

COLORADO CLIMATE SUMMARY
WATER-YEAR SERIES
(October 1984-September 1985)

Nolan J. Doesken
Thomas B. McKee

Climatology Report No. 86-1

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Water-Year Series

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by

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ACKNOWLEDGMENTS

For many years now we have taken this opportunity to thank the many cooperative weather observers in Colorado and their National Weather Service supervisors, William Tate and Michael Elias, for making it possible to monitor the climate in all parts of Colorado at a very low cost. Again, our sincere thanks are in order.

The authors also wish to express their appreciation to Odilia Bliss for doing a fine job of preparing and processing each month's climate data and assembling this finished product. The work of John Kleist in automating much of the data analysis and in improving the appearance of each monthly report has been very helpful.

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TABLE OF CONTENTS

	<u>Page</u>
Acknowledgments	ii
I. Introduction	1
II. Explanation of Degree Days: Heating, Cooling and Growing	7
III. 1985 Water Year in Review.	9
October 1984	10
November 1984.	17
December 1984.	25
January 1985	33
February 1985.	41
March 1985	50
April 1985	59
May 1985	68
June 1985.	77
July 1985.	86
August 1985.	95
September 1985	104

I. INTRODUCTION

The 1985 Water Year marked the 12th year of existence of the Colorado Climate Center (CCC) and the 9th year of closely monitoring the climate of this diverse and interesting state. The first monthly climate summary prepared by the CCC was written in early 1977 in the midst of an unprecedented severe winter drought. Since that time Colorado has experienced a myriad of extremes -- record winter cold, incredible snowstorms, disastrous hail storms and several of the snowiest years in the past half century. Our monthly descriptions of Colorado climate have expanded to document and describe as much of this information as possible.

The monthly climate descriptions are intended to accomplish several purposes. They are a written historical record of what our climate has been which can hopefully always be used as a reference in the future. By tracking monthly departures of temperature and precipitation from long-term normals, these summaries have also become tools for operations, planning and policy-making related to agriculture, water resources, land use and energy. Finally these summaries are used to educate the people of Colorado about our unique climate and its impact on our lives and livelihoods.

In Colorado, the Water Year (October 1 through September 30) is the most appropriate period for monitoring climate. This 12-month period is directly correlated with the state's water storage--water usage cycle. In October snow usually begins to accumulate in the high mountains. As

winter progresses, the snowpack normally continues to build up. This snow is the frozen reservoir which supports the huge ski and winter recreation industry. Eventually it supplies much of the water for human consumption, for extensive irrigation, for industry, and to satisfy long-standing stream flow compacts with neighboring states. Irrigated agriculture still accounts for the vast majority of water used in Colorado. Therefore, demand for water peaks during the summer and tapers off as temperatures drop, crops are harvested, and autumn arrives. September marks an appropriate end to the water year.

Because of the crucial importance of water to Colorado, this publication emphasizes precipitation and water-year accumulated precipitation. Comparisons with long-term averages are made to help determine which parts of the state are wetter or drier than average. This makes it possible to document the availability of water resources and to assess potential drought situations.

A new format was developed during the 1985 Water Year for displaying and describing the month by month climate. The following paragraphs describe the information content of this new report format.

Each month's summary begins with a brief one-paragraph description of observed general temperature and precipitation patterns. This is followed by a new feature, "A Look Ahead." This section is not a forecast in the normal sense but is a generalized statewide climatological description (based on past records) of what weather conditions can most typically be expected. This section is really designed as an educational tool for newcomers to Colorado and to those just learning about climate to help familiarize themselves with the nature of our climate. It is also a potential planning tool for those

individuals, businesses, researchers, and government agencies who are just starting to try to take climate into account in planning and scheduling activities.

In December 1984 a new feature was added to the monthly summary. Each month a topic of special interest to climate information users in Colorado was presented. During the 1985 Water Year special topics included:

- 1) The oldest weather station in Colorado (Dec 1984).
- 2) A new average precipitation map for Colorado (Jan 1985).
- 3) A new all-time record cold temperature for Colorado (Feb 1985).
- 4) Where do climate data come from (Mar 1985).
- 5) Berthoud Pass weather station closes (Apr 1985).
- 6) Steamboat Springs long-time weather observer dies (May 1985).
- 7) Heaviest rainfall in Colorado (Jun 1985).
- 8) Autumn frost (Jul 1985).
- 9) How often does precipitation fall (Aug 1985).
- 10) 1985 Water Year wrap-up (Sep 1985).

The feature will be continued in the future.

The daily weather description, which has been a part of the monthly summary for several years, has been continued and now includes a table of extremes of temperature, precipitation and snow. This narrative section gives the dates of major storms, heat waves and cold blasts and gives selected examples from across Colorado.

One page is dedicated each month to the precipitation pattern. A brief narrative description is followed by a list of the wettest and driest National Weather Service reporting stations. A detailed map showing precipitation amounts is contoured to show which areas were above and below average.

The next page of the summary includes a similar assessment of the water year accumulated precipitation. A brief narrative comparison is made between the current and the past year's precipitation. This accompanies the narrative description, tabular data and a contoured map analysis of the current year's accumulated precipitation.

Temperature data for the month and comparisons to average are described in a short paragraph. The monthly temperatures for approximately 55 selected locations are plotted on a map and are analyzed using contour lines of departures from the 1961-80 averages. Another new feature has been added this year and placed on the "temperature" page. A detailed analysis of Fort Collins daily soil temperatures at several depths is presented. Soil temperature is an important climatic element in agriculture, construction, and energy conservation. Unfortunately, detailed soil temperature data are not available throughout Colorado.

Heating degree day data for 36 Colorado cities is published each month in a data table similar to previous years. A description of heating degree days and their use is given in Section II of this report.

The new summary format ends with two pages of tabular climate information for the month for selected Colorado stations. Stations are divided into 4 regions: the Eastern Plains, the Foothills/Adjacent Plains (includes the Front Range urban corridor), the Mountains and High Interior Valleys, and the Western Valleys (includes stations in western Colorado below 7,000 feet). Data presented for each station include the average high, low and mean temperature for the month and the departure from the 1961-1980 average, the highest and lowest temperature recorded during the month, the monthly total of heating, cooling and growing

degree days (see Section II for definitions), the monthly total precipitation, the departure from the 1961-1980 average, the percent of the 1961-1980 average, and the total number of days with measurable precipitation.

The final information contained in each monthly report is a comparative table of number of clear, partly cloudy and cloudy days and the percent of possible sunshine for 5 National Weather Service stations. This is followed by a graph of daily total solar radiation data measured at Fort Collins.

Specific daily temperature and precipitation data are not listed here. Daily data can be obtained in digital and/or hard copy form from the Colorado Climate Center and the National Climatic Data Center (Asheville, NC). Much of the daily data are published in the government document, Climatological Data.

Most temperature and precipitation data used in the monthly summaries were obtained from the National Weather Service cooperative observer network. Data from the major National Weather Service stations, such as Denver and Grand Junction, are also used extensively.

The averages which are used in this report for both temperature and precipitation were calculated using 1961-1980 data. Heating degree day normals were based on 1951-1980 data.

The written descriptions give a good general accounting of each month's weather, but the majority of information is contained on the maps and tables which accompany each report. The accuracy of all of these maps and tables is usually quite good. However, these reports were initially prepared soon after the end of each month, and preliminary information had to be used. Therefore, some of the

precipitation, temperature, and heating, cooling and growing degree day values may differ slightly from what is later published by the National Climatic Data Center.

II. EXPLANATION OF DEGREE DAYS

Many climatic factors affect fuel consumption for heating and cooling. Wind, solar radiation and humidity all play a part, but temperature is by far the most important element. Very simply, the colder it gets; the more energy is needed to stay warm.

A simple index, given the name, heating degree days, was devised several years ago to relate air temperatures to energy consumption (for heating). The number of heating degrees for a given day is calculated by subtracting the mean daily temperature (the average of the daily high and low temperature) from 65°F. Sixty-five degrees is used as the base temperature because at that temperature a typical building will not require any heating to maintain comfortable indoor temperatures. That difference (65°F minus the mean daily temperature) is the number of heating degrees for that day. The daily values are accumulated throughout the heating season to give heating degree day totals. Different base temperatures can be used to calculate heating degree days, but 65° is the long-standing traditional base.

The heating degree day total for a month or for an entire heating season is approximately proportional to the quantity of fuel consumed for heating. Therefore, the colder it gets and the longer it stays cold, the more heating degree days are accumulated and the more energy is required to heat buildings to a comfortable temperature.

So why is this important? Very simply, if you know how much energy you have used for heating your home or business during a certain period

of time, and if you also know the heating degree day total for the same period, you can then establish an energy consumption ratio. With that information you can then make reasonable estimates of your future energy consumption and costs. Also, you can easily check the success and calculate the savings resulting from energy conservation measures such as new insulation, storm windows or lowering the thermostat.

Cooling degree days are calculated in a similar fashion. Cooling degrees occur each day the daily mean temperature is above 65°F. They are accumulated each day throughout the cooling season and are roughly proportional to the amount of energy required to cool a building to a comfortable inside temperature. Cooling degree days are less useful than heating degree days, especially here in Colorado where air conditioning requirements are minimal in many parts of the state. However, they still offer a means of making general comparisons from site to site, year to year or month to month.

