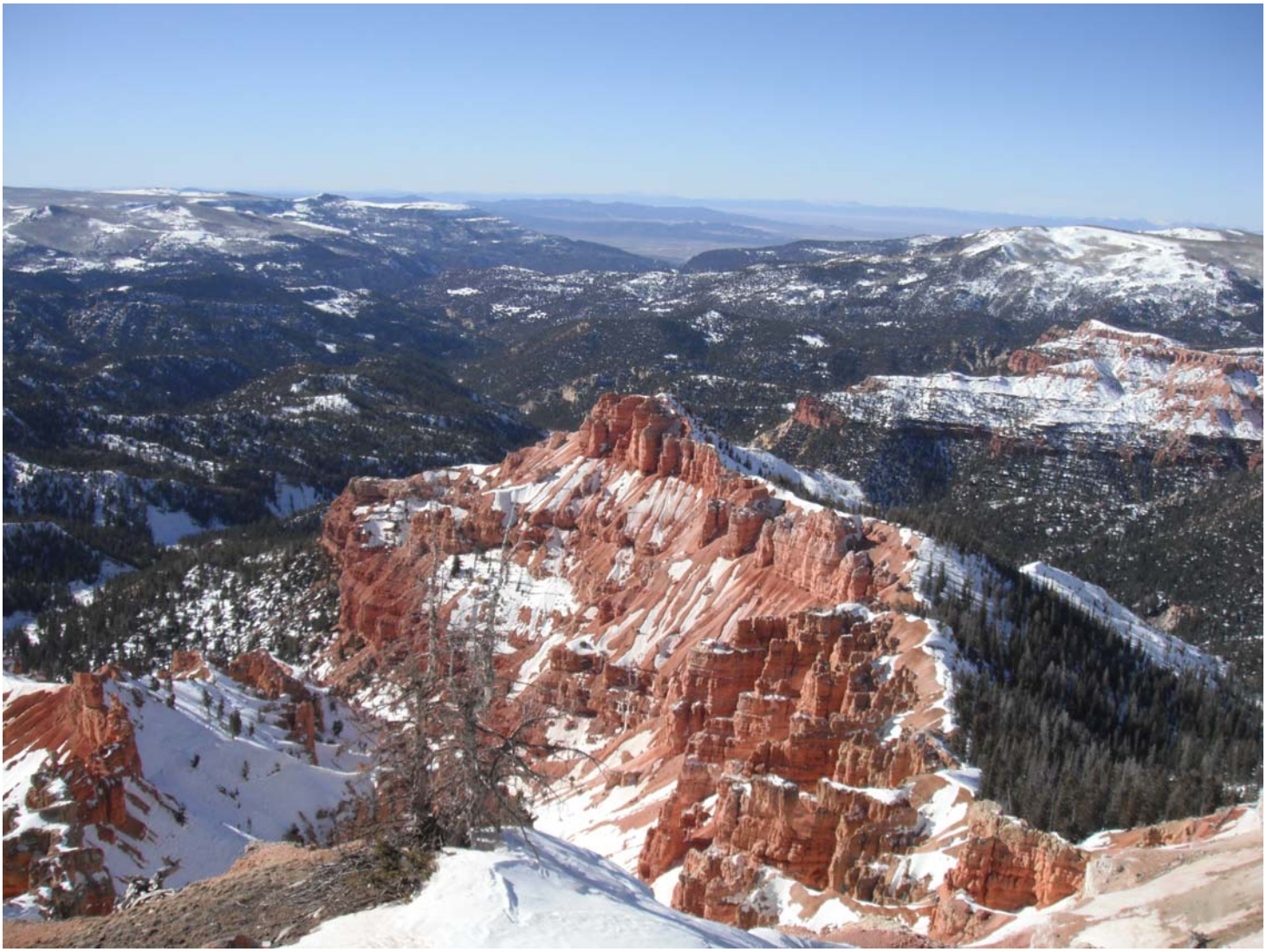
NRCS
Natural Resources Conservation Service

Utah Water Supply Outlook Report

February, 2011



Cedar Breaks, January 2011. **Photo by Beau Uriona, NRCS, USDA.**

Water Supply Outlook Reports
and Federal - State - Private Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snowcourses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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STATE OF UTAH GENERAL OUTLOOK
February 1, 2011

SUMMARY

Snowpacks remain much above average over most of Utah, but as expected they have declined as a percent of average from the phenomenal values of January 1. Keeping pace with 200% of average snowpack would require massive storms on a frequent basis and January was below average across the state. In spite of a much drier January, water supply conditions remain much above average across the state. In terms of climate, a more typical La Nina pattern was followed during January with fairly dry conditions in southern Utah. We are currently at the midpoint of winter snow accumulation in the high country and snowpacks range from 132% over southeastern Utah to 163% across southwestern Utah. Northern Utah has snowpacks that range from 130% to 160%. January precipitation was much below to below normal (52%-86%) in northern Utah and much below normal (36%-48%) in the south which brings the year to date precipitation much above normal statewide at 161%. Current soil moisture saturation levels in runoff producing areas are: Bear – 70%, Weber – 68%, Provo – 57%, Uintah Basin – 56%, SE Utah – 66%, Sevier – 63% and SW Utah – 59%, in most cases nearly double soil moisture values of last year and only 10% to 20% lower than maximum values observed during snowmelt. Wetter soils mean that watersheds are primed and ready for runoff. High snowpacks and high soil moisture have the potential for extremely high flows. Reservoir storage is currently at 68% of capacity statewide which is the same as last year at this time. General water supply conditions are much above average across the state. Streamflow forecasts range from 113% Pine Creek nr Escalante to 227% of average for Sevier River nr Kingston. Surface Water Supply Indices range from 39% on the Bear River to 88% for the Beaver Watershed.

SNOWPACK

January first snowpacks as measured by the NRCS SNOTEL system are as follows: Bear - 134%, Weber - 135%, Provo - 150%, Uintahs - 151%, southeast Utah - 132%, Sevier - 148%, southwest Utah - 163% and the statewide figure is 142% of average. With February and March remaining in the snow accumulation season, the range of potential outcomes is still reasonably large and any outcome is possible depending on future climatic conditions. If drought prevails, snowpacks could range between 63% (Sevier) and 90% (Weber) of average. Given maximum accumulations, April 1 snowpacks could range between 145% (Weber) and 221% (SW Utah) of average. With normal accumulations, April 1 snowpacks will be between 119% (SE Utah) and 141% (SW Utah) of average.

PRECIPITATION

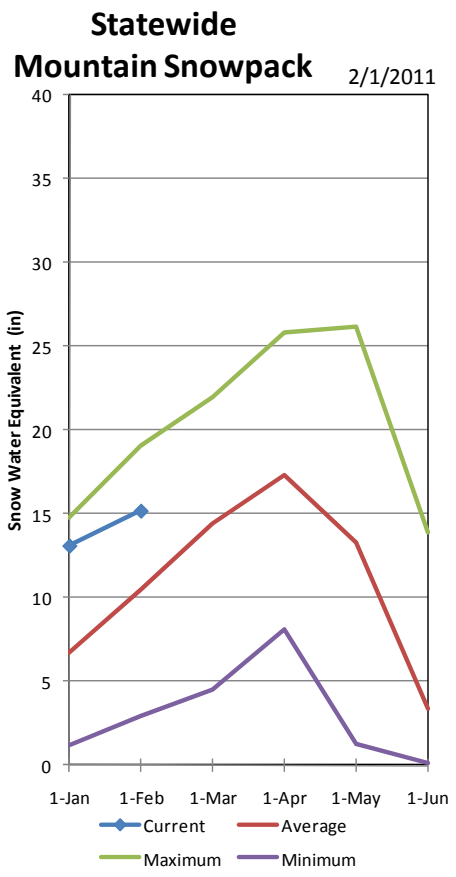
Mountain precipitation during January was: Bear – 86%, Weber – 82%, Provo – 62%, Uintahs – 52%, SE Utah – 36%, Sevier – 48%, SW Utah – 48% and the statewide figure is 65% of average. This brings the seasonal accumulation (Oct-Jan) to 161% of average statewide.

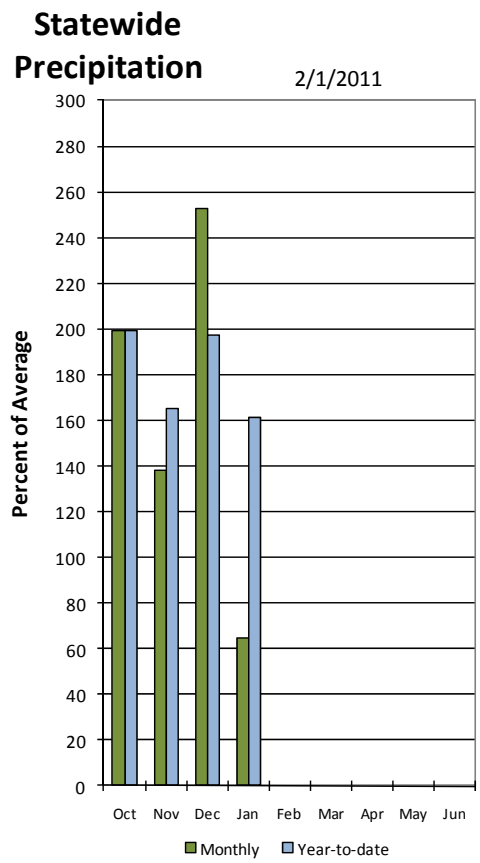
RESERVOIRS

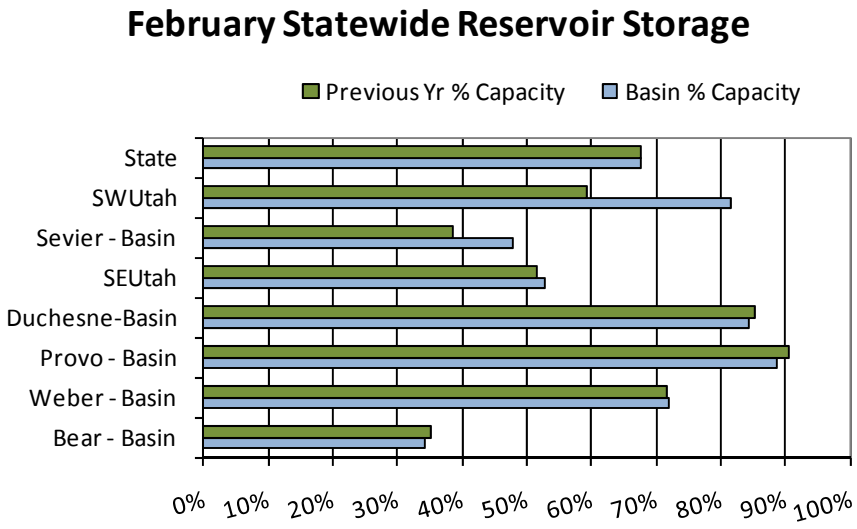
Storage in 41 of Utah's key irrigation reservoirs is at 68% of capacity the same as last year. Reservoir storage by Basin: Bear – 34%, Weber – 72%, Provo – 89%, Uintah Basin – 84%, SE Utah – 53%, Sevier – 48%, SW Utah – 82% of capacity.

STREAMFLOW

Snowmelt streamflows are expected to be above to much above average across the state this year. Forecast streamflows range from 113% Pine Creek Nr Escalante to 227% on the Sevier River nr Kingston. Most flows are forecast to be in the 120% to 150% range.

