



Utah Water Supply Outlook Report

March 1, 2003



An Empty Upper Enterprise Reservoir, Nearly Empty Lower Reservoir
February 19, 2003 Photo by Randy Julander, Snow survey, 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

Mar 1, 2003

SUMMARY

A February like this one at any other time would be absolutely nondescript. Average. So average, it would be practically speaking, boring. It was even below average in some places. But this February, coming on the heels of an extremely warm, dry, essentially snow-less January and persistently declining snowpacks was anything but average in terms of the impact it has had on water supplies, especially in southern Utah. This February was a million dollar month for southern Utah, increasing snowpacks 10 to 20% relative to last month. Many areas in southern Utah were flirting with a non-snowmelt runoff year, similar in many respects to last year. With the recent storms and increases in snowpack, this area now has almost double the snowpack of last year. Before getting overly exuberant, remember that double nothing is still a pretty small figure. Snowpacks are still much below normal, but significantly improved over last month and last year. In fact, snowpacks across the state are below to much below normal, ranging from 59% to only 72% of average, a far cry from what is needed to provide adequate water supplies for a thirsty state. Low elevation snowpacks are still much below average and will most likely melt early. March snowpack accumulation in order to get back to average by April 1 ranges from 259% on the Bear in northern Utah to 431% of average for southwest Utah. The probability of this magnitude increase is essentially zero for all of northern Utah and ranges from 3 to 16% for southern Utah. Given average snowpack accumulations during March, most areas will end up in the 60% to 75% of average range, which is a little better than current conditions. Soil moisture condition remains in relatively good shape over most of the state that is currently monitored. This should improve snowmelt runoff efficiency over what we have seen the past few years, where much of the snowpack has been lost to soil moisture replacement. Reservoir storage in 41 major reservoirs across the state is at 49% of capacity, down 641,600 acre feet from last year, out of a total capacity of 5, 470,000, or about 12 %. The amount of water represented by 650,000 acre feet is a little more than 2 completely full Jordanelle reservoirs, a substantial deficit of reservoir storage. Some larger reservoirs, such as Bear Lake and Utah Lake would take several years of at least average runoff to fill to capacity. Streamflow continues to be much below average over most of the state, and won't improve significantly until snowmelt season. Thus there will be little reservoir recharge over the winter months.

SNOWPACK

March first snowpacks as measured by the NRCS SNOTEL system are near 60% to 70% of average in southern Utah. Southeast Utah has the highest snowpack at 72% of average and southwest Utah has the lowest at 59% of average. In northern Utah, snowpacks range from a low of 59% on the Provo to 68% on the Bear and the Uintah Basin. In order to reach average by April 1, northern snowpacks must have 250% to 300% of average March accumulation, with little chance (i.e. greater than maximum historical observations) that it will occur. Southern Utah would have to accumulate 250% to almost 450% of average March accumulations and the probability ranges from 3 to 16% of occurrence. Statewide, snowpacks are at 65% of average. Another drought year appears to be at the door.

PRECIPITATION

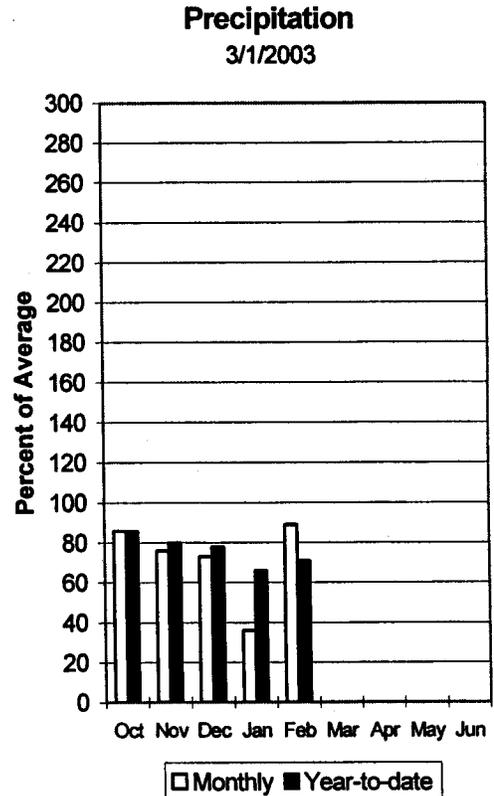
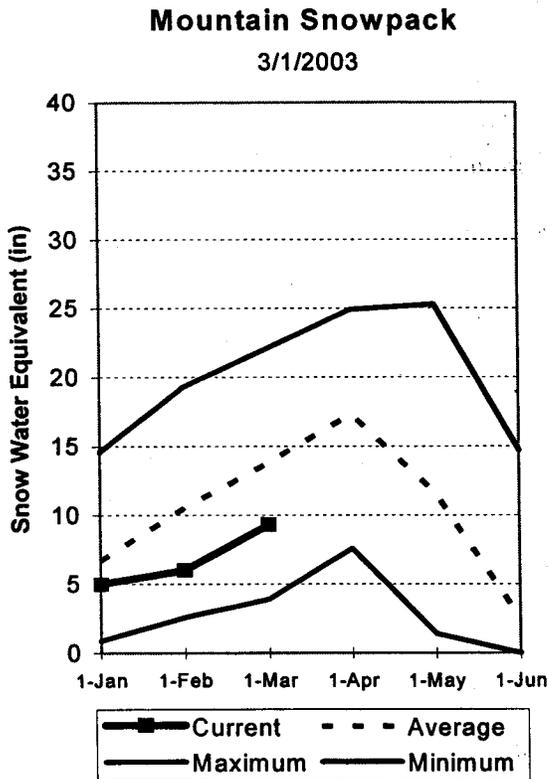
Mountain precipitation during February was below to near normal (70%-99%) in the north and near normal (99%-102%) in southern Utah. This brings the seasonal accumulation (Oct-Jan) to 71% of average statewide.

RESERVOIRS

Storage in 41 of Utah's key irrigation reservoirs is at 49% of capacity. This is down substantially from last year indicating heavy use of reservoir storage to make up the streamflow deficit. Most reservoir operators are utilizing a conservative strategy, storing as much water as possible.

STREAMFLOW

Snowmelt streamflows are expected to be much below average across the entire state of Utah this year. Low snowpacks tend to melt earlier and produce proportionately less runoff. Streams may peak early, have significantly less volume and have short recessions back to base flow. Overall water supply conditions are below normal.

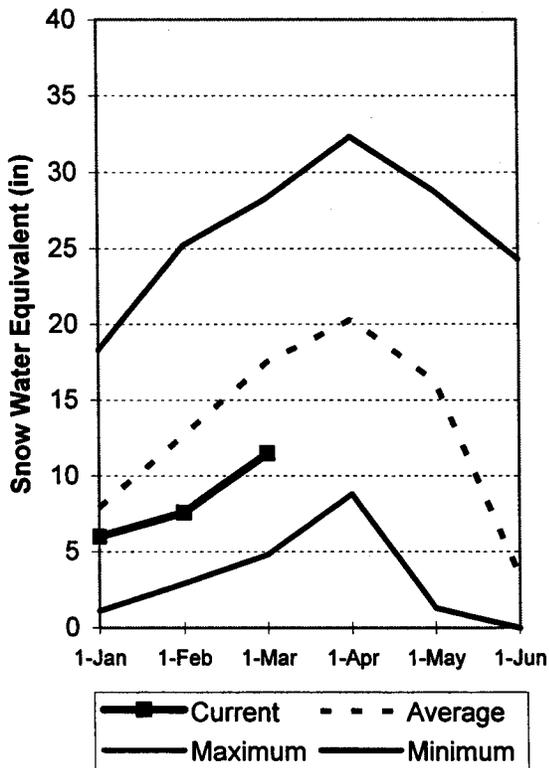


Bear River Basin Mar 1, 2003

Snowpacks on the Bear River Basin are much below average at 68% of normal, about 90% of last year and up 8% relative to last month. There is almost no chance of getting back to average by April 1. Specific sites range from 41% to 89% of normal. This could be the sixth consecutive below normal April 1 snowpack for this watershed. Soil moisture conditions are somewhat improved from last year and may offer higher runoff efficiency. February precipitation was near average at 99%, which brings the seasonal accumulation (Oct-Feb) to 75% of average. Forecast streamflows are for much below normal volumes this spring. Reservoir storage is at 26% of capacity. Water supply conditions are much below normal due to low snowpack and low reservoir storage.