Growing degree days are a measure of temperature which has been found to correlate with the rate of development and maturation of crops. Several methods exist for computing growing degree days. In this report the "corn" growing degree day definition was used. The optimum growth occurs at 86°F and essentially no growth occurs at temperatures below 50°F. Therefore, when computing the daily mean temperature any minimum temperature below 50° is counted at 50° and any maximum above 86° is counted as 86°. Growing degree day totals are this adjusted mean temperature (°F) minus 50°F summed for each day.

III. 1985 WATER-YEAR IN REVIEW

In previous years several pages have been written recapping the highlights of the year's climate and the impact it had on Colorado. Because of the expanded format of each monthly report, and the fact that most information in this section was simply repeated from the original monthly reports, we will no longer be publishing this segment. The impacts were also extremely difficult to assess and document easily and accurately. We regret the omission of this section.

COLORADO CLIMATE -- OCTOBER 1984

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The 1985 water year got off to a very cold and wet start. All of Colorado was several degrees cooler than average in October. Precipitation was abundant statewide with several reports of more than 500% of average in the vicinity of Colorado Springs. Record monthly snowfall was also reported at a few locations. It was the "lousiest" October since 1969.

Significant Highlights -- October

<u>Date</u>	<u>Event</u>
1-5	A slow moving "cut off" low pressure area drifted toward Colorado. Rainshowers began on the Western Slope early on the 1st. Palisade totalled 1.10" on the 1st. By late in the day on the 2nd, precipitation began to spread into eastern Colorado. As the low moved across southern Colorado, steady upslope rains developed which lasted for more than 48 hours in some areas. All of the state received precipitation, but the heaviest rains fell along the Front Range. Storm totals of 2" were common, but Lakewood's 3.64" total (2.93" in 24 hours) and 3.92" at Ruxton Park on the north side of Pikes Peak were the greatest in the state. Temperatures throughout this period were mild. Holly and Walsh each recorded 85° on the 2nd, the state's warmest temperatures for this October.
6-10	Fine fall weather with daytime temperatures mostly in the 50s in the mountains and 60s-70s at lower elevations. Just a few scattered light showers from the mountains eastward on the 8th and 9th still caused by the same storm system from the previous week. The only significant rains occurred in southeast Colorado where more than 0.50" fell on the night of the 8th in some locations. Holly totalled 1.16" of rain.
11	The warmest weather of the month over much of the state preceeded a Pacific cold front. Craig reached 70°F. Upper 70s were common east of the mountains. Pueblo and Sterling each reached 80°.
12-14	A Pacific cold front crossed the state on the 12th bringing cooler temperatures and moderate rain and snow showers west

of the Continental Divide. Meeker received 0.56" of rain on the 12th. Berthoud Pass and Climax both picked up 6" of snow. By the 14th, a stronger cold front made its way across the state. A major winter-type storm system began to take shape over the Rockies, and rain and snow began falling.

- 15-16 Major winter storm brought much colder temperatures and widespread snowfall. Precipitation fell statewide but was heaviest in the southwest and across the eastern half of the state. Wolf Creek Pass received nearly 3 feet of new snow in just 24 hours. Snowfall in amounts of 6-18" were common in the San Juans, even at lower elevations. But the heaviest snows fell east of the Continental Divide. Blizzard conditions developed on the 16th on the Palmer Lake Divide south and southeast of Denver. Both the Mount Evans and Pikes Peak areas received nearly 4 feet of snow in only about 24 hours. Heavy snow also fell on the plains. Denver and Boulder each received about a foot of snow, but nearby reports ranged from 15" at Limon and 18.5" at Colorado Springs to 20" at Lakewood, 27" at Palmer Lake and 35" northeast of Colorado Springs near Eastonville. Even as far east as Burlington, 10" of snow fell. The snow had substantial water content as well -- more than 2" in many places. A report of 3.50" of precipitation came from the Conifer area.
- 17-25 Unseasonably cold with most days 10-20 degrees below average. The first subzero temperatures of the year occurred on the 20th when Ruxton Park and Rio Grande Reservoir dipped to -1° and -2°F, respectively. Unsettled with daily mountain snows and several periods of snow and rain at lower elevations. The southeastern plains received some heavy rains on the 24th such as the 1.55" reported at Holly. The coldest temperature of the month occurred at Antero Reservoir on the morning of the 25th, -3°F.
- 26-31 A strong upper air disturbance brought 4-12" of new snow to the Northern and Central Mountains on the 26-28th. Otherwise it was dry over the rest of the state and temperatures returned to more seasonal allowing the remaining snow to melt. An arctic cold front "backed" into northeastern Colorado on the 30th leaving daytime temperatures only in the 30s. But it quickly retreated on the 31st leaving sunshine and temperatures mostly in the 60s (40s and 50s in the mountains).

Precipitation Summary

Precipitation totals for October (the first month of the 1985 water year) and percents of average are shown in Figures 1 and 2. Except for extreme northwest Colorado, the entire state was wetter than average.

Most areas had more than double the average precipitation. From the Front Range eastward across the plains, totals were generally more than 300% of average. From Denver to Pueblo and along the Kansas border, most stations reported more than 4 times the average October precipitation. New records were set at Colorado Springs (5.01"), Fountain (5.39"), Lakewood (5.75") and Ruxton Park (7.46"). At least a dozen stations totalled more than 5.00" of precipitation for the month. Ruxton Park, northwest of Colorado Springs, was the wettest reporting station. Browns Park Refuge in extreme northwest Colorado was the driest with 0.84".

Temperature Summary

This was the coldest October since 1969 and one of the coldest on record. Temperatures ranged from about three degrees below average in the northeast and in the San Luis Valley to eight degrees below average in central Colorado. Nighttime temperatures were actually near normal to as much as 3 degrees above normal because of frequent cloud cover. However, daytime temperatures were anywhere from 7 to as much as 14 degrees below average making October feel more like March.

Degree Days

No cooling degree days occurred in October so the statistics shown at the end of September complete the summer cooling season. Heating degree days are shown in Table 1. Because of the cold weather, heating degree day totals were much higher than usual. As a result energy requirements for heating homes, schools and business in October were as much as 60% more than average and 70% more than last year in some areas.

Figure 1. October 1984 precipitation amounts (inches).

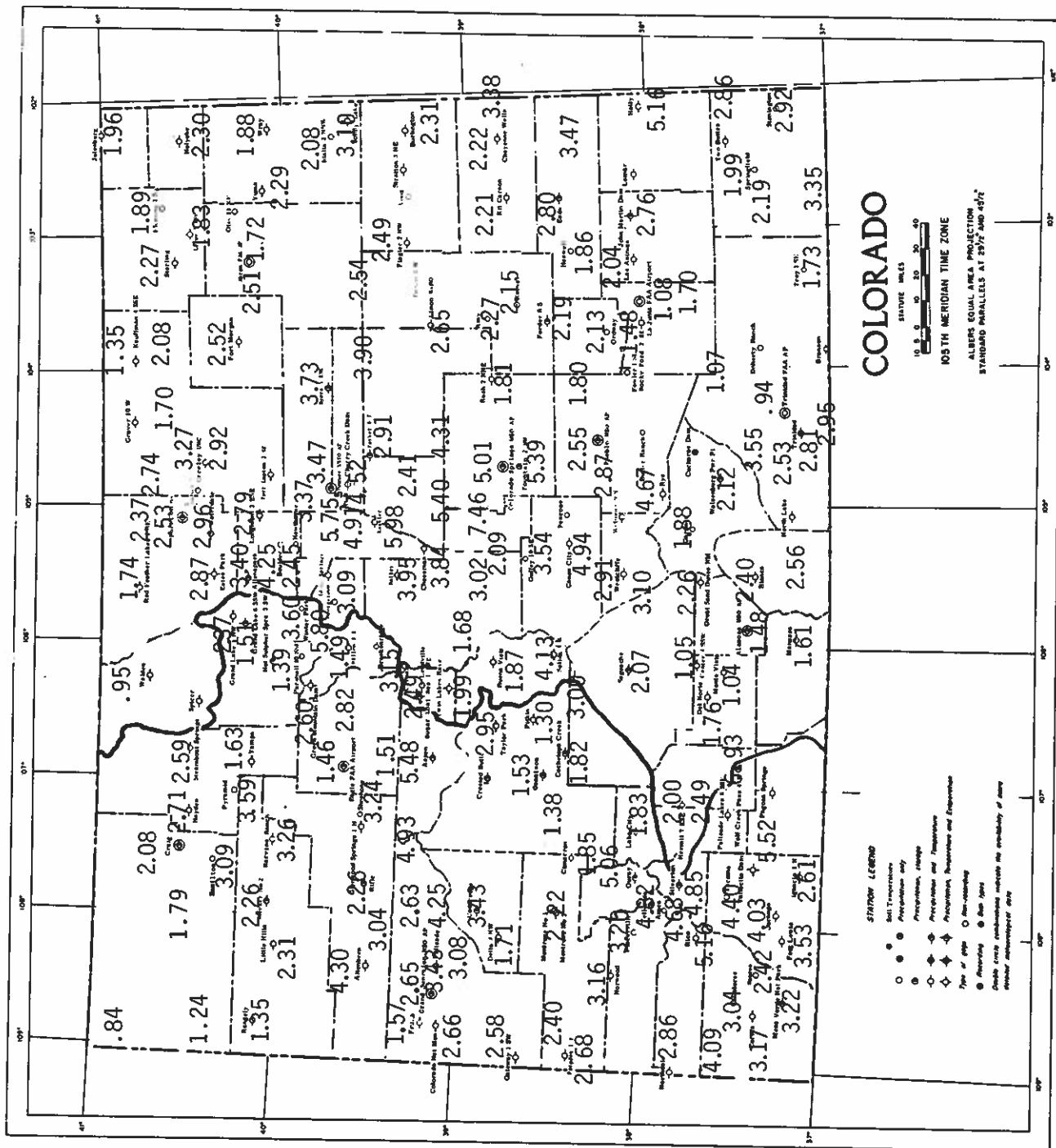


Figure 2. Precipitation for October 1984 as a percent of the 1961-80 average.

