

# STATE OF UTAH GENERAL OUTLOOK

Feb 1, 2004

## SUMMARY

Last month it was superlatives, gushing euphoria and general optimism that we had a real chance of having a banner snowpack year. This month it is back to reality. January snowpacks were 120% to 140% of normal with almost half of that snowpack accumulated over the Christmas-New Years time frame. High pressure moved in and essentially shut off the snow. In fact, January accumulated just 39% to 60% of average snow increases with most of that happening in the first few days of the month. The result is snowpacks that are near average across the state with the exception of the Virgin – Escalante area which is at 79% of average. Even though snowpacks have declined 20% to 30% relative to last month, they are still 150% to 200% greater than last year. Average looks pretty good compared to the 30% to 50% of normal last year. Precipitation for January was much below average state wide, ranging from 48% to 65% of average, bringing seasonal precipitation, (Oct-Jan) to 94%. Soil moisture remains a concern as there was very little precipitation accumulation prior to the onset of snowpacks. This condition will persist until the melt season saturates the soils and in some cases, could take an above normal amount of snow. Soil moisture deficits range from 6 to 9 inches in the upper 24 inches of soil, similar to last year. Low reservoir storage is also a concern with total reservoir storage down 8% (428,000 AF) from last year. 428,000 AF would be the entire reservoir capacity of the Sevier River Basin and then some. Areas of greatest concern are the Bear and Sevier River basins with current storage of 3% and 21% respectively. Streamflow forecasts are scattered across the spectrum, ranging from 13% to 122% of average. Surface Water Supply Indexes range from 2% on the Bear River to 59% over the western part of the Uintah Basin.

## SNOWPACK

January first snowpacks as measured by the NRCS SNOTEL system range from 78% in southern Utah to 106% on the Utah Lake watershed. The lowest snowpacks are on the Escalante at 65% of average. With just 2 months remaining in the normal snowpack accumulation season, most snowpacks are near normal conditions. Given the soil moisture and reservoir storage deficits, Utah really needs a much above average snowpack year. Given maximum historical snowpack accumulation for February and March, Utah's April 1 snowpack would range between 122% to 166% of normal with only a very small probability that this could occur. Given the minimum accumulation for February and March, our April 1 snowpacks would range between 0% and 80% of normal. The likelihood of this occurrence is also very small.

## PRECIPITATION

Mountain precipitation during January was much below average (62%) statewide. In northern Utah precipitation ranged from 55% on the Uintahs to 66% on the Provo. Southern Utah had precipitation values ranging from 48% in the southwest to 63% over the southeast watersheds. This brings the seasonal accumulation (Oct-Jan) to 94% of average statewide.

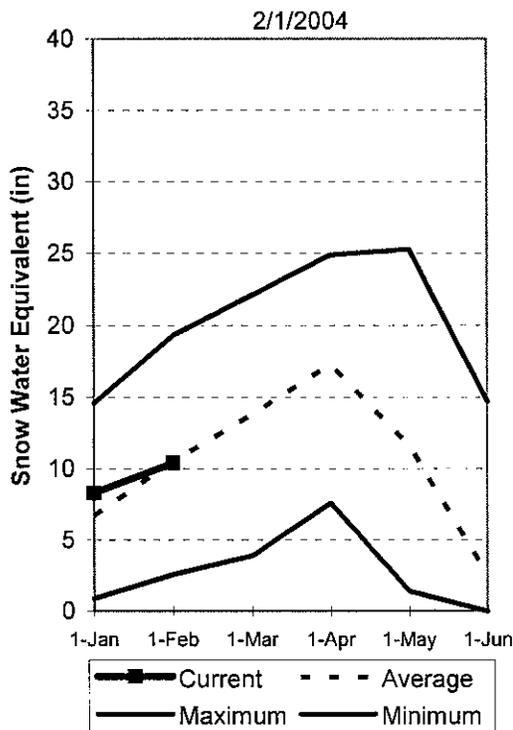
## RESERVOIRS

Storage in 41 of Utah's key irrigation reservoirs is at 39% of capacity, up 1% from last month. This is down substantially (8%) 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.

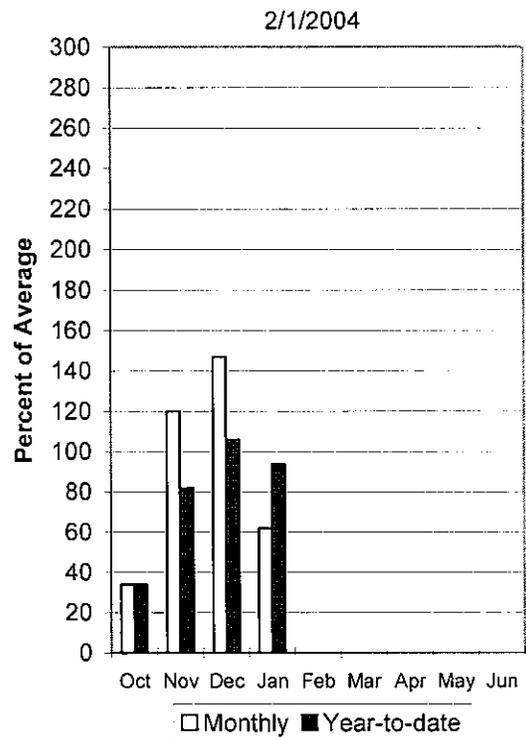
### STREAMFLOW

Snowmelt streamflows are expected to be much below to near average across the entire state of Utah this year. Forecast streamflows range from 13% on the Bear at Stewart dam to 122% on Wheeler Creek. Most flows are forecast to be in the 60% to 90% range. Overall water supply conditions are below to near normal.

### Mountain Snowpack



### Precipitation

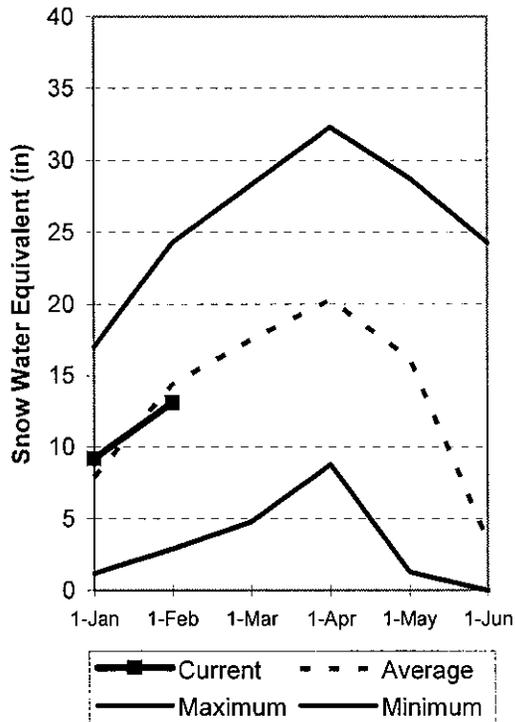


## Bear River Basin Jan 1, 2004

Snowpacks on the Bear River Basin are near average at 91% of normal, about 159% of last year and down 25% relative to last month. Specific sites range from 77% to 108% of normal. January precipitation was much below average at 66%, which brings the seasonal accumulation (Oct-Jan) to 91% of average. Soil moisture levels in runoff producing areas indicate about 7 inches of deficit in the upper 2 feet of soil. Forecast streamflows are for much below normal (13%) to below normal volumes (78%) this spring. Reservoir storage is extremely low at 3% of capacity. The Surface Water Supply Index is at 2% for the Bear River, or 98% of years have had more total water available. Water supply conditions are much below normal due to low reservoir storage and soil moisture.

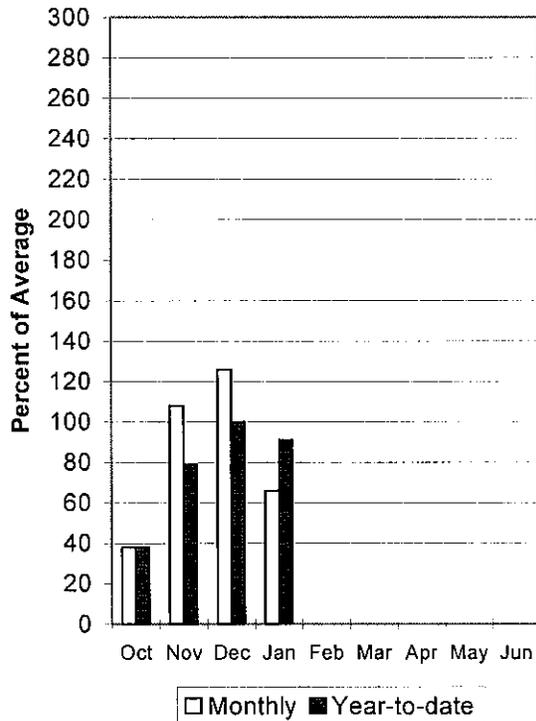
### Bear River Snowpack

2/1/2004



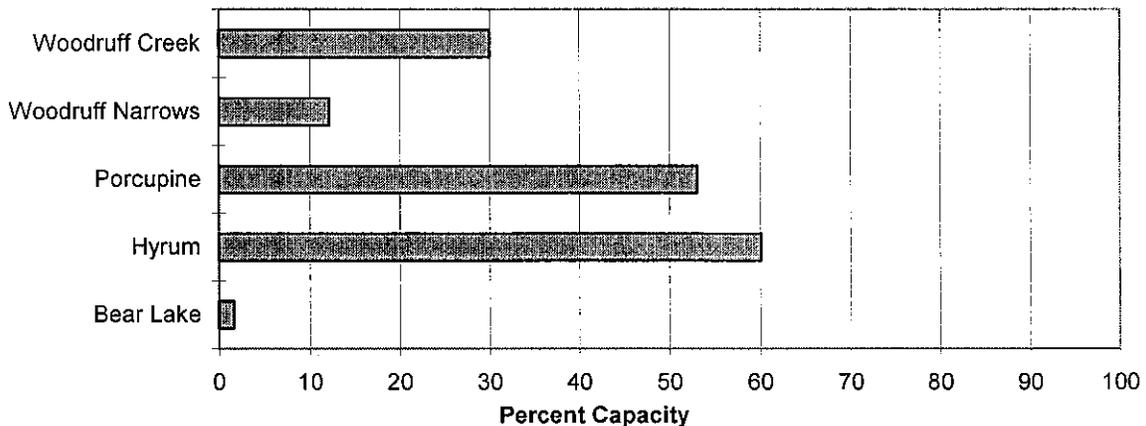
### Bear River Precipitation

2/1/2004



### Reservoir Storage

2/1/2004



BEAR RIVER BASIN  
Streamflow Forecasts - February 1, 2004

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)
Bear River nr UT-WY State Line	APR-JUL	51	71	85	75	99	119	113		
Bear River ab Reservoir nr Woodruff	APR-JUL	10.0	42	64	47	86	118	136		
Big Creek nr Randolph	APR-JUL	0.75	1.14	1.90	39	2.71	3.81	4.90		
Smiths Fork nr Border	APR-JUL	50	68	80	78	92	110	103		
Bear River at Stewart Dam	APR-JUL	9.0	16.0	29	13	45	76	227		
Little Bear River at Paradise	APR-JUL	18.7	28	36	78	45	59	46		
Logan River nr Logan combined flow	APR-JUL	58	78	93	74	109	136	126		
Blacksmith Fork nr Hyrum	APR-JUL	18.8	28	36	75	45	59	48		

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of January					BEAR RIVER BASIN Watershed Snowpack Analysis - February 1, 2004			
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	21.1	358.2	---	BEAR RIVER, UPPER (abv Ha	6	140	86
HYRUM	15.3	9.2	6.7	10.4	BEAR RIVER, LOWER (blw Ha	8	167	100
PORCUPINE	11.3	6.0	6.7	4.4	LOGAN RIVER	4	169	98
WOODRUFF NARROWS	57.3	7.0	7.0	25.2	RAFT RIVER	1	201	103
WOODRUFF CREEK	4.0	1.2	2.5	---	BEAR RIVER BASIN	14	157	95

\* 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.

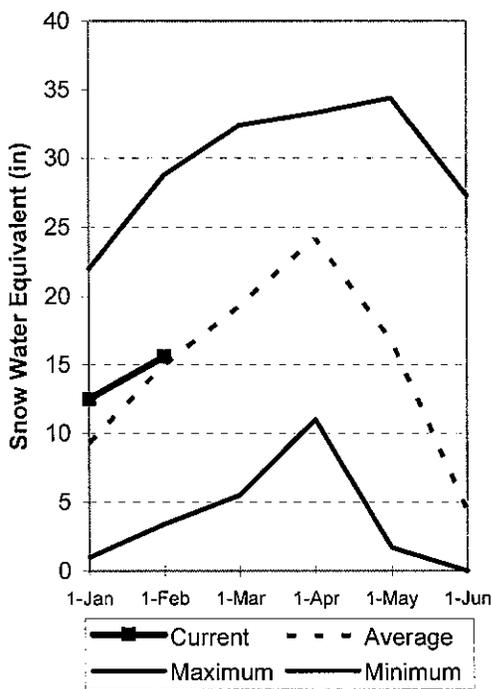
# Weber and Ogden River Basins

Feb 1, 2004

Snowpack on the Weber and Ogden Watersheds is near normal at 104% of average, about 182% of last year and down 30% relative to last month. Individual sites range from 67% to 155% of average. January precipitation was much below average at 65% bringing the seasonal accumulation (Oct-Jan) to 91% of average. Soil moisture levels in runoff producing areas indicate about 7 inches of deficit in the upper 2 feet of soil. Streamflow forecasts range from 56% to 122% of average. Reservoir storage is at 32% of capacity, about 12% less than last year. The Surface Water Supply Index is at 11% for the Weber River and at 25% for the Ogden River. Overall water supply conditions are below normal due to low reservoir storage and soil moisture conditions.

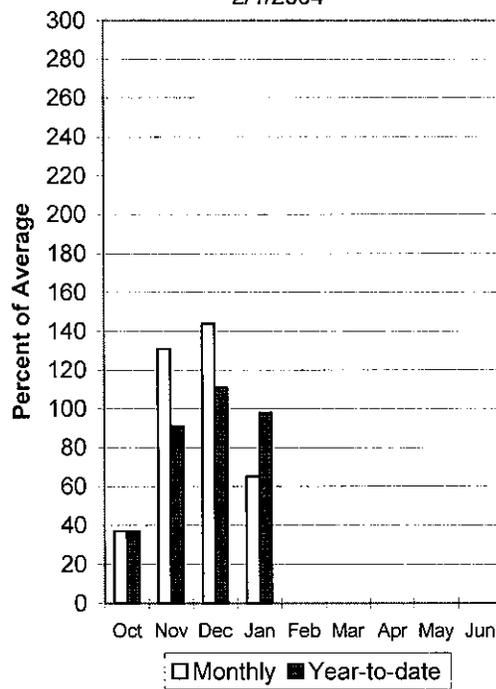
### Weber River Snowpack

2/1/2004



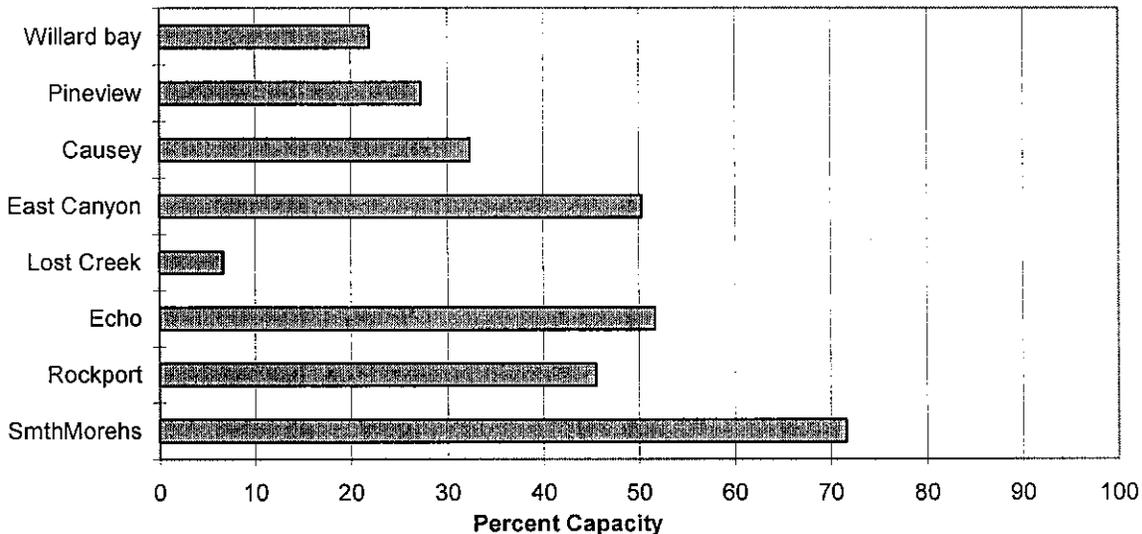
### Weber River Precipitation

2/1/2004



### Reservoir Storage

2/1/2004



WEBER & OGDEN WATERSHEDS in Utah  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions				Wetter		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)		
Smith & Morehouse Res inflow	APR-JUL	13.1	18.0	22	65	26	31	34
Weber River nr Oakley	APR-JUL	45	64	77	63	90	109	123
Rockport Reservoir inflow	APR-JUL	41	66	83	62	100	125	134
Weber River nr Coalville	APR-JUL	40	66	84	61	102	128	137
Chalk Creek at Coalville	APR-JUL	5.7	17.2	25	56	33	44	45
Echo Reservoir inflow	APR-JUL	51	86	109	61	132	167	179
Lost Creek Reservoir inflow	APR-JUL	4.7	8.1	11.0	63	14.3	19.9	17.6
East Canyon Reservoir inflow	APR-JUL	15.1	20	24	77	28	35	31
Weber River at Gateway	APR-JUL	130	199	245	69	291	361	355
SF Ogden River nr Huntsville	APR-JUL	25	40	50	78	60	75	64
Pineview Reservoir inflow	APR-JUL	49	79	99	74	119	149	133
Wheeler Creek nr Huntsville	APR-JUL	5.00	6.60	7.70	122	8.80	10.40	6.30

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

WEBER & OGDEN WATERSHEDS in Utah  
Watershed Snowpack Analysis - February 1, 2004

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	2.3	2.0	2.8	OGDEN RIVER	4	194	104
EAST CANYON	49.5	24.9	28.5	35.4	WEBER RIVER	9	180	103
ECHO	73.9	38.2	30.6	50.2	WEBER & OGDEN WATERSHEDS	12	186	104
LOST CREEK	22.5	1.5	6.1	14.0				
PINEVIEW	110.1	30.0	42.0	51.7				
ROCKPORT	60.9	27.7	32.5	34.3				
WILLARD BAY	215.0	47.1	101.0	151.6				

\* 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.

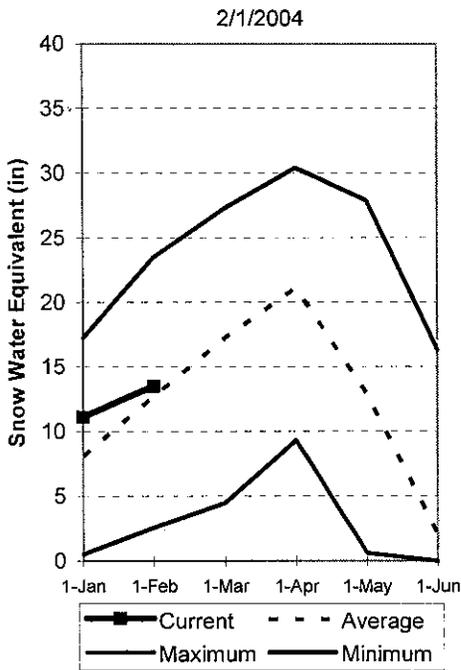
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## Utah Lake, Jordan River & Tooele Valley Basins

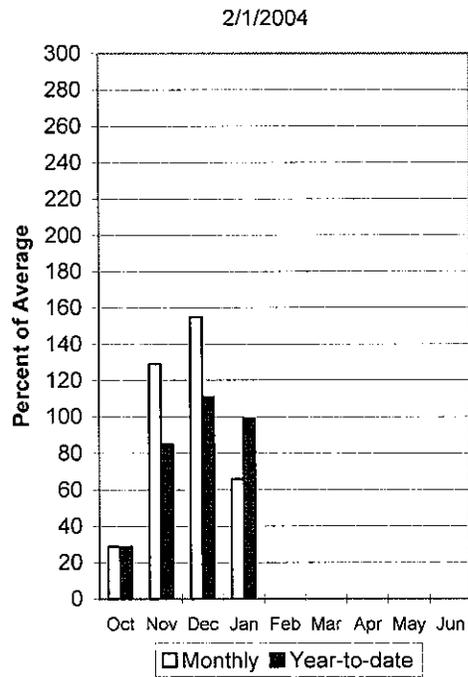
### Feb 1, 2004

Snowpacks over these watersheds are at 106% of average, 201% of last year and down 29% relative to last month. The upper Provo area is at 96% of average. Individual sites range from 81% to 138% of average. December precipitation was much below average at 66%, bringing the seasonal accumulation (Oct-Jan) to 99% of average. Soil moisture levels in runoff producing areas indicate about 6.5 inches of deficit in the upper 2 feet of soil. Forecast streamflows range from 54% to 105% of average. Reservoir storage is at 61% of capacity, 4% less than last year. The Surface Water Supply Index is at 9%, or 91% of years would have more total water available. General water supply conditions are below normal due to low reservoir storage and soil moisture.

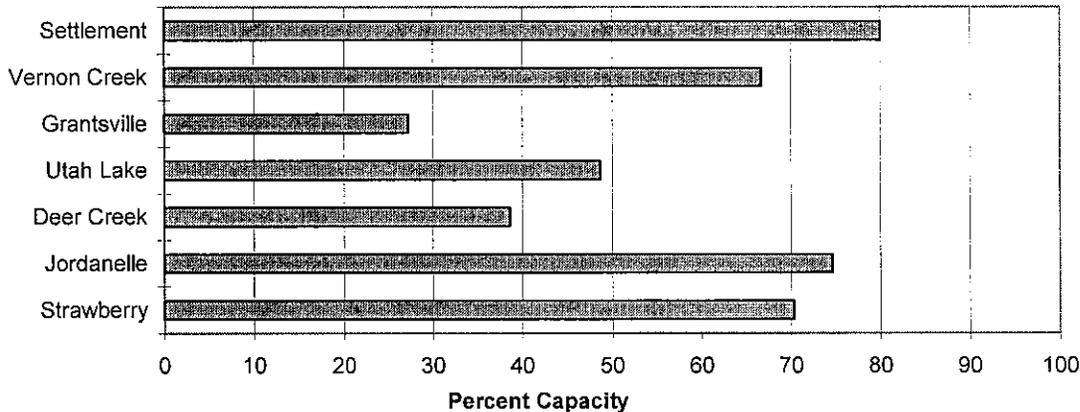
**Provo River Snowpack**



**Provo River Precipitation**



**Reservoir Storage**  
2/1/2004



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		===== Wetter =====>>				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Spanish Fork River nr Castilla	APR-JUL	7.7	33	57	74	81	107	77
Provo River nr Woodland	APR-JUL	34	54	67	65	80	100	103
Provo River nr Hailstone	APR-JUL	26	52	68	62	84	110	109
Provo R blw Deer Creek Dam	APR-JUL	24	62	88	70	114	152	126
American Fk R nr American Fk	APR-JUL	13.4	21	25	78	29	36	32
Utah Lake inflow	APR-JUL	68	169	240	74	311	410	325
Little Cottonwood Ck nr SLC	APR-JUL	19.6	26	30	75	34	41	40
Big Cottonwood Ck nr SLC	APR-JUL	15.2	23	27	71	31	39	38
Mill Creek nr SLC	APR-JUL	1.40	2.79	4.00	57	5.21	7.00	7.00
Parley's Creek nr SLC	APR-JUL	2.0	7.2	11.0	66	14.8	20	16.7
Dell Fork nr SLC	APR-JUL	1.02	2.28	3.90	57	5.52	8.00	6.80
Emigration Creek nr SLC	APR-JUL	0.00	1.09	2.50	56	3.91	5.80	4.50
City Creek nr SLC	APR-JUL	1.39	2.99	4.70	54	6.41	8.90	8.70
Vernon Creek nr Vernon	APR-JUL	0.61	0.86	1.10	74	1.40	1.99	1.48
Settlement Creek nr Tooele	APR-JUL	0.79	1.12	1.40	71	1.72	2.27	1.97
South Willow Creek nr Grantsville	APR-JUL	1.83	2.80	3.40	105	4.00	5.00	3.23

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

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Watershed Snowpack Analysis - February 1, 2004

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	57.8	75.8	104.8	PROVO RIVER & UTAH LAKE	7	189	96
GRANTSVILLE	3.3	0.9	1.4	1.8	PROVO RIVER	4	193	96
SETTLEMENT CREEK	1.0	0.8	0.6	0.6	JORDAN RIVER & GREAT SALT	6	220	114
STRAWBERRY-ENLARGED	1105.9	777.7	811.2	642.2	TOOELE VALLEY WATERSHEDS	3	202	112
UTAH LAKE	870.9	424.1	464.4	790.9	UTAH LAKE, JORDAN RIVER &	16	205	106
VERNON CREEK	0.6	0.4	0.5	---				

\* 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.

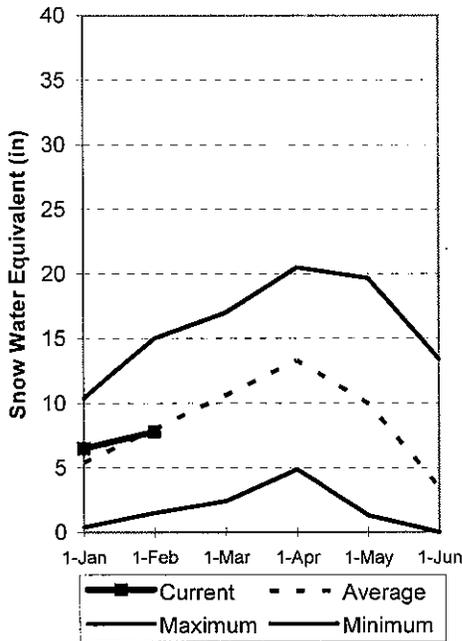
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## Uintah Basin and Dagget SCD's Feb 1, 2004

Snowpacks across the Uintah Basin and North Slope areas are near average at 98%, which is 164% of last year, down 23% relative to last month. The North Slope ranges from 68% to 119% and the Uintah Basin ranges from 86% to 124% of average. Precipitation during January was much below average at 55% bringing the seasonal accumulation (Oct-Jan) to 92% of average. Soil moisture levels in runoff producing areas indicate about 7 inches of deficit in the upper 2 feet of soil. Reservoir storage is at 70% of capacity, 2% less than last year. The Surface Water Supply Index for the western area is 59% and for the eastern area it is 46% indicating average or better conditions. Springtime runoff conditions are near normal with the exception of soil moisture.

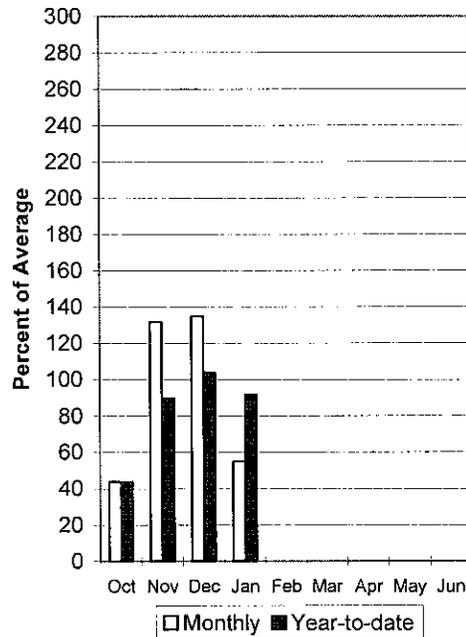
### Uintahs Snowpack

2/1/2004

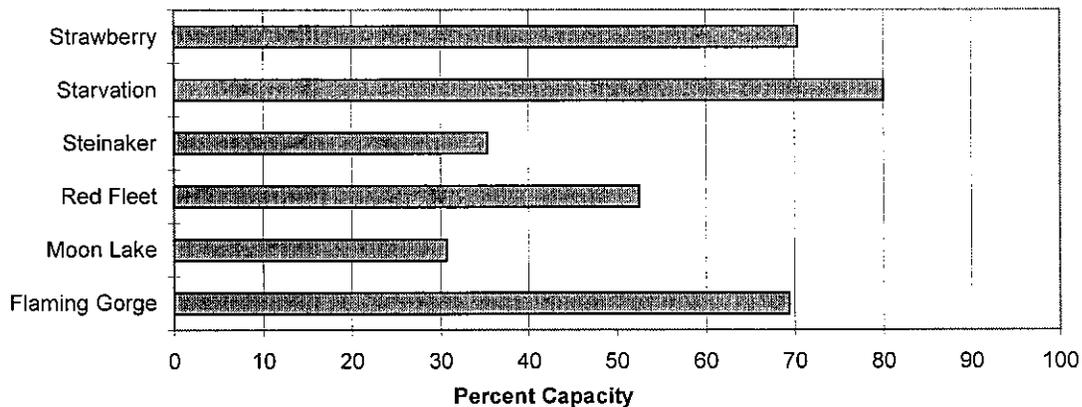


### Uintahs Precipitation

2/1/2004



### Reservoir Storage 2/1/2004



UINTAH BASIN & DAGGET SCD'S  
 Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<----- Drier ----->>		----->>		----->>		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	Chance Of Exceeding * (% AVG.)	30% (1000AF)	10% (1000AF)	
Blacks Fork nr Robertson	APR-JUL	47	65	77	81	89	107	95
EF of Smiths Fork nr Robertson	APR-JUL	17.2	20	23	74	26	31	31
Flaming Gorge Reservoir Inflow	APR-JUL	515	730	880	74	1030	1250	1190
BIG BRUSH CK abv Red Fleet Resv	APR-JUL	14.8	19.0	22	105	25	29	21
Ashley Creek nr Vernal	APR-JUL	27	44	55	106	66	83	52
WF DUCHESNE RIVER nr Hanna	APR-JUL	13.2	18.2	22	92	26	33	24
DUCHESNE R nr Tabiona	APR-JUL	65	81	92	88	103	119	105
UPPER STILLWATER RESV inflow	APR-JUL	44	59	70	85	81	96	82
ROCK CK nr Mountain Home	APR-JUL	51	65	74	83	83	97	89
DUCHESNE R abv Knight Diversion	APR-JUL	94	130	155	82	180	217	188
STRAWBERRY RES nr Soldier Springs	APR-JUL	31	44	55	93	67	86	59
CURRANT CREEK RESV Inflow	APR-JUL	14.8	19.1	22	88	25	30	25
STARVATION RESERVOIR inflow	APR-JUL	53	84	105	87	126	157	121
Lake Fork River abv Moon Lake	APR-JUL	40	52	61	90	70	82	68
Yellowstone River nr Altonah	APR-JUL	30	46	56	90	66	82	62
DUCHESNE R at Myton	APR-JUL	86	157	205	79	255	325	260
Whiterocks River nr Whiterocks	APR-JUL	17.0	37	50	89	63	83	56
DUCHESNE R nr Randlett	APR-JUL	33	139	240	74	340	490	325

UINTAH BASIN & DAGGET SCD'S Reservoir Storage (1000 AF) - End of January					UINTAH BASIN & DAGGET SCD'S Watershed Snowpack Analysis - February 1, 2004			
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	2601.0	2626.0	2966.0	UPPER GREEN RIVER in UTAH	6	152	90
MOON LAKE	49.5	15.2	18.9	27.9	ASHLEY CREEK	2	213	113
RED FLEET	25.7	13.5	11.1	18.0	BLACK'S FORK RIVER	2	122	76
STEINAKER	33.4	11.8	6.0	21.6	SHEEP CREEK	1	150	68
STARVATION	165.3	132.3	127.0	132.3	DUCHESNE RIVER	11	169	101
STRAWBERRY-ENLARGED	1105.9	777.7	811.2	642.2	LAKE FORK-YELLOWSTONE CRE	4	155	95
					STRAWBERRY RIVER	4	190	105
					UINTAH-WHITEROCKS RIVERS	2	158	107
					UINTAH BASIN & DAGGET SCD	17	164	98

\* 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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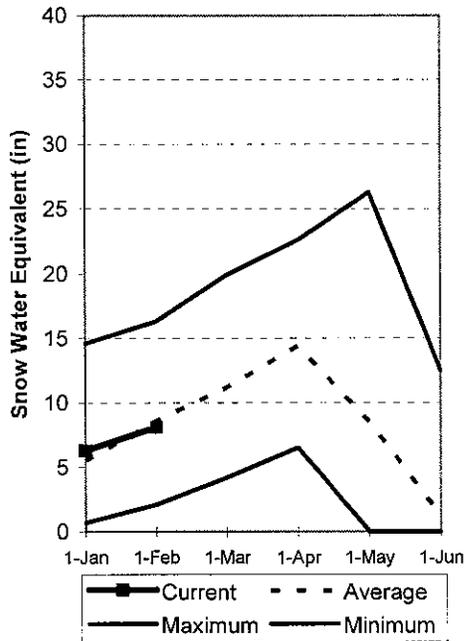
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## Carbon, Emery, Wayne, Grand and San Juan Co. Feb 1, 2004

Snowpacks in this region are near normal at 93% of average, about 152% of last year, down 21% relative to last month. Individual sites range from 53% to 116% of average. Precipitation during January was much below average at 63%, bringing the seasonal accumulation (Oct-Jan) to 92% of normal. Soil moisture levels in runoff producing areas indicate about 7 inches of deficit in the upper 2 feet of soil. Forecast streamflows range from 74% to 114% of average. Reservoir storage is at 37% of capacity, up 5% from last year. Surface Water Supply Indices for the area are: Price 28%, (below normal) San Rafael area 52% (average) and Moab 56% (average). General runoff and water supply conditions are below to near normal due to low reservoir storage and soil moisture.