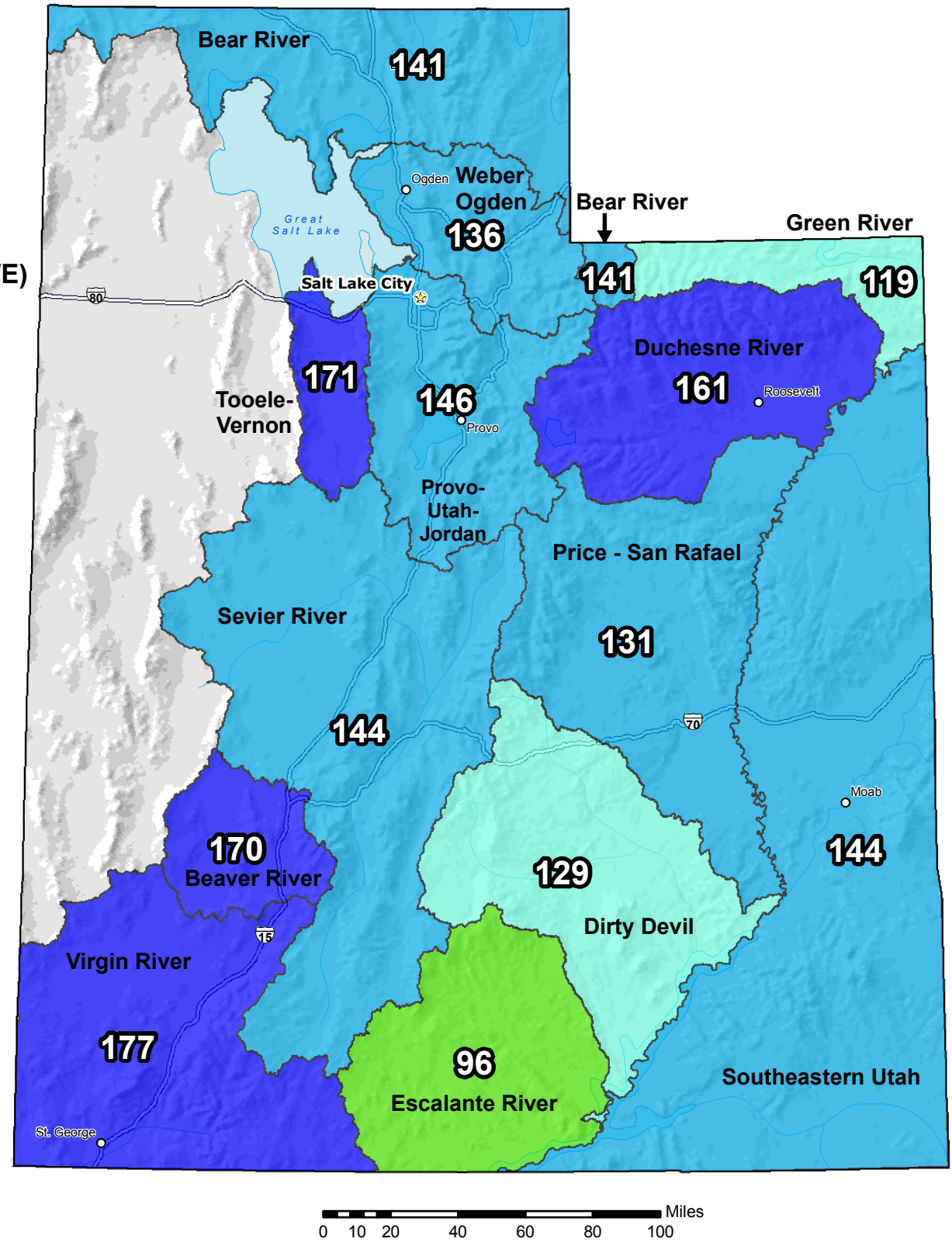






Utah
SNOTEL Current Snow Water Equivalent (SWE)
% of Normal

Feb 01, 2011



Snow Water Equivalent (SWE) Basin-wide Percent of 1971-2000 Normal

- 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*

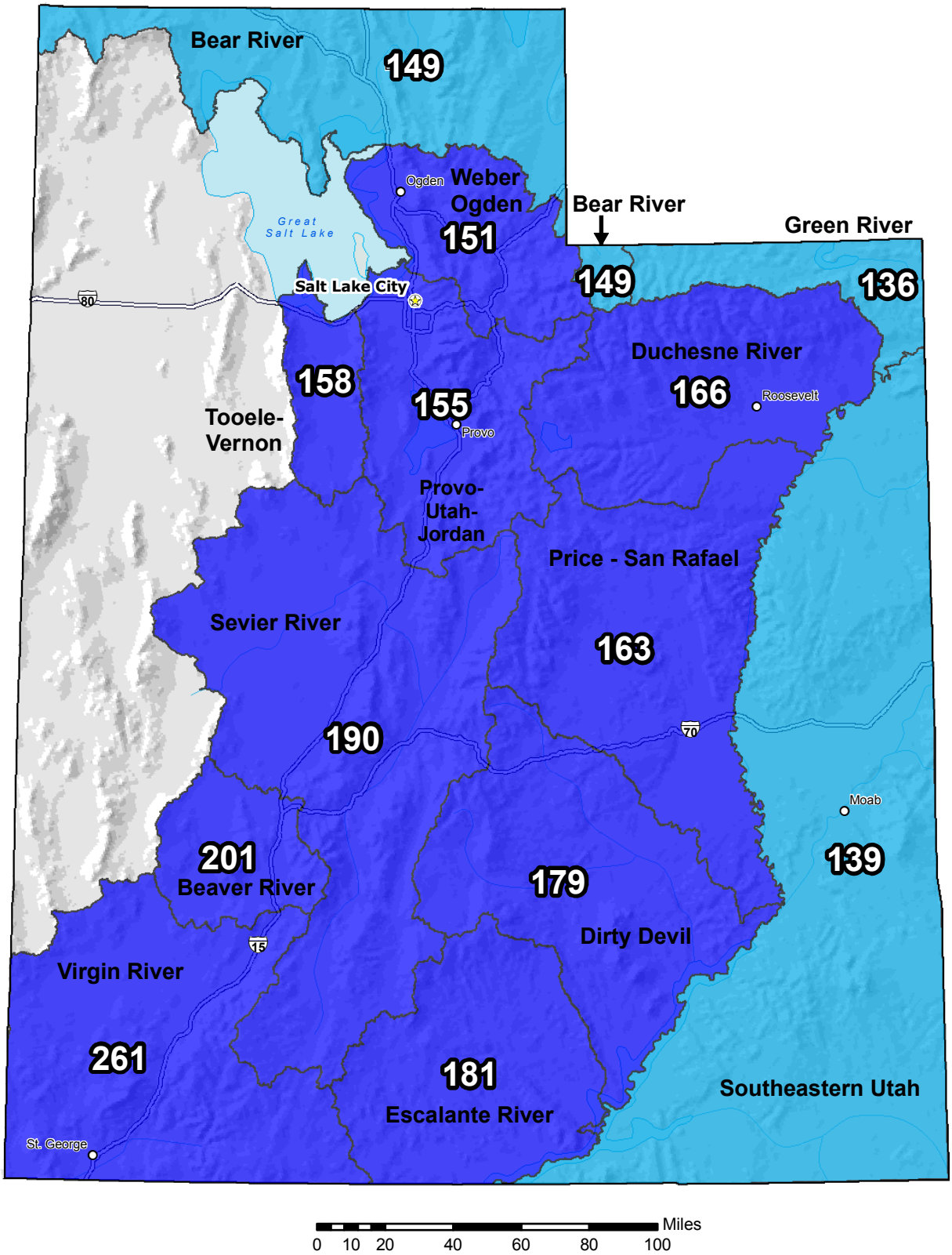
Provisional Data Subject to Revision

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

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

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

Feb 01, 2011



Water Year (Oct 1) to Date Precipitation Basin-wide Percent of 1971-2000 Normal

- 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

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/
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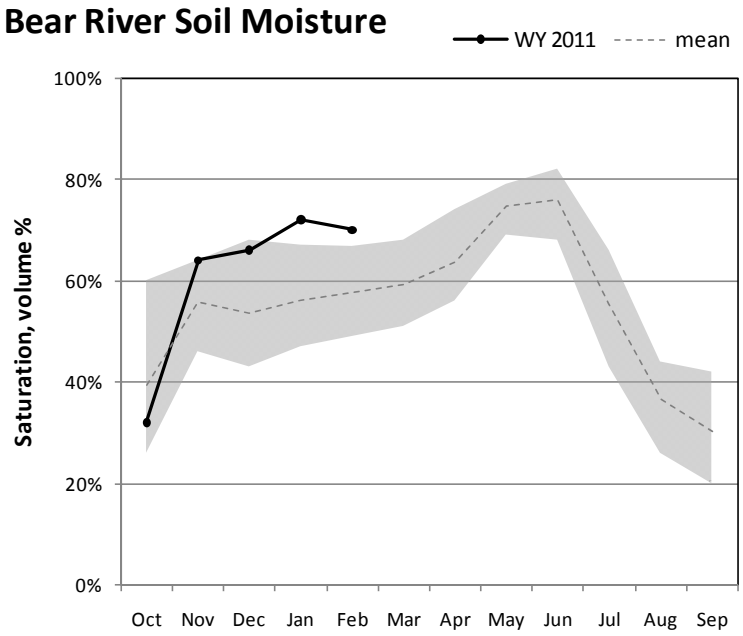
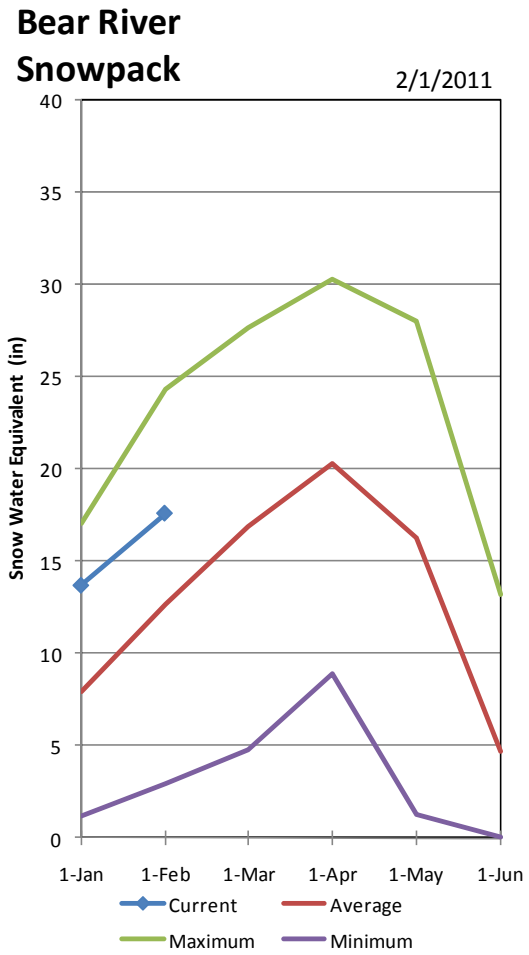
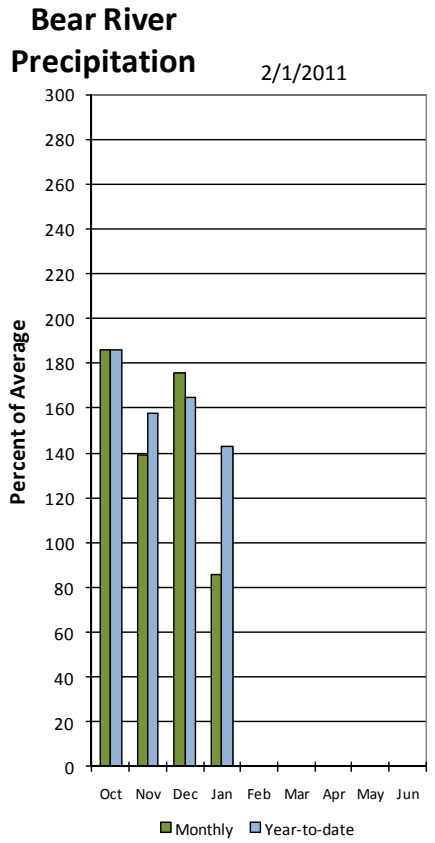
Bear River Basin
February 1, 2011

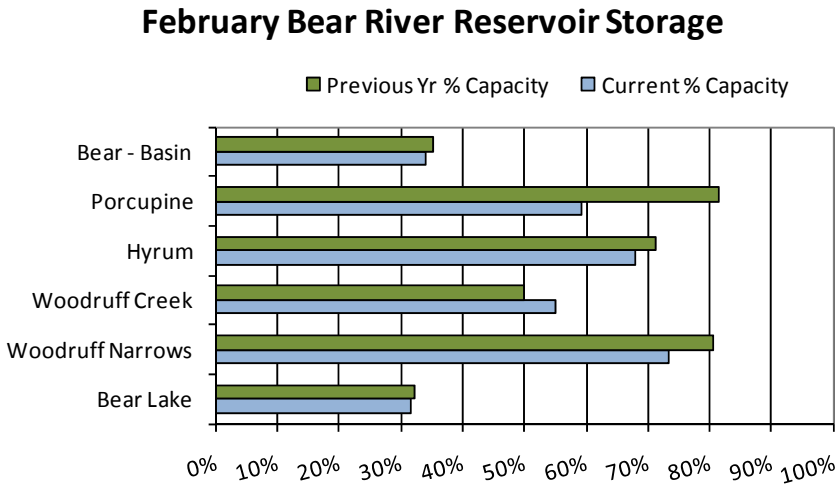
Snowpacks on the Bear River Basin are much above average at 132% of normal, and 203% of last year. Individual sites range from 154% of normal at Lily Lake Snotel to 120% at Giveout Snotel. January precipitation was below average at 86%, which brings the seasonal accumulation (Oct-Jan) to 143% of average. Soil moisture levels in runoff producing areas are at 70% of saturation in the upper 2 feet of soil compared to 49% last year. Forecast streamflows (April-July) are above average (122%-141%) volumes for this spring and summer. Bear Lake reservoir storage is low at 34% of capacity, which is down 1% from this time last year. The Surface Water Supply Index is at 39% for the Bear River Basin, in other words, 61% of years have had more total water available. Water supply conditions are below normal due to low reservoir storage in Bear Lake.



Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content. The gray area represents the range in saturation values since 2005.







BEAR RIVER BASIN
Streamflow Forecasts - February 1, 2011

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear R nr UT-WY State Line	APR-JUL	110	134	150	133	166	190	113
Bear R abv Resv nr Woodruff	APR-JUL	86	142	180	132	220	275	136
Big Ck nr Randolph	APR-JUL	4.00	5.30	6.20	127	7.10	8.40	4.90
Smiths Fork nr Border	APR-JUL	86	108	122	118	136	158	103
Bear R bl Stewart Dam	APR-JUL	168	250	305	130	360	440	234
L Bear at Paradise	APR-JUL	40	55	65	141	75	90	46
Logan R nr Logan	APR-JUL	105	135	155	123	175	205	126
Blacksmith Fk nr Hyrum	APR-JUL	41	55	65	135	75	89	48
Dunn Ck nr Park Valley	APR-JUL	0.16	1.15	4.00	129	5.70	8.60	3.10

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1302.0	413.2	420.3	---
HYRUM	15.3	10.4	10.9	10.4
PORCUPINE	11.3	6.7	10.5	4.4
WOODRUFF NARROWS	57.3	42.0	46.2	25.2
WOODRUFF CREEK	4.0	2.2	2.0	---

BEAR RIVER BASIN
Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
BEAR RIVER, UPPER	8	218	137
BEAR RIVER, LOWER	9	199	131
LOGAN RIVER	4	197	140
RAFT RIVER	1	149	134
BEAR RIVER BASIN	17	207	134

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

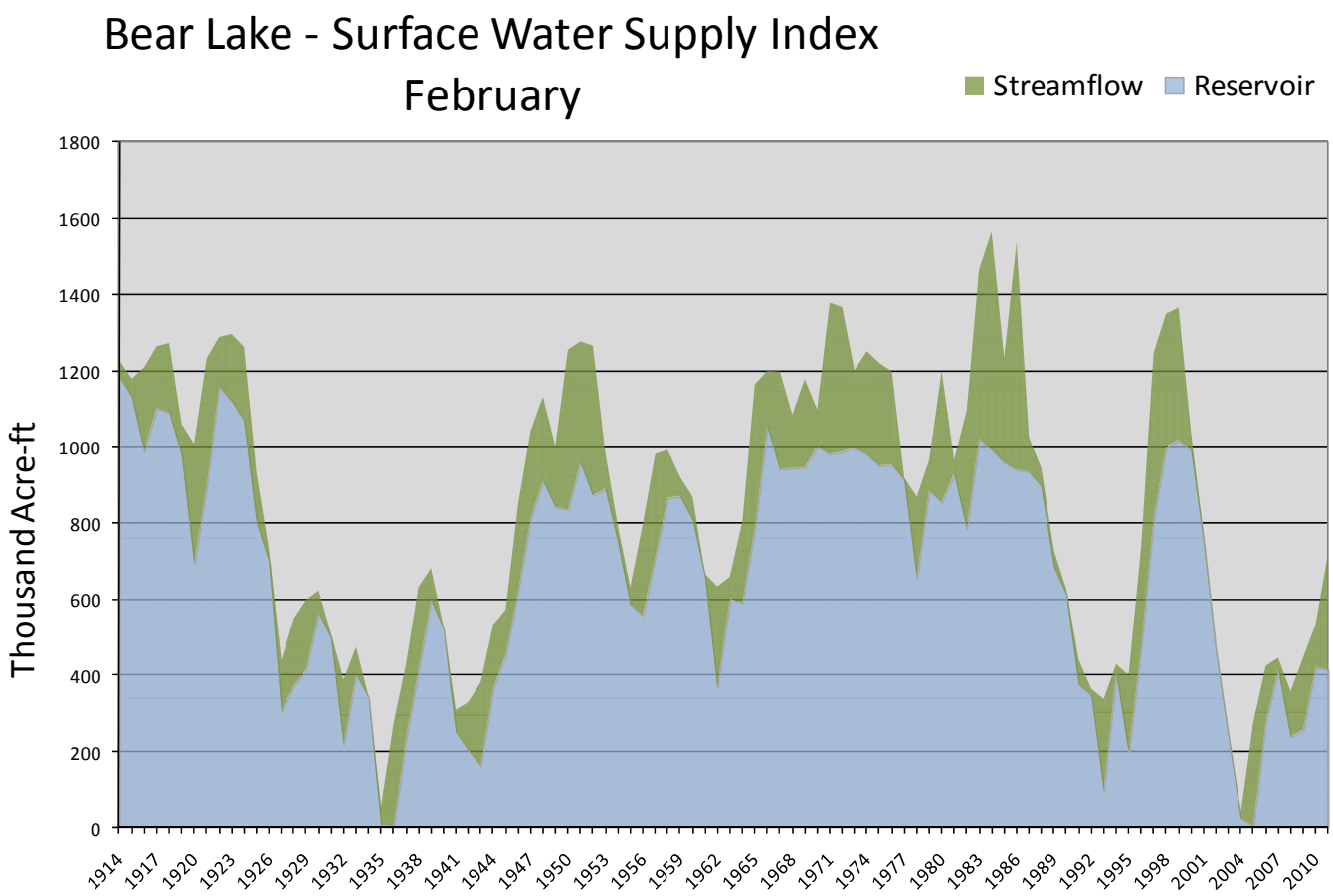
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

February 1, 2011

Surface Water Supply Index

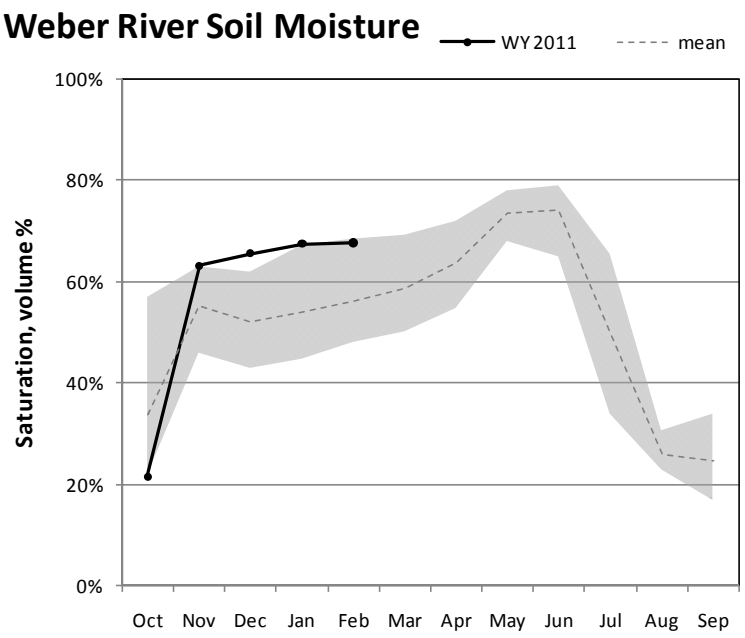
Basin or Region	January EOM* Bear Lake	April-July Forecast below Stewart Dam	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Bear River	**413**	**305**	**718**	**-0.88**	**39**	**39,61,89,26**

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



Weber and Ogden River Basins
February 1, 2011

Snowpacks on the Weber and Ogden Watersheds are much above average at 133% of normal, and 189% of last year. Individual sites range from 162% to 116% of average. January precipitation was below average at 82% bringing the seasonal accumulation (Oct-Jan) to 150% of average. Soil moisture levels in runoff producing areas are at 68% of saturation in the upper 2 feet of soil compared to 48% last year. Streamflow forecasts (April-July) range from 121% to 141% of average. Reservoir storage is at 72% of capacity, the same as last year. The Surface Water Supply Index is at 88% for the Weber River and 77% for the Ogden River indicating that overall water supply conditions are much above average.



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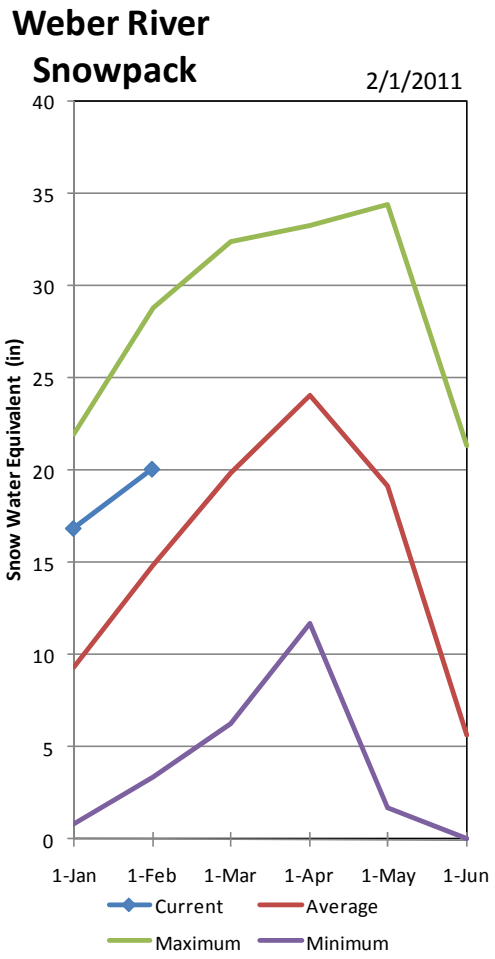
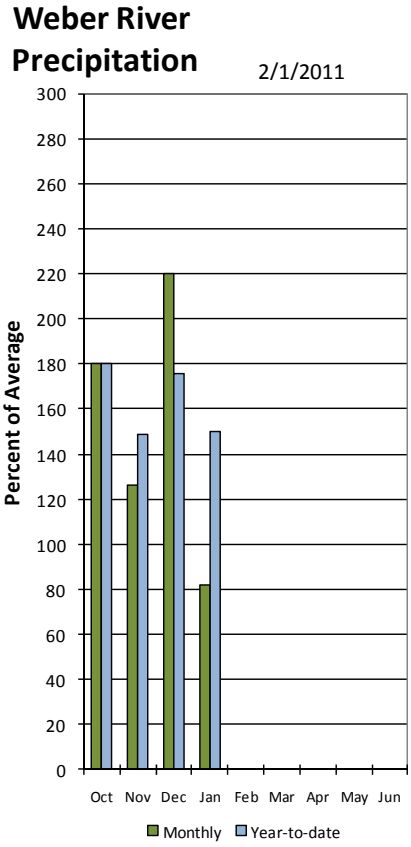
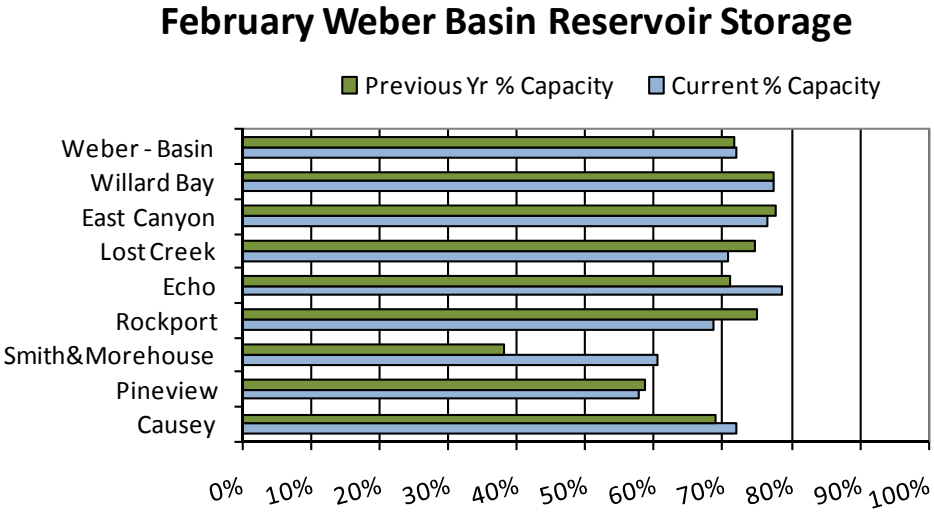






