Mountain Snow Conditions and Water Supply Forecasts for Alberta

March 2001

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Notes

Alberta Environment publishes the **"Mountain Snow Conditions and Water Supply Forecasts for Alberta"** monthly, usually from February to August. These reports are prepared by the Water Sciences Branch, Hydrology/Forecasting Section of the Department's Water Management Division.

Alberta Environment is grateful for the assistance of Environment Canada's Climatological Services Unit and Water Resources Branch in providing weather, precipitation and streamflow data. Snow survey data are also provided by the United States, Soil Conservation Service of Montana and the British Columbia Ministry of Environment, Lands and Parks. The assistance of a number of private citizens who diligently report observations of precipitation and other data is also appreciated.

Alberta Environment and the National Resources Conservation Service (NRCS) from Portland, Oregon are collaborating on the Water Supply Forecasts for the Milk and St. Mary Rivers. Water Supply forecasts for the Western United States are available through the NRCS web page: http://www.wcc.nrcs.usda.gov/water/w_qnty.html

All data summarized in this publication are preliminary and subject to revision**Data used in this report are available on request from: Alberta Environment, Water Sciences Branch, Hydrology/Forecasting Section, 10th Fl, Oxbridge Place, 9820 -106 Street, Edmonton,** Alberta, T5K 2J6, **Fax: (780) 422-8606**

This report is also available through Alberta Environment's automated streamflow information/fax-on-demand service. To access this service toll-free, please call the Alberta Government RITE Operator at 310-0000, available 24 hours a day from anywhere in the province. At the prompt, enter the phone number **207-2718** for our streamflow information/fax on demand service.

Historical Streamflow Information: Environment Canada, Calgary, (403) 292-5317

Equivalents of Measure

Parameter	Metric Unit	Conversion to Imperial Units
Snow depth	centimetres	2.54 cm = 1 inch
Water Equivalent	millimetres	25.4 mm = 1 inch
Elevation	metres	1 m = 3.2808 feet
Streamflow	cubic metres per second	1 cms = 35.3 cfs
Volume	cubic decametre (dam^3)	1 dam^3=1000 m^3= 0.8107 acre-feet

Explanation of Descriptions

Much-above-average	In the upper 15% of recorded values
Above-average	Between the upper 15% and 35% of recorded values
Below-average	Between the lower 15% and 35% of recorded values
Much-below-average	In the lower 15% of recorded values

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Overview

Below to much-below-normal precipitation amounts were recorded in many areas of the province in February. Precipitation remains much-below-normal for the winter season (November 2000 to February 2001). Current predictions from Environment Canada are for above-normal precipitation for the March to May period in southern Alberta.

The March 1 Mountain snowpack was much-below-average in all areas along the eastern slopes. A majority of the measurements completed at the end of February set new historic minimum values. The only area along the mountains and foothills to have near normal accumulations is the Sundre area.

Fall precipitation (September to October 2000) was near normal in the south and below-normal in central regions and the foothills of western Alberta. The lack of precipitation since April 2000 in southern Alberta resulted in much-below-average soil moisture conditions heading into the winter season.

Water storage as of March 1, 2001 in the major irrigation and hydroelectric reservoirs in the Bow, Red Deer and North Saskatchewan River basins is normal for this time of the season. The exceptions are: Lake Abraham, which is above-normal and Spray Lake and Travers Reservoir, which are below-normal. In the Oldman River basin, reservoirs are below-normal except for Keho Lake, which is normal.

As of March 1, 2001, much-below-average March to September natural streamflow volume is forecast for the Milk, Oldman, Bow, Red Deer, and North Saskatchewan River headwaters.

February Climatic Conditions

Below to much-below-normal precipitation amounts were recorded in many areas of the province in February (Figures 1 and 2). Precipitation values ranged from 13 to 213 % of normal during the month. Eastern areas of the province and Kananaskis Country recorded normal to above-normal precipitation during the month. Temperatures were below-normal during the month of February. Precipitation remains much-below-normal for the winter season (November 2000 to February 2001) (Figures 3 and 4).

Long-Lead Precipitation Outlook

Environment Canada is forecasting above-normal precipitation in the March to May period for southern Alberta and below-normal precipitation in the Peace Country. The National Oceanic and Atmospheric Administration (NOAA) is forecasting normal precipitation for the March to May period. Preliminary forecasts by Environment Canada for the 2001 summer (June to August) are for above-normal precipitation in the southern two-thirds of Alberta, while NOAA is predicting normal precipitation across the province. La Niña conditions strengthened late in 2000 and remained strong in January.

Summer Water Supply Volume Forecast

Fall Precipitation

Fall precipitation (September to October) was near normal in southern areas of the province (Figures 5 and 6). Central regions recorded below-normal fall precipitation and the foothills of western Alberta received below-normal to much-below-normal fall precipitation in 2000. The lack of precipitation since April 2000 in southern Alberta has resulted in soil moisture conditions being much-below-average heading into the winter season.

Mountain Snowpack

The March 1 Mountain snowpack remains much-below-average in all areas along the eastern slopes. Of the 35 mountain snow courses measured in Alberta during the last week of February, 22 recorded new historical minimums, with the majority of these sites located south of the Red Deer River. The Highwood, Elbow and Kananaskis headwaters continue to be well below the previous recorded minimum values. Snowpack conditions did improve slightly in February, however most mountain and foothill areas received between 70% and 100% of normal precipitation for the month and remain much-below-average for this time of the year.

The only area along the mountains and foothills to have near normal accumulations is the Sundre-Rocky Mountain House area, where an isolated December snowfall accounted for most of the precipitation. The mountain snowpack conditions are shown in Figure 7 and are summarized in Table 1.

Snow pillow sites track snow accumulation in real-time. These plots are located on the department website at: (www.gov.ab.ca/env/water/WSWaterReports/Index.html).

Table 1 Mountain Snowpack Conditions as of March 1, 2001

Area	Snowpack Conditions (percent of Average)
Waterton/St. Mary River Headwaters	50 to 60%
Oldman River Headwaters	35 to 50%
Highwood/Kananaskis River headwaters	35 to 45%
Bow River Headwaters	40 to 55%
Red Deer River Headwaters	35 to 90%
North Saskatchewan River Headwaters	35 to 45%
Athabasca River Headwaters	45 to 55%
Smoky River Headwaters	45 to 60%

Average = 100%

Water Supply Volume Forecasts

As of March 1, 2001, much-below-average March to September natural streamflow volume is forecast for the Milk, Oldman, Bow, Red Deer, and North Saskatchewan River headwaters. These forecasts assume that precipitation over the summer period will be normal. The natural streamflow volume forecasts for 2001 and the actual 2000 volumes are presented in Table 2.

Due to the very dry conditions in southern Alberta, this year's water supply forecasts have been extended to include March and April into the forecast period. Therefore, forecasts are based on the March to September natural flow volumes. A March to June forecast has also been provided for the South Saskatchewan Basin.

