

Plains Runoff Outlook for Alberta

March 2001



Alberta
ENVIRONMENT

Notes

Alberta Environment publishes the "**Plains Runoff Outlook for Alberta**" monthly, usually from February to May. 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

Overview

Fall precipitation (September to October) was near normal in southern areas of the province, above-normal in the north and below-normal in central regions, leaving most areas with dry soil moisture conditions heading into the winter.

The winter precipitation, November 1, 2000 to February 28, 2001, was much-below-normal across Alberta except in the Sundre area and along the eastern portion of the province, where normal precipitation was recorded. In February, most areas in the Plains area of Alberta received below to much-below-normal precipitation except eastern areas and in the extreme southern portion of the province which recorded above-normal precipitation.

As of March 1, snowpack in most of the Plains area of the province is much-below-average. Snowpack is below-average in the Wabasca, Fort McMurray and Cypress Hills, average in the Coronation area, and average to much-above-average in the Sundre region.

The March 1, 2001 forecast is for much-below-normal spring runoff in north-central, central and southern Alberta except in the Sundre and Coronation areas, where below-normal to normal spring runoff is forecast. Spring runoff is forecast to be below-normal in northern Alberta.

Winter Climatic Conditions

During February, most areas in the Plains area of Alberta received below to much-below-normal precipitation. Precipitation was above-normal in eastern areas and in the extreme southern portion of the province (Figures 1 and 2). Temperatures were below-normal during February.

The winter precipitation, November 1, 2000 to February 28, 2001, was much-below-normal across Alberta (Figures 3 and 4). The only exceptions are in the Sundre area and along the eastern portion of the province, where normal precipitation was recorded.

Plains Spring Snowmelt Runoff Outlook

Fall Precipitation

Fall precipitation (September to October) was near normal in southern areas of the province (Figures 5 and 6). Northern Alberta recorded above-normal precipitation while central regions recorded below-normal fall precipitation. The foothills of western Alberta received below-normal to much-below-normal fall precipitation in 2000. Despite normal fall precipitation in southern Alberta, conditions were dry as a result of much-below-normal precipitation in the summer of 2000, soil moisture conditions were still very dry heading into the winter season.

Plains Area Snowpack

Snowpack in most of the Plains area of the province is much-below-average. Snowpack in the High Level, Wabasca and Fort Chipewyan zones are below-average to much-below-average for this time of the year. Many snow course measurements in these areas tied or set new historical minimum values.

Wabasca, Fort McMurray and Cypress Hills areas indicate below-average snowpack. In the Coronation area, snowpack is average for this time of the year. Snowpack continues to be average to much-above-average in the Sundre region. This area of anomalous snowpack is in a relatively small area in the Sundre-Rocky Mountain House area. Snowpack conditions change rapidly as you move away from this area.

A map of Plains area snowpack is available from the Environment Canada website located at:
http://www.msc-smc.ec.gc.ca/ccrp/SNOW/snow_swe.html.

Spring Snowmelt Runoff Outlook

The March 1, 2001 forecast is for much-below-normal spring runoff in north-central, central and southern Alberta including the Grande Prairie, Slave Lake, Fort McMurray, Whitecourt, Cold Lake, Edson, Rocky

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Mountain House, Red Deer, Edmonton, Lloydminster, Brooks, Calgary, Lethbridge, Medicine Hat, Milk River and Cypress Hills regions (Figure 7). Spring runoff is forecast to be below-normal in northern Alberta, including the Wabasca and Fort Chipewyan areas. Below-normal to normal spring runoff is forecast for the Sundre and Coronation areas.

These forecasts are based on the antecedent soil moisture conditions (fall precipitation), winter precipitation, temperature and snowpack on the ground. Routine snow surveys to monitor snowpack on the plains begin in early March. Since it is early in the spring runoff forecasting season, weather conditions leading up to the spring snowmelt could change this runoff forecast considerably. Check the Forecaster's Comments on the department web page throughout the month for updated information regarding spring runoff conditions.