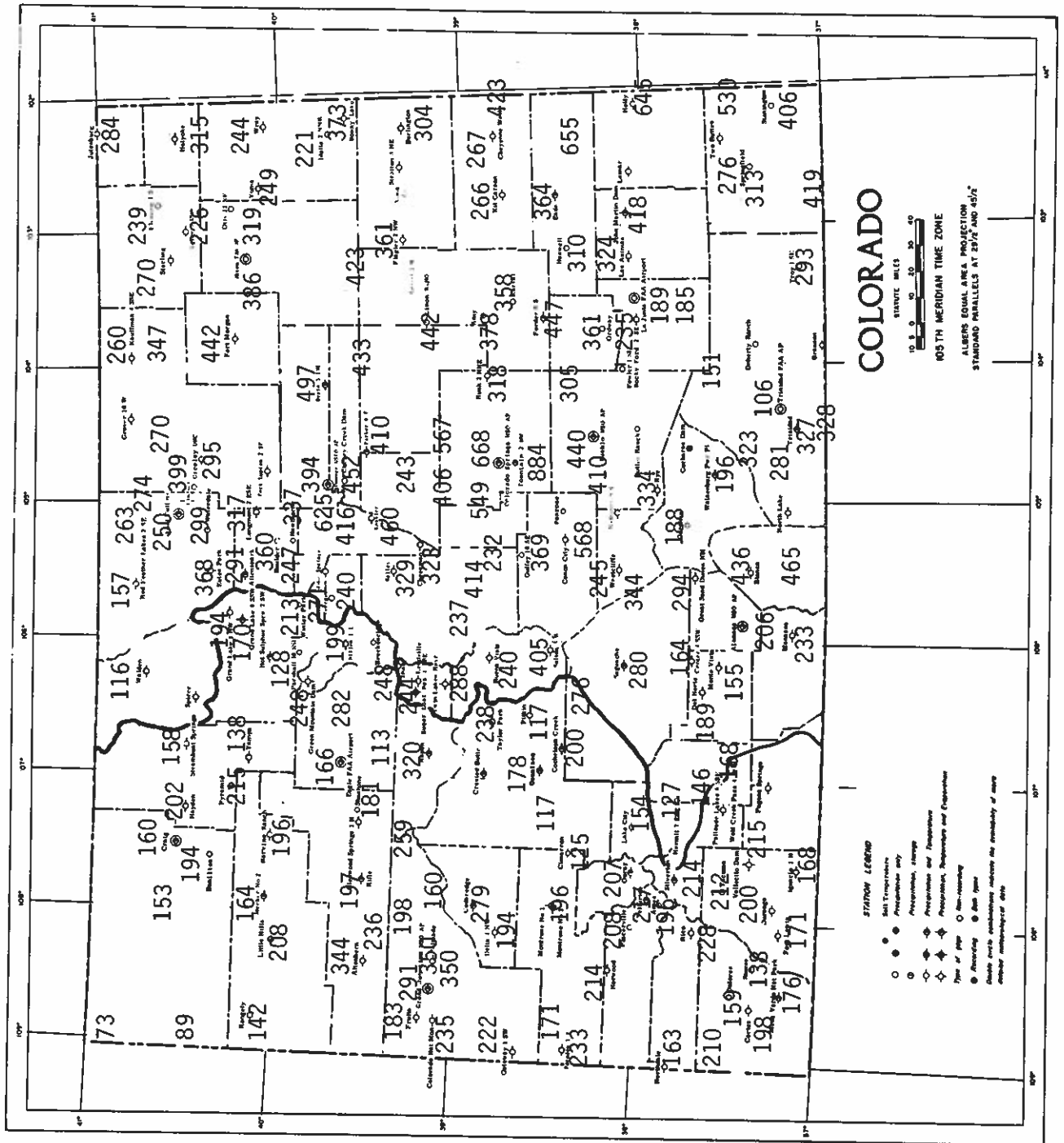
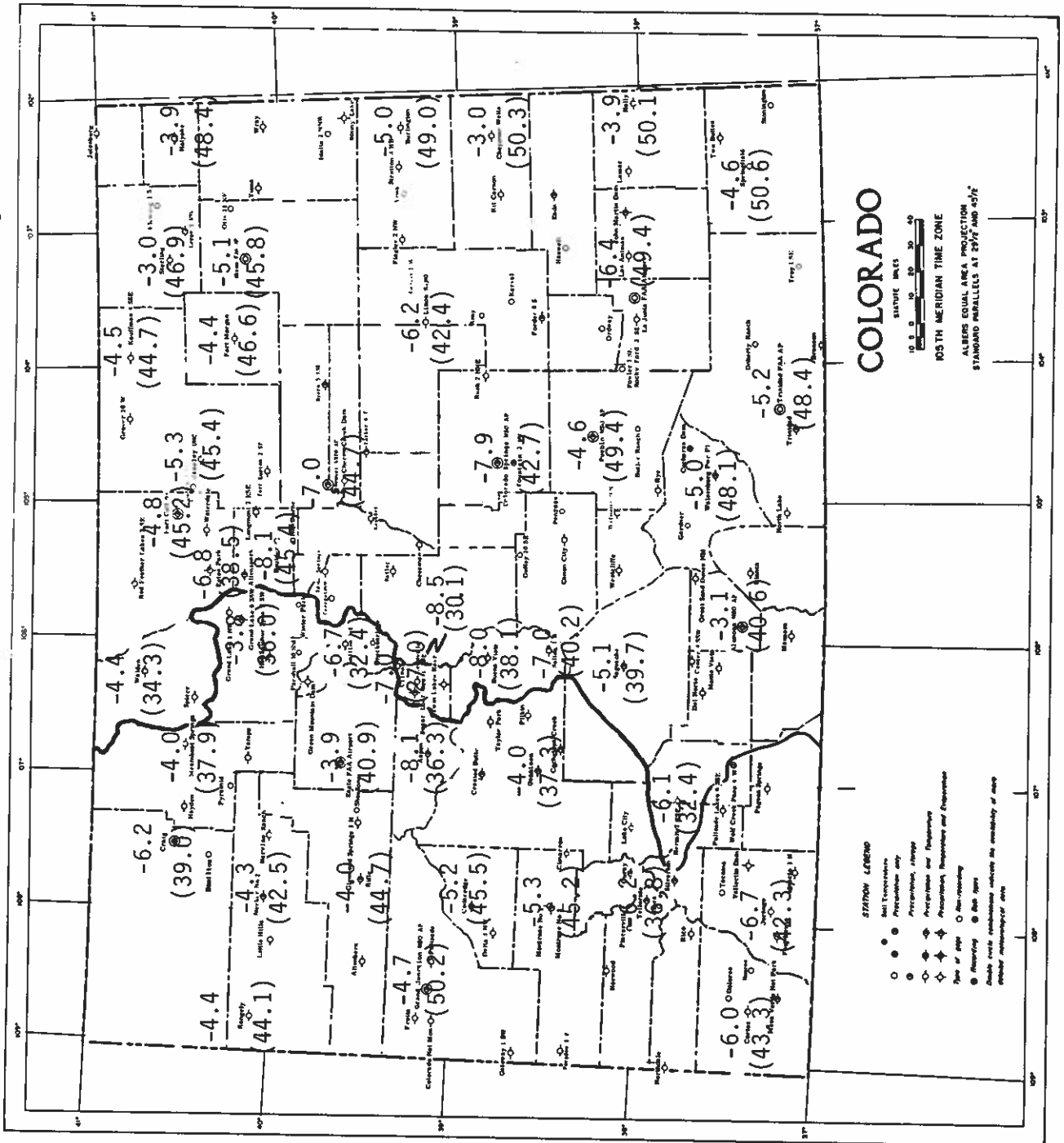


Figure 3. Temperatures for October 1984 in degrees Fahrenheit (in parentheses) and departures from the 1961-1980 average.



COLORADO CLIMATE

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NOVEMBER 1984

November in Review:

Placid autumn weather was observed in Colorado in November. It was a sharp but pleasant contrast with the cold and stormy early winter weather of October. Temperatures were close to average over the western half of the state, and warmer than average in the east. Precipitation was generally 50% to 100% of average west of the Continental Divide. A few small areas in the Northern and Central Mountains were wetter than average. East of the Divide precipitation was very sparse. Twenty stations reported no measurable precipitation for the month.

