



# Utah Water Supply Outlook Report

January, 2009



**Near Timpanogos Divide SNOTEL. 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

January 1, 2009

## SUMMARY

Water year 2009 is thus-far eerily similar to water year 2008. Both years began with a few early season October storms that put some snow in the high country. Subsequently, both years turned dry in November and the first half of December with large storms pounding the state in the latter half of December. One cannot easily forget the snow shoveling between Christmas and New Years of 2008 or the repeat in 2009. In mid December this year, snowpacks were hovering in the 30% to 50% range with many of the lower elevation stations without any snow at all. Recent large storms have brought southern Utah snowpacks ranging between 110% and 160% of average. With southern snowpacks at these levels, flashbacks of water year 2005 come to mind where new record high snows and flooding occurred. While there is always a chance we could have a repeat of 2005, the probability is extremely low and our capability to identify and deal with such events has increased. Northern Utah is now near 90% of average and central Utah from Richfield to Spanish Fork have increased snowpacks (75%) but not nearly as much as both north or south. Fall precipitation was much below normal in both October and November (50% to 80%) and consequently, soil moisture figures are lower than last year, especially in southern Utah. Current soil moisture saturation levels in runoff producing areas are: Bear – 53%, Weber – 50%, Provo – 39%, Uintah Basin – 31%, SE Utah – 29%, Sevier – 35% and SW Utah – 28%. Drier soils typically mean less runoff from snowmelt. Reservoir storage is currently at 57% of capacity statewide compared to 62% last year. General water supply conditions are near average in northern Utah, above average on the Virgin and near to below average in central Utah. Streamflow forecasts range from 60% for the Bear River at Stewart Dam to 114% of average on Coal Creek near Cedar City. Surface Water Supply Indices range from 12% on the Bear River to 71% for the Virgin. The extremely low value for the Bear River is a reflection of Bear Lake storage which continues to be well below normal.

## SNOWPACK

January first snowpacks as measured by the NRCS SNOTEL system are as follows: Bear - 88%, Weber - 91%, Provo - 90%, Uintahs - 79%, southeast Utah - 86%, Sevier - 110%, southwest Utah - 157% and the statewide figure is 93% of average. There is a substantial part of snow accumulation yet to come this year and any outcome is possible depending on future climatic conditions. If drought prevails, snowpacks could range between 20% and 60% of average. Given maximum accumulations, April 1 snowpacks could range between 140% and 250% of average. With normal accumulations, April 1 snowpacks will be between 90% and 120% of average. The areas with lowest snowpack averages are the north slope of the Uintahs – 63% and the San Pitch Basin at 75% of average.

## PRECIPITATION

Mountain precipitation during December was above to much above average across the entire state (143%), ranging from 118% on the Bear River to 246% of average over SW Utah. This brings the seasonal accumulation (Oct-Dec) to 101% of average statewide and ranges from 89% over the Uintah Basin to 140% in SW Utah

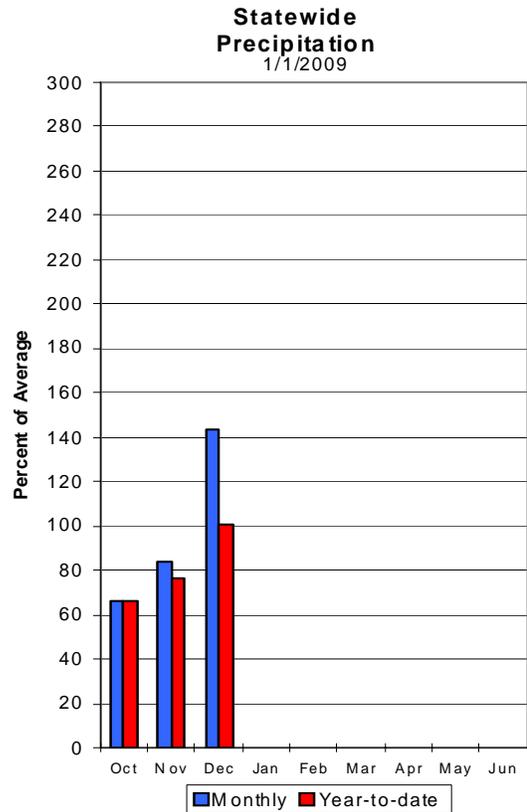
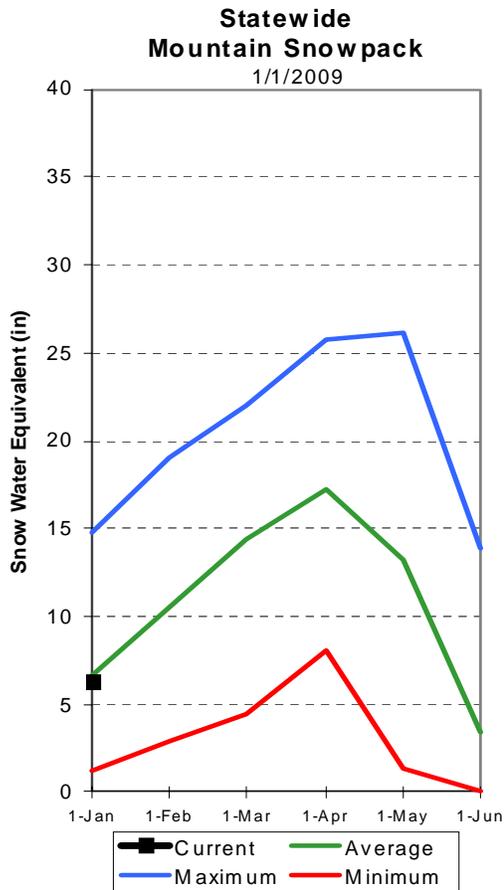
## RESERVOIRS

Storage in 41 of Utah's key irrigation reservoirs is at 57% of capacity down 5% compared to January of last year year. A very mild and dry fall has contributed to reservoir declines across the State. There is some good news on the reservoir repair front as the Enterprise reservoirs,

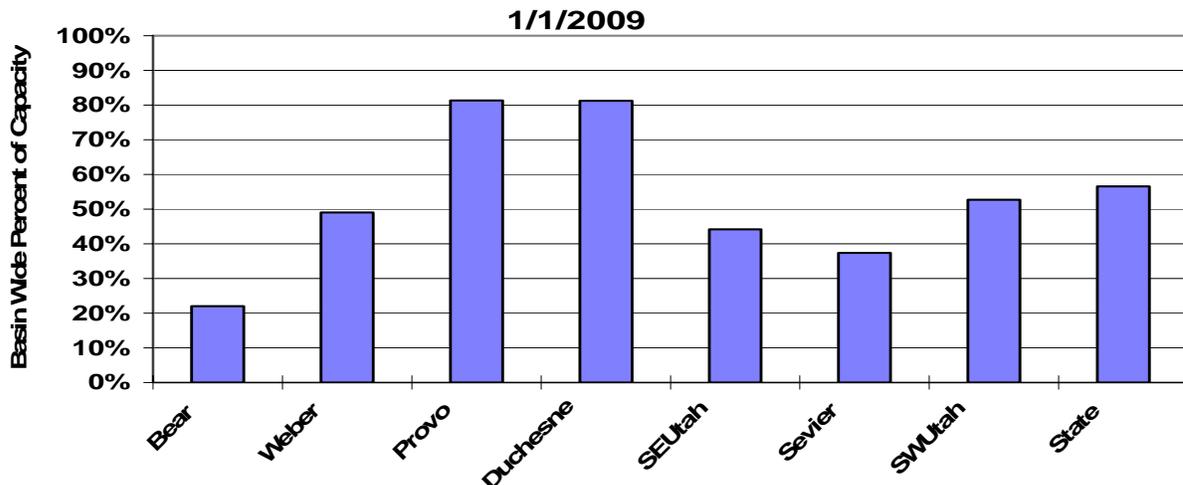
Deer Creek and Scofield are now able to store unrestricted. Willard Bay remains restricted.

## STREAMFLOW

Snowmelt streamflows are expected to have a wide range from much below average to above average across the state of Utah this year. Forecast streamflows range from 60% on the Bear River at Stewart Dam to 114% on Coal Creek near Cedar City. Most flows are forecast to be in the 80% to 105% range.

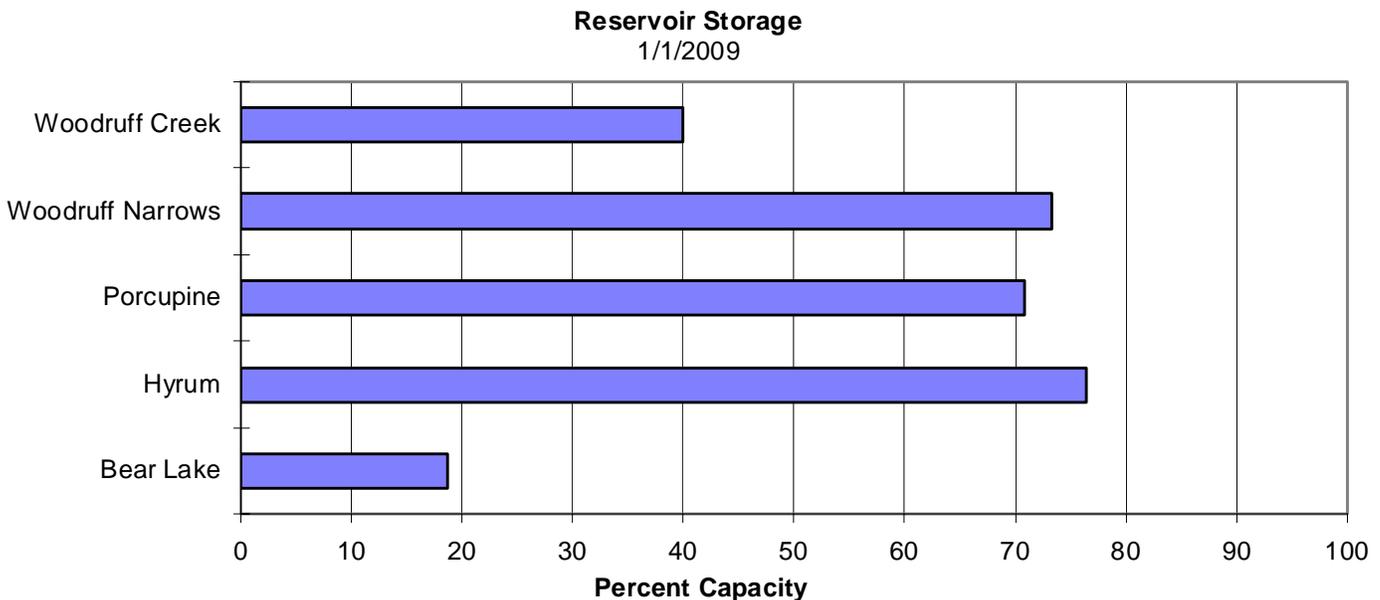
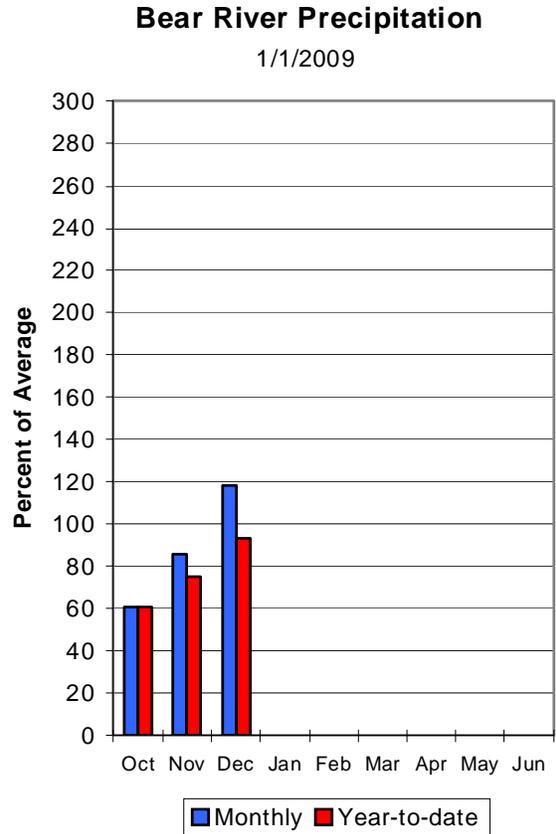
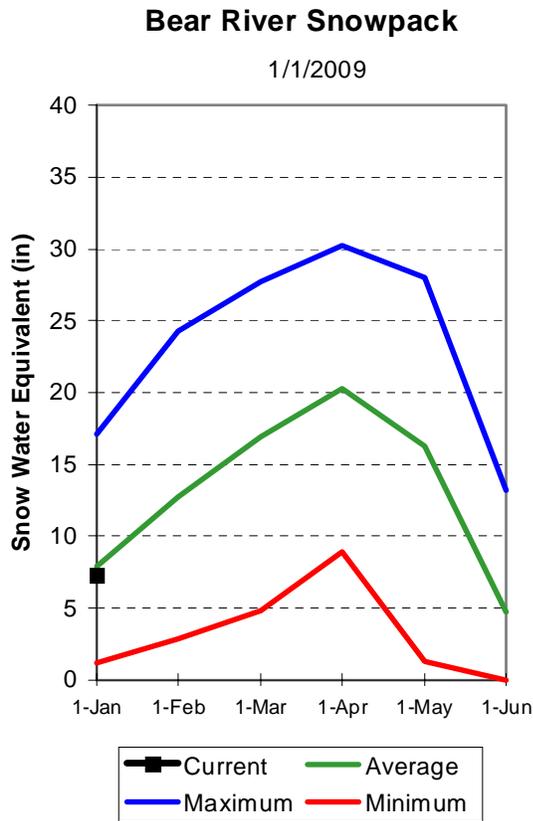


## Statewide Basin Reservoir Storage



## Bear River Basin January 1, 2009

Snowpacks on the Bear River Basin are average at 128% of normal, about 88% of last year. Individual sites range from 108% of normal at Hayden Fork Snotel to 57% at Bug Lake Snotel. December precipitation was above average at 118%, which brings the seasonal accumulation (Oct-Dec) to 93% of average. Soil moisture levels in runoff producing areas are at 53% of saturation in the upper 2 feet of soil compared to 50% last year. Forecast streamflows (April-July) range from much below to near average (60%-90%) volumes for this spring and summer. Reservoir storage is low at 19% of capacity, which is unchanged from this time last year. The Surface Water Supply Index is at 15% for the Bear River, in other words, 85% of years have had more total water available. Water supply conditions are much below normal due to low reservoir storage in Bear Lake.



BEAR RIVER BASIN  
Streamflow Forecasts - January 1, 2009

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Bear R nr UT-WY State Line	APR-JUL	54	80	98	87	116	142	113
Bear River ab Reservoir nr Woodruff	APR-JUL	58	95	120	88	145	182	136
Big Creek nr Randolph	APR-JUL	1.72	3.20	4.20	86	5.20	6.70	4.90
Smiths Fork nr Border	APR-JUL	51	73	88	85	103	125	103
Bear River at Stewart Dam*	APR-JUL	63	105	140	60	180	248	234
Little Bear at Paradise, UT	APR-JUL	11.0	29	41	89	53	71	46
Logan nr Logan, UT	APR-JUL	53	86	108	86	130	163	126
Blacksmith Fk nr Hyrum, UT	APR-JUL	13.9	29	40	83	51	66	48

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of December					BEAR RIVER BASIN Watershed Snowpack Analysis - January 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BEAR LAKE	1302.0	242.9	226.0	---	BEAR RIVER, UPPER (abv Ha	5	119	92
HYRUM	15.3	11.7	10.5	10.2	BEAR RIVER, LOWER (blw Ha	9	85	81
PORCUPINE	11.3	8.0	5.9	3.9	LOGAN RIVER	4	96	81
WOODRUFF NARROWS	57.3	42.0	24.0	23.6	RAFT RIVER	1	77	134
WOODRUFF CREEK	4.0	1.6	2.9	---	BEAR RIVER BASIN	14	91	84

\* 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.

\* - Stewart dam is an observed flow forecast

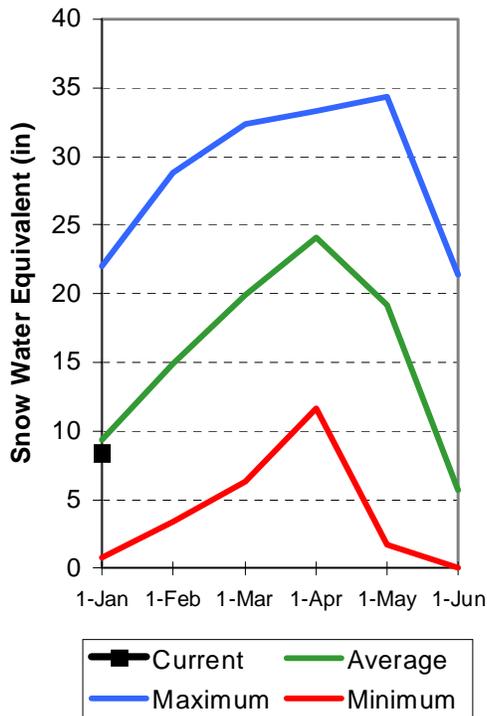
# Weber and Ogden River Basins

## January 1, 2009

Snowpacks on the Weber and Ogden Watersheds are average at 106%, about 91% of last year. Individual sites range from 109% to 69% of average. December precipitation was above average at 124% bringing the seasonal accumulation (Oct-Dec) to 92% of average. Soil moisture levels in runoff producing areas are at 50% of saturation in the upper 2 feet of soil compared to 48% last year. Streamflow forecasts (April-July) range from 78% to 90% of average. Reservoir storage is at 49% of capacity, 12% higher than last year. The Surface Water Supply Index is at 44% for the Weber River and 48% for the Ogden River indicating that overall water supply conditions are near average.

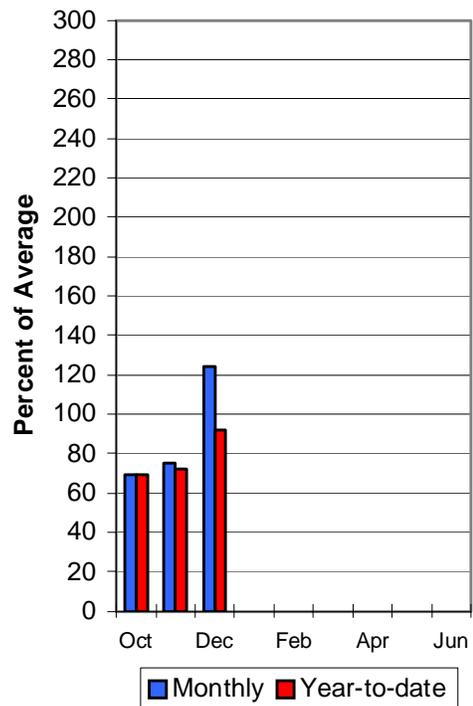
### Weber River Snowpack

1/1/2009



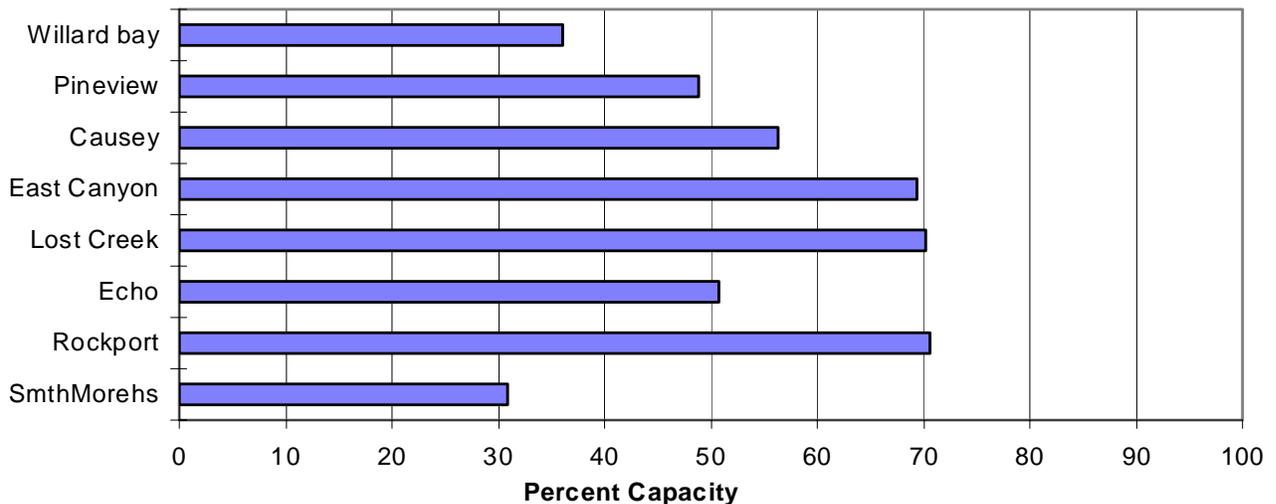
### Weber River Precipitation

1/1/2009



### Reservoir Storage

1/1/2009



WEBER & OGDEN WATERSHEDS in Utah  
Streamflow Forecasts - January 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		===== Wetter =====>>				
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Smith & Morehouse Res inflow	APR-JUL	18.8	25	30	88	35	41	34
Weber R nr Oakley, UT	APR-JUL	58	89	110	89	131	162	123
Rockport Reservoir	APR-JUL	50	89	115	86	141	180	134
Weber R nr Coalville, UT	APR-JUL	54	93	120	88	147	186	137
Chalk Ck at Coalville, UT	APR-JUL	12.4	28	39	87	49	65	45
Echo Resv at Echo, UT	APR-JUL	66	110	140	78	170	214	179
Lost Ck Resv Inflow	APR-JUL	3.3	10.3	15.0	85	19.7	27	17.6
East Canyon Ck nr Morgan, UT	APR-JUL	9.1	21	28	90	36	48	31
Weber R at Gateway, UT	APR-JUL	88	208	290	82	372	492	355
SF Ogden R nr Huntsville, UT	APR-JUL	19.9	41	56	88	71	92	64
Pineview Resv Inflow	APR-JUL	31	84	120	90	156	209	133
Wheeler Ck nr Huntsville, UT	APR-JUL	1.97	4.20	5.70	91	7.20	9.40	6.30

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

WEBER & OGDEN WATERSHEDS in Utah  
Watershed Snowpack Analysis - January 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CAUSEY	7.1	4.0	3.5	2.8	OGDEN RIVER	4	108	93
EAST CANYON	49.5	34.3	27.3	34.9	WEBER RIVER	9	103	89
ECHO	73.9	37.5	31.5	47.9	WEBER & OGDEN WATERSHEDS	13	105	91
LOST CREEK	22.5	15.8	13.0	14.1				
PINEVIEW	110.1	53.7	37.3	52.9				
ROCKPORT	60.9	43.0	30.0	36.2				
WILLARD BAY	215.0	77.4	56.8	147.7				

\* 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.

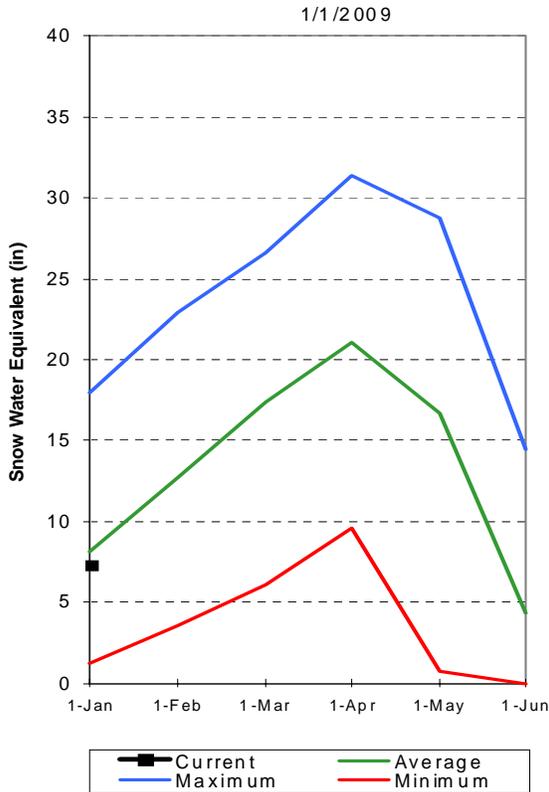
(2) - The value is natural volume - actual volume may be affected by upstream water management.

# Utah Lake, Jordan River & Tooele Valley Basins

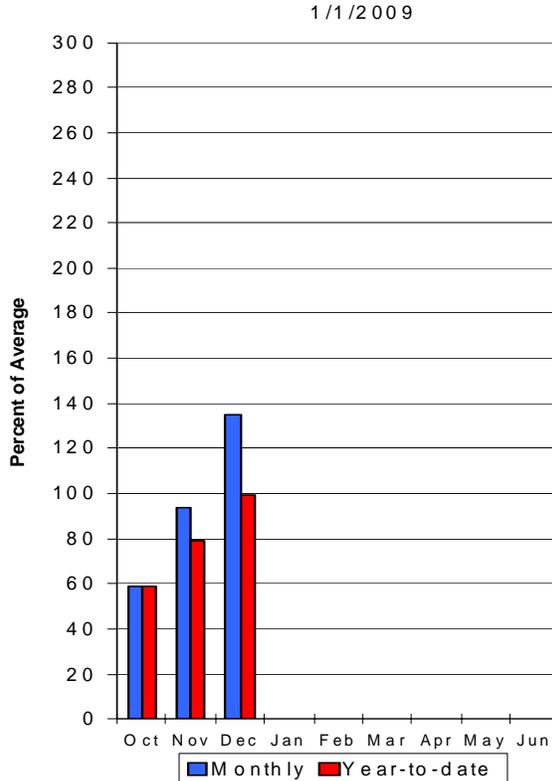
## January 1, 2009

Snowpack over these basins are near average at 90%, which is 102% of last year. Individual sites range from 62% at Dry Fork Snotel, to 131% of average at the Snowbird Snotel. December precipitation was above average at 135%, bringing the seasonal accumulation (Oct-Dec) to 99% of average. Average soil moisture in runoff producing areas is estimated at 39% of saturation in the upper 2 feet of soil compared to 37% at this time last year. Reservoir storage is at 81% of capacity, 3% higher than last year. Streamflow forecasts (Apr-July) range from 81% to 95% of average. The Surface Water Supply Index is at 45%, indicating general water supply conditions are near normal.

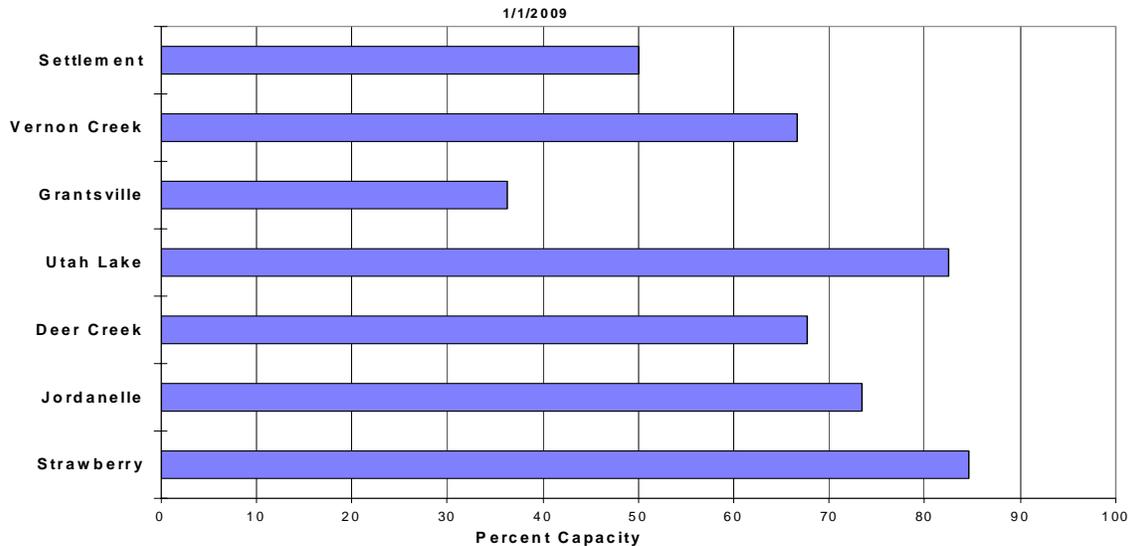
**Provo River Snowpack**



**Provo River Precipitation**



**Reservoir Storage**



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Streamflow Forecasts - January 1, 2009

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Spanish Fk at Castilla, UT	APR-JUL	2.3	32	62	81	92	136	77
Provo River nr Woodland	APR-JUL	50	72	90	87	109	142	103
Provo River nr Hailstone	APR-JUL	56	80	98	90	118	151	109
Provo R blw Deer Ck Dam, UT	APR-JUL	42	84	112	89	140	181	126
American Fk abv Upper Powerplant	APR-JUL	7.4	19.6	28	88	36	49	32
Utah Lake inflow	APR-JUL	91	204	280	86	356	469	325
W Canyon Ck nr Cedar Fort, UT	APR-JUL	0.59	1.49	2.10	88	2.70	3.60	2.40
Little Cottonwood Ck nr SLC	APR-JUL	24	32	38	95	45	55	40
Big Cottonwood Ck nr SLC, UT	APR-JUL	24	31	36	95	41	48	38
Mill Ck nr SLC, UT	APR-JUL	3.00	4.80	6.10	87	7.40	9.20	7.00
Parleys Ck nr SLC, UT	APR-JUL	4.4	10.4	14.5	87	18.6	25	16.7
Dell Fork nr SLC, UT	APR-JUL	0.41	3.30	5.80	85	8.30	12.00	6.80
Emigration Ck nr SLC, UT	APR-JUL	0.18	2.20	3.70	82	5.20	7.40	4.50
City Ck nr SLC, UT	APR-JUL	2.70	5.60	7.50	86	9.40	12.30	8.70
Vernon Ck nr Vernon, UT	APR-JUL	0.03	0.75	1.30	88	1.85	2.70	1.48
Settlement Ck nr Tooele, UT	APR-JUL	0.13	1.02	1.80	86	2.60	3.70	2.10
South Willow Ck nr Grantsville, UT	APR-JUL	1.43	2.40	3.00	93	3.60	4.60	3.23

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

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Watershed Snowpack Analysis - January 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of Last Yr	Average
		This Year	Last Year	Avg				
DEER CREEK	149.7	101.3	63.4	102.0	PROVO RIVER & UTAH LAKE	7	98	89
GRANTSVILLE	3.3	1.2	1.3	1.6	PROVO RIVER	4	103	95
SETTLEMENT CREEK	1.0	0.5	0.5	0.5	JORDAN RIVER & GREAT SALT	6	101	92
STRAWBERRY-ENLARGED	1105.9	936.0	874.5	640.0	TOOELE VALLEY WATERSHEDS	3	100	86
UTAH LAKE	870.9	719.0	731.3	756.5	UTAH LAKE, JORDAN RIVER &	16	99	90
VERNON CREEK	0.6	0.4	0.4	---				

\* 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.

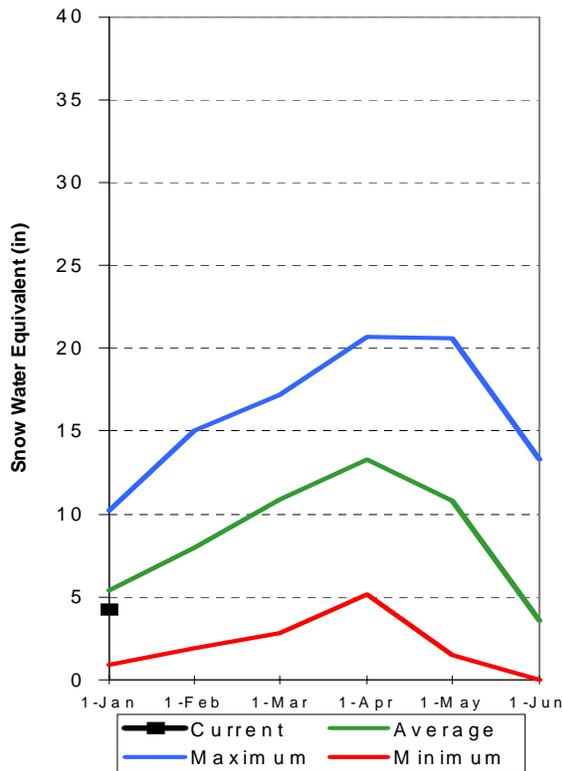
# Uintah Basin and Dagget SCD's

## January 1, 2009

Snowpack across the Uintas is below average at 80%, which is 104% of last year. Individual sites on the North Slope range from 52% to 74% and on the South Slope range from 59% to 104% of average. Precipitation during December was much above average at 133% bringing the seasonal accumulation (Oct-Dec) to 89%. Soil moisture values in runoff producing areas are at 31% of saturation in the upper 2 feet of soil compared to 32% last year. Reservoir storage is at 81% of capacity, 4% more than last year. Streamflow forecasts (Apr-July) range from 65% to 90% of average. The Surface Water Supply Index for the western area is 45% and for the eastern area it is 39% indicating near normal conditions on the west side and slightly below normal for the eastern area. General water supply conditions range from near to slightly below average.

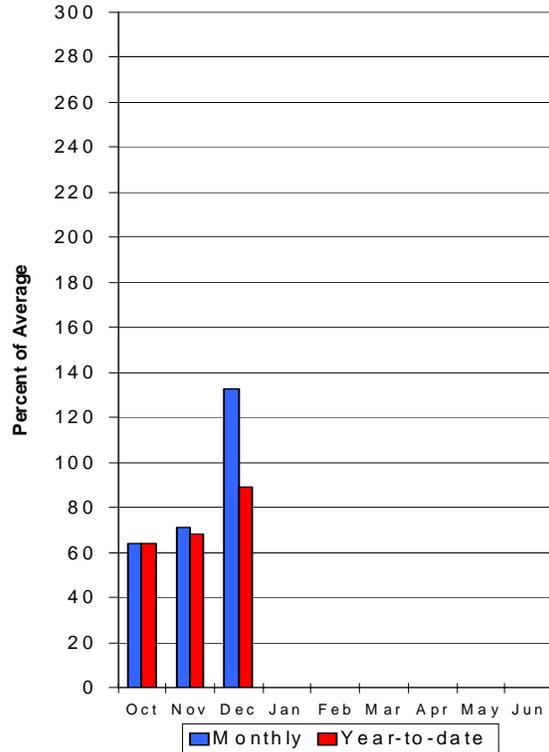
### Uinta Snow pack

1/1/2009



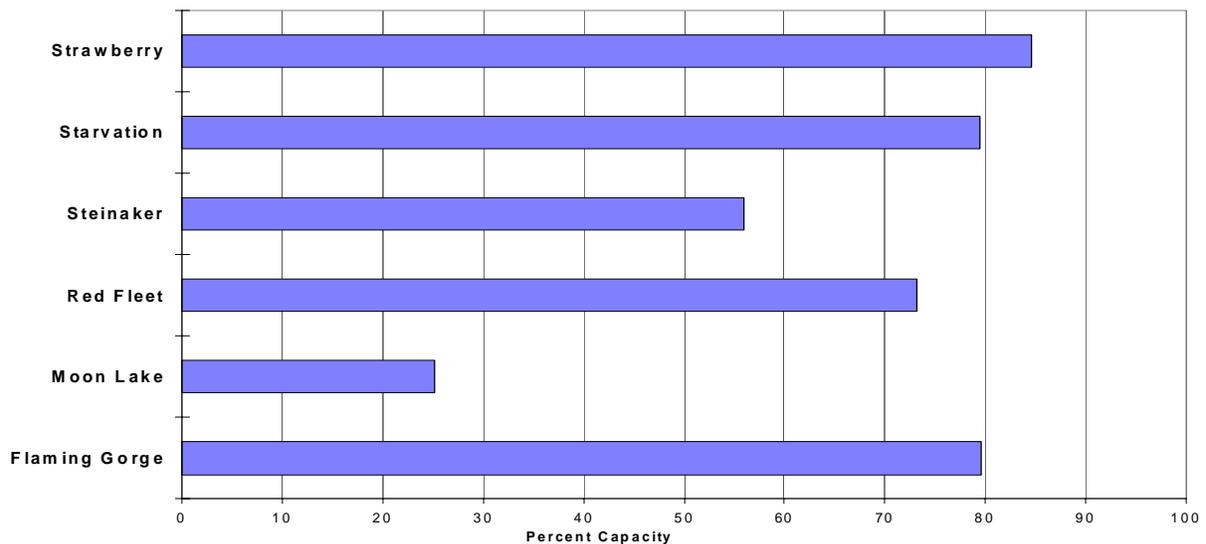
### Uinta Precipitation

1/1/2009



### Reservoir Storage

1/1/2009



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UINTAH BASIN & DAGGET SCD'S  
Streamflow Forecasts - January 1, 2009

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Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		===== Wetter =====>>				
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding *		30% (1000AF)	10% (1000AF)	
		(1000AF)	(% AVG.)					
Blacks Fork nr Robertson	APR-JUL	51	67	80	84	94	116	95
EF of Smiths Fork nr Robertson	APR-JUL	14.8	20	24	83	28	35	29
Flaming Gorge Reservoir Inflow (2)	APR-JUL	495	725	910	77	1110	1450	1190
Big Brush Ck abv Red Fleet Resv	APR-JUL	10.2	14.0	17.0	81	20	26	21
Ashley Creek nr Vernal	APR-JUL	24	34	42	81	51	65	52
WF Duchesne River nr Hanna (2)	APR-JUL	11.2	16.6	21	88	26	34	24
Duchesne R nr Tabiona (2)	APR-JUL	51	72	88	84	106	135	105
Upper Stillwater Reservoir Inflow	APR-JUL	47	60	70	85	81	97	82
Rock Ck nr Mountain Home (2)	APR-JUL	51	65	76	85	88	106	89
Duchesne R abv Knight Diversion (2)	APR-JUL	101	134	160	85	188	235	188
Strawberry R nr Soldier Springs (2)	APR-JUL	17.6	34	48	81	65	93	59
Currant Creek Reservoir Inflow (2)	APR-JUL	9.1	15.6	21	84	27	38	25
Strawberry R nr Duchesne (2)	APR-JUL	32	60	85	70	114	164	121
Lake Fork River Moon Lake Inflow	APR-JUL	42	54	63	93	73	88	68
Yellowstone River nr Altonah	APR-JUL	37	48	56	90	65	79	62
Duchesne R at Myton (2)	APR-JUL	68	136	195	75	265	385	260
Whiterocks nr Whiterocks	APR-JUL	27	38	47	84	57	72	56
Duchesne R nr Randlett (2)	APR-JUL	66	142	210	65	290	435	324

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

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UINTAH BASIN & DAGGET SCD'S  
Watershed Snowpack Analysis - January 1, 2009

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Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
FLAMING GORGE	3749.0	2983.0	3031.0	3027.0	UPPER GREEN RIVER in UTAH	6	98	63
MOON LAKE	49.5	9.0	7.9	26.1	ASHLEY CREEK	2	98	66
RED FLEET	25.7	18.8	16.6	17.5	BLACK'S FORK RIVER	2	100	65
STEINAKER	33.4	18.7	18.0	20.0	SHEEP CREEK	1	88	52
STARVATION	165.3	131.4	123.5	128.6	DUCHESNE RIVER	11	106	86
STRAWBERRY-ENLARGED	1105.9	936.0	874.5	640.0	LAKE FORK-YELLOWSTONE CRE	4	123	95
					STRAWBERRY RIVER	4	90	80
					UINTAH-WHITEROCKS RIVERS	2	105	87
					UINTAH BASIN & DAGGET SCD	17	104	80

\* 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.

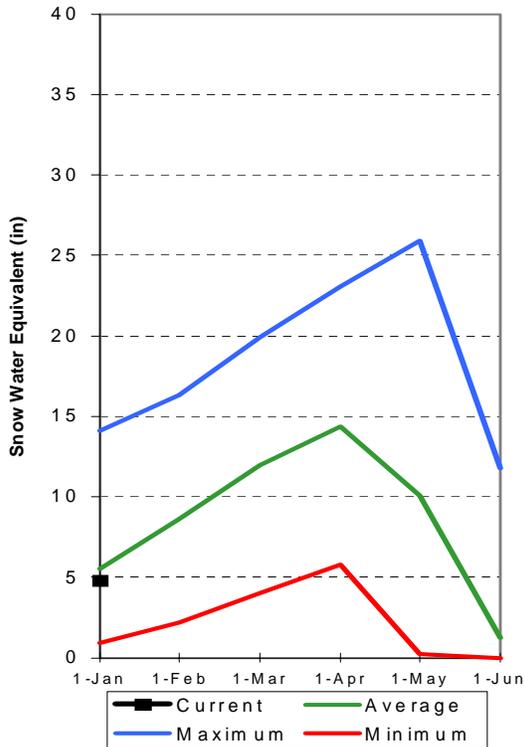
# Carbon, Emery, Wayne, Grand and San Juan Co.

## January 1, 2009

Snowpacks in this region are below normal at 86% of average, about 87% of last year. Individual sites range from 58% to 169% of average. Precipitation during December was much above average at 154%, bringing the seasonal accumulation (Oct-Dec) to 92% of normal. Soil moisture estimates in runoff producing areas are at 29% of saturation in the upper 2 feet of soil, 12% below last year at this time. Forecast streamflows (Apr – July) range from 69% to 109% of average. Reservoir storage is at 44% of capacity, up 2% from last year at this time. Surface Water Supply Indices for the area are: Price 32%, Joe's Valley 50%, Ferron Creek 42%, and Moab 70%. General runoff and water supply conditions are below average on the Price due to prior reservoir fill restriction, and above, and near average in the Moab and San Rafael areas respectively.

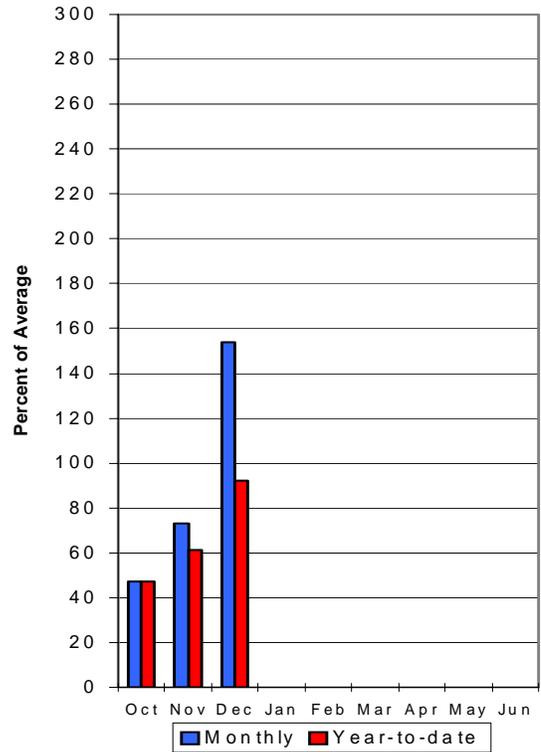
**Southeast Utah Snowpack**

1/1/2009



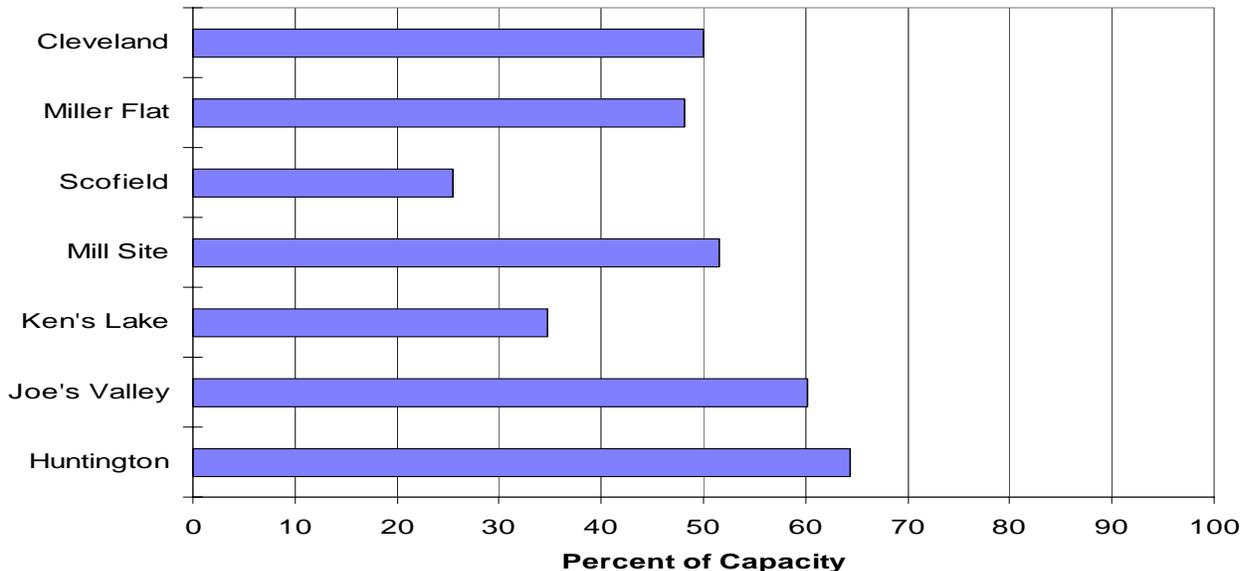
**Southeast Utah Precipitation**

1/1/2009



**Reservoir Storage**

1/1/2009



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Streamflow Forecasts - January 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		Chance Of Exceeding *		===== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Gooseberry Creek nr Scofield	APR-JUL	5.6	8.0	10.0	84	12.2	15.7	11.9
Price River nr Scofield Reservoir	APR-JUL	19.8	28	35	78	43	56	45
White River blw Tabbyune Creek	APR-JUL	4.9	8.8	12.0	69	15.7	22	17.3
Green River at Green River, UT (2)	APR-JUL	1180	2110	2750	87	3390	4320	3170
Huntington Ck Inflow to Electric Lk	APR-JUL	6.5	9.6	12.0	76	14.7	19.2	15.7
Huntington Ck nr Huntington (2)	APR-JUL	21	32	40	82	49	64	49
Joe's Valley Reservoir Inflow	APR-JUL	24	36	45	78	55	72	58
Ferron Ck (Upper Station) nr Ferron	APR-JUL	15.9	24	30	77	37	49	39
Colorado River nr Cisco (2)	APR-JUL	2770	4100	5000	108	5900	7230	4650
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	2.50	4.00	5.30	106	6.90	9.79	5.00
Muddy Creek nr Emery	APR-JUL	6.6	11.2	15.0	75	19.4	27	19.9
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.46	0.98	1.50	109	2.20	3.50	1.38
San Juan River near Bluff (2)	APR-JUL	640	1050	1330	108	1610	2020	1230

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

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Watershed Snowpack Analysis - January 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNTINGTON NORTH	4.2	2.7	1.7	2.4	PRICE RIVER	3	70	72
JOE'S VALLEY	61.6	37.1	39.2	41.0	SAN RAFAEL RIVER	3	72	66
KEN'S LAKE	2.3	0.8	1.1	1.0	MUDDY CREEK	1	70	78
MILL SITE	16.7	8.6	8.1	75.0	FREMONT RIVER	3	115	84
SCOFIELD	65.8	16.8	13.3	32.7	LASAL MOUNTAINS	1	105	136
					BLUE MOUNTAINS	1	107	141
					WILLOW CREEK	1	114	169
					CARBON, EMERY, WAYNE, GRA	13	85	86

\* 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.

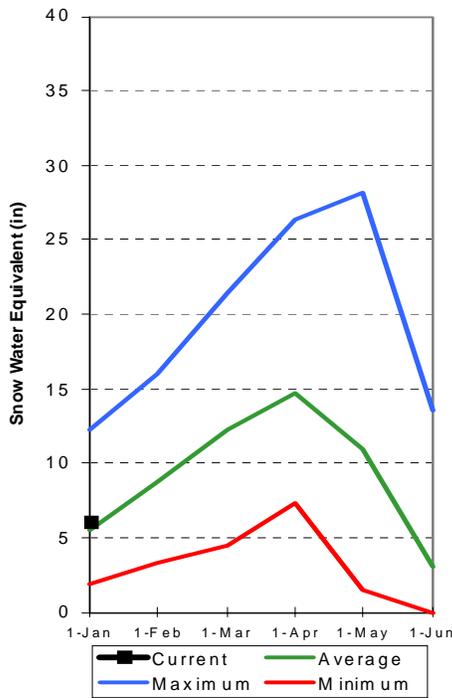
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Sevier and Beaver River Basins

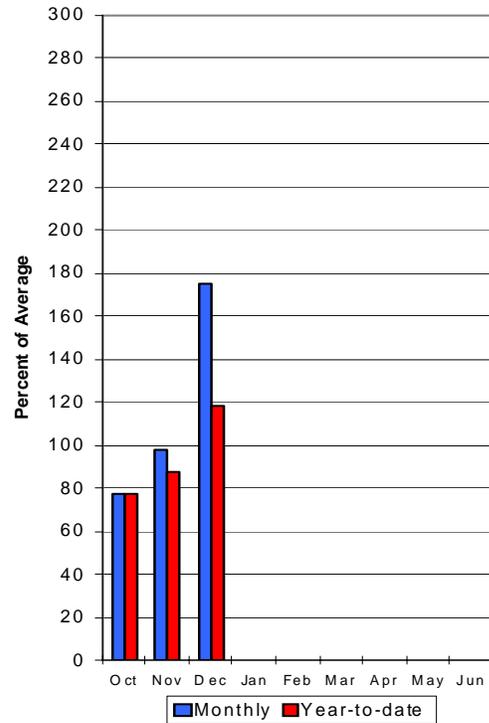
## January 1, 2009

Snowpacks on the Sevier River Basin are above normal at 110% of average, about 96% of last year. Individual sites range from 68% at Pine Creek to 317% of average at Long Valley Junction. Precipitation during December was much above average at 175% of normal, bringing the seasonal accumulation (Oct-Dec) to 118% of average. Soil moisture estimates in runoff producing areas are at 35% of saturation in the upper 2 feet of soil compared to 36% last year. Streamflow forecasts range from 60% to 109% of average. Reservoir storage is at 37% of capacity, 9% less than last year. Surface Water Supply Indices are: Upper Sevier 47%, Lower Sevier 55% and Beaver 49%. Water supply conditions are near average on the upper Sevier, lower Sevier and the Beaver River watersheds.

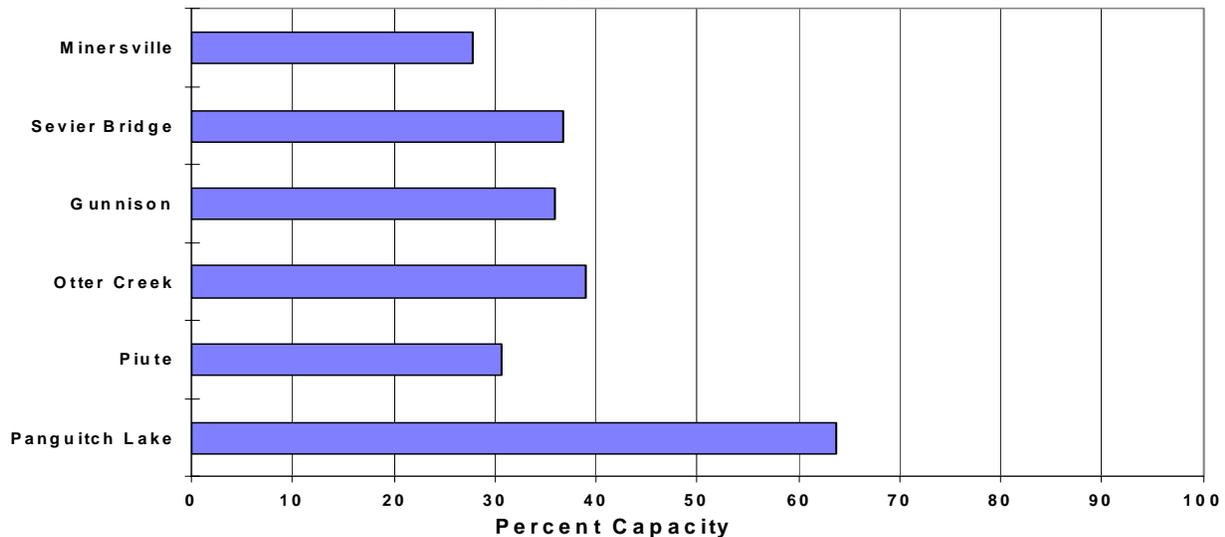
**Sevier River Snow pack**  
1/1/2009



**Sevier River Precipitation**  
1/1/2009



**Reservoir Storage**  
1/1/2009



SEVIER & BEAVER RIVER BASINS  
Streamflow Forecasts - January 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<----- Drier ----->>		----->>		----->>		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Sevier R at Hatch, UT	APR-JUL	26	46	60	109	74	94	55
Sevier R nr Kingston, UT	APR-JUL	39		36	109		86	33
EF Sevier R nr Kingston, UT	APR-JUL	16.0	30	38	109	46	55	35
Sevier R blw Piute Dam nr Marysvale*	APR-JUL	52		99	109		146	91
Clear Creek Abv Diversions nr Sevier	APR-JUL	8.6	15.6	20	91	25	32	22
Salina Ck at Salina, UT	APR-JUL	3.5	8.8	18.0	91	19.6	30	19.7
Manti Ck Blw Dugway Ck Nr Manti	APR-JUL	8.3	11.9	15.0	82	17.8	23	18.3
Sevier R nr Gunnison, UT *	APR-JUL	35	52	95	90	148	200	106
Chicken Creek nr Levan	APR-JUL	0.20	0.69	2.70	60	2.20	4.00	4.50
Oak Creek nr Oak City	APR-JUL	0.33	0.62	1.00	60	1.16	1.66	1.66
Beaver R nr Beaver, UT	APR-JUL	8.4	18.5	25	93	32	42	27
Minersville Reservoir	APR-JUL	1.0	4.0	15.0	90	13.1	25	16.6

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

SEVIER & BEAVER RIVER BASINS  
Watershed Snowpack Analysis - January 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNNISON	20.3	7.3	1.1	10.9	UPPER SEVIER RIVER (south	8	135	150
MINERSVILLE (RkyFd)	23.3	6.5	5.5	12.7	EAST FORK SEVIER RIVER	3	152	143
OTTER CREEK	52.5	20.5	24.3	32.8	SOUTH FORK SEVIER RIVER	5	124	154
PIUTE	71.8	22.0	32.7	42.1	LOWER SEVIER RIVER (inclu	6	62	75
SEVIER BRIDGE	236.0	86.7	114.2	148.9	BEAVER RIVER	2	100	101
PANGUITCH LAKE	22.3	14.2	14.0	108.0	SEVIER & BEAVER RIVER BAS	16	99	110

\* 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.

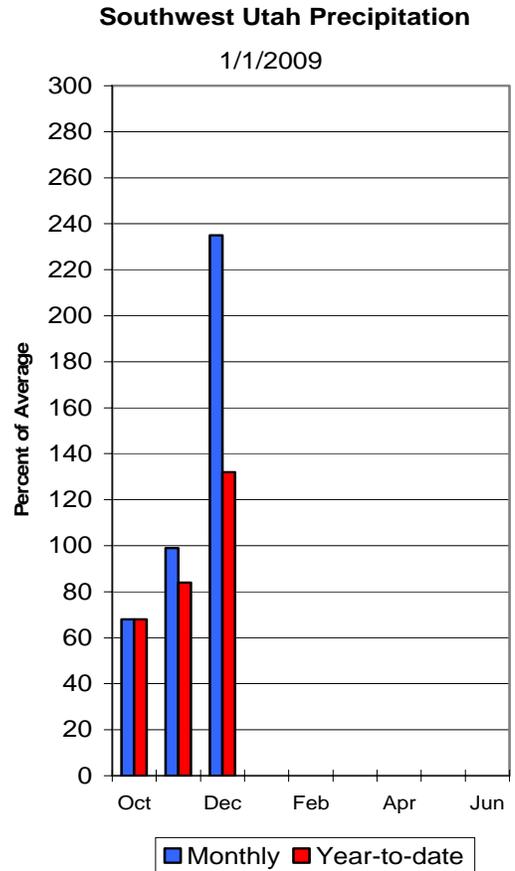
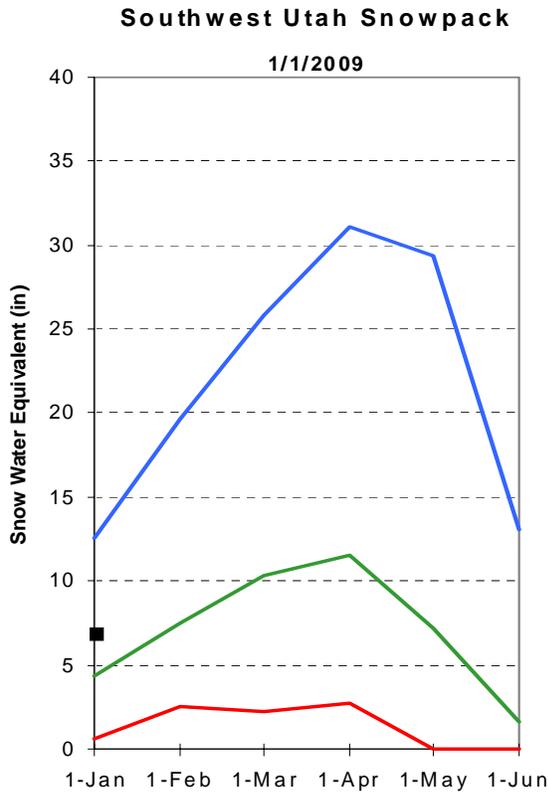
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural volume - actual volume may be affected by upstream water management.

\* - values for Piute inflow and Gunnison are for observed flow.

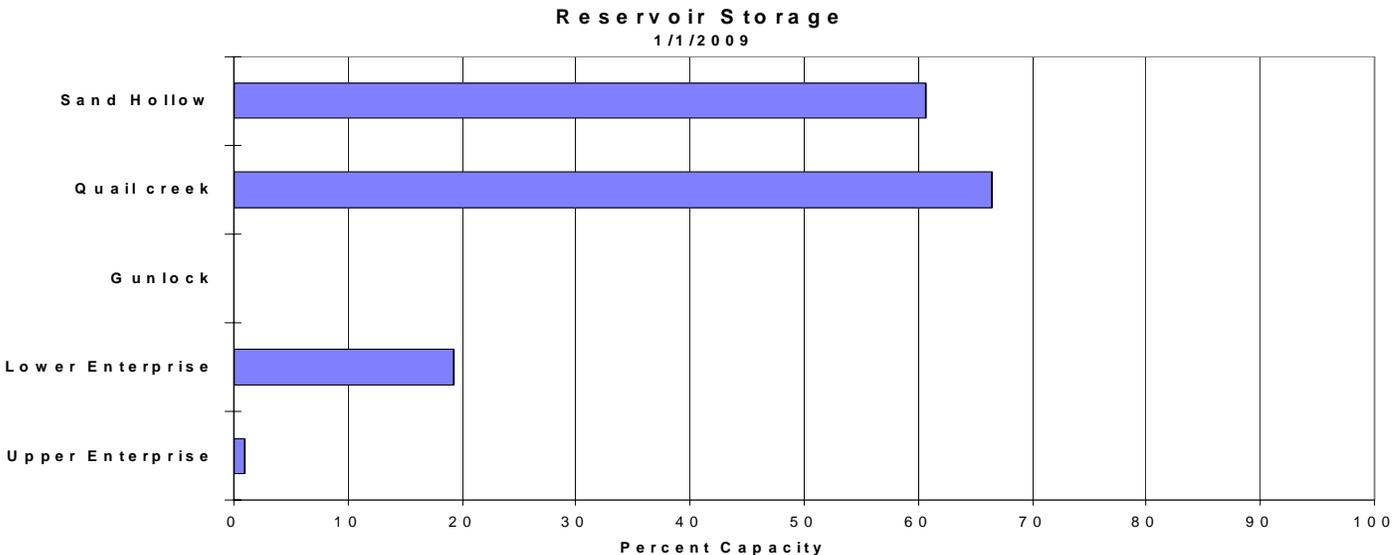
## E. Garfield, Kane, Washington, & Iron Co. January 1, 2009

Snowpacks in this region are much above normal at 157% of average, which is 149% of last year. Individual sites range from 58% at Donkey Reservoir Snotel, to 317% of average at Long Valley Junction Snotel. Precipitation during the month of December was much above average at 246%, bringing the seasonal accumulation (Oct-Dec) to 140% of average. The average soil moisture estimate in runoff producing areas is at 28% of saturation within the upper 2 feet of soil, compared to 36% last year. Forecast streamflows (Apr-July) range from 101% to 114% of average. Reservoir storage is at 53% of capacity, 6% less than last year; however, Gunlock reservoir, accounting for 8% of the regions storage, is drained for maintenance. The Surface Water Supply Index is at 71%, indicating above average water supply conditions.



■ Current    — Average  
— Maximum    — Minimum

■ Monthly    ■ Year-to-date



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E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Streamflow Forecasts - January 1, 2009

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Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Lake Powell Inflow (2)	APR-JUL	4540	6600	8000	101	9400	11500	7930
Virgin River at Virgin	APR-JUL	38	56	70	109	86	112	64
Virgin River nr Hurricane	APR-JUL	33	56	74	107	95	131	69
Santa Clara River nr Pine Valley	APR-JUL	2.30	4.30	6.00	109	8.00	11.40	5.50
Coal Ck nr Cedar City, UT	APR-JUL	12.6	19.4	22	114	29	35	19.3

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

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E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Watershed Snowpack Analysis - January 1, 2009

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Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNLOCK	10.4	0.0	6.2	5.7	VIRGIN RIVER	5	148	170
LAKE POWELL	24322.0	13609.0	11264.0	---	PAROWAN	2	138	135
QUAIL CREEK	40.0	26.6	26.2	23.9	ENTERPRISE TO NEW HARMONY	2	204	216
UPPER ENTERPRISE	10.0	0.1	0.0	---	COAL CREEK	2	146	141
LOWER ENTERPRISE	2.6	0.5	1.4	26.7	ESCALANTE RIVER	2	144	85
					E. GARFIELD, KANE, WASHIN	9	153	157
*****						85	98	94

\* 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.

<b>UTAH SURFACE Snow Surveys Basin or Region January 1, 2009</b>	<b>WATER NRCS SWSI/%</b>	<b>SUPPLY USDA Percentile</b>	<b>INDEX Years with Similar SWSI</b>
<b>Bear River</b>	<b>-2.88</b>	<b>15%</b>	<b>37,43,95,06</b>
<b>Ogden River</b>	<b>-0.13</b>	<b>48%</b>	<b>78,93,94,08</b>
<b>Weber River</b>	<b>-0.51</b>	<b>44%</b>	<b>70,76,79,81</b>
<b>Provo</b>	<b>-0.40</b>	<b>45%</b>	<b>91,00,07,08</b>
<b>West Uintah Basin</b>	<b>-0.42</b>	<b>45%</b>	<b>79,76,08,93</b>
<b>East Uintah Basin</b>	<b>-0.94</b>	<b>39%</b>	<b>88,92,80,06</b>
<b>Price River</b>	<b>-1.54</b>	<b>32%</b>	<b>07,94,93,05</b>
<b>Joe's Valley</b>	<b>0.00</b>	<b>50%</b>	<b>04,01,00,93</b>
<b>Ferron Creek</b>	<b>-0.66</b>	<b>42%</b>	<b>87,03,78,91</b>
<b>Moab</b>	<b>1.63</b>	<b>70%</b>	<b>94,97,92,88</b>
<b>Upper Sevier River</b>	<b>-0.21</b>	<b>47%</b>	<b>53,52,68,99</b>
<b>Lower Sevier River</b>	<b>0.41</b>	<b>55%</b>	<b>07,71,74,81</b>
<b>Beaver River</b>	<b>-0.09</b>	<b>49%</b>	<b>67,08,71,96</b>
<b>Virgin River</b>	<b>1.74</b>	<b>71%</b>	<b>92,01,06,88</b>

## What is a Surface Water Supply Index?

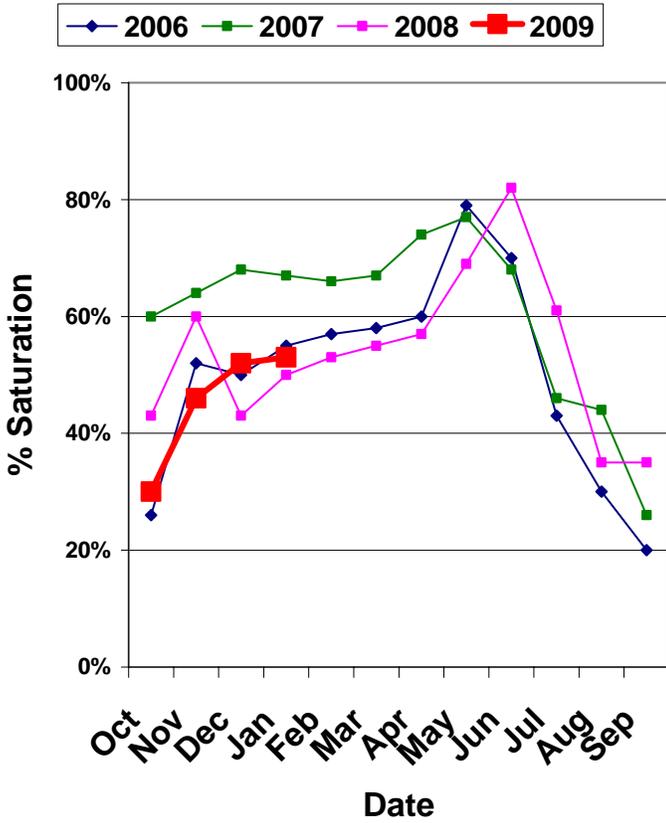
The **Surface Water Supply Index (SWSI)** is a predictive indicator of total surface water availability within a watershed for the spring and summer water use seasons. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow which are 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 very cumbersome name, it has the simplest application. It can be best thought of as a simple 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.

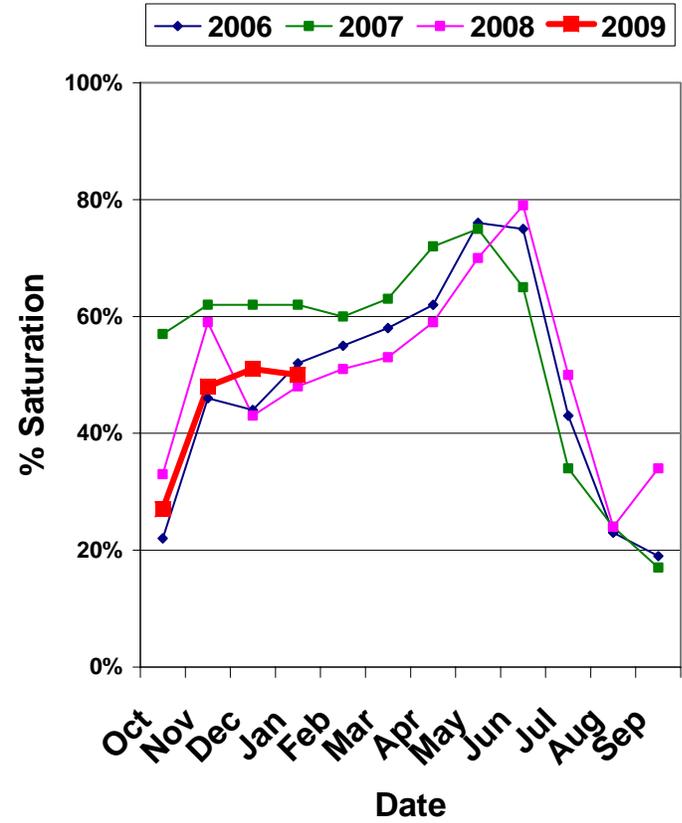
For more information on the SWSI go to: [www.ut.nrcs.usda.gov/snow/](http://www.ut.nrcs.usda.gov/snow/) on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

# Watershed Soil Moisture Charts for Utah Water Supply

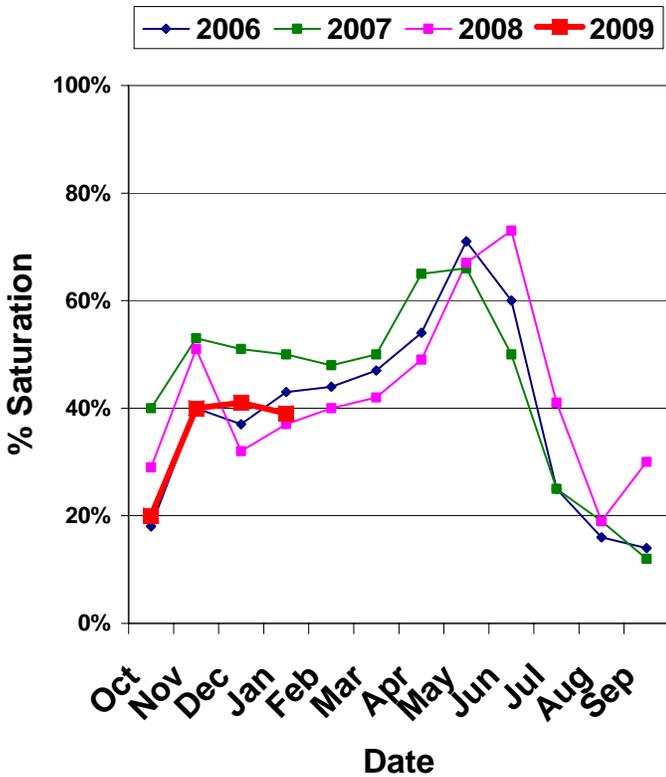
## Bear River Soil Moisture



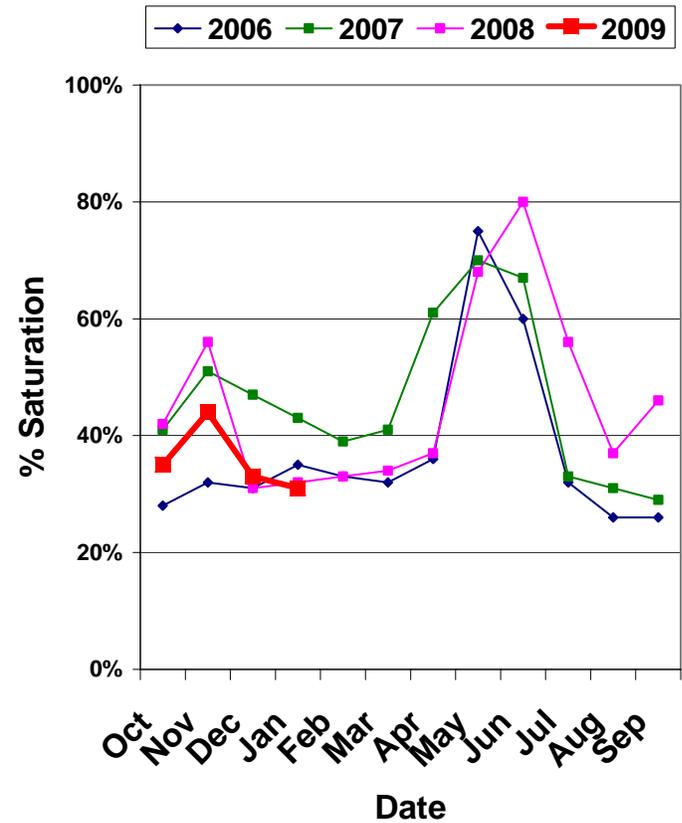
## Weber River Soil Moisture



## Jordan/Provo River Soil Moisture

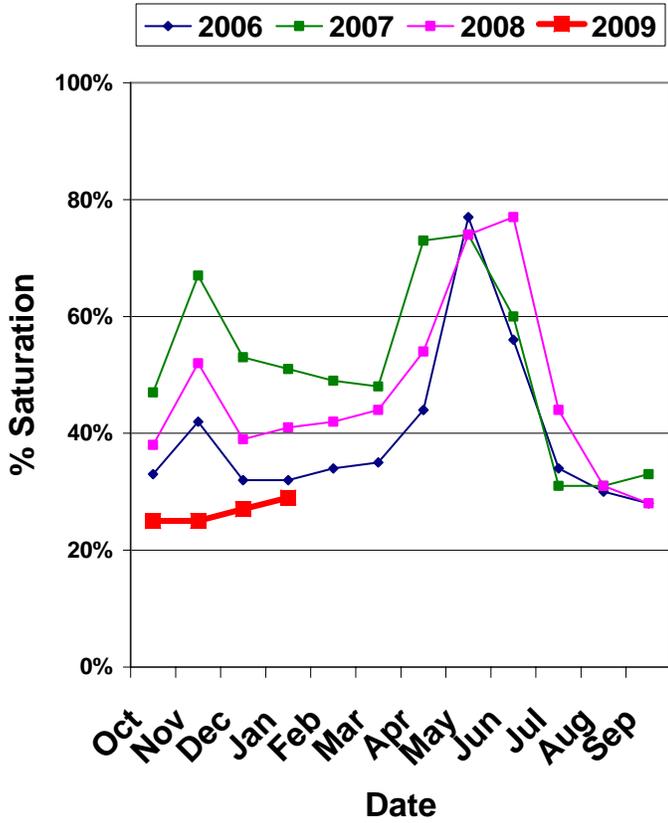


## Uintah Basin Soil Moisture

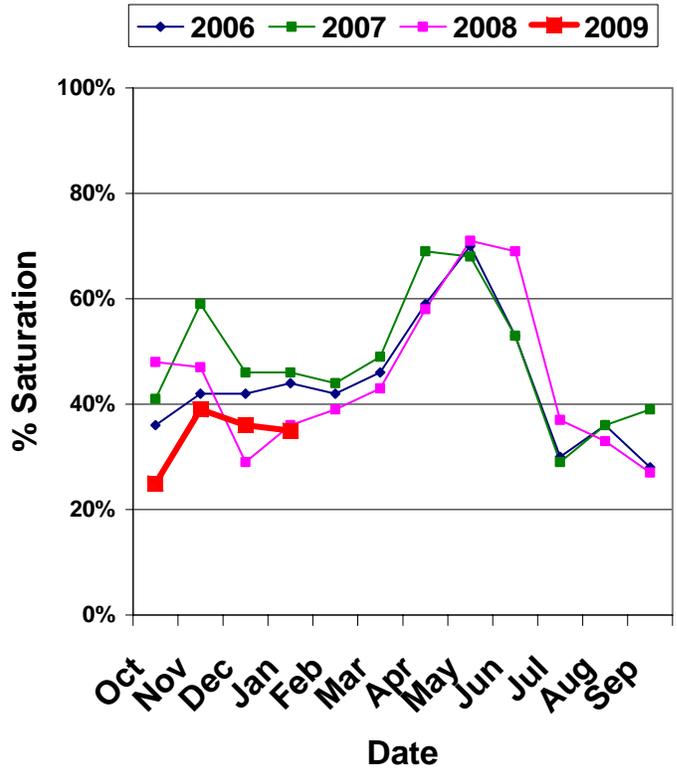


# Watershed Soil Moisture Charts for Utah Water Supply

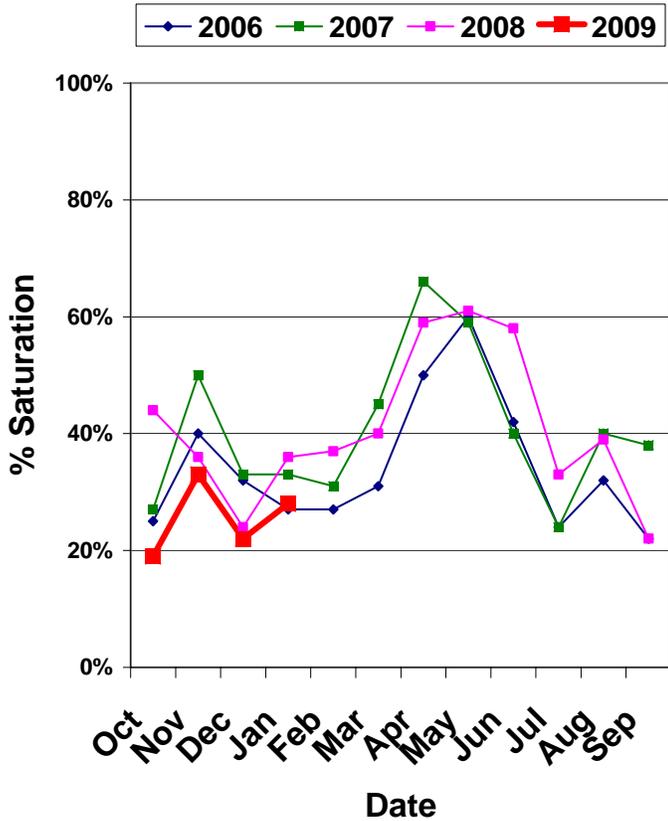
## South East Utah Soil Moisture



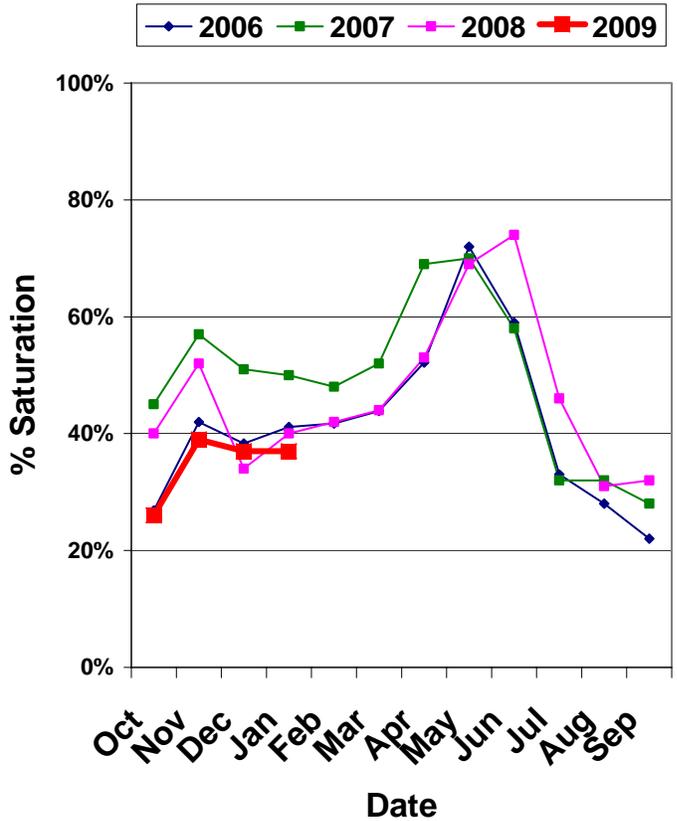
## Sevier/Beaver River Soil Moisture



## Southwest Utah Soil Moisture



## Statewide Soil Moisture



## S N O W C O U R S E D A T A

JANUARY 2009

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	1/01	27	7.2	3.8	2.9
ALTA CENTRAL	8800	12/31	58	15.7	9.5	16.5
BEAVER DAMS SNOTEL	8000	1/01	14	3.0	5.3	4.3
BEAVER DIVIDE SNOTEL	8280	1/01	21	4.7	4.5	4.7
BEN LOMOND PK SNOTEL	8000	1/01	49	14.4	13.6	14.5
BEN LOMOND TR SNOTEL	6000	1/01	37	7.7	9.0	8.5
BEVAN'S CABIN	6450				-	4.2
BIG FLAT SNOTEL	10290	1/01	35	7.9	7.1	7.6
BIRCH CROSSING	8100				-	2.8
BLACK FLAT-U.M. CK S	9400	1/01	16	3.1	3.9	3.8
BLACK'S FORK GS-EF	9340				-	3.3
BLACK'S FORK JUNCTN	8930				-	3.7
BOX CREEK SNOTEL	9800	1/01	25	6.0	5.3	5.3
BRIAN HEAD	10000				-	8.2
BRIGHTON SNOTEL	8750	1/01	32	8.8	8.4	10.9
BRIGHTON CABIN	8700	12/30	43	10.5	7.0	11.5
BROWN DUCK SNOTEL	10600	1/01	37	6.8	5.7	7.7
BRYCE CANYON	8000				-	2.1
BUCK FLAT SNOTEL	9800	1/01	21	4.9	7.6	7.2
BUCK PASTURE	9700				-	-
BUCKBOARD FLAT	9000				-	5.4
BUG LAKE SNOTEL	7950	1/01	26	4.7	4.4	8.3
BURT'S-MILLER RANCH	7900				-	2.2
CAMP JACKSON SNOTEL	8600	1/01	34	7.9	7.4	5.6
CASCADE MOUNTAIN SNO	7770	1/01	29	6.9	9.4	-
CASTLE VALLEY SNOTEL	9580	1/01	32	6.1	5.3	4.9
CHALK CK #1 SNOTEL	9100	1/01	37	8.8	8.2	10.1
CHALK CK #2 SNOTEL	8200	1/01	27	6.0	6.4	6.7
CHALK CREEK #3	7500				-	3.5
CHEPETA SNOTEL	10300	1/01	28	5.6	5.1	6.0
CLAYTON SPRINGS SNTL	10000	1/01	26	5.3	3.6	-
CLEAR CK RIDG #1 SNT	9200	1/01	28	5.6	6.4	7.7
CLEAR CK RIDG #2 SNT	8000	1/01	26	5.1	5.0	6.0
CORRAL	8200				-	-
CURRANT CREEK SNOTEL	8000	1/01	20	4.2	4.4	4.2
DANIELS-STRAWBERRY S	8000	1/01	28	5.9	5.6	6.5
DILL'S CAMP SNOTEL	9200	1/01	19	4.3	6.1	5.5
DONKEY RESERVOIR SNO	9800	1/01	16	2.3	2.1	4.0
DRY BREAD POND SNTL	8350	1/01	35	8.1	6.5	9.1
DRY FORK SNOTEL	7160	1/01	21	4.3	5.9	6.9
EAST WILLOW CREEK SN	8250	1/01	24	4.9	4.3	2.9
FARMINGTON U. SNOTEL	8000	1/01	49	12.1	12.1	13.0
FARMINGTON L. SNOTEL	6780	1/01	30	7.9	8.6	-
FARNSWORTH LK SNOTEL	9600	1/01	30	6.6	8.6	8.0
FISH LAKE	8700				-	2.9
FIVE POINTS LAKE SNO	10920	1/01	33	6.4	5.2	7.0
G.B.R.C. HEADQUARTER	8700				-	-
G.B.R.C. MEADOWS	10000				-	9.7
GARDEN CITY SUMMIT	7600				-	6.5
GARDNER PEAK SNOTEL	8350	1/01	30	7.7	4.7	-
GEORGE CREEK	8840				-	-
GOOSEBERRY R.S.	8400				-	5.1
GOOSEBERRY R.S. SNTL	7900	1/01	13	2.7	4.8	3.6
GUTZ PEAK SNOTEL	6820	1/01	27	7.1	3.8	-
HARDSCRABBLE SNOTEL	7250	1/01	28	6.4	7.1	6.5
HARRIS FLAT SNOTEL	7700	1/01	23	6.3	4.6	2.5
HAYDEN FORK SNOTEL	9100	1/01	28	6.8	4.9	6.3
HENRY'S FORK	10000				-	-
HEWINTA SNOTEL	9500	1/01	14	2.7	2.7	4.1
HICKERSON PARK SNTL	9100	1/01	11	1.5	1.7	2.9
HIDDEN SPRINGS	5500	12/29	16	3.3	3.7	.2
HOBBLE CREEK SUMMIT	7420				-	6.1
HOLE-IN-ROCK SNOTEL	9150	1/01	10	1.5	1.5	2.7
HORSE RIDGE SNOTEL	8260	1/01	32	6.4	6.5	9.3
HUNTINGTON-HORSESHOE	9800				-	9.7
INDIAN CANYON SNOTEL	9100	1/01	17	2.8	4.2	4.4
JOHNSON VALLEY	8850				-	2.7
JONES CORRAL SNOTEL	9750	1/01	22	4.8	2.9	-
KILFOIL CREEK	7300				-	5.5
KILLYON CANYON	6300	12/29	19	4.3	4.2	5.1

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
KIMBERLY MINE SNOTEL	9300	1/01	30	6.5	8.3	6.0
KING'S CABIN SNOTEL	8730	1/01	14	3.0	3.0	5.0
KLONDIKE NARROWS	7400				-	7.5
KOLOB SNOTEL	9250	1/01	46	11.4	8.9	6.9
LAKEFORK #1 SNOTEL	10100	1/01	24	5.8	4.0	5.6
LAKEFORK BASIN SNTL	10900	1/01	37	8.0	7.1	8.2
LAKEFORK MOUNTAIN #3	8400				-	2.8
LAMBS CANYON	7400	12/30	32	7.3	4.9	7.4
LASAL MOUNTAIN LOWER	8800				-	3.8
LASAL MOUNTAIN SNTL	9850	1/01	25	6.4	6.1	4.7
LIGHTNING RIDGE SNTL	8220	1/01	27	7.2	6.7	-
LILY LAKE SNOTEL	9050	1/01	25	5.3	3.5	5.5
LITTLE BEAR LOWER	6000				-	4.3
LITTLE BEAR SNOTEL	6550	1/01	23	5.2	5.0	5.2
LITTLE GRASSY SNOTEL	6100	1/01	21	5.3	1.0	2.1
LONG FLAT SNOTEL	8000	1/01	21	5.3	4.2	2.8
LONG VALLEY JCT. SNT	7500	1/01	24	5.7	3.5	1.8
LOOKOUT PEAK SNOTEL	8200	1/01	35	8.5	8.6	9.9
LOST CREEK RESERVOIR	6130				-	2.0
LOUIS MEADOW SNOTEL	6700	1/01	29	8.4	9.0	-
MAMMOTH-COTTONWD SNT	8800	1/01	23	6.1	8.6	7.6
MERCHANT VALLEY SNTL	8750	1/01	26	5.2	6.0	5.4
MIDDLE CANYON	7000				-	5.9
MIDWAY VALLEY SNOTEL	9800	1/01	49	12.6	8.3	9.0
MILL CREEK	6950	12/30	34	7.6	6.0	8.3
MILL-D NORTH SNOTEL	8960	1/01	32	8.5	7.7	10.3
MILL-D SOUTH FORK	7400	12/30	32	8.2	5.7	8.6
MINING FORK SNOTEL	8000	1/01	19	4.9	5.4	5.5
MONTE CRISTO SNOTEL	8960	1/01	42	9.8	7.8	11.0
MOSBY MTN. SNOTEL	9500	1/01	24	4.1	4.1	5.1
MT.BALDY R.S.	9500				-	9.9
MUD CREEK #2	8600				-	5.3
OAK CREEK	7760				-	-
PANGUITCH LAKE R.S.	8200				-	-
PARLEY'S CANYON SNTL	7500	1/01	26	6.1	6.5	7.2
PARRISH CREEK SNOTEL	7740	1/01	39	8.6	9.0	-
PAYSON R.S. SNOTEL	8050	1/01	26	6.1	7.5	7.2
PICKLE KEG SNOTEL	9600	1/01	22	4.4	7.4	6.2
PINE CREEK SNOTEL	8800	1/01	31	6.0	11.5	8.8
RED PINE RIDGE SNTL	9200	1/01	20	4.2	6.0	6.7
REDDEN MINE LOWER	8500				-	6.7
REES'S FLAT	7300				-	5.6
ROCK CREEK SNOTEL	7900	1/01	13	2.2	2.8	3.7
ROCKY BN-SETTLEMT SN	8900	1/01	32	7.4	6.1	10.0
SEELEY CREEK SNOTEL	10000	1/01	15	4.3	5.0	6.4
SMITH MOREHOUSE SNTL	7600	1/01	26	6.1	4.4	5.7
SNOWBIRD SNOTEL	9700	1/01	58	17.3	15.4	13.2
SPIRIT LAKE	10300				-	5.5
SQUAW SPRINGS	9300				-	3.2
STEEL CREEK PARK SNO	10100	1/01	25	4.3	4.3	6.7
STILLWATER CAMP	8550				-	3.9
STRAWBERRY DIVIDE SN	8400	1/01	25	5.0	5.6	7.4
SUSC RANCH	8200				-	2.8
TALL POLES	8800				-	5.3
TEMPLE FORK SNOTEL	7410	1/01	30	6.4	5.3	-
THAYNES CANYON SNTL	9200	1/01	34	8.5	8.8	9.0
THISTLE FLAT	8500				-	-
TIMBERLINE	9100				-	-
TIMBERLINE SNOTEL	8680	1/01	17	3.7	6.3	-
TIMPANOGOS DIVIDE SN	8140	1/01	36	9.5	9.5	9.2
TONY GROVE LK SNOTEL	8400	1/01	50	12.8	9.8	14.3
TONY GROVE R.S.	6250				-	5.0
TRIAL LAKE	9960				-	9.8
TRIAL LAKE SNOTEL	9960	1/01	40	9.3	6.4	10.5
TROUT CREEK SNOTEL	9400	1/01	16	3.1	3.2	4.2
UPPER JOES VALLEY	8900				-	4.1
USU DOC DANIEL SNTL	8270	1/01	47	10.8	9.5	-
VERNON CREEK SNOTEL	7500	1/01	21	4.4	5.2	4.0
VIPONT	7670				-	-
WEBSTER FLAT SNOTEL	9200	1/01	33	8.5	6.2	6.0
WHITE RIVER #1 SNTL	8550	1/01	16	3.0	4.8	5.2
WHITE RIVER #3	7400				-	3.5
WIDTSOE #3 SNOTEL	9500	1/01	18	4.8	2.9	4.4
WRIGLEY CREEK	9000				-	4.3
YANKEE RESERVOIR	8700				-	3.7

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YOU MAY OBTAIN THIS PRODUCT AS WELL AS CURRENT SNOW, PRECIPITATION, TEMPERATURE AND SOIL MOISTURE, RESERVOIR, SURFACE WATER SUPPLY INDEX, AND OTHER DATA BY VISITING OUR WEB SITE @:

<http://www.ut.nrcs.usda.gov/snow/>

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**Utah Water Supply  
Outlook Report**  
Natural Resources Conservation Service  
Salt Lake City, UT





# Utah Water Supply Outlook Report

February, 2009



**The Wasatch Back. Photo by Karen Vaughan, 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, 2009

## SUMMARY

January 2009 saw pretty much average snow accumulation in northern and southeastern Utah. The Sevier basin had a bit below average January snowpack accumulation at 88% but southwestern Utah was much below normal with only 48% of an average January accumulation. Much of January was dominated by high pressure systems across the state and broken only occasionally by large storms. Snowpacks across the state now range from 83% over the Uintahs to 111% in southwestern Utah. There is an interesting pattern in the current snowpack where the east side of the Wasatch and Sevier Plateaus comprising the Escalante, Dirty Devil, San Rafael, Price, clear to the Duchesne and the north Slope is below average and the west side has a near normal snowpack. January precipitation was near to above normal (94%-123%) in northern Utah and near to below normal (77%-105%) in the south which brings the year to date precipitation to near normal in the north and above average in the south. Current soil moisture saturation levels in runoff producing areas are: Bear – 55%, Weber – 54%, Provo – 41%, Uintah Basin – 31%, SE Utah – 36%, Sevier – 43% and SW Utah – 39%, up 1% to 6 % from last month. Drier soils typically mean less runoff from snowmelt. Reservoir storage is currently at 59% of capacity statewide compared to 56% last year. General water supply conditions are near average in northern Utah, above average on the Virgin and near to below average in central Utah. Streamflow forecasts range from 60% for the Bear River at Stewart Dam to 111% of average on the Beaver River nr Beaver. Surface Water Supply Indices range from 25% on the Bear River to 71% for the Virgin. The extremely low value for the Bear River is a reflection of Bear Lake storage which continues to be well below normal.

## SNOWPACK

February first snowpacks as measured by the NRCS SNOTEL system are as follows: Bear - 90%, Weber - 96%, Provo - 98%, Uintahs - 83%, southeast Utah - 89%, Sevier - 103%, southwest Utah - 111% and the statewide figure is 94% of average. With February and March remaining in the snow accumulation season, the range of potential outcomes is narrowing, however any outcome is possible depending on future climatic conditions. If drought prevails, snowpacks could range between 20% and 70% of average. Given maximum accumulations, April 1 snowpacks could range between 120% and 190% of average. With normal accumulations, April 1 snowpacks will be between 90% and 110% of average. The area with lowest snowpack average is the north slope of the Uintahs – 69%.