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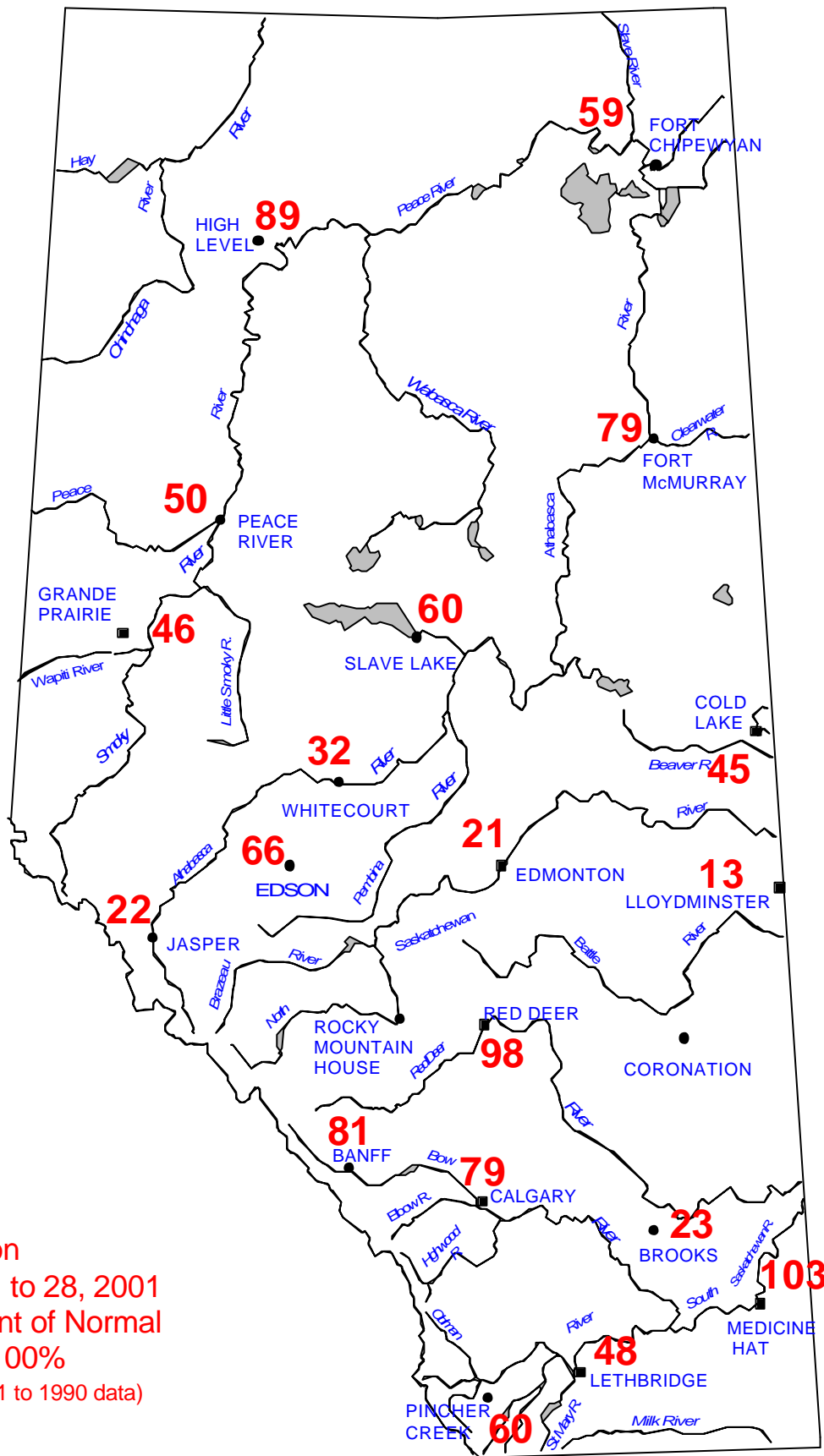


Figure 1
 Precipitation
 February 1 to 28, 2001
 as a percent of Normal
 Normal = 100%
 (based on 1961 to 1990 data)