A Look Ahead -- January 1985:

January is typically the coldest month of the winter for Colorado. Normal daytime temperatures rise into the 30s and 40s from the Eastern Plains into the foothills. The mountains typically see daytime temperatures in the 20s, while readings in the 30s are normal in the Western Valleys. Local topography has a big effect on nighttime temperatures. Lows are typically near zero high in the mountains but often fall well below zero in the mountain valleys. Nighttime lows average between 10 and 15°F over most areas east of the mountains. Boulder and Canon City are noted exceptions as their temperatures often stay in the 20s. One or more episodes of extreme cold can normally be expected in January dropping temperatures below zero over most of the state. There are also usually a few warm "chinook" periods where westerly winds produce "downslope" warming east of the mountains. Occurrences of temperatures in the 50s and 60s are not uncommon during these episodes. Some of the worst downslope windstorms have occurred in January along the Front Range causing considerable damage.

January is a very dry month in the San Luis Valley, South Park and over most of eastern Colorado. Major snowstorms are uncommon in these areas and there is usually plenty of sunshine. However in the higher mountains and in areas west of the Continental Divide, January is a cloudy and snowy month. Monthly snowfall totals often exceed 50 inches in the mountains.

Happy Holidays!

The staff at the Colorado Climate Center wish you and yours a wonderful holiday season and a great new year. We appreciate your interest in the climate of our state and look forward to serving you in the years ahead.

As you can see, we have a new layout for our monthly summary. We hope this is to your liking. Please feel free to contact us with your comments.

Merry Christmas!

NOVEMBER 1984 DAILY WEATHER

<u>Date</u>	<u>Event</u>
1	Plenty of sunshine but chilly east of the mountains.
2	Rapid warmup. The warmest day of the month for much of the state with temperatures in the 70s over most of the Eastern Plains.
3	A few widely scattered rain and snow showers in and near the mountains associated with an upper air disturbance.
4-7	Dry and mild.
8-9	A storm system moved quickly from the West Coast across Colorado producing significant mountain snows particularly in the Northern and Central Mountains. Snows of 6-12" were common. Only a few sprinkles spilled across into eastern Colorado, but some lightning and thunder was observed on the 8th.
10-13	High pressure ridge over the Rockies brought warm and dry weather. Very warm on the 13th in advance of Pacific storm system. Unusually warm temperatures included 66° at Montrose, 73° at Burlington and 78° at Las Animas.
13-14	Snow developed late on the 13th in the Northern and Central Mountains. Precipitation was generally light, but the Berthoud Pass-Winter Park area received more than a foot of new snow.
15-21	Mild days but chilly nights. A storm system over New Mexico spilled into southwestern Colorado 17-18th leaving a few inches of new snow.
22-24	Warm statewide -- 40s and 50s. Moisture began moving northward into Colorado on the 24th with precipitation developing in the San Juan and Sangre de Cristo Mountains.
25-26	A moderate winter storm formed over Colorado and moved quickly into the Dakotas. Snow fell over most of western Colorado. Meeker, for example, totalled 6". For the first time all month, snow developed over portions of eastern Colorado. While the storm only affected a few areas, some heavy amounts were reported such as: Bennett 6", Trinidad 8", Palmer Lake 10" and Aguilar 13".
27	Clear and cold. Temperatures dropped to the teens and single digits over the plains and western valleys with below zero readings in the mountains. Leadville, for example, dipped to -8°. Crested Butte had a -21°, while Taylor Park Reservoir took it on the chin with a -30° reading.
28-30	Cold, moist northwesterly flow aloft brought periods of light snow to the mountains and some of the western valleys. Strong winds and warm temperatures along the Front Range on the 28th. Cold but dry in the east 29-30.

November 1984 Extremes

Highest Temperature	80°F	November 2	La Junta 20S
Lowest Temperature	-30°F	November 27	Taylor Park Resvr.
Greatest Total Precipitation	3.92"		Berthoud Pass
Least Total Precipitation	0		Several locations
Greatest Snowfall	54"		Berthoud Pass
Greatest Depth of Snow	37"	November 5	Berthoud Pass and
		November 29	Bonham Reservoir

NOVEMBER 1984 PRECIPITATION

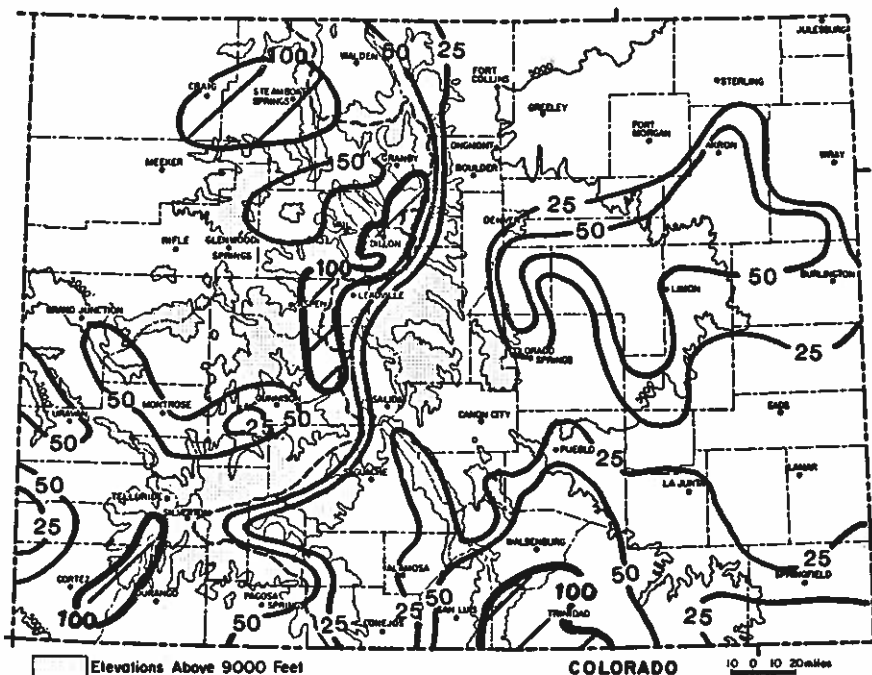
November precipitation was below average over most of Colorado. Many areas in eastern Colorado received no measurable precipitation. The only areas which were wetter than average included a narrow band along the Continental Divide from Winter Park to Taylor Park, an area in the northern mountains near Steamboat Springs, a very small area on the southwest slopes of the San Juan Mountains and an area from the Sangre de Cristo Range to Trinidad. Only one precipitation event affected eastern Colorado during the entire month.

Greatest

3.92" Berthoud Pass
 2.80" Bonham Reservoir
 2.78" Wolf Creek Pass
 2.39" Trout Lake
 2.16" Pyramid

Least

0.00" Briggsdale, Eads,
 Haswell, Kit Carson,
 Kauffman 4SSE,
 Waterdale (Loveland)



Precipitation for November 1984 as a percent of the 1961-1980 average.

1985 WATER YEAR PRECIPITATION

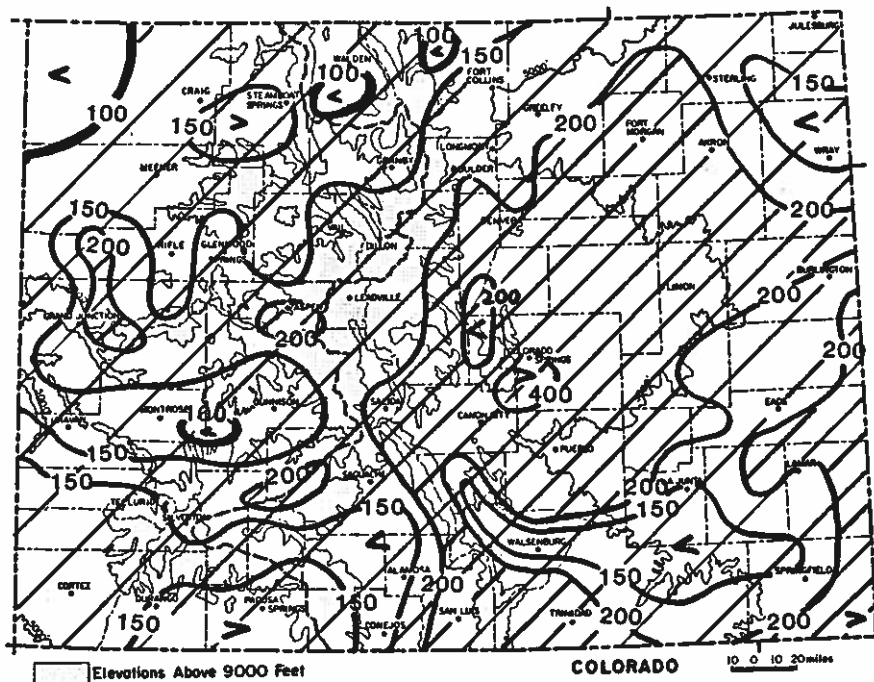
Despite a dry November, precipitation for the first two months of the 1985 water year is well above average over most of the state. Much of eastern Colorado is still more than 200% of average for this time of year.