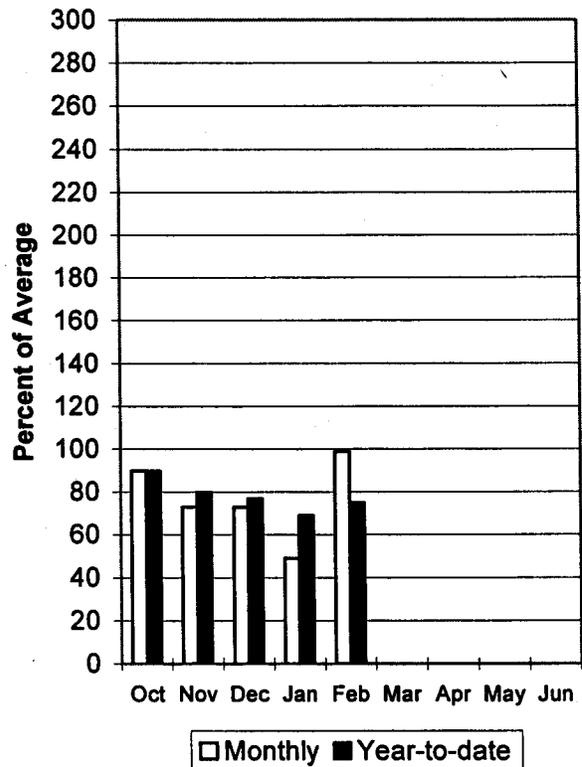
Bear River Snowpack

3/1/2003

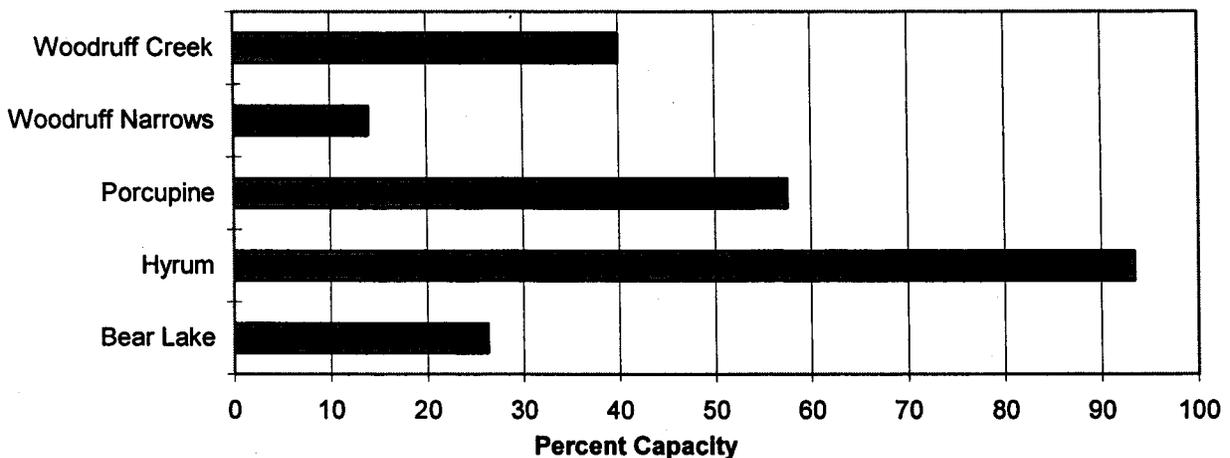


Bear River Precipitation

3/1/2003



Reservoir Storage 3/1/2003



BEAR RIVER BASIN
Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	<<----- Drier ----->>		Future Conditions		----- Wetter ----->>		30-Yr Avg. (1000AF)
		90%	70%	Chance Of Exceeding *		30%	10%	
		(1000AF)	(1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Bear R nr UT-WY State Line	APR-JUL	52	62	70	60	79	94	116
Woodruff Narrows Res inflow	APR-JUL	26	41	53	39	67	90	136
Big Creek nr Randolph	APR-JUL	0.54	1.47	2.10	43	3.57	5.74	4.90
Smiths Fork nr Border	APR-JUL	42	52	60	58	69	86	103
Bear River blw Stewart Dam	APR-JUL	62	82	96	33	138	198	288
Little Bear River at Paradise	APR-JUL	12.2	15.6	18.4	40	22	28	46
Logan River nr Logan	APR-JUL	51	61	69	57	78	93	122
Blacksmith Fork nr Hyrum	APR-JUL	18.2	23	26	54	30	37	48

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

BEAR RIVER BASIN
Watershed Snowpack Analysis - March 1, 2003

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BEAR LAKE	1421.0	372.7	593.1	910.7	BEAR RIVER, UPPER (abv Ha	6	94	66
HYRUM	15.3	14.3	11.2	11.0	BEAR RIVER, LOWER (blw Ha	8	89	69
PORCUPINE	11.3	6.5	10.5	5.6	LOGAN RIVER	4	87	69
WOODRUFF NARROWS	57.3	8.0	5.5	27.6	RAFT RIVER	1	48	55
WOODRUFF CREEK	4.0	1.6	1.3	---	BEAR RIVER BASIN	14	90	68

* 90%, 70%, 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.

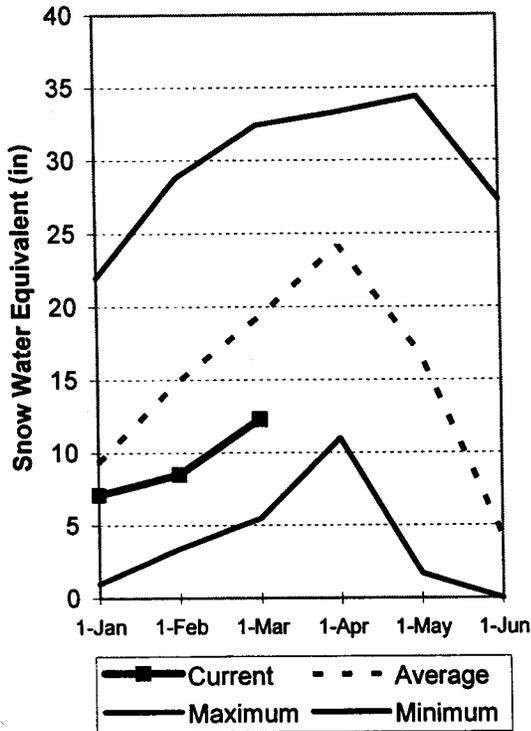
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Weber and Ogden River Basins

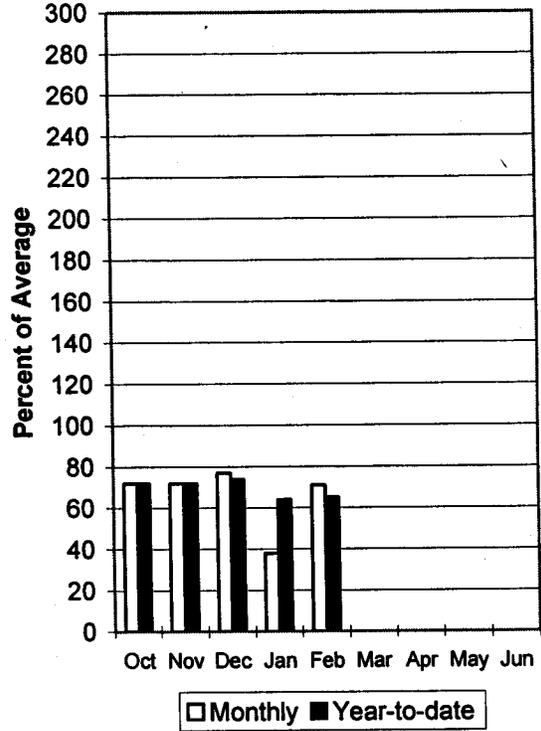
Mar 1, 2003

Snowpack on the Weber and Ogden Watersheds is much below normal at 62% of average, about 80% of last year and up 5% relative to last month. This is the lowest March 1 snowpack since 1992. Individual sites range from 34% to 82% of average. This could be the fifth consecutive year of below normal April 1 snowpack for this watershed with little chance of getting back to average conditions. Soil moisture conditions are somewhat improved from last year and may yield a higher runoff efficiency. Precipitation during February was below normal at 71%, bringing the seasonal accumulation (Oct-Feb) to 65% of average. Reservoir storage is at 49% of capacity. Streamflow forecasts are much below average. Overall water supply conditions are much below normal due to poor snowpack and low reservoir storage.