WEBER & OGDEN WATERSHEDS in Utah as of February 1, 2011

WEBER & OGDEN WATERSHEDS in Utah
Streamflow Forecasts - February 1, 2011

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Smith & Morehouse Res Inflow	APR-JUL	32	37	41	121	45	50	34
Weber R nr Oakley	APR-JUL	111	137	155	126	173	199	123
Rockport Res	APR-JUL	114	150	175	131	200	235	134
Weber R nr Coalville	APR-JUL	123	160	185	135	210	245	137
Chalk Ck at Coalville	APR-JUL	33	49	60	133	71	87	45
Echo Res Inflow	APR-JUL	139	199	240	134	280	340	179
Lost Ck Resv Inflow	APR-JUL	12.4	18.1	22	125	26	32	17.6
East Canyon Ck nr Jeremy Ranch	APR-JUL	10.1	14.8	18.0	127	21	26	14.2
East Canyon Ck nr Morgan	APR-JUL	23	33	40	129	47	57	31
Weber R at Gateway	APR-JUL	255	395	490	138	585	725	355
SF Ogden R nr Huntsville	APR-JUL	54	74	88	138	102	122	64
Pineview Res Inflow	APR-JUL	97	140	170	128	200	245	133
Centerville Ck	APR-JUL	1.16	1.48	1.70	133	1.92	2.20	1.28
	APR-JUL	1.16	1.48	1.70	133	1.92	2.20	1.28

WEBER & OGDEN WATERSHEDS in Utah
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CAUSEY	7.1	5.1	4.9	2.8
EAST CANYON	49.5	37.9	38.5	35.4
ECHO	73.9	58.2	52.6	50.2
LOST CREEK	22.5	15.9	16.8	14.0
PINEVIEW	110.1	63.6	64.7	51.7
ROCKPORT	60.9	41.8	45.7	34.3
WILLARD BAY	215.0	166.2	166.4	151.6

WEBER & OGDEN WATERSHEDS in Utah
Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OGDEN RIVER	4	184	125
WEBER RIVER	9	199	141
WEBER & OGDEN WATERSHEDS	13	193	135

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

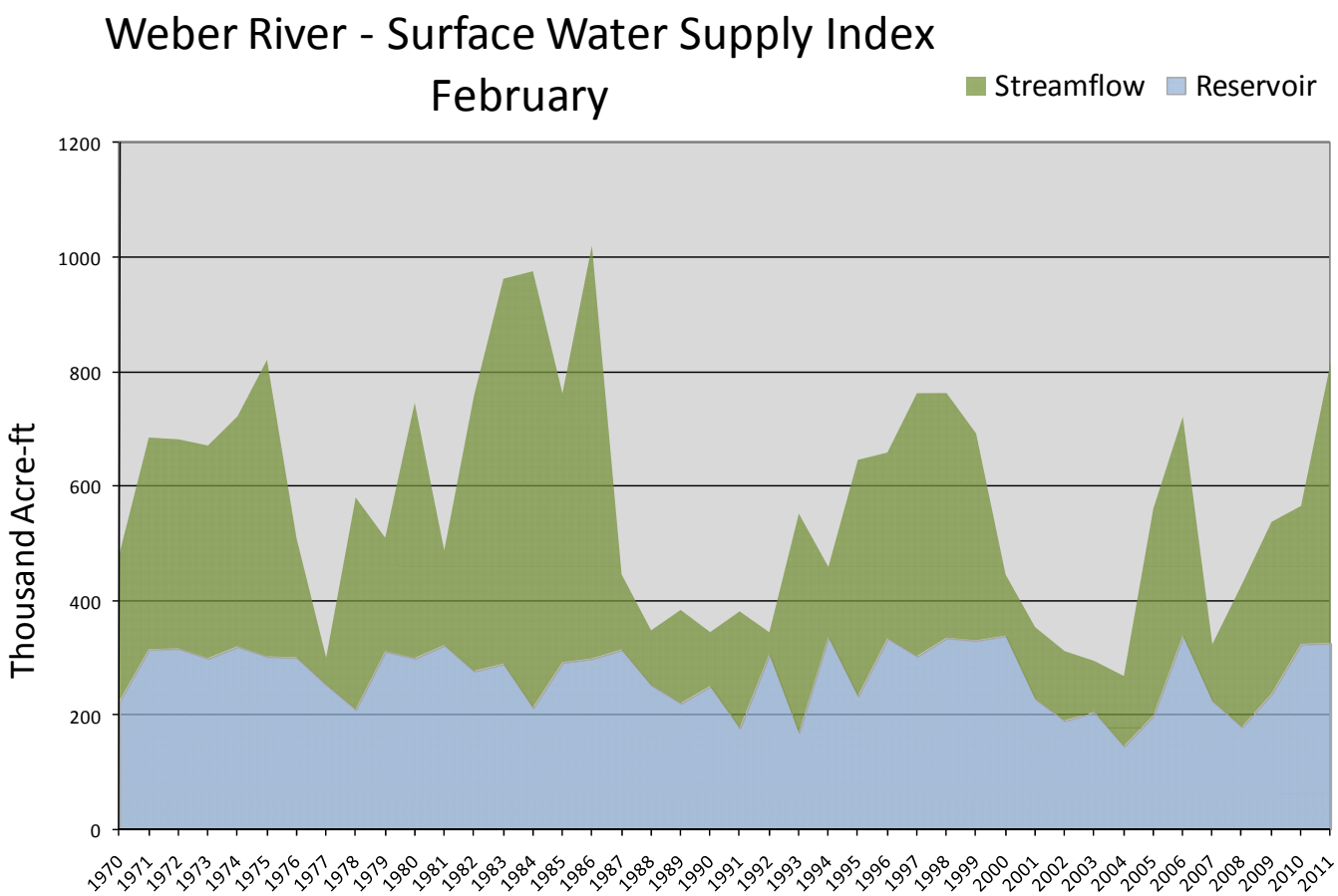
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

February 1, 2011

Surface Water Supply Index

Basin or Region	January EOM* Reservoirs	April-July Forecast Weber River at Gateway	Reservoirs + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Weber River	**325**	**490**	**815**	**3.20**	**88**	**97,98,75,83**

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

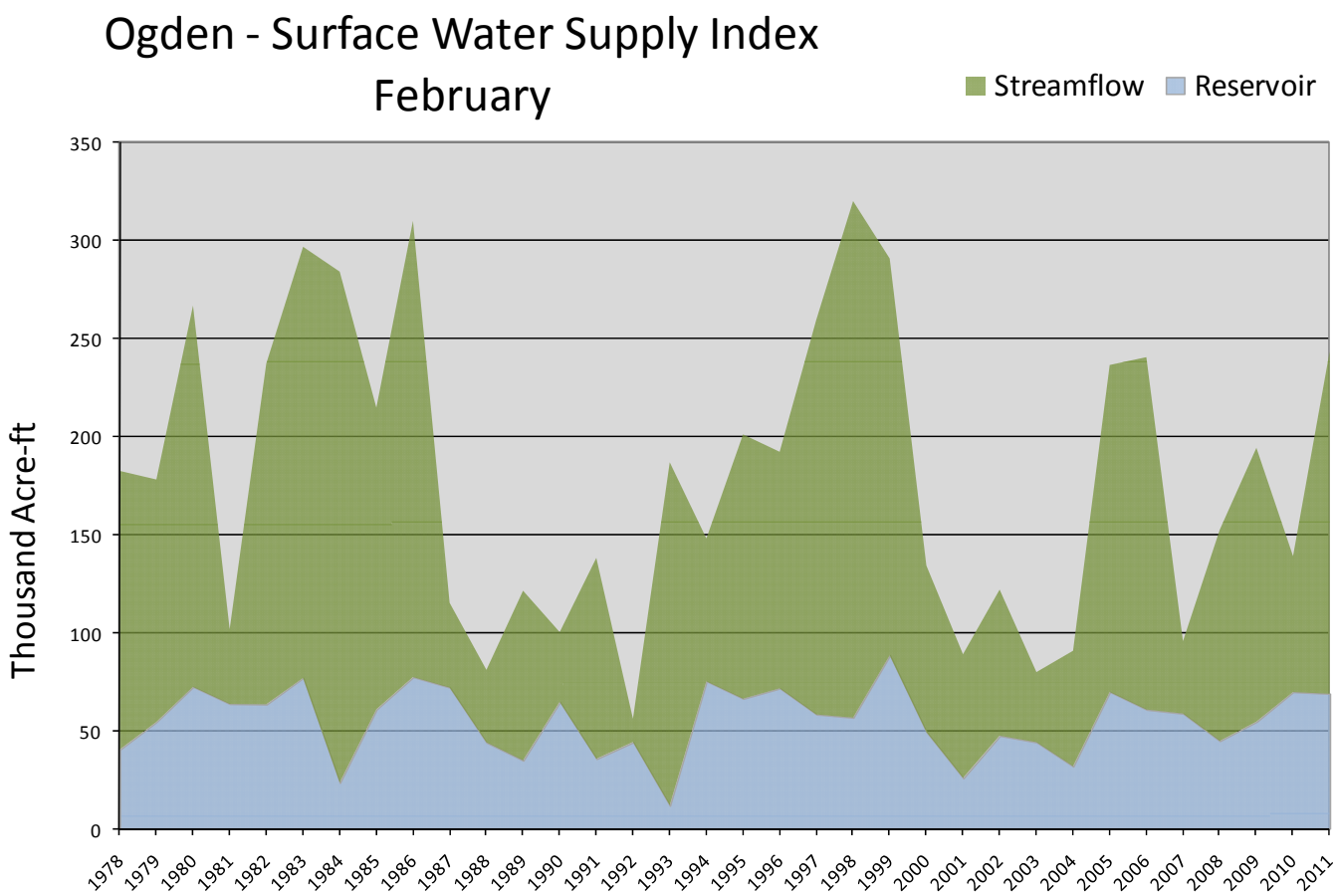


February 1, 2011

Surface Water Supply Index

Basin or Region	January EOM* Pine View & Causey	April-July Forecast Pineview Reservoir Inflow	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Ogden River	**69**	**175**	**244**	**2.26**	**77**	**82,06,97,80**

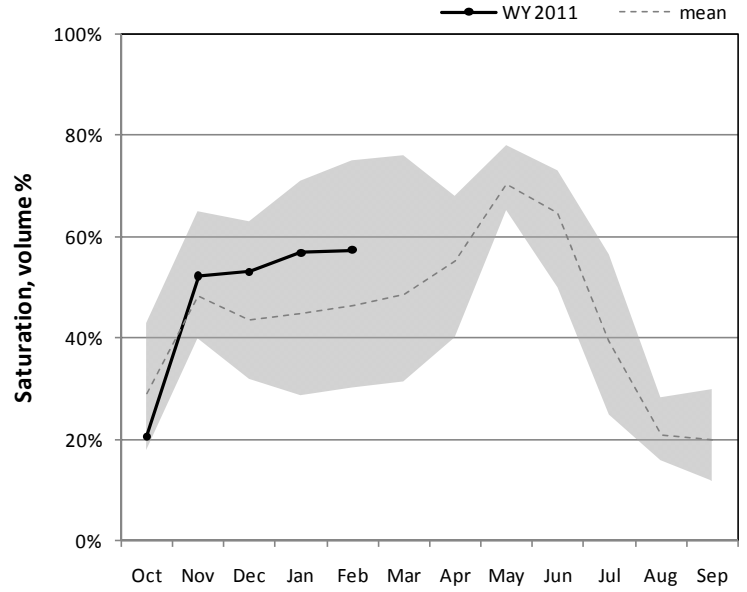
**EOM, end of month; # SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.*



Utah Lake, Jordan River & Tooele Valley Basins
February 1, 2011

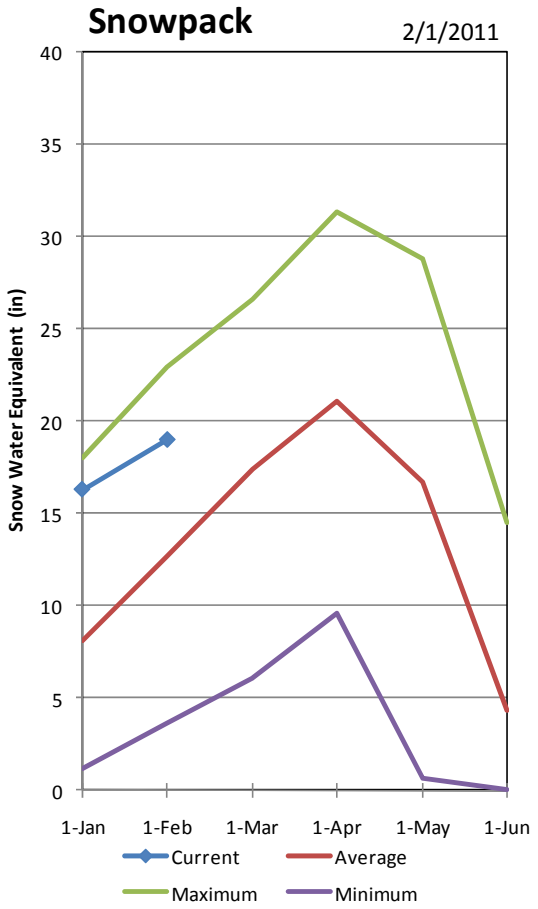
Snowpack over these basins are much above average at 149%, which is 196% of last year. Individual sites range from 106% at Dry Fork Snotel to 218% of average at Mining Fork Snotel. January precipitation was much below average at 62%, bringing the seasonal accumulation (Oct-Jan) to 155% of average. Average soil moisture in runoff producing areas is estimated at 57% of saturation in the upper 2 feet of soil compared to 27% at this time last year. Reservoir storage is at 89% of capacity, 1% lower than last year. Streamflow forecasts (Apr-July) range from 116% to 154% of average. The Surface Water Supply Index below Deer Creek reservoir is 82%, indicating general water supply conditions are much above average.

Jordan / Provo River Soil Moisture

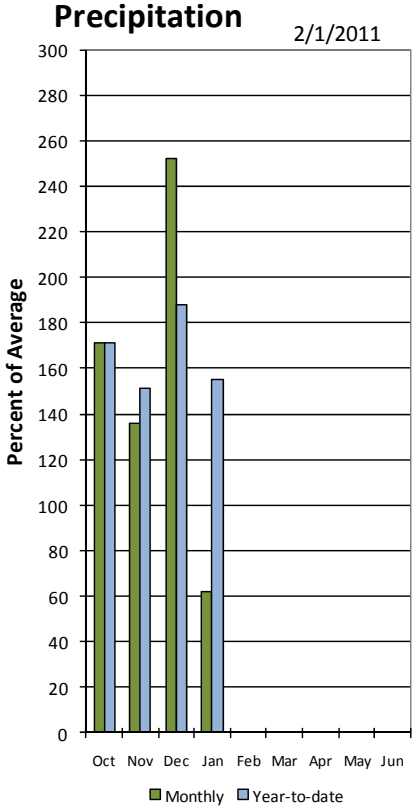


Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content. The gray area represents the range in saturation values since 2005.