Comparison to Last Year

Last year at this time, accumulated precipitation was also above average over most of the state. The only dramatic differences were that the southeastern plains and the San Luis Valley were considerably drier last year and the northwestern counties were wetter than they are so far this year.

1985 Water Year to Date through November

<u>Wettest (as % of average)</u>			<u>Driest (as % of average)</u>		
Fountain	527%	5.43"	Brown's Park Refuge	66%	1.10"
Fort Carson	497%	5.96"	Williams Fork Dam	85%	1.89"
Colorado Springs	402%	5.15"	Cimarron	90%	2.15"
Inter Canyon	390%	7.41"	Dinosaur Nat Mon	93%	1.88"
Holly	382%	5.23"	Red Feather Lakes	90%	2.15"

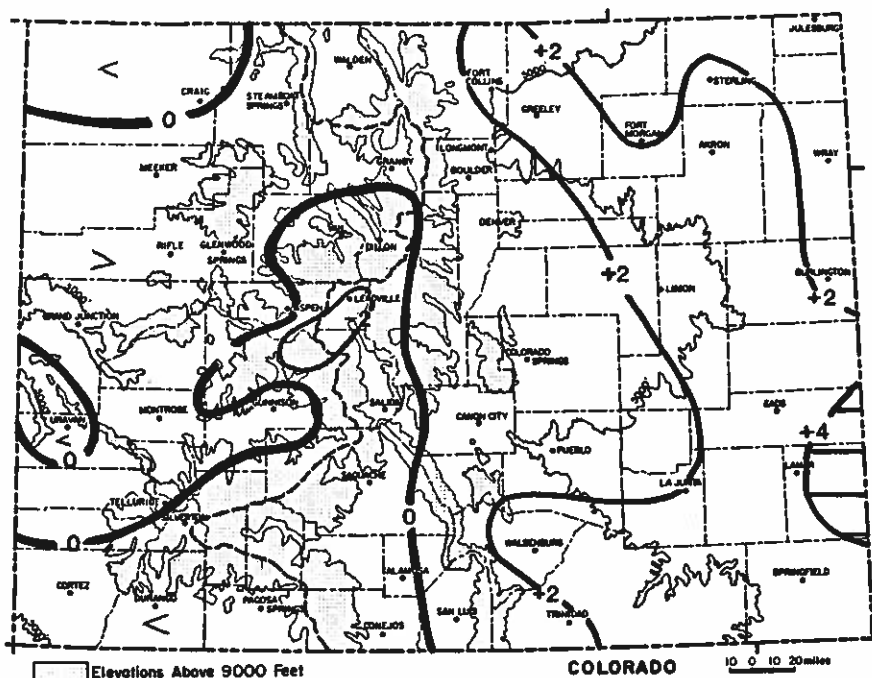


Precipitation for October through November 1984 as a percent of the 1961-1980 average.

NOVEMBER 1984 TEMPERATURES
AND DEGREE DAYS

Mean temperature for the month were very near the 1961-80 average. The only areas with significant departures from average were in northeastern Colorado where Fort Collins, Sterling and Akron were all nearly 3 degrees Fahrenheit above average, and also in southeastern Colorado where Holly was more than 4 degrees warmer than average.

Because of the seasonal to somewhat warmer than average temperatures experienced this November, heating degree day totals are near to somewhat less than average. Compared to last year, heating degree day totals this year were generally a little lower over most of the state indicating less demand for energy this year for heating purposes. More detailed data appear in the table on the following page.



November 1984 temperature departures from normal.

NOVEMBER 1984 SOIL TEMPERATURES

Soil temperatures are important to a wide number of persons ranging from farmers to excavators. At the present time, systematic measurements of soil temperature are taken at only a few locations in Colorado. Data have been collected in Fort Collins at Colorado State University for several decades. Beginning this month, we will display a monthly graph of Fort Collins soil temperatures. The measurements are taken beneath unirrigated sod with an open exposure.

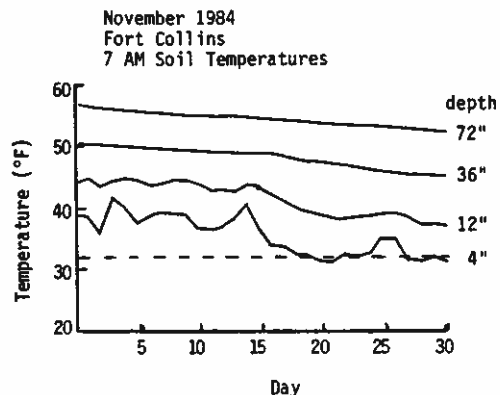


Table 1. Colorado Heating Degree Day Data through November 1984.

STATION	HEATING DEGREE DATA														
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANN		
ALAMOSA	40	100	203	657	1074	1457	1519	1182	1035	732	453	165	8717	384	
AVE	83-84	28	35	213	674	1112	1581	1566	1166	799	300	188	9644	654	
84-85	11	56	232	748	1051								2118	630	
ASPERN	95	150	348	651	1029	1339	1376	1162	1116	798	524	262	8850	522	
AVE	83-84	97	86	269	622	1021	1392	1470	1200	1108	932	477	345	848	661
84-85	87	134	345	683	1031								2480	170	
BOULDER	0	6	130	357	714	908	1004	804	775	493	220	59	5460	543	
AVE	83-84	4	84	350	753	1367	1087	830	792	639	168	58	6132	816	
84-85	0	1	171	599	716								1487	432	
BUENA VISTA	47	116	285	577	936	1184	1218	1025	983	720	459	184	7734	102	
AVE	83-84	45	89	234	595	970	1333	1020	982	808	370	203	7940	348	
84-85	16	91	264	628	949								2168	502	
BURLING- TON	6	5	108	364	762	1017	1110	871	803	459	200	38	5743	726	
AVE	83-84	0	0	87	359	758	1500	1172	884	883	700	200	34	1340	1038
84-85	0	0	148	453	699								6577	1171	
CANON CITY	0	9	81	301	639	831	911	734	707	411	179	33	4836	702	
AVE	83-84	0	0	71	314	649	1278	993	760	752	570	134	27	5548	570
84-85	0	0											0	299	
COLORADO SPRINGS	8	25	162	440	819	1042	1122	910	880	564	296	78	6346	282	
AVE	83-84	2	0	101	417	811	1438	1197	911	912	700	220	58	6767	936
84-85	0	6	200	684	791								1681	311	
CORTAZ	0	11	115	434	813	1132	1181	921	828	555	292	68	6350	467	
AVE	83-84	5	0	98	438	854	1154	1271	1018	677	239	119	5873	871	
84-85	0	0	108	666	839								1613	507	
CRAIG	42	58	272	608	996	1342	1479	1193	1094	887	419	193	8376	594	
AVE	83-84	31	3	215	579	1005	1471	1730	1420	1194	884	383	267	9189	600
84-85	15	25	304	799	1002								2145	669	
DELTA	0	0	94	394	813	1135	1197	890	753	429	167	31	5903	254	
AVE	83-84	0	0	60	340	727	1061	1366	1006	736	505	135	537	598	
84-85	0	11	49	477	713								74	6014	
DENVER	0	0	183	622	753								51	6573	
AVE	83-84	3	0	87	372	633	1466	1162	889	854	673	183	51	1559	
84-85	0	1											74	6014	
DILLON	0	0	183	622	753								51	6573	
AVE	83-84	273	332	513	806	1167	1435	1516	1305	1296	972	704	435	10754	
84-85	245	301	510	1004	1161								472	11017	
DURANGO	9	34	193	493	837	1153	1218	958	862	600	366	125	6848	3221	
AVE	83-84	3	0	124	464	899	1161	1289	1009	835	665	209	113	6771	
84-85	0	6	124	695	866								1691	2019	
EAGLE	33	80	288	626	1026	1407	1448	1148	1014	705	431	171	8377	323	
AVE	83-84	30	3	203	579	962	1337	1661	1299	1015	798	338	238	8463	
84-85	1	27	252	741	998								2019	490	
EVER- GREEN	59	113	327	621	916	1135	1199	1011	1009	730	489	218	7827	533	
AVE	83-84	72	15	228	826	1419	1653	1419	1333	1124	675	231	8140	331	
84-85	21	68											1789	2452	
FORT COLLINS	5	11	171	468	846	1073	1181	930	877	558	281	82	6483	318	
AVE	83-84	2	0	115	415	843	1432	1225	867	629	661	196	81	1554	
84-85	0	0	193	606	745								1686	139	
FORT MORGAN	0	6	140	438	867	1156	1283	969	874	516	224	47	6520	207	
AVE	83-84	0	0	77	268	582	1614	1493	998	844	650	158	38	7022	
84-85	0	0	185	584	784								1533	468	
GRAND JUNCTION	0	0	65	325	762	1138	1295	882	716	403	148	19	5683	501	
AVE	83-84	0	0	27	209	578	1066	1366	958	630	474	89	44	5540	
84-85	0	0	54	452	719								1225	147	