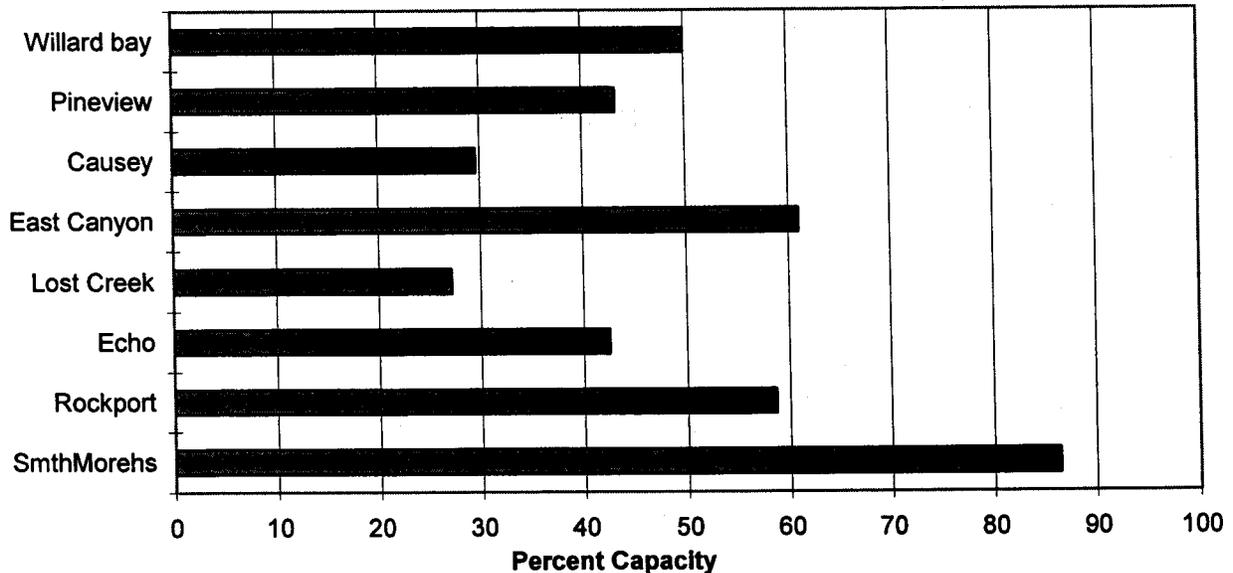
Weber River Snowpack
3/1/2003



Weber River Precipitation
3/1/2003



Reservoir Storage
3/1/2003



WEBER & OGDEN WATERSHEDS in Utah
Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<----- Drier ----->>		----->> Wetter <<----->>				
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Smith & Morehouse Res inflow	APR-JUL	12.2	16.9	20	59	23	28	34
Weber River nr Oakley	APR-JUL	42	59	70	57	81	98	123
Rockport Reservoir inflow	APR-JUL	32	56	72	54	88	112	134
Weber River nr Coalville	APR-JUL	30	55	72	53	89	114	137
Chalk Creek at Coalville	APR-JUL	9.5	13.4	16.0	36	23	34	45
Echo Reservoir inflow	APR-JUL	34	65	86	48	107	138	179
Lost Creek Reservoir inflow	APR-JUL	1.7	3.6	5.3	30	7.3	10.8	17.6
East Canyon Reservoir inflow	APR-JUL	5.4	8.3	10.7	35	13.4	17.8	31
Weber River at Gateway	APR-JUL	37	98	140	39	182	241	355
SF Ogden River nr Huntsville	APR-JUL	18.4	24	27	42	35	48	64
Pineview Reservoir inflow	APR-JUL	11.0	36	53	40	70	95	133
Wheeler Creek nr Huntsville	APR-JUL	1.50	2.60	3.40	54	4.20	5.30	6.30

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

WEBER & OGDEN WATERSHEDS in Utah
Watershed Snowpack Analysis - March 1, 2003

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	2.1	2.6	2.6	OGDEN RIVER	4	73	55
EAST CANYON	49.5	30.2	26.9	35.4	WEBER RIVER	9	81	66
ECHO	73.9	31.4	38.0	51.0	WEBER & OGDEN WATERSHEDS	13	78	62
LOST CREEK	22.5	6.1	7.1	13.9				
PINEVIEW	110.1	47.6	48.8	52.6				
ROCKPORT	60.9	35.7	22.4	33.2				
WILLARD BAY	215.0	107.4	103.7	154.9				

* 90%, 70%, 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.

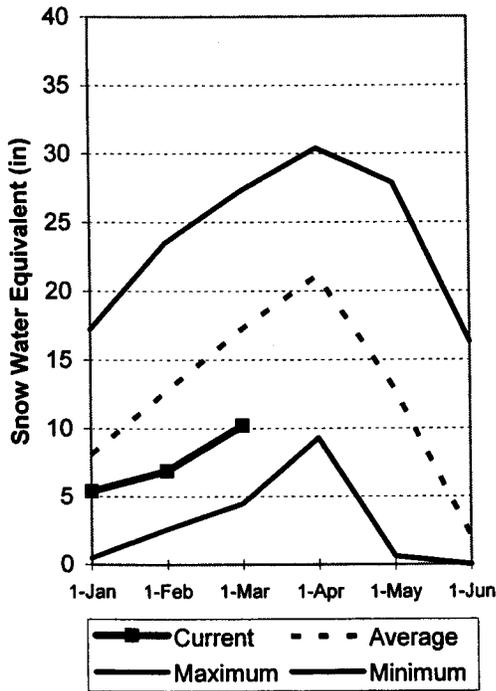
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Utah Lake, Jordan River & Tooele Valley Basins Mar 1, 2003

Snowpacks over these watersheds are at 59% of average, 81% of last year and up 5% relative to last month. This is the lowest March 1 snowpack since 1981. Individual sites range from 24% to 76% of average. There is very little chance of getting back to average conditions by April 1. This could be the fifth consecutive year of below normal April 1 snowpack on these watersheds. Soil moisture is somewhat improved from last year and may yield a higher runoff efficiency. Precipitation during February was below normal at 74%, bringing the seasonal accumulation (Oct-Feb) to 65% of average. Forecast streamflows are much below normal. Reservoir storage is at 67% of capacity. General water supply conditions are poor due to low snowpack and low reservoir storage.

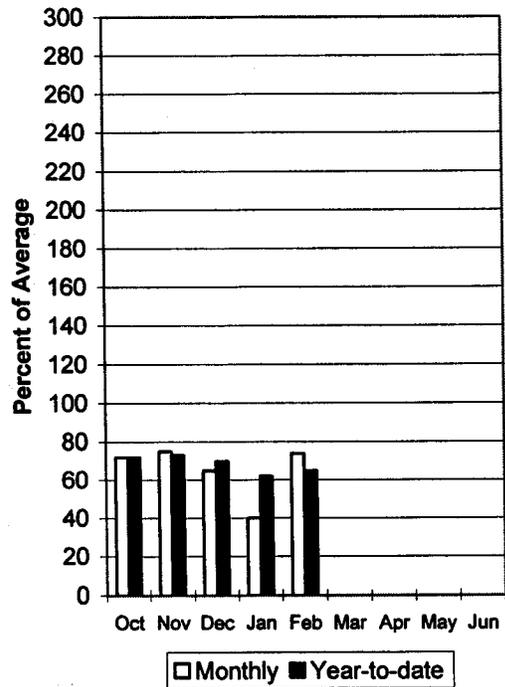
Provo River Snowpack

3/1/2003



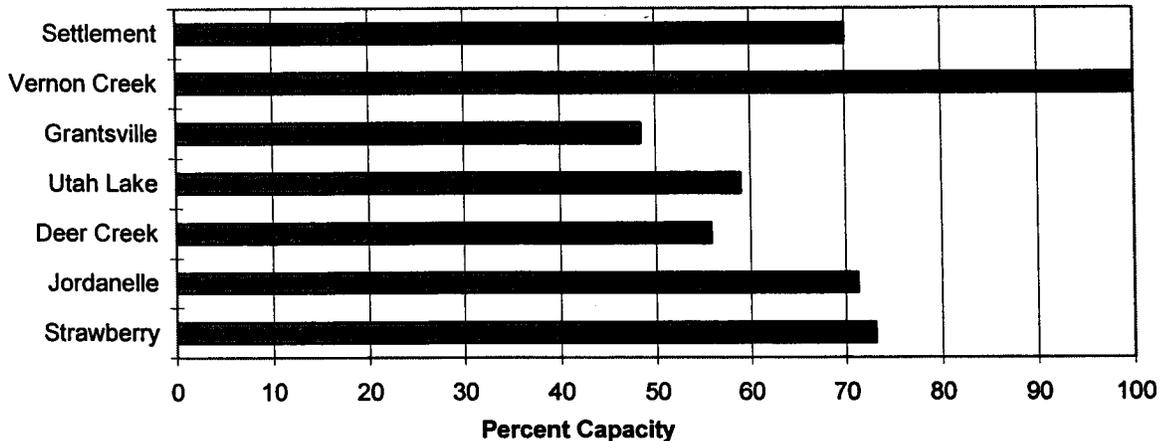
Provo River Precipitation

3/1/2003



Reservoir Storage

3/1/2003



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Streamflow Forecasts - March 1, 2003

