

# Utah Climate and Water Report

November 2013



A new SNOTEL site at Sunflower Flat on the east Boulder Mountain,  
installed October 2013

Photo by Randy Julander

# Utah Climate and Water Report

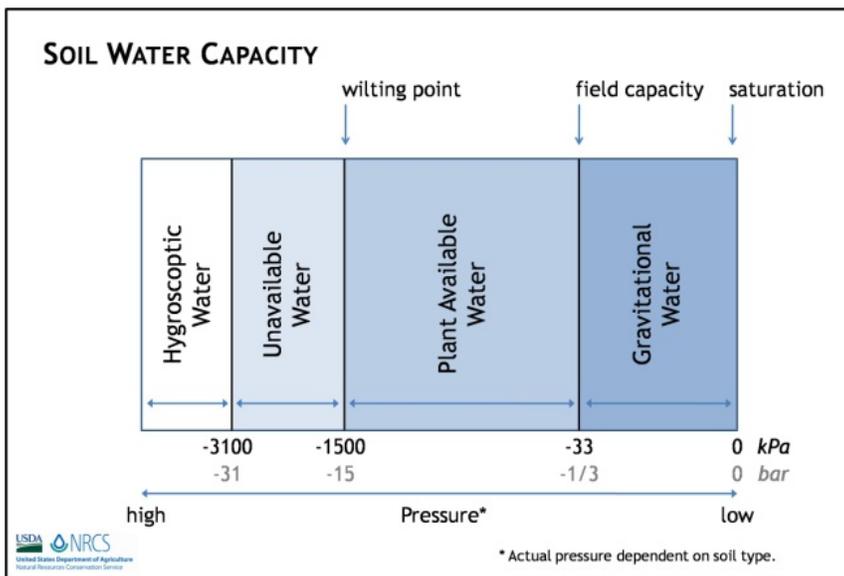
The purpose of the Climate and Water Report is to provide a snapshot of current and immediate past climatic conditions and other information useful to agricultural and water user interests in Utah. The report utilizes data from several sources that represent specific parameters (streamflow data from the United States Geological Survey, reservoir data from the Bureau of Reclamation, and other sources), geography including high elevation United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Snowpack Telemetry (SNOTEL) data, and agriculturally important data from the USDA-NRCS Soil Climate Analysis Network (SCAN). Data on precipitation, soil moisture, soil temperature, reservoir storage, and streamflow are analyzed and presented. These data analyses can be used to increase irrigation efficiency and agricultural production. As with all data and analyses, there are limitations due to data quality, quantity, and spatial application.

# Climate and Water Information

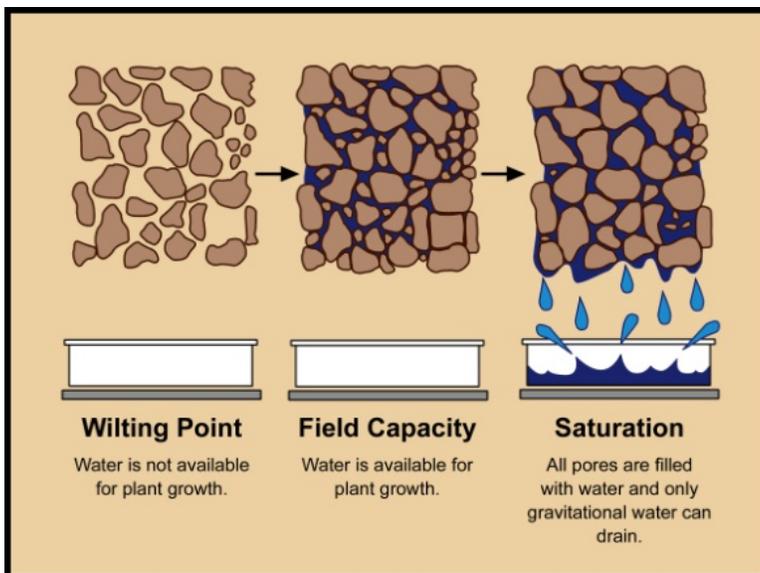
## Soil Climate Analysis Network

Soil Climate Analysis Network (SCAN) stations are primarily located on low-to mid-elevation, agriculturally important landscapes that maintain representative soils. Elevations range from 3,000 to 7,000 ft. The SCAN network provides real-time soil moisture and temperature data coupled with additional climate information for use in natural resource planning, drought assessment, water resource management, and resource inventory. Stations are situated on non-irrigated, native soils, are remotely located, and collect hourly atmospheric and soils data that are available to the public online.

In order to summarize SCAN data, the 35 sites in Utah are grouped by climate divisions (North Central, Northern Mountains, Uintah Basin, Southeast, South Central, Dixie, and Western).



**Explanation of soil water capacity definitions.** Field capacity (FC) and wilting point (WP) are calculated in the laboratory for each soil horizon. The amount of water held between field capacity and wilting point is plant available.



**Visual explanation of soil water capacity definitions.**

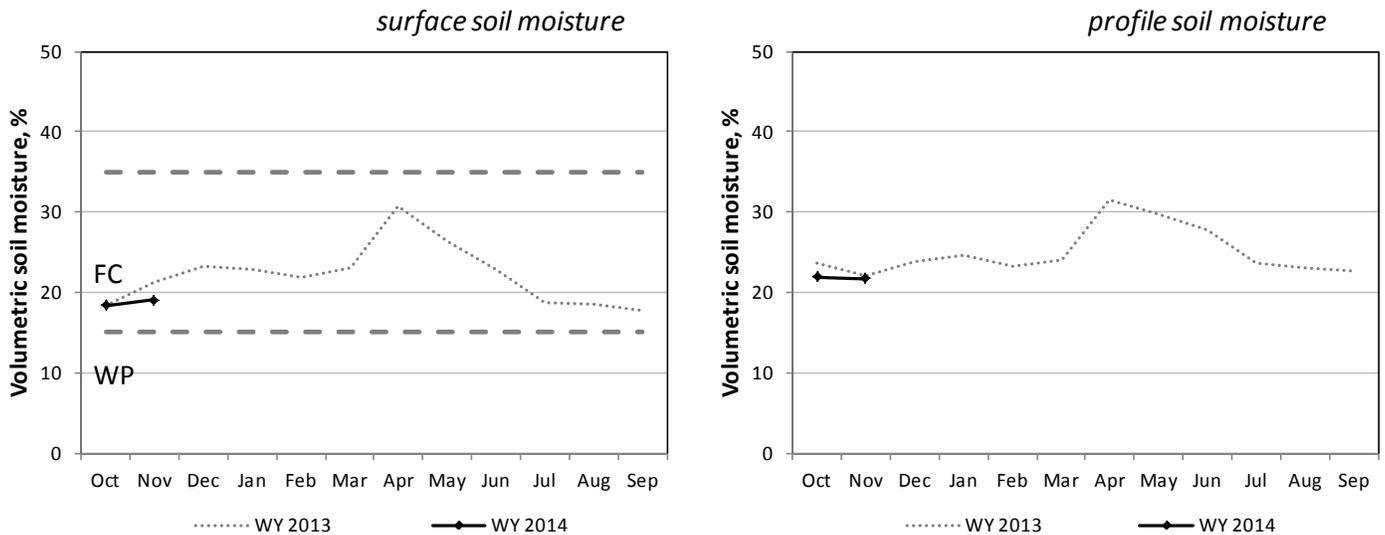
# North Central

## Soil Climate Analysis Network (SCAN)

Site name	Precip to Date*	Monthly Precip	Soil Moisture					Soil Temperature				
			2"	4"	8"	20"	40"	2"	4"	8"	20"	40"
	<i>in.</i>	<i>in.</i>	<i>volume %</i>					<i>°F</i>				
<b>NORTH CENTRAL</b>												
Blue Creek	0.7	0.7	13	13	18	21	17	43	45	47	50	54
Cache Junction	0.7	0.7	22	21	24	25	25	45	46	47	50	53
Grantsville	1.2	1.2	8	18	26	28		46	49	51	55	

\* Precipitation since October 1 (beginning of the water year). Monthly Precip is the amount of precipitation accumulated in the past month. SCAN sites utilize tipping bucket rain gauges which do not accurately measure precipitation in the form of snowfall. Soil moisture and temperature values reflect conditions measured on the first of the month.

## North Central



*Surface soil moisture* is the weighted mean of the water content measured at depths of 2, 4, and 8 inches. **FC** is the mean field capacity, **WP** is the mean permanent wilting point for the soil surface (0 to 12 inches) at SCAN sites within the region, and **WY** is the water year lasting October through September. *Profile soil moisture* is the weighted mean of water content measured at depths of 2, 4, 8, 20, and 40 inches.

**Additional data available at the SCAN website, including: hourly air temperature, relative humidity, wind speed, wind direction, barometric pressure, precipitation, solar radiation, soil temperature, and soil moisture.**

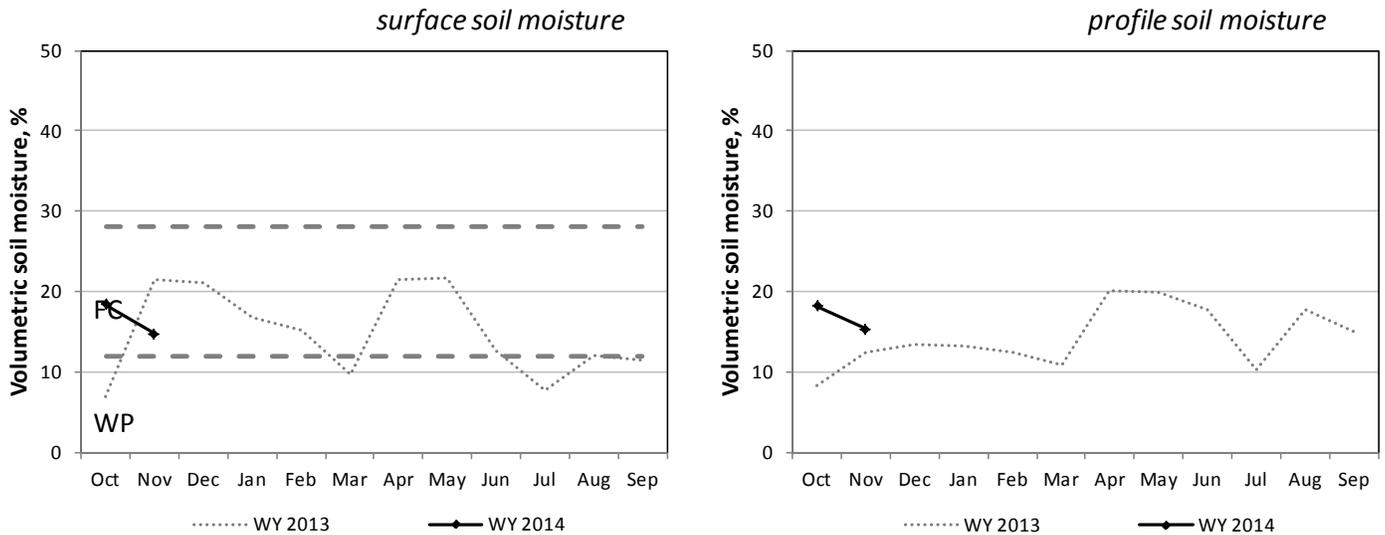
# Northern Mountains

## Soil Climate Analysis Network (SCAN)

Site name	Precip to Date*	Monthly Precip	Soil Moisture					Soil Temperature				
			2"	4"	8"	20"	40"	2"	4"	8"	20"	40"
	<i>in.</i>	<i>in.</i>	<i>volume %</i>					<i>°F</i>				
<b>NORTHERN MOUNTAINS</b>												
Chicken Ridge	0.7	0.7	6	10	12	10	11	35	37	38	42	46
Buffalo Jump	0.7	0.7	8	12	13	7	-	38	39	41	46	-
Morgan	1.0	1.0	22	20	23	32	19	44	44	45	46	49

\* Precipitation since October 1 (beginning of the water year). Monthly Precip is the amount of precipitation accumulated in the past month. SCAN sites utilize tipping bucket rain gauges which do not accurately measure precipitation in the form of snowfall. Soil moisture and temperature values reflect conditions measured on the first of the month.

## Northern Mountains



*Surface soil moisture* is the weighted mean of the water content measured at depths of 2, 4, and 8 inches. **FC** is the mean field capacity, **WP** is the mean permanent wilting point for the soil surface (0 to 12 inches) at SCAN sites within the region, and **WY** is the water year lasting October through September. *Profile soil moisture* is the weighted mean of water content measured at depths of 2, 4, 8, 20, and 40 inches.

**Additional data available at the SCAN website, including: hourly air temperature, relative humidity, wind speed, wind direction, barometric pressure, precipitation, solar radiation, soil temperature, and soil moisture.**

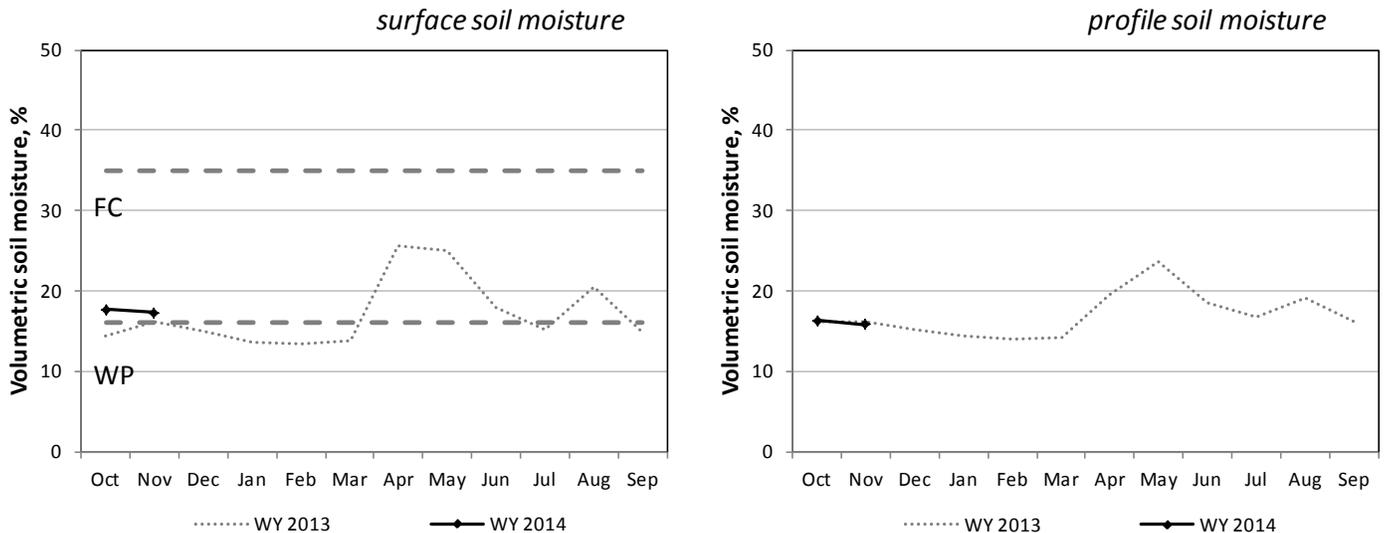
# Uintah Basin

## Soil Climate Analysis Network (SCAN)

Site name	Precip to Date*	Monthly Precip	Soil Moisture					Soil Temperature				
			2"	4"	8"	20"	40"	2"	4"	8"	20"	40"
	<i>in.</i>	<i>in.</i>	<i>volume %</i>					<i>°F</i>				
<b>UINTAH BASIN</b>												
Mountain Home	0.4	0.4	13	19	22	18	10	41	42	43	46	48
Little Red Fox	0.5	0.5	10	17	19	20	18	39	44	46	49	52
Split Mountain	1.5	1.5	15	22	16	13	12	41	43	46	50	55

\* Precipitation since October 1 (beginning of the water year). Monthly Precip is the amount of precipitation accumulated in the past month. SCAN sites utilize tipping bucket rain gauges which do not accurately measure precipitation in the form of snowfall. Soil moisture and temperature values reflect conditions measured on the first of the month.

## Uintah Basin



*Surface soil moisture* is the weighted mean of the water content measured at depths of 2, 4, and 8 inches. **FC** is the mean field capacity, **WP** is the mean permanent wilting point for the soil surface (0 to 12 inches) at SCAN sites within the region, and **WY** is the water year lasting October through September. *Profile soil moisture* is the weighted mean of water content measured at depths of 2, 4, 8, 20, and 40 inches.

**Additional data available at the SCAN website, including: hourly air temperature, relative humidity, wind speed, wind direction, barometric pressure, precipitation, solar radiation, soil temperature, and soil moisture.**

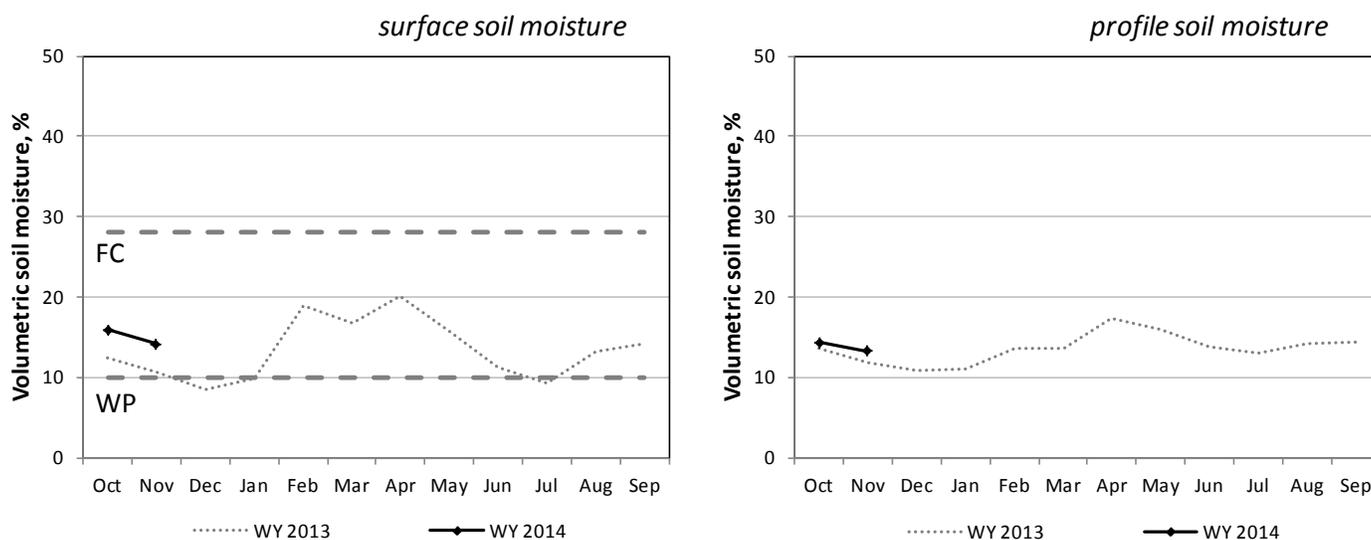
# Southeast

## Soil Climate Analysis Network (SCAN)

Site name	Precip to Date*	Monthly Precip	Soil Moisture					Soil Temperature				
			2"	4"	8"	20"	40"	2"	4"	8"	20"	40"
		<i>in.</i>	<i>volume %</i>					<i>°F</i>				
<b>SOUTHEAST</b>												
Price	1.2	1.2	9	17	20	14	19	39	42	45	50	54
Green River	0.5	0.5	6	8	8	5	7	42	45	48	53	58
Harm's Way	1.4	1.4	12	3	19	13	6	39	37	43	48	53
West Summit	0.9	0.9	16	20	20	14	17	35	37	42	44	50
Eastland	1.5	1.5	27	21	22	22	20	38	41	42	48	52
Alkali Mesa	0.4	0.4	7	16	14	18	13	40	37	46	52	55
McCracken Mesa	0.7	0.7	21	15	14	15	13	39	45	48	55	60

\* Precipitation since October 1 (beginning of the water year). Monthly Precip is the amount of precipitation accumulated in the past month. SCAN sites utilize tipping bucket rain gauges which do not accurately measure precipitation in the form of snowfall. Soil moisture and temperature values reflect conditions measured on the first of the month.

## Southeast



*Surface soil moisture* is the weighted mean of the water content measured at depths of 2, 4, and 8 inches. **FC** is the mean field capacity, **WP** is the mean permanent wilting point for the soil surface (0 to 12 inches) at SCAN sites within the region, and **WY** is the water year lasting October through September. *Profile soil moisture* is the weighted mean of water content measured at depths of 2, 4, 8, 20, and 40 inches.

Additional data available at the SCAN website, including: hourly air temperature, relative humidity, wind speed, wind direction, barometric pressure, precipitation, solar radiation, soil temperature, and soil moisture.

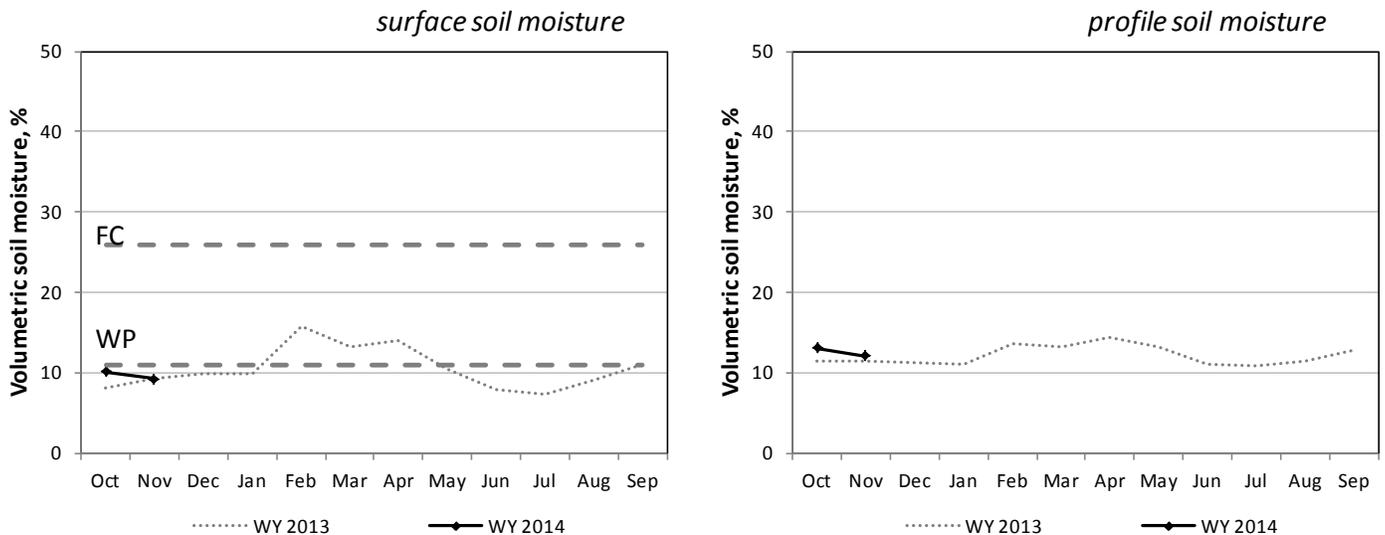
# South Central

## Soil Climate Analysis Network (SCAN)

Site name	Precip to Date*	Monthly Precip	Soil Moisture					Soil Temperature				
			2"	4"	8"	20"	40"	2"	4"	8"	20"	40"
	<i>in.</i>	<i>in.</i>	<i>volume %</i>					<i>° F</i>				
<b>SOUTH CENTRAL</b>												
Nephi	0.9	0.9	14	17	14	7	1	46	47	48	52	55
Ephraim	0.8	0.8	14	11	15	15	33	46	47	49	50	54
Holden	0.4	0.4	3	5	3	12	13	46	48	50	53	58
Milford	0.4	0.4	6	13	14	27	17	42	48	50	54	58
Manderfield	1.0	1.0	11	13	11	11	6	39	44	45	48	52
Circleville	0.6	0.6	20	5	6	8	20	37	42	68	50	54
Panguitch	0.8	0.8	7	18	14	20	30	38	39	40	44	49
Cave Valley	1.9	1.9	0	8	8	6	5	32	37	41	46	49
Vermillion	1.4	1.4	3	9	8	9	7	34	36	40	44	50
Spooky	0.2	0.2	2	1	3	18	2	49	47	51	55	58

\* Precipitation since October 1 (beginning of the water year). Monthly Precip is the amount of precipitation accumulated in the past month. SCAN sites utilize tipping bucket rain gauges which do not accurately measure precipitation in the form of snowfall. Soil moisture and temperature values reflect conditions measured on the first of the month.

## South Central



*Surface soil moisture* is the weighted mean of the water content measured at depths of 2, 4, and 8 inches. **FC** is the mean field capacity, **WP** is the mean permanent wilting point for the soil surface (0 to 12 inches) at SCAN sites within the region, and **WY** is the water year lasting October through September. *Profile soil moisture* is the weighted mean of water content measured at depths of 2, 4, 8, 20, and 40 inches.