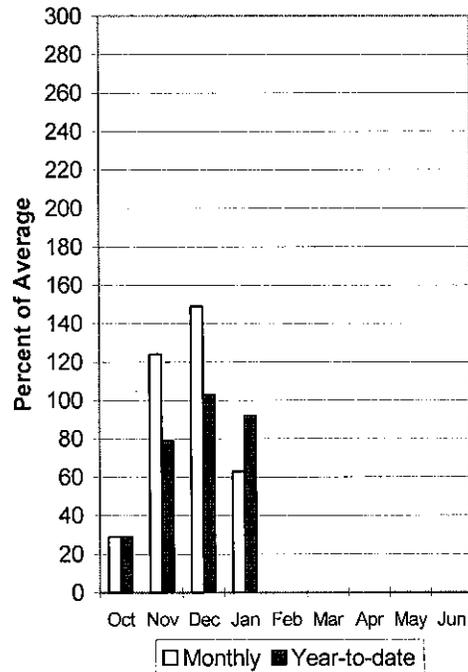
### Southeast Utah Snowpack

2/1/2004



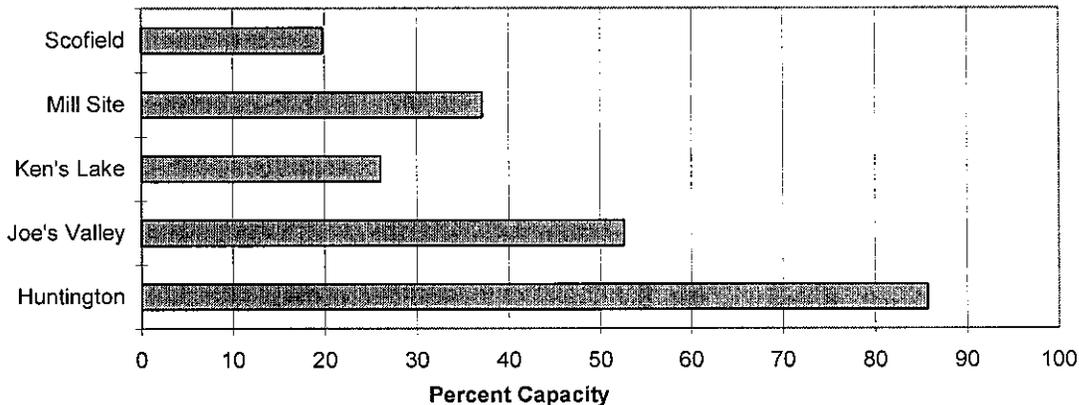
### Southeast Utah Precipitation

2/1/2004



### Reservoir Storage

2/1/2004



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	Future Conditions <<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
Gooseberry Creek nr Scofield	APR-JUL	5.2	8.3	10.3	87	12.3	15.4	11.9		
Scofield Reservoir inflow	APR-JUL	28	36	42	91	48	56	46		
White River blw Tabbyune Creek	APR-JUL	5.9	10.0	13.4	77	17.3	24	17.4		
Green River at Green River, UT	APR-JUL	1420	2110	2580	81	3050	3740	3170		
Electric Lake inflow	APR-JUL	5.7	8.9	11.6	74	14.8	21	15.7		
HUNTINGTON CK nr Huntington	APR-JUL	19.8	30	37	74	44	54	50		
JOE'S VALLEY RESV Inflow	APR-JUL	25	40	50	86	60	75	58		
Ferron Creek nr Ferron	APR-JUL	21	29	34	87	40	50	39		
Colorado River nr Cisco	APR-JUL	2140	3130	3800	82	4470	5460	4650		
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	2.50	4.40	5.70	114	7.00	8.90	5.00		
Seven Mile Creek nr Fish Lake	APR-JUL	2.70	5.40	7.20	103	9.00	11.70	7.00		
Muddy Creek nr Emery	APR-JUL	7.0	13.7	18.3	92	23	30	19.9		
North Ck ab R.S. nr Monticello	MAR-JUL	0.01	0.31	1.03	106	2.16	4.57	0.97		
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.56	1.06	1.50	110	2.01	2.90	1.37		
Recapture Ck bl Johnson Ck nr Blandi	MAR-JUL	1.40	3.90	5.50	109	7.10	9.60	5.05		
San Juan River nr Bluff	APR-JUL	820	1100	1290	105	1480	1760	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, 2004

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	3.6	3.7	2.8	PRICE RIVER	3	147	90
JOE'S VALLEY	61.6	32.4	21.8	41.2	SAN RAFAEL RIVER	3	141	92
KEN'S LAKE	2.3	0.6	0.7	1.1	MUDDY CREEK	1	143	102
MILL SITE	16.7	6.2	8.7	78.8	FREMONT RIVER	3	114	79
SCOFIELD	65.8	13.0	13.6	33.8	LASAL MOUNTAINS	1	195	103
					BLUE MOUNTAINS	1	289	116
					WILLOW CREEK	1	230	108
					CARBON, EMERY, WAYNE, GRA	13	152	93

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

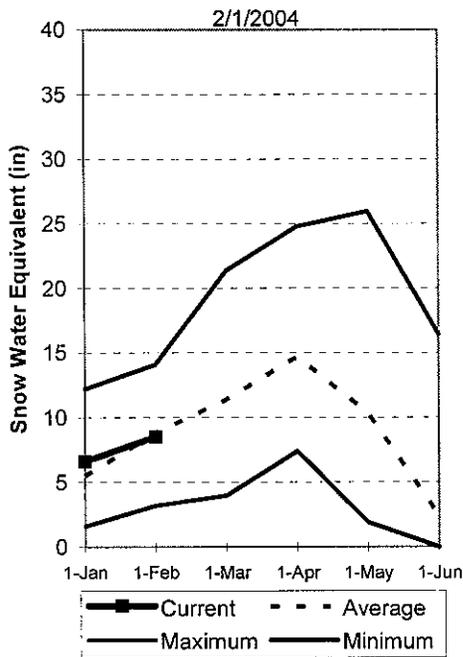
The average is computed for the 1971-2000 base period.

- (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.

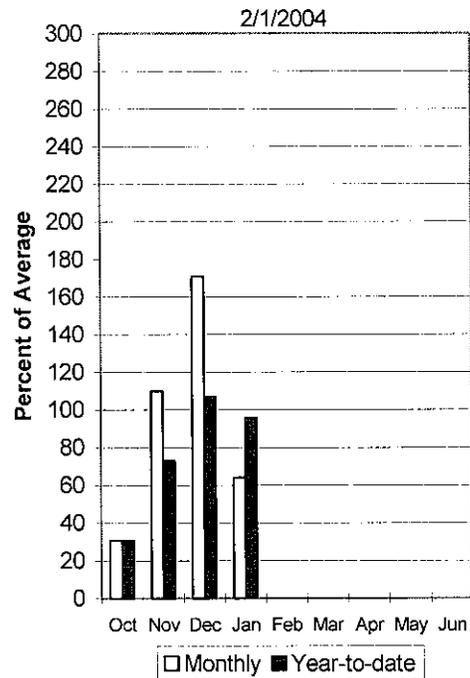
## Sevier and Beaver River Basins Feb 1, 2004

Snowpacks on the Sevier River Basin are near normal at 96% of average, about 177% of last year, down 24% relative to last month. Individual sites range from 73% to 110% of average. Precipitation during January was much below average at 64% of normal, bringing the seasonal accumulation (Oct-Jan) to 96% of average. Soil moisture levels in runoff producing areas indicate about 7 inches (Sevier) and 9 inches (Beaver) of deficit in the upper 2 feet of soil. Streamflow forecasts range from 30% to 77% of average. Reservoir storage is at 21% of capacity, 5% less than last year. Surface Water Supply Indices are: Upper Sevier 24%, Lower Sevier 22% and Beaver 32%. Water supply conditions remain below normal due to low reservoir storage and soil moisture.

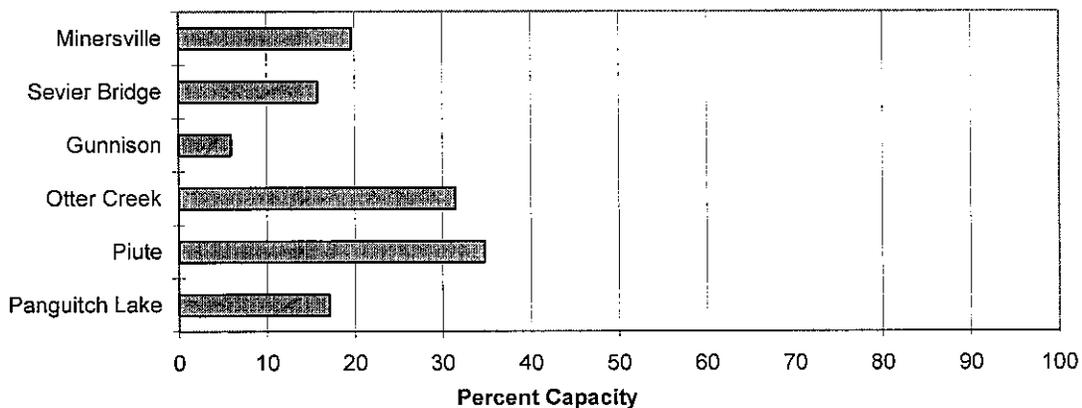
### Sevier River Snowpack



### Sevier River Precipitation



### Reservoir Storage 2/1/2004



SEVIER & BEAVER RIVER BASINS  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>								
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * (1000AF) (% AVG.)		30% (1000AF) 10% (1000AF)		30-Yr Avg. (1000AF)
Sevier River at Hatch	APR-JUL	7.1	26	36	66	46	65	55		
Sevier River nr Kingston	APR-JUL	15.1	40	54	61	68	93	89		
EF Sevier R nr Kingston	APR-JUL	2.3	12.1	22	58	32	47	38		
Sevier R blw Piute Dam	APR-JUL	15.0	53	79	63	105	143	126		
Clear Creek nr Sevier	APR-JUL	3.7	12.2	17.0	77	22	30	22		
Sevier R nr Gunnison	APR-JUL	64	108	182	65	256	395	280		
Chicken Creek nr Levan	APR-JUL	1.14	2.25	3.30	73	4.64	7.21	4.50		
Oak Creek nr Oak City	APR-JUL	0.47	0.79	1.06	64	1.37	1.89	1.66		
Beaver River nr Beaver	APR-JUL	11.9	15.9	19.0	70	23	28	27		
Minersville Reservoir inflow	APR-JUL	0.5	2.7	5.0	30	8.1	13.9	16.6		

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

SEVIER & BEAVER RIVER BASINS  
Watershed Snowpack Analysis - February 1, 2004

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	1.2	1.1	13.1	UPPER SEVIER RIVER (south	8	192	98
MINERSVILLE (RkyFd)	23.3	4.6	4.6	14.4	EAST FORK SEVIER RIVER	3	154	94
OTTER CREEK	52.5	16.5	22.4	36.5	SOUTH FORK SEVIER RIVER	5	228	100
PIUTE	71.8	25.0	2.5	49.5	LOWER SEVIER RIVER (inclu	6	160	94
SEVIER BRIDGE	236.0	37.2	76.3	159.6	BEAVER RIVER	2	170	99
PANGUITCH LAKE	22.3	3.8	3.9	131.4	SEVIER & BEAVER RIVER BAS	16	175	96

\* 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.

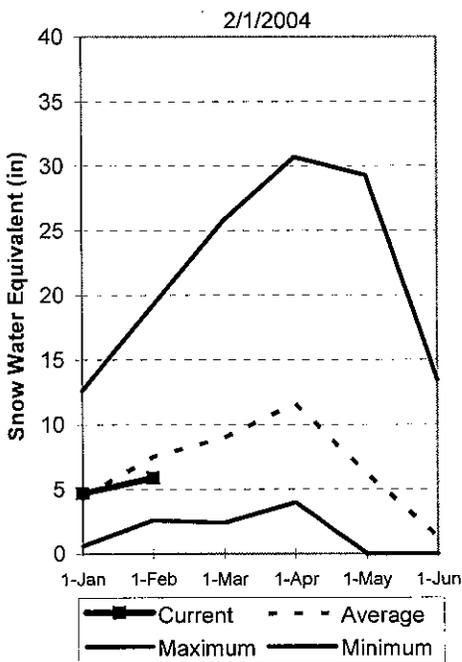
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

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

Feb 1, 2004

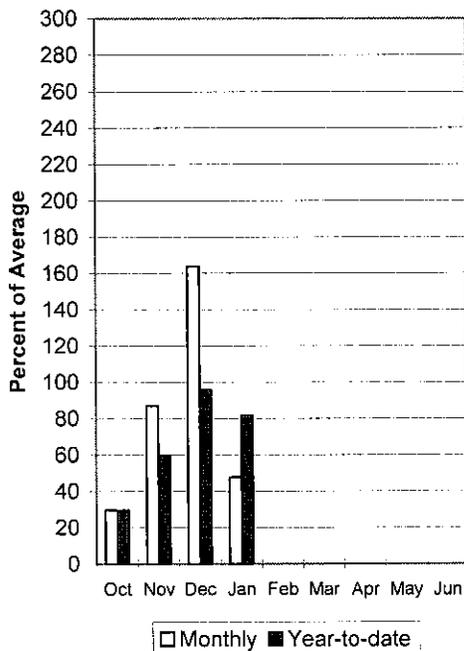
Snowpacks in this region are below normal at 78% of average, about 200% of last year, down 29% relative to last month. Individual sites range from 16% to 105% of average. Precipitation was much below normal during January at 48% of average, bringing the seasonal accumulation (Oct-Jan) to 82% of normal. Soil moisture levels in runoff producing areas indicate about 7 inches of deficit in the upper 2 feet of soil. Forecast streamflows range from 57% to 67% of average. Reservoir storage is at 41% of capacity, 16% more than last year. The Surface Water Supply Index is at 33%, indicating below normal water availability. Concerns remain over low reservoir storage, soil moisture and snowpacks in the lower elevations.

### Southwest Utah Snowpack



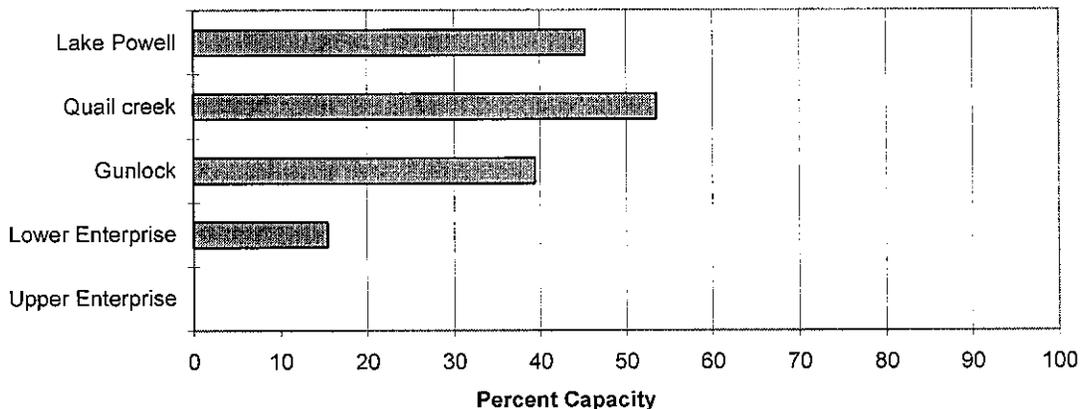
### Southwest Utah Precipitation

2/1/2004



### Reservoir Storage

2/1/2004



E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Streamflow Forecasts - February 1, 2004

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>									
		90%		70%		50% (Most Probable)		30%		10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)		
Lake Powell inflow	APR-JUL	3420	5260	6500	82	7740	9580	7930			
Virgin River nr Virgin	APR-JUL	20	31	40	63	50	66	64			
Virgin River nr Hurricane	APR-JUL	16.2	30	39	57	48	62	69			
Santa Clara River nr Pine Valley	APR-JUL	0.84	2.15	3.40	62	4.93	7.69	5.50			
Coal Creek nr Cedar City	APR-JUL	6.5	10.1	13.0	67	16.3	22	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, 2004

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	4.1	4.4	5.7	VIRGIN RIVER	5	223	90
LAKE POWELL	24322.0	11010.0	13300.0	---	PAROWAN	2	197	99
QUAIL CREEK	40.0	21.4	11.0	26.5	ENTERPRISE TO NEW HARMONY	2	0	46
UPPER ENTERPRISE	10.0	0.0	0.2	---	COAL CREEK	2	203	87
LOWER ENTERPRISE	2.6	0.4	0.4	38.0	ESCALANTE RIVER	2	111	65
					E. GARFIELD, KANE, WASHIN	9	193	78

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

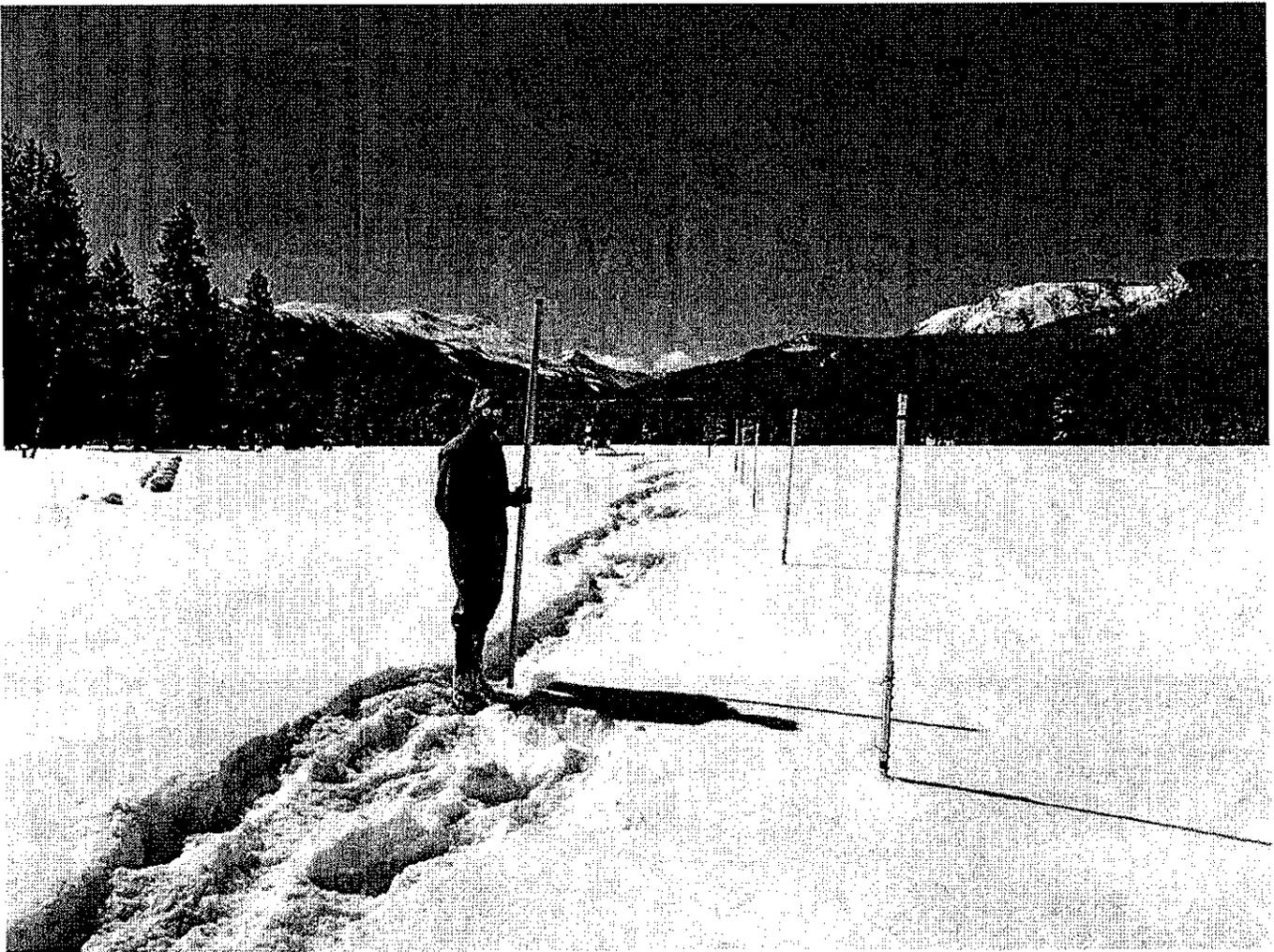
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# Utah Water Supply Outlook Report

March, 2004



East Fork of Blacks Fork Snow Course, March 1, 2004. Photo by Randy Julander

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

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Todd C. Nielson, Area Conservationist, 302 E. 1860 S., Provo, UT 84606 - Phone: (801) 377-5580  
David M. Webster, Area Conservationist, 80 N. 500 W., Vernal, UT 84078 - Phone: (435) 789-2100  
Snow Survey Staff, 245 N Jimmy Doolittle Rd, SLC Utah, 84041 - Phone: (801) 524-5213  
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

Mar 1, 2004

## SUMMARY

Most of February was pretty nondescript from a snowpack point of view. The final ten days were spectacular. Snowpacks on the Virgin and Escalante Basins essentially doubled during that time frame. All of southern Utah had substantial increases in snow accumulation. For example the Virgin Basin actually has more snow now than it normally would on April 1 and given the past few years of abysmal runoff from this area, an above normal snowpack is extremely welcome. Northern Utah also saw large snowpack increases over most areas although not nearly the gains seen in the south. February snowpack accumulation in southern Utah was 129% to 214% of average and in the north, it ranged between 83% on the Bear and 134% over the Utah Lake Basin. Precipitation for February was near to much above average state wide, ranging from 84% to 156% of average, bringing seasonal precipitation, (Oct-Feb) to 118%. Soil moisture remains a concern as there was very little precipitation accumulation prior to the onset of snowpacks. This condition will persist until the melt season saturates the soils and in some cases, could take an above normal amount of snow. Soil moisture deficits range from 6 to 9 inches in the upper 24 inches of soil, similar to last year. Low reservoir storage is also a concern with total reservoir storage down 8% (428,000 Acre-Feet) from last year. 428,000 AF would be the entire reservoir capacity of the Sevier River Basin and then some. Areas of greatest concern are the Bear and Sevier River basins with current storage of 4% and 26% respectively. Streamflow forecasts are scattered across the spectrum, ranging from 13% to 149% of average. Surface Water Supply Indexes range from 2% on the Bear River to 64% over the western part of the Uintah Basin.

## SNOWPACK

January first snowpacks as measured by the NRCS SNOTEL system range from 91% on the Bear River to 115% on the Virgin watershed. This is 135% to 197% of last years snowpack, so Utah is doing far better than the recent past. The lowest snowpacks are on the Bear which needs 141% of average snowpack accumulation during March to reach average by April 1. The probability of getting that amount of snow is about one in five. Other areas across the state require 40% to 93% of average March accumulation to reach a normal April 1 snowpack with the exception of the Virgin which already has more snow than the typical April 1 peak. Depending on wetter/drier March conditions, snowpacks could range between 70% and 170% of average by April 1.

## PRECIPITATION

Mountain precipitation during February was above average statewide (118%). In the north it was actually below normal (84%) and in the south, much above average (156%). This brings the seasonal accumulation (Oct-Feb) to 99% of average statewide.

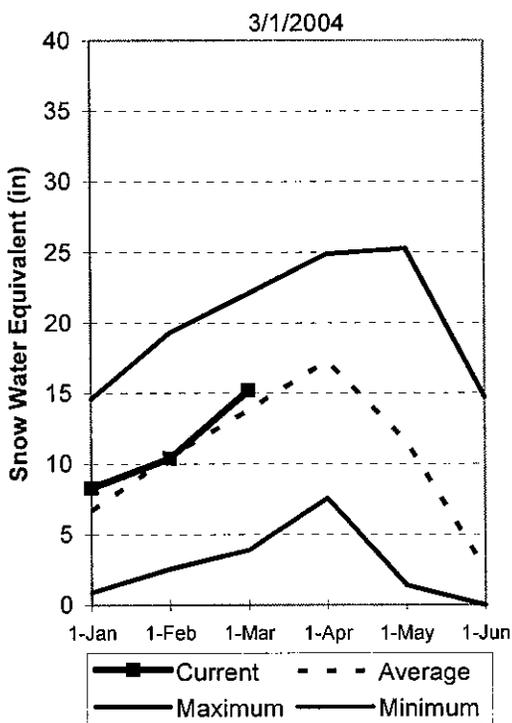
## RESERVOIRS

Storage in 41 of Utah's key irrigation reservoirs is at 41% of capacity, up 2% from last month. This is down substantially (8%) 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.

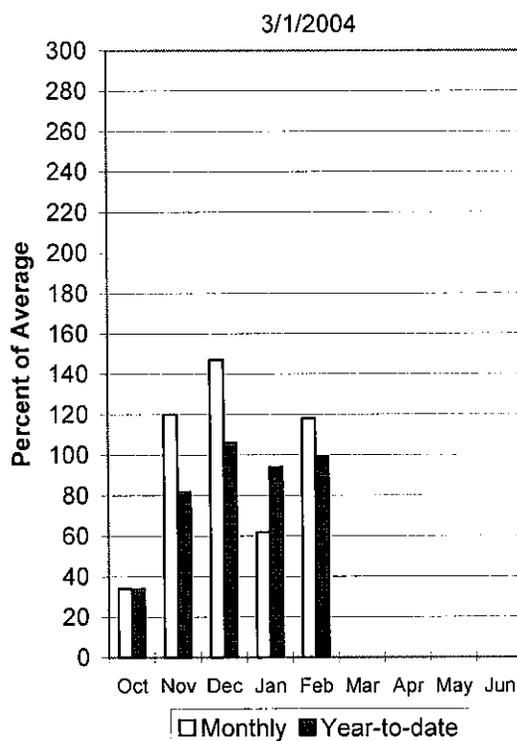
## STREAMFLOW

Snowmelt streamflows are expected to be much below to much above average across the entire state of Utah this year. Forecast streamflows range from 13% on the Bear at Stewart dam to 149% on Vernon Creek. Most flows are forecast to be in the 60% to 100% range. Overall water supply conditions are below to near normal.

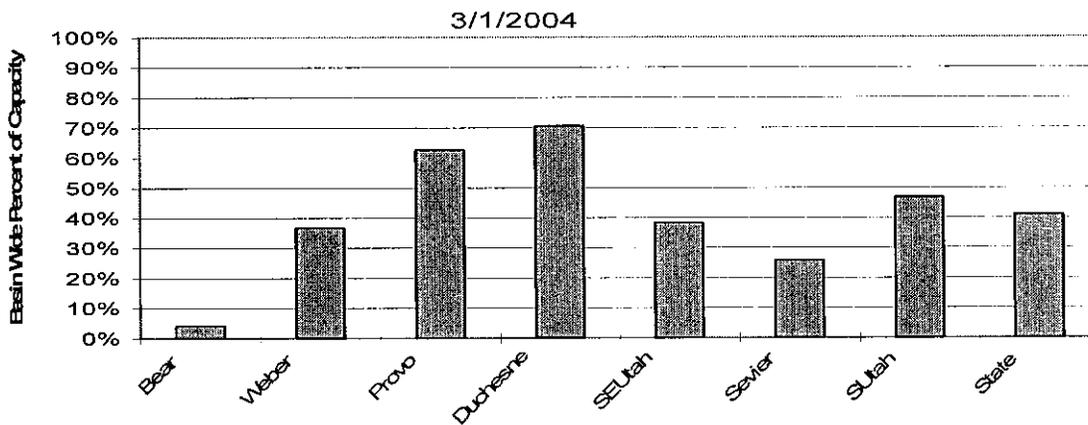
### Mountain Snowpack



### Precipitation



### Statewide Basin Reservoir Storage

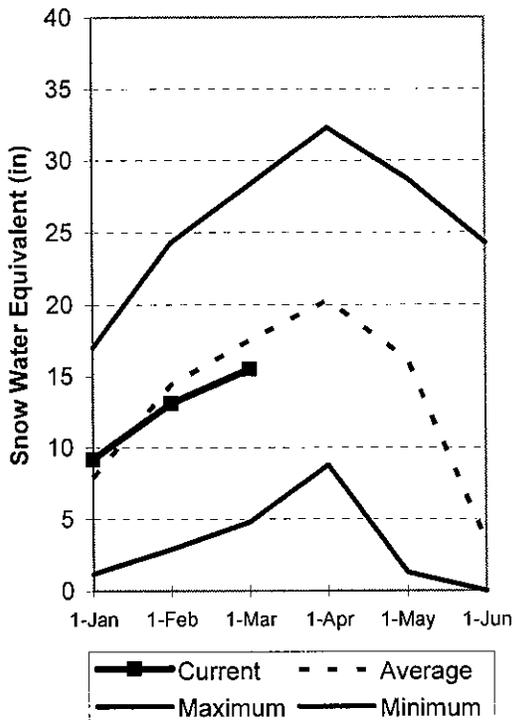


## Bear River Basin Mar 1, 2004

Snowpacks on the Bear River Basin are near average at 91% of normal, about 135% of last year the same as last month. Specific sites range from 74% to 146% of normal. Low elevation snowpack is much above normal. February precipitation was below average at 84%, which brings the seasonal accumulation (Oct-Feb) to 90% of average. Soil moisture levels in runoff producing areas indicate about 7 inches of deficit in the upper 2 feet of soil. Forecast streamflows are for much below normal (13%) to near normal volumes (100%) this spring. Reservoir storage is extremely low at 4% of capacity. The Surface Water Supply Index is at 2% for the Bear River, or 98% of years have had more total water available. Water supply conditions are much below normal due to low reservoir storage and soil moisture.

