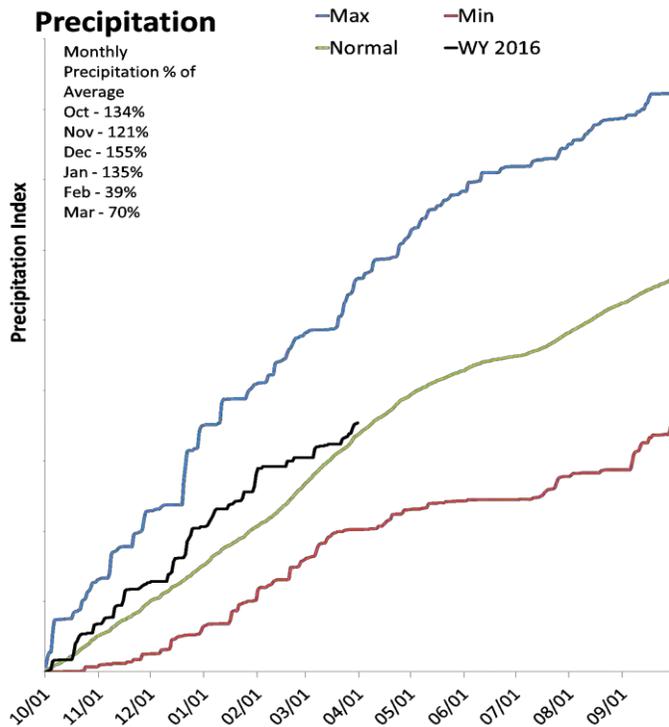
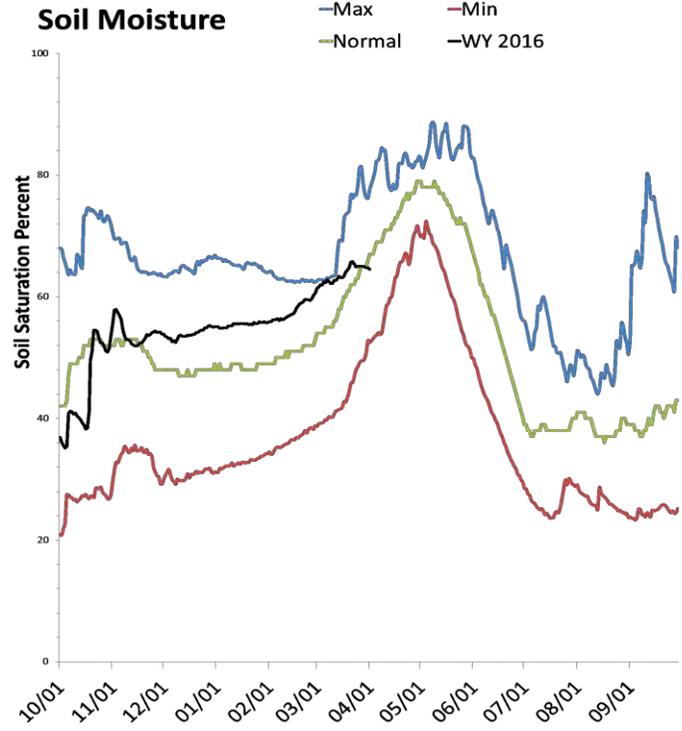
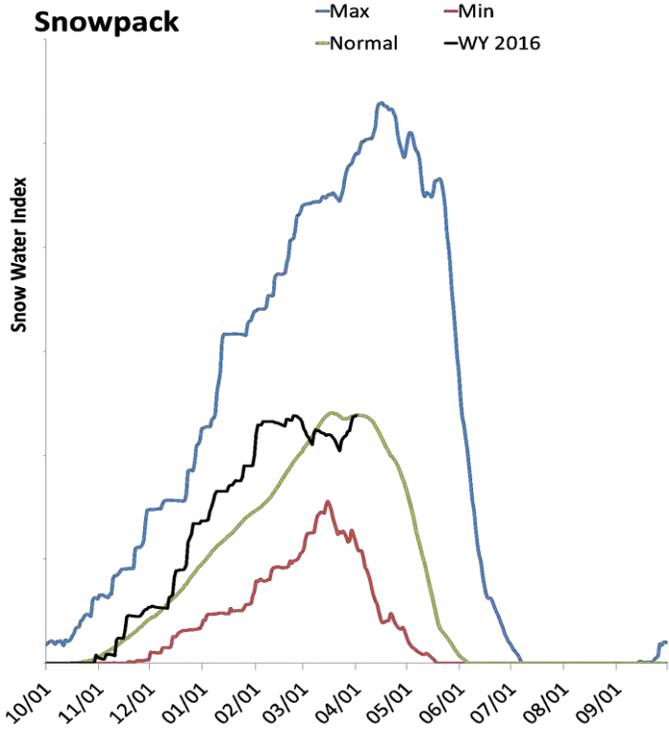
Percent normal



Upper Sevier River Basin

4/1/2016

Snowpack in the Upper Sevier River Basin is near normal at 100% of normal, compared to 47% last year. Precipitation in March was below average at 70%, which brings the seasonal accumulation (Oct-Mar) to 105% of average. Soil moisture is at 65% compared to 65% last year. Reservoir storage is at 54% of capacity, compared to 61% last year. Forecast streamflow volumes range from 93% to 100% of average. The surface water supply index is 35% for the Upper Sevier.



Upper Sevier River Streamflow Forecasts - April 1, 2016

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)
Mammoth Ck nr Hatch	APR-JUL	1.35	4.7	25	93%	45	75	27
Sevier R at Hatch	APR-JUL	32	41	47	98%	53	62	48
EF Sevier R nr Kingston	APR-JUL	15.7	27	35	100%	43	54	35
Sevier R nr Kingston	APR-JUL	10.9	24	33	100%	42	55	33
Sevier R bl Piute Dam	APR-JUL	16.5	45	65	98%	85	113	66
Clear Ck ab Diversions nr Sevier	APR-JUL	11.8	16.7	20	95%	23	28	21
Salina Ck nr Emery	APR-JUL	3.1	6	7.9	100%	9.8	12.7	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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Piute Reservoir	34.7	37.1	58.2	71.8
Otter Creek Reservoir	36.4	43.2	42.2	52.5
Panguitch Lake	7.6	9.3	14.5	22.3
Basin-wide Total	78.7	89.7	114.9	146.6
# of reservoirs	3	3	3	3

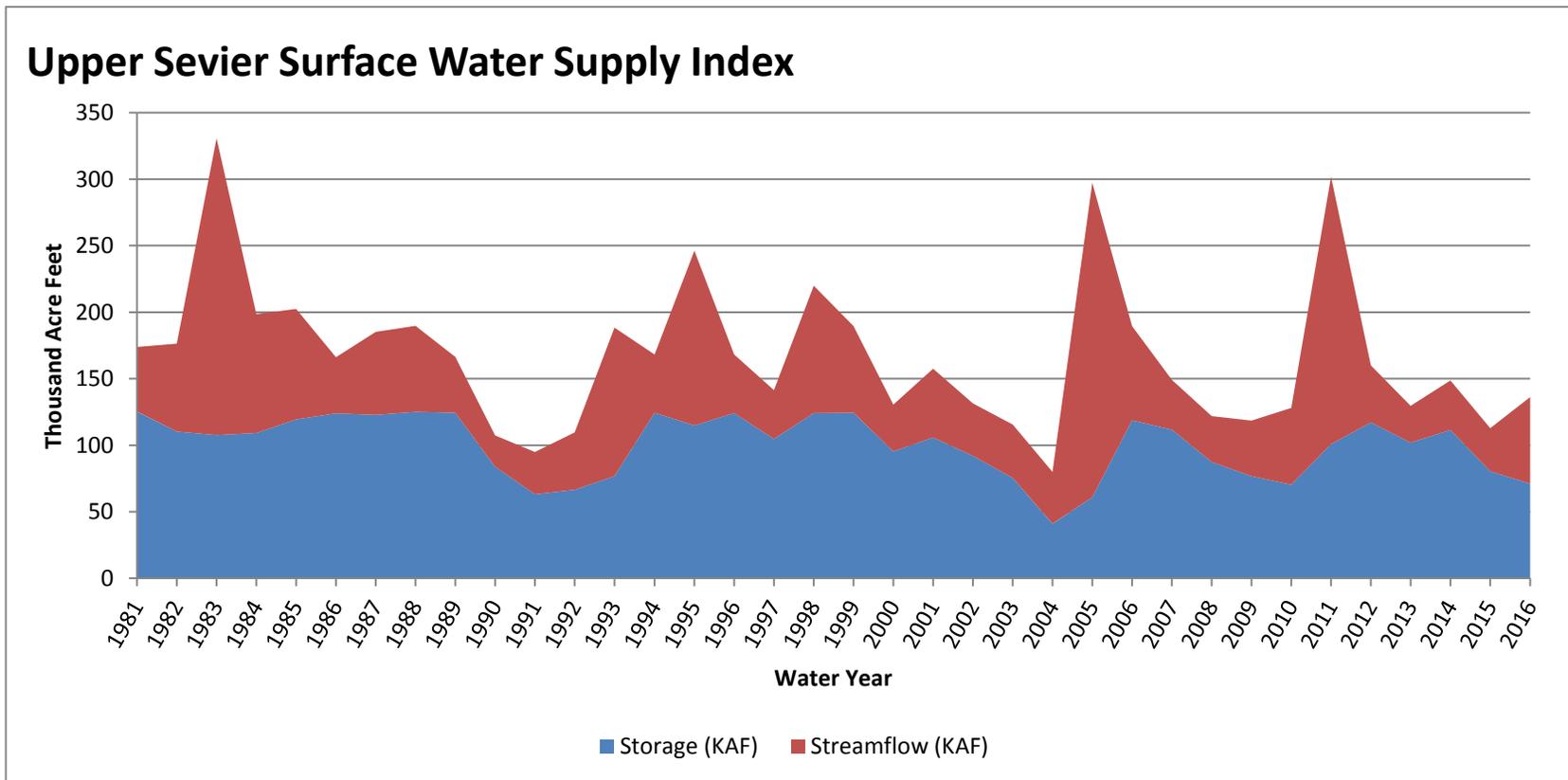
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Upper Sevier	8	102%	46%
Middle Sevier	9	102%	44%
E Fk Sevier	6	87%	42%

April 1, 2016

Surface Water Supply Index

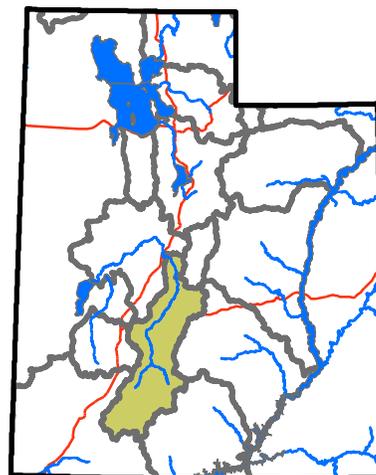
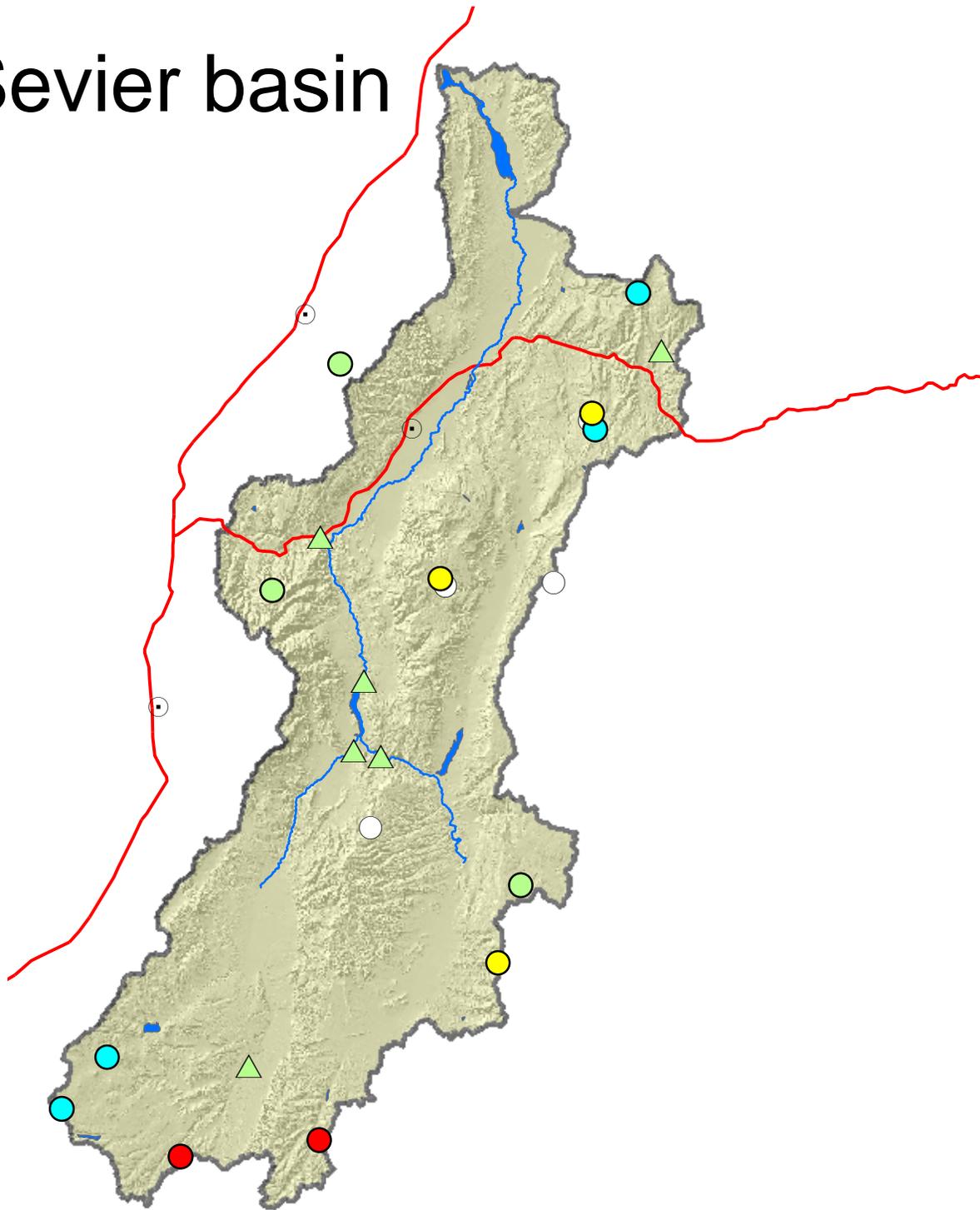
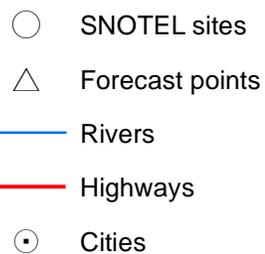
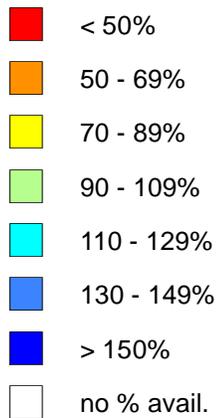
Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Upper Sevier	71.09	65.00	136.09	35	-1.24	00, 02, 97, 14