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 Fork River nr Castilla	APR-JUL	7.7	11.5	35	46	59	85	77
Provo River nr Woodland	APR-JUL	24	41	53	52	65	82	103
Provo River nr Hailstone	APR-JUL	11.0	35	49	45	64	87	109
Provo R blw Deer Creek Dam	APR-JUL	11.0	43	65	52	87	118	126
American Fk R nr American Fk	APR-JUL	2.6	9.1	12.0	38	14.9	22	32
Utah Lake inflow	APR-JUL	39	74	145	45	216	295	325
Little Cottonwood Ck nr SLC	APR-JUL	13.2	18.0	22	55	26	31	40
Big Cottonwood Ck nr SLC	APR-JUL	8.4	14.1	18.0	47	22	28	38
Mill Creek nr SLC	APR-JUL	1.19	1.32	2.50	36	3.68	5.20	7.00
Parley's Creek nr SLC	APR-JUL	1.2	2.4	6.1	37	9.8	14.0	16.7
Dell Fork nr SLC	APR-JUL	0.82	1.26	2.70	40	4.14	6.60	6.80
Emigration Creek nr SLC	APR-JUL	0.00	0.31	1.40	31	2.78	4.60	4.50
City Creek nr SLC	APR-JUL	1.22	1.55	3.20	37	4.85	7.10	8.70
Vernon Creek nr Vernon	APR-JUL	0.33	0.47	0.60	41	0.77	1.09	1.48
Settlement Creek nr Tooele	APR-JUL	0.27	0.52	0.80	41	1.24	2.35	1.97
S Willow Ck nr Grantsville	APR-JUL	0.49	1.15	1.60	50	2.51	3.80	3.20

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

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Watershed Snowpack Analysis - March 1, 2003

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	83.6	97.9	107.4	PROVO RIVER & UTAH LAKE	7	100	58
GRANTSVILLE	3.3	1.6	---	2.2	PROVO RIVER	4	89	54
SETTLEMENT CREEK	1.0	0.7	---	0.6	JORDAN RIVER & GREAT SALT	6	68	60
STRAWBERRY-ENLARGED	1105.9	807.9	899.3	637.8	TOOELE VALLEY WATERSHEDS	3	78	53
UTAH LAKE	870.9	513.8	638.0	825.1	UTAH LAKE, JORDAN RIVER &	16	79	58
VERNON CREEK	0.6	0.6	0.6	---				

* 90%, 70%, 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.

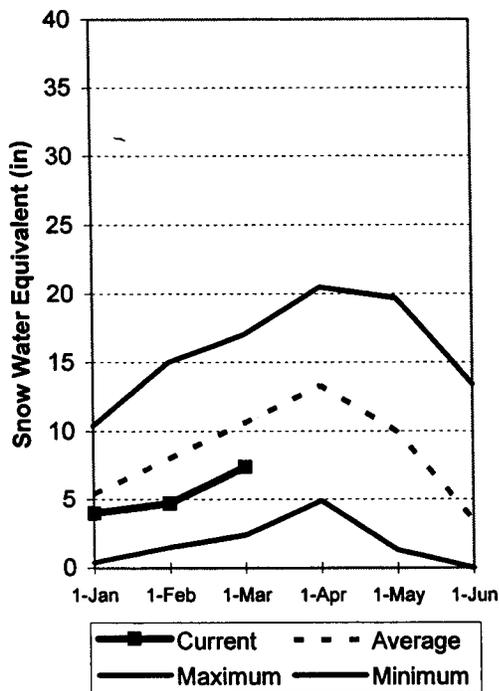
Uintah Basin and Dagget SCD's

Mar 1, 2003

Snowpacks across the Uintah Basin and North Slope areas are much below average at 68%, which is 114% of last year's snowpack and up 8% relative to last month. The North Slope ranges from 64% to 95% and the Uintah Basin ranges from 34% to 84% of average. This could be the fifth consecutive below normal April 1 snowpack in the Uintah Basin with very little chance of getting back to average conditions. Soil moisture is somewhat improved over last year and may yield a higher runoff efficiency. Precipitation during February was near normal at 90%, bringing the seasonal accumulation (Oct-Feb) to 69% of average. Reservoir storage is at 73% of capacity. Springtime runoff conditions are much below normal due to low snowpack and low reservoir storage.

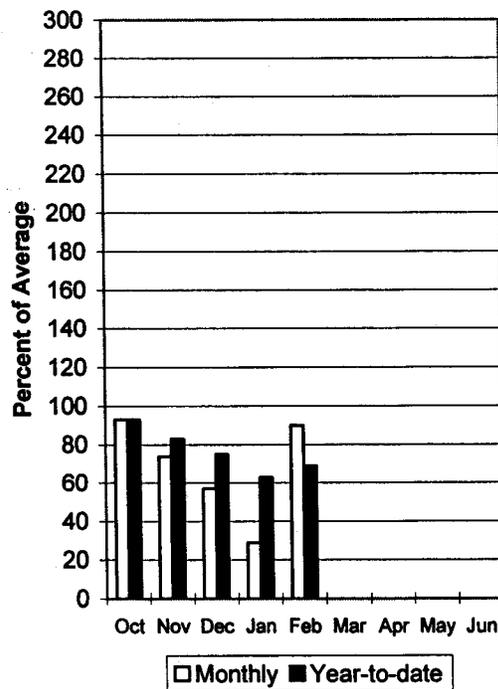
Uintahs Snowpack

3/1/2003



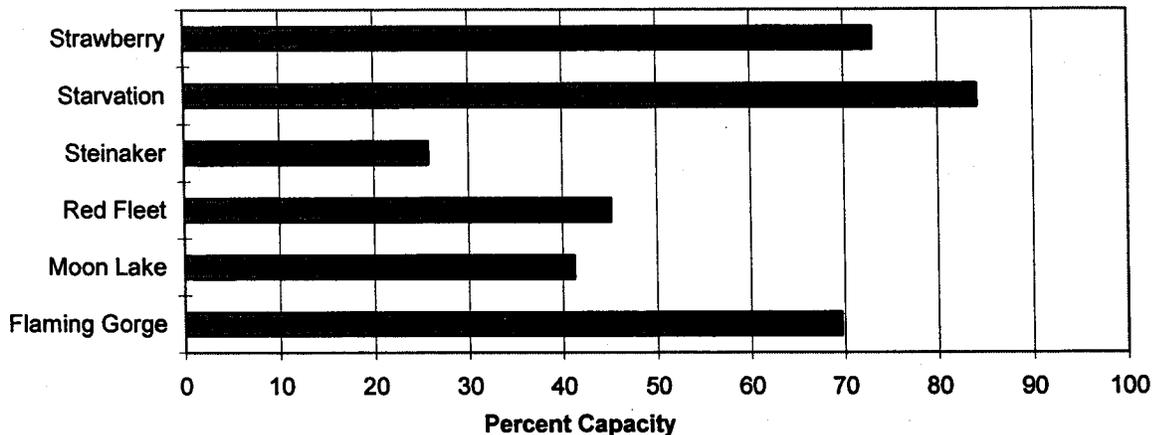
Uintahs Precipitation

3/1/2003



Reservoir Storage

3/1/2003



**UINTAH BASIN & DAGGET SCD'S
Streamflow Forecasts - March 1, 2003**

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Future Conditions		Wetter		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Blacks Fork nr Robertson	APR-JUL	29	46	57	60	68	85	95
EF of Smiths Fork nr Robertson	APR-JUL	13.3	15.7	17.5	57	19.6	23	31
Flaming Gorge Reservoir Inflow	APR-JUL	335	525	660	56	795	985	1190
BIG BRUSH CK abv Red Fleet Resv	APR-JUL	7.8	12.1	15.0	71	17.9	22	21
Ashley Creek nr Vernal	APR-JUL	10.9	26	36	69	46	61	52
WF DUCHESNE RIVER nr Hanna	APR-JUL	5.9	9.8	13.0	54	16.6	23	24
DUCHESNE R nr Tabiona	APR-JUL	31	46	57	54	68	83	105
UPPER STILLWATER RESV inflow	APR-JUL	26	37	45	55	53	64	82
ROCK CK nr Mountain Home	APR-JUL	28	40	49	55	58	70	89
DUCHESNE R abv Knight Diversion	APR-JUL	39	74	98	52	122	157	188
STRAWBERRY RES nr Soldier Springs	APR-JUL	9.6	17.4	24	41	32	45	59
CURRENT CREEK RESV Inflow	APR-JUL	3.1	7.3	10.2	41	13.1	17.3	25
STARVATION RESERVOIR inflow	APR-JUL	10.0	33	49	41	65	88	121
Lake Fork River abv Moon Lake	APR-JUL	20	31	38	56	45	56	68
Yellowstone River nr Altonah	APR-JUL	11.0	26	36	58	46	61	62
DUCHESNE R at Myton	APR-JUL	21	46	90	35	134	198	260
Whiterocks River nr Whiterocks	APR-JUL	8.4	22	35	63	48	67	56
DUCHESNE R nr Randlett	APR-JUL	13.0	23	114	35	213	353	325