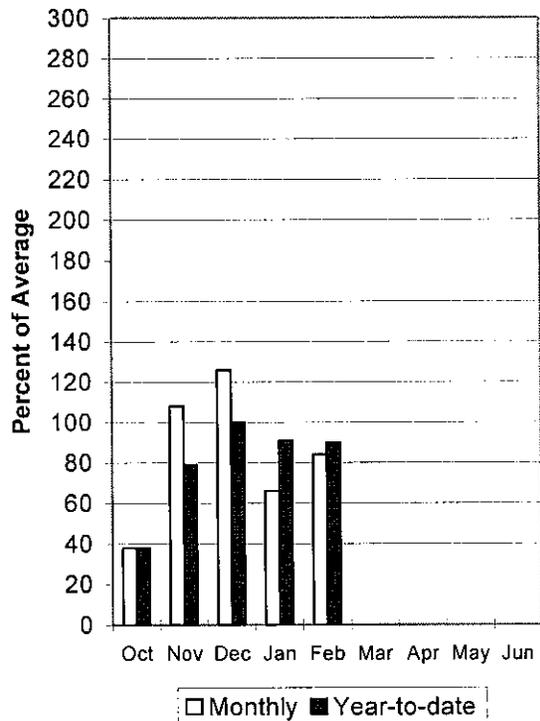
### Bear River Snowpack

3/1/2004



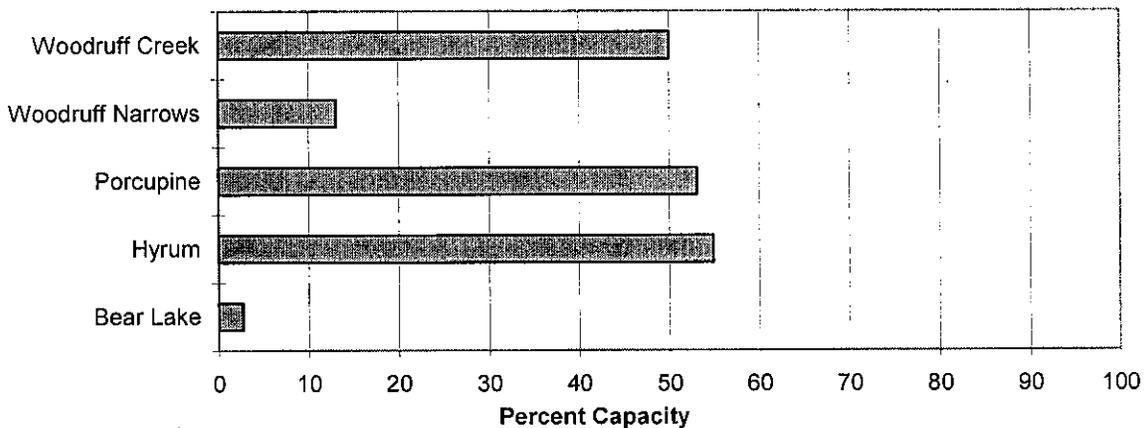
### Bear River Precipitation

3/1/2004



### Reservoir Storage

3/1/2004



BEAR RIVER BASIN  
Streamflow Forecasts - March 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		50% (Most Probable)		Wetter		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Bear River nr UT-WY State Line	APR-JUL	55	72	84	74	96	113	113
Bear River ab Reservoir nr Woodruff	APR-JUL	42	55	64	47	83	111	136
Big Creek nr Randolph	APR-JUL	1.22	1.62	1.90	39	2.59	3.69	4.90
Smiths Fork nr Border	APR-JUL	54	68	77	75	86	100	103
Bear River at Stewart Dam	APR-JUL	6	18	29	13	42	66	227
Little Bear River at Paradise	APR-JUL	18.4	26	32	70	39	49	46
Logan River nr Logan combined flow	APR-JUL	65	81	93	74	106	125	126
Blacksmith Fork nr Hyrum	APR-JUL	18.7	27	34	71	41	54	48

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of February					BEAR RIVER BASIN Watershed Snowpack Analysis - March 1, 2004			
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	34.4	372.7	---	BEAR RIVER, UPPER (abv Ha	6	130	86
HYRUM	15.3	8.4	14.3	11.0	BEAR RIVER, LOWER (blw Ha	8	135	95
PORCUPINE	11.3	6.0	6.5	5.6	LOGAN RIVER	4	131	94
WOODRUFF NARROWS	57.3	7.5	8.0	27.6	RAFT RIVER	1	216	119
WOODRUFF CREEK	4.0	2.0	1.6	---	BEAR RIVER BASIN	14	133	91

\* 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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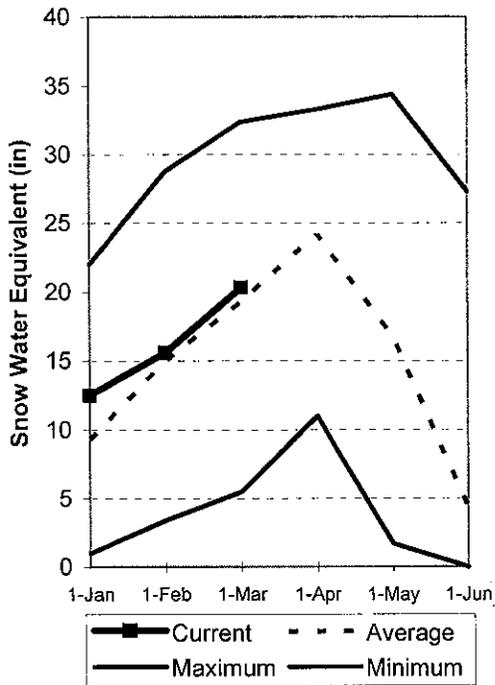
# Weber and Ogden River Basins

## Mar 1, 2004

Snowpack on the Weber and Ogden Watersheds is near normal at 102% of average, about 170% of last year and down 2% relative to last month. Individual sites range from 67% to 159% of average. February precipitation was below average at 86% bringing the seasonal accumulation (Oct-Feb) to 96% of average. Soil moisture levels in runoff producing areas indicate about 7 inches of deficit in the upper 2 feet of soil. Streamflow forecasts range from 62% to 124% of average. Reservoir storage is at 37% of capacity, about 12% less than last year. The Surface Water Supply Index is at 21% for the Weber River and at 25% for the Ogden River. Overall water supply conditions are below normal due to low reservoir storage and soil moisture conditions.

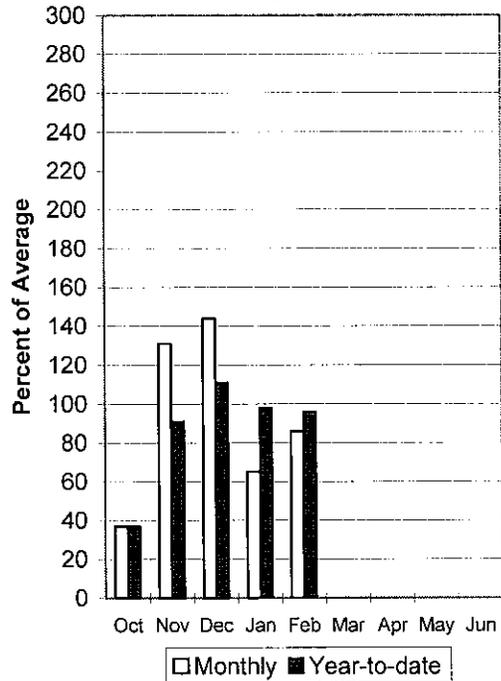
### Weber River Snowpack

3/1/2004



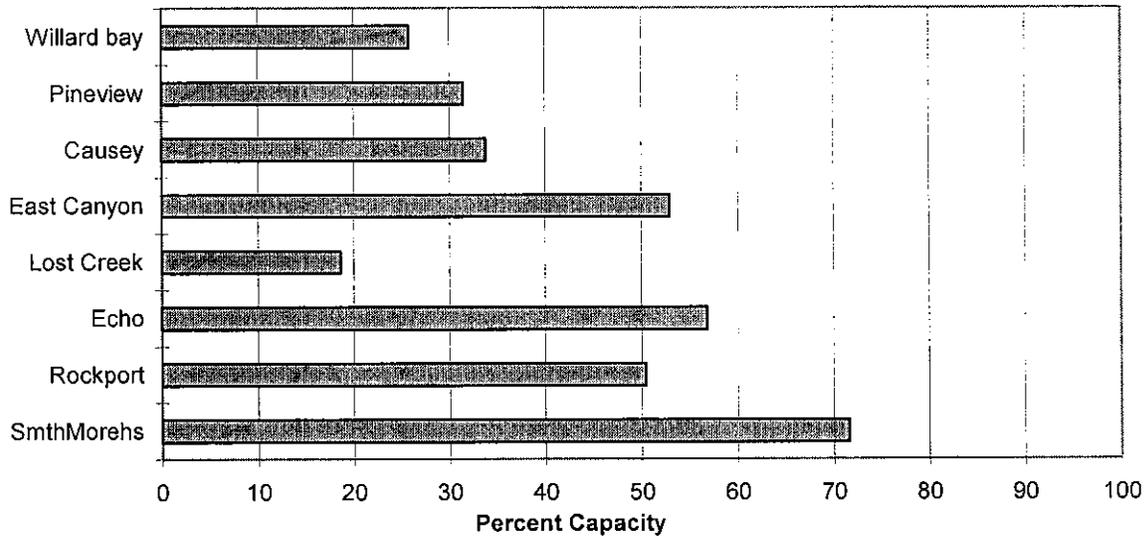
### Weber River Precipitation

3/1/2004



### Reservoir Storage

3/1/2004



WEBER & OGDEN WATERSHEDS in Utah  
Streamflow Forecasts - March 1, 2004

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)	
Smith & Morehouse Res inflow	APR-JUL	16.2	21	24	71	27	32	34
Weber River nr Oakley	APR-JUL	57	74	85	69	96	113	123
Rockport Reservoir inflow	APR-JUL	44	68	84	63	100	124	134
Weber River nr Coalville	APR-JUL	43	68	85	62	102	127	137
Chalk Creek at Coalville	APR-JUL	9.6	21	28	62	35	46	45
Echo Reservoir inflow	APR-JUL	62	93	114	64	135	166	179
Lost Creek Reservoir inflow	APR-JUL	7.0	10.5	13.2	75	16.2	21	17.6
East Canyon Reservoir inflow	APR-JUL	18.9	24	28	90	32	39	31
Weber River at Gateway	APR-JUL	167	228	270	76	310	375	355
SF Ogden River nr Huntsville	APR-JUL	33	46	54	84	62	75	64
Pineview Reservoir inflow	APR-JUL	65	90	107	81	124	149	133
Wheeler Creek nr Huntsville	APR-JUL	5.50	6.90	7.80	124	8.70	10.10	6.30

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

WEBER & OGDEN WATERSHEDS in Utah  
Watershed Snowpack Analysis - March 1, 2004

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	2.4	2.1	2.6	OGDEN RIVER	4	178	98
EAST CANYON	49.5	26.2	30.2	35.4	WEBER RIVER	9	170	104
ECHO	73.9	42.0	31.4	51.0	WEBER & OGDEN WATERSHEDS	12	174	102
LOST CREEK	22.5	4.2	6.1	13.9				
PINEVIEW	110.1	34.7	47.6	52.6				
ROCKPORT	60.9	30.7	35.7	33.2				
WILLARD BAY	215.0	55.5	107.4	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.

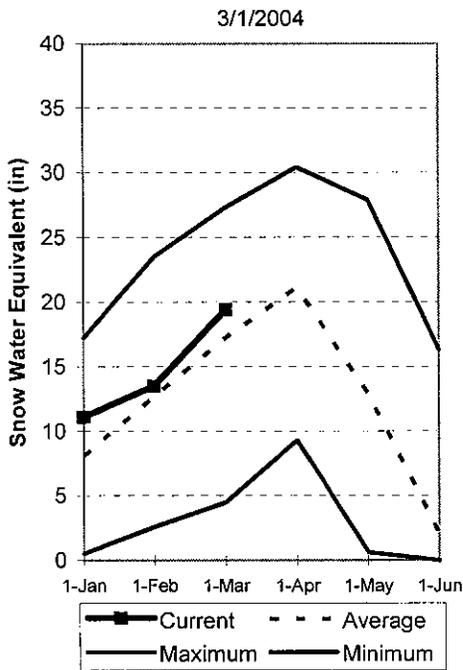
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## Utah Lake, Jordan River & Tooele Valley Basins

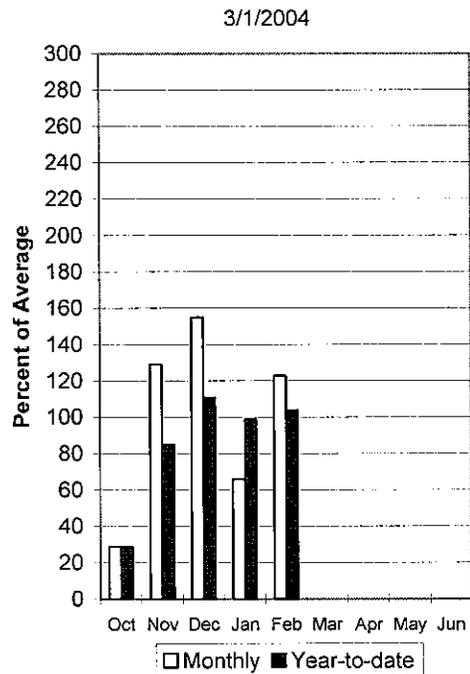
### Mar 1, 2004

Snowpacks over these watersheds are at 111% of average, 192% of last year and up 5% relative to last month. The upper Provo, the area of greatest water production, is at only 95% of average. Individual sites range from 82% to 161% of average. February precipitation was above average at 123%, bringing the seasonal accumulation (Oct-Feb) to 104% of average. Soil moisture levels in runoff producing areas indicate about 6.5 inches of deficit in the upper 2 feet of soil. Forecast streamflows range from 70% to 149% of average. Reservoir storage is at 63% of capacity, 4% less than last year. The Surface Water Supply Index is at 17%, or 83% of years would have more total water available. General water supply conditions are below normal due to low reservoir storage and soil moisture.

#### Provo River Snowpack

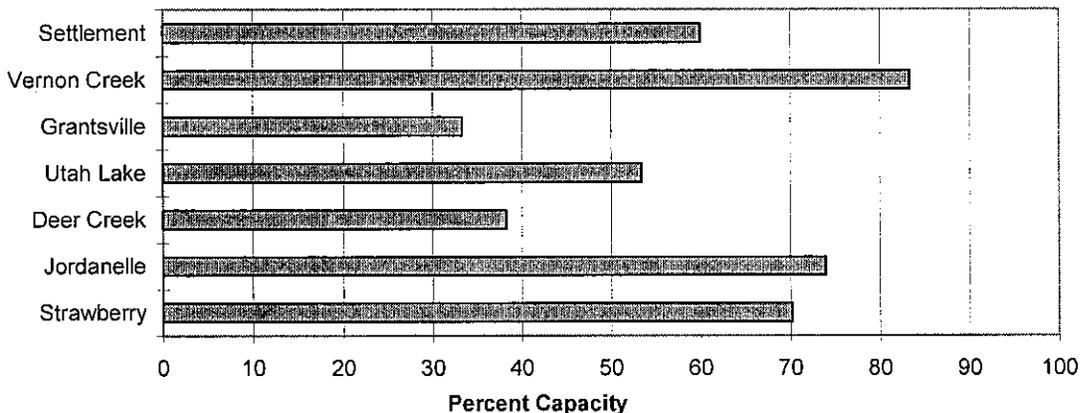


#### Provo River Precipitation



#### Reservoir Storage

3/1/2004



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Streamflow Forecasts - March 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Spanish Fork River nr Castilla	APR-JUL	15.4	39	62	81	86	102	77
Provo River nr Woodland	APR-JUL	41	46	74	72	86	99	103
Provo River nr Hailstone	APR-JUL	33	62	76	70	91	109	109
Provo R blw Deer Creek Dam	APR-JUL	37	74	96	76	118	145	126
American Fk R nr American Fk	APR-JUL	15.7	23	26	81	29	34	32
Utah Lake inflow	APR-JUL	94	184	255	79	326	395	325
Little Cottonwood Ck nr SLC	APR-JUL	22	31	35	88	39	40	40
Big Cottonwood Ck nr SLC	APR-JUL	19.4	28	32	84	36	39	38
Mill Creek nr SLC	APR-JUL	3.00	5.62	6.80	97	7.98	8.40	7.00
Parley's Creek nr SLC	APR-JUL	5.2	11.3	15.0	90	18.7	21	16.7
Dell Fork nr SLC	APR-JUL	1.56	4.76	6.20	91	7.64	9.30	6.80
Emigration Creek nr SLC	APR-JUL	1.58	3.92	5.30	118	6.68	8.00	4.50
City Creek nr SLC	APR-JUL	4.90	8.35	10.00	115	11.65	12.70	8.70
Vernon Creek nr Vernon	APR-JUL	1.32	1.79	2.20	149	2.71	3.67	1.48
Settlement Creek nr Tooele	APR-JUL	1.45	1.93	2.30	117	2.72	3.44	1.97
South Willow Creek nr Grantsville	APR-JUL	3.30	4.20	4.70	146	5.20	6.10	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, 2004			
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	60.3	83.6	107.4	PROVO RIVER & UTAH LAKE	7	174	98
GRANTSVILLE	3.3	1.1	1.6	2.2	PROVO RIVER	4	181	95
SETTLEMENT CREEK	1.0	0.6	0.7	0.6	JORDAN RIVER & GREAT SALT	6	195	114
STRAWBERRY-ENLARGED	1105.9	776.1	807.9	637.8	TOOELE VALLEY WATERSHEDS	3	255	136
UTAH LAKE	870.9	465.2	513.8	825.1	UTAH LAKE, JORDAN RIVER &	16	195	111
VERNON CREEK	0.6	0.5	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.

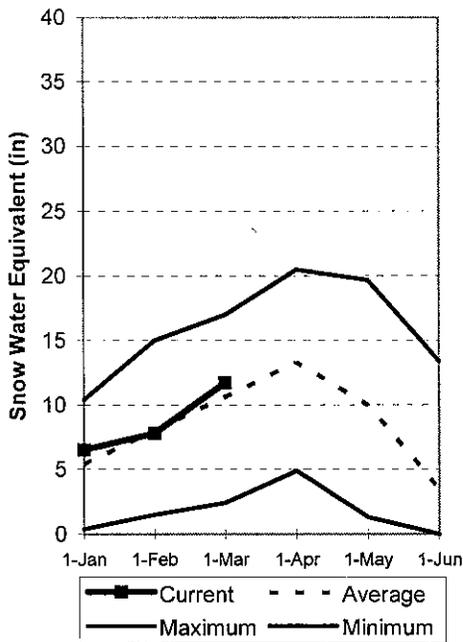
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Uintah Basin and Dagget SCD's Mar 1, 2004

Snowpacks across the Uintah Basin and North Slope areas are near average at 107%, which is 159% of last year, up 9% relative to last month. The North Slope ranges from 70% to 113% and the Uintah Basin ranges from 89% to 124% of average. Precipitation during February was much above average at 133% bringing the seasonal accumulation (Oct-Feb) to 101% of average. Soil moisture levels in runoff producing areas indicate about 7 inches of deficit in the upper 2 feet of soil. Reservoir storage is at 71% of capacity, 2% less than last year. The Surface Water Supply Index for the western area is 64% and for the eastern area it is 50% indicating average or better conditions. Springtime runoff conditions are near normal with the exception of soil moisture.

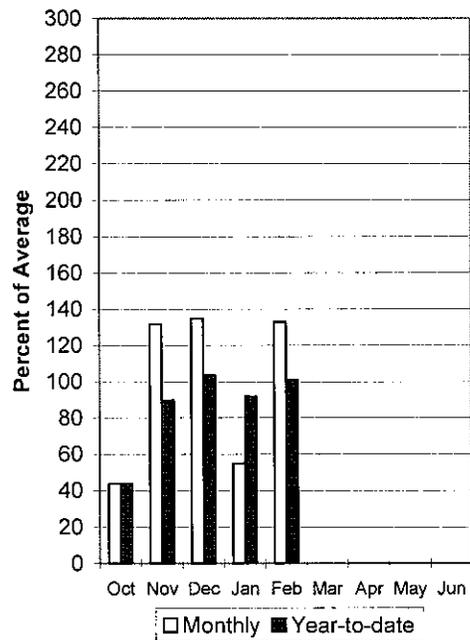
### Uintahs Snowpack

3/1/2004

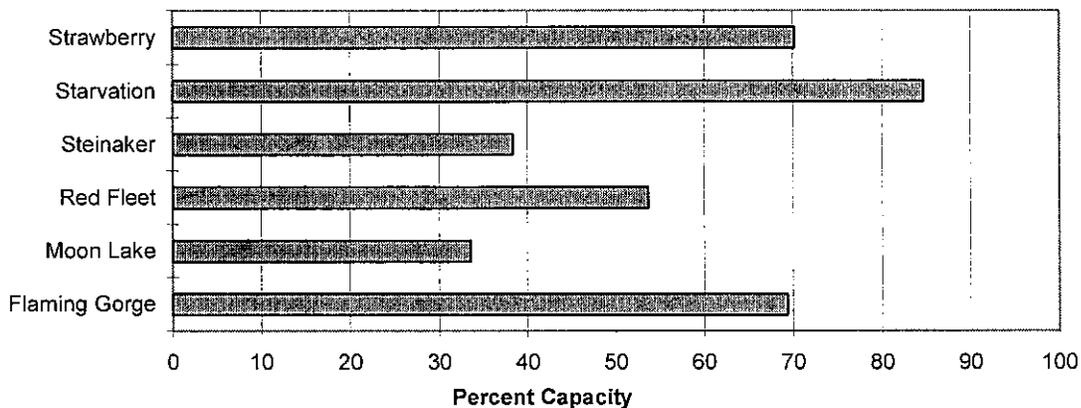


### Uintahs Precipitation

3/1/2004



### Reservoir Storage 3/1/2004



UINTAH BASIN & DAGGET SCD'S  
Streamflow Forecasts - March 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Future Conditions		Wetter		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	Chance Of Exceeding * (% AVG.)	30% (1000AF)	10% (1000AF)	
Blacks Fork nr Robertson	APR-JUL	46	63	74	78	85	102	95
EF of Smiths Fork nr Robertson	APR-JUL	16.7	19.7	22	71	25	29	31
Flaming Gorge Reservoir Inflow	APR-JUL	500	690	825	69	960	1150	1190
BIG BRUSH CK abv Red Fleet Resv	APR-JUL	15.8	20	23	110	26	30	21
Ashley Creek nr Vernal	APR-JUL	33	48	58	112	68	83	52
WF DUCHESNE RIVER nr Hanna	APR-JUL	13.2	18.7	23	96	28	36	24
DUCHESNE R nr Tabiona	APR-JUL	66	81	92	88	103	118	105
UPPER STILLWATER RESV inflow	APR-JUL	58	69	77	94	85	96	82
ROCK CK nr Mountain Home	APR-JUL	61	73	82	92	91	103	89
DUCHESNE R abv Knight Diversion	APR-JUL	108	143	167	89	191	225	188
STRAWBERRY RES nr Soldier Springs	APR-JUL	32	45	55	93	66	85	59
CURRENT CREEK RESV Inflow	APR-JUL	18.9	23	26	104	29	34	25
STARVATION RESERVOIR inflow	APR-JUL	66	89	105	87	121	144	121
Lake Fork River abv Moon Lake	APR-JUL	45	56	63	93	70	81	68
Yellowstone River nr Altonah	APR-JUL	34	49	59	95	69	84	62
DUCHESNE R at Myton	APR-JUL	110	176	220	85	265	330	260
Whiterocks River nr Whiterocks	APR-JUL	19.0	38	51	91	64	83	56
DUCHESNE R nr Randlett	APR-JUL	36	173	270	83	365	510	325

UINTAH BASIN & DAGGET SCD'S Reservoir Storage (1000 AF) - End of February					UINTAH BASIN & DAGGET SCD'S Watershed Snowpack Analysis - March 1, 2004				
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	2600.0	2610.0	2919.0	UPPER GREEN RIVER in UTAH	6	144	106	
MOON LAKE	49.5	16.6	20.4	29.8	ASHLEY CREEK	2	174	129	
RED FLEET	25.7	13.8	11.6	18.4	BLACK'S FORK RIVER	2	123	87	
STEINAKER	33.4	12.8	8.6	22.8	SHEEP CREEK	1	173	110	
STARVATION	165.3	147.0	139.1	135.9	DUCHESNE RIVER	11	165	108	
STRAWBERRY-ENLARGED	1105.9	776.1	807.9	637.8	LAKE FORK-YELLOWSTONE CRE	4	156	100	
					STRAWBERRY RIVER	4	182	111	
					UINTAH-WHITEROCKS RIVERS	2	149	118	
					UINTAH BASIN & DAGGET SCD	17	159	107	

\* 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.

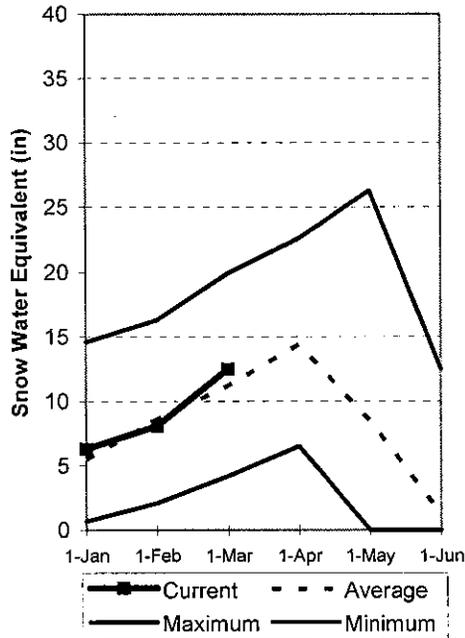
# Carbon, Emery, Wayne, Grand and San Juan Co.

Mar 1, 2004

Snowpacks in this region are near normal at 104% of average, about 145% of last year, up 11% relative to last month. Individual sites range from 76% to 128% of average. Precipitation during February was much above average at 137%, bringing the seasonal accumulation (Oct-Feb) to 102% of normal. Soil moisture levels in runoff producing areas indicate about 7 inches of deficit in the upper 2 feet of soil. Forecast streamflows range from 78% to 111% of average. Reservoir storage is at 38% of capacity, up 4% from last year. Surface Water Supply Indices for the area are: Price 28%, (below normal) San Rafael area 52% (average) and Moab 44% (average). General runoff and water supply conditions are below to near normal due to low reservoir storage and soil moisture.

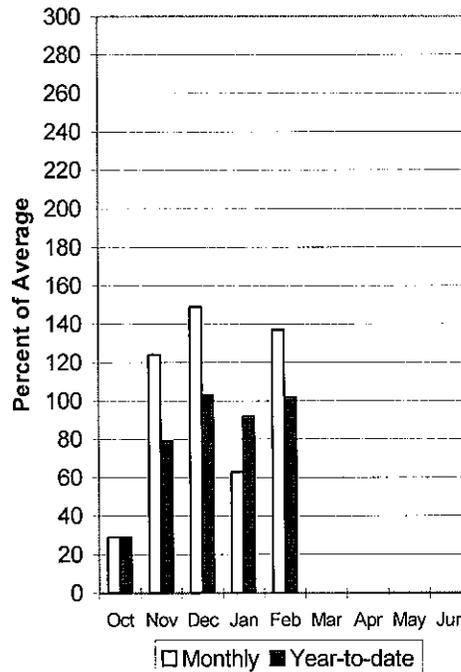
## Southeast Utah Snowpack

3/1/2004



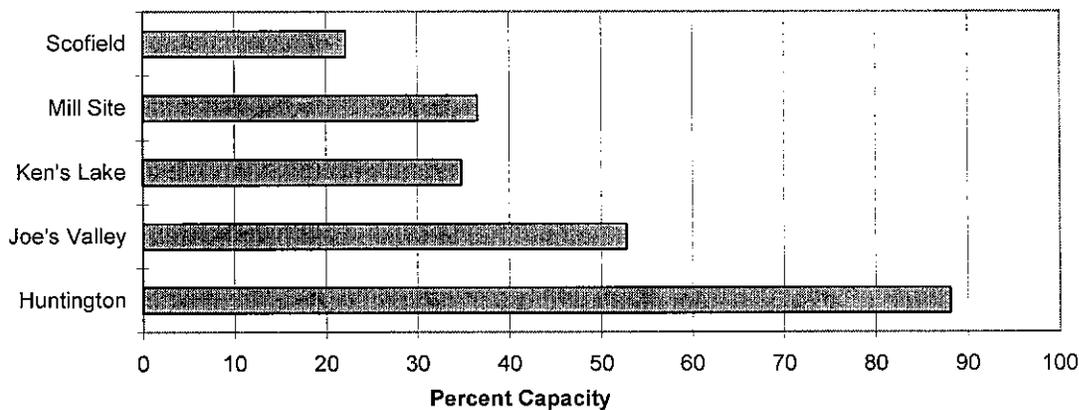
## Southeast Utah Precipitation

3/1/2004



## Reservoir Storage

3/1/2004



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Streamflow Forecasts - March 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<----- Drier ----->>		----->>>		----->>>		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Gooseberry Creek nr Scofield	APR-JUL	5.7	8.5	10.3	87	12.1	14.9	11.9
Scofield Reservoir inflow	APR-JUL	31	38	42	91	46	53	46
White River blw Tabbyune Creek	APR-JUL	7.4	11.5	14.8	85	18.5	25	17.4
Green River at Green River, UT	APR-JUL	1460	2110	2550	80	2990	3640	3170
Electric Lake inflow	APR-JUL	7.9	10.9	13.3	85	16.1	21	15.7
HUNTINGTON CK nr Huntington	APR-JUL	29	37	42	84	47	55	50
JOE'S VALLEY RESV Inflow	APR-JUL	27	42	52	90	62	77	58
Ferron Creek nr Ferron	APR-JUL	24	32	37	95	43	52	39
Colorado River nr Cisco	APR-JUL	2140	3070	3700	80	4330	5260	4650
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	2.00	3.70	4.80	96	5.90	7.60	5.00
Seven Mile Creek nr Fish Lake	APR-JUL	2.90	5.60	7.40	106	9.20	11.90	7.00
Muddy Creek nr Emery	APR-JUL	11.1	17.6	22	111	26	33	19.9
North Ck ab R.S. nr Monticello	MAR-JUL	0.02	0.46	1.08	111	1.96	3.73	0.97
South Ck ab Lloyd's Res nr Monticello	MAR-JUL	0.62	1.11	1.52	111	2.00	2.82	1.37
Recapture Ck bl Johnson Ck nr Blandi	MAR-JUL	1.40	3.90	5.60	111	7.30	9.80	5.05
San Juan River nr Bluff	APR-JUL	900	1170	1350	110	1530	1800	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, 2004

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	3.7	3.5	3.4	PRICE RIVER	3	133	92
JOE'S VALLEY	61.6	33.3	22.6	41.5	SAN RAFAEL RIVER	3	148	103
KEN'S LAKE	2.3	0.8	0.8	1.3	MUDDY CREEK	1	157	120
MILL SITE	16.7	6.1	8.7	84.9	FREMONT RIVER	3	144	106
SCOFIELD	65.8	14.6	16.2	34.8	LASAL MOUNTAINS	1	124	98
					BLUE MOUNTAINS	1	174	128
					WILLOW CREEK	1	170	120
					CARBON, EMERY, WAYNE, GRA	13	145	104

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

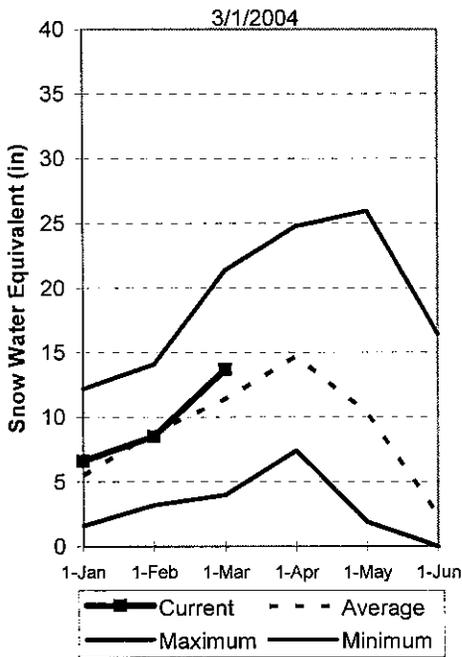
The average is computed for the 1971-2000 base period.