**Additional data available at the SCAN website, including: hourly air temperature, relative humidity, wind speed, wind direction, barometric pressure, precipitation, solar radiation, soil temperature, and soil moisture.**

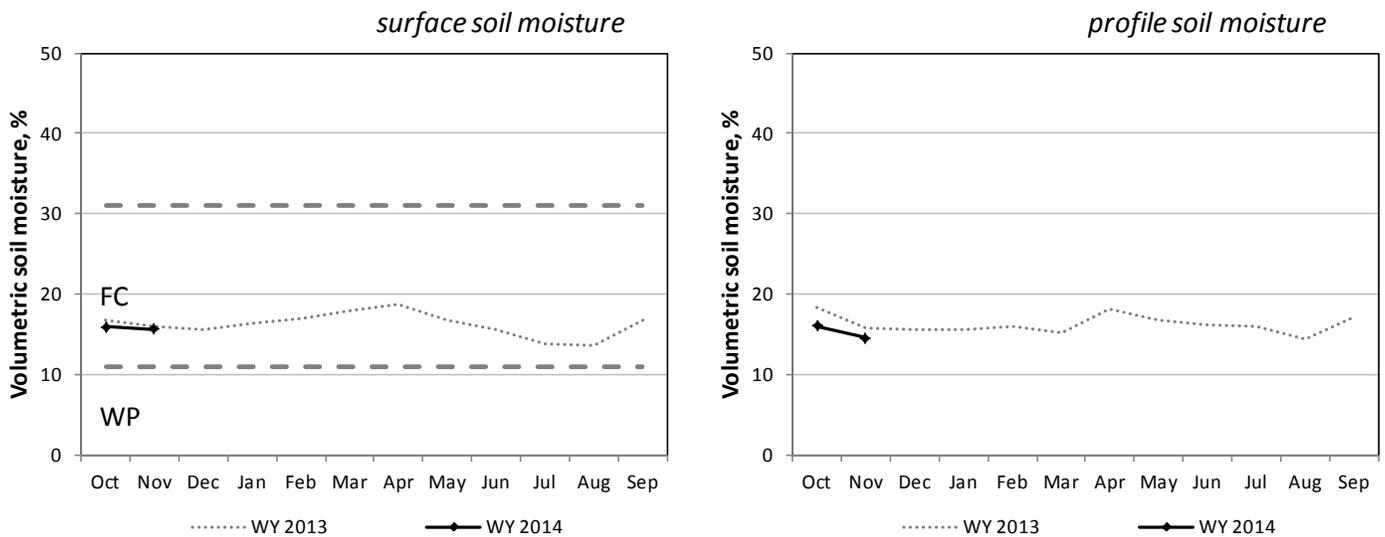
# Western and Dixie

## Soil Climate Analysis Network (SCAN)

Site name	Precip to Date*	Monthly Precip	Soil Moisture					Soil Temperature				
			2"	4"	8"	20"	40"	2"	4"	8"	20"	40"
	<i>in.</i>	<i>in.</i>	<i>volume %</i>					<i>°F</i>				
<b>WESTERN</b>												
Grouse Creek	0.4	0.4	1	9	11	15	16	43	45	47	48	52
Park Valley	1.2	1.2					24	42	44	46	50	55
Goshute	0.8	0.8	14	0	46	32	30	37	41	46	46	53
Dugway	0.9	0.9	28	31	37		12	45	48	50	52	54
Tule Valley	0.4	0.4	13	13	22	13	10	41	48	53	54	59
Hal's Canyon	0.8	0.8	4	8	10	10	9	39	43	46	52	57
Enterprise	0.3	0.3	4	20	20	13	14	41	50	51	53	58
<b>DIXIE</b>												
Sand Hollow	0.3	0.3	2	1	0	1	0	44	50	56	59	64

\* Precipitation since October 1 (beginning of the water year). Monthly Precip is the amount of precipitation accumulated in the past month. SCAN sites utilize tipping bucket rain gauges which do not accurately measure precipitation in the form of snowfall. Soil moisture and temperature values reflect conditions measured on the first of the month.

### Western & Dixie



*Surface soil moisture* is the weighted mean of the water content measured at depths of 2, 4, and 8 inches. **FC** is the mean field capacity, **WP** is the mean permanent wilting point for the soil surface (0 to 12 inches) at SCAN sites within the region, and **WY** is the water year lasting October through September. *Profile soil moisture* is the weighted mean of water content measured at depths of 2, 4, 8, 20, and 40 inches.

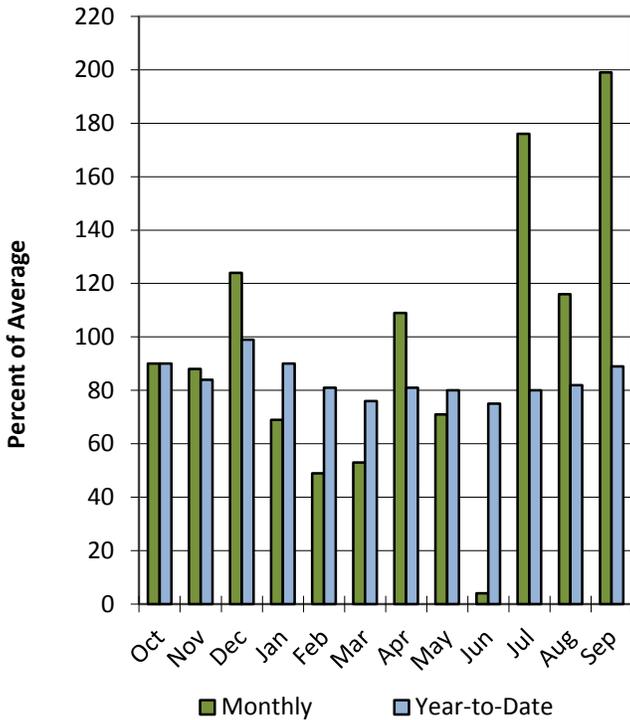
**Additional data available at the SCAN website, including:** hourly air temperature, relative humidity, wind speed, wind direction, barometric pressure, precipitation, solar radiation, soil temperature, and soil moisture.

# Statewide Utah

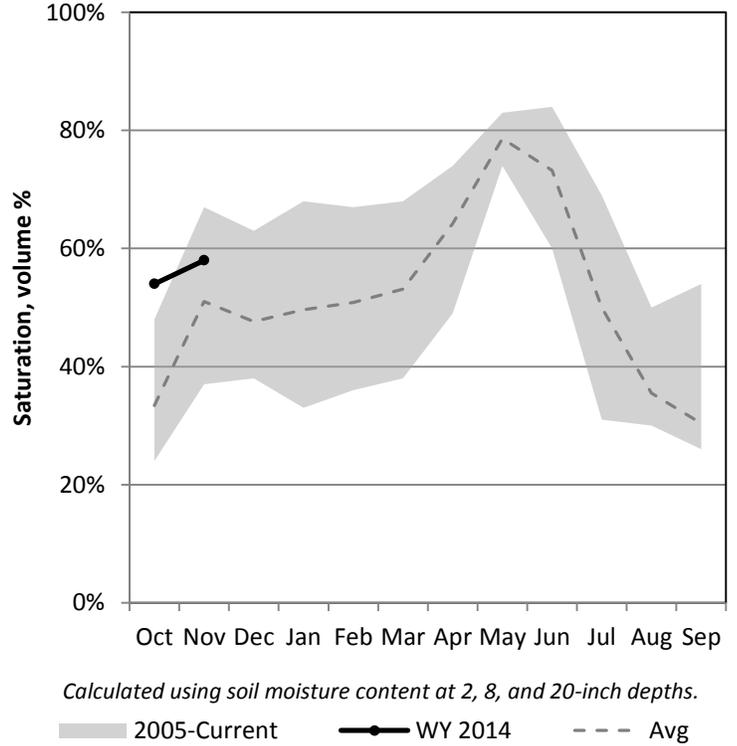
11/1/2013

Precipitation in October was near average at 90%, which brings the seasonal accumulation (Oct-Oct) to 90% of average. Soil moisture is at 58% compared to 42% last year. Reservoir storage is at 65% of capacity, compared to 86% last year.

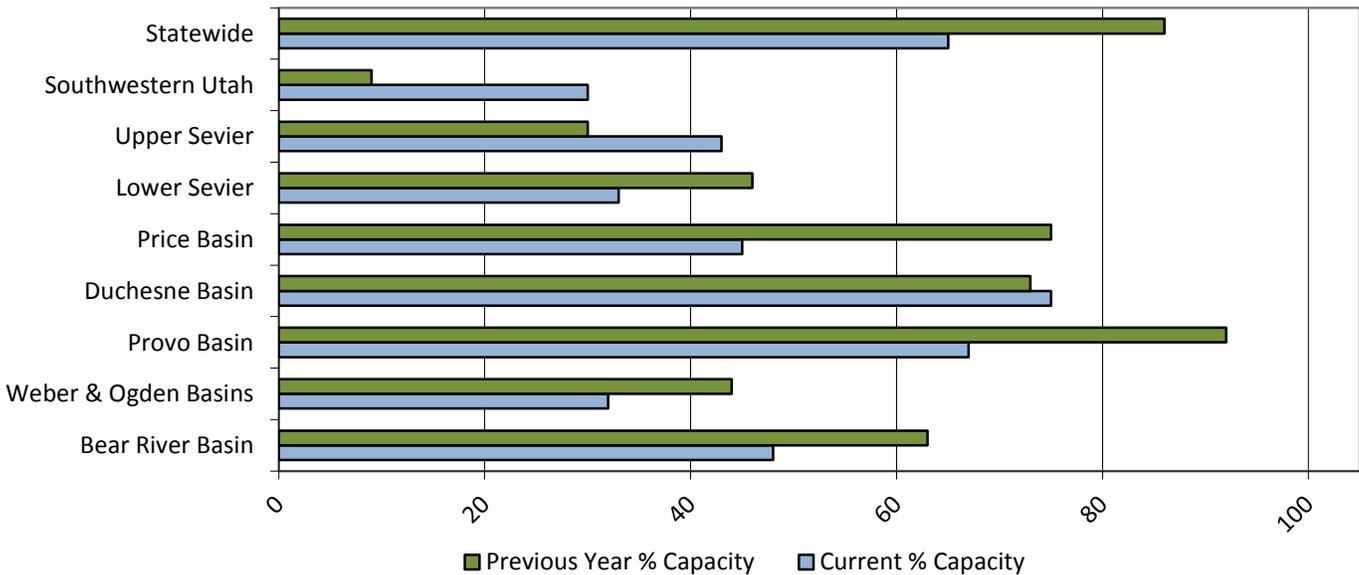
## Precipitation



## Soil Moisture



## Reservoir Storage



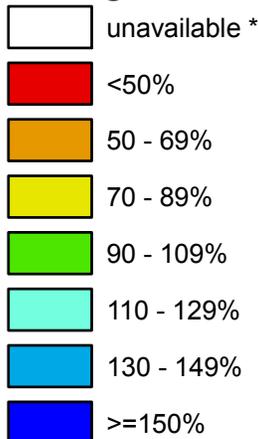
# Utah

## SNOTEL Water Year (Oct 1) to Date Precipitation

### % of Normal

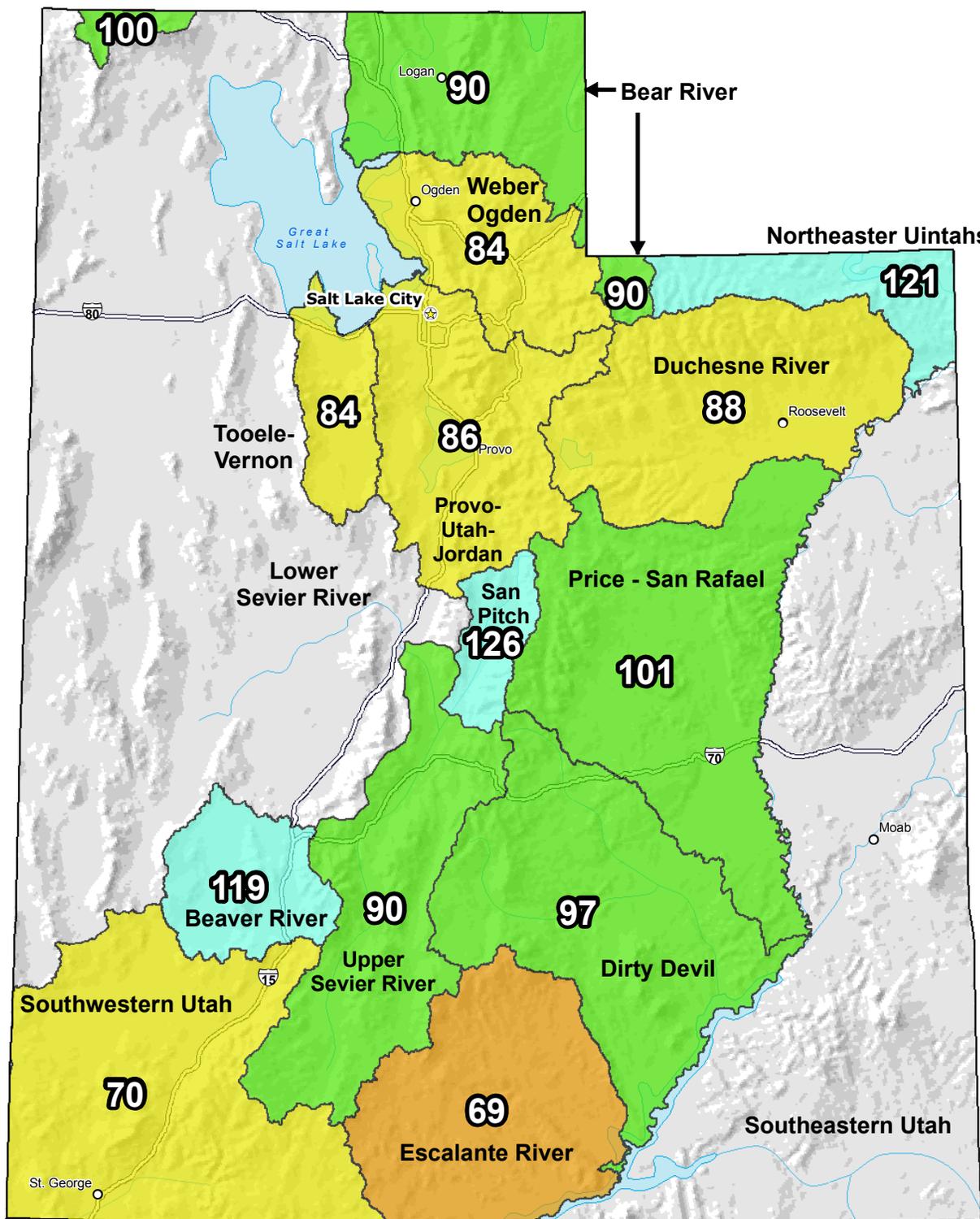
Nov 04, 2013

Water Year  
(Oct 1) to Date  
Precipitation  
Basin-wide  
Percent of  
1981-2010  
Average



\* Data unavailable at time of posting or measurement is not representative at this time of year

**Provisional Data  
Subject to Revision**



The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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

# Utah

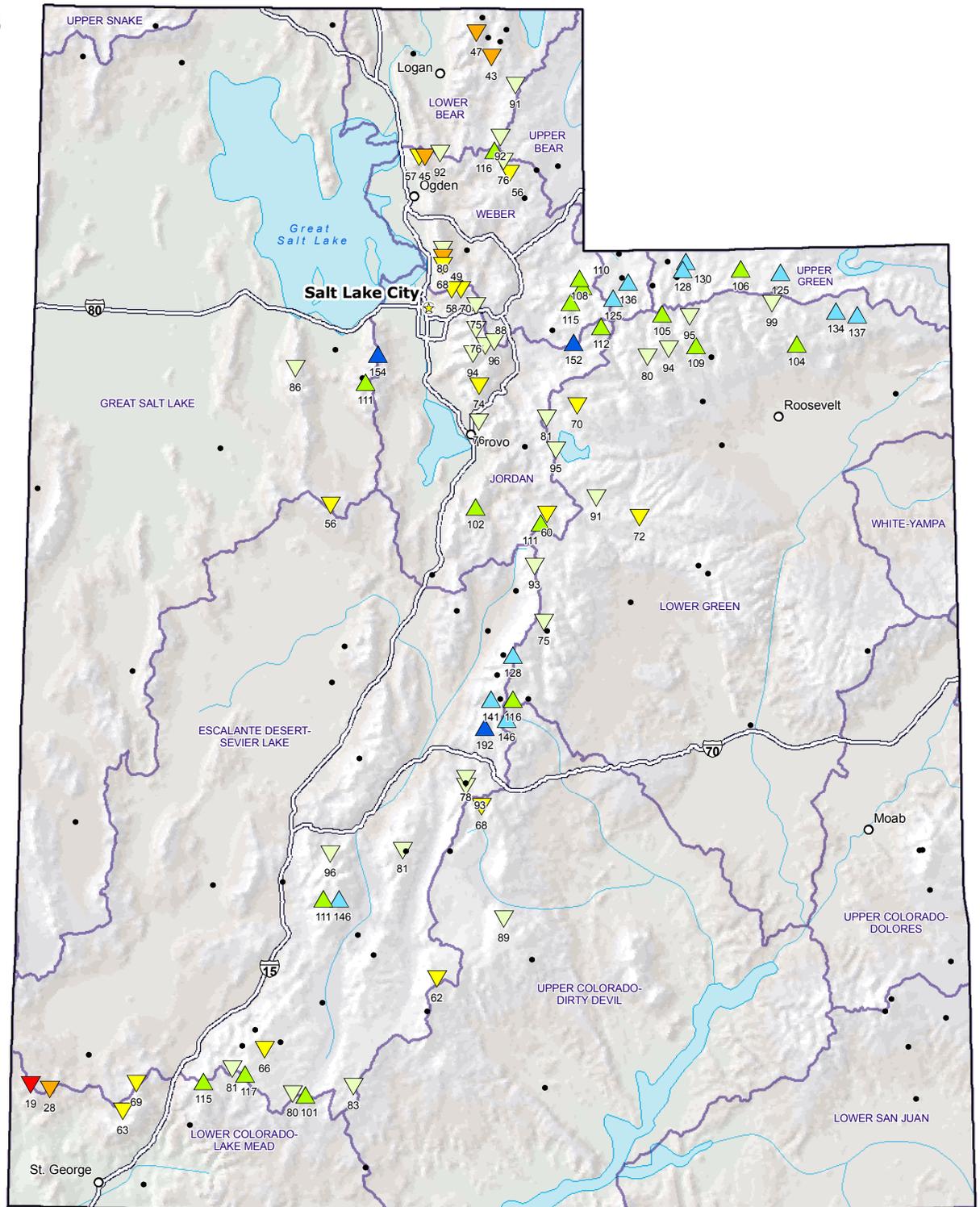
## SNOTEL Month to Date (MTD) Precipitation % of Normal

**Nov 01, 2013**

**Current MTD  
Precipitation  
% of 1981-2010  
Average**

- ▲ > 200%
- ▲ 150-200%
- ▲ 125-149%
- ▲ 100-124%
- ▼ 75-99%
- ▼ 50-74%
- ▼ 25-49%
- ▼ 1-24%
- + 0%
- Unavailable\*

*Provisional Data  
Subject to Revision*



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

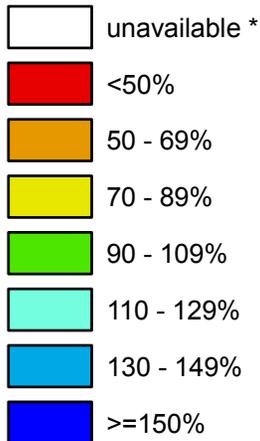
*\* Data unavailable at time of posting or  
unavailable long-term normal.*

# Utah

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

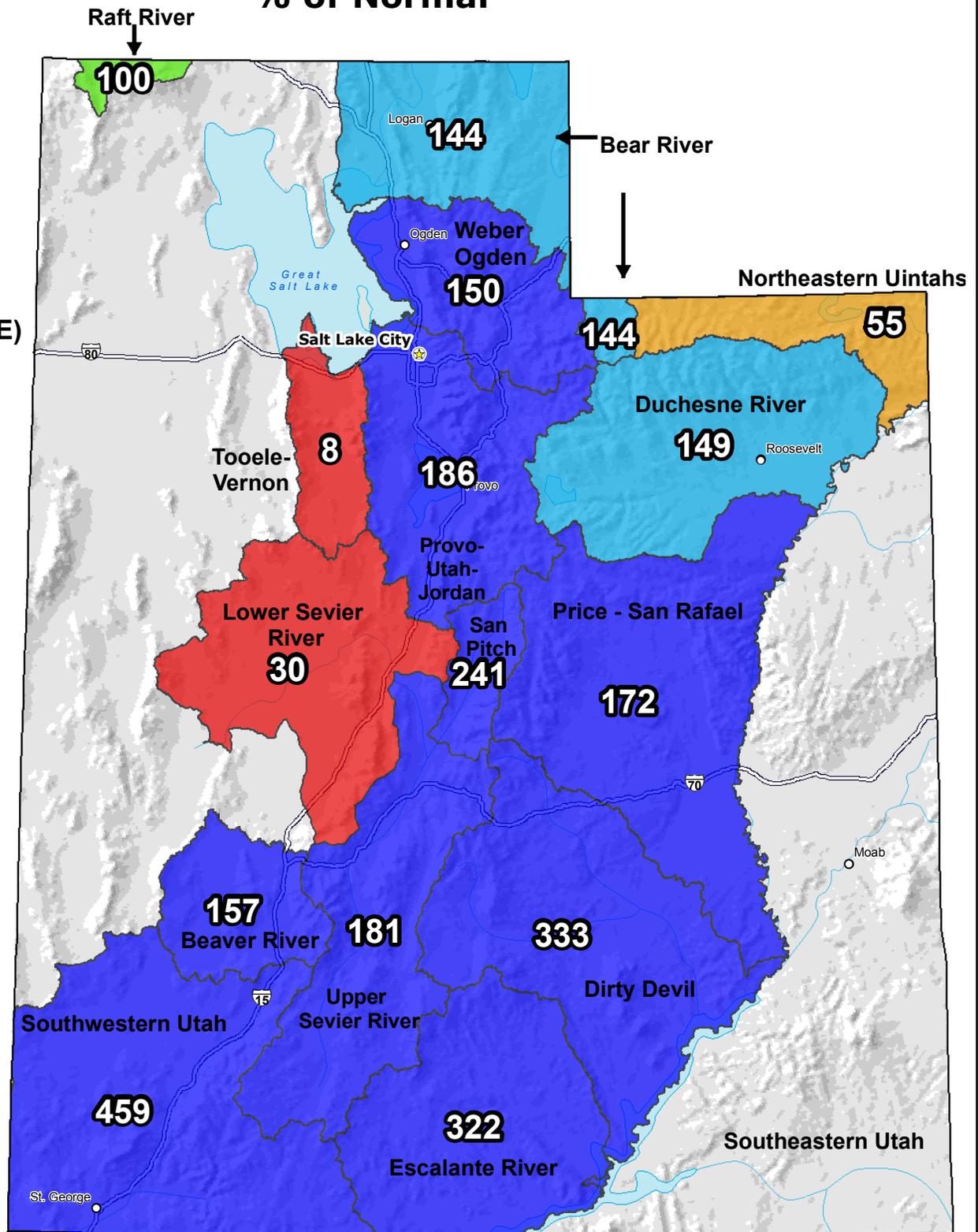
**Nov 04, 2013**

**Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median**



\* Data unavailable at time of posting or measurement is not representative at this time of year

**Provisional Data  
Subject to Revision**



The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

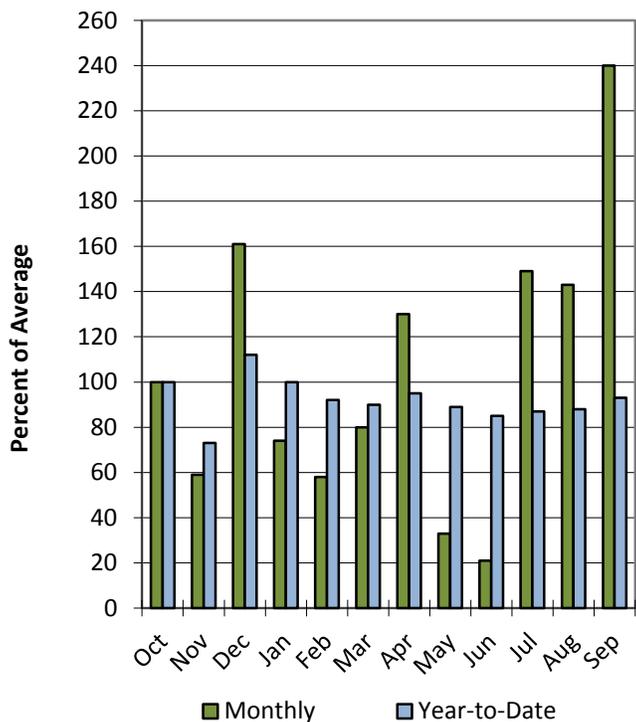
Prepared by the USDA/NRCS National Water and Climate Center  
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: [Jim.Marron@por.usda.gov](mailto:Jim.Marron@por.usda.gov) 503 414 3047

# Raft River Basin

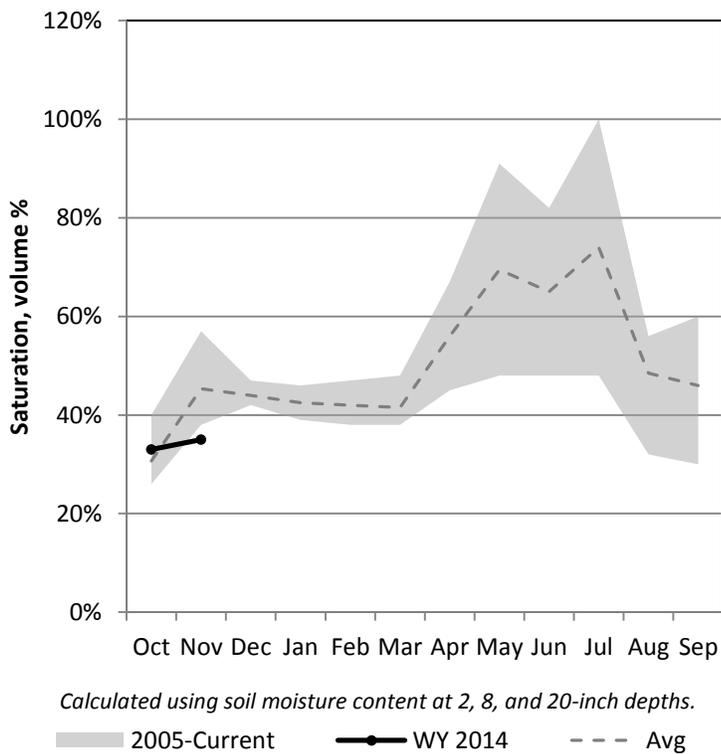
11/1/2013

Precipitation in October was near average at 100%, which brings the seasonal accumulation (Oct-Oct) to 100% of average. Soil moisture is at 35% compared to 38% last year.