## PRECIPITATION

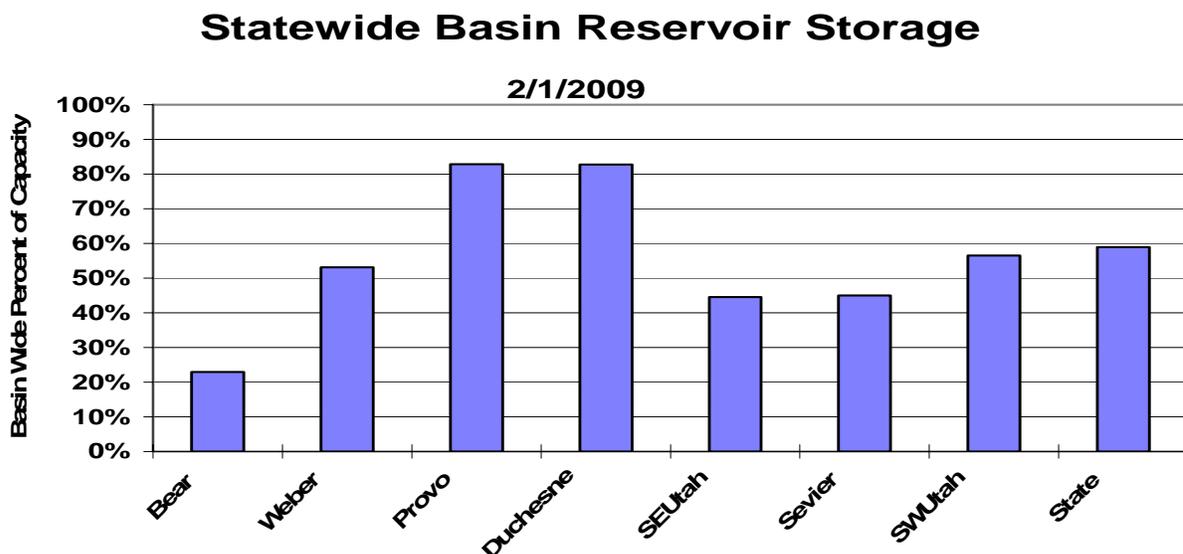
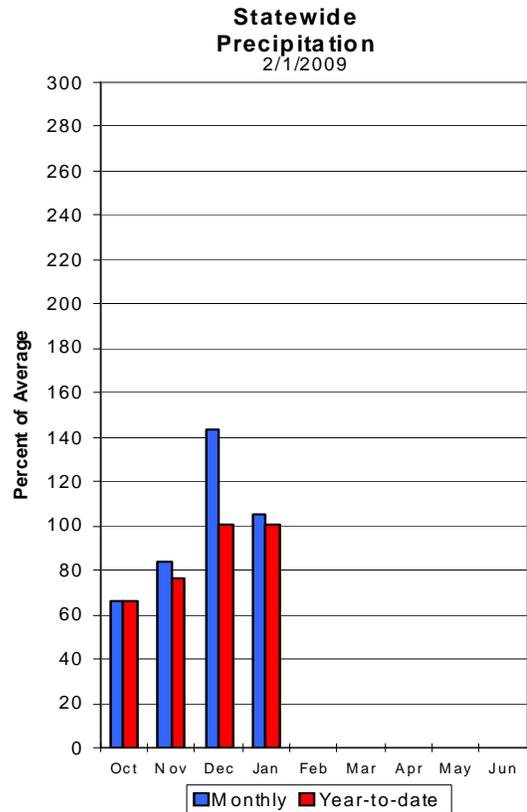
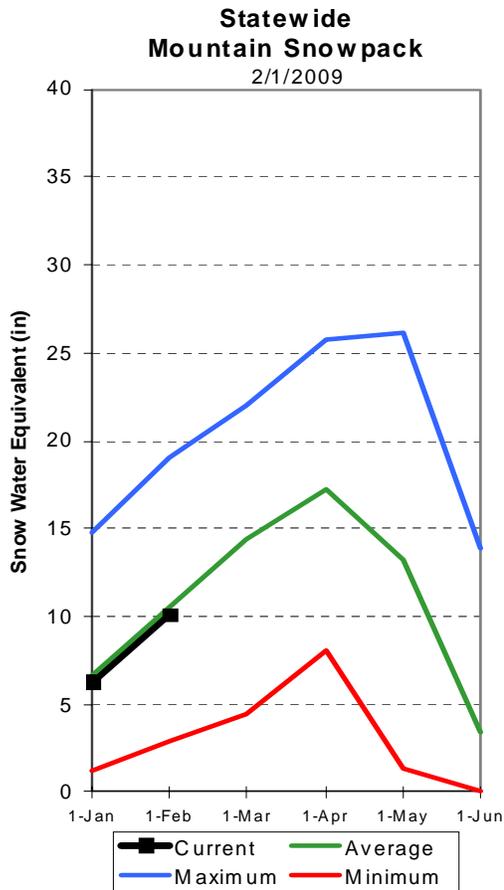
Mountain precipitation during January was: Bear – 102%, Weber – 116%, Provo – 123%, Uintahs – 94%, SE Utah – 97%, Sevier – 105%, SW Utah – 77% and the statewide figure is 105% of average. This brings the seasonal accumulation (Oct-Jan) to 101% of average statewide.

## RESERVOIRS

Storage in 41 of Utah's key irrigation reservoirs is at 59% of capacity up 3% compared to February of last year. A very mild and dry fall has contributed to reservoir declines across the State. There is some good news on the reservoir repair front as all previously restricted fill reservoirs are now able to store, including Willard Bay.

## STREAMFLOW

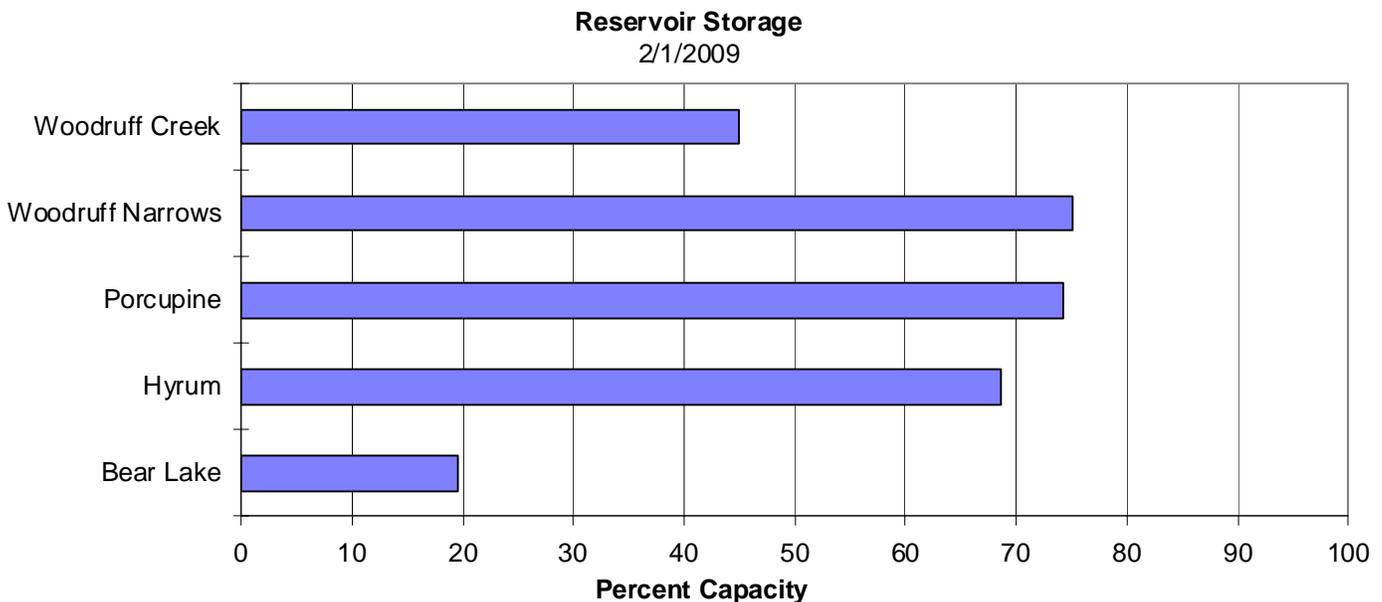
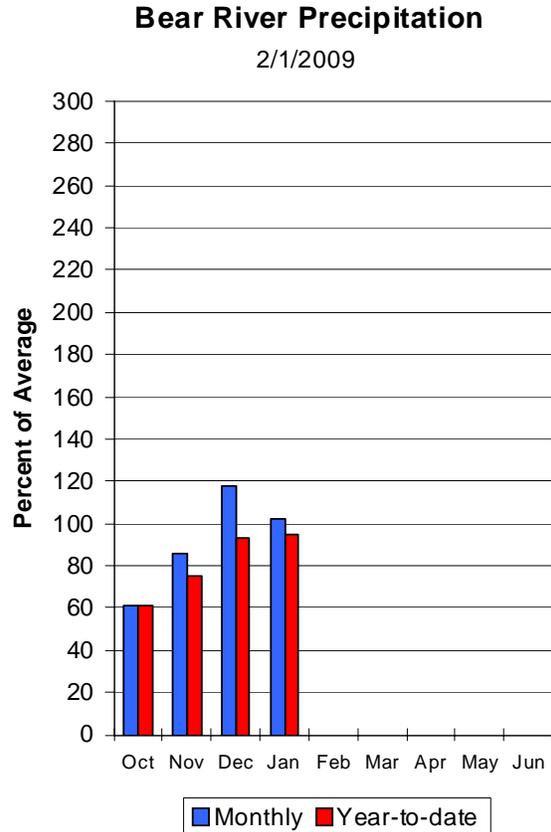
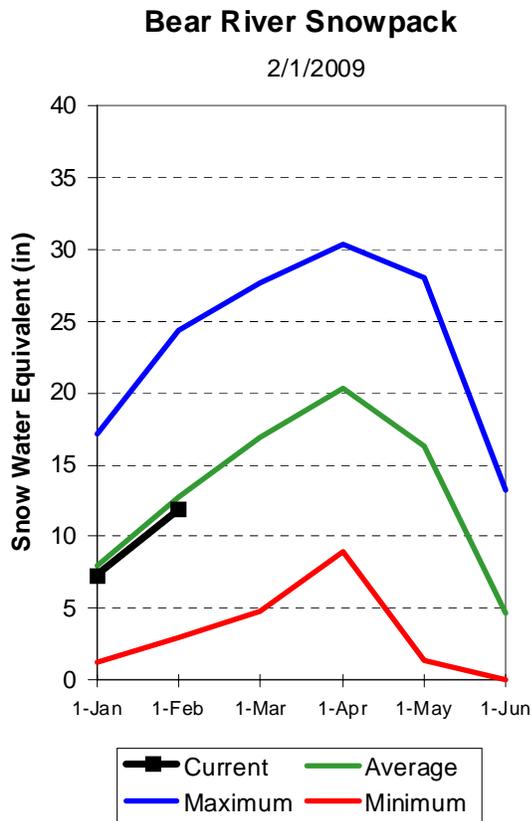
Snowmelt streamflows are expected to have a wide range from much below average to above average across the state of Utah this year. Forecast streamflows range from 60% on the Bear River at Stewart Dam to 111% on Beaver River nr Beaver. Most flows are forecast to be in the 80% to 100% range.



# Bear River Basin

## February 1, 2009

Snowpacks on the Bear River Basin are average at 91% of normal, about 97% of last year. Individual sites range from 108% of normal at Hayden Fork Snotel to 71% at Giveout Snotel. January precipitation was average at 102%, which brings the seasonal accumulation (Oct-Jan) to 95% of average. Soil moisture levels in runoff producing areas are at 55% of saturation in the upper 2 feet of soil compared to 53% last year. Forecast streamflows (April-July) range from much below to near average (60%-87%) volumes for this spring and summer. Reservoir storage is low at 23% of capacity, which is up 3% from this time last year. The Surface Water Supply Index is at 25% for the Bear River, in other words, 75% of years have had more total water available. Water supply conditions are much below normal due to low reservoir storage in Bear Lake.



BEAR RIVER BASIN  
Streamflow Forecasts - February 1, 2009

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Bear R nr UT-WY State Line	APR-JUL	57	81	97	86	113	137	113
Bear River ab Reservoir nr Woodruff	APR-JUL	63	95	117	86	139	171	136
Big Creek nr Randolph	APR-JUL	2.30	3.40	4.20	86	5.00	6.10	4.90
Smiths Fork nr Border	APR-JUL	58	76	88	85	100	118	103
Bear River at Stewart Dam	APR-JUL	72	110	140	60	174	230	234
Little Bear at Paradise, UT	APR-JUL	14.8	30	40	87	50	65	46
Logan nr Logan, UT	APR-JUL	55	85	105	83	125	155	126
Blacksmith Fk nr Hyrum, UT	APR-JUL	15.7	30	41	85	50	64	48

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of January					BEAR RIVER BASIN Watershed Snowpack Analysis - February 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BEAR LAKE	1302.0	254.9	237.9	---	BEAR RIVER, UPPER (abv Ha	4	96	96
HYRUM	15.3	10.5	11.1	10.4	BEAR RIVER, LOWER (blw Ha	4	94	88
PORCUPINE	11.3	8.4	6.1	4.4	LOGAN RIVER	3	96	87
WOODRUFF NARROWS	57.3	43.0	25.0	25.2	RAFT RIVER	0	0	0
WOODRUFF CREEK	4.0	1.8	3.0	---	BEAR RIVER BASIN	8	95	92

\* 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.

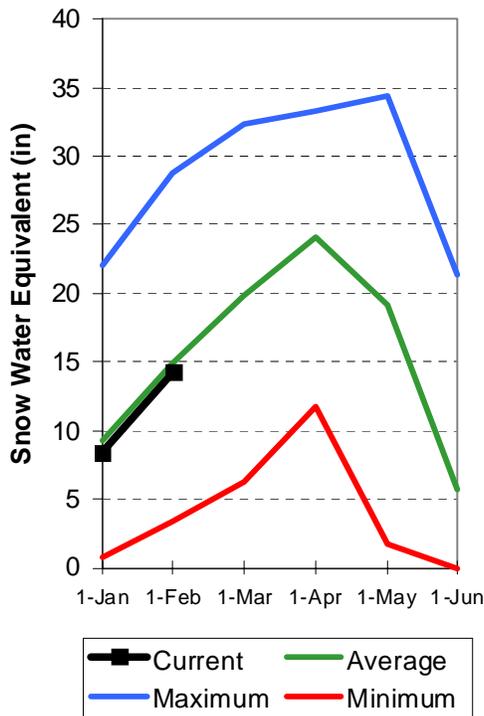
# Weber and Ogden River Basins

## February 1, 2009

Snowpacks on the Weber and Ogden Watersheds are average at 95%, about 85% of last year. Individual sites range from 118% to 76% of average. January precipitation was above average at 116% bringing the seasonal accumulation (Oct-Jan) to 99% of average. Soil moisture levels in runoff producing areas are at 54% of saturation in the upper 2 feet of soil compared to 51% last year. Streamflow forecasts (April-July) range from 89% to 94% of average. Reservoir storage is at 53% of capacity, 12% higher than last year. The Surface Water Supply Index is at 54% for the Weber River and 48% for the Ogden River indicating that overall water supply conditions are near average.

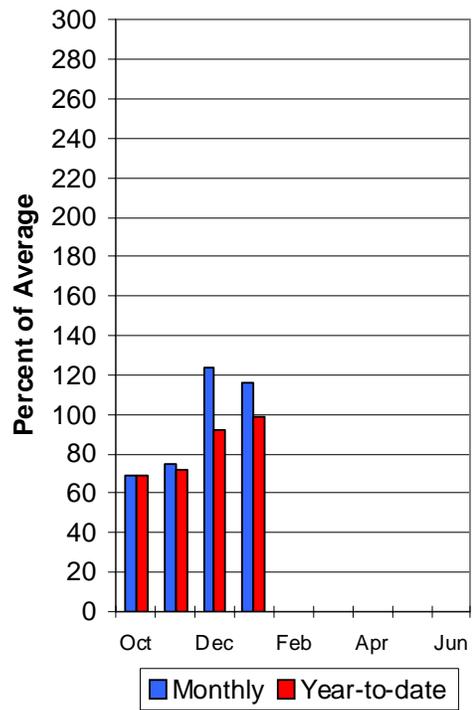
### Weber River Snowpack

2/1/2009



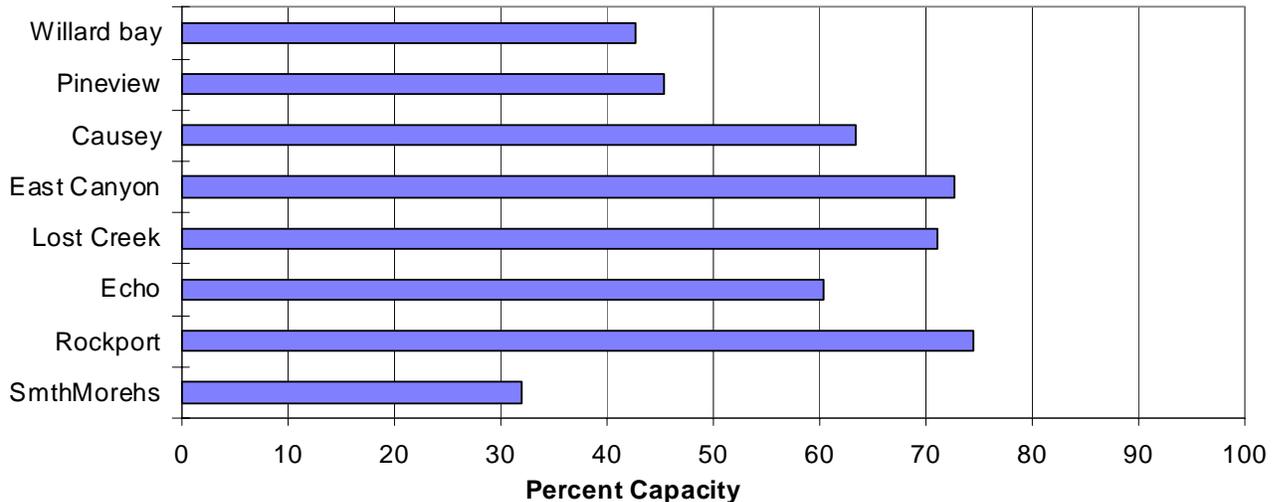
### Weber River Precipitation

2/1/2009



### Reservoir Storage

2/1/2009



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WEBER & OGDEN WATERSHEDS in Utah  
Streamflow Forecasts - February 1, 2009

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Smith & Morehouse Res inflow	APR-JUL	22	27	31	91	35	40	34
Weber R nr Oakley, UT	APR-JUL	67	93	111	90	129	155	123
Rockport Reservoir	APR-JUL	59	95	120	90	145	181	134
Weber R nr Coalville, UT	APR-JUL	62	99	124	91	149	186	137
Chalk Ck at Coalville, UT	APR-JUL	14.1	30	41	91	52	68	45
Echo Resv at Echo, UT	APR-JUL	59	119	160	89	201	261	179
Lost Ck Resv Inflow	APR-JUL	6.4	12.1	16.0	91	19.9	26	17.6
East Canyon Ck nr Morgan, UT	APR-JUL	10.2	21	29	94	37	48	31
Weber R at Gateway, UT	APR-JUL	85	225	320	90	415	555	355
SF Ogden R nr Huntsville, UT	APR-JUL	23	43	57	89	71	91	64
Pineview Resv Inflow	APR-JUL	47	90	120	90	150	193	133
Wheeler Ck nr Huntsville, UT	APR-JUL	2.40	4.40	5.70	91	7.00	9.00	6.30

WEBER & OGDEN WATERSHEDS in Utah Reservoir Storage (1000 AF) - End of January					WEBER & OGDEN WATERSHEDS in Utah Watershed Snowpack Analysis - February 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CAUSEY	7.1	4.5	4.1	2.8	OGDEN RIVER	4	81	89
EAST CANYON	49.5	36.0	28.5	35.4	WEBER RIVER	9	88	99
ECHO	73.9	44.6	37.7	50.2	WEBER & OGDEN WATERSHEDS	13	86	95
LOST CREEK	22.5	16.0	13.3	14.0				
PINEVIEW	110.1	49.9	40.3	51.7				
ROCKPORT	60.9	45.3	30.7	34.3				
WILLARD BAY	215.0	92.0	63.2	151.6				

\* 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.

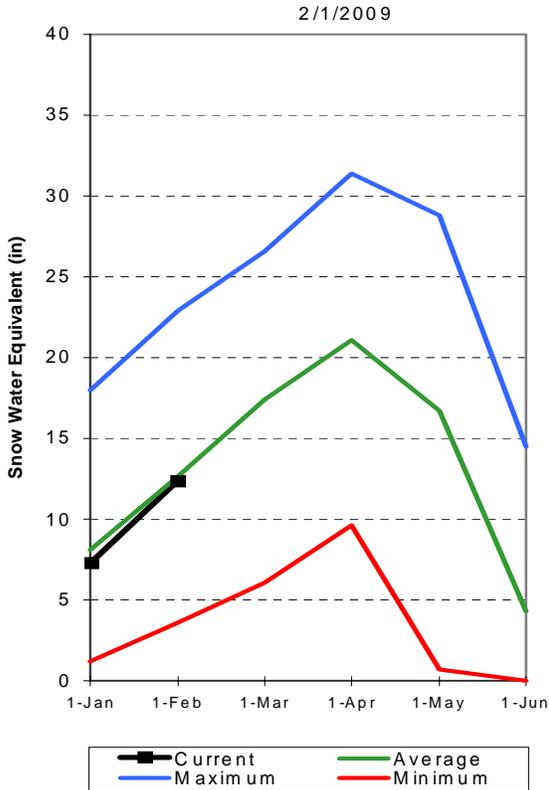
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Utah Lake, Jordan River & Tooele Valley Basins

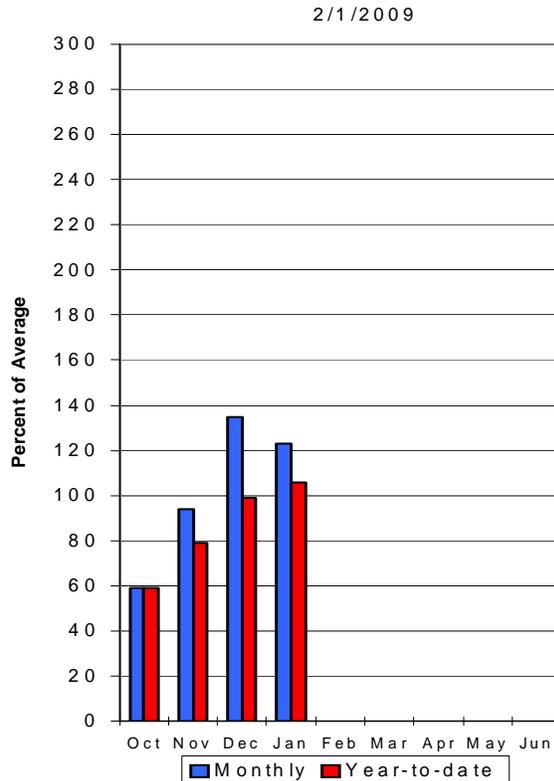
## February 1, 2009

Snowpack over these basins are near average at 98%, which is 84% of last year. Individual sites range from 56% at Killyon Canyon, to 129% of average at the Snowbird Snotel. January precipitation was above average at 123%, bringing the seasonal accumulation (Oct-Jan) to 106% of average. Average soil moisture in runoff producing areas is estimated at 41% of saturation in the upper 2 feet of soil compared to 40% at this time last year. Reservoir storage is at 83% of capacity, 5% higher than last year. Streamflow forecasts (Apr-July) range from 87% to 105% of average. The Surface Water Supply Index below Deer Creek reservoir is 48%, indicating general water supply conditions are near normal.

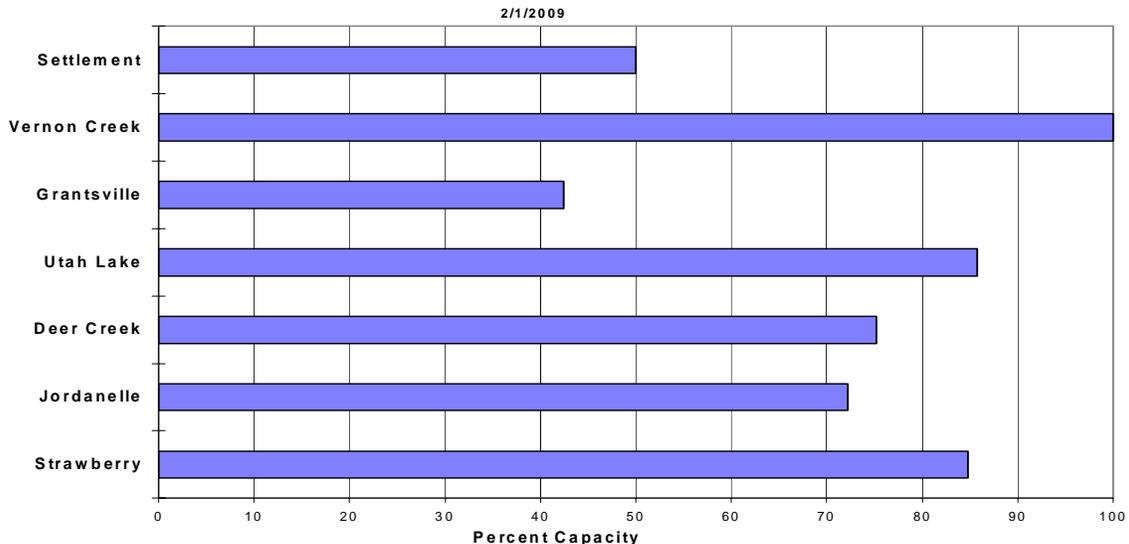
**Provo River Snowpack**



**Provo River Precipitation**



**Reservoir Storage**



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Streamflow Forecasts - February 1, 2009

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Spanish Fk at Castilla, UT	APR-JUL	3.1	34	70	91	106	158	77
Provo River nr Woodland	APR-JUL	54	77	94	91	113	144	103
Provo River nr Hailstone	APR-JUL	56	80	98	90	118	151	109
Provo R blw Deer Ck Dam, UT	APR-JUL	69	95	113	90	131	157	126
American Fk abv Upper Powerplant	APR-JUL	14.2	24	30	94	36	46	32
Utah Lake inflow	APR-JUL	130	234	305	94	376	480	325
W Canyon Ck nr Cedar Fort, UT	APR-JUL	0.89	1.67	2.20	92	2.70	3.50	2.40
Little Cottonwood Ck nr SLC	APR-JUL	27	34	39	98	44	53	40
Big Cottonwood Ck nr SLC, UT	APR-JUL	24	32	37	97	42	50	38
Mill Ck nr SLC, UT	APR-JUL	2.70	5.00	6.50	93	8.00	10.30	7.00
Parleys Ck nr SLC, UT	APR-JUL	5.3	11.0	14.8	89	18.6	24	16.7
Dell Fork nr SLC, UT	APR-JUL	0.20	3.50	6.00	88	8.50	12.30	6.80
Emigration Ck nr SLC, UT	APR-JUL	0.34	2.50	3.90	87	5.30	7.50	4.50
City Ck nr SLC, UT	APR-JUL	3.10	5.90	7.80	90	9.70	12.50	8.70
Vernon Ck nr Vernon, UT	APR-JUL	0.03	0.77	1.40	95	2.00	3.00	1.48
Settlement Ck nr Tooele, UT	APR-JUL	0.17	1.20	1.90	91	2.60	3.60	2.10
South Willow Ck nr Grantsville, UT	APR-JUL	1.56	2.70	3.40	105	4.10	5.20	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	112.5	70.5	104.8
GRANTSVILLE	3.3	1.4	1.6	1.8
SETTLEMENT CREEK	1.0	0.5	0.5	0.6
STRAWBERRY-ENLARGED	1105.9	937.5	878.5	642.2
UTAH LAKE	870.9	747.0	744.4	790.9
VERNON CREEK	0.6	0.6	0.6	---

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Watershed Snowpack Analysis - February 1, 2009

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
PROVO RIVER & UTAH LAKE	7	86	95
PROVO RIVER	4	87	96
JORDAN RIVER & GREAT SALT	6	84	102
TOOELE VALLEY WATERSHEDS	3	87	92
UTAH LAKE, JORDAN RIVER &	16	85	98

\* 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.

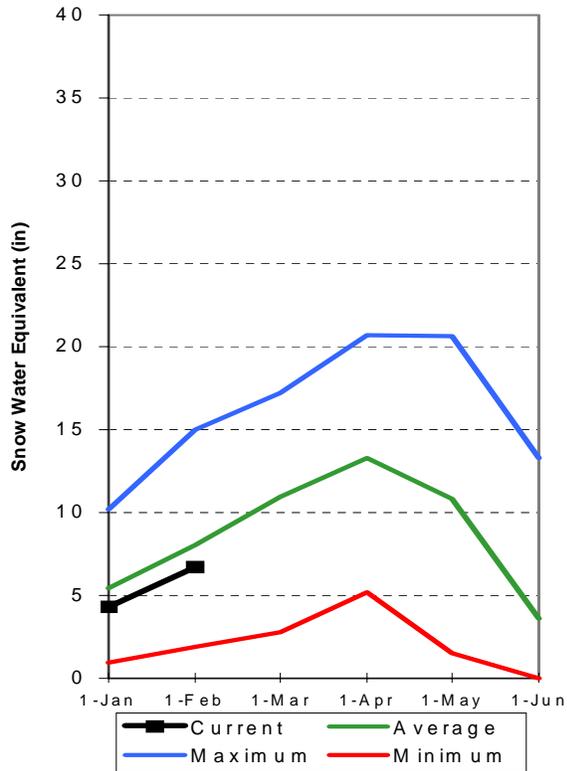
# Uintah Basin and Dagget SCD's

## February 1, 2009

Snowpack across the Uintas is below average at 84%, which is 75% of last year. Individual sites on the North Slope range from 52% to 76% and on the South Slope range from 73% to 110% of average. Precipitation during January was near average at 94% bringing the seasonal accumulation (Oct-Jan) to 91%. Soil moisture values in runoff producing areas are at 31% of saturation in the upper 2 feet of soil compared to 33% last year. Reservoir storage is at 83% of capacity, 5% more than last year. Streamflow forecasts (Apr-July) range from 59% to 88% of average. The Surface Water Supply Index for the western area is 45% and for the eastern area it is 32% indicating near normal conditions on the west side and below normal for the eastern area. General water supply conditions range from near to below average.

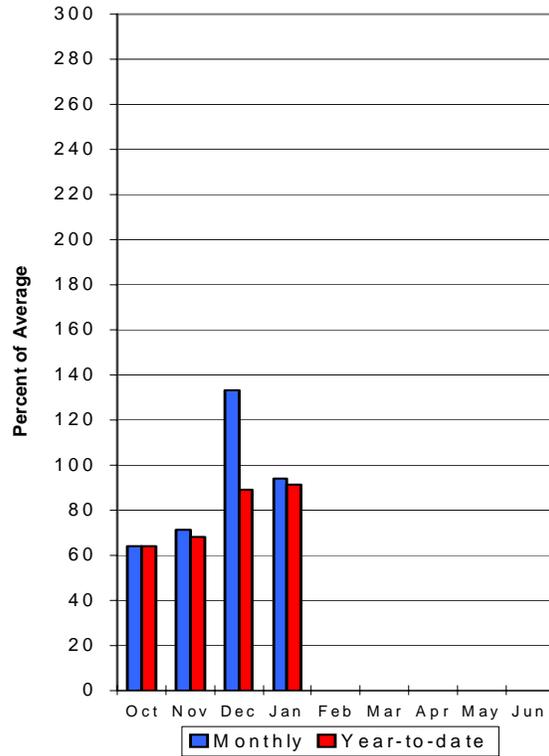
### Uinta Snow pack

2/1/2009



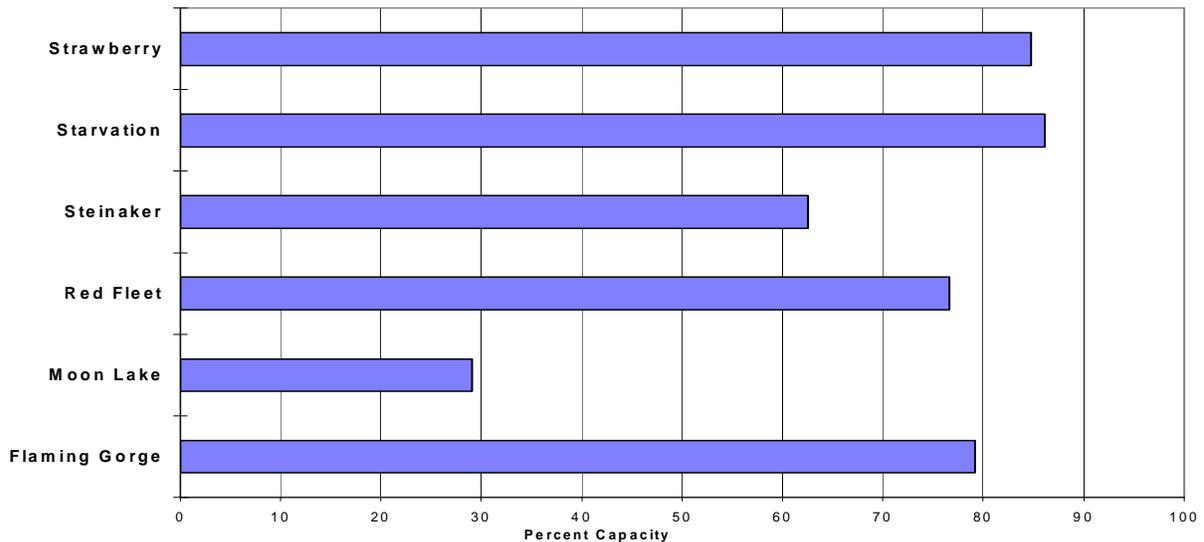
### Uinta Precipitation

2/1/2009



### Reservoir Storage

2/1/2009



UINTAH BASIN & DAGGET SCD'S  
Streamflow Forecasts - February 1, 2009

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ===== Wetter =====>>		Chance Of Exceeding *				30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Blacks Fork nr Robertson	APR-JUL	53	69	80	84	92	112	95
EF of Smiths Fork nr Robertson	APR-JUL	14.6	19.9	24	83	28	36	29
Flaming Gorge Reservoir Inflow (2)	APR-JUL	520	740	910	77	1100	1410	1190
Big Brush Ck abv Red Fleet Resv	APR-JUL	9.7	13.2	16.0	76	19.0	24	21
Ashley Creek nr Vernal	APR-JUL	23	32	39	75	47	59	52
WF Duchesne River nr Hanna (2)	APR-JUL	13.0	17.6	21	88	25	31	24
Duchesne R nr Tabiona (2)	APR-JUL	54	71	85	81	100	124	105
Upper Stillwater Reservoir Inflow	APR-JUL	51	62	70	85	79	92	82
Rock Ck nr Mountain Home (2)	APR-JUL	55	68	77	87	87	103	89
Duchesne R abv Knight Diversion (2)	APR-JUL	103	132	155	82	179	220	188
Strawberry R nr Soldier Springs (2)	APR-JUL	25	38	49	83	61	82	59
Currant Creek Reservoir Inflow (2)	APR-JUL	9.7	15.4	20	80	25	34	25
Strawberry R nr Duchesne (2)	APR-JUL	45	70	91	75	114	154	121
Lake Fork River Moon Lake Inflow	APR-JUL	40	50	57	84	65	77	68
Yellowstone River nr Altonah	APR-JUL	34	44	52	84	60	73	62
Duchesne R at Myton (2)	APR-JUL	67	128	180	69	240	345	260
Whiterocks nr Whiterocks	APR-JUL	27	37	45	80	54	68	56
Duchesne R nr Randlett (2)	APR-JUL	64	131	190	59	260	385	324

UINTAH BASIN & DAGGET SCD'S Reservoir Storage (1000 AF) - End of January					UINTAH BASIN & DAGGET SCD'S Watershed Snowpack Analysis - February 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
FLAMING GORGE	3749.0	2969.0	3021.0	2966.0	UPPER GREEN RIVER in UTAH	6	70	69
MOON LAKE	49.5	10.4	9.5	27.9	ASHLEY CREEK	2	62	74
RED FLEET	25.7	19.7	17.4	18.0	BLACK'S FORK RIVER	2	78	74
STEINAKER	33.4	20.9	19.8	21.6	SHEEP CREEK	1	64	52
STARVATION	165.3	142.3	132.9	132.3	DUCHESNE RIVER	11	76	89
STRAWBERRY-ENLARGED	1105.9	937.5	878.5	642.2	LAKE FORK-YELLOWSTONE CRE	4	83	97
					STRAWBERRY RIVER	4	70	80
					UINTAH-WHITEROCKS RIVERS	2	77	90
					UINTAH BASIN & DAGGET SCD	17	75	84

\* 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.

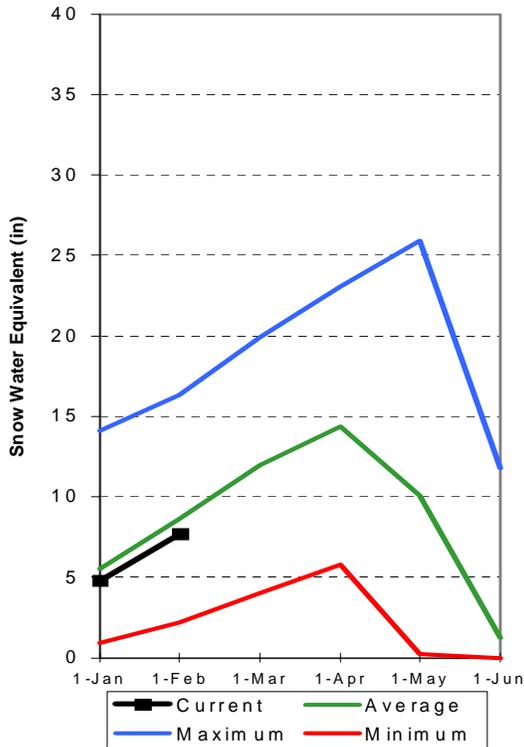
# Carbon, Emery, Wayne, Grand and San Juan Co.

## February 1, 2009

Snowpacks in this region are below normal at 89% of average, about 75% of last year. Individual sites range from 69% to 127% of average. Precipitation during January was near average at 97%, bringing the seasonal accumulation (Oct-Jan) to 93% of normal. Soil moisture estimates in runoff producing areas are at 36% of saturation in the upper 2 feet of soil, 6% below last year at this time. Forecast streamflows (Apr – July) range from 75% to 110% of average. Reservoir storage is at 45% of capacity, up 2% from last year at this time. Surface Water Supply Indices for the area are: Price 32%, Joe's Valley 50%, Ferron Creek 39%, and Moab 61%. General runoff and water supply conditions are below average on the Price due to prior reservoir fill restriction, and above and near average in the Moab and San Rafael areas respectively.

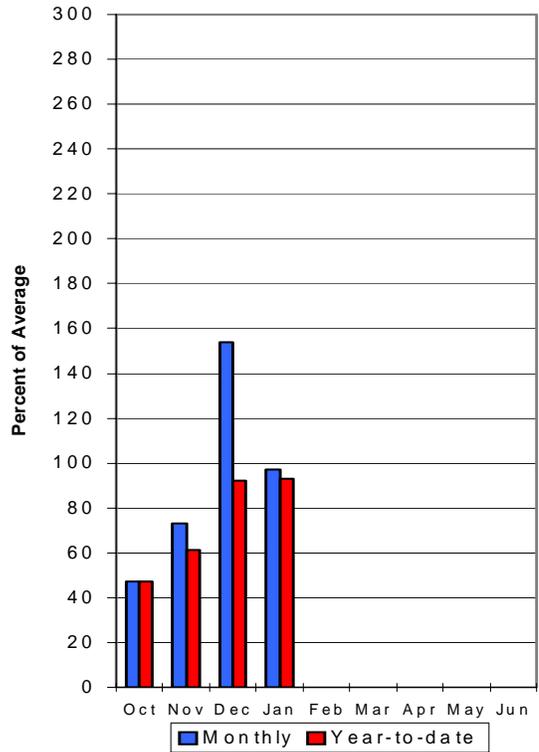
**Southeast Utah Snowpack**

2/1/2009



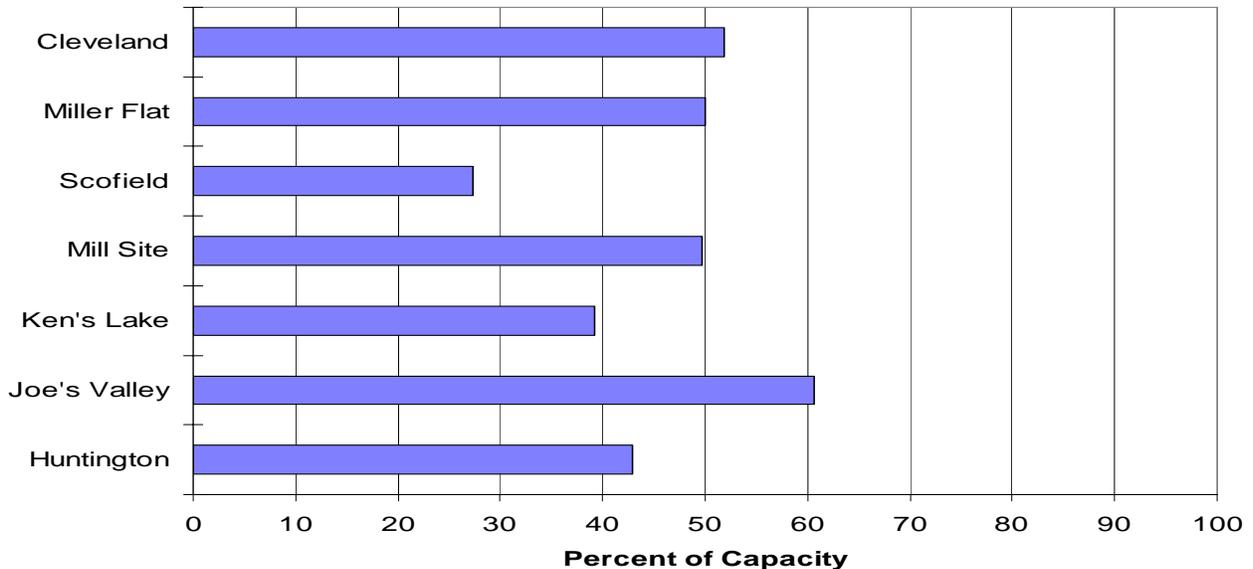
**Southeast Utah Precipitation**

2/1/2009



**Reservoir Storage**

2/1/2009



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Streamflow Forecasts - February 1, 2009

Forecast Point	Forecast Period	<----- Drier ----->		Future Conditions		>----- Wetter ----->		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	Chance Of Exceeding * (% AVG.)	30% (1000AF)	10% (1000AF)	
Gooseberry Creek nr Scofield	APR-JUL	6.8	9.2	11.0	92	13.0	16.2	11.9
Price River nr Scofield Reservoir	APR-JUL	22	30	36	80	43	55	45
White River blw Tabbyune Creek	APR-JUL	7.9	11.1	13.5	78	16.2	21	17.3
Green River at Green River, UT (2)	APR-JUL	1420	2240	2800	88	3360	4180	3170
Huntington Ck Inflow to Electric Lk	APR-JUL	7.9	10.8	13.0	83	15.4	19.3	15.7
Joe's Valley Reservoir Inflow	APR-JUL	26	37	45	78	54	68	58
Ferron Ck (Upper Station) nr Ferron	APR-JUL	18.8	25	30	77	35	44	39
Colorado River nr Cisco (2)	APR-JUL	3120	4300	5100	110	5900	7080	4650
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	2.70	3.90	4.80	96	5.90	7.70	5.00
Muddy Creek nr Emery	APR-JUL	8.3	12.0	15.0	75	18.3	24	19.9
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.60	0.97	1.30	94	1.69	2.40	1.38
San Juan River near Bluff (2)	APR-JUL	700	1070	1320	107	1570	1940	1230

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

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Watershed Snowpack Analysis - February 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNTINGTON NORTH	4.2	1.8	2.1	2.8	PRICE RIVER	3	76	90
JOE'S VALLEY	61.6	37.4	40.2	41.2	SAN RAFAEL RIVER	3	74	81
KEN'S LAKE	2.3	0.9	1.2	1.1	MUDDY CREEK	1	62	77
MILL SITE	16.7	8.3	7.3	78.8	FREMONT RIVER	3	80	77
SCOFIELD	65.8	18.0	14.9	33.8	LASAL MOUNTAINS	1	87	100
					BLUE MOUNTAINS	1	59	112
					WILLOW CREEK	1	76	127
					CARBON, EMERY, WAYNE, GRA	13	74	89

\* 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.

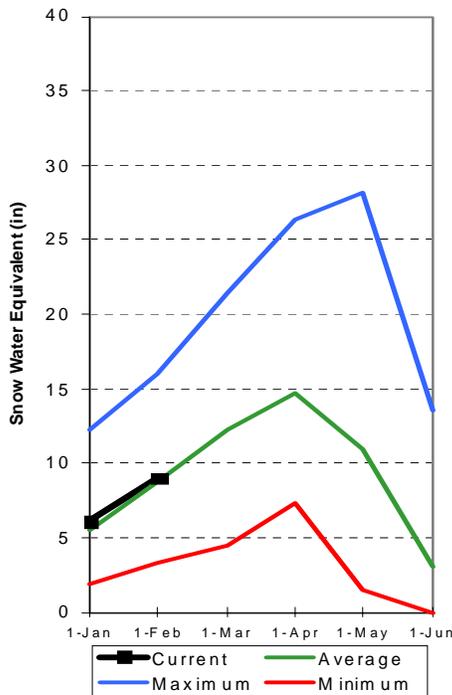
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Sevier and Beaver River Basins

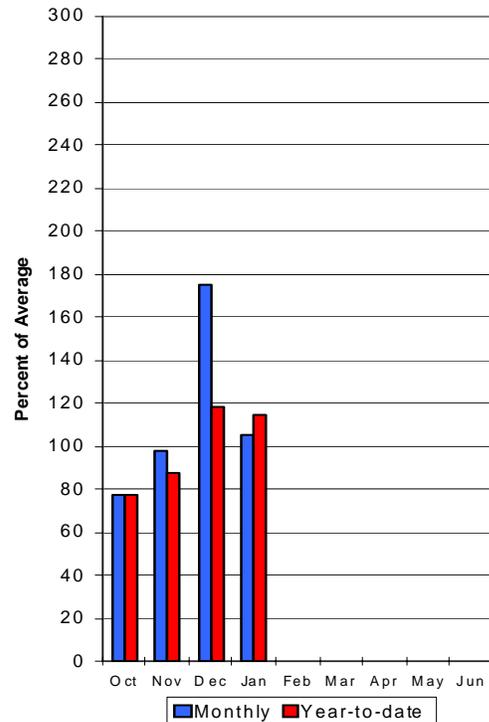
## February 1, 2009

Snowpacks on the Sevier River Basin are near normal at 103% of average, a 7% decline relative to last month and 77% of last year. Individual sites range from 70% at Beaver Dams to 160% of average at Harris Flat. Precipitation during January was near average at 105% of normal, bringing the seasonal accumulation (Oct-Jan) to 115% of average. Soil moisture estimates in runoff producing areas are at 43% of saturation in the upper 2 feet of soil compared to 39% last year. Streamflow forecasts range from 80% to 111% of average. Reservoir storage is at 45% of capacity, 11% less than last year. Surface Water Supply Indices are: Upper Sevier 37%, Lower Sevier 51% and Beaver 55%. Water supply conditions are slightly below average on the upper Sevier and near average on the lower Sevier and the Beaver River watersheds.

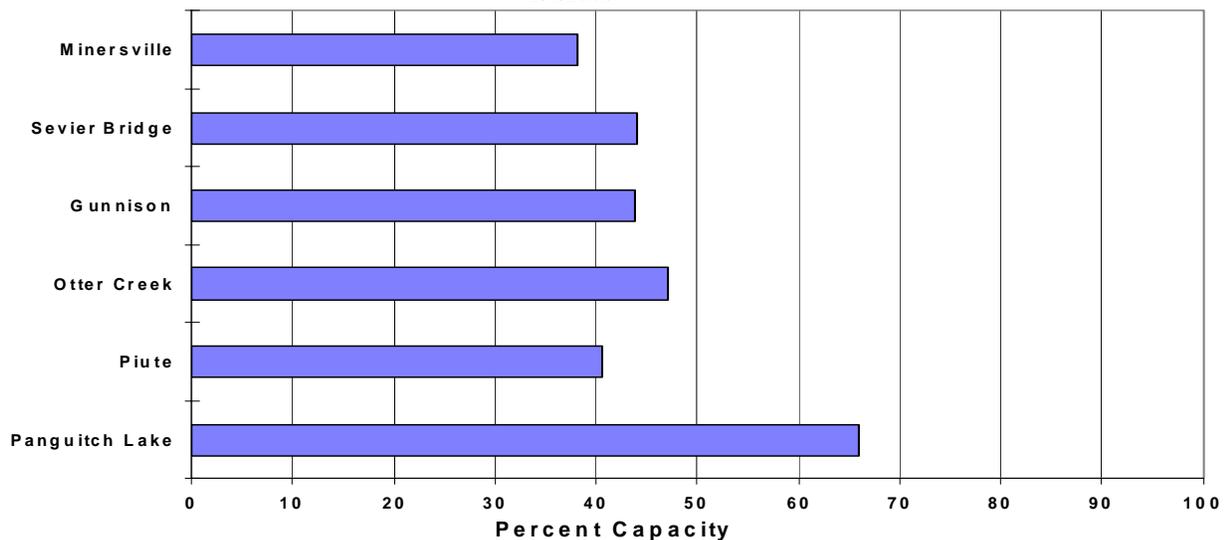
**Sevier River Snow pack**  
2/1/2009



**Sevier River Precipitation**  
2/1/2009



**Reservoir Storage**  
2/1/2009



SEVIER & BEAVER RIVER BASINS  
Streamflow Forecasts - February 1, 2009

Forecast Point	Forecast Period	<----- Drier ----->		Future Conditions		----- Wetter ----->		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	
Sevier R at Hatch, UT	APR-JUL	30	44	54	98	64	78	55
Sevier R nr Kingston, UT	APR-JUL	9.0		32	97		73	33
EF Sevier R nr Kingston, UT	APR-JUL	17.0		36	103		55	35
Sevier R blw Piute Dam nr Marysvale, UT	APR-JUL	41		87	96		133	91
Clear Creek Abv Diversions nr Sevier	APR-JUL	9.9	17.1	22	100	27	34	22
Salina Ck at Salina, UT	APR-JUL	3.5	11.3	19.0	96	29	47	19.7
Manti Ck Blw Dugway Ck Nr Manti	APR-JUL	9.2	12.9	15.8	86	19.0	24	18.3
Sevier R nr Gunnison, UT	APR-JUL	14.0		90	85		275	106
Chicken Creek nr Levan	APR-JUL	1.29	2.50	3.60	80	5.00	7.70	4.50
Oak Creek nr Oak City	APR-JUL	0.70	1.09	1.40	84	1.75	2.30	1.66
Beaver R nr Beaver, UT	APR-JUL	15.1	24	30	111	36	45	27
Minersville Reservoir	APR-JUL	4.3	10.5	17.0	102	26	44	16.6

SEVIER & BEAVER RIVER BASINS Reservoir Storage (1000 AF) - End of January					SEVIER & BEAVER RIVER BASINS Watershed Snowpack Analysis - February 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNNISON	20.3	8.9	2.5	13.1	UPPER SEVIER RIVER (south	8	78	115
MINERSVILLE (RkyFd)	23.3	8.9	7.3	14.4	EAST FORK SEVIER RIVER	3	85	103
OTTER CREEK	52.5	24.7	29.3	36.5	SOUTH FORK SEVIER RIVER	5	74	121
PIUTE	71.8	29.2	38.6	49.5	LOWER SEVIER RIVER (inclu	6	74	88
SEVIER BRIDGE	236.0	103.7	141.0	159.6	BEAVER RIVER	2	97	112
PANGUITCH LAKE	22.3	14.7	13.2	131.4	SEVIER & BEAVER RIVER BAS	16	79	103

\* 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.

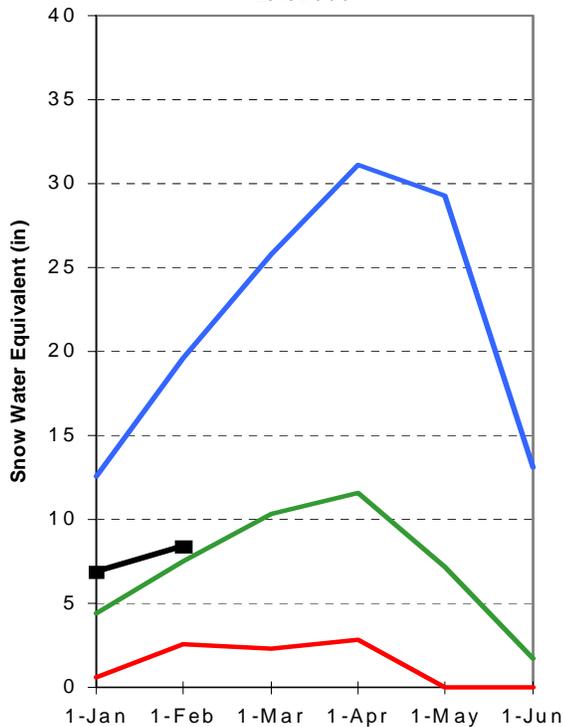
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

## E. Garfield, Kane, Washington, & Iron Co. February 1, 2009

Snowpacks in this region are above normal at 111% of average, which is 77% of last year. Individual sites range from 67% at Little Grassy Snotel, to 160% of average at Harris Flat Snotel. Precipitation during the month of January was below average at 77%, bringing the seasonal accumulation (Oct-Jan) to 122% of average. The average soil moisture estimate in runoff producing areas is at 39% of saturation within the upper 2 feet of soil, compared to 37% last year. Forecast streamflows (Apr-July) range from 98% to 114% of average. Reservoir storage is at 57% of capacity, 5% less than last year; however, Gunlock reservoir, accounting for 8% of the regions storage, is drained for maintenance. The Surface Water Supply Index is at 71%, indicating above average water supply conditions.

### Southwest Utah Snowpack

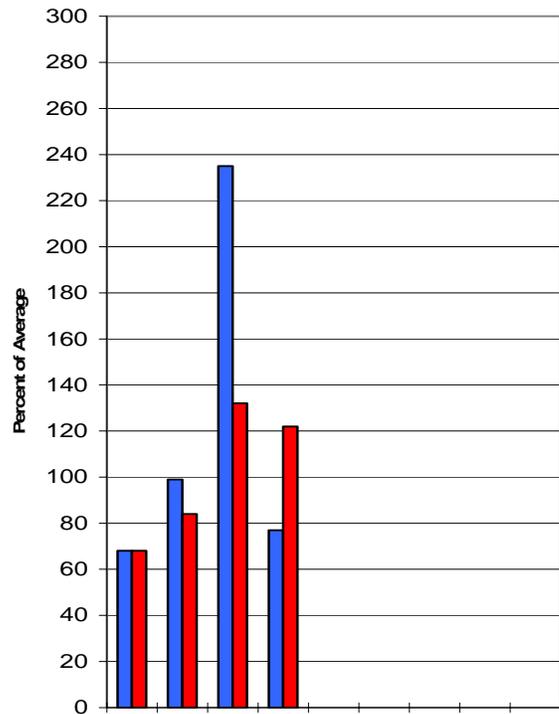
2/1/2009



Current
  Average
  Maximum
  Minimum

### Southwest Utah Precipitation

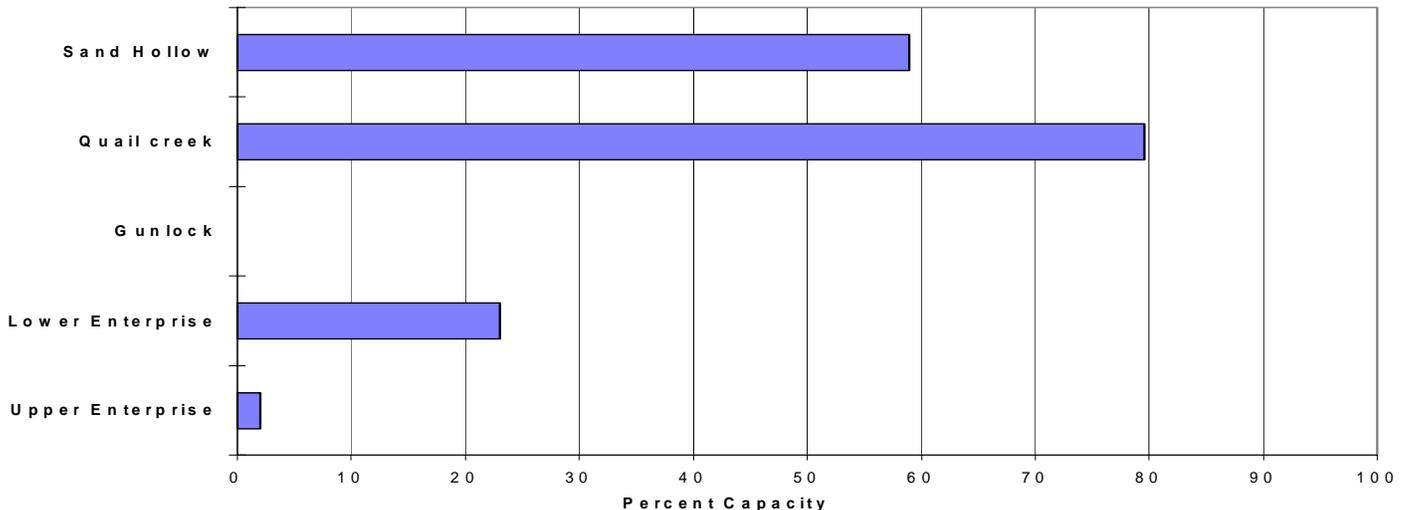
2/1/2009



Monthly
  Year-to-date

### Reservoir Storage

2/1/2009



E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Streamflow Forecasts - February 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		50%		Wetter		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Lake Powell Inflow (2)	APR-JUL	4610	6630	8000	101	9370	11400	7930
Virgin River at Virgin	APR-JUL	40	53	64	100	76	94	64
Virgin River nr Hurricane	APR-JUL	38	55	69	100	84	110	69
Santa Clara River nr Pine Valley	APR-JUL	2.70	4.20	5.40	98	6.80	9.00	5.50
Coal Ck nr Cedar City, UT	APR-JUL	11.5	17.8	22	114	26	32	19.3

E. GARFIELD, KANE, WASHINGTON, & IRON Co. Reservoir Storage (1000 AF) - End of January					E. GARFIELD, KANE, WASHINGTON, & IRON Co. Watershed Snowpack Analysis - February 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNLOCK	10.4	0.0	7.3	5.7	VIRGIN RIVER	5	77	124
LAKE POWELL	24322.0	13184.0	10889.0	---	PAROWAN	2	75	111
QUAIL CREEK	40.0	31.8	30.0	26.5	ENTERPRISE TO NEW HARMONY	2	72	96
UPPER ENTERPRISE	10.0	0.2	0.0	---	COAL CREEK	2	79	113
LOWER ENTERPRISE	2.6	0.6	1.8	38.0	ESCALANTE RIVER	2	95	75
					E. GARFIELD, KANE, WASHIN	9	79	111
					*****	78	81	95

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

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- (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.

# Surface Water Supply Index

February 1, 2009 Basin or Region	SWSI	Percentile	Years with Similar SWSI
Bear River	-2.10	25%	31,33,40,44
Ogden River	-0.13	48%	78,79,94,08
Weber River	0.30	54%	78,93,95,05
Provo	-0.13	48%	07,00,05,08
West Uintah Basin	-0.42	45%	81,76,87,73
East Uintah Basin	-1.48	32%	07,91,88,92
Price River	-1.54	32%	07,94,93,05
Joe's Valley	0.00	50%	04,01,00,93
Ferron Creek	-0.88	39%	04,91,87,03
Moab	0.91	61%	08,07,94,97
Upper Sevier River	-1.06	37%	93,59,75,79
Lower Sevier River	0.08	51%	96,07,71,79
Beaver River	0.43	55%	68,00,75,06
Virgin River	1.74	71%	92,01,06,88

SWSI Scale: -4 to 4    Percentile: 0 - 100%

## What is a Surface Water Supply Index?

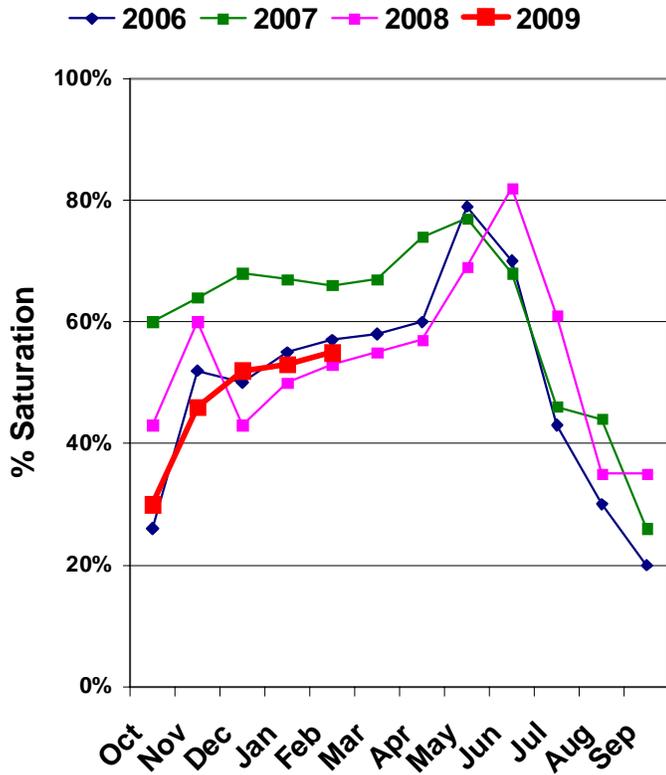
The Surface Water Supply Index (SWSI) is a predictive indicator of total surface water availability within a watershed for the spring and summer water use seasons. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow which are based 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.

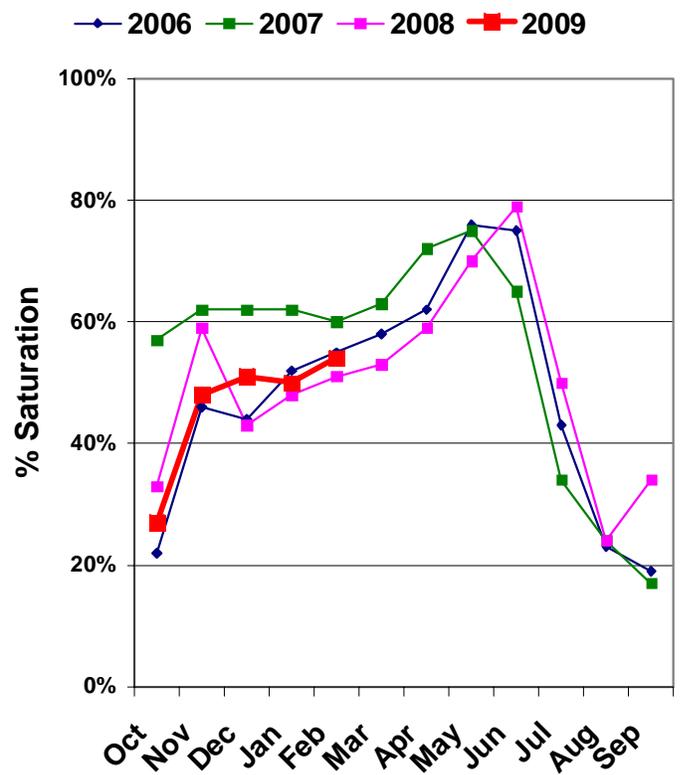
For more information on the SWSI go to: [www.ut.nrcs.usda.gov/snow/](http://www.ut.nrcs.usda.gov/snow/) on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

# Watershed Soil Moisture Charts for Utah Water Supply

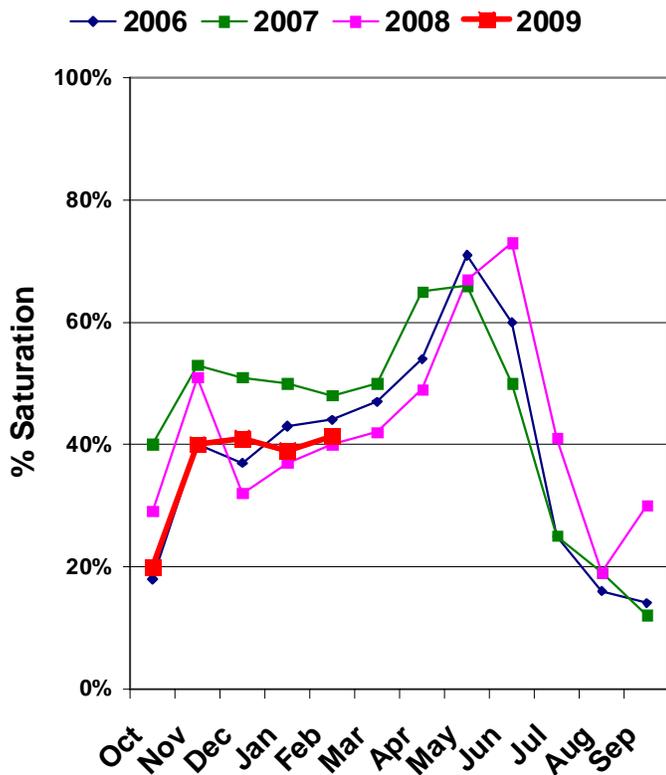
## Bear River Soil Moisture



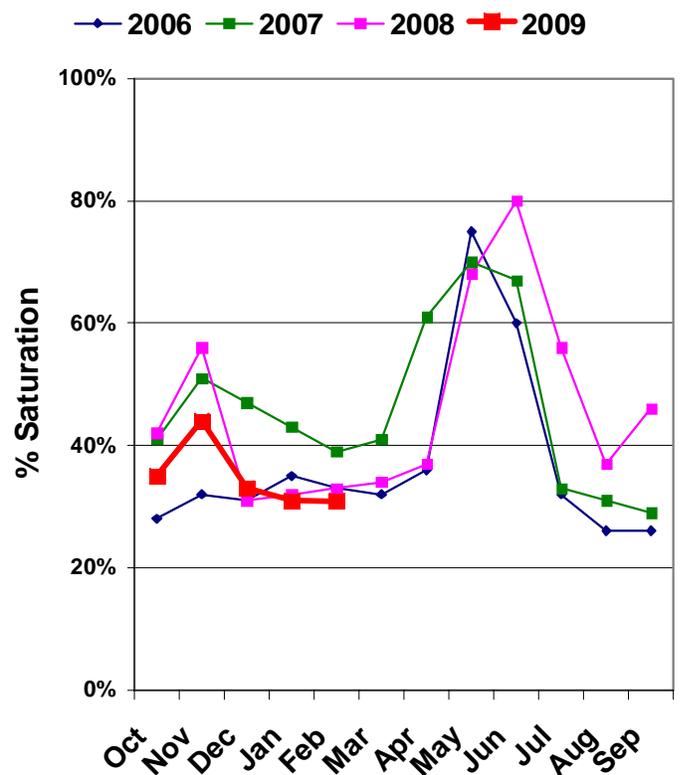
## Weber River Soil Moisture



## Jordan/Provo River Soil Moisture



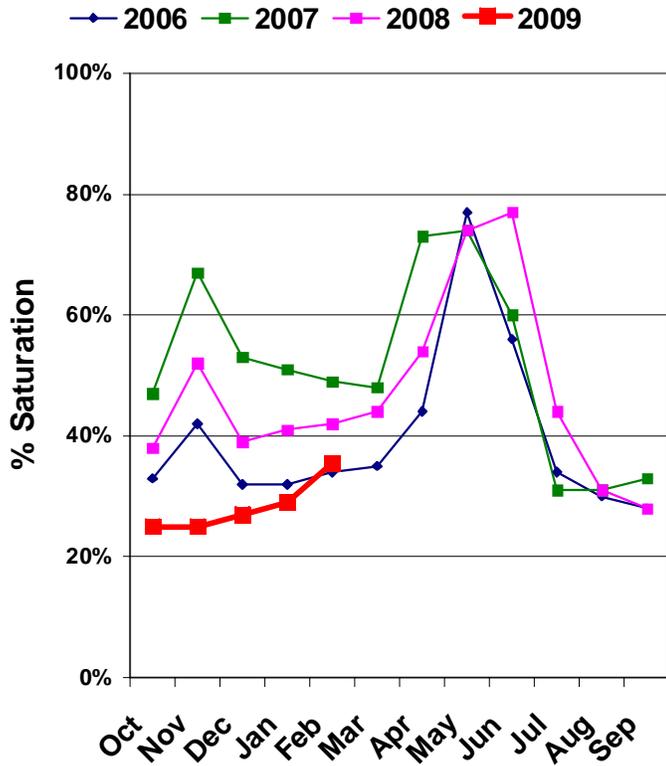
## Uintah Basin Soil Moisture



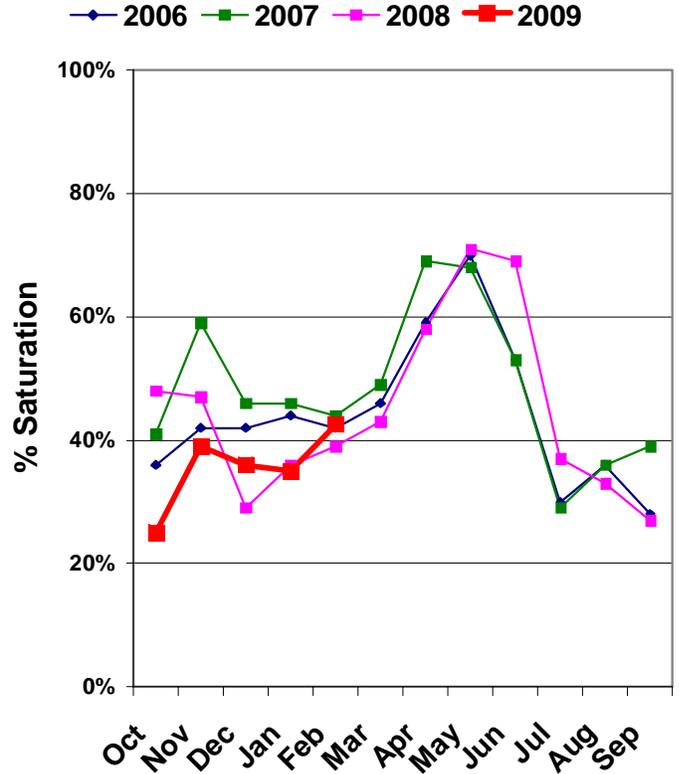
Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content.

# Watershed Soil Moisture Charts for Utah Water Supply

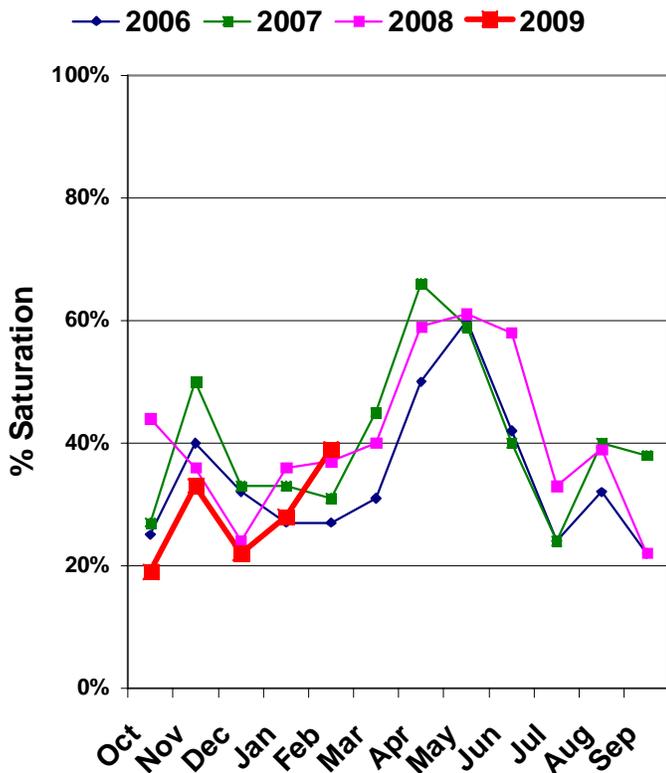
## South East Utah Soil Moisture



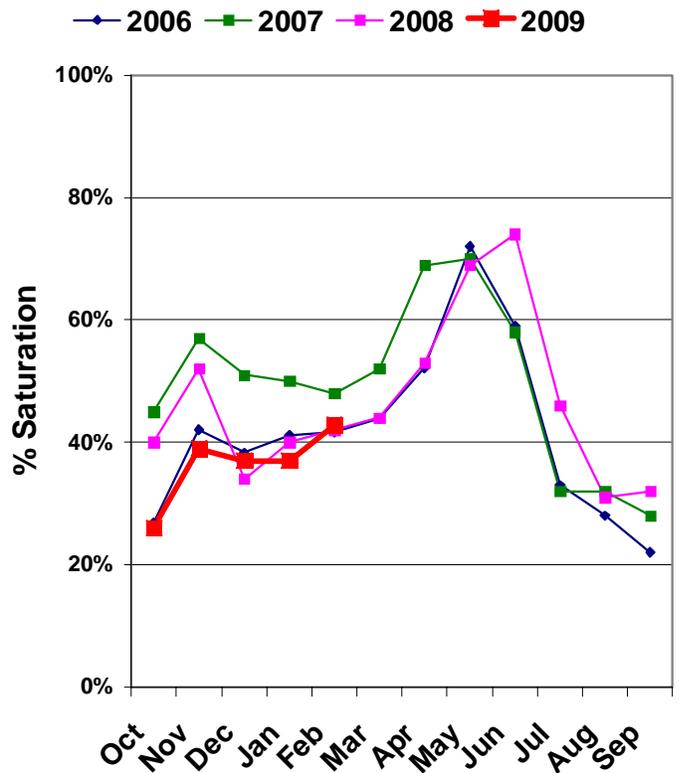
## Sevier/Beaver River Soil Moisture



## Southwest Utah Soil Moisture



## Statewide 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.

## S N O W   C O U R S E   D A T A

FEBRUARY 2009

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	2/01	22	7.1	10.6	5.4
ALTA CENTRAL	8800	1/29	93	26.4	26.5	24.7
BEAVER DAMS SNOTEL	8000	2/01	19	4.9	8.2	7.0
BEAVER DIVIDE SNOTEL	8280	2/01	33	8.0	10.2	7.8
BEN LOMOND PK SNOTEL	8000	2/01	67	24.0	27.8	25.0
BEN LOMOND TR SNOTEL	6000	2/01	34	11.0	19.2	14.4
BEVAN'S CABIN	6450				-	-
BIG FLAT SNOTEL	10290	2/01	49	12.6	12.6	11.4
BIRCH CROSSING	8100				-	4.6
BLACK FLAT-U.M. CK S	9400	2/01	22	4.8	7.8	5.9
BLACK'S FORK GS-EF	9340				-	5.8
BLACK'S FORK JUNCTN	8930				-	5.9
BOX CREEK SNOTEL	9800	2/01	33	8.3	10.4	8.0
BRIAN HEAD	10000				-	11.8
BRIGHTON SNOTEL	8750	2/01	46	13.6	19.7	15.9
BRIGHTON CABIN	8700	1/30	59	16.7	23.7	17.5
BROWN DUCK SNOTEL	10600	2/01	45	10.1	12.3	11.1
BRYCE CANYON	8000				-	3.6
BUCK FLAT SNOTEL	9800	2/01	34	9.4	12.5	11.3
BUCK PASTURE	9700				-	-
BUCKBOARD FLAT	9000				-	-
BUG LAKE SNOTEL	7950	2/01	42	9.7	10.6	13.2
BURT'S-MILLER RANCH	7900				-	3.8
CAMP JACKSON SNOTEL	8600	2/01	29	10.1	17.1	9.0
CASCADE MOUNTAIN SNO	7770	2/01	46	13.5	14.2	-
CASTLE VALLEY SNOTEL	9580	2/01	34	7.9	12.2	7.7
CHALK CK #1 SNOTEL	9100	2/01	54	14.4	16.9	15.3
CHALK CK #2 SNOTEL	8200	2/01	40	10.1	12.1	9.9
CHALK CREEK #3	7500				-	5.6
CHEPETA SNOTEL	10300	2/01	32	7.8	9.8	8.3
CLAYTON SPRINGS SNTL	10000	2/01	31	6.8	7.1	-
CLEAR CK RIDG #1 SNT	9200	2/01	46	11.1	13.0	12.3
CLEAR CK RIDG #2 SNT	8000	2/01	37	9.0	10.6	9.4
CORRAL	8200				-	-
CURRANT CREEK SNOTEL	8000	2/01	24	6.4	9.1	6.8
DANIELS-STRAWBERRY S	8000	2/01	36	8.9	13.6	11.1
DILL'S CAMP SNOTEL	9200	2/01	25	6.5	10.5	8.4
DONKEY RESERVOIR SNO	9800	2/01	19	3.5	3.5	5.1
DRY BREAD POND SNTL	8350	2/01	49	13.1	15.0	14.5
DRY FORK SNOTEL	7160	2/01	27	7.8	9.7	10.1
EAST WILLOW CREEK SN	8250	2/01	25	6.2	8.2	4.9
FARMINGTON U. SNOTEL	8000	2/01	68	22.8	23.4	20.3
FARMINGTON L. SNOTEL	6780	2/01	44	14.1	17.4	-
FARNSWORTH LK SNOTEL	9600	2/01	44	10.5	14.0	11.4
FISH LAKE	8700				-	5.1
FIVE POINTS LAKE SNO	10920	2/01	40	9.1	12.8	9.8
G.B.R.C. HEADQUARTER	8700				-	-
G.B.R.C. MEADOWS	10000				-	14.5
GARDEN CITY SUMMIT	7600				-	11.1
GARDNER PEAK SNOTEL	8350	2/01	29	9.3	10.1	-
GEORGE CREEK	8840				-	-
GOOSEBERRY R.S.	8400				-	7.5
GOOSEBERRY R.S. SNTL	7900	2/01	16	5.1	7.8	5.8
GUTZ PEAK SNOTEL	6820	2/01	24	7.5	10.9	-
HARDSCRABBLE SNOTEL	7250	2/01	36	11.0	15.0	10.9
HARRIS FLAT SNOTEL	7700	2/01	20	7.5	11.0	4.7
HAYDEN FORK SNOTEL	9100	2/01	42	10.6	11.9	9.8
HENRY'S FORK	10000				-	-
HEWINTA SNOTEL	9500	2/01	27	5.1	6.6	6.7
HICKERSON PARK SNTL	9100	2/01	15	2.3	3.6	4.4
HIDDEN SPRINGS	5500	1/28	21	5.9	6.5	5.5
HOBBLE CREEK SUMMIT	7420				-	9.6
HOLE-IN-ROCK SNOTEL	9150	2/01	14	2.3	2.8	4.1
HORSE RIDGE SNOTEL	8260	2/01	47	12.6	14.4	15.1
HUNTINGTON-HORSESHOE	9800				-	15.1
INDIAN CANYON SNOTEL	9100	2/01	30	5.5	8.7	6.9
JOHNSON VALLEY	8850				-	4.6
JONES CORRAL SNOTEL	9750	2/01	26	6.4	6.0	-
KILFOIL CREEK	7300				-	9.4
KILLYON CANYON	6300	1/28	27	6.4	7.8	11.5

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
KIMBERLY MINE SNOTEL	9300	2/01	40	11.2	13.3	9.4
KING'S CABIN SNOTEL	8730	2/01	22	4.9	7.2	6.8
KLONDIKE NARROWS	7400				-	12.7
KOLOB SNOTEL	9250	2/01	50	15.8	19.4	12.1
LAKEFORK #1 SNOTEL	10100	2/01	27	7.3	9.0	7.9
LAKEFORK BASIN SNTL	10900	2/01	50	12.9	13.5	11.7
LAKEFORK MOUNTAIN #3	8400				-	4.6
LAMBS CANYON	7400	1/29	44	11.3	12.8	11.2
LASAL MOUNTAIN LOWER	8800				-	5.9
LASAL MOUNTAIN SNTL	9850	2/01	25	7.8	9.0	7.8
LIGHTNING RIDGE SNTL	8220	2/01	42	12.1	14.1	-
LILY LAKE SNOTEL	9050	2/01	38	8.6	9.1	8.2
LITTLE BEAR LOWER	6000				-	7.1
LITTLE BEAR SNOTEL	6550	2/01	23	7.2	10.4	9.1
LITTLE GRASSY SNOTEL	6100	2/01	10	3.3	6.3	4.9
LONG FLAT SNOTEL	8000	2/01	20	6.8	7.7	5.6
LONG VALLEY JCT. SNT	7500	2/01	17	5.8	9.4	4.4
LOOKOUT PEAK SNOTEL	8200	2/01	56	16.3	18.0	15.4
LOST CREEK RESERVOIR	6130				-	3.8
LOUIS MEADOW SNOTEL	6700	2/01	42	13.9	16.2	-
MAMMOTH-COTTONWD SNT	8800	2/01	40	11.9	14.5	12.9
MERCHANT VALLEY SNTL	8750	2/01	38	9.3	9.9	8.2
MIDDLE CANYON	7000				-	9.1
MIDWAY VALLEY SNOTEL	9800	2/01	56	16.1	19.8	13.9
MILL CREEK	6950	1/29	46	12.9	13.9	12.5
MILL-D NORTH SNOTEL	8960	2/01	52	16.1	16.8	15.8
MILL-D SOUTH FORK	7400	1/30	46	12.7	17.6	13.0
MINING FORK SNOTEL	8000	2/01	34	10.3	11.6	9.3
MONTE CRISTO SNOTEL	8960	2/01	60	16.0	17.6	18.2
MOSBY MTN. SNOTEL	9500	2/01	31	6.0	8.2	7.0
MT.BALDY R.S.	9500				-	14.9
MUD CREEK #2	8600				-	8.6
OAK CREEK	7760				-	-
PANGUITCH LAKE R.S.	8200				-	-
PARLEY'S CANYON SNTL	7500	2/01	41	10.8	12.8	11.6
PARRISH CREEK SNOTEL	7740	2/01	60	16.7	17.1	-
PAYSON R.S. SNOTEL	8050	2/01	37	11.4	13.6	11.6
PICKLE KEG SNOTEL	9600	2/01	32	8.8	12.3	10.0
PINE CREEK SNOTEL	8800	2/01	39	11.7	15.1	12.9
RED PINE RIDGE SNTL	9200	2/01	30	7.7	11.8	10.5
REDDEN MINE LOWER	8500				-	10.8
REES'S FLAT	7300				-	8.7
ROCK CREEK SNOTEL	7900	2/01	20	4.7	7.2	5.6
ROCKY BN-SETTLEMT SN	8900	2/01	39	11.3	13.3	15.1
SEELEY CREEK SNOTEL	10000	2/01	27	7.8	9.2	8.8
SMITH MOREHOUSE SNTL	7600	2/01	37	10.9	10.5	9.2
SNOWBIRD SNOTEL	9700	2/01	78	26.0	31.8	20.1
SPIRIT LAKE	10300				-	7.4
SQUAW SPRINGS	9300				-	4.6
STEEL CREEK PARK SNO	10100	2/01	36	6.8	8.7	9.4
STILLWATER CAMP	8550				-	6.5
STRAWBERRY DIVIDE SN	8400	2/01	36	8.7	11.0	11.9
SUSC RANCH	8200				-	5.2
TALL POLES	8800				-	8.4
TEMPLE FORK SNOTEL	7410	2/01	45	11.6	11.4	-
THAYNES CANYON SNTL	9200	2/01	49	13.8	19.5	13.8
THISTLE FLAT	8500				-	-
TIMBERLINE	9100				-	-
TIMBERLINE SNOTEL	8680	2/01	25	5.7	10.8	-
TIMPANOGOS DIVIDE SN	8140	2/01	51	16.0	19.2	15.0
TONY GROVE LK SNOTEL	8400	2/01	76	22.9	21.7	23.4
TONY GROVE R.S.	6250				-	9.0
TRIAL LAKE	9960				-	14.7
TRIAL LAKE SNOTEL	9960	2/01	53	14.5	13.1	15.7
TROUT CREEK SNOTEL	9400	2/01	21	4.4	7.7	5.8
UPPER JOES VALLEY	8900				-	6.8
USU DOC DANIEL SNTL	8270	2/01	68	17.6	18.1	-
VERNON CREEK SNOTEL	7500	2/01	28	7.4	8.5	7.1
VIPONT	7670				-	-
WEBSTER FLAT SNOTEL	9200	2/01	33	10.6	14.2	9.8
WHITE RIVER #1 SNTL	8550	2/01	34	7.0	8.8	8.3
WHITE RIVER #3	7400				-	5.8
WIDTSOE #3 SNOTEL	9500	2/01	20	5.8	6.2	7.1
WRIGLEY CREEK	9000				-	6.7
YANKEE RESERVOIR	8700				-	5.6

*Issued by*

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YOU MAY OBTAIN THIS PRODUCT AS WELL AS CURRENT SNOW, PRECIPITATION, TEMPERATURE AND SOIL MOISTURE, RESERVOIR, SURFACE WATER SUPPLY INDEX, AND OTHER DATA BY VISITING OUR WEB SITE @:

<http://www.ut.nrcs.usda.gov/snow/>

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



# Utah Water Supply Outlook Report

Natural Resources Conservation Service  
Salt Lake City, UT





# Utah Water Supply Outlook Report

March, 2009



**The old Mirror Lake Lodge and one of the first over snow tracked vehicles used for Snow Surveys. Photo - NRCS, USDA.**

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

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**Internet Address: <http://www.ut.nrcs.usda.gov/snow/>**

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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

March 1, 2009

## SUMMARY

February 2009 seemed to be a snowy month with a lot of stormy days, especially early on, but the amount accumulated at the higher elevations was much less than what our backs told us we had shoveled. The Weber, Sevier and southwest Utah all received average accumulations and the rest of the state got about 75% to 85% of average February accumulation. Snowpacks across the state now range from 83% over the Uintas to 119% in southwestern Utah. The pattern of more snow in the south and less in the north and on the east side of the Wasatch and Sevier Plateaus remains. The probability of getting enough snow in March to reach an average April 1 snowpack is pretty low at this point: Bear – 13%, Weber – 32%, Provo – 24%, Uintas – 13%, SE Utah – 16%, Sevier – 50%, SW Utah – 68%. February precipitation was near normal in most areas and above normal (121%) in southwest Utah which brings the year-to-date precipitation to near normal in the northwest, above average in the southwest and below average in the east. Current soil moisture saturation levels in runoff producing areas are: Bear – 56%, Weber – 58%, Provo – 46%, Uintah Basin – 34%, SE Utah – 36%, Sevier – 47% and SW Utah – 43%, a 0% to 5 % change from last month. Drier soils typically mean less runoff from snowmelt. Reservoir storage is currently at 62% of capacity statewide compared to 58% last year. General water supply conditions are near average in northern Utah, except for the Bear, above average on the Virgin and Beaver and near to below average in central Utah. Streamflow forecasts range from 57% for the Duchesne nr Randlett to 124% of average on Coal Creek near Cedar City. Surface Water Supply Indices range from 14% on the Bear River to 74% for the Virgin. The extremely low value for the Bear River is a reflection of Bear Lake storage which continues to be well below normal.

## SNOWPACK

March first snowpacks as measured by the NRCS SNOTEL system are as follows: Bear - 90%, Weber - 97%, Provo - 94%, Uintas - 83%, southeast Utah - 85%, Sevier - 100%, southwest Utah - 119% and the statewide figure is 94% of average. With only March remaining in the snow accumulation season, the range of potential outcomes has narrowed, however future climatic conditions can still impact spring runoff. If drought prevails, snowpacks could range between 40% and 70% of average. Given maximum accumulations, April 1 snowpacks could range between 105% and 174% of average. With normal accumulations, April 1 snowpacks will be between 86% and 117% of average. A very large March snow accumulation (110%-180%) is necessary over most areas except southern Utah to reach an average snowpack by April 1. The area with lowest snowpack average is the north slope of the Uintas – 69% and the highest is southwest Utah at 119%.

## PRECIPITATION

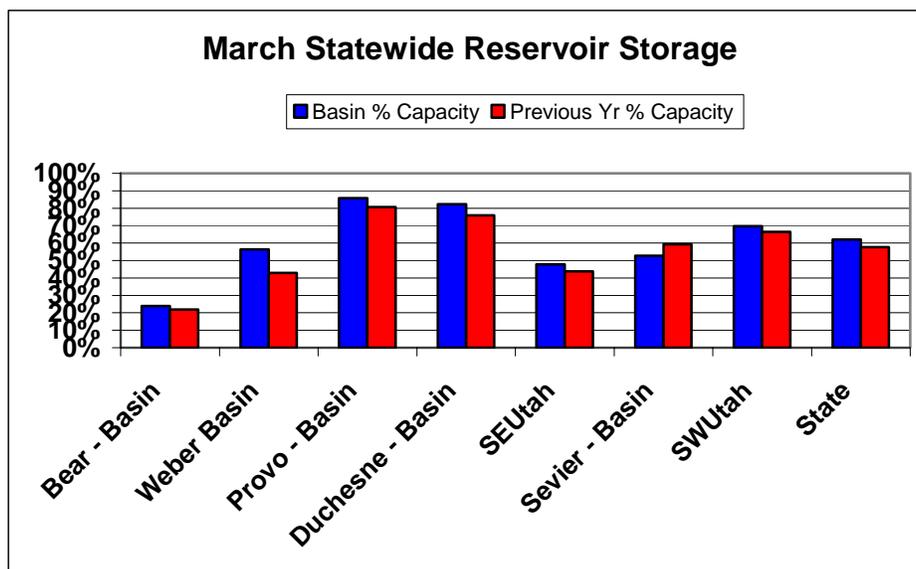
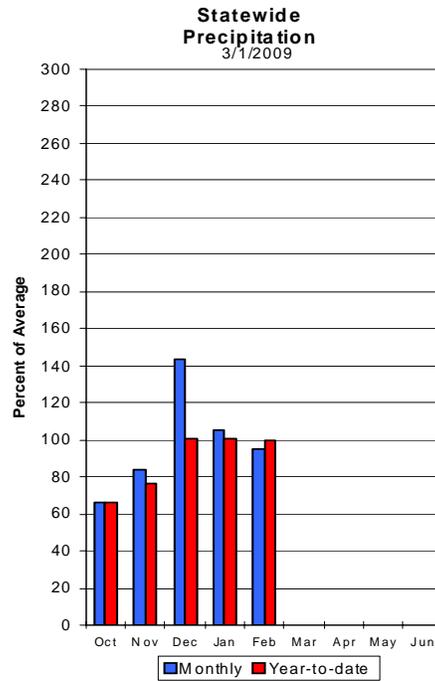
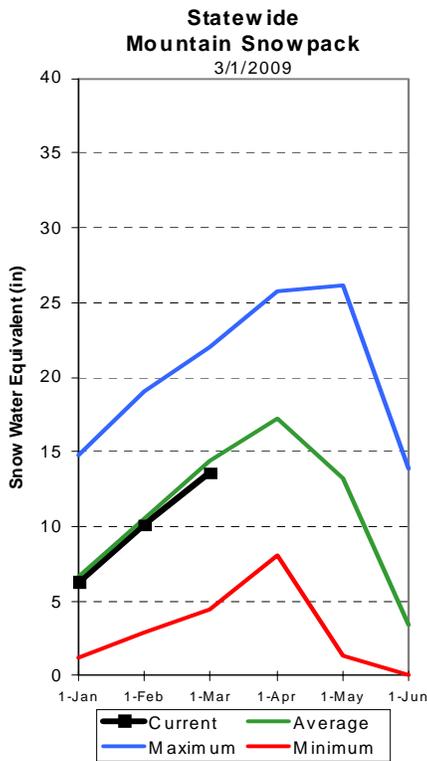
Mountain precipitation during February was: Bear – 91%, Weber – 99%, Provo – 89%, Uintas – 87%, SE Utah – 84%, Sevier – 98%, SW Utah – 121% and the statewide figure is 95% of average. This brings the seasonal accumulation (Oct-Feb) to 100% of average statewide.

## RESERVOIRS

Storage in 46 of Utah's key irrigation reservoirs is at 62% of capacity up 4% compared to March of last year. There is some good news on the reservoir repair front as all previously restricted fill reservoirs are now able to store, including Willard Bay.

## STREAMFLOW

Snowmelt streamflows are expected to have a wide range from much below average to above average across the state of Utah this year. Forecast streamflows range from 57% on the Duchesne nr Randlett to 124% on Coal Creek near Cedar City. Most flows are forecast to be in the below to near average range.