Precipitation will have a major impact on the summer water supply forecast between now and the end of September. Streamflow volume forecasts will be updated monthly until mid-summer. Check our Forecaster's Comments web page throughout the month for updated information regarding runoff conditions.

Table 2 Water Supply Volume Forecasts as of March 1, 2001

Location	March to September 2001 Natural Streamflow Volume Forecasts as a percent of Average	May-September 2000 Actual Natural Streamflow Volumes as a percent of Average
Milk River at Milk River*	22*	26*
Oldman River at Lethbridge	49	51
Bow River at Calgary	78	77
Red Deer River at Red Deer	55	61
North Saskatchewan River at Edmonton	72	82

* The value for Milk River is compared to the median for the period March 1 to September 30

Milk River Basin

Conditions varied in the Milk River basin in February. Locations such as Del Bonita received above-normal precipitation while others (Babb) were below-normal (Figures 1 and 2). Precipitation remains much-below-normal during the winter season (November to February) (Figures 3 and 4).

Much-below-average natural runoff volumes are forecast for the March to September 2001 period (Table 3). Forecasted values did not change significantly from those produced in February. Current forecasted values for the March to September period in the Milk River basin would rank sixth lowest in 84-years of record (1912-95).

Table 3 Water Supply Forecast as of March 1, 2001 - Milk River Basin (Natural Flows)

Locations	Volume Forecast for March 1 to September 30					2000 Actual March to September Volume as a % of Median
	Volume in dam^3	Volume in acre-feet	Volume as a % of Median	Probable Range as a % of Median	Reasonable Minimum As % of Median	
Milk River at Western Crossing	12,700	10,300	22	15-79	10	31
Milk River at Milk River	21,200	17,200	22	15-78	10	26
Milk River at Eastern Crossing	26,000	21,100	22	14-79	9	23

Median is calculated for the March 1 to September 30 period from 1912 to 1995

NOTE: There is: a 50% chance that the actual natural flow will fall within the probable range given; a 25% chance that the actual flow will be less than the lower bound of the probable range given; and a 10% chance that the actual natural flow will be less than the reasonable minimum. Actual day to day streamflow conditions may vary throughout the season as a result of the effects of streamflow diversion and reservoir storage.

Oldman River Basin

Precipitation was below-normal in the Oldman River basin during February (Figures 1 and 2). Most sites received 60% to 80% of normal precipitation during February. Eight snow course measurements were made in the basin during the last week of February, of which, five sites recorded new historical minimums (Table 4).

Table 4 March 2001 Snow course measurements in the Oldman River Basin

Station Name	Mar 1/01 SWE(mm)	% of Avg.	Max SWE(mm)	Min SWE(mm)	Avg. SWE(mm)	Years of Data	Mar 1/01 Ranking (lowest to highest)
Akamina	272	60	714	254	457	21	3
Allison Pass	189	47	625	236	403	21	1
Gardiner HW	283	43	1008	409	665	14	1
Lee Creek	69	55	320	13	125	29	8
South Racehorse	189	51	488	244	373	8	1
West Castle	187	59	460	185	316	19	2
Wilkinson Bush	78	45	307	89	175	16	1
Wilkinson Open	55	45	221	66	121	16	1

Much-below-average natural runoff volumes are forecast for the March to September 2001 period. These forecasts assume normal precipitation over the spring and summer period. Natural flow volumes are higher for the March to September period compared to the March to June period because of the assumption of normal precipitation from July to September. Current forecasted values for the March to September period in the Oldman River basin would rank ninth lowest in the recorded values over an 84-year period (1912-95). Natural volume forecasts for the March to June period are provided in Table 5 and the March to September volumes are located in Table 6.

Table 5 Water Supply Forecast as of March 1, 2001 - Oldman River Basin (Natural Flows)

Locations	Volume Forecast for March 1 to June 30				
	Volume in dam^3	Volume in acre-feet	Volume as a % of Average	Probable Range as a % of Average	Reasonable Minimum as a % of Average
St. Mary River	283,000	229,000	54	39-72	34
Belly River	111,000	90,000	68	46-81	39
Waterton River	291,000	236,000	60	44-76	28
Oldman River near Brocket	296,000	240,000	35	28-54	26
Oldman River near Lethbridge	981,000	795,000	46	34-62	28

Average is calculated for the period 1912 to 1995

NOTE: There is: a 50% chance that the actual natural flow will fall within the probable range given; a 25% chance that the actual flow will be less than the lower bound of the probable range given; and a 10% chance that the actual natural flow will be less than the reasonable minimum. Actual day to day streamflow conditions may vary throughout the season as a result of the effects of streamflow diversion and reservoir storage.

Table 6 Water Supply Forecast as of March 1, 2001 - Oldman River Basin (Natural Flows)

Locations	Volume Forecast for March 1 to September 30					2000 Actual May – September Volume as a % of Average
	Volume in Dam^3	Volume in Acre-feet	Volume as a % of Average	Probable Range as a % of Average	Reasonable Minimum as a % of Average	
St. Mary River	443,000	359,000	58	44-81	33	69
Belly River	172,000	139,000	70	51-87	42	73
Waterton River	394,000	319,000	60	46-82	30	59
Oldman River near Brocket	455,000	369,000	41	33-65	28	46
Oldman River near Lethbridge	1,464,000	1,187,000	49	38-70	29	51

Average is calculated for the period 1912 to 1995

NOTE: There is: a 50% chance that the actual natural flow will fall within the probable range given; a 25% chance that the actual flow will be less than the lower bound of the probable range given; and a 10% chance that the actual natural flow will be less than the reasonable minimum. Actual day to day streamflow conditions may vary throughout the season as a result of the effects of streamflow diversion and reservoir storage.

The lack of precipitation since last spring has resulted in very dry conditions in the basin. Water storage in the major irrigation reservoirs of the Oldman River basin is below-normal for this time of the season, except for Keho Lake which is normal (Table 7).

Table 7 Status of Major Water Storage Reservoirs as of March 1, 2001 - Oldman River Basin

Reservoirs	Current Live Storage			Remarks	March 1, 2000 Live Storage	
	Volume in dam^3	Volume in acre-feet	Volume as % of Capacity		dam^3	Acre-feet
Keho Lake	81,200	65,900	72	normal	79,400	64,400
Waterton Reservoir	71,300	57,800	42	below-normal	60,100	48,700
St. Mary Reservoir	28,700	23,200	7	below-normal	108,000	87,800
Ridge Reservoir	28,400	23,000	22	below-normal	107,000	86,300
Total	128,000	104,000	18	below-normal	275,000	223,000
Chin Reservoir	89,100	72,200	47	below-normal	180,000	146,000
Forty Mile Reservoir	42,800	34,700	50	below-normal	84,800	68,700
Total	132,000	107,000	48	below-normal	265,000	215,000
Oldman Reservoir	252,000	204,000	51	below-normal	397,000	322,000

Bow River Basin

Precipitation during February ranged from much-below-normal to normal in the Bow River basin (Figures 1 and 2). Precipitation remained much-below-normal in the Highwood River basin but was near normal in other portions of the Bow River basin. Precipitation values in the basin ranged from 60% to 100% of normal during February. Precipitation since November 1 has been much-below-normal in the basin (Figures 3 and 4). Seventeen snow course measurements were made at the end of February in the Bow River basin (Table 8) of which, 13 sites set new historical minimum values and the other four sites ranked second lowest on record. Snow course measurements in the Highwood River basin remain low.