## Precipitation



## Soil Moisture

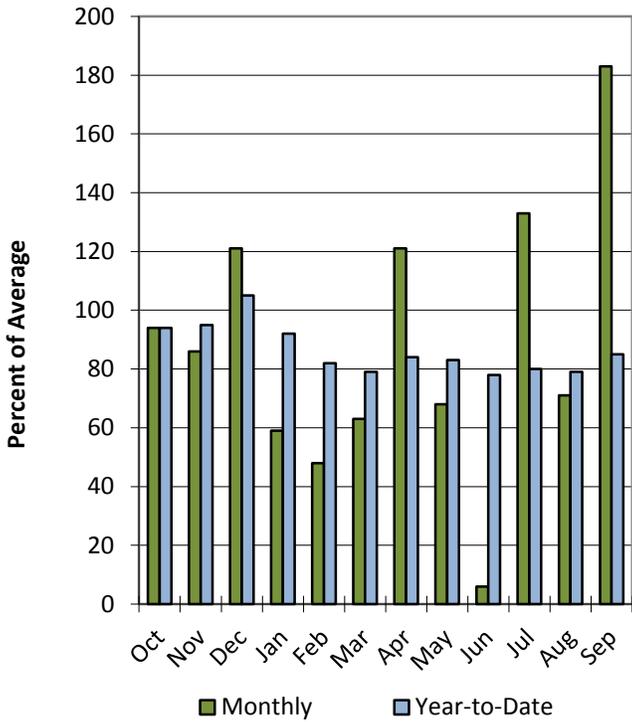


# Bear River Basin

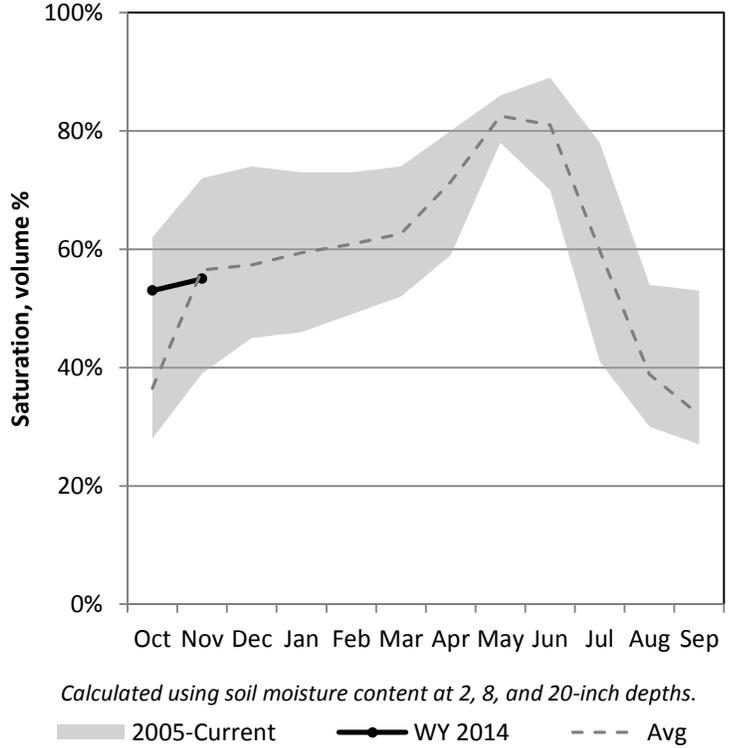
11/1/2013

Precipitation in October was near average at 94%, which brings the seasonal accumulation (Oct-Oct) to 94% of average. Soil moisture is at 55% compared to 52% last year. Reservoir storage is at 48% of capacity, compared to 63% last year. The water availability index for the Bear River is 36%.

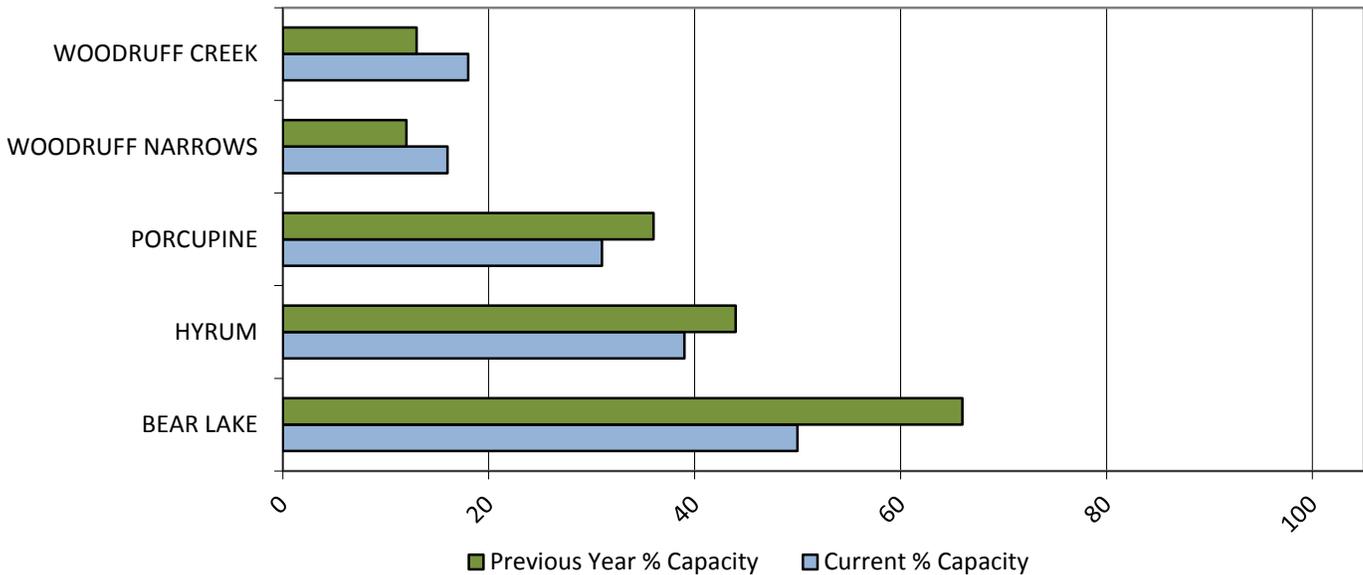
## Precipitation



## Soil Moisture



## Reservoir Storage



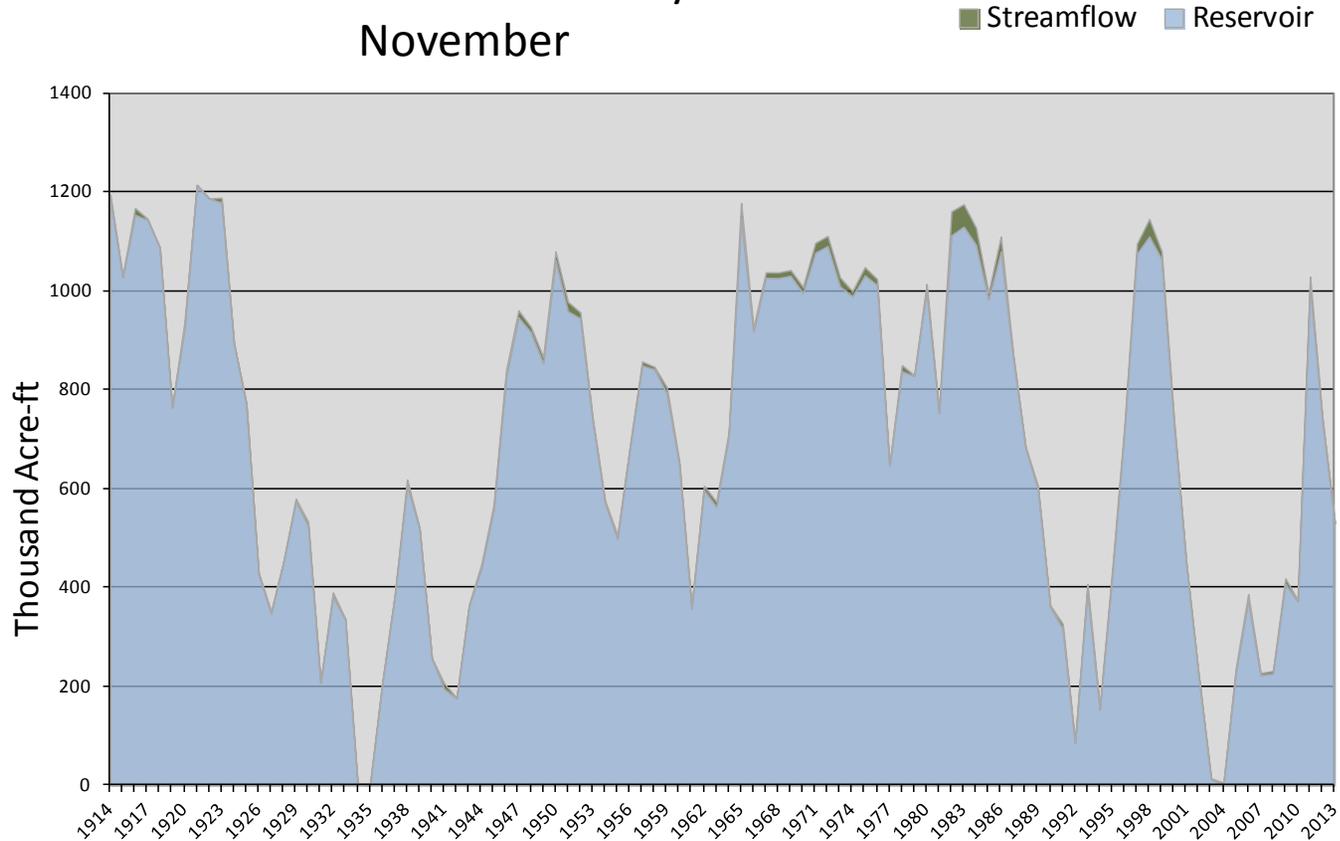
November 1, 2013

## Water Availability Index

Basin or Region	October EOM* Bear Lake	October accumulated inflow to Bear Lake ( <i>observed</i> )	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Bear River</b>	<b>529</b>	<b>5</b>	<b>535</b>	<b>-1.20</b>	<b>36</b>	<b>39, 30, 45, 63</b>

\*EOM, end of month; # WAI, water availability index; ^KAF, thousand acre-feet.

Bear Lake - Water Availability Index  
November



November 1, 2013

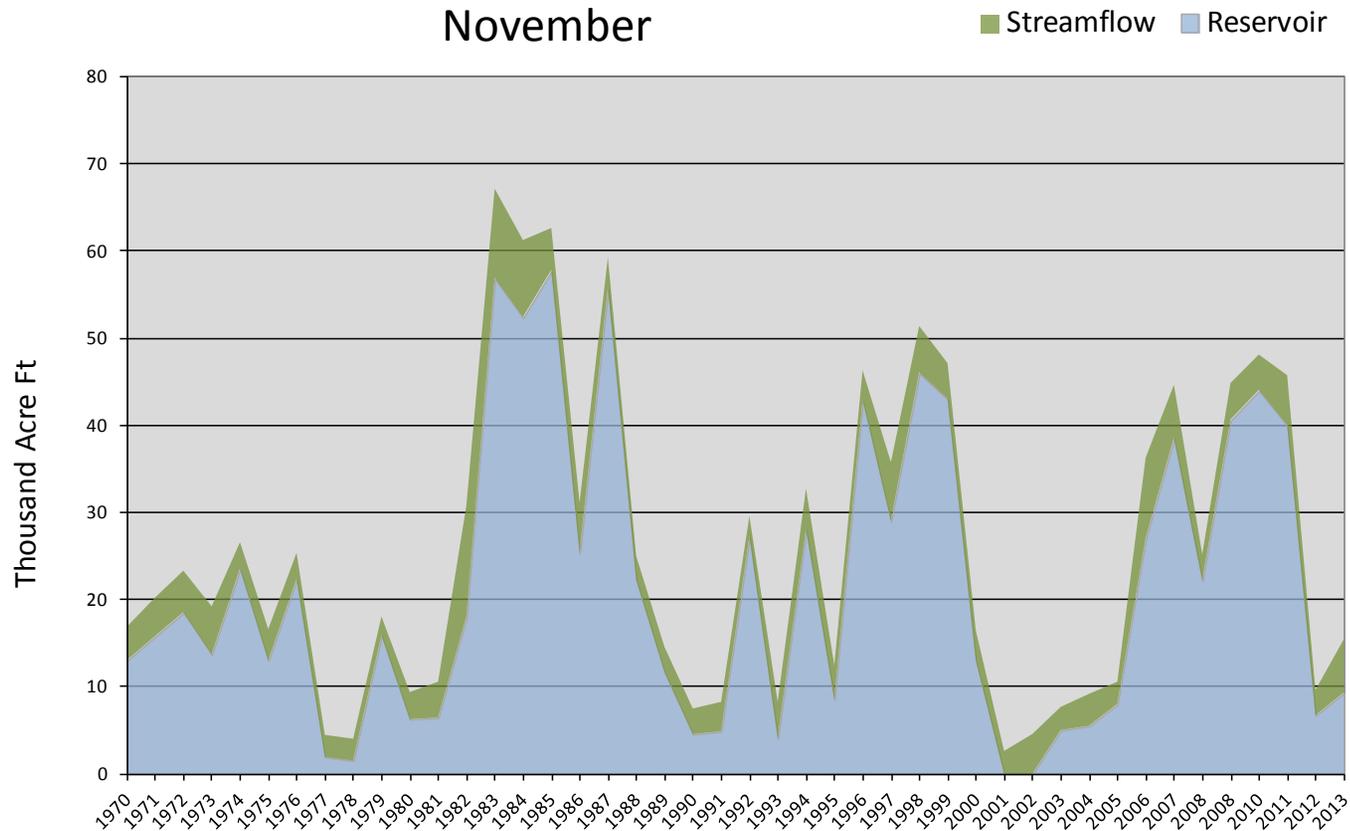
## Water Availability Index

Basin or Region	Oct EOM* Woodruff Narrows Reservoir <i>KAF^</i>	October Observed Streamflow Bear at Stateline <i>KAF</i>	Reservoir + Streamflow <i>KAF</i>	WAI#	Percentile %	Years with similar WAI
<b>Woodruff Narrows</b>	<b>9.3</b>	<b>6.1</b>	<b>15.4</b>	<b>-1.20</b>	<b>36</b>	<b>95, 89, 00, 75</b>

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

### Woodruff Narrows - Water Availability Index

November



November 1, 2013

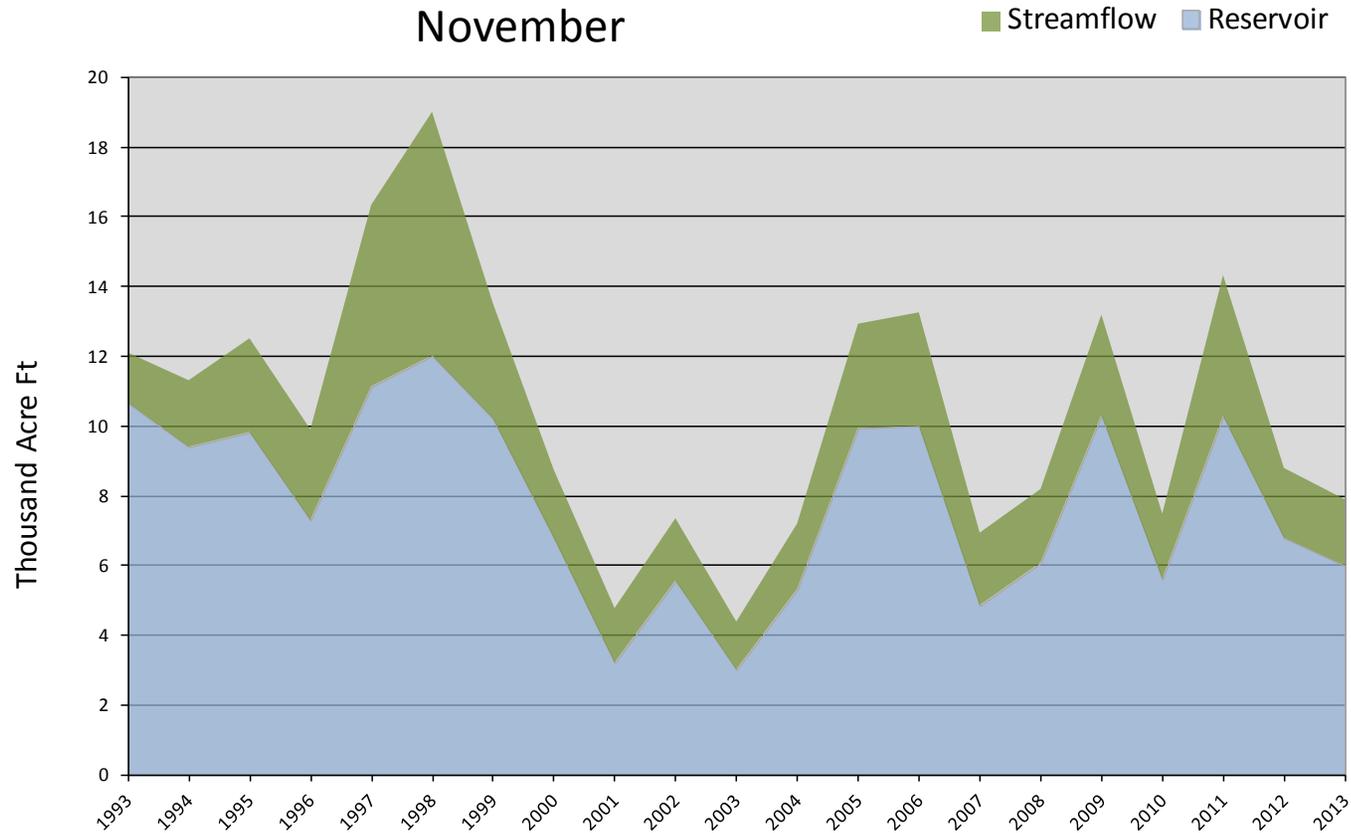
## Water Availability Index

Basin or Region	Oct EOM* Hyrum Reservoir	October Observed Streamflow Little Bear nr Paradise	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Little Bear</b>	<b>6.0</b>	<b>1.9</b>	<b>7.9</b>	<b>-1.52</b>	<b>32</b>	<b>02, 10, 08, 00</b>

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

### Little Bear River - Water Availability Index

November

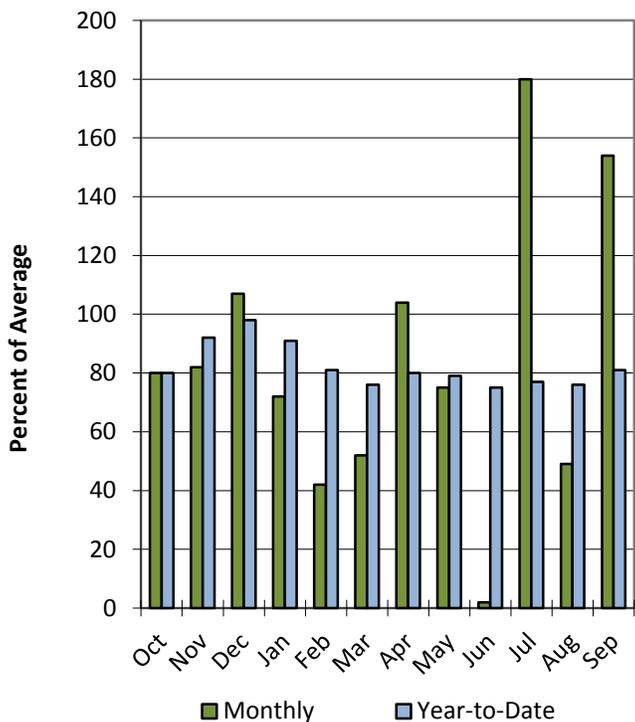


# Weber & Ogden River Basins

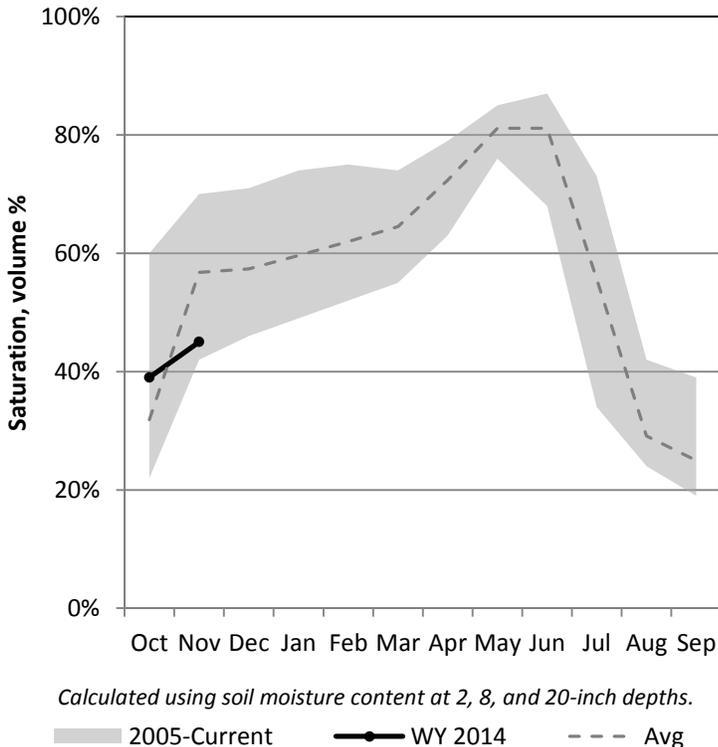
11/1/2013

Precipitation in October was below average at 80%, which brings the seasonal accumulation (Oct-Oct) to 80% of average. Soil moisture is at 45% compared to 51% last year. Reservoir storage is at 32% of capacity, compared to 44% last year. The water availability index for the Ogden River is 36% and 32% for the Weber River.

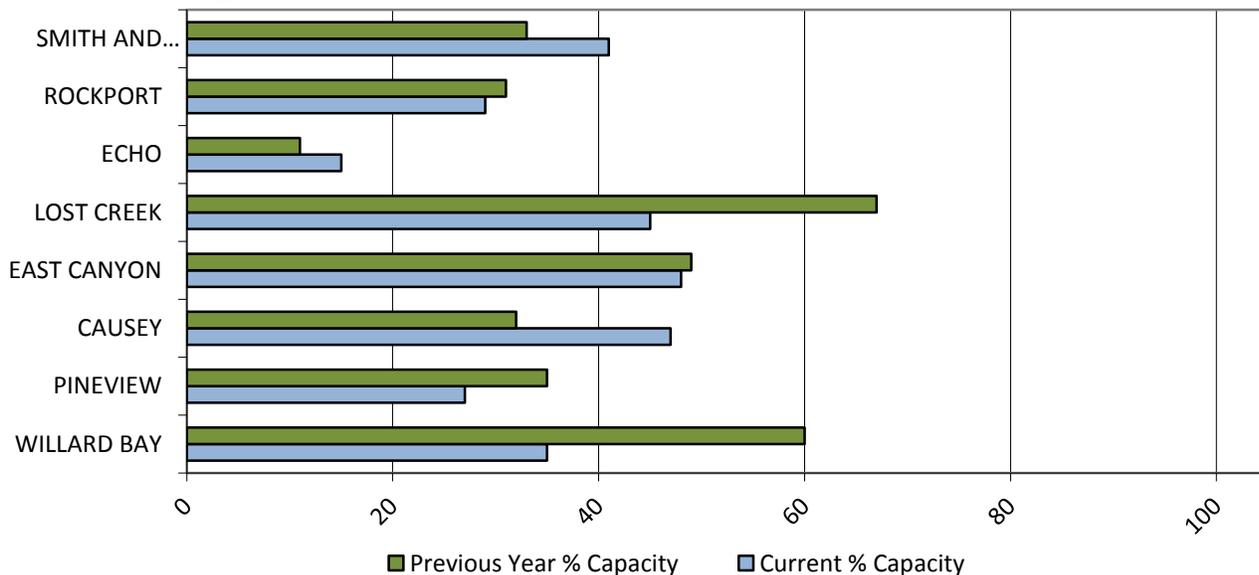
## Precipitation



## Soil Moisture



## Reservoir Storage



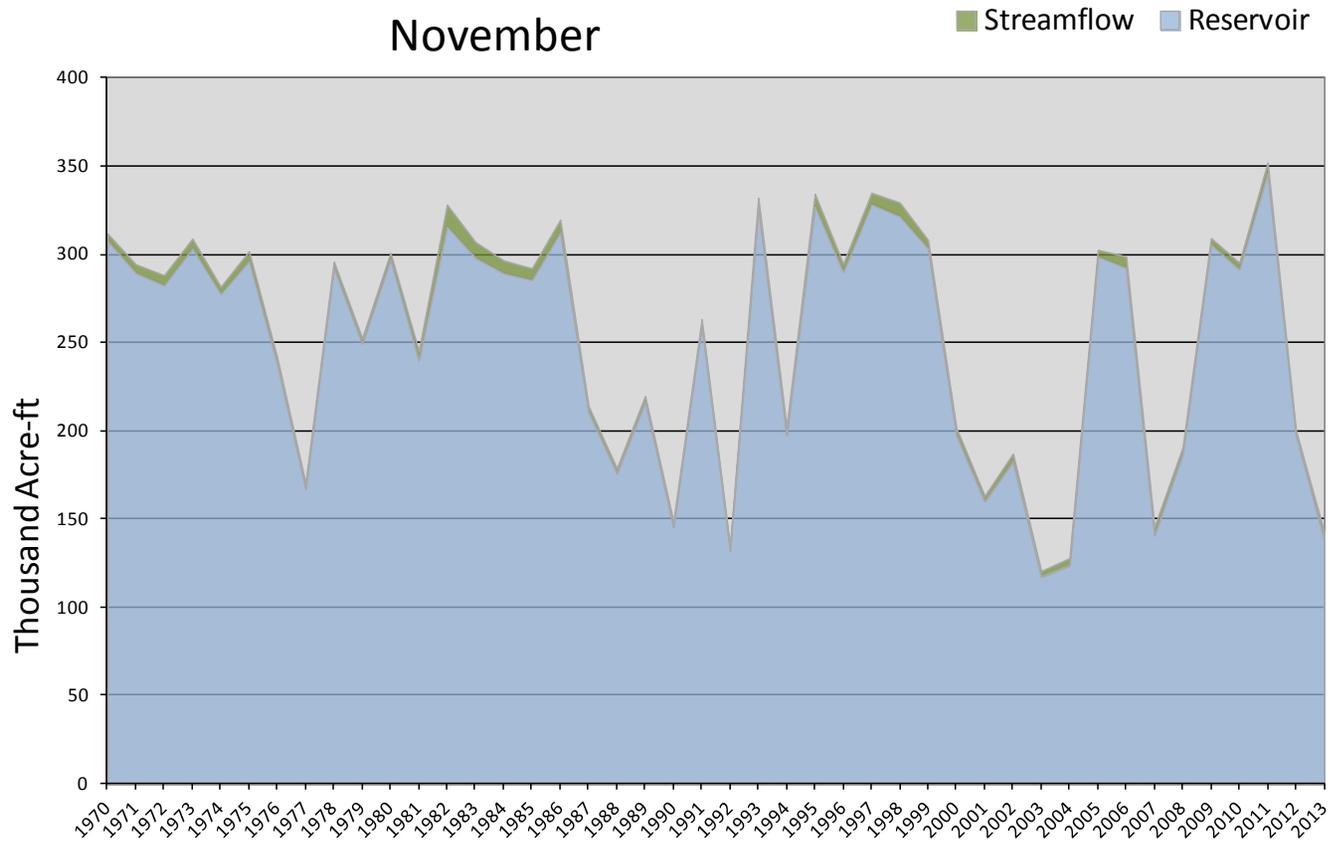
November 1, 2013

## Water Availability Index

Basin or Region	October EOM* Reservoirs	October accumulated flow at Weber near Oakley (observed)	Reservoirs + Streamflow	WAI#	Percentile	Years with similar WAI
	KAF^	KAF	KAF		%	
<b>Weber River</b>	<b>138</b>	<b>4</b>	<b>142</b>	<b>-3.43</b>	<b>9</b>	<b>04, 92, 07, 90</b>

\*EOM, end of month; # WAI, water availability index; ^KAF, thousand acre-feet.