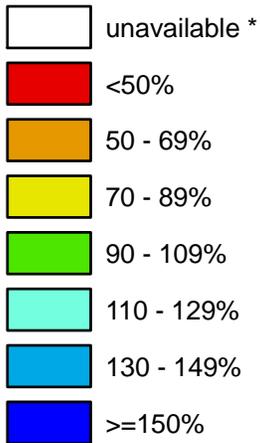


# Utah

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

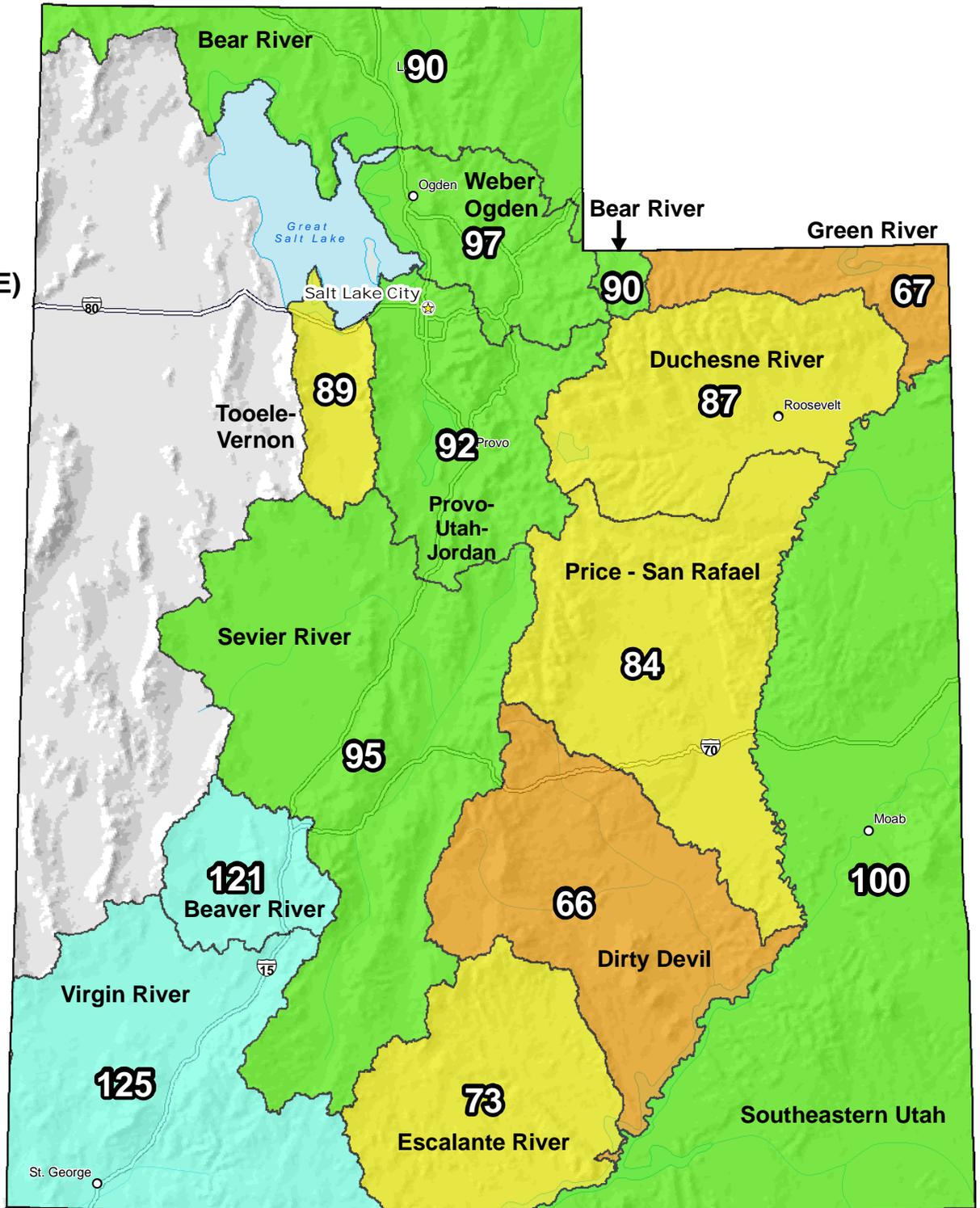
Mar 02, 2009

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



\* 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).

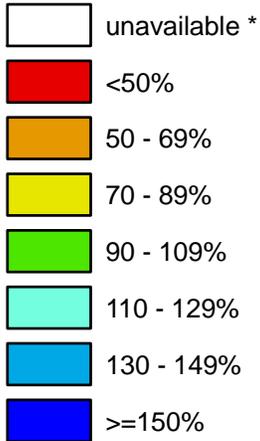
Prepared by the USDA/NRCS National Water and Climate Center  
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: Tom.Pagano@por.usda.gov 503 414 3010

# Utah

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

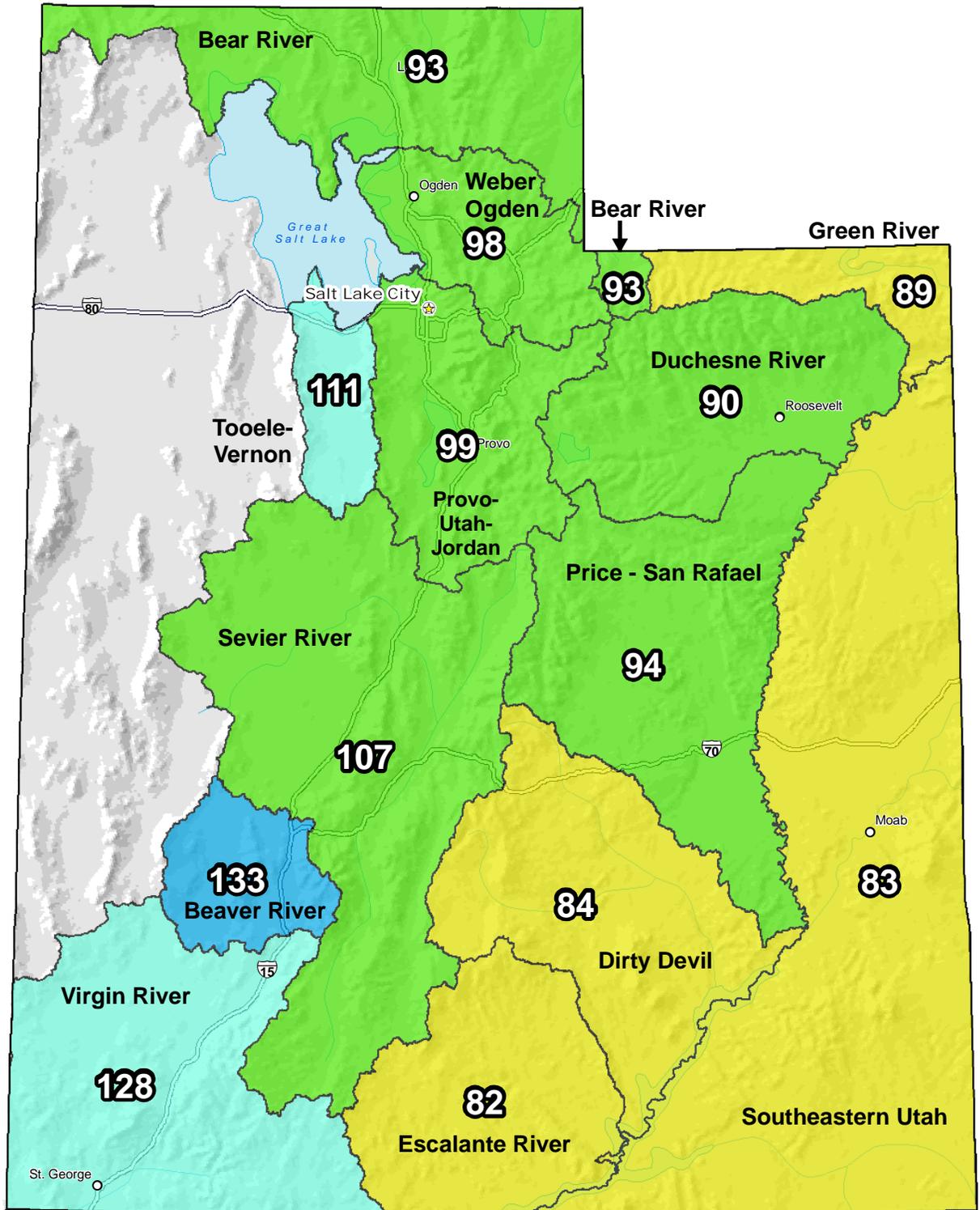
Mar 02, 2009

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



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

**Provisional Data  
Subject to Revision**

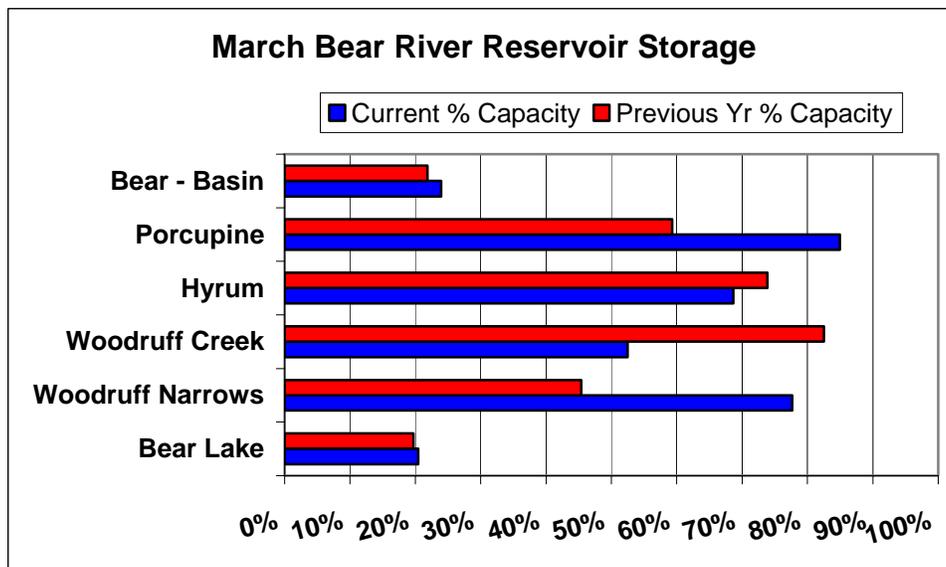
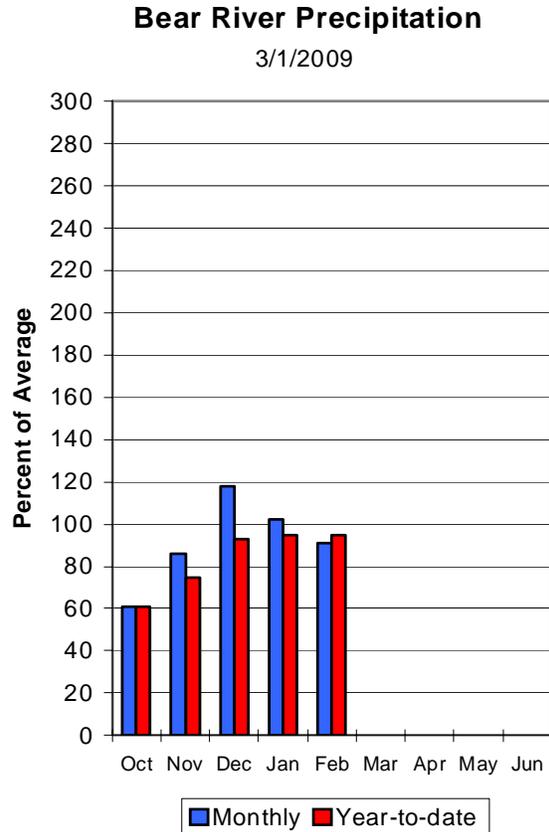
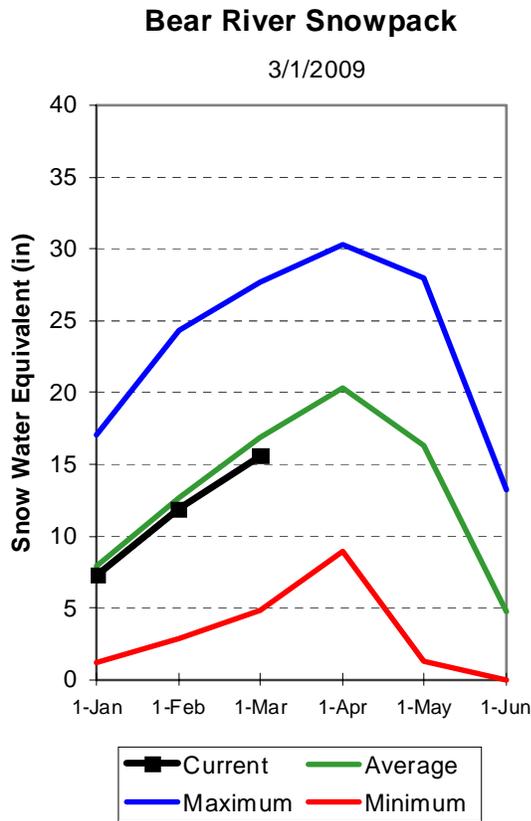


The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by the USDA/NRCS National Water and Climate Center  
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: Tom.Pagano@por.usda.gov 503 414 3010

## Bear River Basin March 1, 2009

Snowpacks on the Bear River Basin are near average at 90% of normal, about 92% of last year. Individual sites range from 123% of normal at Vipont to 69% at Garden City Summit. February precipitation was near average at 91%, which brings the seasonal accumulation (Oct-Feb) to 95% of average. Soil moisture levels in runoff producing areas are at 56% of saturation in the upper 2 feet of soil compared to 55% last year. Forecast streamflows (April-July) range from much below to below average (60%-86%) volumes for this spring and summer. Reservoir storage is low at 24% of capacity, but is up 2% from this time last year. The Surface Water Supply Index is at 14% for the Bear River, in other words, 86% of years have had more total water available. Water supply conditions are much below normal due to low reservoir storage in Bear Lake.



BEAR RIVER BASIN  
Streamflow Forecasts - March 1, 2009

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Bear R nr UT-WY State Line	APR-JUL	65	84	97	86	110	129	113
Bear River ab Reservoir nr Woodruff	APR-JUL	67	95	114	84	133	161	136
Big Creek nr Randolph	APR-JUL	2.20	3.30	4.00	82	4.70	5.80	4.90
Smiths Fork nr Border	APR-JUL	65	79	88	85	97	111	103
Bear River at Stewart Dam	APR-JUL	82	115	140	60	168	213	234
Little Bear at Paradise, UT	APR-JUL	16.4	29	38	83	47	60	46
Logan nr Logan, UT	APR-JUL	73	92	105	83	118	137	126
Blacksmith Fk nr Hyrum, UT	APR-JUL	15.9	30	40	83	50	64	48

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of February					BEAR RIVER BASIN Watershed Snowpack Analysis - March 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BEAR LAKE	1302.0	266.3	256.8	---	BEAR RIVER, UPPER	8	95	90
HYRUM	15.3	10.5	11.3	11.0	BEAR RIVER, LOWER	9	90	89
PORCUPINE	11.3	9.6	6.7	5.6	LOGAN RIVER	4	93	92
WOODRUFF NARROWS	57.3	44.5	26.0	27.6	RAFT RIVER	1	71	85
WOODRUFF CREEK	4.0	2.1	3.3	---	BEAR RIVER BASIN	17	92	90

\* 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.

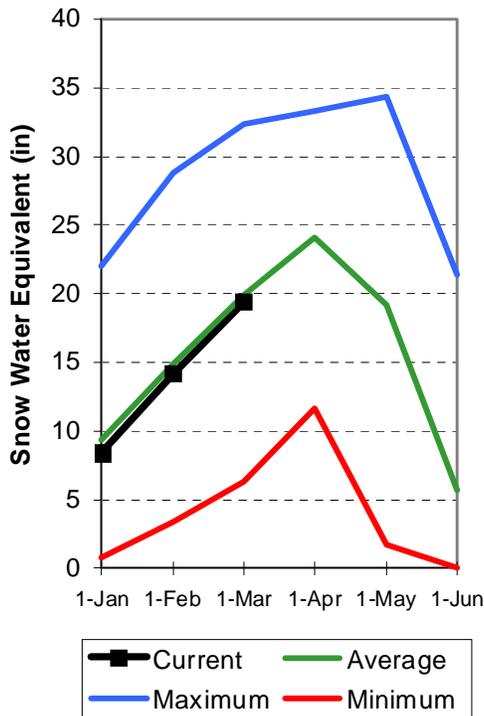
# Weber and Ogden River Basins

## March 1, 2009

Snowpacks on the Weber and Ogden Watersheds are near average at 97%, about 85% of last year. Individual sites range from 122% at Farmington Upper Snotel to 81% of average at the Monte Cristo Snotel. February precipitation was near average at 99% bringing the seasonal accumulation (Oct-Feb) to 99% of average. Soil moisture levels in runoff producing areas are at 58% of saturation in the upper 2 feet of soil compared to 53% last year. Streamflow forecasts (April-July) range from 78% to 90% of average. Reservoir storage is at 56% of capacity, 15% higher than last year. The Surface Water Supply Index is at 49% for the Weber River and 48% for the Ogden River indicating that overall water supply conditions are near average.

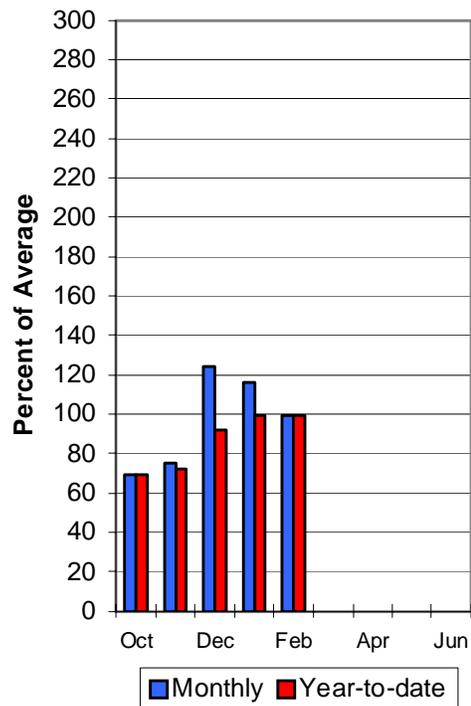
### Weber River Snowpack

3/1/2009

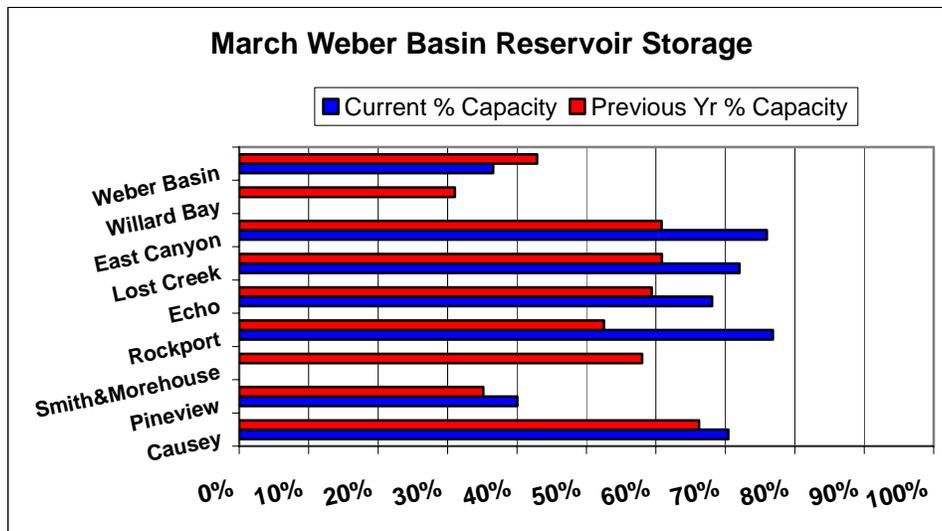


### Weber River Precipitation

3/1/2009



### March Weber Basin Reservoir Storage



WEBER & OGDEN WATERSHEDS in Utah  
Streamflow Forecasts - March 1, 2009

Forecast Point	Forecast Period	<----- Drier ----- Future Conditions ----- Wetter ----->						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Smith & Morehouse Res inflow	APR-JUL	21	26	29	85	32	37	34
Weber R nr Oakley, UT	APR-JUL	72	89	100	81	111	128	123
Rockport Reservoir	APR-JUL	73	95	110	82	125	147	134
Weber R nr Coalville, UT	APR-JUL	75	102	120	88	138	165	137
Chalk Ck at Coalville, UT	APR-JUL	17.6	30	39	87	48	60	45
Echo Resv at Echo, UT	APR-JUL	59	107	140	78	173	221	179
Lost Ck Resv Inflow	APR-JUL	7.7	12.0	15.0	85	18.0	22	17.6
East Canyon Ck nr Morgan, UT	APR-JUL	8.9	19.1	26	84	33	43	31
Weber R at Gateway, UT	APR-JUL	95	217	300	85	383	505	355
SF Ogden R nr Huntsville, UT	APR-JUL	36	48	57	89	66	78	64
Pineview Resv Inflow	APR-JUL	66	98	120	90	142	174	133
Wheeler Ck nr Huntsville, UT	APR-JUL	2.30	4.30	5.70	91	7.10	9.10	6.30

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

WEBER & OGDEN WATERSHEDS in Utah  
Watershed Snowpack Analysis - March 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CAUSEY	7.1	5.0	4.7	2.6	OGDEN RIVER	4	84	98
EAST CANYON	49.5	37.6	30.1	35.4	WEBER RIVER	9	86	98
ECHO	73.9	50.3	43.9	51.0	WEBER & OGDEN WATERSHEDS	13	85	98
LOST CREEK	22.5	16.2	13.7	13.9				
PINEVIEW	110.1	44.1	38.7	52.6				
ROCKPORT	60.9	46.8	32.0	33.2				
WILLARD BAY	215.0	105.0	66.8	154.9				

\* 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.

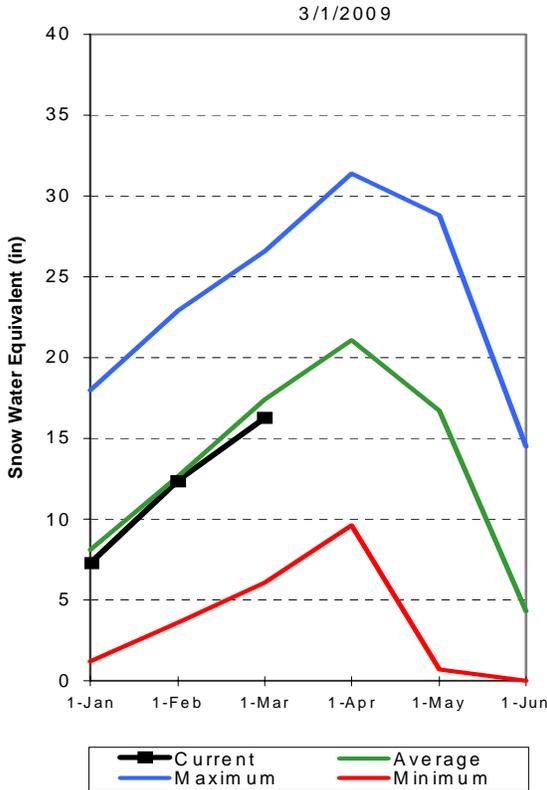
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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# Utah Lake, Jordan River & Tooele Valley Basins

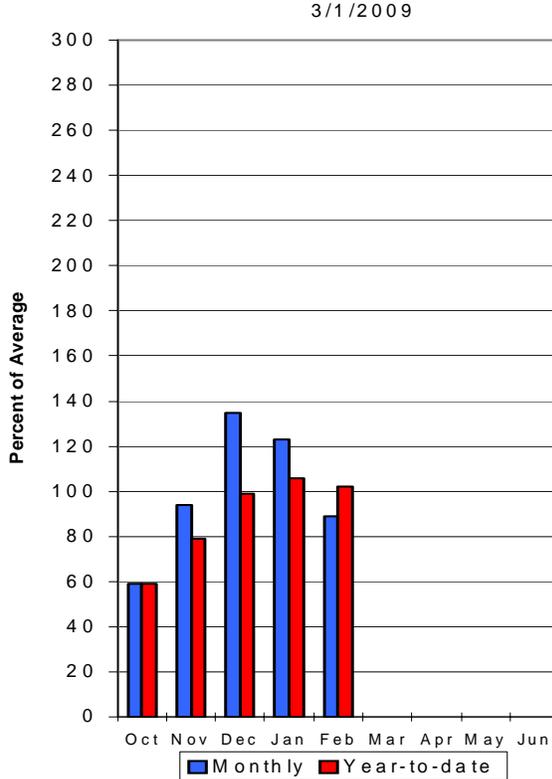
## March 1, 2009

Snowpack over these basins are near average at 94%, which is 80% of last year. Individual sites range from 68% at Dry Fork Snotel, to 116% of average at both the Snowbird and Lookout Peak Snotel stations. February precipitation was below average at 89%, bringing the seasonal accumulation (Oct-Feb) to 102% of average. Average soil moisture in runoff producing areas is estimated at 46% of saturation in the upper 2 feet of soil compared to 42% at this time last year. Reservoir storage is at 86% of capacity, 5% higher than last year. Streamflow forecasts (Apr-July) range from 78% to 105% of average. The Surface Water Supply Index below Deer Creek reservoir is 48%, indicating general water supply conditions are near normal.

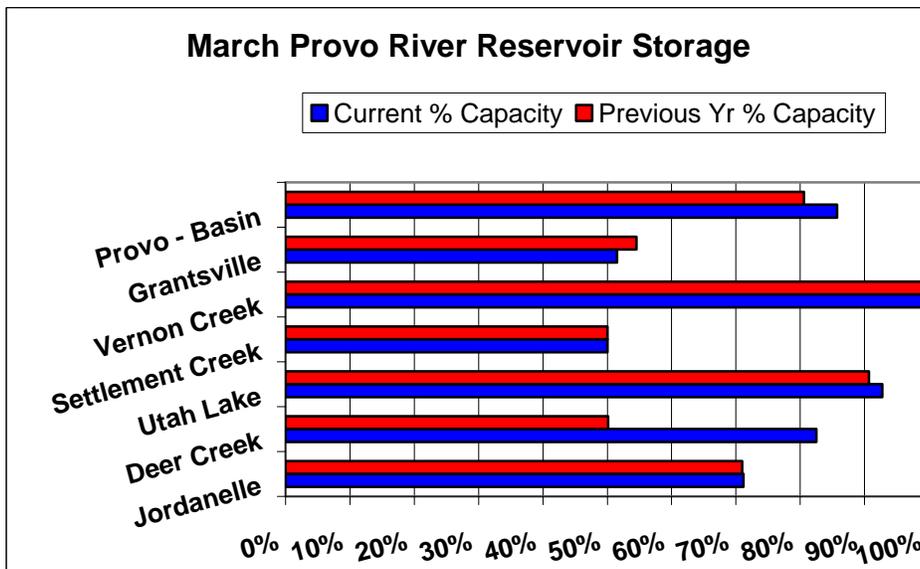
**Provo River Snowpack**



**Provo River Precipitation**



**March Provo River Reservoir Storage**



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Streamflow Forecasts - March 1, 2009

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Spanish Fk at Castilla, UT	APR-JUL	6.2	31	66	86	101	152	77
Provo River nr Woodland	APR-JUL	55	75	90	87	107	133	103
Provo River nr Hailstone	APR-JUL	57	78	95	87	113	143	109
Provo R blw Deer Ck Dam, UT	APR-JUL	72	95	110	87	125	148	126
American Fk abv Upper Powerplant	APR-JUL	17.1	25	30	94	35	43	32
Utah Lake inflow	APR-JUL	105	209	280	86	351	455	325
W Canyon Ck nr Cedar Fort, UT	APR-JUL	1.10	1.69	2.10	88	2.50	3.10	2.40
Little Cottonwood Ck nr SLC	APR-JUL	28	34	39	98	44	51	40
Big Cottonwood Ck nr SLC, UT	APR-JUL	25	32	37	97	42	49	38
Mill Ck nr SLC, UT	APR-JUL	2.20	4.50	6.00	86	7.50	9.80	7.00
Parleys Ck nr SLC, UT	APR-JUL	5.3	10.5	14.0	84	17.5	23	16.7
Dell Fork nr SLC, UT	APR-JUL	0.68	3.40	6.00	88	8.60	12.50	6.80
Emigration Ck nr SLC, UT	APR-JUL	0.20	2.20	3.50	78	4.80	6.80	4.50
City Ck nr SLC, UT	APR-JUL	3.40	6.00	7.80	90	9.60	12.20	8.70
Vernon Ck nr Vernon, UT	APR-JUL	0.32	1.02	1.50	101	1.98	2.70	1.48
Settlement Ck nr Tooele, UT	APR-JUL	0.29	1.14	1.90	91	2.70	3.80	2.10
South Willow Ck nr Grantsville, UT	APR-JUL	1.87	2.80	3.40	105	4.00	4.90	3.23

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

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Watershed Snowpack Analysis - March 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
DEER CREEK	149.7	123.5	75.0	107.4	PROVO RIVER & UTAH LAKE	7	80	91
GRANTSVILLE	3.3	1.7	1.8	2.2	PROVO RIVER	4	84	95
SETTLEMENT CREEK	1.0	0.5	0.5	0.6	JORDAN RIVER & GSL	6	80	97
STRAWBERRY-ENLARGED	1105.9	939.9	880.0	637.8	TOOELE & RUSH VALLEY WATE	3	80	91
UTAH LAKE	870.9	808.0	790.0	825.1	UTAH LAKE/JORDAN R./TOOEL	16	80	94
VERNON CREEK	0.6	0.6	0.6	---				

\* 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.

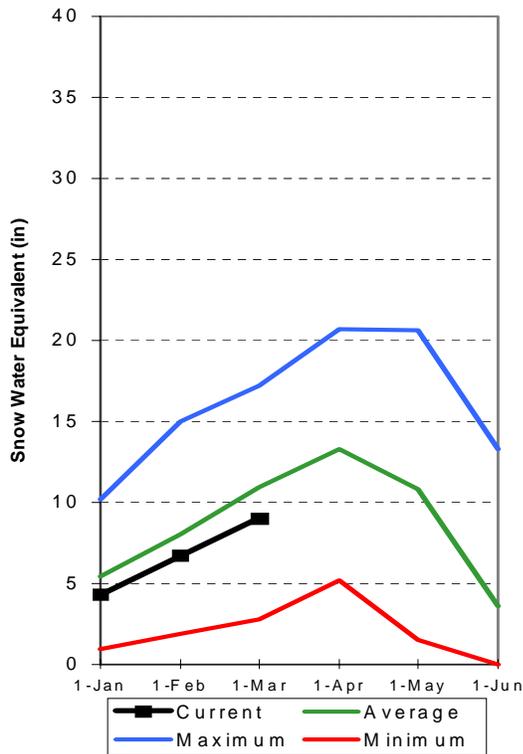
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## Uintah Basin and Dagget SCD's March 1, 2009

Snowpack across the Uintas is below average at 82%, which is 70% of last year. Individual sites on the North Slope range from 56% to 97% and on the South Slope range from 71% to 97% of average. Precipitation during February was below average at 87% bringing the seasonal accumulation (Oct-Feb) to 90%. Soil moisture values in runoff producing areas are at 34% of saturation in the upper 2 feet of soil, the same as last year. Reservoir storage is at 82% of capacity, 6% more than last year. Streamflow forecasts (Apr-July) range from 57% to 87% of average. The Surface Water Supply Index for the western area is 45% and for the eastern area it is 39% indicating near normal conditions on the west side and much below normal for the eastern area. General water supply conditions range from near to much below average.

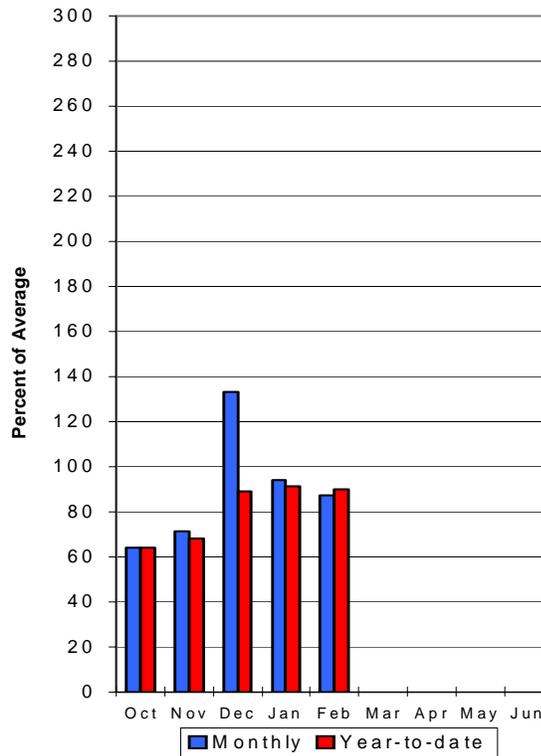
### Uinta Snow pack

3/1/2009



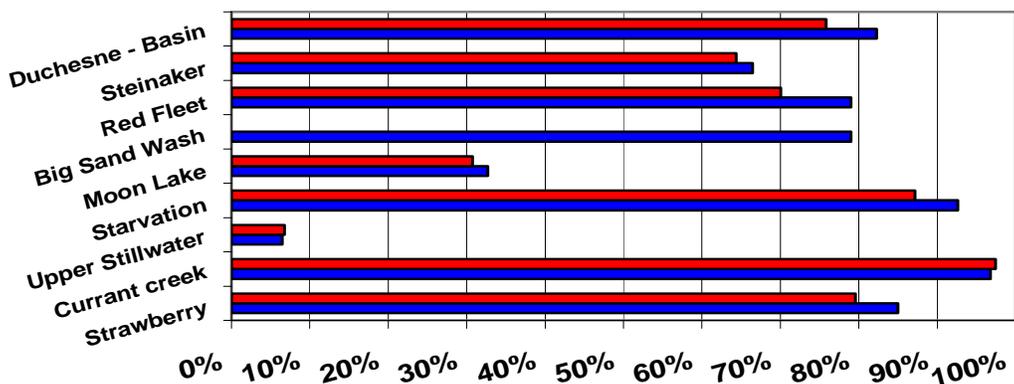
### Uinta Precipitation

3/1/2009



### March Uintah Basin Reservoir Storage

■ Current % Capacity ■ Previous Yr % Capacity



UINTAH BASIN & DAGGET SCD'S  
Streamflow Forecasts - March 1, 2009

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ==== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Blacks Fork nr Robertson	APR-JUL	46	60	70	74	81	99	95
EF of Smiths Fork nr Robertson	APR-JUL	12.6	17.4	21	72	25	32	29
Flaming Gorge Reservoir Inflow (2)	APR-JUL	480	685	845	71	1020	1310	1190
Big Brush Ck abv Red Fleet Resv	APR-JUL	8.2	11.5	14.0	67	16.8	21	21
Ashley Creek nr Vernal	APR-JUL	21	29	36	69	43	56	52
WF Duchesne River nr Hanna (2)	APR-JUL	11.9	16.5	20	83	24	30	24
Duchesne R nr Tabiona (2)	APR-JUL	50	67	80	76	94	116	105
Upper Stillwater Reservoir Inflow	APR-JUL	54	63	70	85	77	88	82
Rock Ck nr Mountain Home (2)	APR-JUL	58	69	77	87	85	99	89
Duchesne R abv Knight Diversion (2)	APR-JUL	108	135	155	82	176	210	188
Strawberry R nr Soldier Springs (2)	APR-JUL	22	35	45	76	57	77	59
Currant Creek Reservoir Inflow (2)	APR-JUL	9.4	14.7	19.0	76	24	32	25
Strawberry R nr Duchesne (2)	APR-JUL	44	67	86	71	107	143	121
Lake Fork River Moon Lake Inflow	APR-JUL	42	51	57	84	64	75	68
Yellowstone River nr Altonah	APR-JUL	36	45	52	84	60	72	62
Duchesne R at Myton (2)	APR-JUL	72	128	175	67	230	325	260
Whiterocks nr Whiterocks	APR-JUL	27	37	45	80	54	68	56
Duchesne R nr Randlett (2)	APR-JUL	68	131	185	57	250	360	324

Reservoir	UINTAH BASIN & DAGGET SCD'S Reservoir Storage (1000 AF) - End of February				UINTAH BASIN & DAGGET SCD'S Watershed Snowpack Analysis - March 1, 2009			
	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	Average
FLAMING GORGE	3749.0	2966.0	3021.0	2919.0	UPPER GREEN RIVER in UTAH	6	63	69
MOON LAKE	49.5	11.7	11.0	29.8	ASHLEY CREEK	2	62	74
RED FLEET	25.7	20.3	18.0	18.4	BLACK'S FORK RIVER	2	66	70
STEINAKER	33.4	22.2	21.5	22.8	SHEEP CREEK	1	54	57
STARVATION	165.3	153.1	144.1	135.9	DUCHESNE RIVER	11	72	87
STRAWBERRY-ENLARGED	1105.9	939.9	880.0	637.8	LAKE FORK-YELLOWSTONE CRE	4	79	90
					STRAWBERRY RIVER	4	65	82
					UINTAH-WHITEROCKS RIVERS	2	78	94
					UINTAH BASIN & DAGGET SCD	17	70	82

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

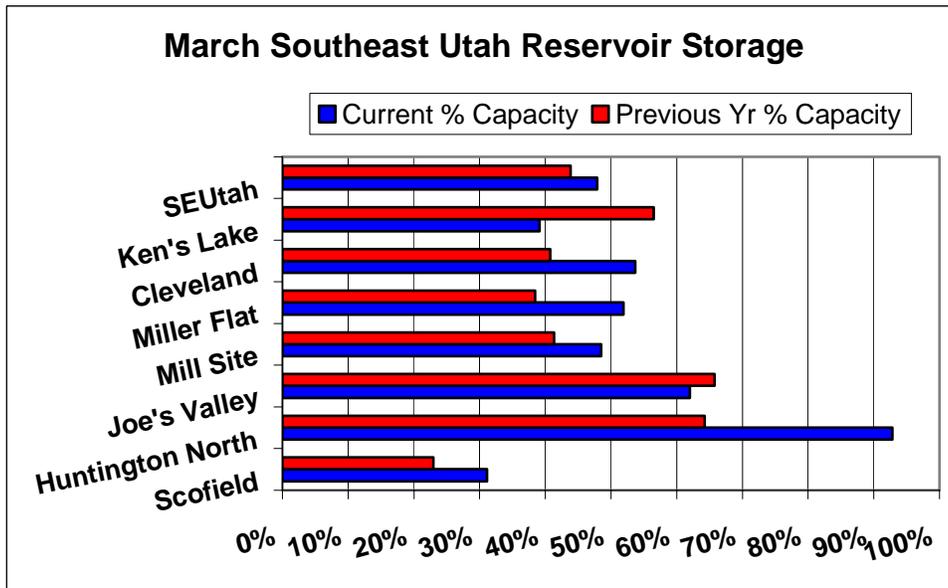
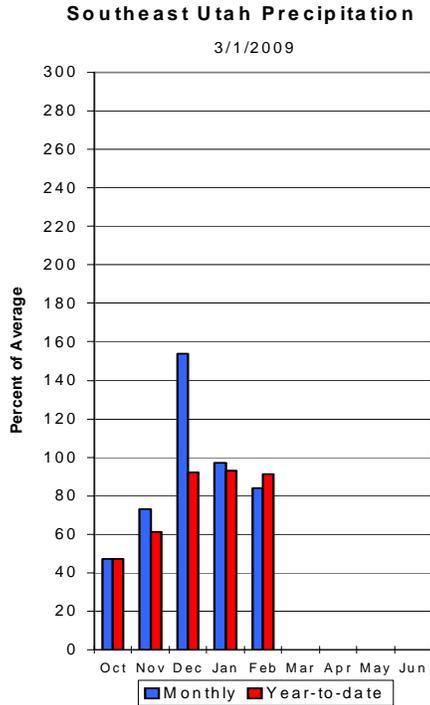
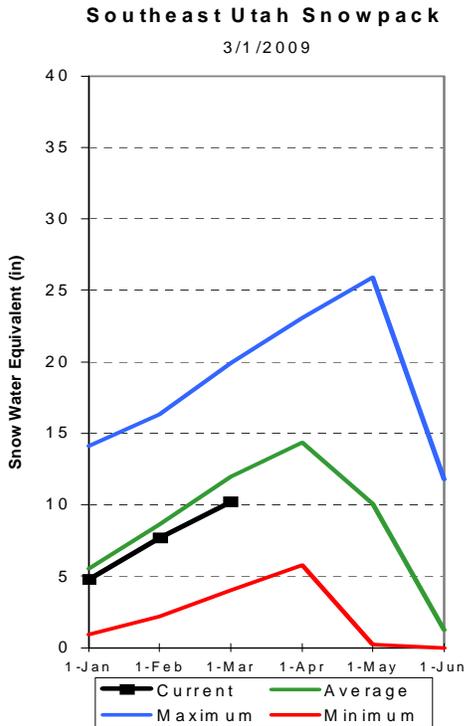
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- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Carbon, Emery, Wayne, Grand and San Juan Co.

## March 1, 2009

Snowpacks in this region are below normal at 86% of average, about 71% of last year. Individual sites range from 48% to 117% of average. Precipitation during February was below average at 84%, bringing the seasonal accumulation (Oct-Feb) to 91% of normal. Soil moisture estimates in runoff producing areas are at 36% of saturation in the upper 2 feet of soil, 8% below last year at this time. Forecast streamflows (Apr – July) range from 75% to 110% of average. Reservoir storage is at 48% of capacity, up 4% from last year at this time. Surface Water Supply Indices for the area are: Price 32%, Joe's Valley 50%, Ferron Creek 37%, and Moab 61%. General runoff and water supply conditions are below average in the Price and Ferron Creek areas, and above, and near average in the Moab and Joe's Valley areas respectively.



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Streamflow Forecasts - March 1, 2009

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Gooseberry Creek nr Scofield	APR-JUL	6.5	8.5	10.0	84	11.6	14.3	11.9
Price River nr Scofield Reservoir	APR-JUL	23	30	36	80	43	54	45
White River blw Tabbyune Creek	APR-JUL	8.0	11.1	13.5	78	16.2	20	17.3
Green River at Green River, UT (2)	APR-JUL	1510	2250	2750	87	3250	3990	3170
Huntington Ck Inflow to Electric Lk	APR-JUL	8.6	11.1	13.0	83	15.0	18.3	15.7
Huntington Ck nr Huntington (2)	APR-JUL	25	33	40	82	47	59	49
Joe's Valley Reservoir Inflow	APR-JUL	26	37	45	78	54	69	58
Ferron Ck (Upper Station) nr Ferron	APR-JUL	19.4	25	30	77	35	43	39
Colorado River nr Cisco (2)	APR-JUL	3320	4380	5100	110	5820	6880	4650
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	3.00	4.00	4.80	96	5.70	7.30	5.00
Muddy Creek nr Emery	APR-JUL	8.5	12.1	15.0	75	18.2	23	19.9
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.57	0.96	1.30	94	1.72	2.50	1.38
San Juan River near Bluff (2)	APR-JUL	695	1020	1250	102	1480	1810	1230

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

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Watershed Snowpack Analysis - March 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNTINGTON NORTH	4.2	3.9	2.7	3.4	PRICE RIVER	3	73	88
JOE'S VALLEY	61.6	38.2	41.2	41.5	SAN RAFAEL RIVER	3	79	82
KEN'S LAKE	2.3	0.9	1.3	1.3	MUDDY CREEK	1	58	72
MILL SITE	16.7	8.1	6.9	84.9	FREMONT RIVER	3	77	76
SCOFIELD	65.8	20.5	15.1	34.8	LASAL MOUNTAINS	1	87	100
					BLUE MOUNTAINS	1	52	98
					WILLOW CREEK	1	63	106
					SOUTHEASTERN UTAH	13	71	86

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

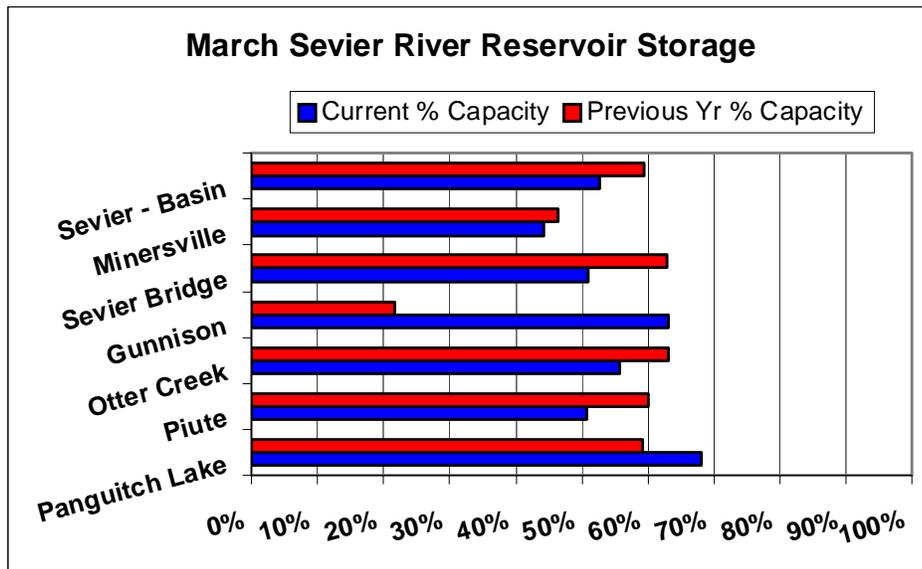
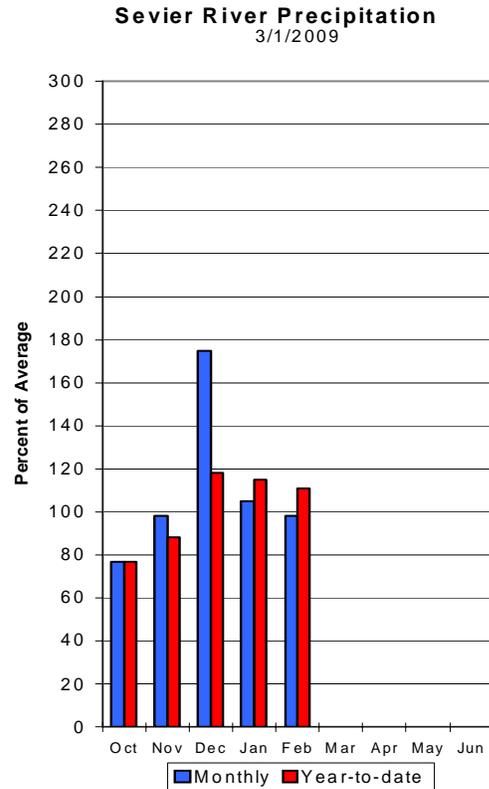
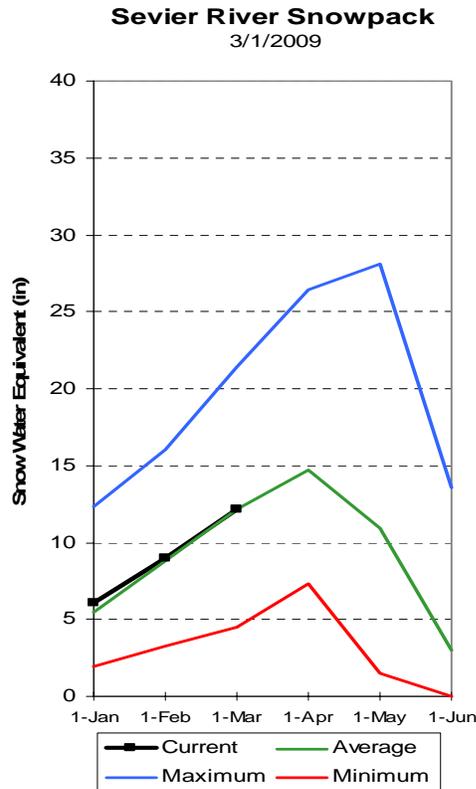
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- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Sevier and Beaver River Basins

## March 1, 2009

Snowpacks on the Sevier River Basin are normal at 100% of average, a 3% decline relative to last month and 79% of last year. Individual sites range from 62% at Beaver Dams to 165% of average at Harris Flat. Precipitation during February was near average at 98% of normal, bringing the seasonal accumulation (Oct-Feb) to 111% of average. Soil moisture estimates in runoff producing areas are at 47% of saturation in the upper 2 feet of soil compared to 43% last year. Streamflow forecasts range from 76% to 119% of average. Reservoir storage is at 53% of capacity, 7% less than last year. Surface Water Supply Indices are: Upper Sevier 39%, Lower Sevier 47% and Beaver 63%. Water supply conditions are below average on the upper Sevier, near average on the lower Sevier and above average on the Beaver River watersheds.



SEVIER & BEAVER RIVER BASINS  
Streamflow Forecasts - March 1, 2009

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding *		30% (1000AF)	10% (1000AF)	
				50% (1000AF)	(% AVG.)			
Sevier R at Hatch, UT	APR-JUL	29	42	51	93	60	73	55
Sevier R nr Kingston, UT	APR-JUL	3.2	15.9	31	94	40	62	33
EF Sevier R nr Kingston, UT	APR-JUL	12.9	27	36	103	45	59	35
Sevier R blw Piute Dam nr Marysvale, UT	APR-JUL	34	66	87	96	108	140	91
Clear Creek Abv Diversions nr Sevier	APR-JUL	10.5	17.4	22	100	27	34	22
Salina Ck at Salina, UT	APR-JUL	3.1	10.5	18.0	91	27	45	19.7
Manti Ck Blw Dugway Ck Nr Manti	APR-JUL	9.1	12.4	15.0	82	17.8	22	18.3
Sevier R nr Gunnison, UT	APR-JUL	5.0	44	80	76	116	168	106
Chicken Creek nr Levan	APR-JUL	1.40	2.40	3.40	76	4.60	6.71	4.50
Oak Creek nr Oak City	APR-JUL	0.78	1.13	1.40	84	1.70	2.20	1.66
Beaver R nr Beaver, UT	APR-JUL	17.5	26	32	119	38	46	27
Minersville Reservoir	APR-JUL	5.1	11.3	17.5	105	26	42	16.6

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

SEVIER & BEAVER RIVER BASINS  
Watershed Snowpack Analysis - March 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNNISON	20.3	12.8	4.4	14.6	UPPER SEVIER RIVER	8	82	113
MINERSVILLE (RkyFd)	23.3	10.3	10.8	16.2	EAST FORK SEVIER RIVER	3	84	101
OTTER CREEK	52.5	29.3	33.1	40.0	SOUTH FORK SEVIER RIVER	5	81	119
PIUTE	71.8	36.5	43.1	53.3	LOWER SEVIER RIVER	6	65	80
SEVIER BRIDGE	236.0	120.4	148.1	175.6	BEAVER RIVER	2	106	122
PANGUITCH LAKE	22.3	15.2	13.2	146.8	SEVIER & BEAVER RIVER BAS	16	79	100

\* 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.

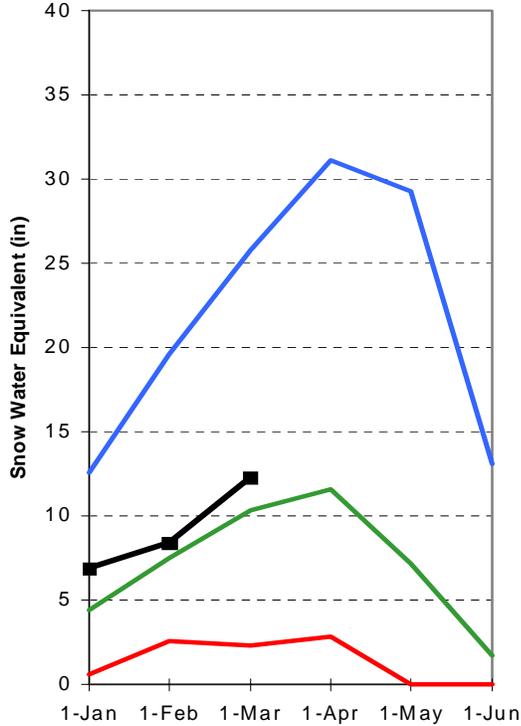
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

## E. Garfield, Kane, Washington, & Iron Co. March 1, 2009

Snowpacks in this region are above normal at 119% of average, which is 88% of last year. Individual sites range from 65% at Donkey Reservoir Snotel, to 165% of average at Harris Flat Snotel. Precipitation during the month of February was above average at 121%, bringing the seasonal accumulation (Oct-Feb) to 121% of average. The average soil moisture estimate in runoff producing areas is at 43% of saturation within the upper 2 feet of soil, compared to 40% last year. Forecast streamflows (Apr-July) range from 98% to 124% of average. Reservoir storage is at 70% of capacity, 4% higher than last year. The Surface Water Supply Index is at 74%, indicating much above average water supply conditions.

### Southwest Utah Snowpack

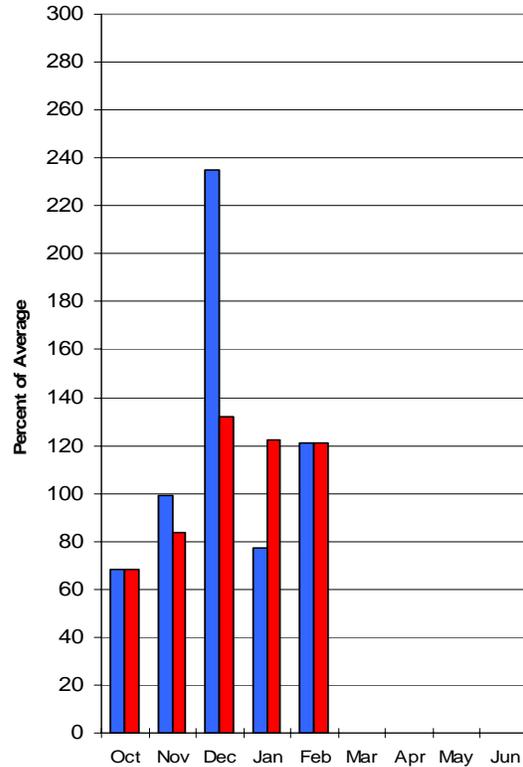
3/1/2009



■ Current   
 — Average   
 — Maximum   
 — Minimum

### Southwest Utah Precipitation

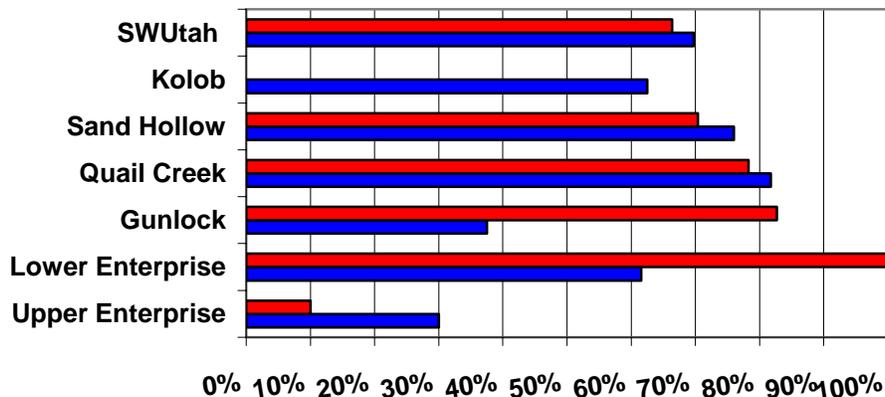
3/1/2009



■ Monthly   
 ■ Year-to-date

### March Southwest Utah Reservoir Storage

■ Current % Capacity   
 ■ Previous Yr % Capacity



E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Streamflow Forecasts - March 1, 2009

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)		
Lake Powell Inflow (2)	APR-JUL	4630	6520	7800	98	9080	11000	7930				
Virgin River at Virgin	APR-JUL	40	53	64	100	76	94	64				
Virgin River nr Hurricane	APR-JUL	38	55	69	100	84	109	69				
Santa Clara River nr Pine Valley	APR-JUL	3.00	4.30	5.40	98	6.60	8.50	5.50				
Coal Ck nr Cedar City, UT	APR-JUL	15.2	20	24	124	28	33	19.3				

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

E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Watershed Snowpack Analysis - March 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNLOCK	10.4	3.9	8.6	4.9	VIRGIN RIVER	5	89	131
LAKE POWELL	24322.0	12977.0	10875.0	---	PAROWAN	2	82	108
QUAIL CREEK	40.0	32.7	31.3	29.7	ENTERPRISE TO NEW HARMONY	2	71	111
UPPER ENTERPRISE	10.0	3.0	1.0	---	COAL CREEK	2	86	119
LOWER ENTERPRISE	2.6	1.6	2.6	90.0	ESCALANTE RIVER	2	93	77
					SOUTHWESTERN UTAH	9	88	119

\* 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.

# Surface Water Supply Index

March 1, 2009			Years with
Basin or Region	SWSI	Percentile	Similar SWSI
Bear River	-2.10	14%	43,32,95,06
Ogden River	-0.13	48%	91,94,79,96
Weber River	-0.10	49%	79,76,93,05
Provo	-0.13	48%	07,00,08,05
West Uintah Basin	-0.42	45%	01,81,73,74
East Uintah Basin	-2.02	26%	03,81,07,91
Price River	-1.54	32%	94,07,93,05
Joe's Valley	0.00	50%	04,01,00,93
Ferron Creek	-1.10	37%	07,74,03,87
Moab	0.91	61%	07,96,94,97
Upper Sevier River	-0.92	39%	79,75,59,90
Lower Sevier River	-0.25	47%	08,01,96,07
Beaver River	1.11	63%	75,87,99,70
Virgin River	1.99	74%	01,92,06,88

SWSI Scale: -4 to 4    Percentile: 0 - 100%

## What is a Surface Water Supply Index?

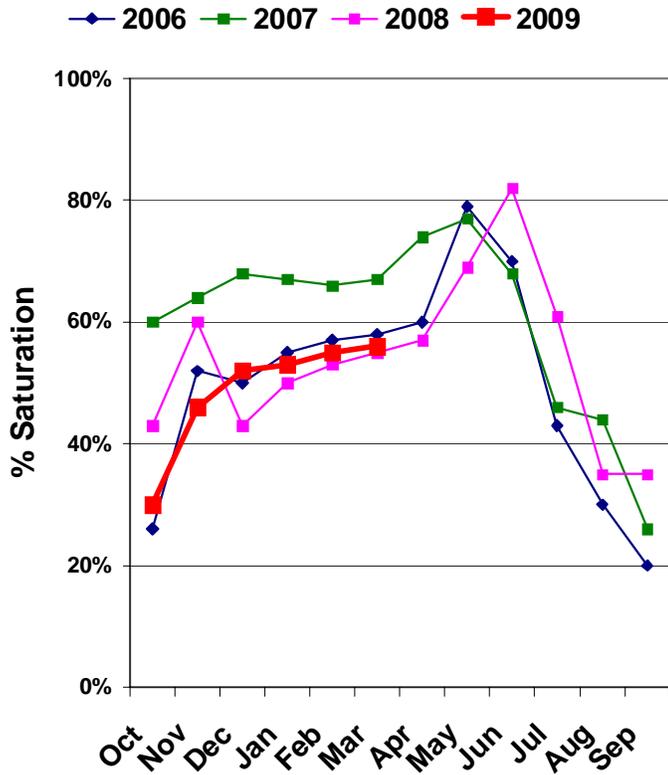
The Surface Water Supply Index (SWSI) is a predictive indicator of total surface water availability within a watershed for the spring and summer water use seasons. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow which are based 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.

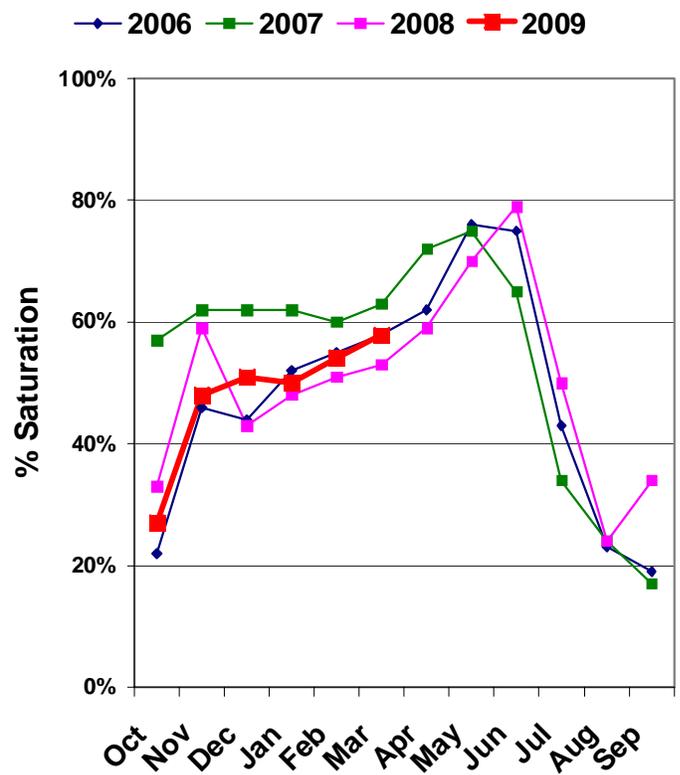
For more information on the SWSI go to: [www.ut.nrcs.usda.gov/snow/](http://www.ut.nrcs.usda.gov/snow/) on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

# Watershed Soil Moisture Charts for Utah Water Supply

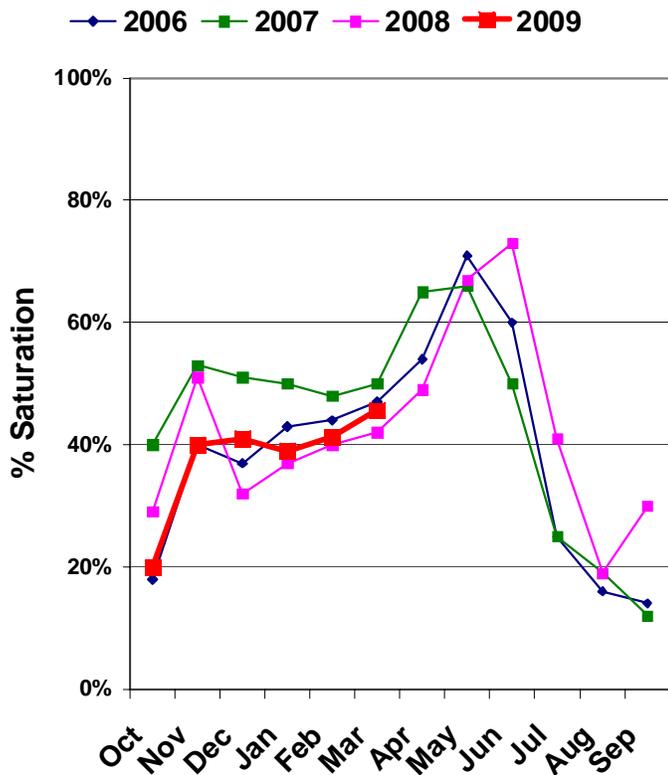
## Bear River Soil Moisture



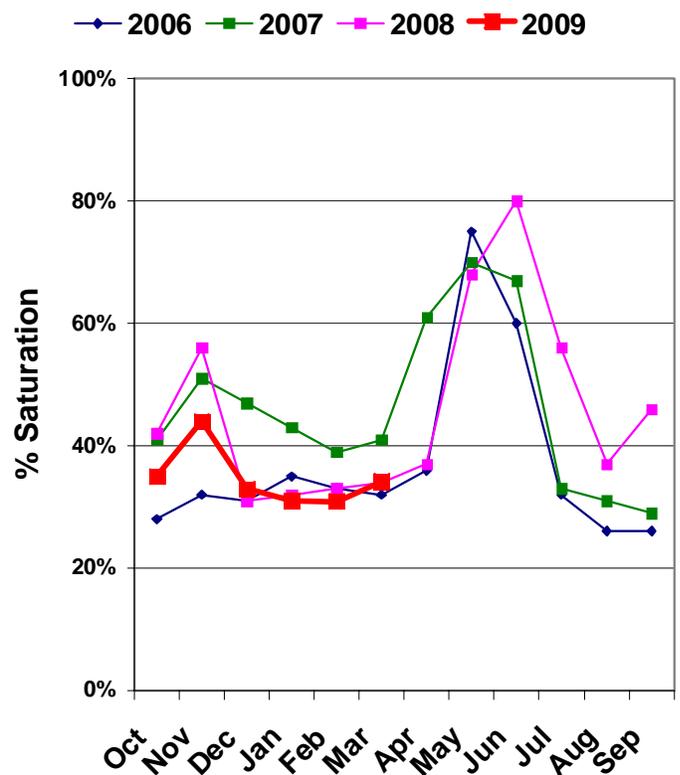
## Weber River Soil Moisture



## Jordan/Provo River Soil Moisture



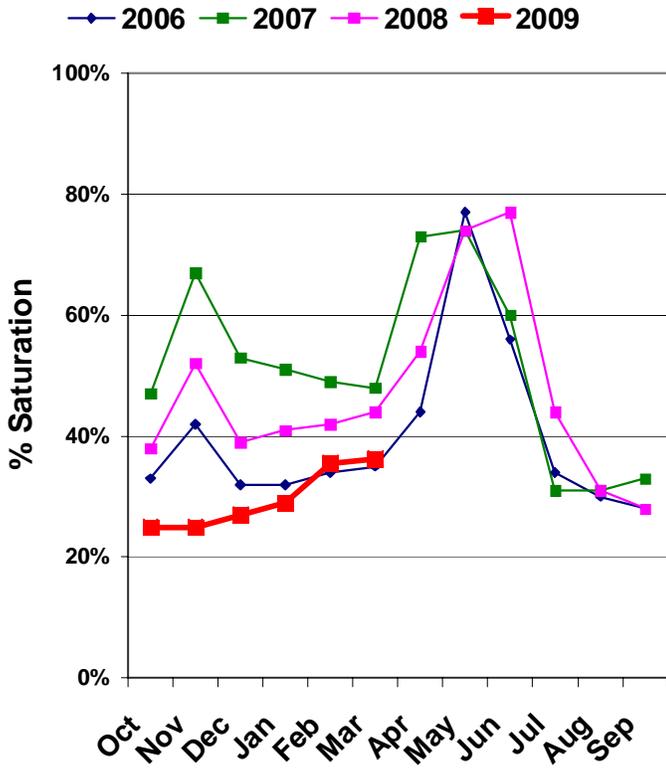
## Uintah Basin Soil Moisture



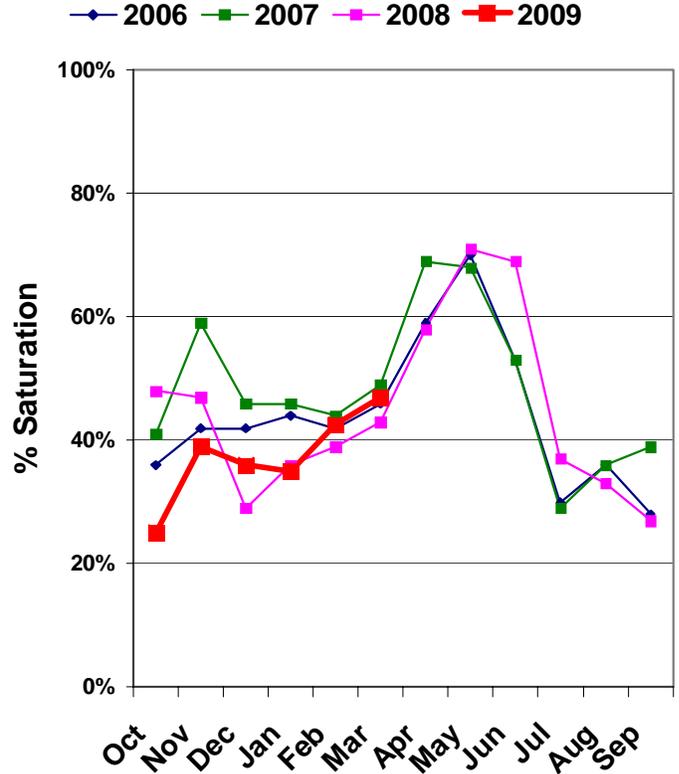
Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content.

# Watershed Soil Moisture Charts for Utah Water Supply

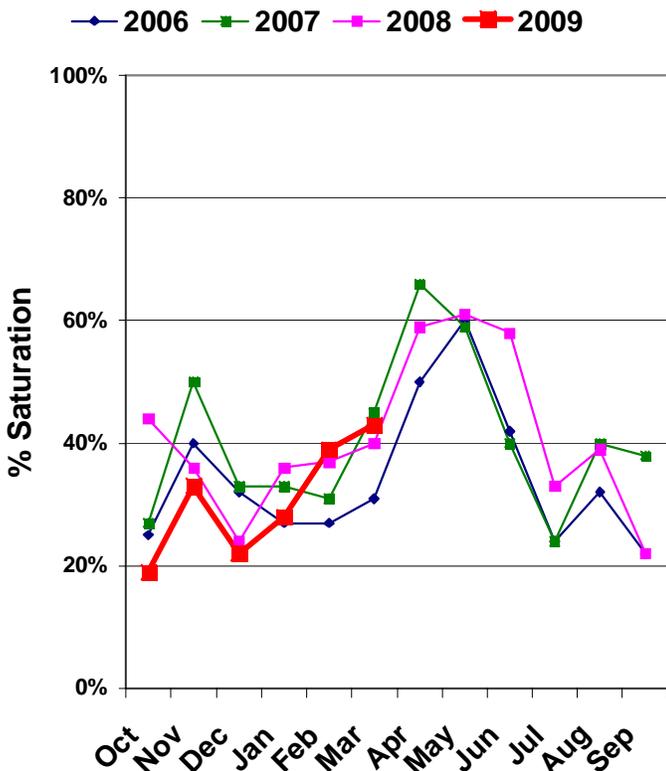
## South East Utah Soil Moisture



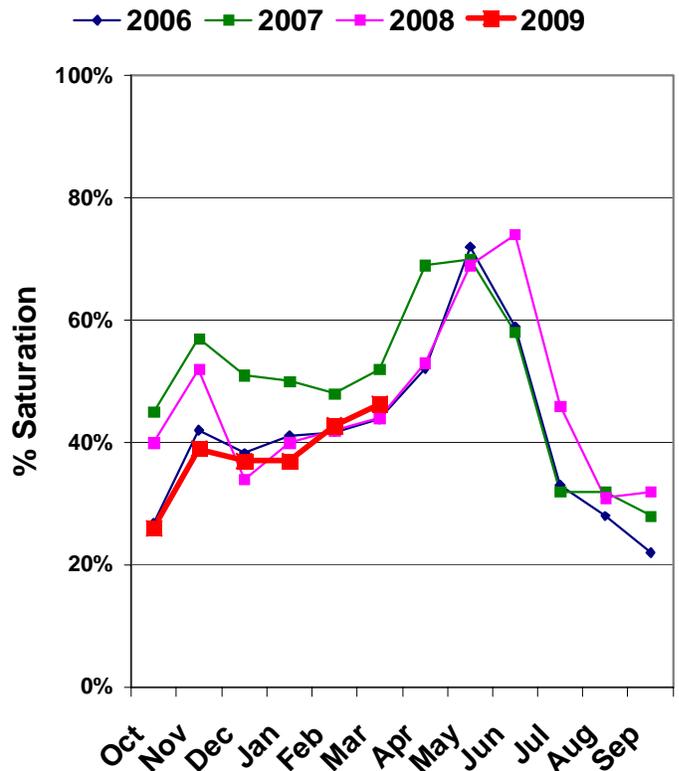
## Sevier/Beaver River Soil Moisture



## Southwest Utah Soil Moisture



## Statewide 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.

## S N O W C O U R S E D A T A

MARCH 2009

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	3/01	27	9.1	13.3	7.3
ALTA CENTRAL	8800	2/26	89	30.7	37.0	31.1
BEAVER DAMS SNOTEL	8000	3/01	17	6.3	11.9	10.2
BEAVER DIVIDE SNOTEL	8280	3/01	32	9.7	13.0	10.2
BEN LOMOND PK SNOTEL	8000	3/01	102	39.3	38.5	34.3
BEN LOMOND TR SNOTEL	6000	3/01	57	18.8	27.0	19.0
BEVAN'S CABIN	6450	2/28	23	7.8	12.4	9.2
BIG FLAT SNOTEL	10290	3/01	64	18.0	16.8	15.0
BIRCH CROSSING	8100	2/25	20	6.4	9.4	6.7
BLACK FLAT-U.M. CK S	9400	3/01	25	6.3	10.5	8.5
BLACK'S FORK GS-EF	9340	2/25	23	7.6	9.8	7.8
BLACK'S FORK JUNCTN	8930	2/25	22	5.8	9.9	7.7
BOX CREEK SNOTEL	9800	3/01	39	11.0	13.8	11.0
BRIAN HEAD	10000	2/25	50	16.0	18.5	16.5
BRIGHTON SNOTEL	8750	3/01	50	17.4	26.9	20.4
BRIGHTON CABIN	8700	2/25	61	19.5	30.2	23.1
BROWN DUCK SNOTEL	10600	3/01	54	13.3	17.0	15.0
BRYCE CANYON	8000	2/27	16	6.7	8.4	4.9
BUCK FLAT SNOTEL	9800	3/01	44	13.3	16.6	15.3
BUCK PASTURE	9700	2/25	45	10.2	14.8	14.0
BUCKBOARD FLAT	9000	2/26	31	10.9	17.5	11.0
BUG LAKE SNOTEL	7950	3/01	48	14.3	15.4	17.1
BURT'S-MILLER RANCH	7900	2/25	14	4.8	6.6	4.7
CAMP JACKSON SNOTEL	8600	3/01	32	12.7	24.2	12.9
CASCADE MOUNTAIN SNO	7770	3/01	54	18.9	19.8	-
CASTLE VALLEY SNOTEL	9580	3/01	43	11.0	15.7	11.8
CHALK CK #1 SNOTEL	9100	3/01	56	17.8	22.3	19.9
CHALK CK #2 SNOTEL	8200	3/01	40	12.3	16.5	12.9
CHALK CREEK #3	7500	2/25	19	6.3	9.8	6.8
CHEPETA SNOTEL	10300	3/01	39	10.6	13.0	11.4
CLAYTON SPRINGS SNTL	10000	3/01	39	9.7	10.1	-
CLEAR CK RIDG #1 SNT	9200	3/01	48	14.6	18.7	16.7
CLEAR CK RIDG #2 SNT	8000	3/01	40	10.6	14.8	12.3
CORRAL	8200	2/24	26	7.1	15.2	-
CURRENT CREEK SNOTEL	8000	3/01	29	8.3	13.7	9.6
DANIELS-STRAWBERRY S	8000	3/01	45	12.4	19.5	15.1
DILL'S CAMP SNOTEL	9200	3/01	33	8.8	15.1	12.3
DONKEY RESERVOIR SNO	9800	3/01	22	4.3	5.3	6.6
DRY BREAD POND SNTL	8350	3/01	55	16.4	21.0	19.0
DRY FORK SNOTEL	7160	3/01	33	9.9	13.1	14.5
EAST WILLOW CREEK SN	8250	3/01	28	7.5	11.9	7.1
FARMINGTON U. SNOTEL	8000	3/01	83	33.2	33.0	27.3
FARMINGTON L. SNOTEL	6780	3/01	58	21.3	24.0	-
FARNSWORTH LK SNOTEL	9600	3/01	45	12.2	19.5	14.8
FISH LAKE	8700	2/24	13	3.6	9.9	7.5
FIVE POINTS LAKE SNO	10920	3/01	49	11.9	17.0	13.8
G.B.R.C. HEADQUARTER	8700	2/24	38	11.7	17.7	13.8
G.B.R.C. MEADOWS	10000	2/24	55	17.9	24.2	19.0
GARDEN CITY SUMMIT	7600	2/28	35	9.3	13.2	13.5
GARDNER PEAK SNOTEL	8350	3/01	40	14.7	13.5	-
GEORGE CREEK	8840	2/25	55	19.0	18.0	17.3
GOOSEBERRY R.S.	8400	2/24	25	7.7	13.3	9.9
GOOSEBERRY R.S. SNTL	7900	3/01	15	6.0	11.3	7.9
GUTZ PEAK SNOTEL	6820	3/01	38	14.3	15.2	-
HARDSCRABBLE SNOTEL	7250	3/01	46	15.3	20.2	14.3
HARRIS FLAT SNOTEL	7700	3/01	29	11.4	14.4	6.9
HAYDEN FORK SNOTEL	9100	3/01	42	13.1	16.3	13.2
HENRY'S FORK	10000	2/25	33	7.2	11.2	10.5
HEWINTA SNOTEL	9500	3/01	31	6.5	10.9	9.1
HICKERSON PARK SNTL	9100	3/01	16	3.3	6.1	5.8
HIDDEN SPRINGS	5500	2/25	21	6.4	9.1	5.9
HOBBLE CREEK SUMMIT	7420	2/25	38	12.5	17.2	13.1
HOLE-IN-ROCK SNOTEL	9150	3/01	18	3.2	5.1	5.7
HORSE RIDGE SNOTEL	8260	3/01	52	17.5	20.6	20.2
HUNTINGTON-HORSESHOE	9800	2/24	56	20.0	22.9	19.4
INDIAN CANYON SNOTEL	9100	3/01	38	9.1	14.7	9.6
JOHNSON VALLEY	8850	2/24	16	4.5	10.4	6.4
JONES CORRAL SNOTEL	9750	3/01	32	8.3	9.1	-
KILFOIL CREEK	7300	2/28	38	11.5	17.3	12.4
KILLYON CANYON	6300	2/25	22	7.4	12.1	8.7

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
KIMBERLY MINE SNOTEL	9300	3/01	43	14.2	16.2	13.3
KING'S CABIN SNOTEL	8730	3/01	26	6.9	10.2	9.4
KLONDIKE NARROWS	7400	2/28	50	16.0	18.8	16.8
KOLOB SNOTEL	9250	3/01	73	24.1	25.2	17.8
LAKEFORK #1 SNOTEL	10100	3/01	34	9.2	11.6	10.5
LAKEFORK BASIN SNTL	10900	3/01	57	16.1	18.1	16.6
LAKEFORK MOUNTAIN #3	8400	2/25	19	4.8	9.6	6.1
LAMBS CANYON	7400	2/26	43	13.3	17.4	14.5
LASAL MOUNTAIN LOWER	8800	2/26	19	6.8	9.2	8.1
LASAL MOUNTAIN SNTL	9850	3/01	31	10.7	12.3	10.7
LIGHTNING RIDGE SNTL	8220	3/01	46	15.1	20.4	-
LILY LAKE SNOTEL	9050	3/01	41	10.6	12.4	10.8
LITTLE BEAR LOWER	6000	2/28	33	11.9	16.6	10.2
LITTLE BEAR SNOTEL	6550	3/01	35	11.7	14.8	12.8
LITTLE GRASSY SNOTEL	6100	3/01	15	5.8	9.6	5.8
LONG FLAT SNOTEL	8000	3/01	25	8.9	11.1	7.4
LONG VALLEY JCT. SNT	7500	3/01	22	8.4	11.7	5.8
LOOKOUT PEAK SNOTEL	8200	3/01	69	23.3	25.2	20.1
LOST CREEK RESERVOIR	6130	2/28	16	6.1	12.6	5.9
LOUIS MEADOW SNOTEL	6700	3/01	51	18.9	21.4	-
MAMMOTH-COTTONWD SNT	8800	3/01	47	16.0	19.7	17.6
MERCHANT VALLEY SNTL	8750	3/01	52	14.1	13.4	11.4
MIDDLE CANYON	7000	2/28	30	11.2	15.1	12.2
MIDWAY VALLEY SNOTEL	9800	3/01	76	22.8	25.6	19.4
MILL CREEK	6950	2/26	47	16.0	20.0	16.6
MILL-D NORTH SNOTEL	8960	3/01	55	20.2	23.0	21.0
MILL-D SOUTH FORK	7400	2/25	47	14.7	22.8	16.9
MINING FORK SNOTEL	8000	3/01	45	14.7	18.8	14.9
MONTE CRISTO SNOTEL	8960	3/01	66	20.1	24.3	24.7
MOSBY MTN. SNOTEL	9500	3/01	38	8.8	11.8	9.3
MT. BALDY R.S.	9500	2/24	57	17.8	23.4	19.9
MUD CREEK #2	8600	2/24	34	9.1	16.1	12.0
OAK CREEK	7760	2/24	33	10.8	11.6	10.0
PANGUITCH LAKE R.S.	8200	2/24	19	6.4	5.8	4.0
PARLEY'S CANYON SNTL	7500	3/01	42	12.9	17.0	15.3
PARRISH CREEK SNOTEL	7740	3/01	70	22.8	24.1	-
PAYSON R.S. SNOTEL	8050	3/01	39	13.9	19.4	17.2
PICKLE KEG SNOTEL	9600	3/01	36	11.4	17.6	14.1
PINE CREEK SNOTEL	8800	3/01	38	15.4	22.8	19.3
RED PINE RIDGE SNTL	9200	3/01	39	11.0	16.5	14.2
REDDEN MINE LOWER	8500	2/25	43	15.3	20.8	15.1
REES'S FLAT	7300	2/24	29	9.0	14.4	11.2
ROCK CREEK SNOTEL	7900	3/01	23	6.5	10.2	7.9
ROCKY BN-SETTLEMT SN	8900	3/01	48	15.8	20.6	21.2
SEELEY CREEK SNOTEL	10000	3/01	33	10.1	10.5	12.3
SMITH MOREHOUSE SNTL	7600	3/01	37	13.1	14.2	12.4
SNOWBIRD SNOTEL	9700	3/01	87	32.9	43.8	28.3
SPIRIT LAKE	10300	2/25	24	6.5	10.7	10.5
SQUAW SPRINGS	9300	2/24	23	6.5	10.0	6.6
STEEL CREEK PARK SNO	10100	3/01	42	8.8	12.3	12.7
STILLWATER CAMP	8550	2/25	28	7.9	11.6	8.8
STRAWBERRY DIVIDE SN	8400	3/01	44	11.5	16.0	16.3
SUSC RANCH	8200	2/25	30	10.3	13.4	8.1
TALL POLES	8800	2/25	38	12.3	14.6	12.1
TEMPLE FORK SNOTEL	7410	3/01	51	14.8	15.7	-
THAYNES CANYON SNTL	9200	3/01	55	17.5	26.7	19.3
THISTLE FLAT	8500	2/24	42	13.1	17.6	-
TIMBERLINE	9100	2/24	32	8.0	16.9	-
TIMBERLINE SNOTEL	8680	3/01	30	8.5	15.7	-
TIMPANOGOS DIVIDE SN	8140	3/01	64	22.4	27.0	20.4
TONY GROVE LK SNOTEL	8400	3/01	86	29.1	31.0	30.0
TONY GROVE R.S.	6250	2/28	35	11.1	14.1	11.3
TRIAL LAKE	9960	2/25	60	19.6	21.8	20.3
TRIAL LAKE SNOTEL	9960	3/01	58	18.3	18.0	20.6
TROUT CREEK SNOTEL	9400	3/01	27	6.1	10.8	8.1
UPPER JOES VALLEY	8900	2/24	24	6.5	13.2	9.3
USU DOC DANIEL SNTL	8270	3/01	79	22.8	24.2	-
VERNON CREEK SNOTEL	7500	3/01	39	11.4	12.7	10.1
VIPONT	7670	2/25	44	15.0	17.2	12.2
WEBSTER FLAT SNOTEL	9200	3/01	44	16.5	19.9	13.5
WHITE RIVER #1 SNTL	8550	3/01	35	9.7	12.7	11.6
WHITE RIVER #3	7400	2/25	27	9.1	11.6	7.8
WIDTSOE #3 SNOTEL	9500	3/01	28	8.2	8.6	9.7
WRIGLEY CREEK	9000	2/24	29	8.3	13.4	9.6
YANKEE RESERVOIR	8700	2/26	31	8.9	10.6	8.4

*Issued by*

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YOU MAY OBTAIN THIS PRODUCT AS WELL AS CURRENT SNOW, PRECIPITATION, TEMPERATURE AND SOIL MOISTURE, RESERVOIR, SURFACE WATER SUPPLY INDEX, AND OTHER DATA BY VISITING OUR WEB SITE @:

<http://www.ut.nrcs.usda.gov/snow/>

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



# Utah Water Supply Outlook Report

Natural Resources Conservation Service  
Salt Lake City, UT



# Utah Water Supply Outlook Report

April, 2009



Ray Wilson at Mt Baldy snow course, March 28, 2009. Photo by Mike Bricco.

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

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**Internet Address: <http://www.ut.nrcs.usda.gov/snow/>**

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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.

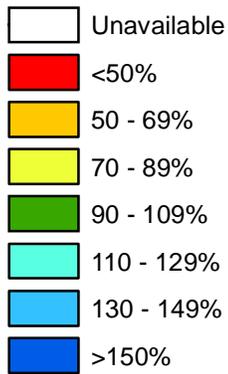
The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. 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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# Utah SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

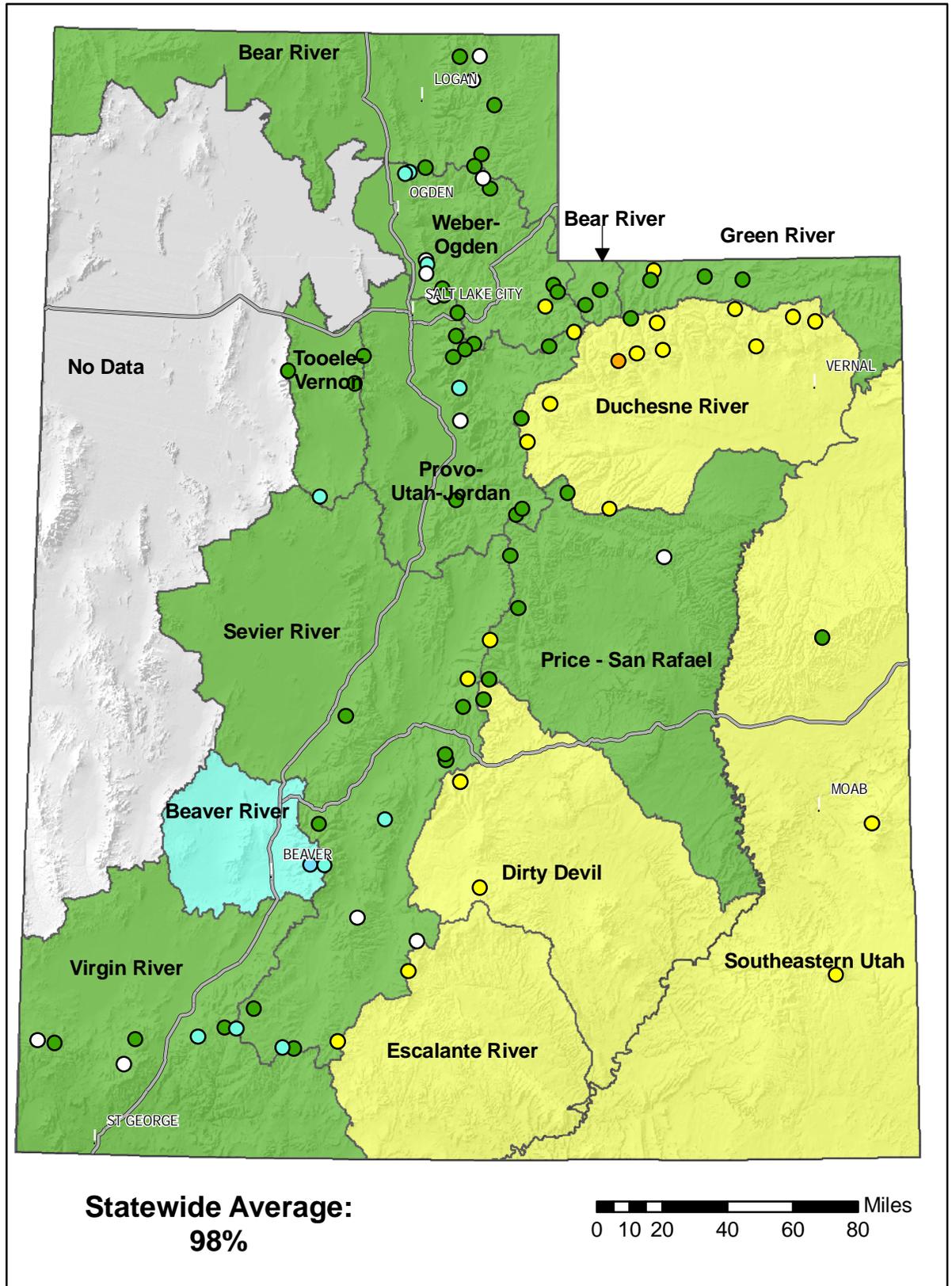
April 1, 2009

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



\* 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).

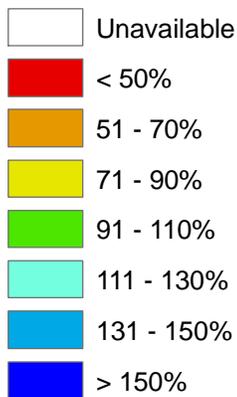
Prepared by the USDA/NRCS Utah DCO  
Salt Lake City, Utah <http://www.ut.nrcs.usda.gov/snow/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: Mike Bracco [michael.bricco@ut.usda.gov](mailto:michael.bricco@ut.usda.gov)

# Utah

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

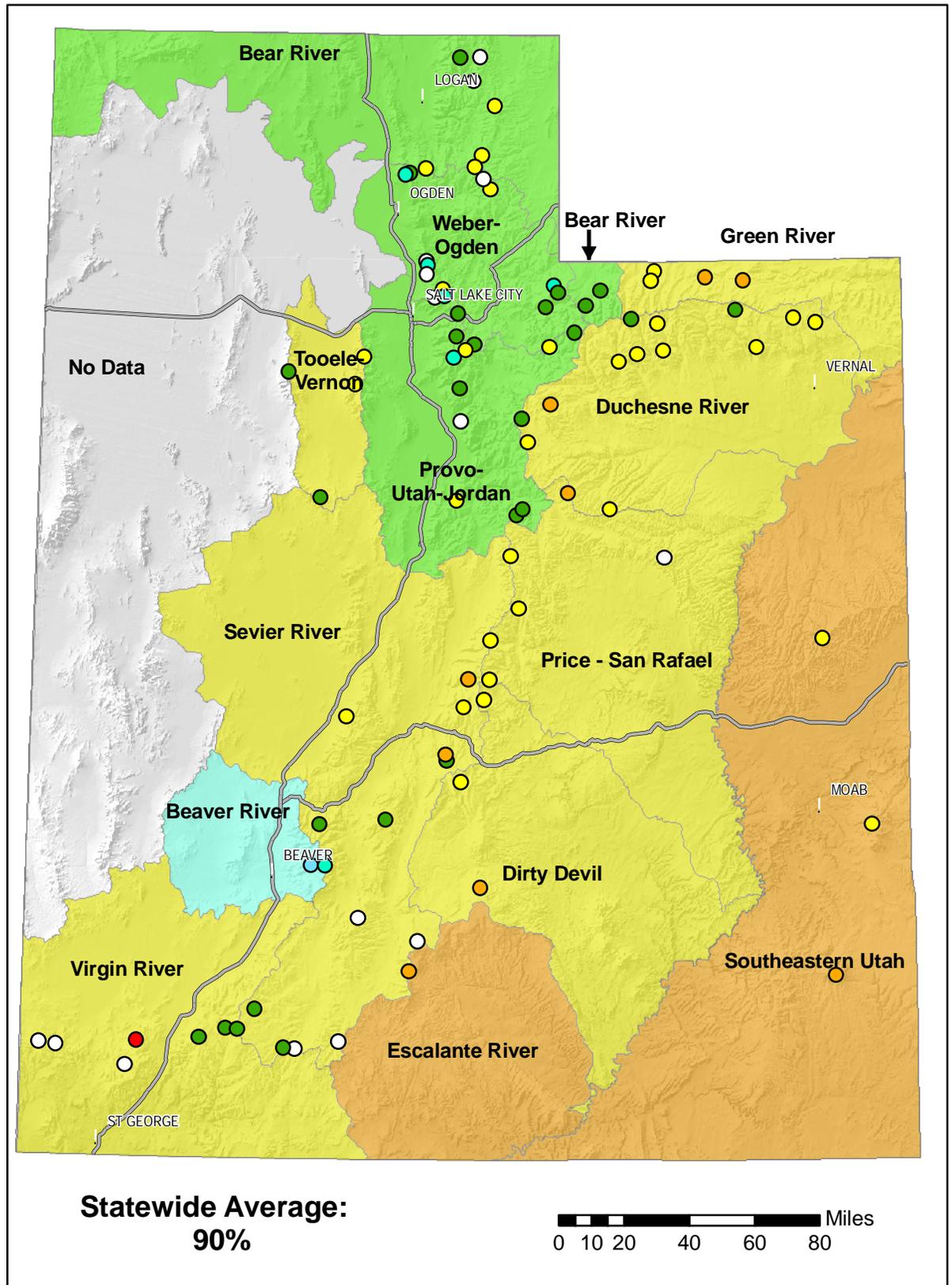
**April 1, 2009**

**Snow Water Equivalent (swe)  
Basin-Wide % of  
1971-2000 Normal**



*\* 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 Utah DCO  
Salt Lake City, Utah: <http://www.ut.nrcs.usda.gov/snow/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: Mike Bracco [michael.bricco@ut.usda.gov](mailto:michael.bricco@ut.usda.gov)

## Ferron Creek Watershed 2009 Hydrology

In the summer of 2007, the upper Ferron Creek Watershed had a fire that extended from just east of Ferron Reservoir to Wrigley Hill. Much of the north aspect of the watershed was burned from the creek bottom to the top of the watershed at 10,000 ft elevation. This fire has the potential to significantly alter the snowmelt runoff in 2008 as well as future years. This was the assessment last year.