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



Upper Sevier basin

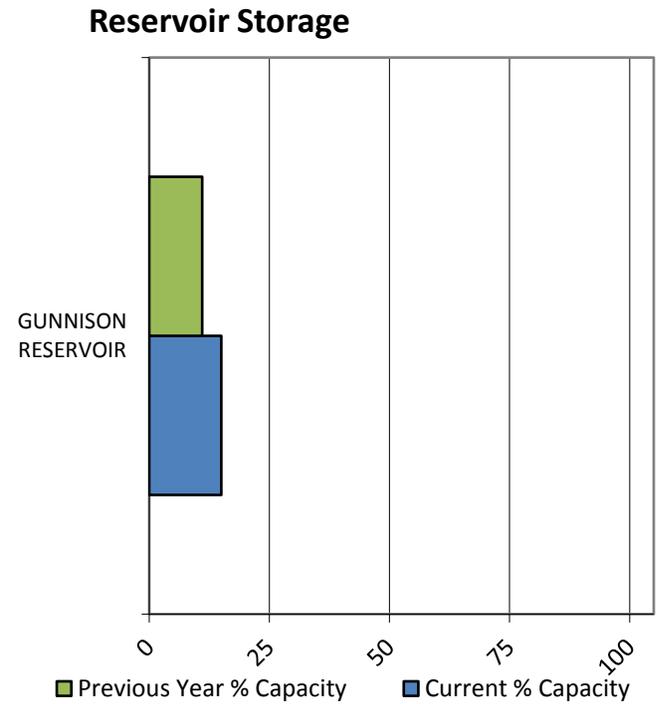
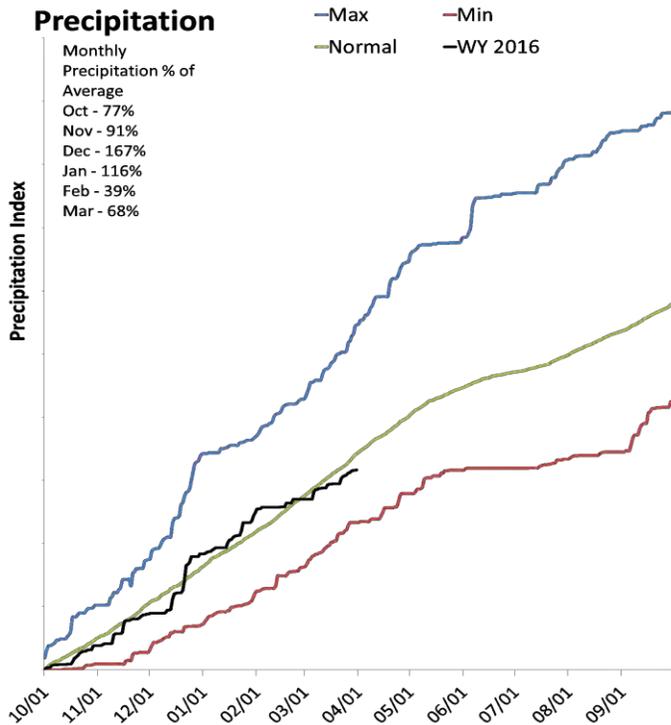
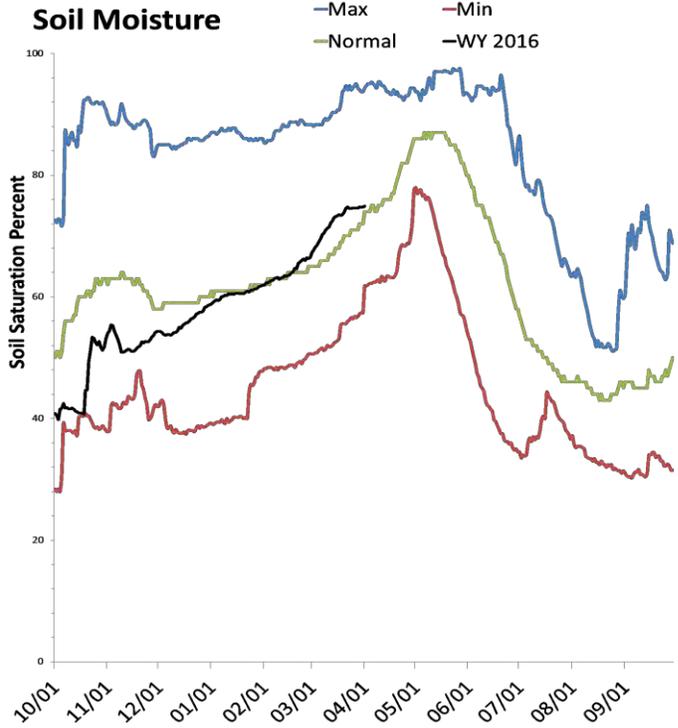
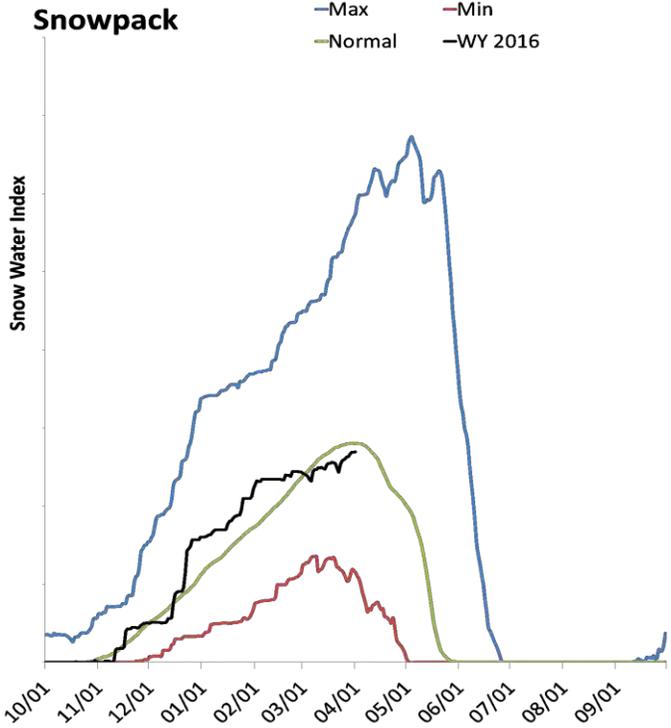
Percent normal



San Pitch River Basin

4/1/2016

Snowpack in the San Pitch River Basin is near normal at 96% of normal, compared to 44% last year. Precipitation in March was much below average at 68%, which brings the seasonal accumulation (Oct-Mar) to 92% of average. Soil moisture is at 74% compared to 66% last year. Reservoir storage is at 15% of capacity, compared to 11% last year. The forecast streamflow volume for Manti Creek is 90% of average. The surface water supply index is 19% for the San Pitch.



San Pitch River Streamflow Forecasts - April 1, 2016

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	10	12.8	15	90%	17.3	21	16.7
Sevier R nr Gunnison	APR-JUL	44	72	90	91%	108	136	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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Gunnison Reservoir	3.0	2.3	14.7	20.3
Basin-wide Total	3.0	2.3	14.7	20.3
# of reservoirs	1	1	1	1

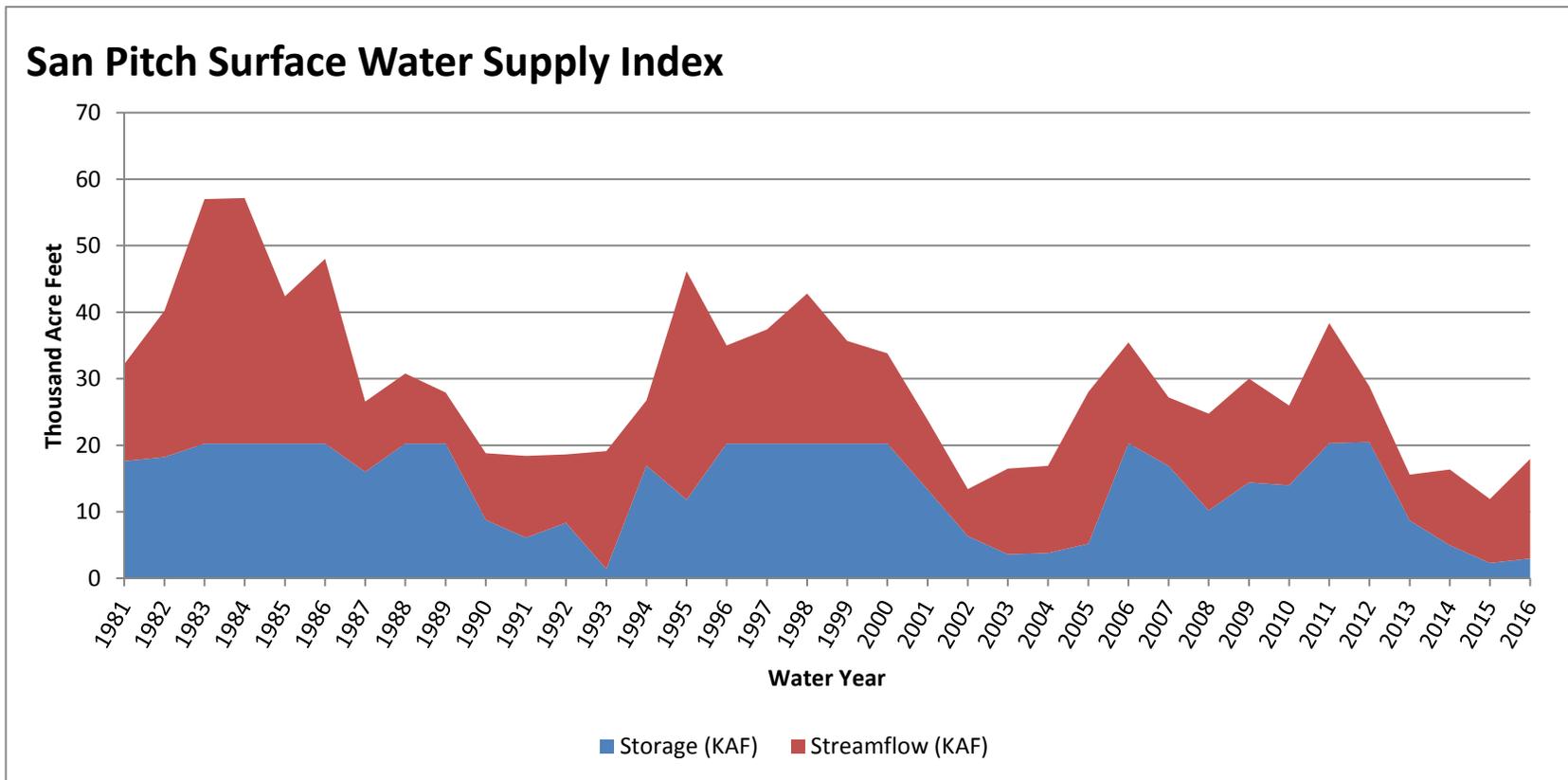
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Upper San Pitch	4	86%	40%
Lower San Pitch	8	98%	56%

April 1, 2016

Surface Water Supply Index

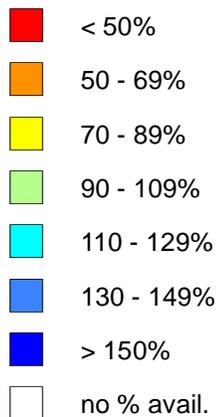
Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
San Pitch	2.96	15.00	17.96	19	-2.59	03, 04, 91, 92

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

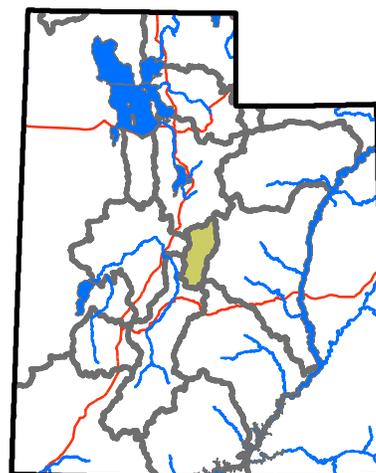
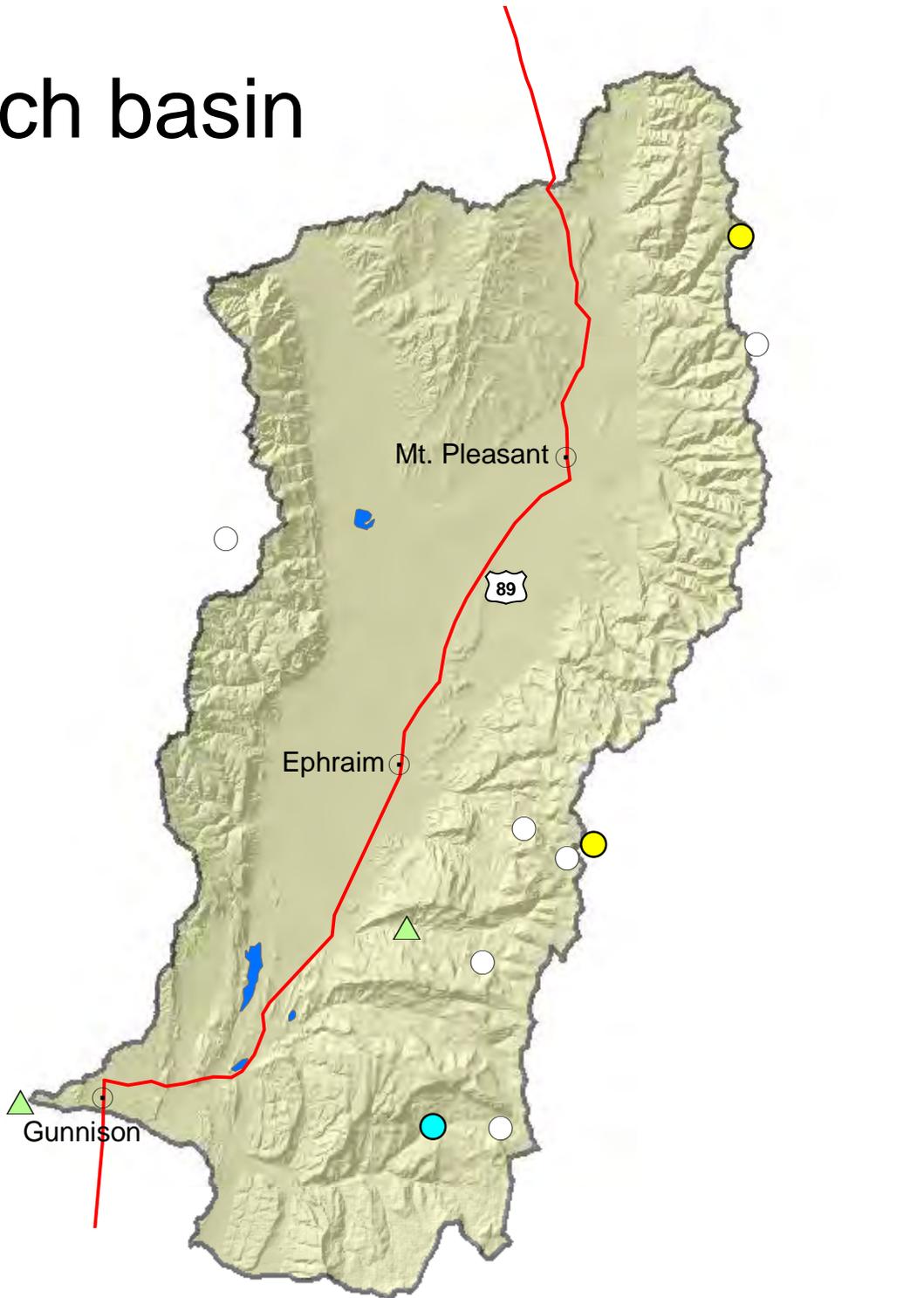