### Weber River - Water Availability Index November



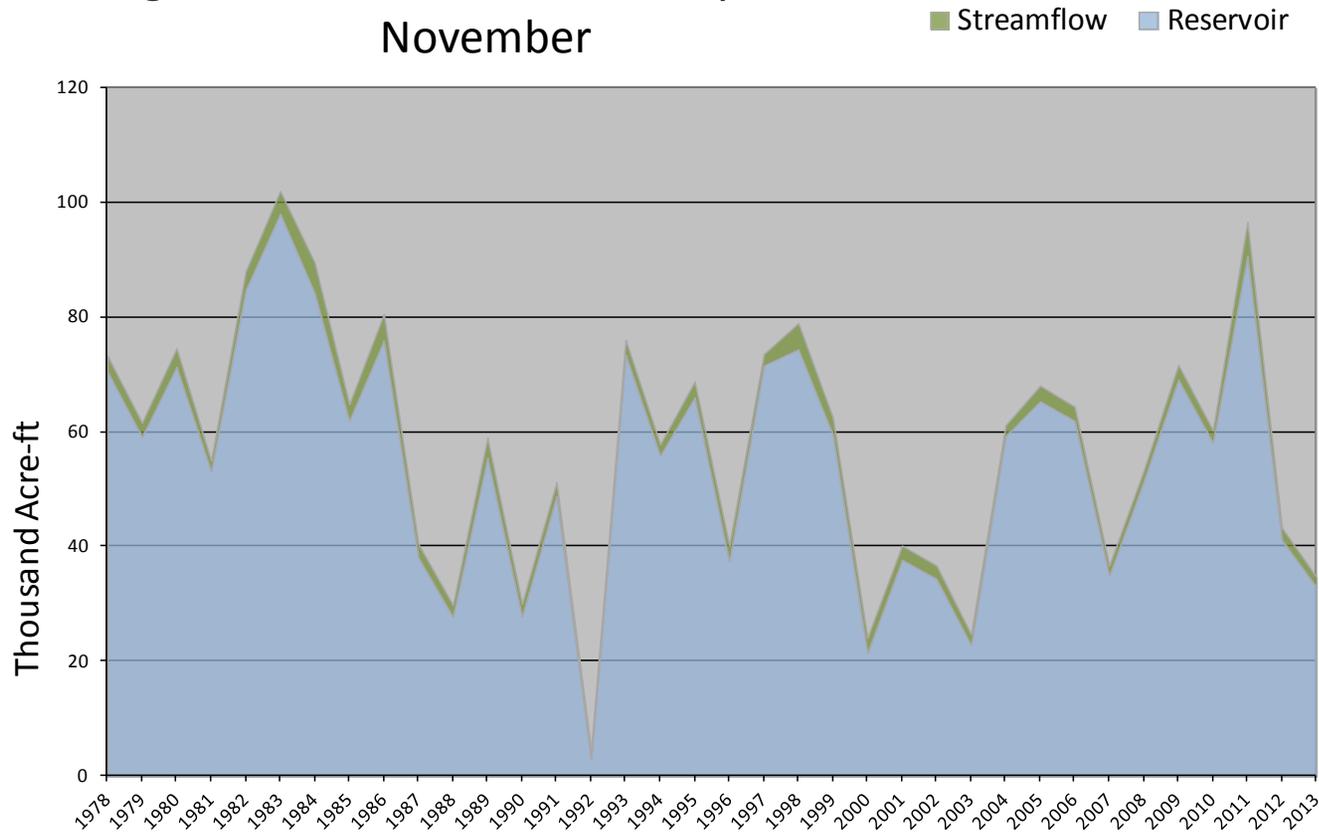
November 1, 2013

## Water Availability Index

Basin or Region	October EOM* Pine View & Causey	October accumulated flow at South Fork Ogden (observed)	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	KAF^	KAF	KAF		%	
<b>Ogden River</b>	<b>33.0</b>	<b>1.7</b>	<b>34.7</b>	<b>-2.82</b>	<b>16</b>	<b>88, 90, 02, 07</b>

\*EOM, end of month; # WAI, water availability index; ^KAF, thousand acre-feet.

### Ogden River - Water Availability Index November

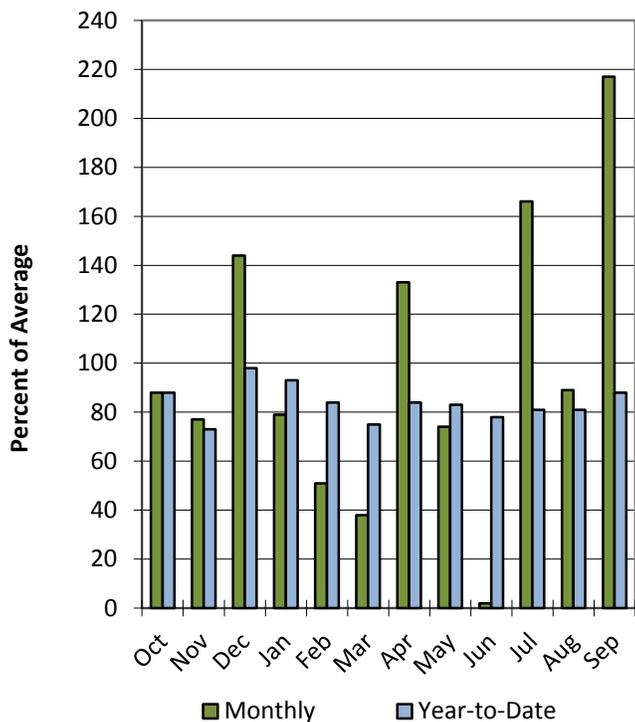


# Tooele & Vernon Creek Basins

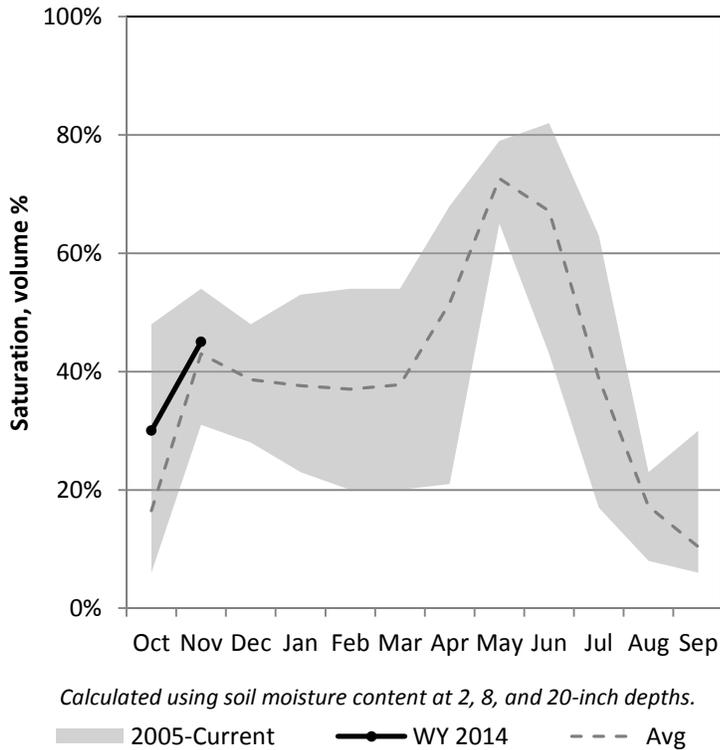
11/1/2013

Precipitation in October was below average at 88%, which brings the seasonal accumulation (Oct-Oct) to 88% of average. Soil moisture is at 45% compared to 31% last year. Reservoir storage is at 20% of capacity, compared to 12% last year.

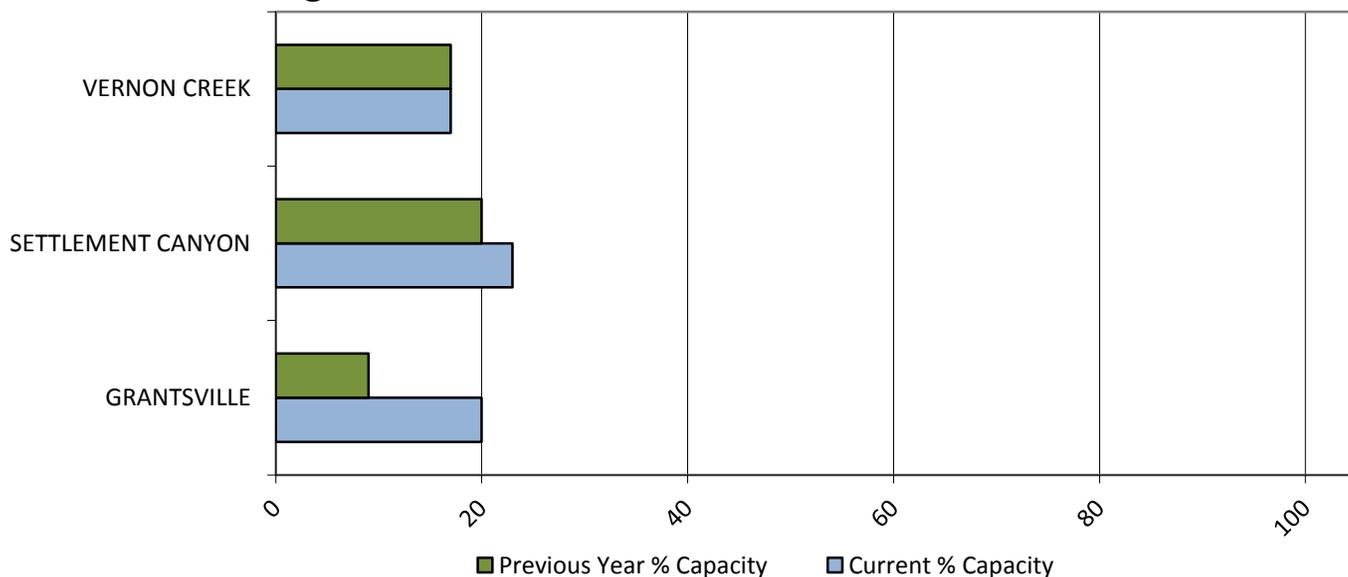
## Precipitation



## Soil Moisture



## Reservoir Storage

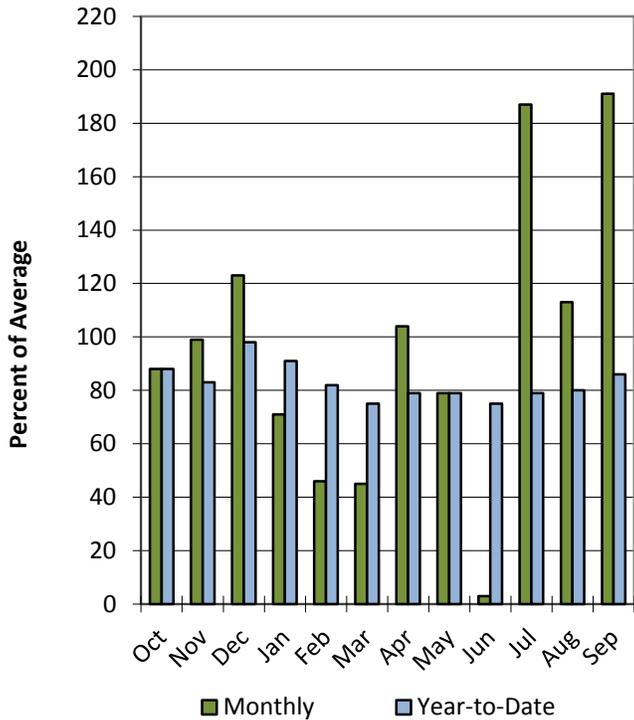


# Provo & Jordan River Basins

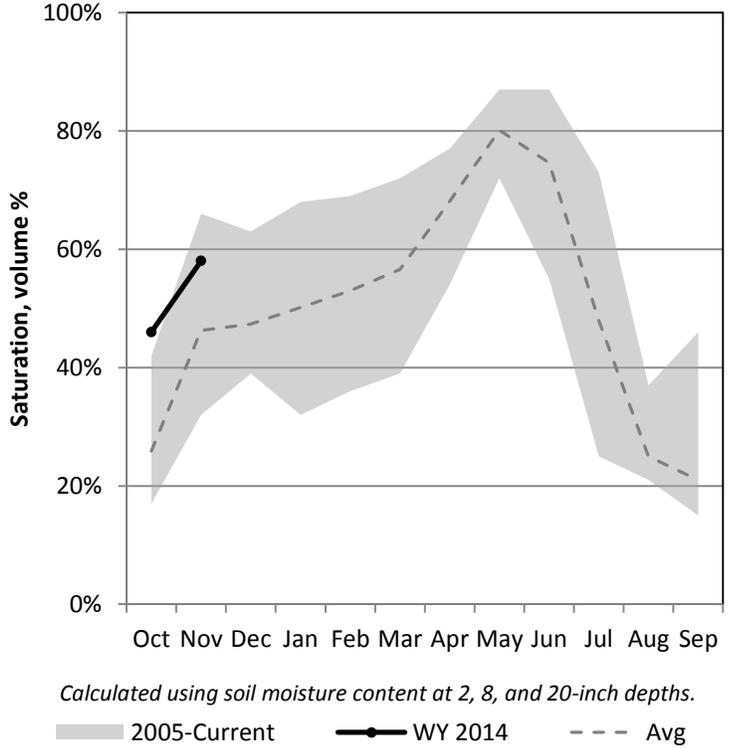
11/1/2013

Precipitation in October was below average at 88%, which brings the seasonal accumulation (Oct-Oct) to 88% of average. Soil moisture is at 58% compared to 34% last year. Reservoir storage is at 67% of capacity, compared to 73% last year. The water availability index for the Provo River is 16%.

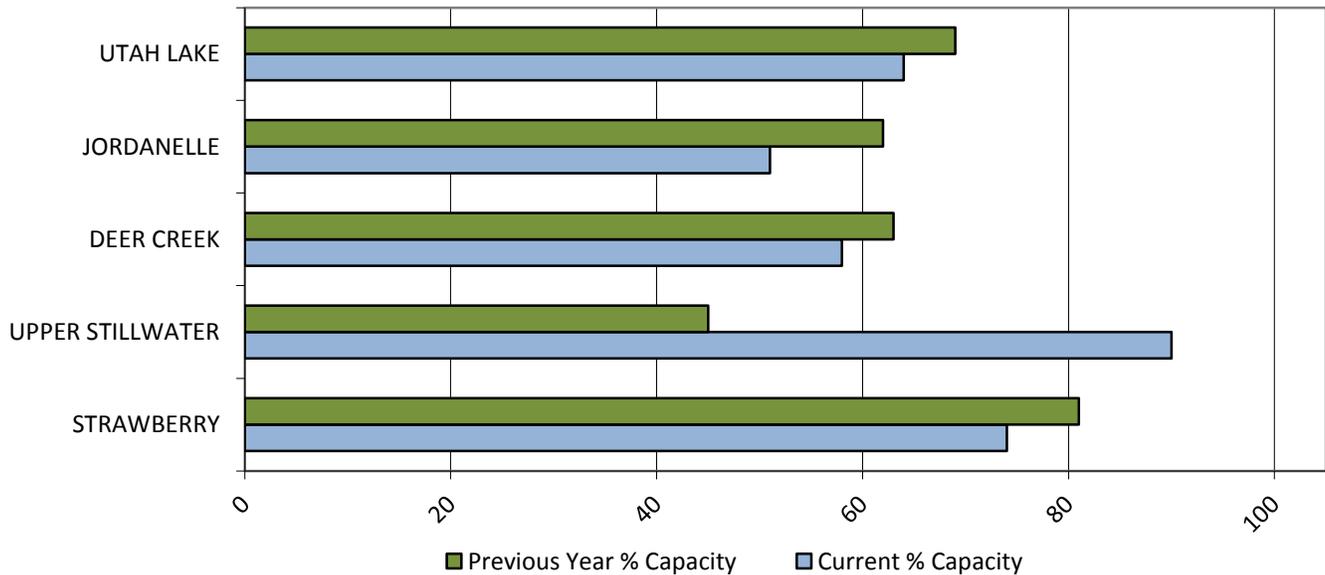
## Precipitation



## Soil Moisture

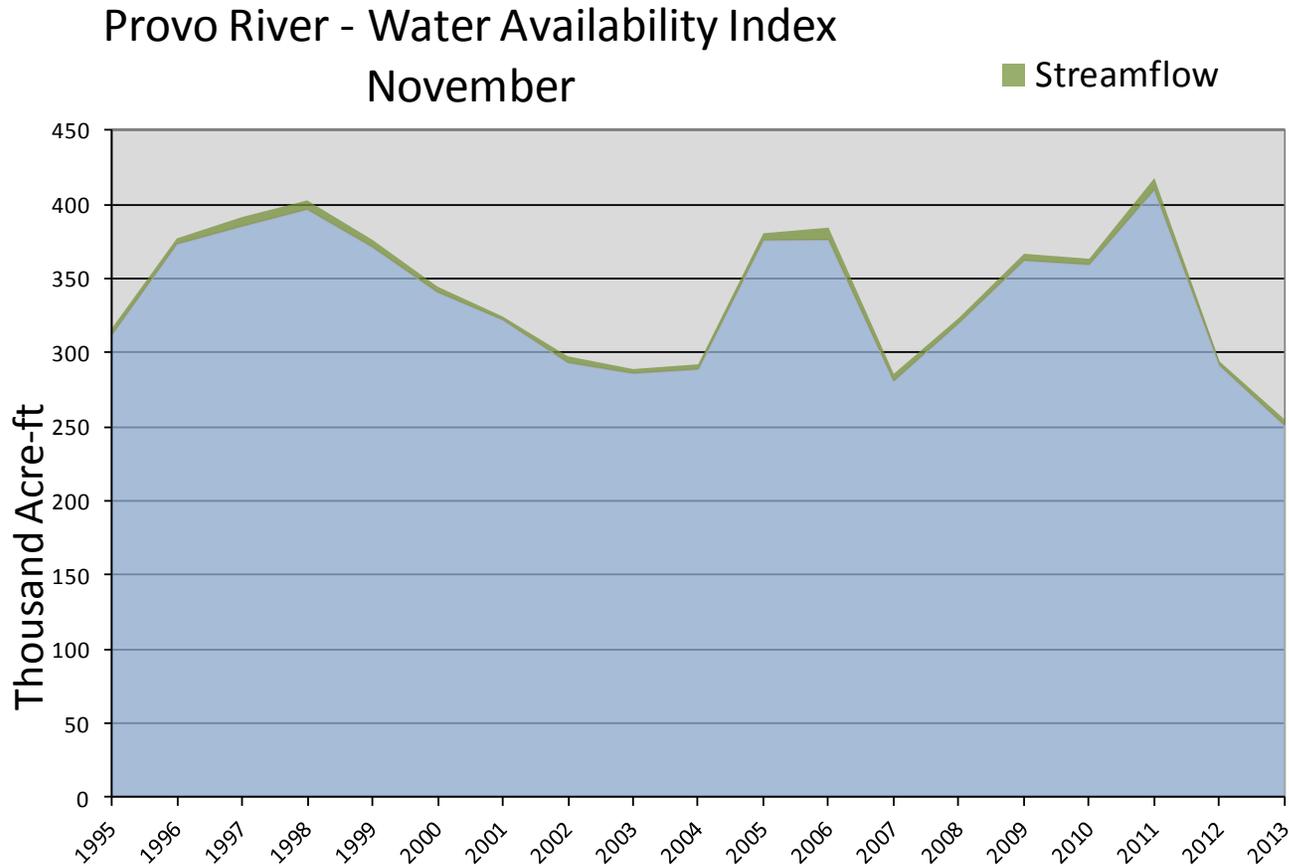


## Reservoir Storage



November 1, 2013	Water Availability Index					
Basin or Region	October EOM* Deer Creek, Jordanelle	October accumulated flow Provo River at Woodland (observed)	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	KAF <sup>^</sup>	KAF	KAF		%	
<b>Provo</b>	<b>251</b>	<b>4.1</b>	<b>255</b>	<b>-3.75</b>	<b>5%</b>	<b>07, 03, 04, 12</b>

*\*EOM, end of month; <sup>#</sup> WAI, water availability index; <sup>^</sup>KAF, thousand acre-feet.*

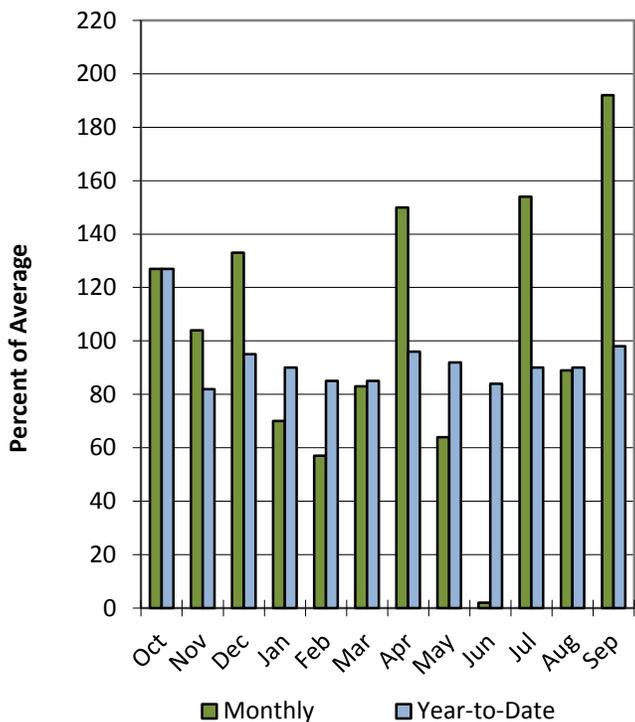


# Northeastern Uintah Basin

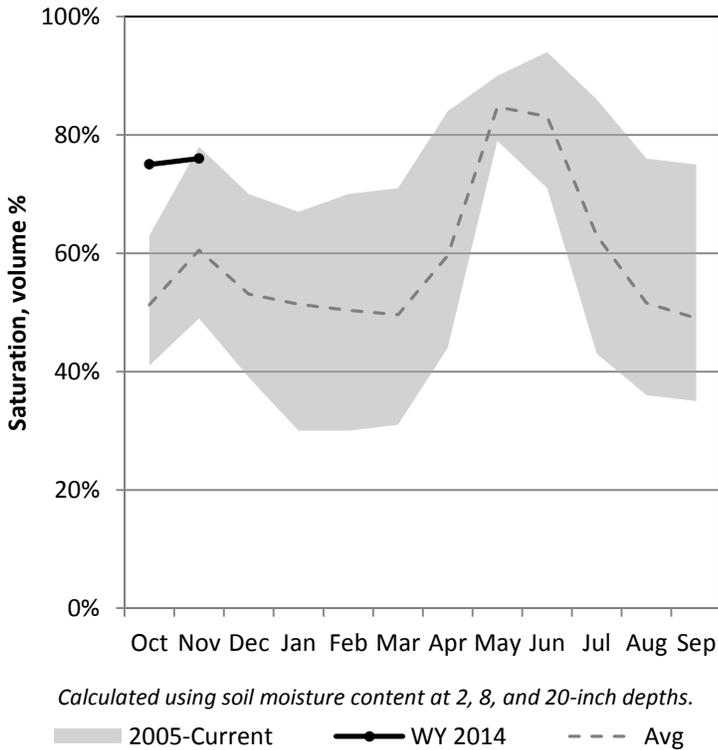
11/1/2013

Precipitation in October was above average at 127%, which brings the seasonal accumulation (Oct-Oct) to 127% of average. Soil moisture is at 76% compared to 52% last year. Reservoir storage is at 75% of capacity, compared to 80% last year.