NOVEMBER 1984 CLIMATIC DATA

Eastern Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
KAUFFMAN 4SSE	51.6	20.9	36.2	0.3	72	6	856	0	65	0.0	-0.28	0.0	0
STERLING	56.0	21.4	38.7	2.6	76	13	784	0	116	0.09	-0.35	20.5	2
FORT MORGAN	54.0	23.2	38.6	1.9	78	16	784	0	92	0.0	-0.36	0.0	0
AKRON FAA AP	53.2	25.9	39.6	2.9	77	10	755	0	90	0.46	0.00	100.0	5
HOLYOKE	53.4	24.7	39.0	1.0	68	13	772	0	78	0.08	-0.44	15.4	3
BURLINGTON	54.9	28.1	41.5	1.8	73	16	699	0	103	0.19	-0.36	34.5	1
LIMON WSMO	51.3	21.5	36.4	0.4	71	6	852	0	68	0.03	-0.35	7.9	1
CHEYENNE WELLS	57.2	27.6	42.4	3.3	74	17	670	0	134	0.12	-0.37	24.5	3
LAMAR	59.5	28.2	43.9	3.6	77	18	626	0	164	0.0	-0.60	0.0	0
LAS ANIMAS	61.4	24.7	43.1	2.1	78	14	653	0	184	0.03	-0.47	6.0	1
HOLLY	62.2	25.1	43.7	4.4	77	9	630	0	199	0.07	-0.50	12.3	1
SPRINGFIELD 7WSW	59.4	28.4	43.9	2.2	77	10	626	0	155	0.26	-0.49	34.7	2

Foothills/Adjacent Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	54.0	25.8	39.9	2.6	76	15	745	0	94	0.02	-0.61	3.2	1
GREELEY UNC	53.3	25.0	39.2	2.3	76	14	769	0	82	0.05	-0.71	6.6	1
ESTES PARK	47.5	23.5	35.5	0.9	61	5	878	0	33	0.03	-0.49	5.8	2
LONGMONT 2ESE	54.7	20.8	37.7	0.5	76	11	812	0	98	0.11	-0.50	18.0	1
BOULDER	55.1	26.7	40.9	0.1	74	17	716	0	100	0.01	-0.95	1.0	1
DENVER WSFO AP	54.3	25.0	39.7	0.9	76	12	753	0	95	0.27	-0.56	32.5	3
EVERGREEN	51.1	20.0	35.6	1.4	69	10	874	0	67	0.04	-0.96	4.0	2
LAKE GEORGE 8SW	43.3	16.7	30.0	1.7	57	2	1043	0	15	0.02	-0.36	5.3	1
COLORADO SPRINGS	51.5	25.3	38.4	0.7	74	8	791	0	74	0.14	-0.39	26.4	2
CANON CITY	56.8	25.9	41.4	-2.9	74	9	702	0	127	0.07	-0.59	10.6	2
PUEBLO WSO AP	57.7	24.3	41.0	0.5	76	11	713	0	138	0.20	-0.27	42.6	2
WALSENBERG	57.3	30.6	44.0	2.9	73	15	621	0	140	0.68	-0.21	76.4	2
TRINIDAD FAA AP	58.6	27.5	43.0	2.0	79	2	652	0	155	0.45	-0.14	76.3	2

Mountains/Interior Valleys*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	40.5	13.6	27.1	0.8	56	-2	1130	0	9	0.53	-0.06	89.8	6
LEADVILLE 2SW	37.3	11.0	24.1	-0.9	54	-8	1217	0	4	0.40	-0.60	40.0	6
SALIDA	49.7	21.3	35.5	-1.0	61	3	876	0	55	0.0	-0.62	0.0	0
BUENA VISTA	47.2	18.9	33.1	-0.7	60	9	949	0	39	0.12	-0.47	20.3	1
SAGUACHE	45.5	17.1	31.3	-0.0	59	5	1004	0	27	0.01	-0.48	2.0	1
HERMIT 7ESE	42.5	13.0	27.8	3.1	52	-2	1109	0	3	0.0	-1.18	0.0	0
ALAMOSA WSO AP	47.7	12.0	29.8	0.0	64	-3	1051	0	43	0.10	-0.26	27.8	4
GRAND LAKE 6SSW	39.2	17.1	28.2	0.4	50	6	1096	0	0	0.64	-0.23	73.6	14
BERTHOUD PASS	30.9	8.8	19.8	-0.2	45	-10	1350	0	0	3.92	0.76	124.1	14
DILLON 1E	40.0	12.1	26.0	-0.7	54	-7	1161	0	5	0.80	0.09	112.7	10
AVON	42.9	15.9	29.4	-0.6	58	-3	1058	0	20	0.58	-0.62	48.3	8
CLIMAX	33.4	10.2	21.8	0.0	47	-10	1288	0	0	1.82	0.09	105.2	12
ASPEN 1SW	43.0	17.7	30.4	0.4	58	-1	1034	0	15	1.50	-0.10	93.8	6
TAYLOR PARK	34.3	-3.0	15.6	-9.6	49	-30	1473	0	0	1.40	0.33	130.8	8
TELLURIDE	46.7	17.2	31.9	0.7	60	-7	984	0	29	1.04	-0.51	67.1	10
PAGOSA SPRINGS	49.8	15.0	32.4	-0.6	62	-7	970	0	55	0.81	-0.79	50.6	7
WOLF CREEK PASS 1	37.4	7.7	22.5	-3.6	52	-10	1267	0	1	2.78	-0.92	75.1	7

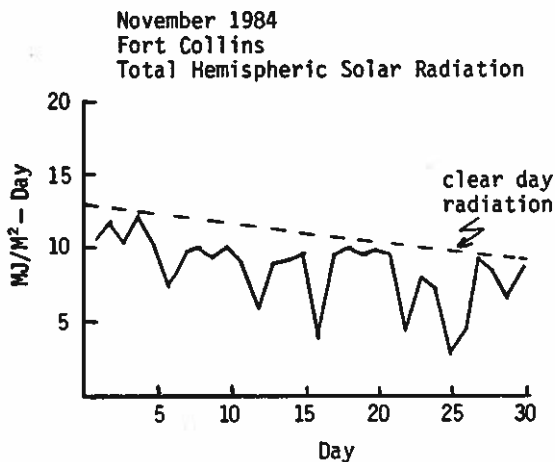
Western Valleys*

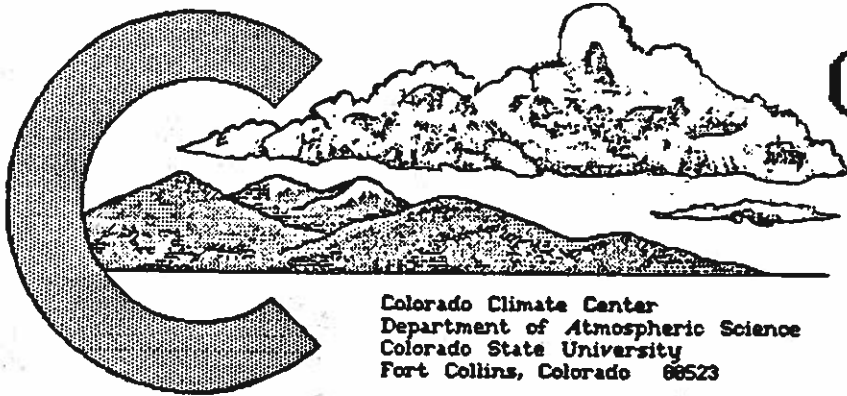
Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
CRAIG 4SW	44.1	18.7	31.4	-0.1	62	4	1002	0	20	1.21	0.24	124.7	8
HAYDEN	44.9	21.2	33.0	1.1	60	5	952	0	28	1.53	0.29	123.4	9
MEEKER NO. 2	48.5	20.5	34.5	1.4	63	-3	907	0	42	0.61	-0.35	63.5	4
EAGLE FAA AP	46.9	16.2	31.5	-0.1	63	0	998	0	39	0.27	-0.32	45.8	5
GLENWOOD SPRINGS	51.2	26.2	38.7	3.3	63	10	782	0	68	0.74	-0.26	74.0	11
RIFLE	51.9	22.4	37.1	0.4	67	10	829	0	81	0.38	-0.43	46.9	4
GRAND JUNCTION WS	51.9	29.7	40.8	0.6	65	19	719	0	70	0.36	-0.25	59.0	3
CEDAREGGE	50.4	26.3	38.3	0.4	65	7	792	0	55	0.73	-0.17	81.1	5
PADONIA 1SW	53.0	26.1	39.6	0.9	67	5	757	0	91	0.78	-0.39	66.7	5
DELTA	56.5	25.6	41.0	2.5	69	12	713	0	126	0.05	-0.55	8.3	1
GUNNISON	43.7	14.2	29.0	0.9	57	-5	1072	0	15	0.16	-0.40	28.6	5
MONTROSE NO. 2	51.7	25.1	38.4	0.9	66	5	791	0	74	0.35	-0.33	51.5	3
URAVAN	54.7	25.3	40.0	-1.0	67	12	741	0	104	0.43	-0.63	40.6	4
NORWOOD	50.1	21.4	35.8	2.0	61	3	871	0	50	0.78	-0.20	79.6	4
YELLOW JACKET 2W	48.5	25.4	37.0	-0.3	61	0	833	0	47	0.57	-0.67	46.0	4
CORTEZ	51.1	22.3	36.7	-1.6	63	2	839	0	76	0.71	-0.32	68.9	7
DURANGO	50.0	21.8	35.9	-1.5	63	3	866	0	63	1.04	-0.29	78.2	8
IGNACIO 1N	51.5	30.3	40.9	5.2	63	8	716	0	68	0.72	-0.31	69.9	5

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

NOVEMBER 1984 SUNSHINE AND SOLAR RADIATION

Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	8	9	13	--	--
Denver	8	12	10	64	65
Grand Junction	8	6	16	69	63
Pueblo	10	8	12	66	74





COLORADO CLIMATE

Colorado Climate Center
Department of Atmospheric Science
Colorado State University
Fort Collins, Colorado 80523

DECEMBER 1984

December in Review:

Temperatures were relatively mild, for December, and precipitation ranged from below average in the Northern and Central Mountains and along the Front Range to much wetter than average over portions of southwestern and west central Colorado. Only two significant storm episodes affected the state. It was a quiet month compared to December 1983 when record cold chilled the Eastern Plains and record breaking snows buried the mountains.