San Pitch basin

Percent normal



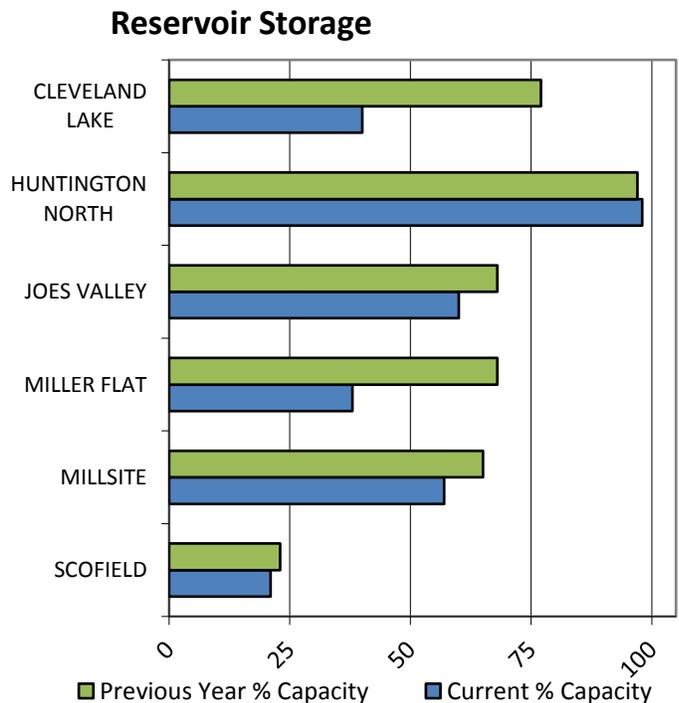
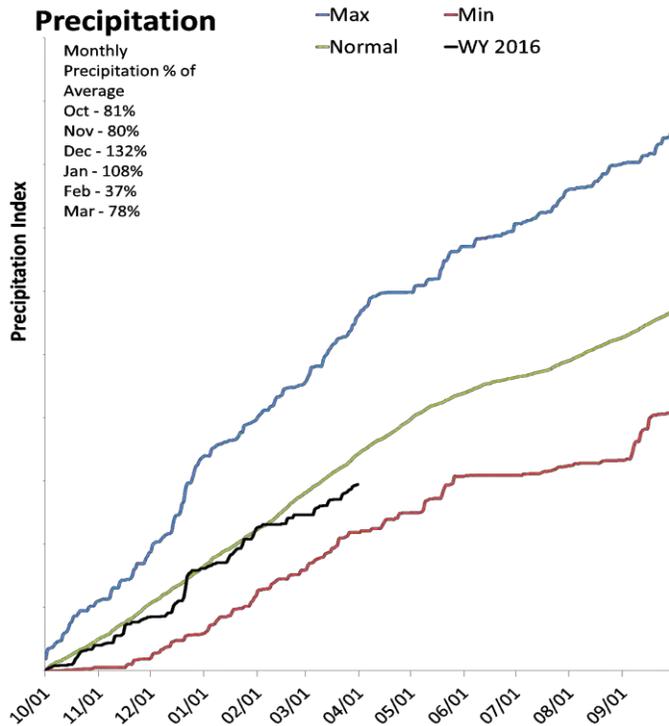
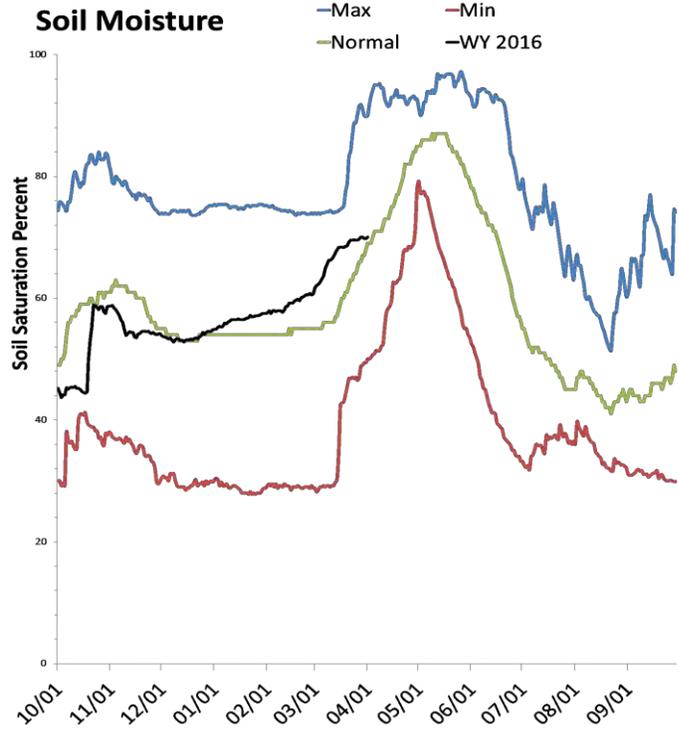
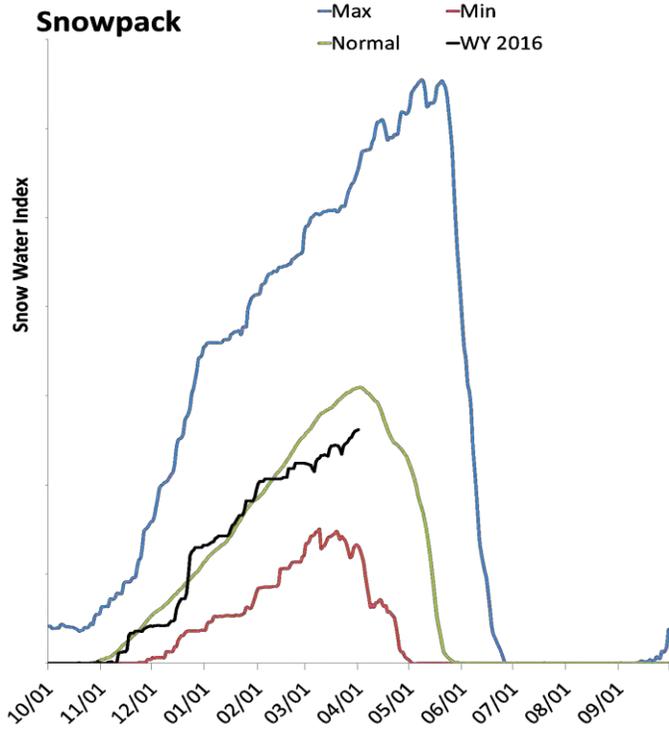
- SNOTEL sites
- △ Forecast points
- Rivers
- Highways
- ⊙ Cities



Price & San Rafael Basins

4/1/2016

Snowpack in the Price & San Rafael Basins is below normal at 85% of normal, compared to 42% last year. Precipitation in March was below average at 77%, which brings the seasonal accumulation (Oct-Mar) to 86% of average. Soil moisture is at 70% compared to 63% last year. Reservoir storage is at 44% of capacity, compared to 48% last year. Forecast streamflow volumes range from 60% to 79% of average. The surface water supply index is 16% for the Price River, 30% for Joe's Valley, 43% for Ferron Creek.



Price San Rafael Streamflow Forecasts - April 1, 2016

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	12.1	16.8	20	67%	24	31	30
Price R nr Scofield Reservoir ²	APR-JUL	12.5	19.5	25	61%	31	42	41
White R bl Tabbyune Creek	APR-JUL	5.8	7.9	9.5	61%	11.3	14.1	15.5
Green R at Green River, UT ²	APR-JUL	1510	1980	2330	79%	2710	3330	2960
Electric Lake Inflow ²	APR-JUL	4.2	6.3	8	60%	9.9	13.1	13.3
Huntington Ck nr Huntington ²	APR-JUL	17.1	22	27	68%	31	38	40
Joes Valley Reservoir Inflow ²	APR-JUL	23	32	38	68%	45	56	56
Ferron Ck (Upper Station) nr Ferron	APR-JUL	21	26	29	76%	33	38	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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Joes Valley Reservoir	37.2	41.7	40.0	61.6
Millsite	9.5	10.8	10.4	16.7
Huntington North Reservoir	4.1	4.1	3.8	4.2
Cleveland Lake	2.2	4.2		5.4
Miller Flat Reservoir	2.0	3.5		5.2
Scofield Reservoir	13.9	15.3	30.7	65.8
Basin-wide Total	64.7	71.9	84.9	148.3
# of reservoirs	4	4	4	4

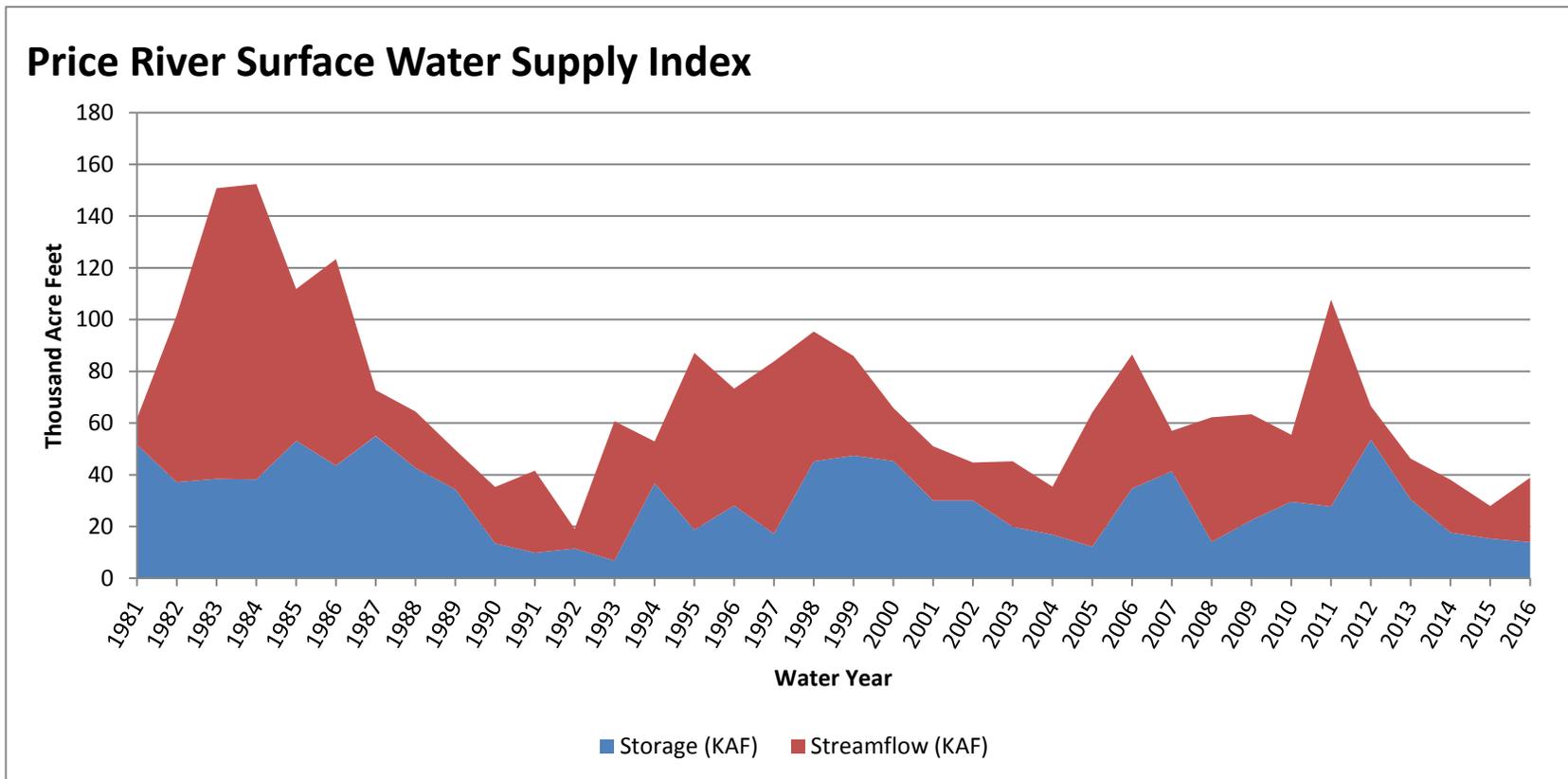
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Price	5	85%	27%
San Rafael	7	85%	54%

April 1, 2016

Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Price River	13.89	25.00	38.89	16	-2.82	04, 14, 91, 02

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

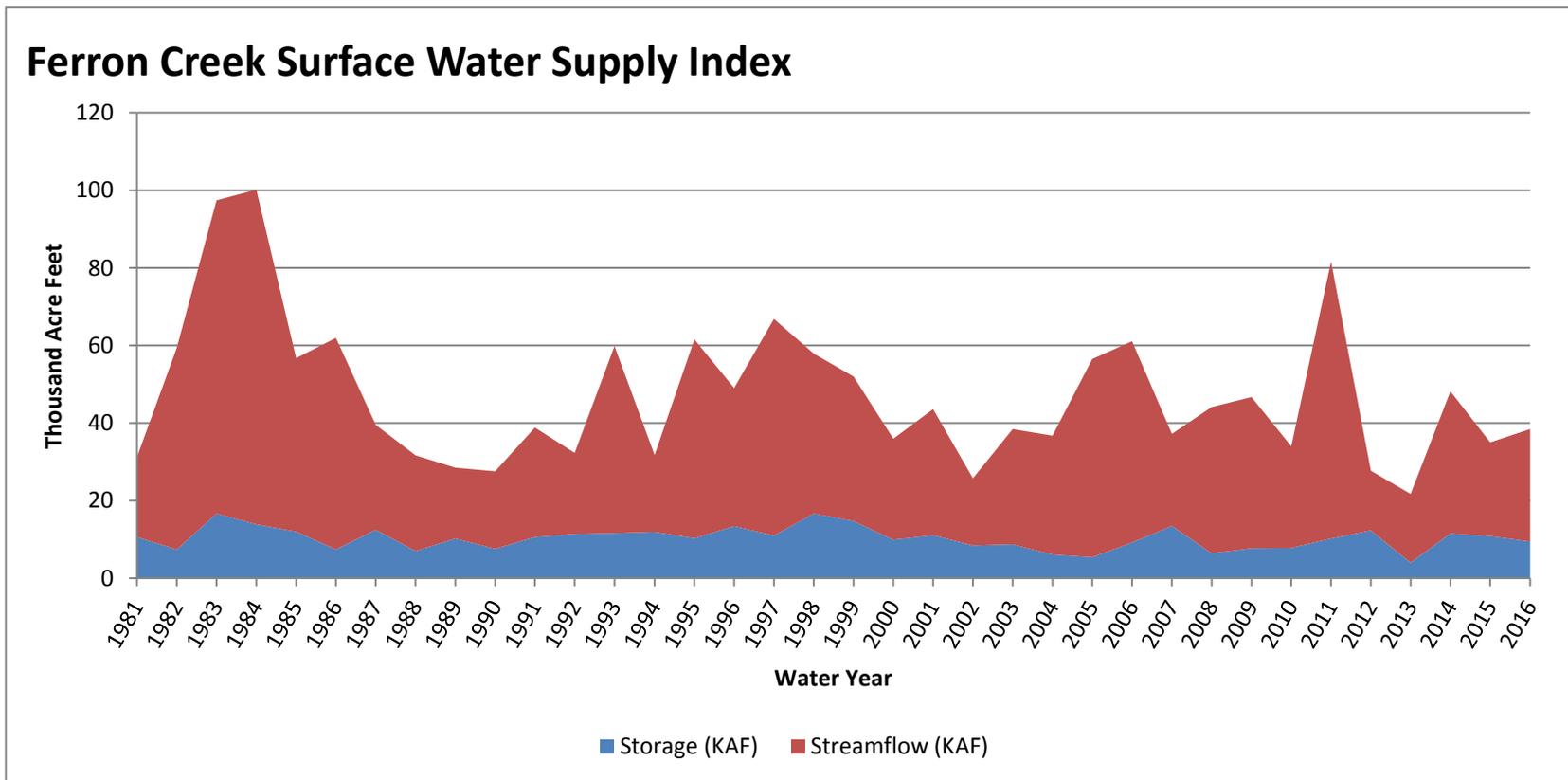


April 1, 2016

Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Ferron Creek	9.46	29.00	38.46	43	-0.56	07, 03, 91, 87