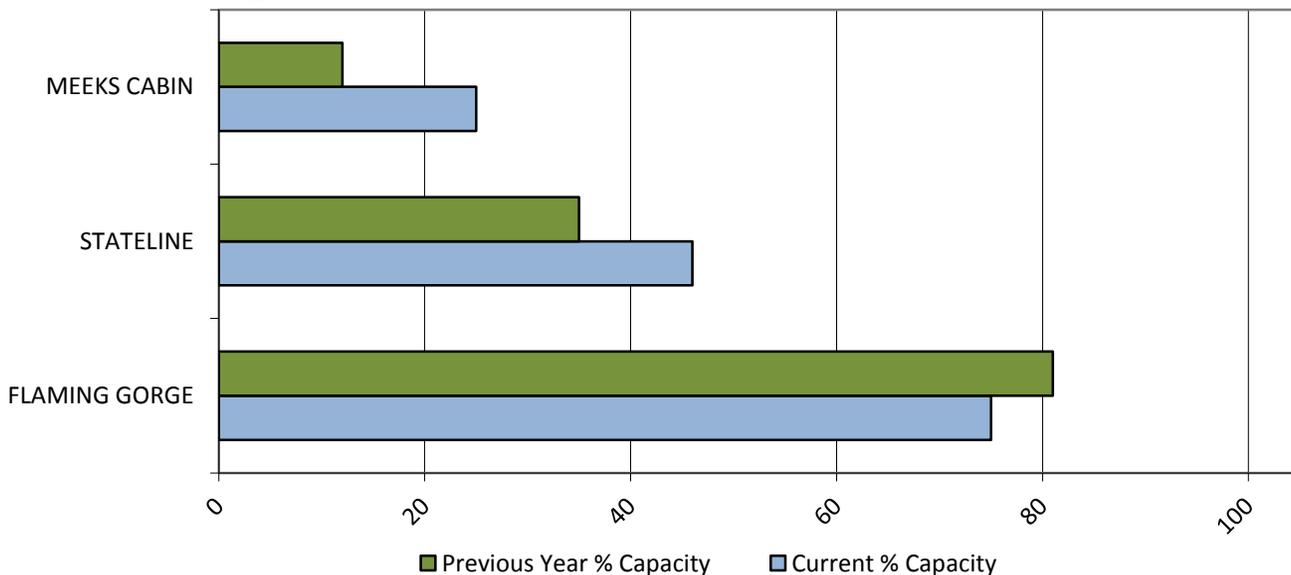
## Precipitation



## Soil Moisture



## Reservoir Storage



November 1, 2013

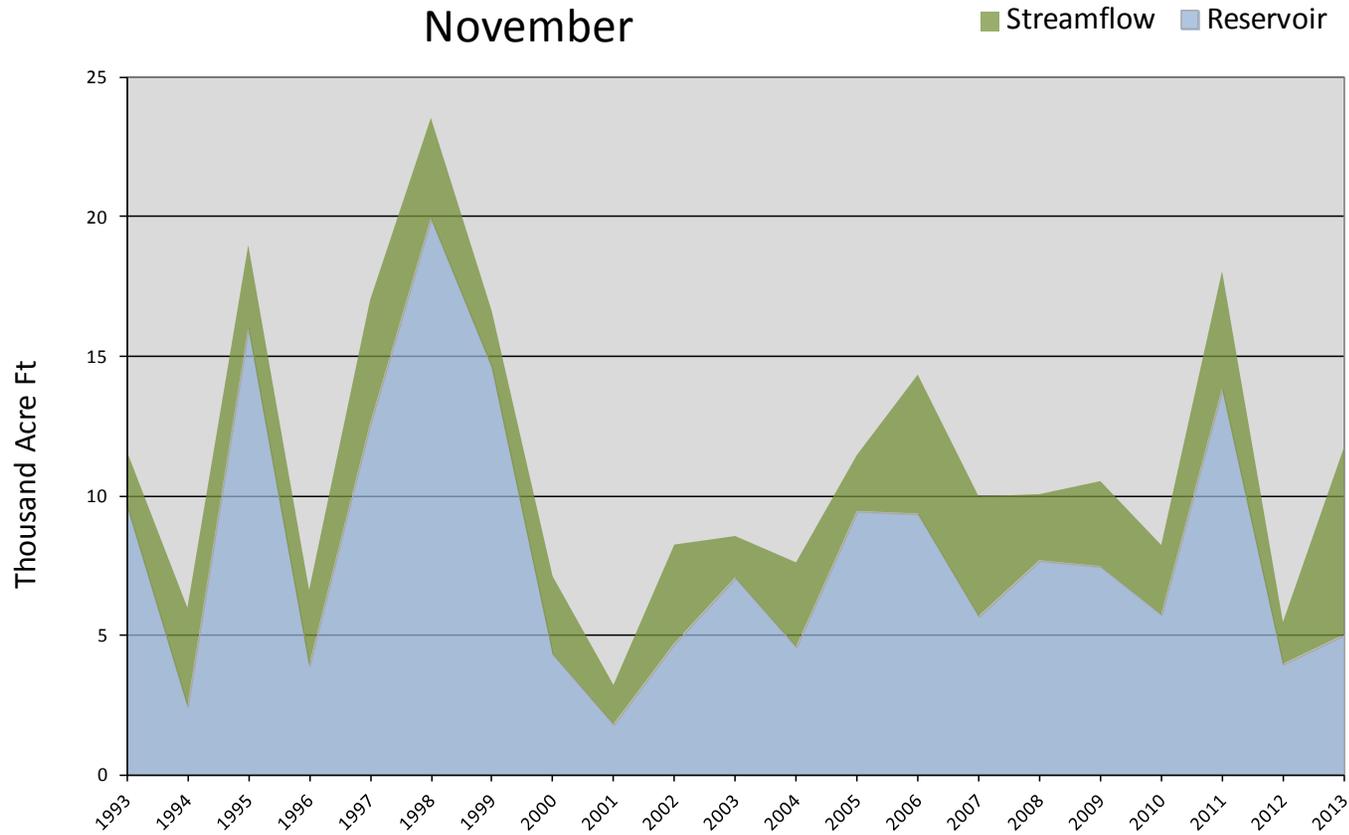
## Water Availability Index

Basin or Region	Oct EOM* Meeks Cabin Reservoir	October Observed Streamflow Blacks Fork nr Robertson	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Blacks Fork</b>	<b>5.0</b>	<b>6.7</b>	<b>11.7</b>	<b>1.52</b>	<b>68</b>	<b>05, 93, 06, 99</b>

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

### Blacks Fork River - Water Availability Index

November



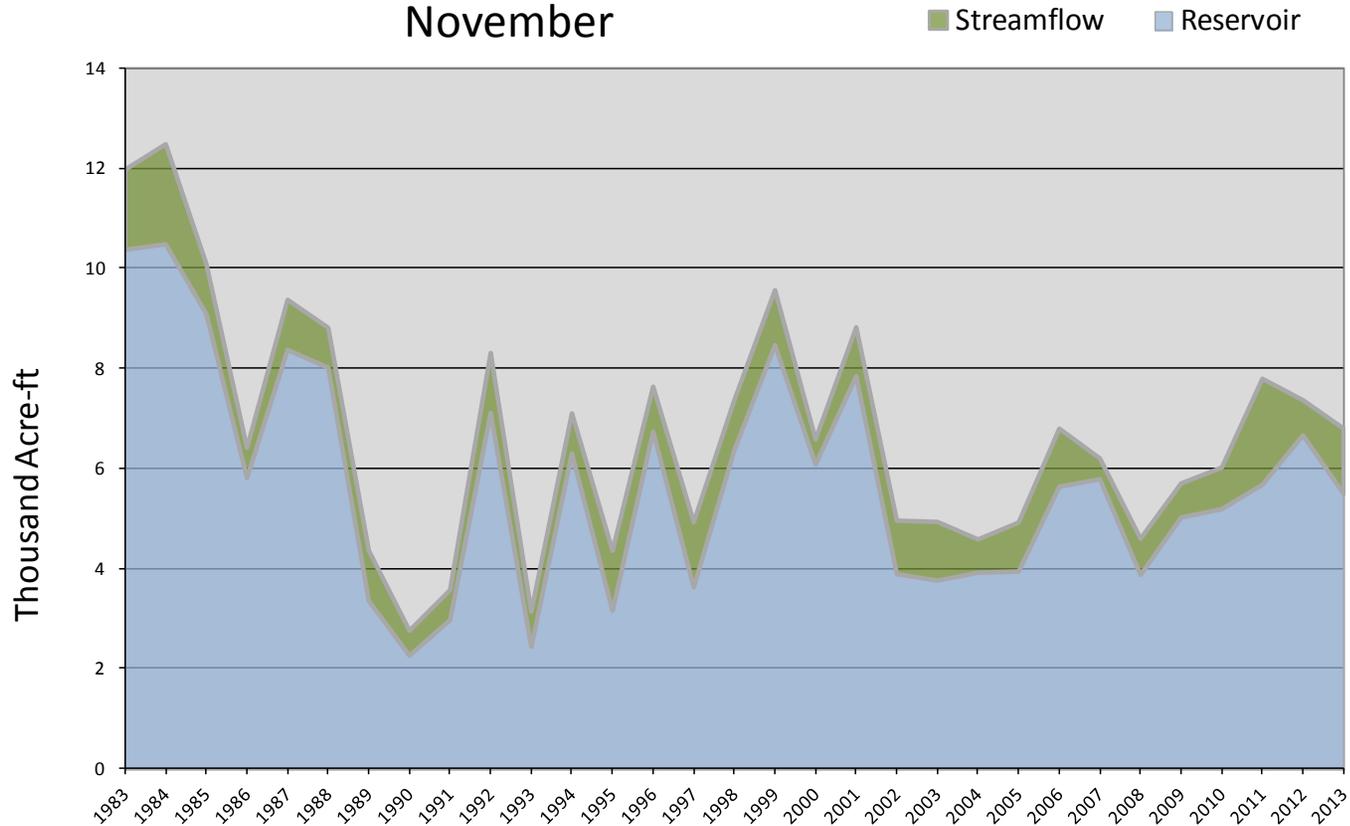
November 1, 2013

## Water Availability Index

Basin or Region	October EOM* Stateline Reservoir	October Observed Flow EF Smiths Creek	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Smiths Creek</b>	<b>5.5</b>	<b>1.3</b>	<b>6.8</b>	<b>0.52</b>	<b>56</b>	<b>00, 06, 94, 12</b>

\*EOM, end of month; # WAI, water availability index; ^KAF, thousand acre-feet.

### Smiths Creek - Water Availability Index November

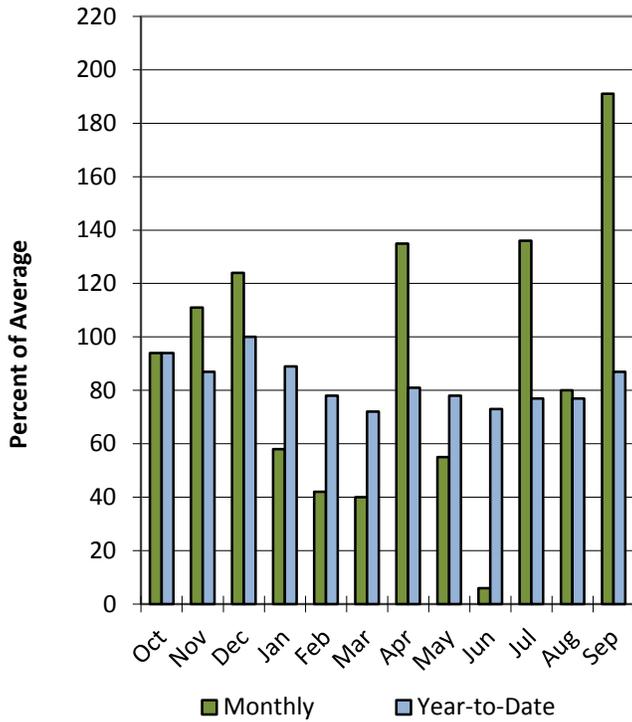


# Duchesne River Basin

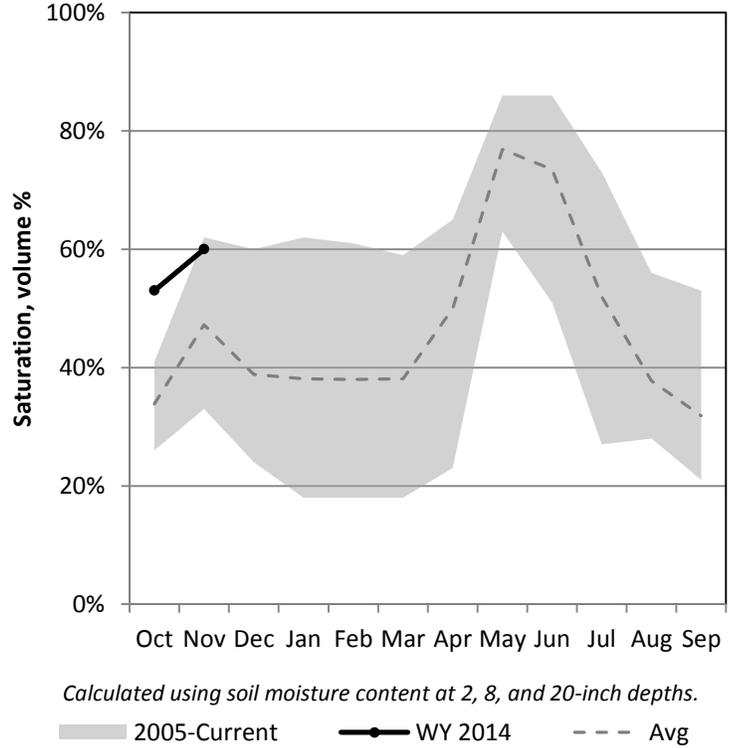
11/1/2013

Precipitation in October was near average at 94%, which brings the seasonal accumulation (Oct-Oct) to 94% of average. Soil moisture is at 60% compared to 33% last year. Reservoir storage is at 70% of capacity, compared to 74% last year. The water availability index for the Western Uintahs is 9% and 5% for the Eastern Uintahs.

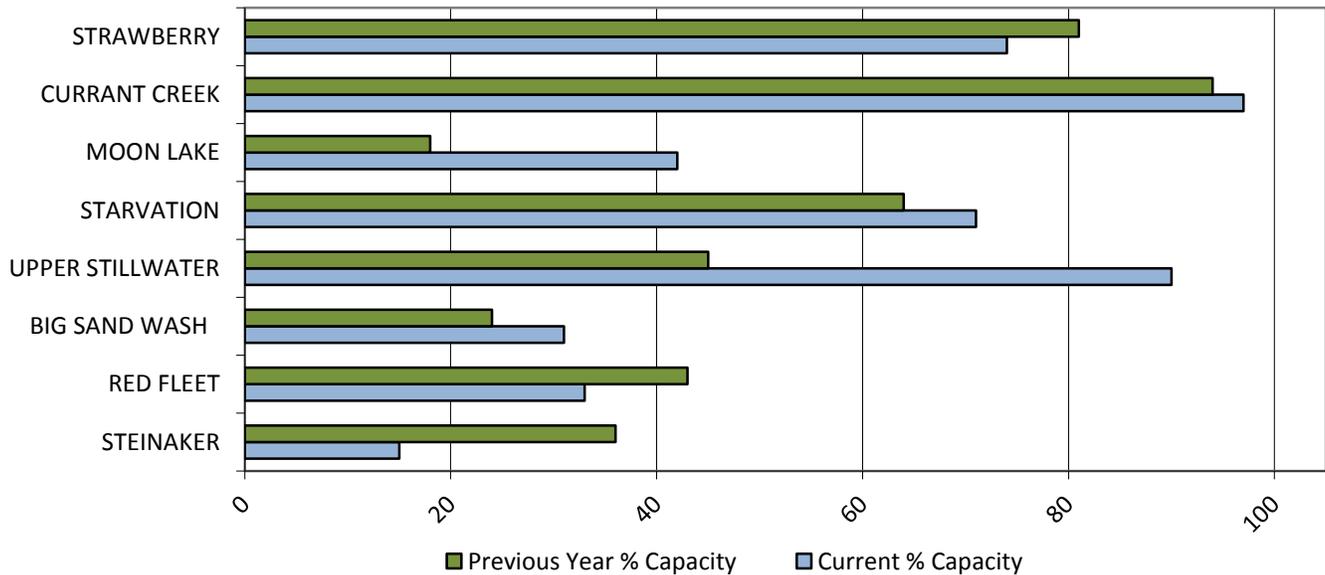
## Precipitation



## Soil Moisture



## Reservoir Storage



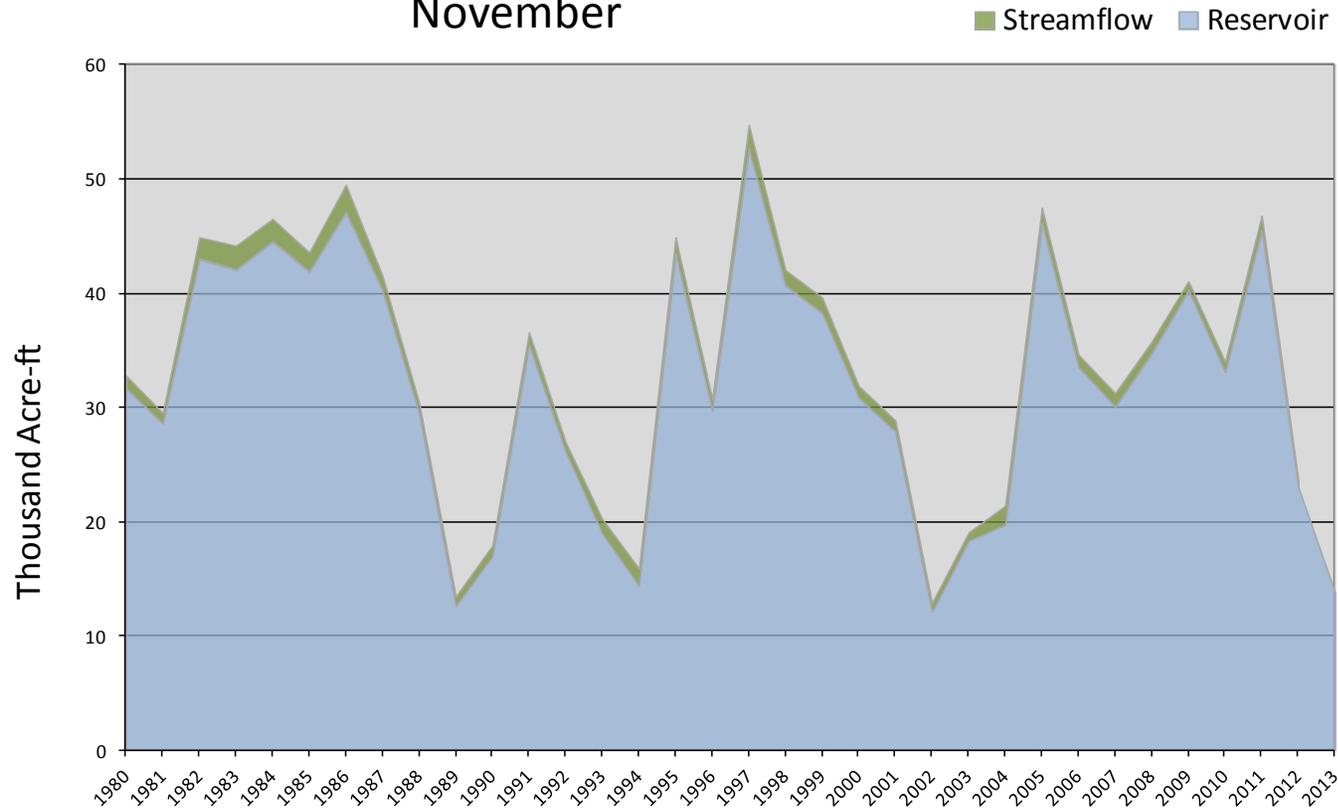
November 1, 2013

## Water Availability Index

Basin or Region	October EOM* Red Fleet and Steinaker	October accumulated flow Big Brush Creek ( <i>observed</i> )	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Eastern Uintah</b>	<b>13.8</b>	<b>0.7</b>	<b>14.5</b>	<b>-3.45</b>	<b>9</b>	<b>02, 89, 94, 90</b>

\*EOM, end of month; <sup>#</sup> WAI, water availability index; <sup>^</sup>KAF, thousand acre-feet.

Eastern Uintah - Water Availability Index  
November



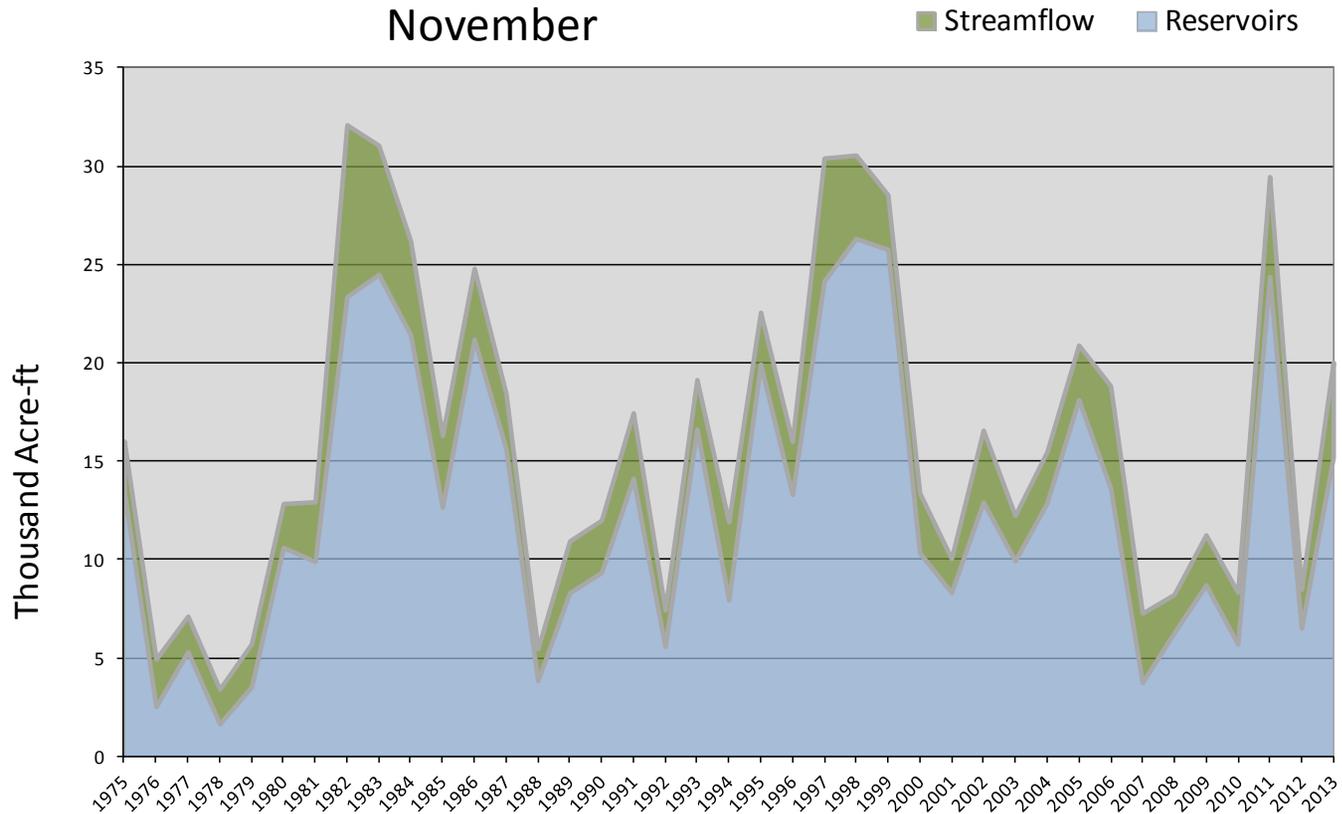
November 1, 2013

## Water Availability Index

Basin or Region	October EOM* Moon Lake	October accumulated flow Lake Fork Creek above Moon Lake (observed)	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	KAF <sup>^</sup>	KAF	KAF		%	
<b>Moon Lake</b>	<b>15.2</b>	<b>4.8</b>	<b>20.0</b>	<b>1.88</b>	<b>73</b>	<b>06, 93, 05, 95</b>

\*EOM, end of month; <sup>#</sup> WAI, water availability index; <sup>^</sup>KAF, thousand acre-feet.

Moon Lake - Water Availability Index  
November

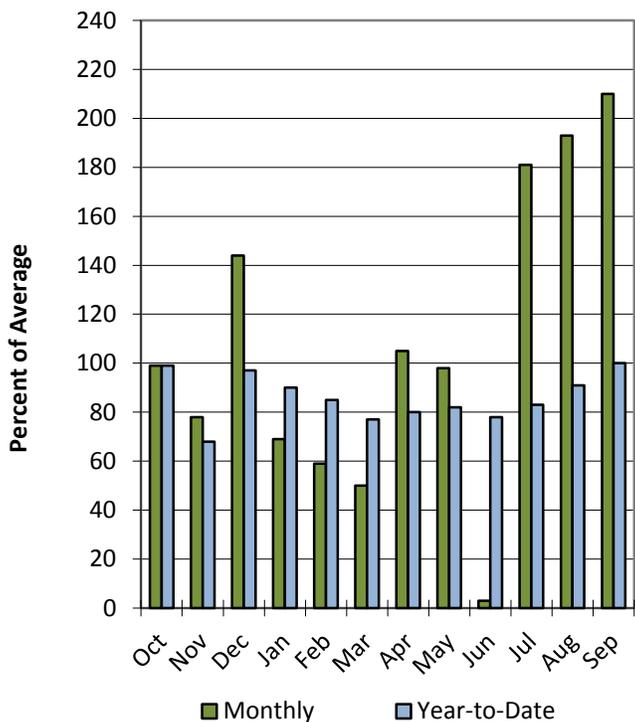


# Price & San Rafael Basins

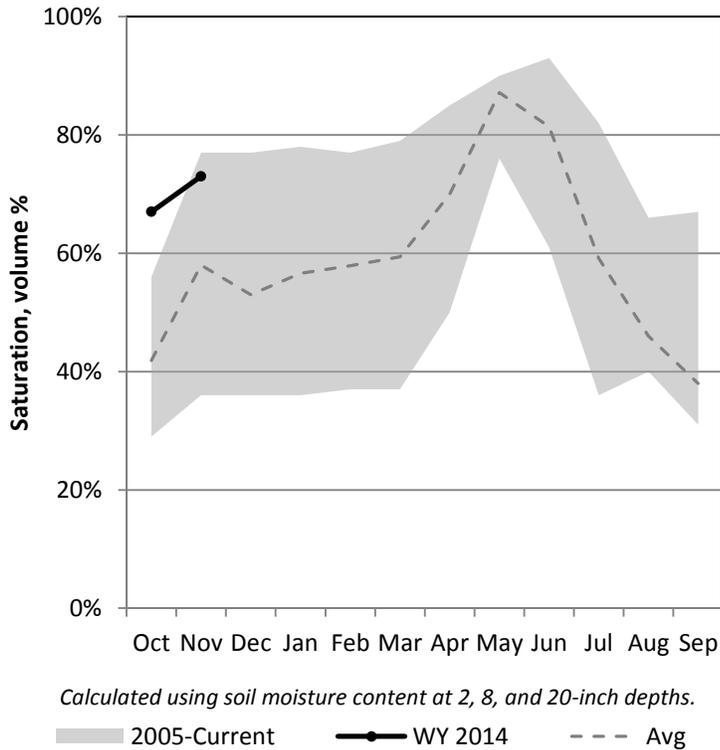
11/1/2013

Precipitation in October was near average at 99%, which brings the seasonal accumulation (Oct-Oct) to 99% of average. Soil moisture is at 73% compared to 36% last year. Reservoir storage is at 39% of capacity, compared to 45% last year. The water availability index for the Price River is 73%, and 9% for Joe's Valley.