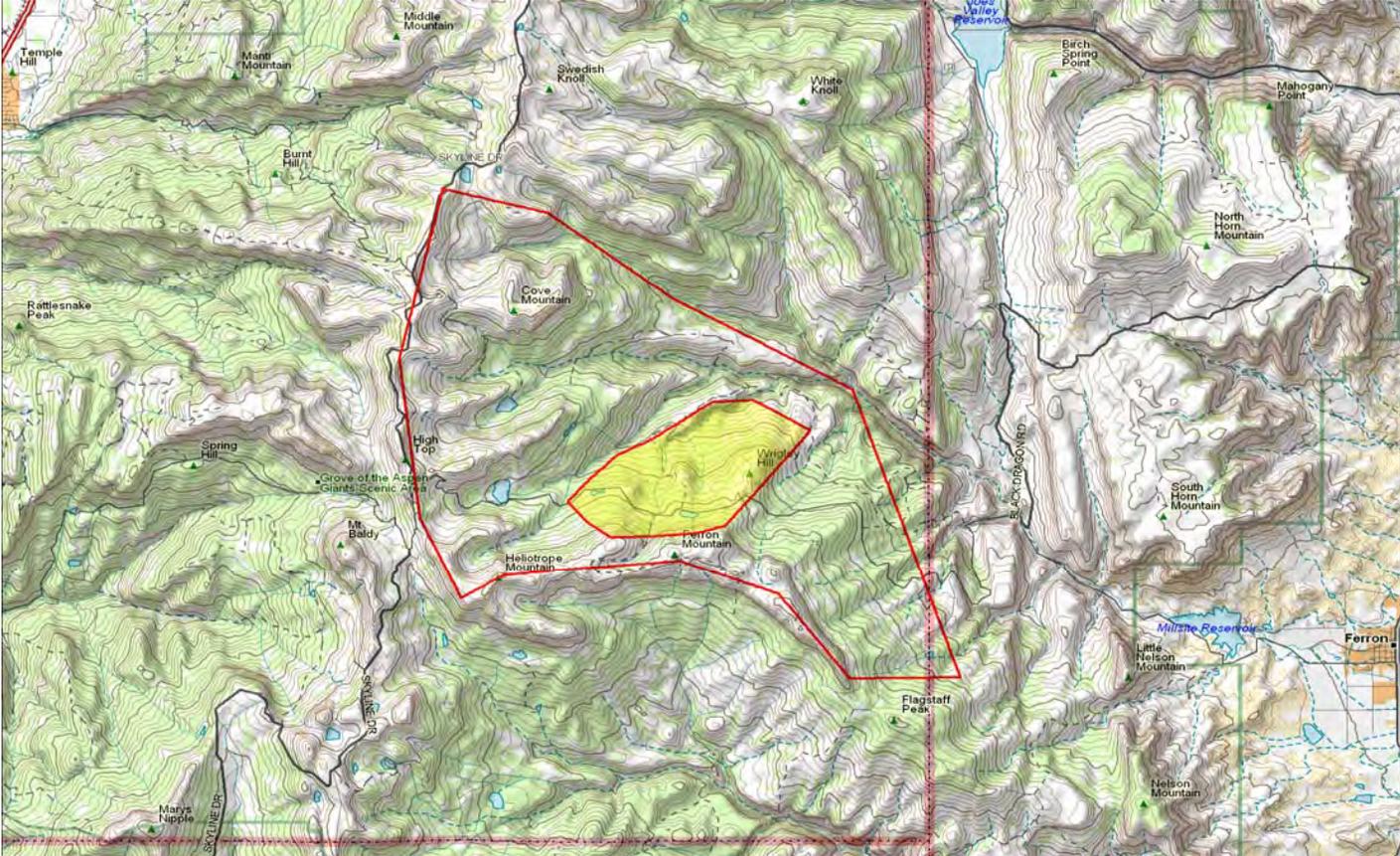
An onsite inspection by Snow Survey crews on March 24, 2009 revealed that much of the interior of the fire had dramatically reduced snowpacks similar to last year. There was a significant storm on March 23<sup>rd</sup> so there wasn't a lot of bare ground but there were substantial areas where the previous day's snow made up the entire pack. Snowpacks near and adjacent to the fire were also substantially reduced. This has been caused by carbon deposition on the snowpack and subsequent solar radiation being absorbed at a much higher rate and earlier in the season. The consequence of these accelerated processes is that snowmelt that would have occurred much later in the season, late May and June has already occurred on a substantial portion of the upper watershed. Thus flow normally occurring at that time may not be there this year. We anticipate that Ferron Creek will respond in a normal fashion in areas not impacted by the fire, namely lower elevations and much of the northern half of the watershed. However, much of the upper elevation impacted by the fire will not generate significant streamflow. We anticipate that the hydrograph will rise early on, responding to lower elevation snowmelt but will likely be of short duration with lower peak flows because the upper elevation snowpack to sustain later flow has been compromised.



These March 24, 2009 photos show layers of carbon deposition in each storm event and the shallow nature of the existing snowpack inside the fire. Areas adjacent to this had 4 to 7 feet of snowpack.



These photos, also taken March 24<sup>th</sup>, 2009 contrast snowpack conditions inside to snowpack conditions just outside the fire complex.



A map of the Ferron Creek Watershed and approximate boundary of the Fire in yellow.

The actual impact of the fire extends well beyond the fire perimeter to the east due to wind distributed carbon deposition.

# STATE OF UTAH GENERAL OUTLOOK

April 1, 2009

## SUMMARY

March was a roller coaster ride. The month started with a few good storms that heightened some anticipation of a good wet spring and abundant snow. The middle of the month was pretty much the middle of no-where because snow and precipitation were no-where to be found. Warm temperatures brought low and mid elevation snowpacks to isothermal conditions and melting began. Snowpacks across the state started a steep decline with many areas showing declines of 5 to 15%. Then in the final week, a series of storms hit the state and which brought snow levels in northern Utah back to near average conditions. Southern and eastern Utah improved but not as much as the north. Snowpacks across the state now range from 77% over southeastern Utah to 100% on the Weber. March precipitation was below to above normal (77%-118%) in northern Utah and much below to below normal (35%-83%) in the south which brings the year to date precipitation to near normal in across the state. Current soil moisture saturation levels in runoff producing areas are: Bear – 65%, Weber – 64%, Provo – 54%, Uintah Basin – 46%, SE Utah – 54%, Sevier – 58% and SW Utah – 60%, up 10 to 20% from last month. Drier soils typically mean less runoff from snowmelt. Reservoir storage is currently at 66% of capacity statewide compared to 60% last year. General water supply conditions are near average in northern Utah, and the Virgin and near to much below average in central and southeastern Utah. Streamflow forecasts range from 53% for the Bear River at Stewart Dam to 115% of average on the Beaver River nr beaver. Surface Water Supply Indices range from 12% on the Bear River to 57% for the Virgin. The extremely low value for the Bear River is a reflection of Bear Lake storage which continues to be well below normal.

## SNOWPACK

April first snowpacks as measured by the NRCS SNOTEL system are as follows: Bear - 94%, Weber - 100%, Provo - 96%, Uintahs - 80%, southeast Utah - 77%, Sevier - 87%, southwest Utah - 83% and the statewide figure is 91% of average. April is the typical peak of snowpack and the beginning of runoff season. Future climate can still impact snow and runoff with dry conditions diminishing runoff and wet conditions enhancing it. The area with lowest snowpack average is the east fork of the Sevier at 63%.

## PRECIPITATION

Mountain precipitation during March was: Bear – 118%, Weber – 114%, Provo – 100%, Uintahs – 77%, SE Utah – 78%, Sevier – 83%, SW Utah – 35% and the statewide figure is 95% of average. This brings the seasonal accumulation (Oct-Mar) to 99% of average statewide.

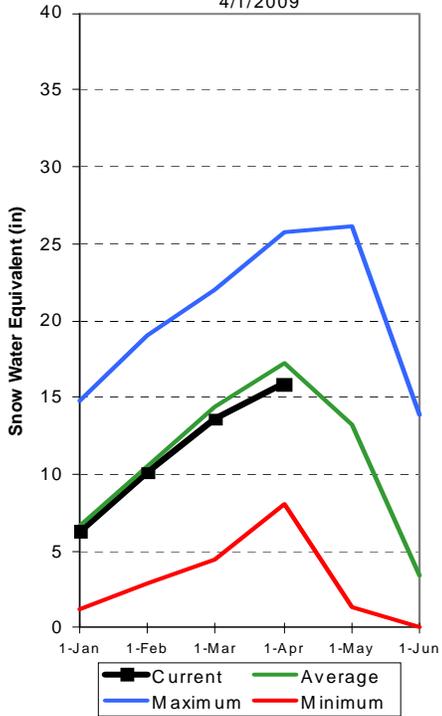
## RESERVOIRS

Storage in 41 of Utah's key irrigation reservoirs is at 66% of capacity up 6% compared to April of last year. Most reservoirs in Utah should easily fill this runoff season. A notable exception is Bear Lake. All reservoirs with previous fill restrictions are now able to store, including Willard Bay.

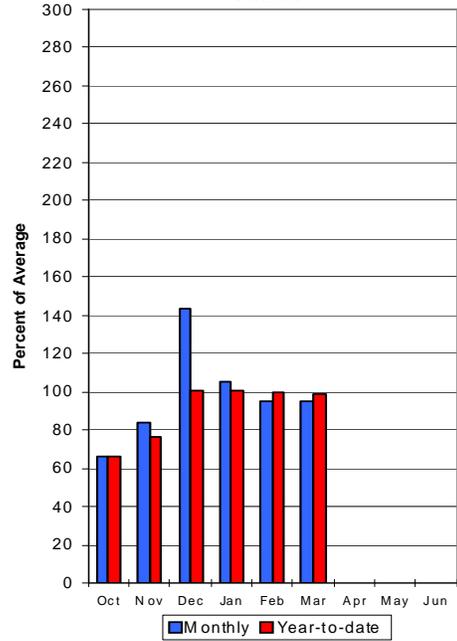
## STREAMFLOW

Snowmelt streamflows are expected to have a wide range from much below average to above average across the state of Utah this year. Forecast streamflows range from 32% on South Creek nr Monticello to 115% on the Beaver River nr Beaver. Most flows are forecast to be in the 80% to 105% range.

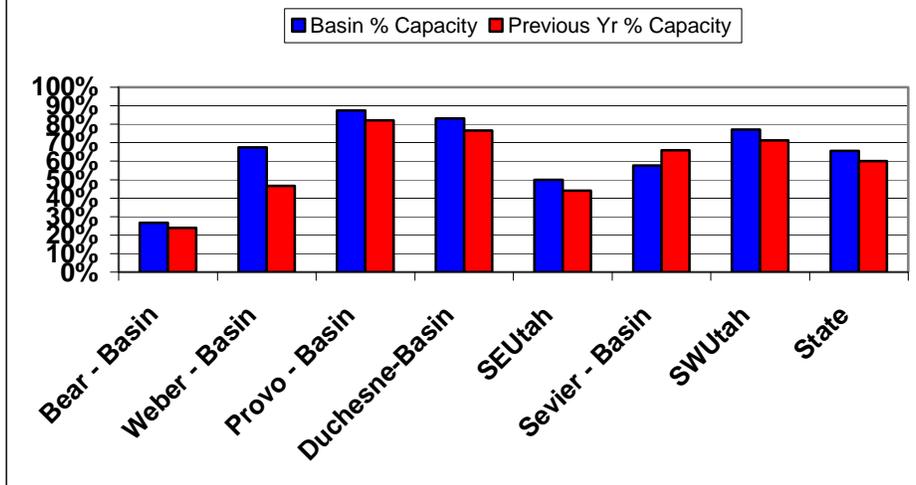
**Statewide Mountain Snowpack**  
4/1/2009



**Statewide Precipitation**  
4/1/2009



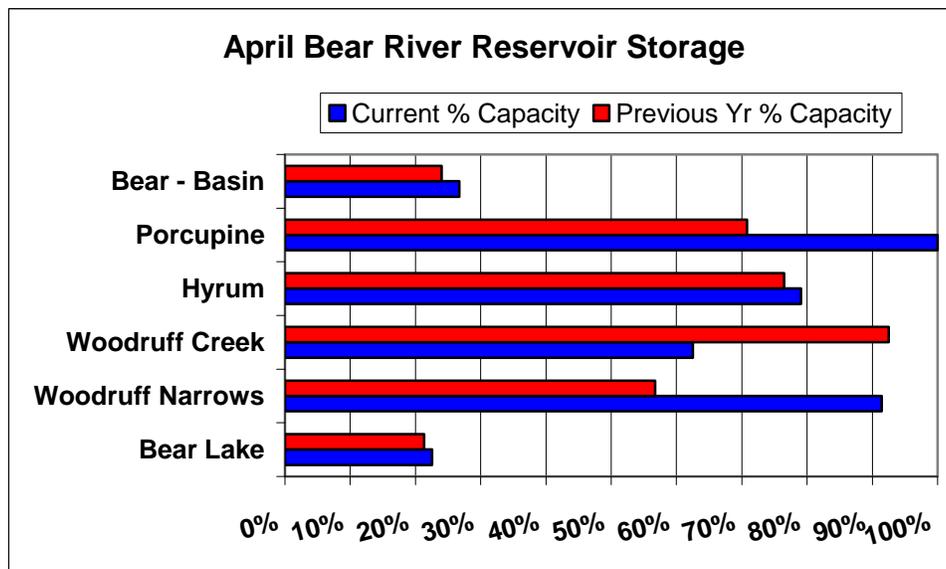
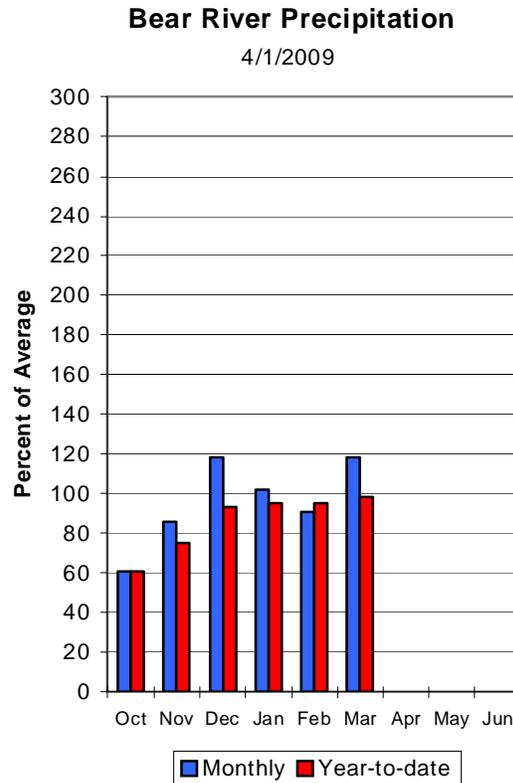
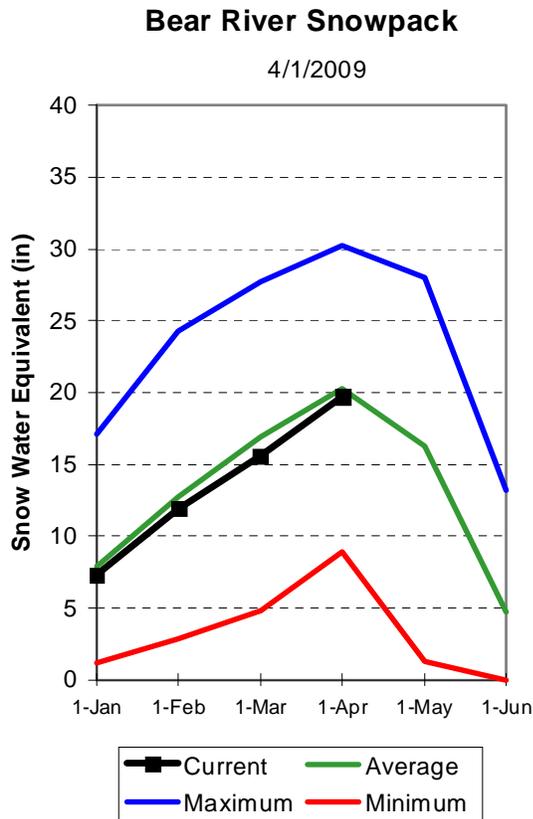
**April Statewide Reservoir Storage**



# Bear River Basin

## April 1, 2009

Snowpacks on the Bear River Basin are average at 94% of normal, about 94% of last year. Individual sites range from 47% of normal at Burt's Miller Ranch to 117% at Little Bear Lower snow course. March precipitation was above average at 118%, which brings the seasonal accumulation (Oct-Mar) to 98% of average. Soil moisture levels in runoff producing areas are at 65% of saturation in the upper 2 feet of soil compared to 57% last year. Forecast streamflows (April-July) range from much below to near average (53%-96%) volumes for this spring and summer. Reservoir storage is low at 27% of capacity, which is up 3% from this time last year. The Surface Water Supply Index is at 12% for the Bear River, in other words, 88% of years have had more total water available. Water supply conditions are much below normal due to low reservoir storage in Bear Lake.



BEAR RIVER BASIN  
Streamflow Forecasts - April 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Bear R nr UT-WY State Line	APR-JUL	76	93	105	93	117	134	113
Bear River ab Reservoir nr Woodruff	APR-JUL	77	102	120	88	136	161	136
Big Creek nr Randolph	APR-JUL	2.40	3.40	4.00	82	4.60	5.60	4.90
Smiths Fork nr Border	APR-JUL	75	86	94	91	102	113	103
Bear River at Stewart Dam	APR-JUL	81	106	125	53	146	179	234
Little Bear at Paradise, UT	APR-JUL	24	35	43	94	51	62	46
Logan nr Logan, UT	APR-JUL	87	104	115	91	126	143	126
Blacksmith Fk nr Hyrum, UT	APR-JUL	12.5	28	44	92	49	65	48

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of March					BEAR RIVER BASIN Watershed Snowpack Analysis - April 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BEAR LAKE	1302.0	293.5	277.6	---	BEAR RIVER, UPPER	8	97	94
HYRUM	15.3	12.1	11.7	12.2	BEAR RIVER, LOWER	9	94	93
PORCUPINE	11.3	11.3	8.0	6.7	LOGAN RIVER	4	99	97
WOODRUFF NARROWS	57.3	52.4	32.5	32.7	RAFT RIVER	1	84	102
WOODRUFF CREEK	4.0	2.5	3.7	---	BEAR RIVER BASIN	17	94	94

\* 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.

Bear Lake SWSI

April 1

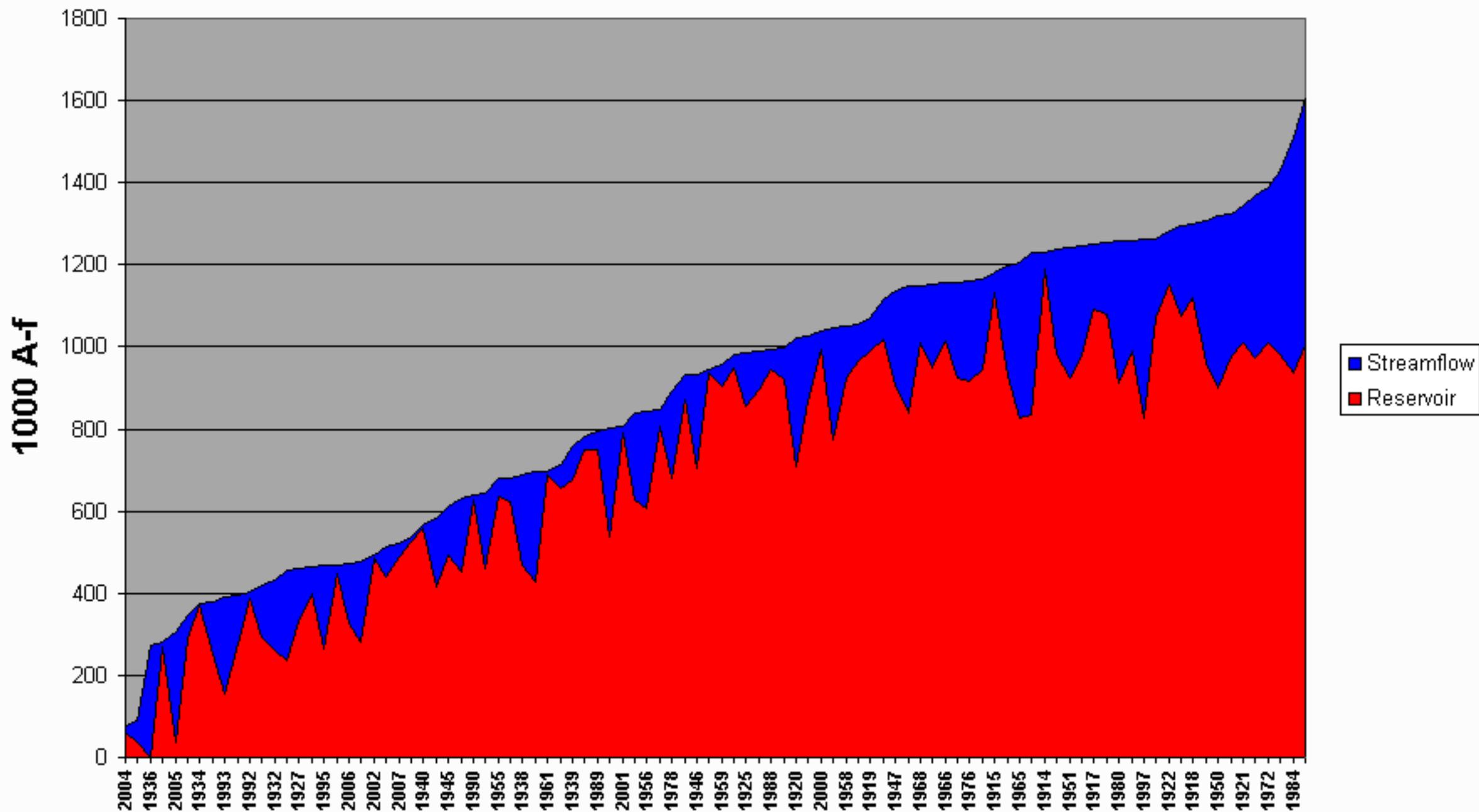
# of years

96

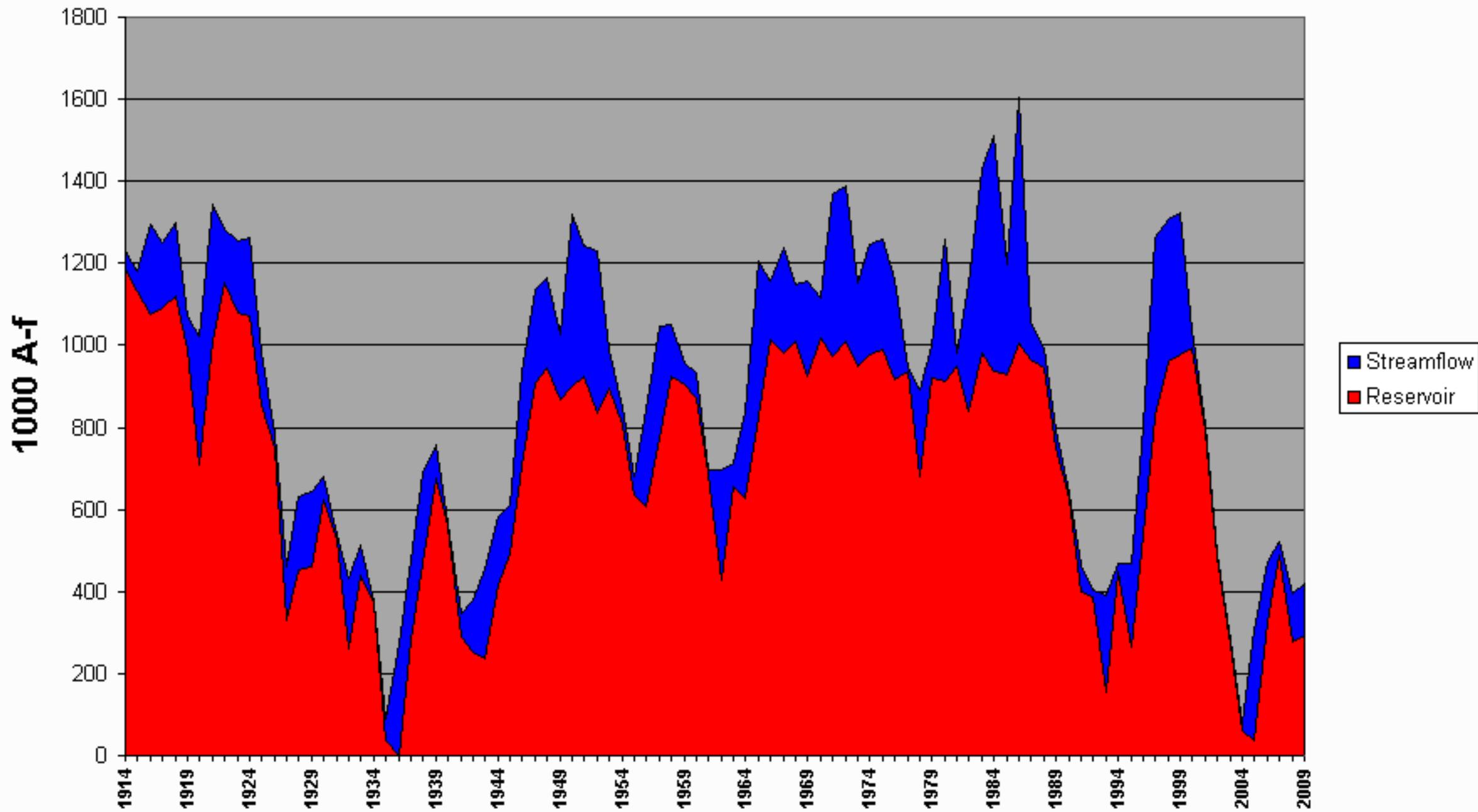
#	Year	EOM March Reservoir KAF	Apr-Jul Streamflow KAF	Reservoir + Streamflow KAF	Probability	SWSI
1	2004	62	15	77	1	-4.08
2	1935	38	52	90	2	-3.99
3	1936	0	272	272	3	-3.91
4	2003	270	10	280	4	-3.82
5	2005	37	270	307	5	-3.74
6	1941	289	57	346	6	-3.65
7	1934	371	3	373	7	-3.57
8	1942	251	126	377	8	-3.48
9	1993	153	240	393	9	-3.39
10	2008	278	119	396	10	-3.31
11	1992	387	16	403	11	-3.22
12	<b>2009</b>	<b>294</b>	<b>125</b>	<b>419</b>	<b>12</b>	<b>-3.14</b>
13	1932	261	170	431	13	-3.05
14	1943	237	219	456	14	-2.96
15	1927	328	133	461	15	-2.88
16	1991	399	64	463	16	-2.79
17	1995	266	200	466	18	-2.71
18	1994	447	21	468	19	-2.62
19	2006	325	147	472	20	-2.53
20	1937	281	194	474	21	-2.45
21	2002	486	8	494	22	-2.36
22	1933	440	72	512	23	-2.28
23	2007	490	31	522	24	-2.19
24	1931	526	11	538	25	-2.10
25	1940	559	5	564	26	-2.02
26	1944	414	167	581	27	-1.93
27	1945	491	119	610	28	-1.85
28	1928	454	177	631	29	-1.76
29	1990	628	13	640	30	-1.68
30	1929	460	183	643	31	-1.59
31	1955	634	45	679	32	-1.50
32	1930	624	58	682	33	-1.42
33	1938	469	219	688	34	-1.33
34	1962	429	265	695	35	-1.25
35	1961	690	7	697	36	-1.16
36	1963	658	57	715	37	-1.07
37	1939	675	82	757	38	-0.99
38	1926	749	31	780	39	-0.90
39	1989	750	43	793	40	-0.82
40	1996	539	262	801	41	-0.73
41	2001	792	16	808	42	-0.64
42	1964	626	213	839	43	-0.56
43	1956	605	237	842	44	-0.47

44	1954	806	40	847	45	-0.39
45	1978	682	212	893	46	-0.30
46	1960	873	59	932	47	-0.21
47	1946	703	229	932	48	-0.13
48	1977	939	5	943	49	-0.04
49	1959	906	50	956	51	0.04
50	1981	948	36	983	52	0.13
51	1925	856	128	984	53	0.21
52	1953	896	93	989	54	0.30
53	1988	946	47	993	55	0.39
54	1979	919	79	998	56	0.47
55	1920	709	313	1021	57	0.56
56	1949	869	159	1028	58	0.64
57	2000	992	47	1039	59	0.73
58	1957	776	270	1046	60	0.82
59	1958	925	126	1051	61	0.90
60	1987	967	89	1057	62	0.99
61	1919	989	81	1070	63	1.07
62	1970	1020	97	1117	64	1.16
63	1947	907	230	1137	65	1.25
64	1982	839	309	1148	66	1.33
65	1968	1010	139	1149	67	1.42
66	1973	948	203	1151	68	1.50
67	1966	1012	144	1157	69	1.59
68	1969	925	232	1157	70	1.68
69	1976	916	245	1160	71	1.76
70	1948	946	221	1166	72	1.85
71	1915	1133	47	1179	73	1.93
72	1985	927	272	1199	74	2.02
73	1965	828	376	1204	75	2.10
74	1952	836	393	1229	76	2.19
75	1914	1189	41	1230	77	2.28
76	1967	980	256	1237	78	2.36
77	1951	924	317	1241	79	2.45
78	1974	976	270	1247	80	2.53
79	1917	1091	161	1252	81	2.62
80	1923	1081	175	1256	82	2.71
81	1980	914	344	1258	84	2.79
82	1975	991	268	1259	85	2.88
83	1997	826	434	1260	86	2.96
84	1924	1072	192	1264	87	3.05
85	1922	1152	129	1281	88	3.14
86	1916	1077	219	1296	89	3.22
87	1918	1119	181	1300	90	3.31
88	1998	960	347	1307	91	3.39
89	1950	901	419	1320	92	3.48
90	1999	976	346	1323	93	3.57
91	1921	1010	335	1345	94	3.65
92	1971	972	397	1369	95	3.74
93	1972	1008	379	1387	96	3.82
94	1983	982	445	1427	97	3.91
95	1984	937	573	1511	98	3.99
96	1986	1005	598	1603	99	4.08

# Bear Lake Surface Water Supply Index April



# Bear Lake Surface Water Supply Index April



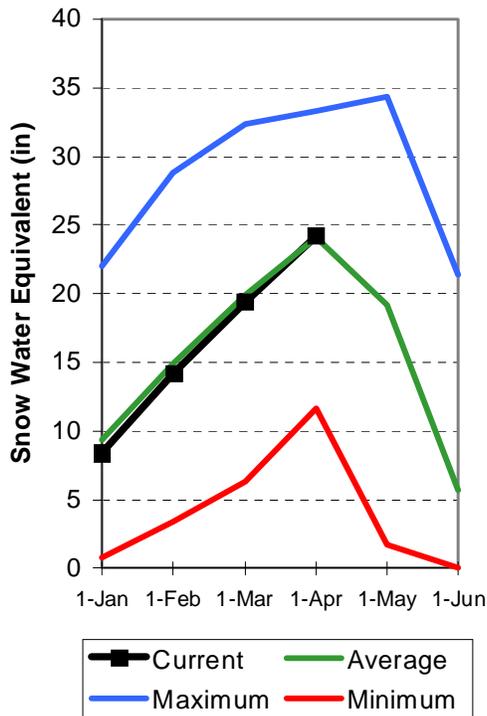
# Weber and Ogden River Basins

## April 1, 2009

Snowpacks on the Weber and Ogden Watersheds are average at 100%, about 91% of last year. Individual sites range from 40% to 128% of average. March precipitation was above average at 114% bringing the seasonal accumulation (Oct-Mar) to 101% of average. Soil moisture levels in runoff producing areas are at 64% of saturation in the upper 2 feet of soil compared to 59% last year. Streamflow forecasts (April-July) range from 85% to 102% of average. Reservoir storage is at 67% of capacity, 12% higher than last year. The Surface Water Supply Index is at 37% for the Weber River and 55% for the Ogden River indicating that overall water supply conditions are below to near average.

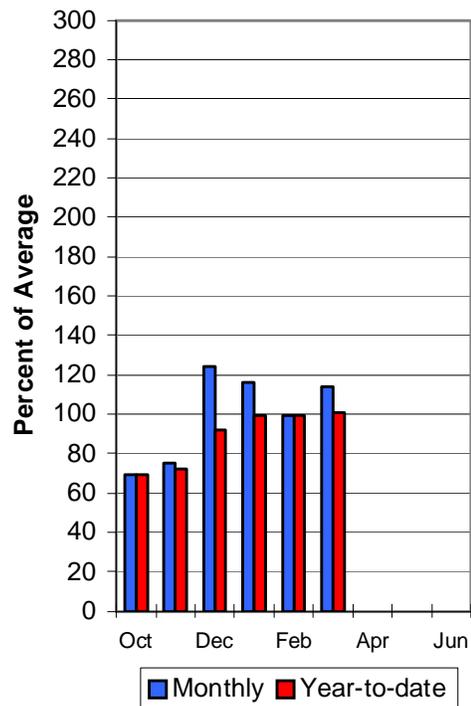
### Weber River Snowpack

4/1/2009

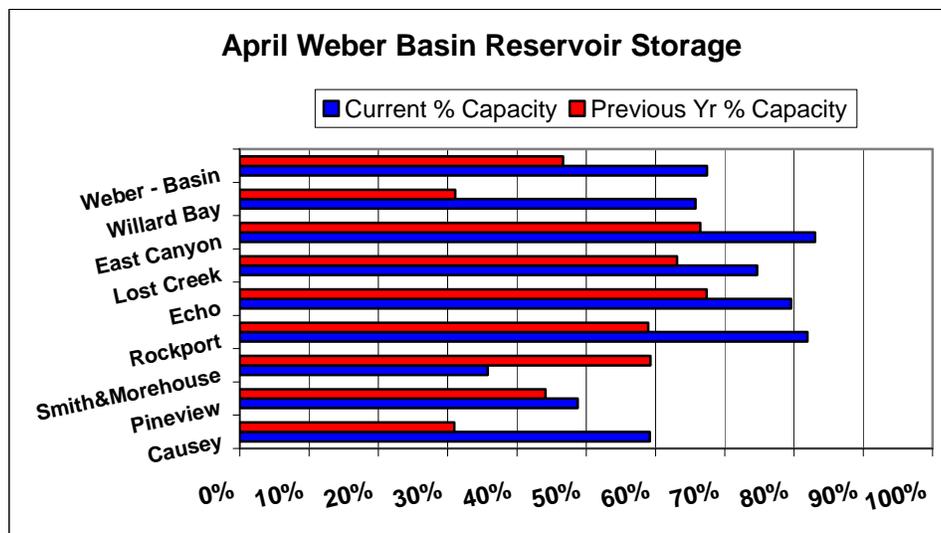


### Weber River Precipitation

4/1/2009



### April Weber Basin Reservoir Storage



WEBER & OGDEN WATERSHEDS in Utah  
Streamflow Forecasts - April 1, 2009

Forecast Point	Forecast Period	<----- Drier ----- Future Conditions ----- Wetter ----->						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Smith & Morehouse Res inflow	APR-JUL	23	27	30	88	33	37	34
Weber R nr Oakley, UT	APR-JUL	80	98	110	89	122	140	123
Rockport Reservoir	APR-JUL	80	103	118	88	133	156	134
Weber R nr Coalville, UT	APR-JUL	84	108	124	91	140	164	137
Chalk Ck at Coalville, UT	APR-JUL	19.3	32	40	89	48	61	45
Echo Resv at Echo, UT	APR-JUL	79	122	152	85	182	225	179
Lost Ck Resv Inflow	APR-JUL	6.2	11.4	15.0	85	18.6	24	17.6
East Canyon Ck nr Morgan, UT	APR-JUL	13.5	23	30	97	37	47	31
Weber R at Gateway, UT	APR-JUL	142	245	315	89	385	488	355
SF Ogden R nr Huntsville, UT	APR-JUL	44	55	63	98	71	82	64
Pineview Resv Inflow	APR-JUL	80	110	130	98	150	180	133
Wheeler Ck nr Huntsville, UT	APR-JUL	3.70	5.30	6.40	102	7.50	9.10	6.30

WEBER & OGDEN WATERSHEDS in Utah Reservoir Storage (1000 AF) - End of March					WEBER & OGDEN WATERSHEDS in Utah Watershed Snowpack Analysis - April 1, 2009			
Reservoir	Usable Capacity	*** This Year	Usable Last Year	Storage *** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr Average	
CAUSEY	7.1	4.2	2.2	2.6	OGDEN RIVER	4	88	99
EAST CANYON	49.5	41.1	32.9	36.5	WEBER RIVER	9	94	101
ECHO	73.9	58.8	49.8	51.5	WEBER & OGDEN WATERSHEDS	13	92	100
LOST CREEK	22.5	16.8	14.2	14.1				
PINEVIEW	110.1	53.7	48.6	61.7				
ROCKPORT	60.9	49.9	35.9	35.1				
WILLARD BAY	215.0	141.4	66.9	160.9				

\* 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.

## Ogden SWSI

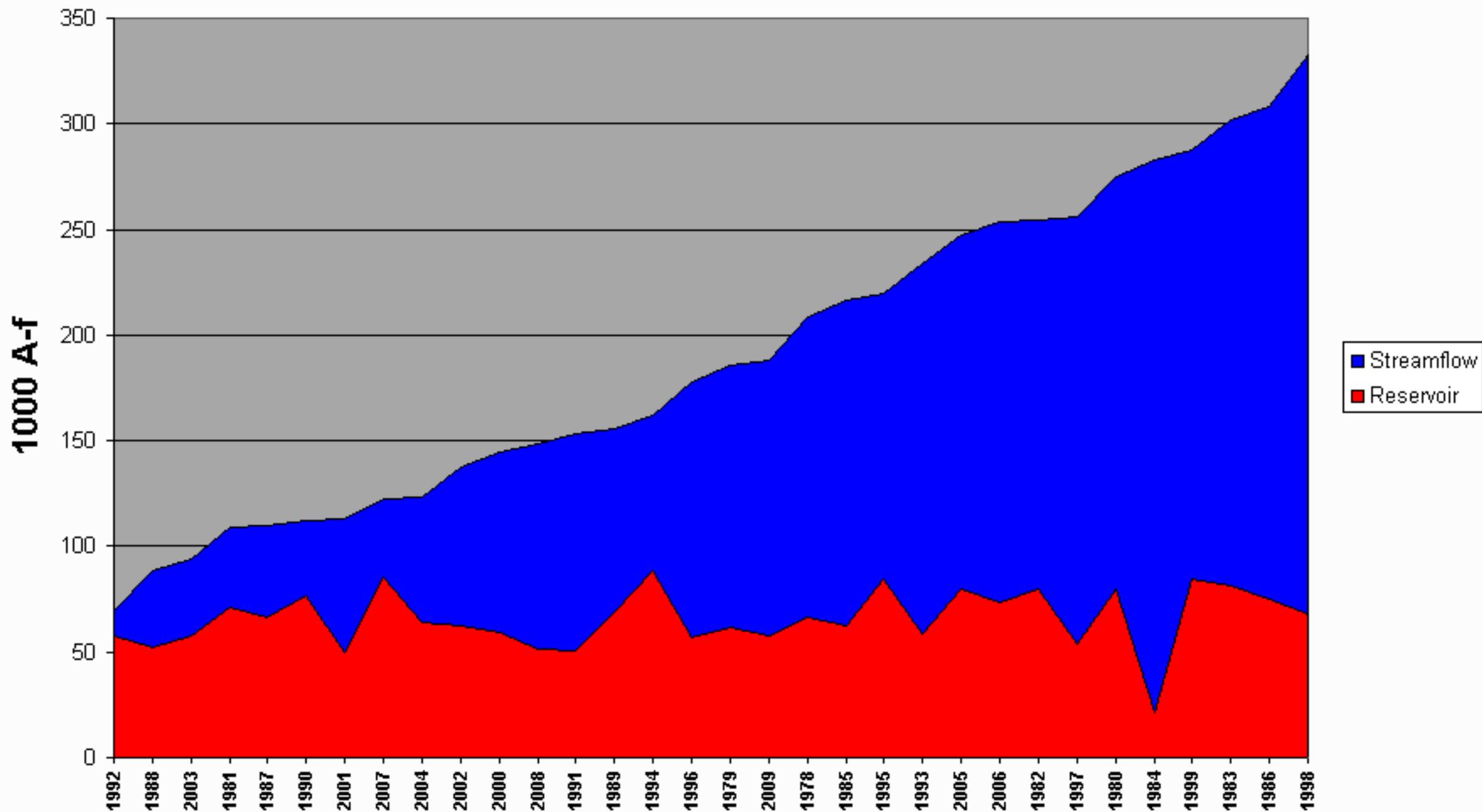
April 1

# of years

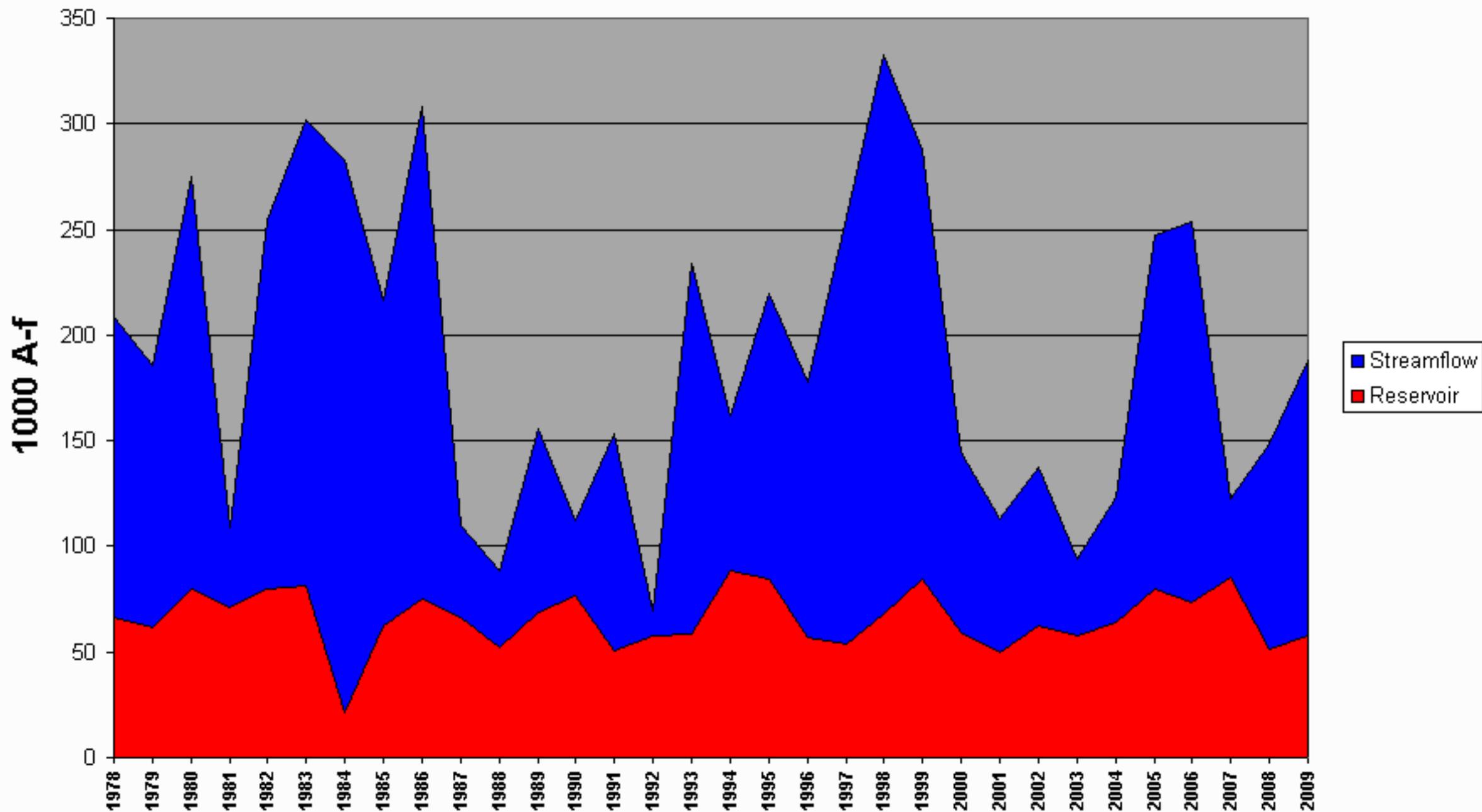
32

#	Year	EOM March Reservoir KAF	Apr-Jul Streamflow KAF	Reservoir + Streamflow KAF	Probability	SWSI
1	1992	58	12	70	3	-3.91
2	1988	52	37	89	6	-3.66
3	2003	58	36	94	9	-3.41
4	1981	71	38	109	12	-3.16
5	1987	67	43	110	15	-2.90
6	1990	77	36	112	18	-2.65
7	2001	50	63	113	21	-2.40
8	2007	86	37	123	24	-2.15
9	2004	64	59	123	27	-1.89
10	2002	62	75	137	30	-1.64
11	2000	59	85	145	33	-1.39
12	2008	51	97	148	36	-1.14
13	1991	50	103	153	39	-0.88
14	1989	69	87	155	42	-0.63
15	1994	89	73	162	45	-0.38
16	1996	57	121	178	48	-0.13
17	1979	61	124	185	52	0.13
18	<b>2009</b>	<b>58</b>	<b>130.0</b>	<b>188</b>	<b>55</b>	<b>0.38</b>
19	1978	66	142	209	58	0.63
20	1985	62	154	217	61	0.88
21	1995	84	135	220	64	1.14
22	1993	59	175	234	67	1.39
23	2005	80	167	247	70	1.64
24	2006	73	180	253	73	1.89
25	1982	80	174	254	76	2.15
26	1997	54	202	256	79	2.40
27	1980	80	195	275	82	2.65
28	1984	21	261	283	85	2.90
29	1999	85	203	288	88	3.16
30	1983	81	221	302	91	3.41
31	1986	75	233	308	94	3.66
32	1998	68	264	332	97	3.91

# Ogden Surface Water Supply Index April



# Ogden Surface Water Supply Index April



Weber SWSI

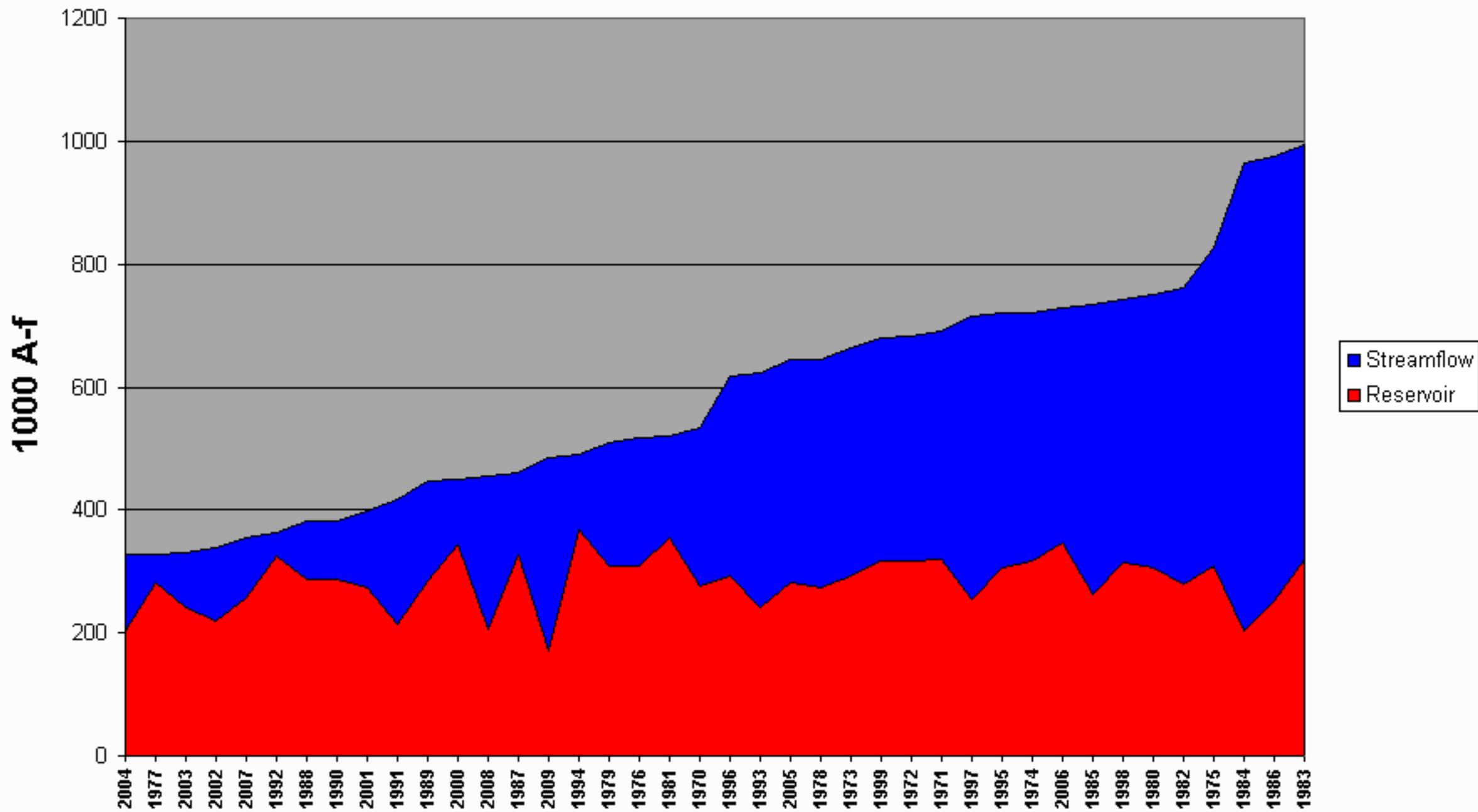
April 1

# of years

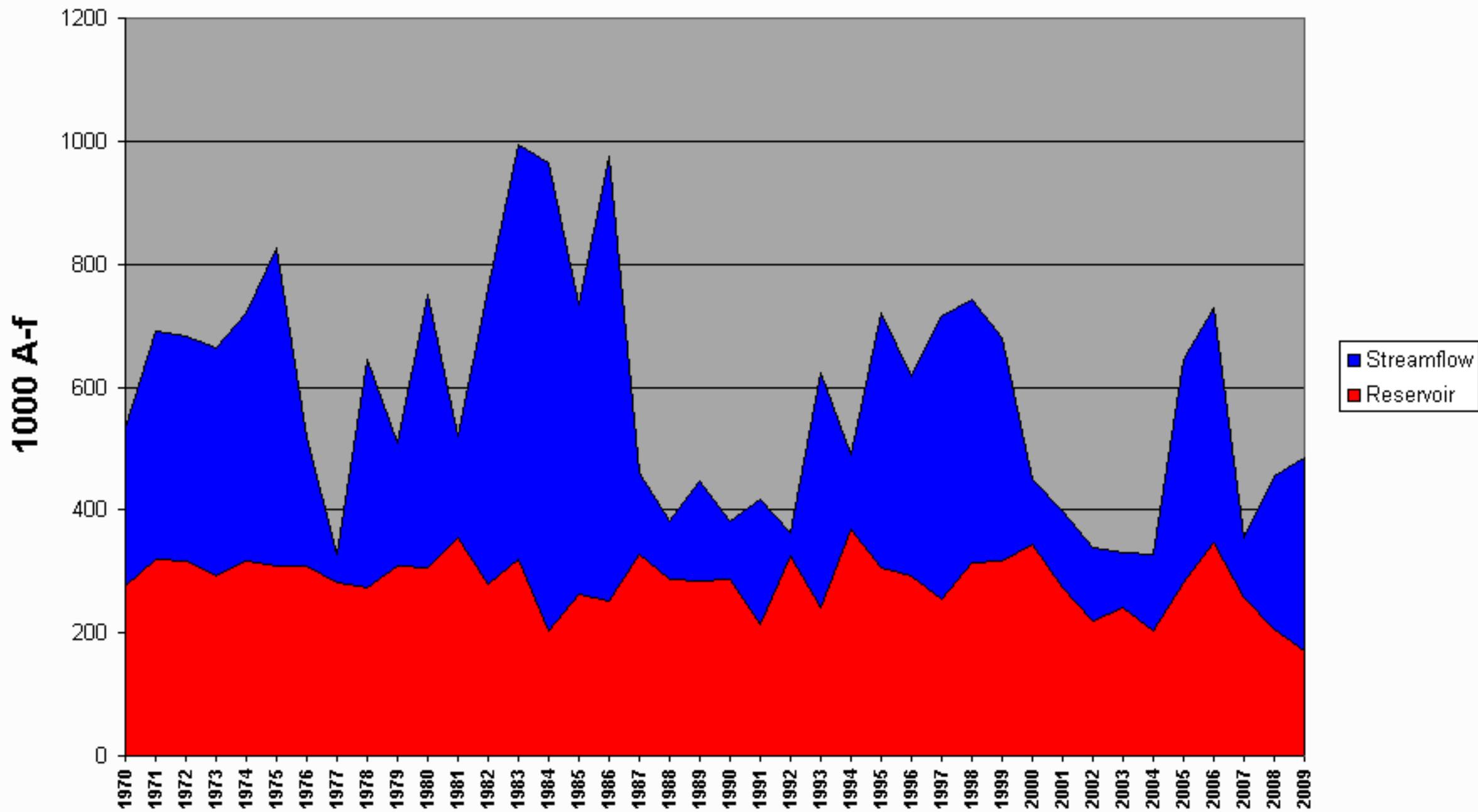
40

#	Year	EOM March Reservoir KAF	Apr-Jul Streamflow KAF	Reservoir + Streamflow KAF	Probability	SWSI
1	2004	204	122	327	2	-3.96
2	1977	281	47	329	5	-3.76
3	2003	242	89	331	7	-3.56
4	2002	218	121	340	10	-3.35
5	2007	257	99	356	12	-3.15
6	1992	326	38	364	15	-2.95
7	1988	287	95	382	17	-2.74
8	1990	288	94	382	20	-2.54
9	2001	273	125	398	22	-2.34
10	1991	214	204	418	24	-2.13
11	1989	285	163	448	27	-1.93
12	2000	344	107	451	29	-1.73
13	2008	205	250	455	32	-1.52
14	1987	328	131	459	34	-1.32
15	<b>2009</b>	<b>170</b>	<b>315</b>	<b>485</b>	<b>37</b>	<b>-1.12</b>
16	1994	369	122	491	39	-0.91
17	1979	310	199	509	41	-0.71
18	1976	308	209	517	44	-0.51
19	1981	355	166	521	46	-0.30
20	1970	276	257	533	49	-0.10
21	1996	291	325	616	51	0.10
22	1993	240	383	623	54	0.30
23	2005	283	362	645	56	0.51
24	1978	275	370	645	59	0.71
25	1973	291	372	664	61	0.91
26	1999	316	362	679	63	1.12
27	1972	316	366	682	66	1.32
28	1971	320	370	691	68	1.52
29	1997	254	460	714	71	1.73
30	1995	307	413	720	73	1.93
31	1974	318	403	721	76	2.13
32	2006	346	382	728	78	2.34
33	1985	263	471	733	80	2.54
34	1998	315	428	743	83	2.74
35	1980	305	446	752	85	2.95
36	1982	280	481	761	88	3.15
37	1975	308	519	827	90	3.35
38	1984	202	764	966	93	3.56
39	1986	252	723	974	95	3.76
40	1983	320	674	994	98	3.96

# Weber River Surface Water Supply Index April



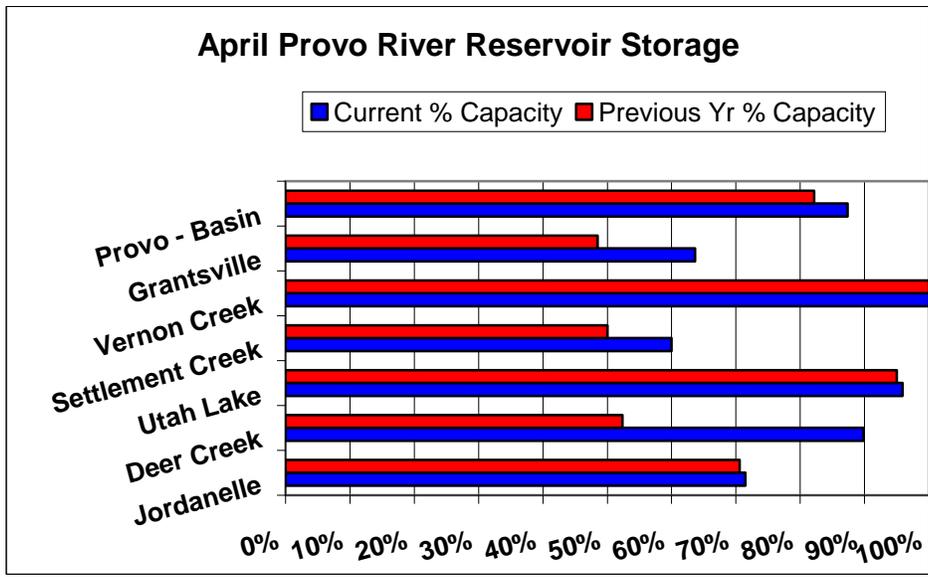
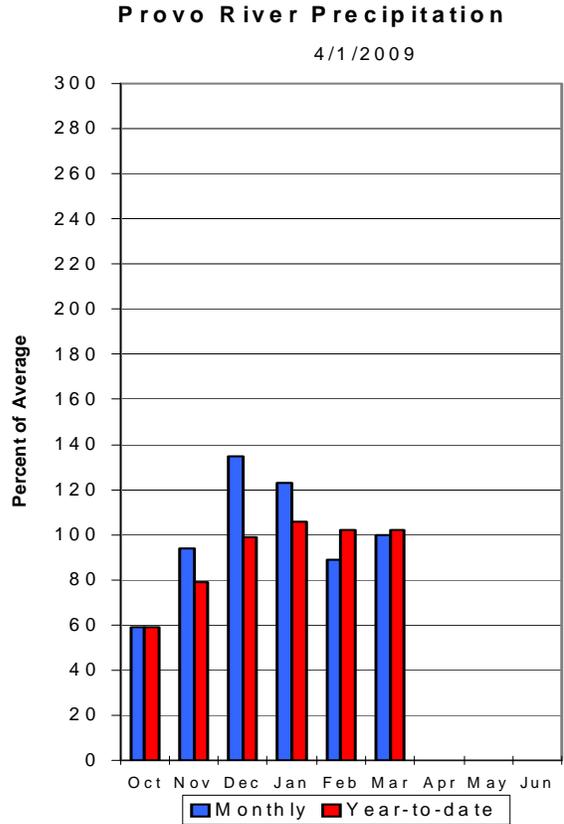
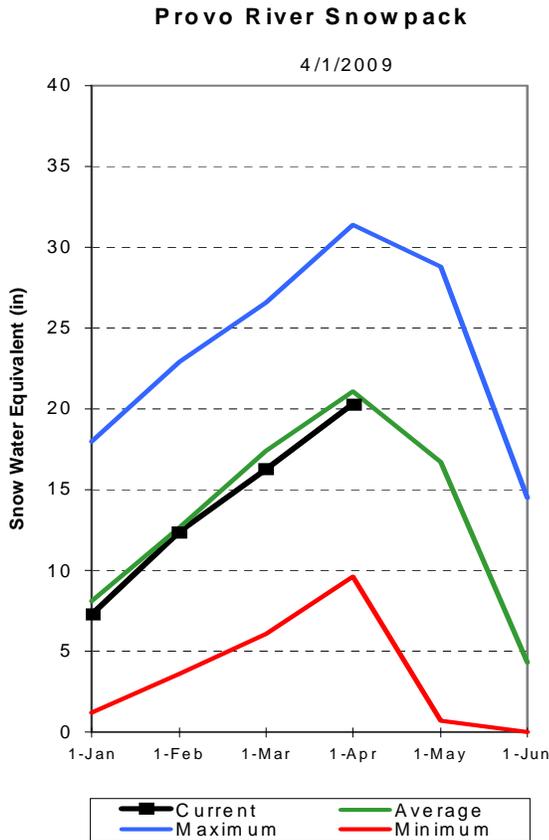
# Weber River Surface Water Supply Index April



# Utah Lake, Jordan River & Tooele Valley Basins

## April 1, 2009

Snowpack over these basins are near average at 96%, which is 86% of last year at this time. Individual sites range from 46% at Killyon Canyon, to 133% of average at the Hidden Springs Snow Course. March precipitation was average at 100%, bringing the seasonal accumulation (Oct-Mar) to 102% of average. Average soil moisture in runoff producing areas is estimated at 54% of saturation in the upper 2 feet of soil compared to 49% at this time last year. Reservoir storage is at 87% of capacity, 5% higher than last year. Streamflow forecasts (Apr-July) range from 83% to 105% of average. The Surface Water Supply Index below Deer Creek reservoir is 52%, indicating general water supply conditions are near normal.



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Streamflow Forecasts - April 1, 2009

Forecast Point	Forecast Period	<----- Drier ----->		Future Conditions		----- Wetter ----->		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Spanish Fk at Castilla, UT	APR-JUL	5.4	39	70	91	101	146	77
Provo River nr Woodland	APR-JUL	60	77	90	87	104	126	103
Provo River nr Hailstone	APR-JUL	58	79	96	88	114	144	109
Provo R blw Deer Ck Dam, UT	APR-JUL	72	96	112	89	128	152	126
American Fk abv Upper Powerplant	APR-JUL	16.2	24	29	91	34	42	32
Utah Lake inflow	APR-JUL	153	232	285	88	338	417	325
W Canyon Ck nr Cedar Fort, UT	APR-JUL	1.14	1.65	2.00	83	2.40	2.90	2.40
Little Cottonwood Ck nr SLC	APR-JUL	29	34	38	95	42	48	40
Big Cottonwood Ck nr SLC, UT	APR-JUL	27	33	37	97	41	47	38
Mill Ck nr SLC, UT	APR-JUL	3.10	5.10	6.50	93	7.90	9.90	7.00
Parleys Ck nr SLC, UT	APR-JUL	7.8	12.6	15.8	95	19.0	24	16.7
Dell Fork nr SLC, UT	APR-JUL	-0.52	3.50	6.30	93	9.10	13.10	6.80
Emigration Ck nr SLC, UT	APR-JUL	1.09	2.90	4.20	93	5.50	7.30	4.50
City Ck nr SLC, UT	APR-JUL	4.90	7.40	9.10	105	10.80	13.30	8.70
Vernon Ck nr Vernon, UT	APR-JUL	0.40	0.99	1.40	95	1.81	2.40	1.48
Settlement Ck nr Tooele, UT	APR-JUL	0.32	1.20	1.80	86	2.40	3.30	2.10
South Willow Ck nr Grantsville, UT	APR-JUL	2.10	2.80	3.20	99	3.60	4.30	3.23

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

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
DEER CREEK	149.7	134.5	78.4	113.0
GRANTSVILLE	3.3	2.1	1.6	2.7
SETTLEMENT CREEK	1.0	0.6	0.5	0.7
STRAWBERRY-ENLARGED	1105.9	940.2	879.9	648.8
UTAH LAKE	870.9	835.0	827.5	855.8
VERNON CREEK	0.6	0.6	0.6	---

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Watershed Snowpack Analysis - April 1, 2009

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
PROVO RIVER & UTAH LAKE	7	85	92
PROVO RIVER	4	88	94
JORDAN RIVER & GSL	6	88	104
TOOELE & RUSH VALLEY WATE	3	88	89
UTAH LAKE/JORDAN R./TOOEL	16	87	96

\* 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.

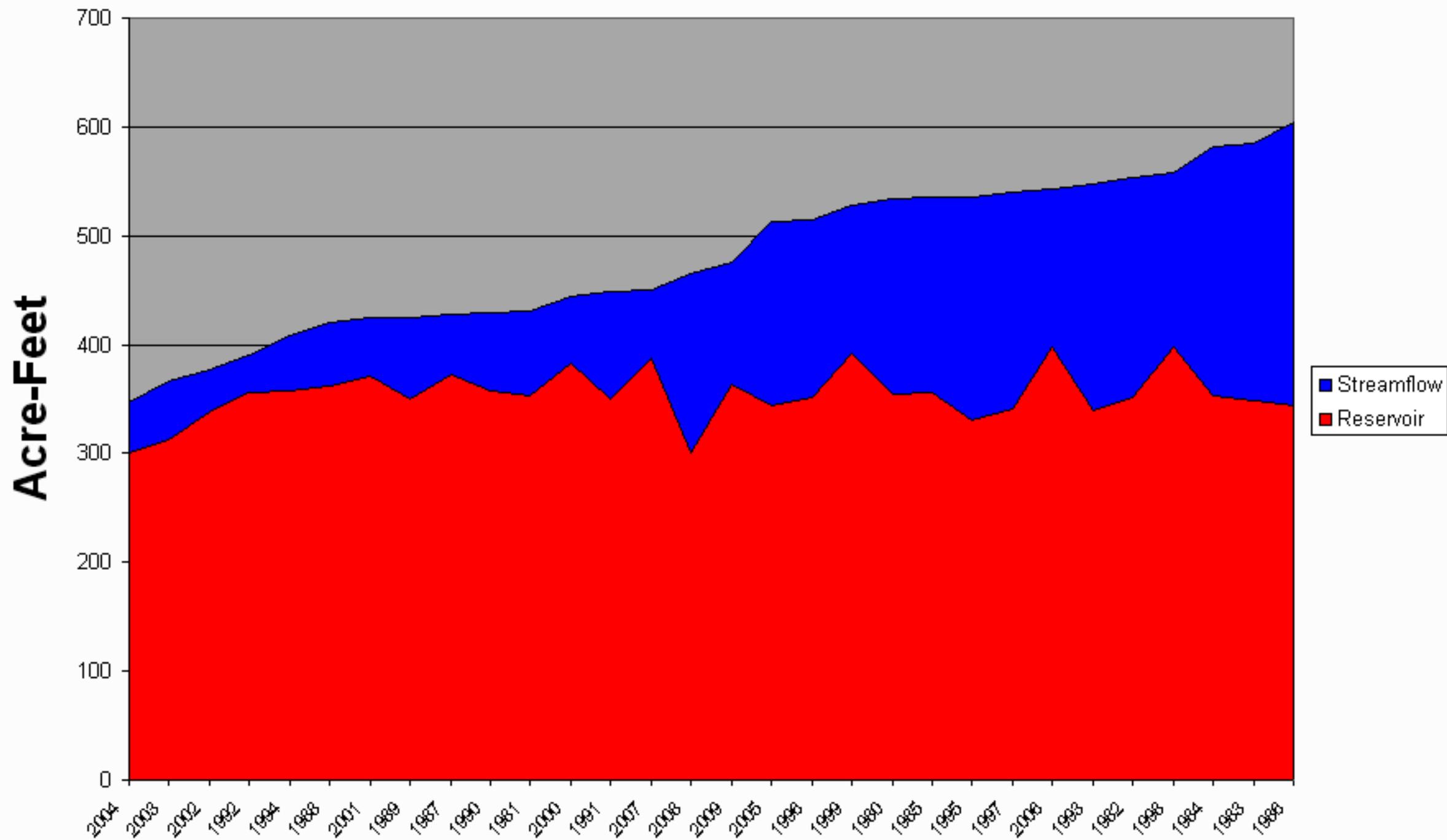
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# April

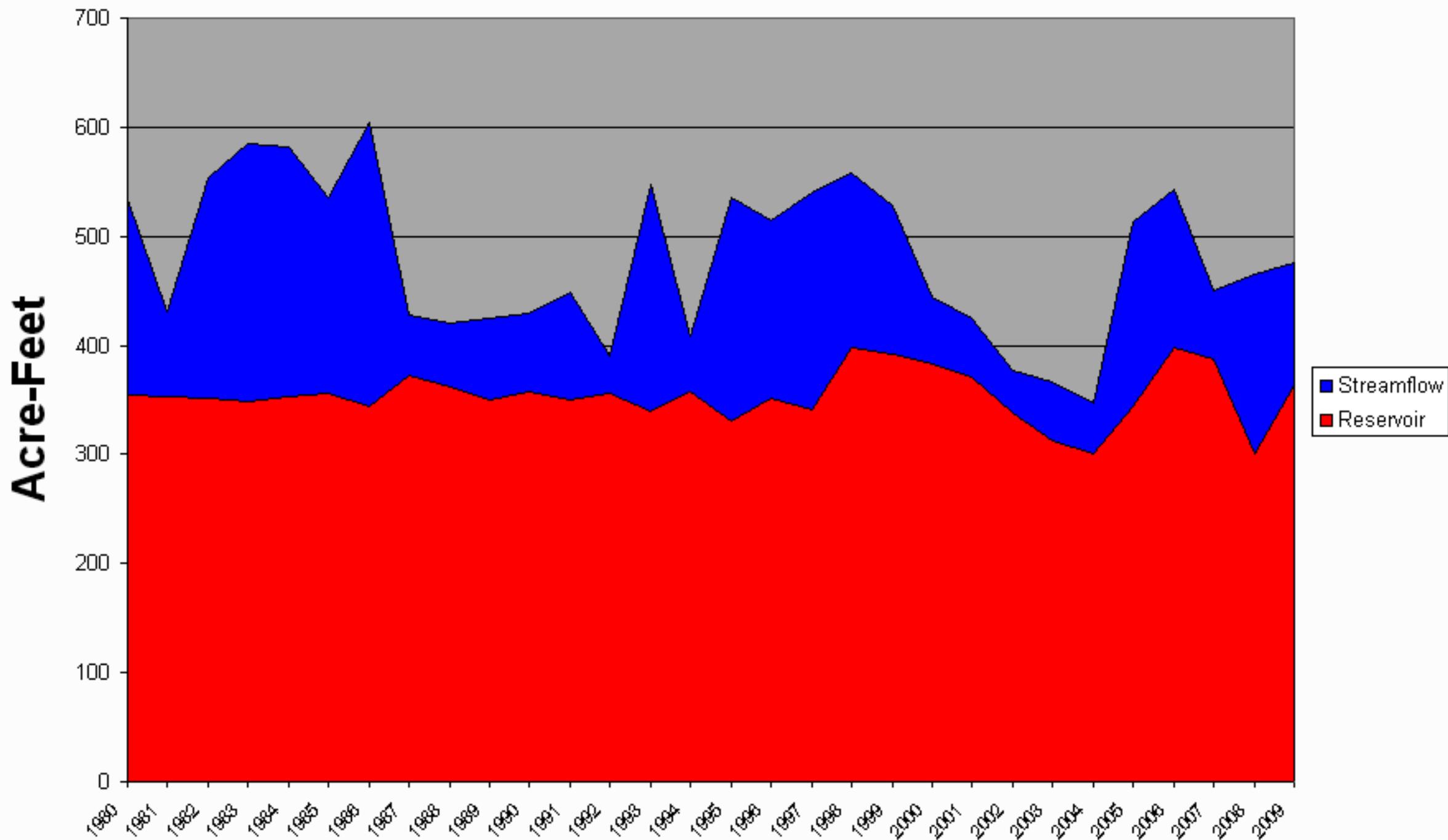
Provo River SWSI @ inflow of Deer Creek - BOR data

Rank	WY	March EOM Reservoir Storage	April - July Predicted Streamflow	# of years Streamflow + EOM Storage	<b>30</b> Non- Exceedance Probability	April SWSI
30	2004	300	47	347	0.03	-3.90
29	2003	312	55	367	0.06	-3.63
28	2002	338	39	377	0.10	-3.36
27	1992	355	35	390	0.13	-3.09
26	1994	358	51	409	0.16	-2.82
25	1988	362	59	421	0.19	-2.55
24	2001	372	52	424	0.23	-2.28
23	1989	350	76	425	0.26	-2.02
22	1987	372	56	428	0.29	-1.75
21	1990	358	72	430	0.32	-1.48
20	1981	353	77	430	0.35	-1.21
19	2000	384	60	444	0.39	-0.94
18	1991	350	99	449	0.42	-0.67
17	2007	387	63	450	0.45	-0.40
16	2008	301	164	465	0.48	-0.13
<b>15</b>	<b>2009</b>	<b>363</b>	<b>112</b>	<b>475</b>	<b>0.52</b>	<b>0.13</b>
14	2005	344	169	514	0.55	0.40
13	1996	351	163	514	0.58	0.67
12	1999	391	136	527	0.61	0.94
11	1980	354	180	534	0.65	1.21
10	1985	356	180	535	0.68	1.48
9	1995	330	206	536	0.71	1.75
8	1997	341	199	540	0.74	2.02
7	2006	398	145	543	0.77	2.28
6	1993	340	208	548	0.81	2.55
5	1982	351	203	554	0.84	2.82
4	1998	398	160	558	0.87	3.09
3	1984	354	229	582	0.90	3.36
2	1983	348	237	585	0.94	3.63
1	1986	344	260	604	0.97	3.90

# Provo River SWSI @ Deer Creek Inflow



# Provo River SWSI @ Deer Creek Inflow



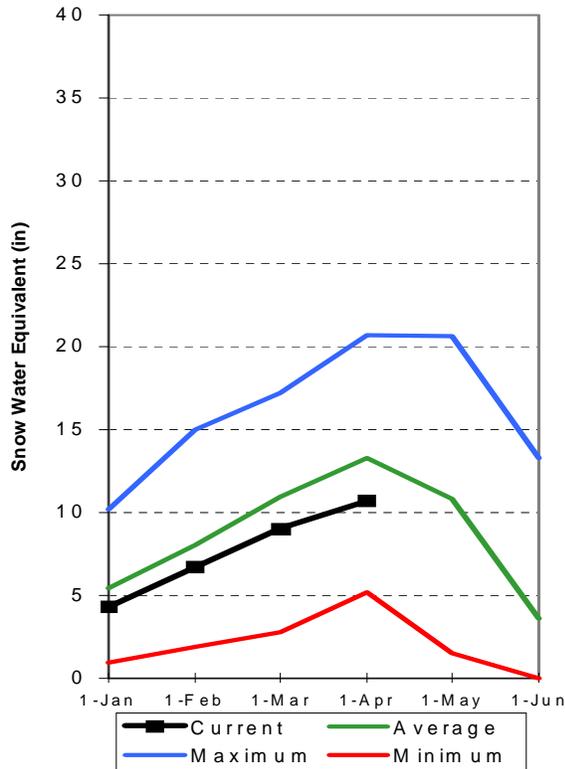
# Uintah Basin and Dagget SCD's

## April 1, 2009

Snowpack across the Uintas is below average at 80%, which is 72% of last year. Individual sites on the North Slope range from 55% to 78% and on the South Slope range from 37% to 95% of average. Precipitation during March was below average at 77% bringing the seasonal accumulation (Oct-Mar) to 87%. Soil moisture values in runoff producing areas are at 46% of saturation in the upper 2 feet of soil compared to 37% last year. Reservoir storage is at 83% of capacity, 6% more than last year. Streamflow forecasts (Apr-July) range from 57% to 83% of average. The Surface Water Supply Index for the western area is 48% and for the eastern area it is 26% indicating near normal conditions on the west side and below normal for the eastern area. General water supply conditions range from near to below average.

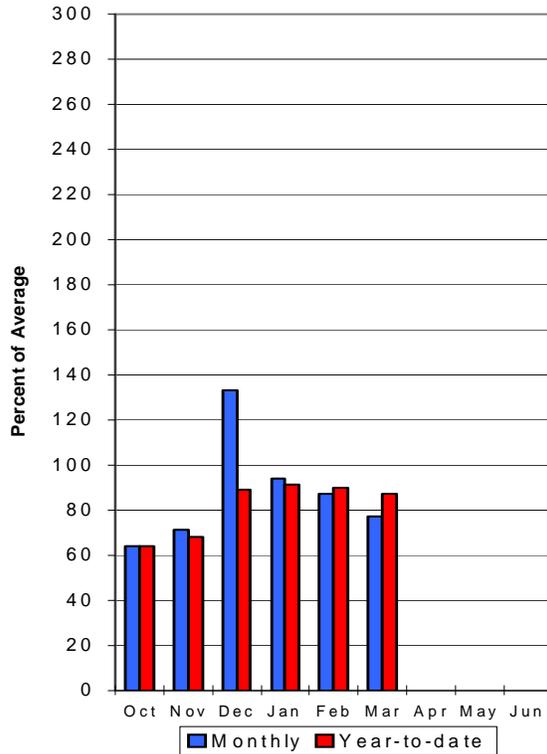
### Uinta Snow pack

4/1/2009



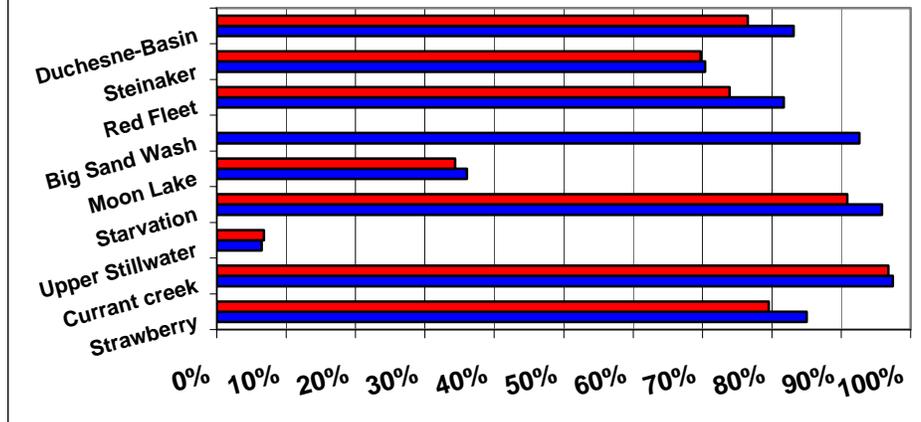
### Uinta Precipitation

4/1/2009



### April Uintah Basin Reservoir Storage

■ Current % Capacity ■ Previous Yr % Capacity



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UINTAH BASIN & DAGGET SCD'S  
Streamflow Forecasts - April 1, 2009

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Blacks Fork nr Robertson	APR-JUL	48	61	70	74	80	96	95
EF of Smiths Fork nr Robertson	APR-JUL	12.7	17.4	21	72	25	31	29
Flaming Gorge Reservoir Inflow (2)	APR-JUL	465	660	810	68	975	1250	1190
Big Brush Ck abv Red Fleet Resv	APR-JUL	8.2	11.4	14.0	67	16.8	21	21
Ashley Creek nr Vernal	APR-JUL	20	29	36	69	44	56	52
WF Duchesne River nr Hanna (2)	APR-JUL	12.8	16.9	20	83	23	29	24
Duchesne R nr Tabiona (2)	APR-JUL	54	69	80	76	92	111	105
Upper Stillwater Reservoir Inflow	APR-JUL	52	60	65	79	71	79	82
Rock Ck nr Mountain Home (2)	APR-JUL	54	63	70	79	77	87	89
Duchesne R abv Knight Diversion (2)	APR-JUL	111	136	155	82	175	205	188
Strawberry R nr Soldier Springs (2)	APR-JUL	20	31	40	68	50	66	59
Currant Creek Reservoir Inflow (2)	APR-JUL	9.7	14.9	19.0	76	24	31	25
Strawberry R nr Duchesne (2)	APR-JUL	39	60	76	63	94	125	121
Lake Fork River Moon Lake Inflow	APR-JUL	43	50	55	81	60	69	68
Yellowstone River nr Altonah	APR-JUL	36	44	50	81	56	66	62
Duchesne R at Myton (2)	APR-JUL	66	112	150	58	194	270	260
Whiterocks nr Whiterocks	APR-JUL	28	38	45	80	53	66	56
Duchesne R nr Randlett (2)	APR-JUL	77	136	185	57	240	340	324

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

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Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
FLAMING GORGE	3749.0	2986.0	3035.0	2920.0
MOON LAKE	49.5	12.9	12.3	30.8
RED FLEET	25.7	21.0	19.0	18.8
STEINAKER	33.4	23.5	23.3	24.2
STARVATION	165.3	158.5	150.2	138.6
STRAWBERRY-ENLARGED	1105.9	940.2	879.9	648.8

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UINTAH BASIN & DAGGET SCD'S  
Watershed Snowpack Analysis - April 1, 2009

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Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
UPPER GREEN RIVER in UTAH	6	65	71
ASHLEY CREEK	2	63	72
BLACK'S FORK RIVER	2	68	77
SHEEP CREEK	1	54	55
DUCHESNE RIVER	11	75	84
LAKE FORK-YELLOWSTONE CRE	4	85	88
STRAWBERRY RIVER	4	64	79
UINTAH-WHITEROCKS RIVERS	2	81	86
UINTAH BASIN & DAGGET SCD	17	72	80

\* 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.

WESTERN UINTA BASIN SWSI

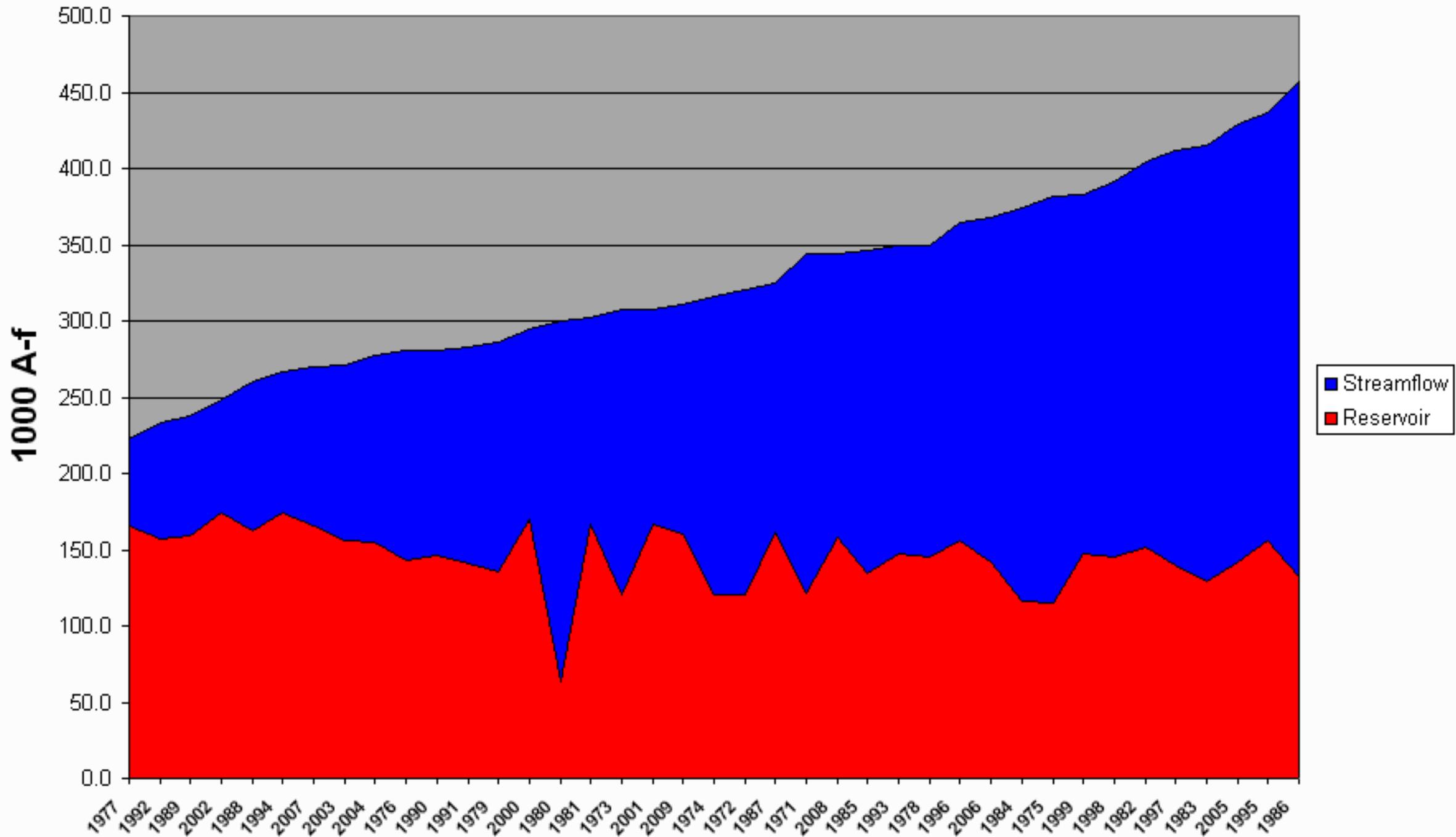
April 1, 2009

# of years

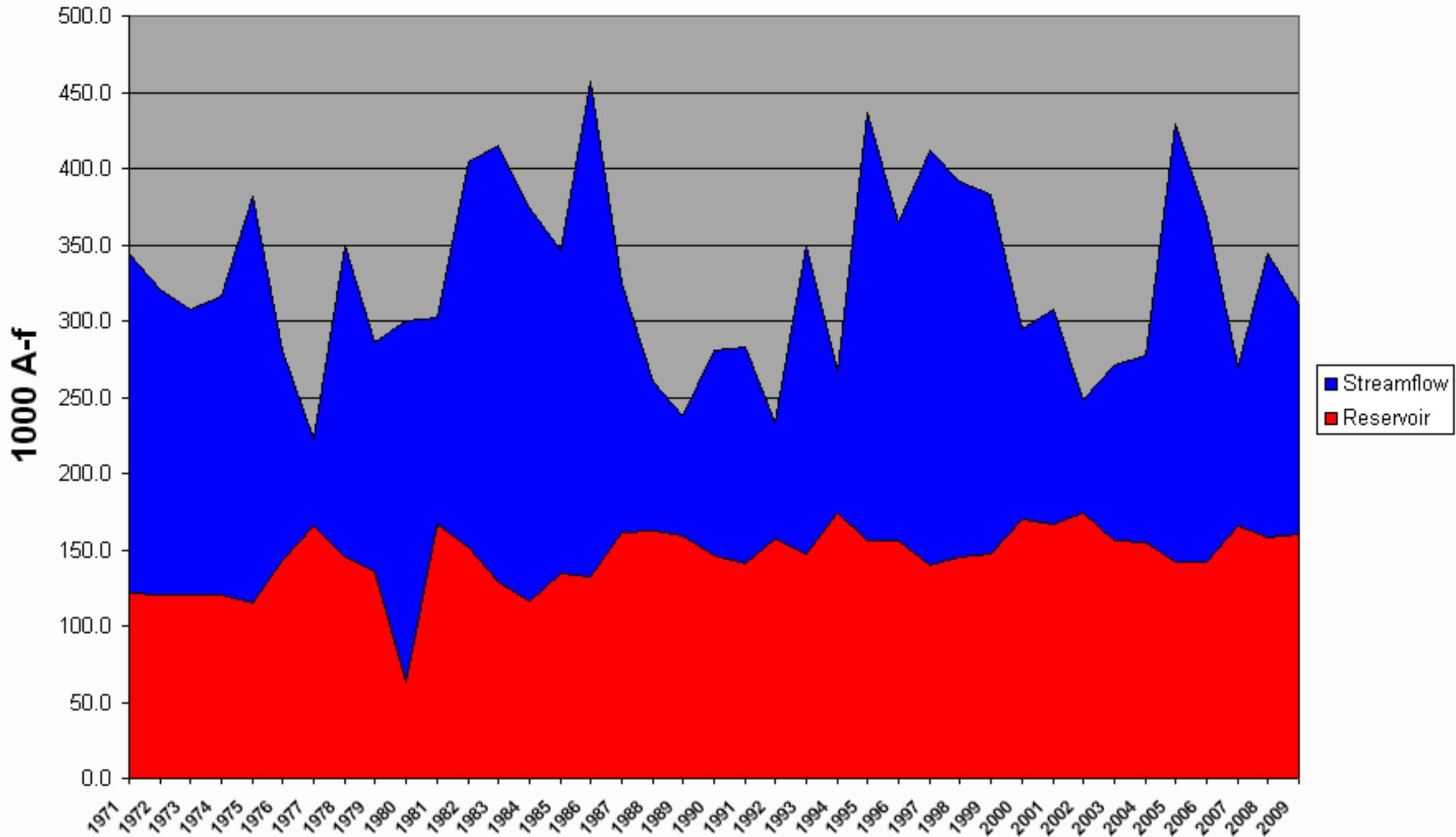
39

#	Year	EOM March	Apr-Jul	Reservoir +	Probability	SWSI
		Reservoir	Streamflow	Streamflow		
		KAF	KAF	KAF		
1	1977	166.0	57.0	223.0	3	-3.96
2	1992	157.2	76.3	233.5	5	-3.75
3	1989	159.0	78.7	237.7	8	-3.54
4	2002	174.3	73.7	248.0	10	-3.33
5	1988	162.5	98.1	260.7	13	-3.13
6	1994	174.3	92.4	266.7	15	-2.92
7	2007	165.5	103.9	269.4	18	-2.71
8	2003	156.0	115.3	271.3	20	-2.50
9	2004	155.3	122.3	277.6	23	-2.29
10	1976	143.1	137.6	280.7	25	-2.08
11	1990	145.9	134.8	280.7	28	-1.88
12	1991	140.8	142.2	283.0	30	-1.67
13	1979	135.8	150.0	285.8	33	-1.46
14	2000	169.5	125.4	295.0	35	-1.25
15	1980	63.0	236.8	299.8	38	-1.04
16	1981	166.2	135.8	301.9	40	-0.83
17	1973	120.6	186.8	307.4	43	-0.63
18	2001	166.9	141.1	308.0	45	-0.42
19	<b>2009</b>	<b>160.6</b>	<b>150.0</b>	<b>310.6</b>	<b>48</b>	<b>-0.21</b>
20	1974	120.3	195.5	315.8	50	0.00
21	1972	120.4	200.3	320.7	53	0.21
22	1987	161.3	162.9	324.2	55	0.42
23	1971	121.3	222.7	344.0	58	0.62
24	2008	158.2	186.0	344.2	60	0.83
25	1985	134.2	212.1	346.3	63	1.04
26	1993	147.8	201.7	349.5	65	1.25
27	1978	144.9	204.8	349.7	68	1.46
28	1996	155.7	208.2	364.0	70	1.67
29	2006	142.3	225.8	368.1	73	1.88
30	1984	115.6	258.2	373.8	75	2.08
31	1975	114.8	266.6	381.4	78	2.29
32	1999	147.0	235.5	382.5	80	2.50
33	1998	145.6	246.0	391.6	83	2.71
34	1982	151.8	252.7	404.6	85	2.92
35	1997	139.5	272.4	411.8	88	3.13
36	1983	129.4	285.2	414.6	90	3.33
37	2005	142.2	286.7	428.9	93	3.54
38	1995	155.5	280.7	436.1	95	3.75
39	1986	132.0	324.7	456.7	98	3.96

# Western Uintah Basin Surface Water Supply Index April



# Western Uintah Basin Surface Water Supply Index April



EASTERN UINTA BASIN SWSI

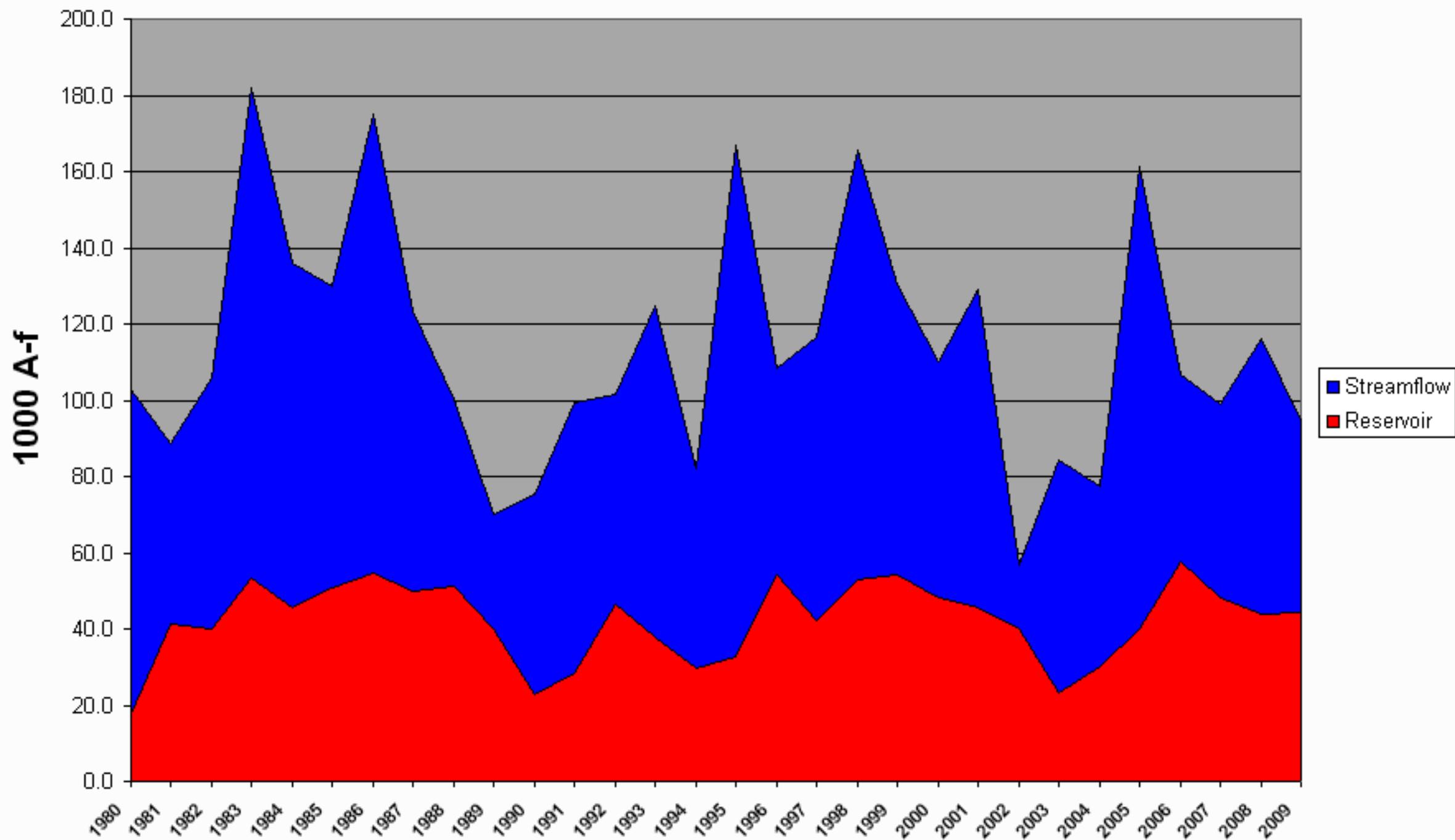
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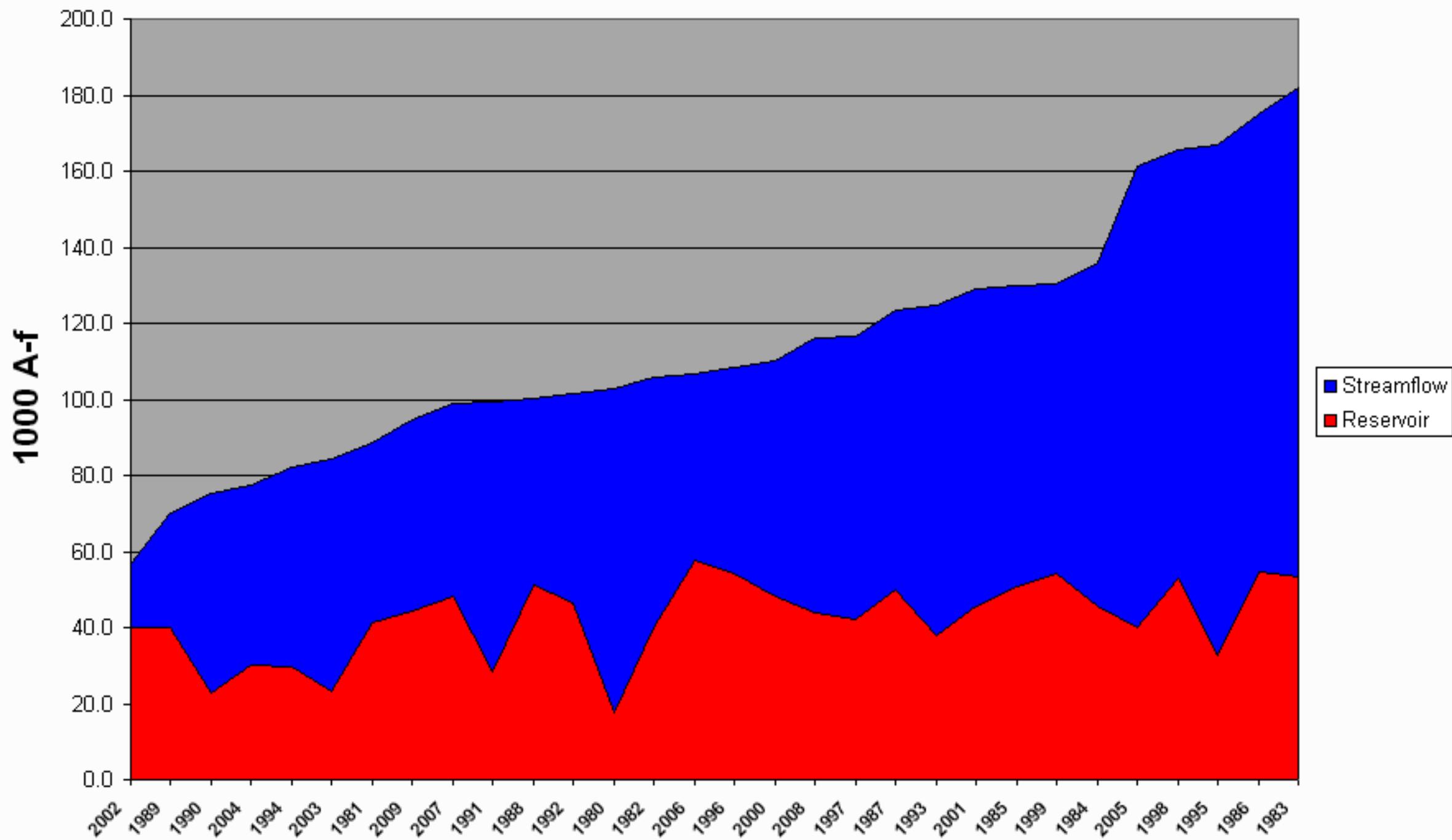
30

#	Year	EOM March	Apr-Jul	Reservoir +	Probability	SWSI
		Reservoir	Streamflow	Streamflow		
		KAF	KAF	KAF		
1	2002	40.1	16.7	56.8	3	-3.90
2	1989	40.1	30.1	70.2	6	-3.63
3	1990	22.8	52.4	75.2	10	-3.36
4	2004	30.3	47.0	77.3	13	-3.09
5	1994	29.8	52.3	82.1	16	-2.82
6	2003	23.3	61.2	84.5	19	-2.55
7	1981	41.5	47.1	88.6	23	-2.28
8	<b>2009</b>	<b>44.5</b>	<b>50.0</b>	<b>94.5</b>	<b>26</b>	<b>-2.02</b>
9	2007	48.1	50.6	98.8	29	-1.75
10	1991	28.5	71.1	99.5	32	-1.48
11	1988	51.1	49.0	100.1	35	-1.21
12	1992	46.5	55.0	101.5	39	-0.94
13	1980	17.8	85.0	102.8	42	-0.67
14	1982	39.9	65.7	105.6	45	-0.40
15	2006	57.5	49.0	106.6	48	-0.13
16	1996	54.3	54.1	108.3	52	0.13
17	2000	48.3	61.7	110.0	55	0.40
18	2008	44.0	72.0	116.0	58	0.67
19	1997	42.0	74.6	116.7	61	0.94
20	1987	50.1	73.4	123.4	65	1.21
21	1993	37.8	87.1	124.9	68	1.48
22	2001	45.4	83.6	129.0	71	1.75
23	1985	50.9	79.1	130.1	74	2.02
24	1999	54.3	76.2	130.4	77	2.28
25	1984	45.5	90.4	135.9	81	2.55
26	2005	40.2	121.1	161.2	84	2.82
27	1998	53.0	112.6	165.6	87	3.09
28	1995	32.8	134.2	166.9	90	3.36
29	1986	54.6	120.3	174.9	94	3.63
30	1983	53.5	128.4	181.9	97	3.898

# Eastern Uintah Basin Surface Water Supply Index April



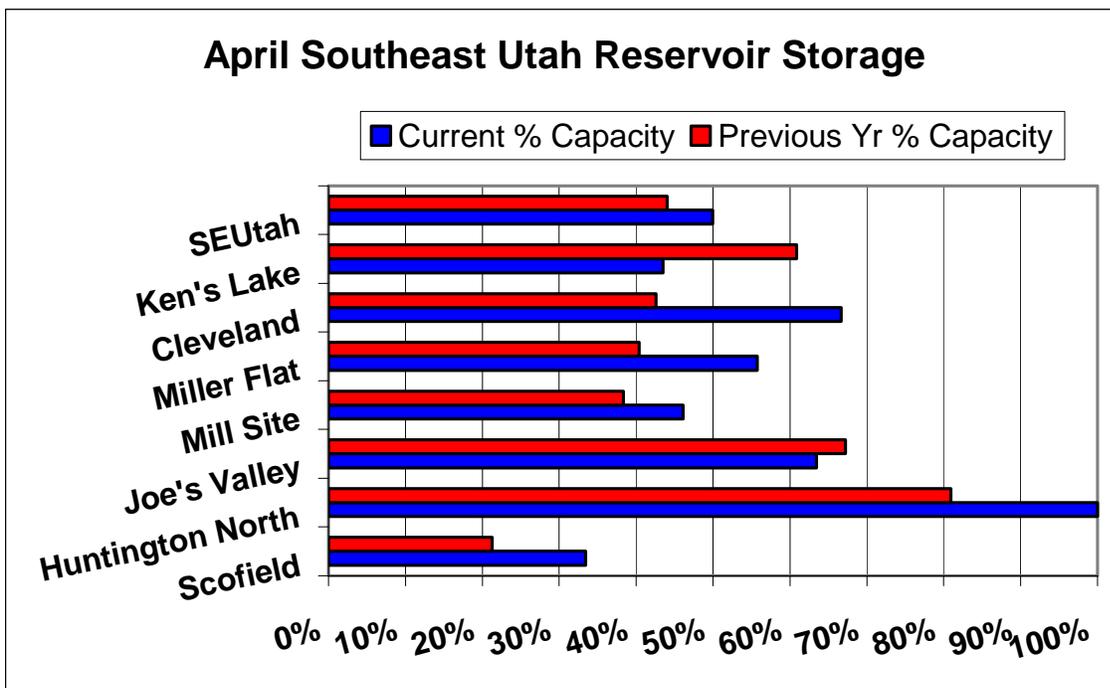
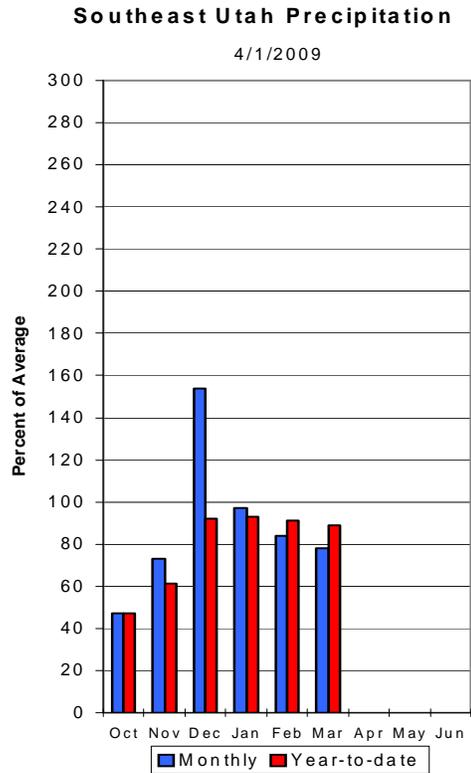
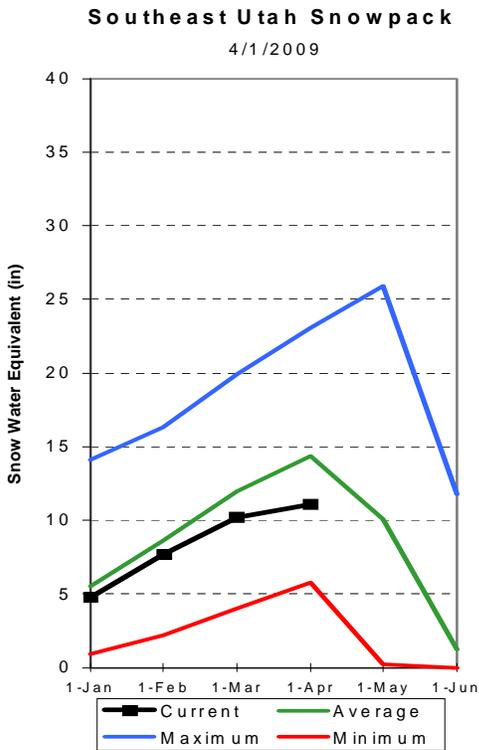
# Eastern Uintah Basin Surface Water Supply Index April



# Carbon, Emery, Wayne, Grand and San Juan Co.

## April 1, 2009

Snowpacks in this region are below normal at 77% of average, about 70% of last year. Individual sites range from 16% to 111% of average. Precipitation during March was below average at 78%, bringing the seasonal accumulation (Oct-Mar) to 89% of normal. Soil moisture estimates in runoff producing areas are at 54% of saturation in the upper 2 feet of soil, the same as last year at this time. Forecast streamflows (Apr – July) range from 32% to 102% of average. Reservoir storage is at 50% of capacity, up 6% from last year at this time. Surface Water Supply Indices for the area are: Price 32%, Joe's Valley 45%, Ferron Creek 16%, and Moab 35%. General runoff and water supply conditions are below average for Moab and the Price, much below average for Ferron Creek, and near average for Joe's Valley.