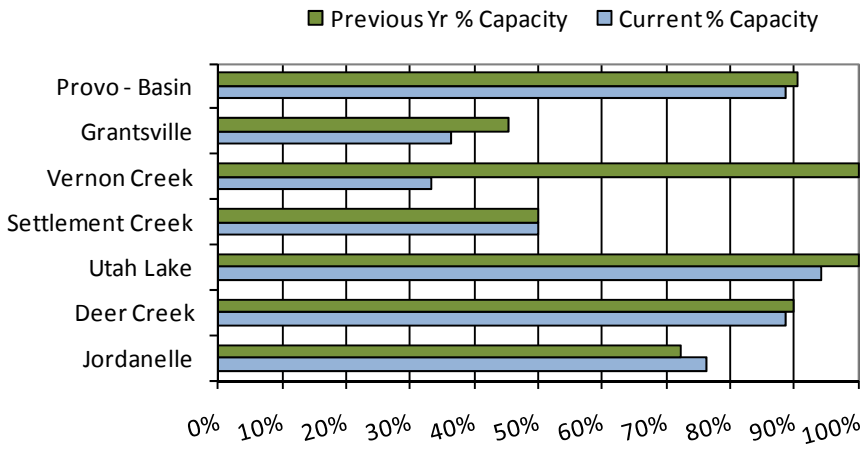
Jordan/Provo River Snowpack



Jordan/Provo River Precipitation



February Provo River Reservoir Storage



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY as of February 1, 2011

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Streamflow Forecasts - February 1, 2011

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Salt Ck at Nephi	APR-JUL	3.80	9.90	14.00	149	18.10	24.00	9.40
Spanish Fk at Castilla	APR-JUL	27	79	115	149	151	205	77
Provo River nr Woodland	APR-JUL	91	119	140	136	163	200	103
Provo River nr Hailstone	APR-JUL	97	127	150	138	175	215	109
Provo R bl Deer Ck Dam	APR-JUL	136	162	180	143	198	225	126
American Fk ab Upper Powerplant	APR-JUL	29	39	45	141	51	61	32
Utah Lake Inflow	APR-JUL	42	285	520	160	660	1020	325
W Canyon Ck nr Cedar Fort	APR-JUL	1.69	2.50	3.00	125	3.50	4.30	2.40
L Cottonwood Ck nr SLC	APR-JUL	34	42	47	118	53	62	40
Big Cottonwood Ck nr SLC	APR-JUL	31	39	44	116	49	57	38
Mill Ck nr SLC	APR-JUL	4.60	6.80	8.40	120	10.00	12.20	7.00
Parley's Ck nr SLC	APR-JUL	10.5	16.2	20	120	24	29	16.7
Dell Fk nr SLC	APR-JUL	1.93	5.70	8.20	121	10.70	14.50	6.80
Emigration Ck nr SLC	APR-JUL	1.84	4.00	5.40	120	6.80	9.00	4.50
City Ck nr SLC	APR-JUL	7.00	9.80	11.70	135	13.60	16.40	8.70
Vernon Ck nr Vernon	APR-JUL	0.45	1.37	2.00	135	2.60	3.60	1.48
Settlement Ck nr Tooele	APR-JUL	1.27	2.30	3.00	143	3.70	4.70	2.10
S Willow Ck nr Grantsville	APR-JUL	2.80	3.90	4.60	142	5.30	6.40	3.23

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DEER CREEK	149.7	132.9	134.3	104.8
GRANTSVILLE	3.3	1.2	1.5	1.8
SETTLEMENT CREEK	1.0	0.5	0.5	0.6
STRAWBERRY-ENLARGED	1105.9	976.5	975.3	642.2
UTAH LAKE	870.9	820.0	871.5	790.9
VERNON CREEK	0.6	0.2	0.6	---

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
PROVO RIVER & UTAH LAKE	7	205	150
PROVO RIVER	4	216	165
JORDAN RIVER & GSL	6	189	142
TOOELE & RUSH VALLEY WATE	3	217	171
UTAH LAKE/JORDAN R./TOOEL	16	199	150

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

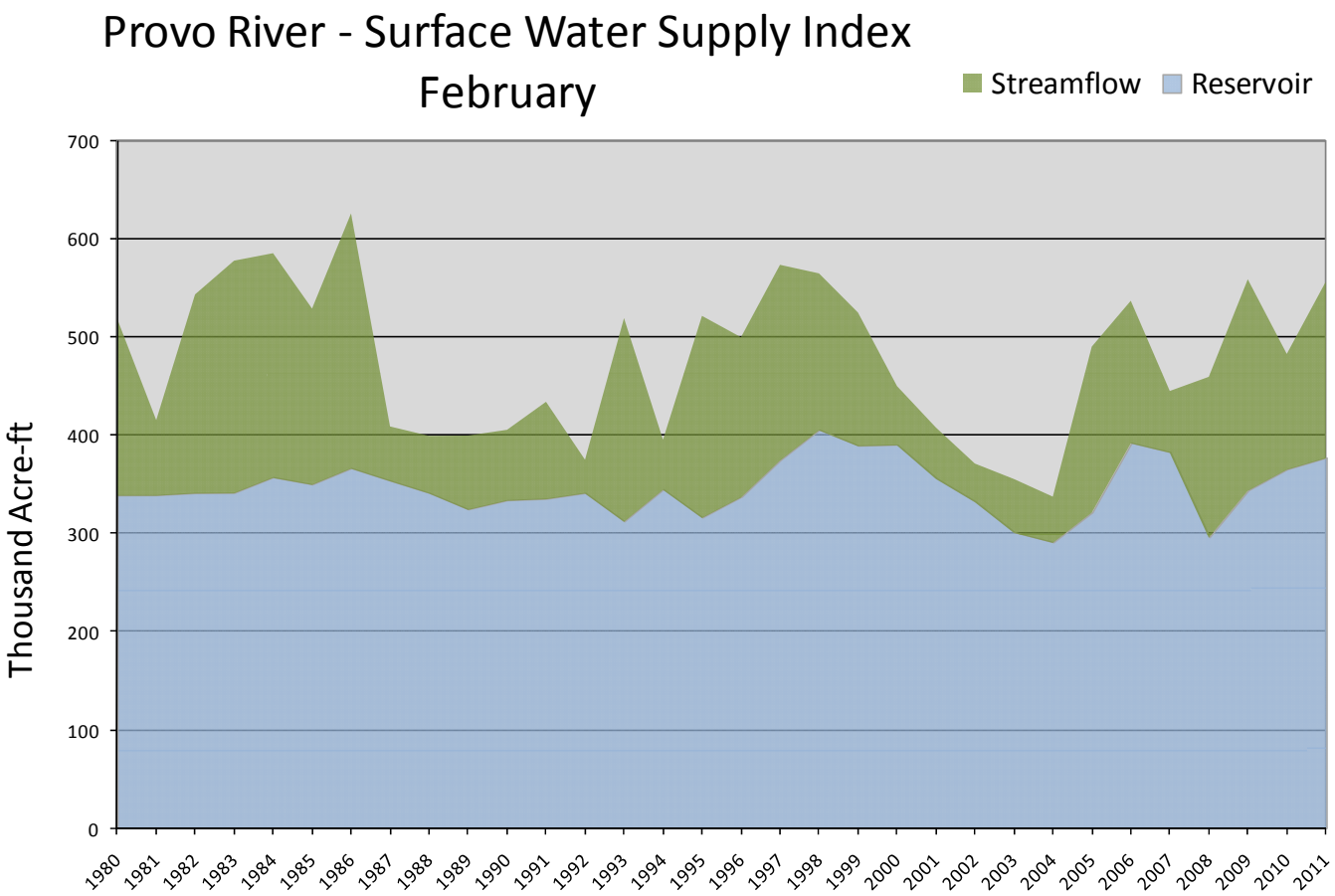
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

February 1, 2011

Surface Water Supply Index

Basin or Region	January EOM* Deer Creek, Jordanelle	April - July Forecast Provo River below Deer Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Provo	**377**	**180**	**557**	**2.65**	**82**	**06, 82, 97, 98**

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

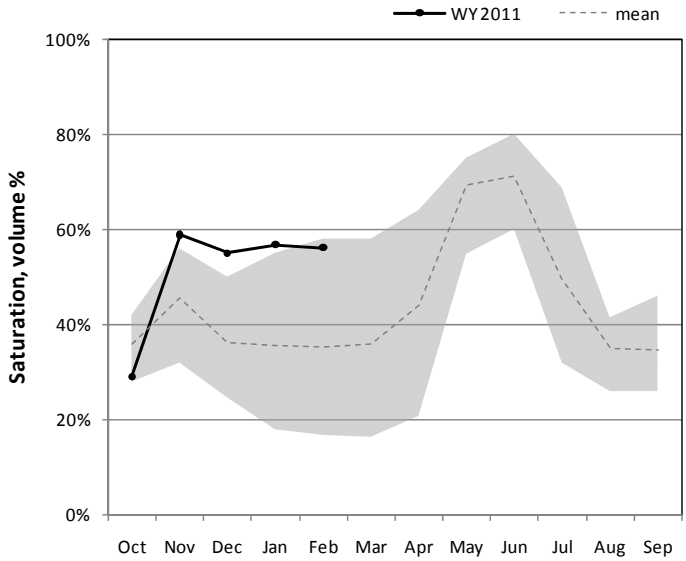


Uintah Basin and Dagget SCDs

February 1, 2011

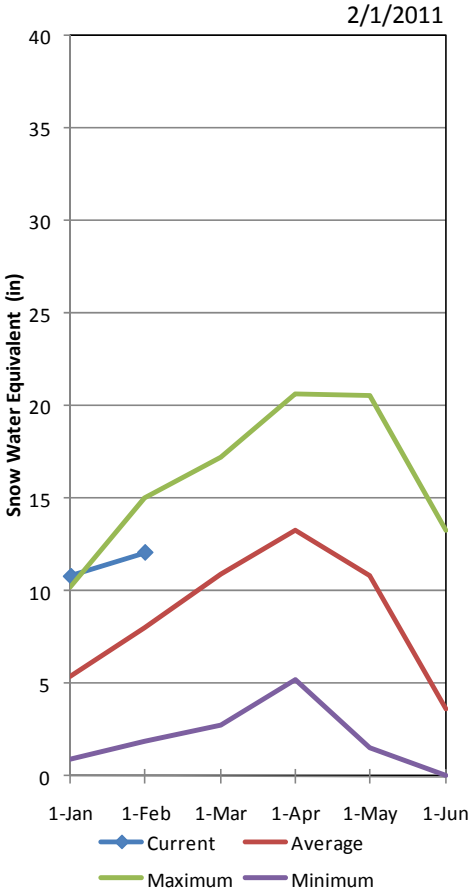
Snowpack across the Uintas is much above average at 151% which is 188% of last year. Individual sites on the North Slope range from 98% to 140% and on the South Slope range from 135% to 185% of average. Precipitation during January was much below average at 52% bringing the seasonal accumulation (Oct-Jan) to 162%. Soil moisture values in runoff producing area are at 56% of saturation in the upper 2 feet of soil compared to 17% last year. Reservoir storage is at 84% of capacity, 1% less than last year. Streamflow forecasts (April-July) range from 99% to 174% of average. The Surface Water Supply Index for the western area is 83% and for the eastern area it is 70% indicating much above normal conditions on the west side and eastern area. General water supply conditions are much above average.

Uintah Basin Soil Moisture

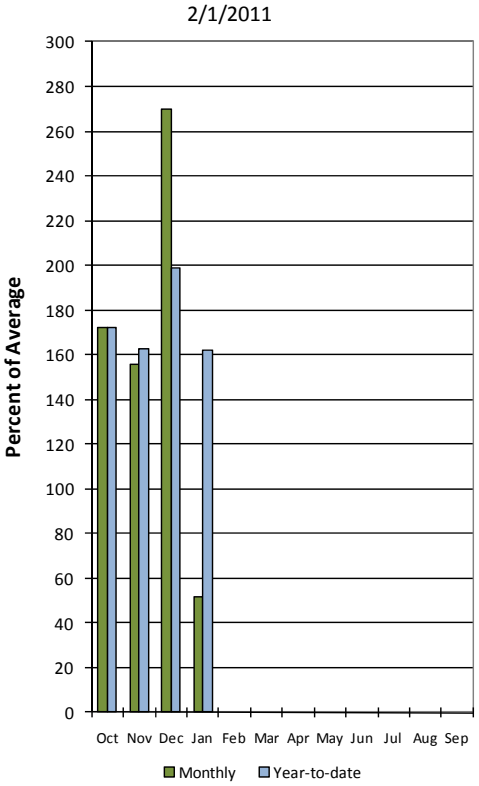


Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content. The gray area represents the range in saturation values since 2005.

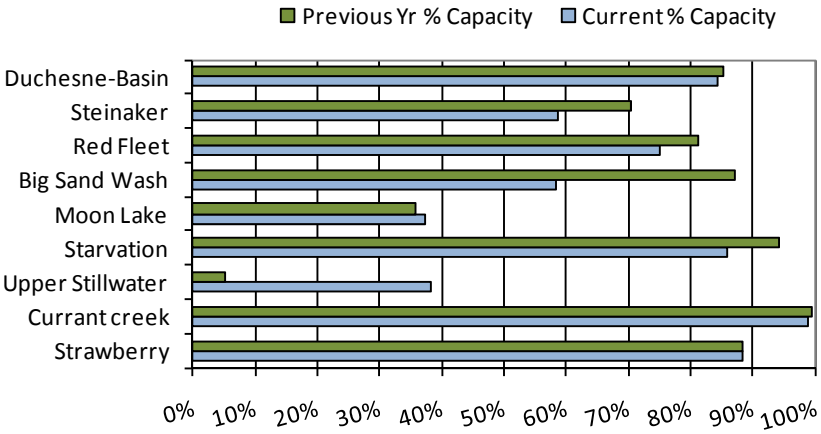
Uinta Snowpack



Uintah Precipitation



February Uintah Basin Reservoir Storage



UINTAH BASIN & DAGGET SCD'S as of February 1, 2011

UINTAH BASIN & DAGGET SCD'S
Streamflow Forecasts - February 1, 2011

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Blacks Fk nr Robertson	APR-JUL	74	92	105	111	119	141	95
EF of Smiths Fork nr Robertson (2)	APR-JUL	21	27	32	110	37	45	29
Flaming Gorge Reservoir Inflow (2)	APR-JUL	735	985	1180	99	1390	1730	1190
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	17.0	22	25	119	29	35	21
Ashley Ck nr Vernal	APR-JUL	39	51	60	115	70	85	52
WF Duchesne R at VAT Diversion	APR-JUL	22	28	32	171	37	44	18.7
Duchesne R nr Tabiona (2)	APR-JUL	95	118	135	129	153	183	105
Upper Stillwater Reservoir Inflow (2	APR-JUL	86	100	110	134	121	137	82
Rock Ck nr Mountain Home (2)	APR-JUL	92	108	120	135	132	152	89
Duchesne R ab Knight Diversion (2)	APR-JUL	178	215	245	130	275	325	188
Strawberry R nr Soldier Springs (2)	APR-JUL	63	84	100	170	117	145	59
Currant Ck Reservoir Inflow (2)	APR-JUL	25	33	40	160	47	59	25
Strawberry R nr Duchesne (2)	APR-JUL	127	169	200	165	235	290	121
Lake Fork R ab Moon Lake Reservoir	APR-JUL	77	90	100	147	110	126	68
Yellowstone R nr Altonah	APR-JUL	66	80	90	145	101	117	62
Duchesne R at Myton (2)	APR-JUL	250	360	445	171	540	695	260
Uinta R bl Powerplant Diversion nr N	APR-JUL	66	93	112	142	131	158	79
Whiterocks R nr Whiterocks	APR-JUL	51	65	75	134	86	104	56
Duchesne R nr Randlett (2)	APR-JUL	330	445	565	174	700	890	324

UINTAH BASIN & DAGGET SCD'S
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
FLAMING GORGE	3749.0	3111.0	3210.0	2966.0
MOON LAKE	49.5	13.4	12.8	27.9
RED FLEET	25.7	19.3	20.9	18.0
STEINAKER	33.4	19.6	23.5	21.6
STARVATION	165.3	141.7	155.4	132.3
STRAWBERRY-ENLARGED	1105.9	976.5	975.3	642.2

UINTAH BASIN & DAGGET SCD'S
Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
UPPER GREEN RIVER in UTAH	6	151	119
ASHLEY CREEK	2	131	131
BLACK'S FORK RIVER	2	182	116
SHEEP CREEK	1	140	98
DUCHESNE RIVER	11	201	163
LAKE FORK-YELLOWSTONE CRE	4	213	172
STRAWBERRY RIVER	4	205	154
UINTAH-WHITEROCKS RIVERS	2	177	158
UINTAH BASIN & DAGGET SCD	17	186	151

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

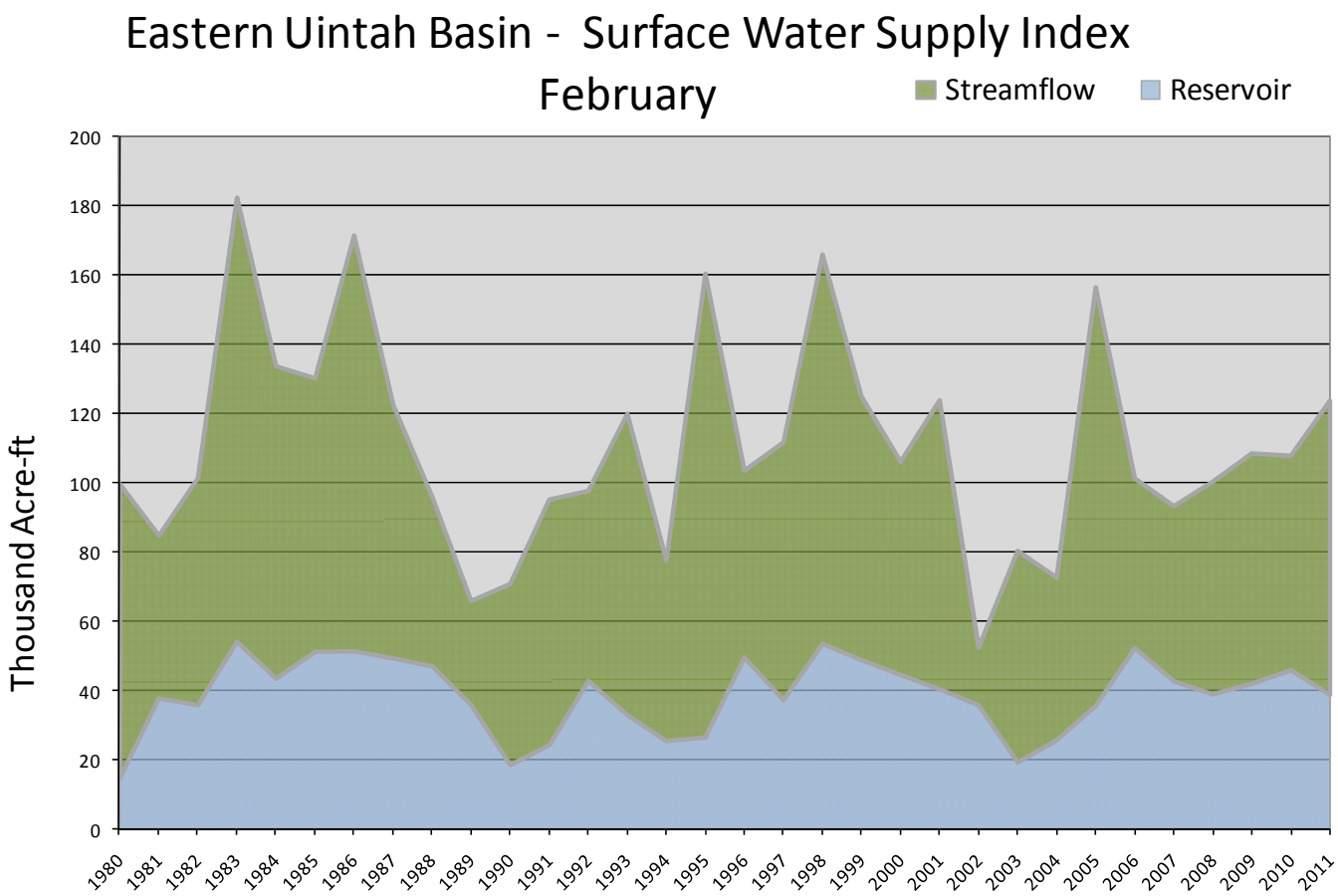
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

