NRCS
Natural Resources Conservation Service

Utah Climate and Water Report

December, 2013

Sunflower Flat, Boulder Mountain, Utah

Photo by Jordan Clayton, USDA-NRCS

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.

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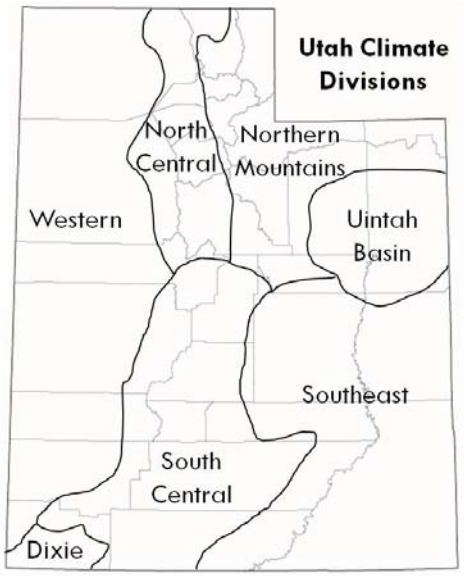
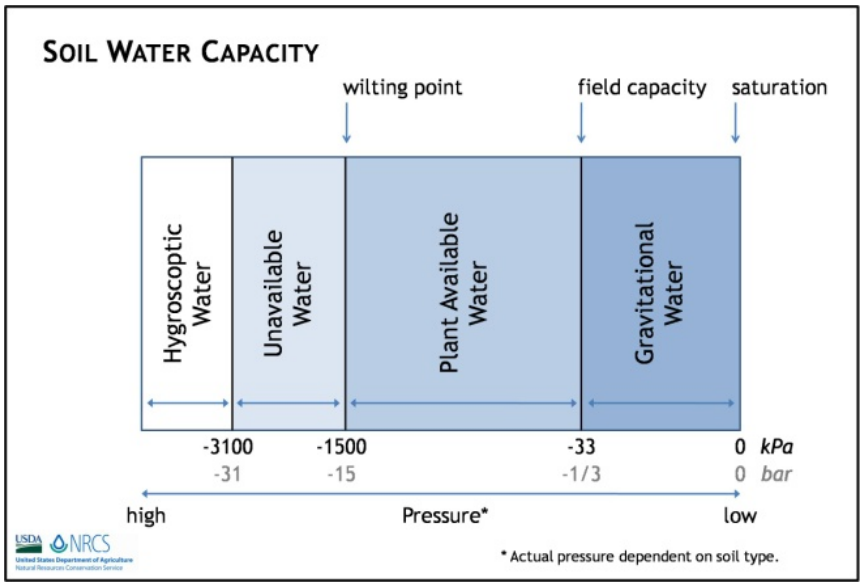
Climate and Water Information

Soil Climate Analysis Network

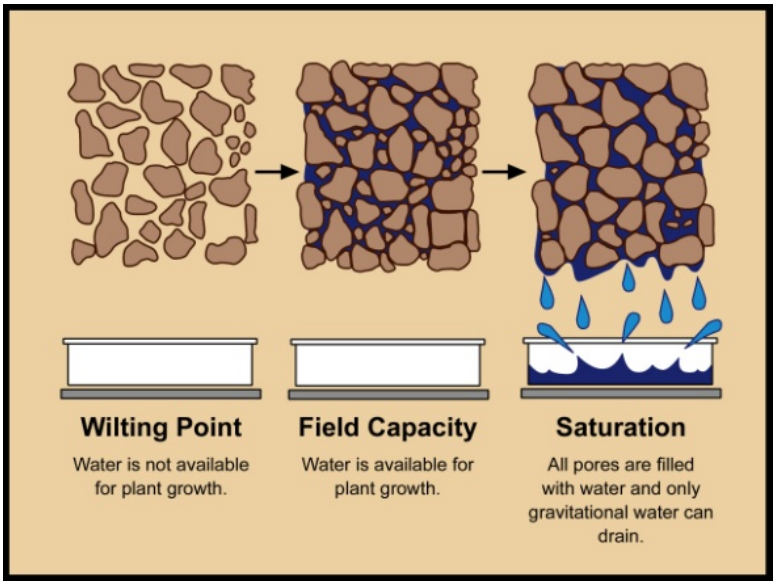
Soil Climate Analysis Network (SCAN) stations are primarily located on low- to mid-elevation, agriculturally important landscapes that maintain representative soils. Elevations range from 3,000 to 7,000 ft. The SCAN network provides real-time soil moisture and temperature data coupled with additional 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.

http://www.wcc.nrcs.usda.gov/scan/Utah/utah.html

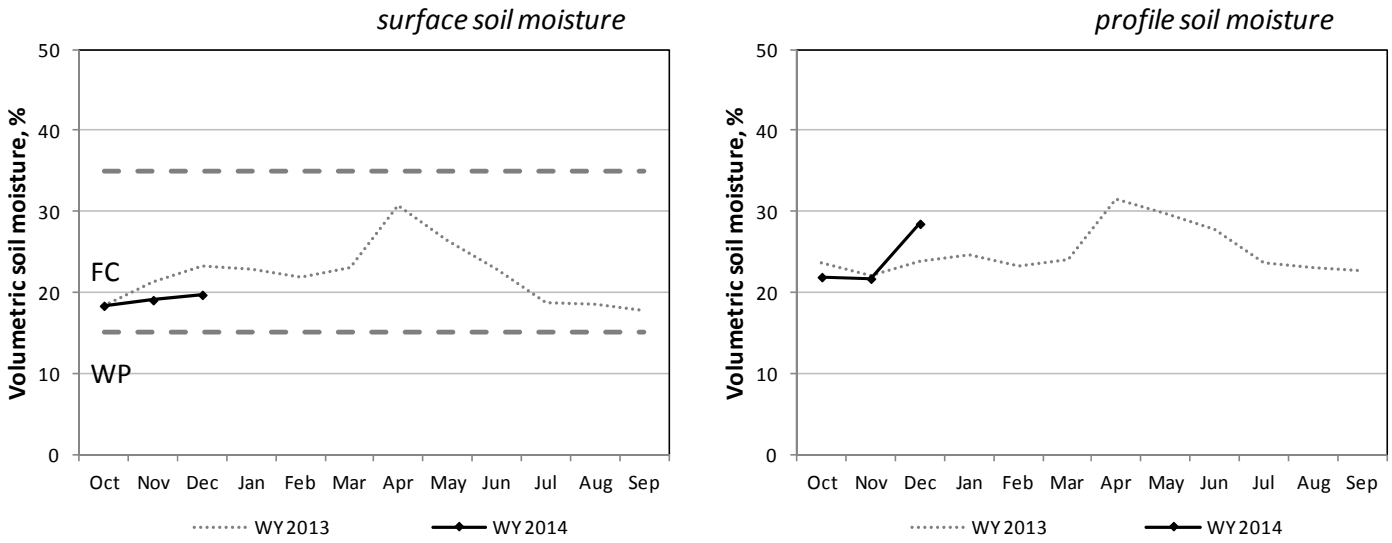
North Central

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"
	in.	*in.*	*volume %*					*°F*				
NORTH CENTRAL												
Blue Creek	1.1	0.4	14	12	17	21	17	35	36	37	41	47
Cache Junction	1.8	1.1	28	25	23	24	24	34	35	37	41	47
Grantsville	2.0	0.8	13	19	23	25	84	35	38	42	48	

* 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.

http://www.wcc.nrcs.usda.gov/scan/Utah/utah.html

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"
	in.	*in.*	*volume %*					*^{o}F*				
NORTHERN MOUNTAINS												
Chicken Ridge	0.8	0.1	9	13	14	10	10	32	33	34	36	40
Buffalo Jump	0.8	0.1	8	11	13	7	-	32	33	34	38	-
Morgan	1.5	0.5	22	20	21	31	18	32	32	33	36	40

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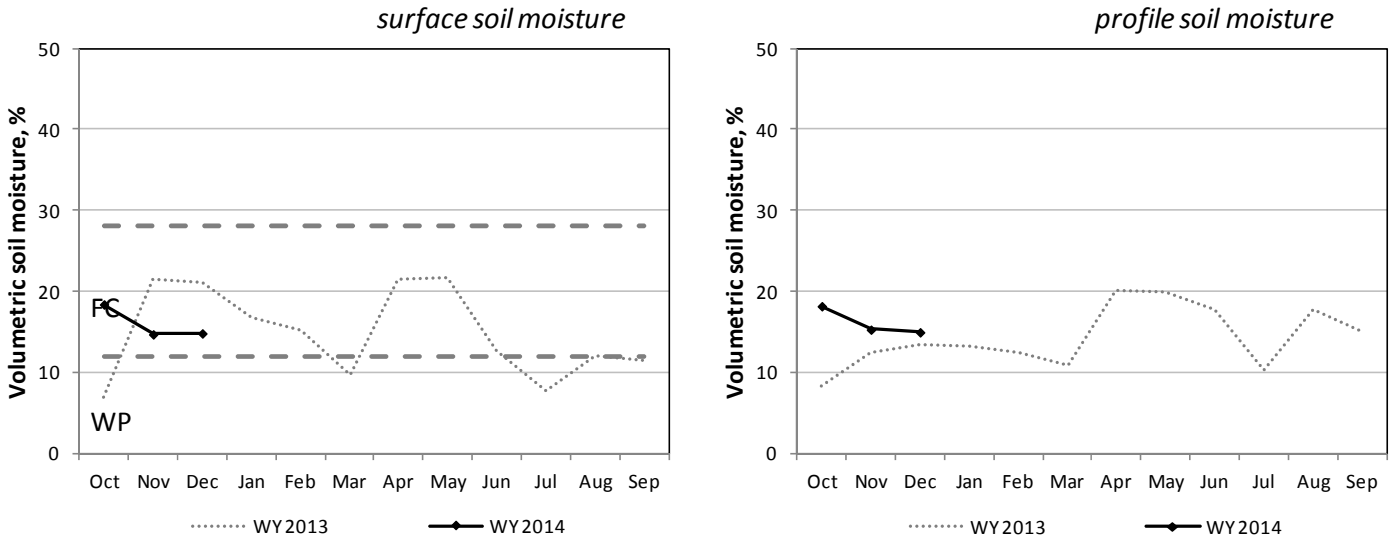
Northern Mountains



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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"
	in.	*in.*	*volume %*					*^{o}F*				
UINTAH BASIN												
Mountain Home	1.0	0.6	13	18	21	18	10	35	35	36	40	43
Little Red Fox	0.8	0.3	10	15	18	19	17	31	34	35	40	44
Split Mountain	1.9	0.3	11	18	14	12	11	33	34	35	40	46

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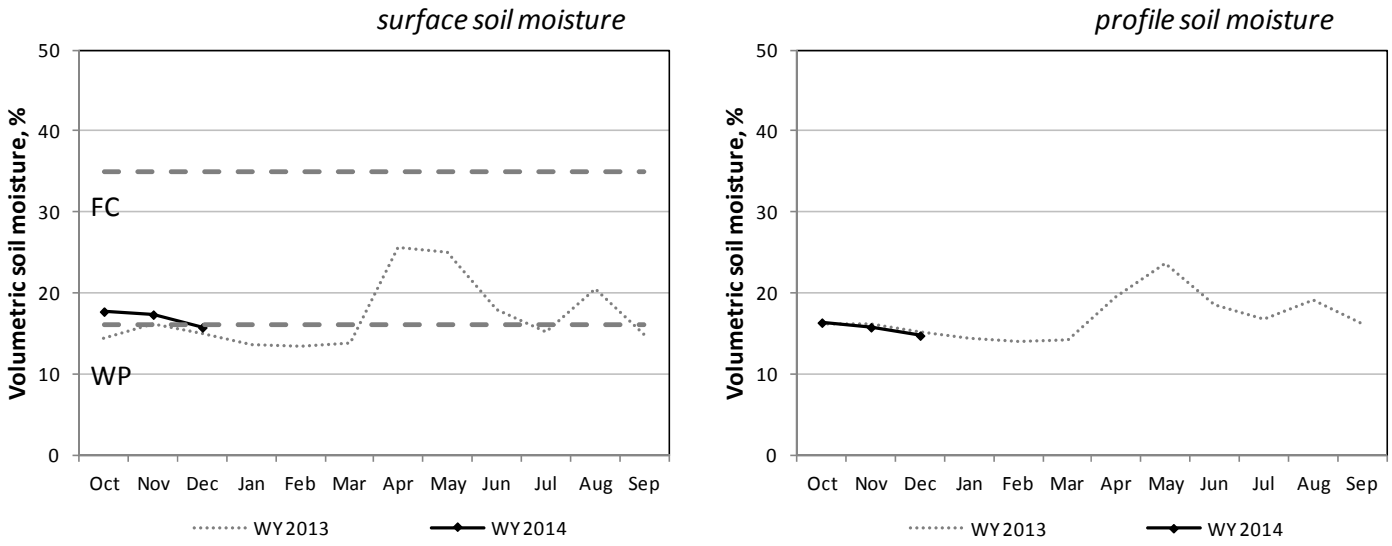
Uintah Basin



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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.

http://www.wcc.nrcs.usda.gov/scan/Utah/utah.html

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"
	in.	*in.*	*volume %*					*°F*				
SOUTHEAST												
Price	1.9	0.7	7	18	19	12	18	32	32	34	40	45
Green River	0.8	0.3	9	8	8	4	7	38	39	40	43	49
Harm's Way	3.1	1.8	18	9	28	12	6	35	33	36	39	45
West Summit	2.7	1.8	23	28	25	14	16	33	34	36	37	42
Eastland	3.1	1.6	29	24	26	21	20	35	35	36	40	44
Alkali Mesa	2.7	2.3	26	28	32	17	13	33	33	35	40	45
McCracken Mesa	2.6	1.9	21	25	25	14	13	37	39	40	45	51

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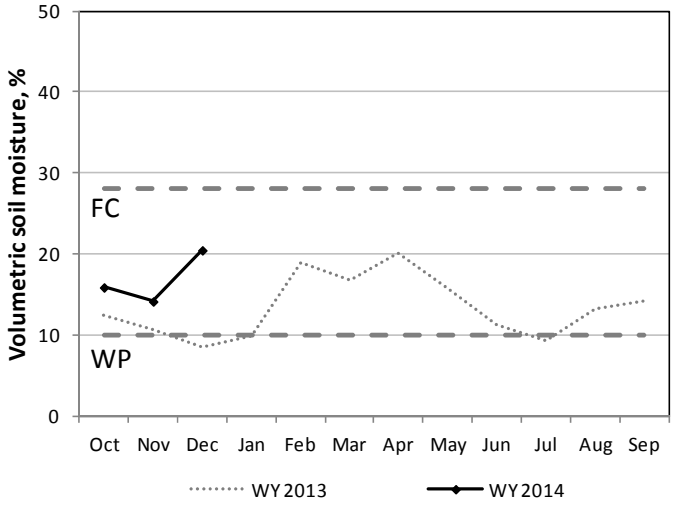
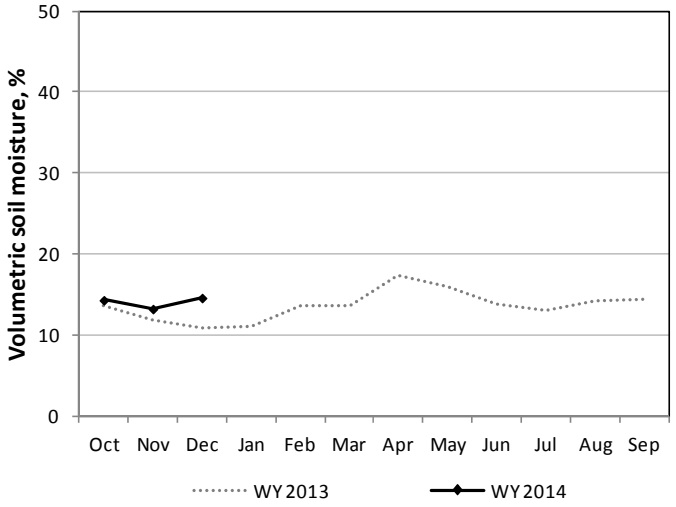
Southeast

surface soil moisture



profile soil moisture



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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"
	in.	*in.*	*volume %*					*^{o}F*				
SOUTH CENTRAL												
Nephi	1.4	0.5	14	26	18	6	0	36	37	38	43	48
Ephraim	1.9	1.0	14	17	18	15	34	37	38	41	43	48
Holden	1.0	0.6	7	9	3	11	12	34	35	37	42	50
Milford	0.7	0.3	17	12	13	26	17	34	37	40	46	52
Manderfield	1.4	0.4	6	12	10	10	5	34	37	38	41	45
Circleville	0.7	0.1	20	15	10	8	18	31	34	36	41	48
Panguitch	1.2	0.4	10	17	13	19	30	32	33	34	39	45
Cave Valley	3.4	1.5	3	7	7	6	8	32	34	37	40	42
Vermillion	3.2	1.9	4	10	10	14	7	33	35	36	38	43
Spooky	2.0	1.8	9	11	6	17	2	35	34	35	41	46

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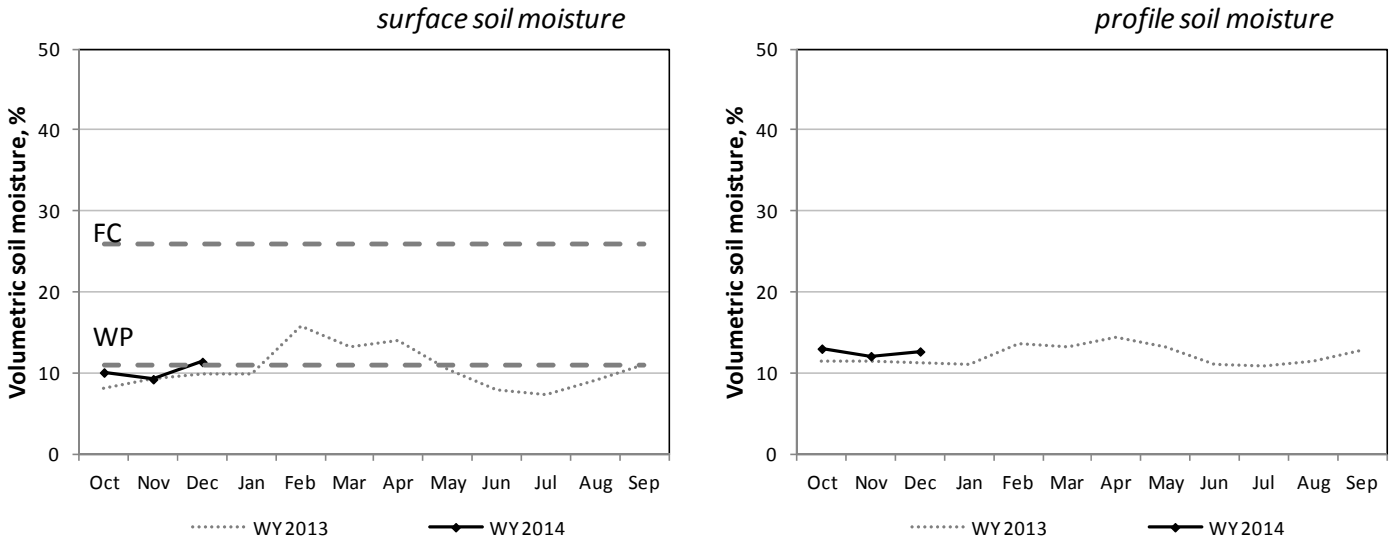
South Central



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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"
	in.	*in.*	*volume %*					*^{o}F*				
WESTERN												
Grouse Creek	0.9	0.5	4	8	10	14	15	35	36	38	41	45
Park Valley	1.4	0.2	4	8	13	27	25	35	36	38	41	48
Goshute	1.3	0.5	33	1	39	17	26	32	33	37	38	46
Dugway	1.2	0.3	28	33	36		11	35	37	39	44	46
Tule Valley	0.8	0.3	18	19	26	15	9	33	37	41	42	48
Hal's Canyon	1.3	0.5	8	12	10	9	8	32	34	35	42	49
Enterprise	0.8	0.5	12	35	20	12	14	34	38	38	43	50
DIXIE												
Sand Hollow	0.8	1.3	4	5	6	7	0	40	42	45	46	54

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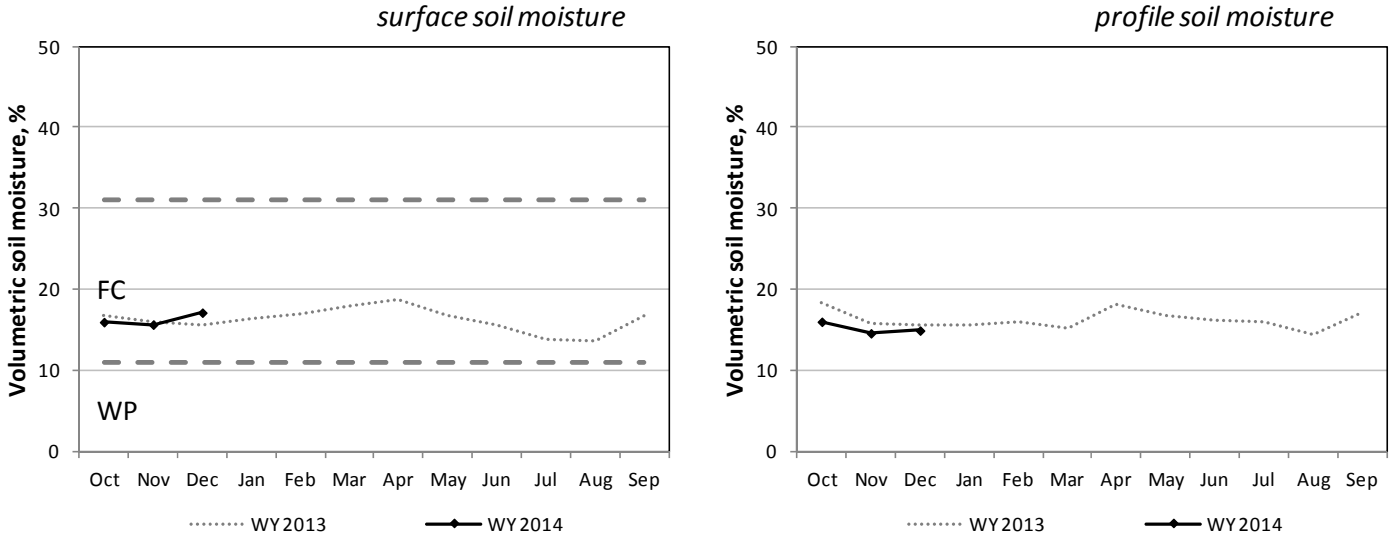
Western & Dixie



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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.

http://www.wcc.nrcs.usda.gov/scan/Utah/utah.html

Utah Hydrologic Summary

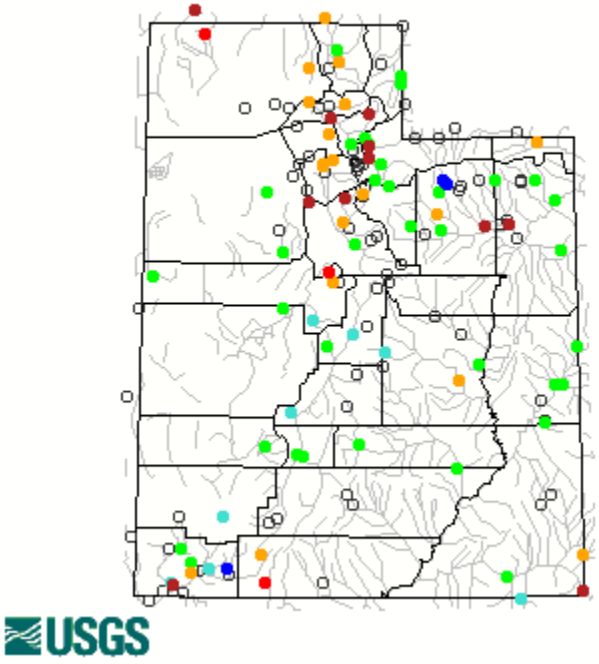
December 1, 2013

Current Conditions

Stream flow across Utah has improved from late summer figures with most sites flowing near or even above average condition. There are still some sites with below and much below normal flow. Snowpacks are much above normal in southern Utah and with the storm yesterday, below to near average in central and northern Utah. Soil moisture conditions have improved substantially over the exceptionally dry summer months with northern Utah still a bit on the dry side and southern Utah very wet. November precipitation in the north was 50% of normal, average in the south and much above average in southeastern Utah. Water year precipitation (Oct-Nov) is about 80% of average. Statewide reservoir storage is at 50% of capacity, 11% lower than last year. In summary – it's early season and we have much of the snow accumulation season before us – soil moisture is good, snowpack is great in the south, marginal in the north and reservoir storage is low.