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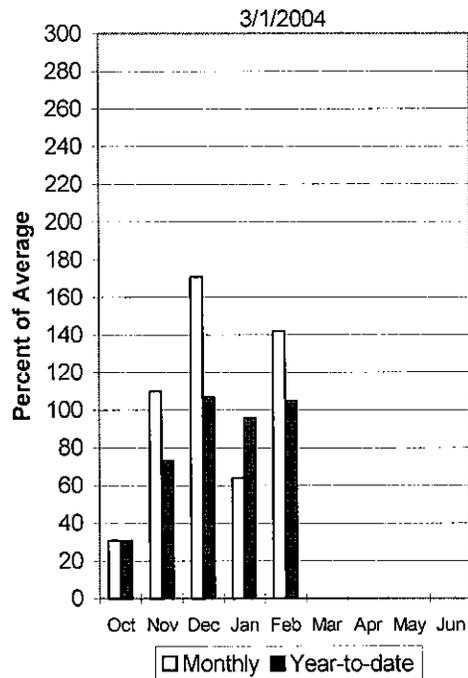
## Sevier and Beaver River Basins Mar 1, 2004

Snowpacks on the Sevier River Basin are above normal at 112% of average, about 166% of last year, up 16% relative to last month. Individual sites range from 84% to 203% of average. Low elevation snowpacks are much above average. Precipitation during February was much above average at 142% of normal, bringing the seasonal accumulation (Oct-Feb) to 105% of average. Soil moisture levels in runoff producing areas indicate about 7 inches (Sevier) and 9 inches (Beaver) of deficit in the upper 2 feet of soil. Streamflow forecasts range from 34% to 115% of average. Reservoir storage is at 26% of capacity, 4% less than last year. Surface Water Supply Indices are: Upper Sevier 37%, Lower Sevier 35% and Beaver 32%. Water supply conditions remain below normal due to low reservoir storage and soil moisture.

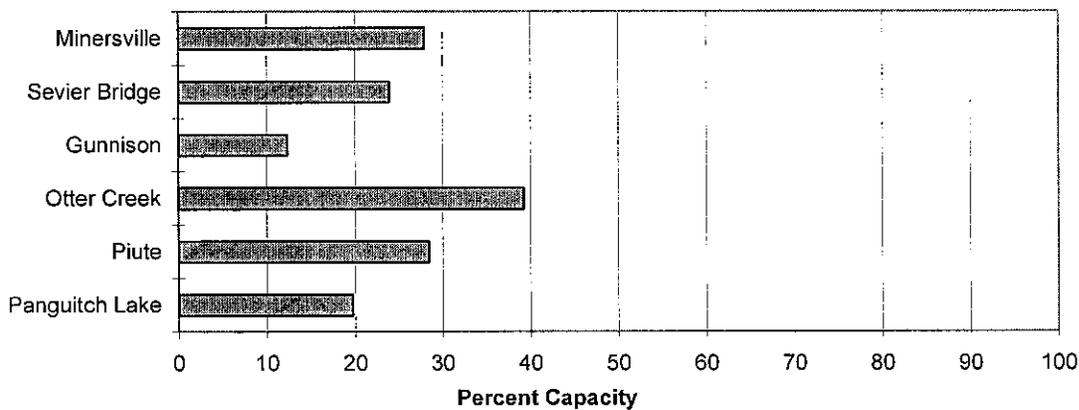
### Sevier River Snowpack



### Sevier River Precipitation



### Reservoir Storage 3/1/2004



SEVIER & BEAVER RIVER BASINS  
Streamflow Forecasts - March 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		===== Chance Of Exceeding * 50% (Most Probable)		===== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	(1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Sevier River at Hatch	APR-JUL	18.1	38	47	86	57	70	55
Sevier River nr Kingston	APR-JUL	31	58	72	81	86	105	89
EF Sevier R nr Kingston	APR-JUL	5.3	23	32	84	41	53	38
Sevier R blw Piute Dam	APR-JUL	30	78	104	83	130	166	126
Clear Creek nr Sevier	APR-JUL	4.2	13.7	18.0	82	22	31	22
Salina Creek at Salina	APR-JUL			11.8	60			19.7
Sevier R nr Gunnison	APR-JUL	64	126	210	75	294	425	280
Chicken Creek nr Levan	APR-JUL	2.33	3.76	5.00	111	6.49	9.18	4.50
Oak Creek nr Oak City	APR-JUL	1.16	1.58	1.90	115	2.25	2.82	1.66
Beaver River nr Beaver	APR-JUL	13.6	17.2	20	74	23	28	27
Minersville Reservoir inflow	APR-JUL	0.9	3.2	5.6	34	8.6	14.2	16.6

SEVIER & BEAVER RIVER BASINS Reservoir Storage (1000 AF) - End of February					SEVIER & BEAVER RIVER BASINS Watershed Snowpack Analysis - March 1, 2004			
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	2.5	2.4	14.6	UPPER SEVIER RIVER (south	8	194	126
MINERSVILLE (RkyFd)	23.3	6.5	5.7	16.2	EAST FORK SEVIER RIVER	3	183	130
OTTER CREEK	52.5	20.6	27.6	40.0	SOUTH FORK SEVIER RIVER	5	202	124
PIUTE	71.8	20.4	2.5	53.3	LOWER SEVIER RIVER (inclu	6	144	103
SEVIER BRIDGE	236.0	56.4	87.0	175.6	BEAVER RIVER	2	142	97
PANGUITCH LAKE	22.3	4.4	3.2	146.8	SEVIER & BEAVER RIVER BAS	16	166	112

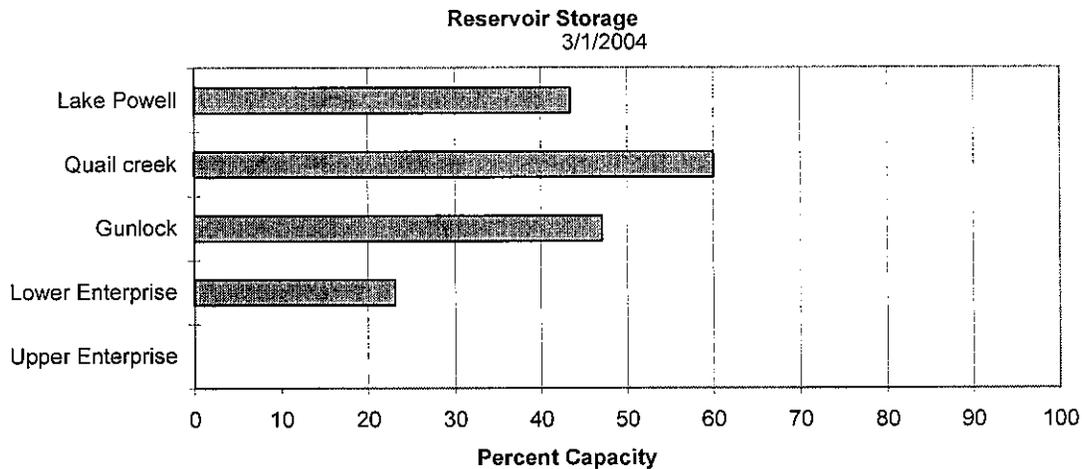
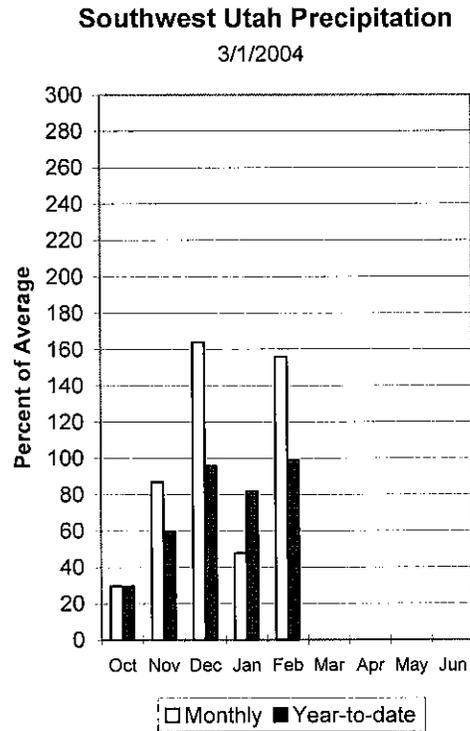
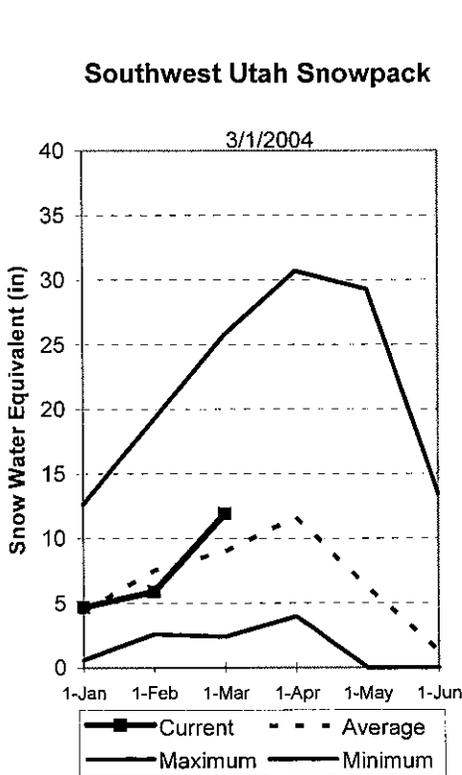
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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.

## E. Garfield, Kane, Washington, & Iron co. Mar 1, 2004

Snowpacks in this region are above normal at 115% of average, about 197% of last year, up 37% relative to last month. Individual sites range from 76% to 163% of average. Precipitation was much above normal during February at 156% of average, bringing the seasonal accumulation (Oct-Feb) to 99% of normal. Soil moisture levels in runoff producing areas indicate about 7 inches of deficit in the upper 2 feet of soil. Forecast streamflows range from 57% to 67% of average. Reservoir storage is at 47% of capacity, 18% more than last year. The Surface Water Supply Index is at 33%, indicating below normal water availability. Concerns remain over low reservoir storage, soil moisture and snowpacks in the lower elevations.



E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Streamflow Forecasts - March 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Lake Powell inflow	APR-JUL	3600	5330	6500	82	7670	9400	7930
Virgin River nr Virgin	APR-JUL	20	35	48	75	63	88	64
Virgin River nr Hurricane	APR-JUL	19.0	36	48	70	60	77	69
Santa Clara River nr Pine Valley	APR-JUL	1.49	2.89	4.10	75	5.52	8.00	5.50
Coal Creek nr Cedar City	APR-JUL	12.0	15.4	18.0	93	21	25	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, 2004

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	4.9	4.9	VIRGIN RIVER	5	200	118
LAKE POWELL	24322.0	10569.0	12833.0	---	PAROWAN	2	191	119
QUAIL CREEK	40.0	24.0	12.5	29.7	ENTERPRISE TO NEW HARMONY	2	365	111
UPPER ENTERPRISE	10.0	0.0	0.2	---	COAL CREEK	2	192	119
LOWER ENTERPRISE	2.6	0.6	0.4	90.0	ESCALANTE RIVER	2	148	106
					E. GARFIELD, KANE, WASHIN	9	194	115

\* 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  
1-Mar-04 Similar SWSI

Bear River	-3.98	2%	2003,93,92,91
Ogden River	-2.1	25%	90,02,00,91
Weber River	-2.4	21%	90,01,91,87
Provo	-2.8	17%	56,03,55,59
West Uintah Basin	1.1	64%	87,02,96,86
East Uintah Basin	0	50%	91,01,97,85
Price River	-1.9	28%	03,89,98,62
San Rafael	0.1	52%	2000,87,74,82
Moab	-5	44%	82,97,00,96
Upper Sevier River	-1.1	37%	00,67,99,66
Lower Sevier River	-1.3	35%	72,78,90,01
Beaver River	-1.5	32%	91,92,2001,65
Virgin River	0.2	54%	86.94,01,97

Snow Surveys

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

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Salt Lake City, UT  
(801) 524-5213

## 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 media 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.

DATA CURRENT AS OF:03/03/04 10:12:07

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

MARCH 2004

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	3/01	50	10.9	4.6	7.3
ALTA CENTRAL	8800	3/02	104	33.1	19.0	31.1
BEAVER DAMS SNOTEL	8000	3/01	-	9.3	6.6	10.2
BEAVER DIVIDE SNOTEL	8280	3/01	38	8.4	6.0	10.2
BEN LOMOND PK SNOTEL	8000	3/01	106	35.2	19.7	34.3
BEN LOMOND TR SNOTEL	6000	3/01	74	25.1	11.5	19.0
BEVAN'S CABIN	6450	3/01	56	14.8	3.5	9.2
BIG FLAT SNOTEL	10290	3/01	64	13.7	10.9	15.0
BIRCH CROSSING	8100	2/26	29	8.3	3.4	6.7
BLACK FLAT-U.M. CK S	9400	3/01	41	9.1	5.5	8.5
BLACK'S FORK GS-EF	9340	3/01	35	8.8	6.8	7.8
BLACK'S FORK JUNCTN	8930	3/01	38	8.7	6.2	7.7
BOX CREEK SNOTEL	9800	3/01	60	13.4	8.0	11.0
BRIAN HEAD	10000	2/26	58	15.3	9.3	16.5
BRIGHTON SNOTEL	8750	3/01	76	18.6	12.6	20.4
BRIGHTON CABIN	8700	2/27	78	23.4	16.0	23.1
BROWN DUCK SNOTEL	10600	3/01	74	15.5	10.1	15.0
BRYCE CANYON	8000	2/25	31	6.4	3.1	4.9
BUCK FLAT SNOTEL	9800	3/01	68	15.9	11.9	15.3
BUCK PASTURE	9700	3/01	51	9.8	10.0	14.0
BUCKBOARD FLAT	9000	2/26	40	10.8	6.8	11.0
BUG LAKE SNOTEL	7950	3/01	52	15.6	12.1	17.1
BURT'S-MILLER RANCH	7900	3/01	23	5.8	3.8	4.7
CAMP JACKSON SNOTEL	8600	3/01	58	16.5	9.5	12.9
CASCADE MOUNTAIN SNO	7770	3/01	67	19.0	9.5	-
CASTLE VALLEY SNOTEL	9580	3/01	65	13.8	6.7	11.8
CHALK CK #1 SNOTEL	9100	3/01	68	16.7	13.2	19.9
CHALK CK #2 SNOTEL	8200	3/01	48	11.7	10.0	12.9
CHALK CREEK #3	7500	3/01	28	6.9	4.7	6.8
CHEPETA SNOTEL	10300	3/01	-	12.1	8.6	11.4
CLAYTON SPRINGS SNTL	10000	3/01	60	12.2	7.0	-
CLEAR CK RIDG #1 SNT	9200	3/01	57	16.6	11.7	16.7
CLEAR CK RIDG #2 SNT	8000	3/01	49	12.9	9.1	12.3
CORRAL	8200					
CURRANT CREEK SNOTEL	8000	3/01	48	11.6	3.3	9.6
DANIELS-STRAWBERRY S	8000	3/01	59	16.6	10.8	15.1
DILL'S CAMP SNOTEL	9200	3/01	64	14.8	9.4	12.3
DONKEY RESERVOIR SNO	9800	3/01	36	5.0	5.8	6.6
DRY BREAD POND SNTL	8350	3/01	55	12.7	9.4	19.0
DRY FORK SNOTEL	7160	3/01	-	17.6	8.0	14.5
EAST WILLOW CREEK SN	8250	3/01	45	8.5	5.0	7.1
FARMINGTON U. SNOTEL	8000	3/01	106	40.3	18.9	27.3
FARMINGTON LOWER SC	6950	2/27	78	28.4	12.6	21.2
FARMINGTON L. SNOTEL	6780	3/01	94	30.8	-	-
FARNSWORTH LK SNOTEL	9600	3/01	68	15.7	11.5	14.8
FISH LAKE	8700	2/25	31	9.1	4.6	7.5
FIVE POINTS LAKE SNO	10920	3/01	69	14.9	8.7	13.8
G.B.R.C. HEADQUARTER	8700	2/25	44	14.3	10.1	13.8
G.B.R.C. MEADOWS	10000	2/25	61	19.6	13.8	19.0
GARDEN CITY SUMMIT	7600	2/27	50	15.3	10.1	13.5
GEORGE CREEK	8840	2/27	64	19.6	12.8	17.3
GOOSEBERRY R.S.	8400	2/25	34	10.2	7.6	9.9
GOOSEBERRY R.S. SNTL	7900	3/01	38	9.4	7.0	7.9
HARDSCRABBLE SNOTEL	7250	3/01	-	20.6	10.1	14.3
HARRIS FLAT SNOTEL	7700	3/01	45	10.0	5.0	6.9
HAYDEN FORK SNOTEL	9100	3/01	46	10.4	11.8	13.2
HENRY'S FORK	10000	3/01	43	7.9	8.1	10.5
HEWINTA SNOTEL	9500	3/01	39	8.4	6.6	9.1
HICKERSON PARK SNTL	9100	3/01	39	6.4	3.7	5.8
HIDDEN SPRINGS	5500	3/02	34	9.4	1.4	5.9
HOBBLE CREEK SUMMIT	7420	2/25	42	12.7	6.9	13.1
HOLE-IN-ROCK SNOTEL	9150	3/01	31	5.8	5.4	5.7
HORSE RIDGE SNOTEL	8260	3/01	62	18.1	13.3	20.2
HUNTINGTON-HORSESHOE	9800	2/25	48	16.3	12.5	19.4
INDIAN CANYON SNOTEL	9100	3/01	53	11.3	7.9	9.6
JOHNSON VALLEY	8850	2/25	30	7.7	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	2/27	51	14.7	8.4	12.4
KILLYON CANYON	6300	3/02	39	12.9	1.0	8.7
KIMBERLY MINE SNOTEL	9300	3/01	60	14.9	8.8	13.3
KING'S CABIN SNOTEL	8730	3/01	46	12.3	7.6	9.4
KLONDIKE NARROWS	7400	2/27	50	15.8	12.4	16.8
KOLOB SNOTEL	9250	3/01	88	17.0	10.4	17.8
LAKEFORK #1 SNOTEL	10100	3/01	58	11.0	7.2	10.5
LAKEFORK BASIN SNTL	10900	3/01	67	14.7	9.9	16.6
LAKEFORK MOUNTAIN #3	8400	3/01	40	8.9	3.6	6.1
LAMBS CANYON	7400	2/27	53	14.7	10.1	14.5
LASAL MOUNTAIN LOWER	8800	2/27	30	8.9	6.2	8.1
LASAL MOUNTAIN SNTL	9850	3/01	49	10.5	8.5	10.7
LILY LAKE SNOTEL	9050	3/01	45	9.2	9.0	10.8
LITTLE BEAR LOWER	6000	2/27	46	14.9	5.8	10.2
LITTLE BEAR SNOTEL	6550	3/01	-	13.7	5.2	12.8
LITTLE GRASSY SNOTEL	6100	3/01	-	5.3	2.0	5.8
LONG FLAT SNOTEL	8000	3/01	-	9.3	2.0	7.4
LONG VALLEY JCT. SNT	7500	3/01	-	8.9	1.8	5.8
LOOKOUT PEAK SNOTEL	8200	3/01	-	27.6	15.2	20.1
LOST CREEK RESERVOIR	6130	2/27	29	9.4	2.0	5.9
LOUIS MEADOW SNOTEL	6700	3/01	69	22.3	9.1	-
MAMMOTH-COTTONWD SNT	8800	3/01	52	14.7	13.1	17.6
MERCHANT VALLEY SNTL	8750	3/01	57	12.0	7.2	11.4
MIDDLE CANYON	7000	3/01	72	18.7	7.2	12.2
MIDWAY VALLEY SNOTEL	9800	3/01	100	23.2	12.7	19.4
MILL CREEK	6950	2/27	59	19.5	10.0	16.6
MILL-D NORTH SNOTEL	8960	3/01	-	22.0	12.4	21.0
MILL-D SOUTH FORK	7400	2/27	56	17.4	9.9	16.9
MINING FORK SNOTEL	8000	3/01	84	22.3	9.0	14.9
MONTE CRISTO SNOTEL	8960	3/01	71	21.6	12.4	24.7
MOSBY MTN. SNOTEL	9500	3/01	54	12.4	7.8	9.3
MT. BALDY R.S.	9500	2/25	61	18.3	16.5	19.9
MUD CREEK #2	8600	2/26	49	11.6	7.2	12.0
OAK CREEK	7760	2/25	39	11.4	6.6	10.0
PANGUITCH LAKE R.S.	8200	2/27	35	8.1	1.8	4.0
PARLEY'S CANYON SNTL	7500	3/01	58	15.4	7.4	15.3
PARRISH CREEK SNOTEL	7740	3/01	88	28.2	12.6	-
PAYSON R.S. SNOTEL	8050	3/01	74	18.2	8.3	17.2
PICKLE KEG SNOTEL	9600	3/01	67	15.0	10.9	14.1
PINE CREEK SNOTEL	8800	3/01	-	22.4	10.8	19.3
RED PINE RIDGE SNTL	9200	3/01	65	13.8	9.5	14.2
REDDEN MINE LOWER	8500	3/01	51	13.7	8.6	15.1
REES'S FLAT	7300	2/25	41	12.4	6.9	11.2
ROCK CREEK SNOTEL	7900	3/01	-	8.8	5.1	7.9
ROCKY BN-SETTLEMT SN	8900	3/01	92	25.6	10.9	21.2
SEELEY CREEK SNOTEL	10000	3/01	53	13.2	7.5	12.3
SMITH MOREHOUSE SNTL	7600	3/01	45	9.9	7.7	12.4
SNOWBIRD SNOTEL	9700	3/01	119	35.2	16.5	28.3
SPIRIT LAKE	10300	3/01	57	11.1	6.8	10.5
SQUAW SPRINGS	9300	2/25	35	8.4	4.2	6.6
STEEL CREEK PARK SNO	10100	3/01	55	10.6	8.8	12.7
STILLWATER CAMP	8550	3/01	34	7.0	6.9	8.8
STRAWBERRY DIVIDE SN	8400	3/01	60	16.5	8.8	16.3
SUSC RANCH	8200	2/26	50	13.2	.7	8.1
TALL POLES	8800	2/26	48	12.3	6.6	12.1
TEMPLE FORK SNOTEL	7410	3/01	50	13.7	12.1	-
THAYNES CANYON SNTL	9200	3/01	74	19.2	12.1	19.3
THISTLE FLAT	8500				-	-
TIMBERLINE	9100				-	-
TIMPANOGOS DIVIDE SN	8140	3/01	76	21.3	8.8	20.4
TONY GROVE LK SNOTEL	8400	3/01	83	29.2	24.7	30.0
TONY GROVE R.S.	6250	2/27	40	12.0	8.6	11.3
TRIAL LAKE	9960	3/01	65	19.2	13.1	20.3
TRIAL LAKE SNOTEL	9960	3/01	64	16.8	10.3	20.6
TROUT CREEK SNOTEL	9400	3/01	53	10.2	5.3	8.1
UPPER JOES VALLEY	8900	2/25	38	10.5	7.1	9.3
VERNON CREEK SNOTEL	7500	3/01	56	15.1	4.8	10.1
VIPONT	7670	2/27	54	17.4	6.6	12.2
WEBSTER FLAT SNOTEL	9200	3/01	65	16.0	7.7	13.5
WHITE RIVER #1 SNTL	8550	3/01	48	11.1	7.2	11.6
WHITE RIVER #3	7400	2/25	28	8.4	5.3	7.8
WIDTSOE #3 SNOTEL	9500	3/01	63	12.2	7.0	9.7
WRIGLEY CREEK	9000	2/25	47	11.7	7.4	9.6
YANKEE RESERVOIR	8700	2/25	46	10.5	4.8	8.4



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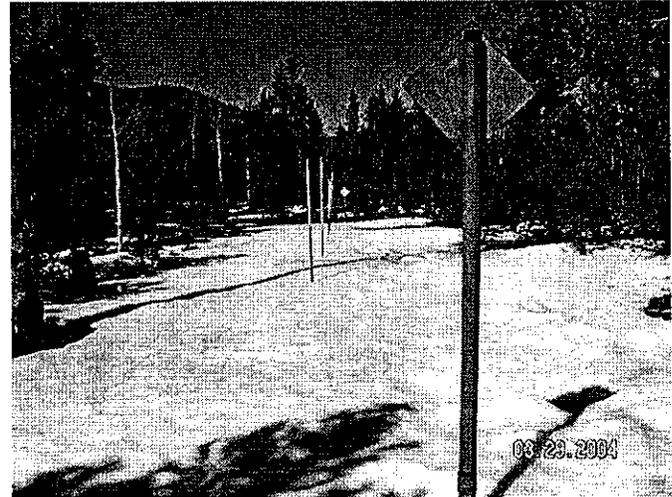
**Utah Water Supply  
Outlook Report**  
Natural Resources Conservation Service  
Salt Lake City, UT





# Utah Water Supply Outlook Report

April 1, 2004



Photos of Johnson Valley and Lake Fork 3 snow courses. Left side - March 1 Survey, Photos on the right April 1, Survey - record snowpack losses for March. Photos by Ray Wilson and Randy Julander, Snow survey, 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

Apr 1, 2004

## SUMMARY

Records are made to be broken. March 2004 is one we never want to see again! Recall at the beginning of the month, snowpacks were near average and we were pretty relaxed thinking that even if the worst observed March were to occur, we would still be in reasonable shape. What was the possibility that March 2004 would be worse than the worst? That is precisely what has happened - the worst March non-accumulation ever. Almost all watersheds in Utah have experienced a March where they have lost some snowpack but not like this! Every basin across the state except the Sevier had the worst March snowpack decrease ever, in some cases double and triple the worst ever and the Sevier had its second worst ever with 1972 being the only exception. Actual snowpack losses ranged from -2.4 on the Weber to -5.4 over southwest Utah. All this in what is normally one of the heaviest snowpack accumulation months of the year. Several sites in northern Utah are now at or near record lows for April 1 snowpack including Burts Miller Ranch (first recorded zero on April 1, started in 1937), Stillwater Camp, Blacks Fork Junction and Chalk Creek #3. Having lost a record 25% to 60% of March snowpack, streamflows barely rose in most locations and in fact, the Sevier River at Hatch (USGS data) has yet to come up to average flow conditions and average flows during March are typically pretty small to begin with! The reason for snowmelt not converting to streamflow is primarily due to the soil moisture deficit and snowpack losses to evapotranspiration and sublimation. Most streams have had only marginal responses to the record snowmelt. Snowpacks now range between 56% of average in southern Utah to 75% of average on the Provo/Jordan River watershed. Precipitation for March ranged from an abysmal 20 in southern Utah to a pathetic 45% on the Weber, bringing seasonal precipitation, (Oct-Mar) to 87%. Soil moisture remains a concern as there was very little precipitation accumulation prior to the onset of snowpacks. This condition is, in most watersheds about half the deficit of a month ago. Soil moisture deficits range from 2.5 to 6 inches in the upper 24 inches of soil. Low reservoir storage is also a concern with total reservoir storage at 45% of capacity, down 8% (428,000 Acre-Feet) from last year. 428,000 AF would be the entire reservoir capacity of the Sevier River Basin and then some. Areas of greatest concern are the Bear and Sevier River basins with current storage of 8% and 31% respectively. Streamflow forecasts range from 7% to 71% of average. Surface Water Supply Indexes range from 2% on the Bear River, Sevier and Moab areas to 45% over the western part of the Uintah Basin.

## SNOWPACK

April first snowpacks as measured by the NRCS SNOTEL system range from 56% over southwestern and southeastern Utah to 75% on the Jordan River/Utah Lake Watersheds. Most areas are comparable to last year. The bright and optimistic side of the snowpack numbers is that we are not even close to the worst April 1 snowpack ever, with the exception of the upper Bear River Watershed.

## PRECIPITATION

Mountain precipitation during March was much below average statewide (33%). In the north it was much below normal (45%) and in the south, only 25%. This brings the seasonal accumulation (Oct-Mar) to 87% of average statewide.

## RESERVOIRS

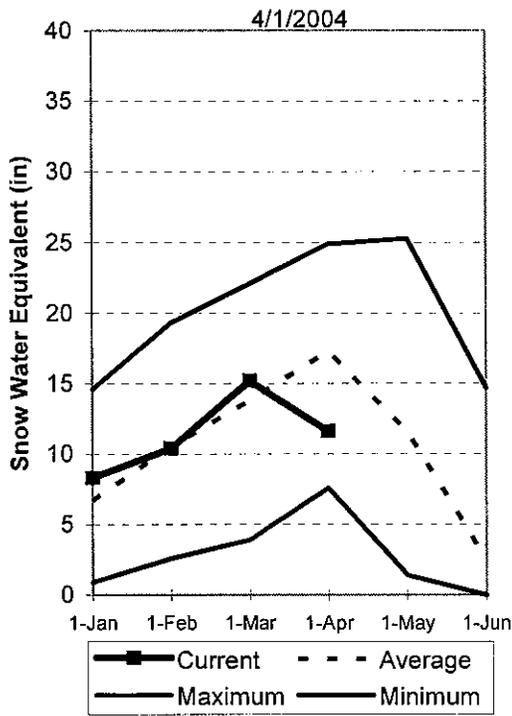
Storage in 41 of Utah's key irrigation reservoirs is at 45% of capacity, up only 4% from last month. This is down substantially (8%) from last year indicating heavy use of reservoir storage to make up

the streamflow deficit. Most reservoir operators are utilizing a conservative strategy, storing as much water as possible.

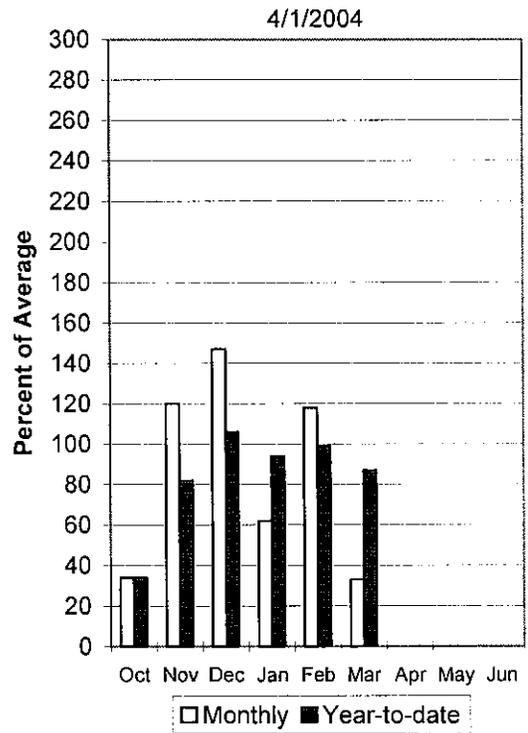
## STREAMFLOW

Snowmelt streamflows are expected to be below to much below average across the entire state of Utah this year. Forecast streamflows range from 7% on the Bear at Stewart dam to 71% on Wheeler Creek, a stark contrast from forecasts issued last month. Most flows are forecast to be in the 30% to 60% range. Overall water supply conditions are below to much below normal.