Table 8 March Snow course measurements in the Bow River Basin

Station Name	Mar 1/01 SWE(mm)	% of Avg.	Max SWE(mm)	Min SWE(mm)	Avg. SWE(mm)	Years of Data	Mar 1/01 Ranking (lowest to highest)
Bow River	102	51	386	104	200	34	1
Bow Summit	137	41	533	124	336	22	2
Chateau Lawn	114	45	401	137	253	32	1
Cuthead Lake	140	38	643	163	369	19	1
Highwood Summit	145	44	455	150	327	28	1
Katherine Lake	168	44	607	173	383	16	1
Larch Valley	206	52	569	201	394	18	2
Little Elbow	102	36	523	137	280	22	1
Lost Creek	158	35	775	272	453	15	1
Mt. Odlum	168	43	579	201	393	16	1
Mirror Lake	122	47	483	124	262	34	1
Mud Lake	112	39	439	140	286	20	1
Pipestone Upper	112	52	376	107	216	34	2
Ptarmigan Hut	183	53	564	175	344	32	2
Sunshine Village	211	42	770	254	502	31	1
Tent Ridge	122	40	584	142	306	18	1
Three Isle Lake	224	43	752	287	517	19	1

Much-below-average natural runoff volumes are forecast for the March to September 2001 period. These forecasts assume normal precipitation over the spring and summer period. Natural flow volumes are higher for the March to September period compared to the March to June period because of the assumption of normal precipitation from July to September. Current forecasted values for the March to September period in the Bow River basin would rank eleventh lowest on record (1912-95 period). Natural volume forecasts for the March to June (Table 9) and the March to September (Table 10) periods are provided below.

Table 9 Water Supply Forecast as of March 1, 2001 - Bow River Basin (Natural Flows)

Locations	Volume Forecast for March 1 to June 30				
	Volume in dam^3	Volume in acre-feet	Volume as a % of Average	Probable Range as a % of Average	Reasonable Minimum as a % of Average
Bow River at Banff	360,000	292,000	71	65-79	49
Lake Minnewanka Inflow	59,900	48,600	60	49-70	41
Spray Lake near Banff	111,000	90,000	58	51-63	45
Kananaskis River	120,000	97,300	58	55-68	47
Bow River at Calgary	757,000	614,000	63	56-69	45
Elbow River	48,900	39,600	38	30-56	25
Highwood River	145,000	118,000	33	27-55	24

Average is calculated for the period 1912 to 1995

NOTE: There is: a 50% chance that the actual natural flow will fall within the probable range given; a 25% chance that the actual flow will be less than the lower bound of the probable range given; and a 10% chance that the actual natural flow will be less than the reasonable minimum. Actual day to day streamflow conditions may vary throughout the season as a result of the effects of streamflow diversion and reservoir storage.

Table 10 Water Supply Forecast as of March 1, 2001 - Bow River Basin (Natural Flows)

Locations	Volume Forecast for March 1 to September 30					2000 Actual May – September Volume as a % of Average
	Volume in dam^3	Volume in acre-feet	Volume as a % of Average	Probable Range as a % of Average	Reasonable Minimum as a % of Average	
Bow River at Banff	897,000	727,000	83	71-90	56	92
Lake Minnewanka Inflow	134,000	109,000	71	56-84	46	80
Spray Lake near Banff	261,000	212,000	71	60-81	53	74
Kananaskis River	294,000	238,000	71	63-84	53	65
Bow River at Calgary	1,894,000	1,535,000	78	66-87	54	77
Elbow River	110,000	89,100	50	41-74	28	46
Highwood River	256,000	208,000	40	31-69	22	43

Average is calculated for the period 1912 to 1995

NOTE: There is: a 50% chance that the actual natural flow will fall within the probable range given; a 25% chance that the actual flow will be less than the lower bound of the probable range given; and a 10% chance that the actual natural flow will be less than the reasonable minimum. Actual day to day streamflow conditions may vary throughout the season as a result of the effects of streamflow diversion and reservoir storage.

Water storage in most of the major hydroelectric and irrigation reservoirs is normal for the season with the exception of Spray Lake and Travers Reservoir, which are below-normal (Table 11).

Table 11 Status of Major Water Storage Reservoirs as of March 1, 2001 - Bow River Basin

Reservoirs	Current Live Storage			Remarks	March 1, 2000 Live Storage	
	Volume in dam^3	Volume in acre-feet	Volume as a % of Capacity		dam^3	Acre-feet
Lake Minnewanka	103,000	83,500	46	normal	104,000	84,100
Spray Lake	48,200	39,100	27	below-normal	55,400	44,900
Upper Kananaskis Lake	14,300	11,600	14	normal	16,200	13,100
Lower Kananaskis Lake	37,700	30,600	60	normal	34,100	27,600
Total	203,000	165,000	36	normal	229,000	170,000
Lake McGregor	309,000	250,000	85	normal	229,000	186,000
Travers Reservoir	54,200	44,000	52	below-normal	77,600	62,900
Total	363,000	294,000	77	normal	307,000	249,000
Lake Newell	159,000	129,000	89	normal	157,000	127,000
Crawling Valley Reservoir	102,000	82,400	90	normal	101,000	81,900
Total	260,000	211,000	90	normal	258,000	209,000

Red Deer River Basin

The Red Deer River basin recorded normal precipitation in February (Figures 1 and 2). Precipitation values ranged from 80% to 110% in most areas of the headwater portion of the basin during February. Precipitation remains much-below-normal for the winter period (November to February) with the exception of the Sundre area, which has recorded normal precipitation (Figures 3 and 4). This area of higher precipitation is evident in the data from the snow courses in the basin. Limestone snow course (Table 12) indicated normal accumulation while the other three snow courses recorded two new historical minimums and the other was ranked second lowest.