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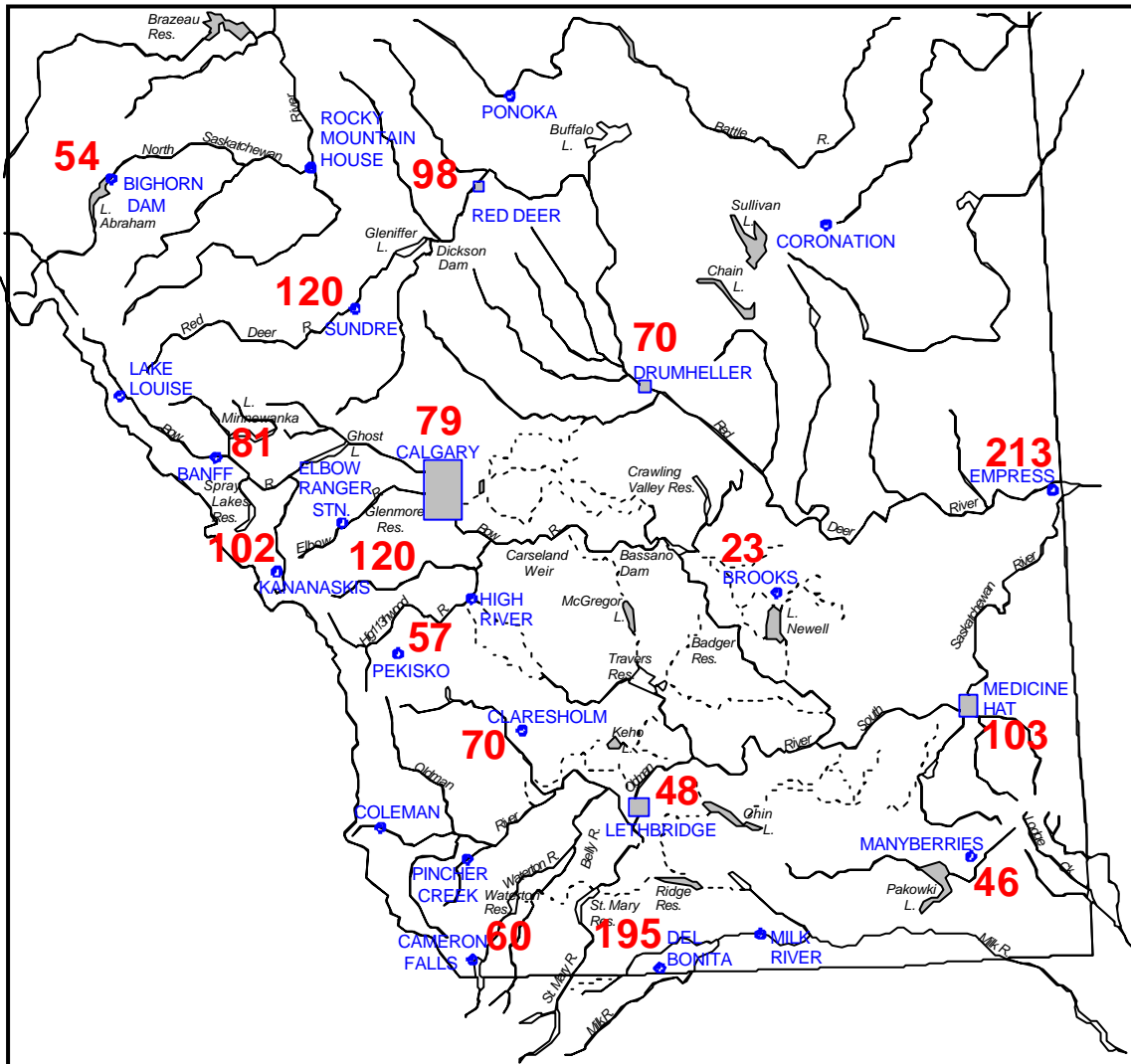


Figure 2
 Winter Precipitation
 Southern Alberta
 February 1 to 28, 2001
 as a percent of Normal
 Normal = 100%
 (based on 1961 to 1990 data)