Current Utah Streamflow - Courtesy US Geological Survey

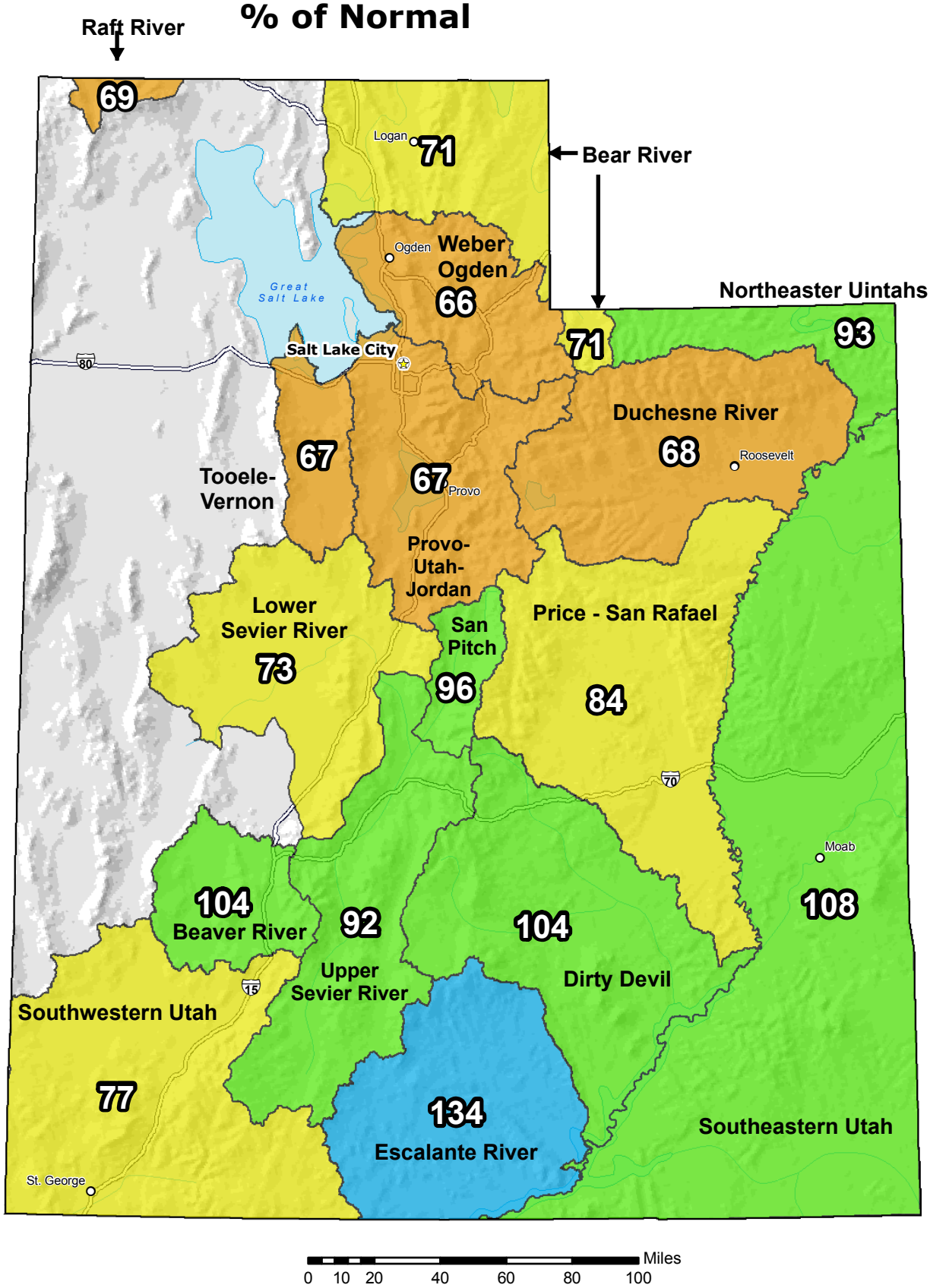
Tuesday, December 03, 2013 12:30ET



Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not ranked

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

Dec 02, 2013



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

- unavailable *
- <50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- >=150%

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

Provisional Data Subject to Revision

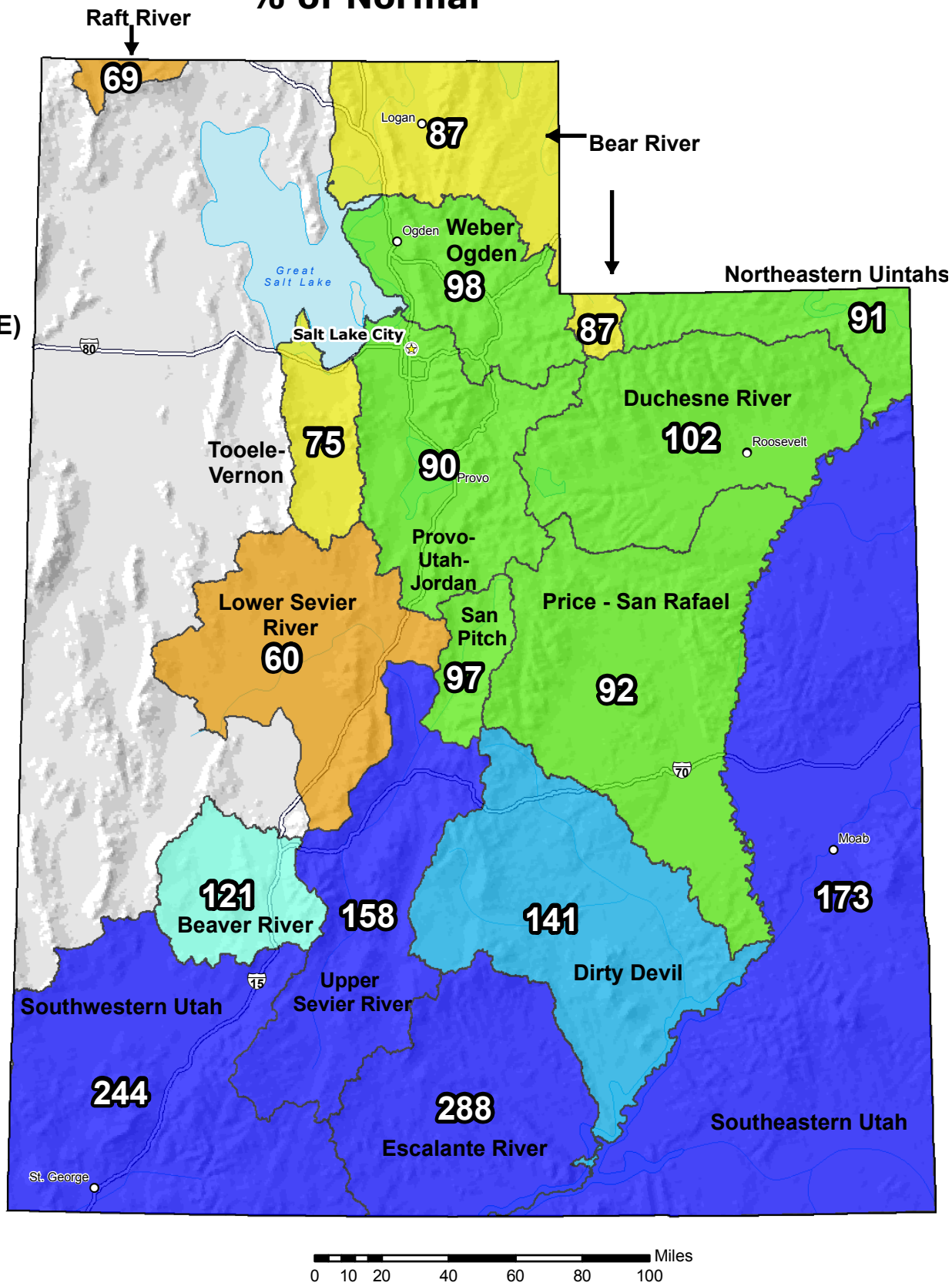
USDA NRCS

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 503 414 3047

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

Dec 04, 2013



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

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USDA NRCS

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

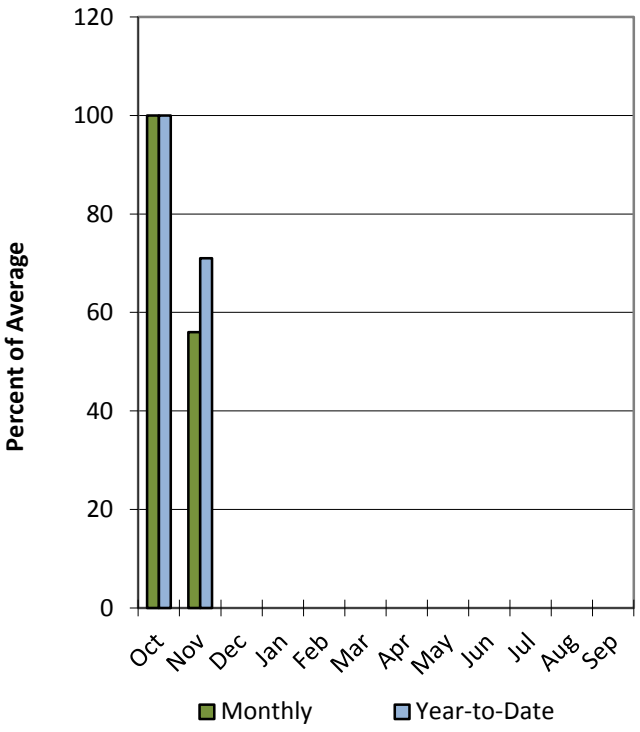
Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon http://www.wcc.nrcs.usda.gov/gis/
Based on data from http://www.wcc.nrcs.usda.gov/reports/
Science contact: Jim.Marron@por.usda.gov 503 414 3047

Raft River Basin

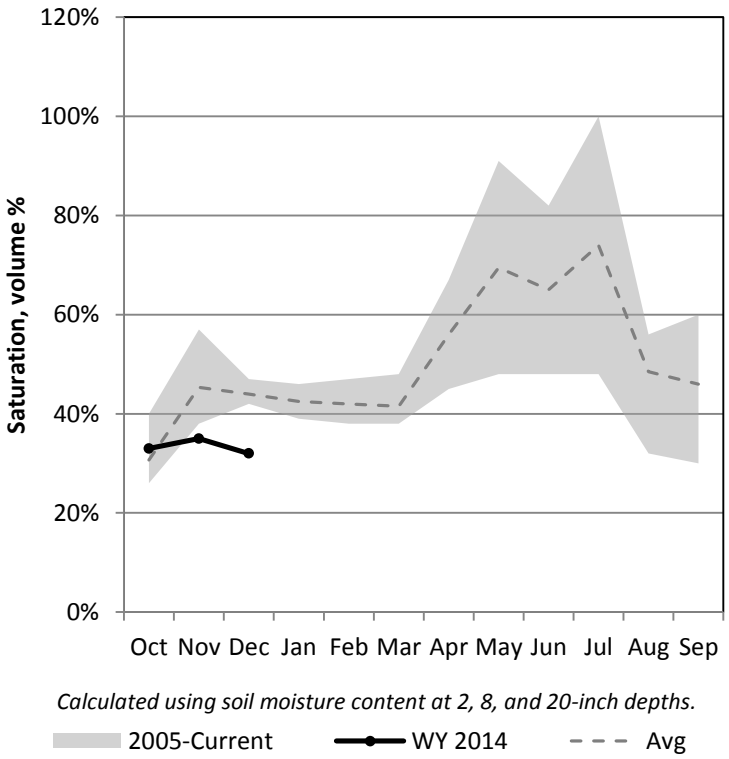
12/1/2013

Precipitation in November was much below average at 56%, which brings the seasonal accumulation (Oct-Nov) to 71% of average. Soil moisture is at 32% compared to 43% last year.

Precipitation



Soil Moisture

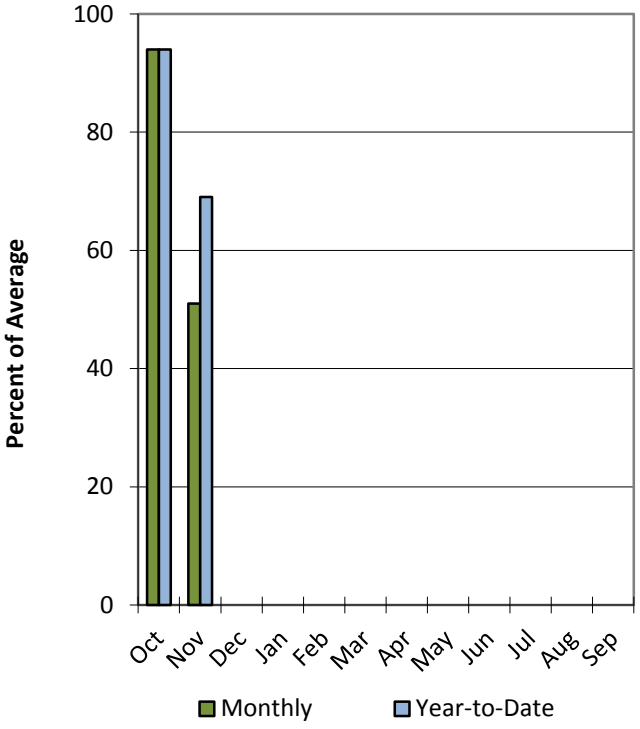


Bear River Basin

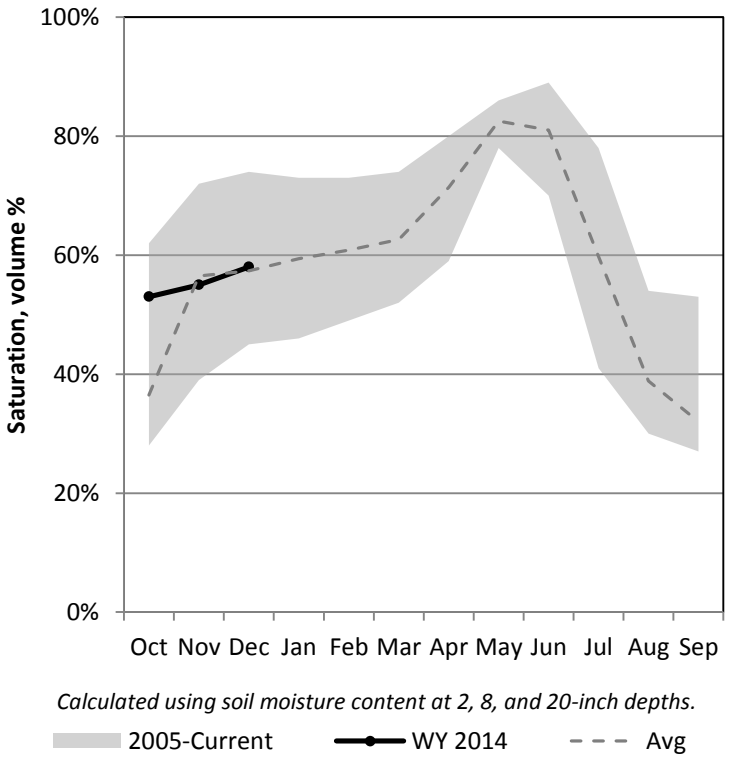
12/1/2013

Precipitation in November was much below average at 51%, which brings the seasonal accumulation (Oct-Nov) to 69% of average. Soil moisture is at 58% compared to 60% last year. Reservoir storage is at 48% of capacity, compared to 63% last year. The water availibility index for the Bear River is 36%.

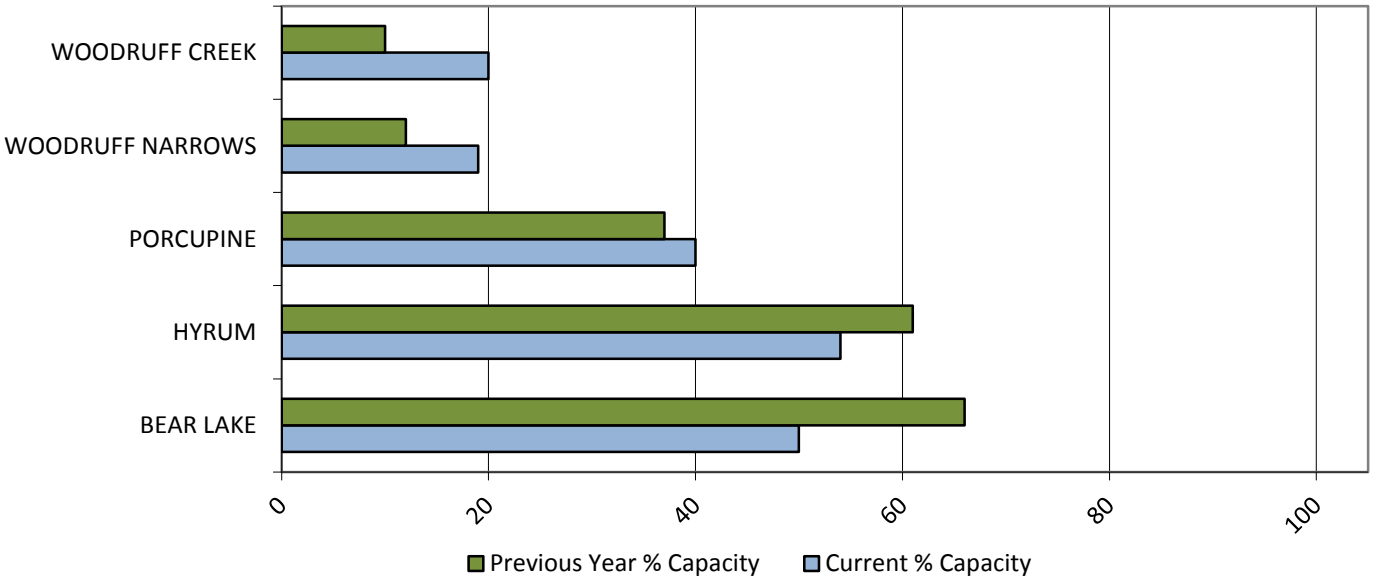
Precipitation



Soil Moisture

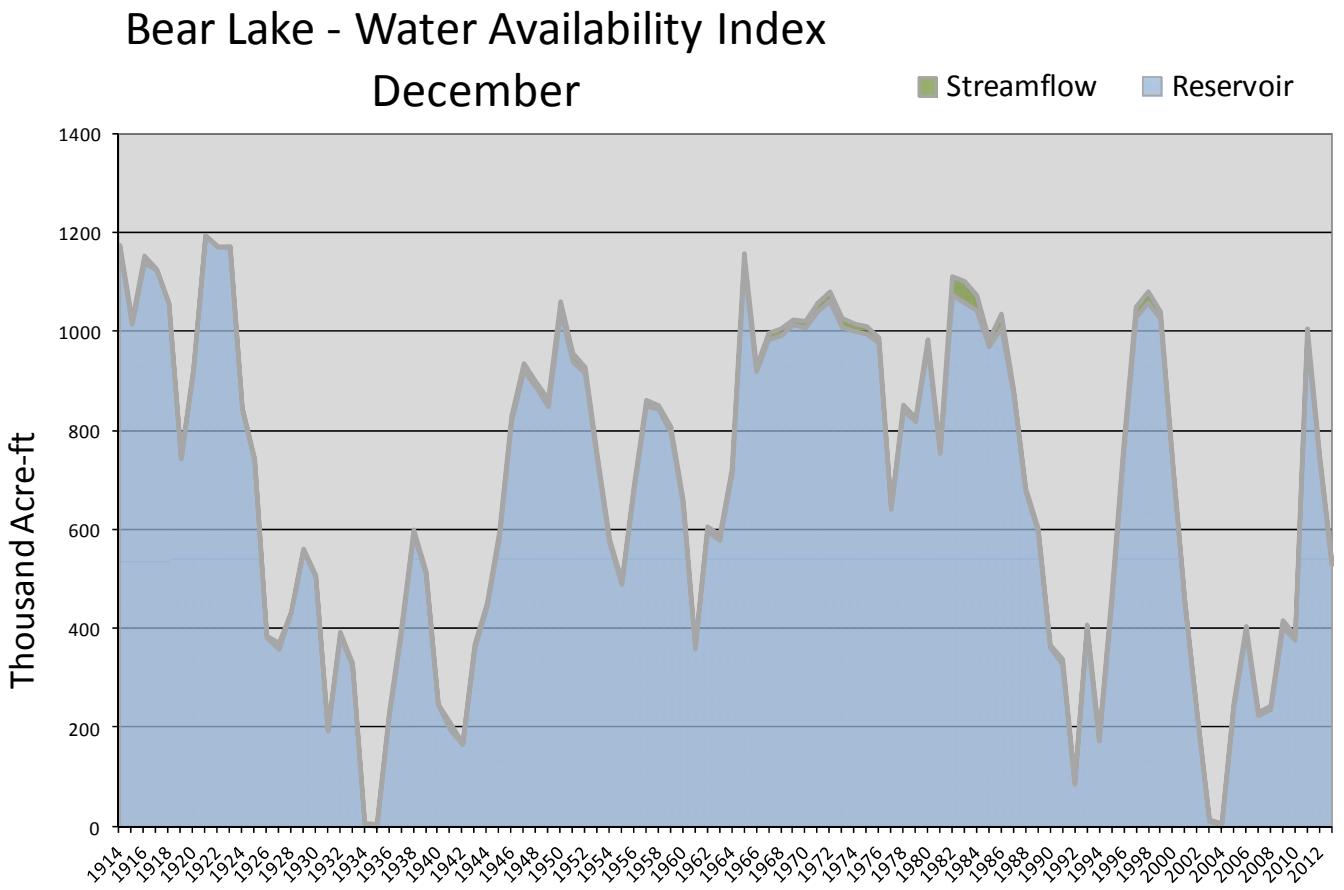


Reservoir Storage



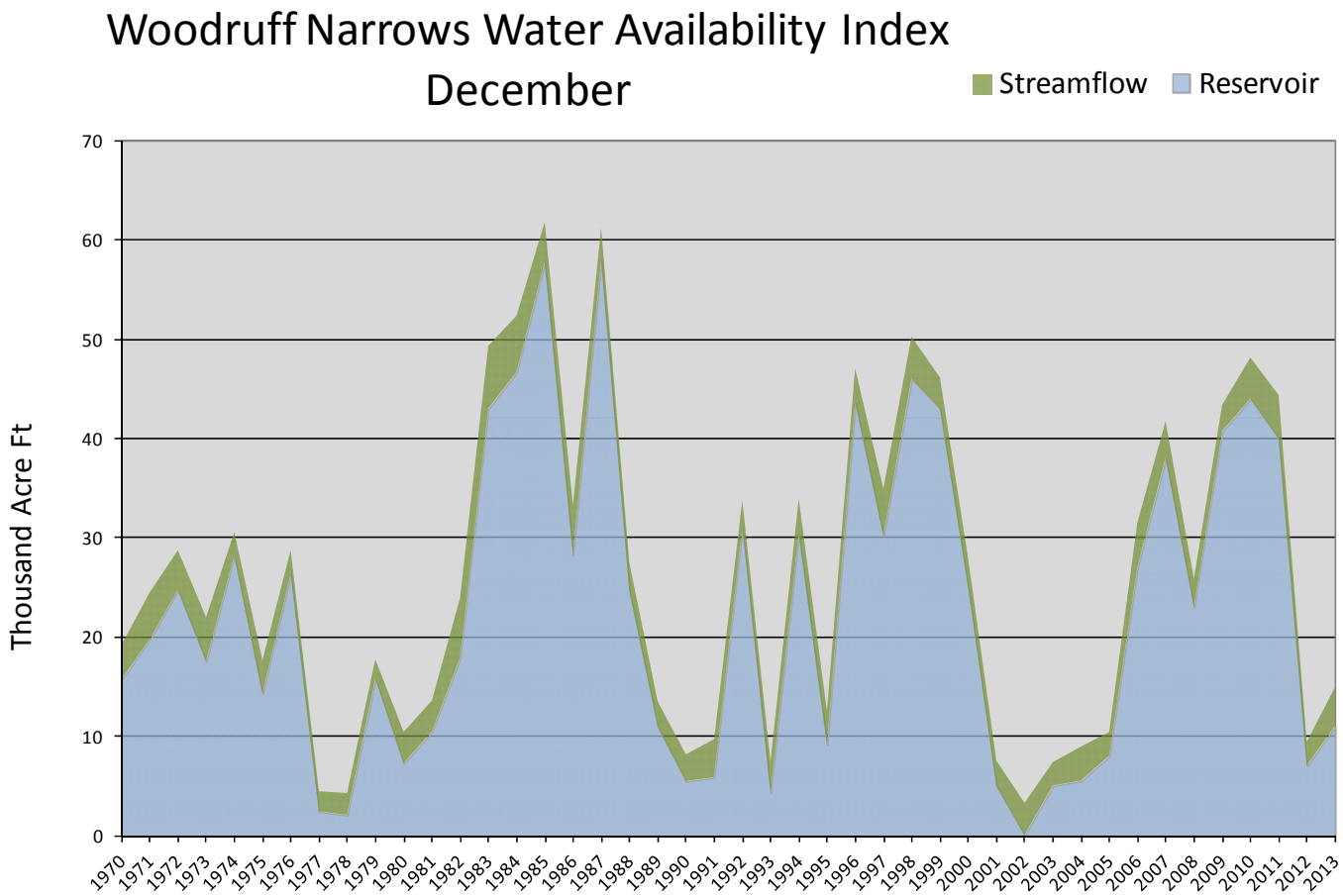
December 1, 2013	**Water Availability Index**					
Basin or Region	November EOM* Bear Lake	November accumulated inflow to Bear Lake (*observed*)	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Bear River	**529**	**5.0**	**534**	**-1.20**	**36**	**30,39,29,54**