Table 12 March 2001 Snow course measurements in the Red Deer, North Saskatchewan and Athabasca River Basins

Station Name	Mar 1/01 SWE(mm)	% of Avg.	Max SWE(mm)	Min SWE(mm)	Avg. SWE(mm)	Years of Data	Mar 1/01 Ranking (lowest to highest)
Red Deer							
Gable Mountain	75	47	297	86	158	18	1
Limestone	104	92	178	50	113	18	9
McConnell Creek	58	36	292	89	159	19	1
Skoki Lodge	160	50	516	155	319	19	2
North Saskatchewan							
Brown Creek	58	85	132	11	68	24	11
Nigel Creek	150	40	655	135	375	29	2
Nordegg	51	84	109	6	61	26	12
Athabasca							
Hinton	36	44	135	37	82	26	1
Marmot-Jasper	91	46	314	111	197	21	1
Sunwapta Falls	94	54	277	79	174	29	3

Much-below-average natural runoff volumes are forecast for the March to September 2001 period. These forecasts assume normal precipitation over the spring and summer period. Natural flow volumes are higher for the March to September period compared to the March to June period because of the assumption of normal precipitation from July to September. Current forecasted values for the March to September period in the Red Deer River basin would rank 12th lowest in the recorded values over an 84-year period (1912-95). Natural volume forecasts for the March to June (Table 13) and the March to September (Table 14) periods are located below.

Table 13 Water Supply Forecast as of March 1, 2001 – Red Deer River Basin (Natural Flows)

Locations	Volume Forecast for March 1 to June 30				
	Volume in dam^3	Volume in acre-feet	Volume as a % of Average	Probable Range as a % of Average	Reasonable Minimum as a % of Average
Glennifer Lake	297,000	241,000	61	45-81	39
Red Deer River at Red Deer	373,000	302,000	50	37-66	32

Average is calculated for the period 1912 to 1995

NOTE: There is: a 50% chance that the actual natural flow will fall within the probable range given; a 25% chance that the actual flow will be less than the lower bound of the probable range given; and a 10% chance that the actual natural flow will be less than the reasonable minimum. Actual day to day streamflow conditions may vary throughout the season as a result of the effects of streamflow diversion and reservoir storage.

Table 14 Water Supply Forecast as of March 1, 2001 - Red Deer River Basin (Natural Flows)

Locations	Volume Forecast for March 1 to September 30					2000 Actual May – September Volume as a % of Average
	Volume in dam^3	Volume in acre-feet	Volume as a % of Average	Probable Range as a % of Average	Reasonable Minimum as % of Average	
Glennifer Lake	606,000	491,000	64	51-90	41	63
Red Deer River at Red Deer	718,000	582,000	55	42-81	35	61

Average is calculated for the period 1912 to 1995

NOTE: There is: a 50% chance that the actual natural flow will fall within the probable range given; a 25% chance that the actual flow will be less than the lower bound of the probable range given; and a 10% chance that the actual natural flow will be less than the reasonable minimum. Actual day to day streamflow conditions may vary throughout the season as a result of the effects of streamflow diversion and reservoir storage.

Water storage in Glennifer Lake is normal for this time of the season (Table 15).

Table 15 Status of Major Water Storage Reservoirs as of March 1, 2001 – Red Deer River Basin

Reservoirs	Current Live Storage			Remarks	March 1, 2000 Live Storage	
	Volume in dam^3	Volume in acre-feet	Volume as a % of Capacity		dam^3	acre-feet
Glennifer Lake	99,800	80,900	49	normal	118,000	95,300

North Saskatchewan River Basin

Precipitation during February was much below-normal in the North Saskatchewan River basin (Figures 1 and 2). Winter precipitation (November to January) remains much-below-normal (Figures 3 and 4). Two of the three snow course measurements in the basin at the end of February (Brown Creek and Nordegg) were below-average (Table 12). These sites correspond to the pocket of snow observed in the Sundre-Rocky Mountain area. Nigel Creek, a higher elevation site, recorded the second lowest value in 29 years (Table 12). Other higher elevation snow course sites in the adjacent Athabasca River basin are near the historical minimum values. Therefore, the snowpack at the higher elevations of the North Saskatchewan are assumed to be much-below-average.

Much-below-average natural runoff volumes are forecast for the March to September 2001 period (Table 16). Current forecasted values for the March to September period in the North Saskatchewan River basin would rank seventh lowest in 84-years (1912-95).

Table 16 Water Supply Forecast as of March 1, 2001 - North Saskatchewan River Basin (Natural Flows)

Locations	Volume Forecast for March 1 to September 30					2000 Actual May – September Volume as a % of Average
	Volume in dam^3	Volume in acre-feet	Volume as a % of Average	Probable Range as a % of Average	Reasonable Minimum as a % of Average	
Lake Abraham Inflow	1,794,000	1,454,000	85	78-91	74	81
Brazeau Reservoir Inflow	1,031,000	836,000	72	60-88	55	85
North Saskatchewan River at Edmonton	4,228,000	3,428,000	72	64-80	57	82

Average is calculated for the period from 1912 to 1995

NOTE: There is: a 50% chance that the actual natural flow will fall within the probable range given; a 25% chance that the actual flow will be less than the lower bound of the probable range given; and a 10% chance that the actual natural flow will be less than the reasonable minimum. Actual day to day streamflow conditions may vary throughout the season as a result of the effects of streamflow diversion and reservoir storage.

Water storage in the North Saskatchewan major hydroelectric reservoirs is above-normal at Lake Abraham and normal at Brazeau Reservoir (Table 17).

Table 17 Status of Major Water Storage Reservoirs as of March 1, 2001 – North Saskatchewan River Basin

Reservoirs	Current Live Storage			Remarks	March 1, 2000 Live Storage	
	Volume in dam^3	Volume in acre-feet	Volume as a % of Capacity		dam^3	Acre-feet
Lake Abraham	632,000	513,000	45	above-normal	650,000	527,000
Brazeau Reservoir	118,000	95,800	24	normal	104,000	84,200
Total	750,000	608,000	40	above-normal	754,000	611,000