A Look Ahead -- February 1985:

Daylength becomes noticeably longer in February and a few warm days east of the mountains give early hints of the coming of spring. For the most part, though, February means more winter weather for Colorado. Temperatures begin a gradual warm up over the state. On the average, February temperatures are 1 to 4 degrees Fahrenheit warmer than January in the mountains and foothills. But out on the plains and in some of the western valleys the warmup is more noticeable. At Grand Junction, for example, February temperatures average 10 degrees higher than January. After the first week of February the chances of seeing below zero temperatures on the Eastern Plains drop dramatically. But in the mountains, subzero temperatures are just as likely in February as in January. Some of Colorado's coldest temperatures ever occurred in February such as Taylor Park's well known -60°F reading on February 1, 1951.

February is still a month known for plenty of mountain snows, and the snow that falls won't start melting for several weeks. But down at lower elevations, especially east of the mountains, dry conditions normally prevail. During the past 25 years February has reliably been the driest month of the year on the plains. Few major blizzards have occurred. February is sometimes called "the calm before the storm" since Eastern Plains weather often deteriorates in March.

Interesting Facts about Colorado's Climate

Were it not for the efforts made decades ago to gather local climate data, we would still be groping to understand some of the interesting local variations we observe in Colorado. In January 1867, 118 years ago, complete daily weather observations were begun at Ft. Lyon near what is now Las Animas in southeastern Colorado. Weather data from Las Animas have been collected continuously since that time making that the longest climatological record in Colorado. They have had their share of extremes over the years. Their wettest year was 1923 when 21.39" of precipitation fell. Only 2.79" was recorded in 1894. The highest temperature ever recorded there was 114° in July 1933 while the coldest was -32° in January 1948. During 1984 their temperatures ranged from a high of 104° to a low of -29° and their total annual precipitation was 11.92.

DECEMBER 1984 DAILY WEATHER

<u>Date</u>	<u>Event</u>
1-5	A cold front crossed the state producing a few inches of snow in the Northern and Central Mountains. Behind the front, weak upslope flow brought a little moisture to the Pueblo-Colorado Springs area. Colorado Springs was surprised by almost 5" of new snow on the 2nd. Dry, but cold 3-5th. Several stations had their coldest temperatures of the month including +4°F at Cheyenne Wells on the 4th, and -17° at Steamboat Springs on the 5th.
6-10	Dry, breezy, and unseasonably warm east of the mountains. Unusually warm temperatures for December were reported on the 7th including 68° at Denver and Fort Collins, 72° at Pueblo and 75° at Springfield. The highest temperature in the state occurred at Holly on the 10th, 76°F. Meanwhile, moisture moved into western Colorado from the southwest on the 8th. Vallecito Dam received nearly 10" of snow on the 8th and 9th.
11-18	Colder over all except southwestern Colorado with daily mountain snowfall. Thirteen inches of snow fell 11-16th at Rifle and 18" at Durango while higher elevations reported much more. Snow developed over eastern Colorado on the 12th and continued intermittently until the 15th. Most of the area received significant snowfall with typical accumulations between 4 and 8 inches. Temporary clearing on the 14th resulted in some of the coldest temperatures so far this winter east of the mountains such as 3°F at Boulder, 1° at Limon and -6° at Kauffman. Then chilly and dry 17-18th.
19-21	Moisture spread into all of western Colorado producing generally light precipitation. Some local exceptions included nearly a foot of new snow at Rifle, Bonham Reservoir and near Hermit. East of the mountains remained dry with seasonal temperatures and some gusty winds on the 21st.
22-23	No precipitation. Sunny with cold nighttime temperatures in the mountains. Alamosa dipped to -19° on the 23rd and Silverton was -24° on the 22nd. Taylor Park Dam claimed the month's coldest temperature with a -42° early on the 22nd. Strong downslope winds developed on the 23rd along the Front Range. Gusts near 100 mph were reported near Boulder.
24	Sharply colder over eastern Colorado as an arctic front slipped southward.
25	Cloud cover spread across Colorado on Christmas Day, but temperatures were seasonal and only a few mountain snow showers were reported.
26-28	Copious moisture moved into southwestern Colorado. Heavy precipitation was reported on the 27th, some of it falling as rain even up to elevations of nearly 10,000 feet. Lemon Dam near Durango received 3.70" from the storm including 2.87" in 24 hours. Rain was reported as far north as Steamboat Springs. The Eastern Plains remained dry.
29-30	Dry and mild.
31	Light snow began in the mountains and spread to the plains during the evening causing tricky driving conditions on New Year's Eve.

December 1984 Extremes

Highest Temperature	76°F	December 10	Holly
Lowest Temperature	-42°F	December 22	Taylor Park Resvr.
Greatest Total Precipitation	7.28"		Lemon Dam
Least Total Precipitation	.02"		Brandon
Greatest Snowfall	82"		Tacoma (Electra Lake)
Greatest Depth of Snow	52"	December 28	Bonham Resvr.

DECEMBER 1984 PRECIPITATION

The December precipitation pattern in Colorado was very complex. Precipitation was generally below average along the Front Range and the eastern foothills from Trinidad to the Wyoming border. The weather station at South Platte received just 0.12" of precipitation during the month. Bailey recorded 0.17." Most of the northern and central mountain areas were also drier than average. However, in west central and southwest Colorado heavy precipitation was observed. Parts of the San Juan Mountains, the Grand Mesa, the western portion of the San Luis Valley and scattered areas of extreme western and southwestern Colorado had more than double the average precipitation. At the same time, the Gunnison Valley got less than half of their normal December precipitation.

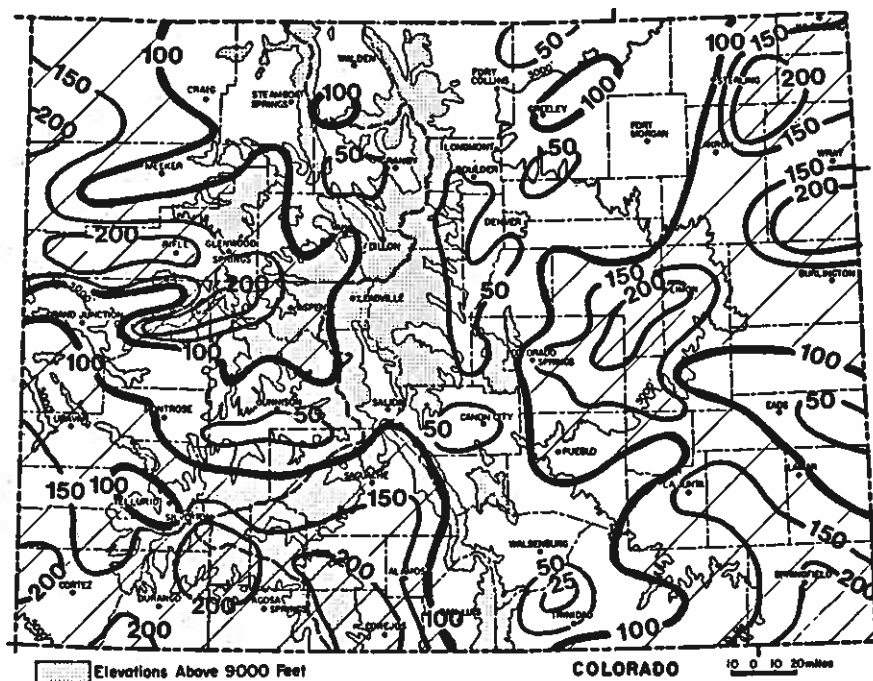
The Eastern Plains were generally a little wetter than average with precipitation totals mostly between 0.25 and 0.75."

Greatest

Lemon Dam	7.28"
Bonham Reservoir	6.57"
Vallecito Dam	6.30"
Rio Grande Resvr	4.02"
Tacoma	3.89"

Least

Brandon	0.02"
Aguilar	0.09"
Florissant	0.09"
Fossil Beds	0.10"
Delta	0.13"



Precipitation for December 1984 as a percent of the 1961-1980 average.