### Mountain Snowpack

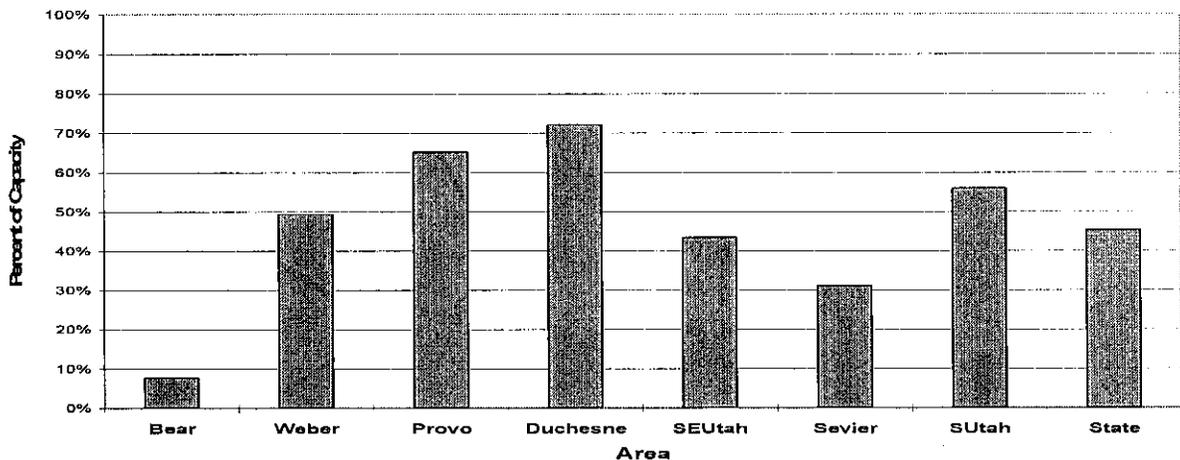


### Precipitation



### Statewide Reservoir Storage

4/1/2004

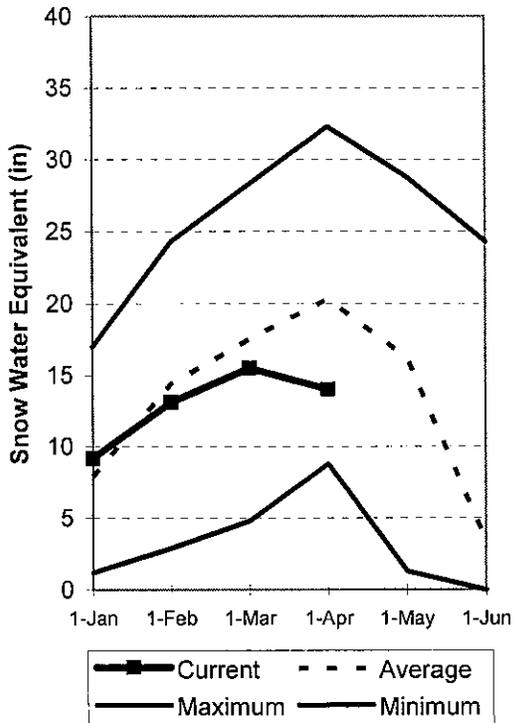


## Bear River Basin Apr 1, 2004

Snowpacks on the Bear River Basin are near average at 61% of normal, about 91% of last year and 30% less than last month. Specific sites range from 0% to 120% of normal. Low elevation snowpack is gone with a first ever zero reading at Burts Miller Ranch. March precipitation was much below average at 44%, which brings the seasonal accumulation (Oct-Mar) to 82% of average. Soil moisture levels in runoff producing areas indicate about 4.1 inches of deficit in the upper 2 feet of soil. Forecast streamflows are for much below normal (7%) to below normal volumes (57%) this spring. Reservoir storage is extremely low at 8% of capacity, 21% less than last year. The Surface Water Supply Index is at 2% for the Bear River, or 98% of years have had more total water available. Water supply conditions are much below normal.

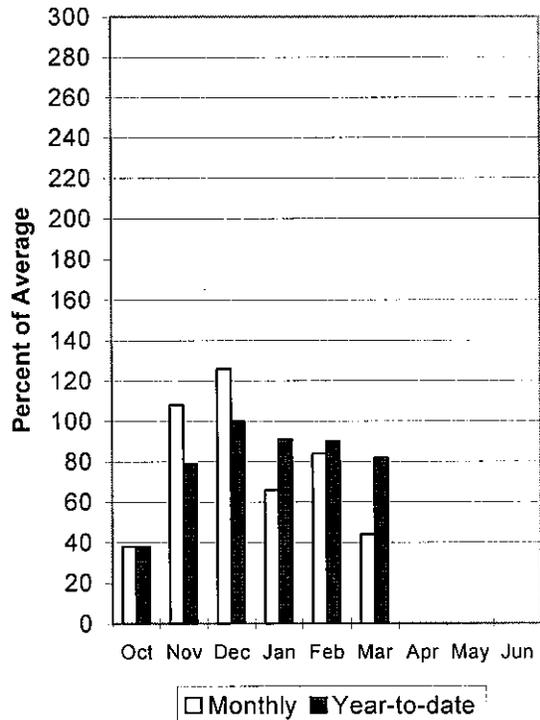
### Bear River Snowpack

4/1/2004



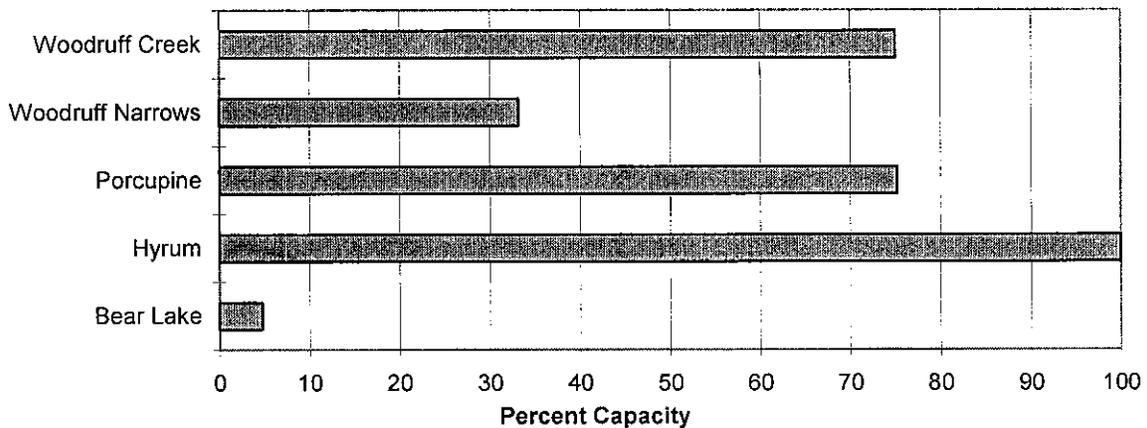
### Bear River Precipitation

4/1/2004



### Reservoir Storage

4/1/2004



BEAR RIVER BASIN  
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Chance Of Exceeding *		Wetter		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Bear River nr UT-WY State Line	APR-JUL	30	44	53	47	62	76	113
Bear River ab Reservoir nr Woodruff	APR-JUL	23	29	33	24	50	75	136
Big Creek nr Randolph	APR-JUL	0.38	0.48	0.55	11	1.18	2.10	4.90
Smiths Fork nr Border	APR-JUL	41	52	60	58	68	79	103
Bear River at Stewart Dam	APR-JUL	4.0	10.0	17.0	7	25	40	234
Little Bear River at Paradise	APR-JUL	13.9	19.0	23	50	27	34	46
Logan River nr Logan combined flow	APR-JUL	53	64	72	57	81	94	126
Blacksmith Fork nr Hyrum	APR-JUL	12.7	19.0	24	50	30	39	48

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of March					BEAR RIVER BASIN Watershed Snowpack Analysis - April 1, 2004			
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	61.7	389.1	---	BEAR RIVER, UPPER (abv Ha	6	90	62
HYRUM	15.3	15.3	15.3	12.2	BEAR RIVER, LOWER (blw Ha	8	90	60
PORCUPINE	11.3	8.5	7.9	6.7	LOGAN RIVER	4	87	62
WOODRUFF NARROWS	57.3	19.0	16.0	32.7	RAFT RIVER	1	172	98
WOODRUFF CREEK	4.0	3.0	2.4	---	BEAR RIVER BASIN	14	90	61

\* 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.

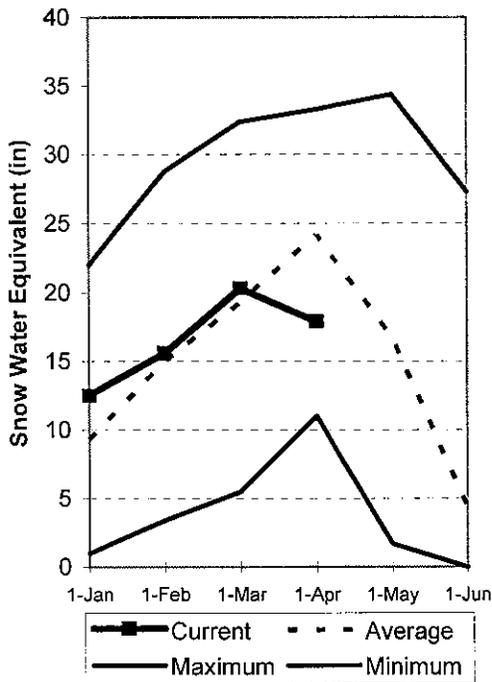
## Weber and Ogden River Basins

### Apr 1, 2004

Snowpack on the Weber and Ogden Watersheds is below normal at 74% of average, about 125% of last year and down 28% relative to last month. Individual sites range from 0% to 119% of average. March precipitation was much below average at 45% bringing the seasonal accumulation (Oct-Mar) to 87% of average. Soil moisture levels in runoff producing areas indicate about 4.2 inches of deficit in the upper 2 feet of soil. Streamflow forecasts range from 31% to 71% of average. Reservoir storage is at 49% of capacity, about 6% less than last year. The Surface Water Supply Index is at 5% for the Weber River and at 23% for the Ogden River. Overall water supply conditions are much below normal due to low snowpack, reservoir storage and soil moisture conditions.

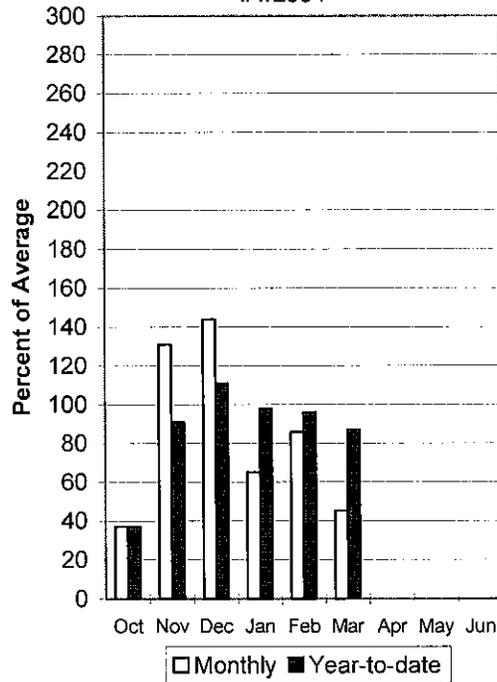
#### Weber River Snowpack

4/1/2004



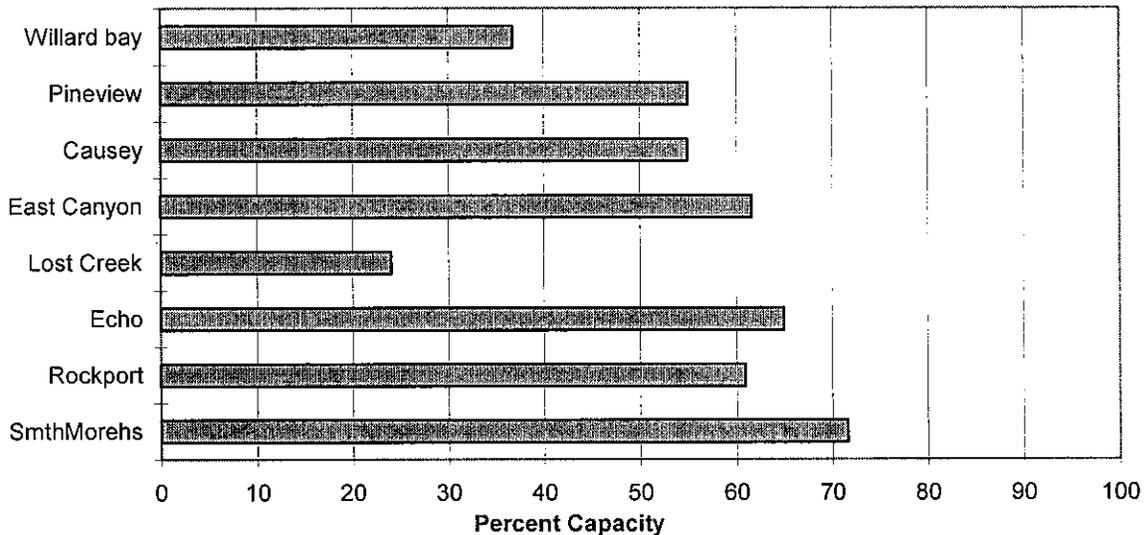
#### Weber River Precipitation

4/1/2004



#### Reservoir Storage

4/1/2004



WEBER & OGDEN WATERSHEDS in Utah  
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ==== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50% (Most Probable)			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)		(1000AF)	(1000AF)	(1000AF)	
Smith & Morehouse Res inflow	APR-JUL	10.3	14.6	17.5	52	20	25	34				
Weber River nr Oakley	APR-JUL	32	47	58	47	69	84	123				
Rockport Reservoir inflow	APR-JUL	19.0	39	52	39	65	85	134				
Weber River nr Coalville	APR-JUL	15.0	36	50	37	64	85	137				
Chalk Creek at Coalville	APR-JUL	9.3	12.1	14.0	31	21	32	45				
Echo Reservoir inflow	APR-JUL	21	50	70	39	90	119	179				
Lost Creek Reservoir inflow	APR-JUL	5.0	7.8	10.0	57	12.5	16.7	17.6				
East Canyon Reservoir inflow	APR-JUL	10.5	14.2	17.0	55	20	25	31				
Weber River at Gateway	APR-JUL	68	126	165	47	204	262	355				
SF Ogden River nr Huntsville	APR-JUL	23	33	40	63	47	57	64				
Pineview Reservoir inflow	APR-JUL	45	65	78	59	91	111	133				
Wheeler Creek nr Huntsville	APR-JUL	2.50	3.70	4.50	71	5.30	6.50	6.30				

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

WEBER & OGDEN WATERSHEDS in Utah  
Watershed Snowpack Analysis - April 1, 2004

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	3.9	2.5	2.6	OGDEN RIVER	4	155	79
EAST CANYON	49.5	30.5	33.0	36.5	WEBER RIVER	9	115	71
ECHO	73.9	48.0	40.4	51.5	WEBER & OGDEN WATERSHEDS	12	129	74
LOST CREEK	22.5	5.4	4.9	14.1				
PINEVIEW	110.1	60.6	55.4	61.7				
ROCKPORT	60.9	37.1	38.9	35.1				
WILLARD BAY	215.0	79.0	118.5	160.9				

\* 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.

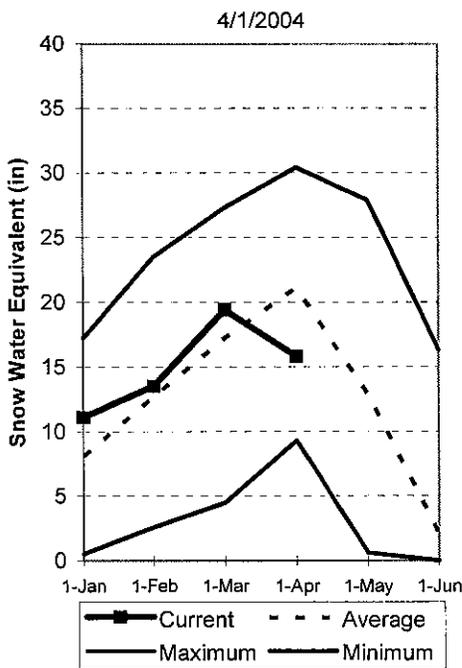
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## Utah Lake, Jordan River & Tooele Valley Basins

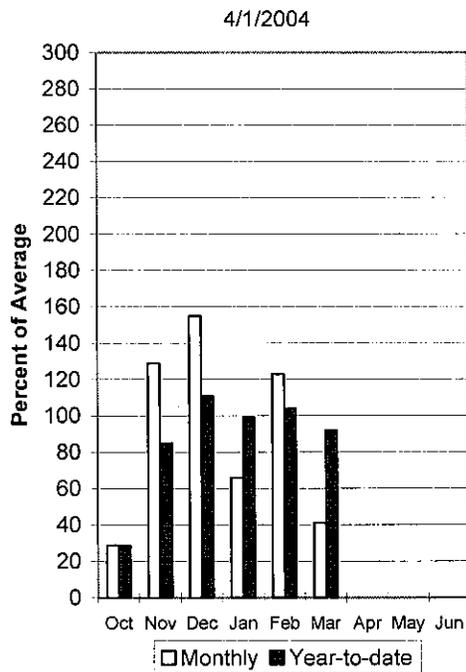
### Apr 1, 2004

Snowpack over these watersheds is at 75% of average, 118% of last year and down 36% relative to last month. The upper Provo, the area of greatest water production, is at only 56% of average. Individual sites range from 4% to 119% of average. March precipitation was much below average at 41%, bringing the seasonal accumulation (Oct-Mar) to 92% of average. Soil moisture levels in runoff producing areas indicate about 2.7 inches of deficit in the upper 2 feet of soil. Forecast streamflows range from 35% to 85% of average. Reservoir storage is at 65% of capacity, 5% less than last year. The Surface Water Supply Index is at 9%, or 91% of years would have more total water available. General water supply conditions are below normal due to low snowpack, reservoir storage and soil moisture.

#### Provo River Snowpack

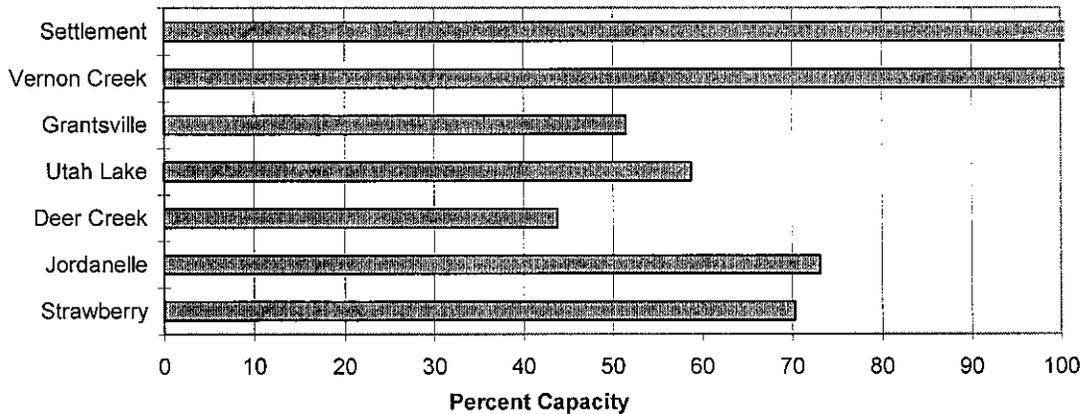


#### Provo River Precipitation



#### Reservoir Storage

4/1/2004



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Streamflow Forecasts - April 1, 2004

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)	
Spanish Fork River nr Castilla	APR-JUL	7.7	14.2	34	44	54	74	77
Provo River nr Woodland	APR-JUL	25	40	52	51	64	79	103
Provo River nr Hailstone	APR-JUL	15.0	37	51	47	65	87	109
Provo R blw Deer Creek Dam	APR-JUL	20	44	64	51	84	122	126
American Fk R nr American Fk	APR-JUL	12.2	16.2	19.0	59	22	26	32
Utah Lake inflow	APR-JUL	39	122	175	54	228	310	325
Little Cottonwood Ck nr SLC	APR-JUL	28	31	34	85	37	40	40
Big Cottonwood Ck nr SLC	APR-JUL	14.8	19.6	23	61	26	31	38
Mill Creek nr SLC	APR-JUL	3.40	4.93	6.00	86	7.07	8.60	7.00
Parley's Creek nr SLC	APR-JUL	3.3	7.4	10.5	63	13.6	17.5	16.7
Dell Fork nr SLC	APR-JUL	0.61	2.94	4.40	65	5.86	8.20	6.80
Emigration Creek nr SLC	APR-JUL	0.00	0.40	1.60	36	2.80	4.50	4.50
City Creek nr SLC	APR-JUL	0.96	1.62	3.00	35	4.38	6.40	8.70
Vernon Creek nr Vernon	APR-JUL	0.47	0.61	0.72	49	0.86	1.10	1.48
Settlement Creek nr Tooele	APR-JUL	0.49	0.72	0.91	46	1.13	1.53	1.97
South Willow Creek nr Grantsville	APR-JUL	0.95	1.60	2.10	65	2.60	3.20	3.23

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY Reservoir Storage (1000 AF) - End of March					UTAH LAKE, JORDAN RIVER & TOOELE VALLEY Watershed Snowpack Analysis - April 1, 2004			
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	62.6	89.2	113.0	PROVO RIVER & UTAH LAKE	7	96	57
GRANTSVILLE	3.3	1.7	1.8	2.7	PROVO RIVER	4	110	56
SETTLEMENT CREEK	1.0	0.6	0.8	0.7	JORDAN RIVER & GREAT SALT	6	130	86
STRAWBERRY-ENLARGED	1105.9	777.4	812.6	648.8	TOOELE VALLEY WATERSHEDS	3	151	88
UTAH LAKE	870.9	512.2	576.0	855.8	UTAH LAKE, JORDAN RIVER &	16	120	75
VERNON CREEK	0.6	0.7	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.

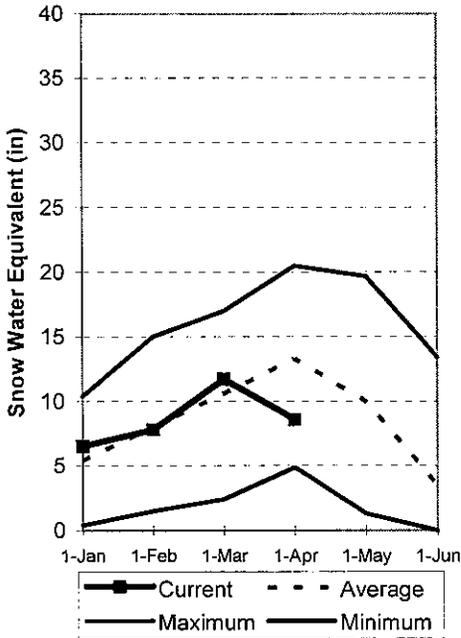
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## Uintah Basin and Dagget SCD's Apr 1, 2004

Snowpacks across the Uintah Basin and North Slope areas are much below average at 65%, which is 88% of last year, down 42% relative to last month. The North Slope ranges from 35% to 76% and the Uintah Basin ranges from 32% to 92% of average. Precipitation during March was much below average at 22% bringing the seasonal accumulation (Oct-Mar) to 86% of average. Soil moisture levels in runoff producing areas indicate about 4.6 inches of deficit in the upper 2 feet of soil. Reservoir storage is at 72% of capacity, 2% less than last year. The Surface Water Supply Index for the western area is 45% and for the eastern area it is 27% indicating normal on the west to poor conditions on the east. Streamflow forecasts range between 35% and 77% of average. Springtime runoff conditions are much below normal.

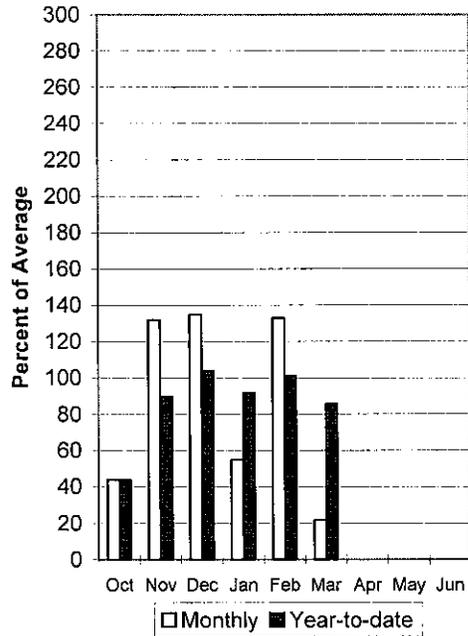
### Uintahs Snowpack

4/1/2004

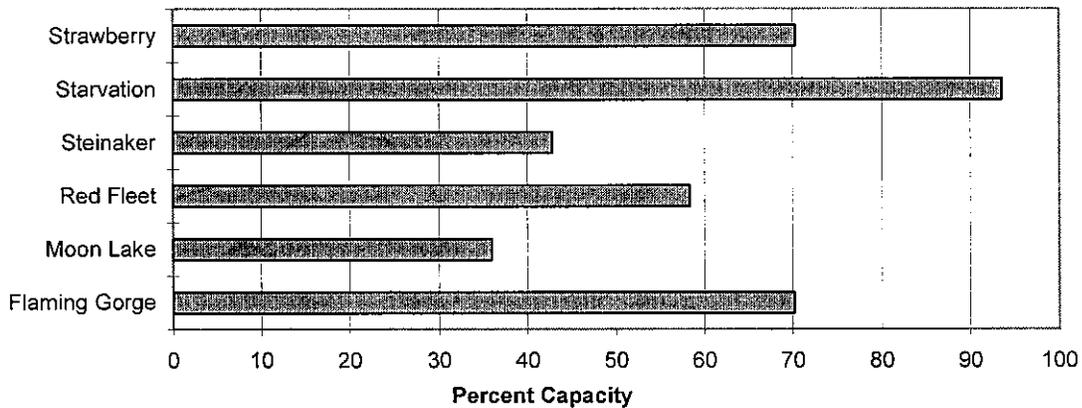


### Uintahs Precipitation

4/1/2004



### Reservoir Storage 4/1/2004



UINTAH BASIN & DAGGET SCD'S  
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Blacks Fork nr Robertson	APR-JUL	37	51	60	63	69	83	95
EF of Smiths Fork nr Robertson	APR-JUL	14.3	16.4	18.0	58	19.8	23	31
Flaming Gorge Reservoir Inflow	APR-JUL	320	500	620	52	740	920	1190
BIG BRUSH CK abv Red Fleet Resv	APR-JUL	7.6	11.6	14.3	68	17.0	21	21
Ashley Creek nr Vernal	APR-JUL	18.4	28	35	67	42	52	52
WF DUCHESNE RIVER nr Hanna	APR-JUL	6.1	9.3	11.8	49	14.6	19.4	24
DUCHESNE R nr Tabiona	APR-JUL	33	46	55	52	64	77	105
UPPER STILLWATER RESV inflow	APR-JUL	30	42	51	62	60	72	82
ROCK CK nr Mountain Home	APR-JUL	35	46	54	61	62	73	89
DUCHESNE R abv Knight Diversion	APR-JUL	48	79	100	53	121	152	188
STRAWBERRY RES nr Soldier Springs	APR-JUL	16.2	24	30	51	37	48	59
CURRENT CREEK RESV Inflow	APR-JUL	2.9	6.4	8.8	35	11.2	14.7	25
STARVATION RESERVOIR inflow	APR-JUL	23	46	61	50	76	99	121
Lake Fork River abv Moon Lake	APR-JUL	36	46	52	77	58	68	68
Yellowstone River nr Altonah	APR-JUL	27	38	46	74	54	65	62
DUCHESNE R at Myton	APR-JUL	26	68	109	42	150	211	260
Whiterocks River nr Whiterocks	APR-JUL	20	32	39	70	47	58	56
DUCHESNE R nr Randlett	APR-JUL	33	65	120	37	218	358	325

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

UINTAH BASIN & DAGGET SCD'S  
Watershed Snowpack Analysis - April 1, 2004

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	2631.0	2629.0	2920.0	UPPER GREEN RIVER in UTAH	6	62	55
MOON LAKE	49.5	17.8	21.8	30.8	ASHLEY CREEK	2	65	58
RED FLEET	25.7	14.7	12.2	18.8	BLACK'S FORK RIVER	2	76	63
STEINAKER	33.4	14.3	10.0	24.2	SHEEP CREEK	1	39	35
STARVATION	165.3	154.7	148.8	138.6	DUCHESNE RIVER	11	102	69
STRAWBERRY-ENLARGED	1105.9	777.4	812.6	648.8	LAKE FORK-YELLOWSTONE CRE	4	120	82
					STRAWBERRY RIVER	4	86	51
					UINTAH-WHITEROCKS RIVERS	2	103	80
					UINTAH BASIN & DAGGET SCD	17	88	65

\* 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.

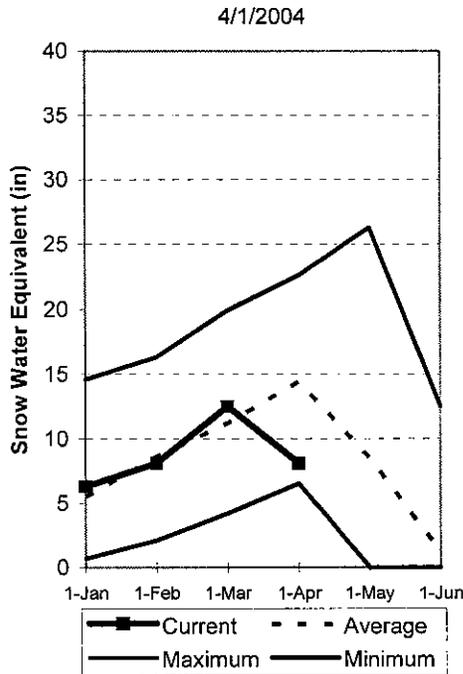
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# Carbon, Emery, Wayne, Grand and San Juan Co.

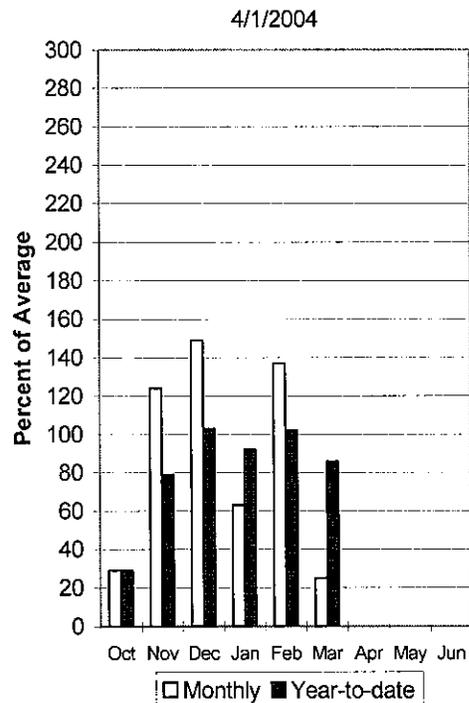
Apr 1, 2004

Snowpacks in this region are much below normal at 56% of average, about 73% of last year, down 48% relative to last month. Individual sites range from 0% to 82% of average. Precipitation during March was much below average at 25%, bringing the seasonal accumulation (Oct-Mar) to 86% of normal. Soil moisture levels in runoff producing areas indicate about 3.5 inches of deficit in the upper 2 feet of soil. Forecast streamflows range from 36% to 60% of average. Reservoir storage is at 43% of capacity, up 5% from last year. Surface Water Supply Indices for the area are: Price 11%, (much below normal) San Rafael area 24% (below average) and Moab 4% (much below average). General runoff and water supply conditions are much below to below normal.