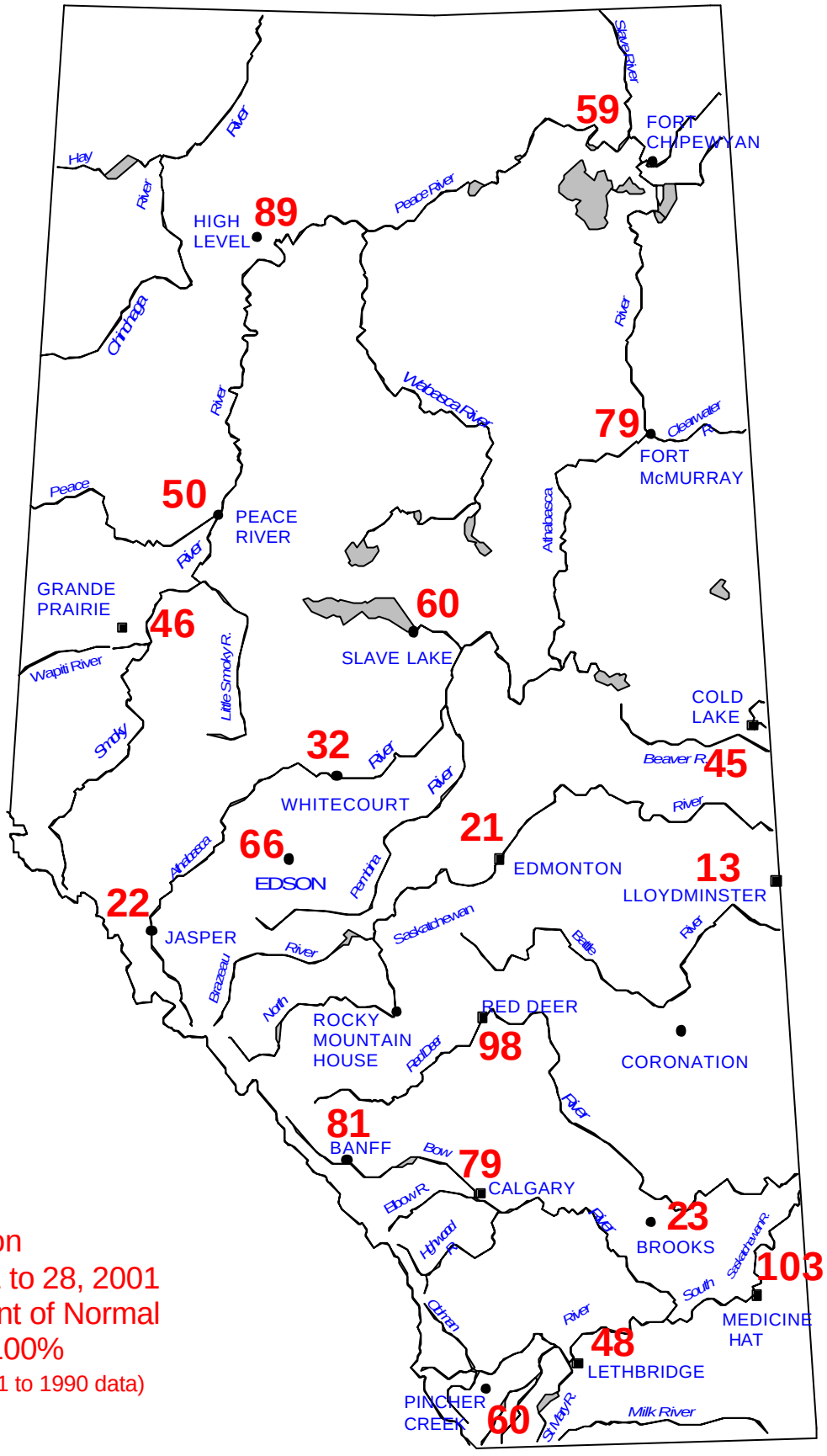

Figure 1
Precipitation
February 1 to 28, 2001
as a percent of Normal
Normal = 100%
(based on 1961 to 1990 data)

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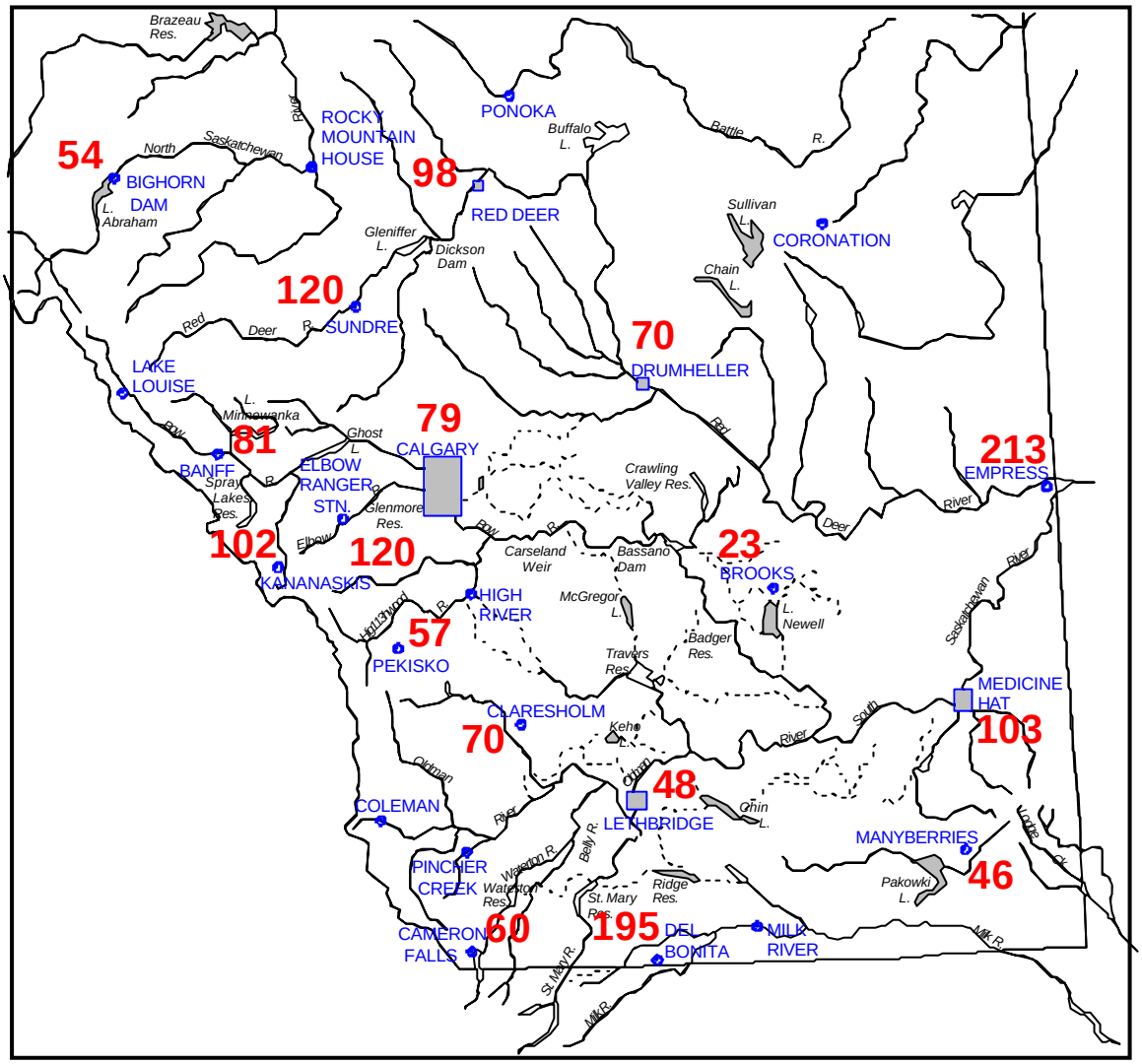