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



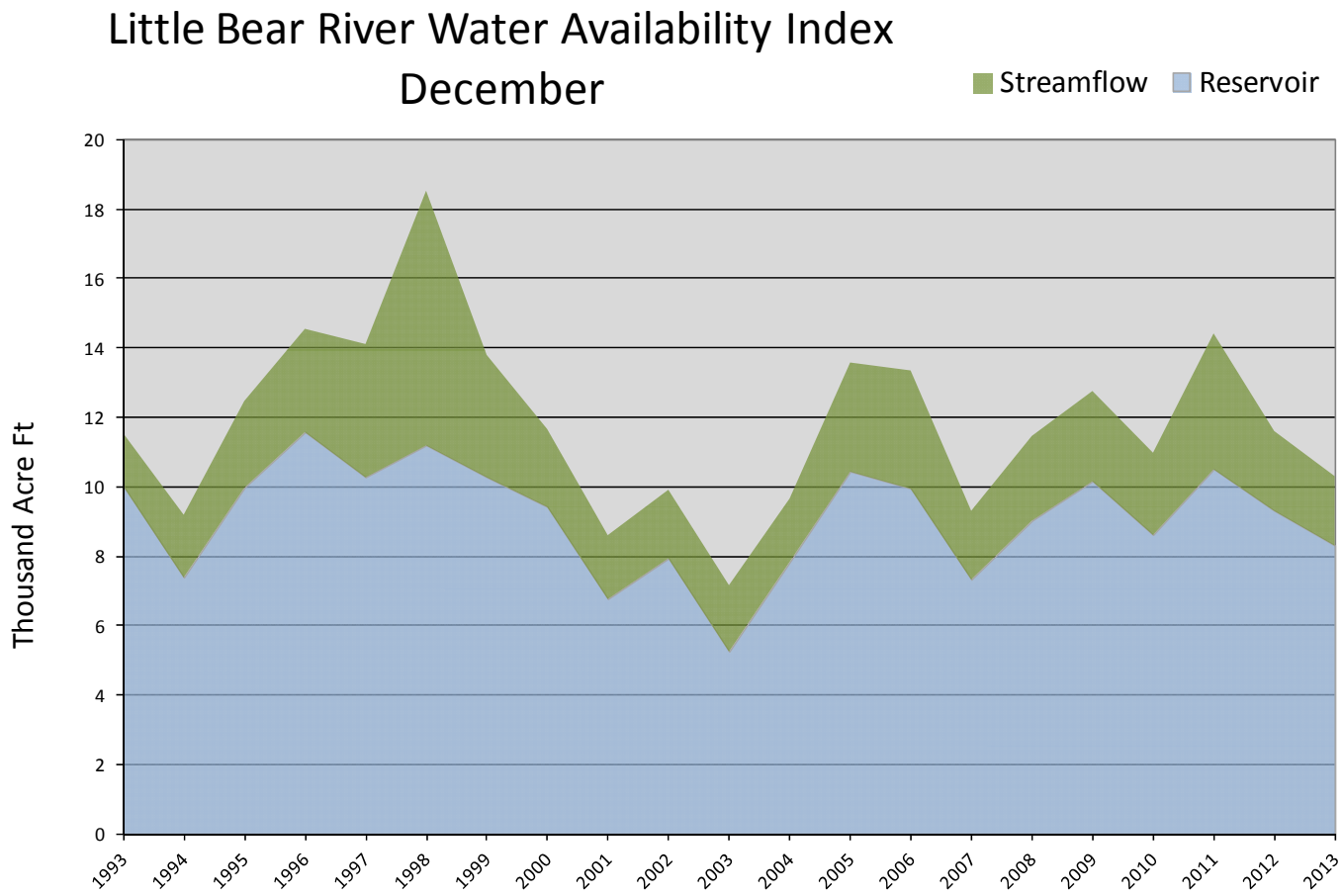
December 1, 2013	**Woodruff Narrows Water Availability Index**					
Basin or Region	June EOM* Woodruff Narrows Reservoir	November Observed Streamflow Bear at Stateline	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Woodruff Narrows	**11.0**	**3.9**	**14.9**	**-1.20**	**36**	**89,81,75,79**

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



December 1, 2013		**Little Bear Water Availability Index**				
Basin or Region	June EOM* Hyrum Reservoir	November Observed Streamflow Little Bear nr Paradise	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Little Bear	**8.3**	**2.0**	**10.3**	**-1.52**	**32**	**04,02,10,8**

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

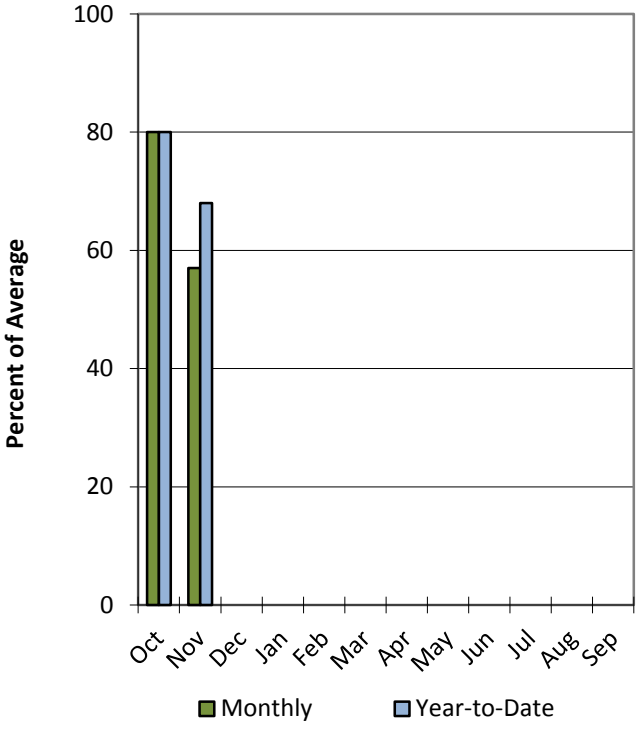


Weber & Ogden River Basins

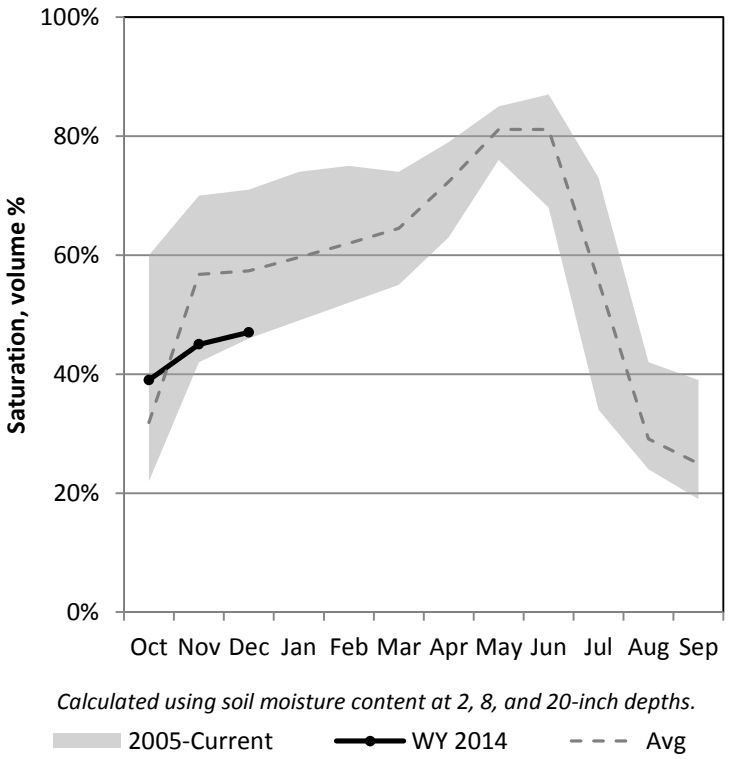
12/1/2013

Precipitation in November was much below average at 57%, which brings the seasonal accumulation (Oct-Nov) to 68% of average. Soil moisture is at 47% compared to 60% last year. Reservoir storage is at 33% of capacity, compared to 46% last year. The water availibility index for the Ogden River is 36% and 32% for the Weber River.

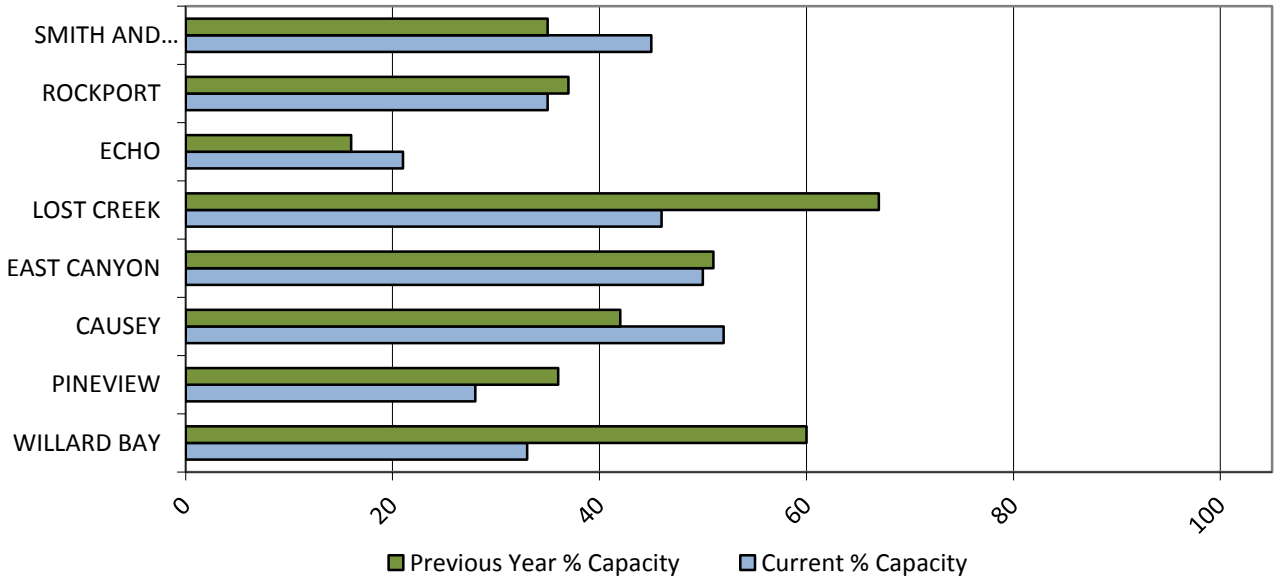
Precipitation



Soil Moisture

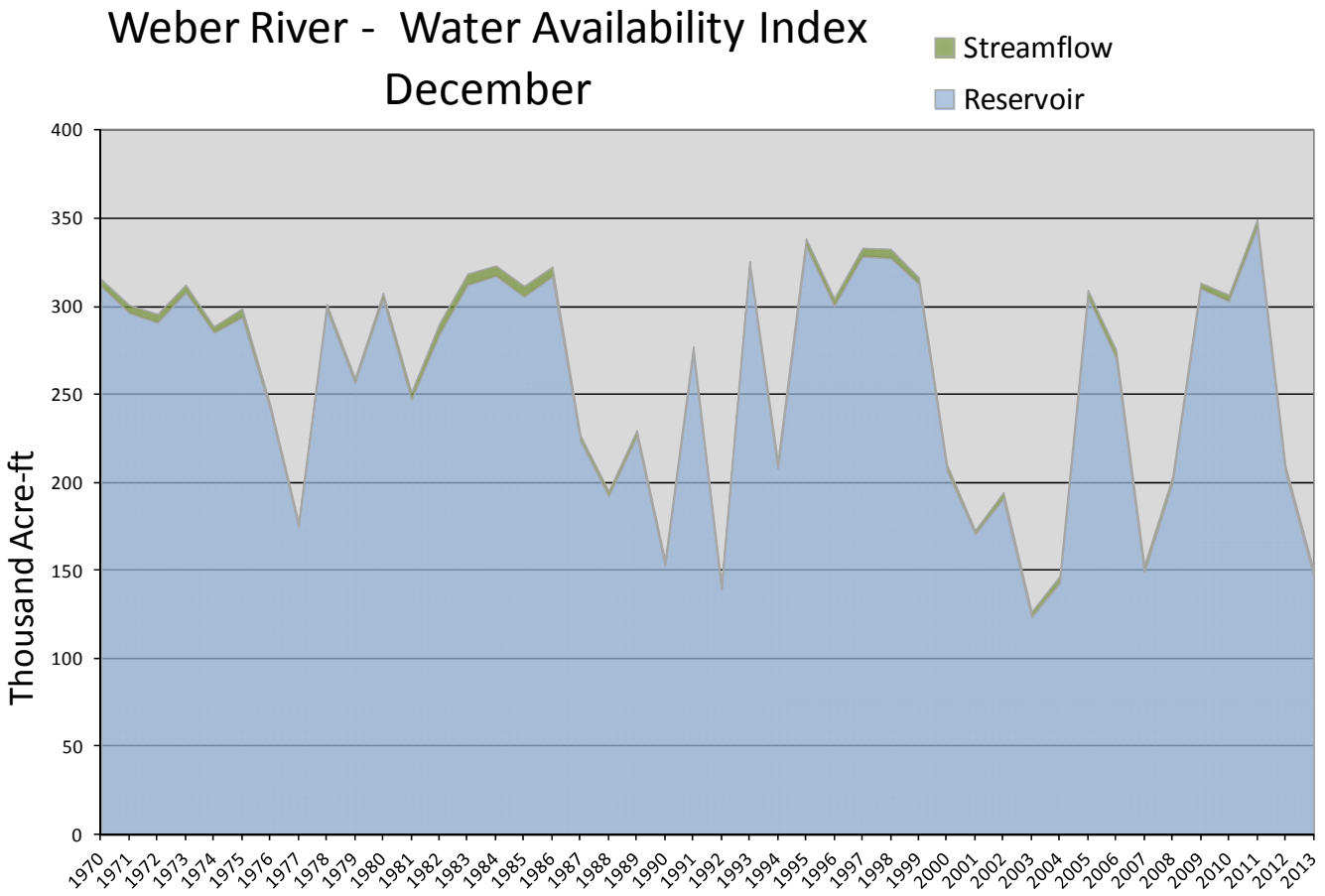


Reservoir Storage



December 1, 2013	**Water Availability Index**					
Basin or Region	November EOM* Reservoirs	November accumulated flow at Weber near Oakley (*observed*)	Reservoirs + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Weber River	**147**	**3**	**151**	**-3.43**	**9**	**92,04,07,90**

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

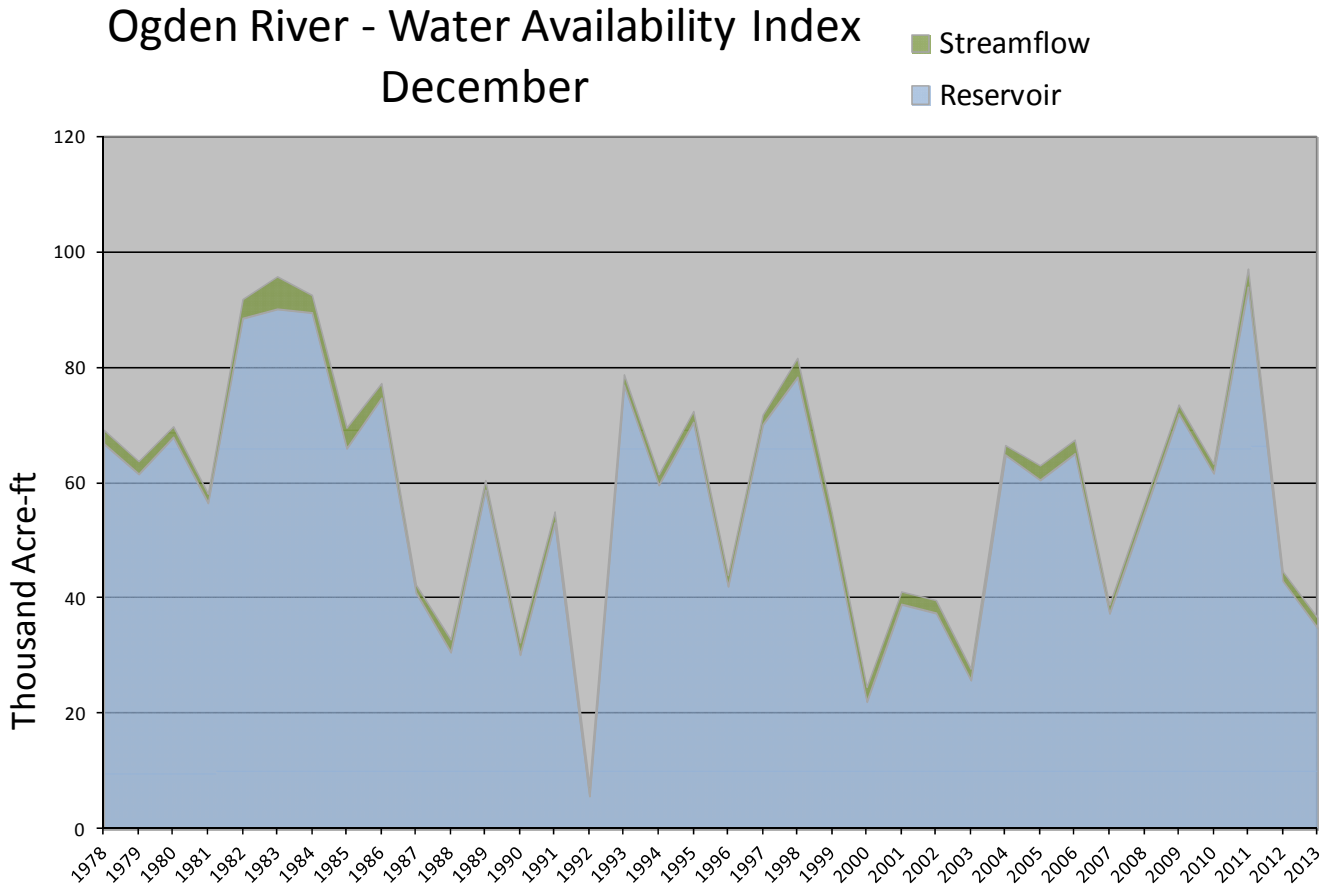


December 1, 2013

Water Availability Index

Basin or Region	November EOM* Pine View & Causey	November accumulated flow at South Fork Ogden (*observed*)	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Ogden River	**35.0**	**1.7**	**36.7**	**-2.82**	**16**	**90,88,07,02**

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

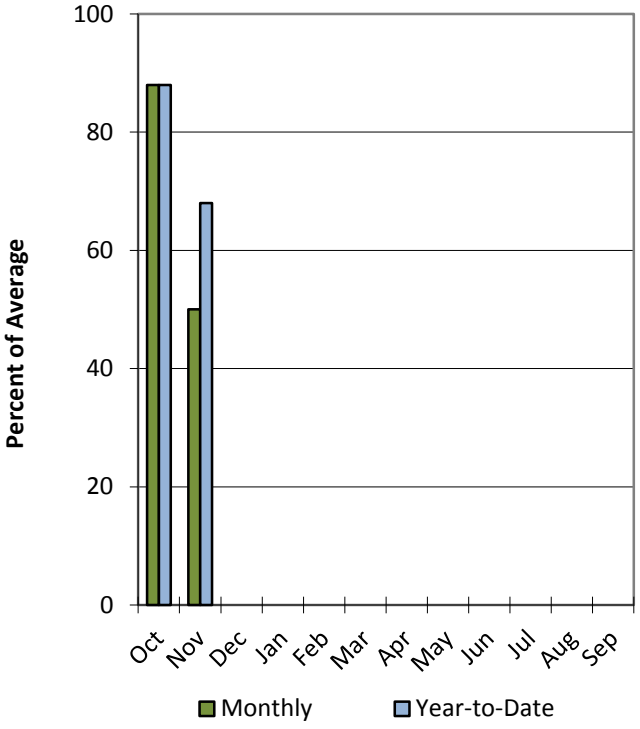


Tooele & Vernon Creek Basins

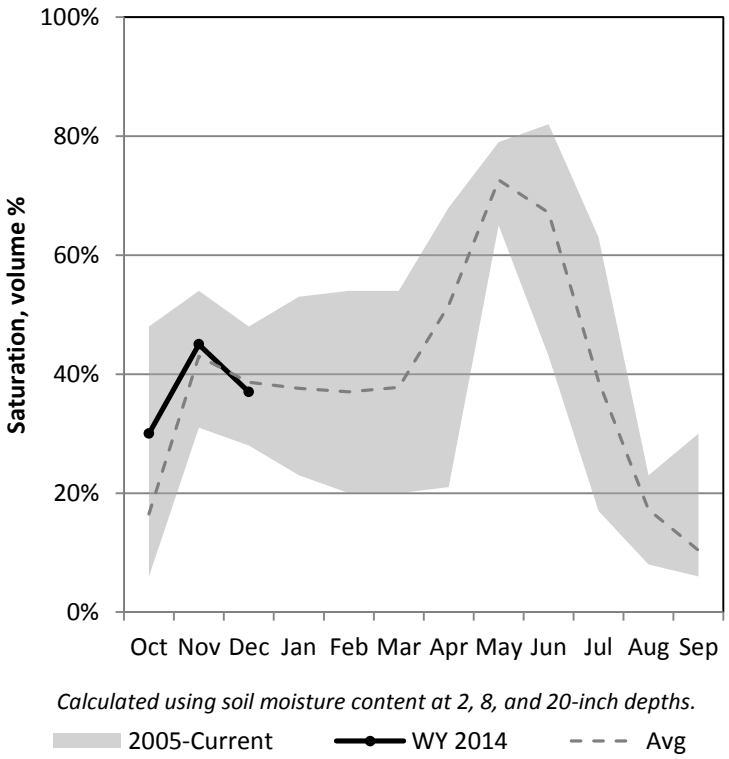
12/1/2013

Precipitation in November was much below average at 50%, which brings the seasonal accumulation (Oct-Nov) to 68% of average. Soil moisture is at 37% compared to 34% last year. Reservoir storage is at 22% of capacity, compared to 20% last year.