February 1, 2011

Surface Water Supply Index

Basin or Region	January EOM* Red Fleet & Steinaker	April-July Forecast Big Brush & Ashley Creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Eastern Uintah	**38.9**	**85.0**	**124**	**1.64**	**70**	**93, 87, 01, 99**

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

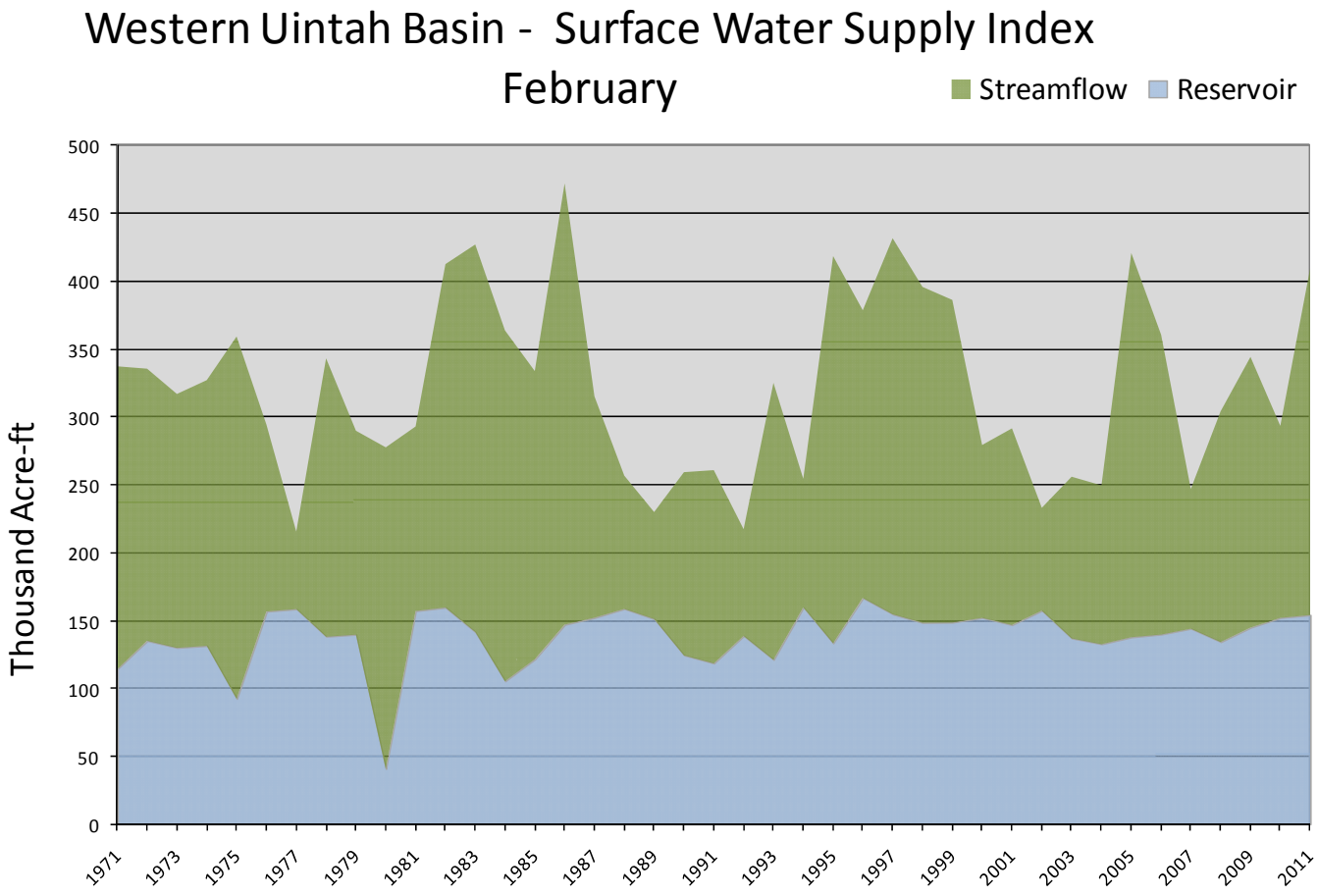


February 1, 2011

Surface Water Supply Index

Basin or Region	January EOM* Starvation & Upper Stillwater	April-July Forecast Rock Creek & Duchesne River	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Western Uintah	**154**	**255**	**409**	**2.78**	**83**	**99, 98, 82, 95**

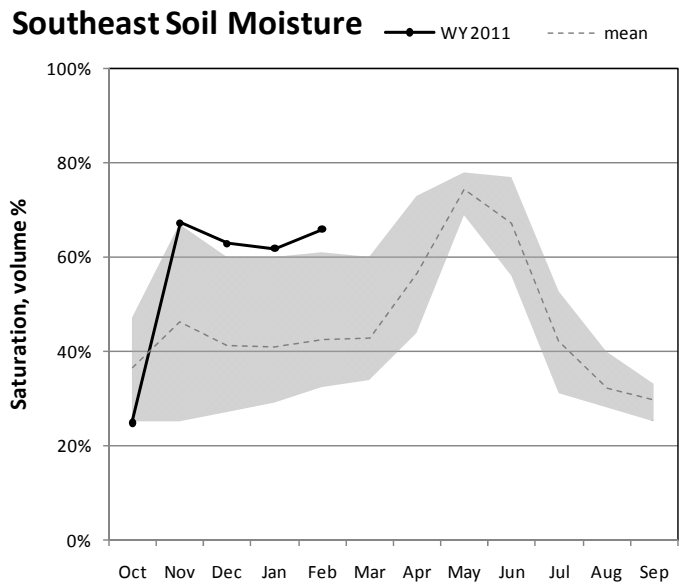
**EOM, end of month; # SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.*



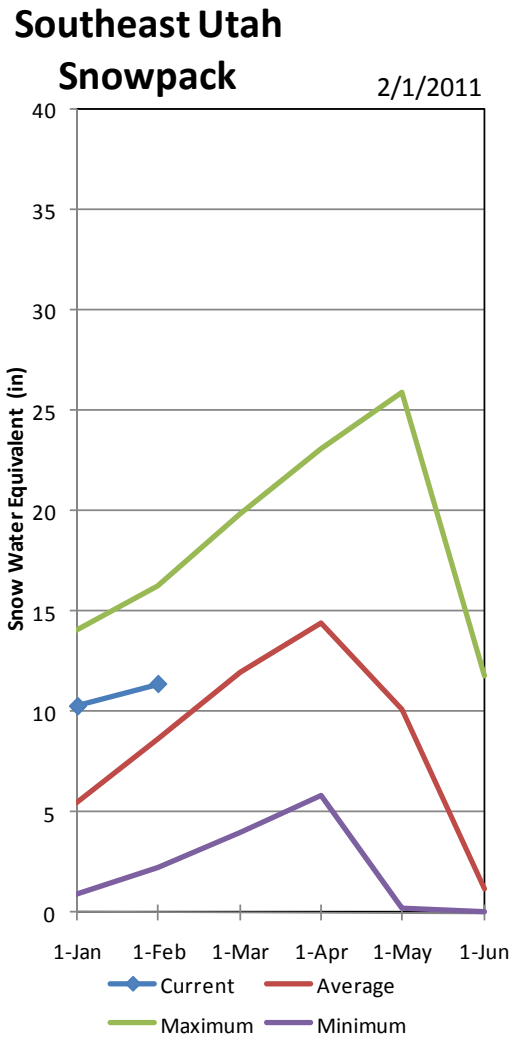
Southeast - Carbon, Emery, Wayne, Grand and San Juan Counties

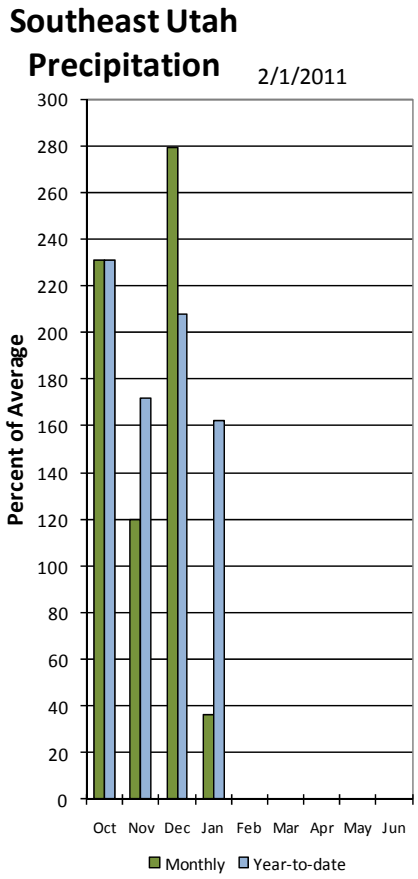
February 1, 2011

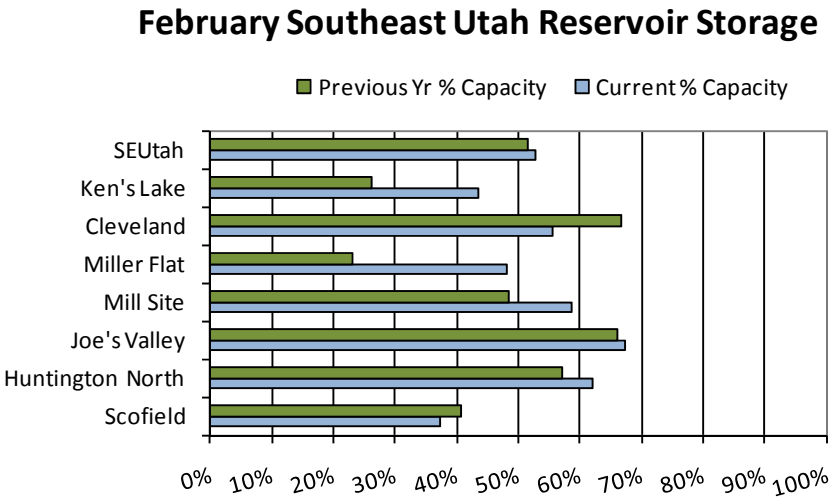
Snowpacks in this region are much above normal at 132% of average, about 143% of last year. Individual sites range from 84% Donkey Reservoir Snotel to 178% at East Willow Creek Snotel of average. Precipitation during January was much above average at 36%, bringing the seasonal accumulation (Oct-Jan) to 162% of normal. Soil moisture estimates in runoff producing areas are at 66% of saturation in the upper 2 feet of soil, compared to 32% last year at this time. Forecast streamflows (April-July) range from 110% to 162% of average. Reservoir storage is at 53% of capacity, 1% higher than last year at this time. Surface Water Supply Indices for the area are: Price 53%, Joe's Valley 79%, Ferron Creek 78%, and Moab 76%. General runoff and water supply conditions are much above average in the Price, Joe's Valley, Ferron Creek areas, and Moab area.



Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content. The gray area represents the range in saturation values since 2005.







CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.
Streamflow Forecasts - February 1, 2011

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Fish Creek ab Reservoir nr Scofield	APR-JUL	29	39	45	140	51	61	32
Price R nr Scofield Reservoir (2)	APR-JUL	48	60	70	156	81	98	45
White R bl Tabbyune Ck	APR-JUL	19.7	24	28	162	32	38	17.3
Green R at Green River, UT (2)	APR-JUL	2483	3289	3900	123	4564	5635	3170
Electric Lake Inflow (2)	APR-JUL	13.6	17.2	20	127	23	28	15.7
Huntington Ck nr Huntington (2)	APR-JUL	42	54	63	129	73	88	49
Joe's Valley Reservoir Inflow (2)	APR-JUL	46	60	70	121	81	99	58
Ferron Ck (Upper Station) nr Ferron	APR-JUL	35	44	50	128	57	67	39
Seven Mile Ck nr Fish Lake	APR-JUL	5.00	7.40	9.00	129	10.60	13.00	7.00
Colorado R nr Cisco (2)	APR-JUL	3550	4550	5370	116	6260	7500	4650
Mill Ck at Sheley Tunnel nr Moab	APR-JUL	2.90	4.00	5.00	100	6.10	8.00	5.00
Muddy Ck nr Emery	APR-JUL	20	26	30	151	35	42	19.9
Pine Ck nr Escalante	APR-JUL	1.00	1.91	2.70	113	3.60	5.20	2.40
South Ck ab Lloyd's Reservoir nr Mon	MAR-JUL	1.03	1.56	2.00	145	2.50	3.40	1.38
San Juan R nr Bluff (2)	APR-JUL	650	955	1130	92	1320	1550	1230

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNTINGTON NORTH	4.2	2.6	2.4	2.8
JOE'S VALLEY	61.6	41.4	40.7	41.2
KEN'S LAKE	2.3	0.9	0.6	1.1
MILL SITE	16.7	9.8	8.1	7.8
SCOFIELD	65.8	24.6	26.7	33.8

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.
Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
PRICE RIVER	3	197	141
SAN RAFAEL RIVER	3	172	122
MUDDY CREEK	1	182	154
FREMONT RIVER	3	99	108
LASAL MOUNTAINS	1	98	106
BLUE MOUNTAINS	1	98	158
WILLOW CREEK	1	100	178
SOUTHEASTERN UTAH	13	146	132

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

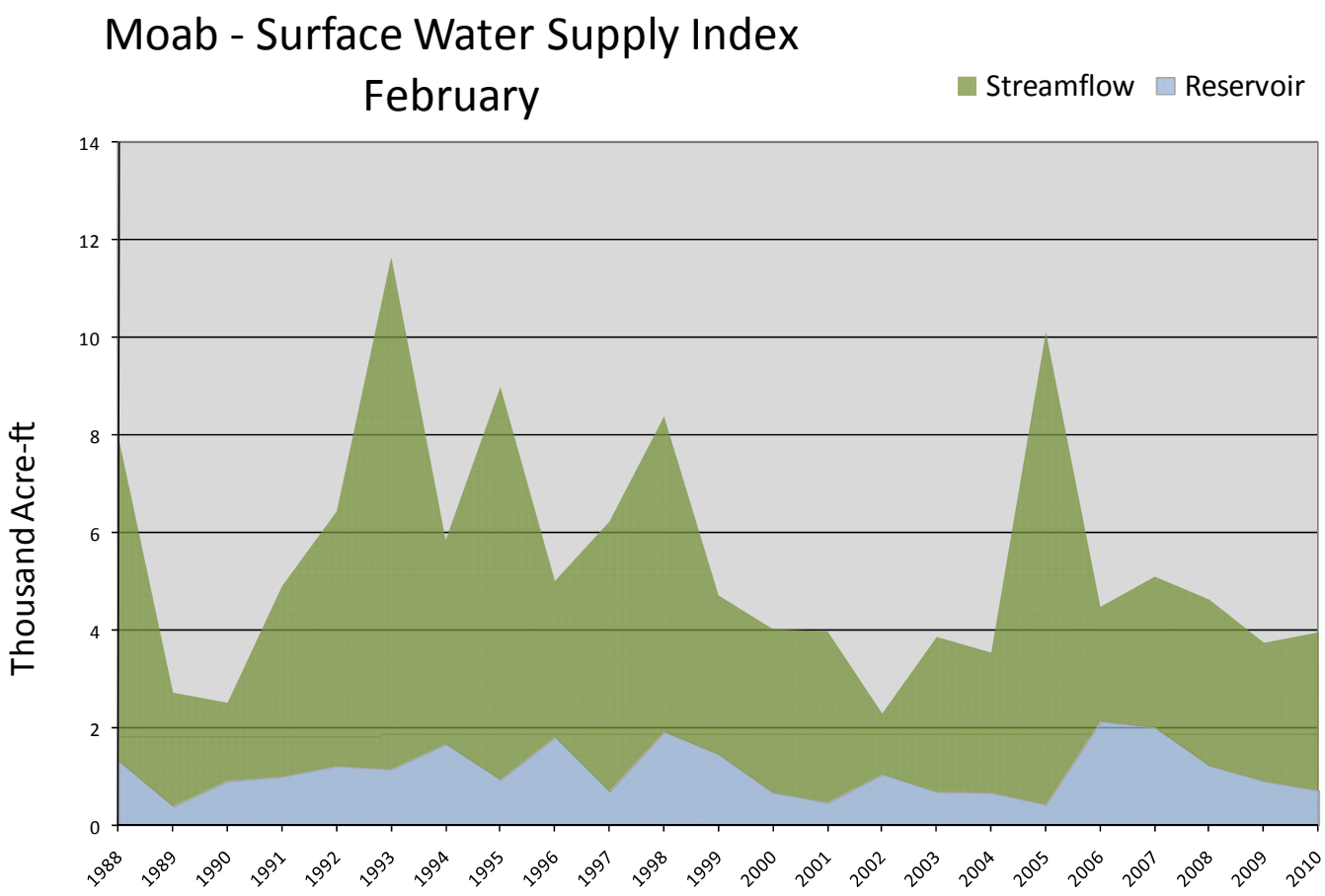
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

February 1, 2011

Surface Water Suply Index

Basin or Region	January EOM* Ken's Lake Reservoir	April-July Forecast Mill Creek at Sheley	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Moab	**1.0**	**5.5**	**6.5**	**2.17**	**76**	**97, 92, 88, 98**