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

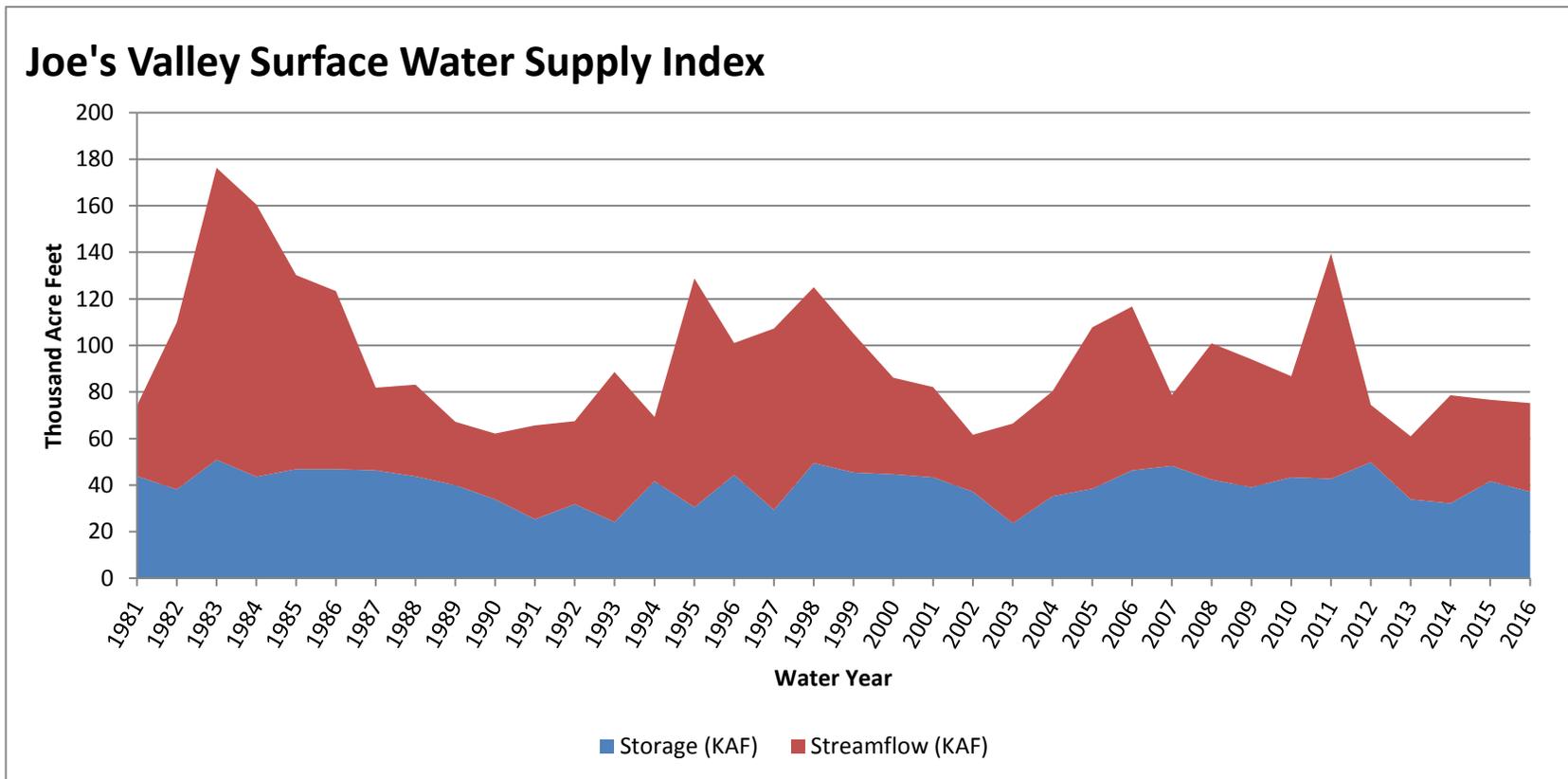


April 1, 2016

Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Joe's Valley	37.18	38.00	75.18	30	-1.69	81, 12, 15, 14

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



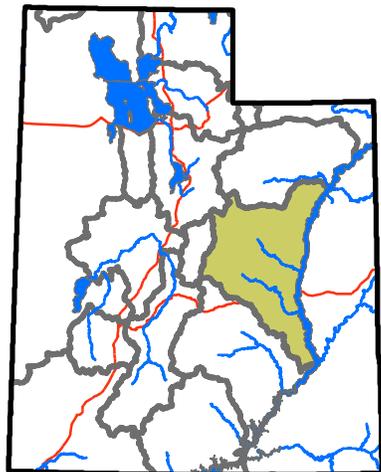
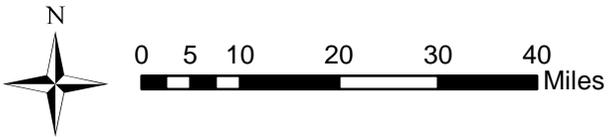
Price-San Rafael basin



Percent normal

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

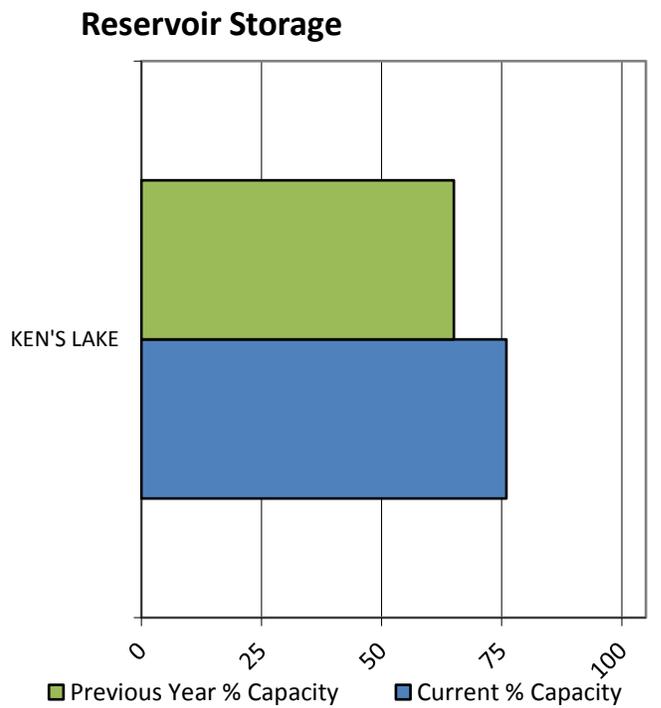
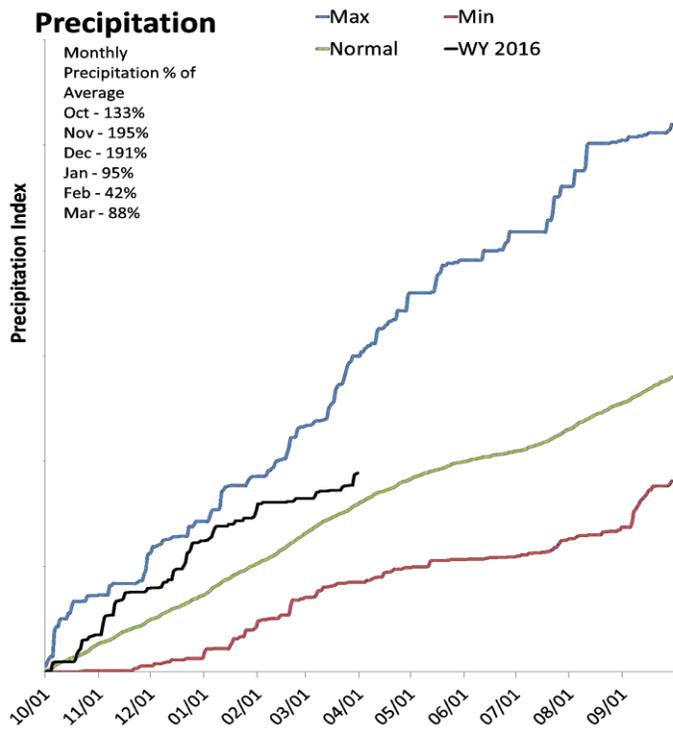
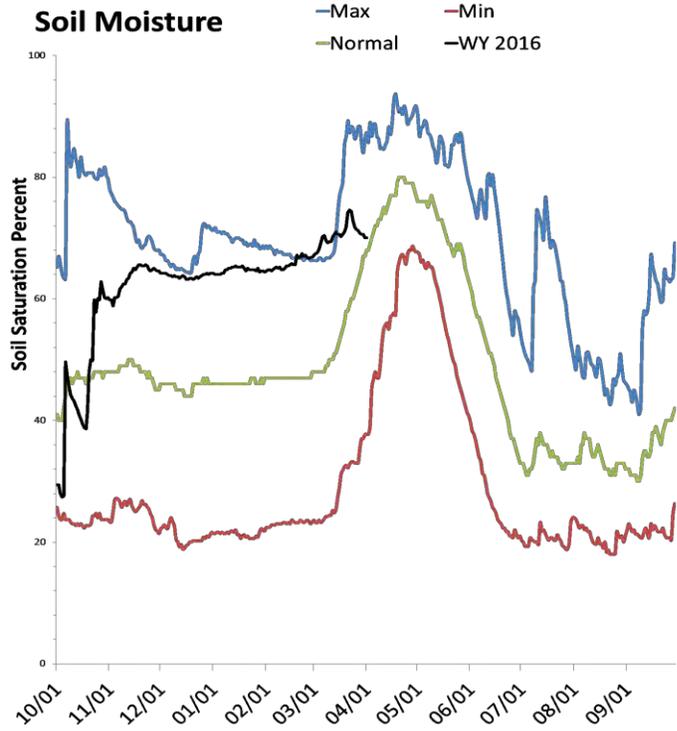
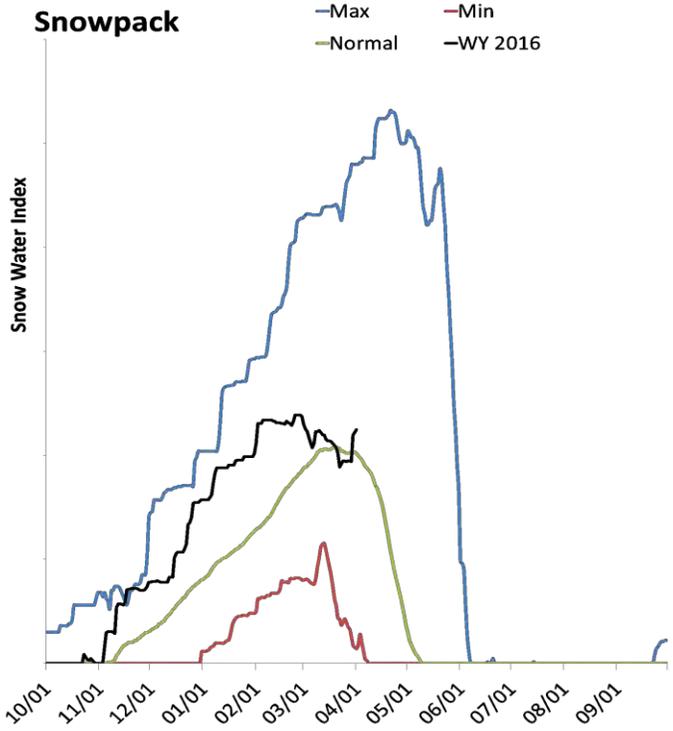
- SNOTEL sites
- Forecast points
- Rivers
- Highways
- Cities



Southeastern Utah Basin

4/1/2016

Snowpack in the Southeastern Utah Basin is above normal at 111% of normal, compared to 22% last year. Precipitation in March was below average at 88%, which brings the seasonal accumulation (Oct-Mar) to 119% of average. Soil moisture is at 80% compared to 75% last year. Reservoir storage is at 76% of capacity, compared to 65% last year. Forecast streamflow volumes range from 50% to 140% of average. The surface water supply index is 80% for Moab.