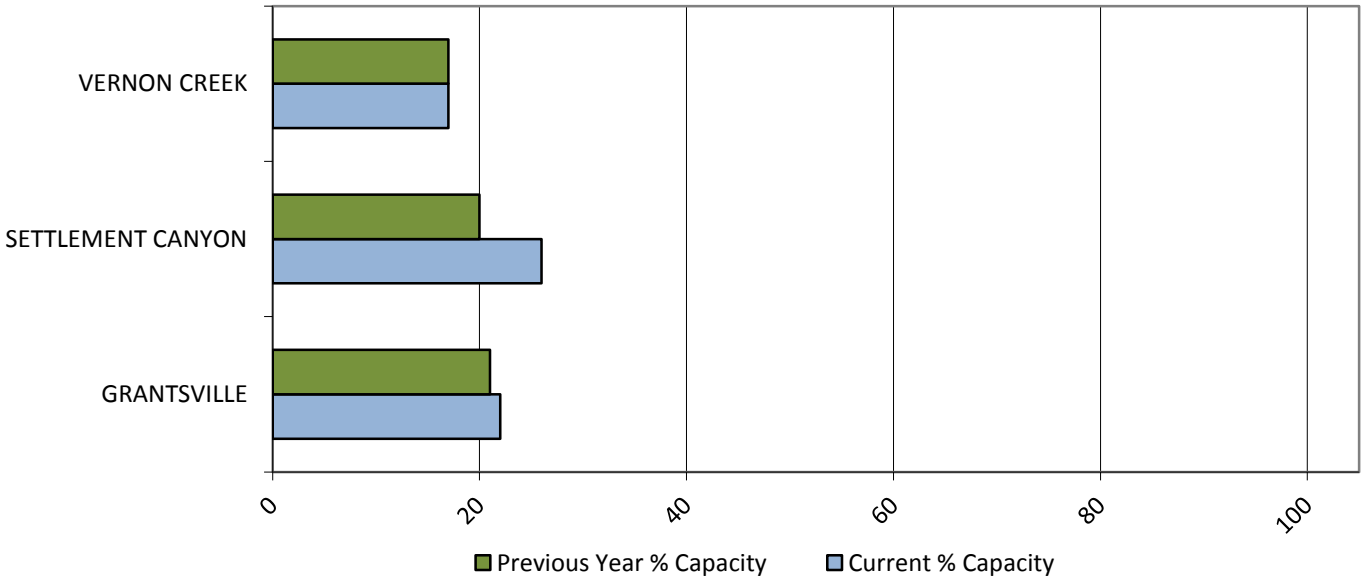
Precipitation



Soil Moisture



Reservoir Storage

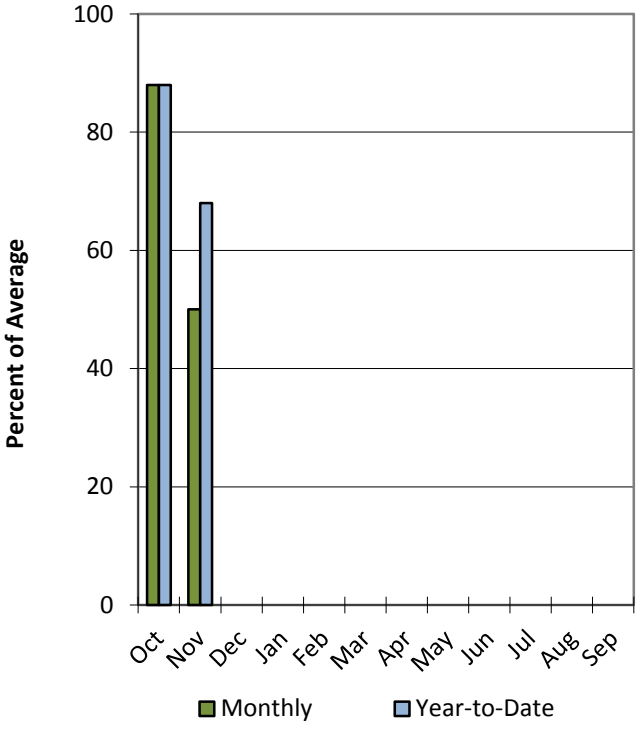


Provo & Jordan River Basins

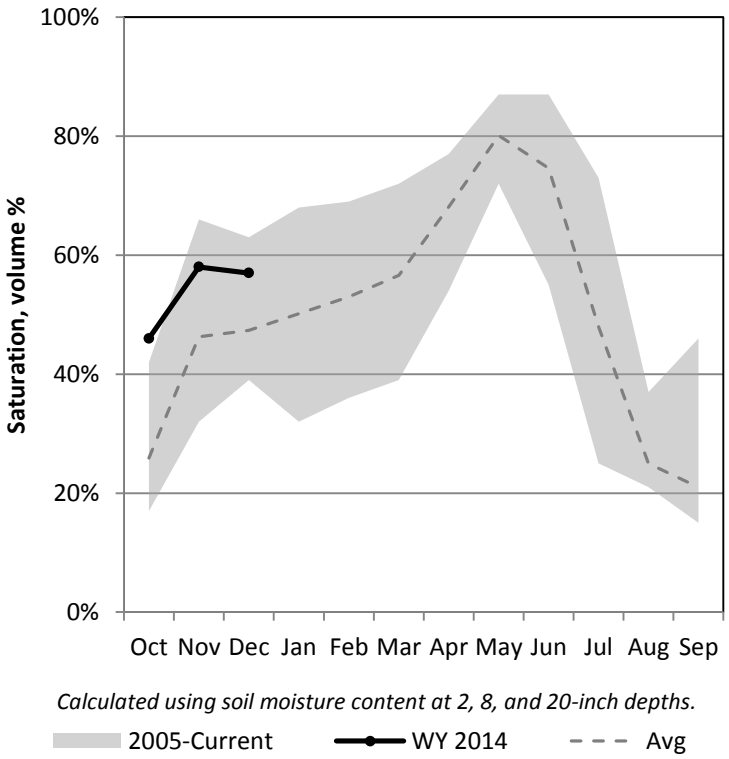
12/1/2013

Precipitation in November was much below average at 50%, which brings the seasonal accumulation (Oct-Nov) to 68% of average. Soil moisture is at 57% compared to 46% last year. Reservoir storage is at 67% of capacity, compared to 74% last year. The water availibility index for the Provo River is 16%.

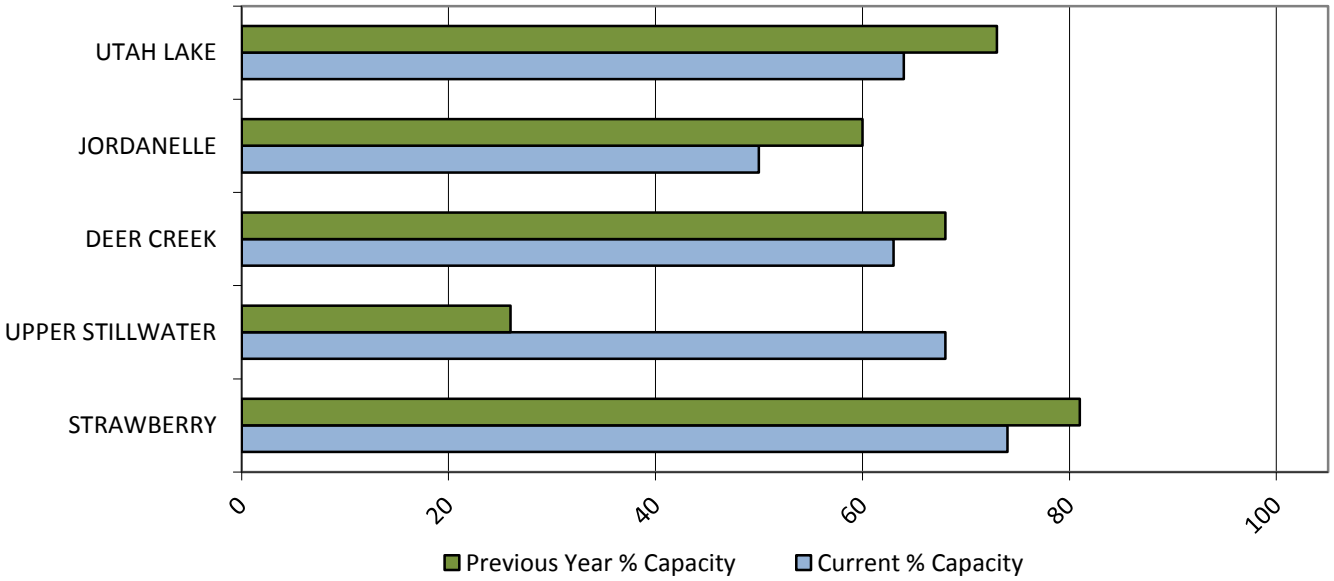
Precipitation



Soil Moisture

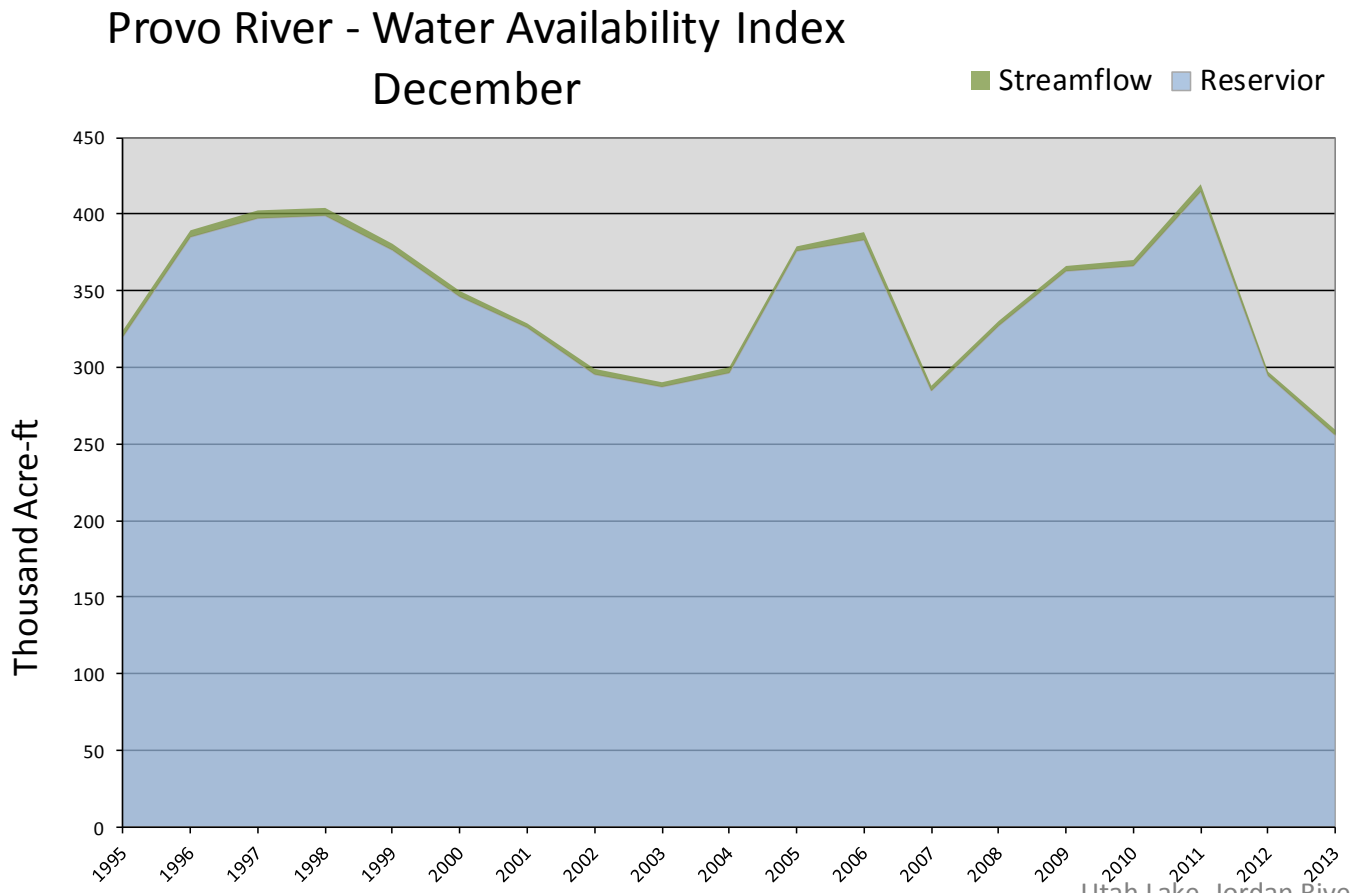


Reservoir Storage



12/1/2013	**Water Availability Index**					
Basin or Region	November EOM* Deer Creek, Jordanelle	November accumulated flow Provo River at Woodland (*observed*)	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Provo	**256**	**3.6**	**259**	**-3.75**	**5**	**07,03,12,02**

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

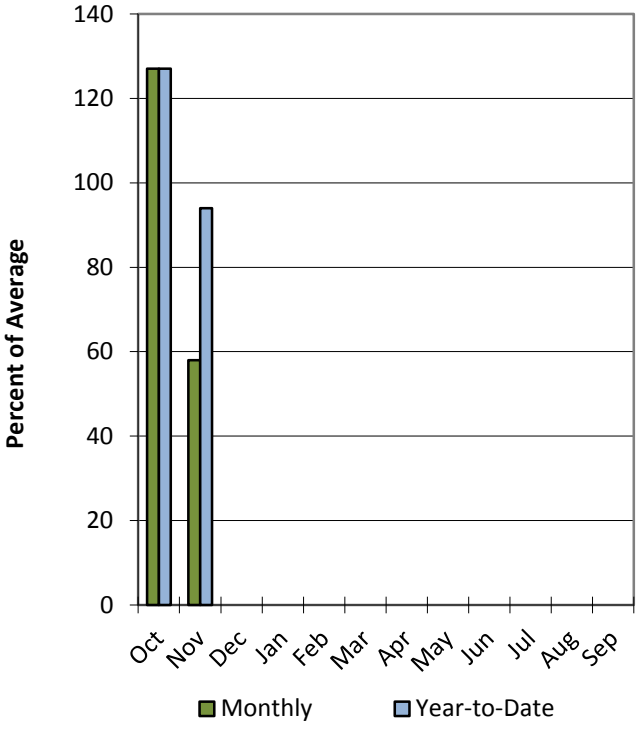


Northeastern Uintah Basin

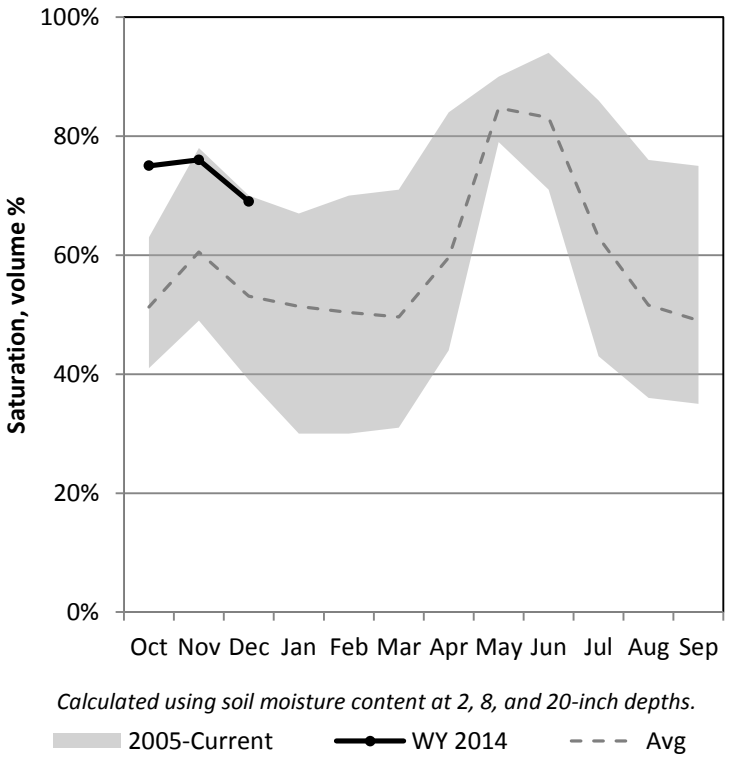
12/1/2013

Precipitation in November was much below average at 58%, which brings the seasonal accumulation (Oct-Nov) to 94% of average. Soil moisture is at 69% compared to 45% last year. Reservoir storage is at 75% of capacity, compared to 80% last year.

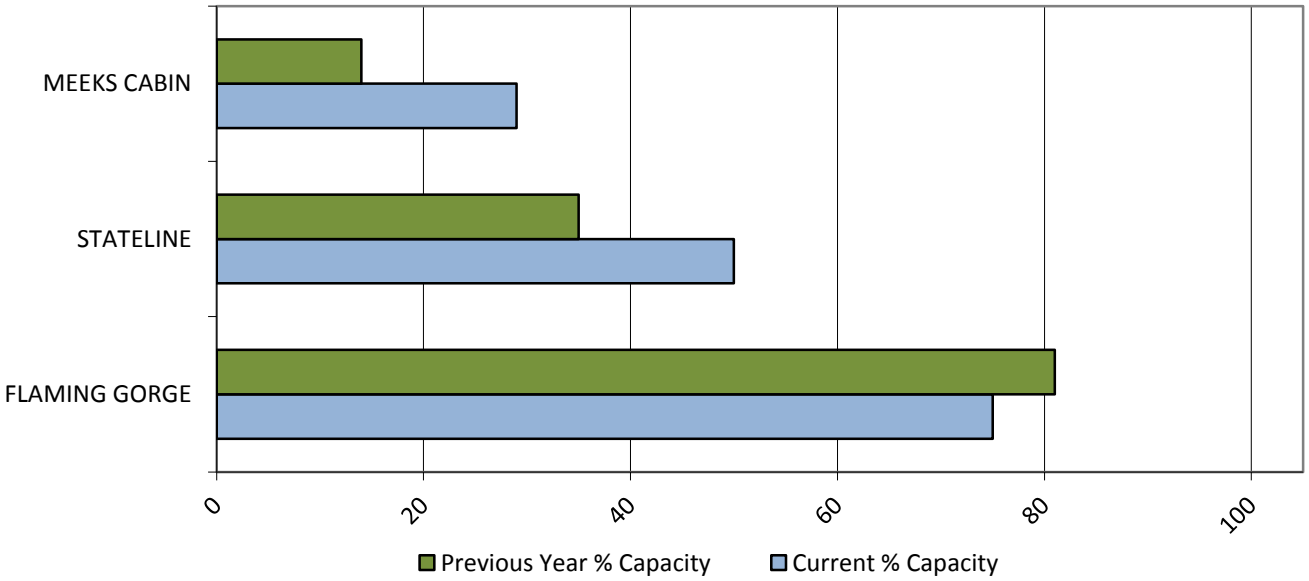
Precipitation



Soil Moisture



Reservoir Storage

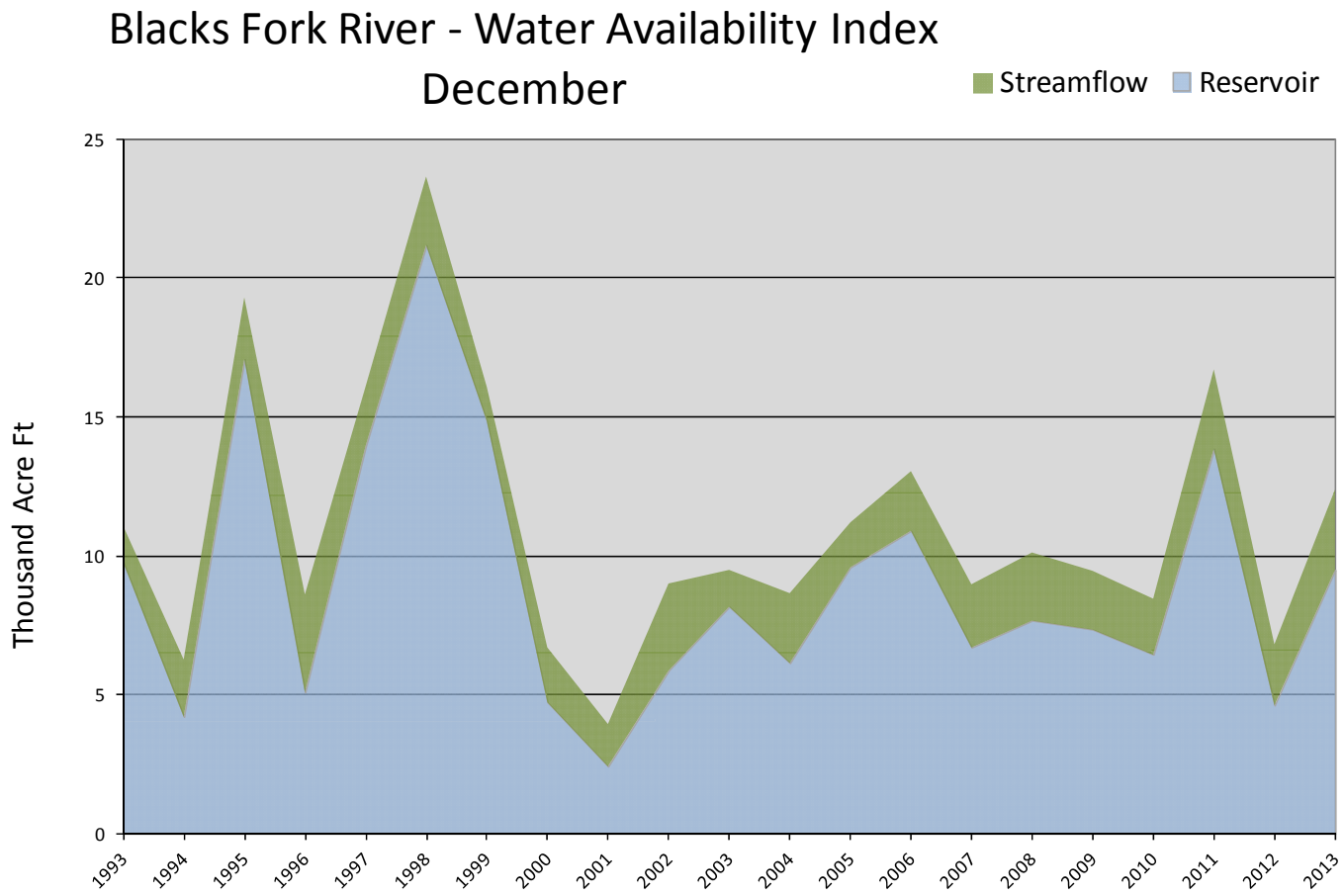


December 1, 2013

Water Availability Index

Basin or Region	June EOM* Meeks Cabin Reservoir	November Observed Streamflow Blacks Fork nr Robertson	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Blacks Fork	**9.5**	**2.9**	**12.4**	**1.52**	**68**	**93,05,06,97**

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

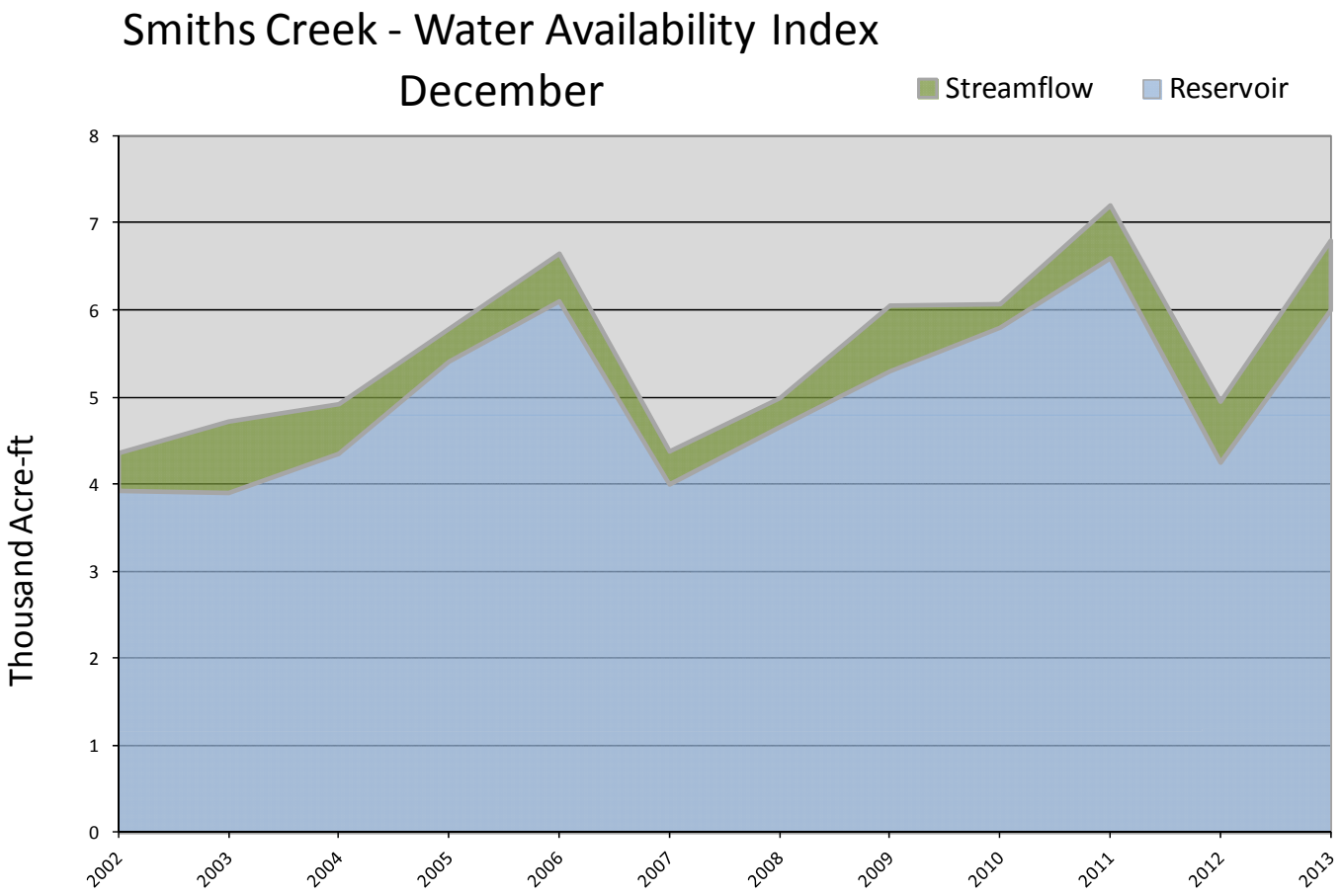


December 1, 2013

Water Availability Index

Basin or Region	November EOM* Stateline Reservoir	November Observed Flow EF Smiths Creek	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Smiths Creek	**6.0**	**0.8**	**6.8**	**2.88**	**85**	**10,06,11**