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

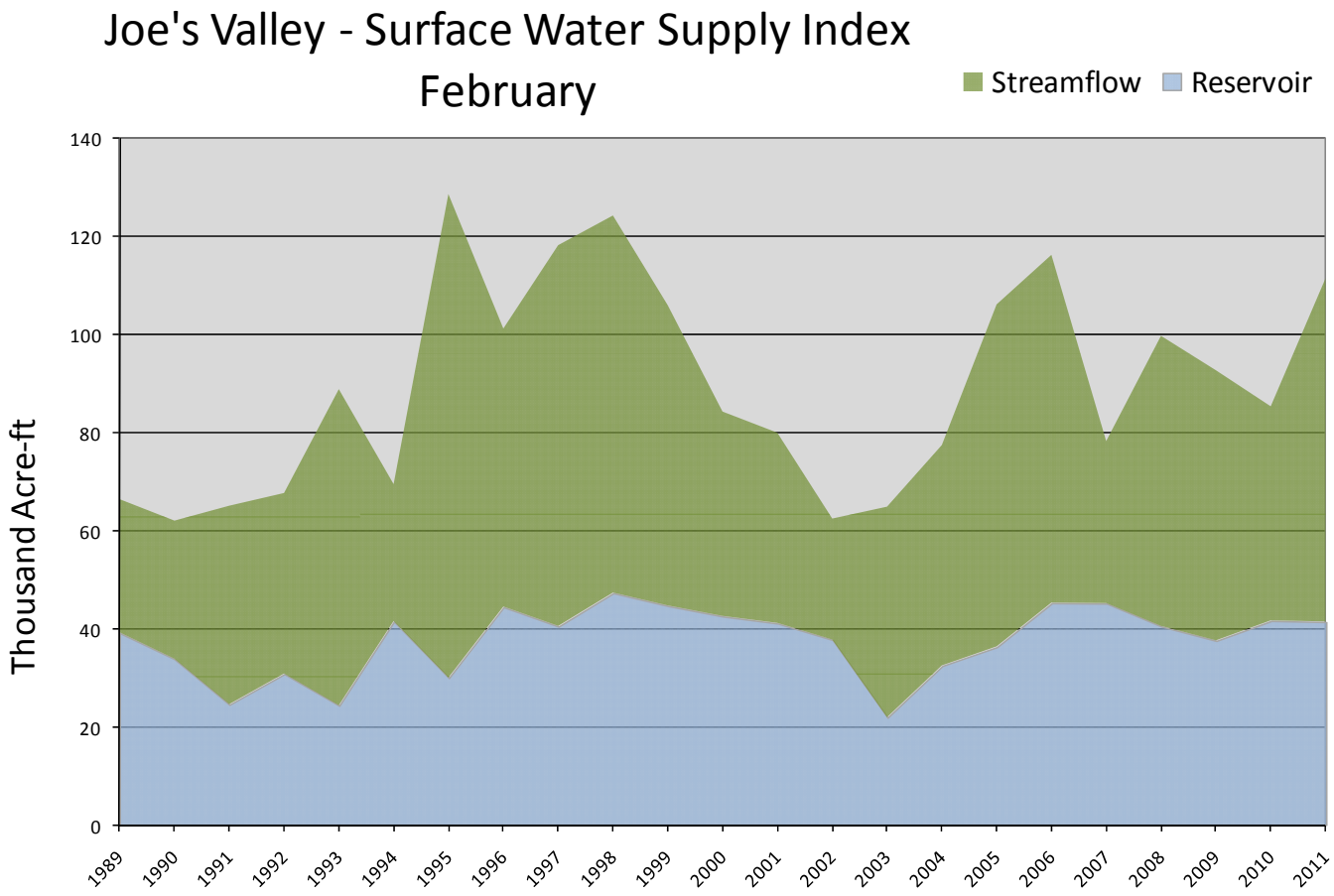


February 1, 2011

Surface Water Supply Index

Basin or Region	January EOM* Joe's Valley	April-July Forecast Inflow to Joe's Valley	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Joe's Valley	**41.4**	**70.0**	**111**	**2.43**	**79**	**99, 05, 06, 97**

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

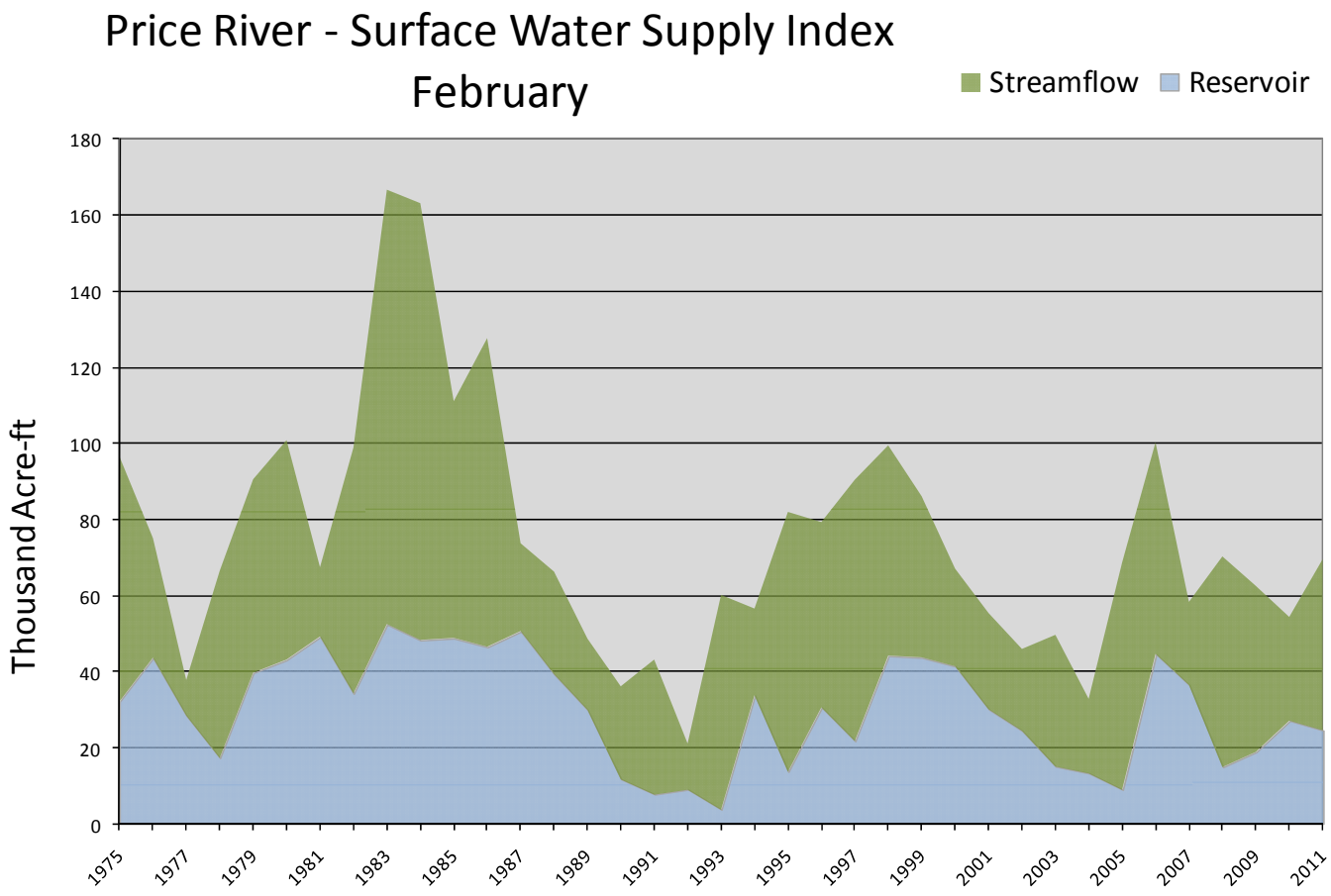


February 1, 2011

Surface Water Availability Index

Basin or Region	January EOM* Scofield Reservoir	April-July Forecast @ Scofield	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Price River	**24.6**	**45.0**	**69.6**	**0.22**	**53**	**81, 05, 08, 07**

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

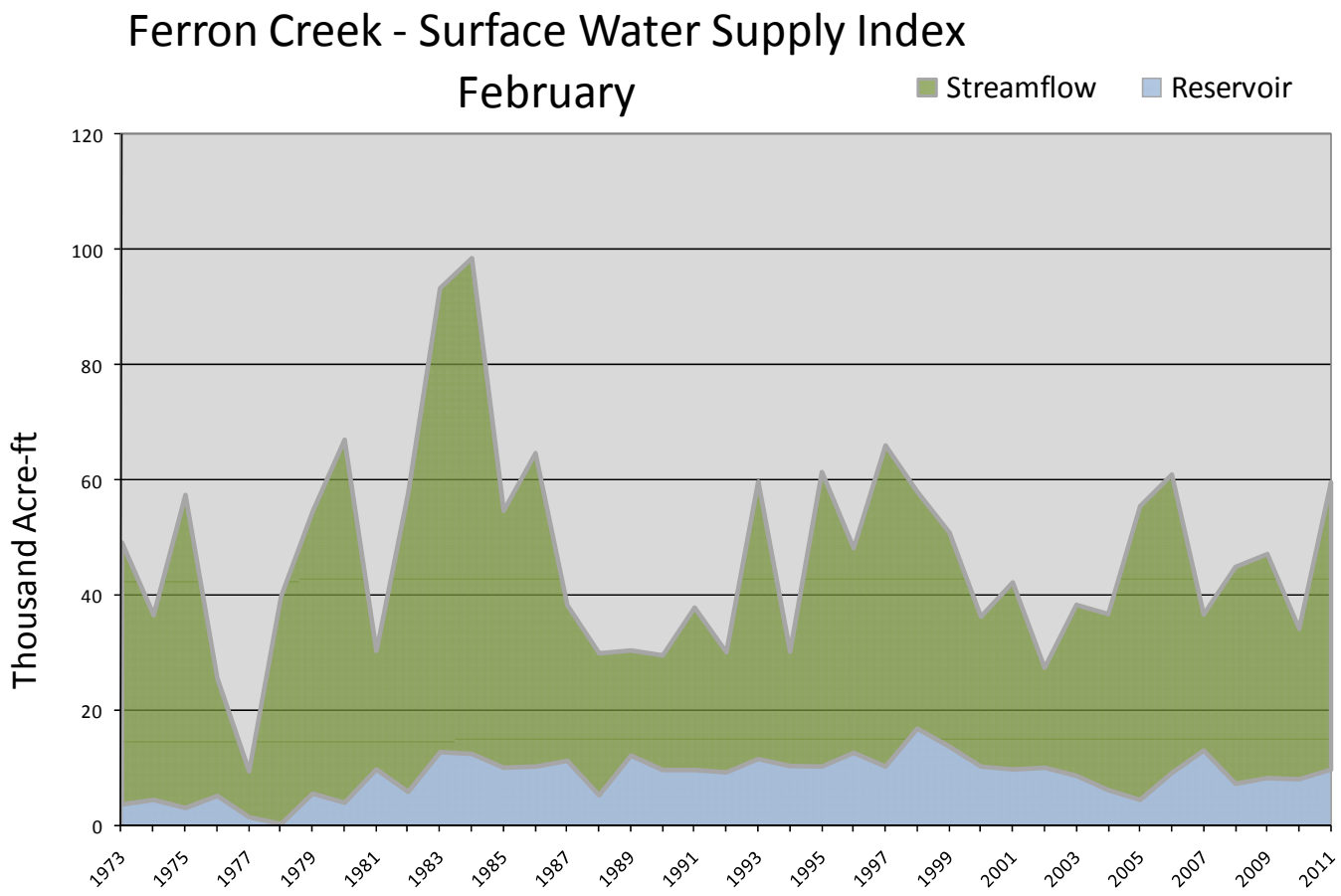


February 1, 2011

Surface Water Supply Index

Basin or Region	January EOM* Millsite Reservoir	April-July Forecast Ferron creek	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Ferron Creek	**9.8**	**50.0**	**59.8**	**2.29**	**78**	**82, 98, 93, 06**

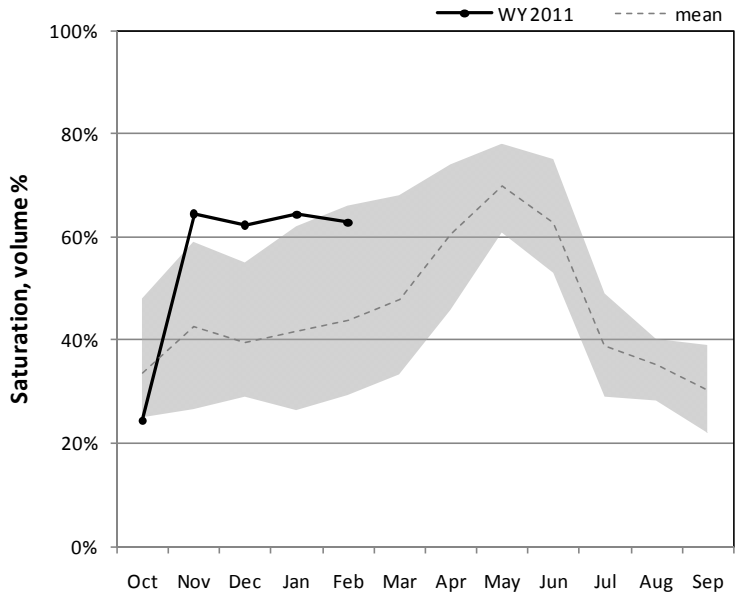
**EOM, end of month; # SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.*



Sevier and Beaver River Basins
February 1, 2011

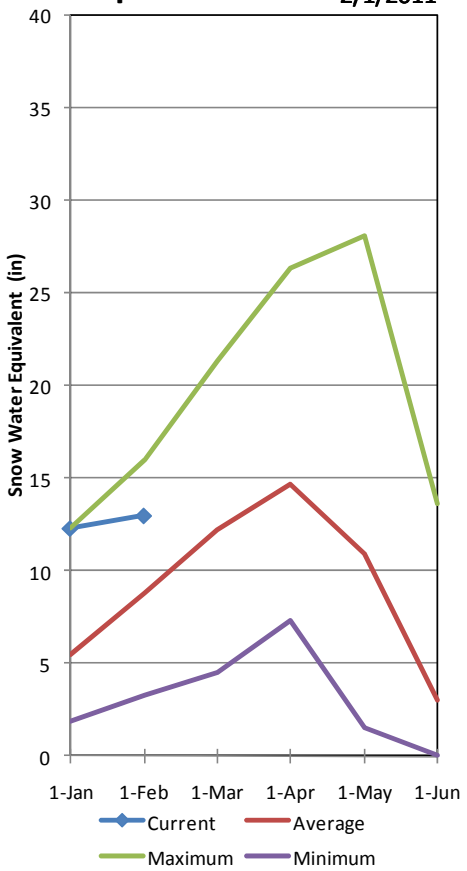
Snowpacks on the Sevier River Basin are much above normal at 148% of average, compared to 133% last year. Individual sites range from 104% at Pickle Keg Springs to 215% of average at Harris Flat. Precipitation during January was much below average at 48% of normal, bringing the seasonal accumulation (Oct-Jan) to 191% of average. Soil moisture estimates in runoff producing areas are at 63% of saturation in the upper 2 feet of soil compared to 29% last year. Streamflow forecasts range from 137% to 227% of average. Reservoir storage is at 43% of capacity, 10% more than last year. Surface Water Supply Indices are: Upper Sevier 72%, Lower Sevier 81% and Beaver 88%. Water supply conditions are much above average on the upper Sevier, lower Sevier and the Beaver River watersheds.

Sevier / Beaver River Soil Moisture

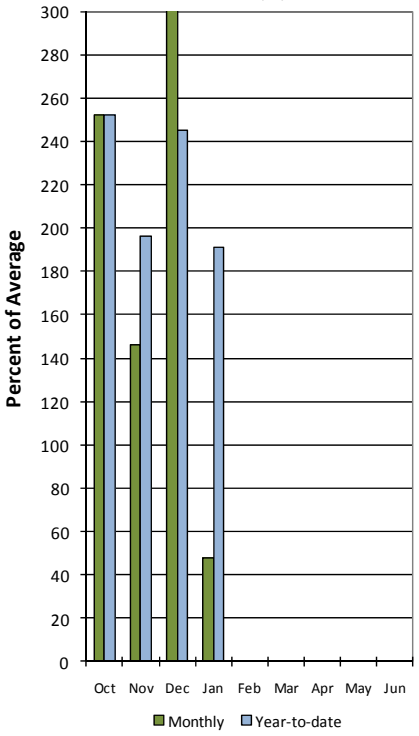


Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content. The gray area represents the range in saturation values since 2005.