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

**UINTAH BASIN & DAGGET SCD'S
Watershed Snowpack Analysis - March 1, 2003**

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	2610.0	2834.9	2919.0	UPPER GREEN RIVER in UTAH	6	114	74
MOON LAKE	49.5	20.4	14.9	29.8	ASHLEY CREEK	2	134	74
RED FLEET	25.7	11.6	18.7	18.4	BLACK'S FORK RIVER	2	100	71
STEINAKER	33.4	8.6	19.3	22.8	SHEEP CREEK	1	95	64
STARVATION	165.3	139.1	158.8	135.9	DUCHESNE RIVER	11	114	65
STRAWBERRY-ENLARGED	1105.9	807.9	899.3	637.8	LAKE FORK-YELLOWSTONE CRE	4	110	64
					STRAWBERRY RIVER	4	113	61
					UINTAH-WHITEROCKS RIVERS	2	121	79
					UINTAH BASIN & DAGGET SCD	17	114	68

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

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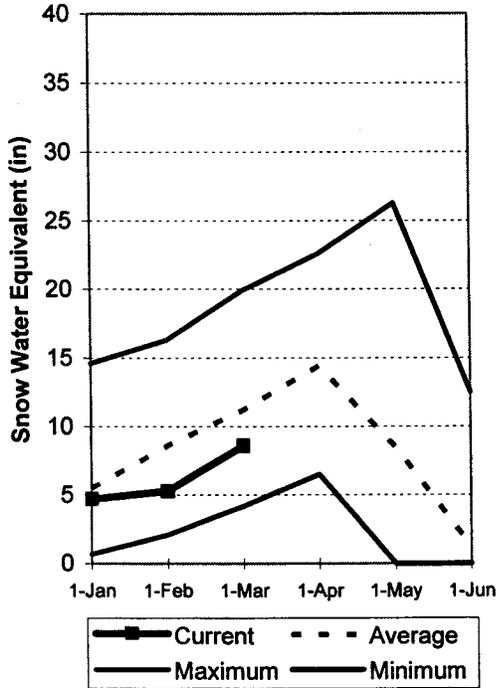
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

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

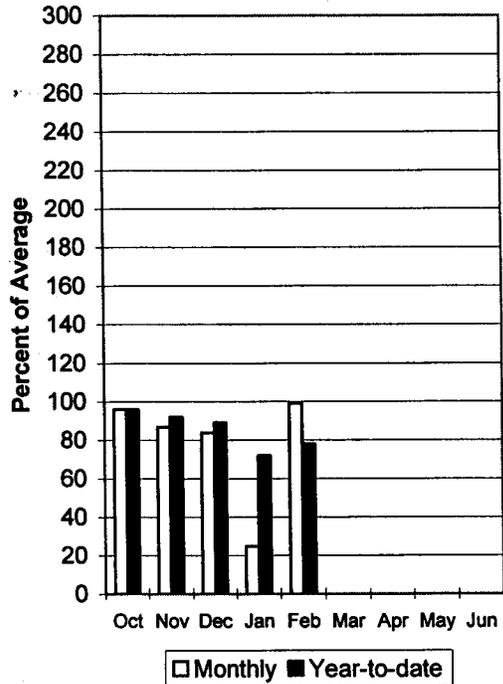
Mar 1, 2003

Snowpacks in this region are below normal at 72% of average, about 131% of last year and up 11% relative to last month. Individual sites range from 61% to 88% of average. This could be the fifth consecutive below normal April 1 snowpack for this region with about a 3% chance of getting back to average by April 1. Soil moisture is somewhat improved over last year and may yield a higher runoff efficiency. Precipitation during February was near average at 99%, bringing the seasonal accumulation (Oct-Feb) to 78% of normal. Reservoir storage is at 34% of capacity. General runoff and water supply conditions are much below normal due to low snowpack and low reservoir storage.

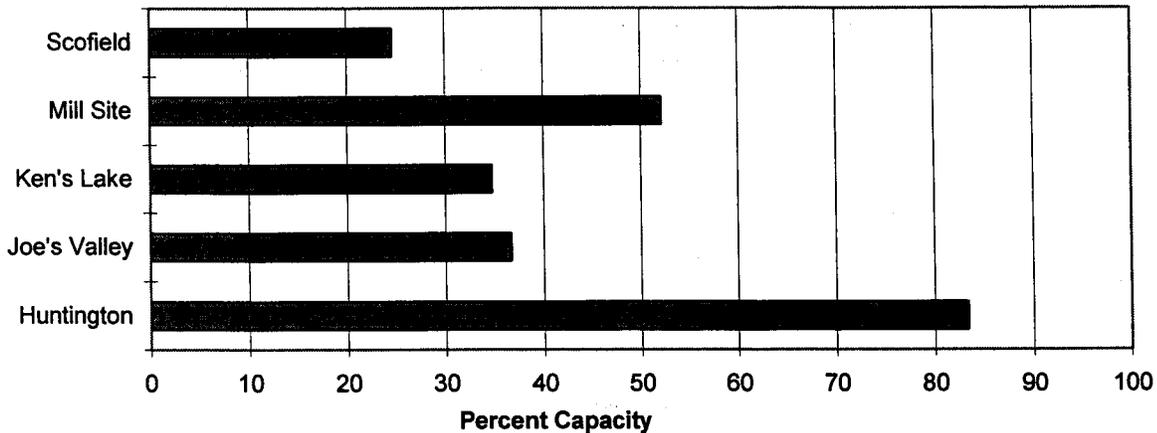
Southeast Utah Snowpack
3/1/2003



Southeast Utah Precipitation
3/1/2003



Reservoir Storage
3/1/2003



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.
Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	Future Conditions				Wetter		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	Chance Of Exceeding * (% AVG.)	30% (1000AF)	10% (1000AF)	
Gooseberry Creek nr Scofield	APR-JUL	2.7	5.5	7.3	61	9.1	11.9	11.9
Scofield Reservoir inflow	APR-JUL	17.3	24	28	61	32	39	46
White River blw Tabbyune Creek	APR-JUL	3.9	7.0	9.6	55	12.6	17.8	17.4
Green River at Green River, UT	APR-JUL	820	1470	1910	60	2350	3000	3170
Electric Lake inflow	APR-JUL	5.6	8.0	10.0	64	12.3	16.3	15.7
HUNTINGTON CK nr Huntington	APR-JUL	17.2	25	30	60	35	43	50
JOE'S VALLEY RESV Inflow	APR-JUL	9.4	24	34	59	44	59	58
Ferron Creek nr Ferron	APR-JUL	15.7	22	26	67	31	39	39
Colorado River nr Cisco	APR-JUL	1790	2720	3350	72	3980	4910	4650
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	1.00	2.20	3.30	66	4.40	6.10	5.00
Seven Mile Creek nr Fish Lake	APR-JUL	1.19	3.30	5.10	73	6.90	9.60	7.00
Muddy Creek nr Emery	APR-JUL	3.1	9.6	14.0	70	18.4	25	19.9
North Ck ab R.S. nr Monticello	MAR-JUL	0.01	0.26	0.75	56	1.51	3.09	1.35
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.17	0.45	0.73	56	1.07	1.69	1.31
Recapture Ck bl Johnson Ck nr Blandi	MAR-JUL	0.30	1.72	3.40	56	5.10	7.60	6.10
San Juan River nr Bluff	APR-JUL	223	490	675	55	860	1130	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, 2003

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	3.5	2.7	3.4	PRICE RIVER	3	136	70
JOE'S VALLEY	61.6	22.6	37.2	41.5	SAN RAFAEL RIVER	3	112	69
KEN'S LAKE	2.3	0.8	1.0	1.3	MUDDY CREEK	1	122	76
MILL SITE	16.7	8.7	8.7	84.9	FREMONT RIVER	3	142	74
SCOFIELD	65.8	16.2	27.9	34.8	LASAL MOUNTAINS	1	139	79
					BLUE MOUNTAINS	1	167	74
					WILLOW CREEK	1	143	70
					CARBON, EMERY, WAYNE, GRA	13	131	72

* 90%, 70%, 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.