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

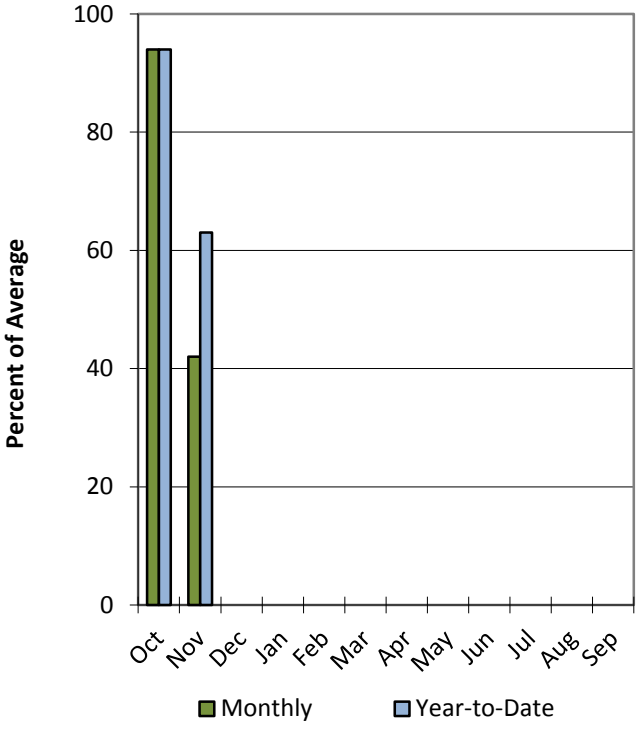


Duchesne River Basin

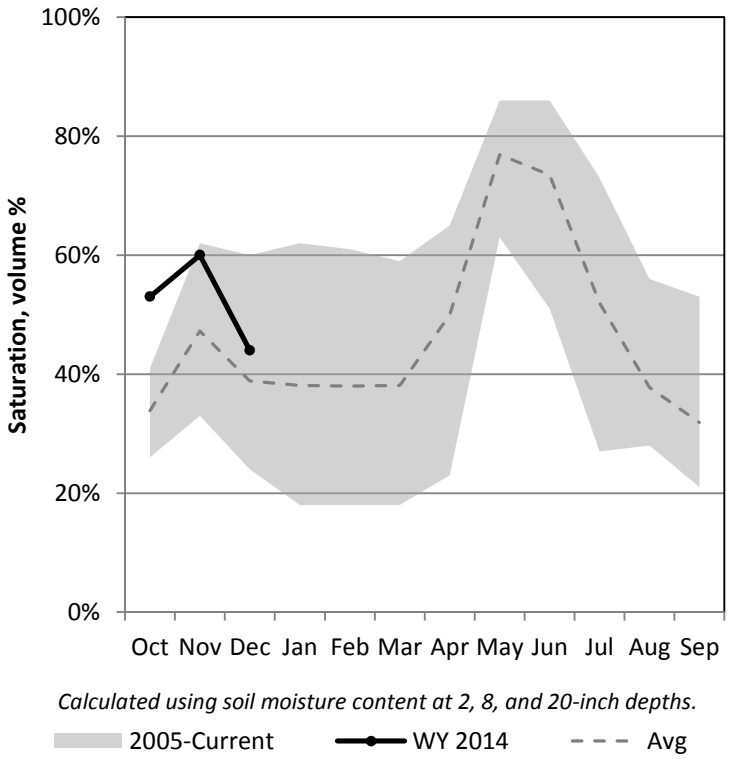
12/1/2013

Precipitation in November was much below average at 42%, which brings the seasonal accumulation (Oct-Nov) to 63% of average. Soil moisture is at 44% compared to 35% last year. Reservoir storage is at 71% of capacity, compared to 74% last year. The water availibility index for the Western Uintahs is 9% and 5% for the Eastern Uintahs.

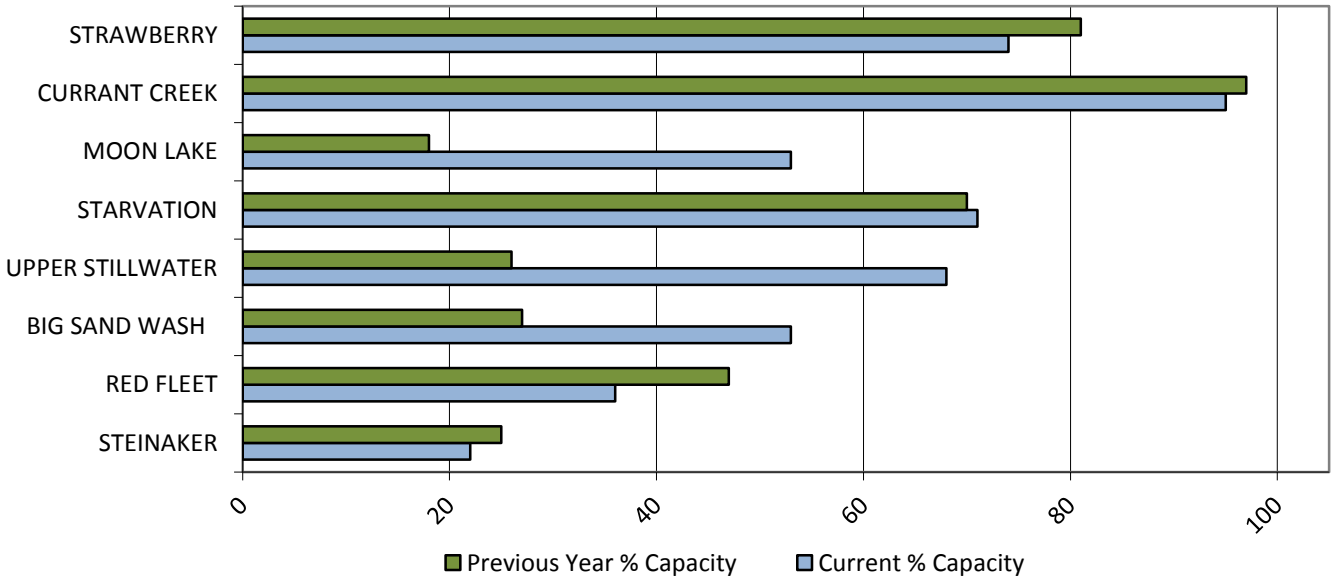
Precipitation



Soil Moisture



Reservoir Storage



December 1, 2013

Water Availability Index

Basin or Region	November EOM* Red Fleet and Steinaker	November accumulated flow Big Brush Creek (*observed*)	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Eastern Uintah	**16.7**	**#N/A**	**#N/A**	**-3.45**	**9**	**90, 94, 03, 93**

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

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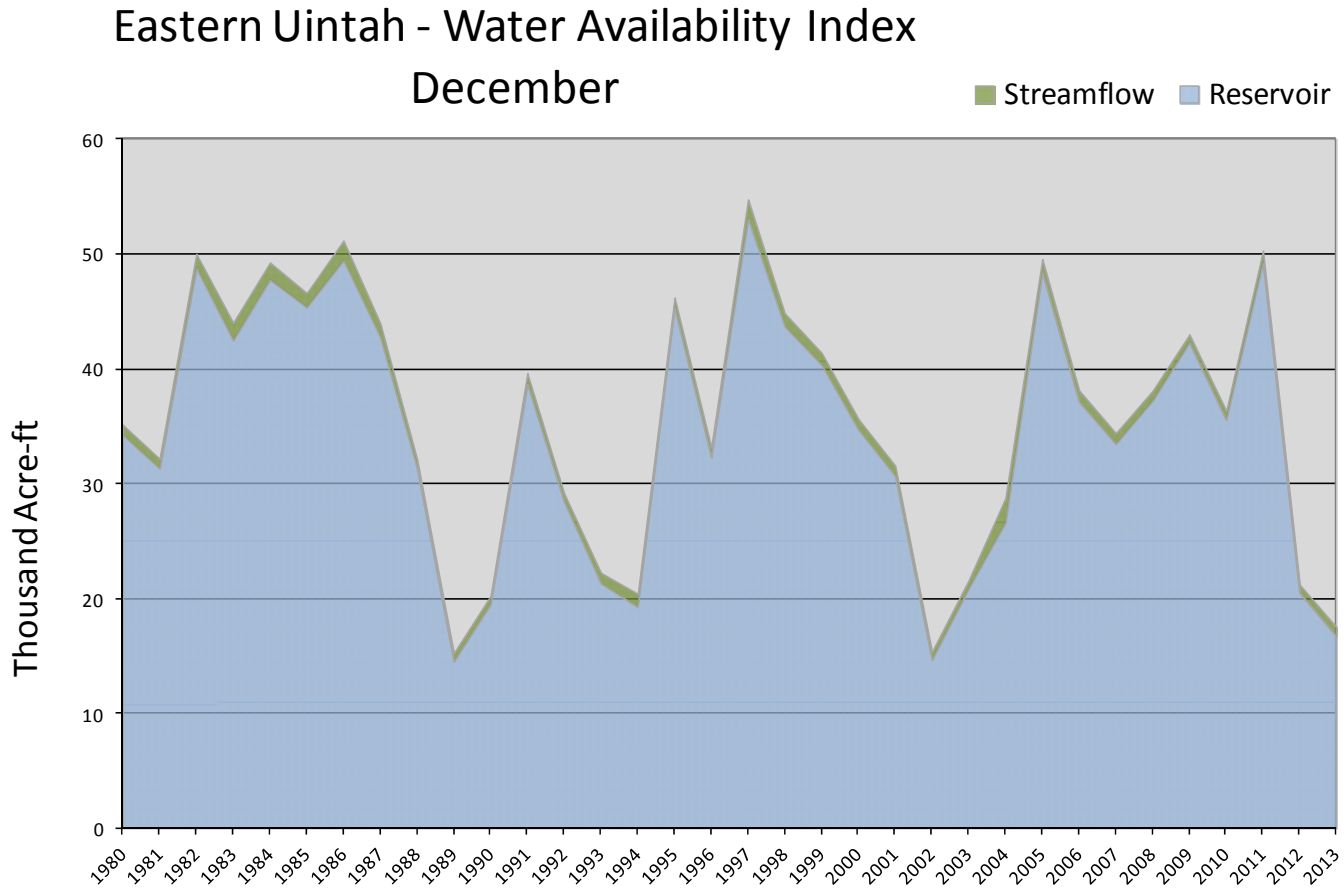
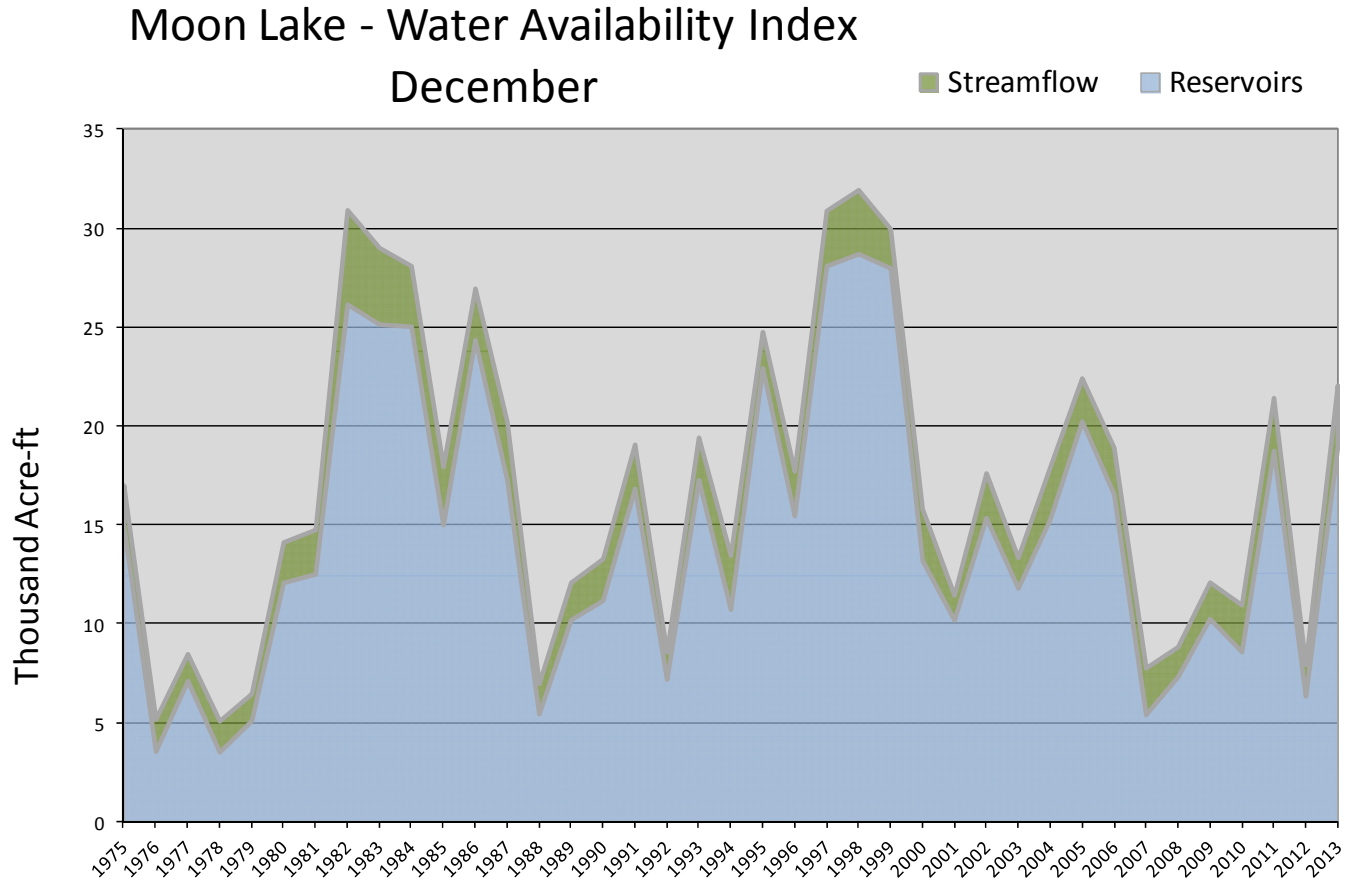


December 1, 2013

Water Availability Index

Basin or Region	November EOM* Moon Lake	November accumulated flow Lake Fork Creek above Moon Lake (*observed*)	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Moon Lake	**19.0**	**3.1**	**22.1**	**2.08**	**75**	**87,11,05,95**

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

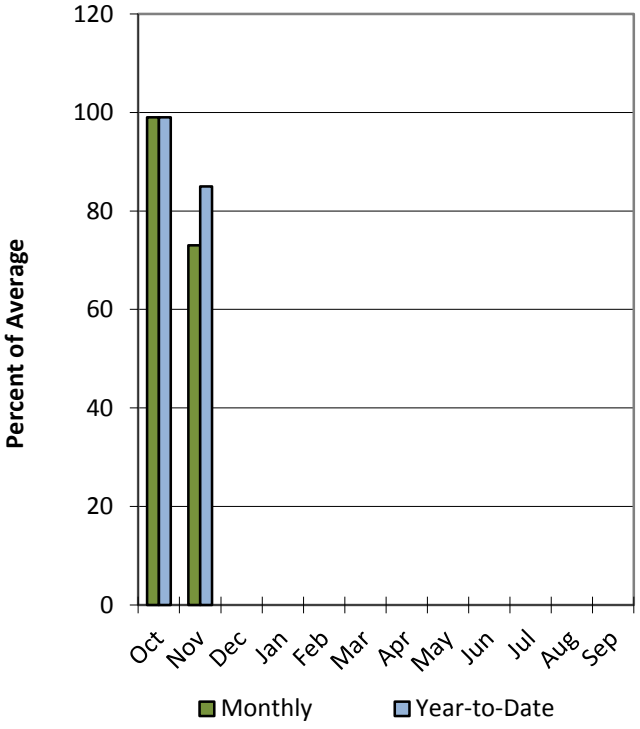


Price & San Rafael Basins

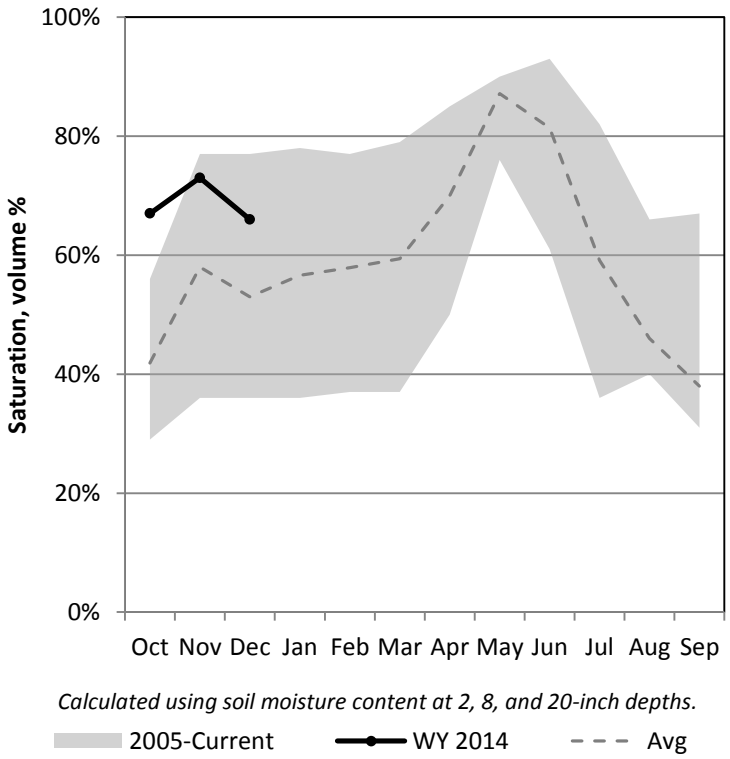
12/1/2013

Precipitation in November was below average at 73%, which brings the seasonal accumulation (Oct-Nov) to 85% of average. Soil moisture is at 66% compared to 36% last year. Reservoir storage is at 39% of capacity, compared to 47% last year. The water availibility index for the Price River is 75%, and 9% for Joe's Valley.