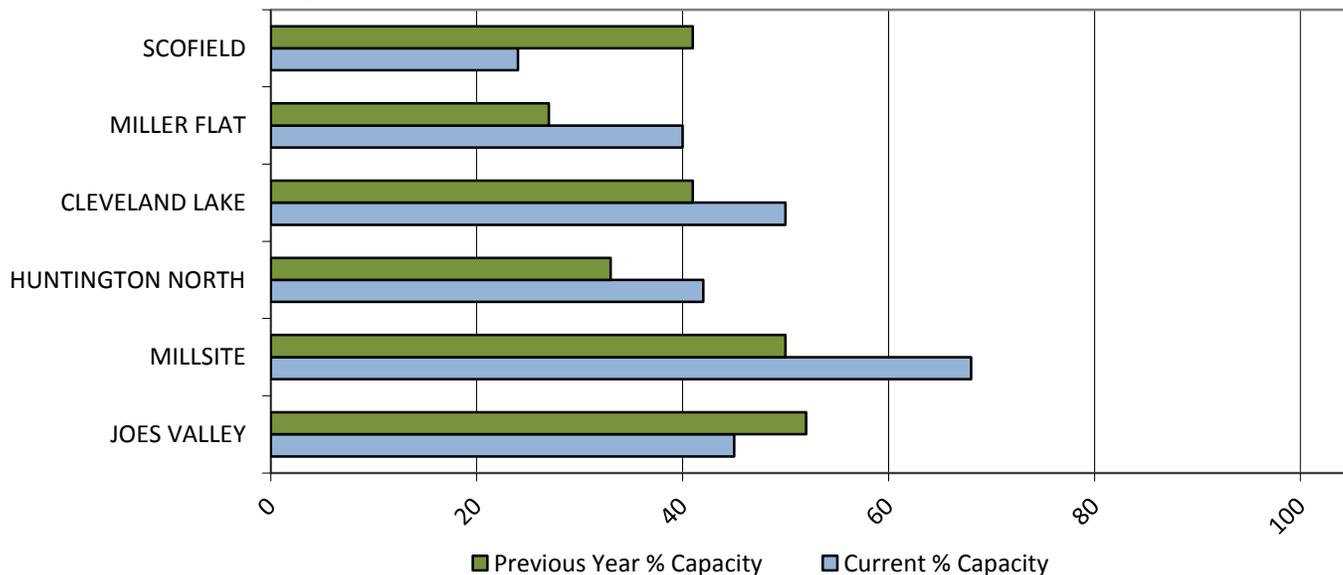
## Precipitation



## Soil Moisture



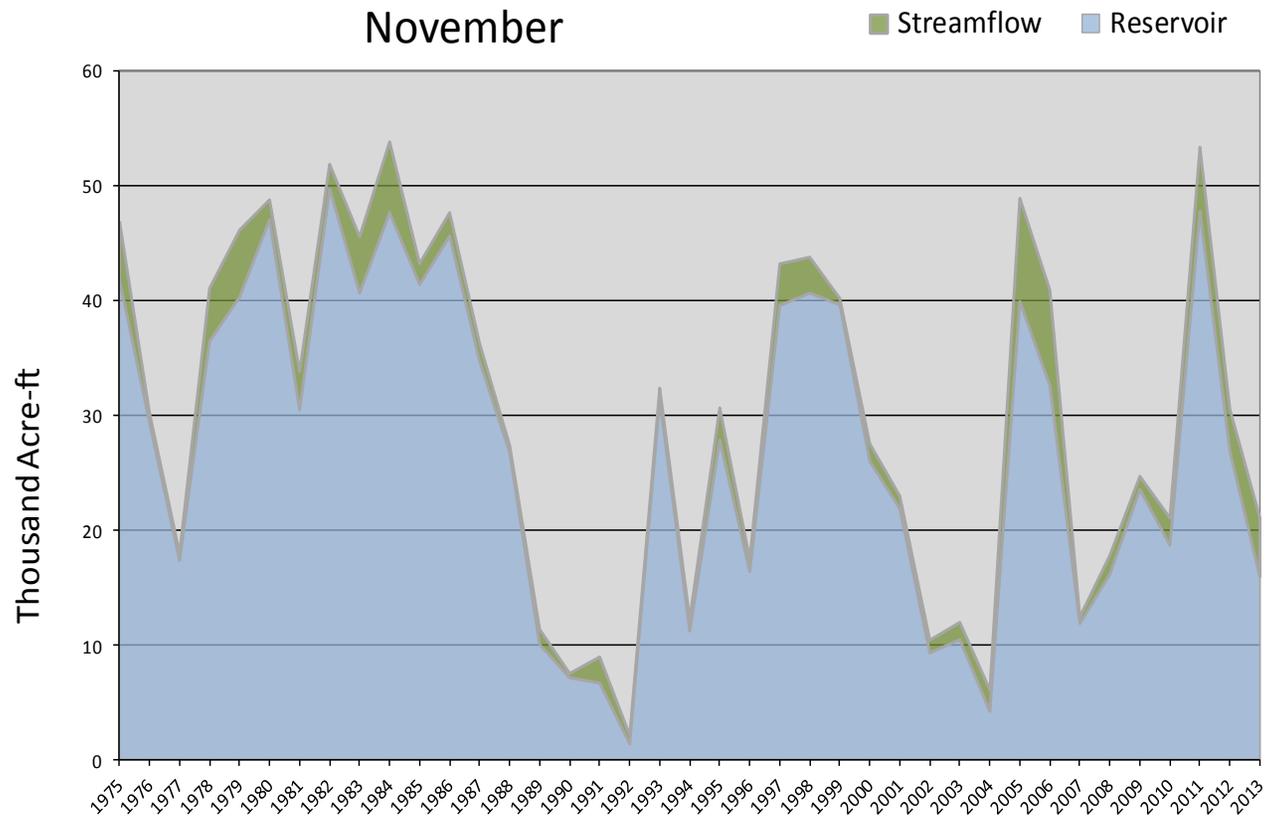
## Reservoir Storage



November 1, 2013		Water Availability Index				
Basin or Region	October EOM* Scofield	October accumulated inflow to Scofield (calculated)	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	KAF <sup>^</sup>	KAF	KAF		%	
<b>Price River</b>	<b>15.9</b>	<b>5.1</b>	<b>21.0</b>	<b>-1.25</b>	<b>35</b>	<b>77, 10, 01, 09</b>

*\*EOM, end of month; <sup>#</sup> WAI, water availability index; <sup>^</sup>KAF, thousand acre-feet.*

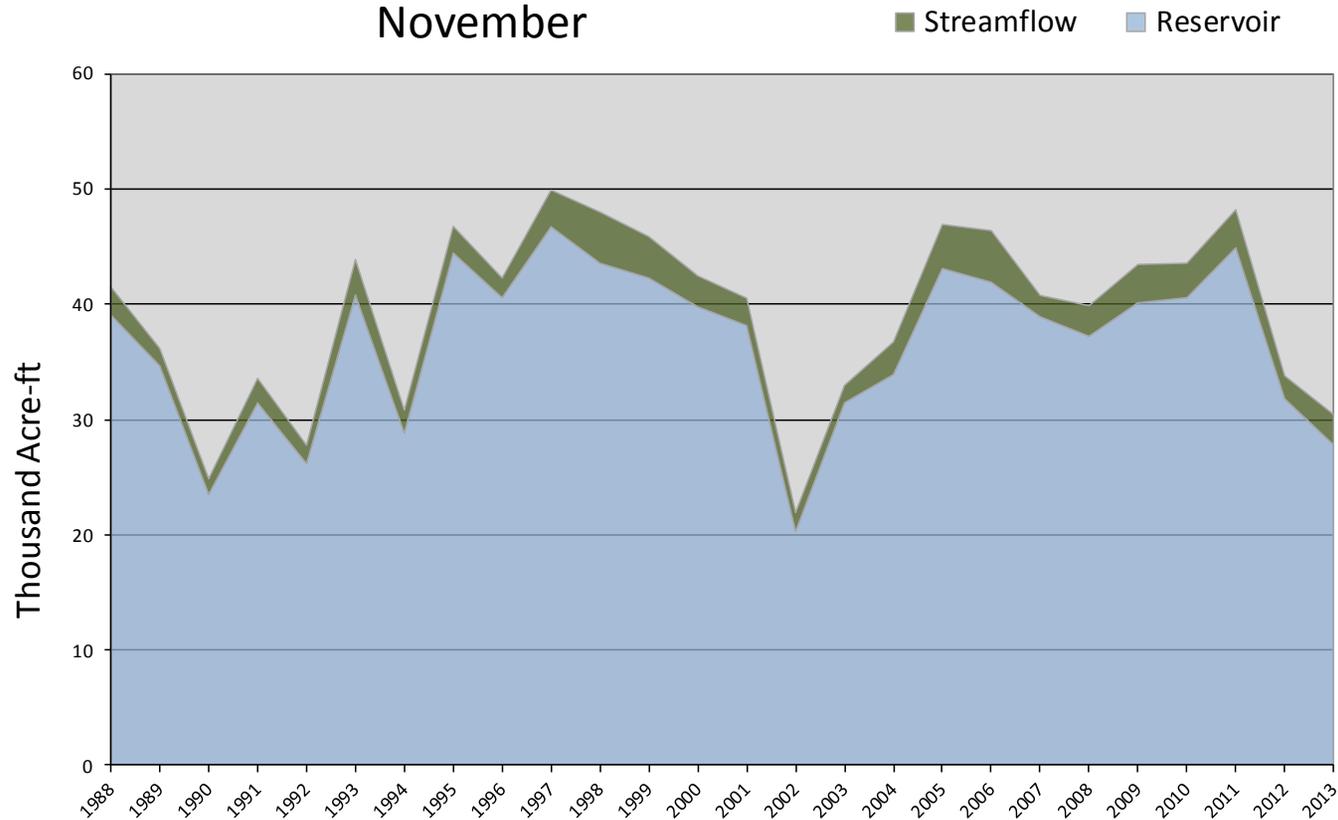
Price River - Water Availability Index  
November



November 1, 2013		Water Availability Index				
Basin or Region	October EOM* Joe's Valley	October accumulated inflow to Joe's Valley (calculated)	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	KAF^	KAF	KAF		%	
<b>Joe's Valley</b>	<b>27.8</b>	<b>2.6</b>	<b>30.4</b>	<b>-2.93</b>	<b>15</b>	<b>90, 92, 94, 03</b>

*\*EOM, end of month; # WAI, water availability index; ^KAF, thousand acre-feet.*

Joe's Valley - Water Availability Index  
November

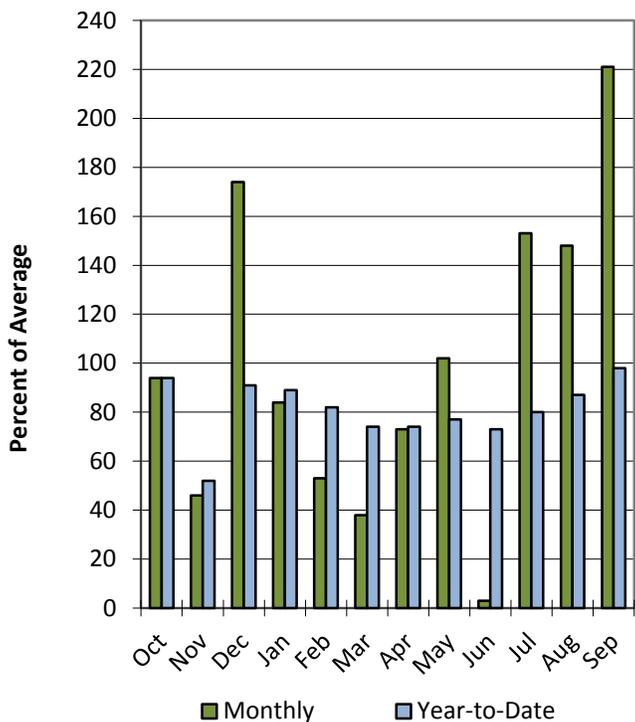


# Southeastern Utah Basin

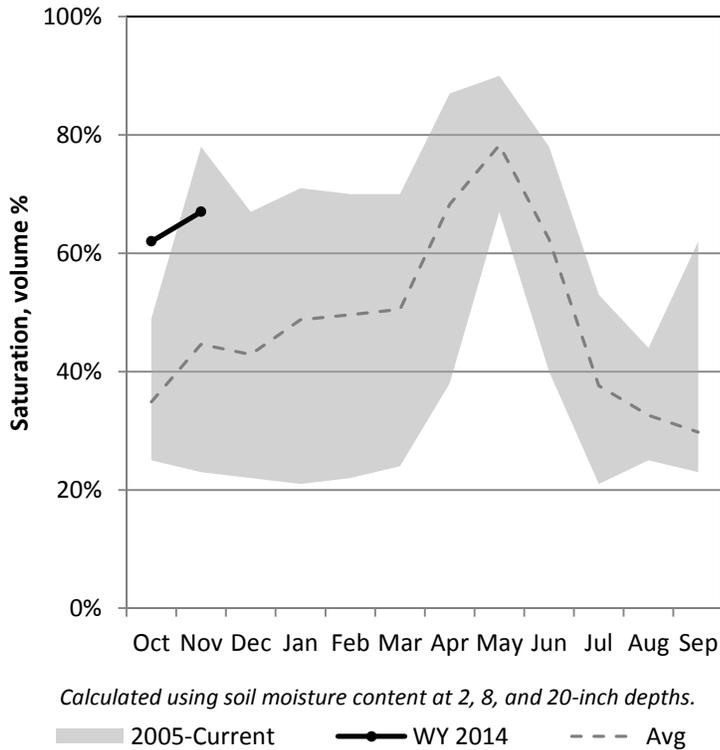
11/1/2013

Precipitation in October was near average at 94%, which brings the seasonal accumulation (Oct-Oct) to 94% of average. Soil moisture is at 67% compared to 28% last year. Reservoir storage is at 30% of capacity, compared to 9% last year. The water availability index for Moab is 56%.

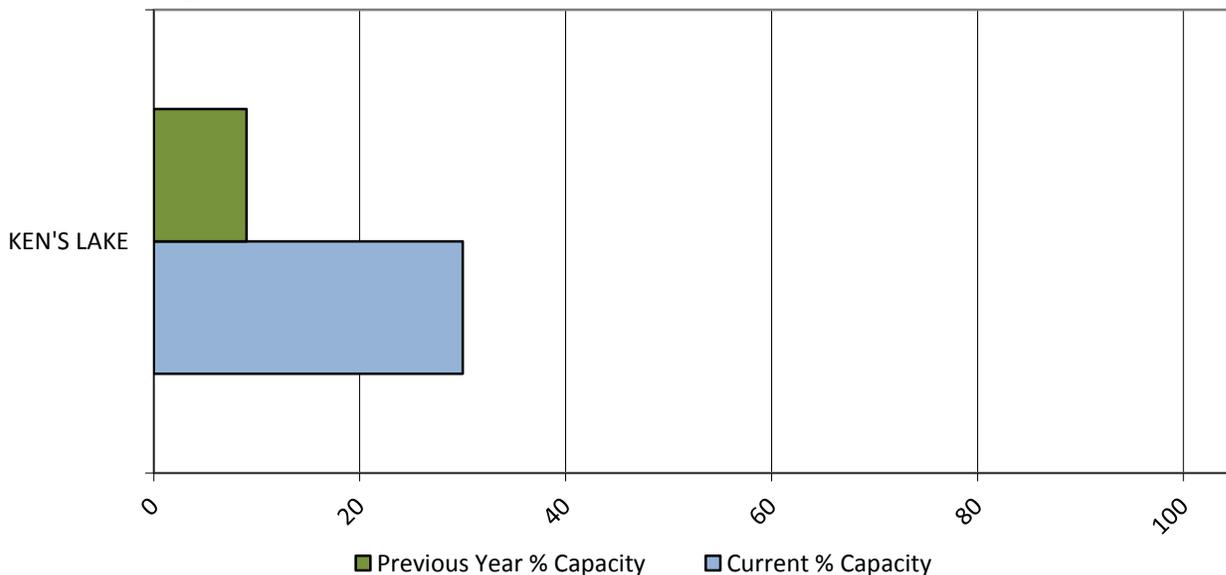
## Precipitation



## Soil Moisture



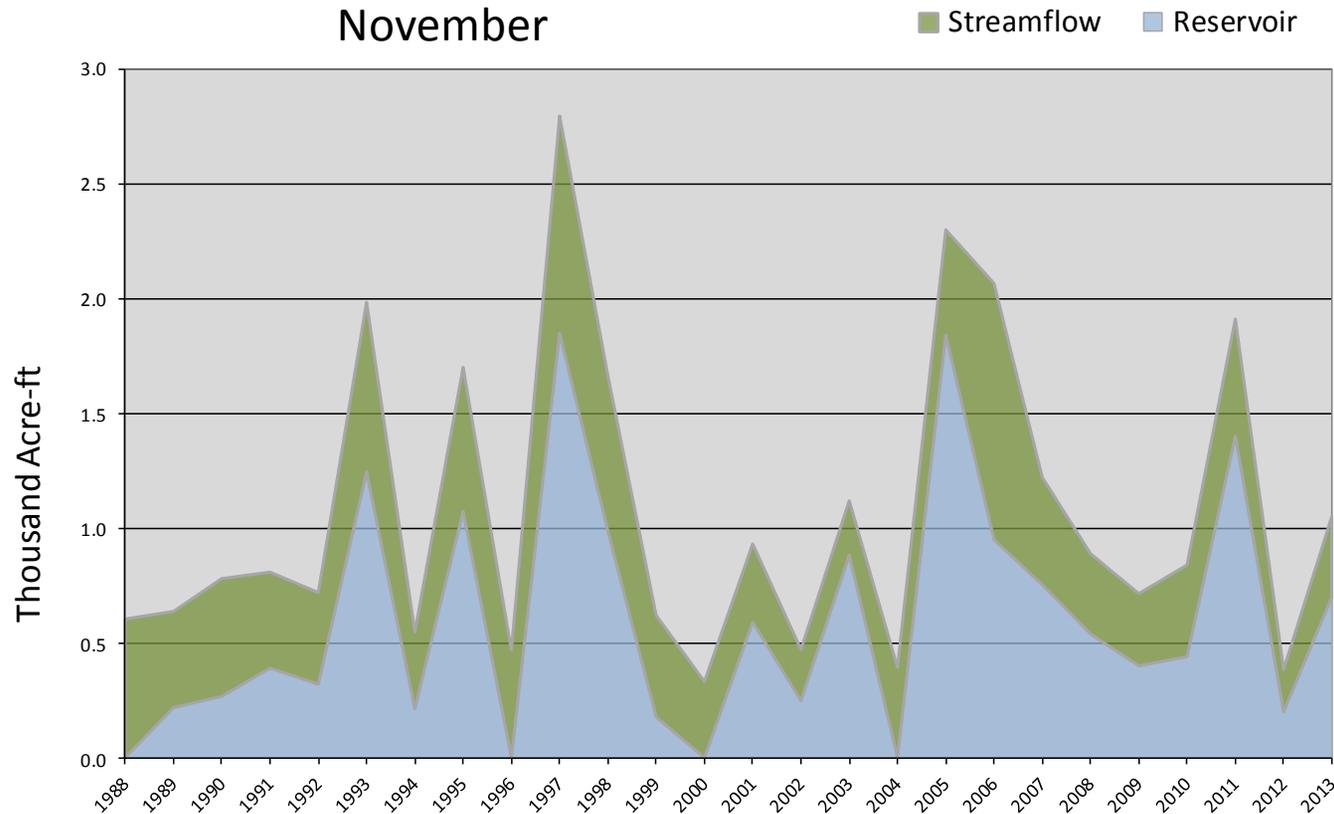
## Reservoir Storage



November 1, 2013		Water Availability Index				
Basin or Region	October EOM* Ken's Lake Reservoir	October accumulated flow Mill Creek at Sheley ( <i>observed</i> )	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	KAF <sup>^</sup>	KAF	KAF		%	
<b>Moab</b>	<b>0.7</b>	<b>0.4</b>	<b>1.1</b>	<b>1.08</b>	<b>63</b>	<b>08, 01, 03, 07</b>

*\*EOM, end of month; <sup>#</sup> WAI, water availability index; <sup>^</sup>KAF, thousand acre-feet.*

Moab - Water Availability Index  
November

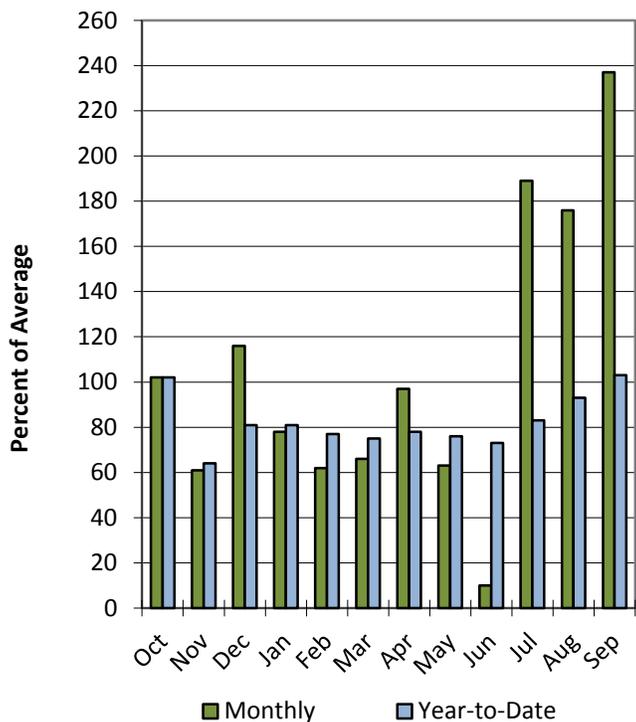


# Dirty Devil Basin

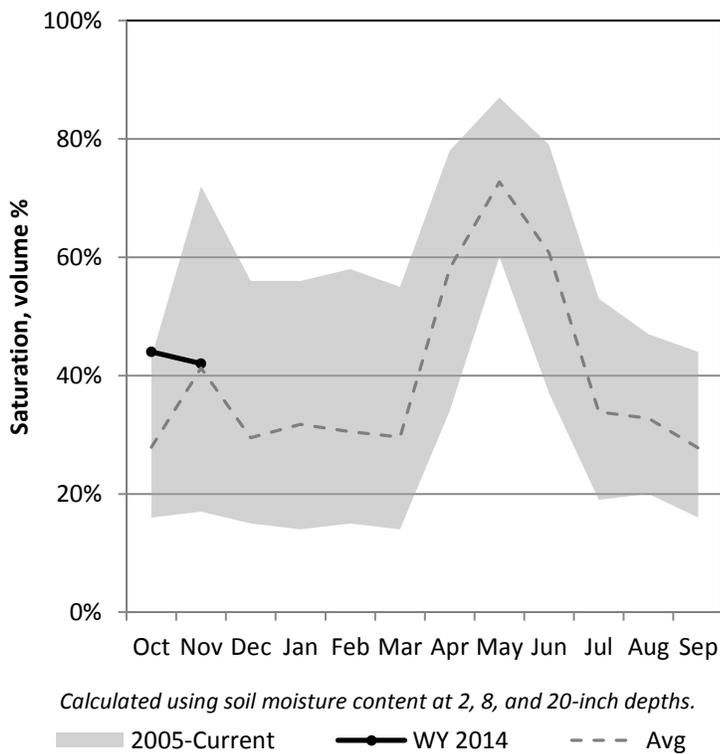
11/1/2013

Precipitation in October was near average at 102%, which brings the seasonal accumulation (Oct-Oct) to 102% of average. Soil moisture is at 42% compared to 31% last year.

## Precipitation



## Soil Moisture

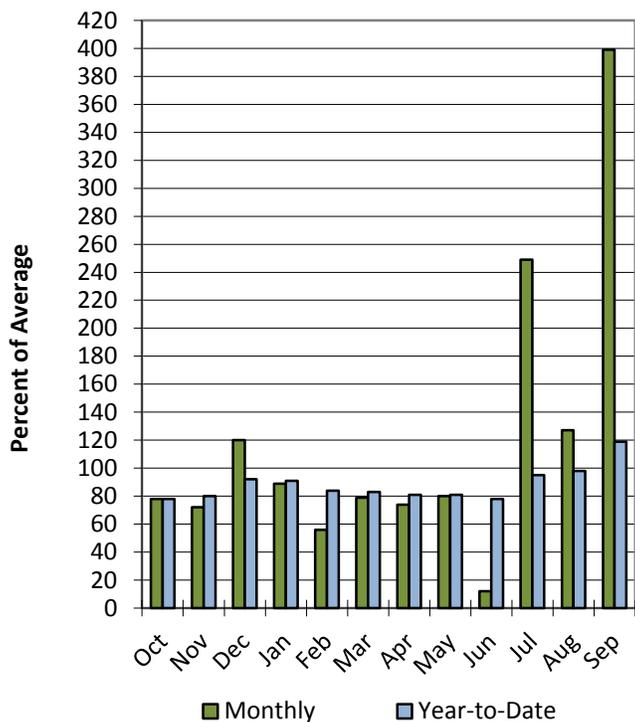


# Escalante River Basin

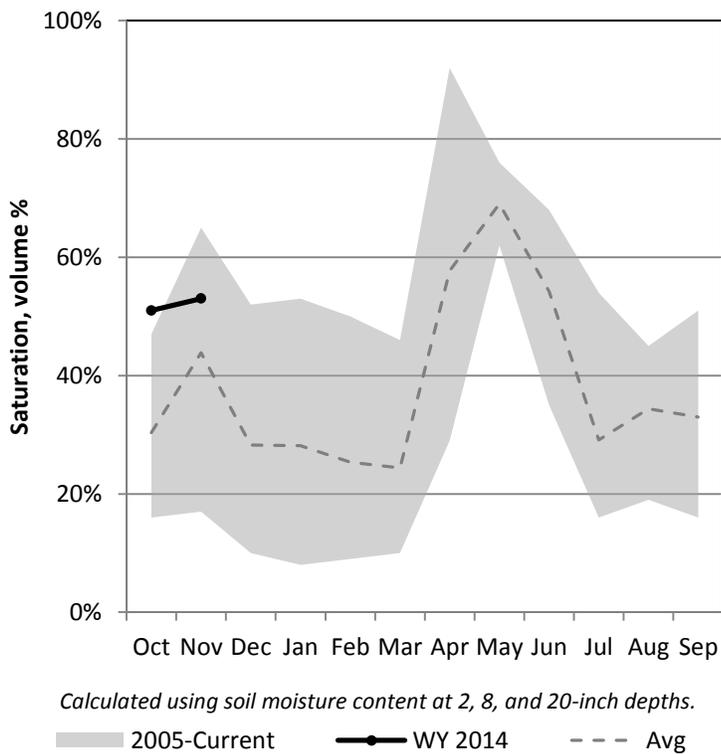
11/1/2013

Precipitation in October was below average at 78%, which brings the seasonal accumulation (Oct-Oct) to 78% of average. Soil moisture is at 53% compared to 39% last year.