Southeastern Utah Streamflow Forecasts - April 1, 2016

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	4.1	5.2	6	140%	6.9	8.3	4.3
South Ck ab Resv nr Monticello	MAR-JUL	0.2	0.38	0.55	50%	0.77	1.2	1.09
	APR-JUL	0.16	0.34	0.51	52%	0.73	1.16	0.99
Colorado R nr Cisco ²	APR-JUL	2610	3150	3550	83%	3970	4630	4280
San Juan R near Bluff ²	APR-JUL	495	645	760	69%	885	1080	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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Ken's Lake	1.7	1.5	1.3	2.3
Basin-wide Total	1.7	1.5	1.3	2.3
# of reservoirs	1	1	1	1

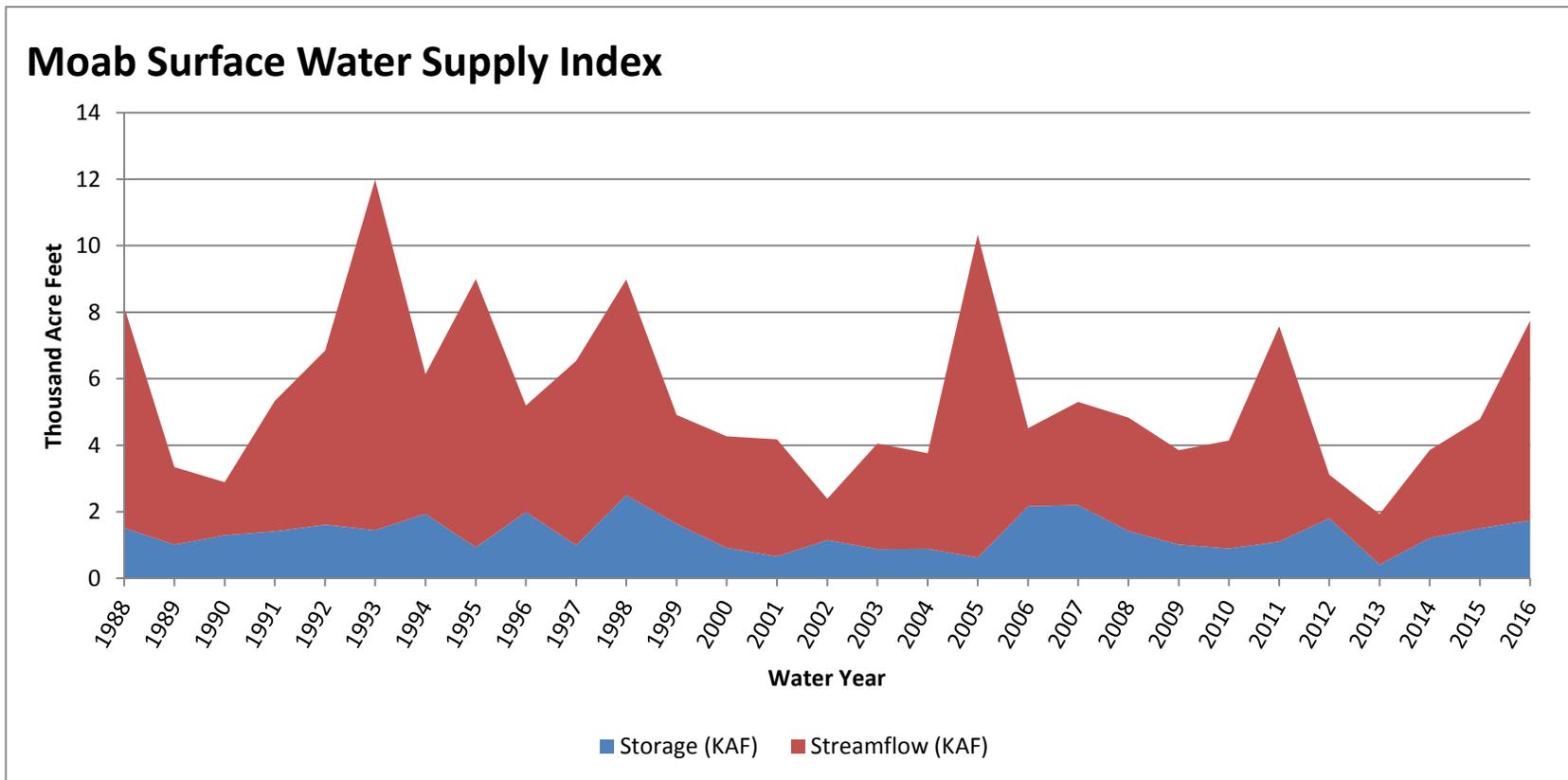
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Lasal Mtns	2	116%	20%
Lower San Juan	2	80%	50%
Lower Green	2	99%	9%

April 1, 2016

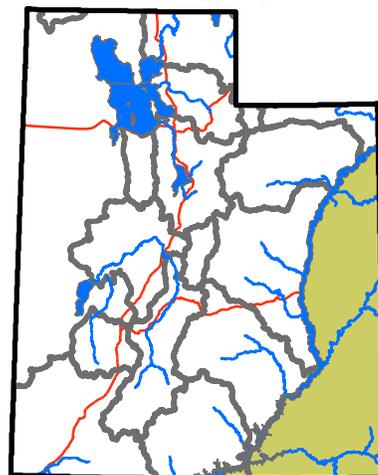
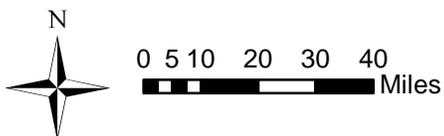
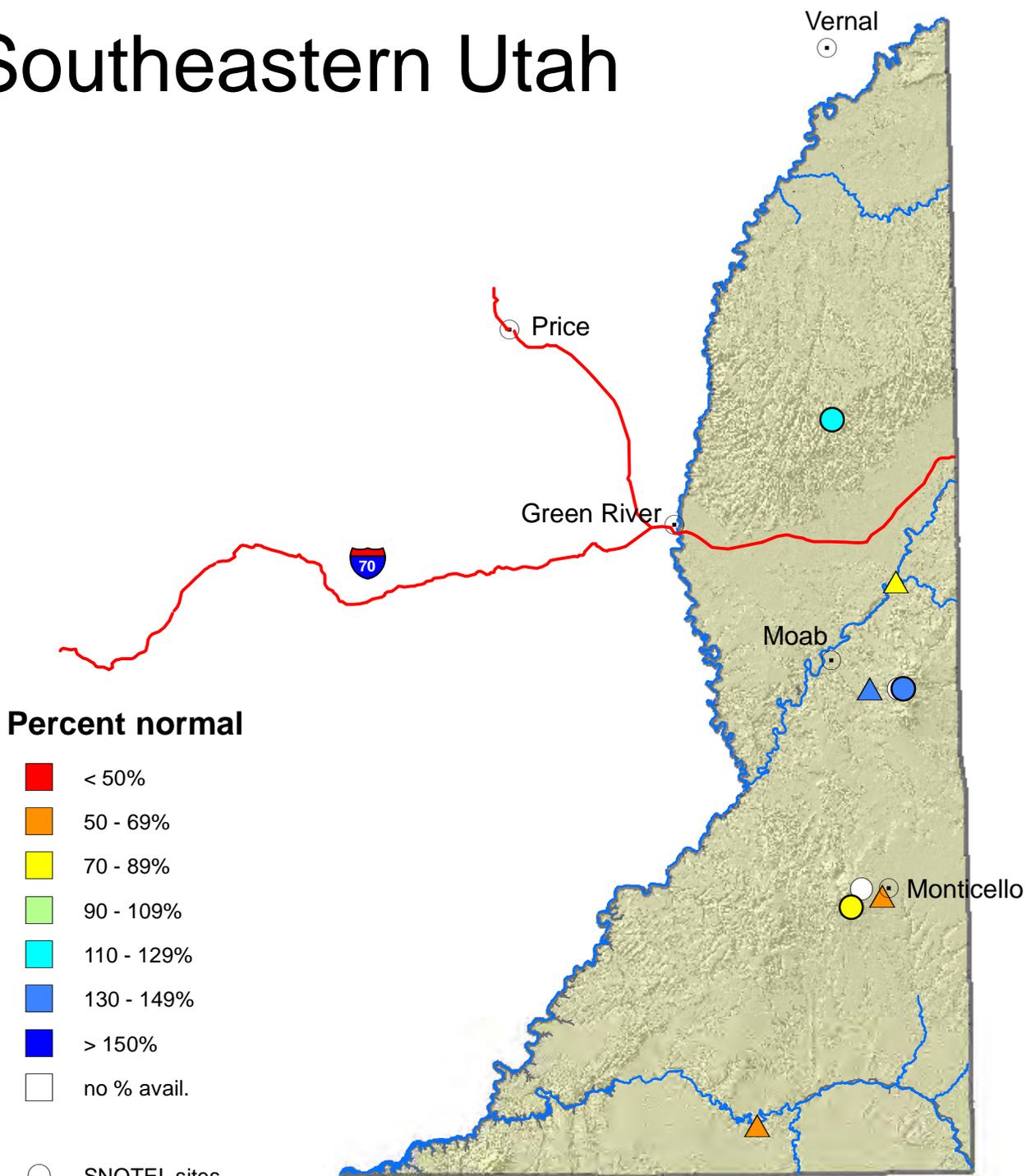
Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Moab	1.74	6.00	7.74	80	2.5	92, 11, 88, 98

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



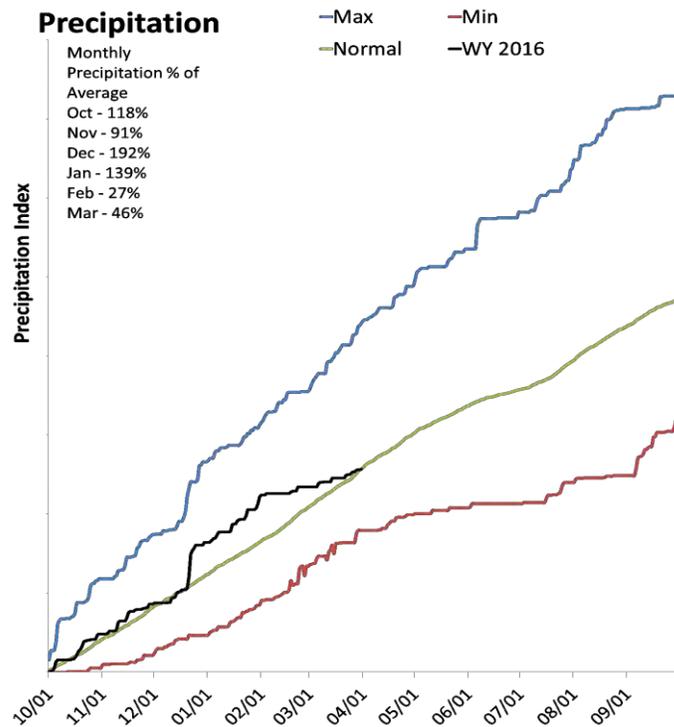
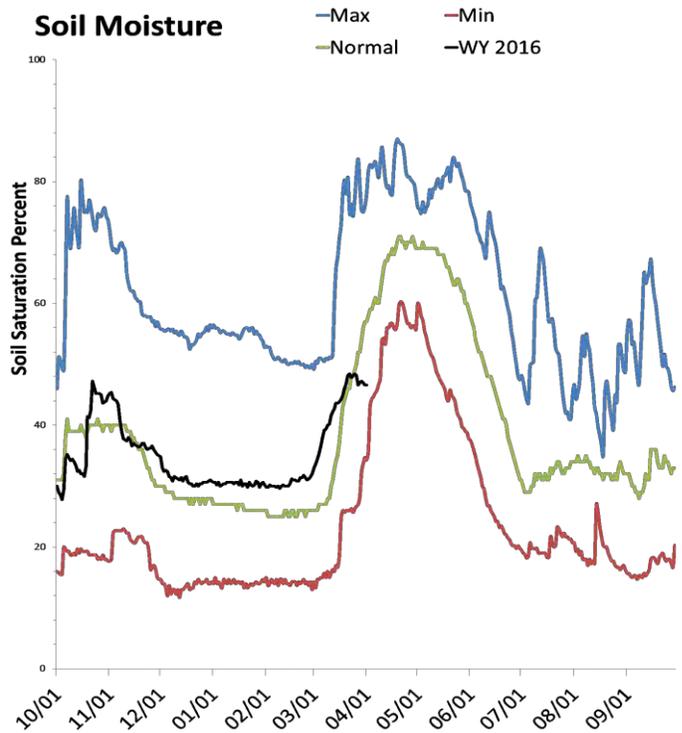
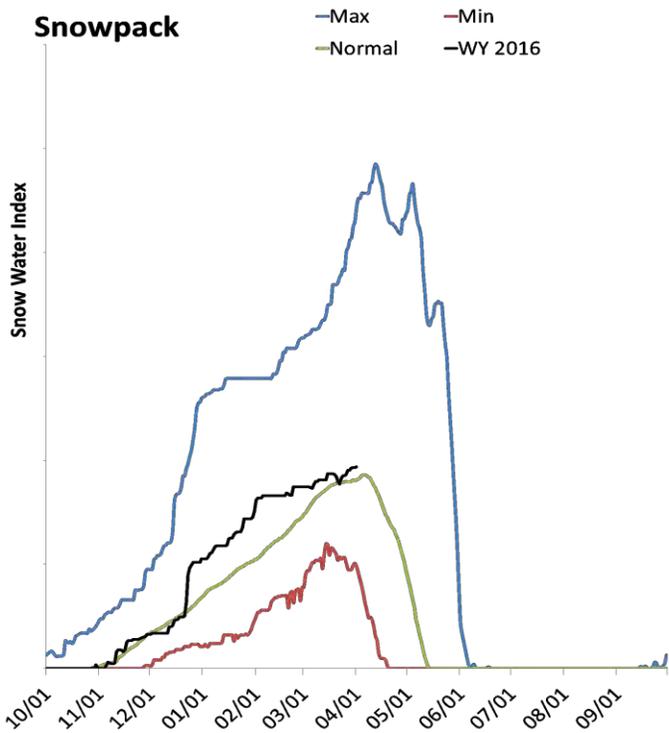
Southeastern Utah



Dirty Devil Basin

4/1/2016

Snowpack in the Dirty Devil Basin is near normal at 107% of normal, compared to 70% last year. Precipitation in March was much below average at 46%, which brings the seasonal accumulation (Oct-Mar) to 99% of average. Soil moisture is at 53% compared to 45% last year. Forecast streamflow volumes range from 75% to 103% of average.