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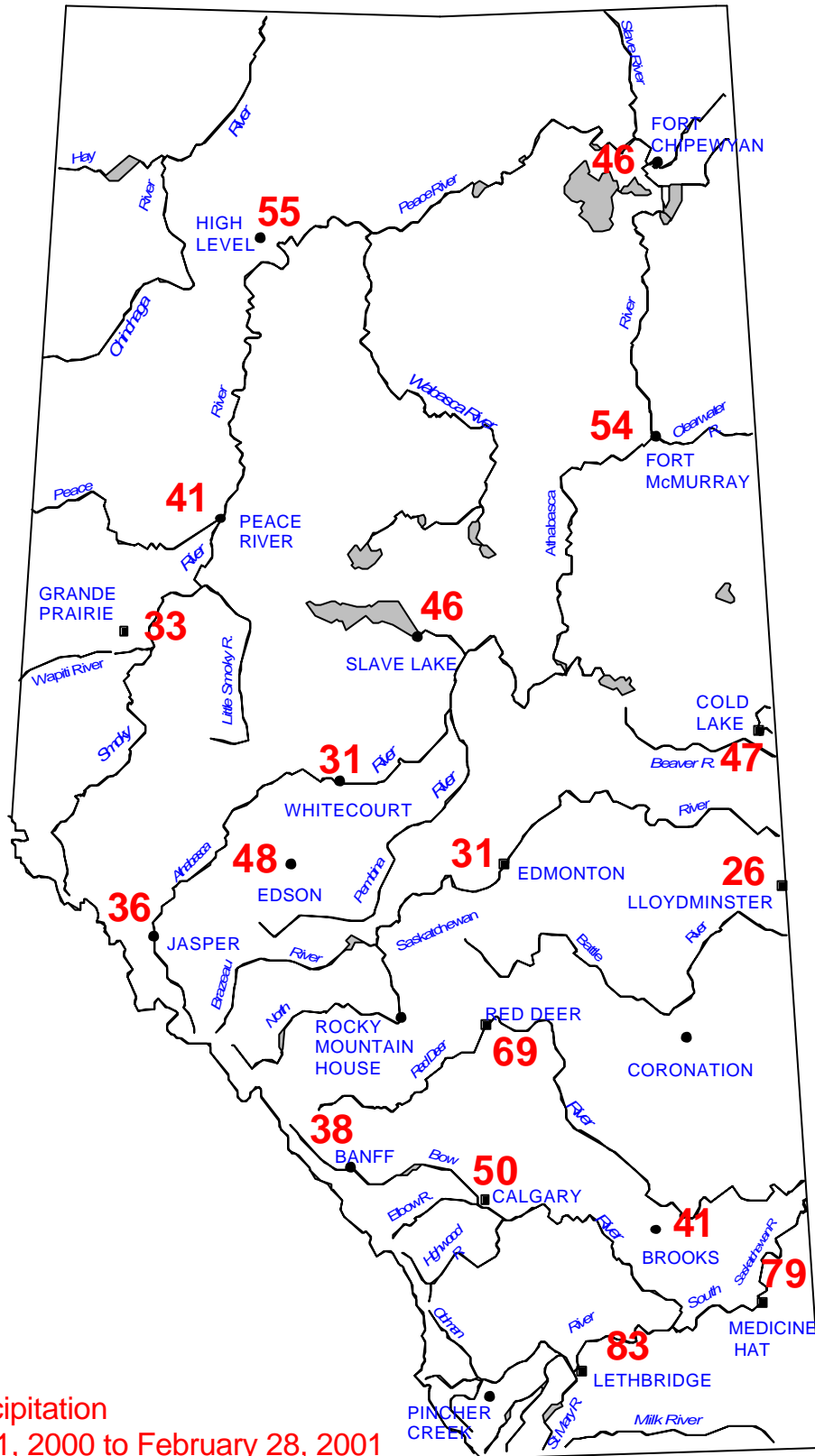


Figure 3
 Winter Precipitation
 November 1, 2000 to February 28, 2001
 as a percent of Normal
 Normal = 100%
 (based on 1961 to 1990 data)