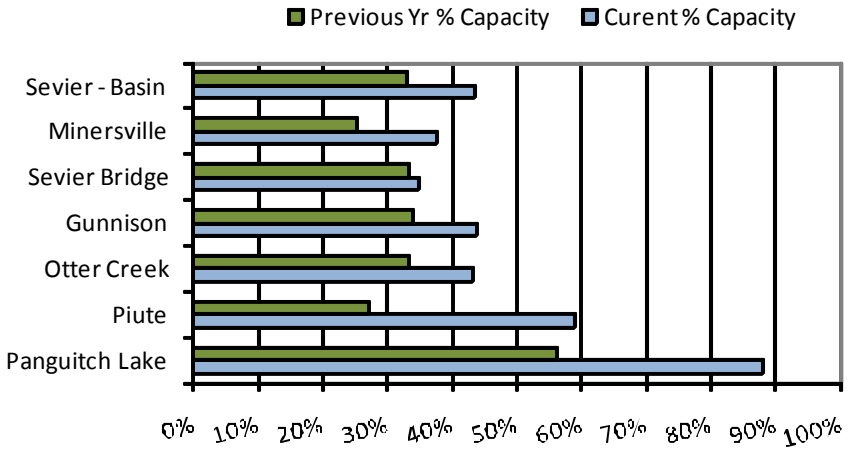
Sevier River Snowpack



Sevier River Precipitation



January Sevier River Reservoir Storage



SEVIER & BEAVER RIVER BASINS as of February 1, 2011

SEVIER & BEAVER RIVER BASINS
Streamflow Forecasts - February 1, 2011

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Mammoth Ck nr Hatch	APR-JUL	3.1	20	45	175	70	106	26
Sevier R at Hatch	APR-JUL	76	90	100	182	110	124	55
Sevier R nr Kingston	APR-JUL	25	46	60	182	74	95	33
EF Sevier R nr Kingston	APR-JUL	40	53	62	177	71	84	35
Sevier R bl Piute Dam	APR-JUL	76	108	130	197	152	184	66
Clear Ck ab Diversions nr Sevier	APR-JUL	28	35	40	182	45	52	22
Salina Ck nr Emery	APR-JUL	10.70	14.50	17.00	189	19.50	23.00	9.00
Salina Ck at Salina	APR-JUL	14.2	27	39	198	53	76	19.7
Manti Ck Blw Dugway Ck Nr Manti	APR-JUL	16.5	21	25	137	29	35	18.3
Sevier R nr Gunnison	APR-JUL	147	179	200	189	221	253	106
Chicken Ck nr Levan	APR-JUL	4.40	6.90	9.00	200	11.50	16.10	4.50
Oak Creek nr Oak City	APR-JUL	1.61	2.20	2.60	157	3.10	3.80	1.66
Beaver R nr Beaver	APR-JUL	34	43	49	182	55	64	27
Minersville Res Inflow	APR-JUL	10.5	21	31	187	44	68	16.6

SEVIER & BEAVER RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
GUNNISON	20.3	11.4	9.0	13.1
MINERSVILLE (RkyFd)	23.3	11.0	7.5	14.4
OTTER CREEK	52.5	31.0	20.5	36.5
PIUTE	71.8	34.2	28.1	49.5
SEVIER BRIDGE	236.0	95.5	90.0	159.6
PANGUITCH LAKE	22.3	20.1	9.3	131.4

SEVIER & BEAVER RIVER BASINS
Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
UPPER SEVIER RIVER	8	112	162
EAST FORK SEVIER RIVER	3	101	127
SOUTH FORK SEVIER RIVER	5	120	180
LOWER SEVIER RIVER	6	165	127
BEAVER RIVER	2	159	171
SEVIER & BEAVER RIVER BAS	16	132	148

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

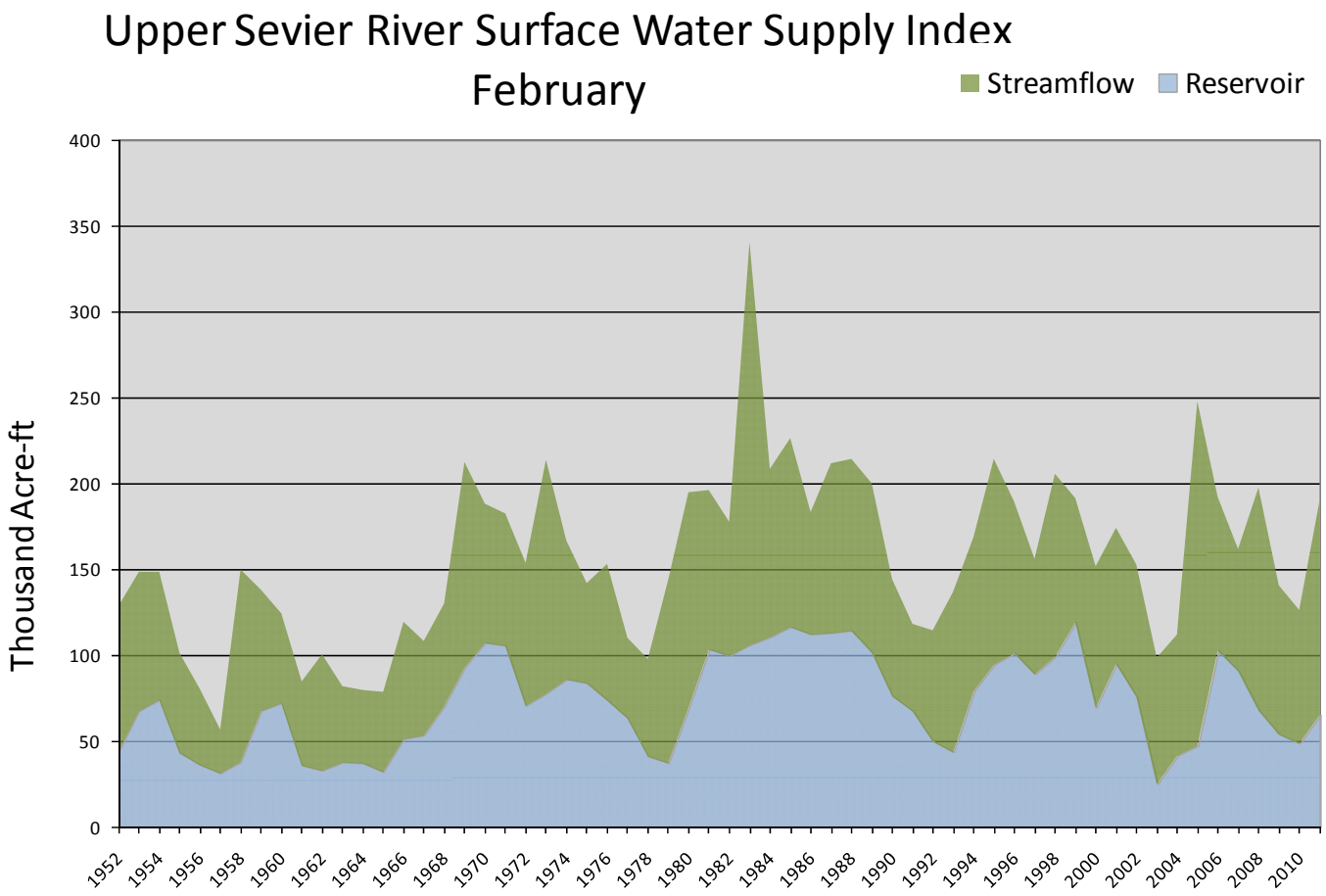
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

February 1, 2011

Upper Sevier Surface Water Supply Index

Basin or Region	January EOM* Piute & Otter Creek Reservoir	April-July Forecast Inflow to Piute Reservoir	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Upper Sevier	**65.2**	**125**	**190**	**1.84**	**82**	**70,88,87,95**

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

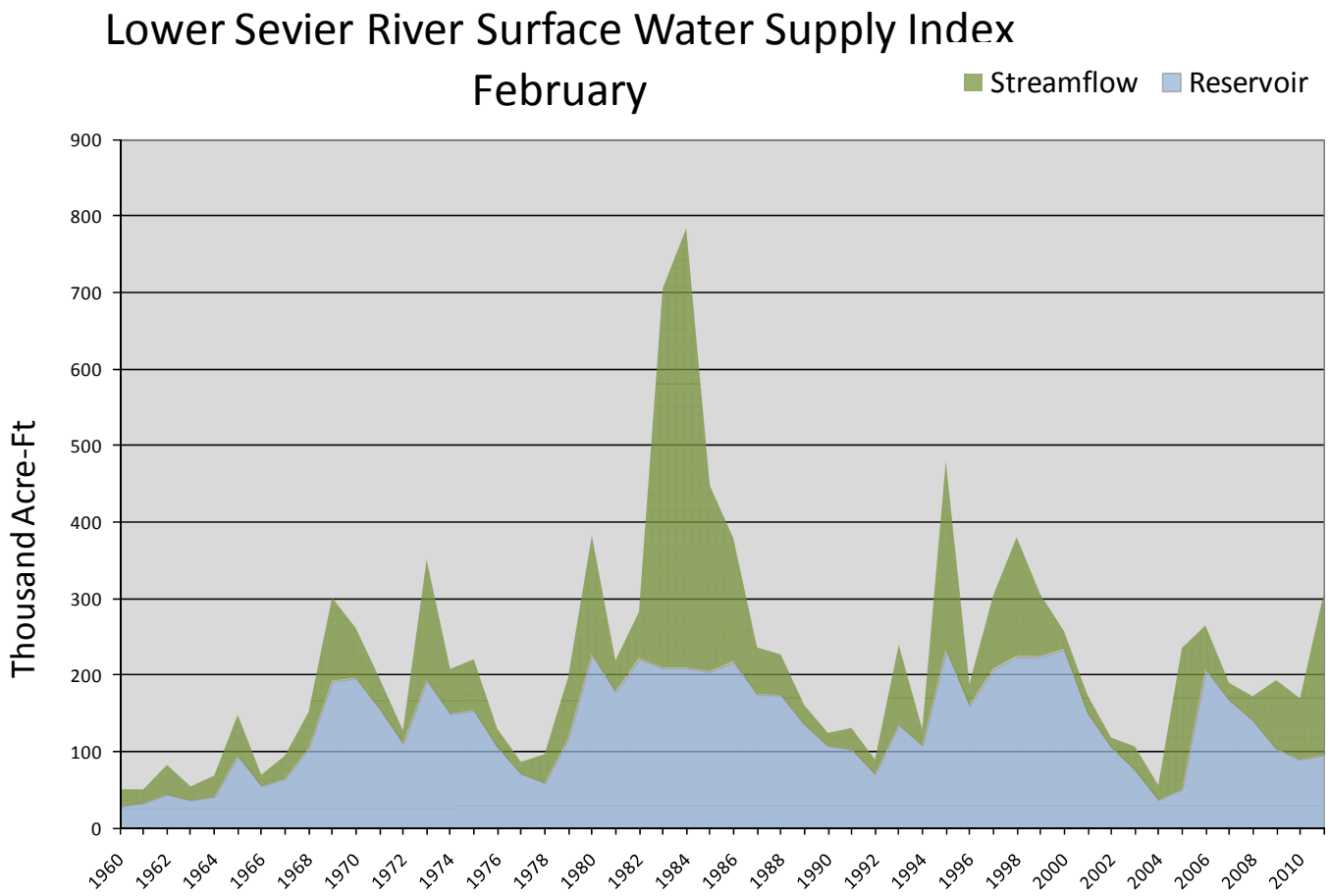


February 1, 2011

Lower Sevier Surface Water Supply Index

Basin or Region	January EOM* Sevier Bridge Reservoir	April-July Forecast Inflow to Sevier Bridge Reservoir	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Lower Sevier	**95.5**	**210**	**306**	**2.59**	**81**	**69,97,99,73**

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

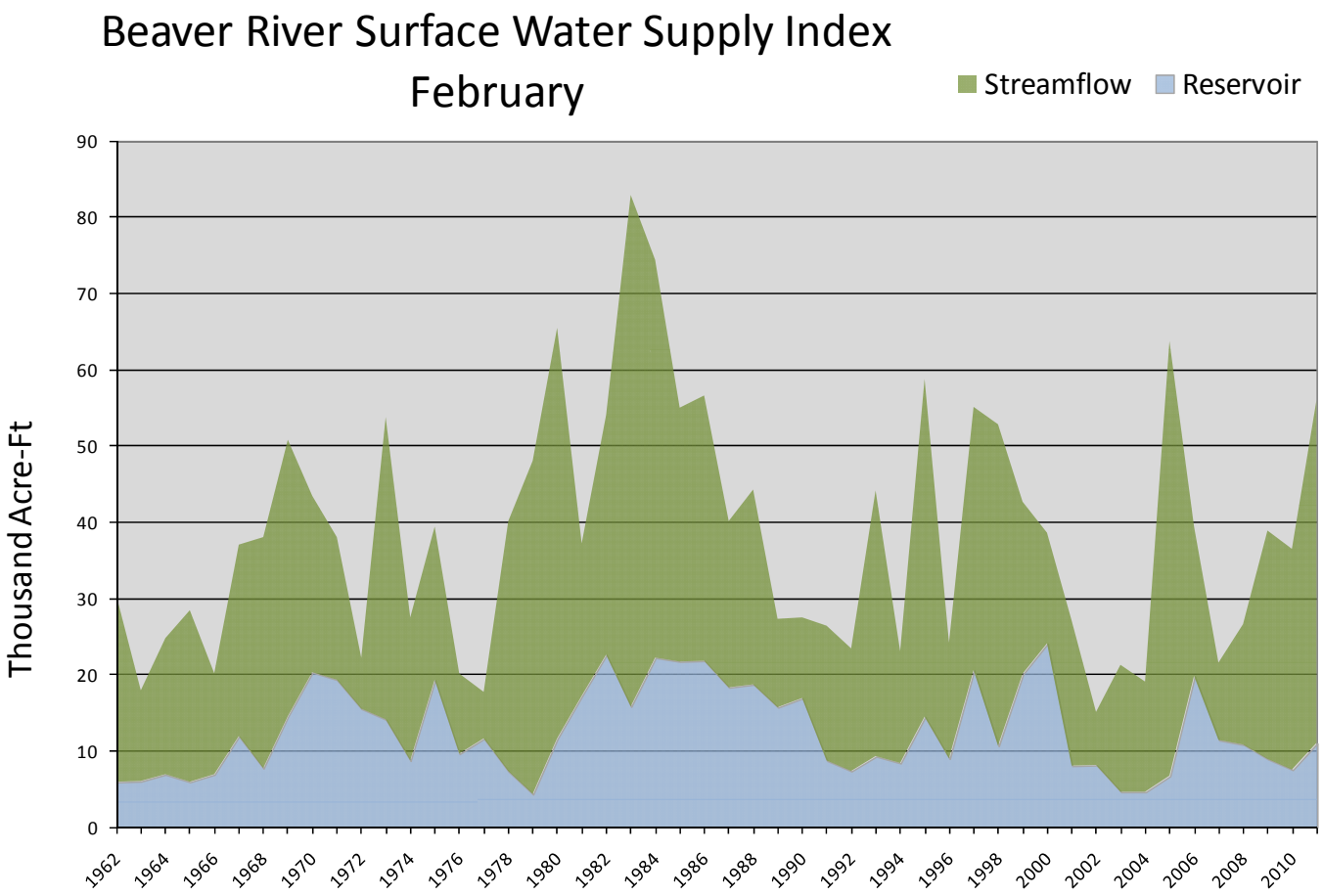


February 1, 2011

Beaver Surface Water Supply Index

Basin or Region	January EOM* Minersville Reservoir	April-July forecast Beaver River at Beaver	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Beaver	**8.8**	**50.0**	**58.8**	**3.19**	**88**	**79,85,98,80**

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

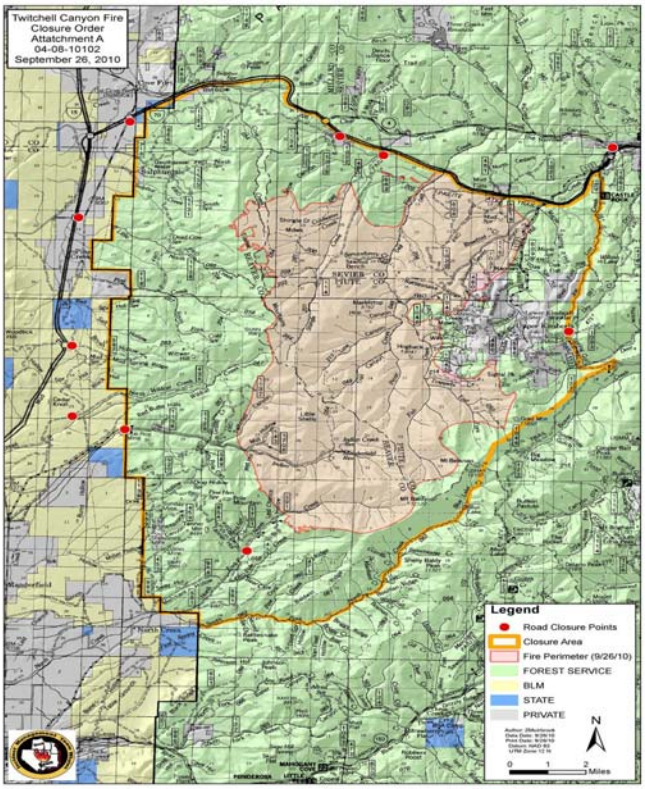


Twitchell Canyon Fire Analysis

From the Incident Information System: http://www.inciweb.org/incident/2036/

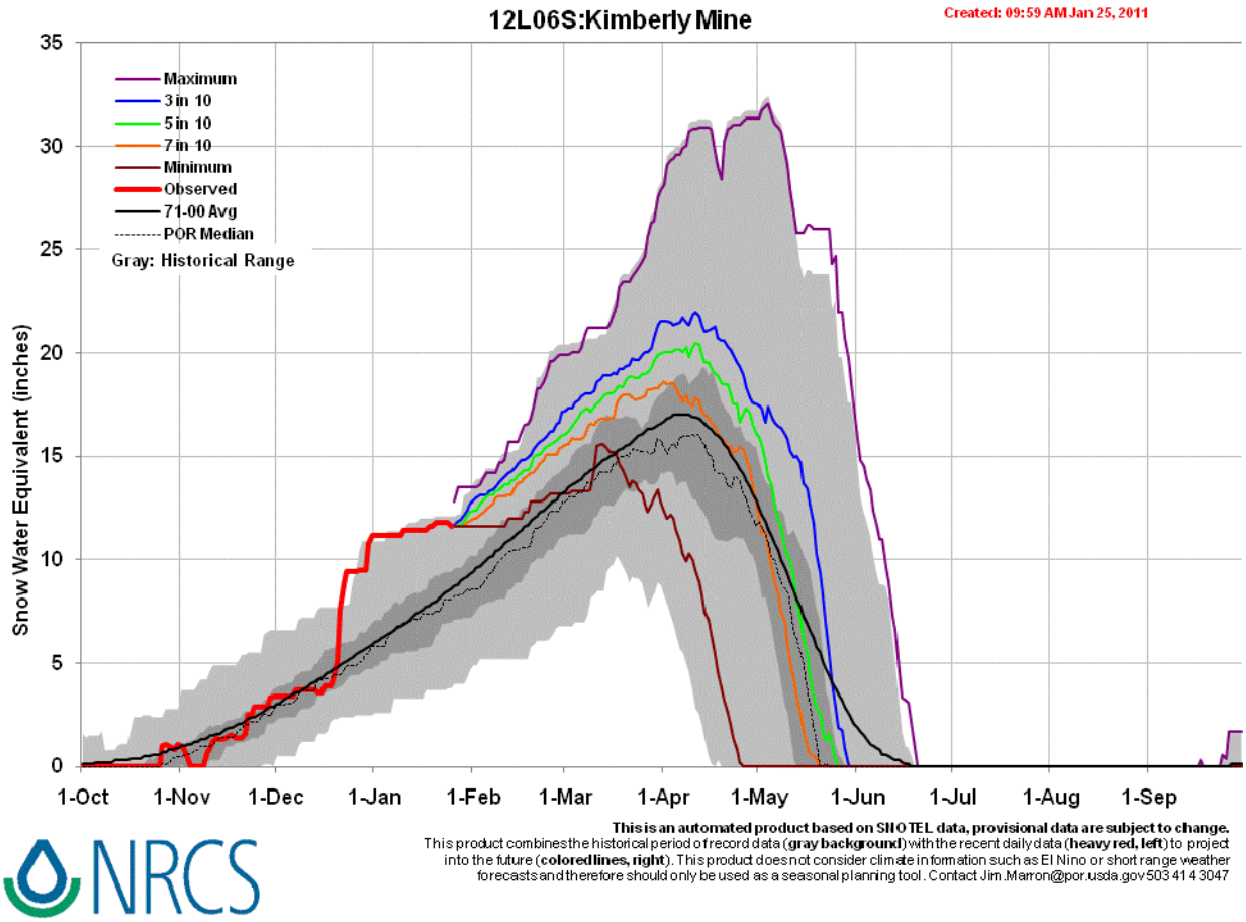
"The Twitchell fire began on July 20 from a lightning strike. In August, what had been a wet summer turned dry and the fire began burning more actively. On Sept. 15 alone, the fire burned over 9500 acres. Since then with fall weather and aggressive firefighting, the fire growth slowed. Since early October the fire area has received significant rainfall. All roads and trails previously closed due to fire activity are now open. The public is reminded to use extreme caution while in the burned area and stay alert to falling snags and possible flash floods."