Figure 2
Winter Precipitation
Southern Alberta
February 1 to 28, 2001
as a percent of Normal
Normal = 100%
(based on 1961 to 1990 data)

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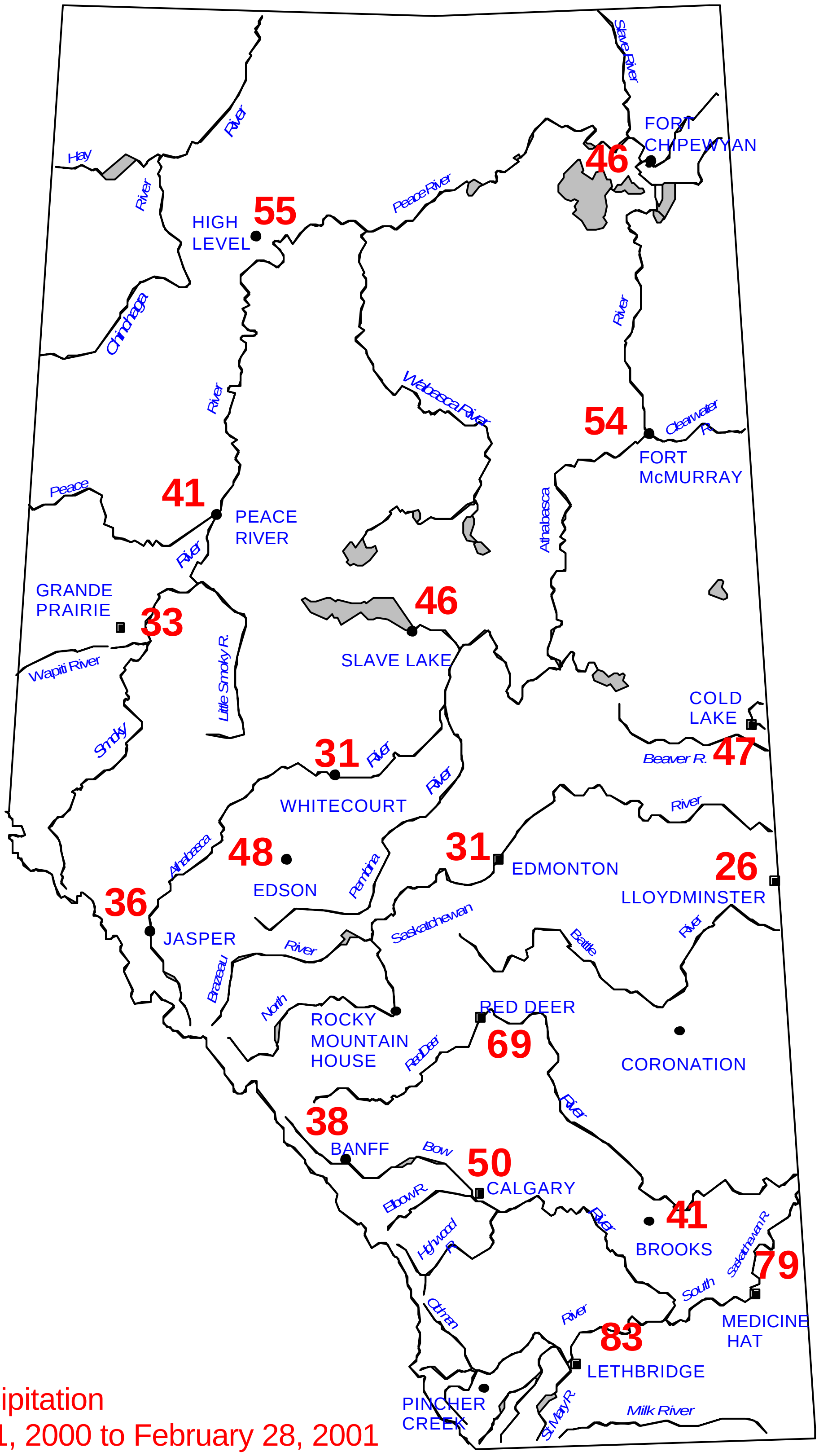

Figure 3
Winter Precipitation
November 1, 2000 to February 28, 2001
as a percent of Normal
Normal = 100%
(based on 1961 to 1990 data)

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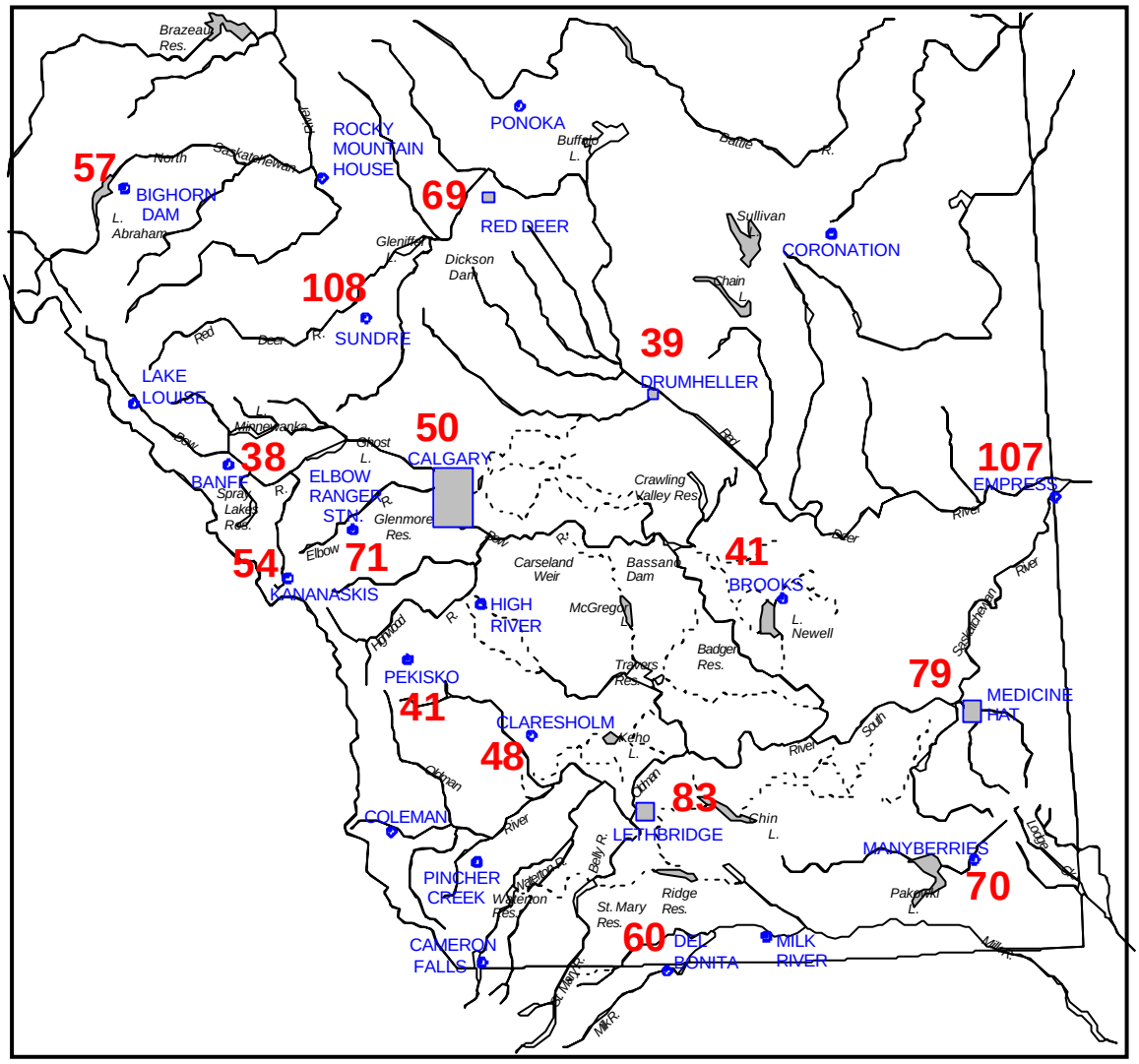