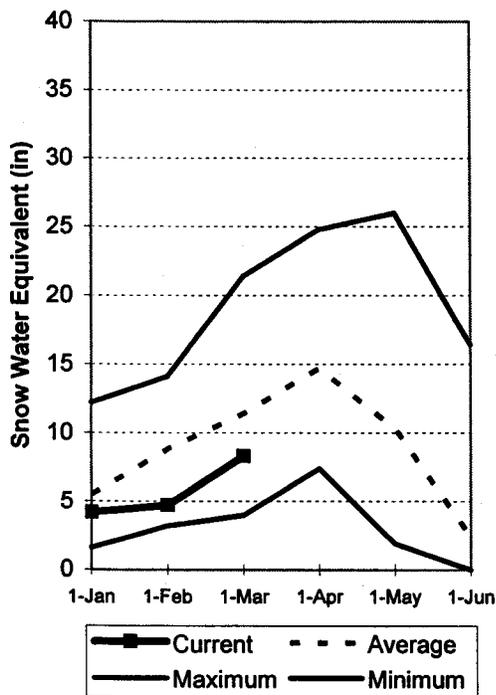
Sevier and Beaver River Basins

Mar 1, 2003

Snowpacks on the Sevier River Basin are much below normal at 68% of average, about 126% of last year and up 14% relative to last month. Individual sites range from 31% to 78% of average. This could be the fifth consecutive below normal April 1 snowpack year for the Sevier with only a 9% chance of getting back to average by April 1. Soil moisture is somewhat improved over last year and may yield a higher runoff efficiency. Precipitation during February was near average at 98% of normal, bringing the seasonal accumulation (Oct-Feb) to 77% of average. Reservoir storage is at 30% of capacity. Water supply conditions and streamflow forecasts are much below normal due to low snowpack and low reservoir storage.

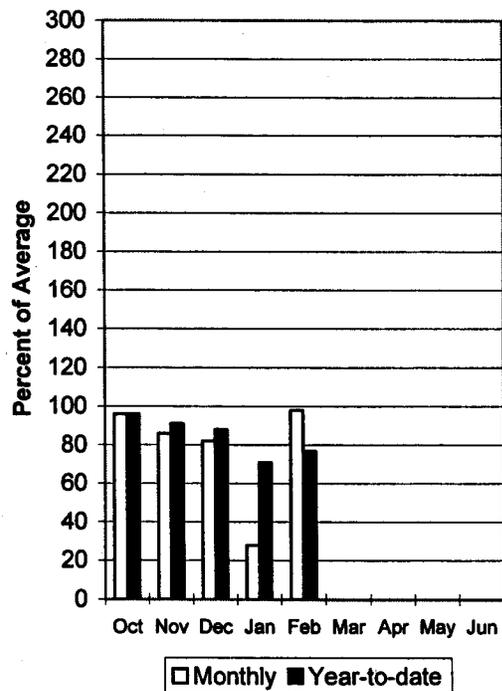
Sevier River Snowpack

3/1/2003



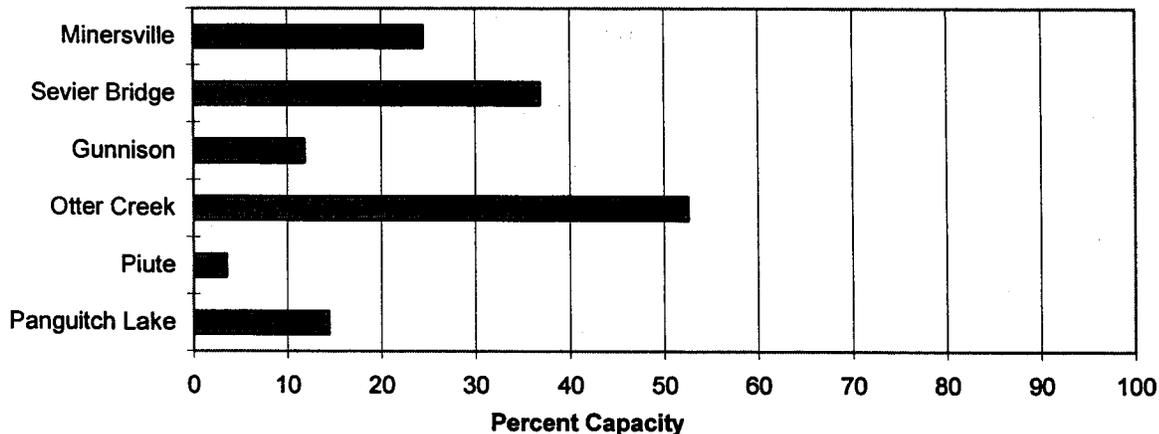
Sevier River Precipitation

3/1/2003



Reservoir Storage

3/1/2003



SEVIER & BEAVER RIVER BASINS
Streamflow Forecasts - March 1, 2003

Period	<<----- Drier ----->>		Future Conditions		----- Wetter ----->>		30-Yr Avg. (1000AF)	
	90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)		
Sevier River at Hatch	APR-JUL	4.4	21	30	55	40	56	55
Sevier River nr Kingston	APR-JUL	8.9	32	46	52	60	83	89
EF Sevier R nr Kingston	APR-JUL	2.3	10.7	20	53	29	44	38
Sevier R blw Piute Dam	APR-JUL	6.0	34	60	48	86	129	126
Clear Creek nr Sevier	APR-JUL	4.2	7.7	12.0	55	16.3	25	22
Salina Creek at Salina	APR-JUL			MUCH BELOW AVERAGE				
Sevier R nr Gunnison	APR-JUL	56	92	130	46	214	350	280
Chicken Creek nr Levan	APR-JUL	0.73	1.17	1.60	36	2.19	3.49	4.50
Oak Creek nr Oak City	APR-JUL	0.42	0.57	0.70	43	0.86	1.16	1.63
Beaver River nr Beaver	APR-JUL	11.4	14.0	16.0	62	18.3	22	26
Minersville Reservoir inflow	APR-JUL	4.5	6.2	7.8	47	9.7	13.5	16.6

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

SEVIER & BEAVER RIVER BASINS
Watershed Snowpack Analysis - March 1, 2003

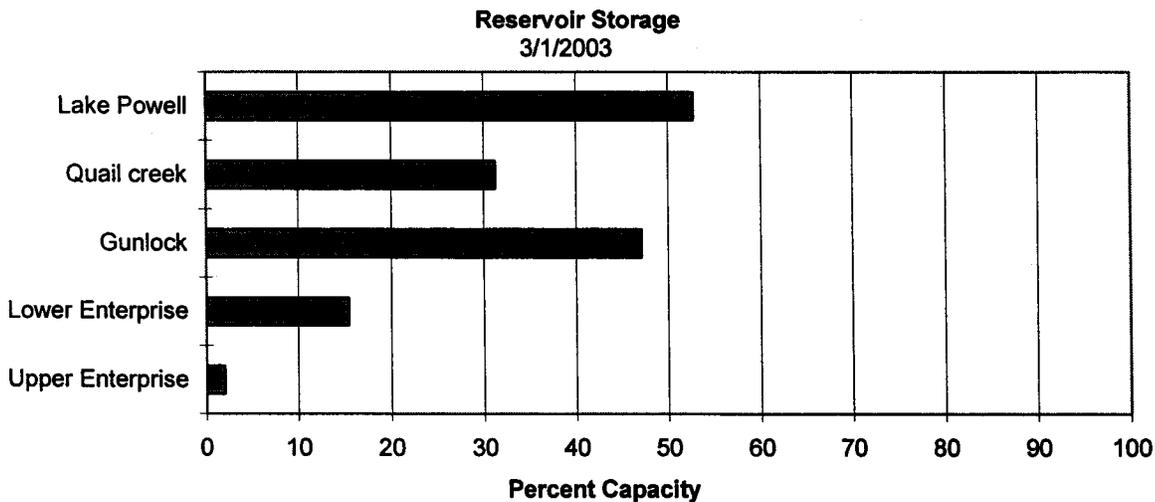
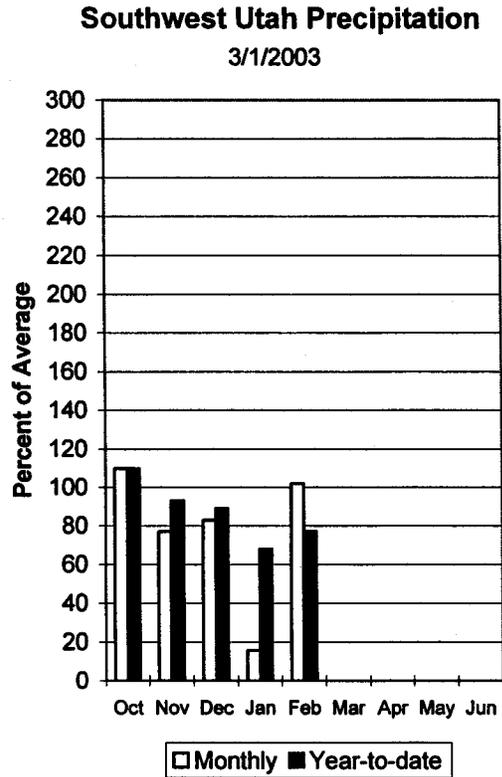
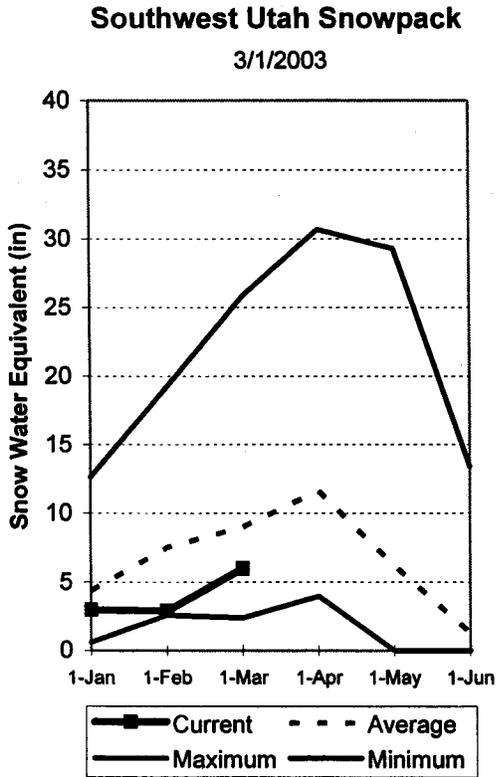
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GUNNISON	20.3	2.4	2.4	14.6	UPPER SEVIER RIVER (south	8	155	64
MINERSVILLE (RkyFd)	23.3	5.7	9.2	16.2	EAST FORK SEVIER RIVER	3	145	70
OTTER CREEK	52.5	27.6	39.2	40.0	SOUTH FORK SEVIER RIVER	5	164	61
PIUTE	71.8	2.5	49.5	53.3	LOWER SEVIER RIVER (inclu	6	105	71
SEVIER BRIDGE	236.0	87.0	119.4	175.6	BEAVER RIVER	2	140	69
PANGUITCH LAKE	22.3	3.2	11.6	146.8	SEVIER & BEAVER RIVER BAS	16	127	68