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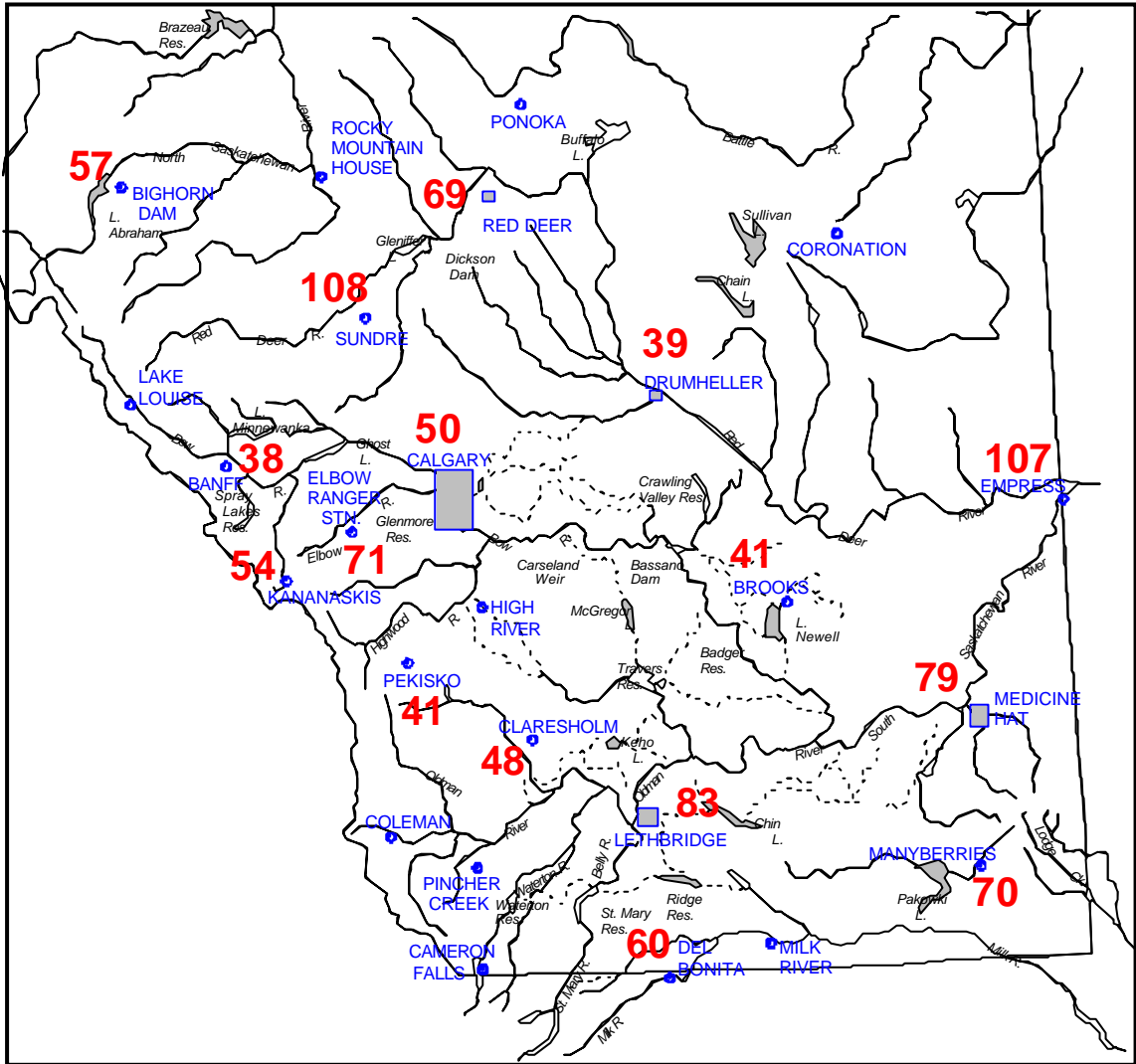


Figure 4
 Winter Precipitation
 Southern Alberta
 November 1, 2000 to February 28, 2001
 as a percent of Normal
 Normal = 100%
 (based on 1961 to 1990 data)