Figure 4
Winter Precipitation
Southern Alberta
November 1, 2000 to February 28, 2001
as a percent of Normal
Normal = 100%
(based on 1961 to 1990 data)

Alberta ENVIRONMENT

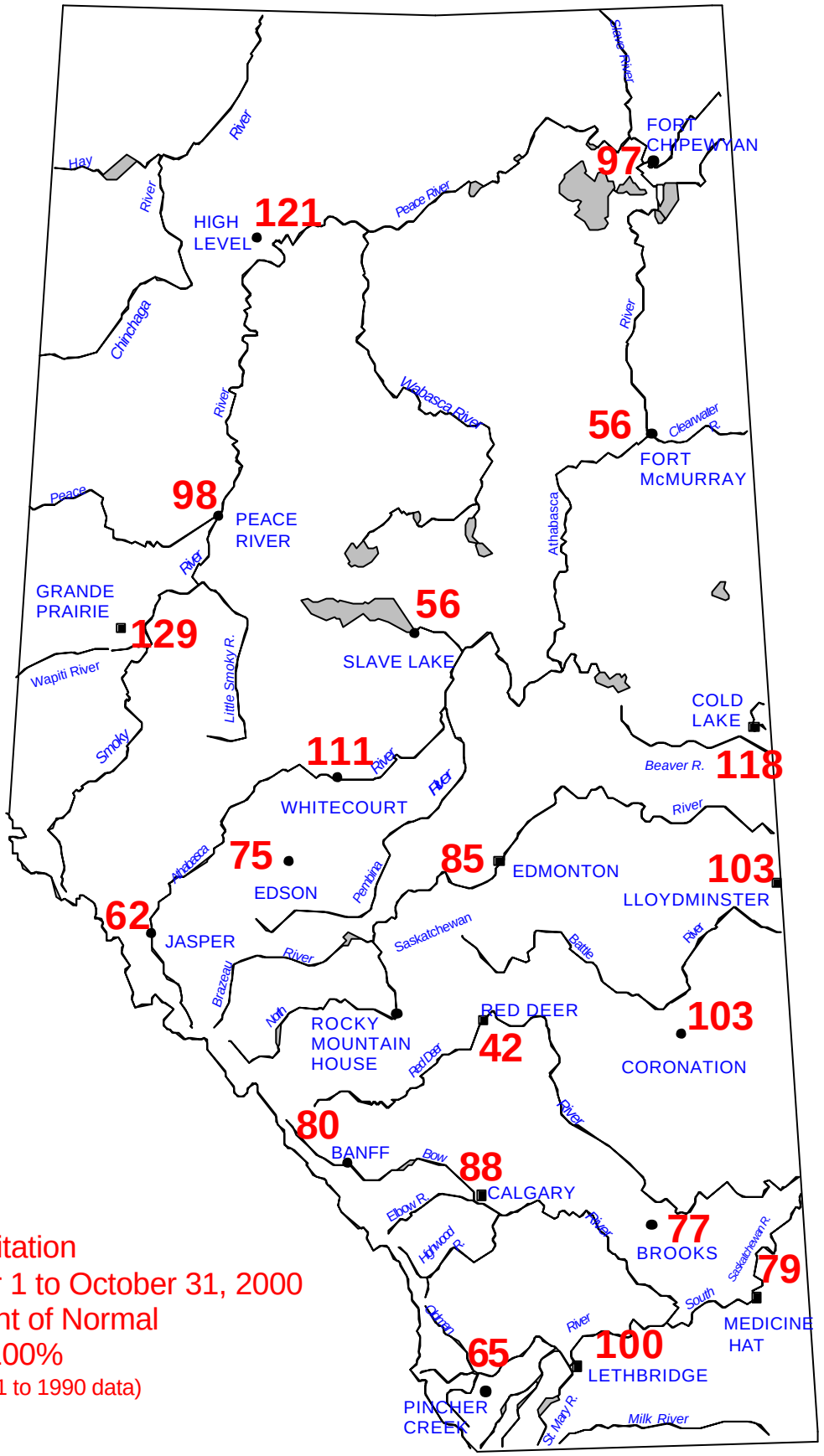

Figure 5
Fall Precipitation
September 1 to October 31, 2000
as a percent of Normal
Normal = 100%
(based on 1961 to 1990 data)