## Precipitation



## Soil Moisture

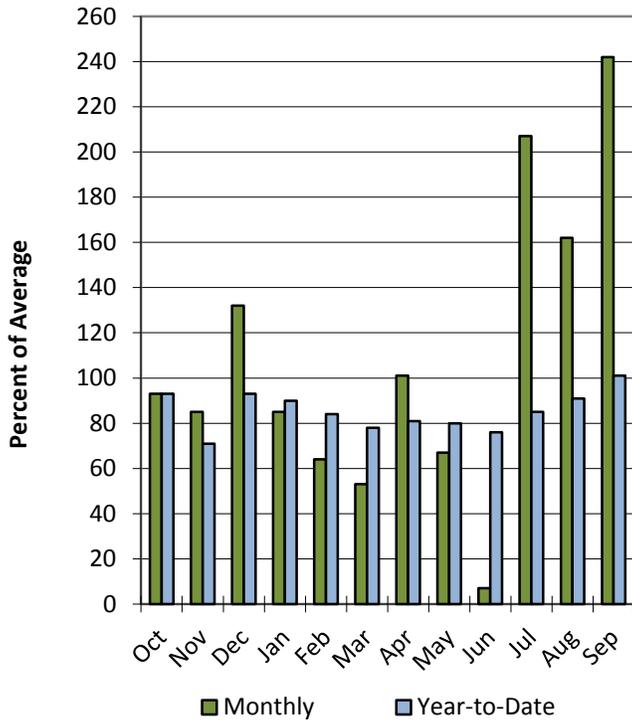


# Upper Sevier River Basin

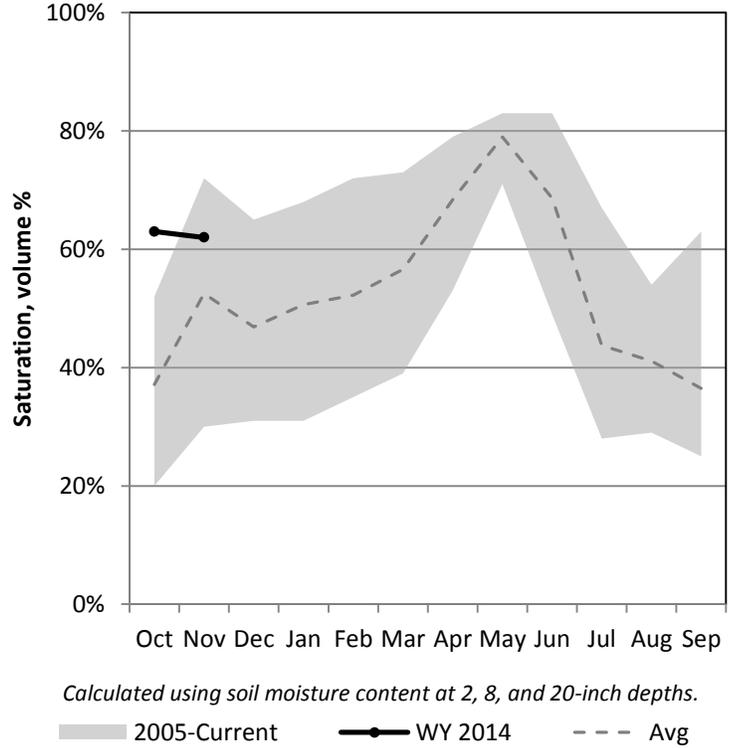
11/1/2013

Precipitation in October was near average at 93%, which brings the seasonal accumulation (Oct-Oct) to 93% of average. Soil moisture is at 62% compared to 42% last year. Reservoir storage is at 43% of capacity, compared to 30% last year. The water availability index for the Upper Sevier is 35%.

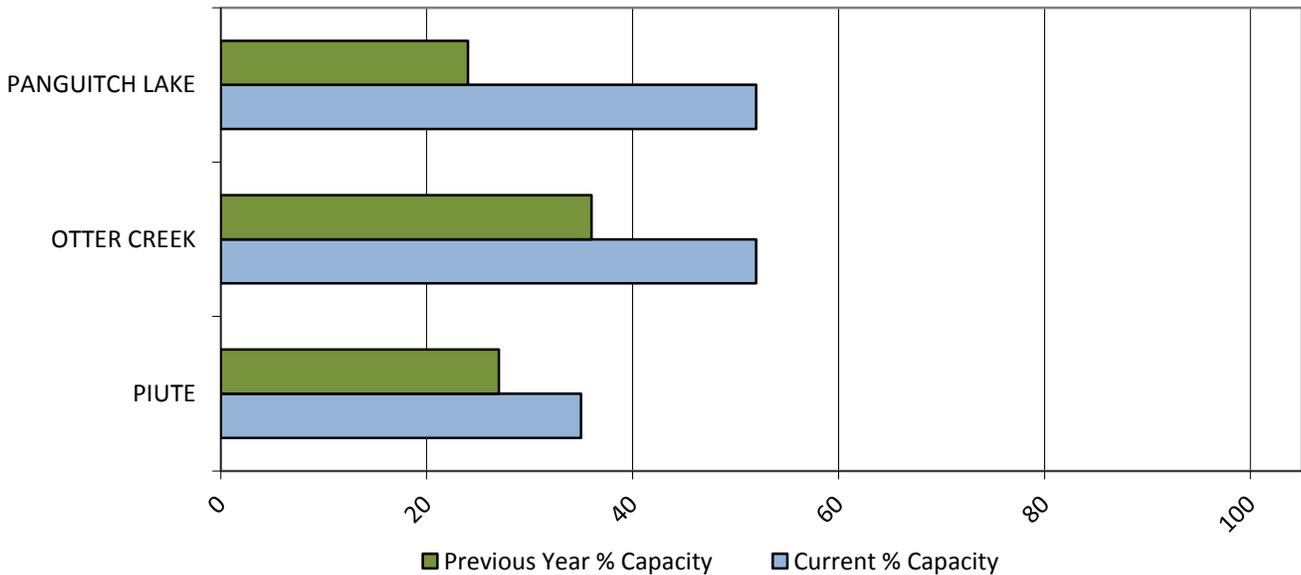
## Precipitation



## Soil Moisture



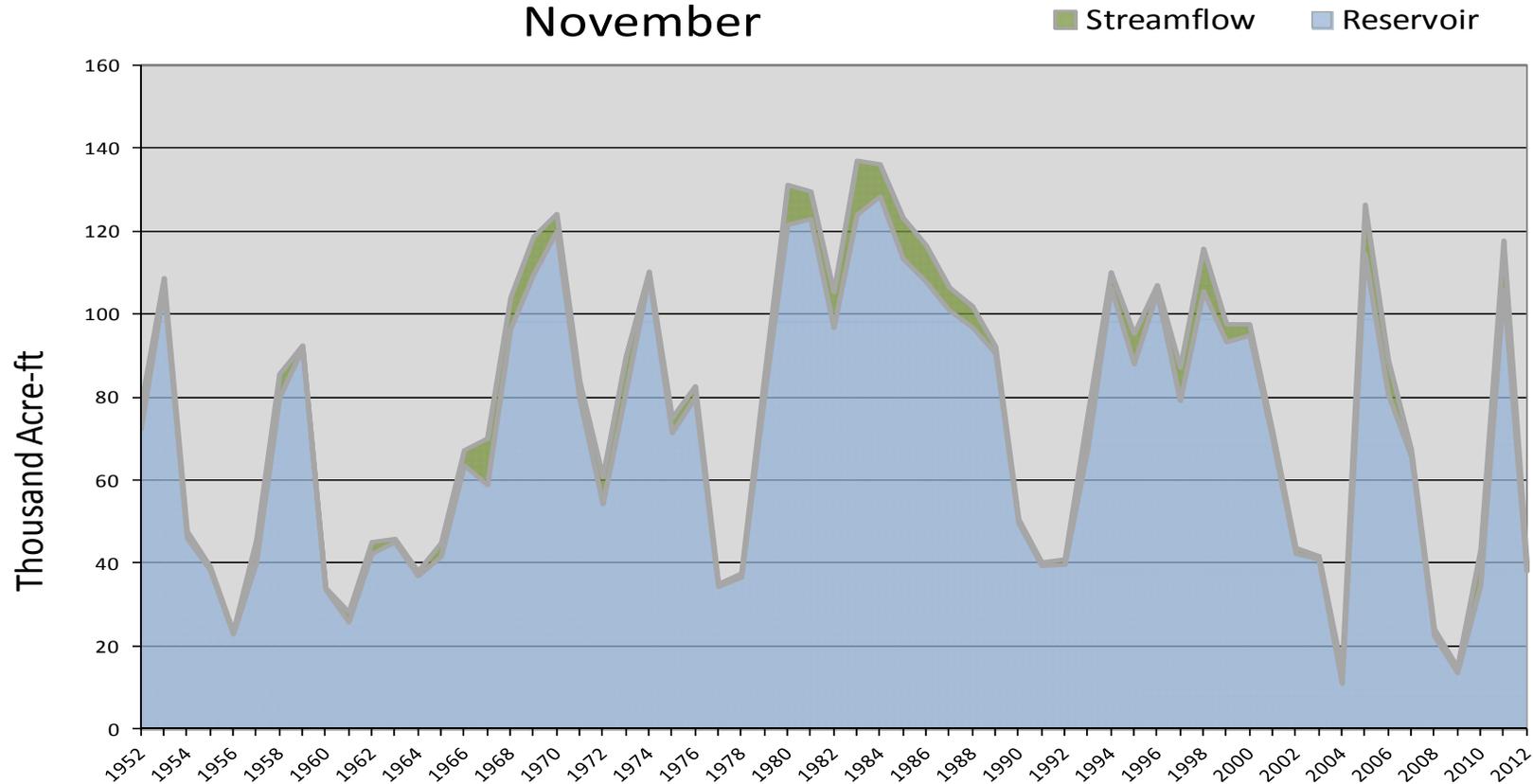
## Reservoir Storage



November 1, 2013		Water Availability Index				
Basin or Region	October EOM* Otter Creek and Piute	October accumulated flow at Kingston ( <i>observed</i> )	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	KAF <sup>^</sup>	KAF	KAF		%	
<b>Upper Sevier River</b>	<b>47.0</b>	<b>4.0</b>	<b>51.0</b>	<b>-1.12</b>	<b>37</b>	<b>54,90,72,66</b>

\*EOM, end of month; <sup>#</sup> WAI, water availability index; <sup>^</sup>KAF, thousand acre-feet.

Upper Sevier River - Water Availability Index  
November

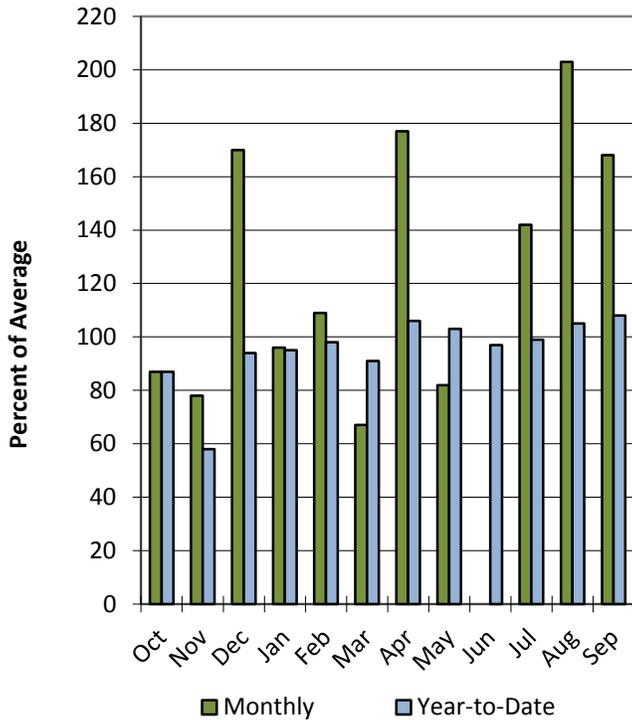


# Lower Sevier River Basin

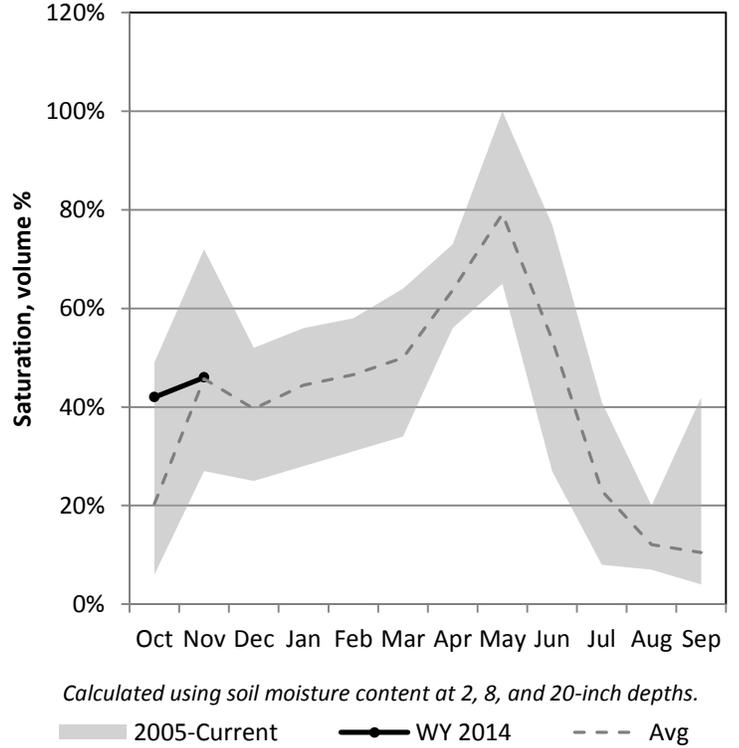
11/1/2013

Precipitation in October was below average at 87%, which brings the seasonal accumulation (Oct-Oct) to 87% of average. Soil moisture is at 46% compared to 27% last year. Reservoir storage is at 33% of capacity, compared to 46% last year. The water availability index for the Lower Sevier is 15%.

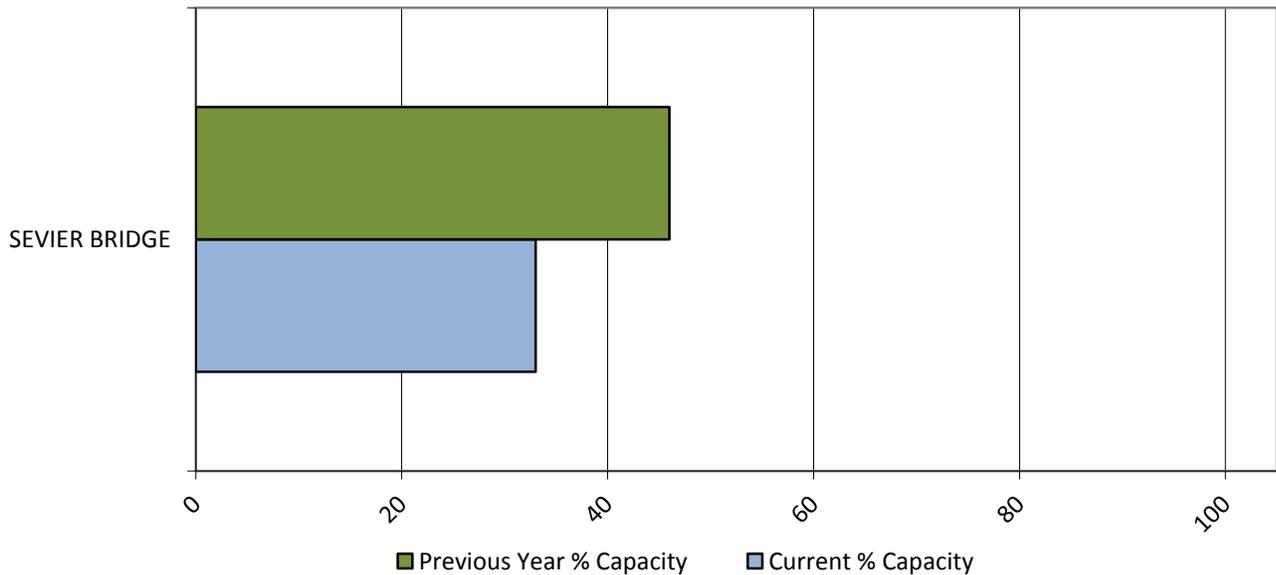
## Precipitation



## Soil Moisture



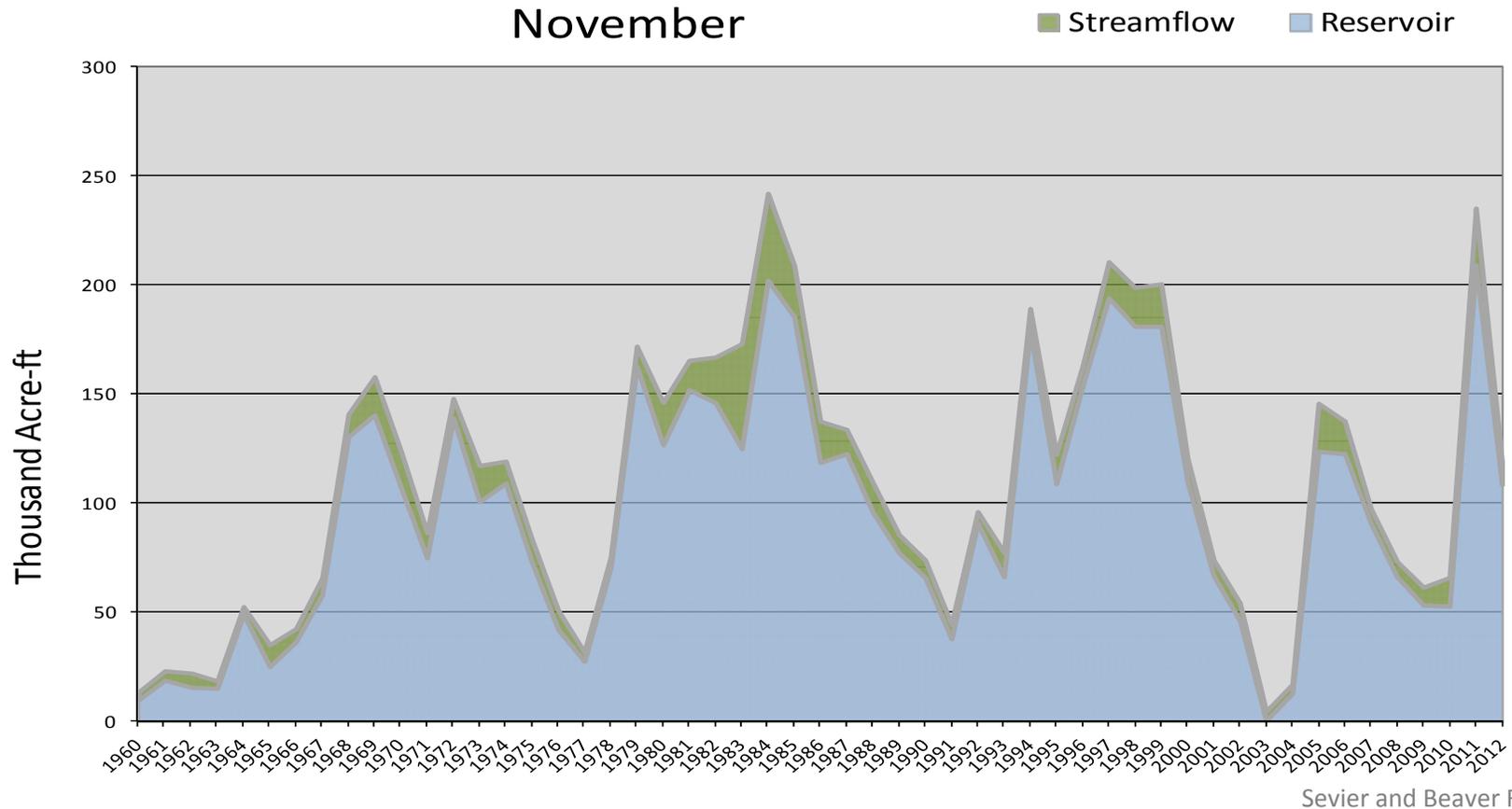
## Reservoir Storage



November 1, 2013		Water Availability Index				
Basin or Region	October EOM* Sevier Bridge	October accumulated flow Sevier at Gunnison ( <i>observed</i> )	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Lower Sevier River</b>	<b>79</b>	<b>8.5</b>	<b>87</b>	<b>-0.38</b>	<b>45</b>	<b>89,71,92,07</b>

*\*EOM, end of month; <sup>#</sup>WAI, water availability index; <sup>^</sup>KAF, thousand acre-feet.*

## Lower Sevier River - Water Availability Index November

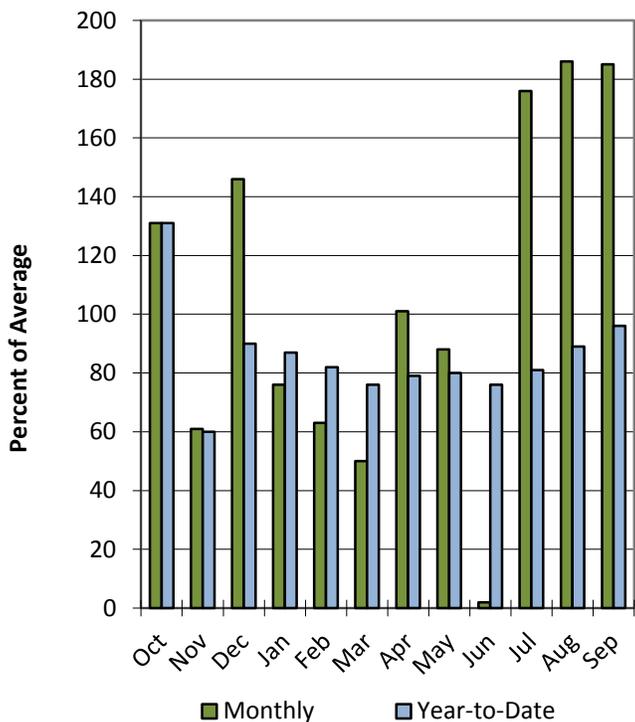


# San Pitch River Basin

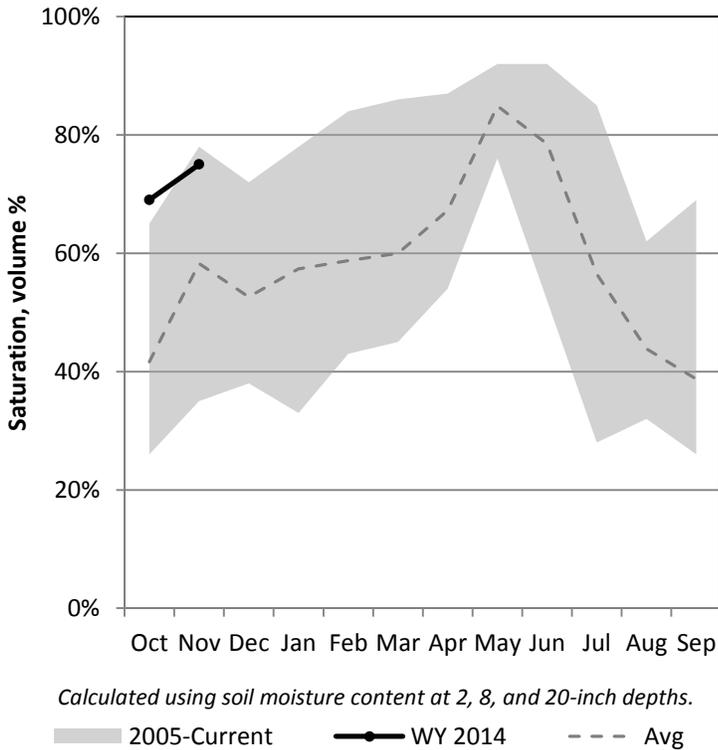
11/1/2013

Precipitation in October was much above average at 131%, which brings the seasonal accumulation (Oct-Oct) to 131% of average. Soil Moisture is at 75% compared to 46% last year. Reservoir storage is at 0% of capacity, compared to 0% last year.

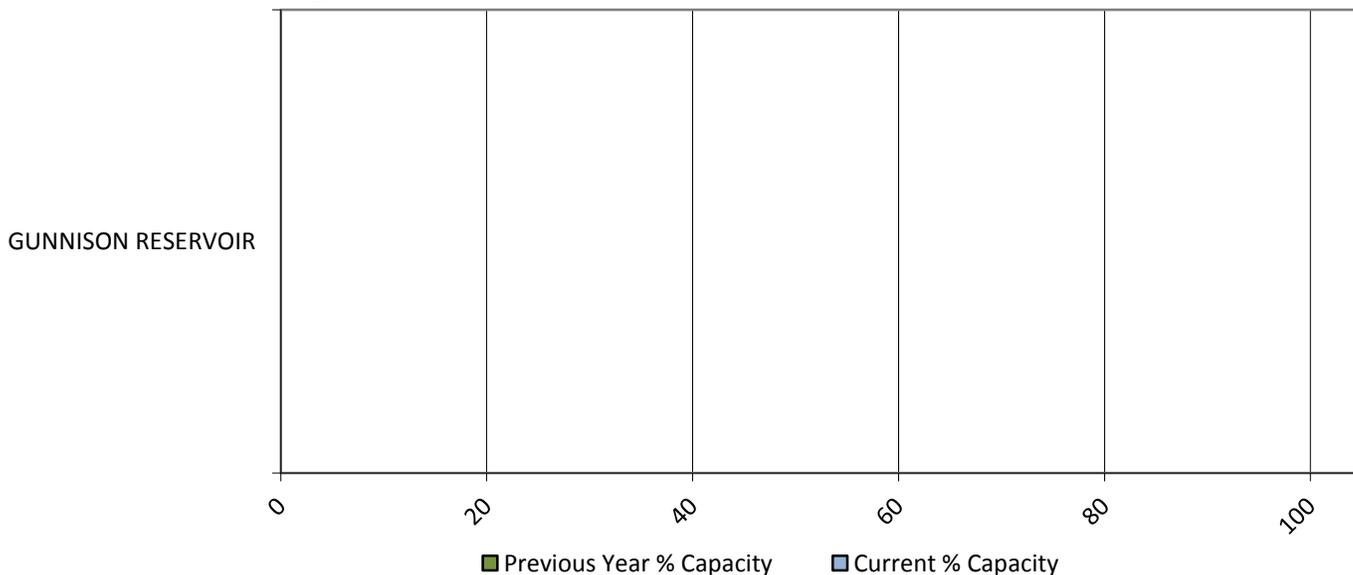
## Precipitation



## Soil Moisture



## Reservoir Storage



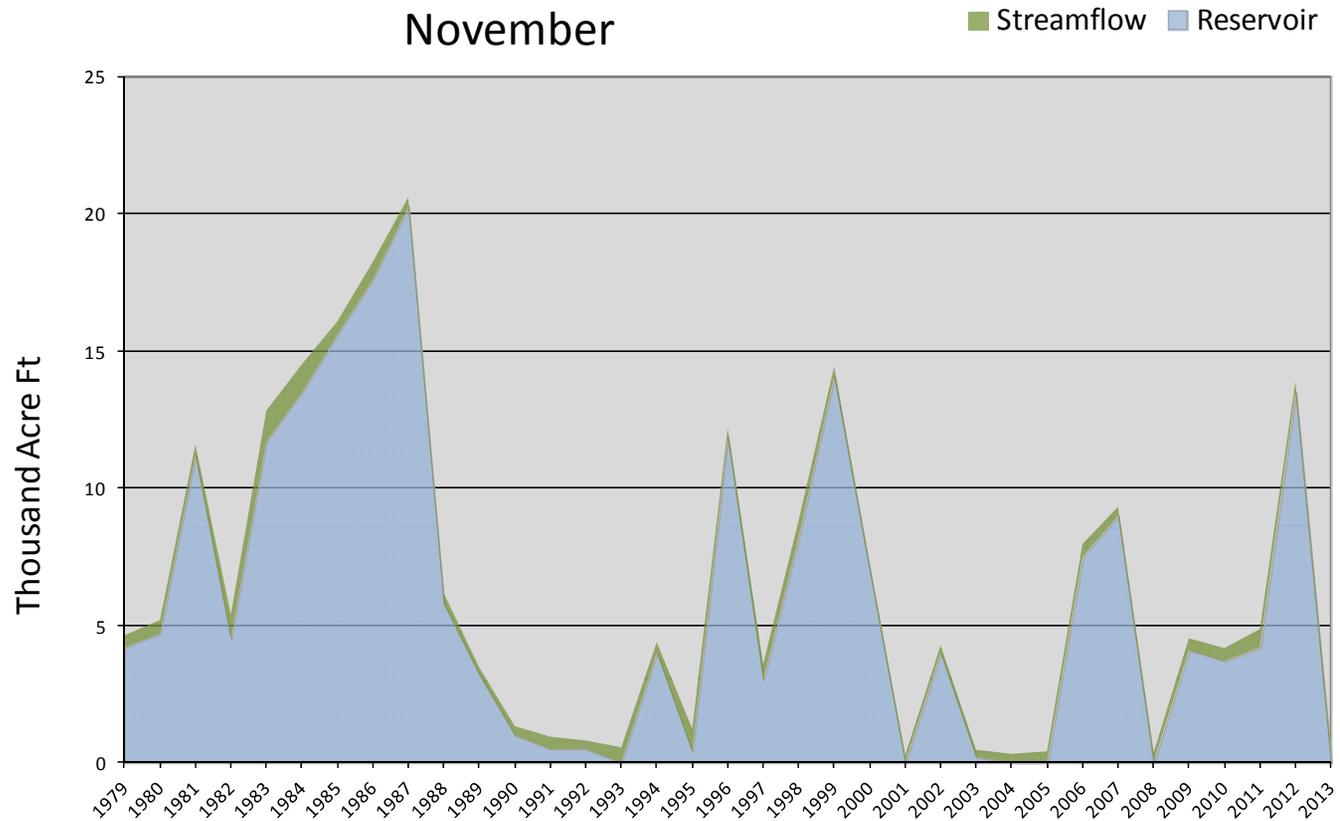
November 1, 2013

## Water Availability Index

Basin or Region	Oct EOM* Gunnison Reservoir	October accumulated flow Manti Creek (observed)	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	KAF^	KAF	KAF		%	
<b>Manti Creek</b>	<b>0.0</b>	<b>0.5</b>	<b>0.5</b>	<b>-2.78</b>	<b>17</b>	<b>03,05,93,92</b>