Dirty Devil Streamflow Forecasts - April 1, 2016

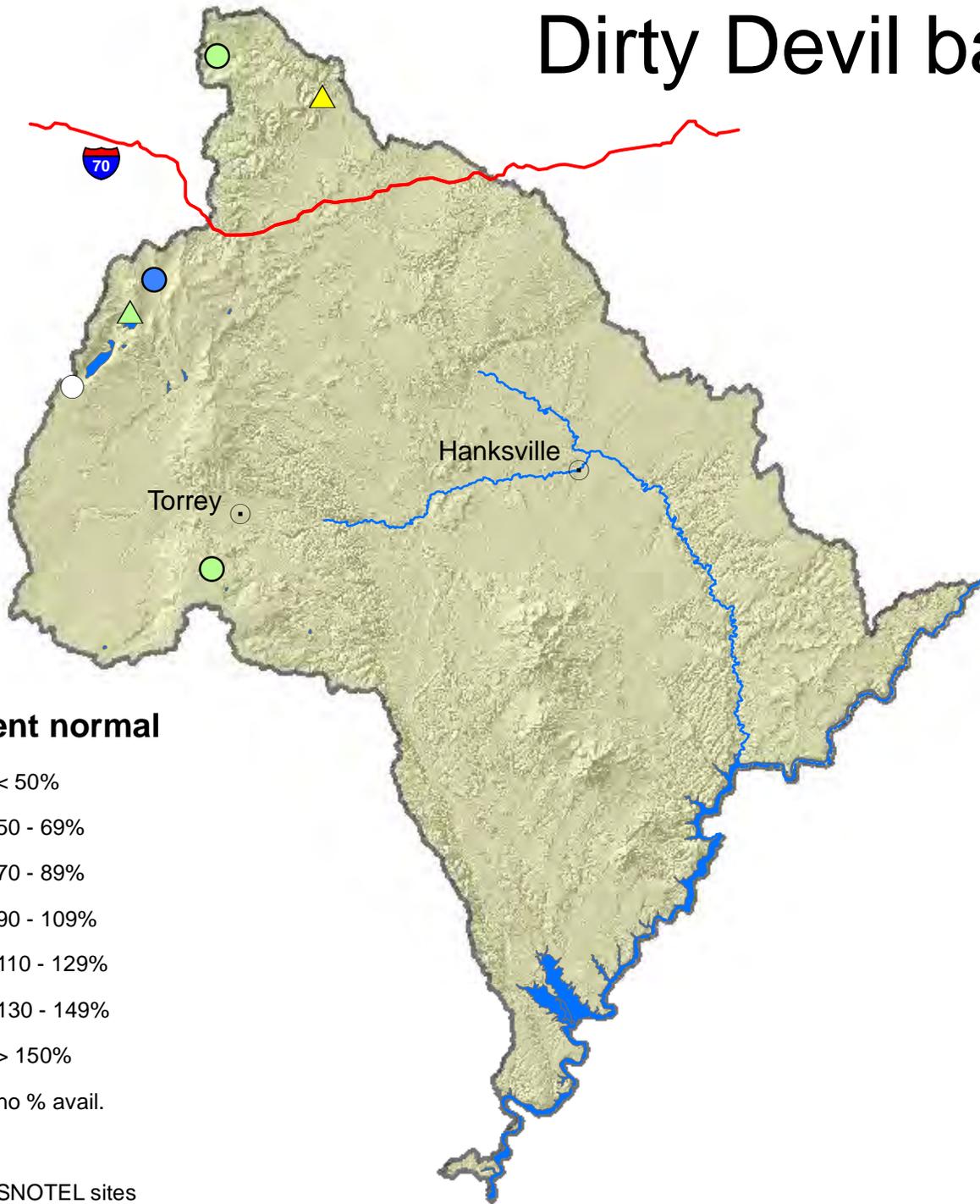
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

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	4.6	6.3	7.5	103%	8.8	11	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, 2016	# of Sites	% Median	Last Year % Median
Muddy	4	94%	54%
Fremont	4	122%	69%

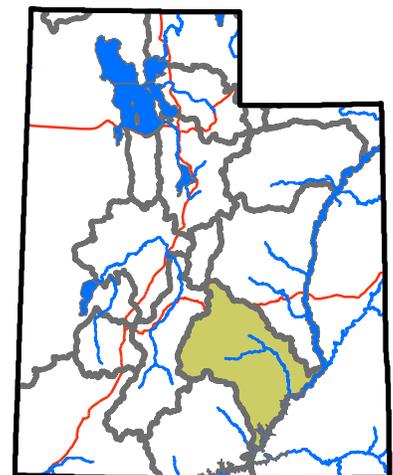
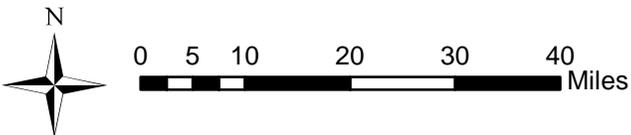
Dirty Devil basin



Percent normal

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

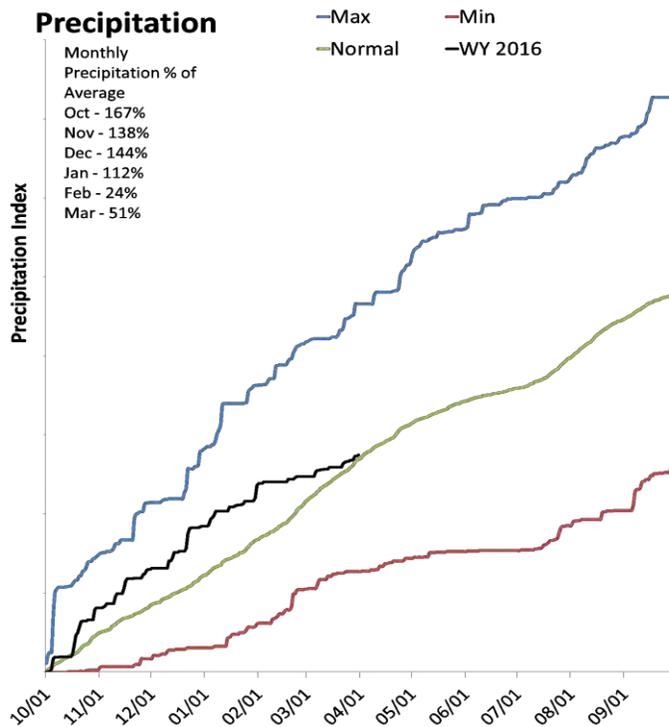
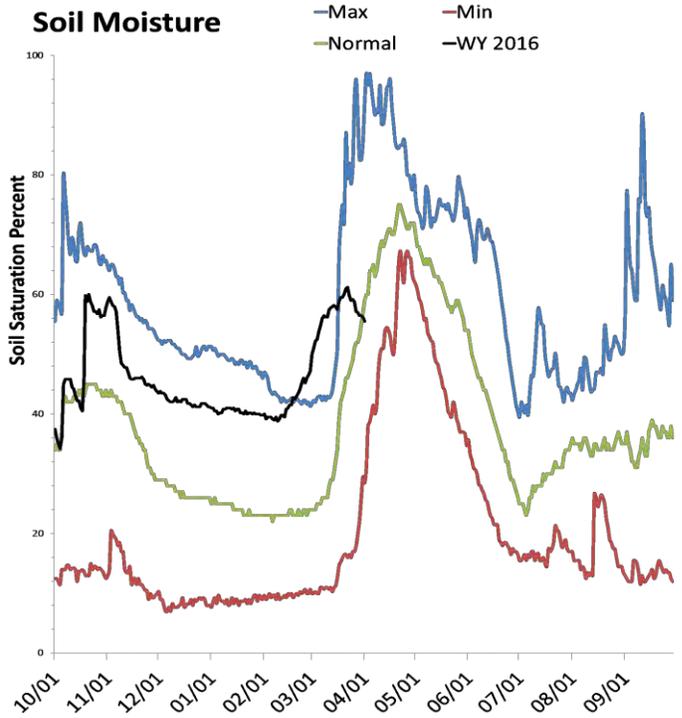
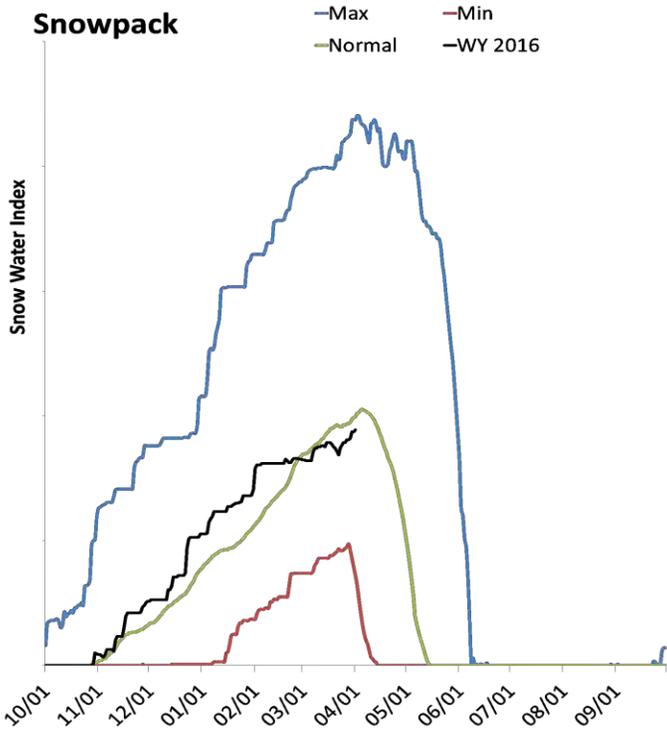
- SNOTEL sites
- Forecast points
- Rivers
- Highways
- Cities



Escalante River Basin

4/1/2016

Snowpack in the Escalante River Basin is near normal at 95% of normal, compared to 74% last year. Precipitation in March was much below average at 51%, which brings the seasonal accumulation (Oct-Mar) to 102% of average. Soil moisture is at 58% compared to 63% last year. The forecast streamflow volume for Pine Creek is 83% of average.



Escalante River Streamflow Forecasts - April 1, 2016

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	0.92	1.53	2	83%	2.6	3.6	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

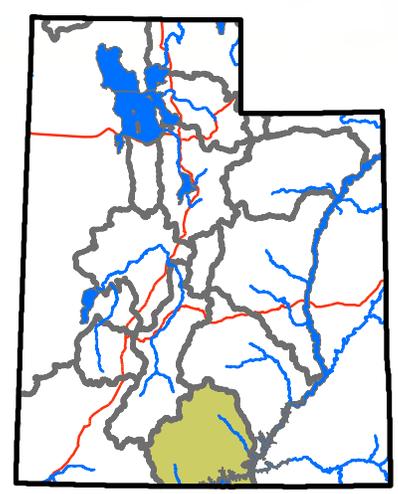
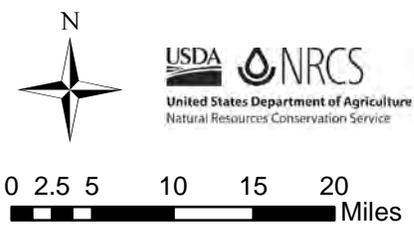
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Escalante	3	95%	74%
Paria	3	67%	60%

Escalante basin



Percent normal

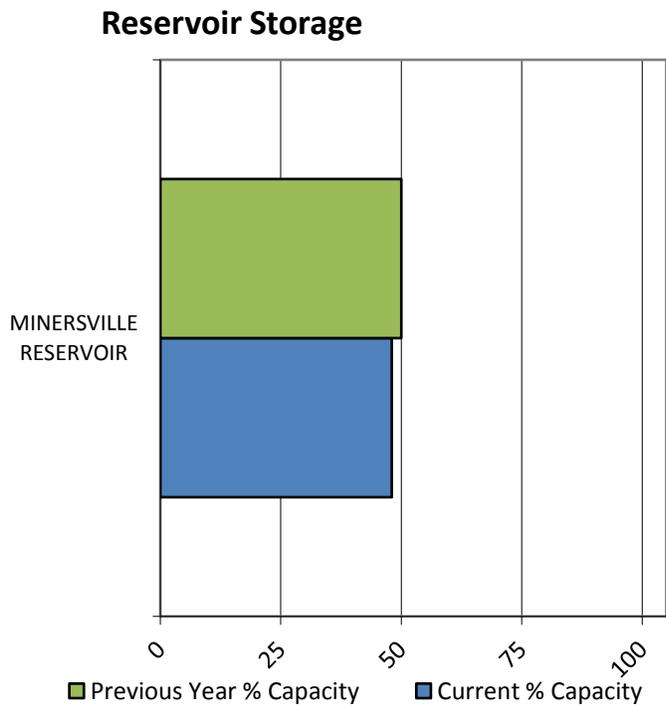
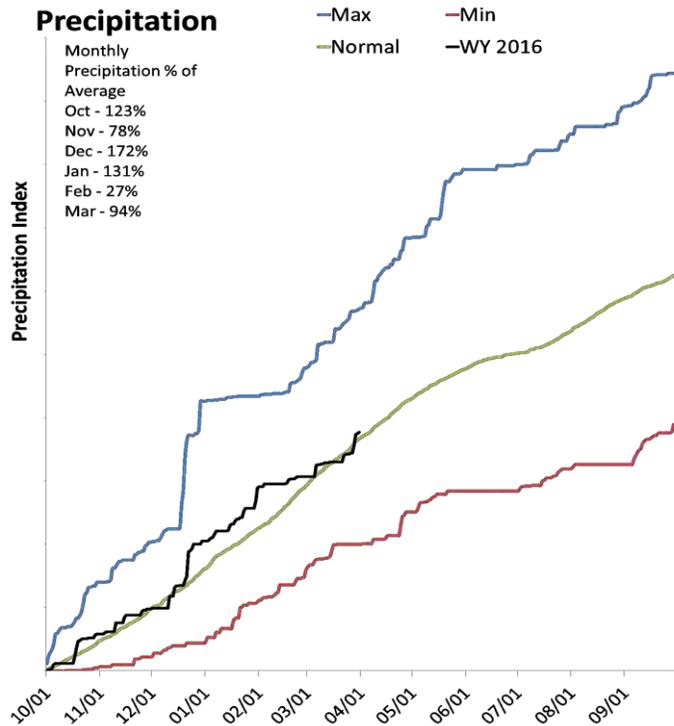
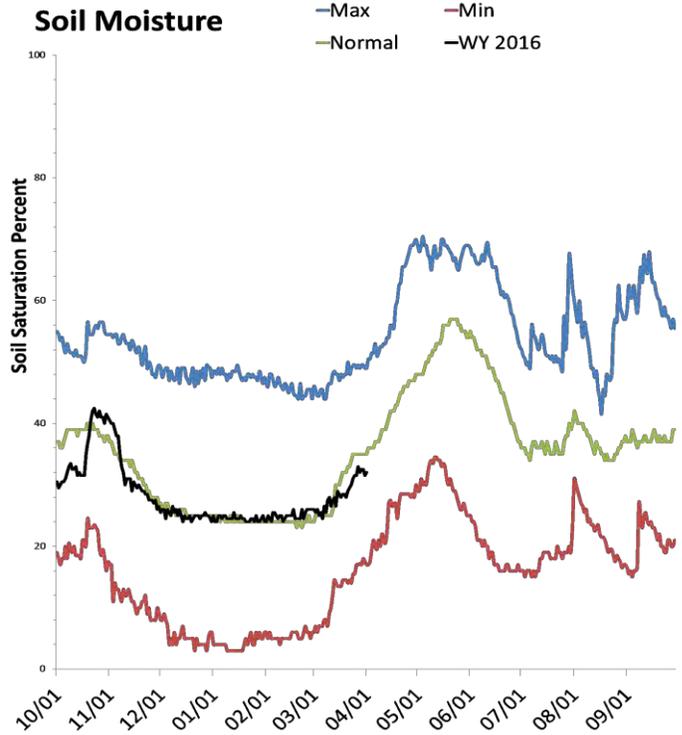
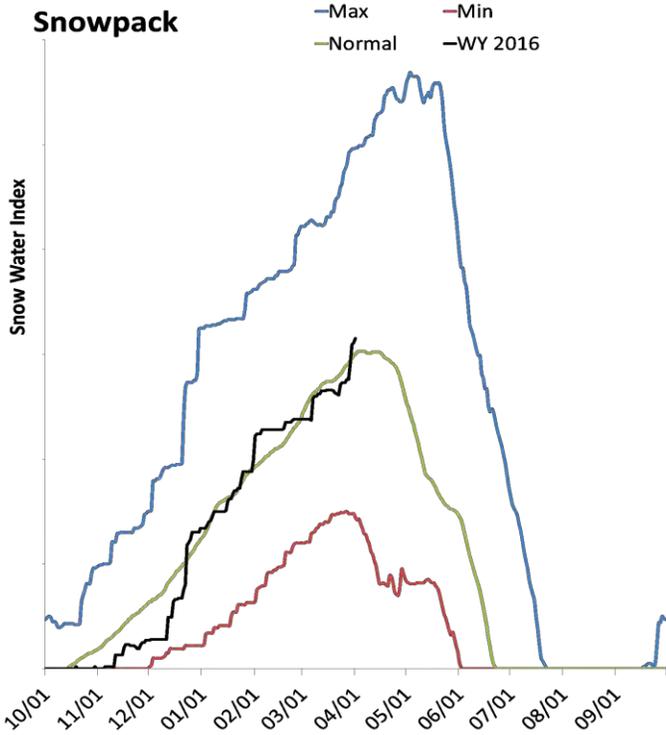
- | | |
|--|--|
| ■ < 50% | ○ SNOTEL sites |
| ■ 50 - 69% | △ Forecast points |
| ■ 70 - 89% | — Rivers |
| ■ 90 - 109% | — Highways |
| ■ 110 - 129% | ⊙ Cities |
| ■ 130 - 149% | |
| ■ > 150% | |
| no % avail. | |



Beaver River Basin

4/1/2016

Snowpack in the Beaver River Basin is near normal at 105% of normal, compared to 48% last year. Precipitation in March was near average at 96%, which brings the seasonal accumulation (Oct-Mar) to 103% of average. Soil moisture is at 32% compared to 42% last year. Reservoir storage is at 48% of capacity, compared to 50% last year. The forecast streamflow volume for the Beaver River is 73% of average. The surface water supply index is 32% for the Beaver River.