Alberta ENVIRONMENT

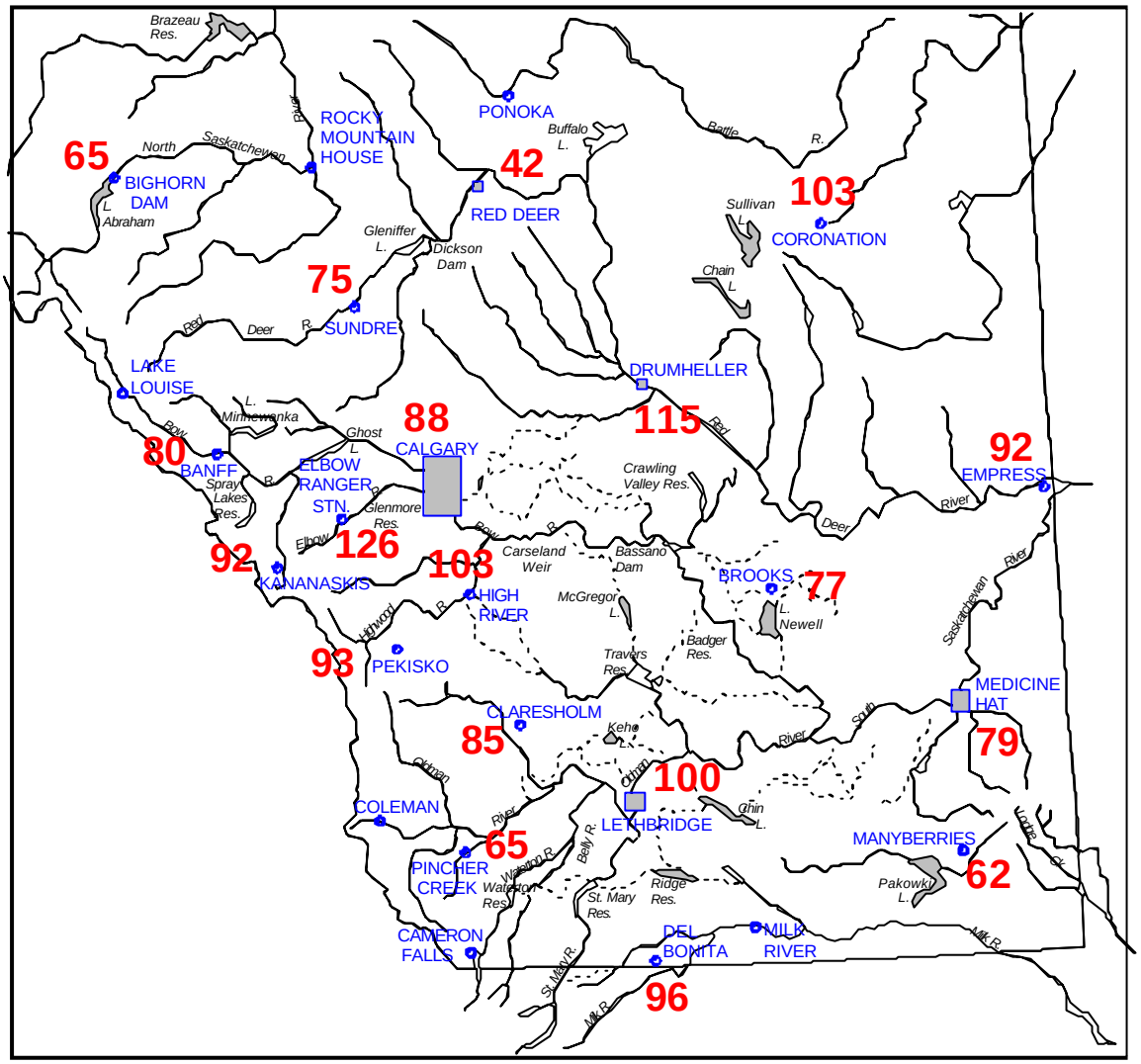

Figure 6
Fall Precipitation
Southern Alberta
September 1 to October 31, 2000
as a percent of Normal
Normal = 100%
(based on 1961 to 1990 data)

Alberta ENVIRONMENT

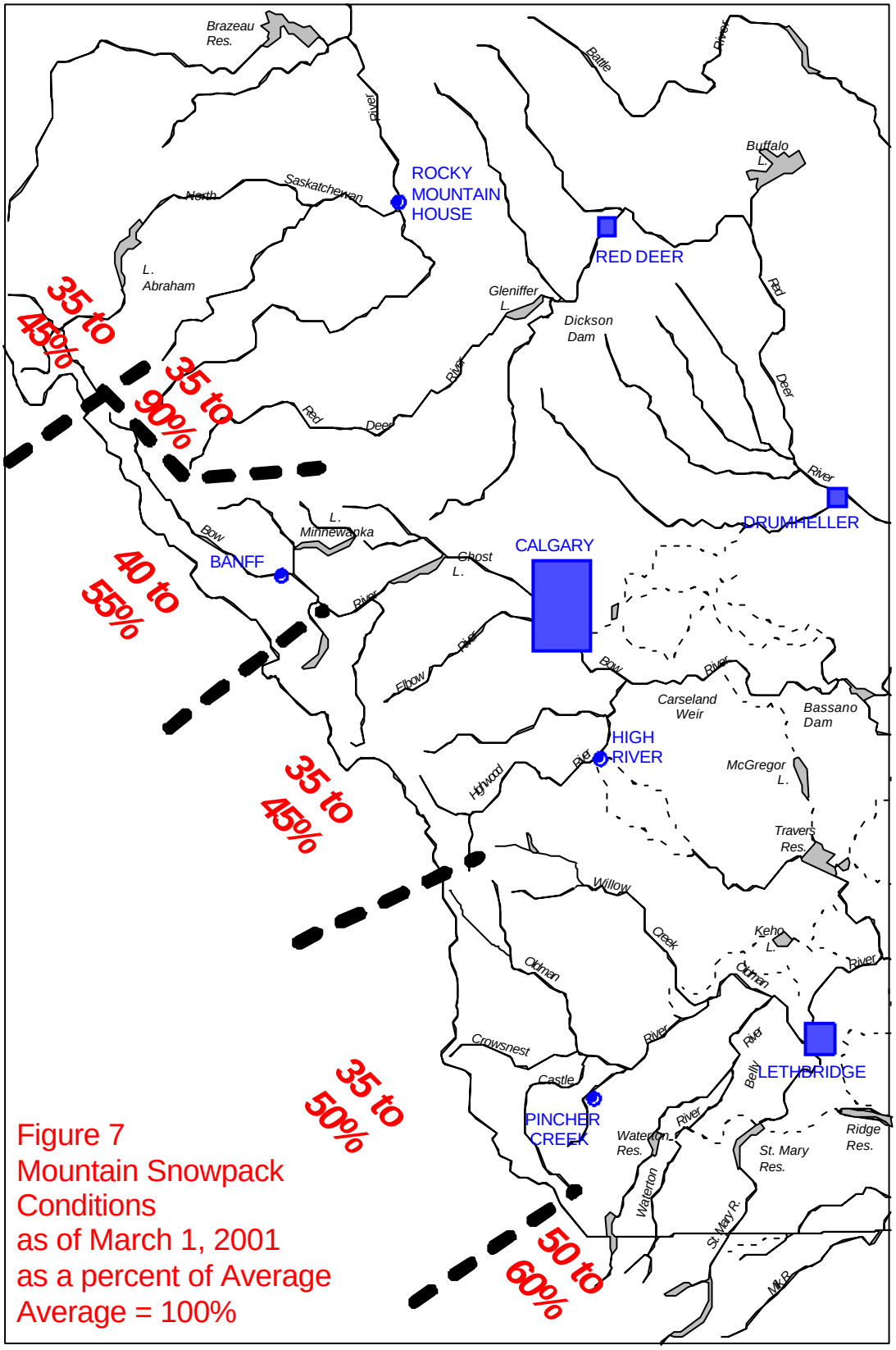

Figure 7
Mountain Snowpack Conditions
as of March 1, 2001
as a percent of Average
Average = 100%

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