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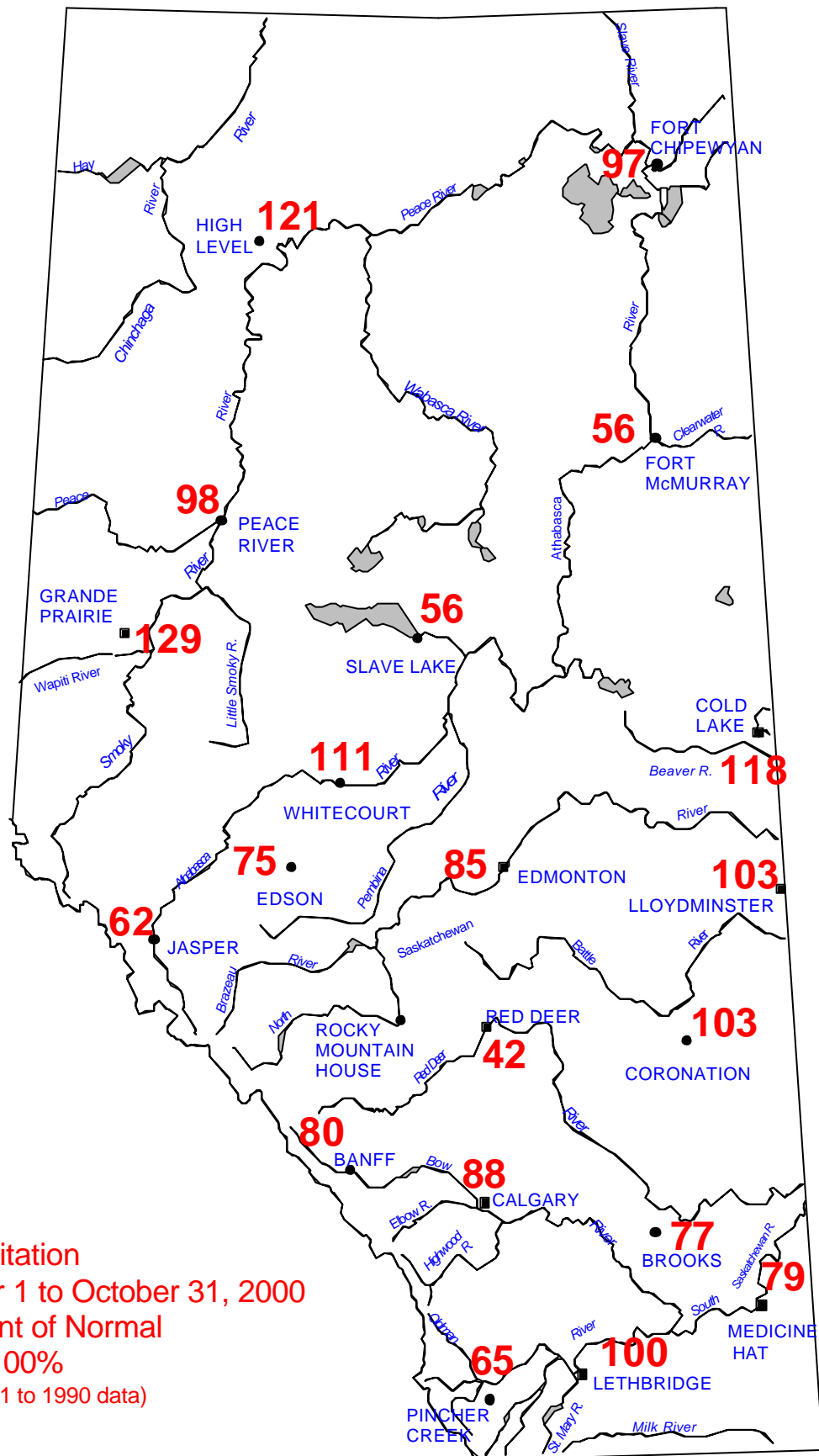