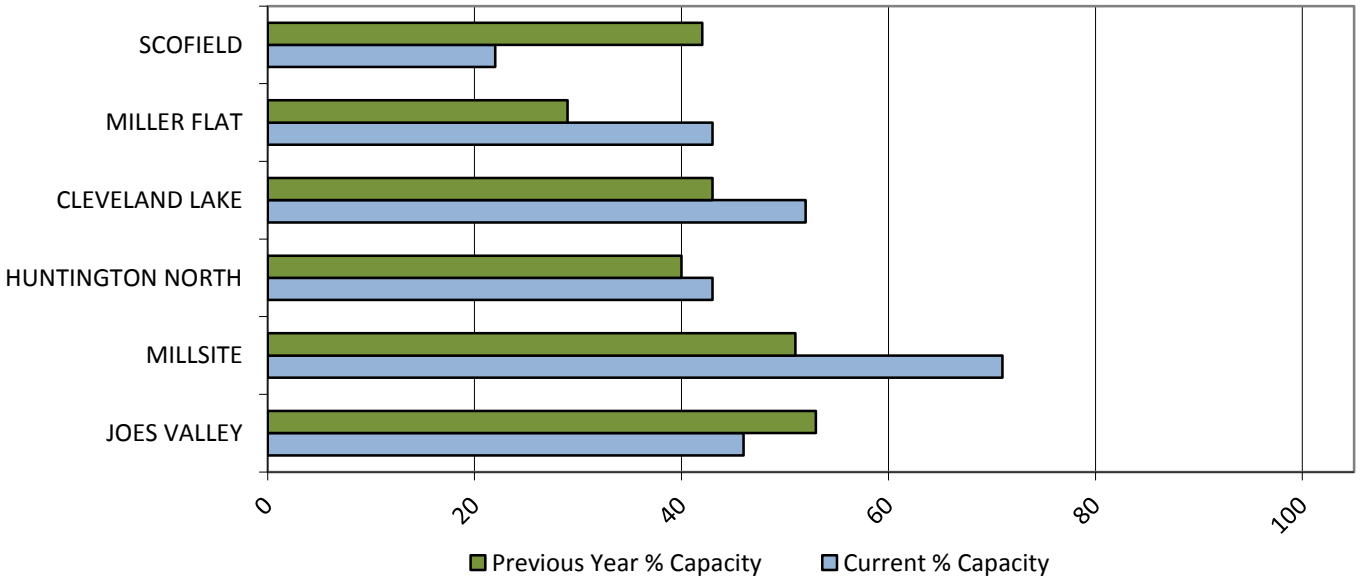
Precipitation



Soil Moisture

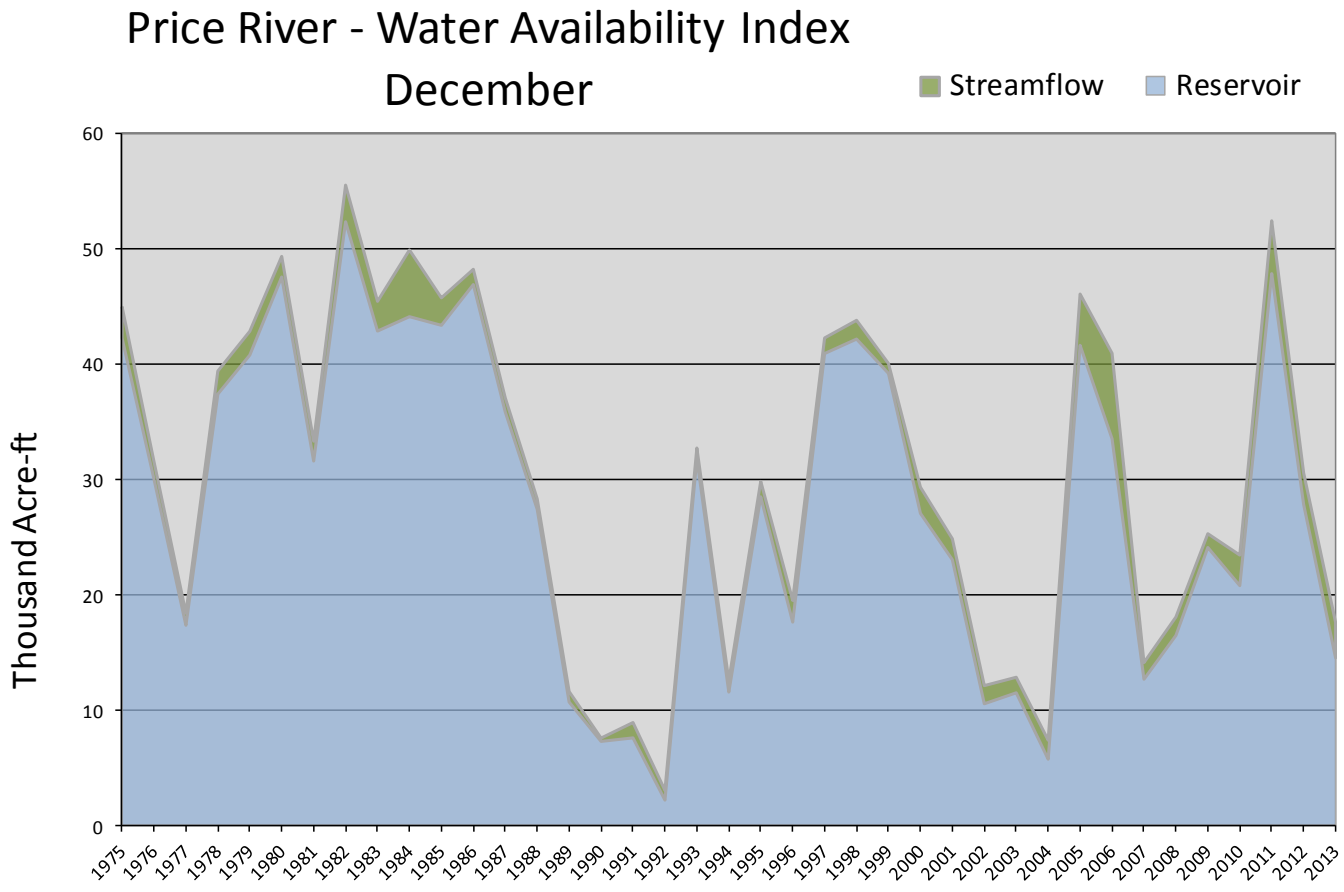


Reservoir Storage



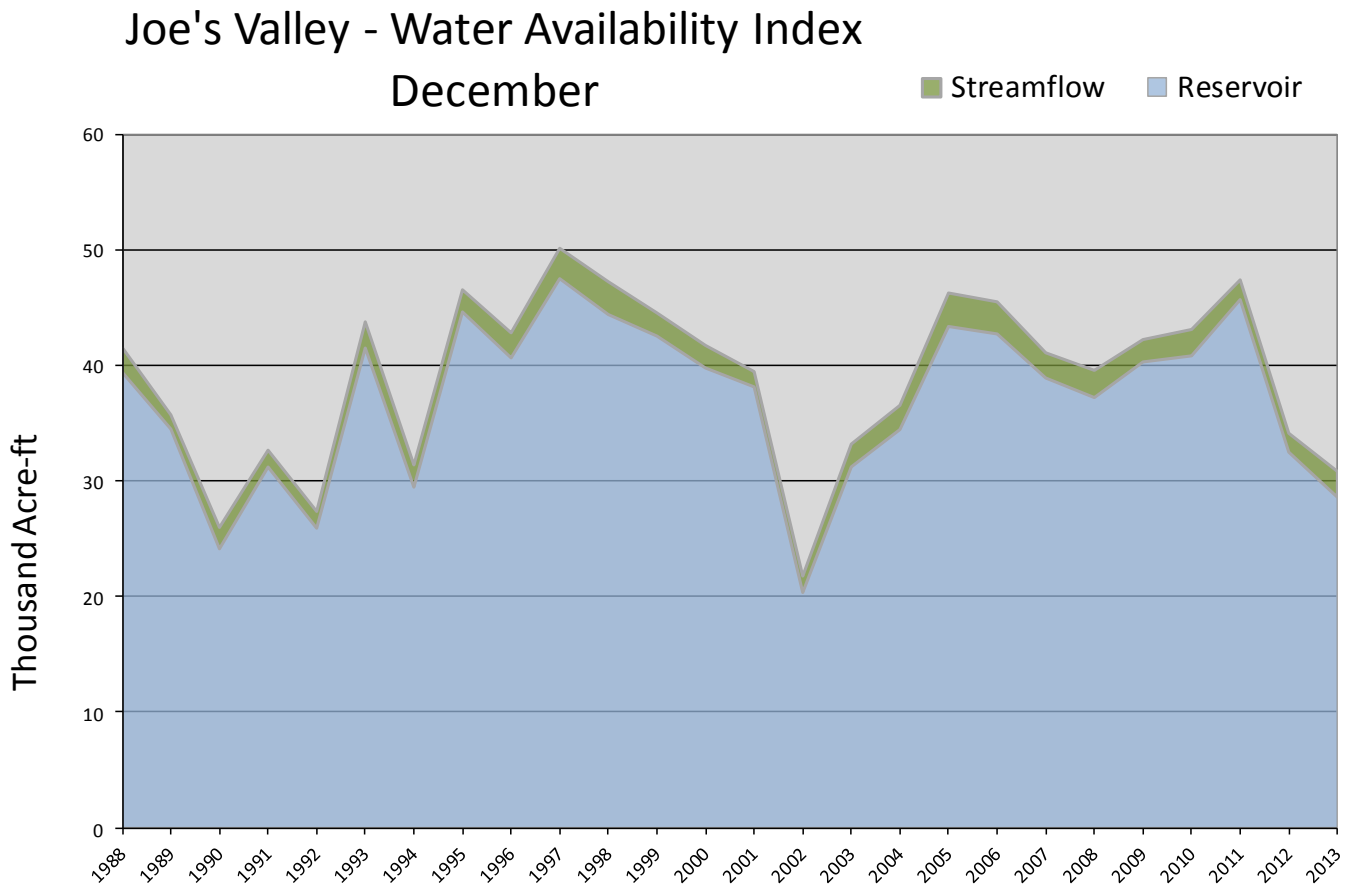
December 1, 2013	**Water Availability Index**					
Basin or Region	November EOM* Scofield	November accumulated inflow to Scofield (*calculated*)	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Price River	**14.5**	**3.1**	**17.6**	**-2.08**	**25**	**03, 07, 08, 77**

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



December 1, 2013	**Water Availability Index**					
Basin or Region	November EOM* Joe's Valley	November accumulated inflow to Joe's Valley (*calculated*)	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Joe's Valley	**28.6**	**2.2**	**30.8**	**-2.93**	**15**	**90, 92, 94, 91**

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

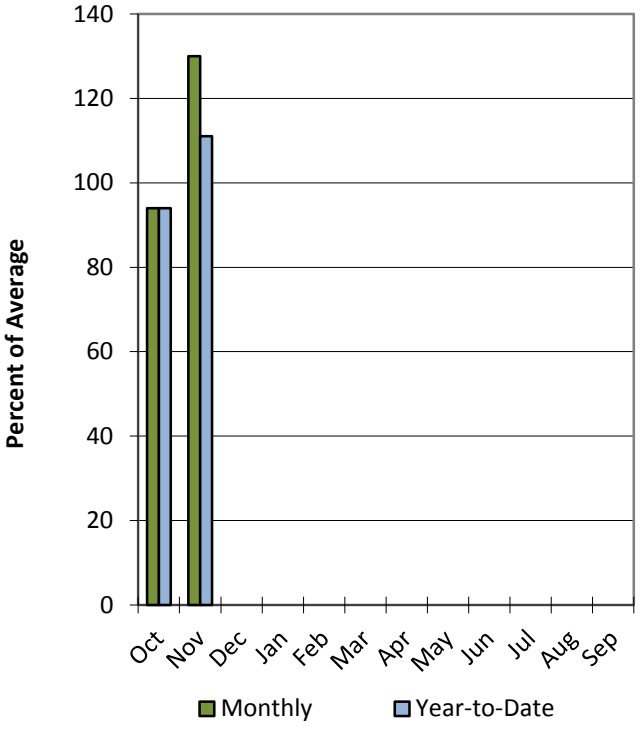


Southeastern Utah Basin

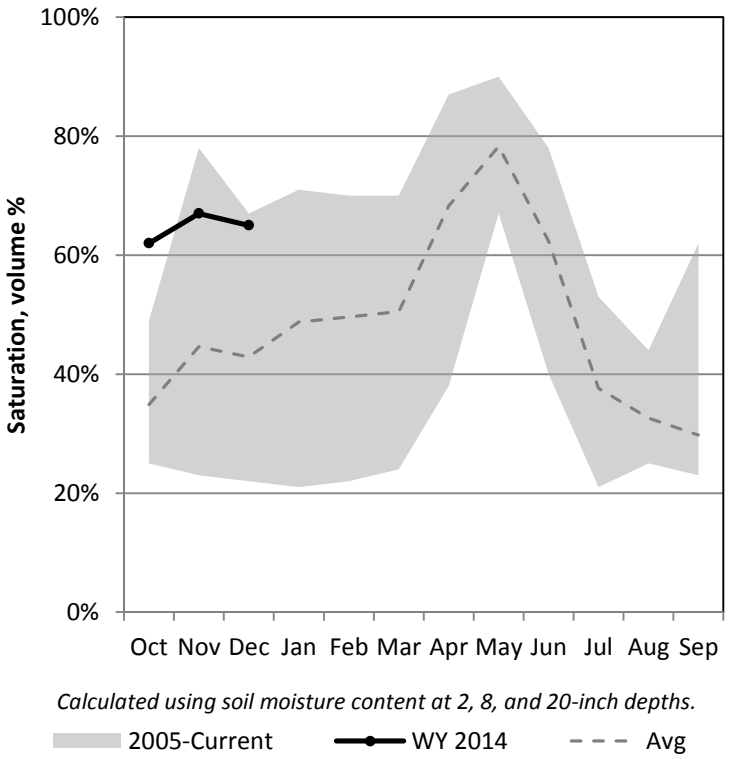
12/1/2013

Precipitation in November was above average at 130%, which brings the seasonal accumulation (Oct-Nov) to 111% of average. Soil moisture is at 65% compared to 22% last year. Reservoir storage is at 37% of capacity, compared to 9% last year. The water availibility index for Moab is 85%.

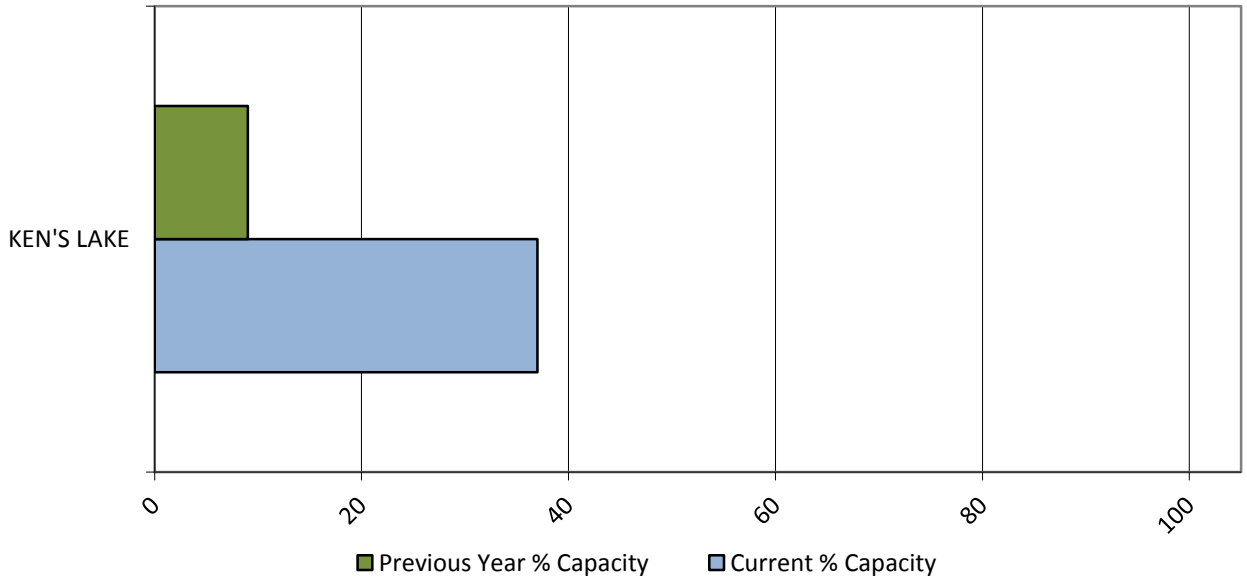
Precipitation



Soil Moisture

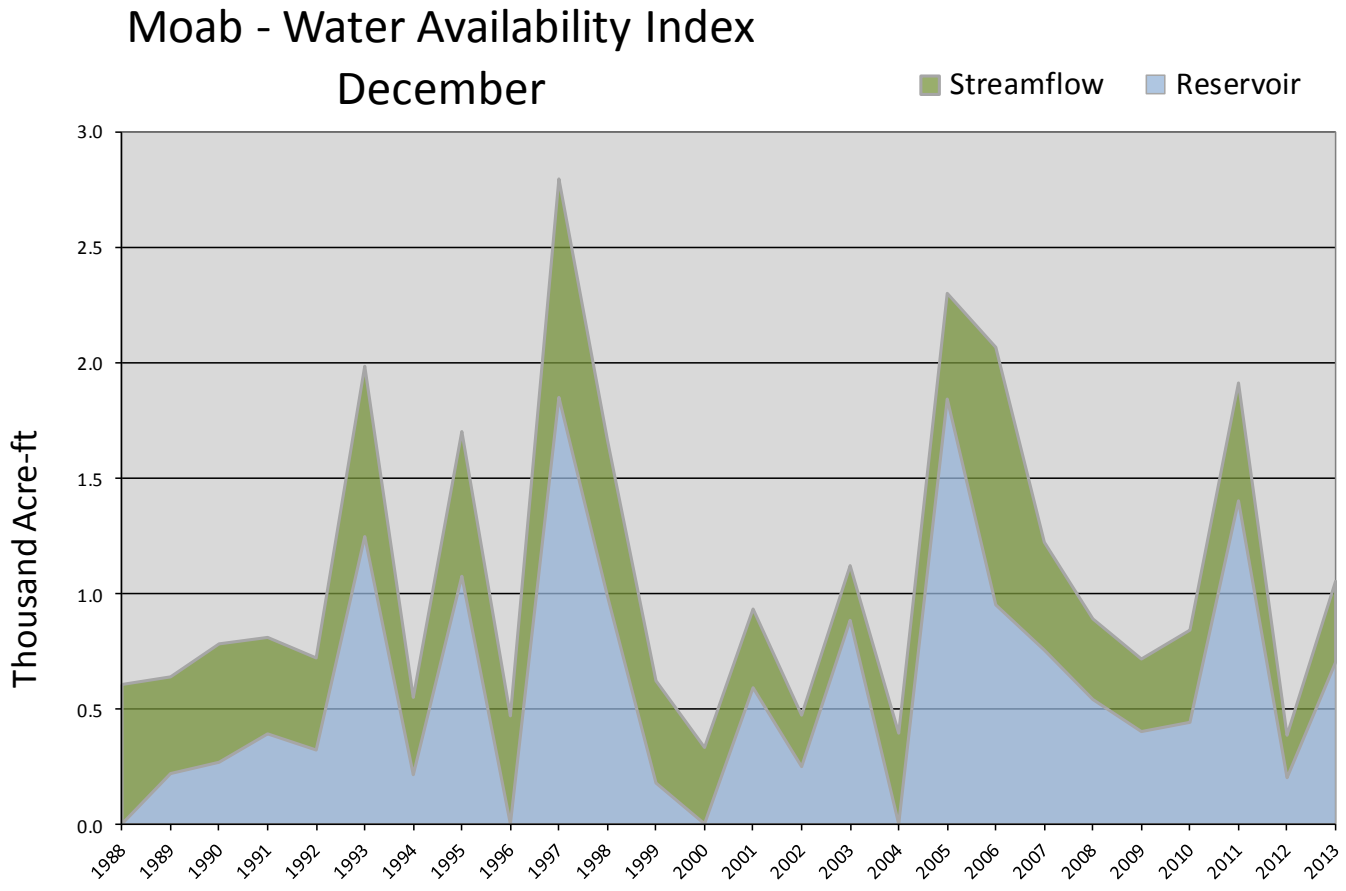


Reservoir Storage



December 1, 2013	**Water Availability Index**					
Basin or Region	November EOM* Ken's Lake Reservoir	November accumulated flow Mill Creek at Sheley (*observed*)	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Moab	**0.9**	**0.3**	**1.2**	**1.39**	**67**	**91, 01, 07, 98**

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

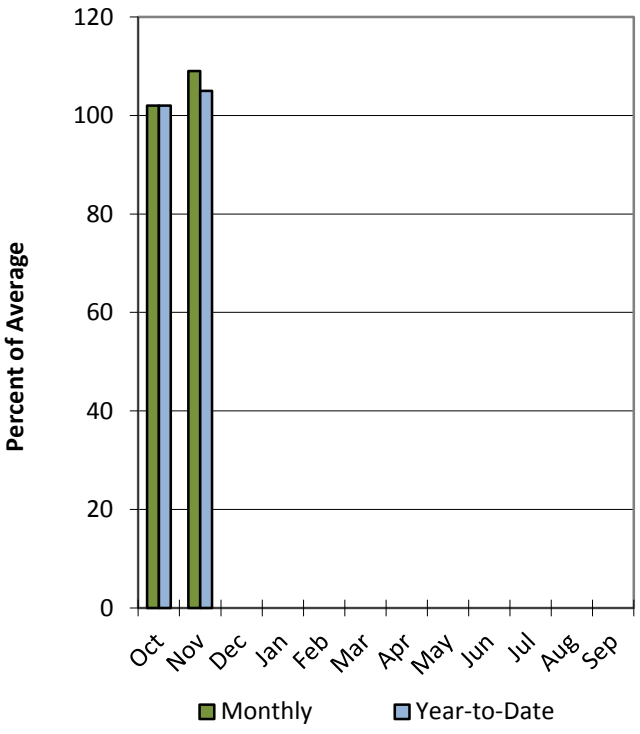


Dirty Devil Basin

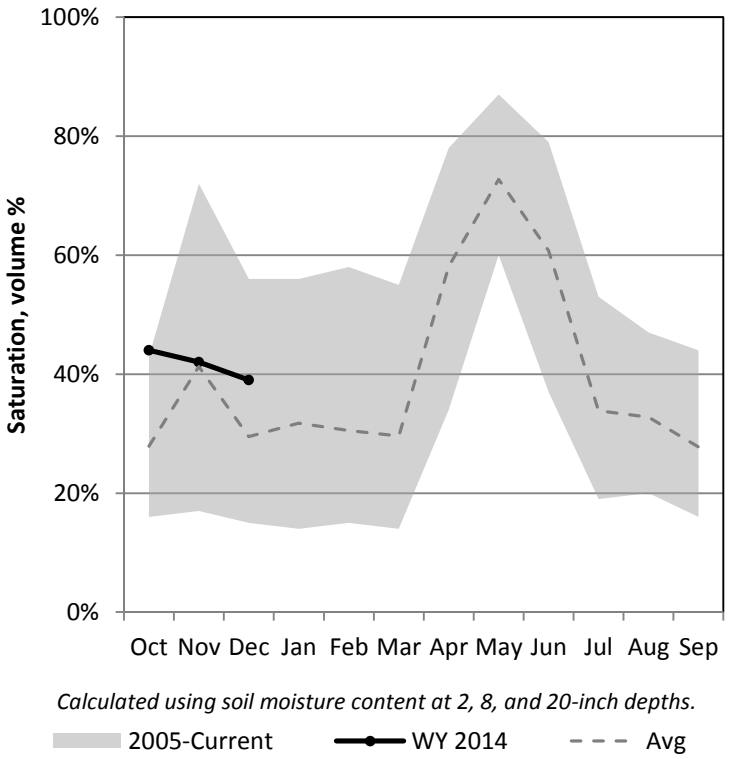
12/1/2013

Precipitation in November was near average at 109%, which brings the seasonal accumulation (Oct-Nov) to 105% of average. Soil moisture is at 39% compared to 23% last year.

Precipitation



Soil Moisture

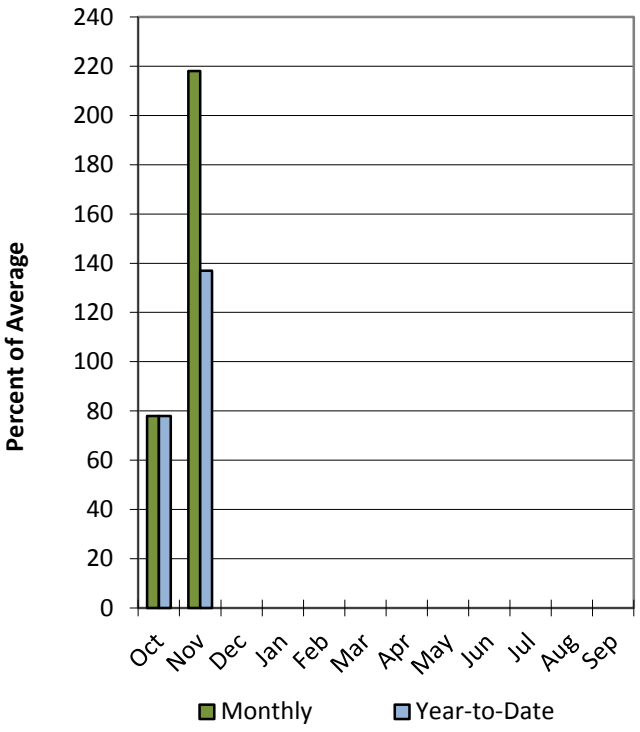


Escalante River Basin

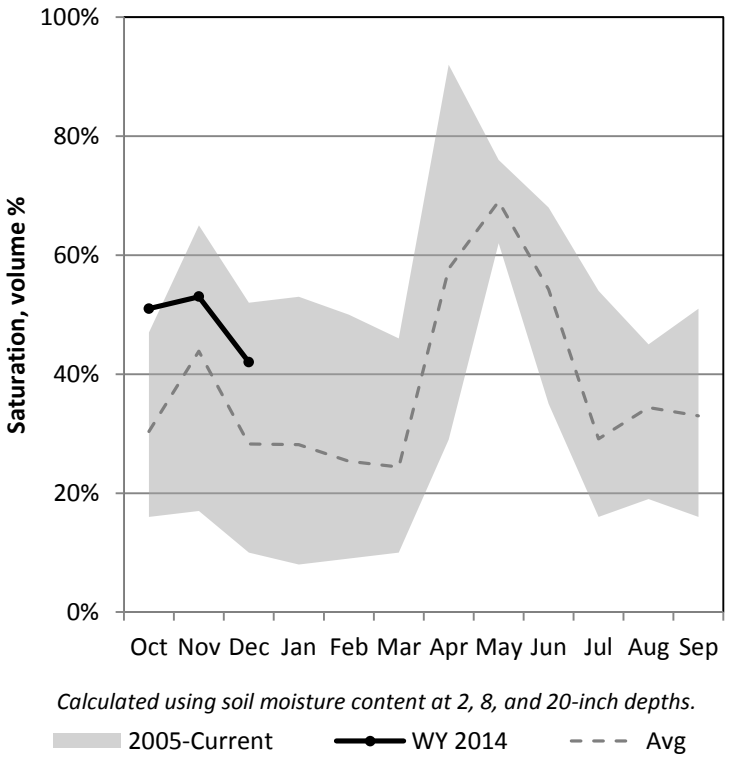
12/1/2013

Precipitation in November was much above average at 218%, which brings the seasonal accumulation (Oct-Nov) to 137% of average. Soil moisture is at 42% compared to 31% last year.

Precipitation



Soil Moisture

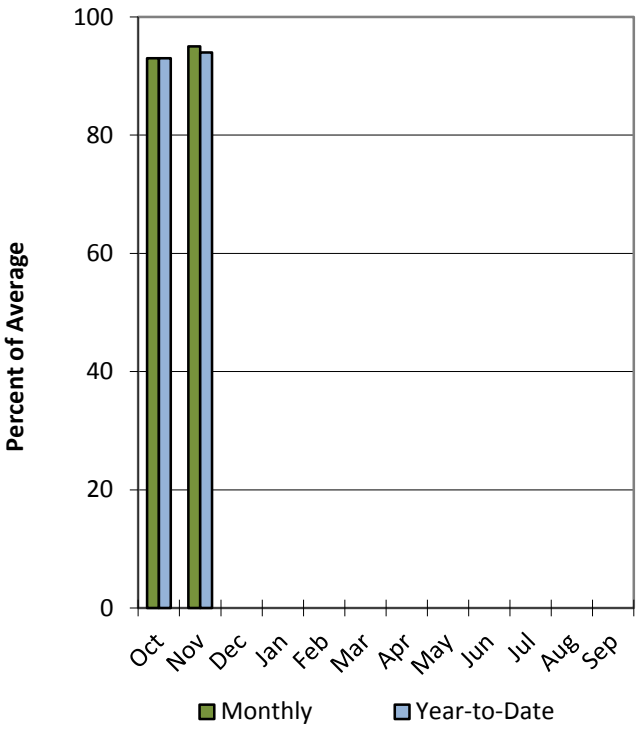


Upper Sevier River Basin

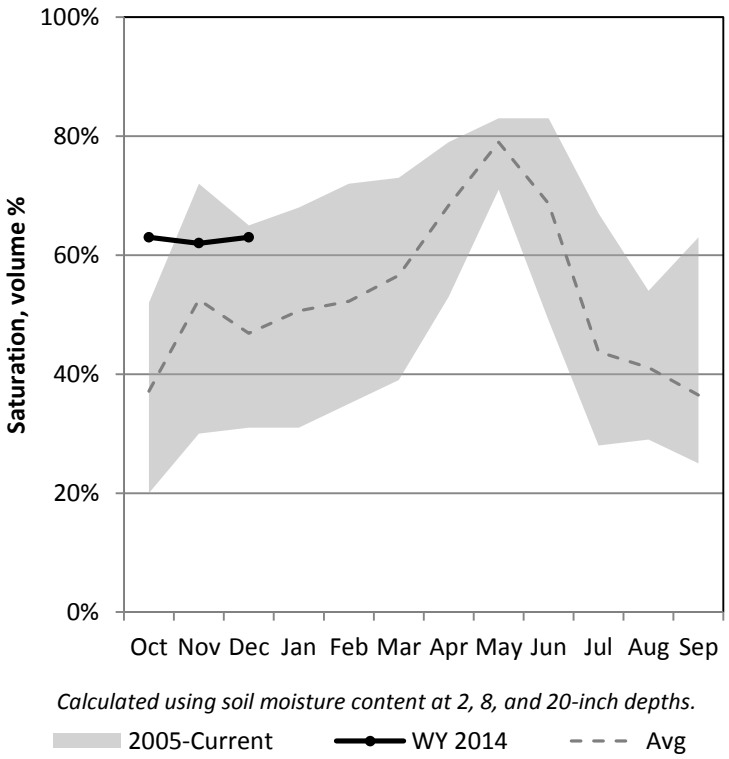
12/1/2013

Precipitation in November was near average at 95%, which brings the seasonal accumulation (Oct-Nov) to 94% of average. Soil moisture is at 63% compared to 44% last year. Reservoir storage is at 40% of capacity, compared to 36% last year. The water availibility index for the Upper Sevier is 25%.