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

### San Pitch River - Water Availability Index November

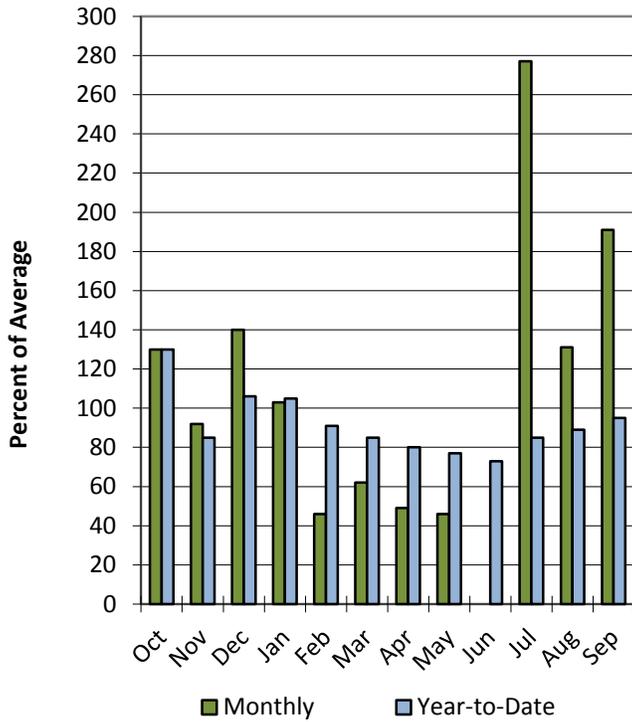


# Beaver River Basin

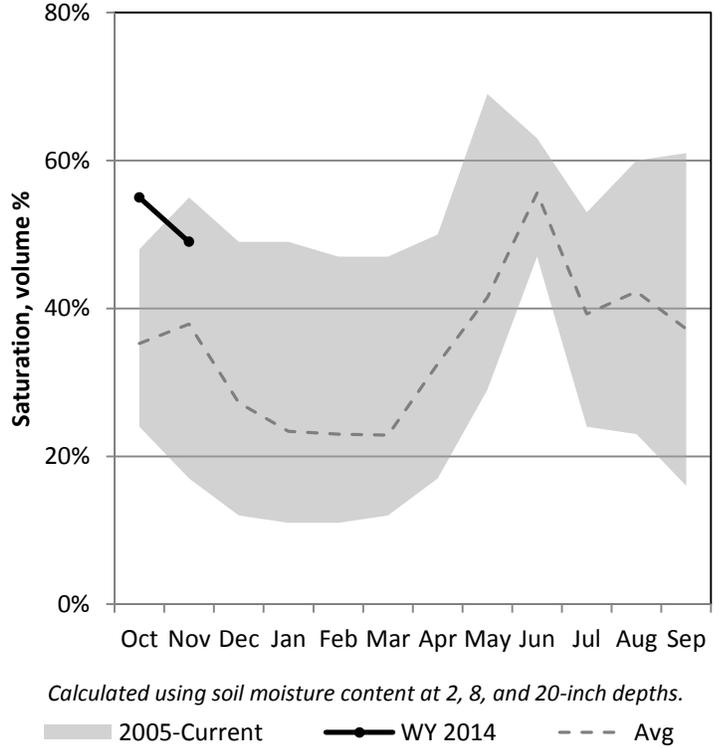
11/1/2013

Precipitation in October was above average at 130%, which brings the seasonal accumulation (Oct-Oct) to 130% of average. Soil moisture is at 49% compared to 41% last year. Reservoir storage is at 22% of capacity, compared to 21% last year. The water availability index for the Beaver River is 63%.

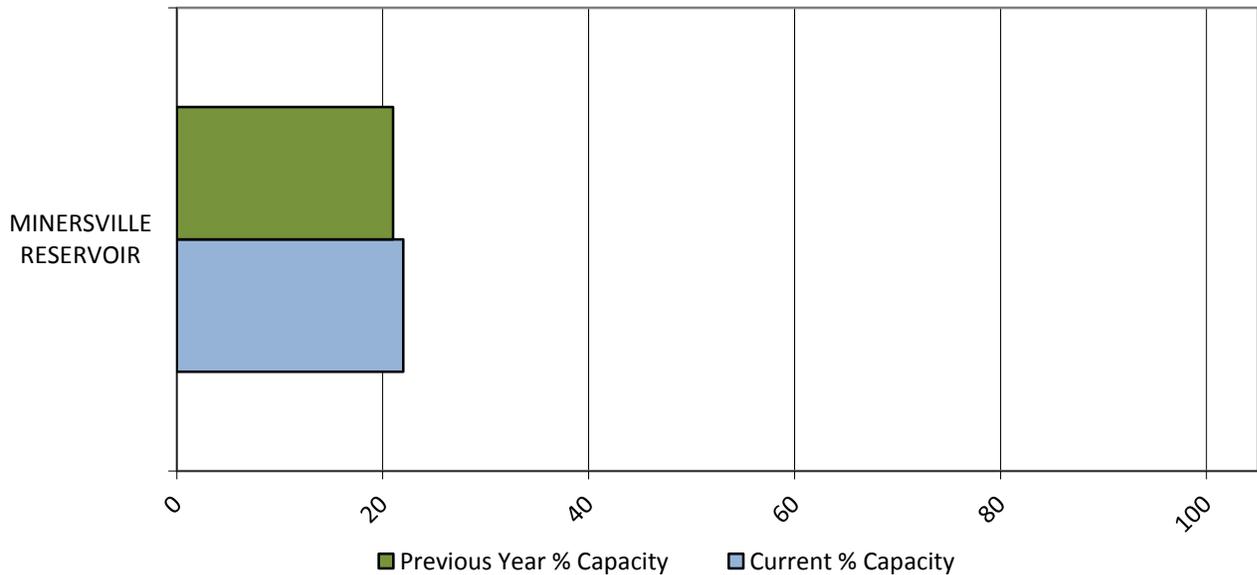
## Precipitation



## Soil Moisture



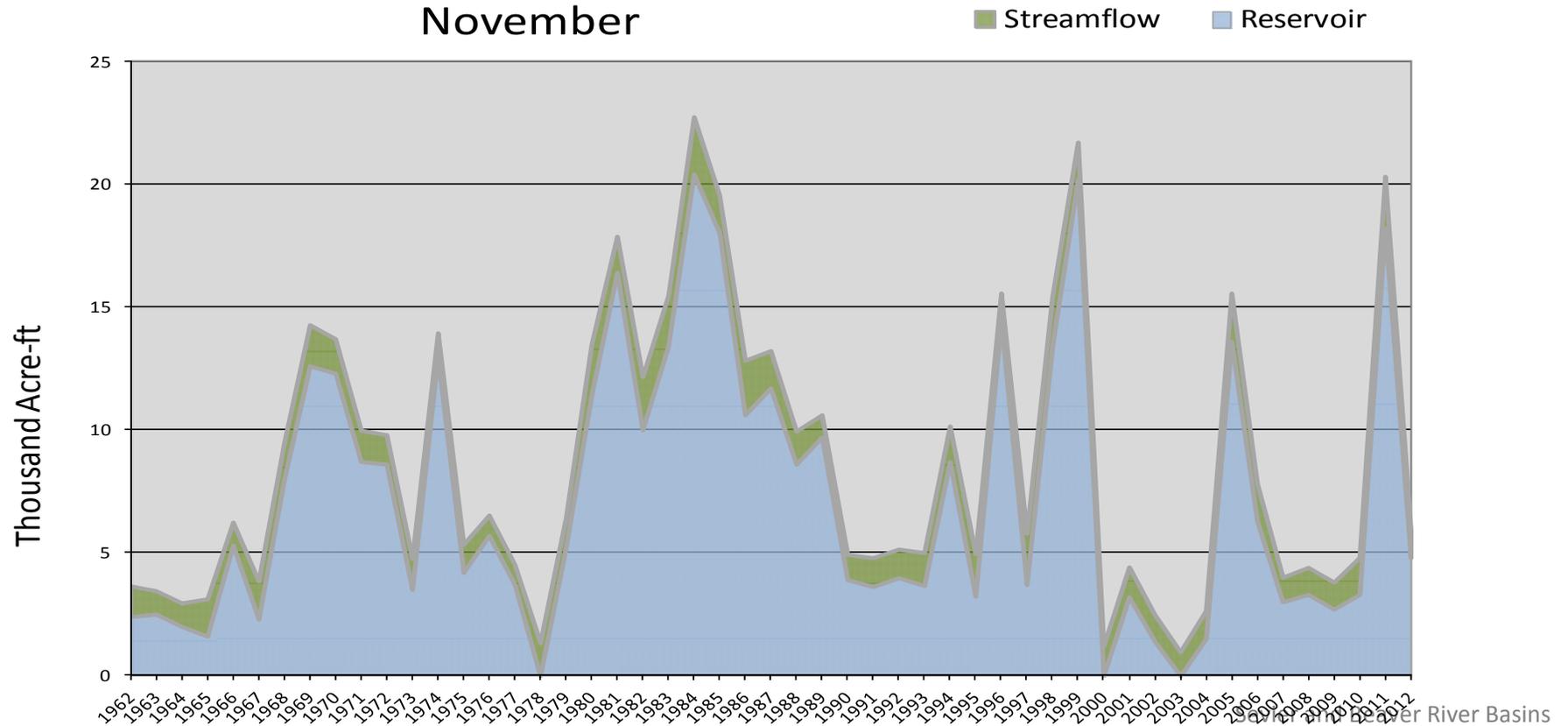
## Reservoir Storage



November 1, 2013		Water Availability Index				
Basin or Region	October EOM* Minersville Reservoir	October accumulated flow Beaver River at Beaver ( <i>observed</i> )	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	KAF <sup>^</sup>	KAF	KAF		%	
<b>Beaver</b>	<b>5.2</b>	<b>1.4</b>	<b>6.6</b>	<b>0.39</b>	<b>55</b>	<b>79,76,06,68</b>

*\*EOM, end of month; <sup>#</sup> WAI, water availability index; <sup>^</sup>KAF, thousand acre-feet.*

## Beaver River - Water Availability Index November

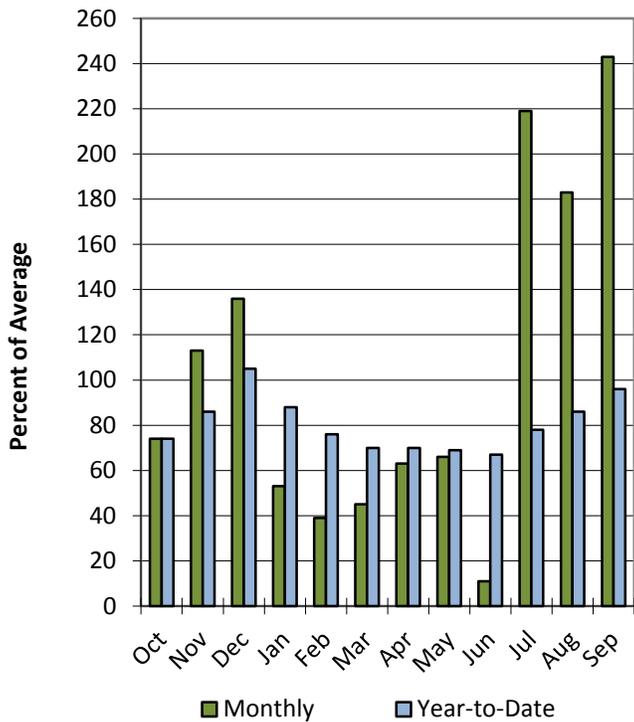


# Southwestern Utah Basin

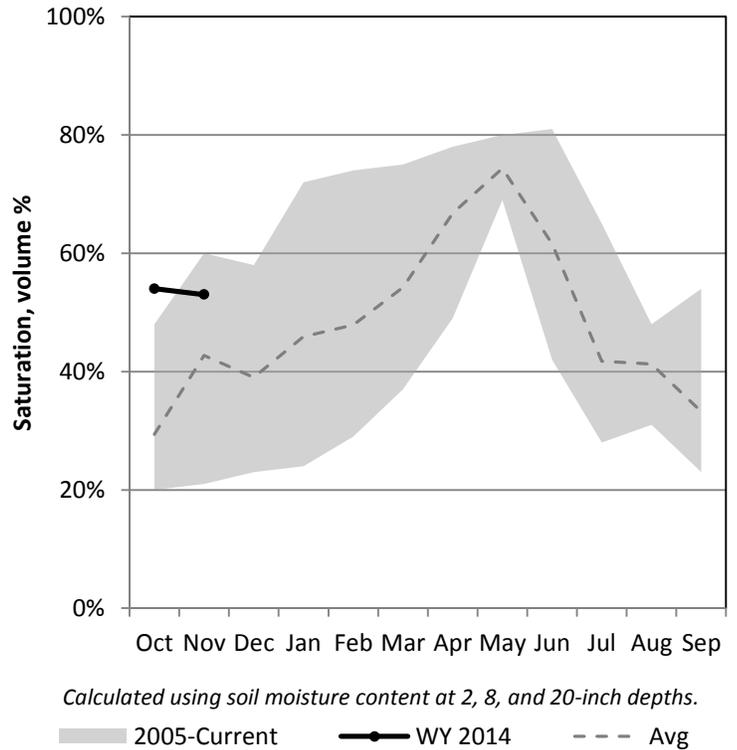
11/1/2013

Precipitation in October was below average at 74%, which brings the seasonal accumulation (Oct-Oct) to 74% of average. Soil moisture is at 53% compared to 40% last year. Reservoir storage is at 45% of capacity, compared to 56% last year. The water availability index for the Virgin River is 37%.

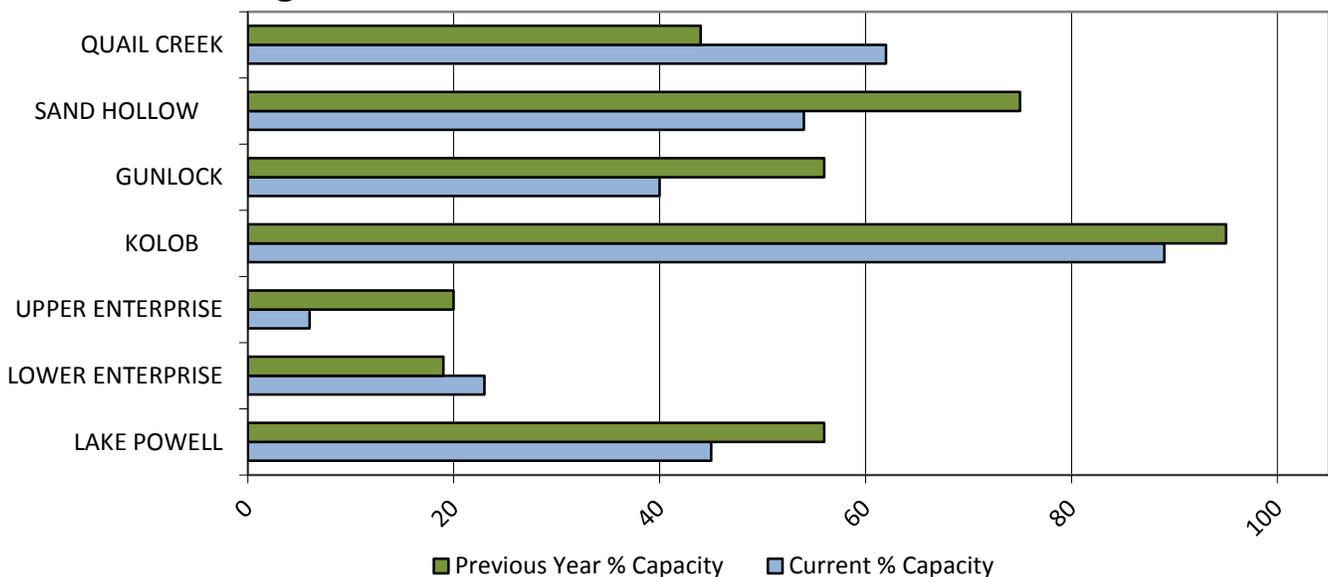
## Precipitation



## Soil Moisture



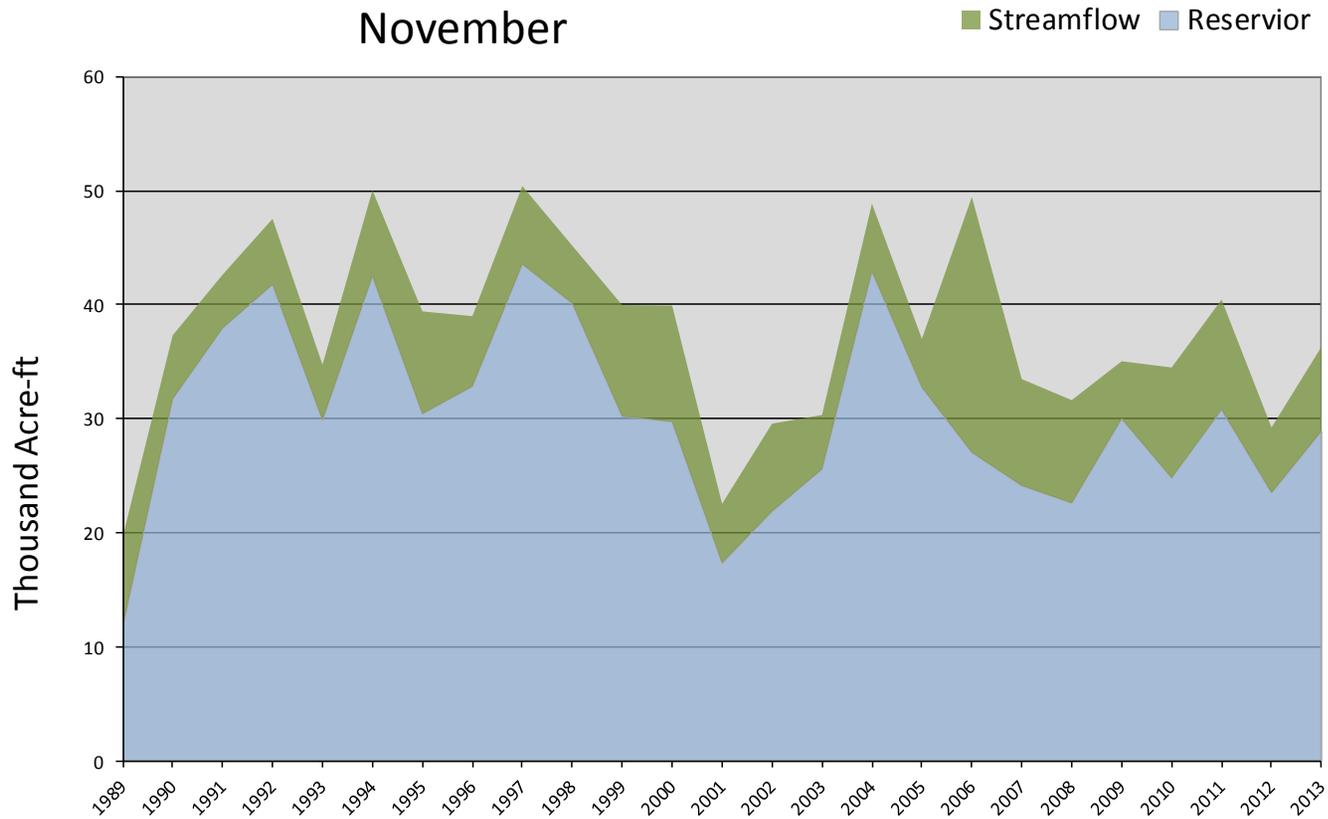
## Reservoir Storage



November 1, 2013	Water Availability Index					
Basin or Region	October EOM* Reservoir	October accumulated flow Virgin and Santa Clara Rivers ( <i>observed</i> )	Reservoir + Streamflow	WAI <sup>#</sup>	Percentile	Years with similar WAI
	<i>KAF</i> <sup>^</sup>	<i>KAF</i>	<i>KAF</i>		%	
<b>Southwest</b>	<b>29</b>	<b>7</b>	<b>36</b>	<b>-0.64</b>	<b>42</b>	<b>93,09,05,90</b>

\*EOM, end of month; <sup>#</sup> WAI, water availability index; <sup>^</sup>KAF, thousand acre-feet.

Southwest - Water Availability Index  
November



11/1/2013

## Water Availability Index

Basin or Region	August EOM*	Observed August	Reservoir +	WAI <sup>#</sup>	Percentile	Years with similar WAI
	Reservoirs	stream flow	Streamflow			
	KAF <sup>^</sup>	KAF	KAF		%	
<b>Bear River</b>	<b>529</b>	<b>5</b>	<b>535</b>	<b>-1.20</b>	<b>36</b>	<b>39, 30, 45, 63</b>
<b>Woodruff Narrows</b>	<b>9</b>	<b>6</b>	<b>15</b>	<b>-1.20</b>	<b>36</b>	<b>95, 89, 00, 75</b>
<b>Little Bear</b>	<b>6</b>	<b>2</b>	<b>8</b>	<b>-1.52</b>	<b>32</b>	<b>02, 10, 08, 00</b>
<b>Ogden River</b>	<b>98</b>	<b>4</b>	<b>102</b>	<b>-2.82</b>	<b>16</b>	<b>88, 90, 02, 07</b>
<b>Weber River</b>	<b>138</b>	<b>4</b>	<b>142</b>	<b>-3.43</b>	<b>9</b>	<b>04, 92, 07, 90</b>
<b>Provo</b>	<b>251</b>	<b>4</b>	<b>255</b>	<b>-3.75</b>	<b>5</b>	<b>07, 03, 04, 12</b>
<b>West Uintah Basin</b>	<b>15</b>	<b>5</b>	<b>20</b>	<b>1.88</b>	<b>73</b>	<b>06, 93, 05, 95</b>
<b>Eastern Uintah</b>	<b>13.8</b>	<b>0.7</b>	<b>15</b>	<b>-3.45</b>	<b>9</b>	<b>02, 89, 94, 90</b>
<b>Blacks Fork</b>	<b>5.0</b>	<b>6.7</b>	<b>12</b>	<b>1.52</b>	<b>68</b>	<b>05, 93, 06, 99</b>
<b>Smiths Creek</b>	<b>5.5</b>	<b>1.3</b>	<b>7</b>	<b>0.52</b>	<b>56</b>	<b>00, 06, 94, 12</b>
<b>Price River</b>	<b>15.9</b>	<b>5.1</b>	<b>21.0</b>	<b>-1.25</b>	<b>35</b>	<b>77, 10, 01, 09</b>
<b>Joe's Valley</b>	<b>27.8</b>	<b>2.6</b>	<b>30.4</b>	<b>-2.93</b>	<b>15</b>	<b>90, 92, 94, 03</b>
<b>Moab</b>	<b>0.7</b>	<b>0.4</b>	<b>1.1</b>	<b>1.08</b>	<b>63</b>	<b>08, 01, 03, 07</b>
<b>Upper Sevier River</b>	<b>47</b>	<b>4</b>	<b>51</b>	<b>-1.12</b>	<b>37</b>	<b>54,90,72,66</b>
<b>San Pitch</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>-2.78</b>	<b>17</b>	<b>03,05,93,92</b>
<b>Lower Sevier River</b>	<b>79</b>	<b>9</b>	<b>87</b>	<b>-0.38</b>	<b>45</b>	<b>89,71,92,07</b>
<b>Beaver River</b>	<b>5.2</b>	<b>1.4</b>	<b>6.6</b>	<b>0.39</b>	<b>55</b>	<b>79,76,06,68</b>
<b>Virgin River</b>	<b>28.9</b>	<b>7.4</b>	<b>36.3</b>	<b>-0.64</b>	<b>42</b>	<b>93, 09, 05, 90</b>

\*EOM, end of month; <sup>#</sup> WAI, water availability index; <sup>^</sup>KAF, thousand acre-feet.

### What is a Water Availability Index?

The Water Availability Index (WAI) is an observed hydrologic indicator of current surface water availability within a watershed. The index is calculated by combining current reservoir storage with the previous months streamflow. WAI 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. WAI'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 WAI 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 WAI 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 WAI 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 WAI go to: [www.ut.nrcs.usda.gov/snow/](http://www.ut.nrcs.usda.gov/snow/) on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

*Issued by*

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

*Released by*

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

*Prepared by*

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



YOU MAY OBTAIN THIS PRODUCT AS WELL AS CURENT 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