Beaver River Streamflow Forecasts - April 1, 2016

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

Beaver River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Beaver R nr Beaver	APR-JUL	6	13.7	19	73%	24	32	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, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Minersville Reservoir	11.1	11.7	16.8	23.3
Basin-wide Total	11.1	11.7	16.8	23.3
# of reservoirs	1	1	1	1

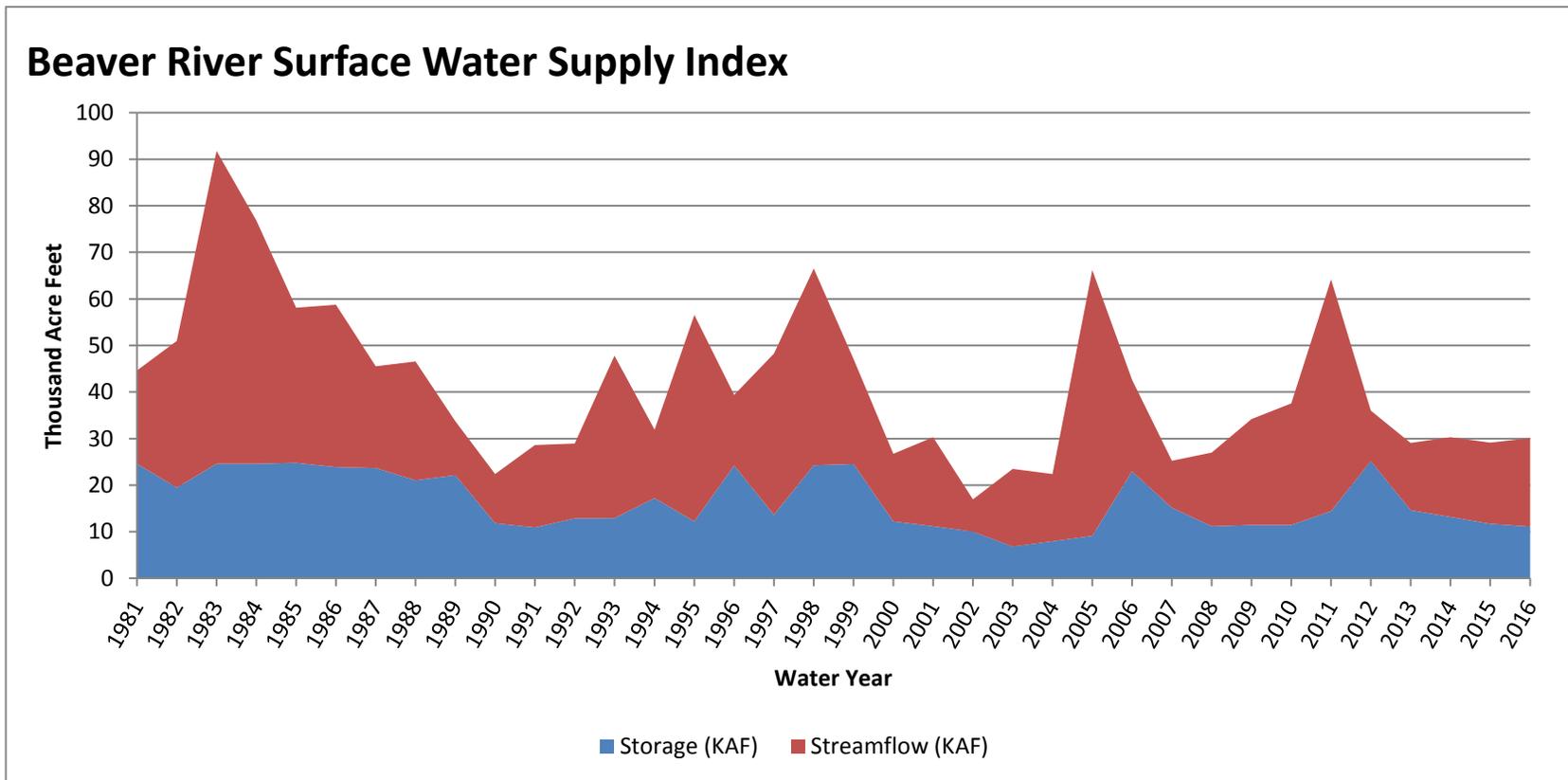
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Beaver	3	101%	40%

April 1, 2016

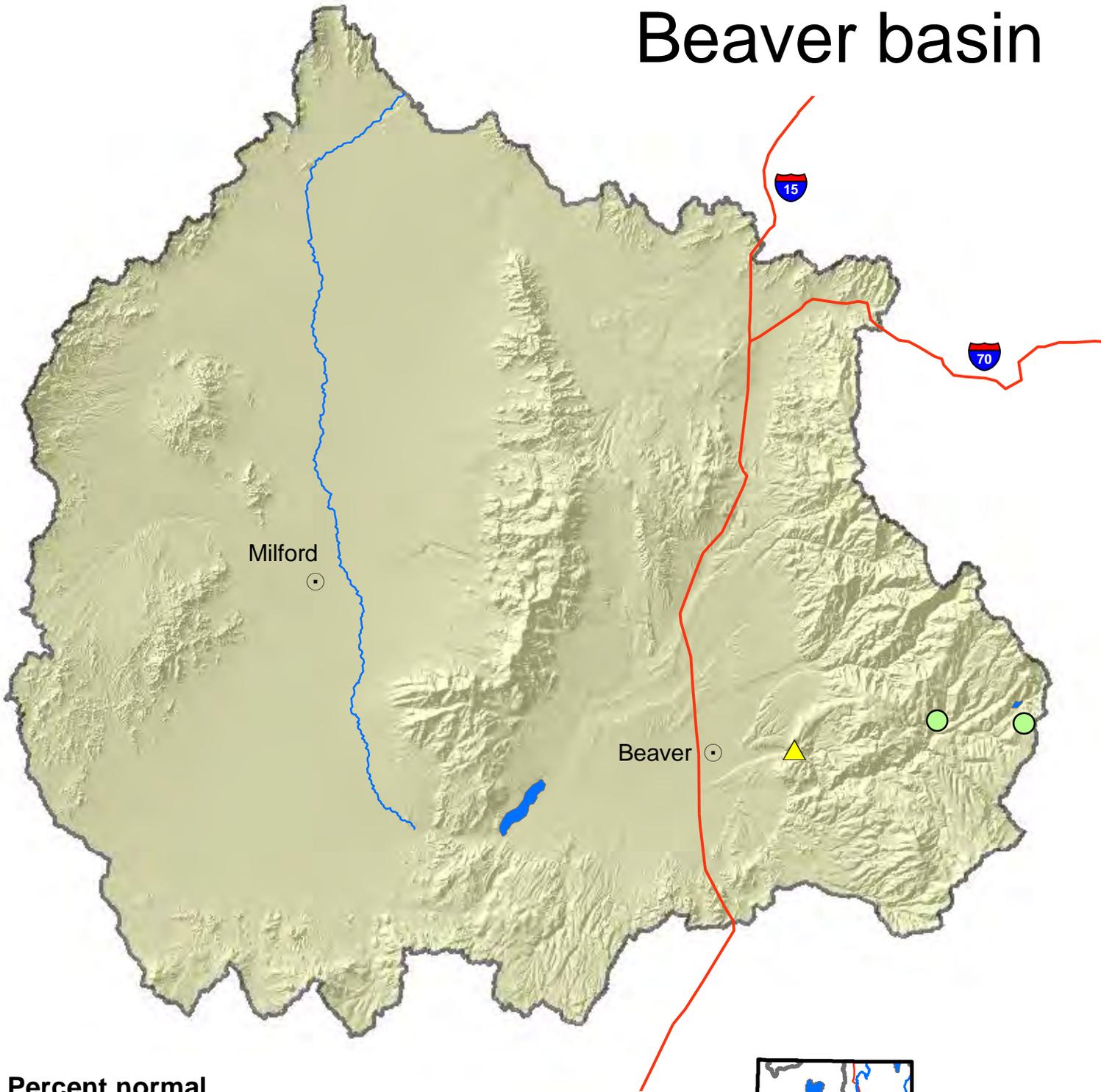
Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Beaver River	11.12	19.00	30.12	32	-1.46	13, 15, 01, 14

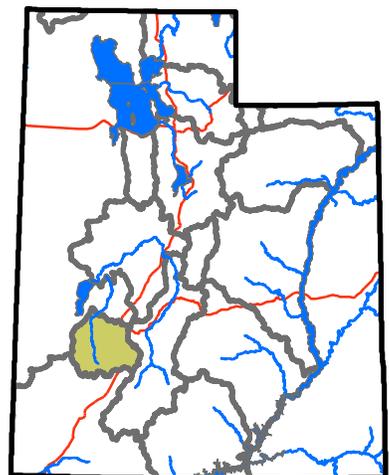
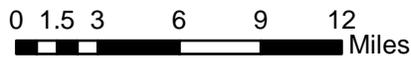
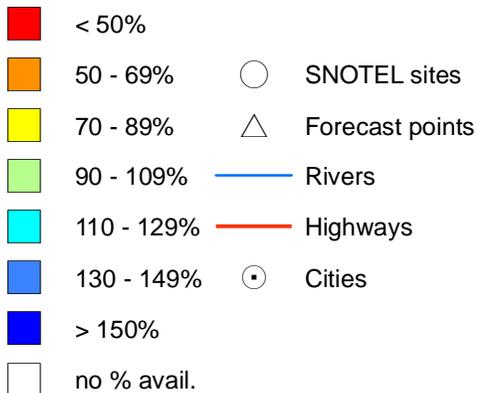
^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



Beaver basin



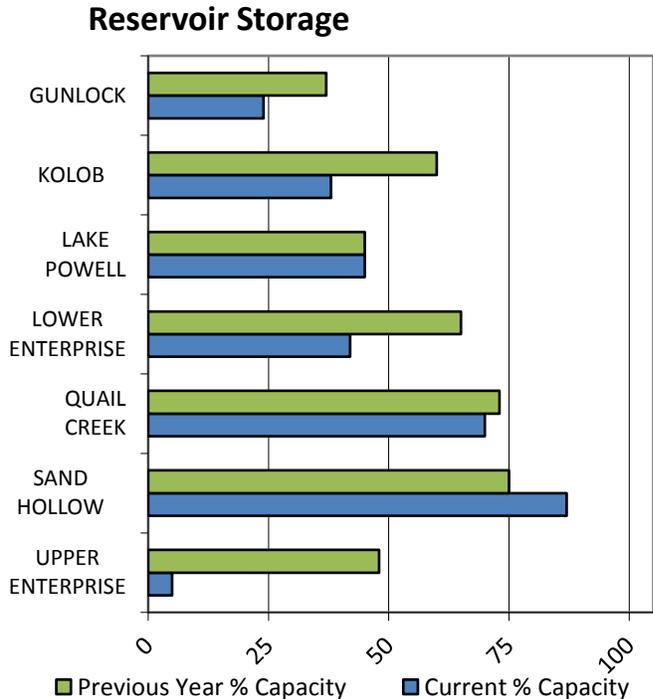
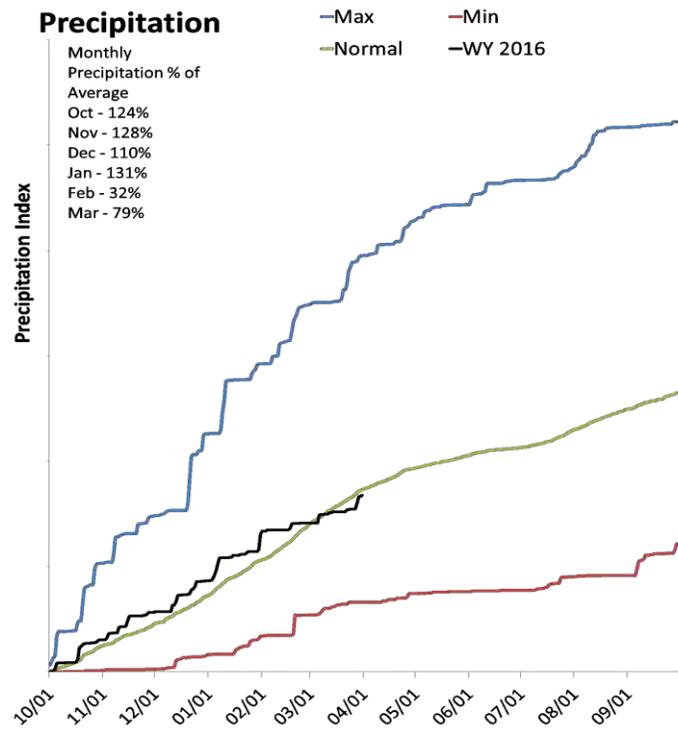
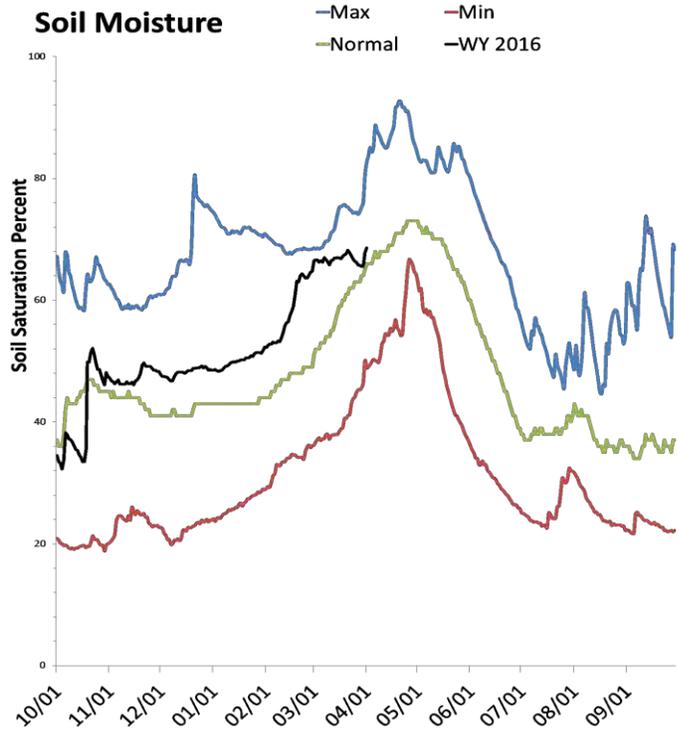
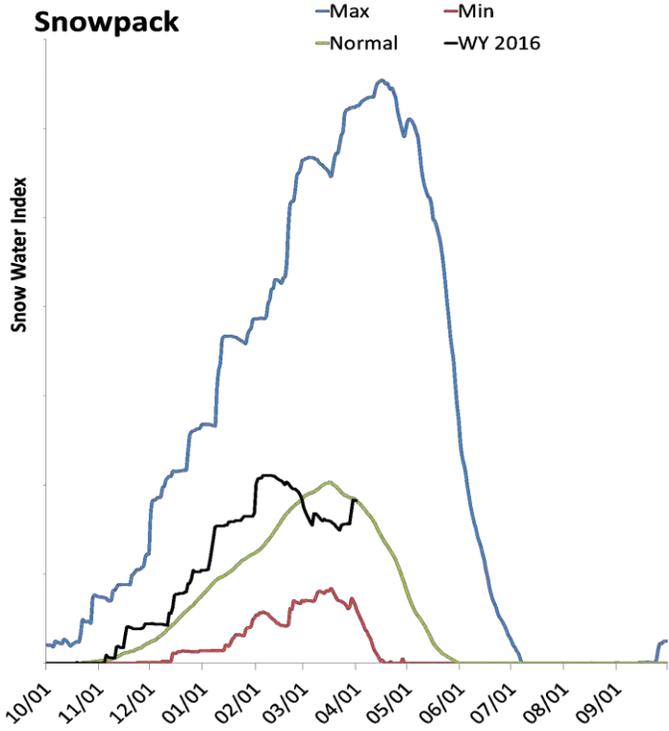
Percent normal



Southwestern Utah Basin

4/1/2016

Snowpack in the Southwestern Utah Basin is near normal at 100% of normal, compared to 42% last year. Precipitation in March was below average at 79%, which brings the seasonal accumulation (Oct-Mar) to 97% of average. Soil moisture is at 72% compared to 63% last year. Reservoir storage is at 45% of capacity, compared to 45% last year. Forecast streamflow volumes range from 75% to 86% of average. The surface water supply index is 56% for the Virgin River.