## Southeast Utah Snowpack

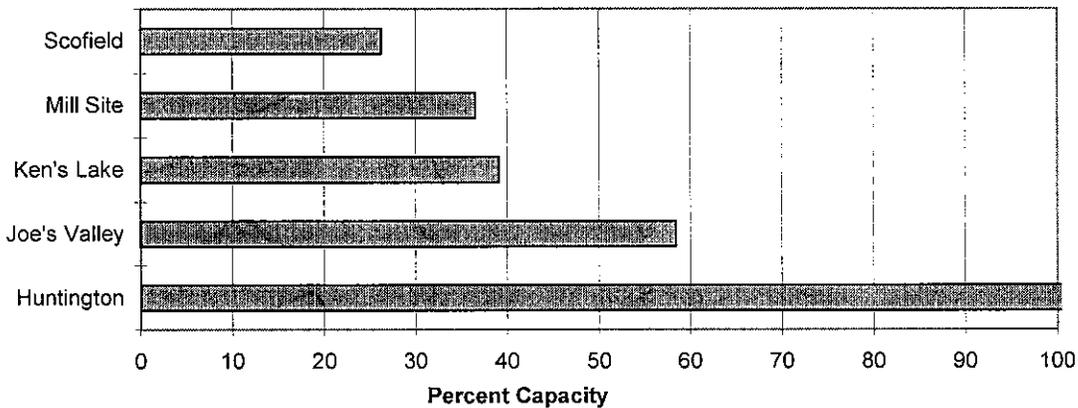


## Southeast Utah Precipitation



## Reservoir Storage

4/1/2004



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Streamflow Forecasts - April 1, 2004

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	3.2	4.9	6.0	50	7.1	8.8	11.9
Scofield Reservoir inflow	APR-JUL	14.2	18.9	22	48	25	30	46
White River blw Tabbyune Creek	APR-JUL	3.8	6.0	7.8	45	9.8	13.2	17.4
Green River at Green River, UT	APR-JUL	695	1310	1730	55	2150	2760	3170
Electric Lake inflow	APR-JUL	4.8	6.3	7.5	48	8.8	11.0	15.7
HUNTINGTON CK nr Huntington	APR-JUL	17.3	23	26	52	30	35	50
JOE'S VALLEY RESV Inflow	APR-JUL	17.7	28	35	60	42	52	58
Ferron Creek nr Ferron	APR-JUL	14.7	18.3	21	54	24	28	39
Colorado River nr Cisco	APR-JUL	1260	2030	2550	55	3070	3840	4650
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	1.25	1.50	1.75	35	2.80	4.30	5.00
Seven Mile Creek nr Fish Lake	APR-JUL	1.05	2.10	3.60	51	5.10	7.30	7.00
Muddy Creek nr Emery	APR-JUL	5.5	9.4	12.0	60	14.6	18.5	19.9
North Ck ab R.S. nr Monticello	MAR-JUL	0.10	0.19	0.35	36	0.85	1.98	0.97
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.14	0.27	0.57	42	0.85	1.36	1.37
Recapture Ck bl Johnson Ck nr Blandi	MAR-JUL	0.50	1.01	2.00	40	3.53	5.63	5.05
San Juan River nr Bluff	APR-JUL	485	700	850	69	995	1215	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, 2004

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	4.0	4.2	3.9	PRICE RIVER	3	63	48
JOE'S VALLEY	61.6	35.1	24.4	41.4	SAN RAFAEL RIVER	3	88	65
KEN'S LAKE	2.3	0.9	0.9	1.4	MUDDY CREEK	1	82	61
MILL SITE	16.7	6.1	8.7	86.2	FREMONT RIVER	3	80	68
SCOFIELD	65.8	17.3	19.3	34.7	LASAL MOUNTAINS	1	42	33
					BLUE MOUNTAINS	1	65	57
					WILLOW CREEK	1	57	36
					CARBON, EMERY, WAYNE, GRA	13	73	56

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

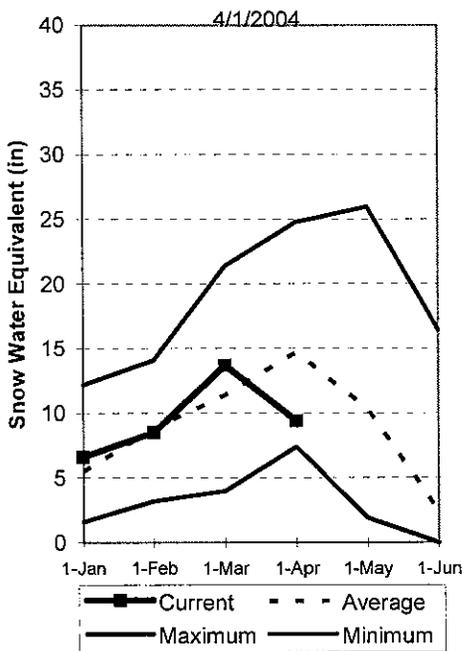
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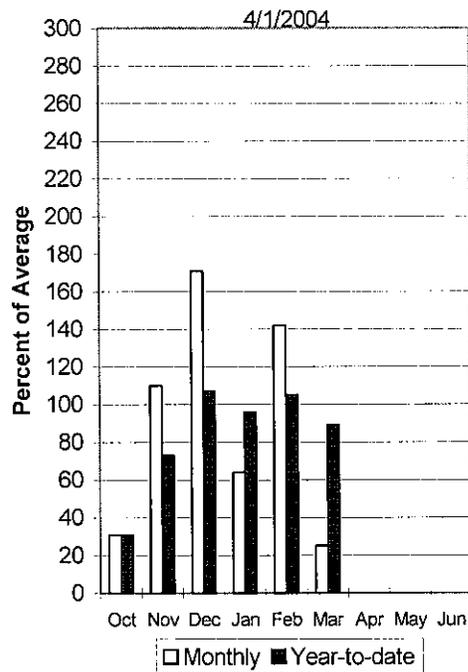
## Sevier and Beaver River Basins Apr 1, 2004

Snowpacks on the Sevier River Basin are above normal at 64% of average, about 182% of last year, down 48% relative to last month. Individual sites range from 0% to 90% of average. Low elevation snowpacks are gone. Precipitation during March was much below average at 25% of normal, bringing the seasonal accumulation (Oct-Mar) to 89% of average. Soil moisture levels in runoff producing areas indicate about 5 inches (Sevier) and 8.5 inches (Beaver) of deficit in the upper 2 feet of soil. Streamflow forecasts range from 16% to 63% of average. Reservoir storage is at 31% of capacity, 3% less than last year. Surface Water Supply Indices are: Upper Sevier 27%, Lower Sevier 15% and Beaver 11%. Water supply conditions remain much below normal due to low snowpack, reservoir storage and soil moisture.

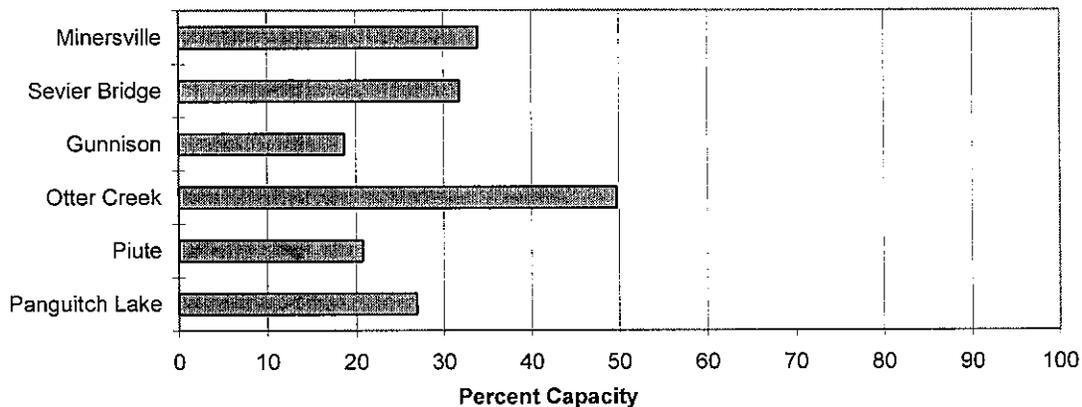
### Sevier River Snowpack



### Sevier River Precipitation



### Reservoir Storage 4/1/2004



SEVIER & BEAVER RIVER BASINS  
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier ====		==== Wetter =====>>				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Sevier River at Hatch	APR-JUL	4.9	16.6	23	42	29	41	55
Sevier River nr Kingston	APR-JUL	9.8	32	38	43	44	66	89
EF Sevier R nr Kingston	APR-JUL	3.8	16.2	24	63	32	44	38
Sevier R blw Piute Dam	APR-JUL	14.0	46	67	53	88	120	126
Clear Creek nr Sevier	APR-JUL	4.2	5.6	9.0	41	12.4	19.1	22
Salina Creek at Salina	APR-JUL			MUCH BELOW AVERAGE				19.7
Sevier R nr Gunnison	APR-JUL	50	46	120	43	194	325	280
Chicken Creek nr Levan	APR-JUL	0.65	1.09	1.49	33	1.97	2.86	4.50
Oak Creek nr Oak City	APR-JUL	0.42	0.63	0.80	48	0.99	1.31	1.66
Beaver River nr Beaver	APR-JUL	9.7	12.1	14.0	52	16.0	19.4	27
Minersville Reservoir inflow	APR-JUL	0.2	1.1	2.6	16	4.7	8.9	16.6

SEVIER & BEAVER RIVER BASINS Reservoir Storage (1000 AF) - End of March					SEVIER & BEAVER RIVER BASINS Watershed Snowpack Analysis - April 1, 2004			
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	3.8	3.6	16.3	UPPER SEVIER RIVER (south	8	100	67
MINERSVILLE (RkyFd)	23.3	7.9	6.8	17.9	EAST FORK SEVIER RIVER	3	99	72
OTTER CREEK	52.5	26.1	32.4	43.5	SOUTH FORK SEVIER RIVER	5	101	64
PIUTE	71.8	14.9	2.5	58.5	LOWER SEVIER RIVER (inclu	6	63	56
SEVIER BRIDGE	236.0	74.9	93.5	189.7	BEAVER RIVER	2	103	82
PANGUITCH LAKE	22.3	6.0	4.0	152.9	SEVIER & BEAVER RIVER BAS	16	83	64

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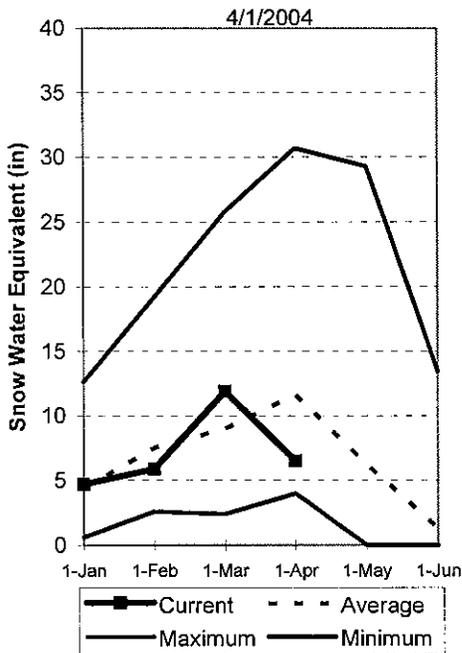
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(2) - The value is natural volume - actual volume may be affected by upstream water management.

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

Apr 1, 2004

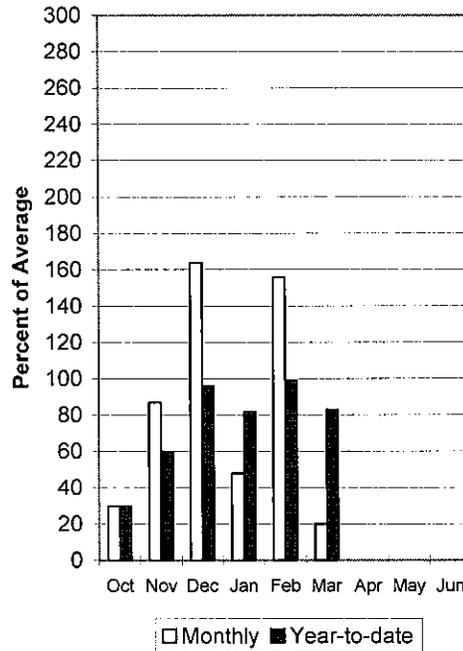
Snowpacks in this region are much below normal at 56% of average, about 103% of last year, down 59% relative to last month. Individual sites range from 0% to 89% of average. Precipitation was much below normal during March at 20% of average, bringing the seasonal accumulation (Oct-Mar) to 83% of normal. Soil moisture levels in runoff producing areas indicate about 4.8 inches of deficit in the upper 2 feet of soil. Forecast streamflows range from 31% to 44% of average. Reservoir storage is at 56% of capacity, 20% more than last year. The Surface Water Supply Index is at 24%, indicating much below normal water availability. Concerns remain over low reservoir storage, soil moisture and low snowpacks.

### Southwest Utah Snowpack



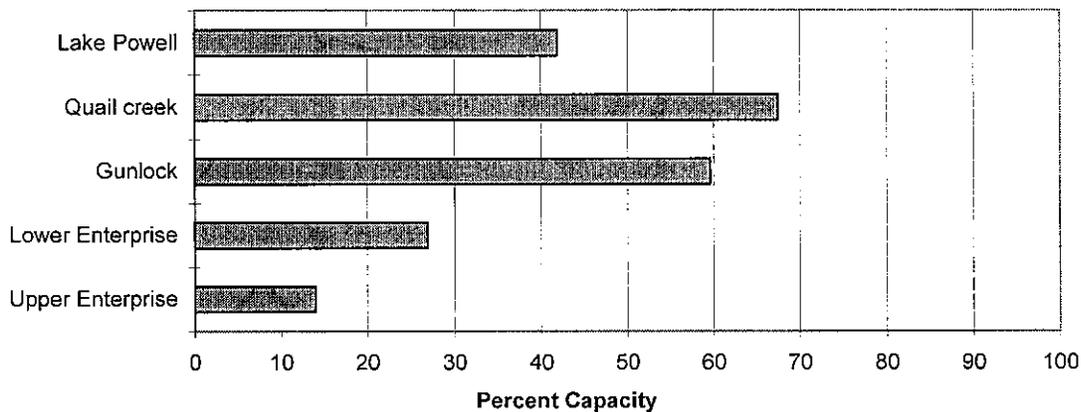
### Southwest Utah Precipitation

4/1/2004



### Reservoir Storage

4/1/2004



E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Streamflow Forecasts - April 1, 2004

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ==== Wetter =====>>		Chance Of Exceeding *				30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Lake Powell inflow	APR-JUL	1490	2980	4000	50	5020	6510	7930
Virgin River nr Virgin	APR-JUL	14.7	22	28	44	35	46	64
Virgin River nr Hurricane	APR-JUL	5.8	16.0	23	33	30	40	69
Santa Clara River nr Pine Valley	APR-JUL	0.82	1.51	2.10	38	2.79	3.97	5.50
Coal Creek nr Cedar City	APR-JUL	7.1	8.8	10.0	52	11.3	13.4	19.3

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

E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Watershed Snowpack Analysis - April 1, 2004

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	6.2	5.8	4.5	VIRGIN RIVER	5	111	57
LAKE POWELL	24322.0	10186.0	12458.0	---	PAROWAN	2	123	82
QUAIL CREEK	40.0	27.0	15.6	31.0	ENTERPRISE TO NEW HARMONY	2	0	0
UPPER ENTERPRISE	10.0	1.4	0.3	---	COAL CREEK	2	112	68
LOWER ENTERPRISE	2.6	0.7	0.7	137.1	ESCALANTE RIVER	2	89	74
					E. GARFIELD, KANE, WASHIN	9	102	56

\* 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  
1-Mar-04 Similar SWSI**

Bear River	-3.98	2%	2003,93,92,91
Ogden River	-2.1	25%	90,02,00,91
Weber River	-2.4	21%	90,01,91,87
Provo	-2.8	17%	56,03,55,59
West Uintah Basin	1.1	64%	87,02,96,86
East Uintah Basin	0	50%	91,01,97,85
Price River	-1.9	28%	03,89,98,62
San Rafael	0.1	52%	2000,87,74,82
Moab	-.5	44%	82,97,00,96
Upper Sevier River	-1.1	37%	00,67,99,66
Lower Sevier River	-1.3	35%	72,78,90,01
Beaver River	-1.5	32%	91,92,2001,65
Virgin River	0.2	54%	86.94,01,97

**Snow Surveys**

245 N Jimmy Doolittle Rd  
Salt Lake City, UT  
(801) 524-5213

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 media 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.

DATA CURRENT AS OF:04/05/04 06:46:17

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

APRIL 2004

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	4/01	8	2.2	2.5	7.1
ALTA CENTRAL	8800	3/30	76	34.0	27.2	37.3
BEAVER DAMS SNOTEL	8000	4/01	-	0.3	7.5	10.5
BEAVER DIVIDE SNOTEL	8280	4/01	2	0.4	5.6	10.6
BEN LOMOND PK SNOTEL	8000	4/01	69	33.2	23.2	41.5
BEN LOMOND TR SNOTEL	6000	4/01	46	18.9	8.2	19.5
BEVAN'S CABIN	6450	3/30	32	12.7	7.4	11.6
BIG FLAT SNOTEL	10290	4/01	49	14.5	14.7	19.0
BIRCH CROSSING	8100	3/29	3	1.1	3.6	5.4
BLACK FLAT-U.M. CK S	9400	4/01	14	5.6	8.7	10.3
BLACK'S FORK GS-EF	9340	3/29	17	7.0	10.0	9.7
BLACK'S FORK JUNCTN	8930	3/29	16	6.4	8.3	9.3
BOX CREEK SNOTEL	9800	4/01	28	11.0	12.2	13.7
BRIAN HEAD	10000	3/28	38	15.9	15.7	21.1
BRIGHTON SNOTEL	8750	4/01	44	15.4	17.7	25.4
BRIGHTON CABIN	8700	3/31	48	20.3	19.7	27.8
BROWN DUCK SNOTEL	10600	4/01	50	16.7	13.0	18.2
BRYCE CANYON	8000	4/01	0	0.0	0.0	3.8
BUCK FLAT SNOTEL	9800	4/01	32	11.2	13.9	18.7
BUCK PASTURE	9700	3/29	37	10.4	14.3	16.9
BUCKBOARD FLAT	9000	3/30	27	9.0	10.0	12.4
BUG LAKE SNOTEL	7950	4/01	36	13.5	16.0	21.2
BURT'S-MILLER RANCH	7900	3/29	0	0.0	5.0	4.9
CAMP JACKSON SNOTEL	8600	4/01	17	7.7	11.9	13.6
CASCADE MOUNTAIN SNO	7770	4/01	37	13.7	10.7	-
CASTLE VALLEY SNOTEL	9580	4/01	29	10.1	9.5	14.6
CHALK CK #1 SNOTEL	9100	4/01	42	16.1	18.7	24.9
CHALK CK #2 SNOTEL	8200	4/01	34	11.3	15.1	16.2
CHALK CREEK #3	7500	3/29	4	1.0	5.7	6.9
CHEPETA SNOTEL	10300	4/01	-	10.3	10.2	14.2
CLAYTON SPRINGS SNTL	10000	4/01	21	9.2	9.8	-
CLEAR CK RIDG #1 SNT	9200	4/01	26	11.5	16.9	19.7
CLEAR CK RIDG #2 SNT	8000	4/01	25	9.5	12.5	14.7
CORRAL	8200	3/28	12	4.2	7.3	9.0
CURRENT CREEK SNOTEL	8000	4/01	9	3.3	3.0	10.2
DANIELS-STRAWBERRY S	8000	4/01	24	9.8	10.3	16.7
DILL'S CAMP SNOTEL	9200	4/01	26	9.1	11.1	14.9
DONKEY RESERVOIR SNO	9800	4/01	17	5.0	9.3	8.7
DRY BREAD POND SNTL	8350	4/01	30	16.4	10.9	22.6
DRY FORK SNOTEL	7160	4/01	-	14.4	9.5	18.2
EAST WILLOW CREEK SN	8250	4/01	13	3.0	5.3	8.3
FARMINGTON U. SNOTEL	8000	4/01	82	40.9	23.2	34.3
FARMINGTON LOWER SC	6950	3/30	72	29.8	14.9	25.6
FARMINGTON L. SNOTEL	6780	4/01	56	22.2	-	-
FARNSWORTH LK SNOTEL	9600	4/01	51	17.3	20.5	19.6
FISH LAKE	8700	3/28	15	5.3	7.4	8.8
FIVE POINTS LAKE SNO	10920	4/01	40	15.6	11.8	17.7
G.B.R.C. HEADQUARTER	8700	3/28	30	11.3	15.2	16.6
G.B.R.C. MEADOWS	10000	3/28	52	20.5	19.4	24.0
GARDEN CITY SUMMIT	7600	3/29	41	15.7	13.7	16.2
GEORGE CREEK	8840	3/27	62	26.8	16.8	22.3
GOOSEBERRY R.S.	8400	3/28	18	6.8	14.8	12.0
GOOSEBERRY R.S. SNTL	7900	4/01	0	0.0	12.1	8.7
HARDSCRABBLE SNOTEL	7250	4/01	-	13.2	9.7	20.2
HARRIS FLAT SNOTEL	7700	4/01	1	0.2	0.3	6.7
HAYDEN FORK SNOTEL	9100	4/01	15	4.9	14.2	16.6
HENRY'S FORK	10000	3/29	19	5.2	10.6	14.0
HEWINTA SNOTEL	9500	4/01	13	5.8	10.3	12.1
HICKERSON PARK SNTL	9100	4/01	10	2.7	6.9	7.7
HIDDEN SPRINGS	5500	3/30	1	0.3	0.0	2.4
HOBBLE CREEK SUMMIT	7420	3/28	25	10.5	7.6	13.9
HOLE-IN-ROCK SNOTEL	9150	4/01	8	2.7	7.7	7.2
HORSE RIDGE SNOTEL	8260	4/01	34	14.3	15.7	23.9
HUNTINGTON-HORSESHOE	9800	3/28	46	17.5	17.5	24.0
INDIAN CANYON SNOTEL	9100	4/01	16	5.6	10.2	11.9
JOHNSON VALLEY	8850	3/28	8	2.6	7.4	7.1
JONES CORRAL G.S.	9720	3/28	32	9.1	11.1	12.5
KILFOIL CREEK	7300	3/29	39	14.9	9.9	14.4

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
KILLYON CANYON	6300	3/30	3	1.3	0.0	5.6
KIMBERLY MINE SNOTEL	9300	4/01	26	10.0	15.4	16.7
KING'S CABIN SNOTEL	8730	4/01	11	5.7	11.6	11.3
KLONDIKE NARROWS	7400	3/29	29	12.5	12.9	19.2
KOLOB SNOTEL	9250	4/01	39	14.4	13.3	23.9
LAKEFORK #1 SNOTEL	10100	4/01	32	10.6	9.6	12.7
LAKEFORK BASIN SNTL	10900	4/01	51	13.9	12.8	20.7
LAKEFORK MOUNTAIN #3	8400	3/29	6	2.4	5.0	6.0
LAMBS CANYON	7400	3/31	29	11.7	9.6	16.1
LASAL MOUNTAIN LOWER	8800	3/29	10	4.0	9.2	9.8
LASAL MOUNTAIN SNTL	9850	4/01	11	4.4	10.5	13.5
LILY LAKE SNOTEL	9050	4/01	18	7.0	12.0	13.5
LITTLE BEAR LOWER	6000	3/29	26	11.1	2.7	9.5
LITTLE BEAR SNOTEL	6550	4/01	-	2.8	0.0	12.3
LITTLE GRASSY SNOTEL	6100	4/01	-	0.0	0.0	.7
LONG FLAT SNOTEL	8000	4/01	-	0.0	0.0	7.5
LONG VALLEY JCT. SNT	7500	4/01	-	0.0	0.0	3.2
LOOKOUT PEAK SNOTEL	8200	4/01	-	28.2	20.3	24.3
LOST CREEK RESERVOIR	6130	3/29	0	0.0	.3	2.0
LOUIS MEADOW SNOTEL	6700	4/01	24	12.5	8.1	-
MAMMOTH-COTTONWD SNT	8800	4/01	20	9.5	15.1	21.0
MERCHANT VALLEY SNTL	8750	4/01	30	12.1	11.1	13.4
MIDDLE CANYON	7000	3/30	33	13.8	8.9	14.0
MIDWAY VALLEY SNOTEL	9800	4/01	53	22.5	17.1	25.3
MILL CREEK	6950	3/31	51	19.5	12.2	20.6
MILL-D NORTH SNOTEL	8960	4/01	-	18.0	15.6	25.5
MILL-D SOUTH FORK	7400	3/31	31	13.5	10.1	19.1
MINING FORK SNOTEL	8000	4/01	42	19.7	13.1	21.0
MONTE CRISTO SNOTEL	8960	4/01	51	21.3	15.5	30.1
MOSBY MTN. SNOTEL	9500	4/01	26	10.8	10.2	12.1
MT.BALDY R.S.	9500	3/28	51	19.3	20.3	24.1
MUD CREEK #2	8600	3/28	31	11.1	11.1	13.5
OAK CREEK	7760	3/28	32	10.3	10.5	12.0
PANGUITCH LAKE R.S.	8200	3/28	8	2.9	1.1	4.0
PARLEY'S CANYON SNTL	7500	4/01	24	7.1	8.9	17.1
PARRISH CREEK SNOTEL	7740	4/01	62	27.7	16.5	-
PAYSON R.S. SNOTEL	8050	4/01	31	11.8	12.4	20.6
PICKLE KEG SNOTEL	9600	4/01	29	11.7	15.2	17.9
PINE CREEK SNOTEL	8800	4/01	-	18.1	20.2	24.8
RED PINE RIDGE SNTL	9200	4/01	26	10.2	13.2	17.3
REDDEN MINE LOWER	8500	3/29	29	11.0	12.0	17.8
REES'S FLAT	7300	3/28	28	9.9	10.5	12.6
ROCK CREEK SNOTEL	7900	4/01	-	3.6	6.9	8.1
ROCKY BN-SETTLEMT SN	8900	4/01	47	22.8	16.9	26.5
SEELEY CREEK SNOTEL	10000	4/01	28	11.7	10.6	15.3
SMITH MOREHOUSE SNTL	7600	4/01	17	6.4	9.0	14.0
SNOWBIRD SNOTEL	9700	4/01	93	42.5	25.9	35.8
SPIRIT LAKE	10300	3/29	27	10.5	11.2	13.8
SQUAW SPRINGS	9300	3/28	13	4.6	7.3	7.1
STEEL CREEK PARK SNO	10100	4/01	38	11.8	12.8	15.9
STILLWATER CAMP	8550	3/29	12	4.6	9.5	10.5
STRAWBERRY DIVIDE SN	8400	4/01	28	10.5	10.3	18.7
SUSC RANCH	8200	3/28	4	2.1	0.9	7.0
TALL POLES	8800	3/28	29	13.0	11.5	14.7
TEMPLE FORK SNOTEL	7410	4/01	29	10.7	14.1	-
THAYNES CANYON SNTL	9200	4/01	45	17.5	17.2	24.9
THISTLE FLAT	8500	3/28	32	12.3	17.0	16.9
TIMBERLINE	9100	3/28	25	9.6	11.5	14.7
TIMPANOGOS DIVIDE SN	8140	4/01	41	16.7	10.7	24.0
TONY GROVE LK SNOTEL	8400	4/01	55	27.8	33.1	37.7
TONY GROVE R.S.	6250	3/29	16	5.9	6.0	11.1
TRIAL LAKE	9960	3/29	45	18.6	16.9	24.2
TRIAL LAKE SNOTEL	9960	4/01	39	15.8	13.9	25.3
TROUT CREEK SNOTEL	9400	4/01	18	7.4	8.7	11.2
UPPER JOES VALLEY	8900	3/28	15	5.7	9.0	9.9
VERNON CREEK SNOTEL	7500	4/01	27	9.5	4.4	11.7
VIPONT	7670	3/27	39	16.6	2.8	15.4
WEBSTER FLAT SNOTEL	9200	4/01	16	5.6	7.9	15.9
WHITE RIVER #1 SNTL	8550	4/01	13	4.9	8.9	13.5
WHITE RIVER #3	7400	3/28	0	.0	4.5	6.1
WIDTSOE #3 SNOTEL	9500	4/01	30	10.9	9.0	12.8
WRIGLEY CREEK	9000	3/28	23	8.5	9.6	11.3
YANKEE RESERVOIR	8700	3/30	16	6.1	8.4	10.0



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

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

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245 North Jimmy Doolittle Road  
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**Utah Water Supply  
Outlook Report**  
Natural Resources Conservation Service  
Salt Lake City, UT





# Utah Water Supply Outlook Report

May 1, 2004



**Klondike Narrows Snow Course.**

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

May 1, 2004

## SUMMARY

The record pace of snowmelt in March slowed during April which becomes a double edged sword. While it's nice to see the snow capped peaks and extend the recreation season, it also extends the snowmelt period which in turn, increases the losses to infiltration, evapotranspiration and sublimation. In general, shorter snowmelt seasons produce more efficient snowmelt conversion to runoff - water that fills reservoirs. Soils become and stay saturated, forcing more overland and shallow subsurface flow and a larger proportion of snowmelt becomes runoff. Thus, if climate stays cool through April and then becomes very warm, the snowmelt period is shortened by 30 to 45 days and more efficient runoff is the result. The longer the snowmelt period, the more melt is lost to all other areas except streamflow. If snowmelt begins in March or even it is abnormally hot in April, it almost always lengthens the snowmelt period instead of condensing it. The result of a longer snowmelt period is greater losses, especially to infiltration and less streamflow. Most streams have had only marginal responses to snowmelt as reservoir storage increased a paltry 4% of capacity statewide. The Sevier River at Hatch is still running only 50% of average flow, having lost 60% of the total snowpack. Lower and mid elevation watersheds have already had peak flows for the year. Higher elevation watersheds will peak soon as snowpacks for the most part will be gone by middle to late May. Snowpacks now range between 38% of average in southeastern Utah to 64% of average on the Sevier River watershed. Precipitation for April ranged from 76% on the Bear to 148% in southeastern Utah, bringing seasonal precipitation, (Oct-Apr) to 89%. Soil moisture remains a concern as there was very little precipitation accumulation prior to the onset of snowpacks. This condition is constantly improving in areas of constant snowmelt and in areas melted out, is declining. Estimates of soil moisture range from 27% of saturation in the upper 24 inches of soil on the Beaver to 80% on the upper Provo. Low reservoir storage is also a concern with total reservoir storage at 49% of capacity, down 6% (321,000 Acre-Feet) from last year. Areas of greatest concern are the Bear and Sevier River basins with current storage of 12% and 31% respectively. Streamflow forecasts range from 7% to 70% of average. Surface Water Supply Indices range from 2% on the Bear River, Sevier and Moab areas to 45% over the western part of the Uintah Basin.

## SNOWPACK

May first snowpacks as measured by the NRCS SNOTEL system range from 42% on the Bear to 69% in southwestern Utah. Most areas are comparable to last year. About 50% of SNOTEL sites are currently bare of snow and all but the highest elevations will melt out within 2 weeks at current melt rates. The bright and optimistic side of the snowpack numbers is that we are not even close to the worst May 1 snowpack ever.