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Streamflow Forecasts - April 1, 2009

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)	(1000AF)	(1000AF)
Gooseberry Creek nr Scofield	APR-JUL	6.9	8.7	10.0	84	11.4	13.7	11.9				
Price River nr Scofield Reservoir	APR-JUL	24	31	36	80	42	51	45				
White River blw Tabbyune Creek	APR-JUL	9.3	11.7	13.5	78	15.4	18.5	17.3				
Green River at Green River, UT (2)	APR-JUL	1640	2300	2750	87	3200	3860	3170				
Huntington Ck Inflow to Electric Lk	APR-JUL	8.4	10.5	12.0	76	13.6	16.2	15.7				
Huntington Ck nr Huntington (2)	APR-JUL	23	30	36	74	42	52	49				
Joe's Valley Reservoir Inflow	APR-JUL	27	35	42	72	49	61	58				
Ferron Ck (Upper Station) nr Ferron	APR-JUL	14.8	18.9	22	56	25	31	39				
Colorado River nr Cisco (2)	APR-JUL	3500	4150	4750	102	5350	6100	4650				
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	2.20	2.90	3.50	70	4.20	5.30	5.00				
Muddy Creek nr Emery	APR-JUL	9.4	12.6	15.0	75	17.7	22	19.9				
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.16	0.33	0.50	36	0.71	1.13	1.38				
	APR-JUL	0.13	0.28	0.43	32	0.62	1.00	1.34				
San Juan River near Bluff (2)	APR-JUL	640	810	1010	82	1210	1410	1230				

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

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Watershed Snowpack Analysis - April 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNTINGTON NORTH	4.2	4.2	3.4	3.9	PRICE RIVER	3	67	83
JOE'S VALLEY	61.6	39.1	42.1	41.4	SAN RAFAEL RIVER	3	85	80
KEN'S LAKE	2.3	1.0	1.4	1.4	MUDDY CREEK	1	67	74
MILL SITE	16.7	7.7	6.4	86.2	FREMONT RIVER	3	80	70
SCOFIELD	65.8	22.0	14.0	34.7	LASAL MOUNTAINS	1	88	73
					BLUE MOUNTAINS	1	37	62
					WILLOW CREEK	1	52	77
					SOUTHEASTERN UTAH	13	70	77

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

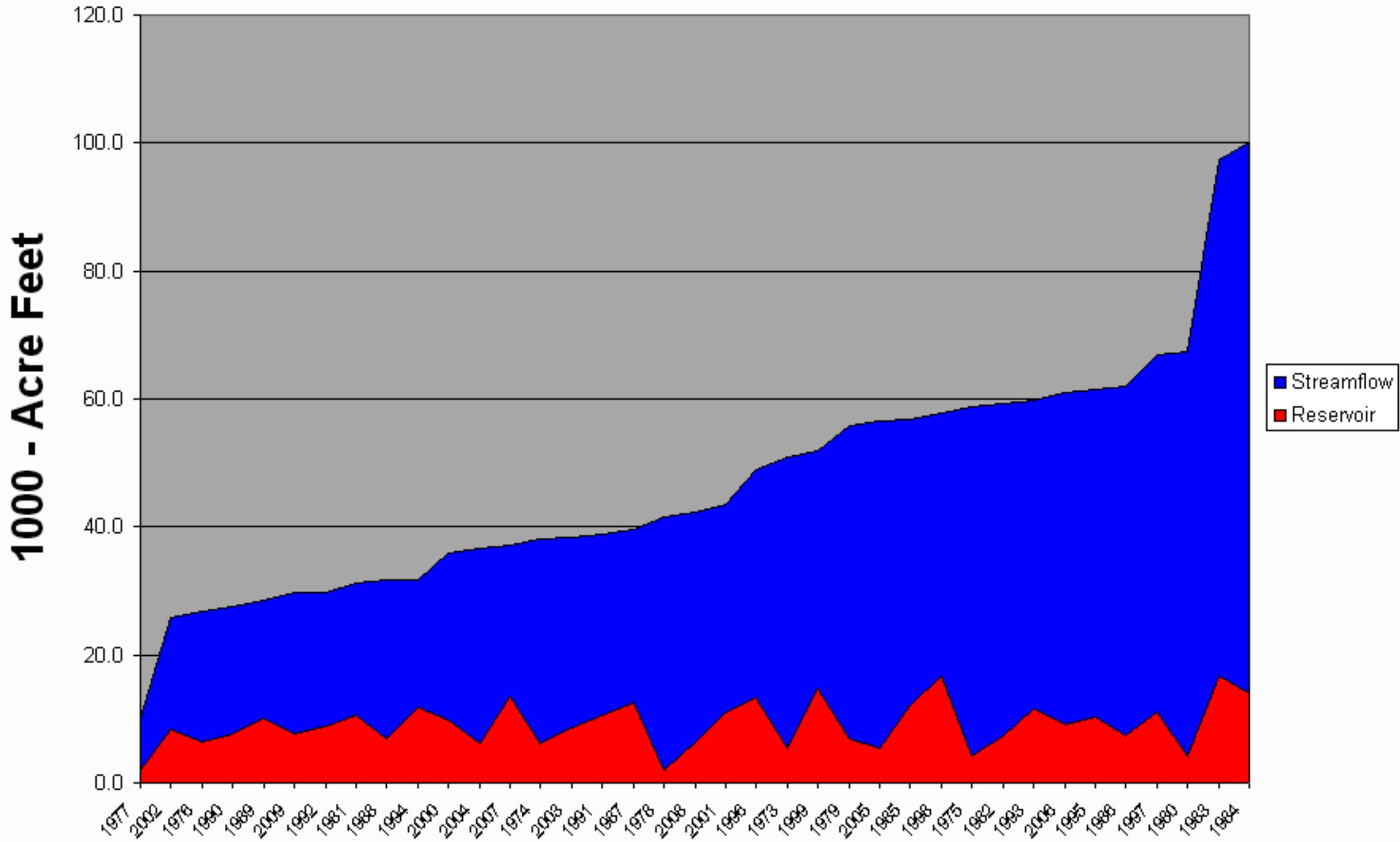
The average is computed for the 1971-2000 base period.

- (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.

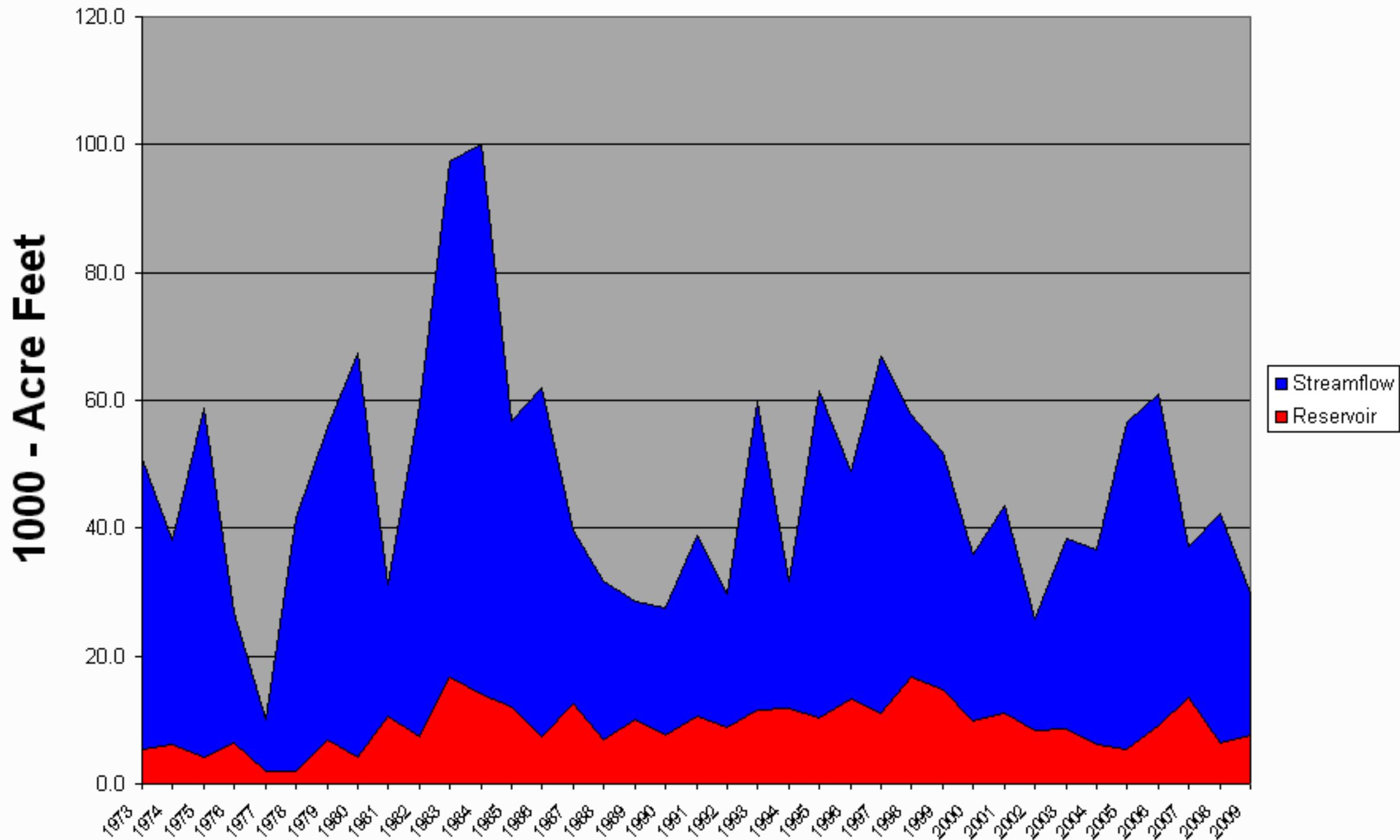
April

		<b>Ferron Creek SWSI</b>					
		<b>April</b>					
#	Year	<b>EOM March Millsite Reservoir Storage</b>	<b>April-July Forecast Streamflow - Ferron Creek Upper</b>	<b>Reservoir + Streamflow 1000AF</b>	<b>Probability</b>	<b>SWSI</b>	
1	1977	2.0	8.0	10.0	3	-3.95	
2	2002	8.4	17.4	25.8	5	-3.73	
3	1976	6.4	20.4	26.8	8	-3.51	
4	1990	7.6	19.9	27.5	11	-3.29	
5	1989	10.2	18.3	28.5	13	-3.07	
6	<b>2009</b>	<b>7.7</b>	<b>22.0</b>	<b>29.7</b>	<b>16</b>	<b>-2.85</b>	
7	1992	8.9	20.9	29.8	18	-2.63	
8	1981	10.6	20.6	31.2	21	-2.41	
9	1988	7.0	24.7	31.7	24	-2.19	
10	1994	11.9	19.9	31.8	26	-1.97	
11	2000	9.9	26.1	36.0	29	-1.75	
12	2004	6.1	30.6	36.7	32	-1.54	
13	2007	13.5	23.7	37.2	34	-1.32	
14	1974	6.1	32.1	38.2	37	-1.10	
15	2003	8.7	29.7	38.4	39	-0.88	
16	1991	10.6	28.3	38.9	42	-0.66	
17	1987	12.5	27.1	39.6	45	-0.44	
18	1978	2.0	39.5	41.5	47	-0.22	
19	2008	6.4	36.0	42.4	50	0.00	
20	2001	11.1	32.5	43.6	53	0.22	
21	1996	13.4	35.6	49.0	55	0.44	
22	1973	5.3	45.6	50.9	58	0.66	
23	1999	14.7	37.3	52.0	61	0.88	
24	1979	6.8	49.1	55.9	63	1.10	
25	2005	5.4	51.1	56.5	66	1.32	
26	1985	12.0	44.7	56.7	68	1.54	
27	1998	16.7	41.2	57.9	71	1.75	
28	1975	4.3	54.5	58.8	74	1.97	
29	1982	7.4	52.0	59.4	76	2.19	
30	1993	11.6	48.3	59.9	79	2.41	
31	2006	9.2	51.9	61.1	82	2.63	
32	1995	10.3	51.2	61.5	84	2.85	
33	1986	7.4	54.5	61.9	87	3.07	
34	1997	11.0	55.9	66.9	89	3.29	
35	1980	4.2	63.2	67.4	92	3.51	
36	1983	16.7	80.7	97.4	95	3.73	
37	1984	13.9	86.3	100.2	97	3.95	

# Ferron Creek SWSI



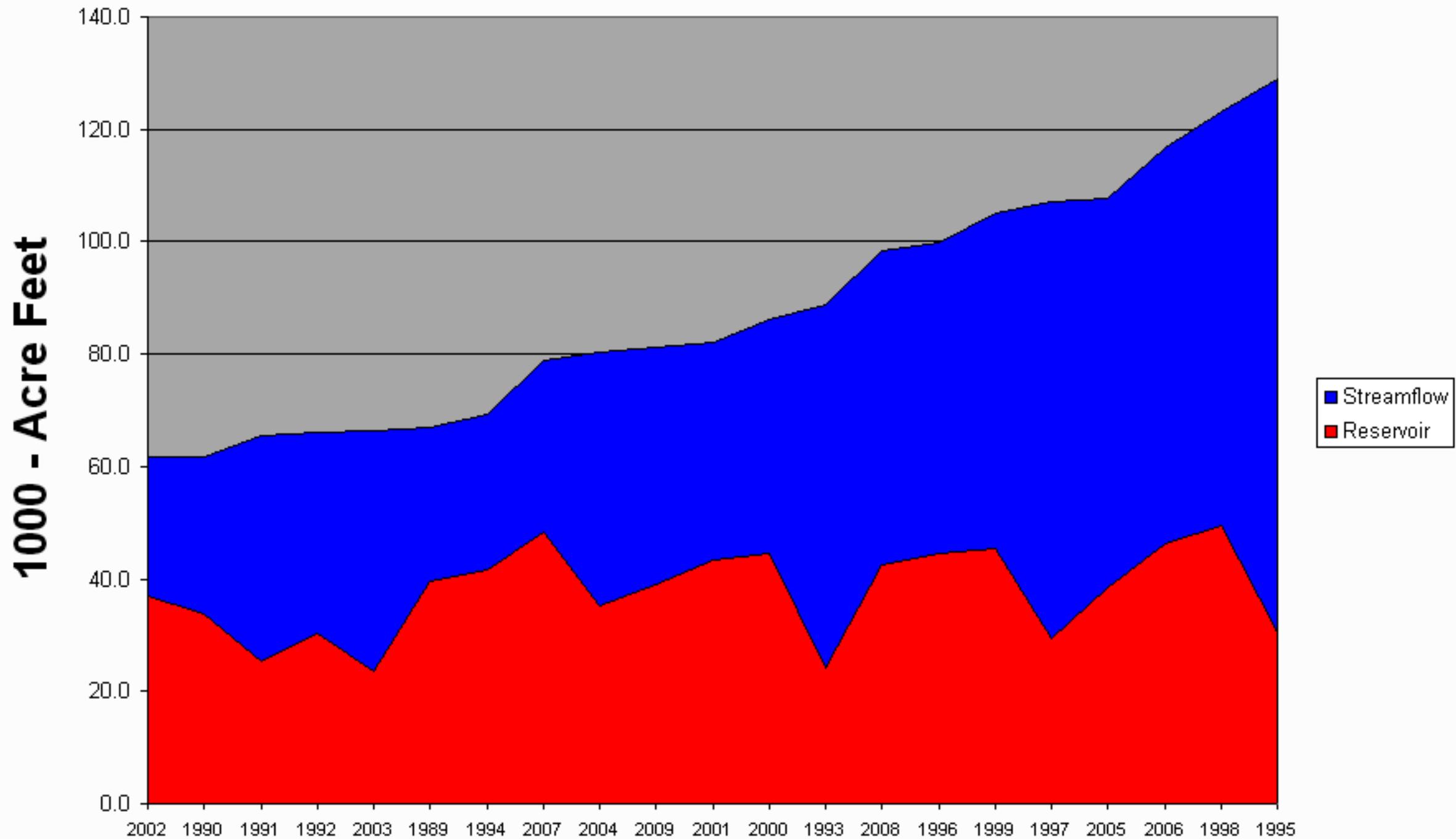
# Ferron Creek SWSI



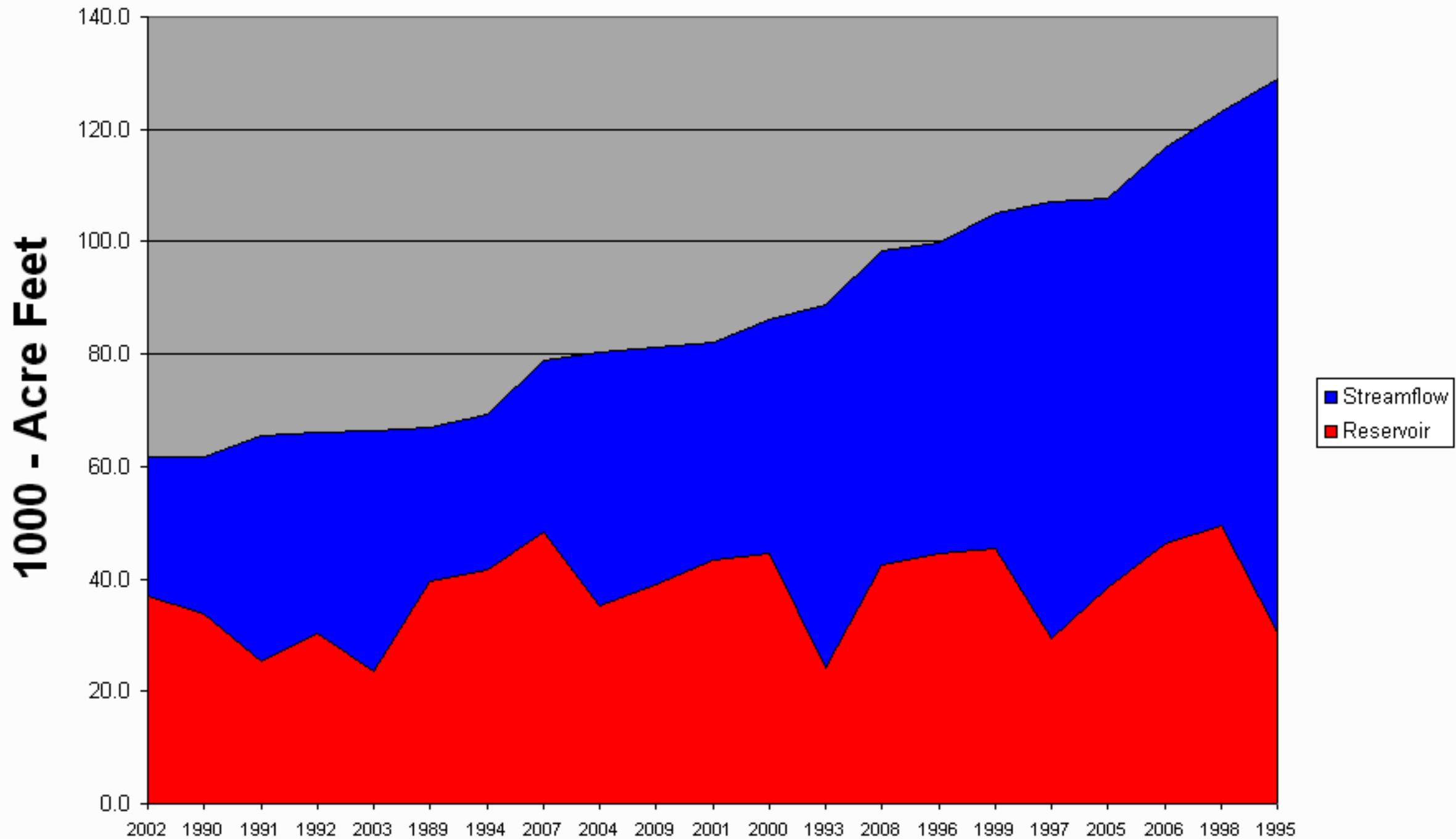
April

		<b>Joe's</b>	<b>Valley</b>	<b>SWSI</b>		
			<b>April</b>			
		<b>EOM</b>	<b>April-July</b>			
		<b>March</b>	<b>Forecast</b>			
		<b>Joe's</b>	<b>Streamflow -</b>			
		<b>Valley</b>	<b>Joe's Valley</b>	<b>Reservoir +</b>		
		<b>Storage</b>	<b>Inflow</b>	<b>Streamflow</b>		
#	Year	<b>1000-AF</b>	<b>1000-AF</b>	<b>1000-AF</b>	<b>Probability</b>	<b>SWSI</b>
1	2002	37.1	24.6	61.6	5	-3.79
2	1990	33.6	28.2	61.8	9	-3.41
3	1991	25.3	40.2	65.5	14	-3.03
4	1992	30.4	35.6	66.0	18	-2.65
5	2003	23.6	42.8	66.4	23	-2.27
6	1989	39.6	27.2	66.8	27	-1.89
7	1994	41.7	27.6	69.3	32	-1.52
8	2007	48.3	30.4	78.8	36	-1.14
9	2004	35.2	45.1	80.3	41	-0.76
10	<b>2009</b>	<b>39.1</b>	<b>42.0</b>	<b>81.1</b>	<b>45</b>	<b>-0.38</b>
11	2001	43.4	38.7	82.1	50	0.00
12	2000	44.6	41.5	86.1	55	0.38
13	1993	24.2	64.5	88.6	59	0.76
14	2008	42.4	56.1	98.5	64	1.14
15	1996	44.4	55.4	99.9	68	1.52
16	1999	45.4	59.6	105.0	73	1.89
17	1997	29.4	77.7	107.1	77	2.27
18	2005	38.4	69.3	107.7	82	2.65
19	2006	46.3	70.5	116.8	86	3.03
20	1998	49.4	73.8	123.2	91	3.41
21	1995	30.5	98.3	128.8	95	3.79

# Joe's Valley SWSI



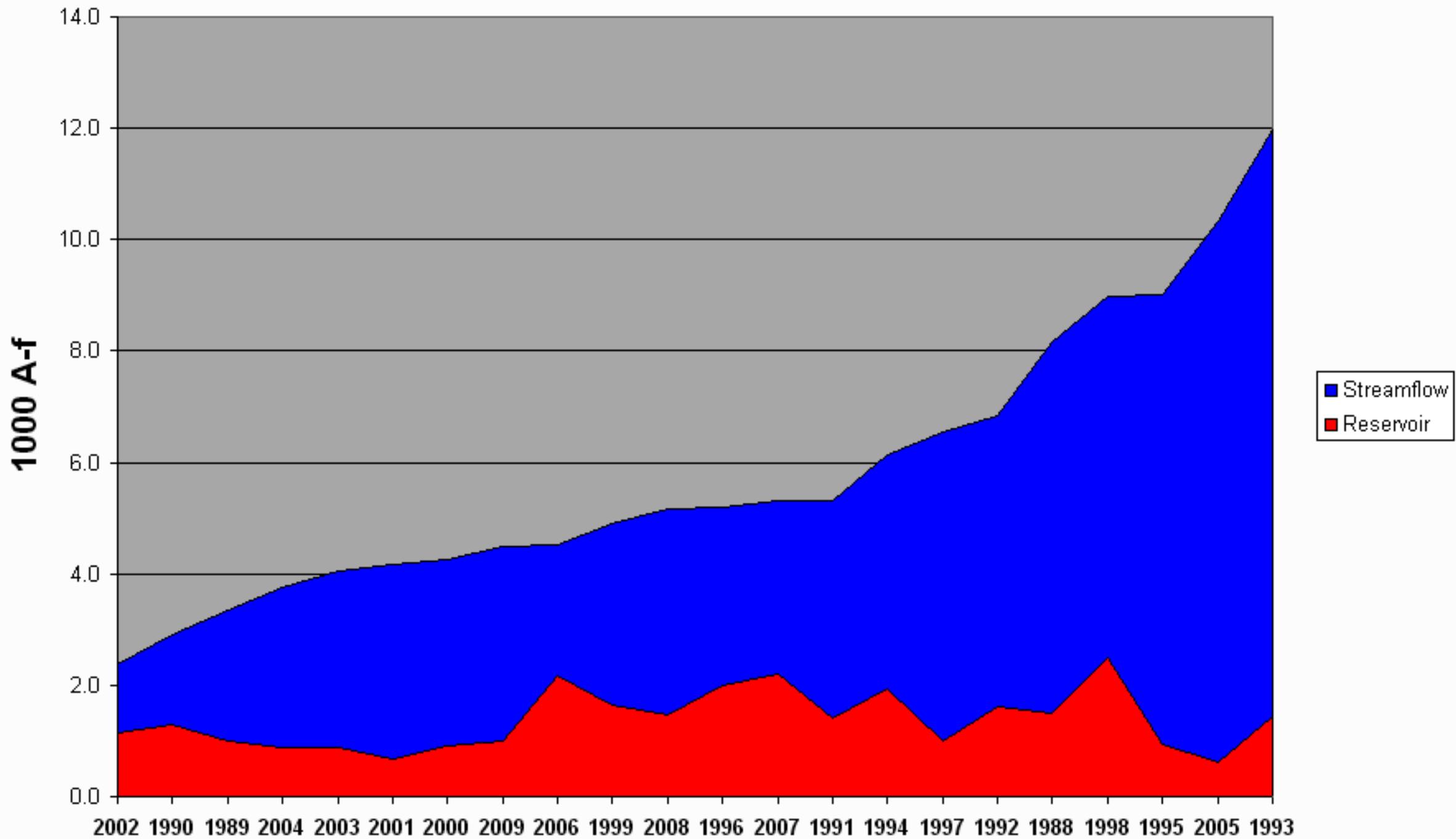
# Joe's Valley SWSI



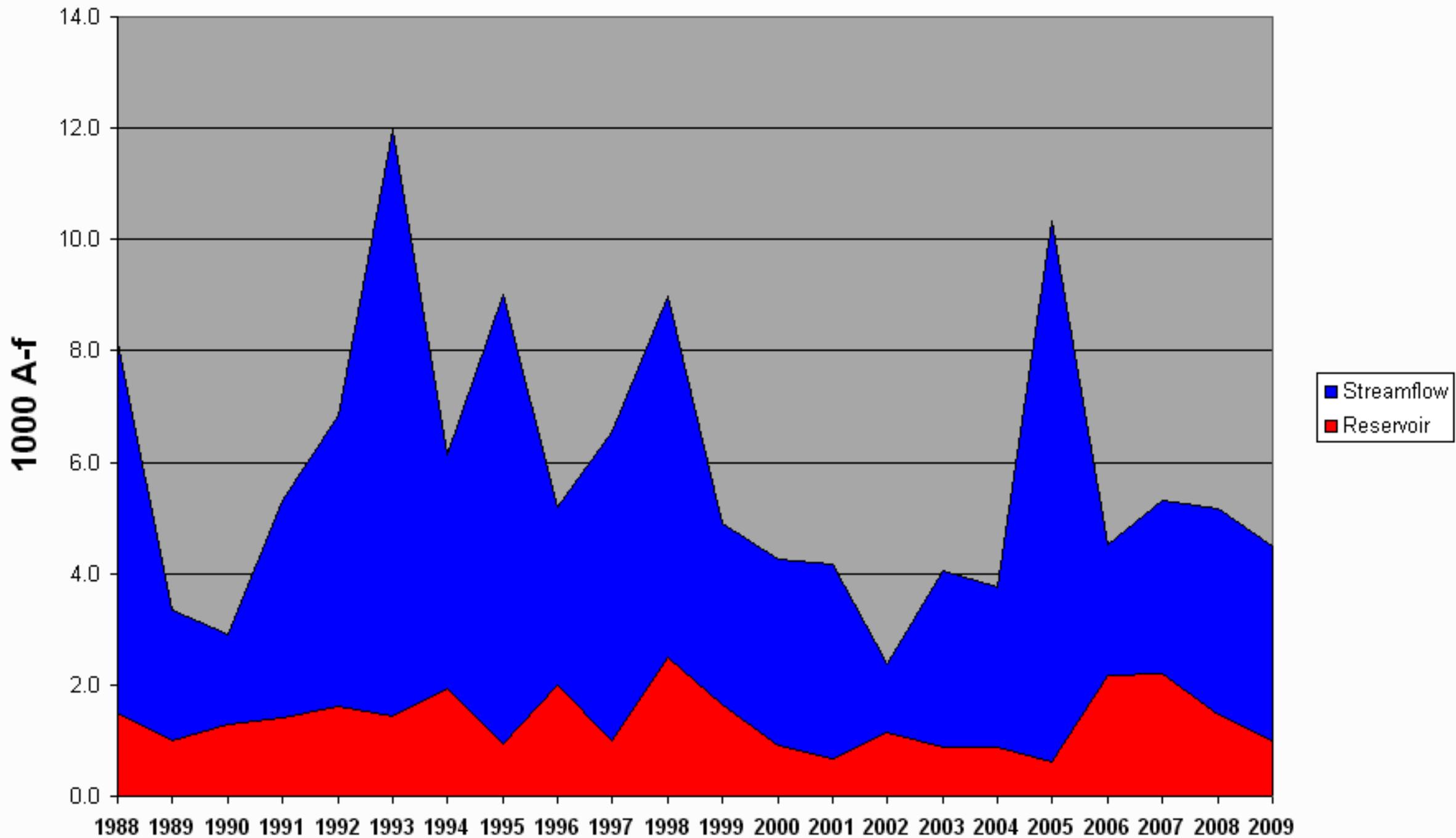
April

Moab SWSI						
April						
#	Year	EOM March Ken's Lake Reservoir Storage 1000-AF	April-July Forecast Streamflow - Mill Creek @ Sheley 1000-AF	Reservoir + Streamflow 1000-AF	Probability	SWSI
1	2002	1.1	1.2	2.4	4	-3.80
2	1990	1.3	1.6	2.9	9	-3.44
3	1989	1.0	2.3	3.3	13	-3.08
4	2004	0.9	2.9	3.8	17	-2.72
5	2003	0.9	3.2	4.1	22	-2.36
6	2001	0.7	3.5	4.2	26	-1.99
7	2000	0.9	3.4	4.3	30	-1.63
8	<b>2009</b>	<b>1.0</b>	<b>3.5</b>	<b>4.5</b>	<b>35</b>	<b>-1.27</b>
9	2006	2.2	2.4	4.5	39	-0.91
10	1999	1.6	3.3	4.9	43	-0.54
11	2008	1.5	3.7	5.2	48	-0.18
12	1996	2.0	3.2	5.2	52	0.18
13	2007	2.2	3.1	5.3	57	0.54
14	1991	1.4	3.9	5.3	61	0.91
15	1994	1.9	4.2	6.1	65	1.27
16	1997	1.0	5.5	6.5	70	1.63
17	1992	1.6	5.2	6.8	74	1.99
18	1988	1.5	6.6	8.2	78	2.36
19	1998	2.5	6.5	9.0	83	2.72
20	1995	0.9	8.1	9.0	87	3.08
21	2005	0.6	9.7	10.3	91	3.44
22	1993	1.5	10.5	12.0	96	3.80

# Moab SWSI



# Moab SWSI

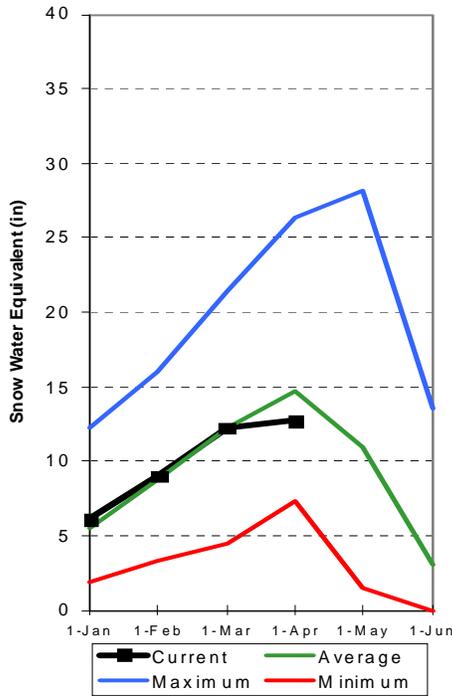


# Sevier and Beaver River Basins

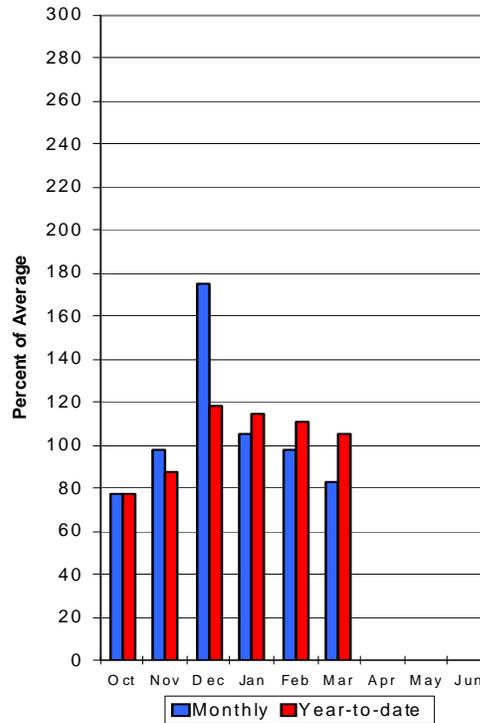
## April 1, 2009

Snowpacks on the Sevier River Basin are below normal at 87% of average, a 13% decline relative to last month and 82% of last year. Individual sites range from 0% at Agua Canyon and Long valley Junction to 131% of average at Merchant Valley. Precipitation during March was below average at 83% of normal, bringing the seasonal accumulation (Oct-Mar) to 105% of average. Soil moisture estimates in runoff producing areas are at 58% of saturation in the upper 2 feet of soil compared to 58% last year. Streamflow forecasts range from 71% to 115% of average. Reservoir storage is at 58% of capacity, 8% less than last year. Surface Water Supply Indices are: Upper Sevier 32%, Lower Sevier 47% and Beaver 57%. Water supply conditions are below average on the upper Sevier and near average on the lower Sevier and the Beaver River watersheds.

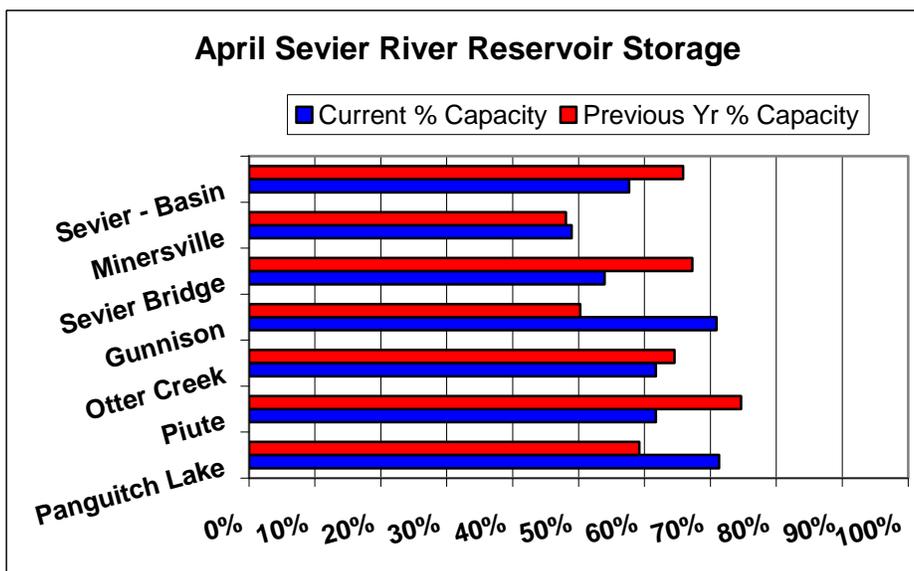
**Sevier River Snow pack**  
4/1/2009



**Sevier River Precipitation**  
4/1/2009



**April Sevier River Reservoir Storage**



SEVIER & BEAVER RIVER BASINS  
Streamflow Forecasts - April 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		=====		>>==== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Sevier R at Hatch, UT	APR-JUL	29	40	48	87	56	67	55
Sevier R nr Kingston, UT	APR-JUL	6.2	18.6	27	82	36	50	33
EF Sevier R nr Kingston, UT	APR-JUL	10.2	25	33	94	41	56	35
Sevier R blw Piute Dam nr Marysvale, UT	APR-JUL	17.3	55	75	82	95	133	91
Clear Creek Abv Diversions nr Sevier	APR-JUL	15.8	21	24	109	27	32	22
Salina Ck at Salina, UT	APR-JUL	4.8	11.2	17.0	86	24	37	19.7
Manti Ck Blw Dugway Ck Nr Manti	APR-JUL	9.2	11.9	14.0	77	16.2	19.9	18.3
Sevier R nr Gunnison, UT	APR-JUL	1.0	35	88	83	120	166	106
Chicken Creek nr Levan	APR-JUL	1.71	2.50	3.20	71	4.00	5.40	4.50
Oak Creek nr Oak City	APR-JUL	0.87	1.17	1.40	84	1.65	2.00	1.66
Beaver R nr Beaver, UT	APR-JUL	18.0	26	31	115	36	44	27
Minersville Reservoir	APR-JUL	8.2	13.4	18.0	108	24	34	16.6

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

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
GUNNISON	20.3	14.4	10.2	16.3
MINERSVILLE (RkyFd)	23.3	11.4	11.2	17.9
OTTER CREEK	52.5	32.4	33.9	43.5
PIUTE	71.8	44.3	53.6	58.5
SEVIER BRIDGE	236.0	127.3	158.7	189.7
PANGUITCH LAKE	22.3	15.9	13.2	152.9

SEVIER & BEAVER RIVER BASINS  
Watershed Snowpack Analysis - April 1, 2009

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
UPPER SEVIER RIVER	8	83	84
EAST FORK SEVIER RIVER	3	80	67
SOUTH FORK SEVIER RIVER	5	86	93
LOWER SEVIER RIVER	6	70	79
BEAVER RIVER	2	118	119
SEVIER & BEAVER RIVER BAS	16	82	87

\* 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.

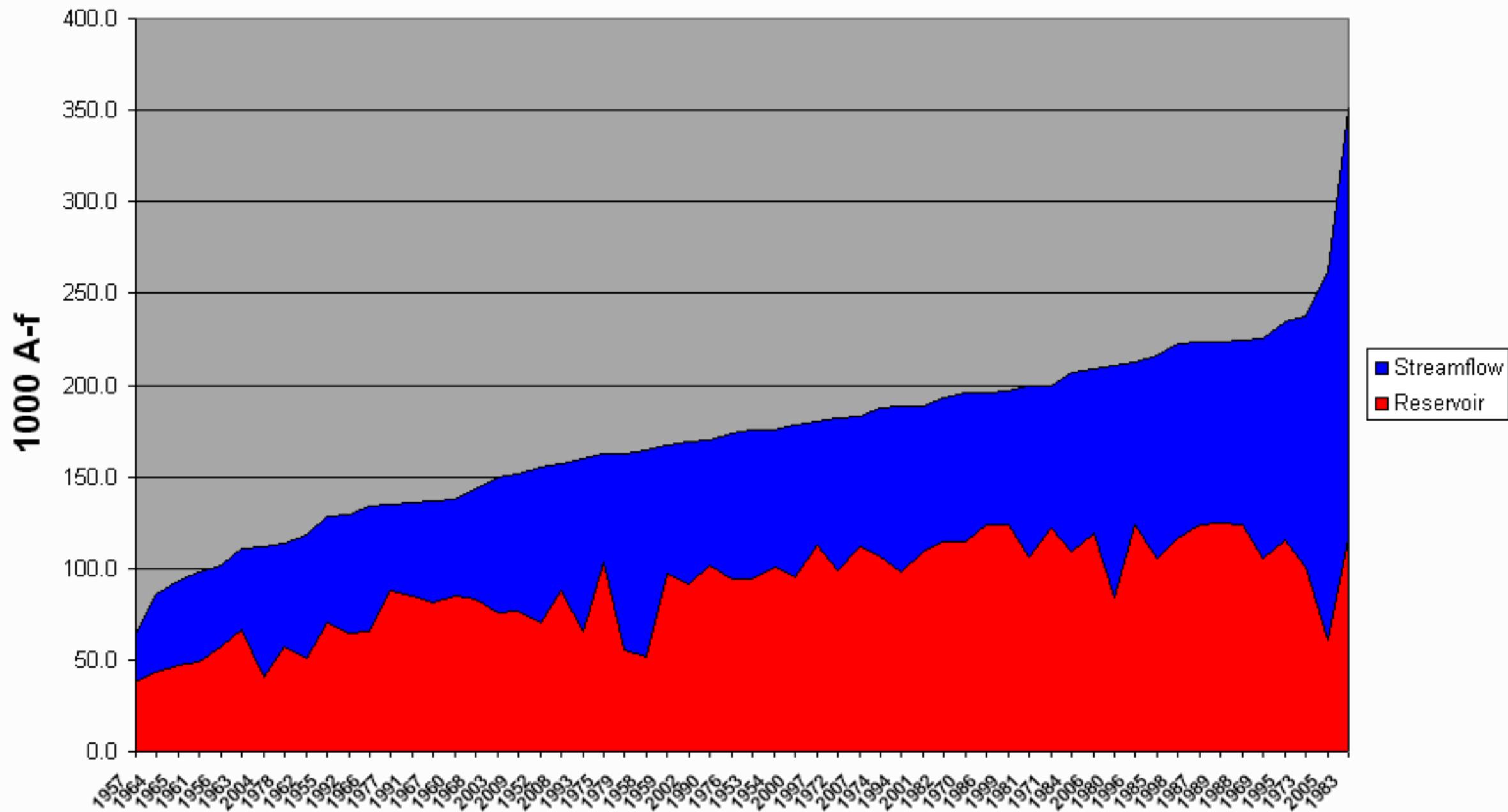
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

**Upper Sevier River SWSI  
April**

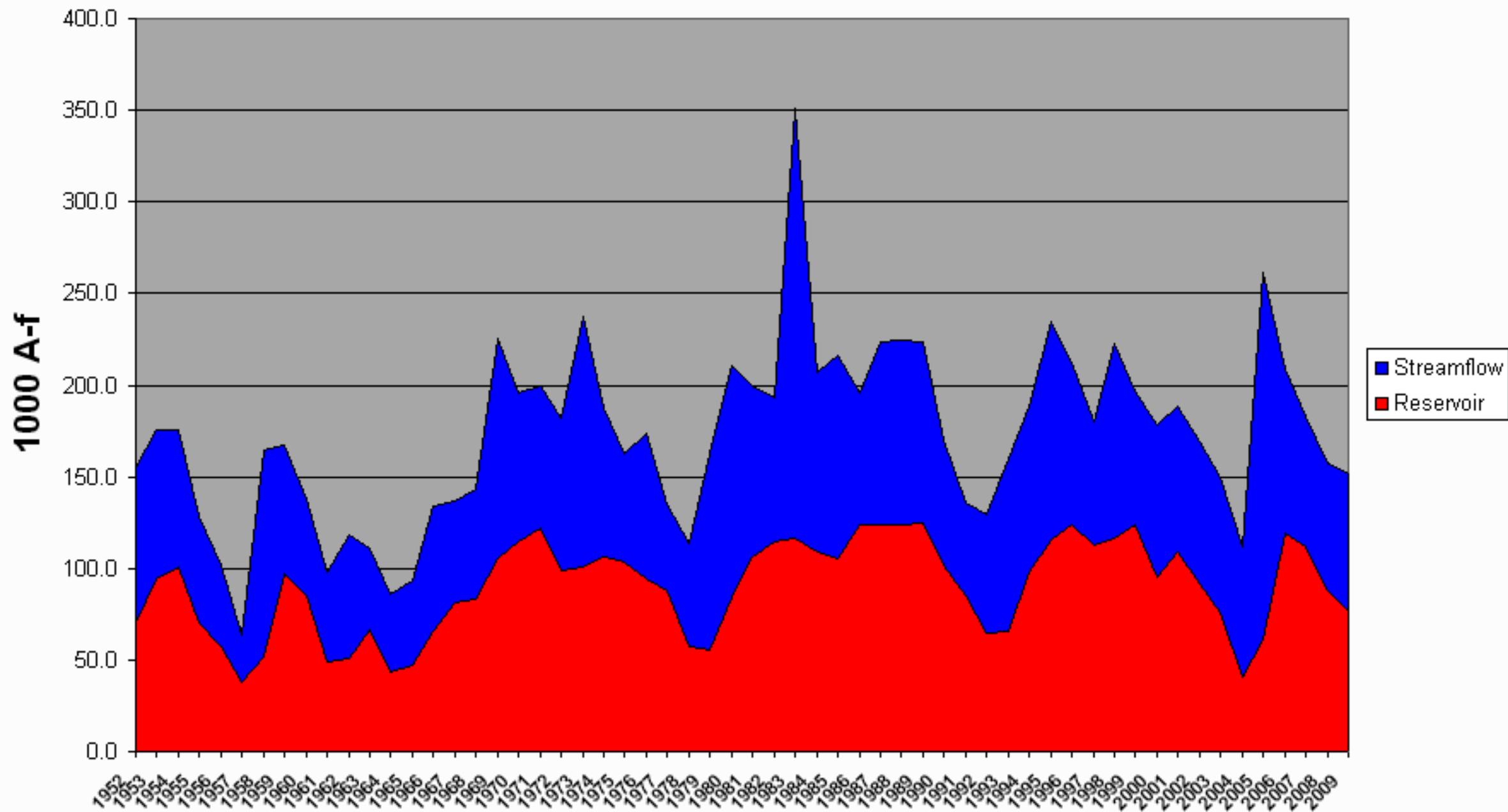
#	Year	EOM March Piute+Otter Creek Reservoir Storage 1000-AF	April-July Forecast Streamflow - Sevier inflow Piute 1000-AF	Reservoir + Streamflow 1000-AF	Probability	SWSI
1	1957	38.2	25.8	64.0	2	-4.03
2	1964	43.1	42.9	86.0	3	-3.88
3	1965	46.7	46.9	93.6	5	-3.74
4	1961	49.1	49.1	98.2	7	-3.60
5	1956	57.4	44.5	101.9	8	-3.46
6	1963	66.7	44.5	111.2	10	-3.32
7	2004	41.0	70.8	111.8	12	-3.18
8	1978	57.0	56.9	113.9	14	-3.04
9	1962	50.5	68.0	118.5	15	-2.90
10	1955	69.8	58.5	128.3	17	-2.75
11	1992	64.8	64.9	129.7	19	-2.61
12	1966	65.6	68.4	134.0	20	-2.47
13	1977	87.7	47.0	134.7	22	-2.33
14	1991	84.5	51.0	135.5	24	-2.19
15	1967	81.7	55.2	136.9	25	-2.05
16	1960	85.3	52.5	137.8	27	-1.91
17	1968	83.6	59.9	143.5	29	-1.77
18	2003	75.4	73.9	149.3	31	-1.62
19	<b>2009</b>	<b>76.7</b>	<b>75</b>	<b>151.7</b>	<b>32</b>	<b>-1.48</b>
20	1952	70.1	85.2	155.3	34	-1.34
21	2008	87.5	70	157.5	36	-1.20
22	1993	65.9	93.6	159.5	37	-1.06
23	1975	103.8	58.5	162.3	39	-0.92
24	1979	55.5	106.9	162.4	41	-0.78
25	1958	52.1	112.3	164.4	42	-0.64
26	1959	96.6	70.8	167.4	44	-0.49
27	2002	91.9	77.2	169.1	46	-0.35
28	1990	101.3	68.3	169.6	47	-0.21
29	1976	93.8	79.6	173.4	49	-0.07
30	1953	93.9	81.2	175.1	51	0.07
31	1954	100.6	74.8	175.4	53	0.21
32	2000	95.6	82.5	178.1	54	0.35
33	1997	112.5	67.4	179.9	56	0.49
34	1972	98.5	83.5	182.0	58	0.64
35	2007	111.8	71.3	183.1	59	0.78
36	1974	106.2	81.1	187.3	61	0.92
37	1994	98.2	89.9	188.1	63	1.06
38	2001	109.3	79.5	188.8	64	1.20
39	1982	114.4	78.4	192.8	66	1.34
40	1970	114.3	81.2	195.5	68	1.48

41	1986	124.1	71.5	195.6	69	1.62
42	1999	124.2	72.5	196.7	71	1.77
43	1981	106.4	93.0	199.4	73	1.91
44	1971	122.2	77.3	199.5	75	2.05
45	1984	108.6	98.2	206.8	76	2.19
46	2006	118.8	89.7	208.5	78	2.33
47	1980	84.5	125.8	210.3	80	2.47
48	1996	124.0	88.4	212.4	81	2.61
49	1985	105.5	110.2	215.7	83	2.75
50	1998	116.3	106.8	223.1	85	2.90
51	1987	124.0	99.1	223.1	86	3.04
52	1989	124.5	98.7	223.2	88	3.18
53	1988	123.9	100.4	224.3	90	3.32
54	1969	105.3	119.9	225.2	92	3.46
55	1995	115.1	120.0	235.0	93	3.60
56	1973	100.6	136.4	237.0	95	3.74
57	2005	60.9	200.8	261.7	97	3.88
58	1983	116.1	234.9	351.0	98	4.03

# Upper Sevier River Surface Water Supply Index April



# Upper Sevier River Surface Water Supply Index April

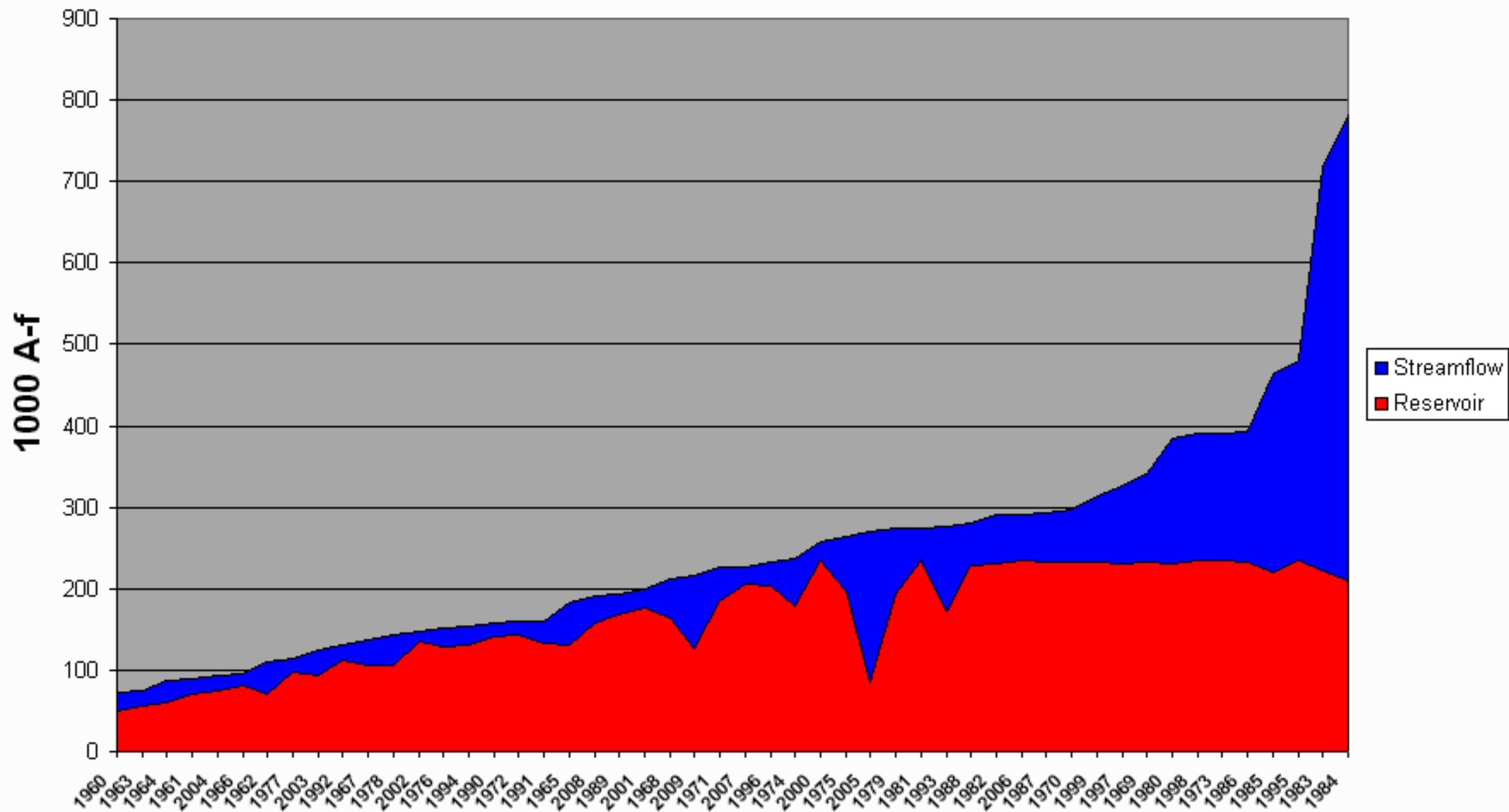


**Lower Sevier River SWSI  
April**

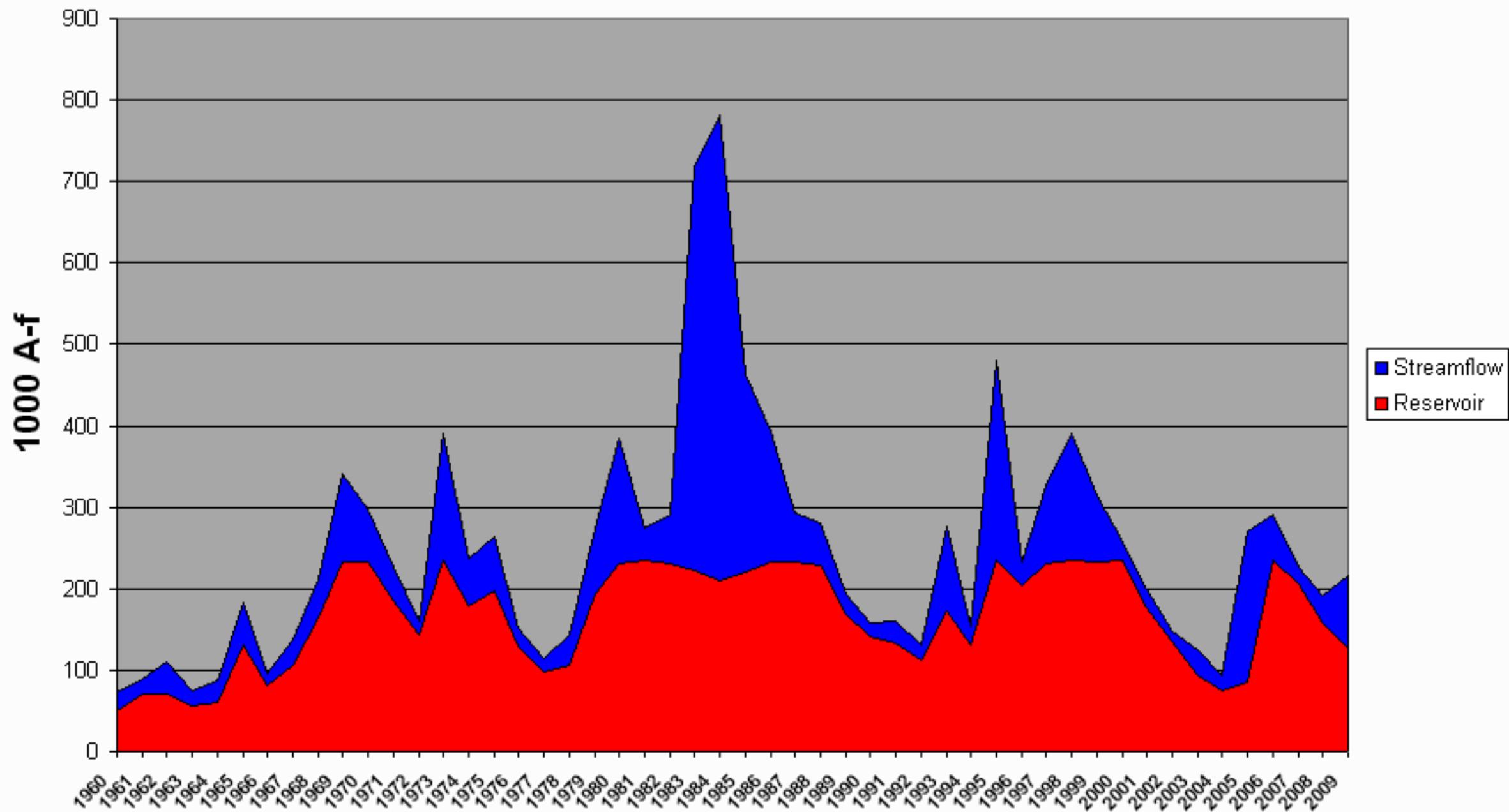
#	Year	EOM		Reservoir + Streamflow 1000-AF	Probability	SWSI
		March Sevier Bridge Reservoir Storage 1000-AF	April-July Forecast Streamflow - Sevier at Gunnison 1000-AF			
1	1960	49.4	22.7	72.1	2	-4.00
2	1963	55.7	18.4	74.1	4	-3.84
3	1964	60	27.6	87.6	6	-3.68
4	1961	71.7	18.3	90.0	8	-3.51
5	2004	74.9	19.5	94.4	10	-3.35
6	1966	81.7	14.8	96.5	12	-3.19
7	1962	70.3	38.9	109.2	14	-3.02
8	1977	97.8	15.8	113.6	16	-2.86
9	2003	93.5	30.9	124.4	18	-2.70
10	1992	112.2	19.2	131.4	20	-2.53
11	1967	107	30.1	137.1	22	-2.37
12	1978	106	37.7	143.7	24	-2.21
13	2002	134.9	12.6	147.5	25	-2.04
14	1976	128.2	24.3	152.5	27	-1.88
15	1994	131.9	21.3	153.2	29	-1.72
16	1990	140.6	17.2	157.8	31	-1.55
17	1972	142.7	16.8	159.5	33	-1.39
18	1991	133.2	27.8	161.0	35	-1.23
19	1965	130.1	53.4	183.5	37	-1.06
20	2008	158.7	31.9	190.6	39	-0.90
21	1989	168.6	25.4	194.0	41	-0.74
22	2001	175.7	23.6	199.3	43	-0.57
23	1968	164.6	46.8	211.4	45	-0.41
24	<b>2009</b>	<b>127.3</b>	<b>88</b>	<b>215.3</b>	<b>47</b>	<b>-0.25</b>
25	1971	185.7	39.9	225.6	49	-0.08
26	2007	205.3	22.29	227.6	51	0.08
27	1996	204.6	28.1	232.7	53	0.25
28	1974	178.7	58.3	237.0	55	0.41
29	2000	235.2	23.6	258.8	57	0.57
30	1975	197.6	66.4	264.0	59	0.74
31	2005	85.7	184.6	270.3	61	0.90
32	1979	193.8	79.7	273.5	63	1.06
33	1981	234	40.6	274.6	65	1.23
34	1993	171.9	104.1	276.0	67	1.39
35	1988	227.6	52.7	280.3	69	1.55
36	1982	230.8	60.4	291.2	71	1.72
37	2006	234.9	56.8	291.7	73	1.88
38	1987	231.9	60.9	292.8	75	2.04
39	1970	232.9	64.8	297.7	76	2.21
40	1999	231.9	81.1	313.0	78	2.37

41	1997	230.4	95.4	325.8	80	2.53
42	1969	232.9	108.3	341.2	82	2.70
43	1980	230.8	154.7	385.5	84	2.86
44	1998	235.6	155.0	390.7	86	3.02
45	1973	234	156.8	390.8	88	3.19
46	1986	232.9	160.5	393.4	90	3.35
47	1985	221.3	242.4	463.7	92	3.51
48	1995	234	245.2	479.2	94	3.68
49	1983	222.3	494.5	716.8	96	3.84
50	1984	209.1	572.7	781.8	98	4.00

# Lower Sevier River Surface Water Supply Index April



# Lower Sevier River Surface Water Supply Index April

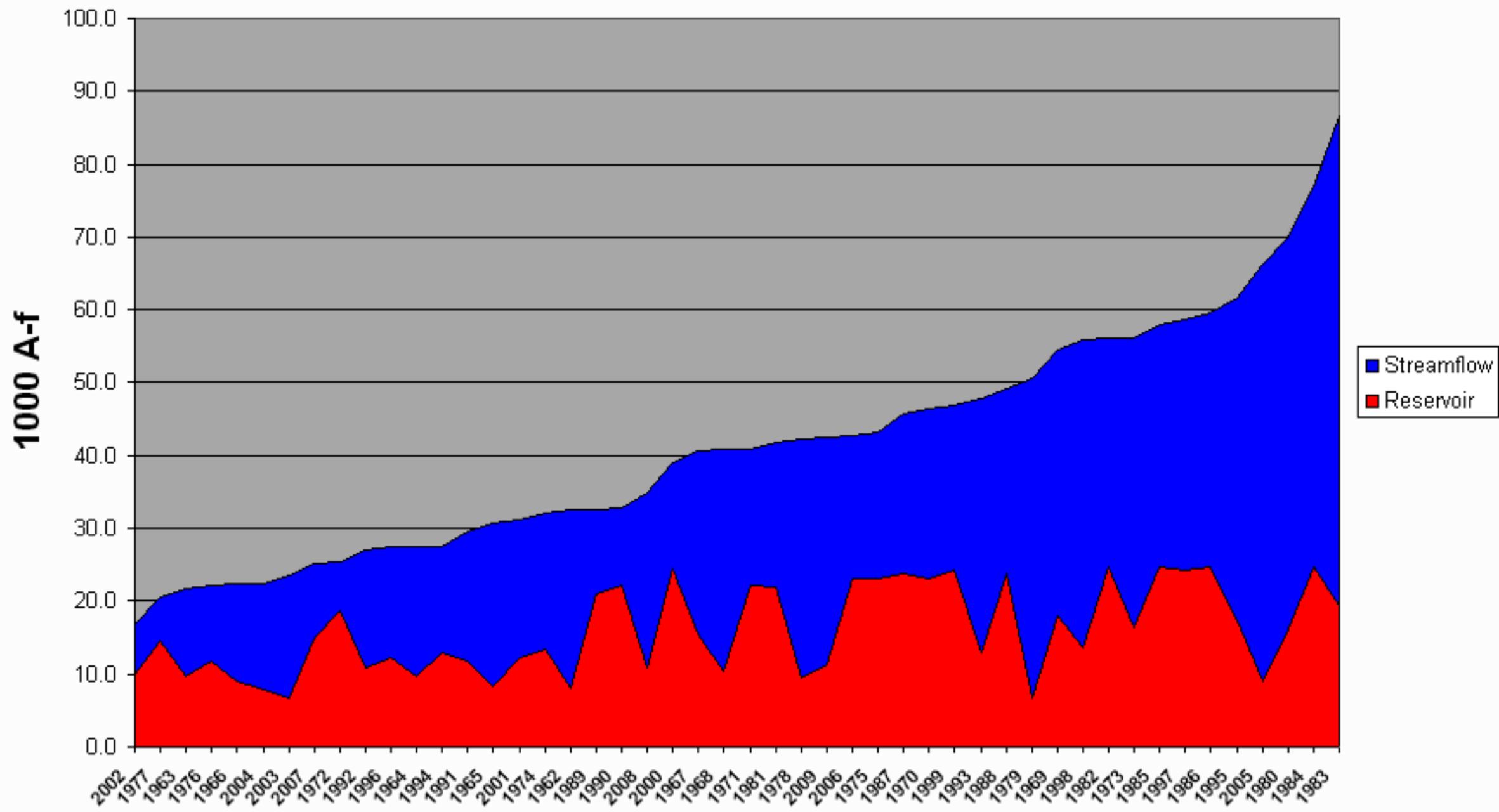


**Beaver River SWSI  
April**

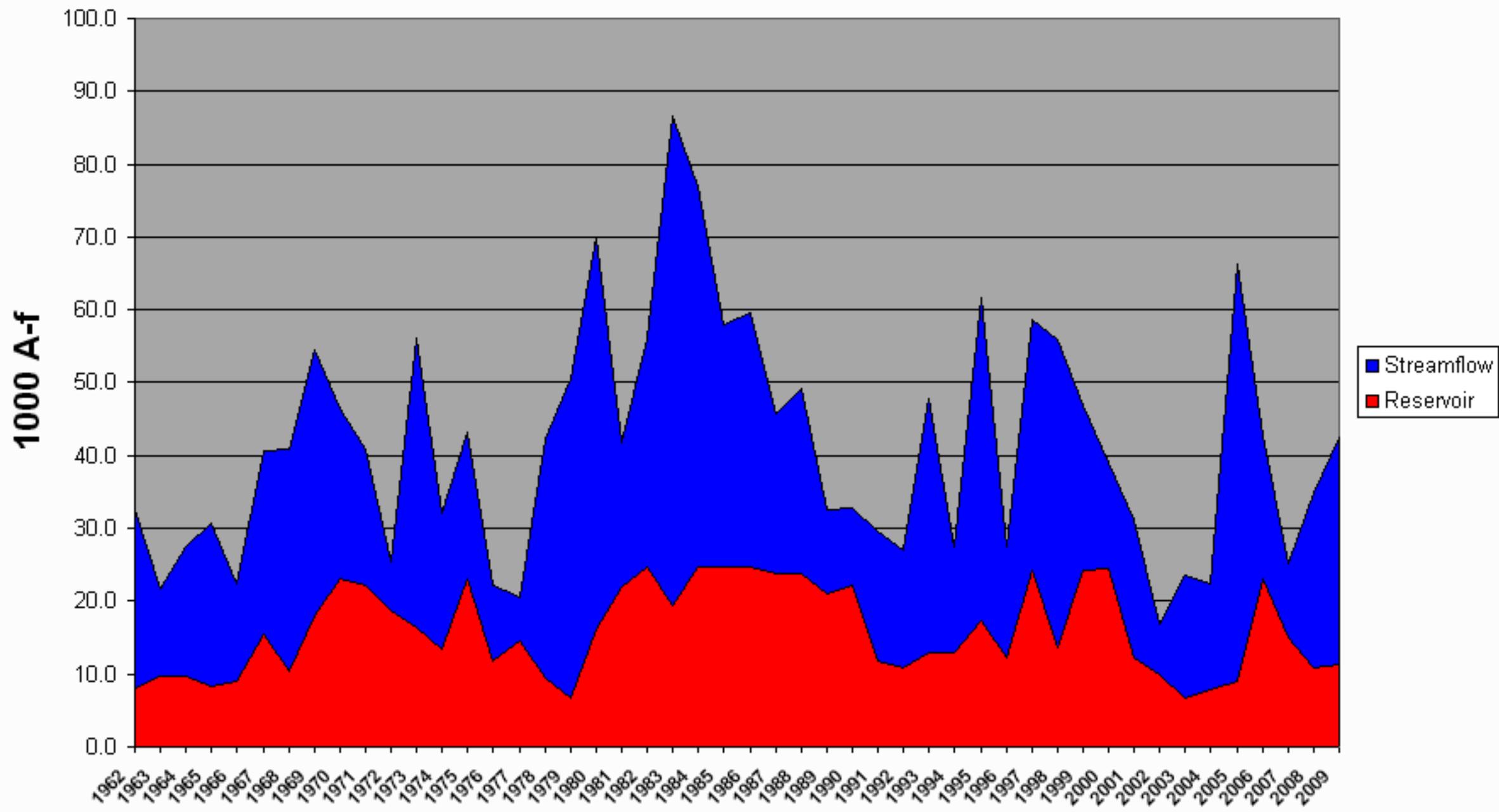
#	Year	EOM	April-July	Reservoir		SWSI
		March	Forecast	Streamflow -	+	
		Minerville	Beaver at	Beaver	Streamflow	Probability
		Reservoir	Beaver	1000-AF	1000-AF	
		Storage	1000-AF	1000-AF	1000-AF	
		1000-AF	1000-AF	1000-AF	1000-AF	
1	2002	10.0	7.0	17.0	2	-4.00
2	1977	14.5	6.1	20.6	4	-3.83
3	1963	9.7	11.9	21.6	6	-3.66
4	1976	11.7	10.5	22.2	8	-3.49
5	1966	9.1	13.2	22.3	10	-3.32
6	2004	7.9	14.5	22.4	12	-3.15
7	2003	6.8	16.7	23.5	14	-2.98
8	2007	15.1	10.1	25.2	16	-2.81
9	1972	18.7	6.7	25.4	18	-2.64
10	1992	10.9	16.1	27.0	20	-2.47
11	1996	12.2	15.2	27.4	22	-2.30
12	1964	9.7	17.9	27.6	24	-2.13
13	1994	12.9	14.7	27.6	27	-1.96
14	1991	11.8	17.7	29.5	29	-1.79
15	1965	8.3	22.5	30.8	31	-1.62
16	2001	12.2	19.1	31.3	33	-1.45
17	1974	13.4	18.8	32.2	35	-1.28
18	1962	8.1	24.5	32.6	37	-1.11
19	1989	21.0	11.6	32.6	39	-0.94
20	1990	22.1	10.6	32.7	41	-0.77
21	2008	10.8	24	34.8	43	-0.60
22	2000	24.5	14.5	39.0	45	-0.43
23	1967	15.5	25.2	40.7	47	-0.26
24	1968	10.5	30.3	40.8	49	-0.09
25	1971	22.2	18.7	40.9	51	0.09
26	1981	21.9	20.0	41.9	53	0.26
27	1978	9.4	32.8	42.2	55	0.43
28	<b>2009</b>	<b>11.4</b>	<b>31</b>	<b>42.4</b>	<b>57</b>	<b>0.60</b>
29	2006	23.0	19.6	42.6	59	0.77
30	1975	23.2	20.1	43.3	61	0.94
31	1987	23.9	21.8	45.7	63	1.11
32	1970	23.2	23.2	46.4	65	1.28
33	1999	24.3	22.6	46.9	67	1.45
34	1993	12.9	34.9	47.7	69	1.62
35	1988	23.7	25.6	49.3	71	1.79
36	1979	6.8	43.8	50.6	73	1.96
37	1969	18.1	36.3	54.4	76	2.13
38	1998	13.7	42.2	55.9	78	2.30
39	1982	24.6	31.5	56.1	80	2.47
40	1973	16.5	39.7	56.2	82	2.64
41	1985	24.6	33.3	57.9	84	2.81

42	1997	24.2	34.6	58.7	86	2.98
43	1986	24.8	34.8	59.6	88	3.15
44	1995	17.2	44.4	61.6	90	3.32
45	2005	9.1	57.1	66.2	92	3.49
46	1980	16.1	53.9	70.0	94	3.66
47	1984	24.6	52.3	76.9	96	3.83
48	1983	19.5	67.2	86.7	98	4.00

# Beaver River Surface Water Supply Index April



# Beaver River Surface Water Supply Index April

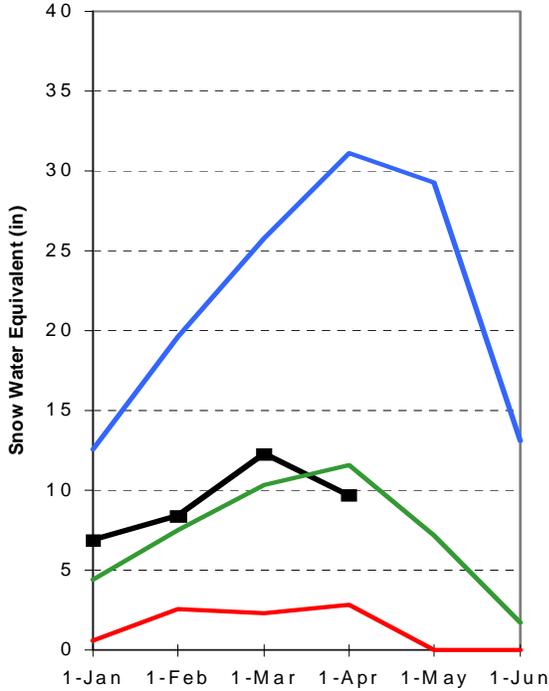


## E. Garfield, Kane, Washington, & Iron Co. April 1, 2009

Snowpacks in this region are near average at 83% of average, which is 89% of last year. Individual sites range from bare ground at both Little Grassy and Long Valley Junction Snotels, to 106% of average at Kolob Snotel. Precipitation during the month of March was much below average at 35%, bringing the seasonal accumulation (Oct-Mar) to 103% of average. The average soil moisture estimate in runoff producing areas is at 60% of saturation within the upper 2 feet of soil, compared to 59% last year. Forecast streamflows (Apr-July) range from 55% to 93% of average. Reservoir storage is at 77% of capacity, 6% more than last year. The Surface Water Supply Index for the Virgin River at Virgin, UT is 57%, indicating average water supply conditions.

### Southwest Utah Snowpack

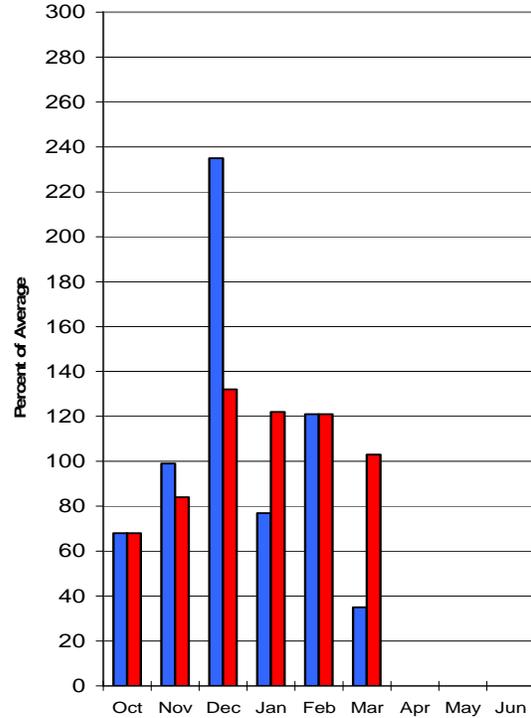
4/1/2009



■ Current   
 ■ Average   
 ■ Maximum   
 ■ Minimum

### Southwest Utah Precipitation

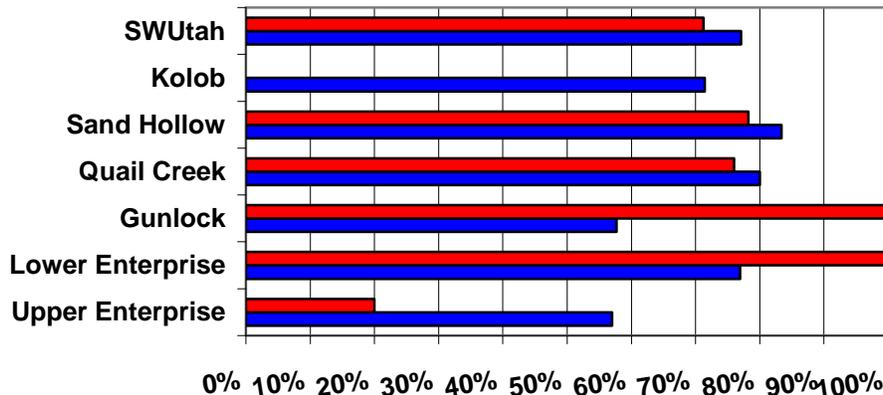
4/1/2009



■ Monthly   
 ■ Year-to-date

### April Southwest Utah Reservoir Storage

■ Current % Capacity   
 ■ Previous Yr % Capacity



E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Streamflow Forecasts - April 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Future Conditions		Wetter		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Lake Powell Inflow (2)	APR-JUL	5000	6110	7200	91	8290	9500	7930
Virgin River at Virgin	APR-JUL	36	44	49	77	55	64	64
Virgin River nr Hurricane	APR-JUL	30	40	47	68	55	68	69
Santa Clara River nr Pine Valley	APR-JUL	1.80	2.50	3.00	55	3.60	4.60	5.50
Coal Ck nr Cedar City, UT	APR-JUL	11.2	15.2	18.0	93	21	25	19.3

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

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
GUNLOCK	10.4	6.0	10.4	4.5
LAKE POWELL	24322.0	12783.0	10784.0	---
QUAIL CREEK	40.0	32.0	30.4	31.0
UPPER ENTERPRISE	10.0	5.7	2.0	---
LOWER ENTERPRISE	2.6	2.0	2.6	137.1

E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Watershed Snowpack Analysis - April 1, 2009

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
VIRGIN RIVER	5	93	95
PAROWAN	2	88	94
ENTERPRISE TO NEW HARMONY	2	45	22
COAL CREEK	2	92	94
ESCALANTE RIVER	2	95	67
SOUTHWESTERN UTAH	9	92	83

\* 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.