The Twitchell Canyon fire burned a total of 45,216 acres and of that amount approximately 29,000 acres were on north facing aspects of the fire area draining into Clear Creek. There are approximately 57,000 total acres of north facing aspect on this watershed so about 51% of all the north facing aspect was burned. The north facing aspect of this watershed has the highest elevation, highest snow accumulation and produces most of the streamflow to the Clear Creek Basin.



Map courtesy of incident systems Information.

Snowpacks on this watershed as measured by the Kimberly SNOTEL site are currently near record levels.



Given the lowest snow accumulation in the remainder of this season, the site would still have close to an average projected snowpack on April 1. Given average accumulation puts the snowpack much higher, perhaps in the upper third of historical accumulations. Given the current climatic conditions of a La Nina, dryer conditions are more likely to prevail at this site. What this means is fewer storms – this in turn means that carbon deposition from the fire has a greater probability of covering the snow surface for long periods of time with subsequent accelerated melt and greater losses to other processes such as sublimation. The Kimberly SNOTEL site is a mile or so outside the burn area and will likely not be representative of conditions across the burn with respect to snowpack accumulation and ablation.

Soil moisture at the Kimberly Mine SNOTEL is at 60% of saturation, very high for this time of year and an indication that the soil profile may not be capable of absorbing much melt water which may tend to faster onset of streamflow from melt water. This could also tend to increase the runoff efficiency of the watershed partially offsetting the expected decrease of flow due to the fire.

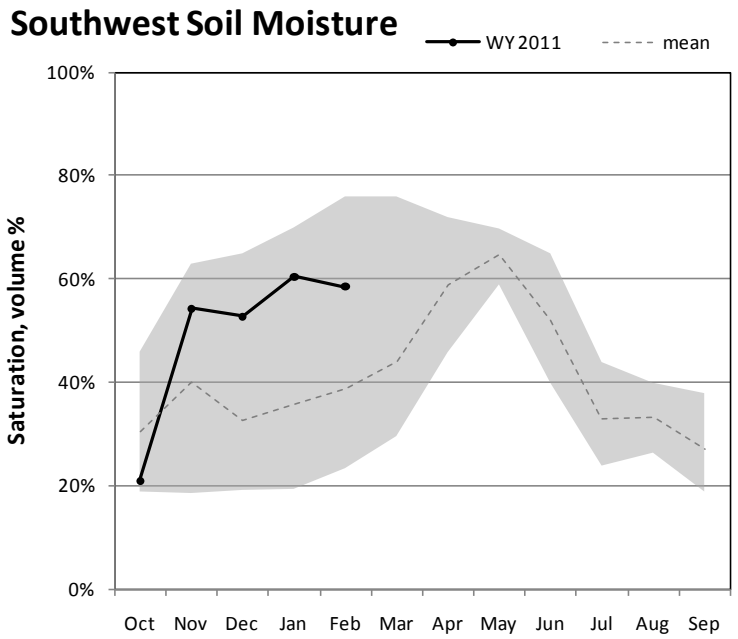
A recent fire of similar characteristics (north facing aspects, high elevation, primary water producing area), the Jungle Fire on the Wasatch Plateau resulted in a decrease in April-July streamflow of approximately 20% to 25% under what would normally been expected. Given the burn conditions, we

expect that streamflow will most likely be reduced by a similar proportion. Streamflow hydrograph characteristics will likely show early melt and flow, early peak, lower aggregate volumes and a faster recession due to accelerated melt patterns caused by significantly reduced albedo (reflectivity) of carbon deposition on the snow surface as well as that incorporated into lower layers of the snowpack. an important factor in carbon deposition on snow the surface is the frequency of storm activity – long durations between snow events allow greater energy input to the pack whereas frequent storms tend to rejuvenate the higher albedos on the surface. Given the climate outlook and the higher probability that southern Utah could go dry – there is a good potential that this area could have long periods of time between storms, higher energy input to the pack, earlier melt, longer duration of melt, and higher loss rates to all processes leaving less for streamflow.

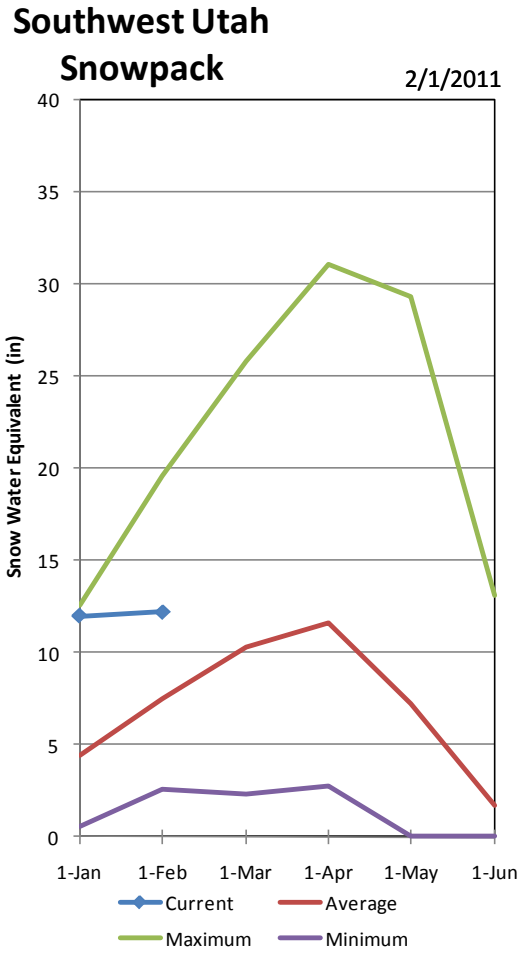
In March, Snow Survey Personnel will conduct a short on site watershed evaluation of the situation to hopefully provide greater insight to observed watershed conditions.

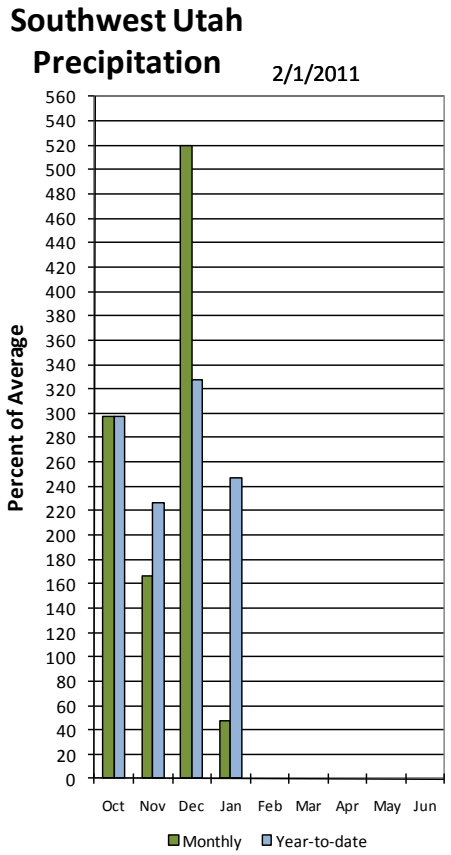
E. Garfield, Kane, Washington, & Iron Co.
February 1, 2011

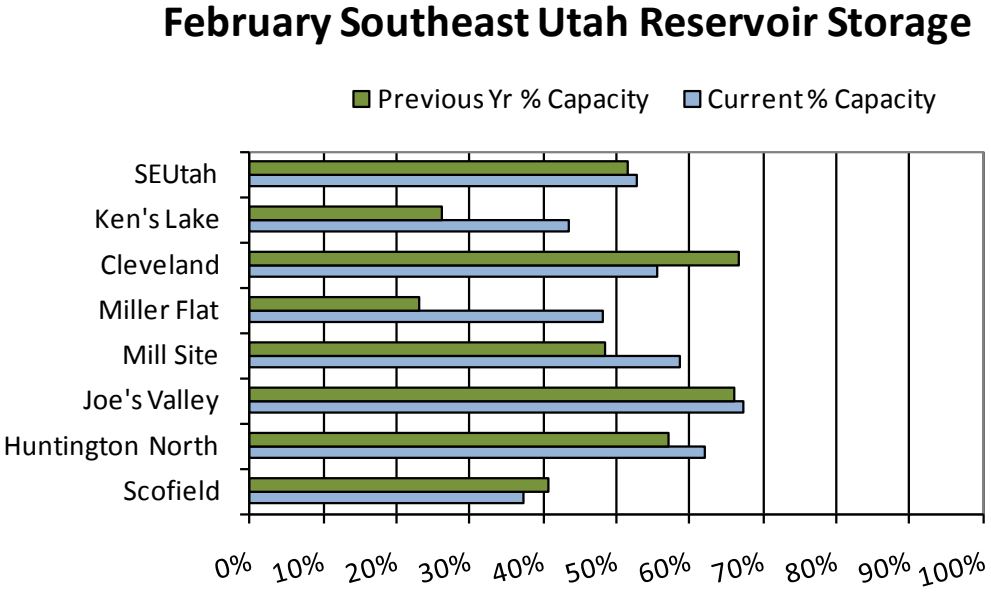
Snowpacks in this region are much above normal at 163% of average, which is 94% of last year. Individual sites range from 84% at Donkey Reservoir Snotel, to 215% of average at Harris Flat Snotel. Precipitation during the month of December was much below average at 48%, bringing the seasonal accumulation (Oct-Dec) to 328% of average. The average soil moisture estimate in runoff producing areas is at 59% of saturation within the upper 2 feet of soil, compared to 24% last year. Forecast streamflows (Apr–July) range from 187% to 114% of average. Reservoir storage is at 82% of capacity, 23% higher than last year at this time. The Surface Water Supply Index is at 81%, indicating much above average water supply conditions.



Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content. The gray area represents the range in saturation values since 2005.







E. GARFIELD, KANE, WASHINGTON, & IRON Co.
Streamflow Forecasts - February 1, 2011

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Lake Powell Inflow (2)	APR-JUL	5700	7500	9000	114	10600	12800	7930
Virgin R at Virgin	APR-JUL	69	87	100	156	114	137	64
Virgin R nr Hurricane	APR-JUL	69	92	110	159	129	160	69
Santa Clara R nr Pine Valley	APR-JUL	4.60	6.50	8.00	146	9.60	12.30	5.50
Coal Ck nr Cedar City	APR-JUL	26	32	36	187	40	46	19.3

E. GARFIELD, KANE, WASHINGTON, & IRON Co.
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
GUNLOCK	10.4	8.9	0.0	5.7
LAKE POWELL	24322.0	13926.0	14002.0	---
QUAIL CREEK	40.0	27.4	30.6	26.5
UPPER ENTERPRISE	10.0	10.0	0.2	---
LOWER ENTERPRISE	2.6	2.4	0.0	38.0

E. GARFIELD, KANE, WASHINGTON, & IRON Co.
Watershed Snowpack Analysis - February 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
VIRGIN RIVER	5	105	199
PAROWAN	2	138	198
ENTERPRISE TO NEW HARMONY	2	42	86
COAL CREEK	2	132	197
ESCALANTE RIVER	2	97	96
SOUTHWESTERN UTAH	9	94	163

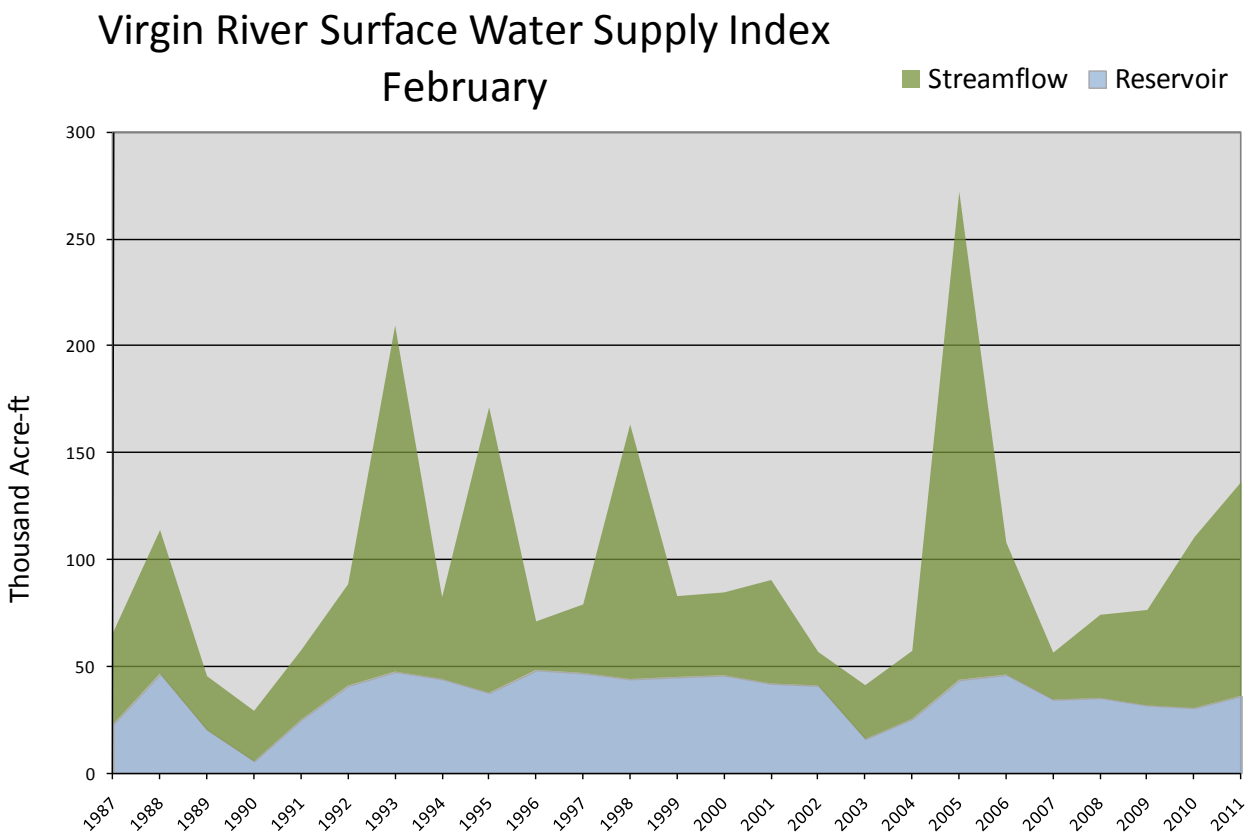
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

February 1, 2011	**Surface Water Supply Index**					
Basin or Region	January EOM* Quail Creek and Gunlock Reservoirs	April-July forecast Virgin and Santa Clara Rivers	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Southwest	**36.3**	**100**	**136**	**2.56**	**81**	**10, 88, 98, 95**

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



February 1, 2011

Surface Water Supply Index

Basin or Region	January EOM* Resevoirs	April-July Stream Forecast	Reservoir + Streamflow	SWSI#	Percentile	Years with similar SWSI
	*KAF^*	*KAF*	*KAF*		*%*	
Bear River	**413**	**305**	**718**	**-0.88**	**39**	**39,61,89,26**
Ogden River	**69.0**	**175**	**244**	**2.26**	**77**	**82,06,97,80**
Weber River	**325**	**490**	**815**	**3.20**	**88**	**97,98,75,83**
Provo	**377**	**180**	**557**	**2.65**	**82**	**06,82,97,98**
West Uintah Basin	**154**	**255**	**409**	**2.78**	**83**	**99,98,82,95**
East Uintah Basin	**38.9**	**85.0**	**124**	**1.64**	**70**	**93,87,01,99**
Price River	**24.6**	**45.0**	**69.6**	**0.22**	**53**	**81,05,08,07**
Joe's Valley	**41.4**	**70.0**	**111**	**2.43**	**79**	**99,05,06,97**
Ferron Creek	**9.8**	**50.0**	**59.8**	**2.29**	**78**	**82,98,93,06**
Moab	**1.0**	**5.5**	**6.5**	**2.17**	**79**	**97,92,88,98**
Upper Sevier River	**65.2**	**125**	**190**	**1.84**	**82**	**70,88,87,95**
Lower Sevier River	**95.5**	**210**	**306**	**2.59**	**81**	**69,97,98,73**
Beaver River	**8.8**	**50.0**	**58.8**	**3.19**	**88**	**79,85,98,80**
Virgin River	**36.3**	**100**	**136**	**2.56**	**81**	**10,88,98,95**

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

What is a Surface Water Supply Index?

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

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

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

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

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Utah Water Supply Outlook Report

Natural Resources Conservation Service
Salt Lake City, UT