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. Mar 1, 2003

Snowpacks in this region are at 59% of average, about 186% of last year and up 20% relative to last month. Individual sites range from 9 to 88% of average and it could be the fifth consecutive below normal April 1 snowpack year. There is a 16% chance of getting back to average conditions by April 1. Soil moisture is somewhat improved over last year and may yield a higher runoff efficiency. Precipitation was near normal during February at 102% of average, bringing the seasonal accumulation (Oct-Feb) to 77% of normal. Reservoir storage is at 29% of capacity. General water supply conditions and streamflow forecasts are much below normal.



E. GARFIELD, KANE, WASHINGTON, & IRON Co.
Streamflow Forecasts - March 1, 2003

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Future Conditions		Wetter		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Lake Powell inflow	APR-JUL	1900	3630	4800	61	5970	7700	7930
Virgin River nr Virgin	APR-JUL	13.9	27	38	59	51	74	64
Virgin River nr Hurricane	APR-JUL	8.3	25	37	54	49	66	69
Santa Clara River nr Pine Valley	APR-JUL	0.97	2.14	3.20	58	4.47	6.72	5.50
Coal Creek nr Cedar City	APR-JUL	3.7	6.8	9.5	49	12.6	17.9	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, 2003

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	4.9	7.5	4.9	VIRGIN RIVER	5	171	59
LAKE POWELL	24322.0	12833.0	17201.0	---	PAROWAN	2	146	62
QUAIL CREEK	40.0	12.5	37.1	29.7	ENTERPRISE TO NEW HARMONY	2	571	30
UPPER ENTERPRISE	10.0	0.2	0.5	---	COAL CREEK	2	157	62
LOWER ENTERPRISE	2.6	0.4	0.2	90.0	ESCALANTE RIVER	2	178	79
					E. GARFIELD, KANE, WASHIN	9	182	59

* 90%, 70%, 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 SURFACE WATER SUPPLY INDEX			
Snow Surveys	NRCS	USDA	
Basin or Region	SWSI/%	Percentile	Years with Similar SWSI
Bear River	-4	2%	92,93,2002
Ogden River	-3.1	10%	88,92,87,01
Weber River	-3.7	5%	77,92,88,02
Tooele Valley	NA		
Provo	-3.4	9%	63,60,64,62
North Slope	NA		
West Uintah Basin	-2	48%	94,88,95,87
East Uintah Basin	-2.9	15%	02,94,92,88
Price River	-2.7	17%	90,63,64,59
San Rafael	-2.3	22%	92,02,81,01
Moab	-2.8	17%	90,89,99,81
Upper Sevier River	-3.8	4%	63,61,77
Lower Sevier River	-2.7	18%	91,66,67,92
Beaver River	-3.0	14%	63,90,72,76
Virgin River	-1.7	30%	91,96,85,87
Snow Surveys			SWSI Scale: -4 to 4
245 N Jimmy Doolittle Rd			Percentile: 0 - 100%
Salt Lake City, UT			
(801) 524-5213			

SNOW COURSE DATA

MARCH 2003

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	3/01	26	4.6	2.5	7.3
ALTA CENTRAL	8800	2/28	55	19.0	29.4	31.1
BEAVER DAMS SNOTEL	8000	3/01	-	6.6	6.5	10.2
BEAVER DIVIDE SNOTEL	8280	3/01	32	6.0	7.4	10.2
BEN LOMOND PK SNOTEL	8000	3/01	56	19.7	29.1	34.3
BEN LOMOND TR SNOTEL	6000	3/01	34	11.5	16.9	19.0
BEVAN'S CABIN	6450	2/27	15	3.5	6.3	9.2
BIG FLAT SNOTEL	10290	3/01	52	10.9	6.7	15.0
BIRCH CROSSING	8100	2/26	14	3.4	2.9	6.7
BLACK FLAT-U.M. CK S	9400	3/01	25	5.5	6.4	8.5
BLACK'S FORK GS-EF	9340	2/26	35	6.8	5.6	7.8
BLACK'S FORK JUNCTN	8930	2/26	31	6.2	5.9	7.7
BOX CREEK SNOTEL	9800	3/01	36	8.0	8.5	11.0
BRIAN HEAD	10000	2/26	40	9.3	7.0	16.5
BRIGHTON SNOTEL	8750	3/01	44	12.6	13.9	20.4
BRIGHTON CABIN	8700	2/28	52	16.0	20.6	23.1
BROWN DUCK SNOTEL	10600	3/01	-	10.1	8.8	15.0
BRYCE CANYON	8000	2/27	16	3.1	1.8	4.9
BUCK FLAT SNOTEL	9800	3/01	46	11.9	10.6	15.3
BUCK PASTURE	9700	2/26	51	10.0	9.0	14.0
BUCKBOARD FLAT	9000	2/28	35	6.8	5.1	11.0
BUG LAKE SNOTEL	7950	3/01	44	12.1	15.1	17.1
BURT'S-MILLER RANCH	7900	2/26	15	3.8	3.8	4.7
CAMP JACKSON SNOTEL	8600	3/01	49	9.5	5.7	12.9
CASCADE MOUNTAIN	7770	3/01	34	9.5	-	-
CASTLE VALLEY SNOTEL	9580	3/01	-	6.7	5.1	11.8
CHALK CK #1 SNOTEL	9100	3/01	51	13.2	14.8	19.9
CHALK CK #2 SNOTEL	8200	3/01	39	10.0	10.6	12.9
CHALK CREEK #3	7500	2/26	18	4.7	4.8	6.8
CHEPETA SNOTEL	10300	3/01	-	8.6	8.3	11.4
CITY CREEK	7500				21.9	23.4
CLAYTON SPRINGS SNTL	10000	3/01	37	7.0	4.6	-
CLEAR CK RIDG #1 SNT	9200	3/01	46	11.7	7.4	16.7
CLEAR CK RIDG #2 SNT	8000	3/01	-	9.1	6.3	12.3
CORRAL	8200				-	-
CURRENT CREEK SNOTEL	8000	3/01	26	3.3	3.6	9.6
DANIELS-STRAWBERRY S	8000	3/01	38	10.8	8.5	15.1
DILL'S CAMP SNOTEL	9200	3/01	-	9.4	7.7	12.3
DONKEY RESERVOIR SNO	9800	3/01	-	5.8	3.7	6.6
DRY BREAD POND SNTL	8350	3/01	39	9.4	10.7	19.0
DRY FORK SNOTEL	7160	3/01	-	8.0	9.8	14.5
EAST WILLOW CREEK SN	8250	3/01	-	5.0	3.5	7.1
FARMINGTON CN SNOTEL	8000	3/01	59	22.5	25.0	27.3
FARMINGTON CANYON L.	6950	2/24	38	12.6	17.3	21.2
FARNSWORTH LK SNOTEL	9600	3/01	54	11.5	9.6	14.8
FISH LAKE	8700	2/28	18	4.6	6.0	7.5
FIVE POINTS LAKE SNO	10920	3/01	46	8.7	7.6	13.8
FRANCES FLATS	6700				17.1	17.5
G.B.R.C. HEADQUARTER	8700	2/28	42	10.1	8.5	13.8
G.B.R.C. MEADOWS	10000	2/28	53	13.8	11.0	19.0
GARDEN CITY SUMMIT	7600	2/24	40	10.1	10.8	13.5
GEORGE CREEK	8840	2/24	44	12.8	16.8	17.3
GOOSEBERRY R.S.	8400	2/28	34	7.6	7.1	9.9
GOOSEBERRY R.S. SNTL	7900	3/01	25	7.0	6.0	7.9
HARDSCRABBLE SNOTEL	7250	3/01	-	10.1	13.0	14.3
HARRIS FLAT SNOTEL	7700	3/01	-	5.0	1.2	6.9
HAYDEN FORK SNOTEL	9100	3/01	43	11.8	10.4	13.2
HENRY'S FORK	10000	2/28	43	8.1	7.0	10.5
HEWINTA SNOTEL	9500	3/01	34	6.6	6.5	9.1
HICKERSON PARK SNTL	9100	3/01	19	3.7	3.9	5.8
HIDDEN SPRINGS	5500	2/28	5	1.4	7.2	5.9
HOBBLE CREEK SUMMIT	7420	2/27	31	6.9	7.9	13.1
HOLE-IN-ROCK SNOTEL	9150	3/01	29	5.4	4.0	5.7
HORSE RIDGE SNOTEL	8260	3/01	-	13.3	14.9	20.2
HUNTINGTON-HORSESHOE	9800	2/28	46	12.5	12.5	19.4
INDIAN CANYON SNOTEL	9100	3/01	39	7.9	4.5	9.6
JOHNSON VALLEY	8850	2/28	18	4.1	4.1	6.4
JONES CORRAL G.S.	9720				-	-