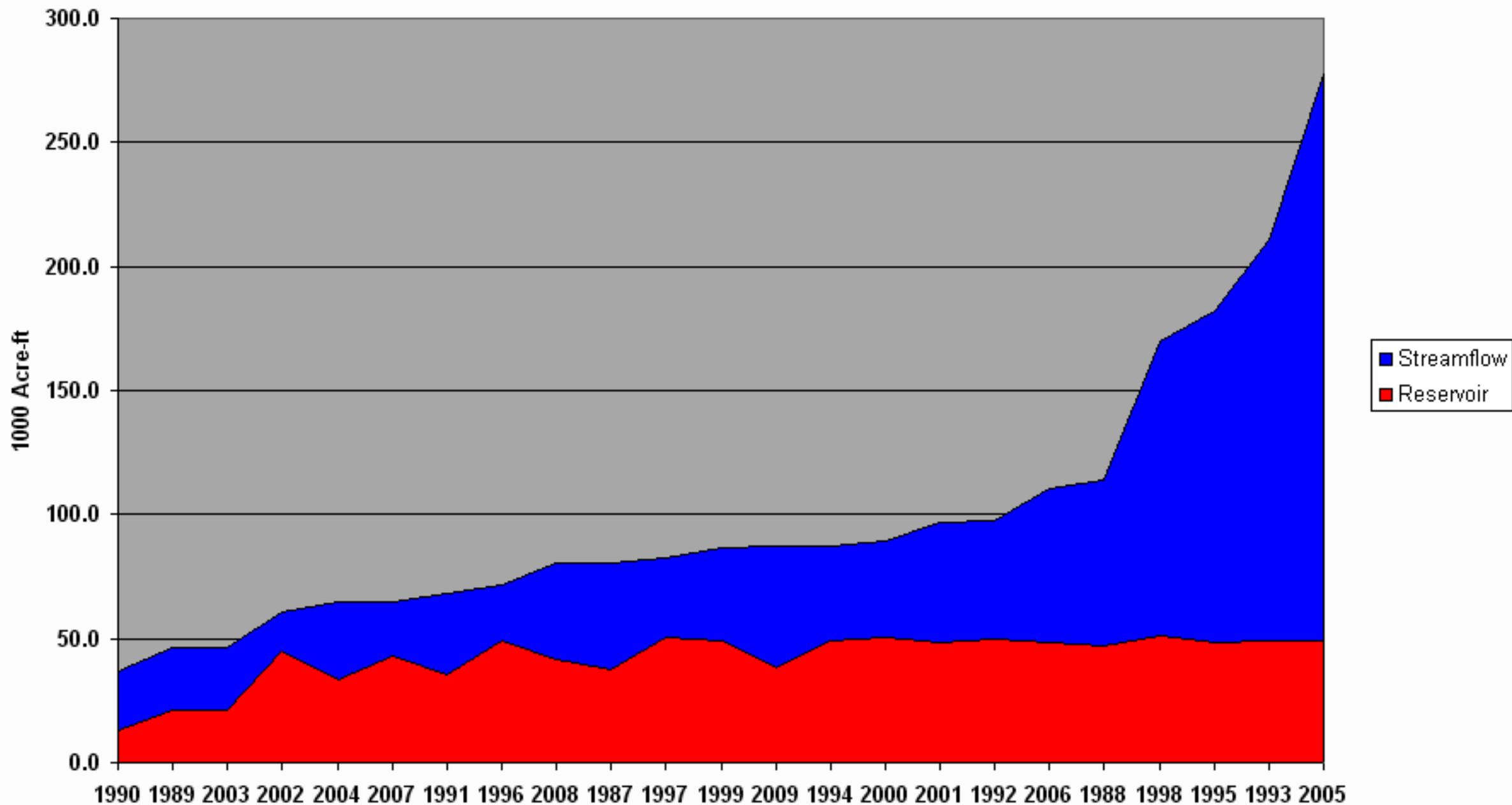
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

VIRGIN RIVER BASIN SWSI

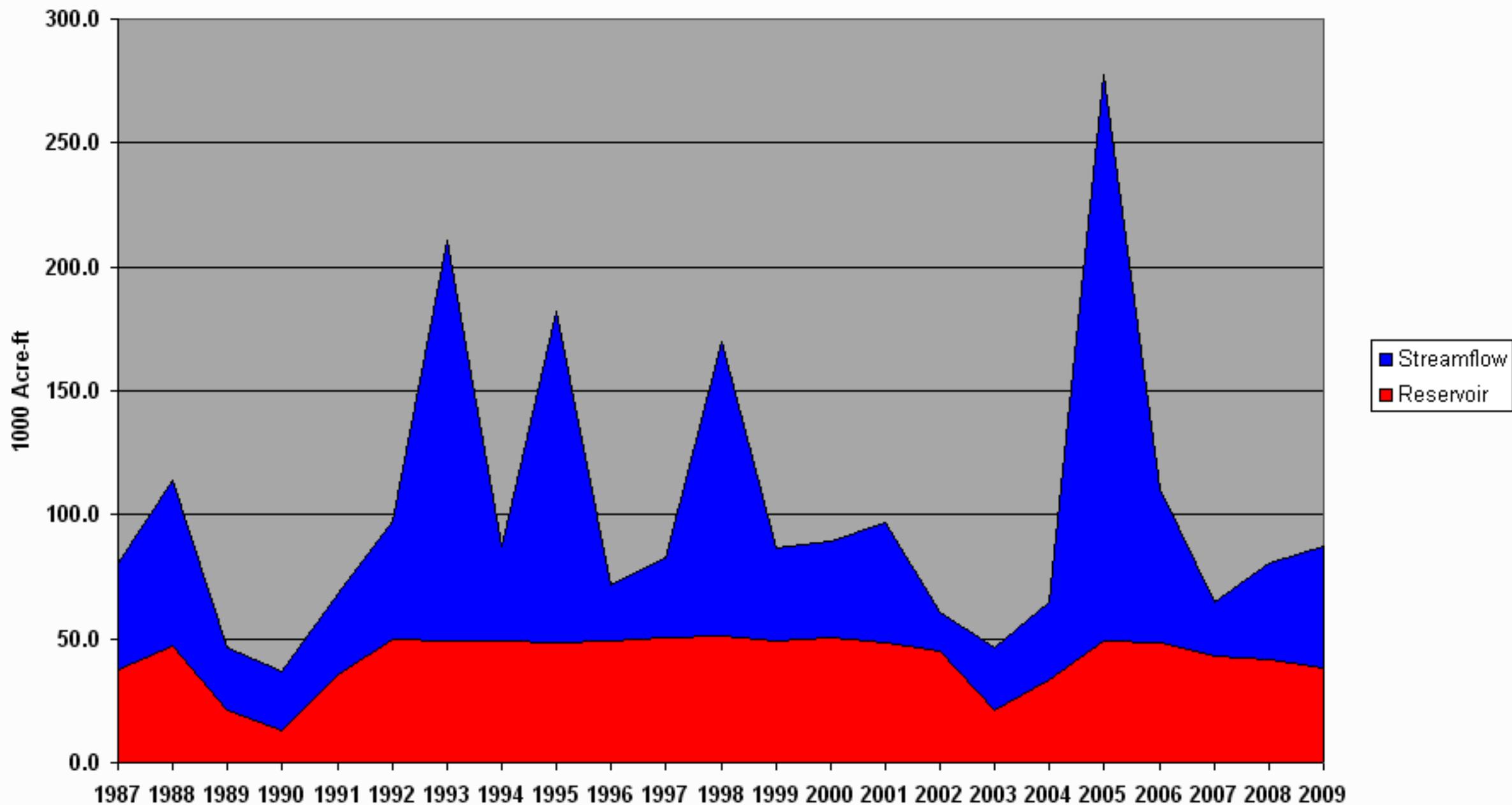
April 1

#	Year	EOM March	Apr-Jul	Reservoir +	Probability	SWSI
		Reservoir	Streamflow	Streamflow		
		KAF	KAF	KAF		
1	1990	13.2	23.6	36.8	4	-3.80
2	1989	20.9	25.2	46.1	9	-3.44
3	2003	21.0	25.2	46.1	13	-3.08
4	2002	44.9	15.7	60.6	17	-2.72
5	2004	33.2	31.8	65.0	22	-2.36
6	2007	43.2	21.9	65.1	26	-1.99
7	1991	35.8	32.4	68.2	30	-1.63
8	1996	49.0	22.7	71.7	35	-1.27
9	2008	41.6	38.9	80.5	39	-0.91
10	1987	37.8	42.8	80.6	43	-0.54
11	1997	50.6	32.1	82.7	48	-0.18
12	1999	49.1	37.8	86.9	52	0.18
<b>13</b>	<b>2009</b>	<b>38.0</b>	<b>49.0</b>	<b>87.0</b>	<b>57</b>	<b>0.54</b>
14	1994	49.2	38.2	87.4	61	0.91
15	2000	50.3	38.7	89.0	65	1.27
16	2001	48.1	48.4	96.5	70	1.63
17	1992	49.8	47.4	97.2	74	1.99
18	2006	48.6	61.8	110.4	78	2.36
19	1988	46.9	67.1	114.1	83	2.72
20	1998	50.9	119.0	169.9	87	3.08
21	1995	48.6	133.4	182.1	91	3.44
22	1993	48.8	161.8	210.6	96	3.80
23	2005	49.1	228.2	277.3	100	4.17

# Virgin River Surface Water Supply Index April

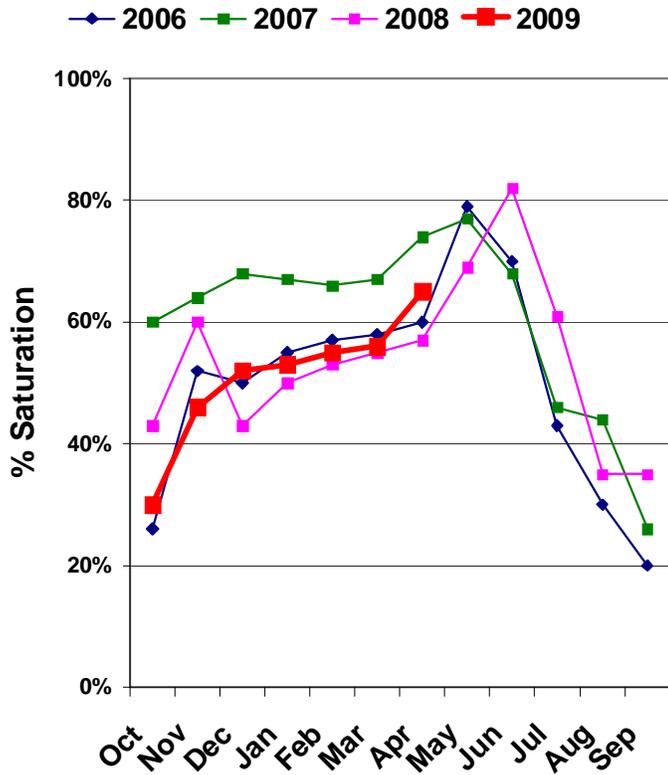


# Virgin River Surface Water Supply Index April

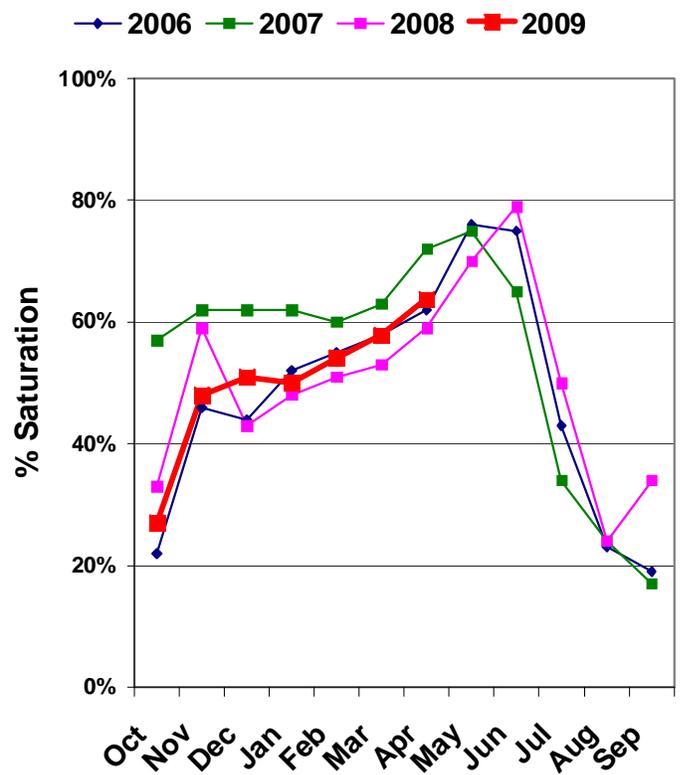


# Watershed Soil Moisture Charts for Utah Water Supply

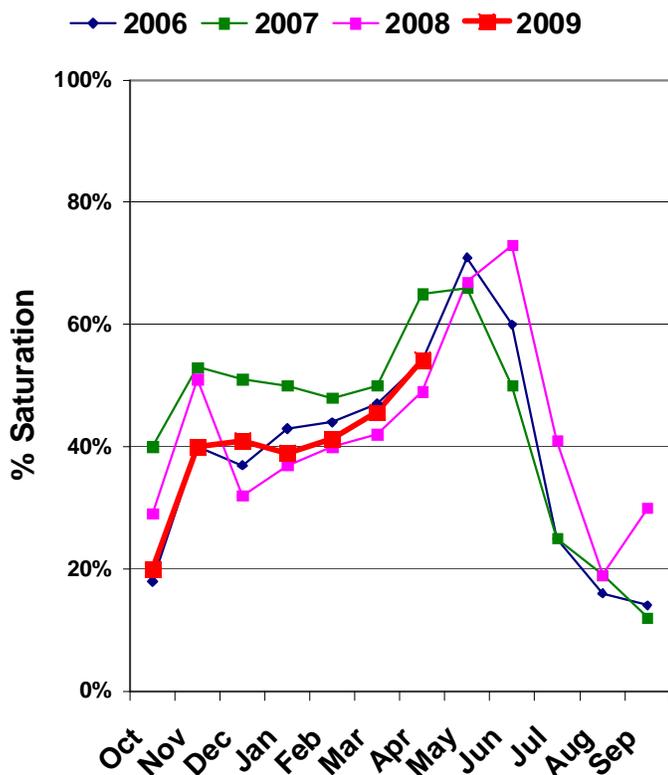
## Bear River Soil Moisture



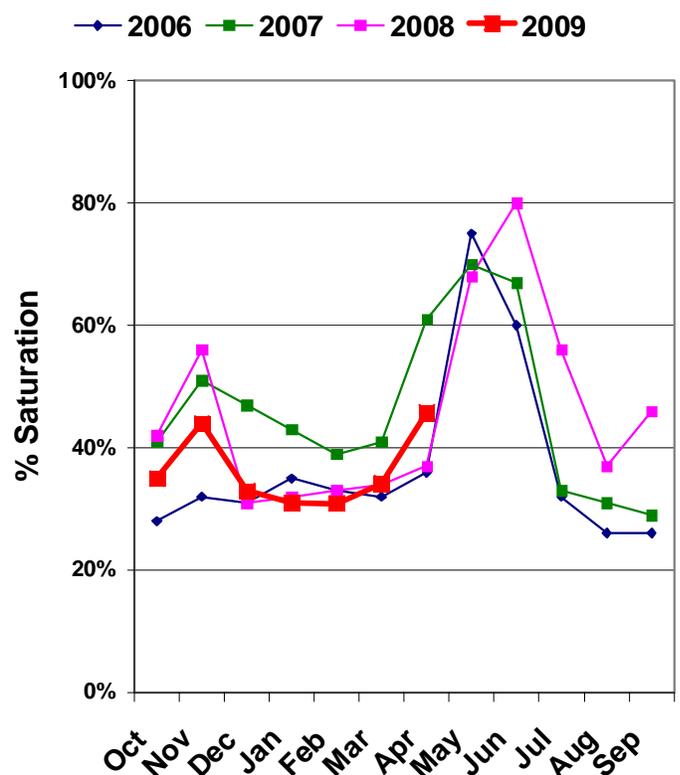
## Weber River Soil Moisture



## Jordan/Provo River Soil Moisture



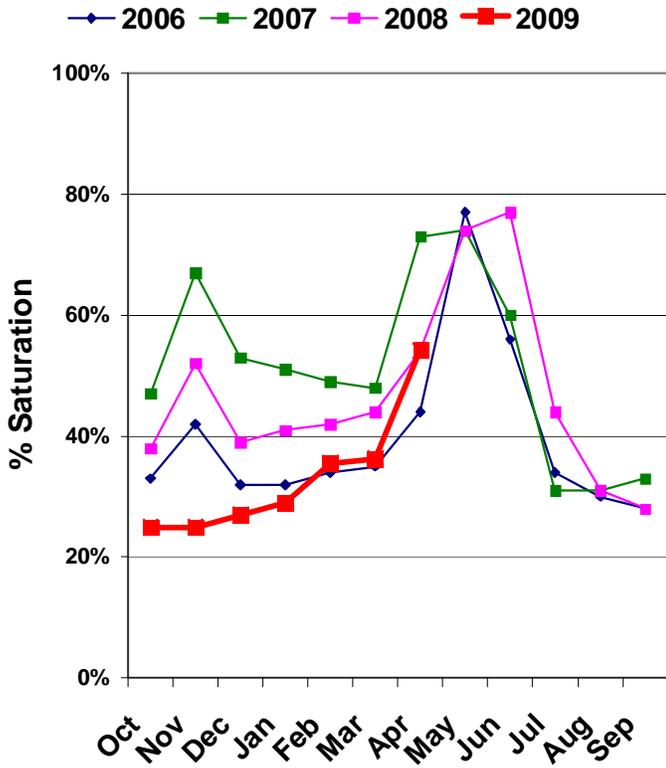
## Uintah Basin Soil Moisture



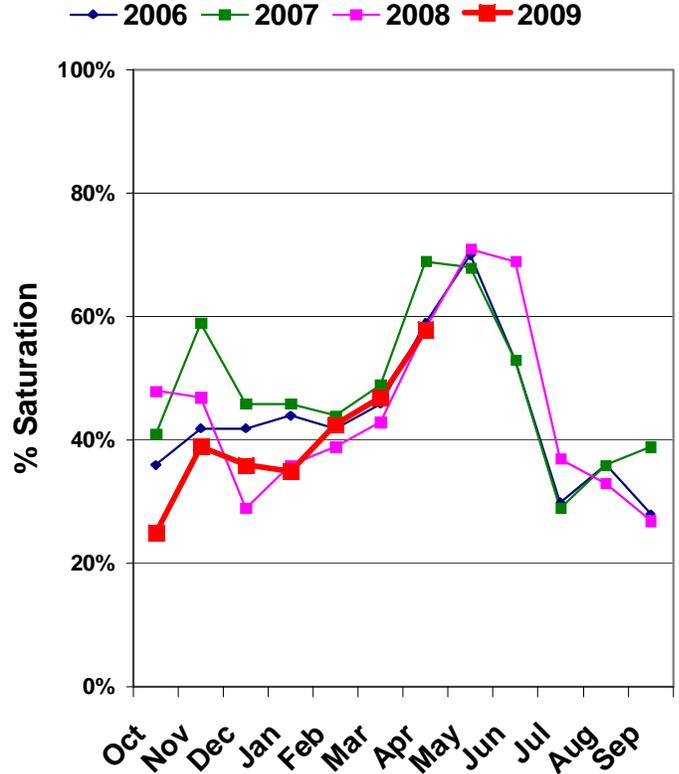
Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content.

# Watershed Soil Moisture Charts for Utah Water Supply

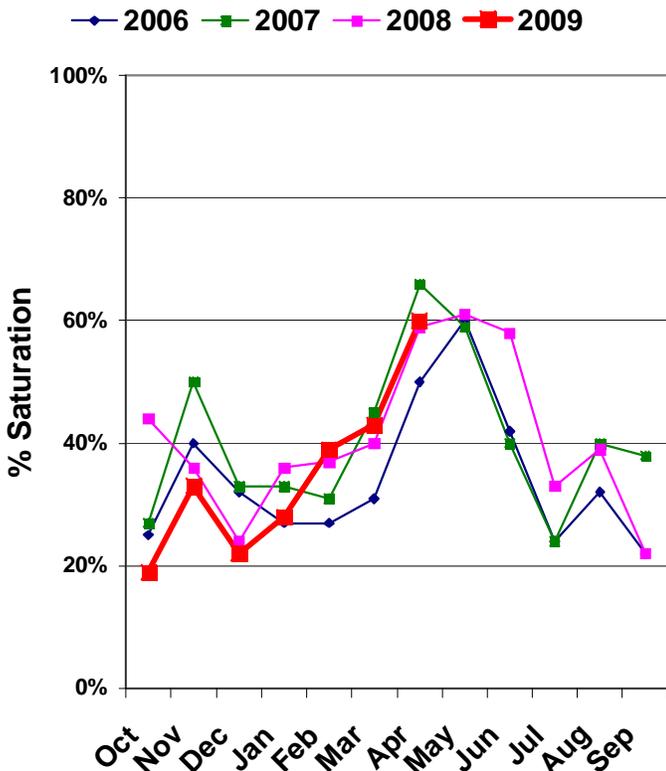
## South East Utah Soil Moisture



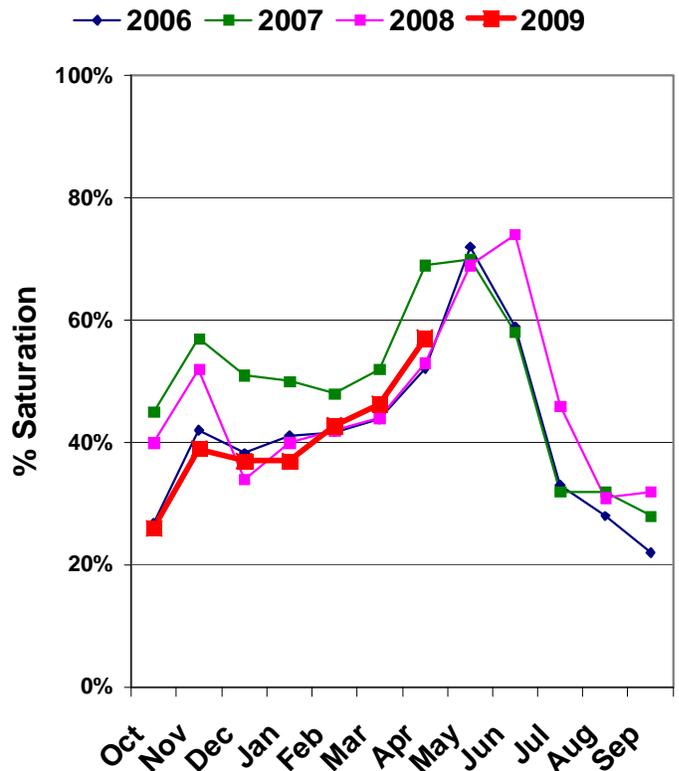
## Sevier/Beaver River Soil Moisture



## Southwest Utah Soil Moisture



## Statewide 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.

# Surface Water Supply Index

March 1, 2009			Years with
Basin or Region	SWSI	Percentile	Similar SWSI
Bear River	-3.14	12%	32,43,92,08
Ogden River	0.38	55%	78,79,85,96
Weber River	-1.12	37%	79,87,94,08
Provo	0.13	52%	07,08,05,96
West Uintah Basin	-0.21	48%	73,01,74,72
East Uintah Basin	-2.02	26%	03,81,07,91
Price River	-1.54	32%	94,07,93,08
Joe's Valley	-0.38	45%	07,04,01,00
Ferron Creek	-2.85	16%	90,89,92,81
Moab	-1.27	35%	01,00,06,99
Upper Sevier River	-1.48	32%	68,03,52,08
Lower Sevier River	-0.25	47%	01,68,71,07
Beaver River	0.60	57%	81,78,06,75
Virgin River	0.54	57%	97,99,94,00

SWSI Scale: -4 to 4	Percentile: 0 - 100%
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## 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/](http://www.ut.nrcs.usda.gov/snow/) on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

## S N O W C O U R S E D A T A

APRIL 2009

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	4/01	0	.0	10.2	7.1
ALTA CENTRAL	8800	3/31	117	37.7	39.5	37.3
BEAVER DAMS SNOTEL	8000	4/01	17	5.4	10.7	10.5
BEAVER DIVIDE SNOTEL	8280	4/01	34	9.3	13.9	10.6
BEN LOMOND PK SNOTEL	8000	4/01	110	46.6	43.2	41.5
BEN LOMOND TR SNOTEL	6000	4/01	56	18.9	29.1	19.5
BEVAN'S CABIN	6450	3/30	33	8.2	14.3	11.6
BIG FLAT SNOTEL	10290	4/01	69	21.2	18.3	19.0
BIRCH CROSSING	8100	3/27	16	4.9	7.8	5.4
BLACK FLAT-U.M. CK S	9400	4/01	25	7.9	11.6	10.3
BLACK'S FORK GS-EF	9340	3/28	25	6.6	10.9	9.7
BLACK'S FORK JUNCTN	8930	3/28	25	6.3	11.0	9.3
BOX CREEK SNOTEL	9800	4/01	45	13.8	14.8	13.7
BRIAN HEAD	10000	3/27	51	17.7	20.3	21.1
BRIGHTON SNOTEL	8750	4/01	60	21.5	31.2	25.4
BRIGHTON CABIN	8700	3/27	73	23.5	31.6	27.8
BROWN DUCK SNOTEL	10600	4/01	62	15.4	19.5	18.2
BRYCE CANYON	8000	3/30	2	.4e	2.1	3.8
BUCK FLAT SNOTEL	9800	4/01	54	16.4	18.4	18.7
BUCK PASTURE	9700	3/28	63	13.1	15.6	16.9
BUCKBOARD FLAT	9000	3/30	25	8.6	16.5	12.4
BUG LAKE SNOTEL	7950	4/01	63	19.0	18.3	21.2
BURT'S-MILLER RANCH	7900	3/28	11	2.3	6.8	4.9
CAMP JACKSON SNOTEL	8600	4/01	18	8.5	22.8	13.6
CASCADE MOUNTAIN SNO	7770	4/01	64	21.0	20.6	-
CASTLE VALLEY SNOTEL	9580	4/01	40	13.6	16.6	14.6
CHALK CK #1 SNOTEL	9100	4/01	75	24.0	26.8	24.9
CHALK CK #2 SNOTEL	8200	4/01	55	18.0	19.1	16.2
CHALK CREEK #3	7500	3/28	22	5.3	9.9	6.9
CHEPETA SNOTEL	10300	4/01	43	12.9	14.6	14.2
CLAYTON SPRINGS SNTL	10000	4/01	30	10.6	10.1	-
CLEAR CK RIDG #1 SNT	9200	4/01	50	18.3	22.5	19.7
CLEAR CK RIDG #2 SNT	8000	4/01	44	14.1	16.6	14.7
CORRAL	8200	3/28	12	3.7	15.1	9.0
CURRENT CREEK SNOTEL	8000	4/01	19	6.4	13.6	10.2
DANIELS-STRAWBERRY S	8000	4/01	42	15.6	21.7	16.7
DILL'S CAMP SNOTEL	9200	4/01	38	11.0	16.4	14.9
DONKEY RESERVOIR SNO	9800	4/01	23	5.7	7.4	8.7
DRY BREAD POND SNTL	8350	4/01	63	20.0	24.4	22.6
DRY FORK SNOTEL	7160	4/01	57	15.5	15.3	18.2
EAST WILLOW CREEK SN	8250	4/01	20	6.4	12.2	8.3
FARMINGTON U. SNOTEL	8000	4/01	112	43.8	37.7	34.3
FARMINGTON L. SNOTEL	6780	4/01	67	24.2	25.9	-
FARNSWORTH LK SNOTEL	9600	4/01	71	18.1	24.1	19.6
FISH LAKE	8700	3/27	8	1.4	11.0	8.8
FIVE POINTS LAKE SNO	10920	4/01	54	15.1	19.2	17.7
G.B.R.C. HEADQUARTER	8700	3/28	39	12.6	16.5	16.6
G.B.R.C. MEADOWS	10000	3/28	69	21.2	25.9	24.0
GARDEN CITY SUMMIT	7600	3/27	42	11.3	15.5	16.2
GARDNER PEAK SNOTEL	8350	4/01	35	14.6	13.8	-
GEORGE CREEK	8840	3/27	77	22.2	19.6	22.3
GOOSEBERRY R.S.	8400	3/27	29	9.1	14.2	12.0
GOOSEBERRY R.S. SNTL	7900	4/01	16	6.1	11.1	8.7
GUTZ PEAK SNOTEL	6820	4/01	19	9.4	10.8	-
HARDSCRABBLE SNOTEL	7250	4/01	54	17.7	22.7	20.2
HARRIS FLAT SNOTEL	7700	4/01	12	6.9	8.8	6.7
HAYDEN FORK SNOTEL	9100	4/01	53	15.8	20.5	16.6
HENRY'S FORK	10000	3/28	43	8.3	12.8	14.0
HEWINTA SNOTEL	9500	4/01	39	9.3	16.2	12.1
HICKERSON PARK SNTL	9100	4/01	20	4.2	7.8	7.7
HIDDEN SPRINGS	5500	3/26	20	3.2	6.0	2.4
HOBBLE CREEK SUMMIT	7420	3/28	35	12.4	17.1	13.9
HOLE-IN-ROCK SNOTEL	9150	4/01	22	4.7	6.9	7.2
HORSE RIDGE SNOTEL	8260	4/01	63	21.1	24.3	23.9
HUNTINGTON-HORSESHOE	9800	3/28	61	21.5	23.2	24.0
INDIAN CANYON SNOTEL	9100	4/01	30	9.1	16.1	11.9
JOHNSON VALLEY	8850	3/27	12	2.2	9.7	7.1
JONES CORRAL SNOTEL	9750	4/01	40	10.9	11.0	-
KILFOIL CREEK	7300	3/27	46	13.6	19.6	14.4
KILLYON CANYON	6300	3/26	19	2.6	7.6	5.6

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
KIMBERLY MINE SNOTEL	9300	4/01	48	17.3	19.1	16.7
KING'S CABIN SNOTEL	8730	4/01	26	8.3	13.0	11.3
KLONDIKE NARROWS	7400	3/27	53	16.2	22.6	19.2
KOLOB SNOTEL	9250	4/01	59	25.4	25.5	23.9
LAKEFORK #1 SNOTEL	10100	4/01	34	10.7	12.6	12.7
LAKEFORK BASIN SNTL	10900	4/01	66	19.7	20.5	20.7
LAKEFORK MOUNTAIN #3	8400	3/28	7	2.2	9.0	6.0
LAMBS CANYON	7400	3/27	48	13.8	18.7	16.1
LASAL MOUNTAIN LOWER	8800	3/31	12	3.2	8.8	9.8
LASAL MOUNTAIN SNTL	9850	4/01	24	9.8	11.2	13.5
LIGHTNING RIDGE SNTL	8220	4/01	60	19.1	23.3	-
LILY LAKE SNOTEL	9050	4/01	47	13.9	15.5	13.5
LITTLE BEAR LOWER	6000	3/27	38	11.1	17.0	9.5
LITTLE BEAR SNOTEL	6550	4/01	33	10.4	15.4	12.3
LITTLE GRASSY SNOTEL	6100	4/01	0	.0	0.0	.7
LONG FLAT SNOTEL	8000	4/01	4	1.8	4.0	7.5
LONG VALLEY JCT. SNT	7500	4/01	0	.0	1.1	3.2
LOOKOUT PEAK SNOTEL	8200	4/01	88	30.3	29.5	24.3
LOST CREEK RESERVOIR	6130	3/27	5	.8	11.4	2.0
LOUIS MEADOW SNOTEL	6700	4/01	59	21.3	23.0	-
MAMMOTH-COTTONWD SNT	8800	4/01	48	17.2	22.1	21.0
MERCHANT VALLEY SNTL	8750	4/01	54	17.5	14.5	13.4
MIDDLE CANYON	7000	3/30	48	12.5	16.5	14.0
MIDWAY VALLEY SNOTEL	9800	4/01	68	23.8	25.9	25.3
MILL CREEK	6950	3/27	65	19.3	22.6	20.6
MILL-D NORTH SNOTEL	8960	4/01	70	26.1	28.4	25.5
MILL-D SOUTH FORK	7400	3/27	54	13.5	23.1	19.1
MINING FORK SNOTEL	8000	4/01	61	19.3	21.6	21.0
MONTE CRISTO SNOTEL	8960	4/01	85	26.7	29.4	30.1
MOSBY MTN. SNOTEL	9500	4/01	31	9.6	13.1	12.1
MT. BALDY R.S.	9500	3/28	63	19.6	23.1	24.1
MUD CREEK #2	8600	3/28	39	11.4	18.7	13.5
OAK CREEK	7760	3/27	37	11.4	12.4	12.0
PANGUITCH LAKE R.S.	8200	3/28	8	3.2	6.5	4.0
PARLEY'S CANYON SNTL	7500	4/01	52	15.7	19.4	17.1
PARRISH CREEK SNOTEL	7740	4/01	90	29.8	28.4	-
PAYSON R.S. SNOTEL	8050	4/01	48	16.6	22.2	20.6
PICKLE KEG SNOTEL	9600	4/01	45	14.5	18.5	17.9
PINE CREEK SNOTEL	8800	4/01	55	19.3	28.1	24.8
RED PINE RIDGE SNTL	9200	4/01	44	13.6	18.8	17.3
REDDEN MINE LOWER	8500	3/28	52	17.4	22.2	17.8
REES'S FLAT	7300	3/27	25	8.3	14.0	12.6
ROCK CREEK SNOTEL	7900	4/01	21	6.2	11.0	8.1
ROCKY BN-SETTLEMT SN	8900	4/01	60	21.5	24.1	26.5
SEELEY CREEK SNOTEL	10000	4/01	31	10.9	11.0	15.3
SMITH MOREHOUSE SNTL	7600	4/01	47	15.2	15.9	14.0
SNOWBIRD SNOTEL	9700	4/01	114	42.5	49.9	35.8
SPIRIT LAKE	10300	3/28	30	7.6	11.2	13.8
SQUAW SPRINGS	9300	3/27	23	6.1	8.9	7.1
STEEL CREEK PARK SNO	10100	4/01	58	12.3	15.8	15.9
STILLWATER CAMP	8550	3/28	27	7.6	13.0	10.5
STRAWBERRY DIVIDE SN	8400	4/01	48	14.1	19.0	18.7
SUSC RANCH	8200	3/31	12	4.2	9.7	7.0
TALL POLES	8800	3/27	39	12.8	15.8	14.7
TEMPLE FORK SNOTEL	7410	4/01	64	19.5	19.2	-
THAYNES CANYON SNTL	9200	4/01	65	23.0	30.8	24.9
THISTLE FLAT	8500	3/28	42	13.6	18.3	16.9
TIMBERLINE	9100	3/28	20	7.5	17.4	14.7
TIMBERLINE SNOTEL	8680	4/01	14	6.1	15.8	-
TIMPANOGOS DIVIDE SN	8140	4/01	60	23.6	26.7	24.0
TONY GROVE LK SNOTEL	8400	4/01	115	39.2	39.9	37.7
TONY GROVE R.S.	6250	3/27	36	10.3	15.6	11.1
TRIAL LAKE	9960	3/28	66	21.1	25.6	24.2
TRIAL LAKE SNOTEL	9960	4/01	75	23.5	22.4	25.3
TROUT CREEK SNOTEL	9400	4/01	27	7.9	12.6	11.2
UPPER JOES VALLEY	8900	3/28	24	6.2	12.4	9.9
USU DOC DANIEL SNTL	8270	4/01	107	31.3	29.6	-
VERNON CREEK SNOTEL	7500	4/01	32	11.7	14.2	11.7
VIPONT	7670	3/27	39	12.6	19.6	15.4
WEBSTER FLAT SNOTEL	9200	4/01	31	15.1	16.2	15.9
WHITE RIVER #1 SNTL	8550	4/01	31	9.5	15.6	13.5
WHITE RIVER #3	7400	3/28	22	6.8	11.3	6.1
WIDTSOE #3 SNOTEL	9500	4/01	20	8.6	8.8	12.8
WRIGLEY CREEK	9000	3/28	30	8.8	13.5	11.3
YANKEE RESERVOIR	8700	3/27	33	9.8	10.3	10.0

*Issued by*

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YOU MAY OBTAIN THIS PRODUCT AS WELL AS CURRENT SNOW, PRECIPITATION, TEMPERATURE AND SOIL MOISTURE, RESERVOIR, SURFACE WATER SUPPLY INDEX, AND OTHER DATA BY VISITING OUR WEB SITE @:

<http://www.ut.nrcs.usda.gov/snow/>

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



**Utah Water Supply  
Outlook Report**  
Natural Resources Conservation Service  
Salt Lake City, UT





# Utah Water Supply Outlook Report

May, 2009



Beau Uriona at Timberline snow course, April 27, 2009. Photo by Randy Julander

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

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**Internet Address: <http://www.ut.nrcs.usda.gov/snow/>**

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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

May 1, 2009

## SUMMARY

April was a fantastic month for water supply in most areas of Utah – cool and wet. The combination of cool and wet does several things: 1) it adds to snowpacks and slows melt, 2) it keeps soils wet and loss rates to a minimum and 3) it delays and decreases water use. Cool, wet Aprils serve on balance to increase water supplies and we had a nice, cool, wet April. The Bear, Weber and Provo watersheds had melt rates near 70% of average due to the cooler, wetter conditions. The Uintas, SE and SW Utah had melt rates near average and the Sevier was slightly below normal. Currently snowpacks on the Bear, Weber and Provo watersheds are near average and below average on the Uintas, SE, SW Utah and the Sevier River areas. Snow stations in the Moab and Monticello area have melted out and streamflow there will rapidly decline. April precipitation was above to much above normal (122%-160%) in all areas of Utah except the SW portion which had average accumulations. This brings the year to date precipitation to near normal in all areas of the State. Current soil moisture saturation levels in runoff producing areas are: Bear – 74%, Weber – 74%, Provo – 75%, Uintah Basin – 75%, SE Utah – 75%, Sevier – 71% and SW Utah – 69%, up substantially from last month. Drier soils typically mean less runoff from snowmelt. Reservoir storage is currently at 70% of capacity statewide compared to 61% last year. General water supply conditions are near average in northern Utah and the Virgin and near to below average in central Utah. Streamflow forecasts for May-July range from 18% for South Creek above Lloyd's Reservoir near Monticello to 125% of average on South Willow Creek near Grantsville. Surface Water Supply Indices range from 17% in the Moab area to 85% for the Weber River.

## SNOWPACK

May first snowpacks as measured by the NRCS SNOTEL system are as follows: Bear - 99%, Weber - 108%, Provo - 104%, Uintas - 75%, southeast Utah - 64%, Sevier - 86%, southwest Utah - 66% and the statewide figure is 93% of average. Although the time frame is short, climate in May can yet impact runoff conditions – continued wet and cool will maximize runoff with dry and warm decreasing yields. Southern Utah is currently melting faster than normal with northern areas less than average.

## PRECIPITATION

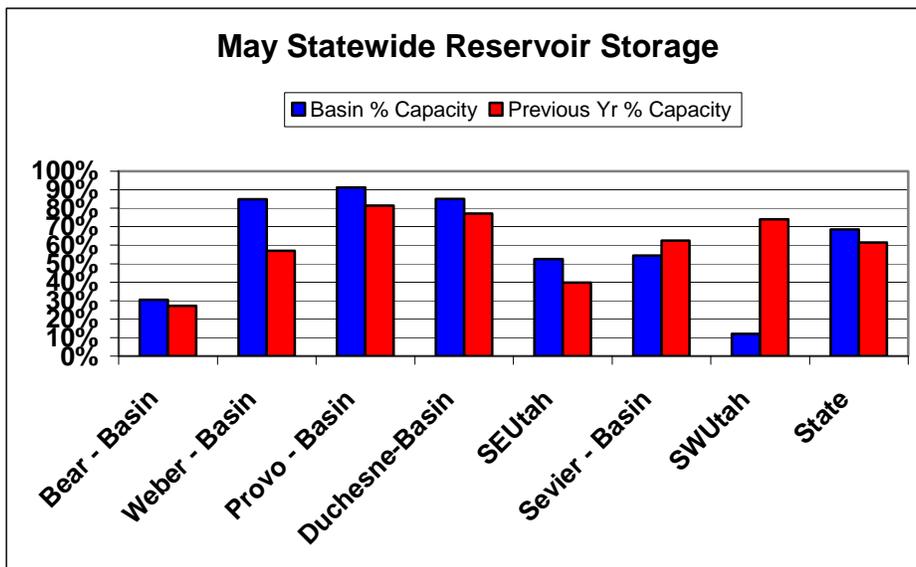
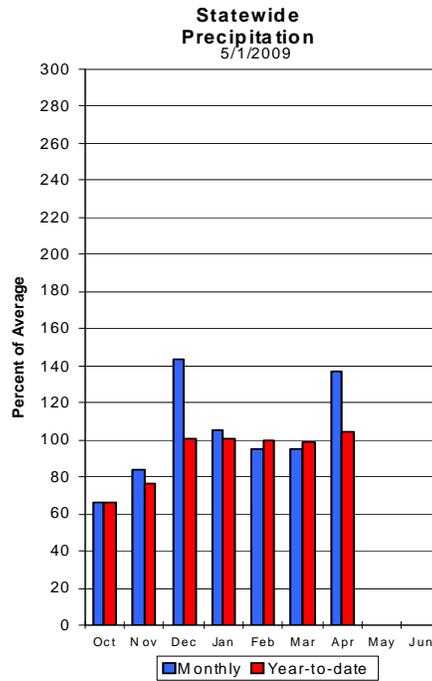
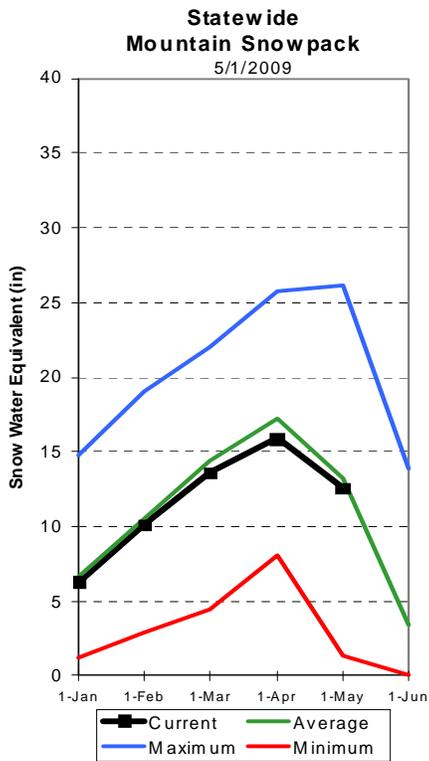
Mountain precipitation during April was: Bear – 122%, Weber – 148%, Provo – 160%, Uintas – 154%, SE Utah – 137%, Sevier – 115%, SW Utah – 105% and the statewide figure is 137% of average. This brings the seasonal accumulation (Oct-April) to 104% of average statewide.

## RESERVOIRS

Storage in 41 of Utah's key irrigation reservoirs is at 70% of capacity up 9% compared to May of last year. The Sevier Watershed is the only area of the state that currently has less reservoir storage than last year. Overall, most small and medium sized reservoirs should easily fill. Reservoir such as Bear Lake will not.

## STREAMFLOW

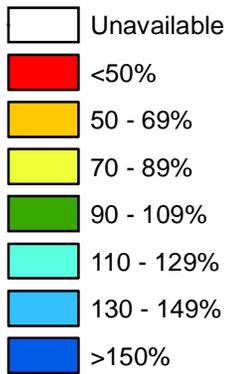
Snowmelt streamflows are expected to have a wide range from much below average to above average across the state of Utah this year. Forecast streamflows range from 18% for South Creek above Lloyd's Reservoir near Monticello to 125% of average on South Willow Creek near Grantsville.



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

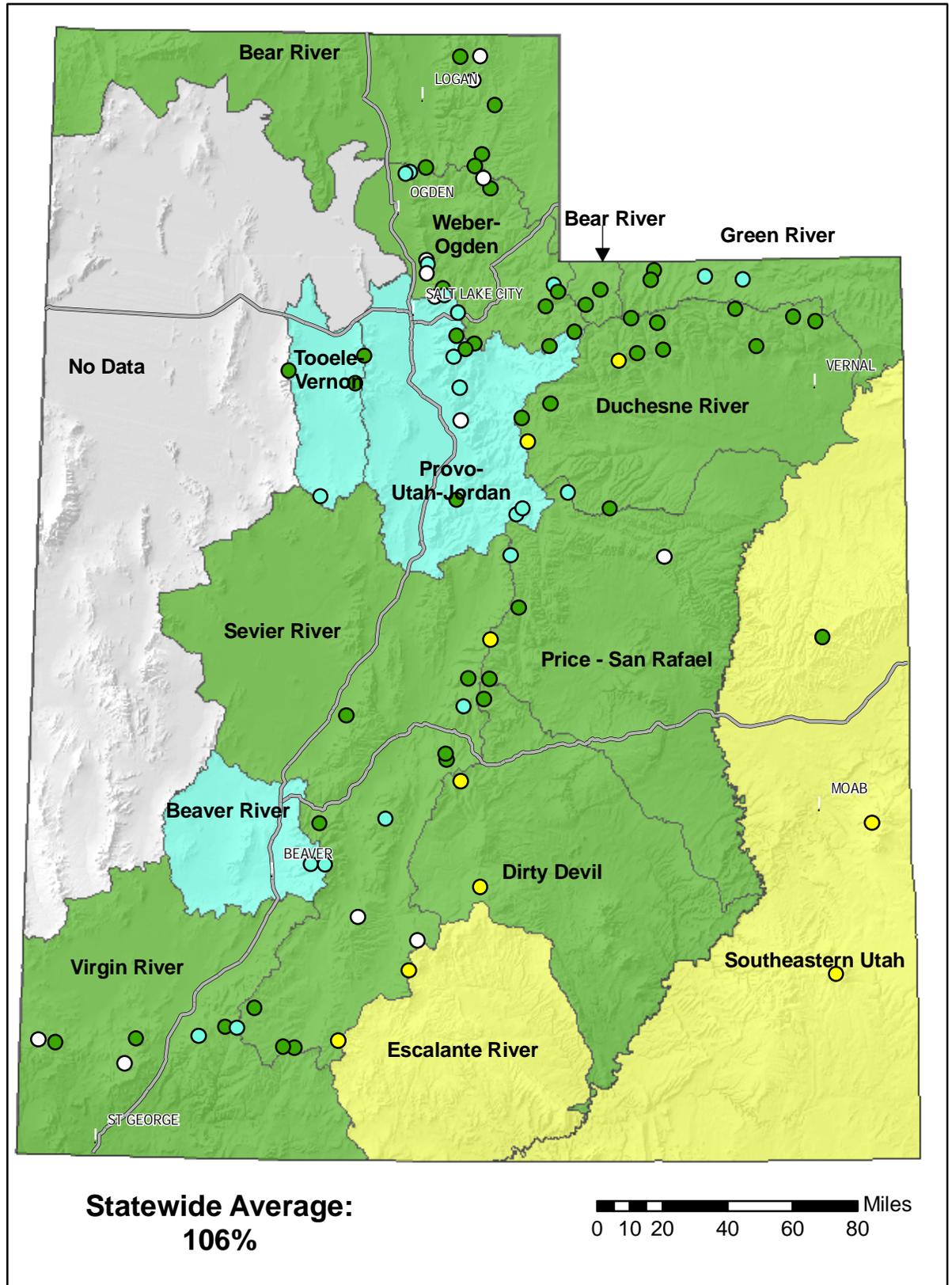
May 1, 2009

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



\* 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).

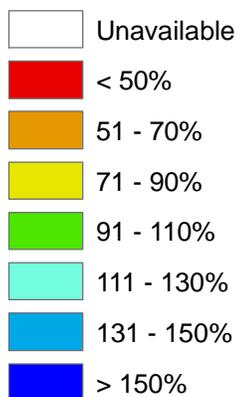
Prepared by the USDA/NRCS Utah DCO  
Salt Lake City, Utah <http://www.ut.nrcs.usda.gov/snow/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: Mike Bracco [michael.bricco@ut.usda.gov](mailto:michael.bricco@ut.usda.gov)

# Utah

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

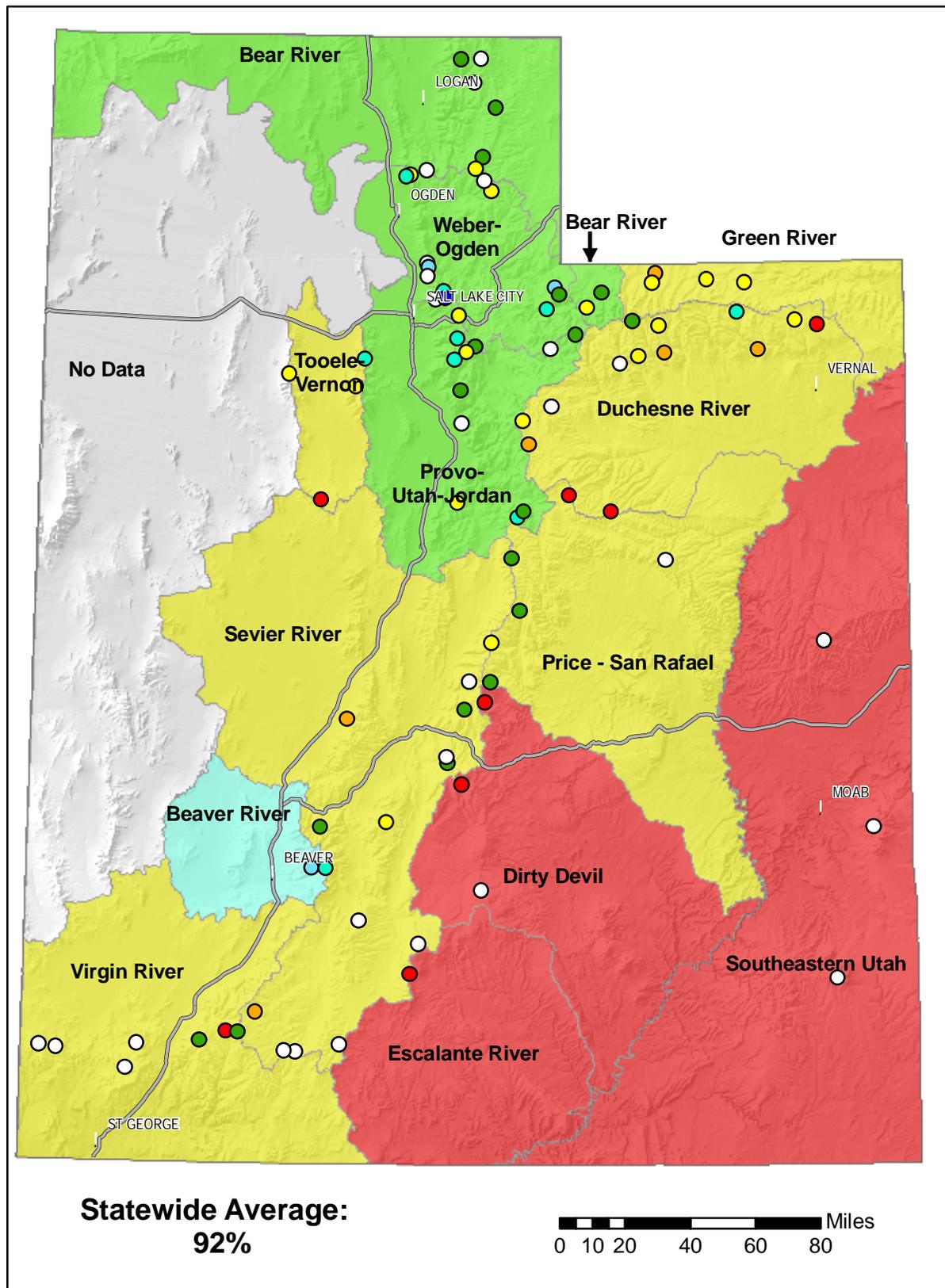
**May 1, 2009**

**Snow Water Equivalent (swe)  
Basin-Wide % of  
1971-2000 Normal**



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

**Provisional Data  
Subject to Revision**

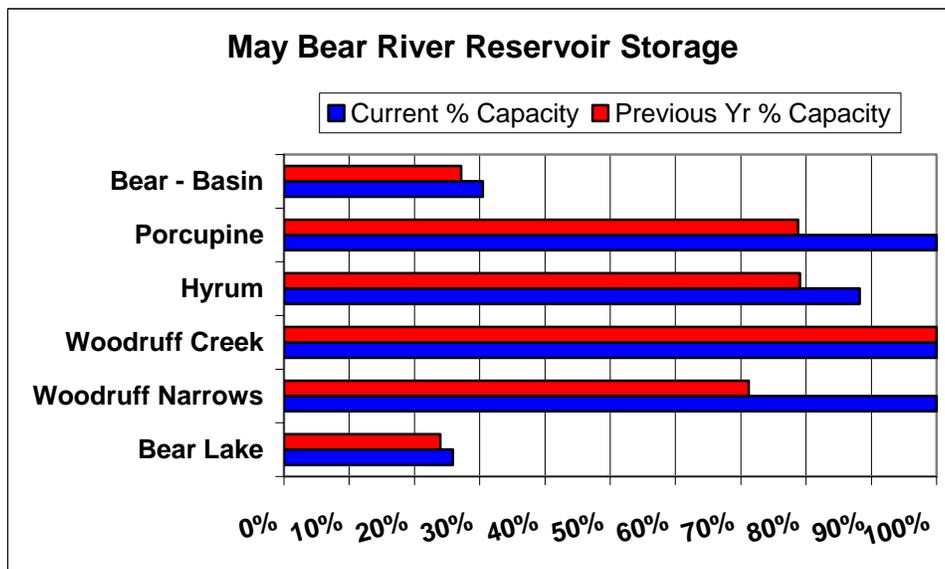
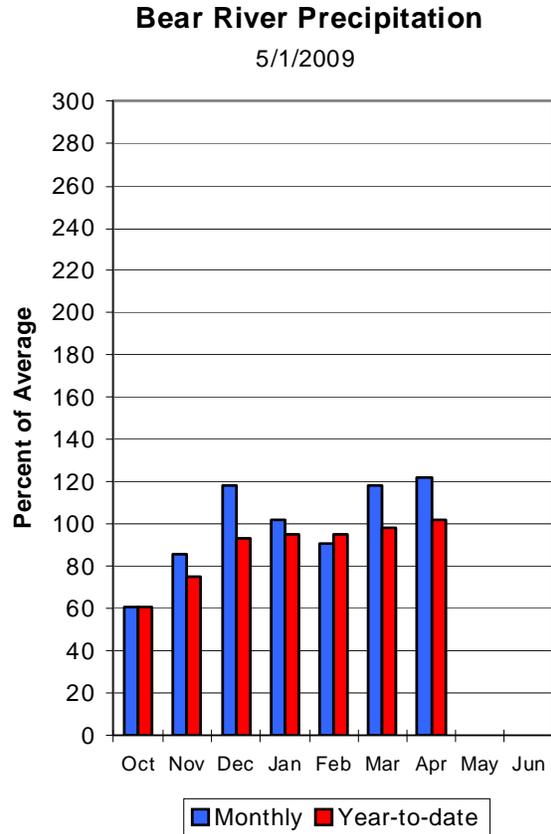
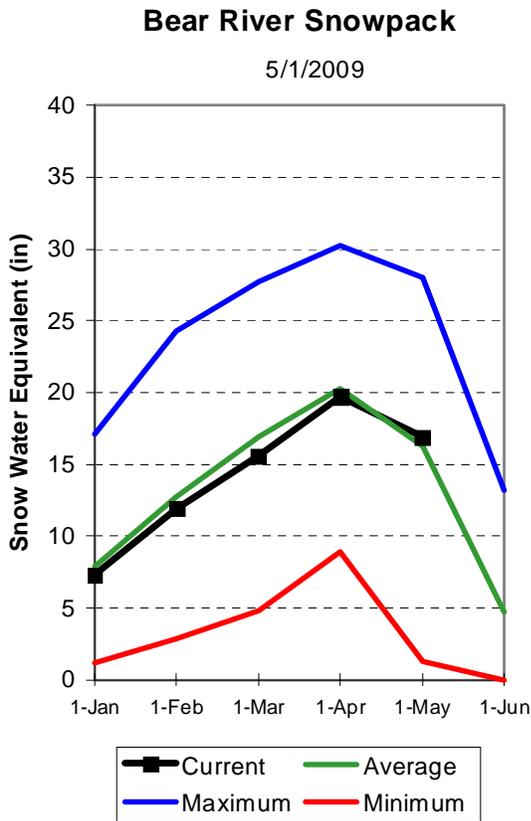


The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by the USDA/NRCS Utah DCO  
Salt Lake City, Utah: <http://www.ut.nrcs.usda.gov/snow/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: Mike Bracco [michael.bricco@ut.usda.gov](mailto:michael.bricco@ut.usda.gov)

## Bear River Basin May 1, 2009

Snowpacks on the Bear River Basin are average at 99% of normal, about 94% of last year. Individual sites range from 166% of normal at CCC Camp snow course to 0% at some lower elevation sites. April precipitation was above average at 122%, which brings the seasonal accumulation (Oct-April) to 102% of average. Soil moisture levels in runoff producing areas are at 74% of saturation in the upper 2 feet of soil compared to 69% last year. Forecast streamflows (May-July) range from below to near average (89%-106%) volumes for this spring and summer. Reservoir storage is low at 26% of capacity, which is up 2% from this time last year. The Surface Water Supply Index is at 21% for the Bear River Basin, in other words, 79% of years have had more total water available. Water supply conditions are much below normal due to low reservoir storage in Bear Lake.



BEAR RIVER BASIN  
Streamflow Forecasts - May 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Bear R nr UT-WY State Line	APR-JUL	92	106	115	102	124	138	113
	MAY-JUL	86	99	107	100	115	128	107
Bear River ab Reservoir nr Woodruff	APR-JUL	101	119	132	97	145	163	136
	MAY-JUL	87	104	116	100	128	145	116
Big Creek nr Randolph	APR-JUL	4.00	4.50	4.80	98	5.10	5.60	4.90
	MAY-JUL	1.94	3.20	4.30	100	5.50	7.60	4.30
Smiths Fork nr Border	APR-JUL	98	103	106	103	109	114	103
	MAY-JUL	90	95	98	103	101	106	95
Bear River at Stewart Dam	APR-JUL	135	163	183	78	204	238	234
	MAY-JUL	111	143	165	89	187	219	186
Little Bear at Paradise, UT	APR-JUL	37	47	53	115	59	69	46
	MAY-JUL	19.4	28	34	106	40	49	32
Logan nr Logan, UT	APR-JUL	100	114	123	98	132	146	126
	MAY-JUL	85	99	108	100	117	131	108
Blacksmith Fk nr Hyrum, UT	APR-JUL	31	44	53	110	62	75	48
	MAY-JUL	21	33	41	103	49	61	40

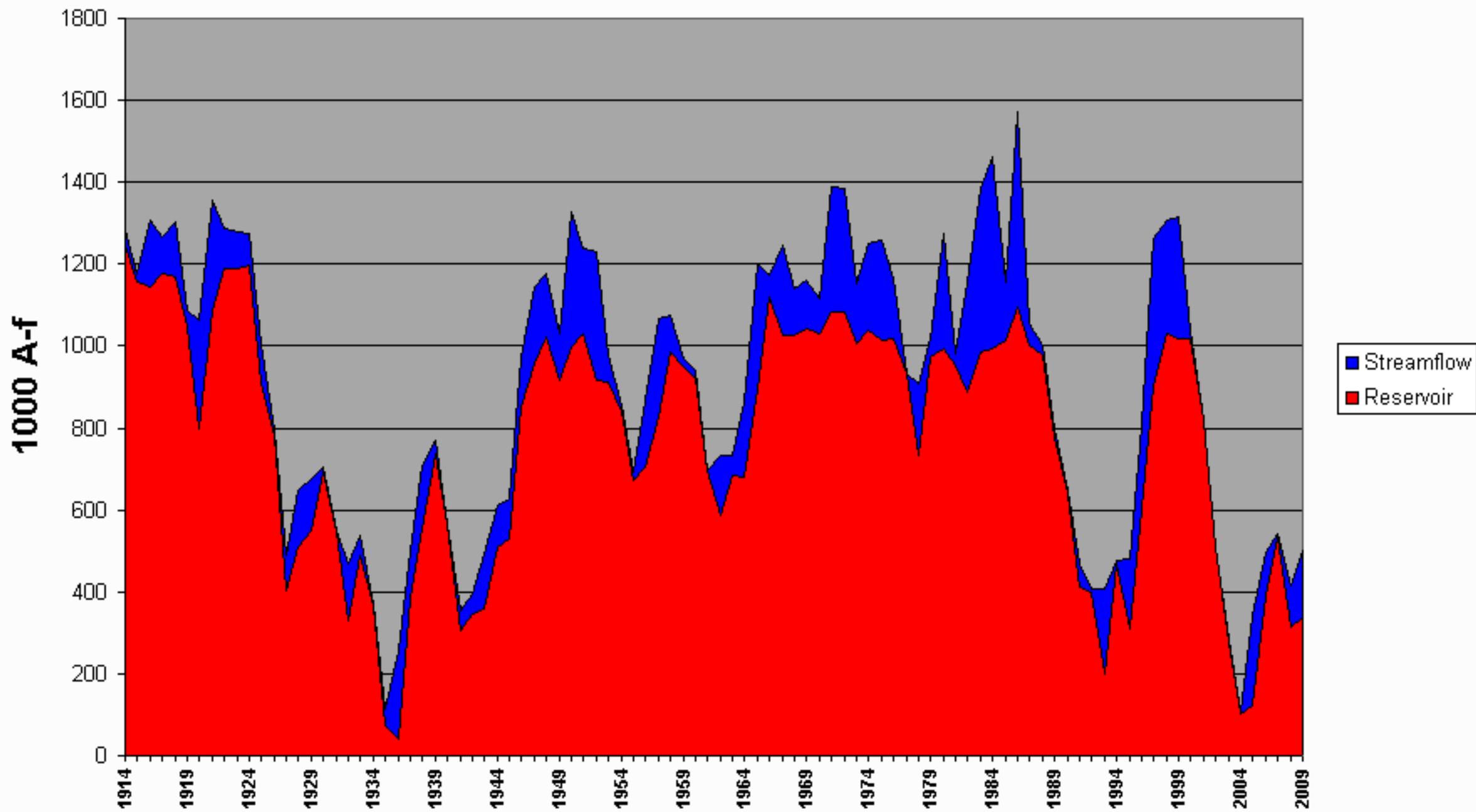
BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of April					BEAR RIVER BASIN Watershed Snowpack Analysis - May 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BEAR LAKE	1302.0	337.4	311.9	---	BEAR RIVER, UPPER	8	96	100
HYRUM	15.3	13.5	12.1	13.2	BEAR RIVER, LOWER	9	95	97
PORCUPINE	11.3	11.3	8.9	9.5	LOGAN RIVER	4	98	104
WOODRUFF NARROWS	57.3	57.3	40.8	38.5	RAFT RIVER	1	83	120
WOODRUFF CREEK	4.0	4.0	4.0	---	BEAR RIVER BASIN	17	94	99

\* 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.

# Bear River Surface Water Supply Index

## May



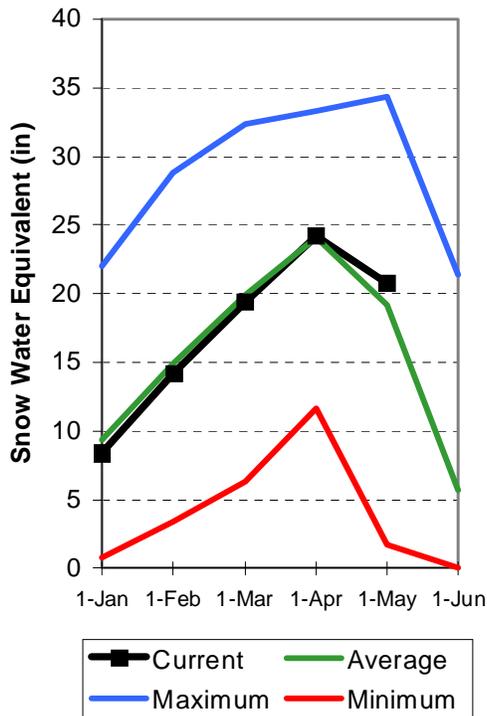
# Weber and Ogden River Basins

## May 1, 2009

Snowpacks on the Weber and Ogden Watersheds are average at 108%, about 89% of last year. Individual sites range from 144% to 0% of average. April precipitation was much above average at 148% bringing the seasonal accumulation (Oct-April) to 108% of average. Soil moisture levels in runoff producing areas are at 74% of saturation in the upper 2 feet of soil compared to 70% last year. Streamflow forecasts (May-July) range from 100% to 122% of average. Reservoir storage is at 85% of capacity, 28% higher than last year. The Surface Water Supply Index is at 85% for the Weber River and 70% for the Ogden River indicating that overall water supply conditions are above average.

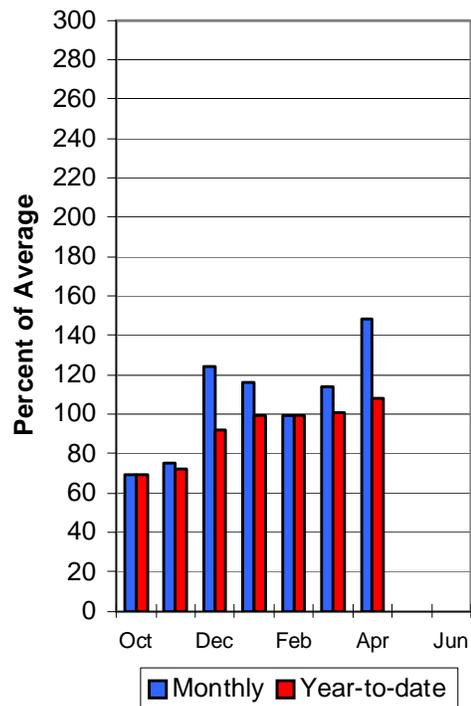
### Weber River Snowpack

5/1/2009

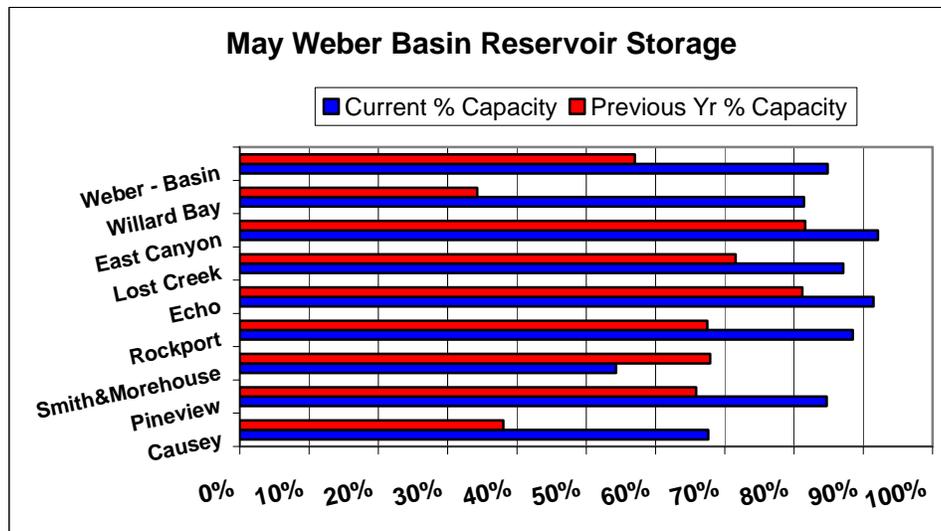


### Weber River Precipitation

5/1/2009



### May Weber Basin Reservoir Storage



WEBER & OGDEN WATERSHEDS in Utah  
Streamflow Forecasts - May 1, 2009

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ==== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * 50% (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
Smith & Morehouse Res inflow	APR-JUL	32	34	36	106	38	40	34		
	MAY-JUL	29	31	33	107	35	37	31		
Weber R nr Oakley, UT	APR-JUL	110	123	131	107	139	152	123		
	MAY-JUL	97	110	119	105	128	141	113		
Rockport Reservoir	APR-JUL	114	130	141	105	152	168	134		
	MAY-JUL	94	110	120	100	130	146	120		
Weber R nr Coalville, UT	APR-JUL	112	131	144	105	157	176	137		
	MAY-JUL	92	109	120	105	131	148	114		
Chalk Ck at Coalville, UT	APR-JUL	34	45	53	118	61	72	45		
	MAY-JUL	26	38	45	122	52	64	37		
Echo Resv at Echo, UT	APR-JUL	117	157	184	103	211	251	179		
	MAY-JUL	101	136	160	105	184	219	152		
Lost Ck Resv Inflow	APR-JUL	8.6	13.0	16.0	91	19.0	23	17.6		
	MAY-JUL	6.5	10.4	13.0	101	15.6	19.5	12.9		
East Canyon Ck nr Morgan, UT	APR-JUL	22	30	36	116	42	50	31		
	MAY-JUL	16.1	22	26	118	30	36	22		
Weber R at Gateway, UT	APR-JUL	226	315	375	106	435	524	355		
	MAY-JUL	170	242	290	106	338	410	273		
SF Ogden R nr Huntsville, UT	APR-JUL	57	65	70	109	75	83	64		
	MAY-JUL	40	47	51	109	55	62	47		
Pineview Resv Inflow	APR-JUL	98	129	149	112	169	200	133		
	MAY-JUL	62	84	100	112	116	138	89		
Wheeler Ck nr Huntsville, UT	APR-JUL	5.00	6.10	6.90	110	7.70	8.80	6.30		
	MAY-JUL	2.60	4.00	4.90	114	5.80	7.20	4.30		

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

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
CAUSEY	7.1	4.8	2.7	4.0
EAST CANYON	49.5	45.6	40.4	40.5
ECHO	73.9	67.6	60.0	52.9
LOST CREEK	22.5	19.6	16.1	15.6
PINEVIEW	110.1	93.3	72.5	77.7
ROCKPORT	60.9	53.9	41.1	38.6
WILLARD BAY	215.0	175.1	73.7	168.0

WEBER & OGDEN WATERSHEDS in Utah  
Watershed Snowpack Analysis - May 1, 2009

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
OGDEN RIVER	4	88	104
WEBER RIVER	9	90	111
WEBER & OGDEN WATERSHEDS	13	89	108

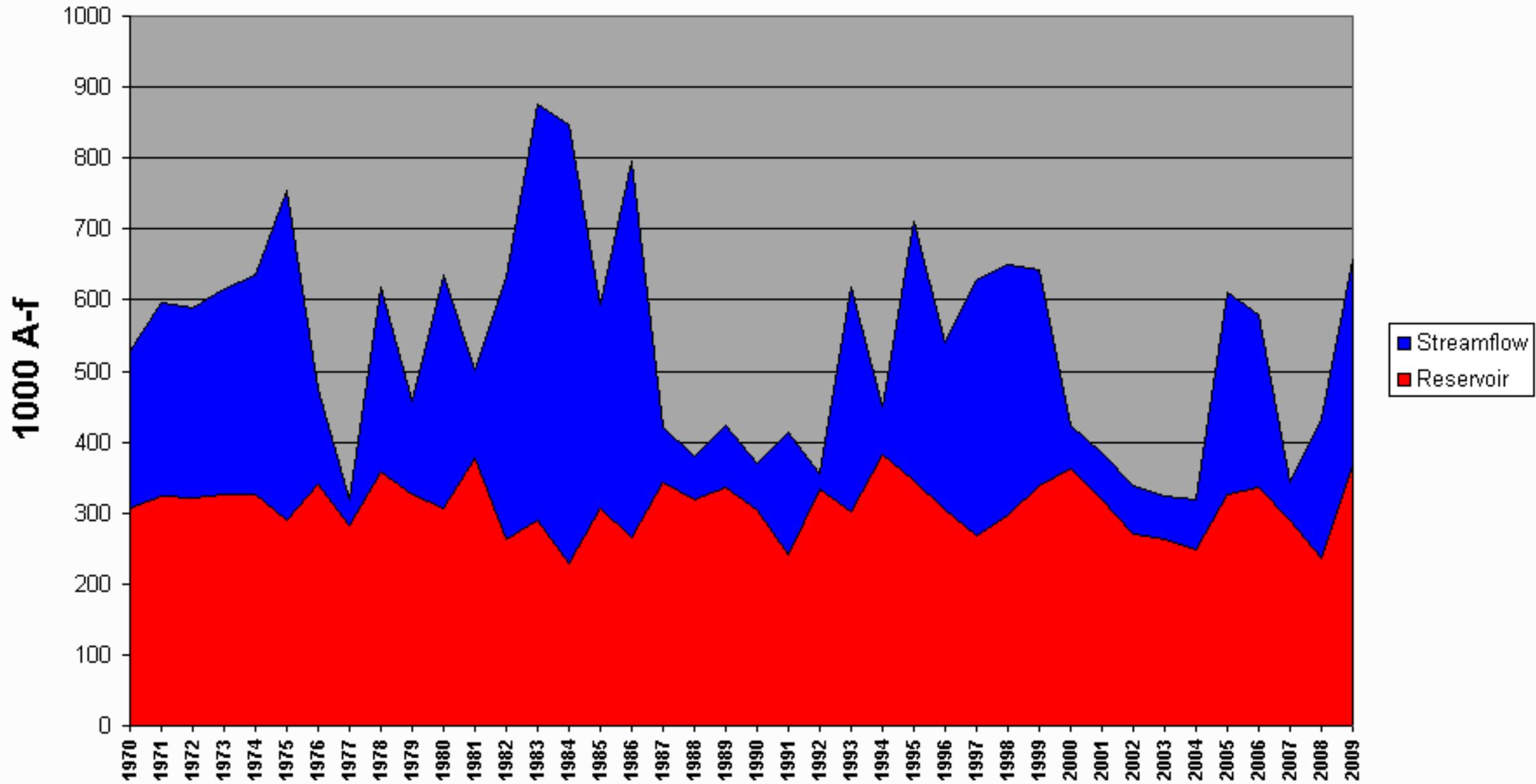
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

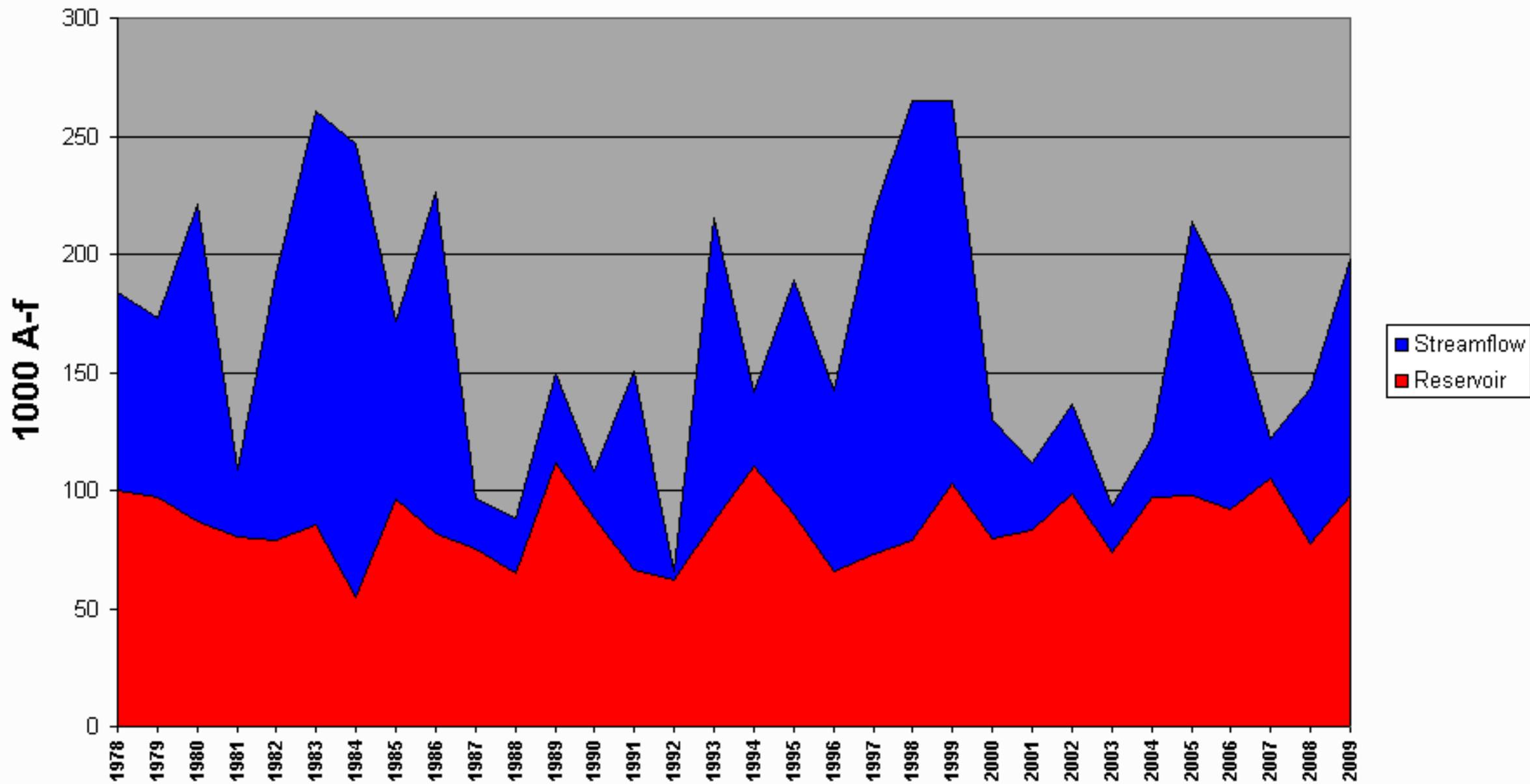
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Weber River Surface Water Supply Index

## May



# Ogden Surface Water Supply Index May

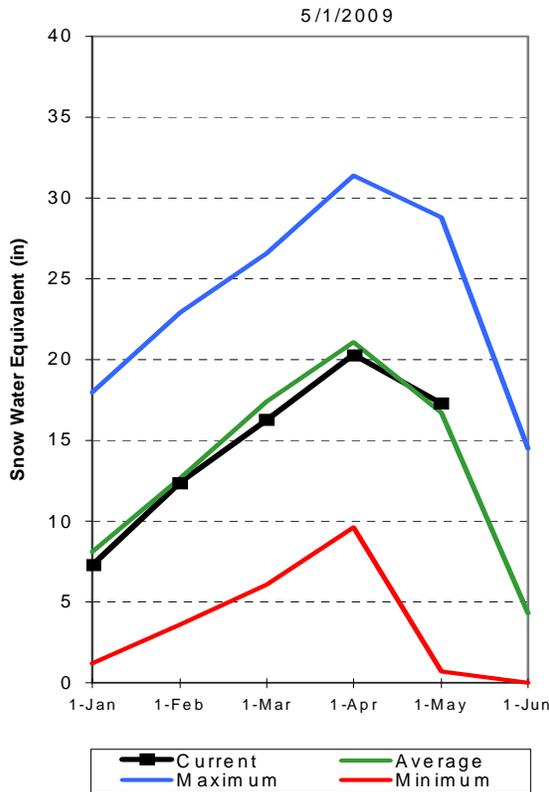


# Utah Lake, Jordan River & Tooele Valley Basins

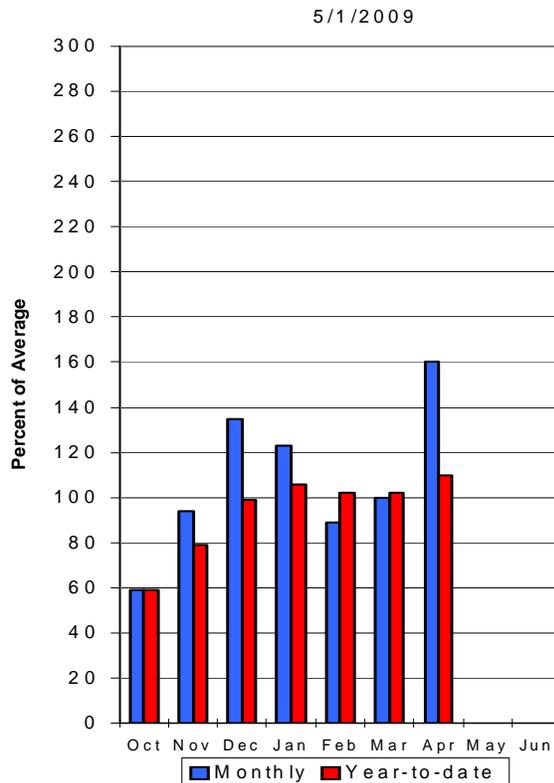
## May 1, 2009

Snowpack over these basins are near average at 104%, which is 85% of last year. Individual sites range from melted out to 153% of average at the Lookout Peak Snotel. April precipitation was much above average at 160%, bringing the seasonal accumulation (Oct-Apr) to 110% of average. Average soil moisture in runoff producing areas is estimated at 75% of saturation in the upper 2 feet of soil compared to 67% at this time last year. Reservoir storage is at 91% of capacity, 10% higher than last year at this time. Streamflow forecasts (May-July) range from 90% to 125% of average. The Surface Water Supply Index below Deer Creek reservoir is 48%, indicating general water supply conditions are near normal.

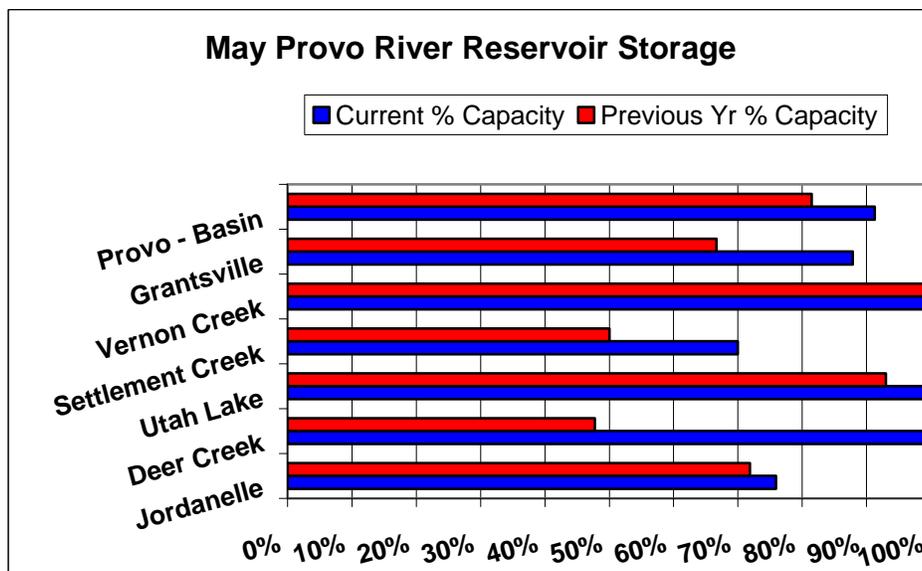
**Provo River Snowpack**



**Provo River Precipitation**



**May Provo River Reservoir Storage**



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Streamflow Forecasts - May 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		=====		>>===== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Spanish Fk at Castilla, UT	APR-JUL	5.7	48	77	100	106	148	77
	MAY-JUL	-5.5	34	60	100	86	125	60
Provo River nr Woodland	APR-JUL	78	95	107	104	120	141	103
	MAY-JUL	70	83	92	100	101	114	92
Provo River nr Hailstone	APR-JUL	76	95	109	100	124	148	109
	MAY-JUL	69	84	95	100	107	125	95
Provo R blw Deer Ck Dam, UT	APR-JUL	98	116	129	102	142	160	126
	MAY-JUL	74	91	102	100	113	130	102
American Fk abv Upper Powerplant	APR-JUL	25	30	34	106	38	43	32
	MAY-JUL	23	28	32	107	36	41	30
Utah Lake inflow	APR-JUL	225	302	355	109	408	485	325
	MAY-JUL	125	202	255	107	308	385	239
W Canyon Ck nr Cedar Fort, UT	APR-JUL	1.36	1.86	2.20	92	2.50	3.00	2.40
	MAY-JUL	1.11	1.58	1.90	91	2.20	2.70	2.10
Little Cottonwood Ck nr SLC	APR-JUL	33	39	43	108	48	55	40
	MAY-JUL	32	37	40	108	44	49	37
Big Cottonwood Ck nr SLC, UT	APR-JUL	29	35	39	103	43	49	38
	MAY-JUL	27	32	36	109	40	45	33
Mill Ck nr SLC, UT	APR-JUL	4.70	6.70	8.10	116	9.50	11.50	7.00
	MAY-JUL	4.30	6.00	7.20	122	8.40	10.10	5.90
Parleys Ck nr SLC, UT	APR-JUL	11.4	15.2	17.8	107	20	24	16.7
	MAY-JUL	8.9	12.2	14.4	113	16.6	19.9	12.8
Dell Fork nr SLC, UT	APR-JUL	4.40	6.80	8.50	125	10.20	12.60	6.80
	MAY-JUL	2.10	4.30	5.80	116	7.30	9.50	5.00
Emigration Ck nr SLC, UT	APR-JUL	2.20	3.80	4.90	109	6.00	7.60	4.50
City Ck nr SLC, UT	APR-JUL	6.60	8.80	10.30	118	11.80	14.00	8.70
	MAY-JUL	5.20	7.20	8.50	116	9.80	11.80	7.30
Vernon Ck nr Vernon, UT	APR-JUL	0.61	1.20	1.60	108	2.00	2.60	1.48
	MAY-JUL	0.45	0.90	1.20	112	1.50	1.95	1.07
Settlement Ck nr Tooele, UT	APR-JUL	0.97	1.64	2.10	100	2.60	3.20	2.10
	MAY-JUL	0.77	1.38	1.80	98	2.20	2.80	1.83
South Willow Ck nr Grantsville, UT	APR-JUL	3.00	3.50	3.90	121	4.30	4.80	3.23
	MAY-JUL	2.60	3.20	3.50	125	3.80	4.40	2.80

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

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Watershed Snowpack Analysis - May 1, 2009

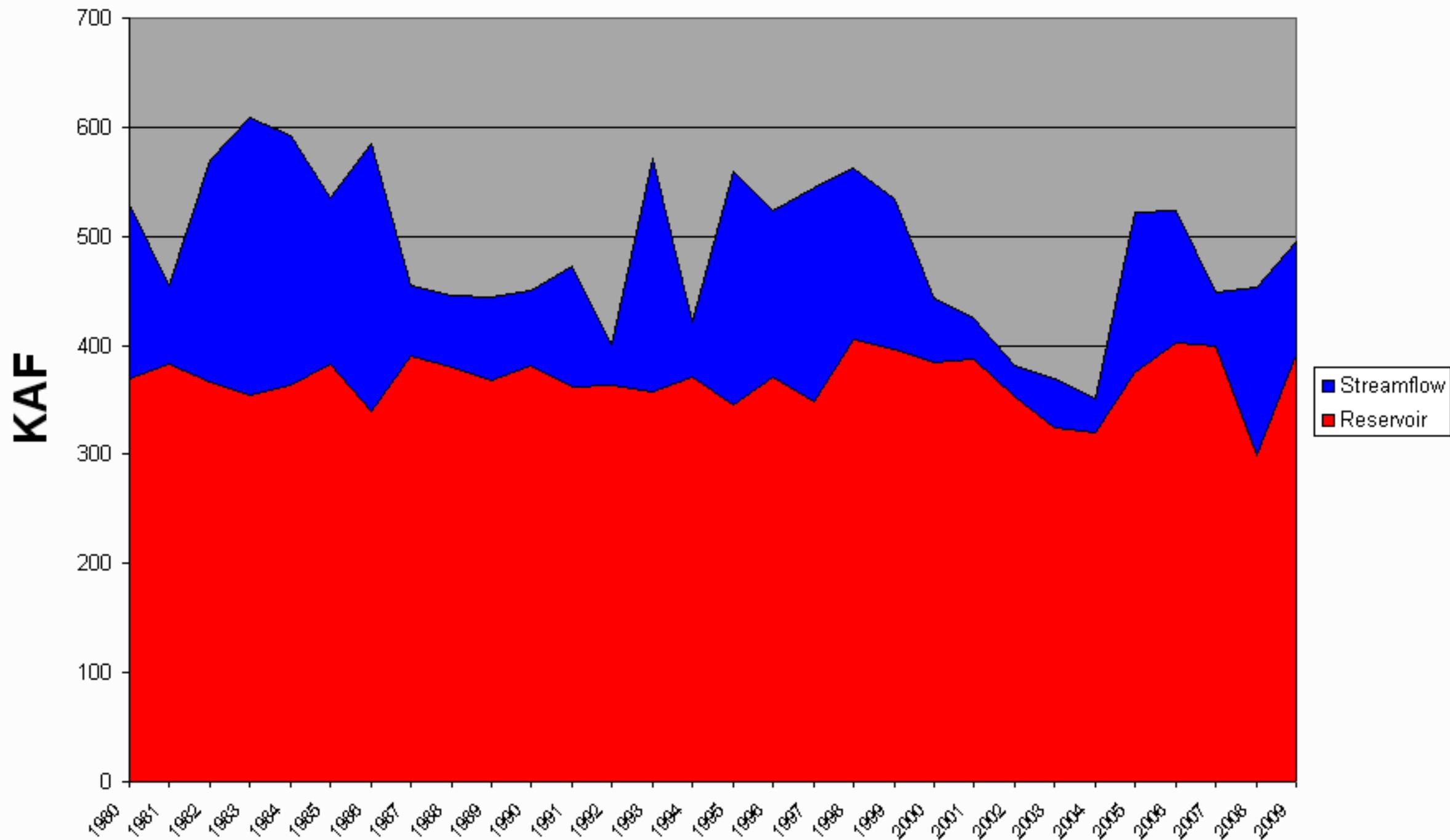
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
DEER CREEK	149.7	149.5	71.5	119.4	PROVO RIVER & UTAH LAKE	7	92	97
GRANTSVILLE	3.3	2.5	2.2	2.8	PROVO RIVER	4	97	91
SETTLEMENT CREEK	1.0	0.7	0.5	0.7	JORDAN RIVER & GSL	6	85	117
STRAWBERRY-ENLARGED	1105.9	958.9	882.1	663.7	TOOELE & RUSH VALLEY WATE	3	84	83
UTAH LAKE	870.9	882.0	810.0	872.6	UTAH LAKE/JORDAN R./TOOEL	16	87	104
VERNON CREEK	0.6	0.6	0.6	---				

\* 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.

# Provo River SWSI @ Deer Creek Inflow



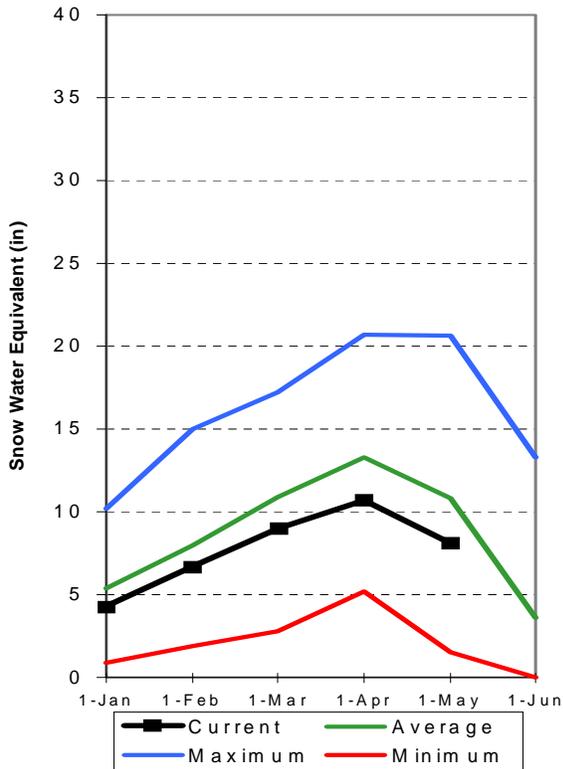
# Uintah Basin and Dagget SCD's

## May 1, 2009

Snowpack across the Uintas is below average at 75%, which is 75% of last year. Individual sites on the North Slope range from 37% to 92% and on the South Slope range from 0% to 117% of average. Precipitation during April was much above average at 154% bringing the seasonal accumulation (Oct-Apr) to 98%. Soil moisture values in runoff producing areas are at 75% of saturation in the upper 2 feet of soil compared to 68% last year. Reservoir storage is at 85% of capacity, 5% more than last year. Streamflow forecasts (May-July) range from 65% to 89% of average. The Surface Water Supply Index for the western area is 55% and for the eastern area it is 42% indicating near normal conditions on the west and east sides of the watershed. General water supply conditions are near average.