Figure 5
 Fall Precipitation
 September 1 to October 31, 2000
 as a percent of Normal
 Normal = 100%
 (based on 1961 to 1990 data)

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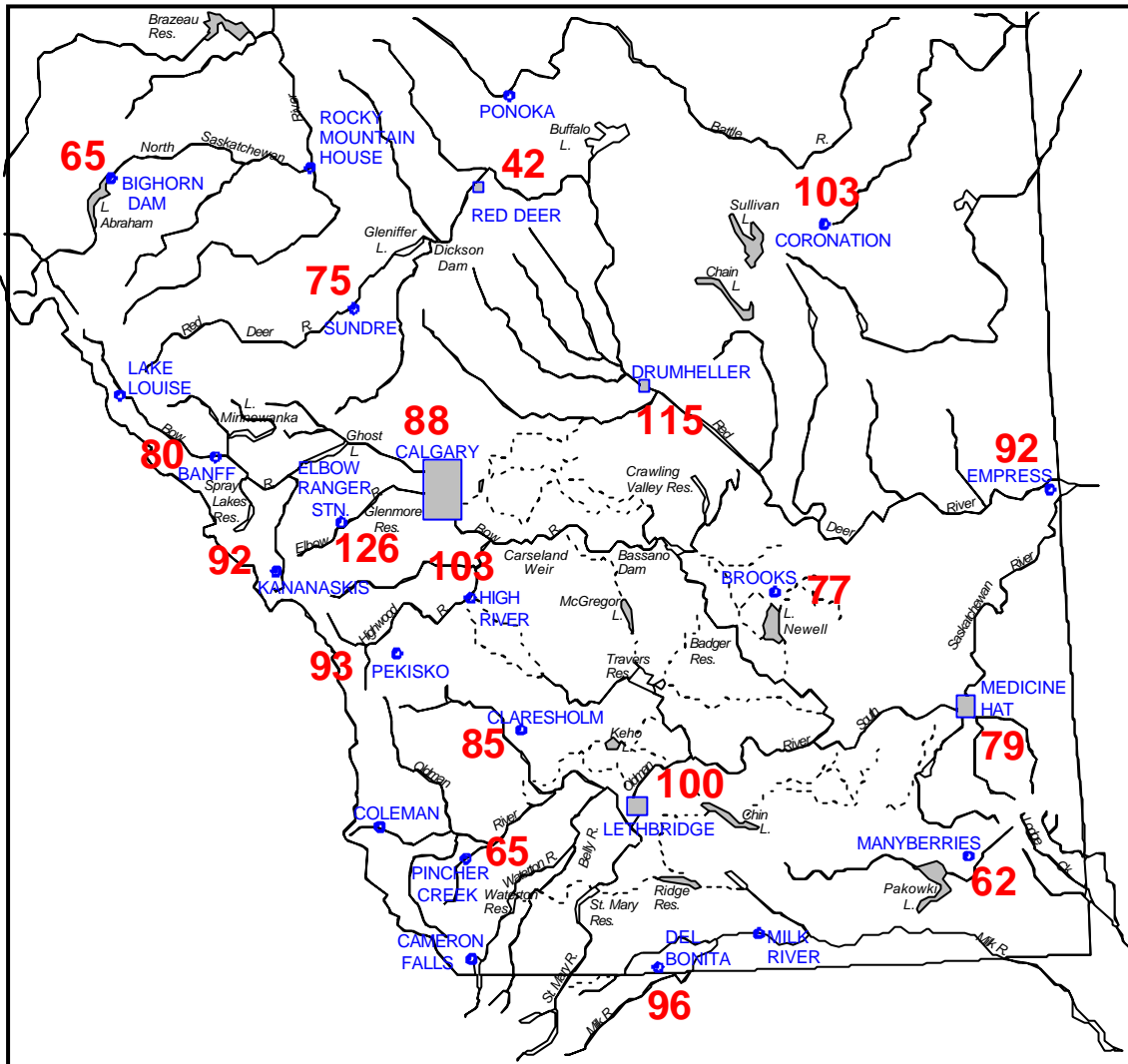