## PRECIPITATION

Mountain precipitation during April was below to near average in northern Utah (76%-99%). In southern Utah, precipitation ranged from 113% to 148% of average. This brings the seasonal accumulation (Oct-Apr) to 89% of average statewide.

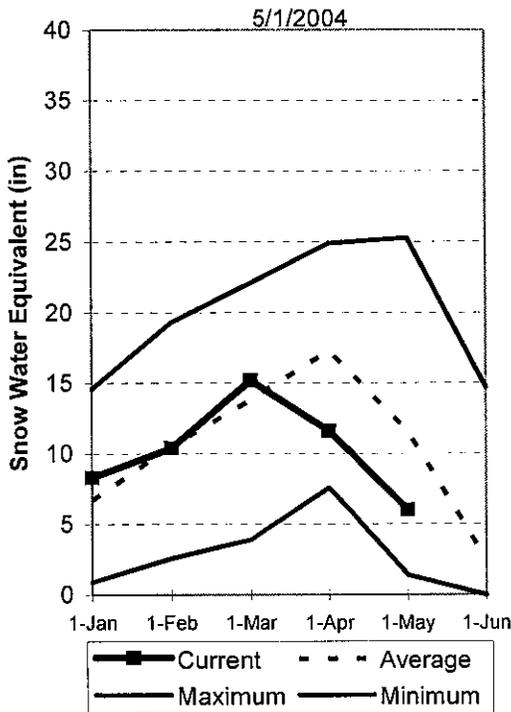
## RESERVOIRS

Storage in 41 of Utah's key irrigation reservoirs is at 49% of capacity, up only 4% from last month. This is down (6%) 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.

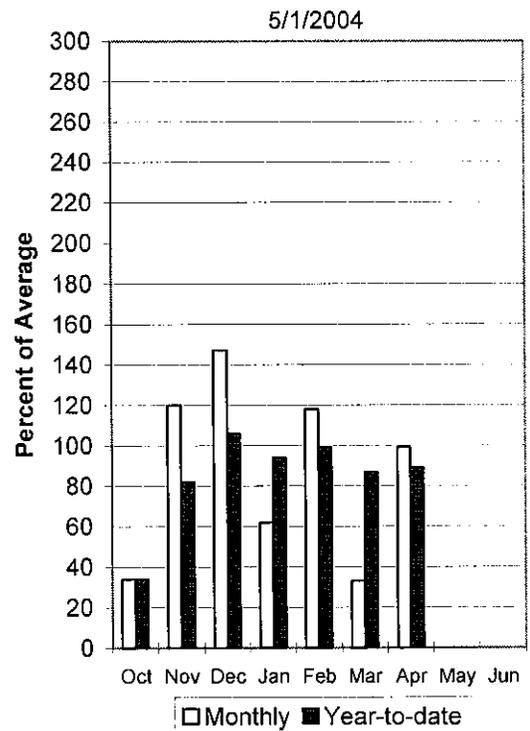
## STREAMFLOW

Snowmelt streamflows are expected to be much below average across the entire state of Utah this year. Forecast streamflows range from 7% on the Bear at Stewart dam to 70% on Little Cottonwood Creek. Most flows are forecast to be in the 30% to 50% range and have dropped about 10% from last month. Overall water supply conditions are much below normal.

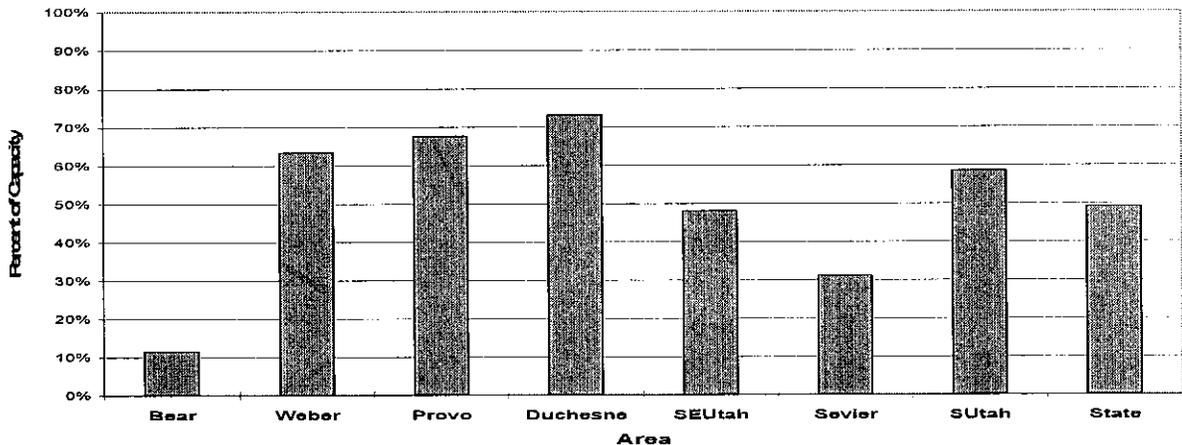
### Mountain Snowpack



### Precipitation



### Statewide Reservoir Storage

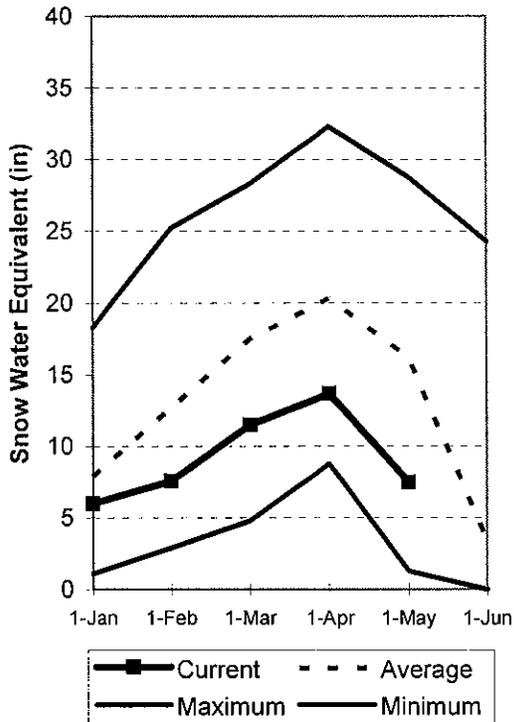


## Bear River Basin May 1, 2003

Snowpacks on the Bear River Basin are much below average at 46% of normal, about 86% of last year and down 21% relative to last month. Water supply conditions are similar to last year. Specific sites range from 0% to 75% of normal. Bear lake was only able to store 7,000 acre feet this past month. April precipitation was much below average at 54%, which brings the seasonal accumulation (Oct-Apr) to 75% of average. Forecast streamflows are for much below normal volumes this spring. Reservoir storage is at 29% of capacity, 16% (241,000 AF) less than last year. Water supply conditions are much below normal due to low snowpack and low reservoir storage.

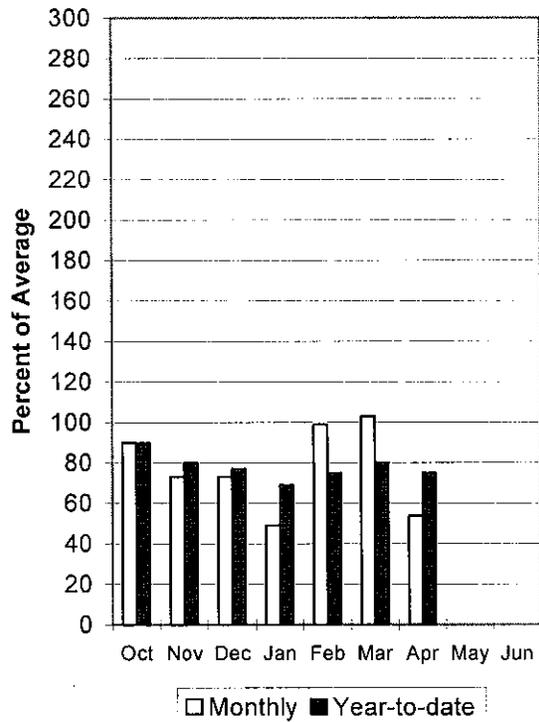
### Bear River Snowpack

5/1/2003



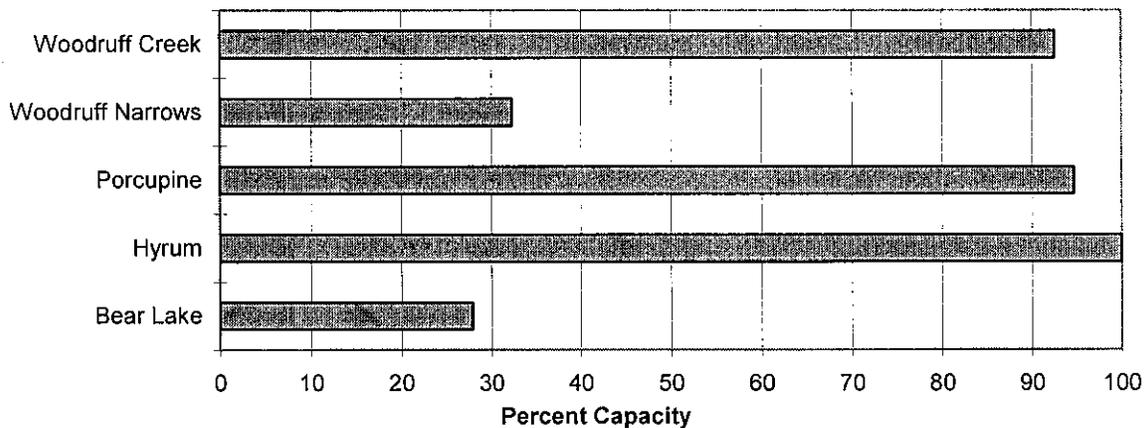
### Bear River Precipitation

5/1/2003



### Reservoir Storage

5/1/2003



BEAR RIVER BASIN  
Streamflow Forecasts - May 1, 2003

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Bear R nr UT-WY State Line	APR-JUL	54	59	62	53	65	70	116
Woodruff Narrows Res inflow	APR-JUL	15.0	25	32	24	40	55	136
Big Creek nr Randolph	APR-JUL	0.34	0.91	1.30	27	2.73	4.84	4.90
Smiths Fork nr Border	APR-JUL	35	41	45	44	50	57	103
Bear River blw Stewart Dam	APR-JUL	22	27	30	10	64	109	288
Little Bear River at Paradise	APR-JUL	9.7	11.3	12.5	27	13.8	16.1	46
Logan River nr Logan	APR-JUL	51	55	58	48	61	66	122
Blacksmith Fork nr Hyrum	APR-JUL	15.3	17.1	18.4	38	19.8	22	48

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of April					BEAR RIVER BASIN Watershed Snowpack Analysis - May 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	396.7	---	---	BEAR RIVER, UPPER (abv Ha	6	77	41
HYRUM	15.3	15.3	15.1	13.2	BEAR RIVER, LOWER (blw Ha	8	88	50
PORCUPINE	11.3	10.7	11.3	9.5	LOGAN RIVER	4	90	65
WOODRUFF NARROWS	57.3	18.5	18.5	38.5	RAFT RIVER	1	67	65
WOODRUFF CREEK	4.0	3.7	3.8	---	BEAR RIVER BASIN	14	83	46

\* 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.

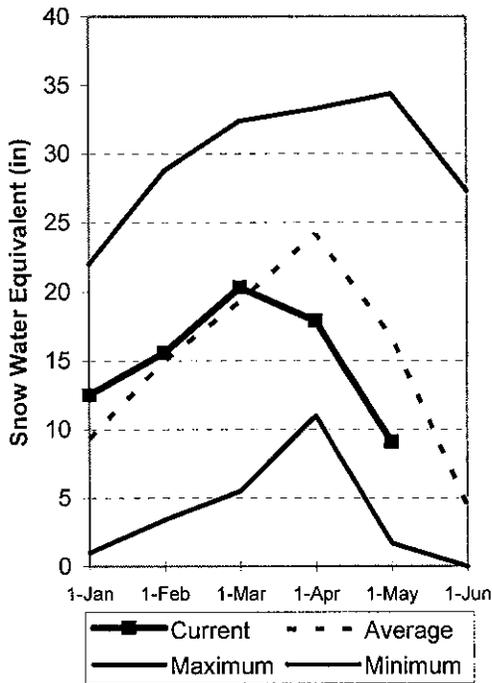
# Weber and Ogden River Basins

May 1, 2004

Snowpack on the Weber and Ogden Watersheds is much below normal at 54% of average, about 137% of last year and down 20% relative to last month. Individual sites range from 0% to 107% of average. April precipitation was below average at 76% bringing the seasonal accumulation (Oct-Apr) to 86% of average. Soil moisture levels in runoff producing areas are at 77% of saturation in the upper 2 feet of soil. Streamflow forecasts range from 22% to 50% of average. Reservoir storage is at 63% of capacity, about 1% more than last year. The Surface Water Supply Index is at 11% for the Weber River and at 25% for the Ogden River. Overall water supply conditions are much below normal due to low snowpack, reservoir storage and soil moisture conditions.

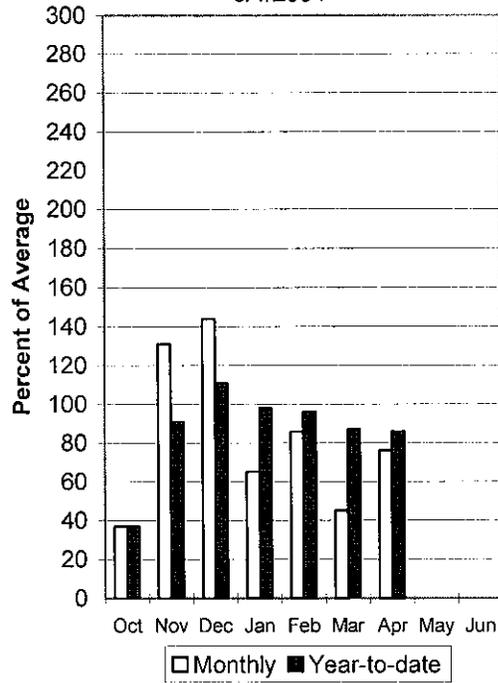
### Weber River Snowpack

5/1/2004



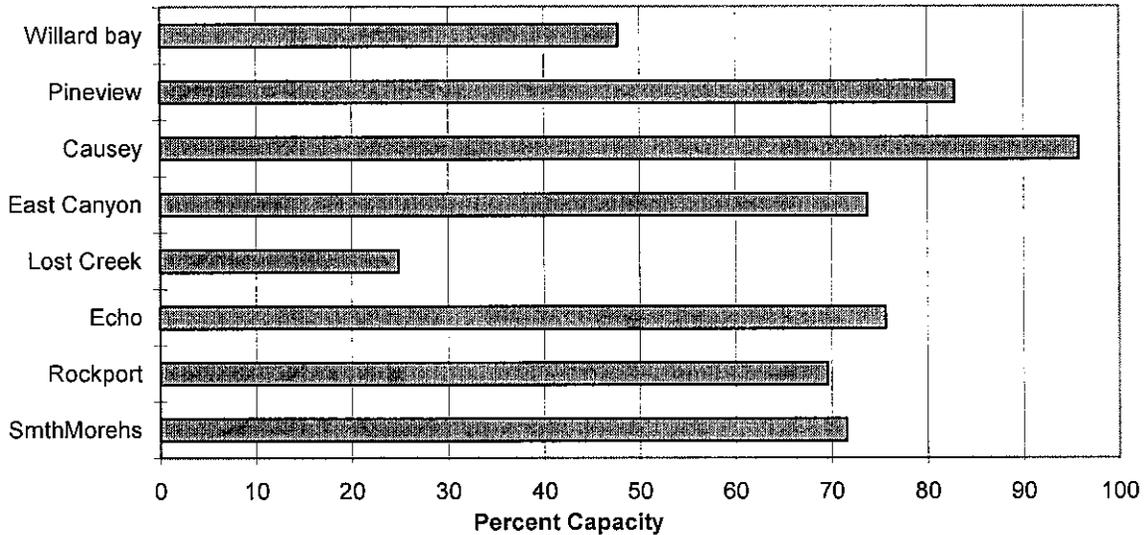
### Weber River Precipitation

5/1/2004



### Reservoir Storage

5/1/2004



WEBER & OGDEN WATERSHEDS in Utah  
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	Drier		Future Conditions		Wetter		30-Yr Avg. (1000AF)
		90%	70%	Chance Of Exceeding *		30%	10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Smith & Morehouse Res inflow	APR-JUL	12.2	14.6	16.3	48	18.0	20	34
Weber River nr Oakley	APR-JUL	38	47	53	43	59	68	123
Rockport Reservoir inflow	APR-JUL	26	37	45	34	53	64	134
Weber River nr Coalville	APR-JUL	24	35	42	31	49	60	137
Chalk Creek at Coalville	APR-JUL	7.5	9.0	10.0	22	15.0	22	45
Echo Reservoir inflow	APR-JUL	29	46	58	32	70	87	179
Lost Creek Reservoir inflow	APR-JUL	4.6	6.0	7.0	40	8.1	9.8	17.6
East Canyon Reservoir inflow	APR-JUL	10.2	12.4	14.0	45	15.7	18.4	31
Weber River at Gateway	APR-JUL	77	111	135	38	159	193	355
SF Ogden River nr Huntsville	APR-JUL	25	29	32	50	35	39	64
Pineview Reservoir inflow	APR-JUL	42	54	62	47	70	82	133
Wheeler Creek nr Huntsville	APR-JUL	1.60	2.20	2.60	41	3.00	3.60	6.30

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

WEBER & OGDEN WATERSHEDS in Utah  
Watershed Snowpack Analysis - May 1, 2004

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	6.8	4.9	4.0	OGDEN RIVER	4	180	55
EAST CANYON	49.5	36.5	33.7	40.5	WEBER RIVER	9	121	54
ECHO	73.9	55.9	47.1	52.9	WEBER & OGDEN WATERSHEDS	12	137	54
LOST CREEK	22.5	5.6	6.3	15.6				
PINEVIEW	110.1	91.2	68.2	77.7				
ROCKPORT	60.9	42.4	41.9	38.6				
WILLARD BAY	215.0	102.7	127.8	168.0				

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

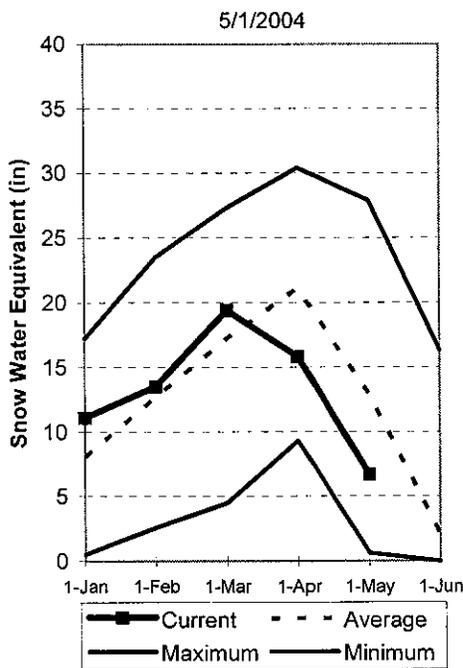
The average is computed for the 1971-2000 base period.

- (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.

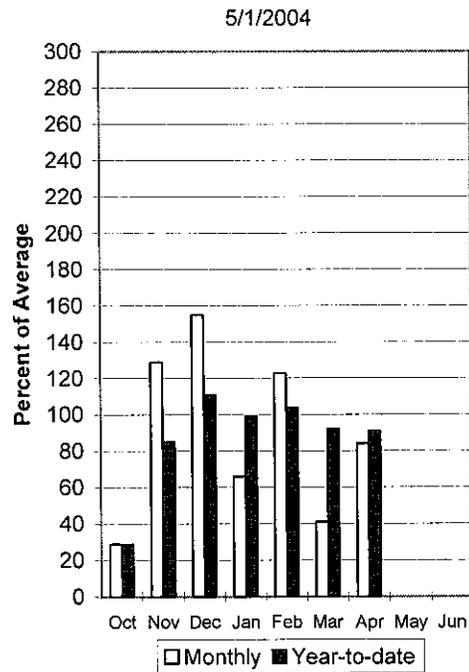
## Utah Lake, Jordan River & Tooele Valley Basins May 1, 2004

Snowpack over these watersheds is at 52% of average, 111% of last year and down 23% relative to last month. The upper Provo, the area of greatest water production, is at only 31% of average. Individual sites range from 0% to 105% of average. April precipitation was below average at 84%, bringing the seasonal accumulation (Oct-Apr) to 91% of average. Soil moisture levels in runoff producing areas are at 80% of saturation in the upper 2 feet of soil. Forecast streamflows range from 35% to 70% of average. Reservoir storage is at 68% of capacity, 3% less than last year. The Surface Water Supply Index is at 9%, or 91% of years would have more total water available. General water supply conditions are below normal due to low snowpack, reservoir storage and soil moisture.

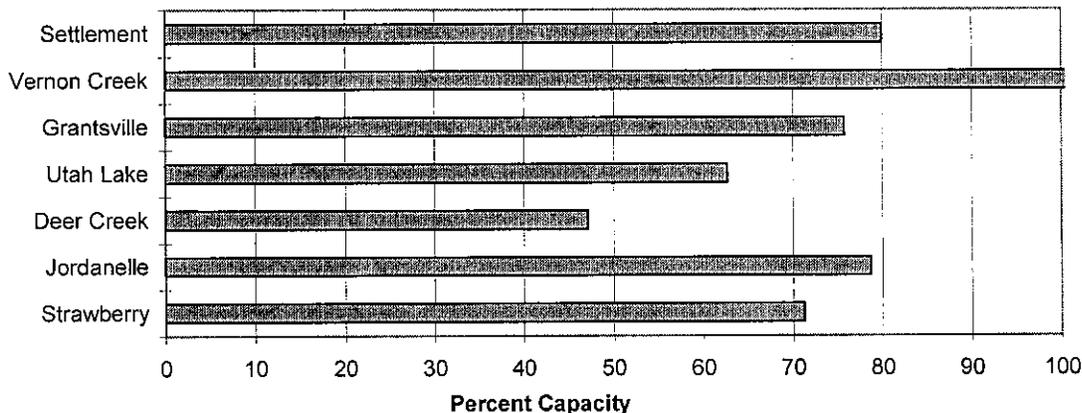
### Provo River Snowpack



### Provo River Precipitation



### Reservoir Storage 5/1/2004



UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Streamflow Forecasts - May 1, 2004

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)	
Spanish Fork River nr Castilla	APR-JUL	7.7	11.6	26	34	45	68	77
Provo River nr Woodland	APR-JUL	32	46	55	53	64	72	103
Provo River nr Hailstone	APR-JUL	24	42	53	49	64	81	109
Provo R blw Deer Creek Dam	APR-JUL	28	49	66	52	83	100	126
American Fk R nr American Fk	APR-JUL	11.2	13.7	16.0	50	18.3	23	32
Utah Lake inflow	APR-JUL	46	102	155	48	208	275	325
Little Cottonwood Ck nr SLC	APR-JUL	22	26	28	70	31	34	40
Big Cottonwood Ck nr SLC	APR-JUL	18.2	23	26	68	29	32	38
Mill Creek nr SLC	APR-JUL	1.54	2.50	3.50	50	4.50	6.10	7.00
Parley's Creek nr SLC	APR-JUL	2.2	4.8	7.5	45	10.2	13.0	16.7
Dell Fork nr SLC	APR-JUL	1.02	1.75	3.00	44	4.25	5.90	6.80
Emigration Creek nr SLC	APR-JUL	0.00	0.55	1.60	36	2.65	4.10	4.50
City Creek nr SLC	APR-JUL	1.39	1.75	3.00	35	4.25	5.90	8.70
Vernon Creek nr Vernon	APR-JUL	0.36	0.44	0.51	35	0.59	0.73	1.48
Settlement Creek nr Tooele	APR-JUL	0.61	0.70	0.76	39	0.83	0.93	1.97
South Willow Creek nr Grantsville	APR-JUL	1.17	1.60	1.90	59	2.20	2.60	3.23

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

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY  
Watershed Snowpack Analysis - May 1, 2004

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	70.6	93.6	119.4	PROVO RIVER & UTAH LAKE	7	72	25
GRANTSVILLE	3.3	2.5	2.2	2.8	PROVO RIVER	4	114	31
SETTLEMENT CREEK	1.0	0.8	0.9	0.7	JORDAN RIVER & GREAT SALT	6	127	70
STRAWBERRY-ENLARGED	1105.9	787.7	817.7	663.7	TOOELE VALLEY WATERSHEDS	3	116	60
UTAH LAKE	870.9	545.8	585.9	872.6	UTAH LAKE, JORDAN RIVER &	16	110	52
VERNON CREEK	0.6	0.7	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.

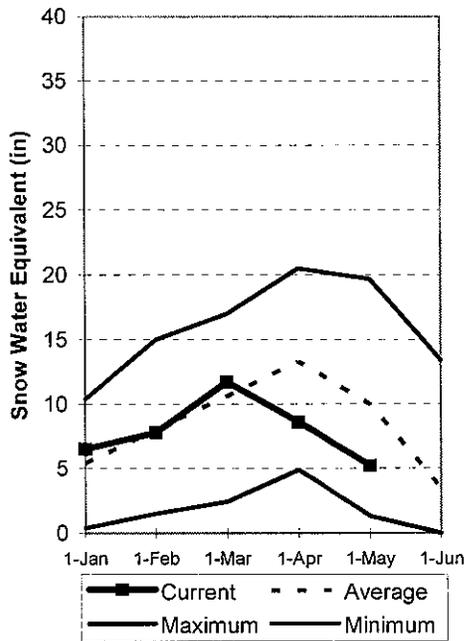
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## Uintah Basin and Dagget SCD's May 1, 2004

Snowpacks across the Uintah Basin and North Slope areas are much below average at 52%, which is 111% of last year, down 13% relative to last month. The North Slope ranges from 0% to 84% and the Uintah Basin ranges from 0% to 96% of average. Precipitation during April was near average at 99% bringing the seasonal accumulation (Oct-Apr) to 88% of average. Soil moisture estimates in runoff producing areas are at 65% of saturation in the upper 2 feet of soil. Reservoir storage is at 73% of capacity, 2% less than last year. The Surface Water Supply Index for the western area is 45% and for the eastern area it is 19% indicating normal on the west to poor conditions on the east. Streamflow forecasts range between 23% and 68% of average. Springtime runoff conditions are much below normal.

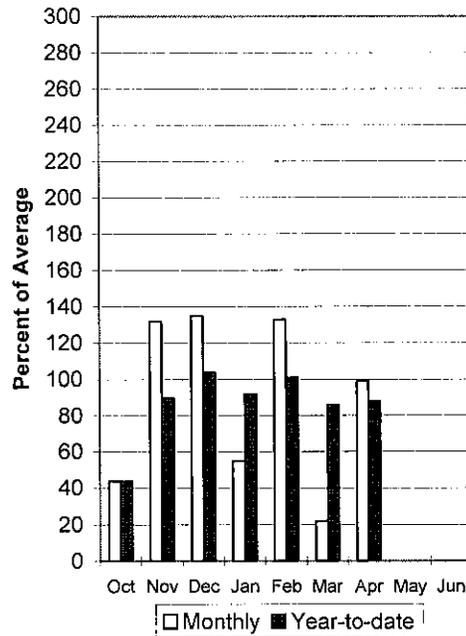
### Uintahs Snowpack

5/1/2004

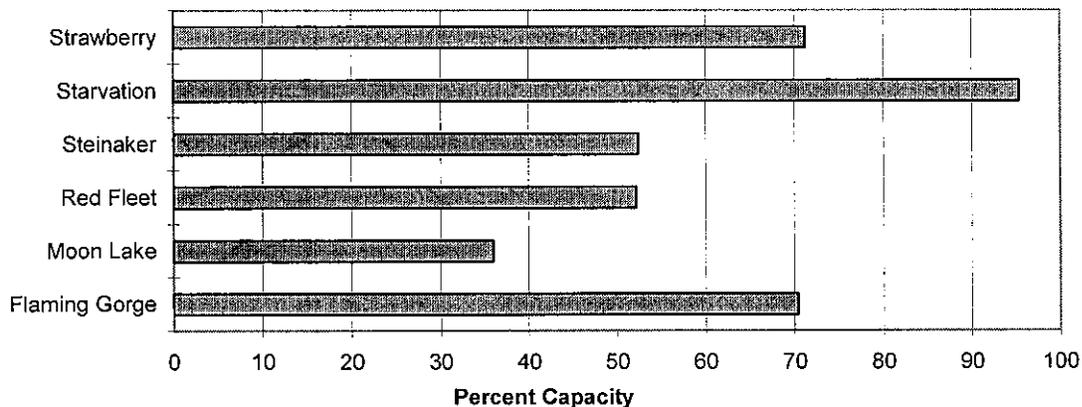


### Uintahs Precipitation

5/1/2004



### Reservoir Storage 5/1/2004



UINTAH BASIN & DAGGET SCD'S  
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		50% (Most Probable)		Wetter		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Blacks Fork nr Robertson	APR-JUL	38	48	54	57	60	70	95
EF of Smiths Fork nr Robertson	APR-JUL	14.2	15.7	16.8	54	18.0	19.8	31
Flaming Gorge Reservoir Inflow	APR-JUL	255	405	510	43	615	765	1190
BIG BRUSH CK abv Red Fleet Resv	APR-JUL	6.4	10.3	13.0	62	15.7	19.9	21
Ashley Creek nr Vernal	APR-JUL	19.0	27	32	62	37	45	52
WF DUCHESNE RIVER nr Hanna	APR-JUL	4.9	7.7	10.0	42	12.6	16.9	24
DUCHESNE R nr Tabiona	APR-JUL	33	42	48	46	54	63	105
UPPER STILLWATER RESV inflow	APR-JUL	30	41	48	59	55	66	82
ROCK CK nr Mountain Home	APR-JUL	34	44	51	57	58	68	89
DUCHESNE R abv Knight Diversion	APR-JUL	42	68	85	45	102	128	188
STRAWBERRY RES nr Soldier Springs	APR-JUL	10.0	15.0	19.0	32	23	31	59
CURRANT CREEK RESV Inflow	APR-JUL	2.5	5.4	7.6	30	9.8	13.1	25
STARVATION RESERVOIR inflow	APR-JUL	12.0	30	42	35	54	72	121
Lake Fork River abv Moon Lake	APR-JUL	32	40	46	68	52	60	68
Yellowstone River nr Altonah	APR-JUL	24	34	41	66	48	58	62
DUCHESNE R at Myton	APR-JUL	13.0	22	60	23	98	153	260
Whiterocks River nr Whiterocks	APR-JUL	19.3	29	36	64	43	53	56
DUCHESNE R nr Randlett	APR-JUL	16.0	46	75	23	165	300	325

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

UINTAH BASIN & DAGGET SCD'S  
Watershed Snowpack Analysis - May 1, 2004

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	2638.0	2673.0	2952.0	UPPER GREEN RIVER in UTAH	6	75	34
MOON LAKE	49.5	17.8	24.1	30.8	ASHLEY CREEK	2	48	8
RED FLEET	25.7	13.4	13.5	19.9	BLACK'S FORK RIVER	2	83	59
STEINAKER	33.4	17.5	11.9	25.0	SHEEP CREEK	1	0	7
STARVATION	165.3	157.6	157.2	139.7	DUCHESNE RIVER	11	125	59
STRAWBERRY-ENLARGED	1105.9	787.7	817.7	663.7	LAKE FORK-YELLOWSTONE CRE	4	121	83
					STRAWBERRY RIVER	4	3	0
					UINTAH-WHITEROCKS RIVERS	2	182	68
					UINTAH BASIN & DAGGET SCD	17	111	52

\* 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.