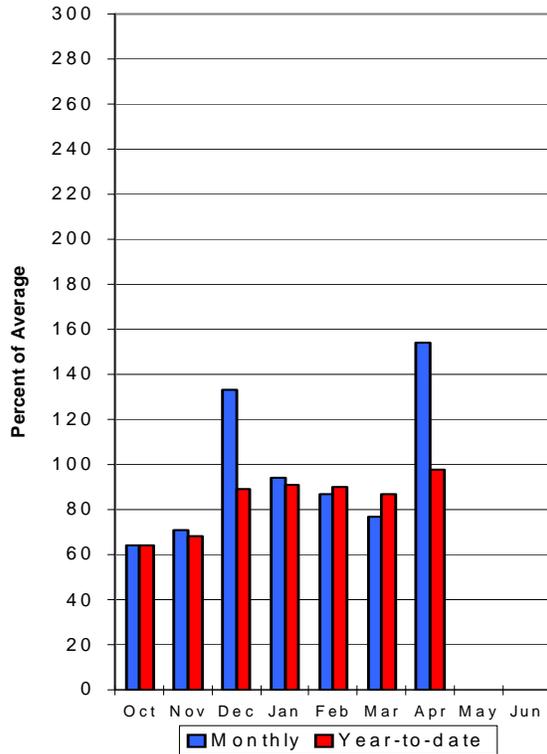
### Uinta Snow pack

5/1/2009



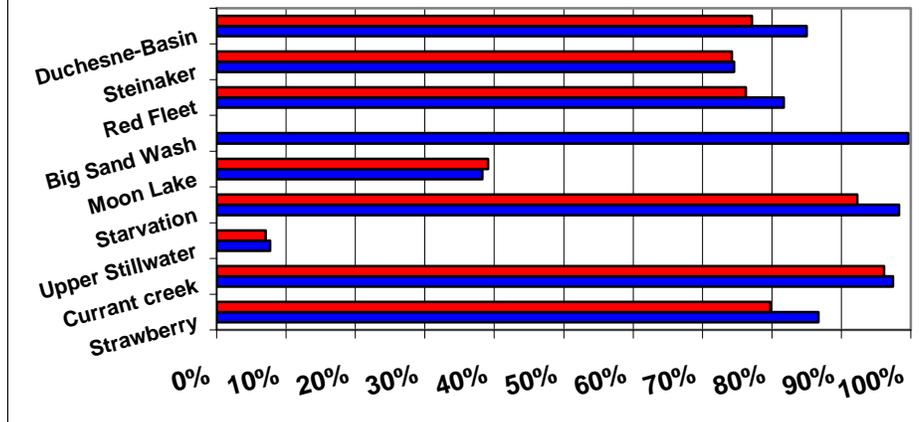
### Uinta Precipitation

5/1/2009



### May Uintah Basin Reservoir Storage

■ Current % Capacity ■ Previous Yr % Capacity



UINTAH BASIN & DAGGET SCD'S  
Streamflow Forecasts - May 1, 2009

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Blacks Fork nr Robertson	APR-JUL	64	76	85	90	94	109	95
	MAY-JUL	61	73	82	89	91	106	92
EF of Smiths Fork nr Robertson	APR-JUL	17.2	22	25	86	29	34	29
	MAY-JUL	16.2	21	24	86	28	33	28
Flaming Gorge Reservoir Inflow (2)	APR-JUL	590	760	890	75	1030	1260	1190
	MAY-JUL	460	630	760	73	900	1130	1035
Big Brush Ck abv Red Fleet Resv	APR-JUL	11.1	13.9	16.0	76	18.3	22	21
	MAY-JUL	9.8	12.6	14.7	78	17.0	21	18.8
Ashley Creek nr Vernal	APR-JUL	32	38	42	81	46	53	52
	MAY-JUL	30	36	40	80	44	51	50
WF Duchesne River nr Hanna (2)	APR-JUL	13.9	17.9	21	88	24	30	24
	MAY-JUL	11.6	15.6	18.7	87	22	28	22
Duchesne R nr Tabiona (2)	APR-JUL	64	77	87	83	98	114	105
	MAY-JUL	55	68	78	81	89	105	96
Upper Stillwater Reservoir Inflow	APR-JUL	57	64	69	84	74	82	82
	MAY-JUL	53	60	65	82	70	78	79
Rock Ck nr Mountain Home (2)	APR-JUL	64	72	78	88	84	94	89
	MAY-JUL	60	68	74	87	80	90	85
Duchesne R abv Knight Diversion (2)	APR-JUL	122	143	158	84	174	200	188
	MAY-JUL	105	126	141	82	157	183	173
Strawberry R nr Soldier Springs (2)	APR-JUL	39	48	55	93	63	75	59
	MAY-JUL	24	33	40	87	48	60	46
Currant Creek Reservoir Inflow (2)	APR-JUL	16.2	20	23	92	26	32	25
	MAY-JUL	7.5	11.3	14.3	65	17.7	23	22
Strawberry R nr Duchesne (2)	APR-JUL	71	90	105	87	121	148	121
	MAY-JUL	49	68	83	77	99	126	108
Lake Fork River Moon Lake Inflow	APR-JUL	44	50	55	81	60	68	68
	MAY-JUL	42	48	53	82	58	66	65
Yellowstone River nr Altonah	APR-JUL	44	50	55	89	60	68	62
	MAY-JUL	41	47	52	88	57	65	59
Duchesne R at Myton (2)	APR-JUL	139	174	200	77	230	275	260
	MAY-JUL	104	139	165	72	194	240	230
Whiterocks nr Whiterocks	APR-JUL	35	43	48	86	54	63	56
	MAY-JUL	33	41	46	87	52	61	53
Duchesne R nr Randlett (2)	APR-JUL	135	193	240	74	295	385	324
	MAY-JUL	100	158	205	71	260	350	289

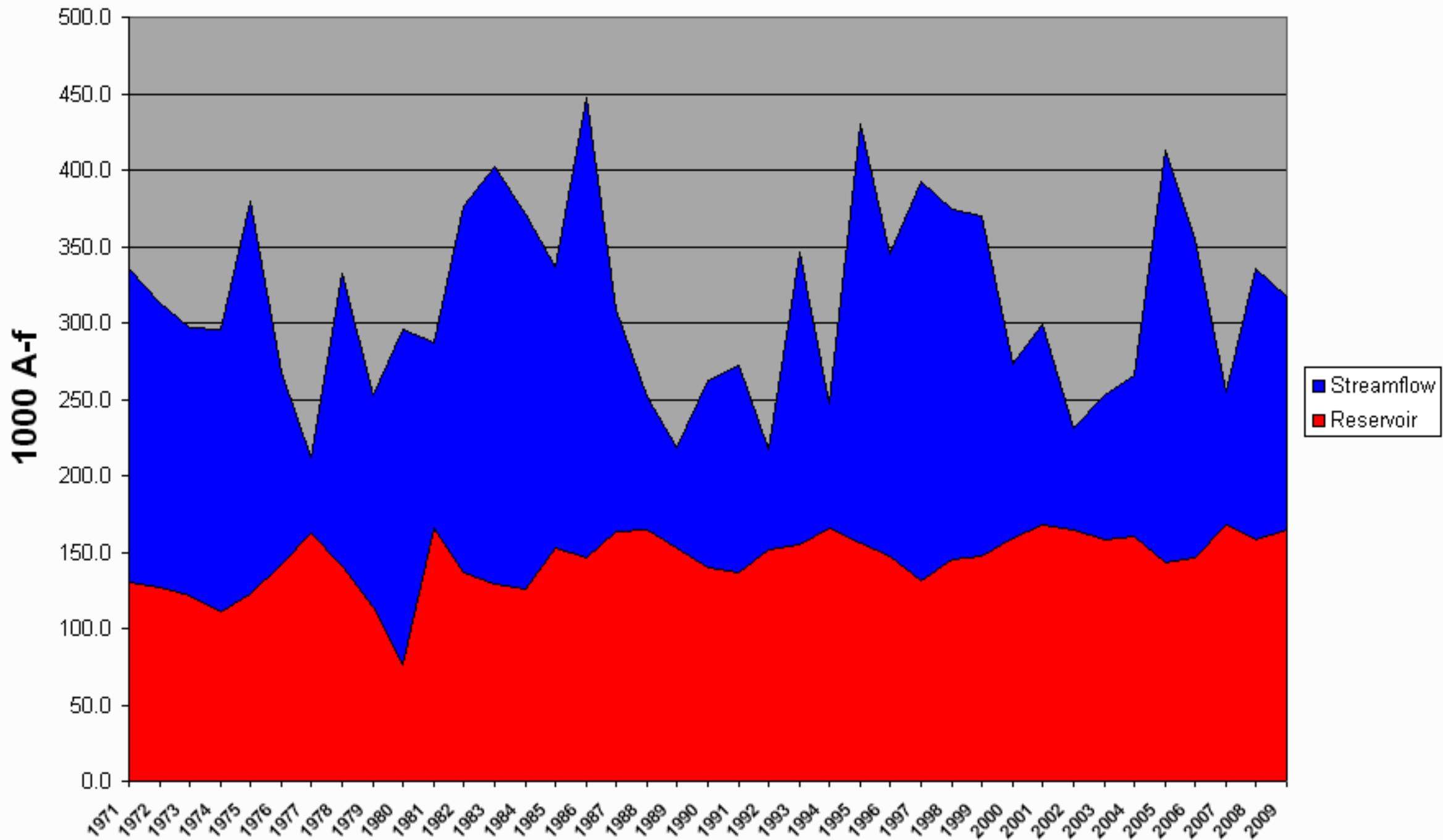
UINTAH BASIN & DAGGET SCD'S Reservoir Storage (1000 AF) - End of April					UINTAH BASIN & DAGGET SCD'S Watershed Snowpack Analysis - May 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
FLAMING GORGE	3749.0	3022.0	3045.0	2952.0	UPPER GREEN RIVER in UTAH	6	71	74
MOON LAKE	49.5	13.7	14.0	30.8	ASHLEY CREEK	2	58	62
RED FLEET	25.7	21.0	19.6	19.9	BLACK'S FORK RIVER	2	70	78
STEINAKER	33.4	24.9	24.8	25.0	SHEEP CREEK	1	102	75
STARVATION	165.3	162.5	152.6	139.7	DUCHESNE RIVER	11	77	76
STRAWBERRY-ENLARGED	1105.9	958.9	882.1	663.7	LAKE FORK-YELLOWSTONE CRE	4	91	84
					STRAWBERRY RIVER	4	42	51
					UINTAH-WHITEROCKS RIVERS	2	114	87
					UINTAH BASIN & DAGGET SCD	17	75	75

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

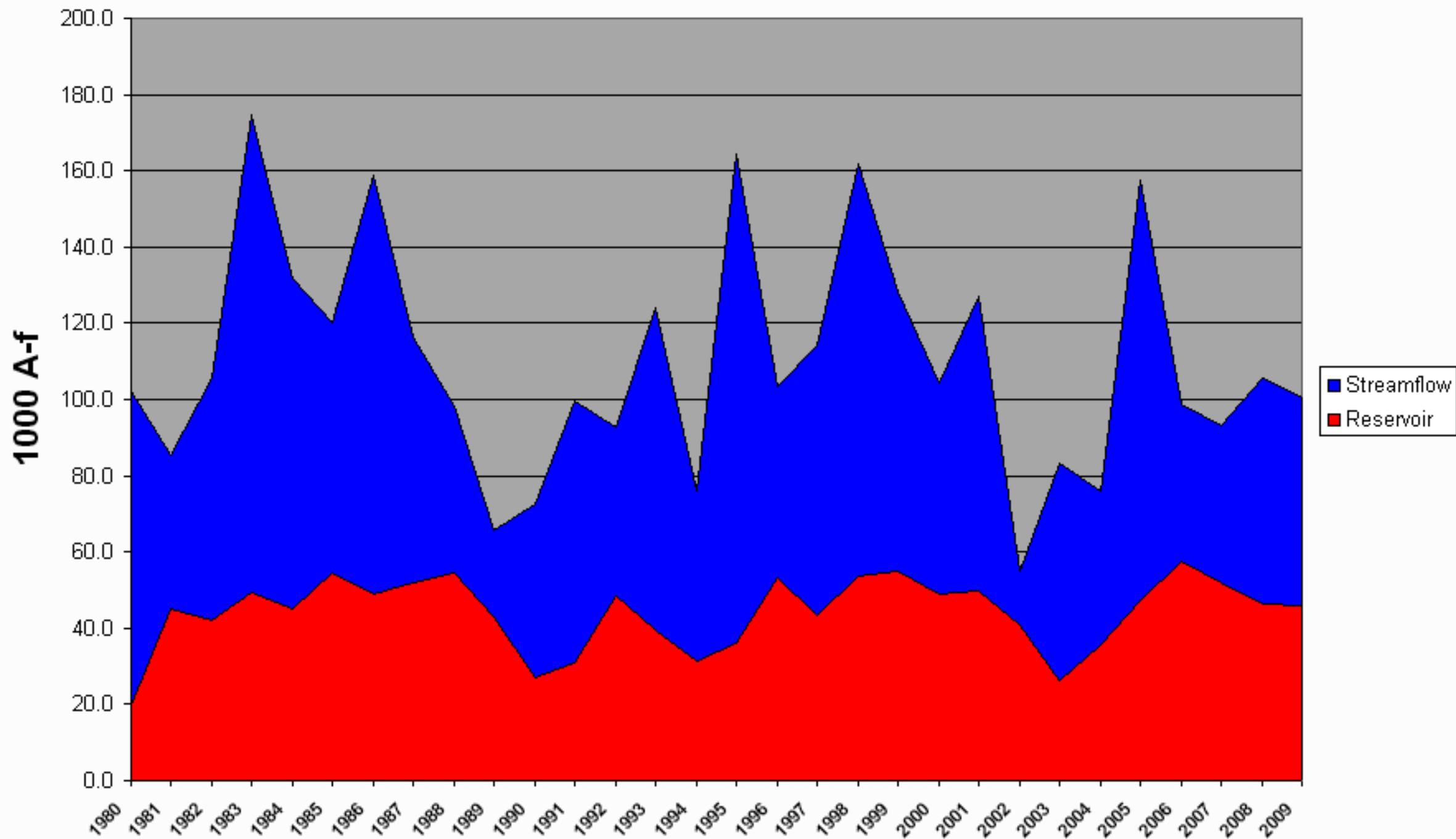
The average is computed for the 1971-2000 base period.

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# Western Uintah Basin Surface Water Supply Index May



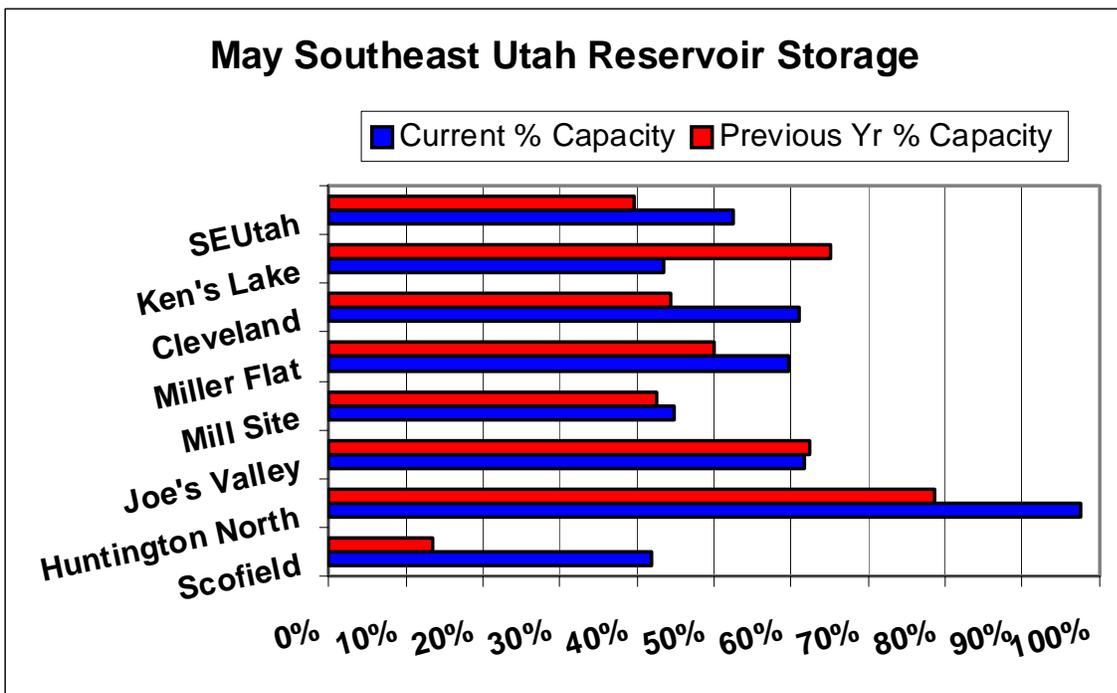
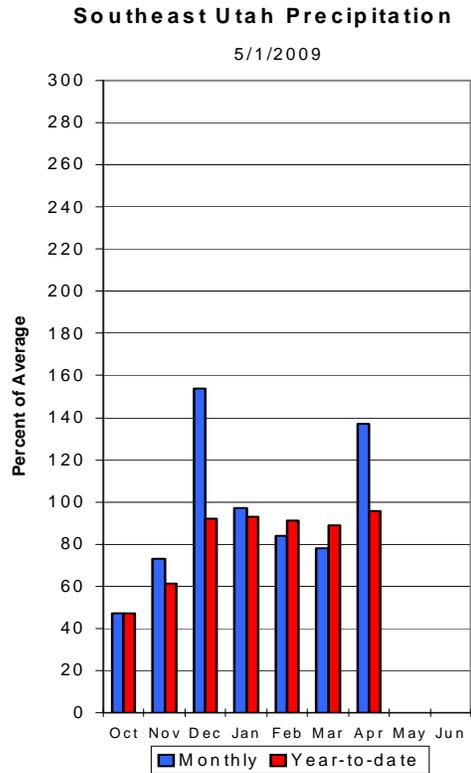
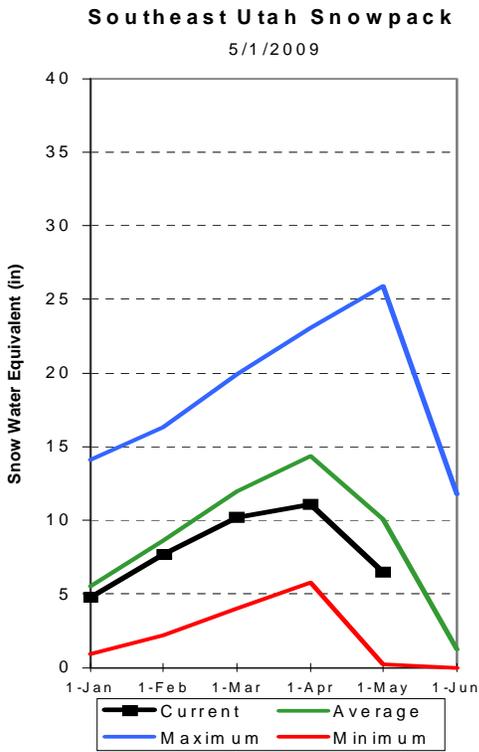
# Eastern Uintah Basin Surface Water Supply Index May



# Carbon, Emery, Wayne, Grand and San Juan Co.

## May 1, 2009

Snowpacks in this region are much below normal at 64% of average, about 71% of last year. Individual sites range from 0% to 130% of average. Precipitation during April was much above average at 137%, bringing the seasonal accumulation (Oct-Apr) to 95% of normal. Soil moisture estimates in runoff producing areas are at 75% of saturation in the upper 2 feet of soil, similar to last year at this time. Forecast streamflows (May – July) range from 18% to 98% of average. Reservoir storage is at 52% of capacity, up 12% from last year at this time. Surface Water Supply Indices for the area are: Price 47%, Joe's Valley 50%, Ferron Creek 26%, and Moab 17%. General runoff and water supply conditions are near average in the north western part of this region, and worsening to the south and east.



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Streamflow Forecasts - May 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		=====		====>> Wetter =====		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Gooseberry Creek nr Scofield	APR-JUL	8.7	10.3	11.5	97	12.7	14.7	11.9
	MAY-JUL	7.6	9.2	10.4	96	11.6	13.6	10.8
Price River nr Scofield Reservoir	APR-JUL	36	41	45	100	49	56	45
	MAY-JUL	30	35	39	98	43	50	40
White River blw Tabbayne Creek	APR-JUL	13.0	15.3	17.0	98	18.8	22	17.3
	MAY-JUL	9.2	11.5	13.2	97	15.0	17.9	13.6
Green River at Green River, UT (2)	APR-JUL	2510	2780	2960	93	3140	3410	3170
	MAY-JUL	2110	2380	2560	93	2740	3010	2740
Huntington Ck Inflow to Electric Lk	APR-JUL	11.1	13.3	15.0	96	16.8	19.5	15.7
	MAY-JUL	9.4	11.6	13.3	95	15.1	17.8	14.0
Huntington Ck nr Huntington (2)	APR-JUL	30	36	40	82	44	51	49
	MAY-JUL	26	32	36	80	40	47	45
Joe's Valley Reservoir Inflow	APR-JUL	32	41	47	81	54	65	58
	MAY-JUL	29	38	44	83	51	62	53
Ferron Ck (Upper Station) nr Ferron	APR-JUL	21	24	27	69	30	34	39
	MAY-JUL	18.7	22	25	69	28	32	36
Colorado River nr Cisco (2)	APR-JUL	3640	4270	4700	101	5140	5770	4650
	MAY-JUL	3000	3630	4060	100	4500	5130	4080
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	1.76	2.30	2.80	56	3.30	4.20	5.00
	MAY-JUL	1.39	1.89	2.30	54	2.80	3.60	4.30
Muddy Creek nr Emery	APR-JUL	10.7	13.7	16.0	80	18.4	22	19.9
	MAY-JUL	9.8	12.8	15.1	84	17.5	21	18.0
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.11	0.23	0.36	26	0.52	0.85	1.38
	MAY-JUL	0.05	0.12	0.18	18	0.28	0.46	1.01
San Juan River near Bluff (2)	APR-JUL	685	875	1010	82	1150	1340	1230
	MAY-JUL	520	710	845	87	980	1170	975

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

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Watershed Snowpack Analysis - May 1, 2009

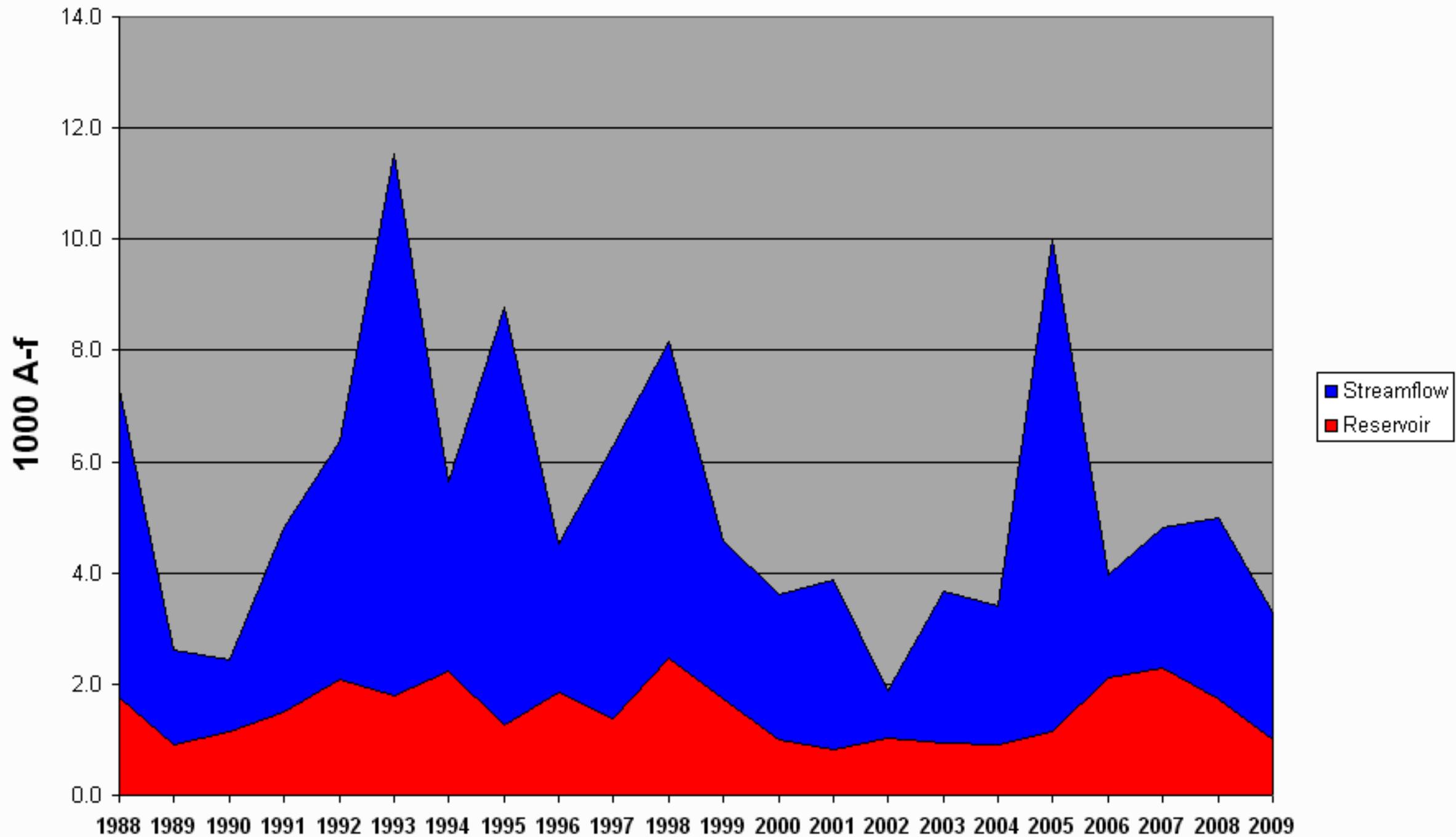
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNTINGTON NORTH	4.2	4.1	3.3	4.1	PRICE RIVER	3	72	96
JOE'S VALLEY	61.6	38.0	39.1	41.9	SAN RAFAEL RIVER	3	105	95
KEN'S LAKE	2.3	1.0	1.5	1.6	MUDDY CREEK	1	37	44
MILL SITE	16.7	7.5	7.1	99.7	FREMONT RIVER	3	12	2
SCOFIELD	65.8	27.6	8.8	37.4	LASAL MOUNTAINS	1	0	0
					BLUE MOUNTAINS	1	0	0
					WILLOW CREEK	1	0	0
					SOUTHEASTERN UTAH	13	71	64

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

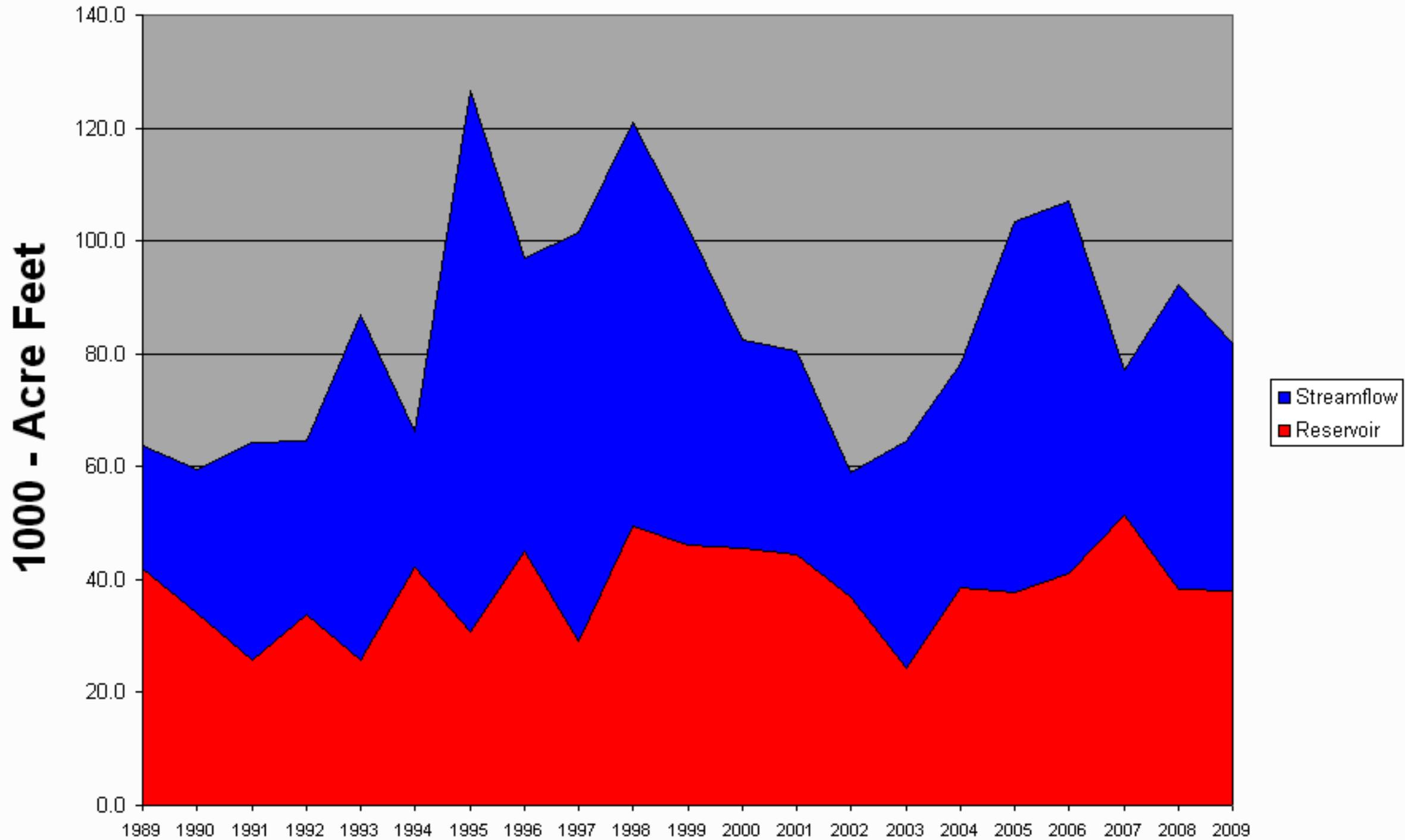
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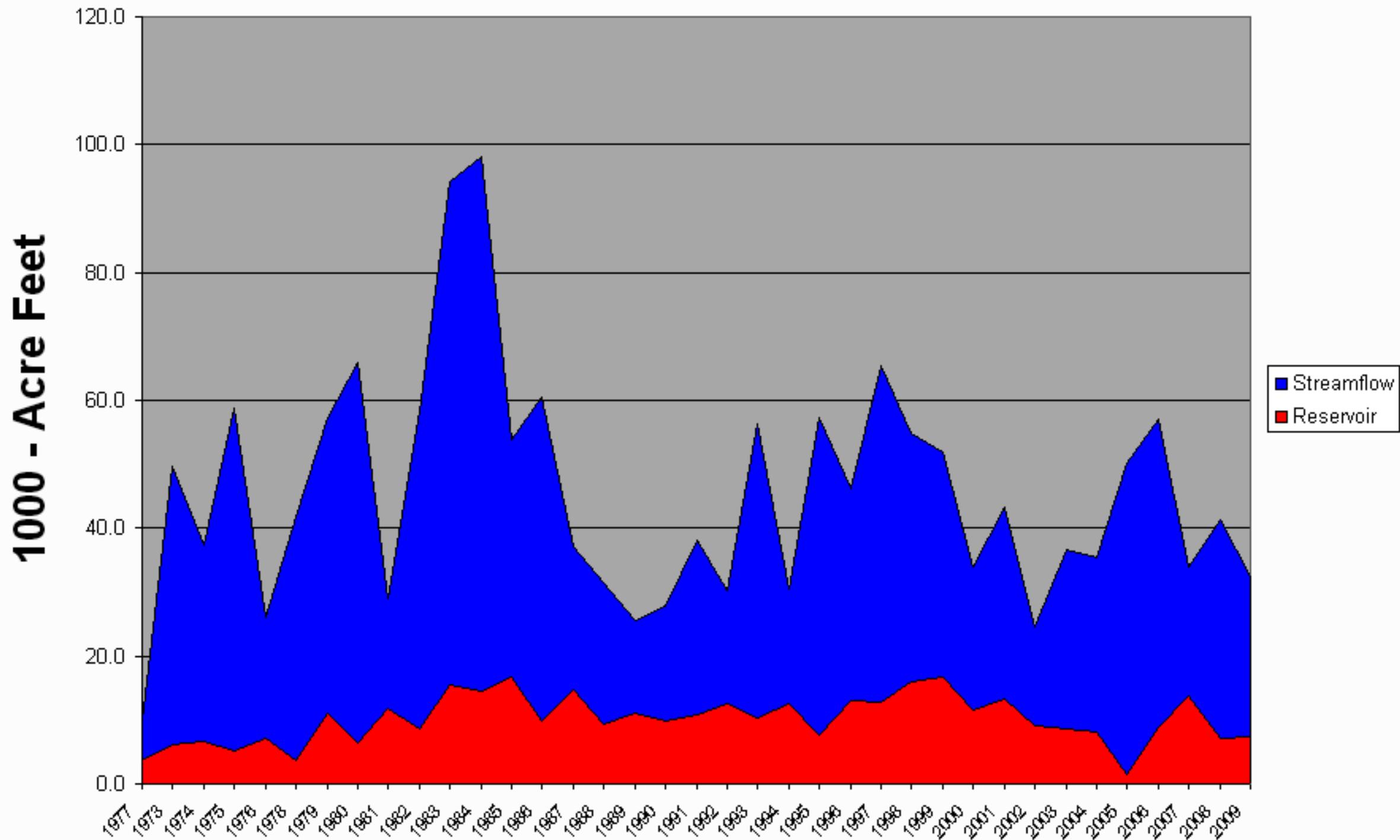
# Moab SWSI



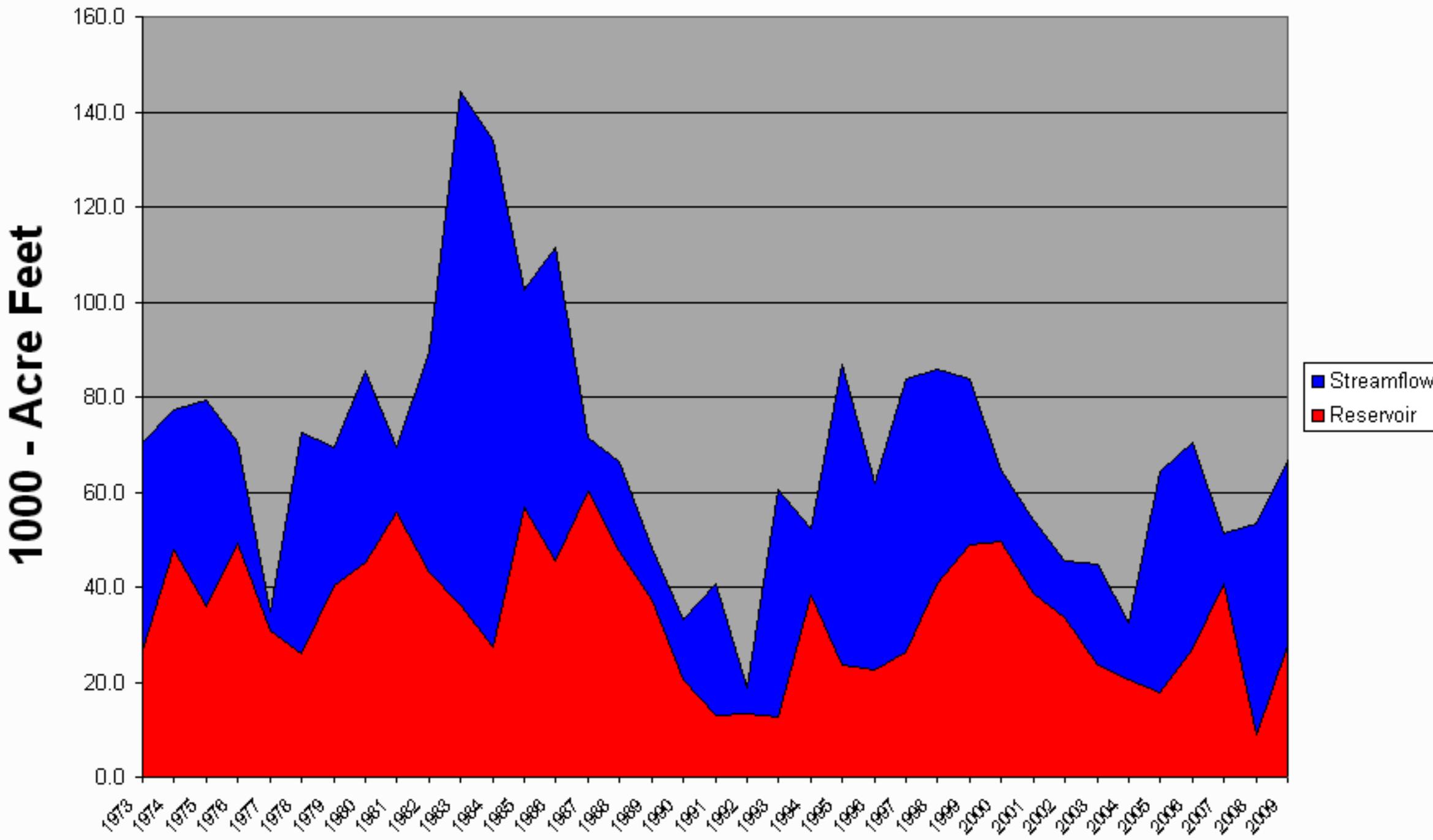
# Joe's Valley SWSI



# Ferron Creek SWSI



# Price River SWSI

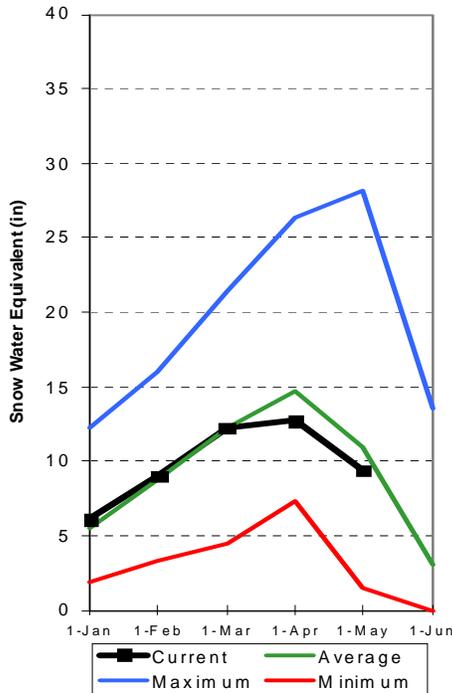


# Sevier and Beaver River Basins

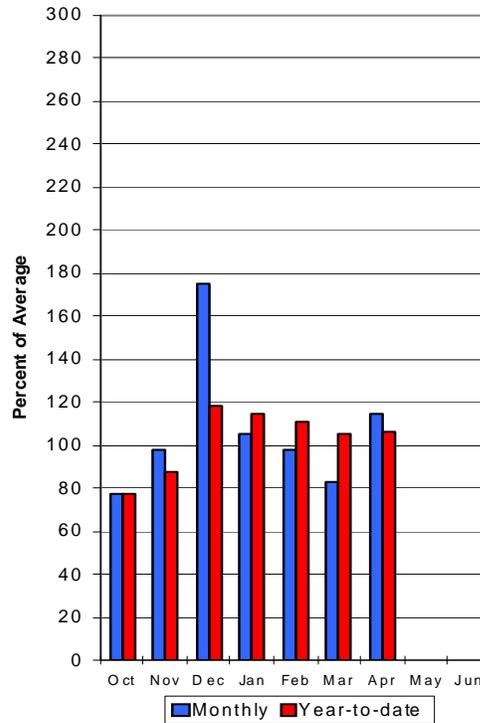
## May 1, 2009

Snowpacks on the Sevier River Basin are below normal at 86% of average, a 17% decline relative to last month and 108% of last year. Individual sites range from 0% at many lower elevation sites to 140% of average at Merchant Valley. Precipitation during April was above average at 115% of normal, bringing the seasonal accumulation (Oct-April) to 106% of average. Soil moisture estimates in runoff producing areas are at 71% of saturation in the upper 2 feet of soil compared to 71% last year. Streamflow forecasts range from 67% to 117% of average. Reservoir storage is at 54% of capacity, 9% less than last year. Surface Water Supply Indices are: Upper Sevier 33%, Lower Sevier 44% and Beaver 53%. Water supply conditions are slightly below average on the upper Sevier and near average on the lower Sevier and the Beaver River watersheds.

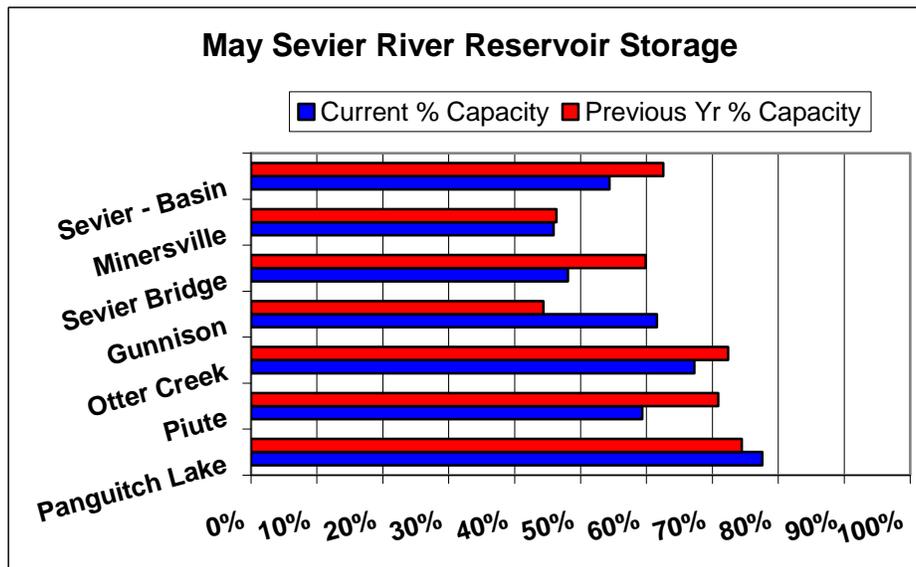
**Sevier River Snow pack**  
5/1/2009



**Sevier River Precipitation**  
5/1/2009



### May Sevier River Reservoir Storage



SEVIER & BEAVER RIVER BASINS  
Streamflow Forecasts - May 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		Future Conditions		===== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Sevier R at Hatch, UT	APR-JUL	25	34	40	73	46	55	55
	MAY-JUL	23	29	34	71	39	45	48
Sevier R nr Kingston, UT	APR-JUL	2.7	15.4	24	73	33	45	33
	MAY-JUL	1.3	11.8	20	27	28	40	74
EF Sevier R nr Kingston, UT	APR-JUL	11.0	22	29	83	36	47	35
	MAY-JUL	7.4	19.1	27	96	35	47	28
Sevier R blw Piute Dam nr Marysvale,	APR-JUL	34	61	80	88	99	126	91
	MAY-JUL	26	48	67	66	89	127	102
Clear Creek Abv Diversions nr Sevier	APR-JUL	12.6	17.0	20	91	23	27	22
	MAY-JUL	11.1	13.9	16.0	89	18.2	22	17.9
Salina Ck at Salina, UT	APR-JUL	5.8	10.4	14.4	73	19.0	27	19.7
	MAY-JUL	4.8	8.5	11.6	67	15.2	21	17.4
Manti Ck Blw Dugway Ck Nr Manti	APR-JUL	11.0	13.4	15.2	83	17.1	20	18.3
	MAY-JUL	10.4	12.8	14.5	85	16.3	19.2	17.1
Sevier R nr Gunnison, UT	APR-JUL	4.0	36	72	68	108	140	106
	MAY-JUL	5.0	40	69	30	99	151	227
Chicken Creek nr Levan	APR-JUL	2.20	2.60	3.00	67	3.40	4.00	4.50
	MAY-JUL	0.91	1.66	2.30	68	3.00	4.30	3.40
Oak Creek nr Oak City	APR-JUL	1.07	1.32	1.50	90	1.70	2.00	1.66
	MAY-JUL	0.54	0.80	1.00	94	1.22	1.60	1.07
Beaver R nr Beaver, UT	APR-JUL	18.2	25	30	111	35	42	27
	MAY-JUL	14.7	23	28	117	33	41	24
Minersville Reservoir	APR-JUL	9.9	15.0	19.4	117	25	34	16.6
	MAY-JUL	8.0	13.0	17.0	117	22	29	14.5

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

SEVIER & BEAVER RIVER BASINS  
Watershed Snowpack Analysis - May 1, 2009

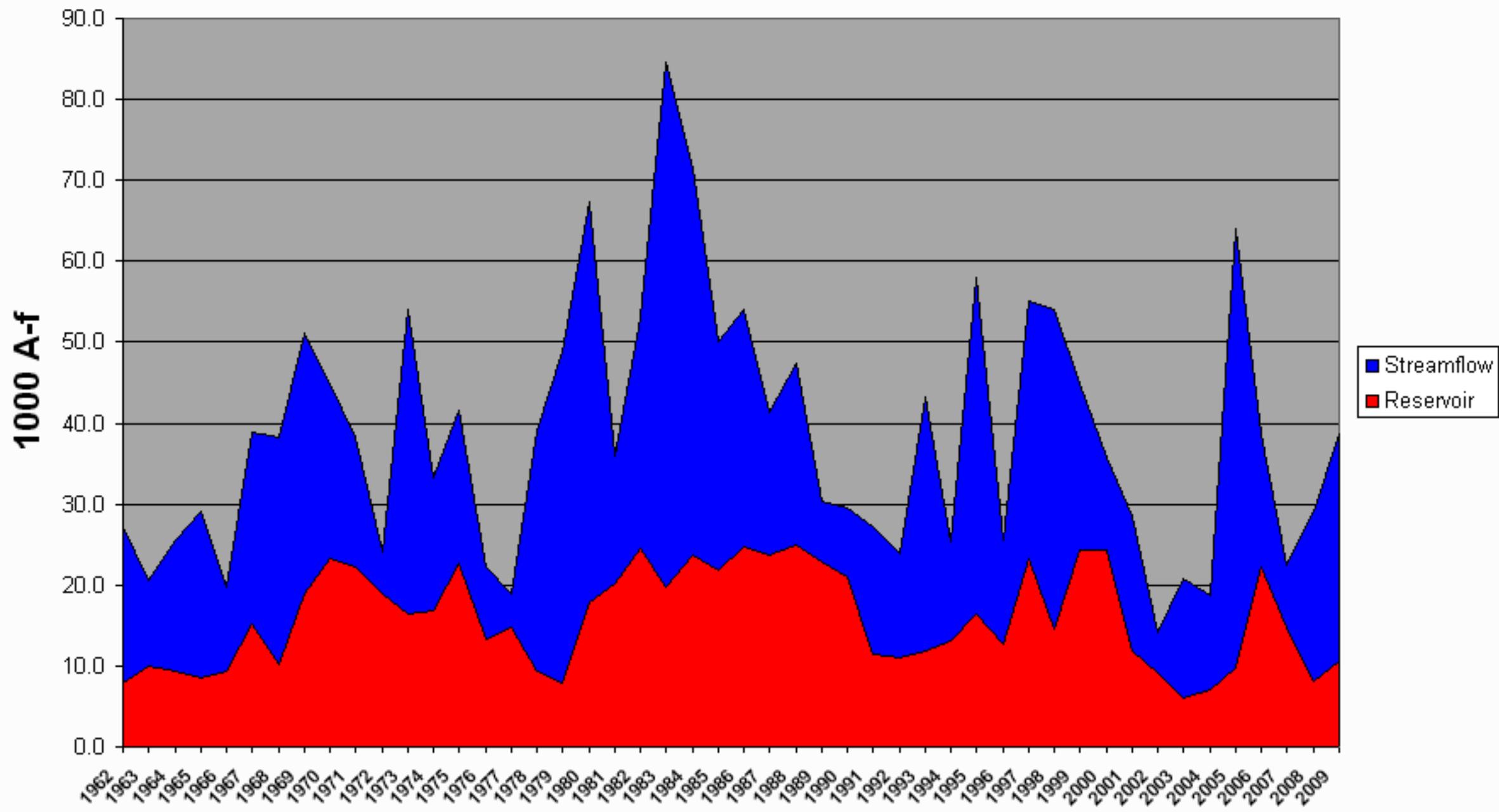
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNNISON	20.3	12.5	9.0	15.7	UPPER SEVIER RIVER	8	128	74
MINERSVILLE (RkyFd)	23.3	10.7	10.8	18.0	EAST FORK SEVIER RIVER	3	158	43
OTTER CREEK	52.5	35.3	38.0	46.0	SOUTH FORK SEVIER RIVER	5	115	89
PIUTE	71.8	42.6	50.9	55.5	LOWER SEVIER RIVER	6	89	81
SEVIER BRIDGE	236.0	113.5	141.3	183.6	BEAVER RIVER	2	144	122
PANGUITCH LAKE	22.3	17.3	16.6		SEVIER & BEAVER RIVER BAS	16	112	86

\* 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.

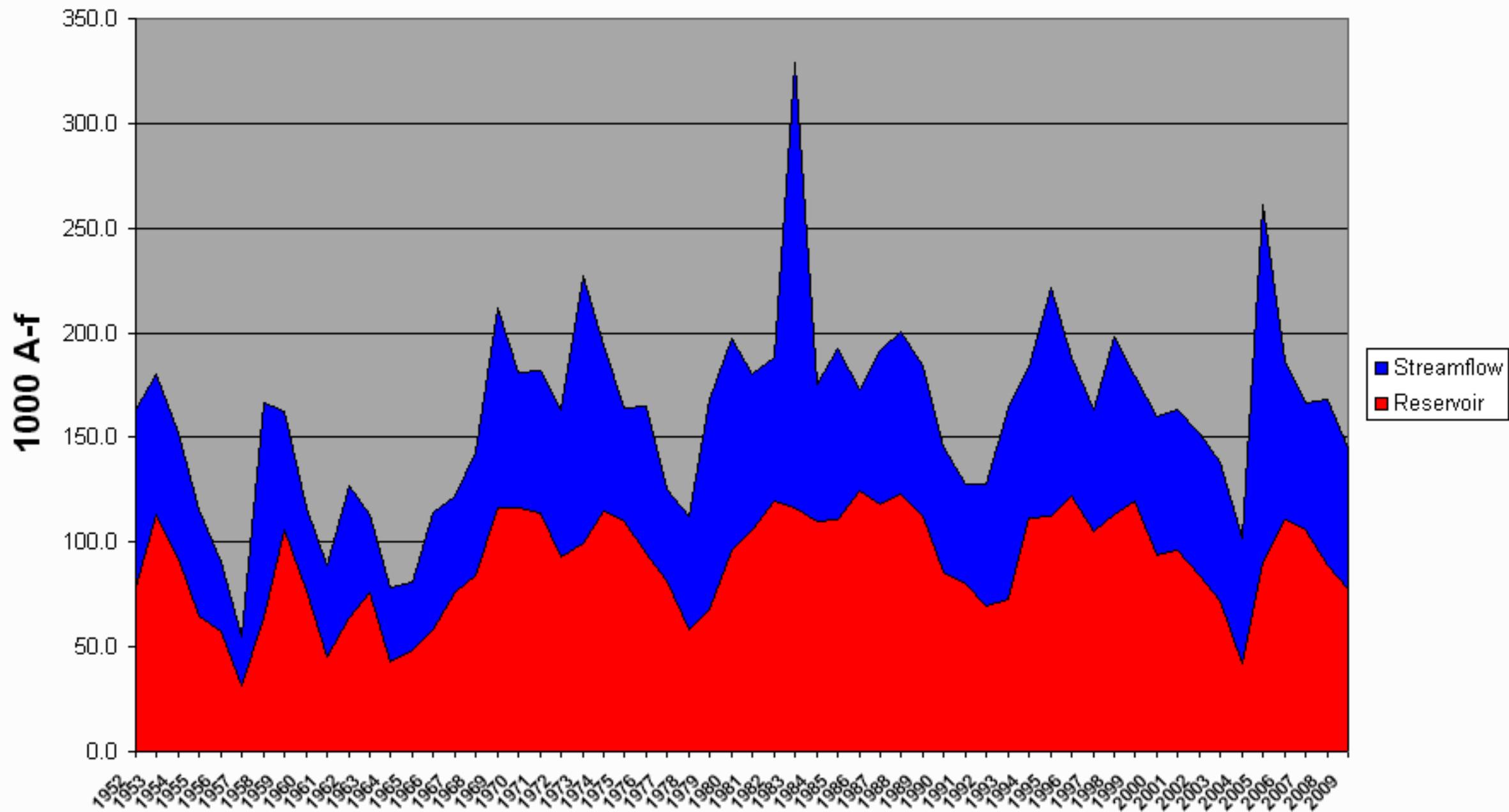
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Beaver River Surface Water Supply Index May



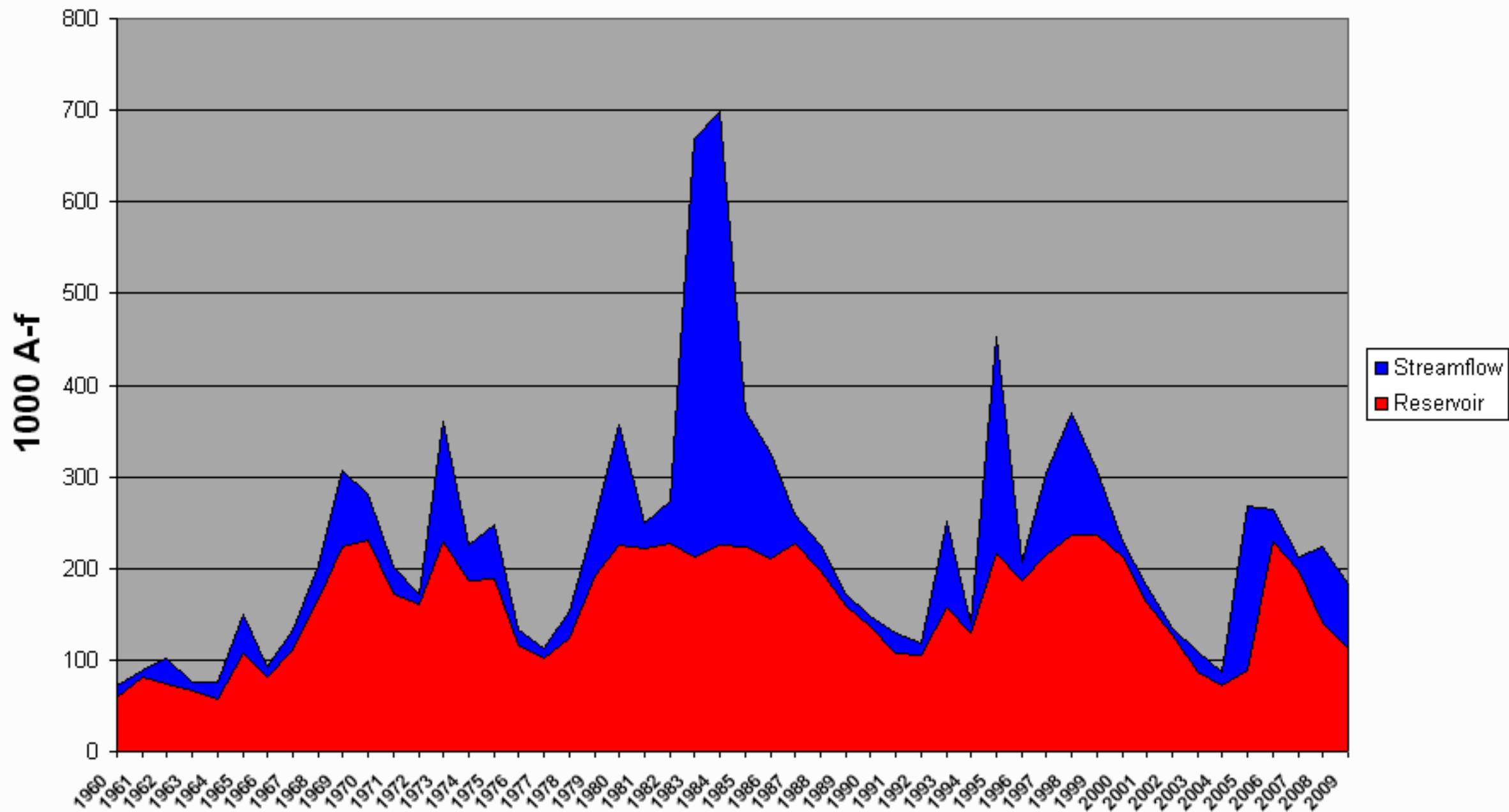
# Upper Sevier River Surface Water Supply Index

## May



# Lower Sevier River Surface Water Supply Index

## May

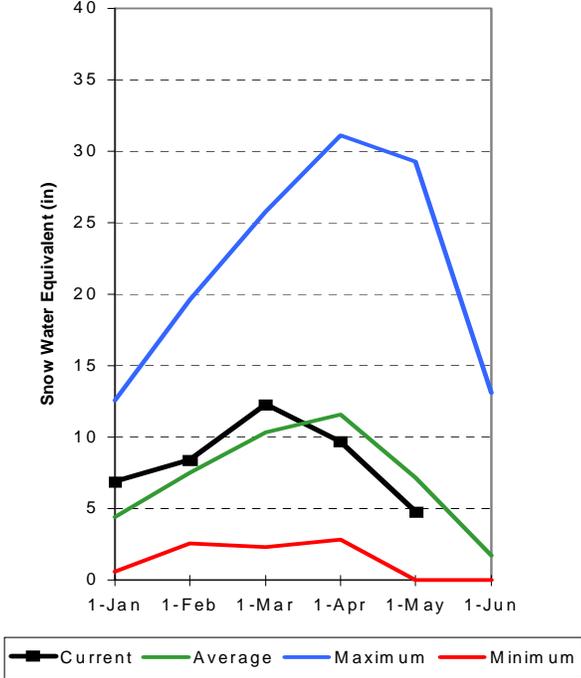


## E. Garfield, Kane, Washington, & Iron Co. May 1, 2009

Snowpacks in this region are much below normal at 65% of average, which is 136% of last year. Individual sites range from melted out, to 105% of average at Yankee Reservoir. Precipitation during the month of April was near average at 105%, bringing the seasonal accumulation (Oct-Apr) to 103% of average. The average soil moisture estimate in runoff producing areas is at 69% of saturation within the upper 2 feet of soil, compared to 61% last year. Forecast streamflows (May–July) range from 44% to 94% of average. Reservoir storage is at 77% of capacity, 3% more than last year. The Surface Water Supply Index is at 52%, indicating near average water supply conditions.

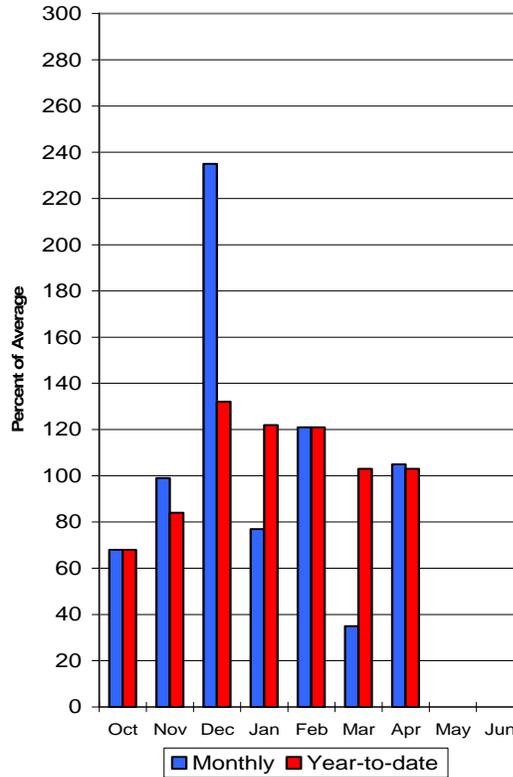
### Southwest Utah Snowpack

5/1/2009



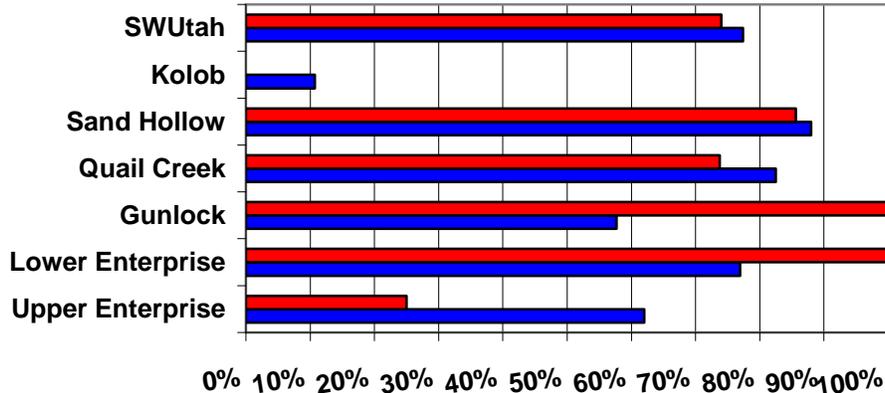
### Southwest Utah Precipitation

5/1/2009



### May Southwest Utah Reservoir Storage

■ Current % Capacity ■ Previous Yr % Capacity



E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Streamflow Forecasts - May 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		=====> Wetter =====>>		Chance Of Exceeding *		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Lake Powell Inflow (2)	APR-JUL	6010	6870	7450	94	8030	8890	7930
	MAY-JUL	5240	6100	6680	96	7260	8120	6940
Virgin River at Virgin	APR-JUL	35	39	42	66	45	49	64
	MAY-JUL	21	25	28	67	31	35	42
Virgin River nr Hurricane	APR-JUL	26	31	35	51	39	45	69
	MAY-JUL	16.4	21	25	54	29	35	46
Santa Clara River nr Pine Valley	APR-JUL	1.60	2.30	2.70	49	3.10	3.80	5.50
	MAY-JUL	1.13	1.62	2.00	44	2.40	3.10	4.50
Coal Ck nr Cedar City, UT	APR-JUL	13.9	15.7	17.0	88	18.3	20	19.3
	MAY-JUL	9.8	12.3	14.0	88	15.7	18.2	15.9

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

E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Watershed Snowpack Analysis - May 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNLOCK	10.4	6.0	10.4	4.3	VIRGIN RIVER	5	124	85
LAKE POWELL	24322.0	12830.0	11170.0	---	PAROWAN	2	119	90
QUAIL CREEK	40.0	33.0	29.5	31.6	ENTERPRISE TO NEW HARMONY	2	0	0
UPPER ENTERPRISE	10.0	6.2	2.5	---	COAL CREEK	2	119	80
LOWER ENTERPRISE	2.6	2.0	2.6		ESCALANTE RIVER	2	0	3
					SOUTHWESTERN UTAH	9	136	65

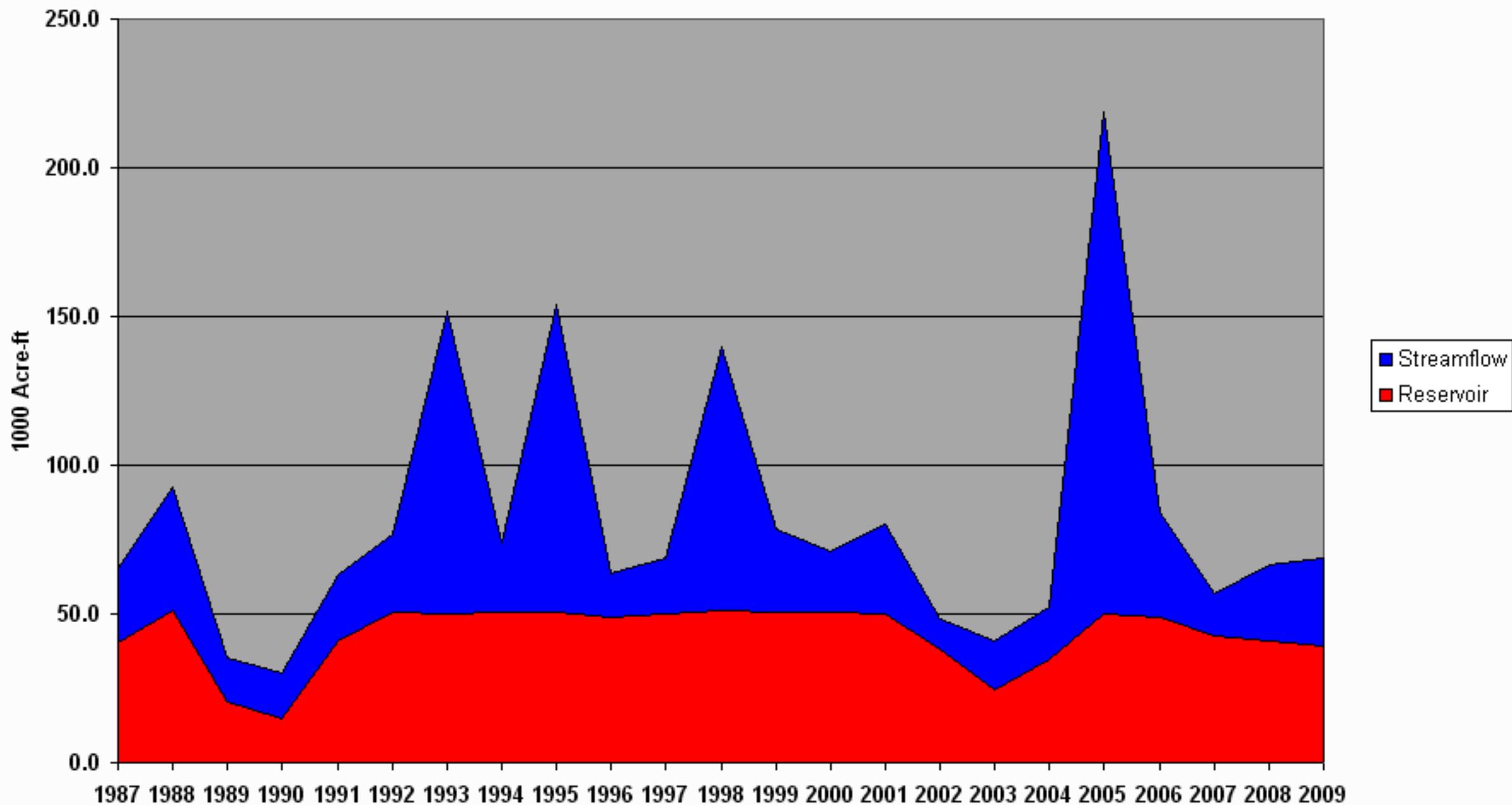
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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.

# Virgin River Surface Water Supply Index

## May



# Surface Water Supply Index

May 1, 2009			Years with
Basin or Region	SWSI	Percentile	Similar SWSI
Bear River	-2.45	21%	33,37,02,06
Ogden River	1.64	70%	82,93,95,05
Weber River	2.95	85%	75,95,98,99
Provo	-0.13	48%	87,91,05,06
West Uintah Basin	0.42	55%	87,72,78,08
East Uintah Basin	-0.67	42%	06,91,80,96
Price River	-0.22	47%	00,88,79,81
Joe's Valley	0.00	50%	04,01,00,93
Ferron Creek	-1.97	26%	94,88,00,07
Moab	-2.72	17%	90,89,04,00
Upper Sevier River	-1.44	33%	03,68,90,02
Lower Sevier River	-0.50	44%	72,01,71,68
Beaver River	0.26	53%	71,68,06,67
Virgin River	0.18	52%	08,97,00,94

SWSI Scale: -4 to 4    Percentile: 0 - 100%

## What is a Surface Water Supply Index?

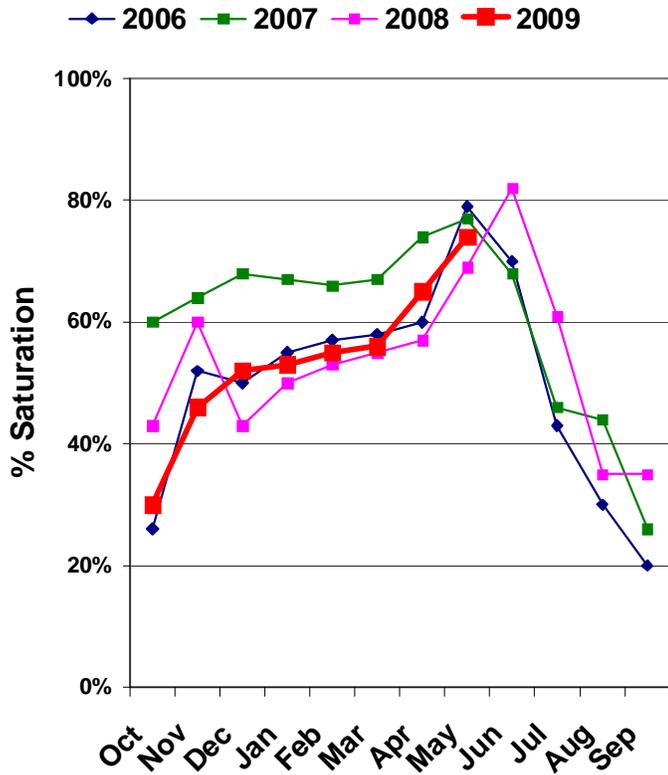
The Surface Water Supply Index (SWSI) is a predictive indicator of total surface water availability within a watershed for the spring and summer water use seasons. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow which are based 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.

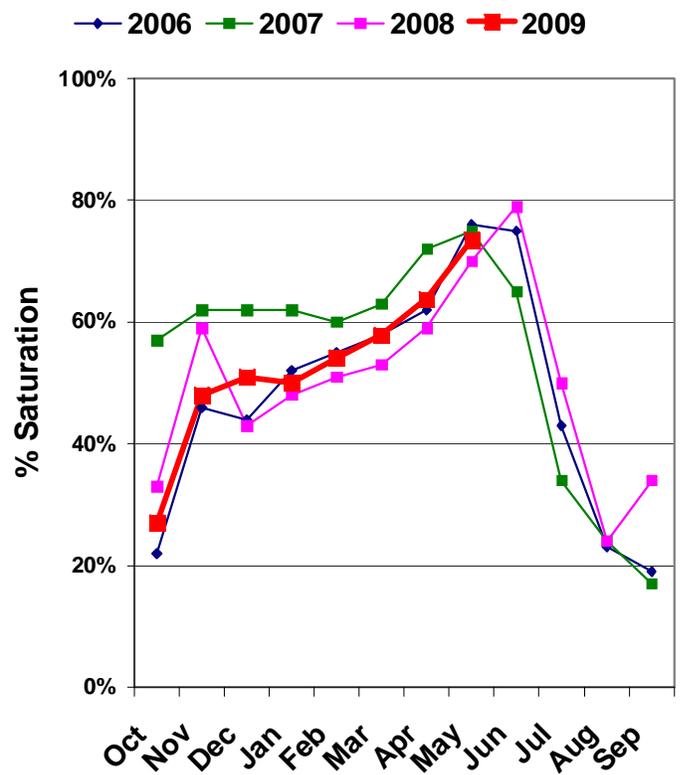
For more information on the SWSI go to: [www.ut.nrcs.usda.gov/snow/](http://www.ut.nrcs.usda.gov/snow/) on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

# Watershed Soil Moisture Charts for Utah Water Supply

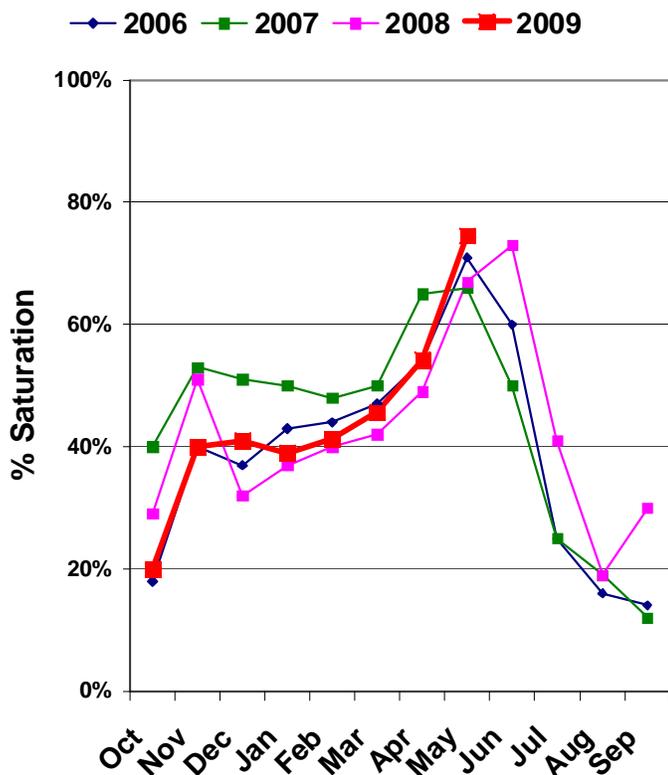
## Bear River Soil Moisture



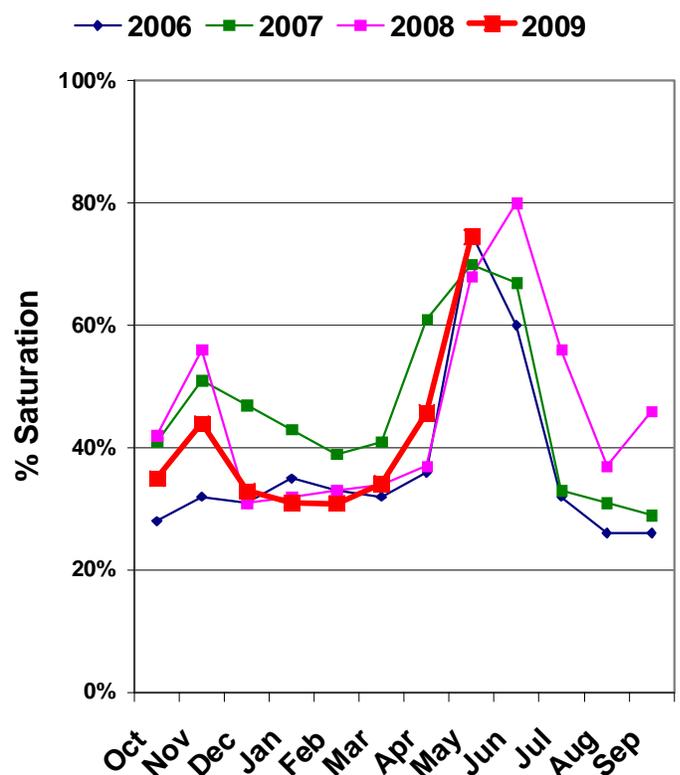
## Weber River Soil Moisture



## Jordan/Provo River Soil Moisture



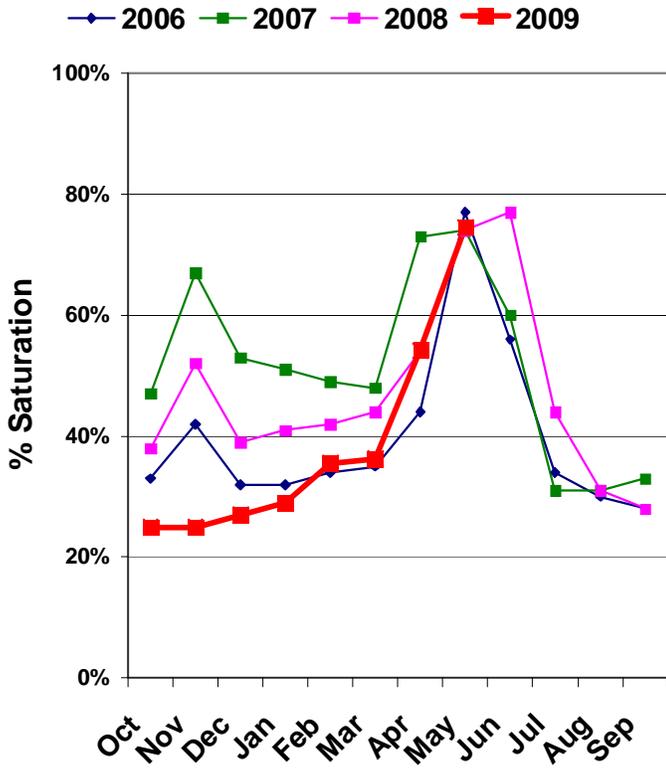
## Uintah Basin Soil Moisture



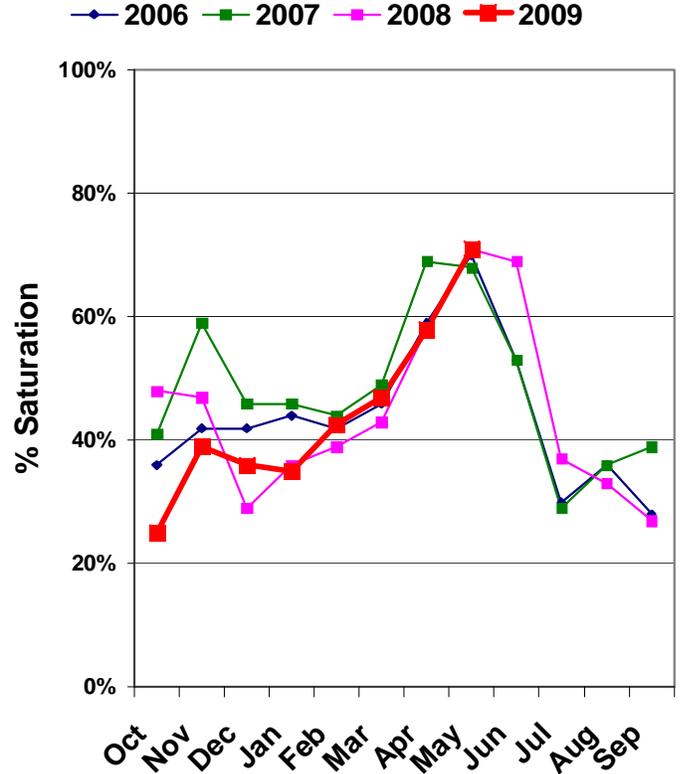
Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content.

# Watershed Soil Moisture Charts for Utah Water Supply

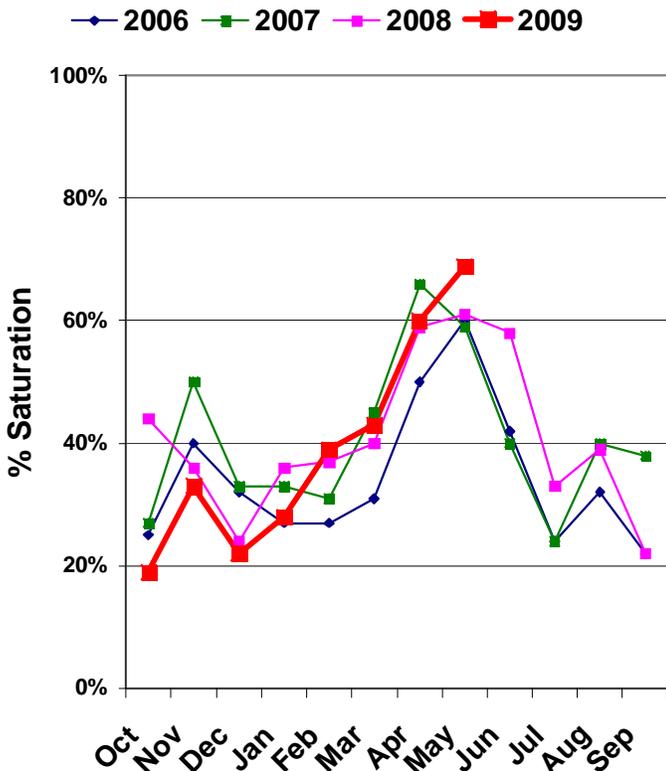
## South East Utah Soil Moisture



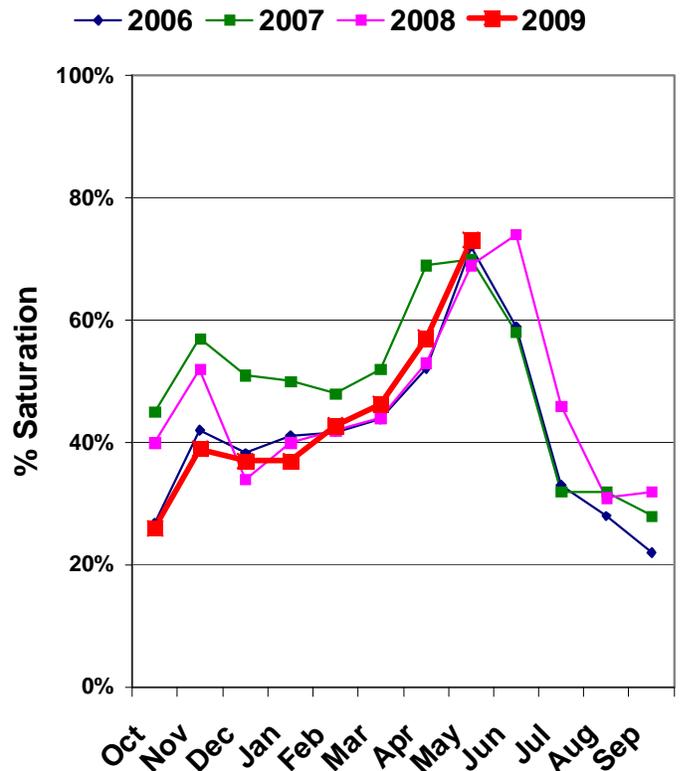
## Sevier/Beaver River Soil Moisture



## Southwest Utah Soil Moisture



## Statewide 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.

## S N O W   C O U R S E   D A T A

MAY   2009

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	5/01	0	.0	.0	1.8
ALTA CENTRAL	8800	4/30	101	45.0	43.2	36.5
BEAVER DAMS SNOTEL	8000	5/01	0	.0	.5	4.7
BEAVER DIVIDE SNOTEL	8280	5/01	0	.0	5.0	3.2
BEN LOMOND PK SNOTEL	8000	5/01	85	47.1	37.9	37.1
BEN LOMOND TR SNOTEL	6000	5/01	15	4.8	16.2	6.8
BEVAN'S CABIN	6450	4/28	8	3.0	11.8	5.0
BIG FLAT SNOTEL	10290	5/01	67	24.2	18.5	20.9
BIRCH CROSSING	8100	4/27	3	1.2	0.0	1.4
BLACK FLAT-U.M. CK S	9400	5/01	1	.1	4.3	7.1
BLACK'S FORK GS-EF	9340	4/27	19	6.2	11.0	8.6
BLACK'S FORK JUNCTN	8930	4/27	12	2.9	9.6	6.8
BOX CREEK SNOTEL	9800	5/01	22	8.9	7.4	10.3
BRIAN HEAD	10000	4/27	47	17.9	13.2	20.8
BRIGHTON SNOTEL	8750	5/01	49	22.1	31.9	25.0
BRIGHTON CABIN	8700	4/30	61	25.0	33.9	23.6
BROWN DUCK SNOTEL	10600	5/01	44	16.1	18.7	20.1
BRYCE CANYON	8000	4/29	0	0.0	0.0	-
BUCK FLAT SNOTEL	9800	5/01	36	15.8	14.4	15.6
BUCK PASTURE	9700	4/27	49	13.6	16.6	16.7
BUCKBOARD FLAT	9000	4/27	12	4.5	6.7	7.0
BUG LAKE SNOTEL	7950	5/01	41	17.8	17.7	18.0
BURT'S-MILLER RANCH	7900	4/27	0	0.0	2.9	1.3
CAMP JACKSON SNOTEL	8600	5/01	0	.0	5.7	6.4
CASCADE MOUNTAIN SNO	7770	5/01	42	18.0	11.3	-
CASTLE VALLEY SNOTEL	9580	5/01	12	4.4	2.9	7.5
CHALK CK #1 SNOTEL	9100	5/01	61	27.0	28.7	25.3
CHALK CK #2 SNOTEL	8200	5/01	36	15.9	17.4	12.0
CHALK CREEK #3	7500	4/27	0	0.0	7.0	1.8
CHEPETA SNOTEL	10300	5/01	42	14.2	10.8	12.1
CLAYTON SPRINGS SNTL	10000	5/01	10	4.1	.0	-
CLEAR CK RIDG #1 SNT	9200	5/01	39	18.8	17.9	15.7
CLEAR CK RIDG #2 SNT	8000	5/01	23	8.7	12.7	7.9
CORRAL	8200	4/27	1	.5	8.6	-
CURRANT CREEK SNOTEL	8000	5/01	0	.0	.5	2.6
DANIELS-STRAWBERRY S	8000	5/01	14	7.2	12.8	9.5
DILL'S CAMP SNOTEL	9200	5/01	13	4.1	11.0	9.4
DONKEY RESERVOIR SNO	9800	5/01	0	.0	.0	4.2
DRY BREAD POND SNTL	8350	5/01	38	14.7	19.4	18.3
DRY FORK SNOTEL	7160	5/01	25	8.9	9.0	7.7
EAST WILLOW CREEK SN	8250	5/01	0	.0	3.7	3.0
FARMINGTON U. SNOTEL	8000	5/01	90	45.7	37.8	31.8
FARMINGTON L. SNOTEL	6780	5/01	33	14.7	16.8	-
FARNSWORTH LK SNOTEL	9600	5/01	54	20.4	21.5	21.1
FISH LAKE	8700	4/26	0	0.0	4.0	5.0
FIVE POINTS LAKE SNO	10920	5/01	44	15.6	18.6	17.5
G.B.R.C. HEADQUARTER	8700	4/26	37	13.3	14.0	14.2
G.B.R.C. MEADOWS	10000	4/26	71	26.4	27.6	25.8
GARDEN CITY SUMMIT	7600	4/28	34	11.6	15.3	14.7
GARDNER PEAK SNOTEL	8350	5/01	10	2.5	.0	-
GEORGE CREEK	8840				-	-
GOOSEBERRY R.S.	8400	4/26	23	7.3	10.9	8.3
GOOSEBERRY R.S. SNTL	7900	5/01	0	.0	.3	2.7
GUTZ PEAK SNOTEL	6820	5/01	0	.0	.0	-
HARDSCRABBLE SNOTEL	7250	5/01	21	8.4	15.4	6.9
HARRIS FLAT SNOTEL	7700	5/01	0	.0	.0	1.5
HAYDEN FORK SNOTEL	9100	5/01	28	11.3	16.0	13.0
HENRY'S FORK	10000	4/27	43	11.6	12.1	13.6
HEWINTA SNOTEL	9500	5/01	15	5.1	11.9	9.3
HICKERSON PARK SNTL	9100	5/01	15	4.3	4.2	5.7
HIDDEN SPRINGS	5500	4/28	0	.0	0.0	-
HOBBLE CREEK SUMMIT	7420	4/27	15	6.0	10.3	6.3
HOLE-IN-ROCK SNOTEL	9150	5/01	16	4.2	4.2	4.7
HORSE RIDGE SNOTEL	8260	5/01	33	14.1	19.7	17.9
HUNTINGTON-HORSESHOE	9800	4/27	67	27.2	24.0	24.6
INDIAN CANYON SNOTEL	9100	5/01	10	2.1	10.1	7.9
JOHNSON VALLEY	8850	4/26	0	0.0	4.7	3.8
JONES CORRAL SNOTEL	9750	5/01	30	11.2	8.2	-
KILFOIL CREEK	7300	4/28	34	12.8	18.8	9.8
KILLYON CANYON	6300	4/28	0	.0	0.0	-

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
KIMBERLY MINE SNOTEL	9300	5/01	26	12.3	11.6	12.5
KING'S CABIN SNOTEL	8730	5/01	6	2.8	8.2	7.6
KLONDIKE NARROWS	7400	4/28	29	12.4	20.3	13.3
KOLOB SNOTEL	9250	5/01	39	17.9	15.6	18.2
LAKEFORK #1 SNOTEL	10100	5/01	19	7.2	8.7	11.5
LAKEFORK BASIN SNTL	10900	5/01	57	22.4	21.7	23.8
LAKEFORK MOUNTAIN #3	8400	4/27	0	0.0	3.2	1.8
LAMBS CANYON	7400	4/29	18	7.9	13.9	8.7
LASAL MOUNTAIN LOWER	8800	4/27	0	.0	.4	4.2
LASAL MOUNTAIN SNTL	9850	5/01	0	.0	1.9	8.7
LIGHTNING RIDGE SNTL	8220	5/01	33	14.4	19.1	-
LILY LAKE SNOTEL	9050	5/01	30	11.9	14.1	11.1
LITTLE BEAR LOWER	6000	4/28	6	2.7	11.2	1.7
LITTLE BEAR SNOTEL	6550	5/01	0	.0	2.8	3.4
LITTLE GRASSY SNOTEL	6100	5/01	0	.0	.0	.0
LONG FLAT SNOTEL	8000	5/01	0	.0	.0	1.8
LONG VALLEY JCT. SNT	7500	5/01	0	.0	.0	.0
LOOKOUT PEAK SNOTEL	8200	5/01	65	31.3	29.9	20.4
LOST CREEK RESERVOIR	6130	4/28	0	0.0	0.0	.0
LOUIS MEADOW SNOTEL	6700	5/01	20	10.9	15.0	-
MAMMOTH-COTTONWD SNT	8800	5/01	34	16.6	17.9	16.0
MERCHANT VALLEY SNTL	8750	5/01	29	11.3	6.1	8.1
MIDDLE CANYON	7000	4/28	16	6.7	11.9	7.8
MIDWAY VALLEY SNOTEL	9800	5/01	57	23.3	20.3	23.2
MILL CREEK	6950	4/29	54	21.4	25.9	18.6
MILL-D NORTH SNOTEL	8960	5/01	51	25.1	29.2	21.7
MILL-D SOUTH FORK	7400	4/30	27	11.6	22.1	12.4
MINING FORK SNOTEL	8000	5/01	38	16.0	19.2	18.3
MONTE CRISTO SNOTEL	8960	5/01	64	27.1	30.5	28.3
MOSBY MTN. SNOTEL	9500	5/01	20	6.7	7.5	12.0
MT. BALDY R.S.	9500	4/26	67	24.8	23.6	24.6
MUD CREEK #2	8600	4/27	33	10.9	16.4	8.4
OAK CREEK	7760	4/26	23	7.4	7.5	8.4
PANGUITCH LAKE R.S.	8200	4/27	0	.0	0.0	-
PARLEY'S CANYON SNTL	7500	5/01	18	7.5	13.6	9.3
PARRISH CREEK SNOTEL	7740	5/01	70	30.3	28.5	-
PAYSON R.S. SNOTEL	8050	5/01	24	11.3	15.8	13.3
PICKLE KEG SNOTEL	9600	5/01	32	14.4	13.7	14.1
PINE CREEK SNOTEL	8800	5/01	32	13.6	18.8	21.2
RED PINE RIDGE SNTL	9200	5/01	30	12.3	14.7	13.0
REDDEN MINE LOWER	8500	4/27	46	18.9	22.3	15.6
REES'S FLAT	7300	4/26	4	1.4	9.3	7.3
ROCK CREEK SNOTEL	7900	5/01	0	.0	3.8	1.4
ROCKY BN-SETTLEMT SN	8900	5/01	46	22.8	22.4	25.3
SEELEY CREEK SNOTEL	10000	5/01	35	13.7	10.7	15.5
SMITH MOREHOUSE SNTL	7600	5/01	22	9.7	13.6	7.5
SNOWBIRD SNOTEL	9700	5/01	94	51.8	56.6	41.3
SPIRIT LAKE	10300	4/27	43	13.5	11.0	14.7
SQUAW SPRINGS	9300	4/26	7	1.4	1.6	3.7
STEEL CREEK PARK SNO	10100	5/01	51	16.8	19.3	18.6
STILLWATER CAMP	8550	4/27	16	5.8	11.3	6.8
STRAWBERRY DIVIDE SN	8400	5/01	23	6.7	14.3	11.3
SUSC RANCH	8200	4/27	0	0.0	0.0	2.2
TALL POLES	8800	4/27	28	10.4	6.2	10.9
TEMPLE FORK SNOTEL	7410	5/01	28	11.8	13.5	-
THAYNES CANYON SNTL	9200	5/01	54	23.4	30.6	22.5
THISTLE FLAT	8500	4/26	44	15.9	16.2	-
TIMBERLINE	9100	4/27	9	2.2	12.6	-
TIMBERLINE SNOTEL	8680	5/01	0	.0	7.8	-
TIMPANOGOS DIVIDE SN	8140	5/01	42	19.0	18.0	17.6
TONY GROVE LK SNOTEL	8400	5/01	76	36.4	37.4	34.2
TONY GROVE R.S.	6250	4/28	6	2.2	9.4	3.2
TRIAL LAKE	9960	4/27	64	25.2	27.4	25.2
TRIAL LAKE SNOTEL	9960	5/01	55	25.5	24.4	26.5
TROUT CREEK SNOTEL	9400	5/01	21	6.7	8.1	7.8
UPPER JOES VALLEY	8900	4/27	10	2.9	7.5	5.0
USU DOC DANIEL SNTL	8270	5/01	81	34.1	31.9	-
VERNON CREEK SNOTEL	7500	5/01	8	1.1	6.2	4.5
VIPONT	7670				-	-
WEBSTER FLAT SNOTEL	9200	5/01	2	.8	.0	6.8
WHITE RIVER #1 SNTL	8550	5/01	7	2.3	9.0	7.7
WHITE RIVER #3	7400	4/27	0	0.0	2.1	.5
WIDTSOE #3 SNOTEL	9500	5/01	2	.9	.0	9.5
WRIGLEY CREEK	9000	4/26	18	5.2	8.6	7.3
YANKEE RESERVOIR	8700	4/27	17	6.3	1.0	6.0

*Issued by*

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YOU MAY OBTAIN THIS PRODUCT AS WELL AS CURRENT SNOW, PRECIPITATION, TEMPERATURE AND SOIL MOISTURE, RESERVOIR, SURFACE WATER SUPPLY INDEX, AND OTHER DATA BY VISITING OUR WEB SITE @:

<http://www.ut.nrcs.usda.gov/snow/>

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



# Utah Water Supply Outlook Report

Natural Resources Conservation Service  
Salt Lake City, UT



# Utah Water Supply Outlook Report

June, 2009



Getting around in the old days – NRCS Snow Survey file photo.

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

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**Internet Address: <http://www.ut.nrcs.usda.gov/snow/>**

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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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

# STATE OF UTAH GENERAL OUTLOOK

June 1, 2009

## SUMMARY

May was yet another interesting month for water supply in Utah. At the beginning of May snowpacks in northern Utah were near average and in southern Utah a bit below. By the end of May, snowpacks were pretty much melted out across the entire state. Accelerated snowmelt during May, leaving very little for recession streamflow. There are pros and cons to this situation: Pro – accelerated melt generally means fewer overall losses from streamflow which means a larger component to our reservoirs. Con – streams will likely hit base flow sooner rather than later so those who depend on direct streamflow will likely see a little less water this summer. So, basins with well developed reservoir systems likely benefitted from the accelerated snowmelt while those on direct streamflow may have some losses.

General water supply conditions are near average in northern Utah, near to below average in southern Utah.

## SNOWPACK

June first snowpacks as measured by the NRCS SNOTEL system are as follows: Bear - 23%, Weber - 5%, Provo - 23%, Uintahs - 15%, southeast Utah - 0%, Sevier - 26%, southwest Utah - 0% and the statewide figure is 18% of average.

## PRECIPITATION

Mountain precipitation during May was: Bear – 74%, Weber – 67%, Provo – 71%, Uintahs – 75%, SE Utah – 109%, Sevier – 66%, SW Utah – 74% and the statewide figure is 75% of average. This brings the seasonal accumulation (Oct-May) to 101% of average statewide.

## RESERVOIRS

Storage in 41 of Utah's key irrigation reservoirs is at 74% of capacity up 6% compared to June of last year year.

## STREAMFLOW

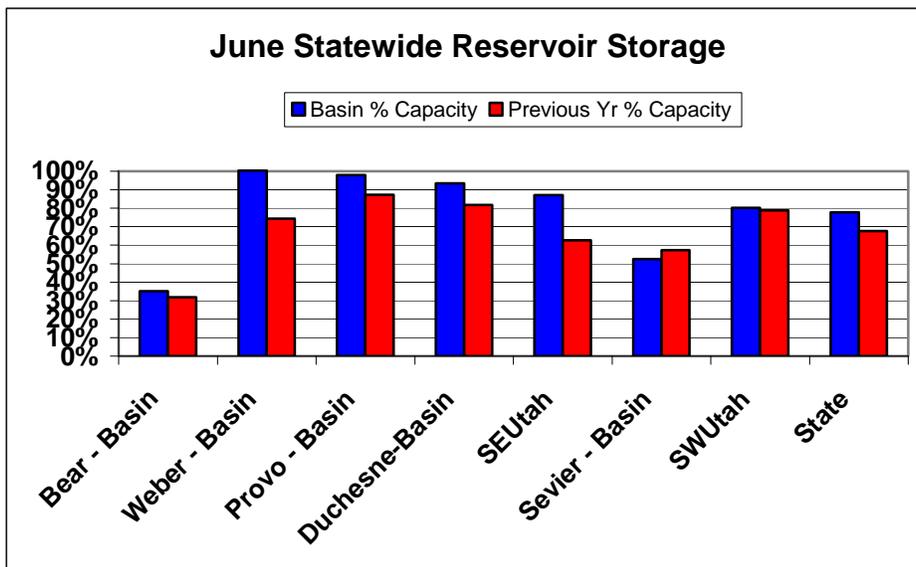
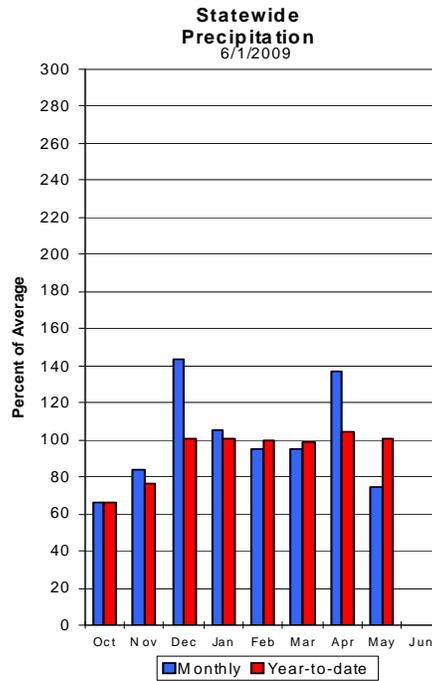
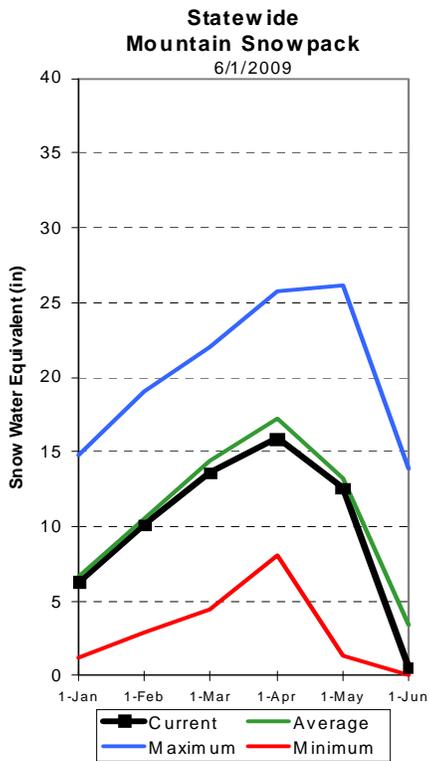
Snowmelt streamflows have peaked for the season and are now receding. Expected flows range from 50% to 110% of average with most flows in the 80% to 100% of normal.