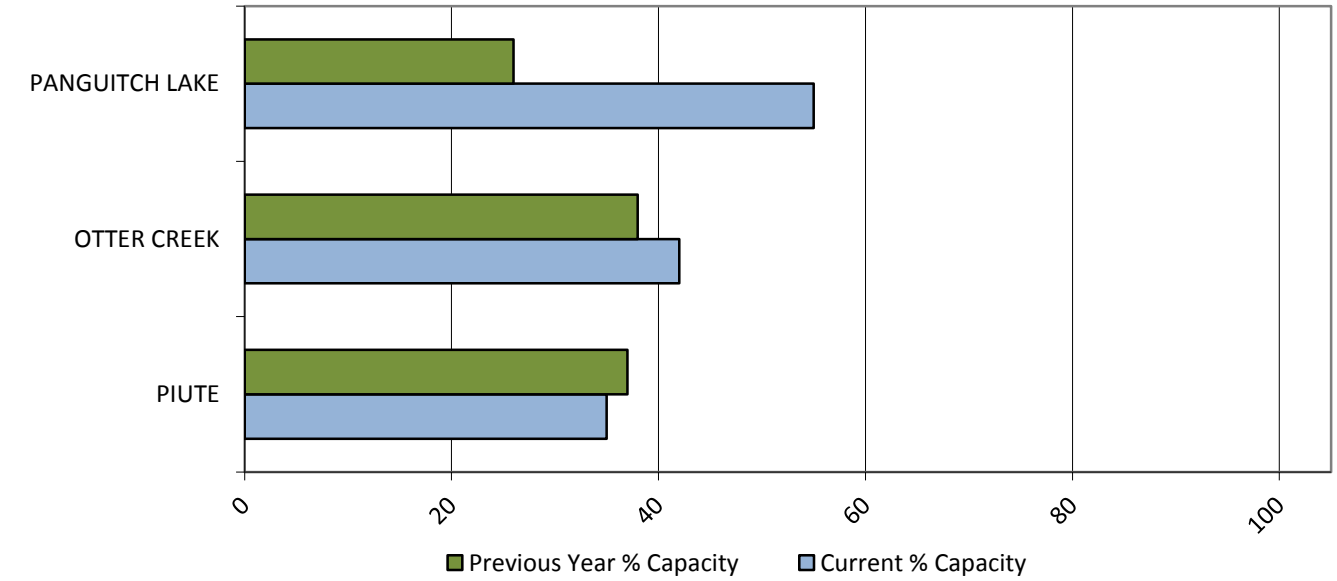
Precipitation



Soil Moisture

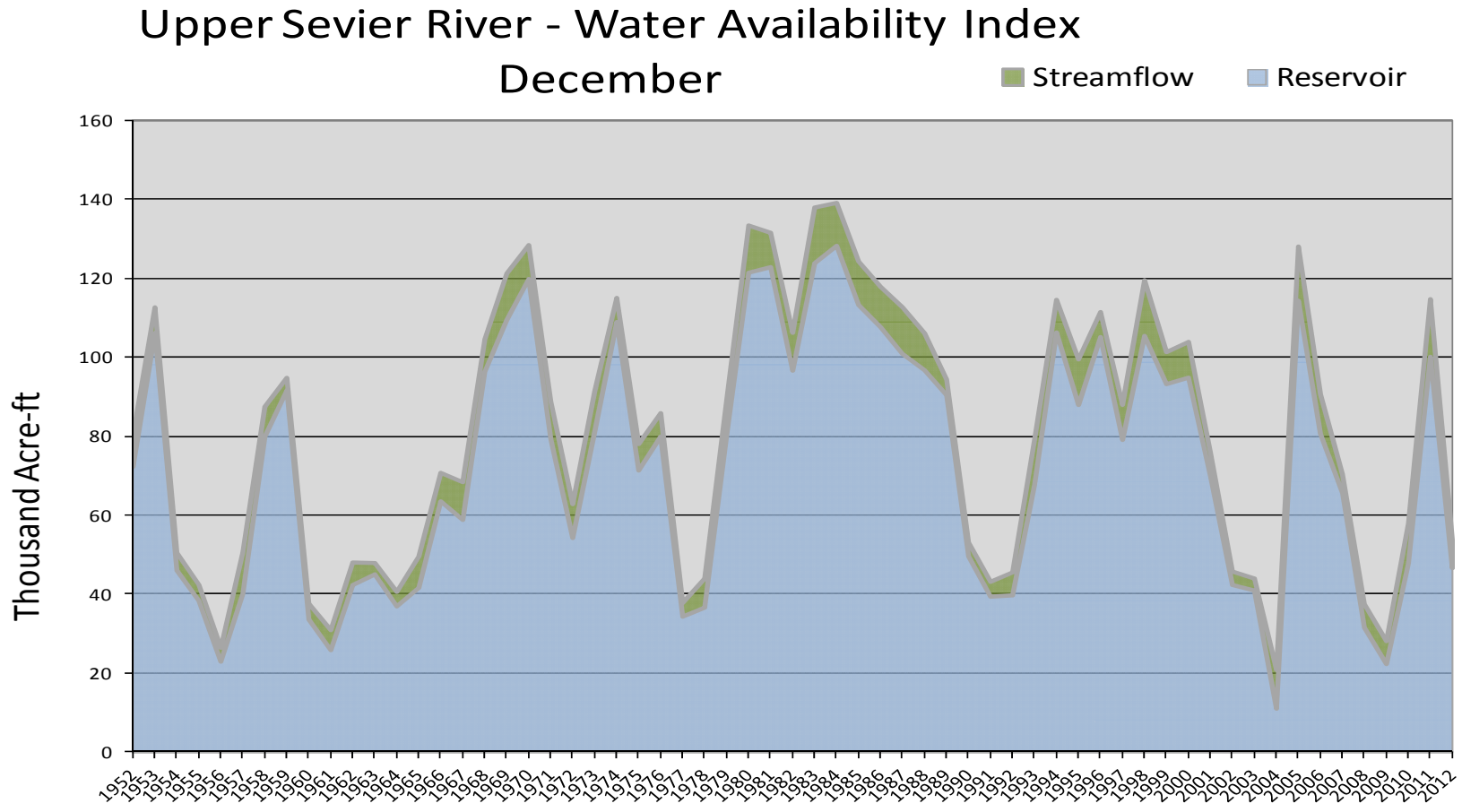


Reservoir Storage



December 1, 2013	**Water Availability Index**					
Basin or Region	November EOM* Otter Creek and Piute	November accumulated flow at Kingston (*observed*)	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Upper Sevier River	**47**	**8.9**	**56**	**-1.26**	**35**	**12,90,10,72**

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

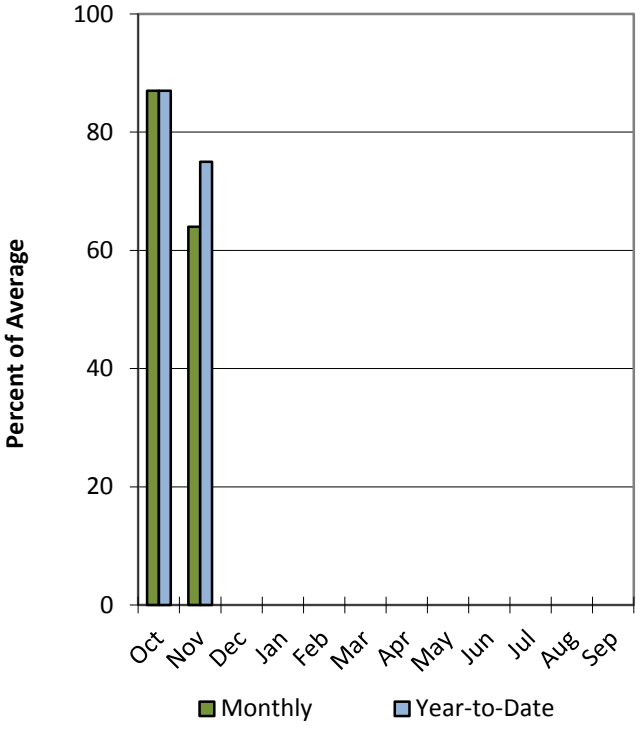


Lower Sevier River Basin

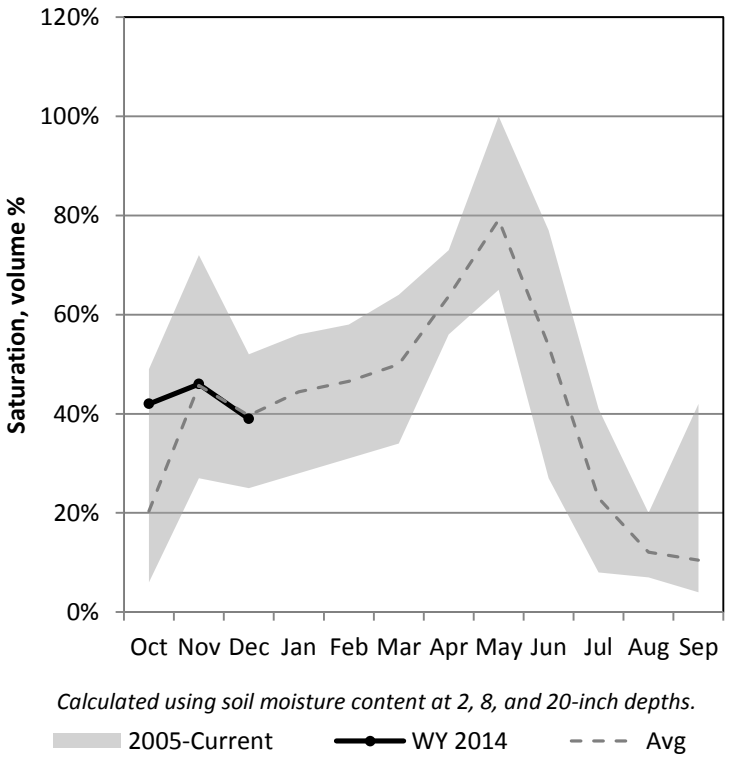
12/1/2013

Precipitation in November was much below average at 64%, which brings the seasonal accumulation (Oct-Nov) to 75% of average. Soil moisture is at 39% compared to 30% last year. Reservoir storage is at 39% of capacity, compared to 51% last year. The water availibility index for the Lower Sevier is 15%.

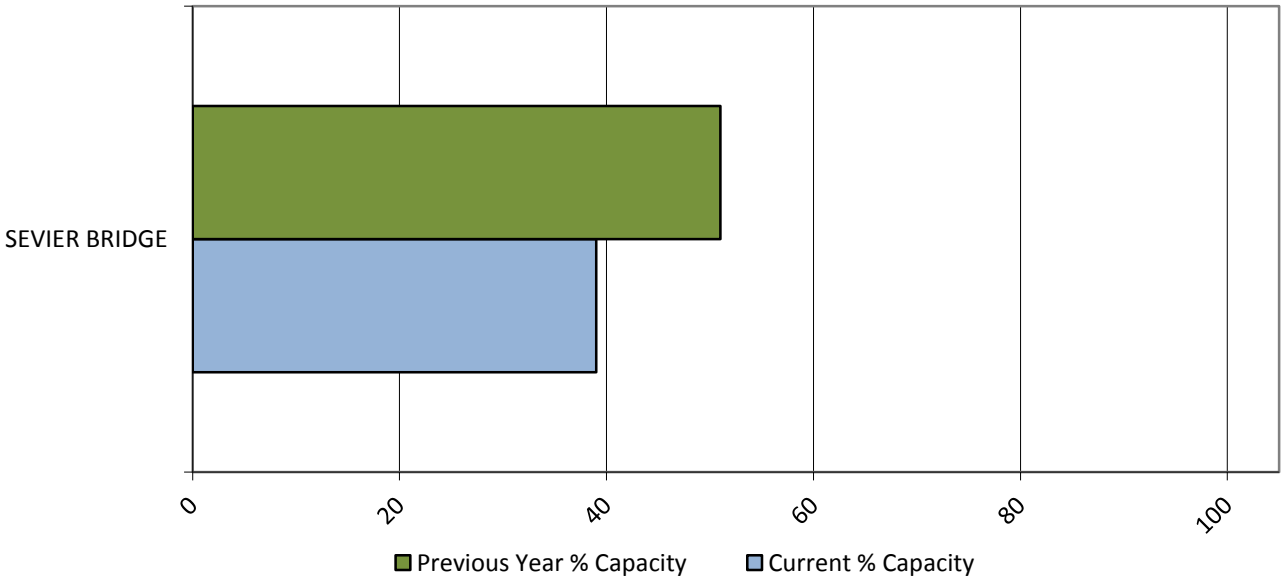
Precipitation



Soil Moisture

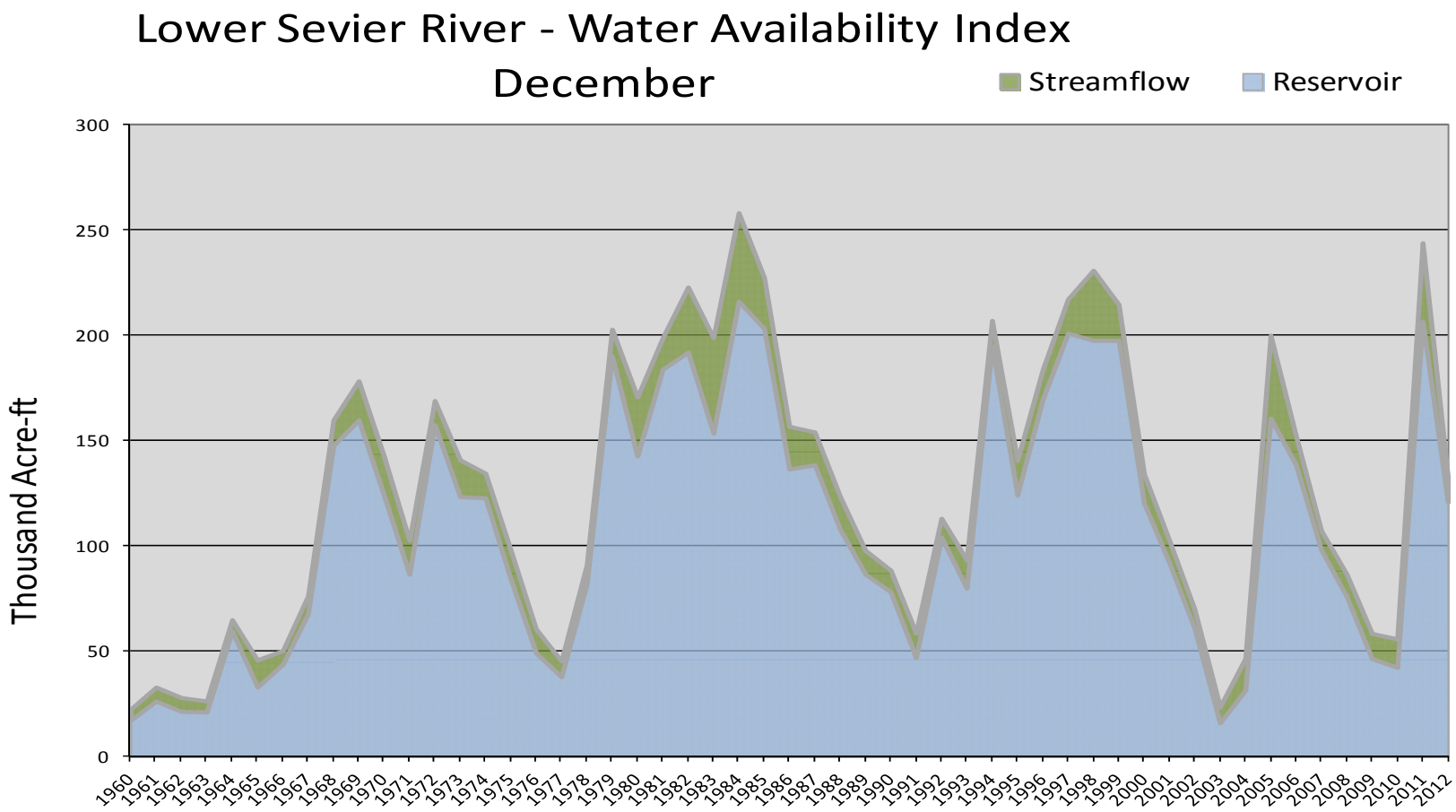


Reservoir Storage



December 1, 2013	**Water Availability Index**					
Basin or Region	November EOM* Sevier Bridge	November accumulated flow Sevier at Gunnsion (*observed*)	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Lower Sevier River	**93**	**13.0**	**106**	**-0.38**	**45**	**01,71,07,92**

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

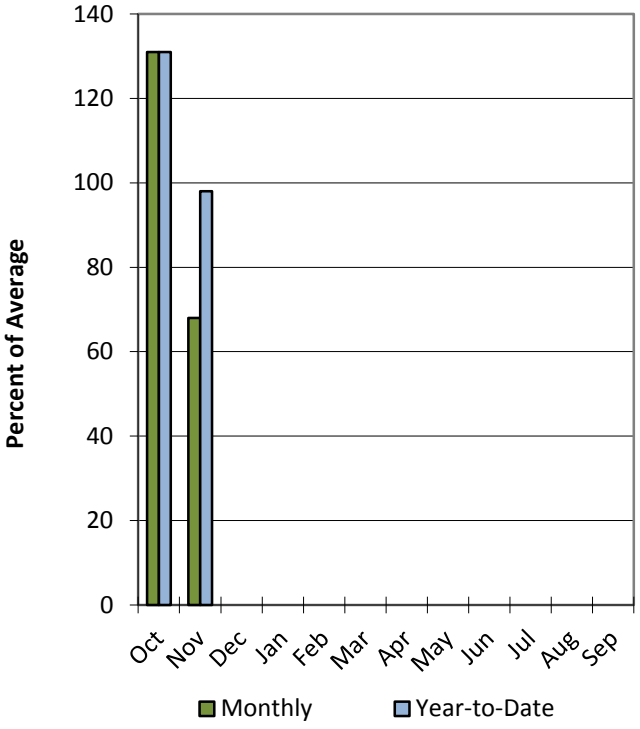


San Pitch River Basin

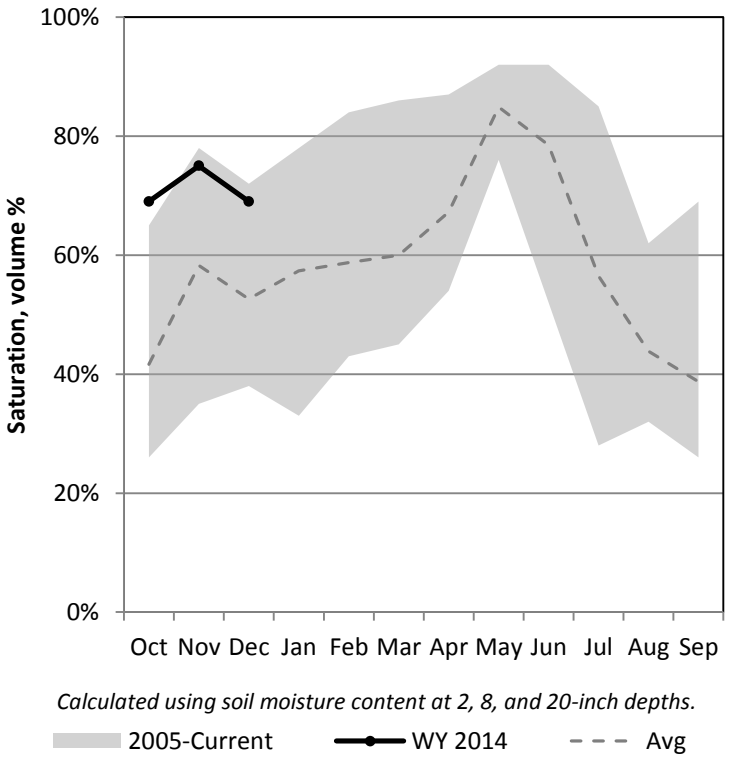
12/1/2013

Precipitation in November was much below average at 68%, which brings the seasonal accumulation (Oct-Nov) to 98% of average. Soil Moisture is at 69% compared to 48% last year. Reservoir storage is at 0% of capacity, compared to 0% last year.

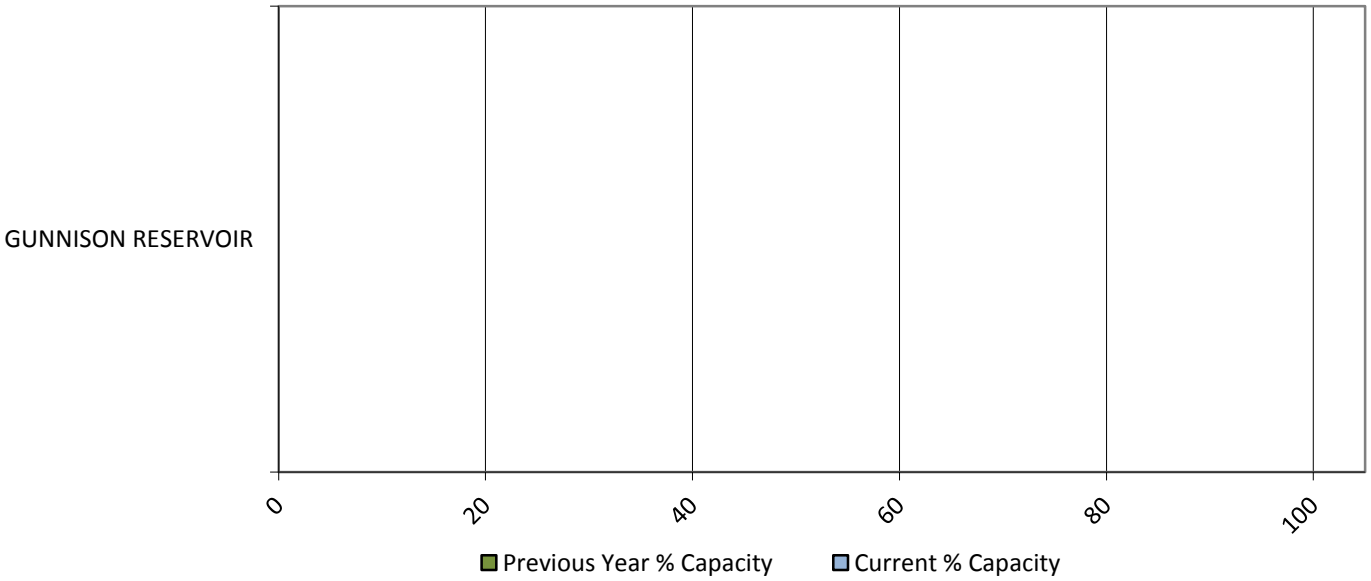
Precipitation



Soil Moisture

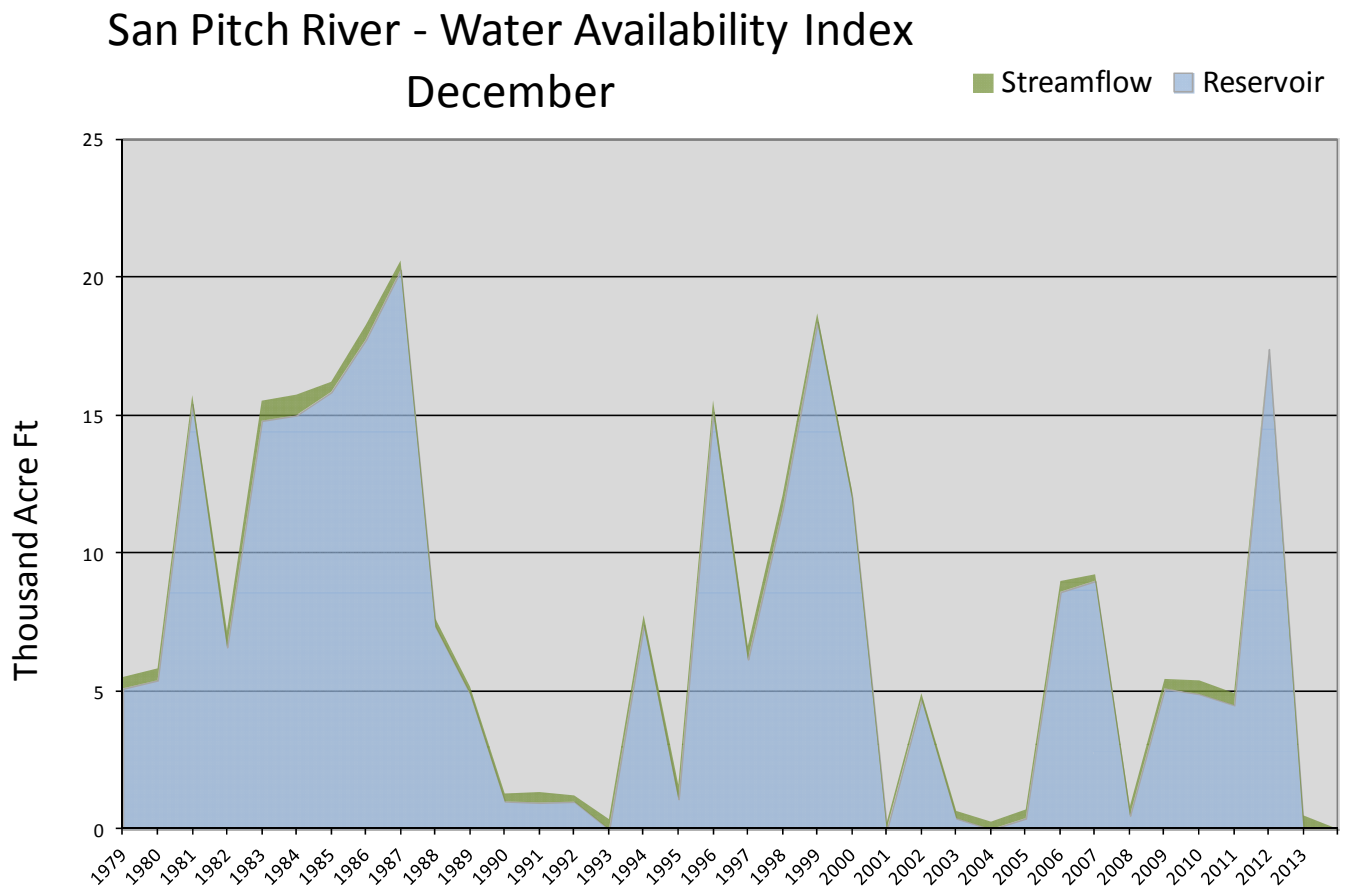


Reservoir Storage



December 1, 2013	**Water Availability Index**					
Basin or Region	November EOM* Gunnison Reservoir	November accumulated flow Manti Creek (observed)	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Manti Creek	**0.0**	**0.5**	**0.5**	**-2.72**	**17**	**04,93,03,05**