Figure 6
 Fall Precipitation
 Southern Alberta
 September 1 to October 31, 2000
 as a percent of Normal
 Normal = 100%
 (based on 1961 to 1990 data)

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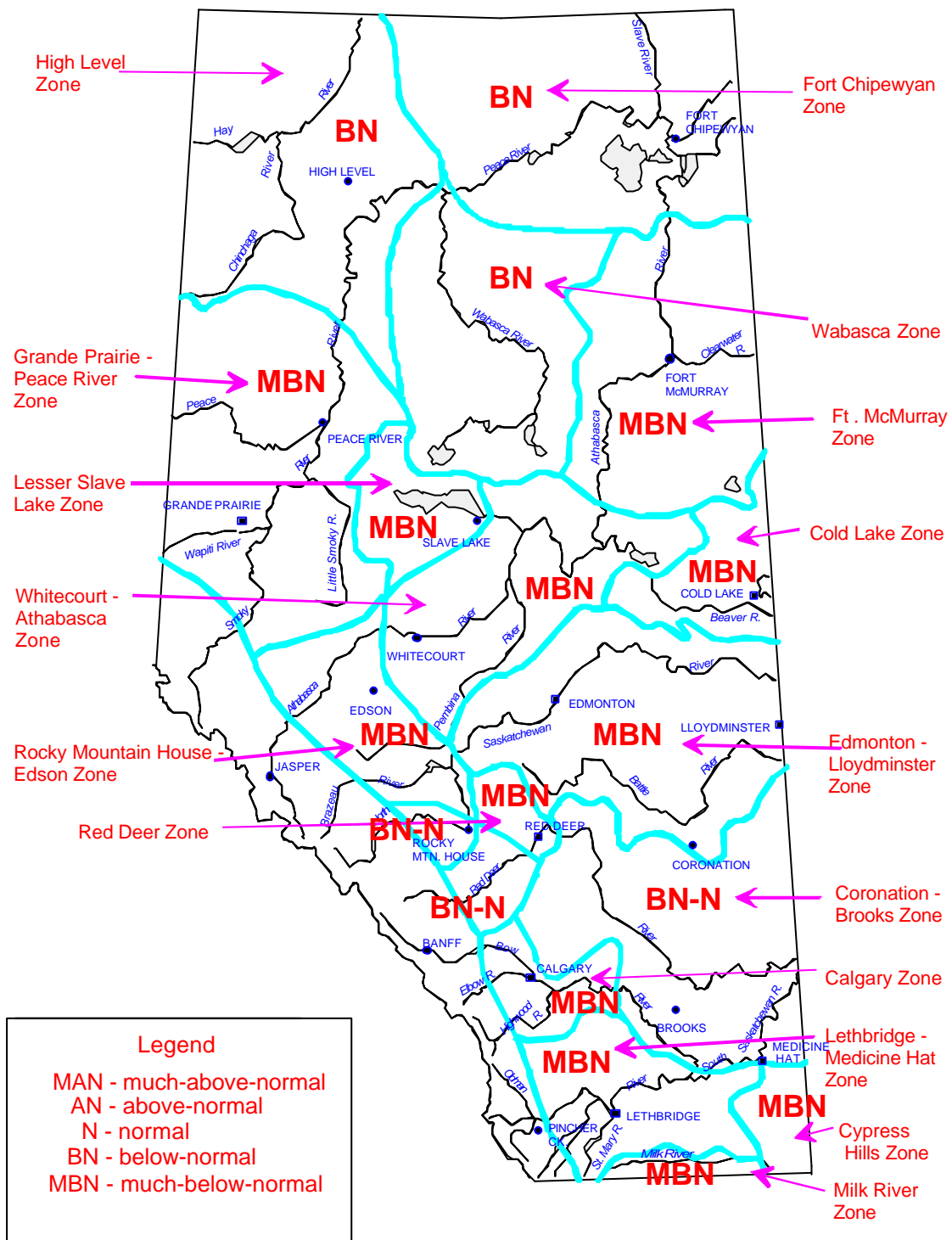


Figure 7
Plains Spring Runoff Outlook
as of March 1, 2001

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