## SOIL MOISTURE

Soil moisture values in northern Utah are near maximum levels while southern Utah has started to dry.

## SURFACE WATER SUPPLY INDEX

Surface Water Supply Indices range from 12% on the Bear River to 71% for the Virgin. The extremely low value for the Bear River is a reflection of Bear Lake storage which continues to be well below normal.

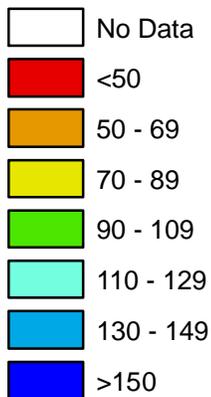


# Utah

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

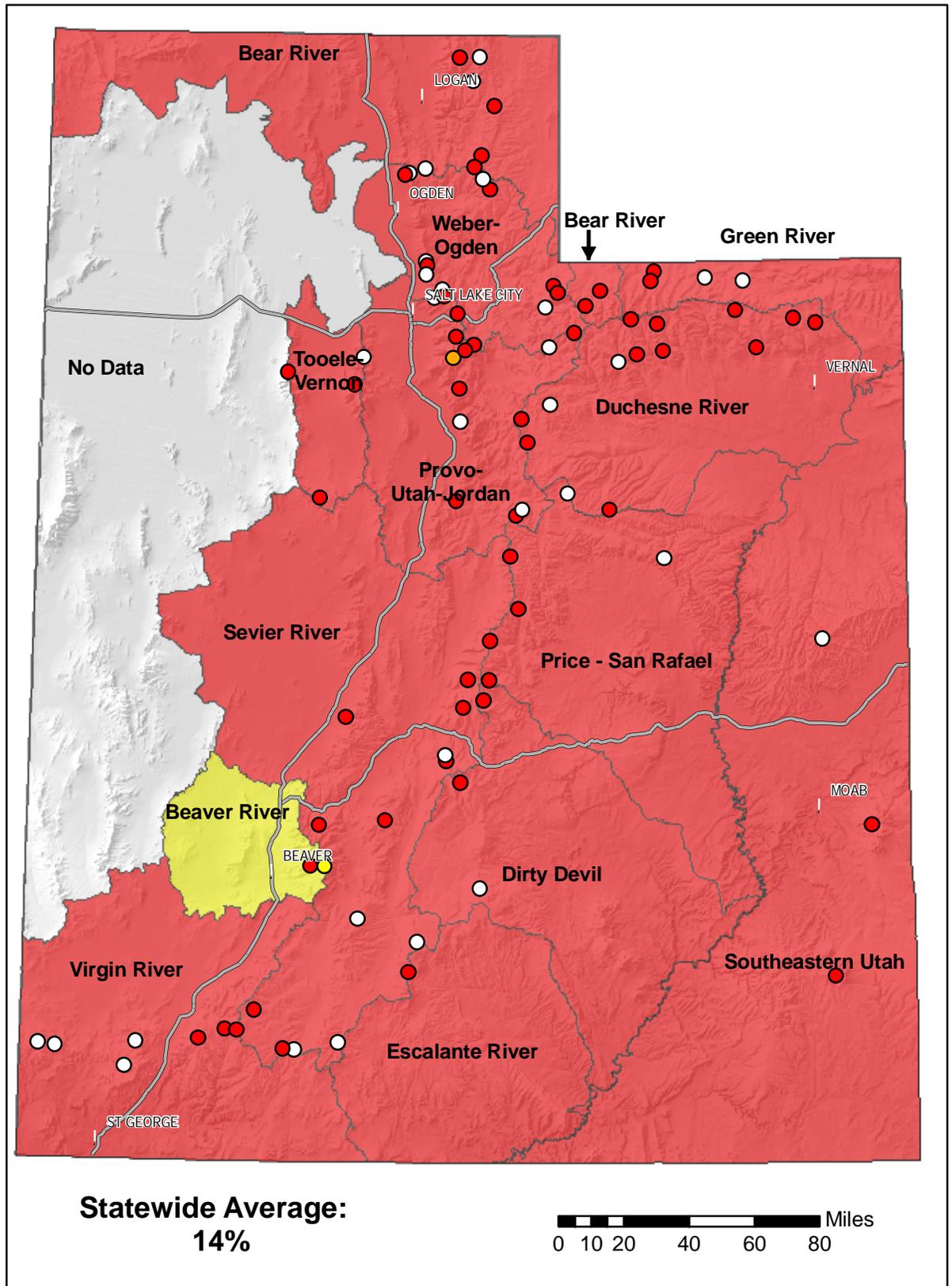
**June 1, 2009**

**Snow Water Equivalent (swe)  
Basin-Wide % of  
1971-2000 Normal**



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

**Provisional Data  
Subject to Revision**



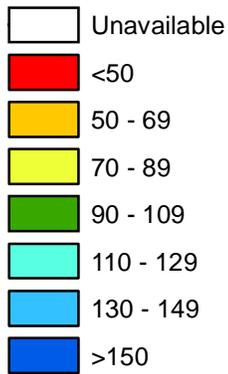
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by the USDA/NRCS Utah DCO  
Salt Lake City, Utah: <http://www.ut.nrcs.usda.gov/snow/>  
Based on data from <http://www.wcc.nrcs.usda.gov/reports/>  
Science contact: Mike Bracco [michael.bricco@ut.usda.gov](mailto:michael.bricco@ut.usda.gov)

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

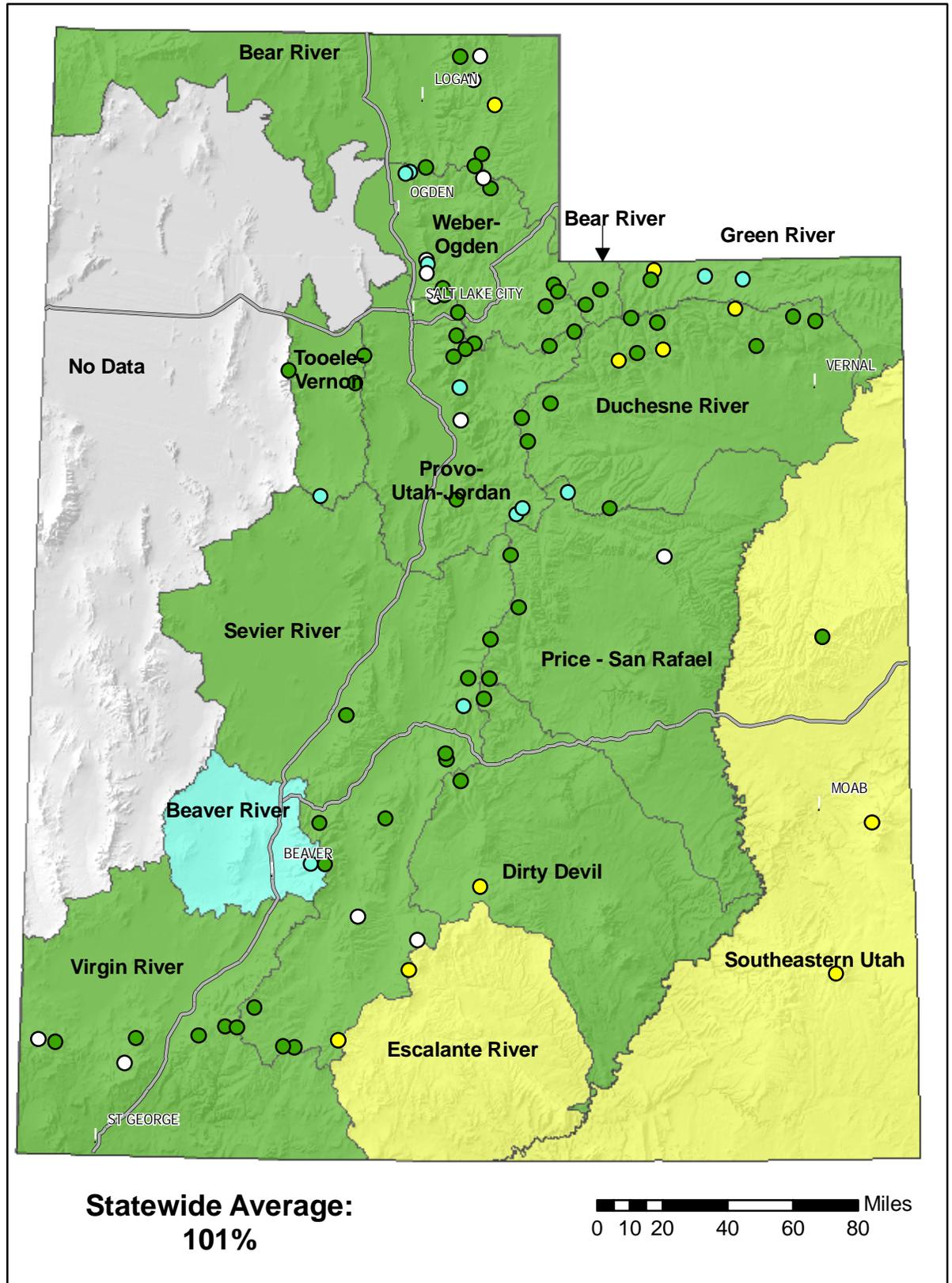
June 1, 2009

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



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

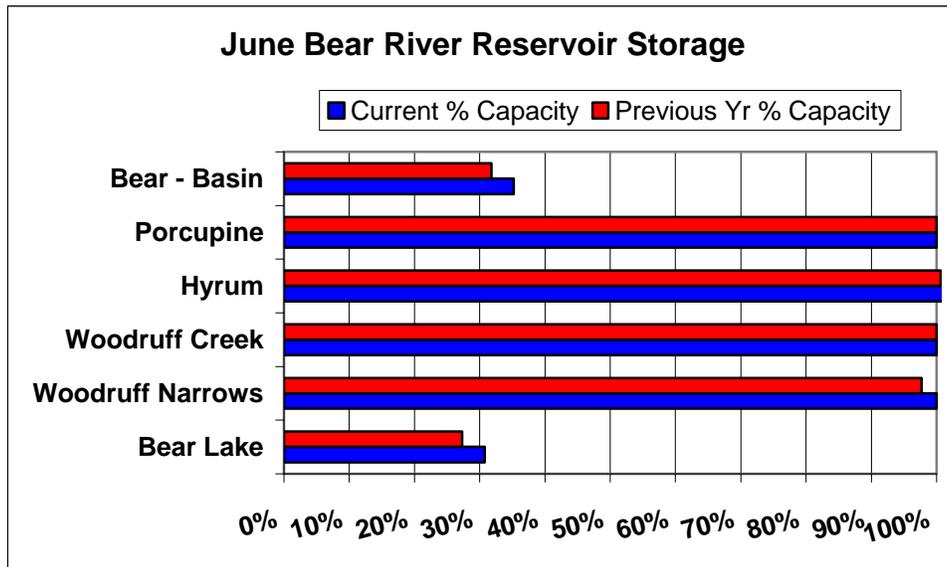
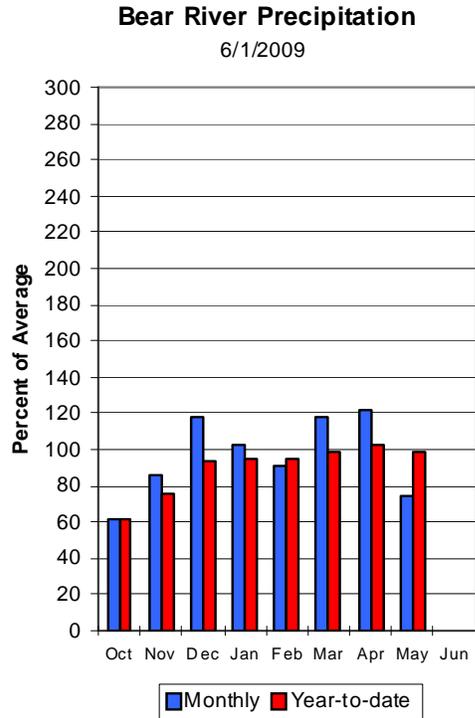
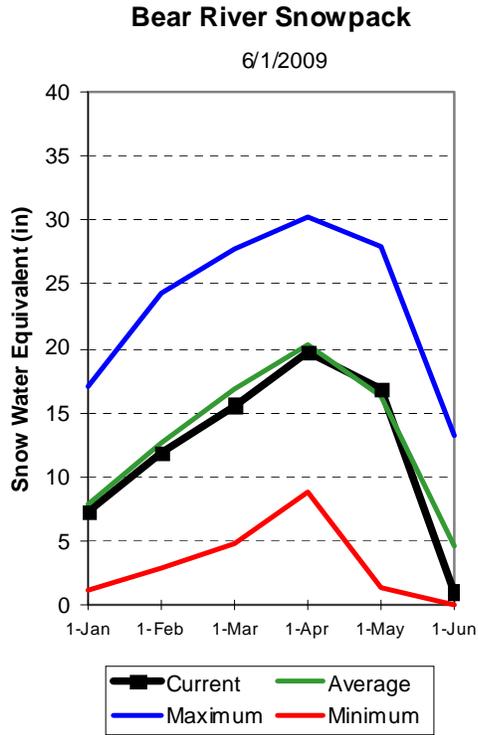
**Provisional Data  
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Prepared by the USDA/NRCS Utah DCO  
Salt Lake City, Utah <http://www.ut.nrcs.usda.gov/snow/>  
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Science contact: Mike Bracco [michael.bricco@ut.usda.gov](mailto:michael.bricco@ut.usda.gov)

# Bear River Basin June 1, 2009



BEAR RIVER BASIN  
Streamflow Forecasts - June 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Bear R nr UT-WY State Line	APR-JUL JUN-JUL	100 40	112 50	120 57	106 81	128 64	140 74	113 70
Bear River ab Reservoir nr Woodruff	APR-JUL JUN-JUL	86 19.0	104 32	117 40	86 63	130 48	148 61	136 64
Big Creek nr Randolph	APR-JUL JUN-JUL	2.10 0.33	2.30 0.78	2.40 1.20	49 52	2.50 1.71	2.70 2.60	4.90 2.30
Smiths Fork nr Border	APR-JUL JUN-JUL	89 49	93 53	95 55	92 90	97 57	101 61	103 61
Bear River at Stewart Dam	APR-JUL JUN-JUL	97 18.0	118 48	133 68	57 62	149 88	175 118	234 110
Little Bear at Paradise, UT	APR-JUL JUN-JUL	35 3.3	43 6.1	49 8.0	107 67	55 9.9	63 12.7	46 11.9
Logan nr Logan, UT	APR-JUL	82	99	110	87	121	138	126
Logan R nr Logan, UT	JUN-JUL	39	47	52	74	57	65	70
Blacksmith Fk nr Hyrum, UT	APR-JUL JUN-JUL	24 8.0	36 12.8	44 16.0	92 80	52 19.2	64 24	48 20

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of May					BEAR RIVER BASIN Watershed Snowpack Analysis - June 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BEAR LAKE	1302.0	400.9	355.3	---	BEAR RIVER, UPPER	8	37	34
HYRUM	15.3	15.5	15.4	14.4	BEAR RIVER, LOWER	9	29	11
PORCUPINE	11.3	11.3	11.3	10.5	LOGAN RIVER	4	32	15
WOODRUFF NARROWS	57.3	57.3	56.0	40.3	RAFT RIVER	1	0	0
WOODRUFF CREEK	4.0	4.0	4.0	---	BEAR RIVER BASIN	17	24	23

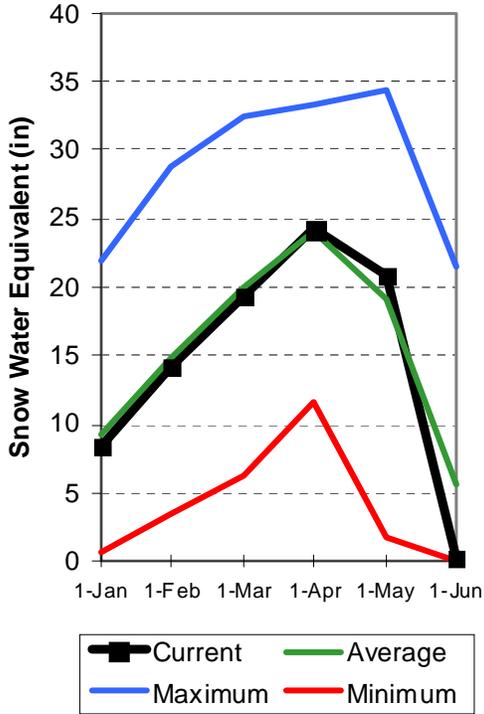
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.  
The average is computed for the 1971-2000 base period.  
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
(2) - The value is natural volume - actual volume may be affected by upstream water management.

# Weber and Ogden River Basins

## June 1, 2009

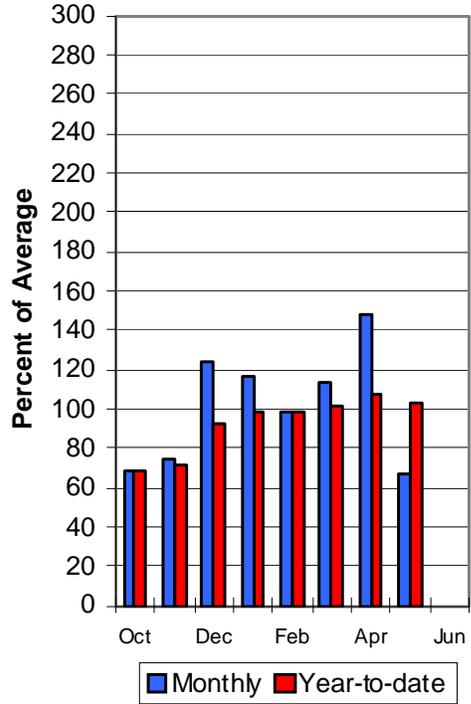
### Weber River Snowpack

6/1/2009

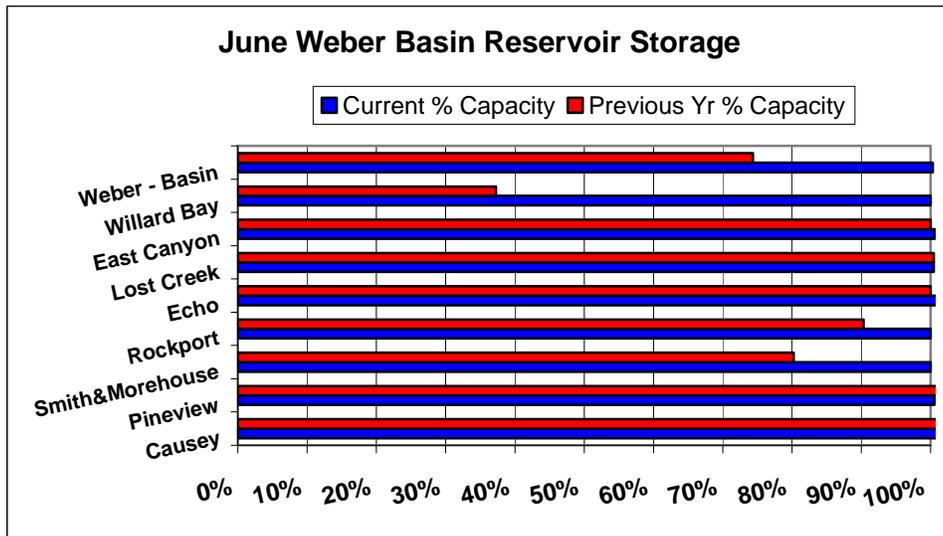


### Weber River Precipitation

6/1/2009



### June Weber Basin Reservoir Storage



WEBER & OGDEN WATERSHEDS in Utah  
Streamflow Forecasts - June 1, 2009

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>				30-Yr Avg. (1000AF)
		Chance Of Exceeding *				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	
Smith & Morehouse Res inflow	APR-JUL	27	29	30	88	34
	JUN-JUL	11.8	13.7	15.0	79	19.1
Weber R nr Oakley, UT	APR-JUL	99	113	123	100	123
	JUN-JUL	32	45	53	75	71
Rockport Reservoir	APR-JUL	77	96	110	82	134
	JUN-JUL	29	42	51	71	72
Weber R nr Coalville, UT	APR-JUL	76	95	108	79	137
	JUN-JUL	24	38	47	69	68
Chalk Ck at Coalville, UT	APR-JUL	24	34	41	91	45
	JUN-JUL	0.7	6.5	12.0	70	17.2
Echo Resv at Echo, UT	APR-JUL	97	133	158	88	179
	JUN-JUL	4.5	32	50	60	83
Lost Ck Resv Inflow	APR-JUL	3.4	8.0	11.1	63	17.6
	JUN-JUL	0.23	1.72	3.00	65	4.60
East Canyon Ck nr Morgan, UT	APR-JUL	18.6	24	27	87	31
	JUN-JUL	2.20	5.00	7.00	75	9.40
Weber R at Gateway, UT	APR-JUL	158	241	297	84	355
	JUN-JUL	23	63	90	71	126
SF Ogden R nr Huntsville, UT	APR-JUL	23	44	59	92	64
SFF Ogden R nr Huntsville, UT	JUN-JUL	9.1	12.6	15.0	93	16.2
Pineview Resv Inflow	APR-JUL	35	86	120	90	133
	JUN-JUL	2.1	16.3	26	87	30
Wheeler Ck nr Huntsville, UT	APR-JUL	1.96	3.80	5.00	79	6.30
	JUN-JUL	0.04	0.77	1.50	71	2.10

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

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
CAUSEY	7.1	7.2	7.2	6.7
EAST CANYON	49.5	49.8	49.5	46.8
ECHO	73.9	74.6	73.9	66.7
LOST CREEK	22.5	22.6	22.6	20.3
PINEVIEW	110.1	110.7	112.0	97.7
ROCKPORT	60.9	60.9	55.0	49.1
WILLARD BAY		NO REPORT		

WEBER & OGDEN WATERSHEDS in Utah  
Watershed Snowpack Analysis - June 1, 2009

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
OGDEN RIVER	4	4	3
WEBER RIVER	9	4	6
WEBER & OGDEN WATERSHEDS	13	4	5

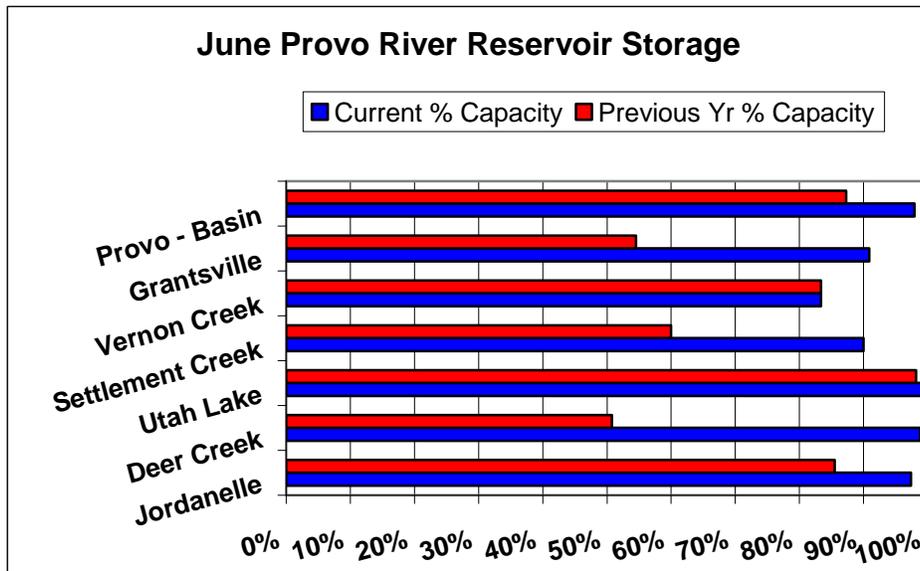
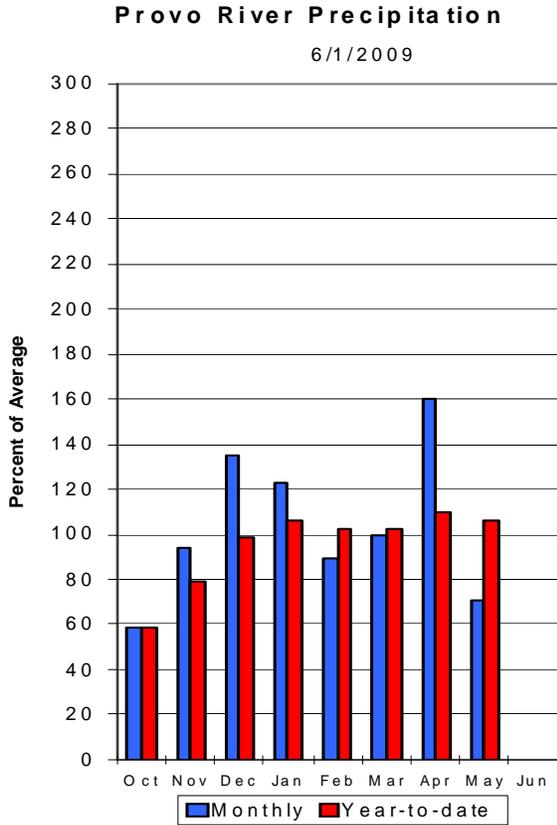
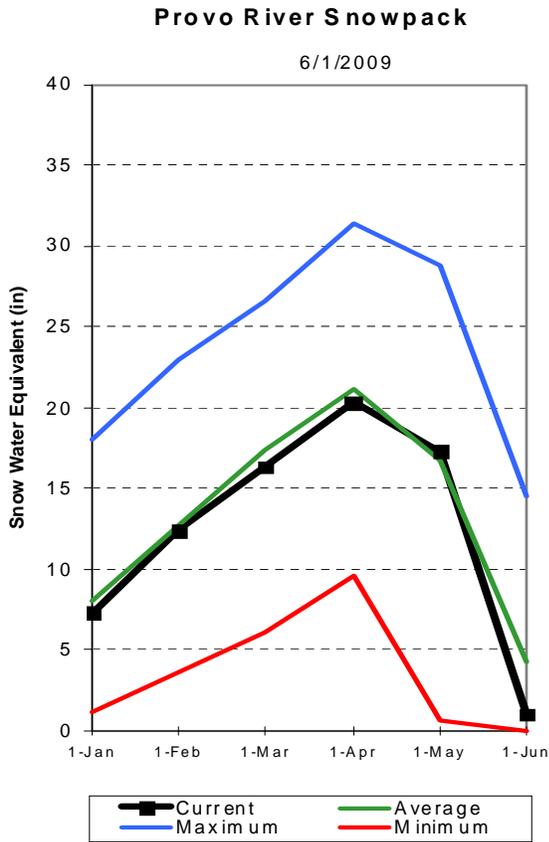
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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.

# Utah Lake, Jordan River & Tooele Valley Basins

## June 1, 2009



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Streamflow Forecasts - June 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====>>		Chance Of Exceeding *		====>> Wetter =====>>		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Spanish Fk at Castilla, UT	APR-JUL	1.5	43	71	92	99	140	77
	JUN-JUL	1.6	10.9	24	92	30	48	26
Provo River nr Woodland	APR-JUL	74	97	115	112	134	166	103
	JUN-JUL	12.0	26	35	67	44	58	52
Provo River nr Hailstone	APR-JUL	78	109	134	123	161	205	109
	JUN-JUL	18.9	28	36	68	44	59	53
Provo R blw Deer Ck Dam, UT	APR-JUL	116	136	149	118	162	182	126
	JUN-JUL	17.4	30	38	58	46	59	66
American Fk abv Upper Powerplant	APR-JUL	16.9	22	26	81	29	34	32
	JUN-JUL	6.7	11.6	15.0	75	18.4	23	20
Utah Lake inflow	APR-JUL	134	227	290	89	353	446	325
	JUN-JUL	7.0	20	83	68	146	239	122
W Canyon Ck nr Cedar Fort, UT	APR-JUL	1.11	1.64	2.00	83	2.40	2.90	2.40
	JUN-JUL	0.41	0.70	0.90	78	1.10	1.39	1.16
Little Cottonwood Ck nr SLC	APR-JUL	26	32	36	90	41	48	40
	JUN-JUL	13.8	17.9	21	81	24	30	26
Big Cottonwood Ck nr SLC, UT	APR-JUL	27	33	38	100	43	49	38
	JUN-JUL	11.3	15.3	18.0	86	21	25	21
Mill Ck nr SLC, UT	APR-JUL	1.77	3.80	5.20	74	6.60	8.60	7.00
	JUN-JUL	1.10	2.10	2.80	78	3.50	4.50	3.60
Parleys Ck nr SLC, UT	APR-JUL	4.1	7.7	10.1	61	12.5	16.1	16.7
	JUN-JUL	1.88	3.40	4.50	78	5.60	7.10	5.80
Dell Fork nr SLC, UT	APR-JUL	3.20	5.40	6.90	102	8.40	10.60	6.80
	JUN-JUL	0.08	0.65	1.30	77	1.95	2.90	1.68
Emigration Ck nr SLC, UT	APR-JUL	0.15	1.67	2.70	60	3.70	5.20	4.50
	JUN-JUL	0.28	0.71	1.00	81	1.29	1.72	1.24
City Ck nr SLC, UT	APR-JUL	4.70	6.70	8.00	92	9.30	11.30	8.70
	JUN-JUL	2.10	3.10	3.80	91	4.50	5.50	4.20
Vernon Ck nr Vernon, UT	APR-JUL	0.09	0.63	1.00	68	1.37	1.91	1.48
	JUN-JUL	0.07	0.27	0.40	70	0.53	0.73	0.57
Settlement Ck nr Tooele, UT	APR-JUL	0.35	1.22	1.80	86	2.40	3.20	2.10
	JUN-JUL	0.05	0.44	0.70	67	0.96	1.35	1.05
South Willow Ck nr Grantsville, UT	APR-JUL	1.98	2.70	3.20	99	3.70	4.40	3.23
	JUN-JUL	1.00	1.36	1.60	88	1.84	2.20	1.81

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

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Watershed Snowpack Analysis - June 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
DEER CREEK	149.7	147.9	76.0	140.2	PROVO RIVER & UTAH LAKE	7	23	13
GRANTSVILLE	3.3	3.0	3.0	2.8	PROVO RIVER	4	23	15
SETTLEMENT CREEK	1.0	0.9	1.0	0.9	JORDAN RIVER & GSL	6	19	39
STRAWBERRY-ENLARGED	1105.9	1016.9	931.5	702.5	TOOELE & RUSH VALLEY WATE	3	0	0
UTAH LAKE	870.9	920.0	855.0	905.1	UTAH LAKE/JORDAN R./TOOEL	16	19	23
VERNON CREEK	0.6	0.5	0.6	---				

\* 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.

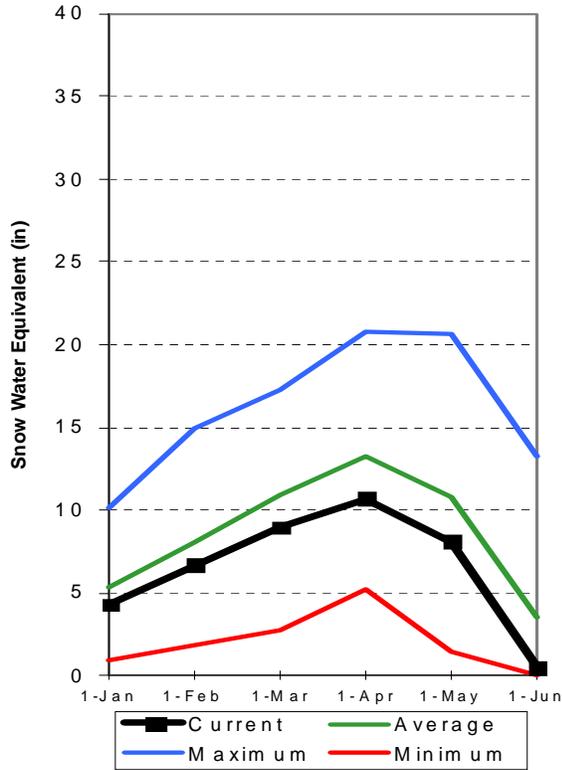
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# Uintah Basin and Dagget SCD's

## June 1, 2009

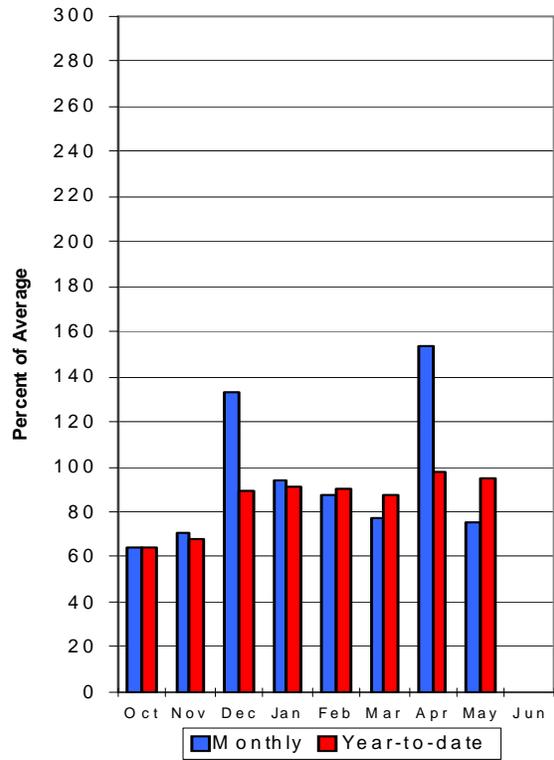
### Uinta Snow pack

6/1/2009



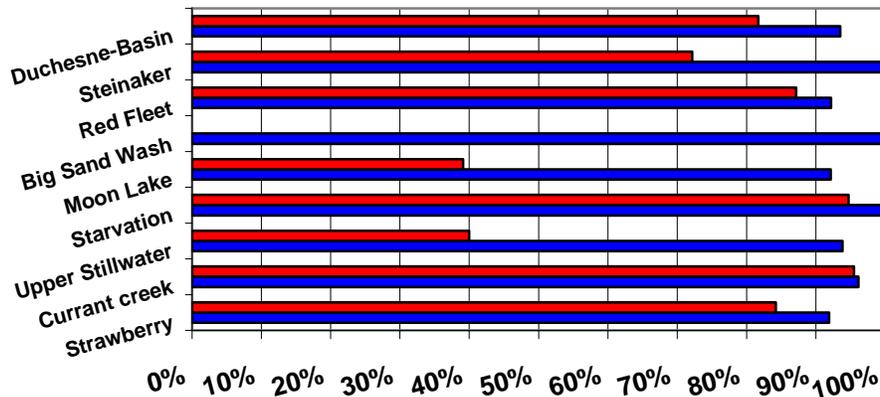
### Uinta Precipitation

6/1/2009



### June Uintah Basin Reservoir Storage

■ Current % Capacity ■ Previous Yr % Capacity



UINTAH BASIN & DAGGET SCD'S  
Streamflow Forecasts - June 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		50%		Wetter		
		90% (1000AF)	70% (1000AF)	1000AF	50% (% AVG.)	30% (1000AF)	10% (1000AF)	
Blacks Fork nr Robertson	APR-JUL	60	72	80	84	89	102	95
	JUN-JUL	21	31	39	58	48	63	67
EF of Smiths Fork nr Robertson	APR-JUL	17.2	22	25	86	29	34	29
	JUN-JUL	7.3	11.0	14.0	67	17.3	23	21
Flaming Gorge Reservoir Inflow (2)	APR-JUL	630	755	850	71	955	1140	1190
	JUN-JUL	290	415	510	70	615	795	730
Big Brush Ck abv Red Fleet Resv	APR-JUL	14.0	15.0	16.0	76	17.0	19.0	21
	JUN-JUL	2.8	4.1	5.1	51	6.2	8.2	10.1
Ashley Creek nr Vernal	APR-JUL	24	28	32	62	35	42	52
	JUN-JUL	8.5	12.7	16.6	60	19.7	26	28
WF Duchesne River nr Hanna (2)	APR-JUL	17.2	19.3	21	88	23	26	24
	JUN-JUL	2.6	4.7	6.4	54	8.4	11.8	11.9
Duchesne R nr Tabiona (2)	APR-JUL	74	83	90	86	98	111	105
	JUN-JUL	16.0	25	32	53	40	53	60
Upper Stillwater Reservoir Inflow	APR-JUL	59	65	69	84	73	80	82
	JUN-JUL	26	33	38	68	43	52	56
Rock Ck nr Mountain Home (2)	APR-JUL	66	74	79	89	85	93	89
	JUN-JUL	22	29	34	55	39	48	62
Duchesne R abv Knight Diversion (2)	APR-JUL	136	148	158	84	169	188	188
	JUN-JUL	24	36	46	39	57	76	117
Strawberry R nr Soldier Springs (2)	APR-JUL	48	52	55	93	59	65	59
	JUN-JUL	4.0	7.8	11.0	69	14.8	21	16.0
Currant Creek Reservoir Inflow (2)	APR-JUL	19.0	21	23	92	25	29	25
	JUN-JUL	4.1	6.5	8.4	71	10.6	14.2	11.8
Strawberry R nr Duchesne (2)	APR-JUL	92	99	105	87	112	125	121
	JUN-JUL	7.6	14.8	21	51	28	41	41
Lake Fork River Moon Lake Inflow	APR-JUL	40	46	50	74	54	61	68
	JUN-JUL	20	26	30	64	35	42	47
Yellowstone River nr Altonah	APR-JUL	45	51	55	89	59	66	62
	JUN-JUL	18.0	23	27	60	31	38	45
Duchesne R at Myton (2)	APR-JUL	170	185	200	77	220	255	260
	JUN-JUL	7.0	22	37	26	56	92	142
Whiterocks nr Whiterocks	APR-JUL	35	40	44	79	48	54	56
	JUN-JUL	11.6	16.3	20	53	24	31	38
Duchesne R nr Randlett (2)	APR-JUL	180	205	225	69	255	305	324
	JUN-JUL	9.0	32	54	29	82	135	186

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

UINTAH BASIN & DAGGET SCD'S  
Watershed Snowpack Analysis - June 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
FLAMING GORGE	3749.0	2991.0	3056.0	3040.0	UPPER GREEN RIVER in UTAH	6	30	36
MOON LAKE	49.5	33.0	14.0	29.9	ASHLEY CREEK	2	0	0
RED FLEET	25.7	23.7	24.1	22.4	BLACK'S FORK RIVER	2	30	40
STEINAKER	33.4	34.9	31.3	27.6	SHEEP CREEK	1	0	0
STARVATION	165.3	166.9	156.6	147.6	DUCHESNE RIVER	11	13	9
STRAWBERRY-ENLARGED	1105.9	1016.9	931.5	702.5	LAKE FORK-YELLOWSTONE CRE	4	13	11
					STRAWBERRY RIVER	4	0	0
					UINTAH-WHITEROCKS RIVERS	2	0	0
					UINTAH BASIN & DAGGET SCD	17	18	15

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

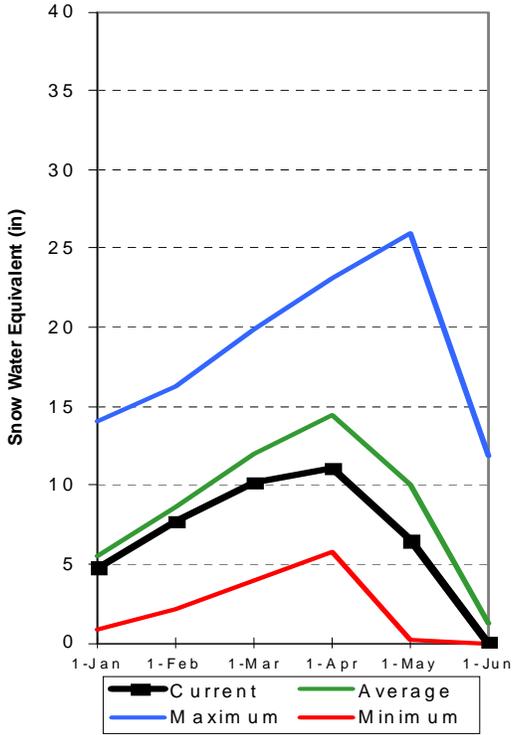
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# Carbon, Emery, Wayne, Grand and San Juan Co. June 1, 2009

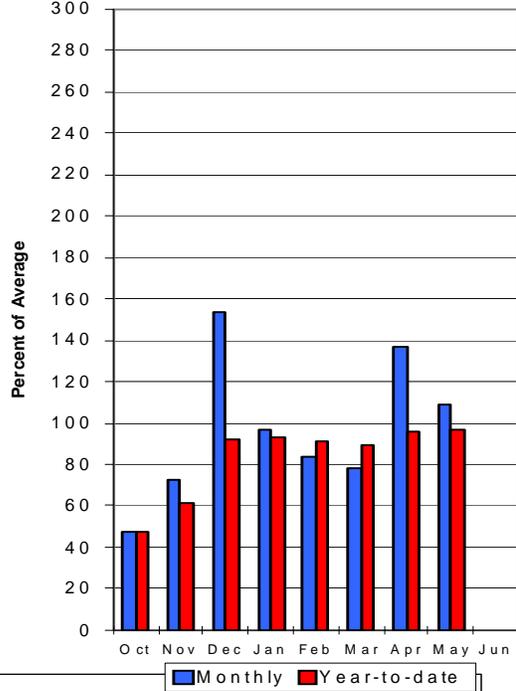
## Southeast Utah Snowpack

6/1/2009



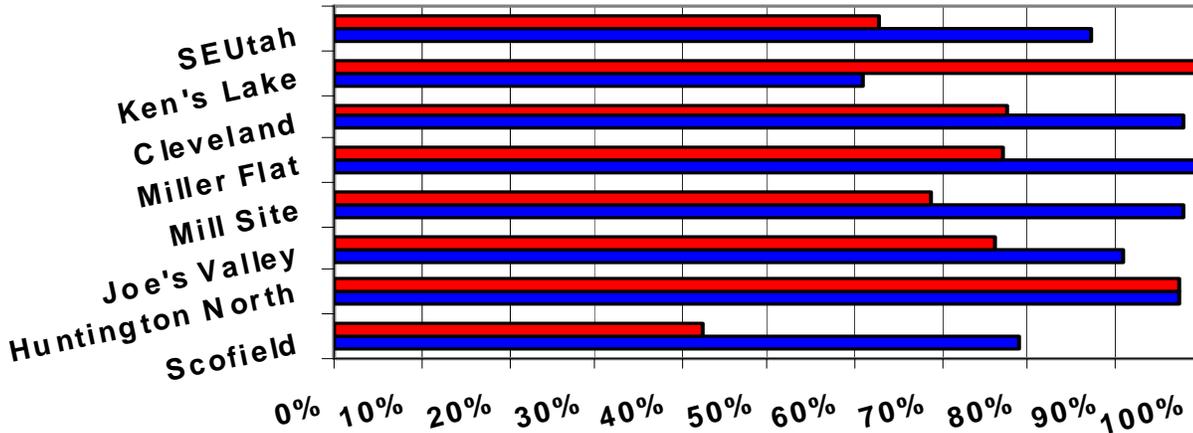
## Southeast Utah Precipitation

6/1/2009



## June Southeast Utah Reservoir Storage

■ Current % Capacity   ■ Previous Yr % Capacity



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Streamflow Forecasts - June 1, 2009

Forecast Point	Forecast Period	<==== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)		(1000AF)	(1000AF)	(1000AF)	(1000AF)
Gooseberry Creek nr Scofield	APR-JUL	8.5	9.6	10.5	88	11.5	13.2	11.9				
	JUN-JUL	2.00	3.10	4.00	85	5.00	6.70	4.70				
Price River nr Scofield Reservoir	APR-JUL	36	38	40	89	42	46	45				
	JUN-JUL	3.6	5.7	7.4	44	9.4	13.1	17.0				
White River blw Tabbyune Creek	APR-JUL	16.0	16.5	17.0	98	17.5	18.5	17.3				
	JUN-JUL	0.85	1.42	1.90	46	2.40	3.40	4.16				
Green River at Green River, UT (2)	APR-JUL	2260	2570	2780	88	3000	3310	3170				
	JUN-JUL	750	980	1140	67	1300	1530	1710				
Huntington Ck Inflow to Electric Lk	APR-JUL	13.4	14.3	15.0	96	15.8	17.0	15.7				
	JUN-JUL	2.40	3.30	4.00	70	4.80	6.00	5.75				
Huntington Ck nr Huntington (2)	APR-JUL	34	37	40	82	42	46	49				
	JUN-JUL	16.6	20	23	89	25	29	26				
Joe's Valley Reservoir Inflow	APR-JUL	38	43	47	81	5.2	59	58				
	JUN-JUL	8.7	13.5	17.4	50	22	29	35				
Ferron Ck (Upper Station) nr Ferron	APR-JUL	25	26	27	69	28	30	39				
	JUN-JUL	2.5	3.8	4.9	21	6.1	8.1	23				
Colorado River nr Cisco (2)	APR-JUL	4360	4510	4750	102	5010	5160	4650				
	JUN-JUL	1500	1570	1890	74	2230	2300	2550				
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	2.30	2.60	2.80	56	3.00	3.40	5.00				
	JUN-JUL	0.64	0.89	1.10	44	1.34	1.74	2.50				
Muddy Creek nr Emery	APR-JUL	12.9	14.7	16.0	80	17.5	19.9	19.9				
	JUN-JUL	4.2	6.0	7.3	61	8.8	11.2	11.9				
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.21	0.26	0.30	22	0.35	0.46	1.38				
	JUN-JUL	0.07	0.12	0.16	49	0.21	0.32	0.33				
San Juan River near Bluff (2)	APR-JUL	885	960	1040	85	1120	1150	1230				
	JUN-JUL	160	235	315	56	390	425	560				

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

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Watershed Snowpack Analysis - June 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNTINGTON NORTH	4.2	4.1	4.1	3.9	PRICE RIVER	3	0	0
JOE'S VALLEY	61.6	56.0	47.0	51.4	SAN RAFAEL RIVER	3	0	0
KEN'S LAKE	2.3	1.4	2.3	2.0	MUDDY CREEK	1	0	0
MILL SITE	16.7	16.4	11.5	16.6	FREMONT RIVER	3	0	0
SCOFIELD	65.8	52.1	28.0	53.7	LASAL MOUNTAINS	1	0	0
					BLUE MOUNTAINS	1	0	0
					WILLOW CREEK	1	0	0
					SOUTHEASTERN UTAH	13	0	0

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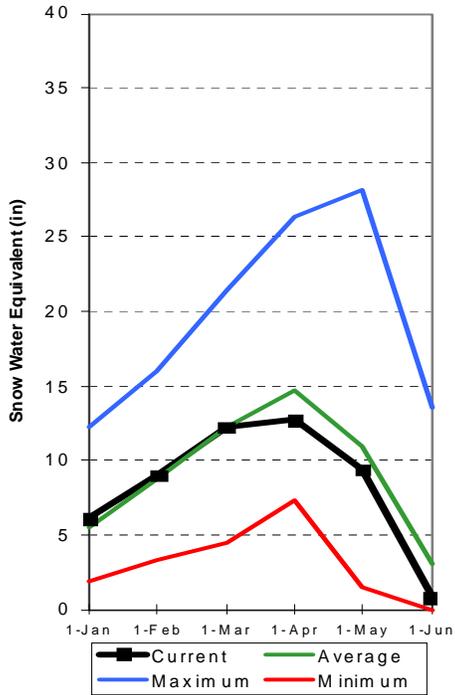
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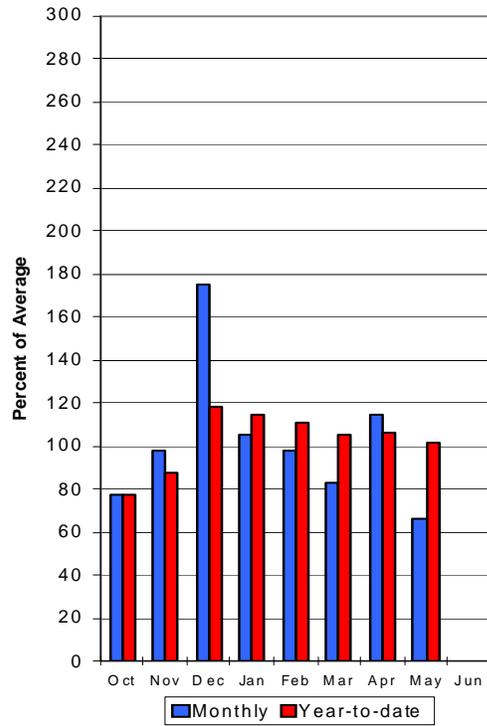
# Sevier and Beaver River Basins

## June 1, 2009

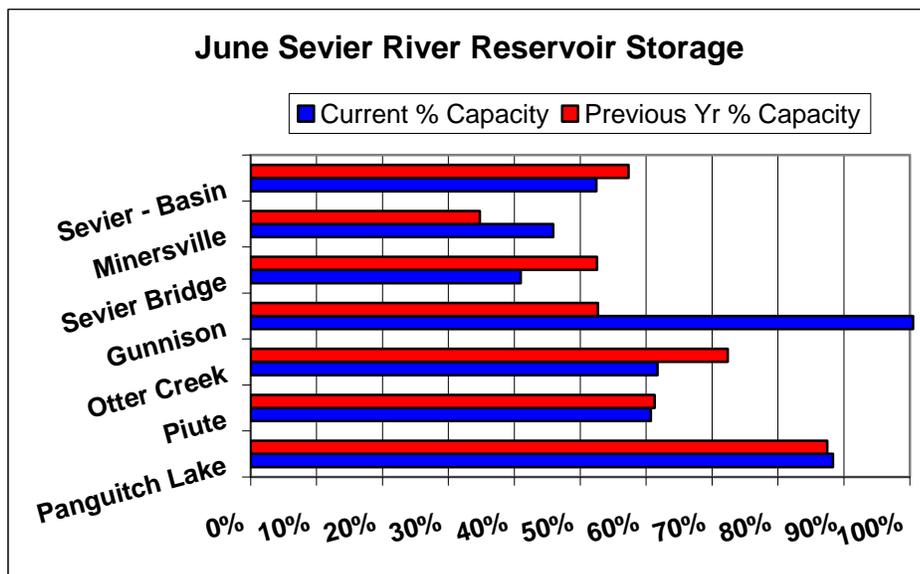
**Sevier River Snow pack**  
6/1/2009



**Sevier River Precipitation**  
6/1/2009



### June Sevier River Reservoir Storage



SEVIER & BEAVER RIVER BASINS  
Streamflow Forecasts - June 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Sevier R at Hatch, UT	APR-JUL JUN-JUL	29 8.6	38 11.8	44 14.0	80 52	50 16.2	59 19.4	55 27
Sevier R nr Kingston, UT	APR-JUL JUN-JUL	4.5 0.3	16.5 4.3	25 8.5	76 19	33 14.6	45 24	33 44
EF Sevier R nr Kingston, UT	APR-JUL JUN-JUL	5.1 3.6	15.2 10.4	22 15.0	63 115	29 19.6	39 26	35 13.1
Sevier R blw Piute Dam nr Marysvale,	APR-JUL	1.8	38	75	82	113	166	91
Sevier R blw Piute Dam	JUN-JUL	3.7	13.2	23	39	36	59	59
Clear Creek Abv Diversions nr Sevier	APR-JUL	13.0	17.2	20	91	23	27	22
Clear Creek Abv Diversions Nr Sevier	JUN-JUL	4.50	6.20	7.50	82	9.00	11.30	9.20
Salina Ck at Salina, UT	APR-JUL	6.2	11.0	15.0	76	19.7	28	19.7
Salina Creek at Salina	JUN-JUL	0.58	2.50	4.50	70	7.10	12.10	6.40
Manti Ck Blw Dugway Ck Nr Manti	APR-JUL JUN-JUL	11.2 5.0	13.4 7.1	15.0 8.7	82 81	16.7 10.5	19.3 13.4	18.3 10.8
Sevier R nr Gunnison, UT	APR-JUL JUN-JUL	2.0 1.0	19.0 7.0	35 19.0	33 14	68 23	90 50	106 134
Chicken Creek nr Levan	APR-JUL JUN-JUL	1.54 0.12	1.80 0.31	2.00 0.50	44 40	2.20 0.73	2.60 1.15	4.50 1.24
Oak Creek nr Oak City	APR-JUL JUN-JUL	0.71 0.09	0.87 0.18	1.00 0.26	60 84	1.13 0.35	1.35 0.52	1.66 0.31
Beaver R nr Beaver, UT	APR-JUL JUN-JUL	14.4 5.0	21 7.0	26 8.8	96 60	31 11.0	38 15.4	27 14.7
Minersville Reservoir	APR-JUL	11.9	17.9	23	139	29	39	16.6
Minersville Reservoir inflow	JUN-JUL	3.20	6.20	8.80	94	11.80	17.10	9.40

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

SEVIER & BEAVER RIVER BASINS  
Watershed Snowpack Analysis - June 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNNISON	20.3	20.4	15.0	15.2	UPPER SEVIER RIVER	8	0	0
MINERSVILLE (RkyFd)	23.3	10.7	15.0	16.4	EAST FORK SEVIER RIVER	3	0	0
OTTER CREEK	52.5	32.4	38.0	46.2	SOUTH FORK SEVIER RIVER	5	0	0
PIUTE	71.8	43.6	44.0	52.6	LOWER SEVIER RIVER	6	0	0
SEVIER BRIDGE	236.0	96.7	124.0	170.7	BEAVER RIVER	2	83	75
PANGUITCH LAKE	22.3	19.7	19.5	18.4	SEVIER & BEAVER RIVER BAS	16	44	26

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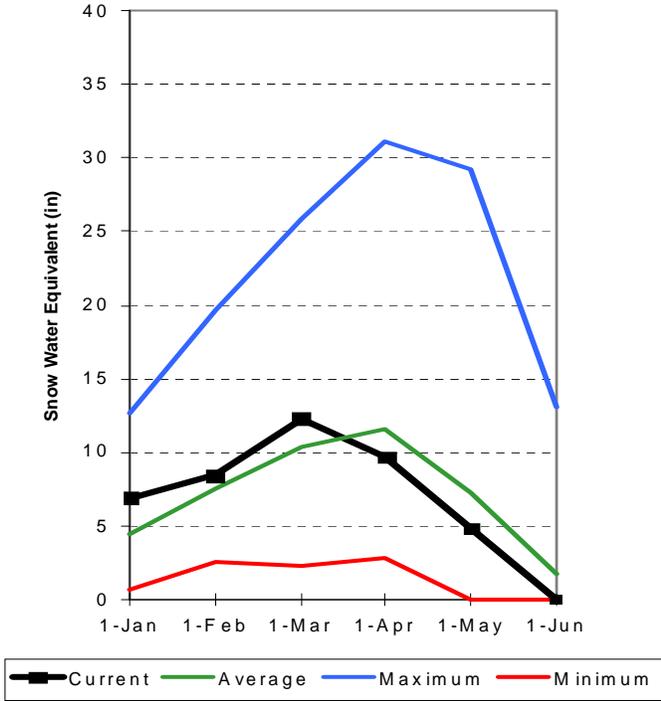
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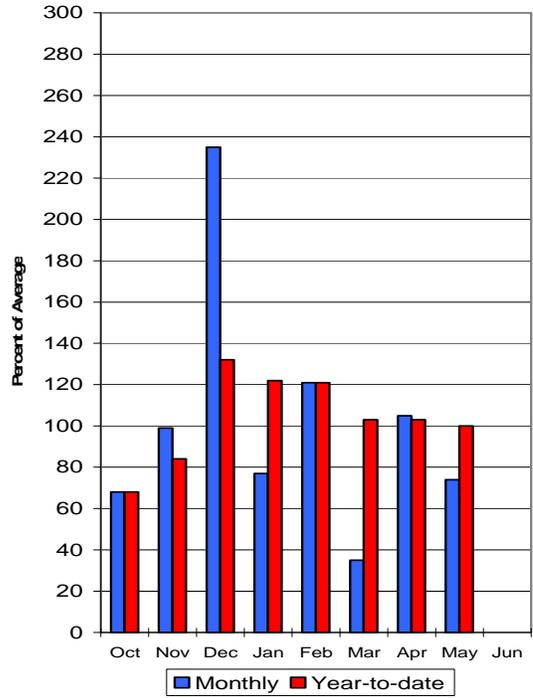
# E. Garfield, Kane, Washington, & Iron Co.

## June 1, 2009

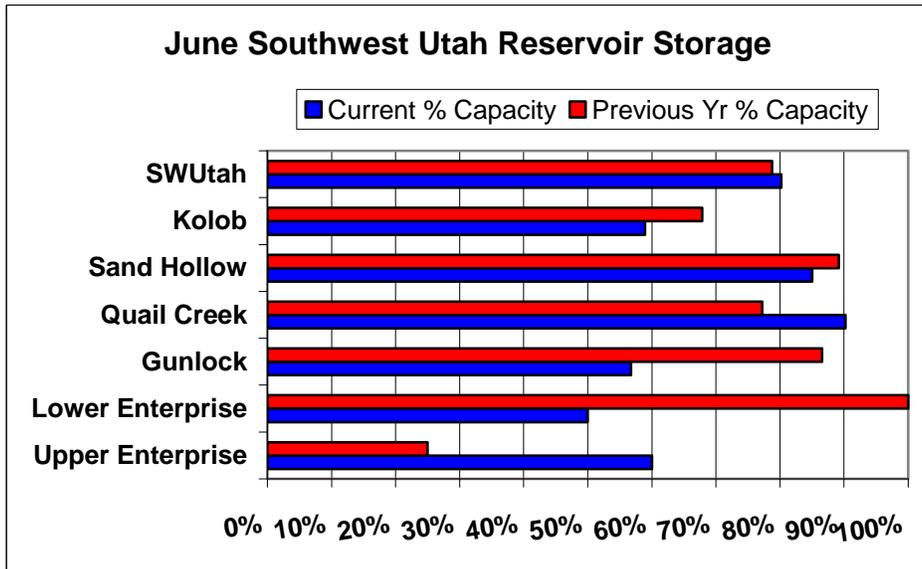
**Southwest Utah Snow pack**  
6/1/2009



**Southwest Utah Precipitation**  
6/1/2009



**June Southwest Utah Reservoir Storage**



E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Streamflow Forecasts - June 1, 2009

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		==== Future Conditions =====		==== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Lake Powell Inflow (2)	APR-JUL JUN-JUL	6220 2500	6320 3010	7100 3380	90 73	7880 3750	7720 4000	7930 4640
Virgin River at Virgin	APR-JUL JUN-JUL	38 8.3	40 10.4	42 12.0	66 73	44 13.7	46 16.4	64 16.4
Virgin River nr Hurricane	APR-JUL JUN-JUL	26 5.6	28 8.1	30 10.0	44 55	32 12.1	36 15.6	69 18.1
Santa Clara River nr Pine Valley	APR-JUL JUN-JUL	2.90 0.52	3.20 0.79	3.40 1.00	62 42	3.60 1.24	4.00 1.63	5.50 2.40
Coal Ck nr Cedar City, UT	APR-JUL JUN-JUL	14.7 0.39	16.5 2.20	17.8 4.00	92 62	19.1 5.80	21 8.40	19.3 6.50

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

E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Watershed Snowpack Analysis - June 1, 2009

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNLOCK	10.4	5.9	9.0	---	VIRGIN RIVER	5	0	0
LAKE POWELL	24322.0	14751.0	12850.0	---	PAROWAN	2	0	0
QUAIL CREEK	40.0	36.1	30.9	29.6	ENTERPRISE TO NEW HARMONY	2	0	0
UPPER ENTERPRISE	10.0	6.0	2.5	---	COAL CREEK	2	0	0
LOWER ENTERPRISE	2.6	1.3	2.6	---	ESCALANTE RIVER	2	0	0
					SOUTHWESTERN UTAH	9	0	0

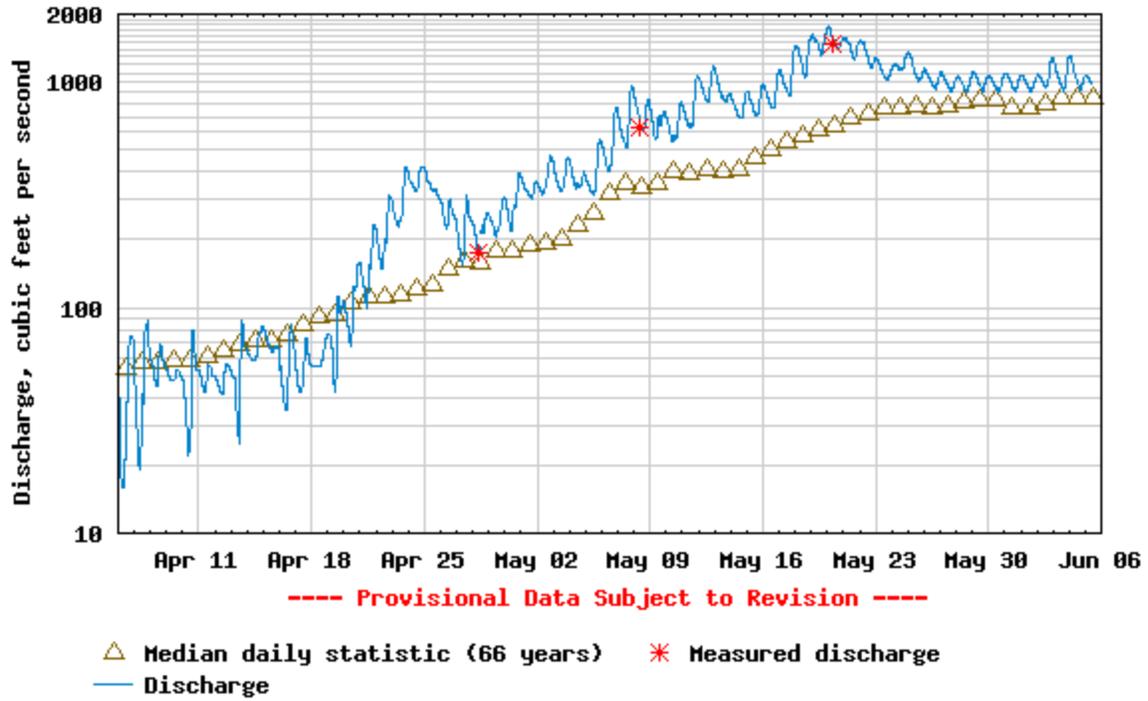
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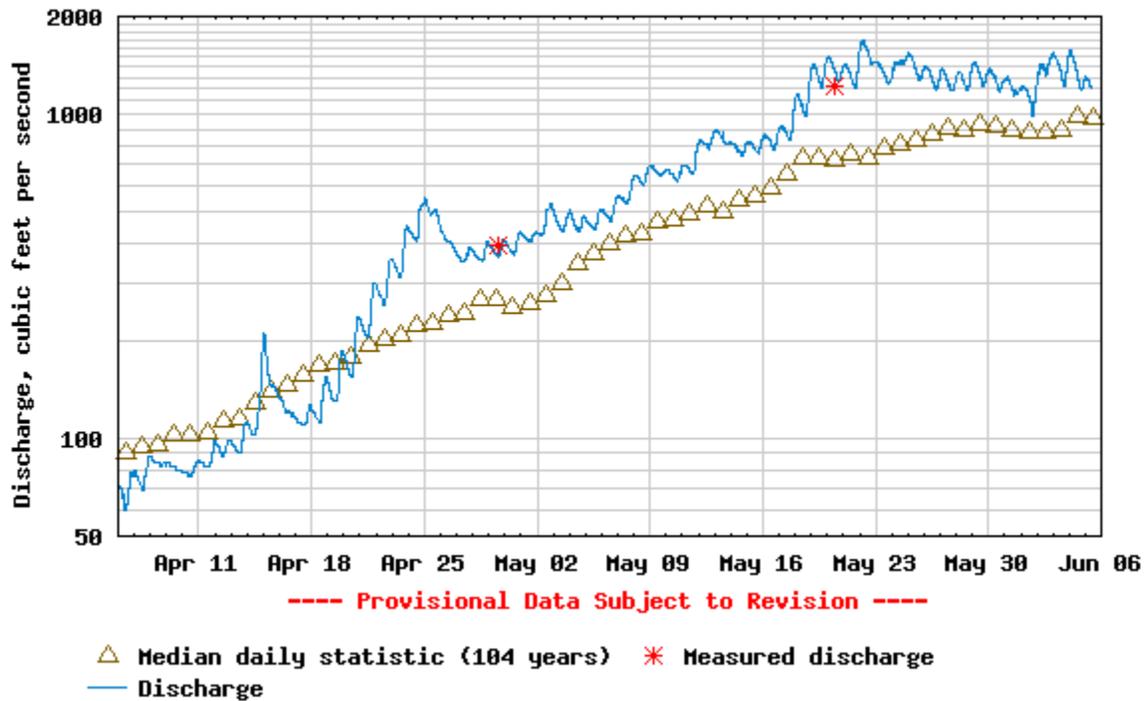
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# US Geological Survey Streamflow Data

USGS 10011500 BEAR RIVER NEAR UTAH-MYOMING STATE LINE

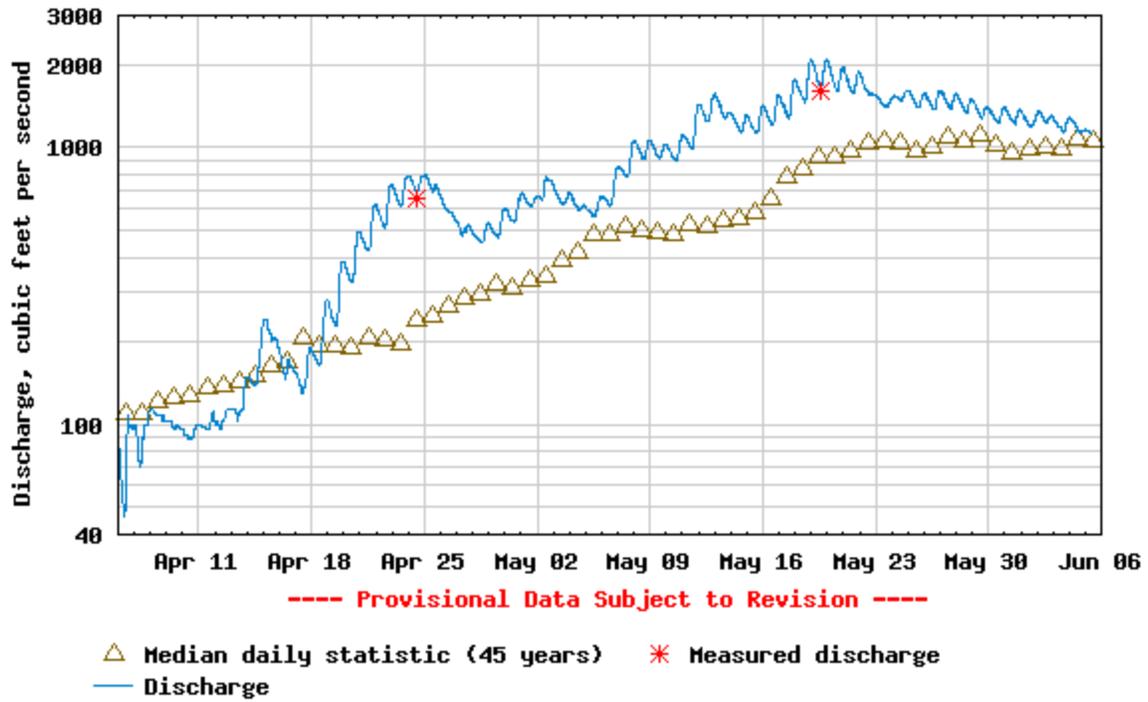


USGS 10128500 WEBER RIVER NEAR OAKLEY, UT

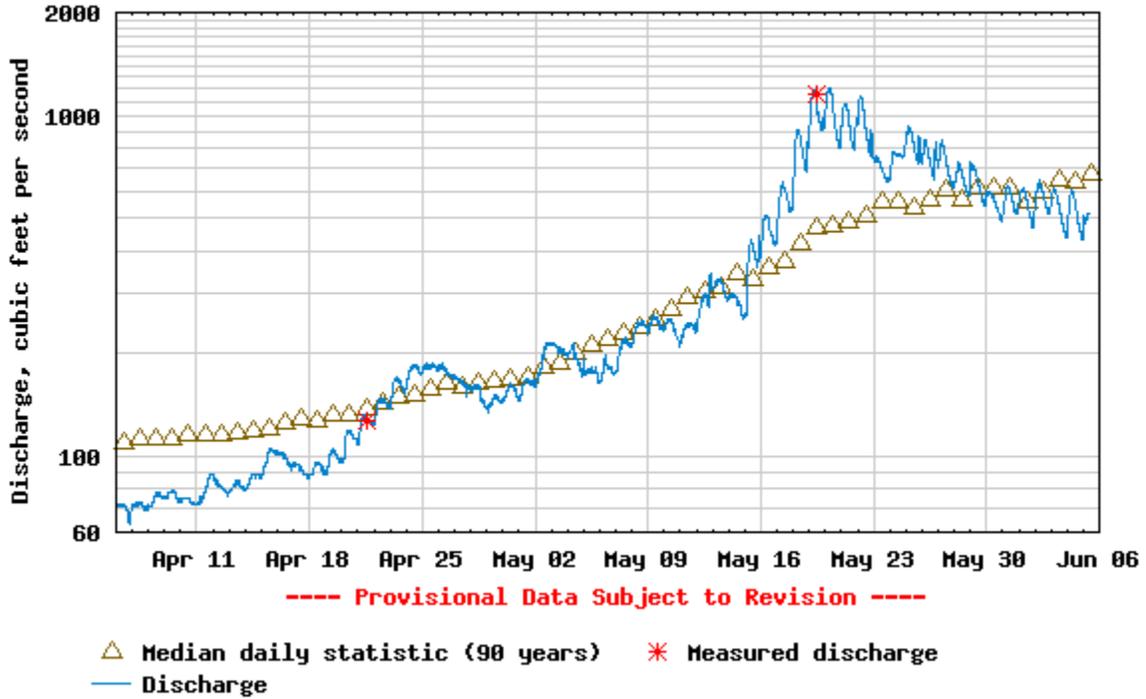


# US Geological Survey Streamflow Data

USGS 18154200 PROVO RIVER NEAR WOODLAND, UT

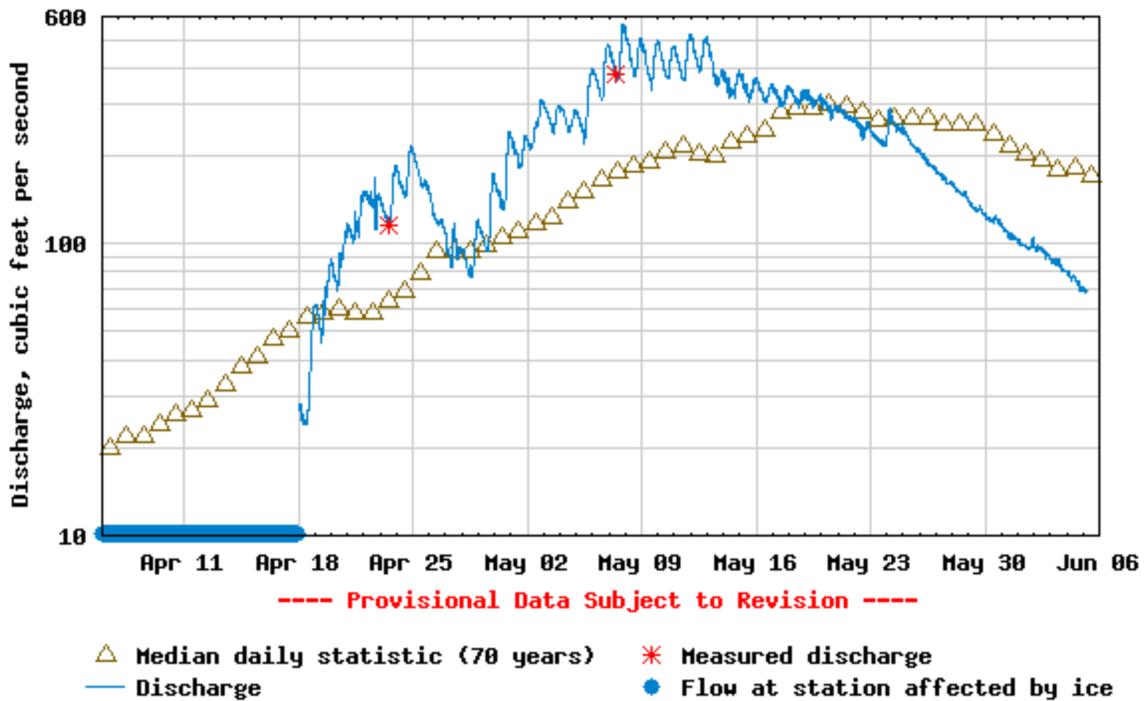


USGS 09277500 DUCHESNE RIVER NEAR TABIONA, UT

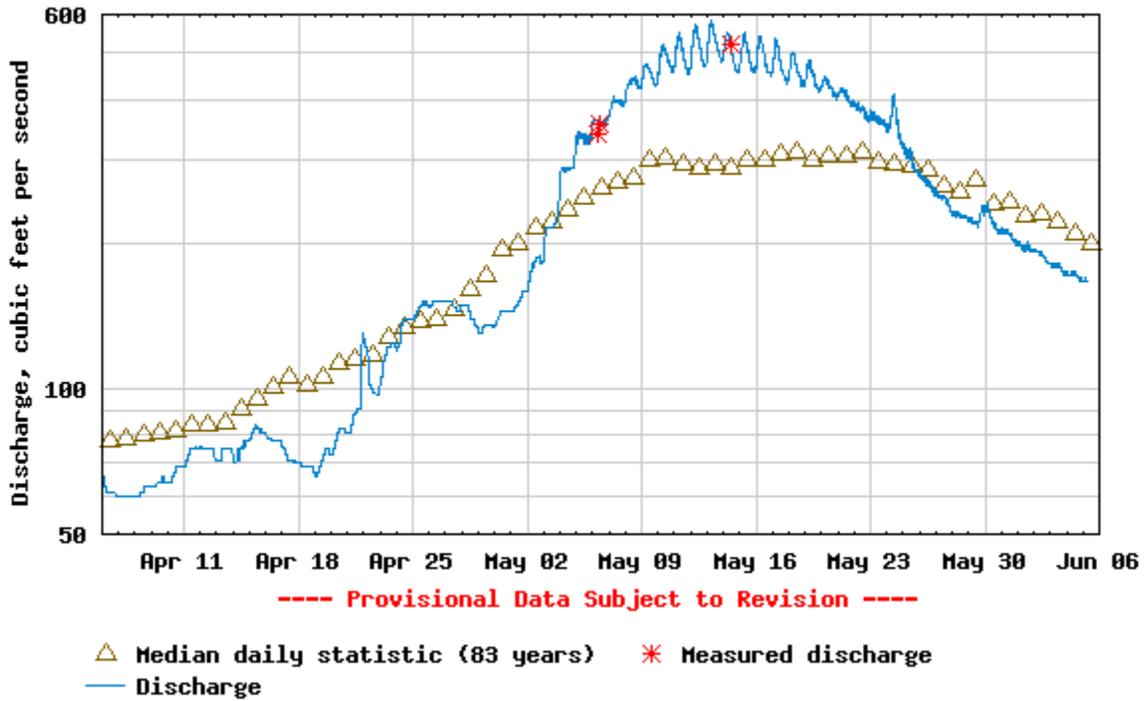


## US Geological Survey Streamflow Data

USGS 09310500 FISH CREEK ABOVE RESERVOIR, NEAR SCOFIELD, UT

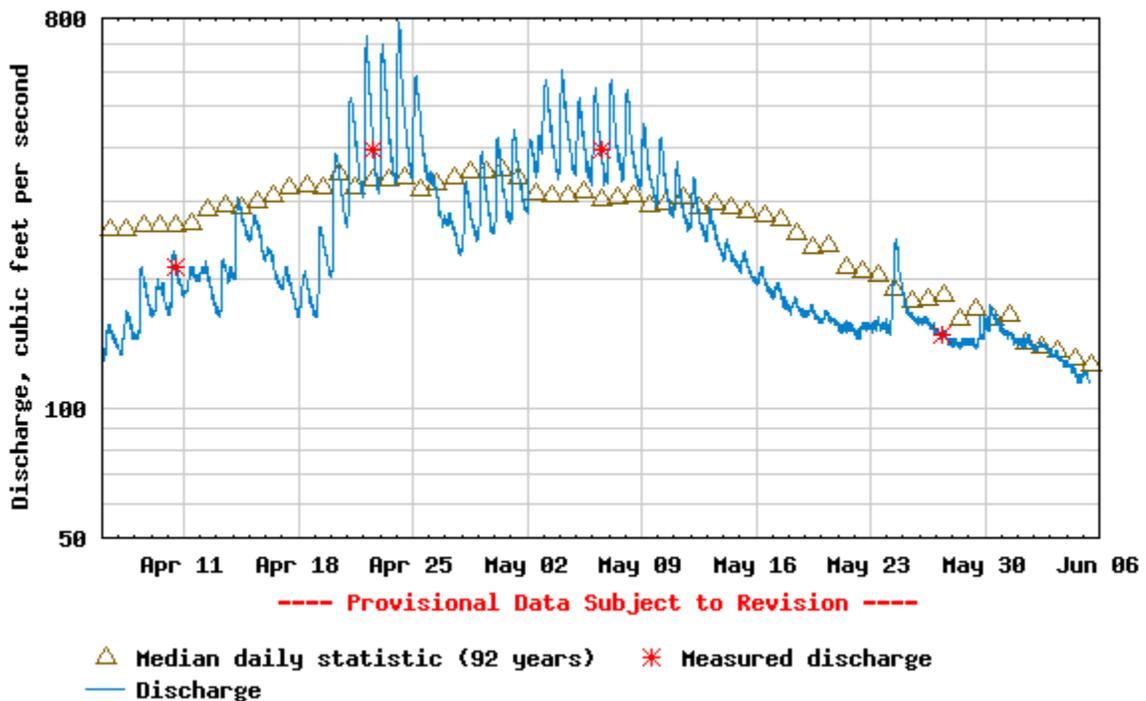


USGS 10174500 SEVIER RIVER AT HATCH, UT



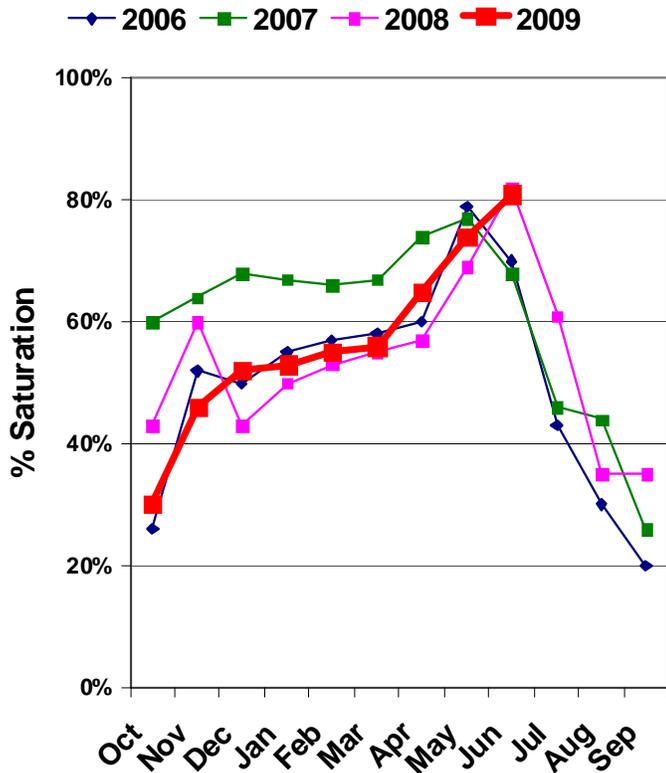
## US Geological Survey Streamflow Data

USGS 09406000 VIRGIN RIVER AT VIRGIN, UT

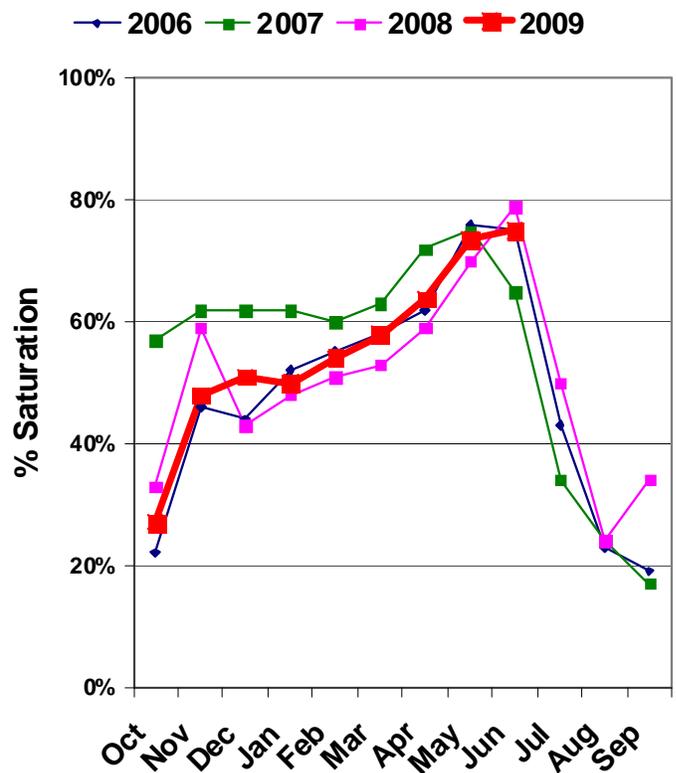


# Watershed Soil Moisture Charts for Utah Water Supply

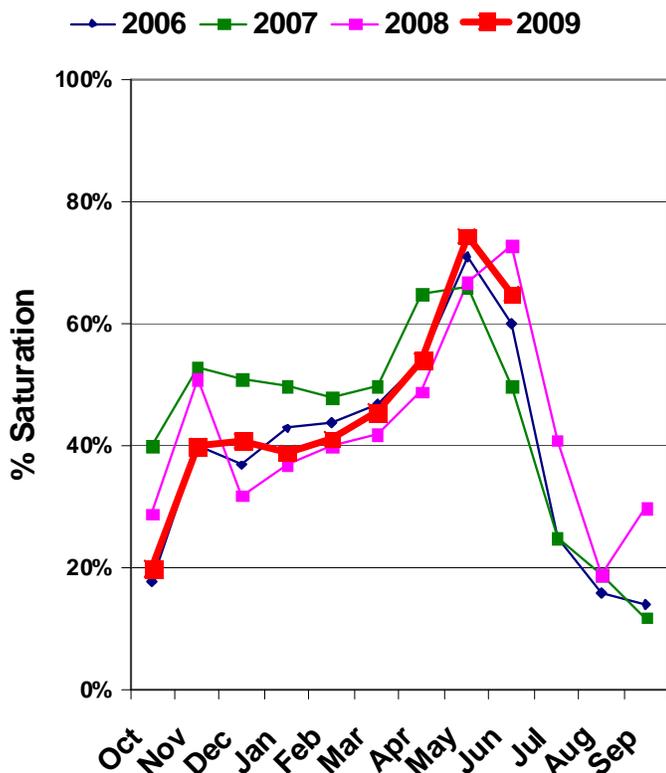
## Bear River Soil Moisture



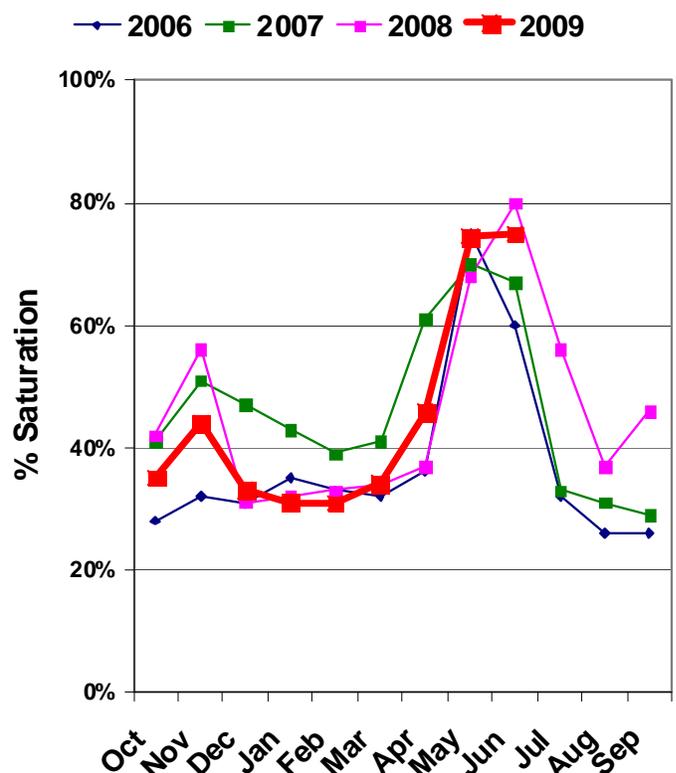
## Weber River Soil Moisture



## Jordan/Provo River Soil Moisture



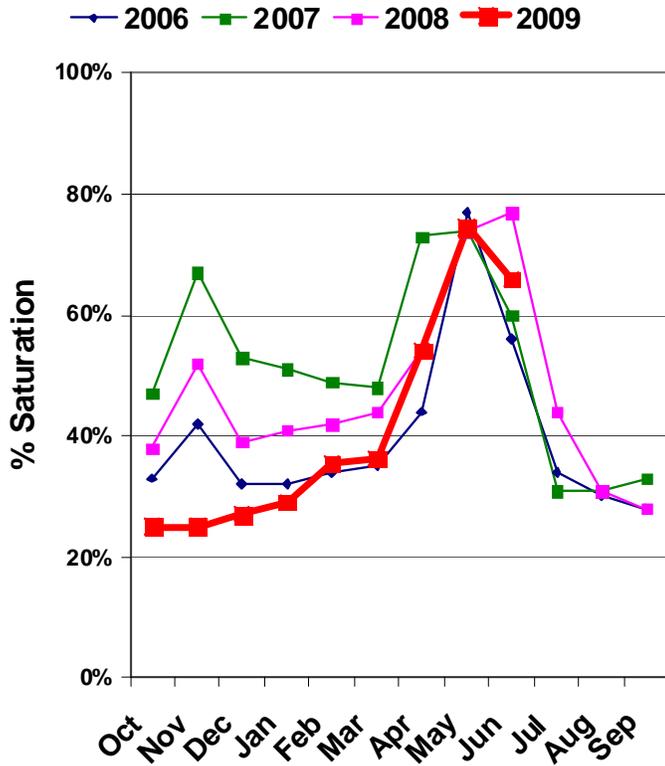
## Uintah Basin Soil Moisture



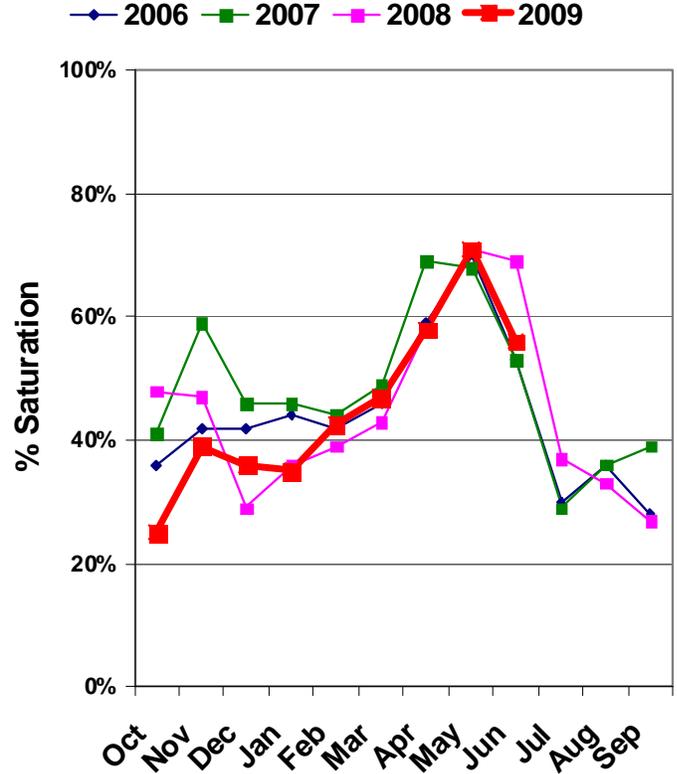
Percent saturation is calculated using the weighted average of volumetric soil moisture content at 2, 8, and 20-inch depths. Saturation is estimated as 40% volumetric water content.

# Watershed Soil Moisture Charts for Utah Water Supply

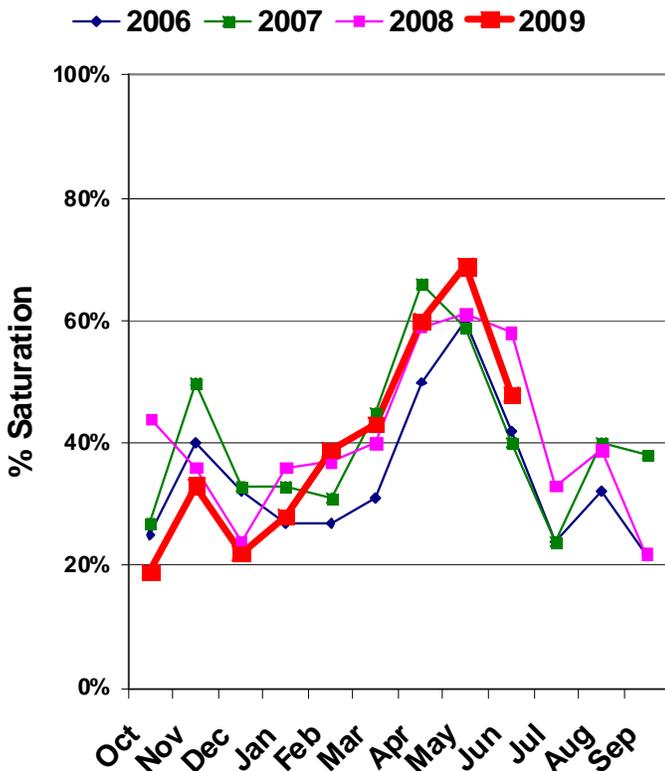
## South East Utah Soil Moisture



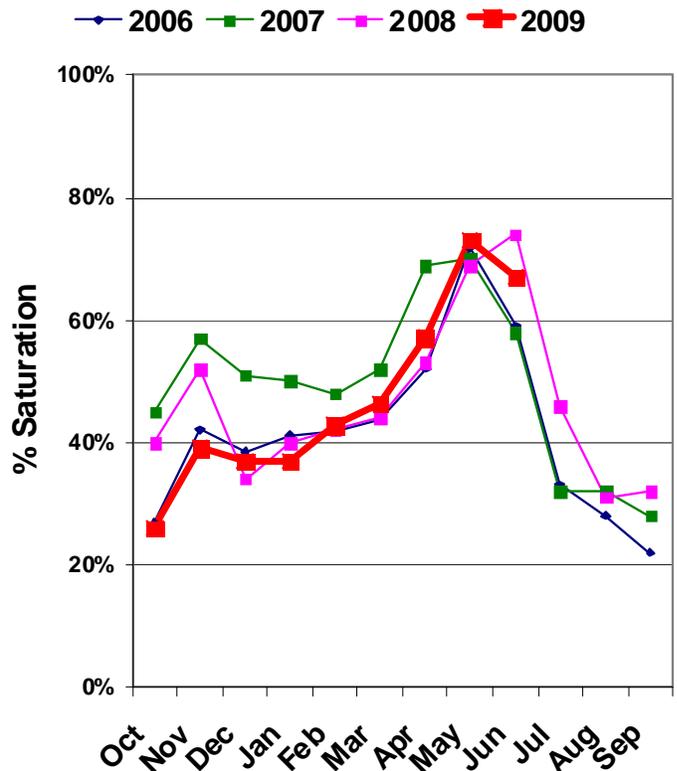
## Sevier/Beaver River Soil Moisture



## Southwest Utah Soil Moisture



## Statewide 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.

# Surface Water Supply Index

May 1, 2009			Years with
Basin or Region	SWSI	Percentile	Similar SWSI
Bear River	-3.05	13%	32,91,93,94
Ogden River	0.88	61%	78,82,91,06
Weber River	-2.95	15%	90,92,02,07
Provo	2.02	74%	97,99,82,86
West Uintah Basin	0.42	55%	73,85,72,96
East Uintah Basin	-0.28	47%	00,08,93,96
Price River	-0.88	39%	08,00,81,93
Joe's Valley	0.00	50%	04,00,01,93
Ferron Creek	na	na	na
Moab	-2.72	17%	90,89,04,00
Upper Sevier River	-1.62	31%	03,08,67,02
Lower Sevier River	-1.50	32%	91,92,78,90
Beaver River	-1.45	33%	72,91,96,90
Virgin River	-0.18	48%	91,96,97,00

SWSI Scale: -4 to 4    Percentile: 0 - 100%

## 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/](http://www.ut.nrcs.usda.gov/snow/) on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

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YOU MAY OBTAIN THIS PRODUCT AS WELL AS CURRENT SNOW, PRECIPITATION, TEMPERATURE AND SOIL MOISTURE, RESERVOIR, SURFACE WATER SUPPLY INDEX, AND OTHER DATA BY VISITING OUR WEB SITE @:

<http://www.ut.nrcs.usda.gov/snow/>

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# Utah Water Supply Outlook Report

Natural Resources Conservation Service  
Salt Lake City, UT