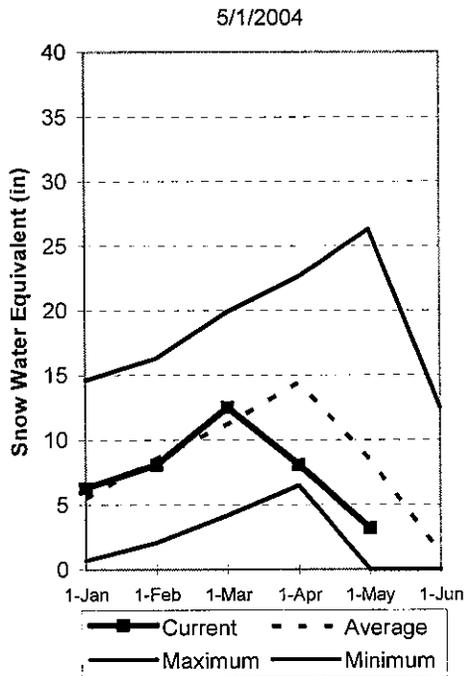
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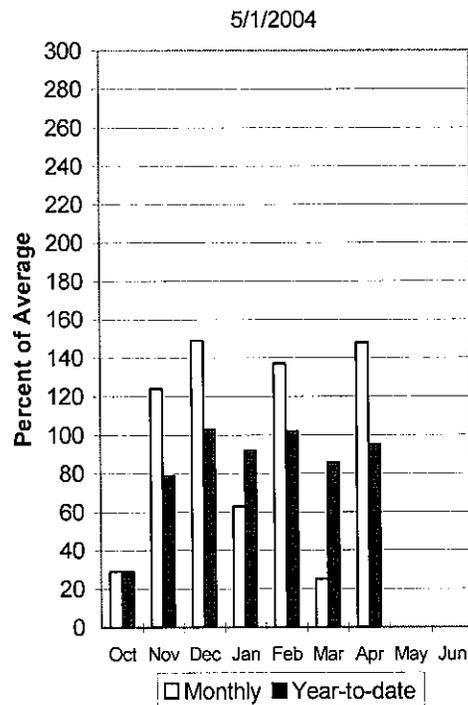
## Carbon, Emery, Wayne, Grand and San Juan Co. May 1, 2004

Snowpacks in this region are much below normal at 38% of average, about 77% of last year, down 18% relative to last month. Individual sites range from 0% to 111% of average. Precipitation during April was much above average at 148%, bringing the seasonal accumulation (Oct-Apr) to 95% of normal. Soil moisture estimates in runoff producing areas are at 74% of saturation in the upper 2 feet of soil. Forecast streamflows range from 29% to 55% of average. Reservoir storage is at 48% of capacity, up 8% from last year. Surface Water Supply Indices for the area are: Price 8%, (much below normal) San Rafael area 15% (much below average) and Moab 4% (much below average). General runoff and water supply conditions are much below to below normal.

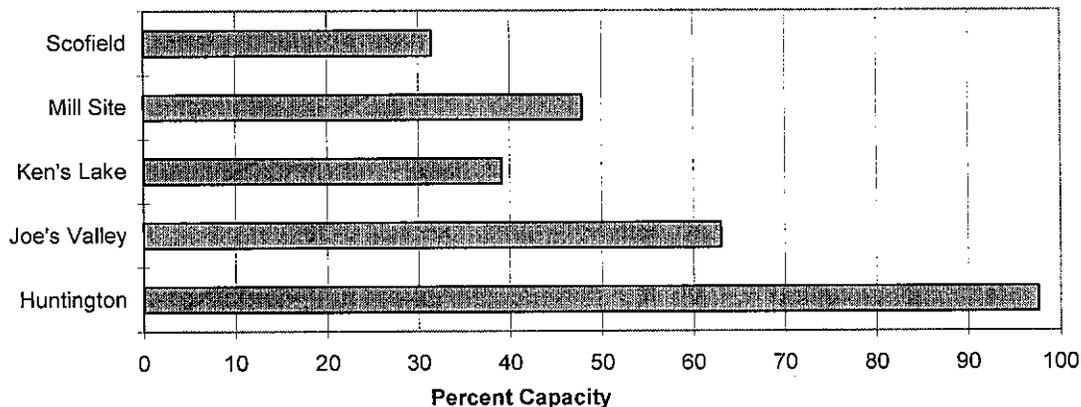
### Southeast Utah Snowpack



### Southeast Utah Precipitation



### Reservoir Storage 5/1/2004



CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.  
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Gooseberry Creek nr Scofield	APR-JUL	2.0	3.7	4.8	40	5.9	7.6	11.9
Scofield Reservoir inflow	APR-JUL	10.2	14.2	17.0	37	19.8	24	46
White River blw Tabbyune Creek	APR-JUL	3.5	4.0	5.0	29	6.4	8.7	17.4
Green River at Green River, UT	APR-JUL	550	1060	1400	44	1740	2250	3170
Electric Lake inflow	APR-JUL	4.2	5.4	6.4	41	7.5	9.2	15.7
HUNTINGTON CK nr Huntington	APR-JUL	11.8	16.7	20	40	23	28	50
JOE'S VALLEY RESV Inflow	APR-JUL	13.0	23	30	52	37	47	58
Ferron Creek nr Ferron	APR-JUL	11.7	15.6	20	51	24	28	39
Colorado River nr Cisco	APR-JUL	1620	2200	2600	56	3000	3580	4650
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	0.75	1.25	1.75	35	2.57	3.67	5.00
Seven Mile Creek nr Fish Lake	APR-JUL	2.00	2.70	3.60	51	4.50	5.70	7.00
Muddy Creek nr Emery	APR-JUL	4.6	7.7	9.8	49	11.9	15.0	19.9
North Ck ab R.S. nr Monticello	MAR-JUL	0.19	0.29	0.39	40	0.65	1.14	0.97
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.38	0.48	0.65	47	0.91	1.39	1.37
Recapture Ck bl Johnson Ck nr Blandi	MAR-JUL	1.41	1.77	2.30	46	3.50	5.20	5.05
San Juan River nr Bluff	APR-JUL	685	825	925	75	1025	1165	1230

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, 2004

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	4.0	4.1	PRICE RIVER	3	30	18
JOE'S VALLEY	61.6	38.8	24.2	41.9	SAN RAFAEL RIVER	3	85	52
KEN'S LAKE	2.3	0.9	0.9	1.6	MUDDY CREEK	1	78	31
MILL SITE	16.7	8.0	8.6	9.9	FREMONT RIVER	3	172	71
SCOFIELD	65.8	20.7	23.0	37.4	LASAL MOUNTAINS	1	35	7
					BLUE MOUNTAINS	1	0	13
					WILLOW CREEK	1	0	30
					CARBON, EMERY, WAYNE, GRA	13	77	38

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

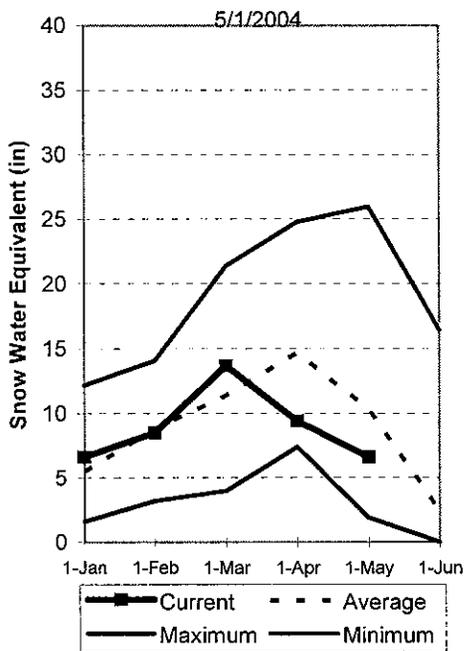
The average is computed for the 1971-2000 base period.

- (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.

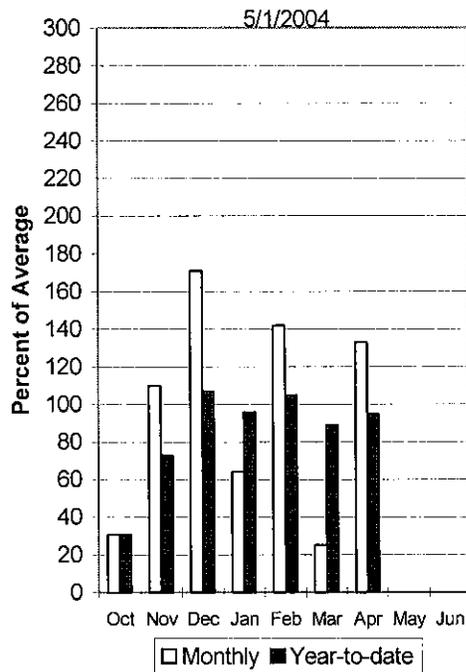
## Sevier and Beaver River Basins May 1, 2004

Snowpacks on the Sevier River Basin are much below normal at 64% of average, about 94% of last year, about the same as last month. Individual sites range from 0% to 111% of average. Low and mid elevation snowpacks are gone. Precipitation during April was much above average at 133% of normal, bringing the seasonal accumulation (Oct-Apr) to 95% of average. Soil moisture estimates in runoff producing areas are at 61% of saturation (Sevier) and 27% (Beaver) in the upper 2 feet of soil. Streamflow forecasts range from 16% to 52% of average. Reservoir storage is at 31% of capacity, 11% less than last year. Surface Water Supply Indices are: Upper Sevier 10%, Lower Sevier 17% and Beaver 20%. Water supply conditions remain much below normal due to low snowpack, reservoir storage and soil moisture.

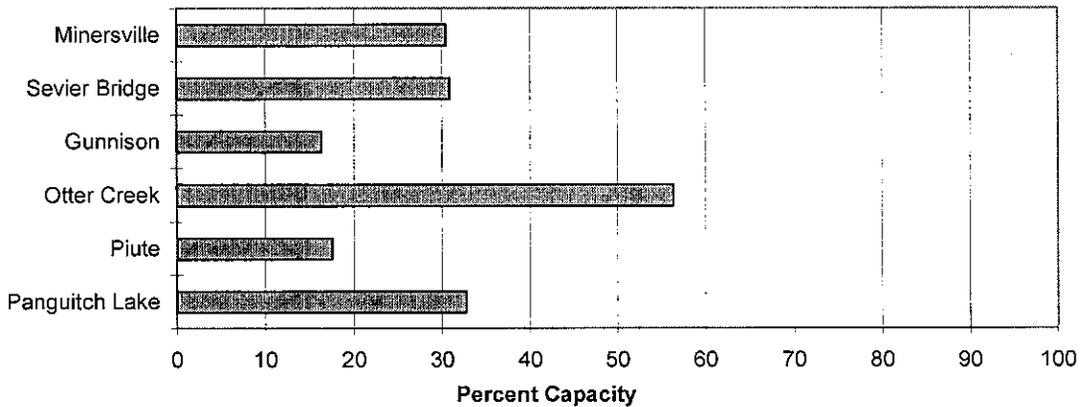
### Sevier River Snowpack



### Sevier River Precipitation



### Reservoir Storage 5/1/2004



SEVIER & BEAVER RIVER BASINS  
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		===== Wetter =====>>				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
Sevier River at Hatch	APR-JUL	14.3	19.0	25	46	31	39	55
Sevier River nr Kingston	APR-JUL	29	36	41	46	51	69	89
EF Sevier R nr Kingston	APR-JUL	4.6	10.6	18.0	47	25	43	38
Sevier R blw Piute Dam	APR-JUL	10.0	37	57	45	77	123	126
Clear Creek nr Sevier	APR-JUL	4.2	7.5	10.0	46	12.5	19.6	22
Salina Creek at Salina	APR-JUL			MUCH BELOW AVERAGE				19.7
Sevier R nr Gunnison	APR-JUL	64	81	109	39	194	335	280
Chicken Creek nr Levan	APR-JUL	0.90	1.17	1.39	31	1.63	2.04	4.50
Oak Creek nr Oak City	APR-JUL	0.39	0.55	0.67	40	0.80	1.02	1.66
Beaver River nr Beaver	APR-JUL	10.2	12.4	14.0	52	15.8	18.6	27
Minersville Reservoir inflow	APR-JUL	1.0	1.2	2.6	16	4.6	8.7	16.6

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

SEVIER & BEAVER RIVER BASINS  
Watershed Snowpack Analysis - May 1, 2004

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	3.3	3.6	15.7	UPPER SEVIER RIVER (south	8	127	70
MINERSVILLE (RkyFd)	23.3	7.1	6.0	18.0	EAST FORK SEVIER RIVER	3	191	80
OTTER CREEK	52.5	29.6	38.6	46.0	SOUTH FORK SEVIER RIVER	5	101	66
PIUTE	71.8	12.6	33.7	55.5	LOWER SEVIER RIVER (inclu	6	73	55
SEVIER BRIDGE	236.0	72.9	87.4	183.6	BEAVER RIVER	2	106	76
PANGUITCH LAKE	22.3	7.3	4.9	16.4	SEVIER & BEAVER RIVER BAS	16	97	64

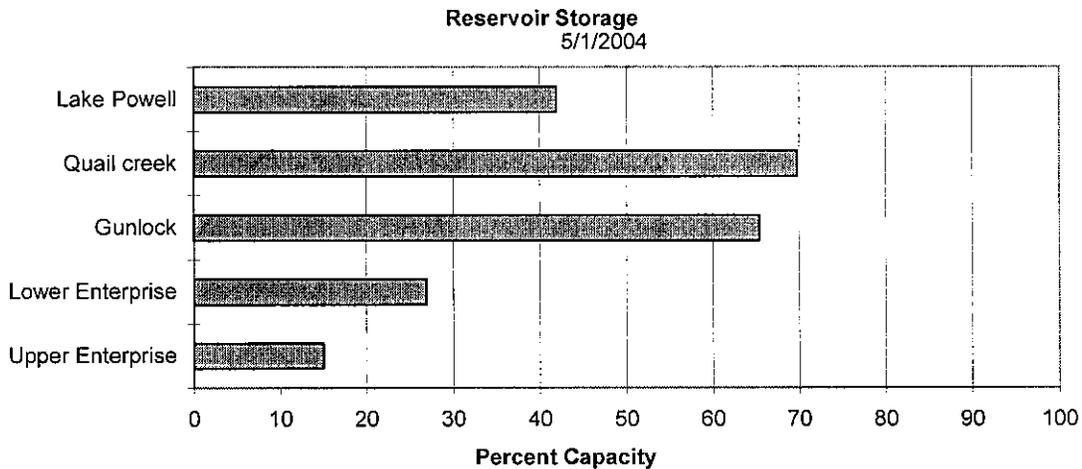
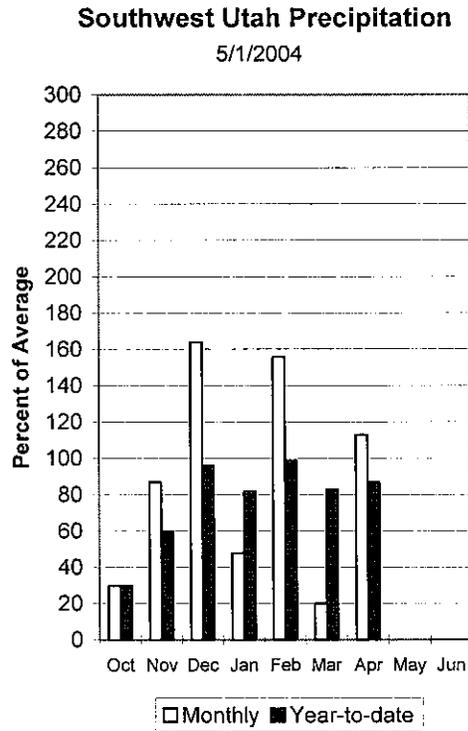
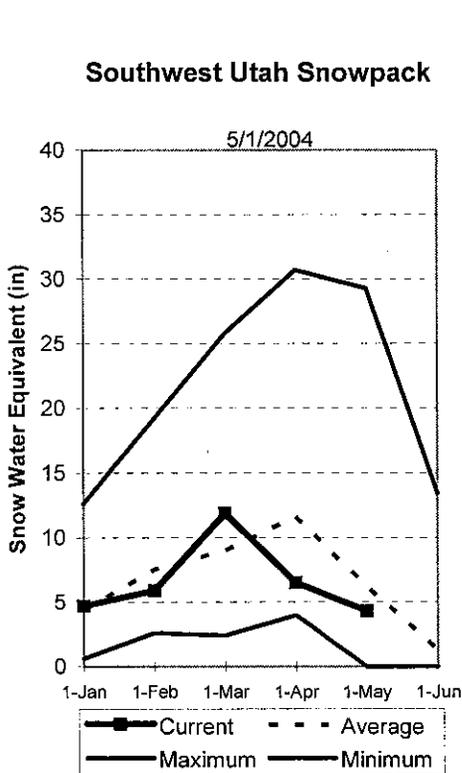
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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.

## E. Garfield, Kane, Washington, & Iron co. May 1, 2004

Snowpacks in this region are much below normal at 69% of average, about 119% of last year, up 13% relative to last month. Individual sites range from 0% to 102% of average. Precipitation was above normal during April at 113% of average, bringing the seasonal accumulation (Oct-Apr) to 87% of normal. Soil moisture estimates in runoff producing areas are at 61% of saturation in the upper 2 feet of soil. Forecast streamflows range from 30% to 46% of average. Reservoir storage is at 59% of capacity, 18% more than last year. The Surface Water Supply Index is at 24%, indicating much below normal water availability. Concerns remain over low reservoir storage, soil moisture and low snowpacks.



E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Streamflow Forecasts - May 1, 2004

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Lake Powell inflow	APR-JUL	1860	3010	3800	48	4590	5740	7930
Virgin River nr Virgin	APR-JUL	19.3	24	28	44	34	44	64
Virgin River nr Hurricane	APR-JUL	12.4	17.0	21	30	25	31	69
Santa Clara River nr Pine Valley	APR-JUL	1.59	2.01	2.50	46	3.04	4.00	5.50
Coal Creek nr Cedar City	APR-JUL	7.0	8.2	9.0	47	9.9	11.3	19.3

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

E. GARFIELD, KANE, WASHINGTON, & IRON Co.  
Watershed Snowpack Analysis - May 1, 2004

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	6.8	5.4	4.3	VIRGIN RIVER	5	98	60
LAKE POWELL	24322.0	10193.0	12238.0	---	PAROWAN	2	124	75
QUAIL CREEK	40.0	27.9	19.5	31.6	ENTERPRISE TO NEW HARMONY	2	0	0
UPPER ENTERPRISE	10.0	1.5	0.3	---	COAL CREEK	2	113	70
LOWER ENTERPRISE	2.6	0.7	0.7	1.1	ESCALANTE RIVER	2	207	108
					E. GARFIELD, KANE, WASHIN	9	124	69

\* 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.

<b>UTAH SURFACE WATER SUPPLY INDEX</b>	<b>NRCS SWSI/%</b>	<b>USDA Percentile</b>	<b>Years with Similar SWSI</b>
<b>Snow Surveys Basin or Region 1-May-04</b>			
Bear River	-3.98	2%	2003,93,92,91
Ogden River	-2.1	25%	01,02,00,66
Weber River	-3.3	11%	92,03,90,88
Provo	-3.5	9%	63,60,64,62
West Uintah Basin	-0.4	45%	94,88,03,95
East Uintah Basin	-2.6	19%	89,92,94,88
Price River	-3.5	8%	92,77.60.90
San Rafael	-2.9	15%	02,03,90,89
Moab	-3.8	4%	02,90,89,99
Upper Sevier River	-3.3	10%	71,60,59,91
Lower Sevier River	-2.7	17%	91,66,67,02
Beaver River	-2.5	20%	00,03,76,66
Virgin River	-2.2	24%	02,03,91,96

Snow Surveys

SWSI Scale: -4 to 4

Percentile: 0 -

100%

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Salt Lake City, UT  
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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 media 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.

DATA CURRENT AS OF:05/05/04 07:02:08

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

MAY 2004

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	5/01	0	0.0	0.0	1.8
ALTA CENTRAL	8800	4/27	56	28.6	24.3	36.5
BEAVER DAMS SNOTEL	8000	5/01	-	0.0	0.0	4.7
BEAVER DIVIDE SNOTEL	8280	5/01	0	0.0	0.0	3.2
BEN LOMOND PK SNOTEL	8000	5/01	40	22.5	13.5	37.1
BEN LOMOND TR SNOTEL	6000	5/01	0	0.0	0.0	6.8
BEVAN'S CABIN	6450	4/27	0	0.0	0.0	5.0
BIG FLAT SNOTEL	10290	5/01	58	18.1	16.2	20.9
BIRCH CROSSING	8100	4/26	2	0.5	0.2	1.4
BLACK FLAT-U.M. CK S	9400	5/01	0	0.0	1.6	7.1
BLACK'S FORK GS-EF	9340	4/26	7	2.7	5.3	8.6
BLACK'S FORK JUNCTN	8930	4/26	0	0.0	1.8	6.8
BOX CREEK SNOTEL	9800	5/01	14	6.7	4.7	10.3
BRIAN HEAD	10000	4/26	33	14.9	15.7	20.8
BRIGHTON SNOTEL	8750	5/01	27	10.5	11.6	25.0
BRIGHTON CABIN	8700	4/27	35	18.5	13.6	23.6
BROWN DUCK SNOTEL	10600	5/01	51	19.2	14.7	20.1
BRYCE CANYON	8000	5/01	0	0.0	0.0	-
BUCK FLAT SNOTEL	9800	5/01	24	8.0	9.4	15.6
BUCK PASTURE	9700	4/26	21	6.9	15.9	16.7
BUCKBOARD FLAT	9000	4/28	7	2.2	1.8	7.0
BUG LAKE SNOTEL	7950	5/01	26	10.2	10.7	18.0
BURT'S-MILLER RANCH	7900	4/26	0	0.0	0.0	1.3
CAMP JACKSON SNOTEL	8600	5/01	2	0.8	0.0	6.4
CASCADE MOUNTAIN SNO	7770	5/01	7	0.7	1.8	-
CASTLE VALLEY SNOTEL	9580	5/01	8	2.0	0.0	7.5
CHALK CK #1 SNOTEL	9100	5/01	33	13.2	15.7	25.3
CHALK CK #2 SNOTEL	8200	5/01	12	4.3	6.4	12.0
CHALK CREEK #3	7500	4/26	0	0.0	0.0	1.8
CHEPETA SNOTEL	10300	5/01	-	10.1	4.3	12.1
CLAYTON SPRINGS SNTL	10000	5/01	15	5.3	2.7	-
CLEAR CK RIDG #1 SNT	9200	5/01	13	6.2	12.1	15.7
CLEAR CK RIDG #2 SNT	8000	5/01	0	0.0	3.8	7.9
CORRAL	8200				-	-
CURRANT CREEK SNOTEL	8000	5/01	0	0.0	0.0	2.6
DANIELS-STRAWBERRY S	8000	5/01	0	0.0	0.0	9.5
DILL'S CAMP SNOTEL	9200	5/01	8	2.9	3.7	9.4
DONKEY RESERVOIR SNO	9800	5/01	19	4.3	2.6	4.2
DRY BREAD POND SNTL	8350	5/01	-	8.3	5.1	18.3
DRY FORK SNOTEL	7160	5/01	-	2.5	0.2	7.7
EAST WILLOW CREEK SN	8250	5/01	7	0.9	0.0	3.0
FARMINGTON U. SNOTEL	8000	5/01	67	34.1	22.5	31.8
FARMINGTON LOWER SC	6950	4/27	50	23.7	12.1	22.4
FARMINGTON L. SNOTEL	6780	5/01	16	7.0	-	-
FARNSWORTH LK SNOTEL	9600	5/01	65	22.0	20.5	21.1
FISH LAKE	8700	4/26	0	0.0	1.2	5.0
FIVE POINTS LAKE SNO	10920	5/01	35	15.1	11.5	17.5
G.B.R.C. HEADQUARTER	8700	4/26	12	5.1	10.2	14.2
G.B.R.C. MEADOWS	10000	4/26	51	22.2	21.1	25.8
GARDEN CITY SUMMIT	7600	4/27	27	10.7	9.6	14.7
GEORGE CREEK	8840				-	-
GOOSEBERRY R.S.	8400	4/26	4	1.3	9.5	8.3
GOOSEBERRY R.S. SNTL	7900	5/01	1	0.3	0.0	2.7
HARDSCRABBLE SNOTEL	7250	5/01	-	0.0	0.0	6.9
HARRIS FLAT SNOTEL	7700	5/01	0	0.0	0.0	1.5
HAYDEN FORK SNOTEL	9100	5/01	0	0.0	4.4	13.0
HENRY'S FORK	10000	4/26	16	5.2	11.0	13.6
HEWINTA SNOTEL	9500	5/01	6	0.7	3.9	9.3
HICKERSON PARK SNTL	9100	5/01	3	0.4	0.0	5.7
HIDDEN SPRINGS	5500	4/28	0	0.0	-	-
HOBBLE CREEK SUMMIT	7420	4/26	0	0.0	0.0	6.3
HOLE-IN-ROCK SNOTEL	9150	5/01	1	0.2	2.0	4.7
HORSE RIDGE SNOTEL	8260	5/01	14	5.4	4.1	17.9
HUNTINGTON-HORSESHOE	9800	4/26	42	17.6	19.8	24.6
INDIAN CANYON SNOTEL	9100	5/01	2	0.1	2.9	7.9
JOHNSON VALLEY	8850	4/26	2	0.6	0.0	3.8
JONES CORRAL G.S.	9720				-	-

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
KILFOIL CREEK	7300	4/27	16	6.9	2.1	9.8
KILLYON CANYON	6300	4/28	0	0.0	-	-
KIMBERLY MINE SNOTEL	9300	5/01	17	6.3	10.4	12.5
KING'S CABIN SNOTEL	8730	5/01	0	0.0	0.0	7.6
KLONDIKE NARROWS	7400	4/27	0	0.0	0.7	13.3
KOLOB SNOTEL	9250	5/01	26	8.9	11.9	18.2
LAKEFORK #1 SNOTEL	10100	5/01	22	8.5	8.6	11.5
LAKEFORK BASIN SNTL	10900	5/01	51	17.8	15.1	23.8
LAKEFORK MOUNTAIN #3	8400	4/26	0	0.0	0.0	1.8
LAMBS CANYON	7400	4/28	3	1.1	0.6	8.7
LASAL MOUNTAIN LOWER	8800	4/29	0	0.0	0.0	4.2
LASAL MOUNTAIN SNTL	9850	5/01	5	0.6	1.7	8.7
LILY LAKE SNOTEL	9050	5/01	0	0.0	3.3	11.1
LITTLE BEAR LOWER	6000	4/27	0	0.0	0.0	1.7
LITTLE BEAR SNOTEL	6550	5/01	-	0.0	0.0	3.4
LITTLE GRASSY SNOTEL	6100	5/01	-	0.0	0.0	.0
LONG FLAT SNOTEL	8000	5/01	-	0.0	0.0	1.8
LONG VALLEY JCT. SNT	7500	5/01	-	0.0	0.0	.0
LOOKOUT PEAK SNOTEL	8200	5/01	-	21.5	15.5	20.4
LOST CREEK RESERVOIR	6130	4/27	0	0.0	0.0	.0
LOUIS MEADOW SNOTEL	6700	5/01	0	0.0	0.0	-
MAMMOTH-COTTONWD SNT	8800	5/01	2	1.0	10.6	16.0
MERCHANT VALLEY SNTL	8750	5/01	10	3.8	4.4	8.1
MIDDLE CANYON	7000	4/27	3	0.9	0.0	7.8
MIDWAY VALLEY SNOTEL	9800	5/01	44	21.0	18.6	23.2
MILL CREEK	6950	4/28	35	16.0	12.1	18.6
MILL-D NORTH SNOTEL	8960	5/01	-	10.7	11.1	21.7
MILL-D SOUTH FORK	7400	4/28	1	0.2	0.0	12.4
MINING FORK SNOTEL	8000	5/01	24	11.8	9.6	18.3
MONTE CRISTO SNOTEL	8960	5/01	45	19.2	9.2	28.3
MOSBY MTN. SNOTEL	9500	5/01	18	6.3	4.7	12.0
MT. BALDY R.S.	9500	4/26	49	19.9	21.0	24.6
MUD CREEK #2	8600	4/26	13	5.3	7.9	8.4
OAK CREEK	7760	4/26	9	3.6	9.3	8.4
PANGUITCH LAKE R.S.	8200	4/26	0	0.0	0.0	-
PARLEY'S CANYON SNTL	7500	5/01	0	0.0	0.0	9.3
PARRISH CREEK SNOTEL	7740	5/01	42	18.4	13.4	-
PAYSON R.S. SNOTEL	8050	5/01	0	0.0	1.9	13.3
PICKLE KEG SNOTEL	9600	5/01	21	7.5	12.0	14.1
PINE CREEK SNOTEL	8800	5/01	-	13.4	17.5	21.2
RED PINE RIDGE SNTL	9200	5/01	7	1.0	6.6	13.0
REDDEN MINE LOWER	8500	4/26	7	3.2	4.8	15.6
REES'S FLAT	7300	4/26	0	0.0	2.5	7.3
ROCK CREEK SNOTEL	7900	5/01	-	0.0	0.0	1.4
ROCKY BN-SETTLEMT SN	8900	5/01	34	17.0	15.2	25.3
SEELEY CREEK SNOTEL	10000	5/01	32	14.0	11.2	15.5
SMITH MOREHOUSE SNTL	7600	5/01	0	0.0	0.0	7.5
SNOWBIRD SNOTEL	9700	5/01	80	42.4	30.8	41.3
SPIRIT LAKE	10300	4/26	26	11.1	9.4	14.7
SQUAW SPRINGS	9300	4/26	0	0.0	1.3	3.7
STEEL CREEK PARK SNO	10100	5/01	45	15.7	15.8	18.6
STILLWATER CAMP	8550	4/26	0	0.0	0.4	6.8
STRAWBERRY DIVIDE SN	8400	5/01	0	0.0	0.0	11.3
SUSC RANCH	8200	4/26	0	0.0	0.0	2.2
TALL POLES	8800	4/26	15	7.1	6.8	10.9
TEMPLE FORK SNOTEL	7410	5/01	0	0.0	1.8	-
THAYNES CANYON SNTL	9200	5/01	34	14.5	12.3	22.5
THISTLE FLAT	8500				-	-
TIMBERLINE	9100				-	-
TIMPANOGOS DIVIDE SN	8140	5/01	11	2.4	1.7	17.6
TONY GROVE LK SNOTEL	8400	5/01	40	21.0	25.6	34.2
TONY GROVE R.S.	6250	4/27	0	0.0	0.0	3.2
TRIAL LAKE	9960	4/26	37	16.8	14.8	25.2
TRIAL LAKE SNOTEL	9960	5/01	30	15.1	12.4	26.5
TROUT CREEK SNOTEL	9400	5/01	4	1.3	2.7	7.8
UPPER JOES VALLEY	8900	4/26	0	0.0	0.7	5.0
VERNON CREEK SNOTEL	7500	5/01	0	0.0	0.0	4.5
VIPONT	7670				-	-
WEBSTER FLAT SNOTEL	9200	5/01	0	0.0	0.0	6.8
WHITE RIVER #1 SNTL	8550	5/01	0	0.0	1.7	7.7
WHITE RIVER #3	7400	4/26	0	0.0	0.0	.5
WIDTSONE #3 SNOTEL	9500	5/01	22	10.5	4.4	9.5
WRIGLEY CREEK	9000	4/26	10	3.5	5.2	7.3
YANKEE RESERVOIR	8700	4/26	3	0.8	2.2	6.0



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