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

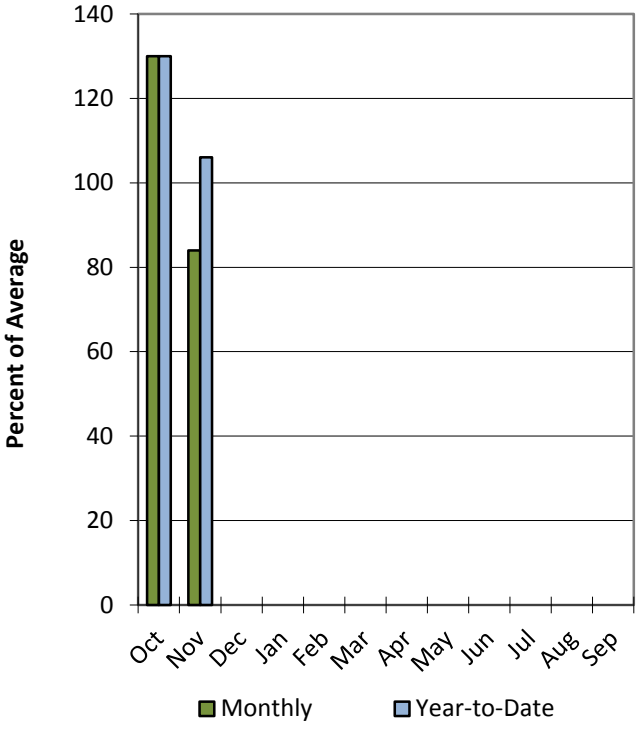


Beaver River Basin

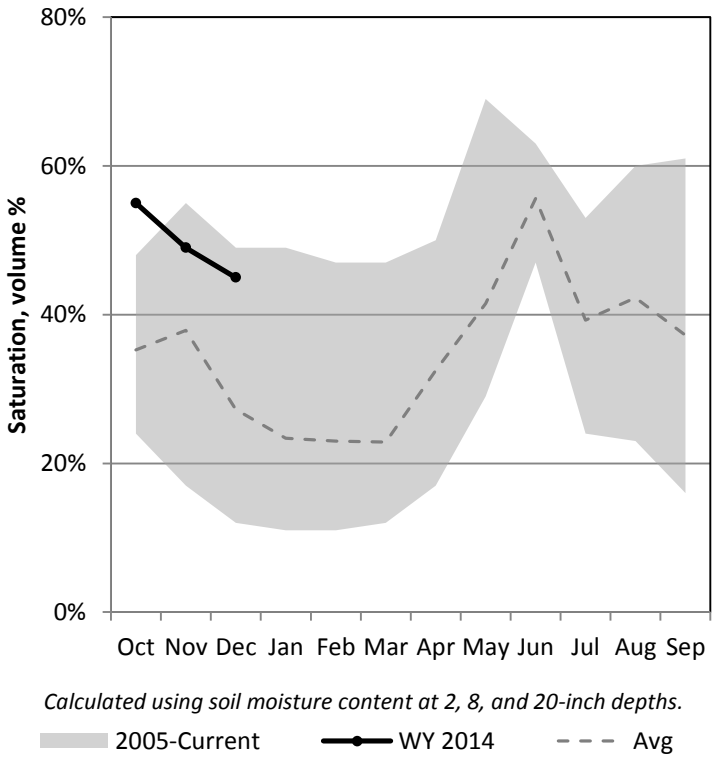
12/1/2013

Precipitation in November was below average at 84%, which brings the seasonal accumulation (Oct-Nov) to 106% of average. Soil moisture is at 45% compared to 38% last year. Reservoir storage is at 32% of capacity, compared to 28% last year. The water availibility index for the Beaver River is 67%.

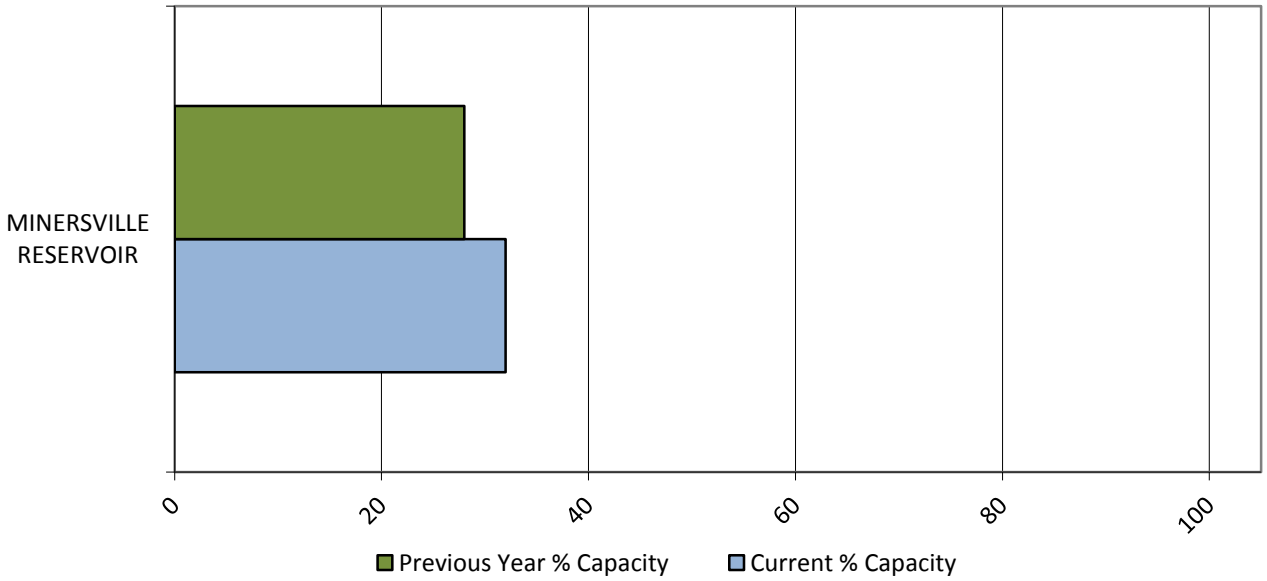
Precipitation



Soil Moisture

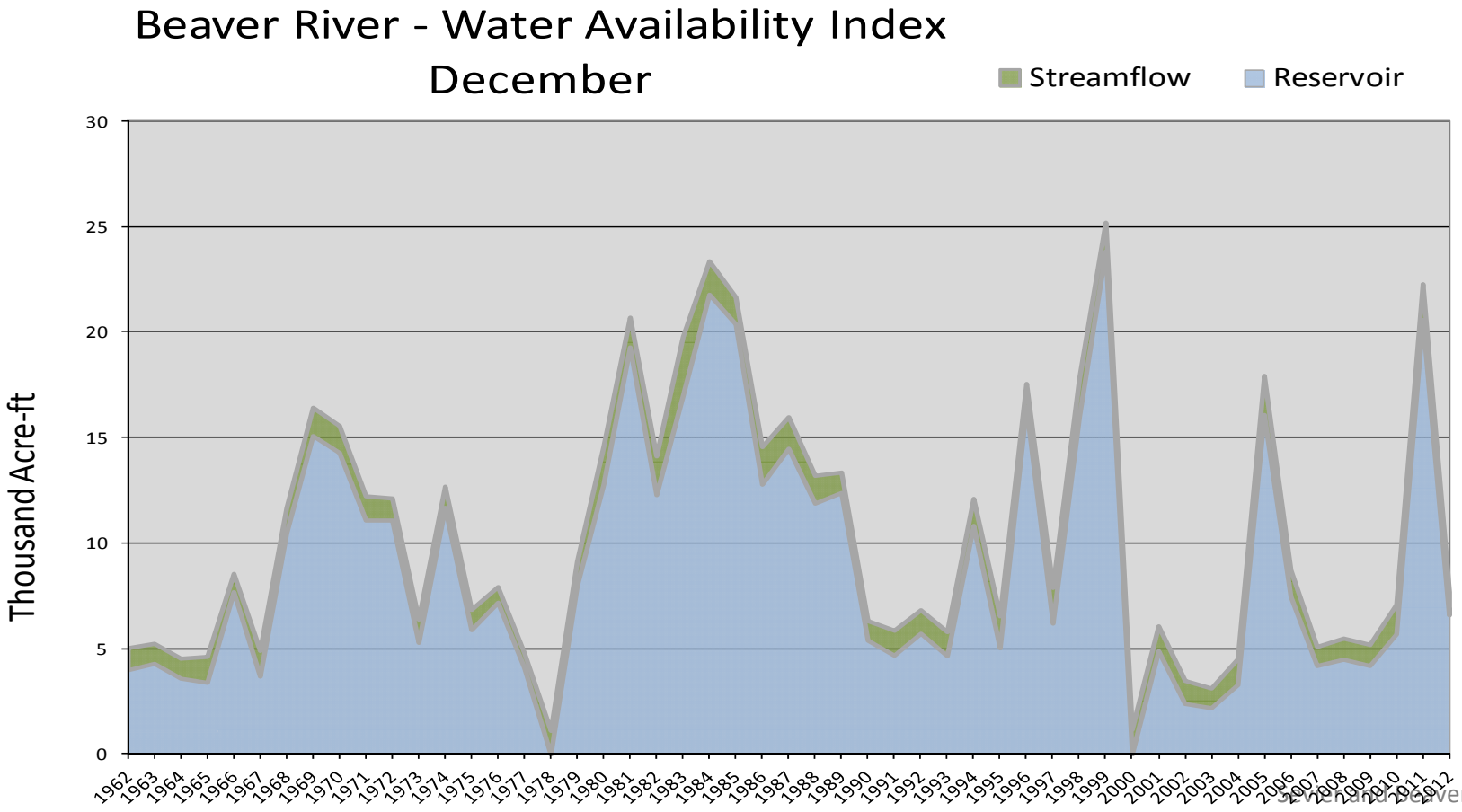


Reservoir Storage



December 1, 2013	**Water Availability Index**					
Basin or Region	November EOM* Minersville Reservoir	November accumulated flow Beaver River at Beaver (*observed*)	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Beaver	**7.4**	**1.3**	**8.7**	**0.24**	**53**	**76,66,06,79**

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

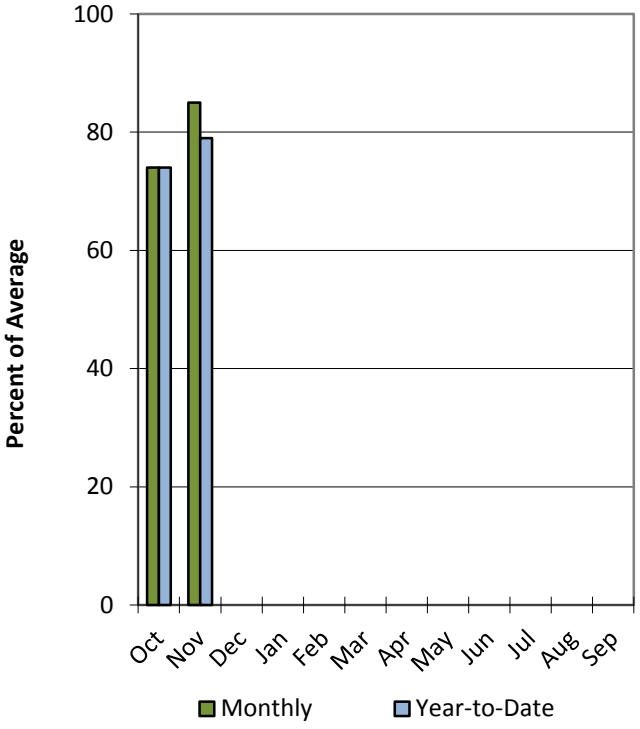


Southwestern Utah Basin

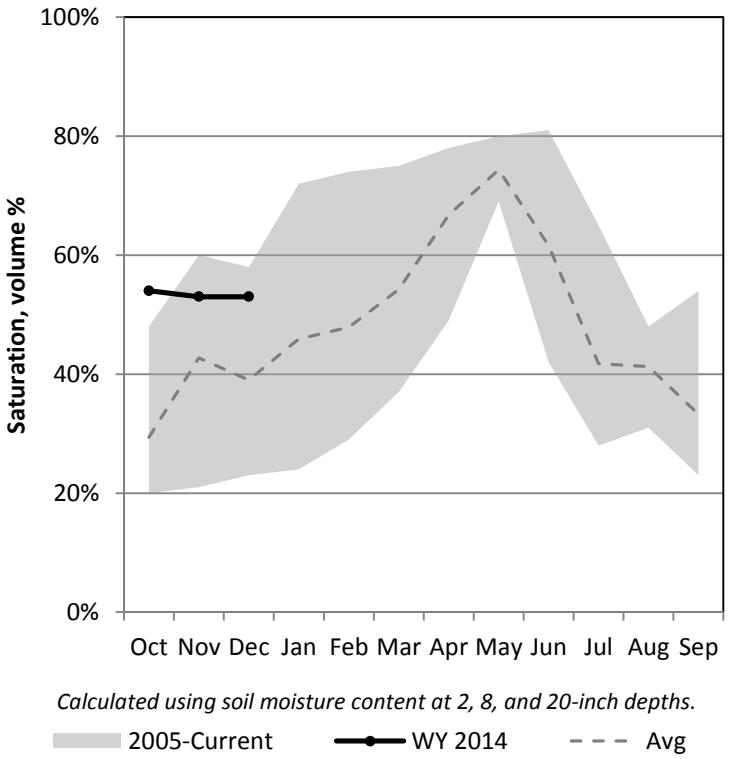
12/1/2013

Precipitation in November was below average at 85%, which brings the seasonal accumulation (Oct-Nov) to 79% of average. Soil moisture is at 53% compared to 43% last year. Reservoir storage is at 44% of capacity, compared to 54% last year. The water availibility index for the Virgin River is 35%.

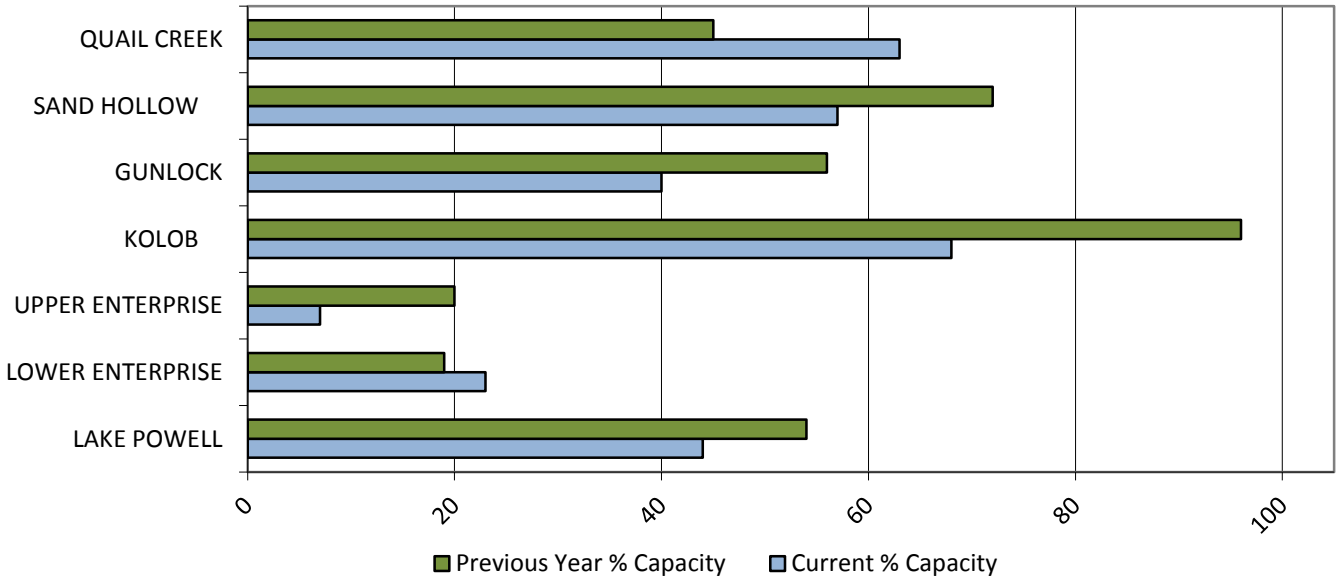
Precipitation



Soil Moisture

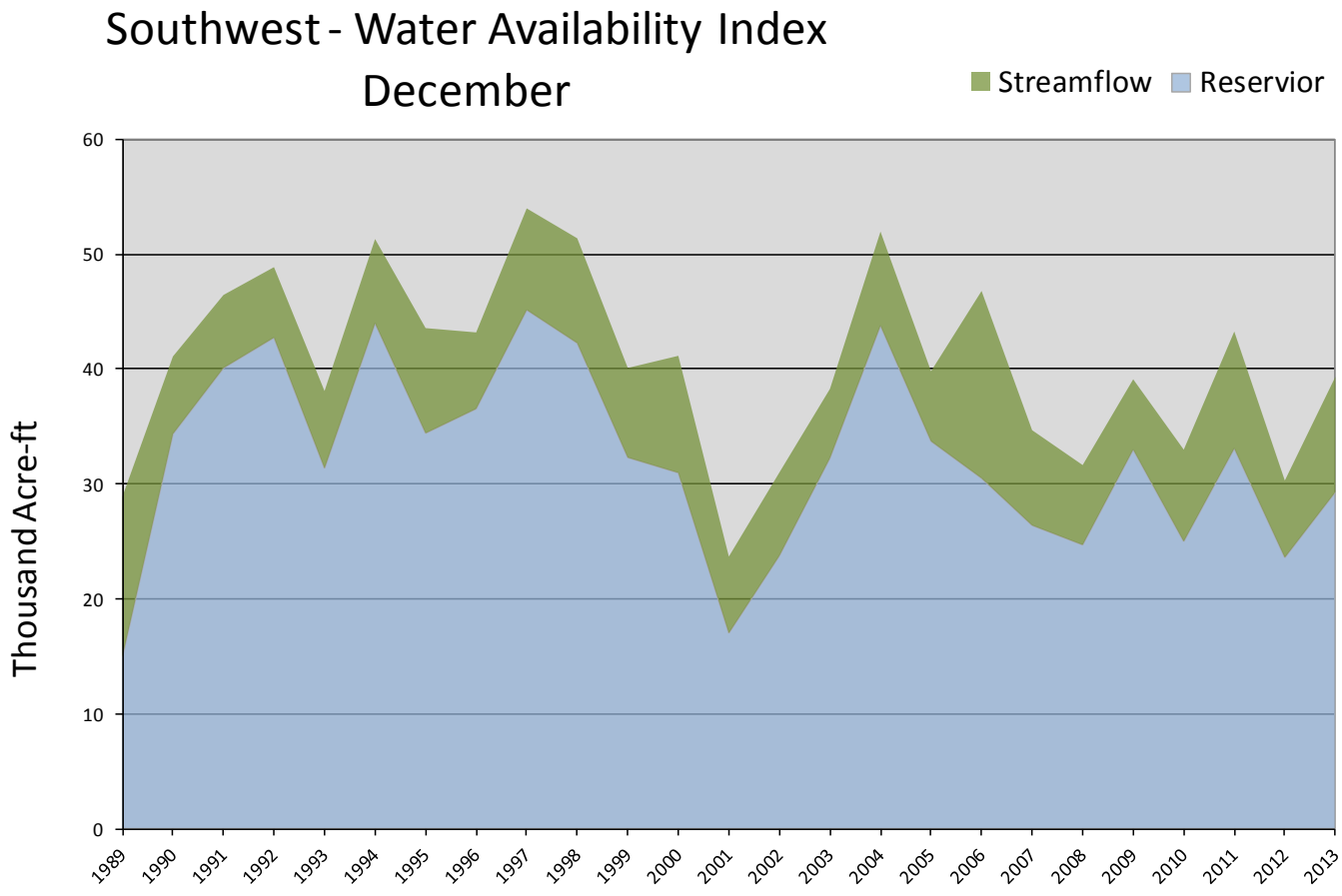


Reservoir Storage



12/1/2013	**Water Availability Index**					
Basin or Region	November EOM* Reservoir	November accumulated flow Virgin and Santa Clara Rivers (*observed*)	Reservoir + Streamflow	WAI[#]	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Southwest	**29.3**	**10.0**	**39.3**	**-0.64**	**42**	**03,09,05,99**

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



12/1/2013

Water Availability Index

Basin or Region	August EOM* Reservoirs	Observed August stream flow	Reservoir + Streamflow	WAI#	Percentile	Years with similar WAI
	*KAF^*	*KAF*	*KAF*		*%*	
Bear River	**529**	**5.0**	**534**	**-1.20**	**36**	**30,39,29,54**
Woodruff Narrows	**11**	**3.9**	**15**	**-1.20**	**36**	**86,81,75,79**
Little Bear	**8**	**1.9**	**10**	**-1.52**	**32**	**04,02,10,08**
Ogden River	**35**	**1.7**	**37**	**-2.82**	**16**	**90,88,07,02**
Weber River	**147**	**3.0**	**151**	**-3.43**	**9**	**92,04,07,90**
Provo	**256**	**3.6**	**259**	**-3.75**	**5**	**07, 03**
West Uintah Basin	**19**	**3.1**	**22**	**2.08**	**75**	**87,11,05,95**
Eastern Uintah	**16.7**	**0.8**	**18**	**-3.45**	**9**	**90,94,03,93**
Blacks Fork	**9.5**	**2.9**	**12**	**1.52**	**68**	**93,05,06,97**
Smiths Creek	**6.0**	**0.8**	**7**	**2.88**	**85**	**10,06,11**
Price River	**14.5**	**3.1**	**17.6**	**-2.08**	**25**	**03, 07, 08, 77**
Joe's Valley	**28.6**	**2.2**	**30.8**	**-2.93**	**15**	**90, 92, 94, 91**
Moab	**0.9**	**0.3**	**1.2**	**1.39**	**67**	**91, 01, 07, 98**
Upper Sevier River	**47**	**8.9**	**56**	**-1.26**	**35**	**12,90,10,72**
San Pitch	**0**	**0.5**	**1**	**-2.22**	**17**	**04,93,03,05**
Lower Sevier River	**93**	**13.0**	**106**	**-0.38**	**45**	**01,71,07,92**
Beaver River	**7.4**	**1.3**	**8.7**	**0.24**	**53**	**76,66,06,79**
Virgin River	**29.3**	**10.0**	**39.3**	**-0.64**	**42**	**03,09,05,99**

**EOM, end of month; # WAI, water availibilty index; ^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/ on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

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Utah Climate and Water Report

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