Southwestern Utah Streamflow Forecasts - April 1, 2016

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	3500	4580	5400	75%	6290	7710	7160
Virgin R nr Hurricane	APR-JUL	24	38	49	78%	62	83	63
Virgin R at Virgin	APR-JUL	33	43	50	86%	58	71	58
Santa Clara R nr Pine Valley	APR-JUL	2.3	3.1	3.8	76%	4.5	5.7	5
Coal Ck nr Cedar City	APR-JUL	8.1	12.1	14.9	80%	17.7	22	18.6

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

Reservoir Storage End of March, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Powell	11007.0	10913.1	16942.0	24322.0
Lower Enterprise	1.1	1.7	1.4	2.6
Upper Enterprise	0.5	4.8	5.3	10.0
Kolob Reservoir	2.1	3.4		5.6
Gunlock	2.5	3.8	6.8	10.4
Sand Hollow Reservoir	43.6	37.7		50.0
Quail Creek	28.0	29.1	31.1	40.0
Basin-wide Total	11039.1	10952.5	16986.6	24385.0
# of reservoirs	5	5	5	5

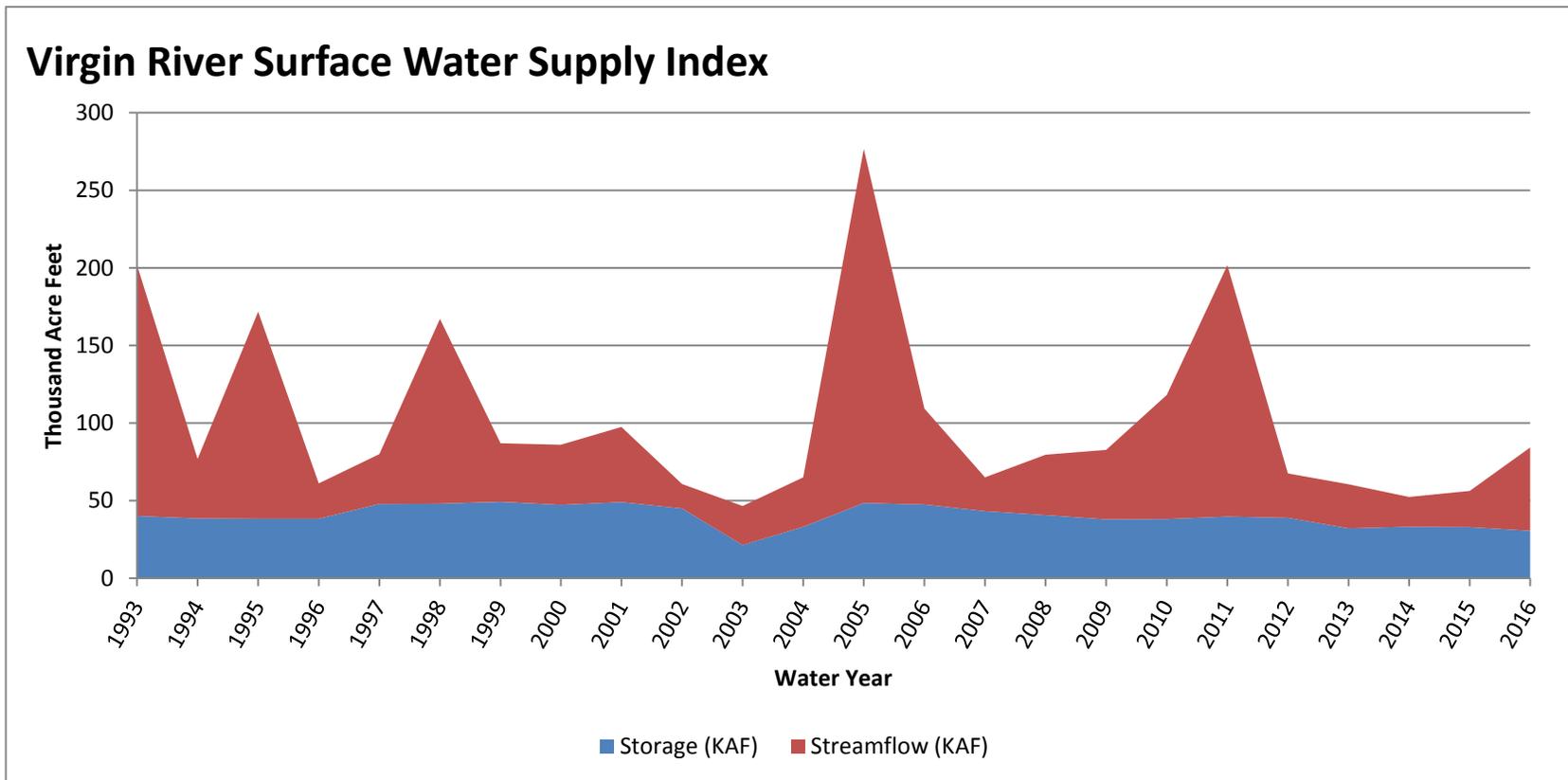
Watershed Snowpack Analysis April 1, 2016	# of Sites	% Median	Last Year % Median
Upper Virgin	8	96%	46%
Lower Virgin	2	33%	0%
Cedar City Parowan	9	102%	49%

April 1, 2016

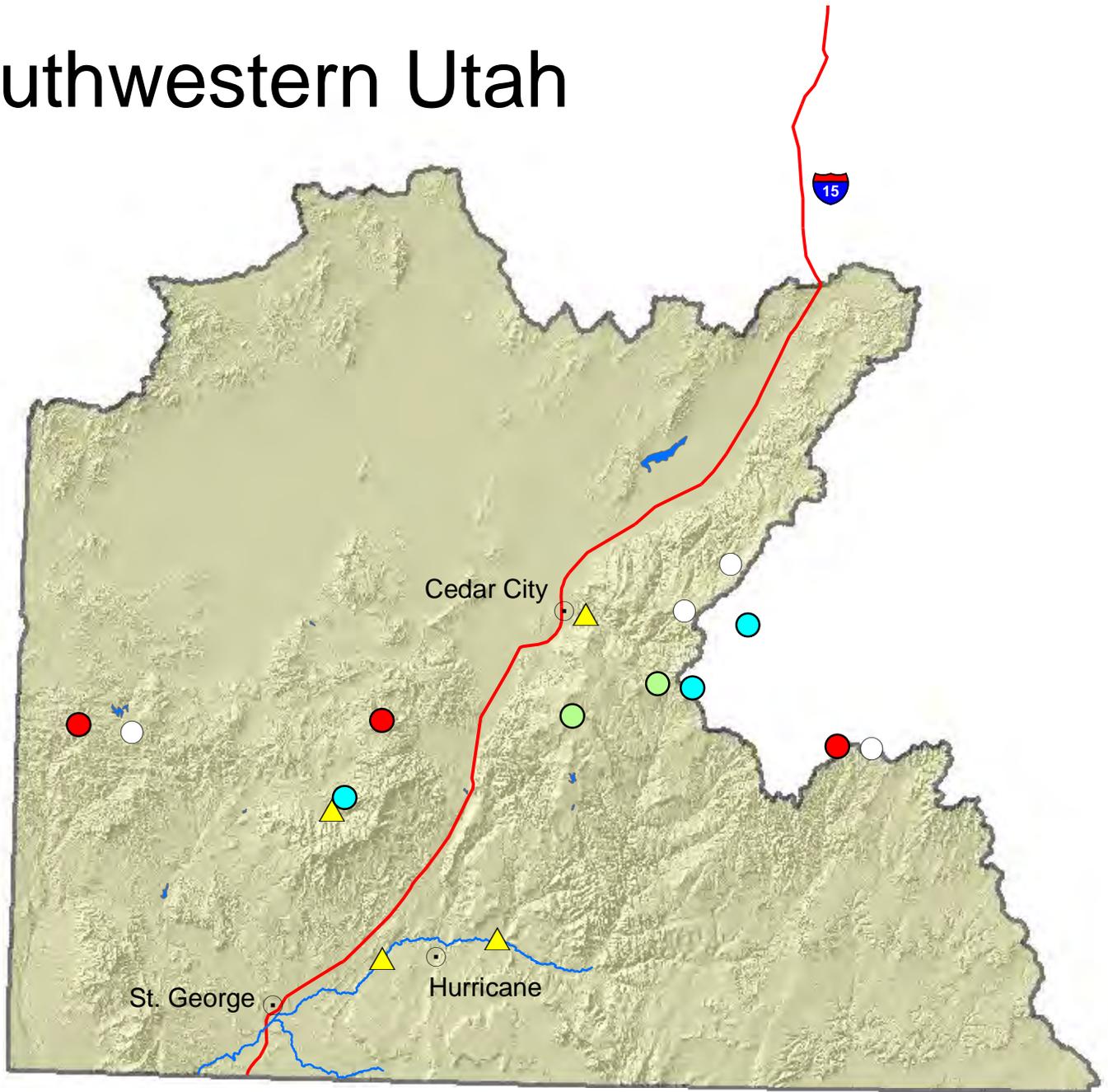
Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage	APR-JUL Forecast	Storage + Forecast	Percentile	SWSI [#]	Years with similiar SWSI
	KAF [^]	KAF [^]	KAF [^]	%		
Virgin River	30.51	53.80	84.31	56	0.5	97, 09, 00, 99

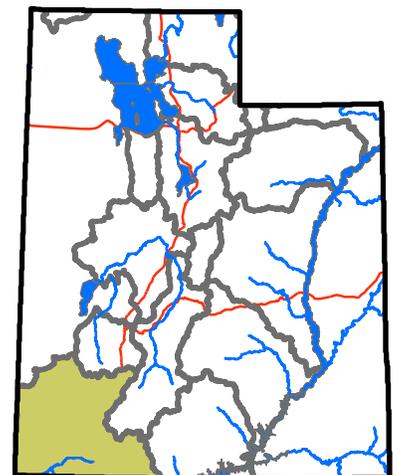
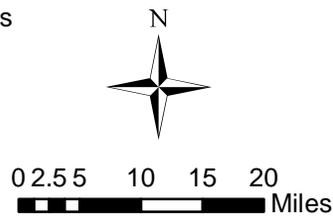
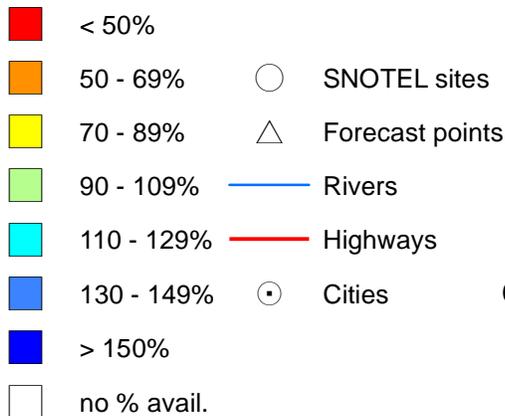
^{*}EOM, end of month; [#]SWSI, Surface Water Supply Index; [^]KAF, thousand acre-feet.



Southwestern Utah



Percent normal



April 1, 2016

Surface Water Supply Index

Basin or Region	Mar EOM [*] Storage <i>KAF</i> [^]	APR-JUL Forecast <i>KAF</i> [^]	Storage + Forecast <i>KAF</i> [^]	Percentile %	SWSI [#]	Years with similar SWSI
Bear River	530.9	125.0	655.9	43	-0.56	10, 90, 15, 14
Woodruff Narrows	51.6	91.0	142.6	49	-0.11	00, 07, 08, 87
Little Bear	12.3	34.0	46.3	52	0.17	94, 10, 08, 93
Ogden River	84.9	68.0	152.9	51	0.11	00, 10, 89, 94
Weber River	242.3	245.0	487.3	46	-0.34	87, 00, 08, 94
Provo River	803.1	92.0	895.1	9	-3.44	04, 03, 15, 05
Western Uintah	182.8	91.0	273.8	68	1.46	09, 06, 98, 96
Eastern Uintah	37.0	59.0	96.0	32	-1.46	12, 15, 07, 91
Blacks Fork	9.5	85.0	94.5	47	-0.25	91, 06, 08, 09
Smiths Fork	6.6	26.0	32.6	59	0.74	97, 91, 14, 10
Price River	13.9	25.0	38.9	16	-2.82	04, 14, 91, 02
Joe's Valley	37.2	38.0	75.2	30	-1.69	81, 12, 15, 14
Ferron Creek	9.5	29.0	38.5	43	-0.56	07, 03, 91, 87
Moab	1.7	6.0	7.7	80	2.5	92, 11, 88, 98
Upper Sevier	71.1	65.0	136.1	35	-1.24	00, 02, 97, 14
San Pitch	3.0	15.0	18.0	19	-2.59	03, 04, 91, 92
Lower Sevier	106.0	90.0	196.0	41	-0.79	89, 13, 01, 07
Beaver River	11.1	19.0	30.1	32	-1.46	13, 15, 01, 14
Virgin River	30.5	53.8	84.3	56	0.5	97, 09, 00, 99

^{*}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
Bob Nault, Electronics Technician
Kent Sutcliffe, Soil Scientist



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

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



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