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
KILFOIL CREEK	7300	2/24	34	8.4	12.2	12.4
KILLYOM CANYON	6300	2/28	3	1.0	9.0	8.7
KIMBERLY MINE SNOTEL	9300	3/01	-	8.8	6.8	13.3
KING'S CABIN SNOTEL	8730	3/01	34	7.6	4.9	9.4
KLONDIKE NARROWS	7400	2/24	51	12.4	11.5	16.8
KOLOB SNOTEL	9250	3/01	53	10.4	7.8	17.8
LAKEFORK #1 SNOTEL	10100	3/01	39	7.2	6.0	10.5
LAKEFORK BASIN SNTL	10900	3/01	52	9.9	10.2	16.6
LAKEFORK MOUNTAIN #3	8400	2/28	25	3.6	3.1	6.1
LAMBS CANYON	7400	2/27	35	10.1	12.1	14.5
LASAL MOUNTAIN LOWER	8800	2/27	28	6.2	5.4	8.1
LASAL MOUNTAIN SNTL	9850	3/01	44	8.5	6.1	10.7
LILY LAKE SNOTEL	9050	3/01	40	9.0	8.2	10.8
LITTLE BEAR LOWER	6000	2/24	18	5.8	10.1	10.2
LITTLE BEAR SNOTEL	6550	3/01	-	5.2	10.0	12.8
LITTLE GRASSY SNOTEL	6100	3/01	-	2.0	0.0	5.8
LONG FLAT SNOTEL	8000	3/01	-	2.0	0.7	7.4
LONG VALLEY JCT. SMT	7500	3/01	-	1.8	0.0	5.8
LOOKOUT PEAK SNOTEL	8200	3/01	-	15.2	17.7	20.1
LOST CREEK RESERVOIR	6130	2/24	8	2.0	6.0	5.9
LOUIS MEADOW SNOTEL	6700	3/01	28	9.1	15.8	-
MAMMOTH-COTTONWD SMT	8800	3/01	44	13.1	10.0	17.6
MERCHANT VALLEY SNTL	8750	3/01	-	7.2	6.2	11.4
MIDDLE CANYON	7000	2/27	24	7.2	8.0	12.2
MIDWAY VALLEY SNOTEL	9800	3/01	61	12.7	8.2	19.4
MILL CREEK	6950	2/27	34	10.0	15.5	16.6
MILL-D NORTH SNOTEL	8960	3/01	-	12.4	20.0	21.0
MILL-D SOUTH FORK	7400	2/28	37	9.9	16.2	16.9
MINING FORK SNOTEL	8000	3/01	30	9.0	14.1	14.9
MONTE CRISTO SNOTEL	8960	3/01	57	12.4	16.2	24.7
MOSSY MTM. SNOTEL	9500	3/01	-	7.8	5.2	9.3
MT. BALDY R.S.	9500	2/28	63	16.5	14.4	19.9
MUD CREEK #2	8600	2/28	40	7.2	6.5	12.0
OAK CREEK	7760	2/27	32	6.6	5.5	10.0
PANGUITCH LAKE R.S.	8200	2/24	6	1.8	1.2	4.0
PARLEY'S CANYON SUM.	7500				15.2	16.2
PARLEY'S CANYON SNTL	7500	3/01	-	7.4	11.8	15.3
PARRISH CREEK SNOTEL	7740	3/01	44	12.6	19.0	-
PAYSON R.S. SNOTEL	8050	3/01	36	8.3	10.8	17.2
PICKLE KEG SNOTEL	9600	3/01	-	10.9	12.1	14.1
PINE CREEK SNOTEL	8800	3/01	-	10.8	12.7	19.3
RED PINE RIDGE SNTL	9200	3/01	41	9.5	8.1	14.2
REDDEN MINE LOWER	8500	2/26	37	8.6	11.1	15.1
REES'S FLAT	7300	2/27	34	6.9	7.6	11.2
ROCK CREEK SNOTEL	7900	3/01	-	5.1	3.9	7.9
ROCKY BN-SETTLEMT SN	8900	3/01	44	10.9	12.4	21.2
SEELEY CREEK SNOTEL	10000	3/01	32	7.5	7.1	12.3
SILVER LAKE (BRIGHT.)	8730				18.5	21.0
SMITH MOREHOUSE SNTL	7600	3/01	31	7.7	9.1	12.4
SNOWBIRD SNOTEL	9700	3/01	61	16.5	31.1	28.3
SPIRIT LAKE	10300	2/28	40	6.8	5.6	10.5
SQUAM SPRINGS	9300	2/27	20	4.2	4.4	6.6
STEEL CREEK PARK SNO	10100	3/01	46	8.8	8.9	12.7
STILLWATER CAMP	8550	2/26	35	6.9	7.8	8.8
STRAWBERRY DIVIDE SN	8400	3/01	-	8.8	10.7	16.3
SUSC RANCH	8200	2/24	3	.7	3.1	8.1
TALL POLES	8800	2/26	30	6.6	5.8	12.1
TEMPLE FORK SNOTEL	7410	3/01	47	12.1	12.2	-
THAYNES CANYON SNTL	9200	3/01	47	12.1	14.9	19.3
THISTLE FLAT	8500				-	-
TIMBERLINE	9100				-	-
TIMPANOGOS DIVIDE SN	8140	3/01	39	8.8	11.0	20.4
TONY GROVE LK SNOTEL	8400	3/01	78	24.7	25.1	30.0
TONY GROVE R.S.	6250	2/24	34	8.6	9.7	11.3
TRIAL LAKE	9960	2/28	55	13.1	14.5	20.3
TRIAL LAKE SNOTEL	9960	3/01	51	10.3	13.4	20.6
TROUT CREEK SNOTEL	9400	3/01	35	5.3	4.7	8.1
UPPER JOES VALLEY	8900	2/28	33	7.1	4.9	9.3
VERNON CREEK SNOTEL	7500	3/01	23	4.8	5.2	10.1
VIPONT	7670	2/24	22	6.6	15.2	12.2
WEBSTER FLAT SNOTEL	9200	3/01	-	7.7	4.8	13.5
WHITE RIVER #1 SNTL	8550	3/01	-	7.2	6.1	11.6
WHITE RIVER #3	7400	2/28	19	5.3	4.8	7.8
WIDTSOE #3 SNOTEL	9500	3/01	-	7.0	2.8	9.7
WRIGLEY CREEK	9000	2/28	36	7.4	5.7	9.6
YANKEE RESERVOIR	8700	2/28	26	4.8	3.6	8.4



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**Utah Water Supply
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