1985 WATER YEAR PRECIPITATION

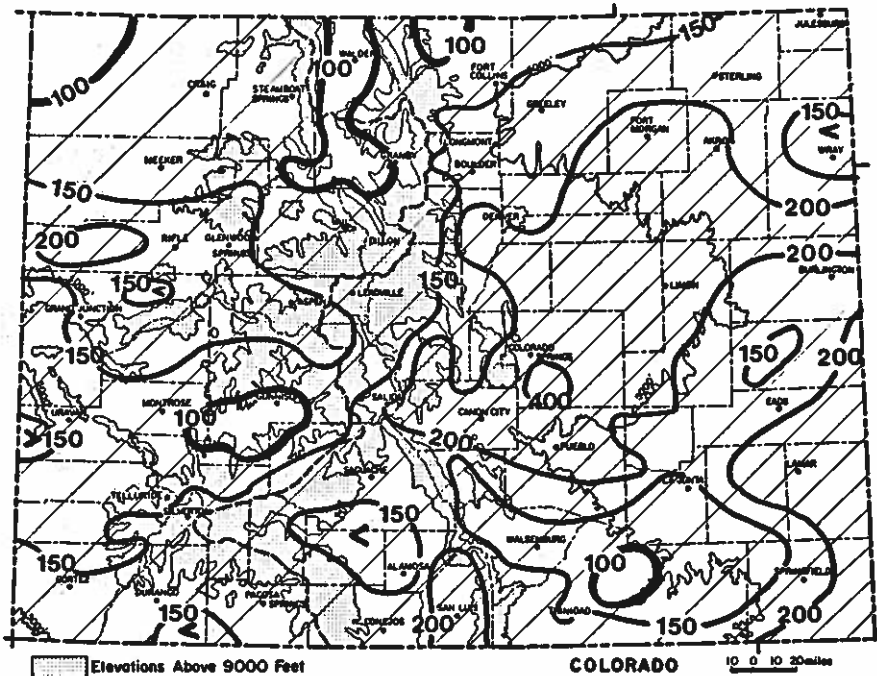
Three months into the new 1985 water year, accumulated precipitation continues to be above average over almost all of Colorado. This, in combination with above average high elevation snowpack and much above average reservoir storage, paints a good picture for surface water supplies during the coming months.

Comparison to Last Year

Last year at this time, accumulated precipitation was also above average over all of Colorado except the lower Arkansas Valley. Record snows during November and December 1983 in the Northern and Central Mountains and the West Slope valleys helped make precipitation totals there greater than they have been so far this winter.

1985 Water Year to Date through December

<u>Wettest (as % of average)</u>			<u>Driest (as % of average)</u>		
Fountain	439%	5.88"	Williams Fork Dam	68%	2.34"
Fort Carson	408%	6.32"	Cimarron	72%	2.29"
Colorado Springs	347%	5.79"	Blue Mesa Reservoir	73%	1.91"
Holly	335%	5.43"	Browns Park Refuge	77%	1.64"
Brandon	309%	3.49"	Red Feather Lakes	85%	2.30"

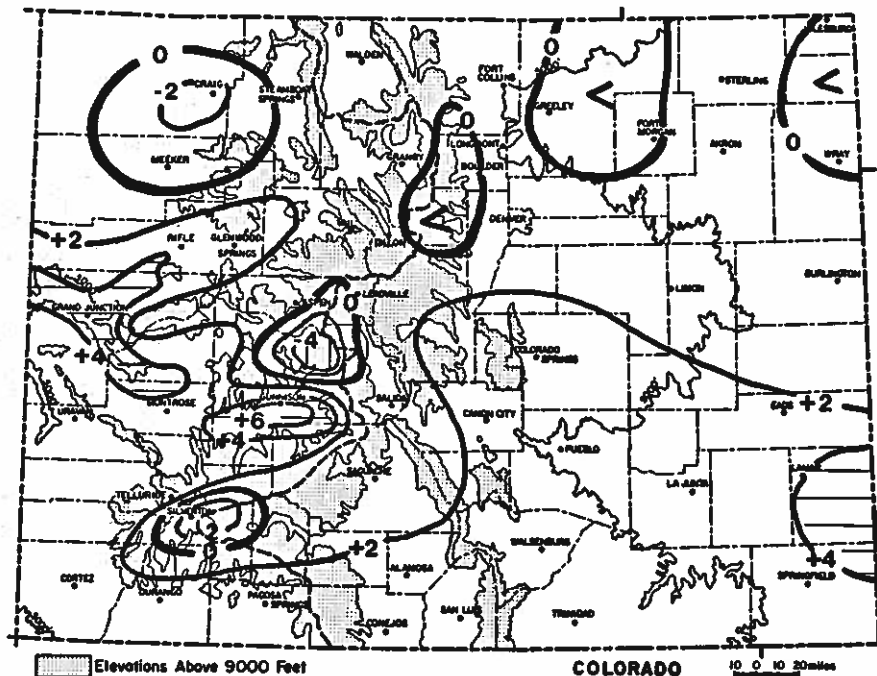


Precipitation for October through December 1984 as a percent of the 1961-1980 average.

DECEMBER 1984 TEMPERATURES
AND DEGREE DAYS

December temperatures were above average over most of Colorado. Parts of the Gunnison Valley and the lower Colorado and Arkansas valleys were more than 4 degrees Fahrenheit warmer than normal. Colder than average temperatures were limited to portions of the northeastern plains and some of the snowcovered mountain valleys.

Heating degree day data appear in the tables on the following pages. Degree day totals were less than average and less than December 1983 for most reporting stations. Dramatic differences were observed compared to last year (one of the coldest December's on record) east of the Continental Divide. Burlington, for example totalled 980 heating degree days compared to 1500 in December 1983. This means that heating bills east of the Divide should be much lower than a year ago.



December 1984 temperature departures from normal.

DECEMBER 1984 SOIL TEMPERATURES

Soil temperatures remained above freezing below depths of 1 foot during December thanks to several inches of snowcover before Christmas. These measurements are taken at Colorado State University beneath unirrigated sod with an open exposure.

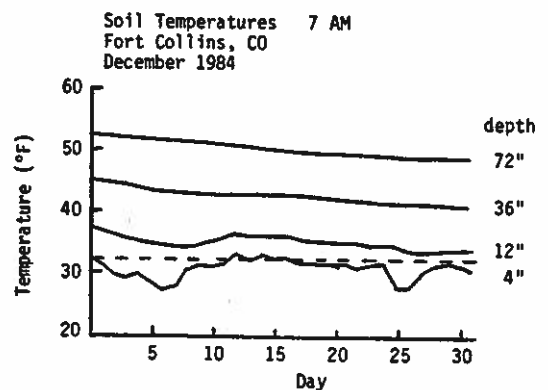


Table 1. Colorado Heating Degree Day Data through December 1984.

STATION		HEATING DEGREE DATA													
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUN	ANN
ALAMOSA	AVE	40	100	303	657	1074	1457	1519	1182	1035	732	453	165	8717	
	83-84	28	35	213	674	1112	1581	1982	1566	1166	799	300	188	9640	384
	84-85	11	56	252	748	1051	1382							10671	411
ASPEN	AVE	95	150	348	651	1029	1339	1376	1162	1116	796	524	262	8850	
	83-84	97	86	269	622	1021	1392	1470	1200	1108	932	477	345	9019	52
	84-85	67	134	345	683	1034	1282							1120	6442
BOULDER	AVE	0	6	130	357	714	908	1004	804	775	483	220	59	5460	
	83-84	4	0	84	350	753	1367	1087	830	792	639	168	58	6132	276
	84-85	0	1	171	599	716	938							10713	432
BUENA VISTA	AVE	47	116	285	577	936	1184	1218	1025	983	720	459	184	7734	
	83-84	45	49	234	595	970	1333	1331	1020	962	808	370	203	7940	207
	84-85	16	91	284	628	949	1169							1019	2425
BURLING- TOR	AVE	6	5	108	364	762	1017	1110	871	803	459	200	38	5743	
	83-84	0	0	87	359	758	1500	1172	884	883	700	200	34	6577	439
	84-85	0	0	148	493	699	960							11360	515
CANYON CITY	AVE	0	9	81	301	639	831	911	734	707	411	179	33	4836	
	83-84	0	0	71	314	649	1278	993	760	752	570	134	27	5548	299
	84-85	0	0	0	702	841								10571	282
COLORADO SPRINGS	AVE	8	25	162	440	819	1042	1122	910	880	564	296	78	8346	
	83-84	2	0	101	417	811	1438	1197	911	912	700	220	58	6767	256
	84-85	0	6	200	684	791	982							10263	2850
CORTEZ	AVE	0	11	115	434	813	1132	1181	921	828	555	292	68	6350	
	83-84	5	0	98	438	854	1154	1271	1018		677	239	119	5978	651
	84-85	0	0	106	666	839	1072							11477	204
CRAG	AVE	32	58	275	608	996	1342	1479	1193	1094	687	419	193	8376	
	83-84	11	3	212	579	1005	1471	1730	1420	1194	884	383	267	9189	333
	84-85	15	25	304	759	1002	1424							11064	220
DELTA	AVE	0	0	94	394	813	1135	1197	890	753	429	167	31	5903	
	83-84	0	0	60	340	727	1061	1366	1006	736	505	135	59	5936	233
	84-85	0	11	49	477	713	989							11190	2221
DENVER	AVE	0	0	135	414	789	1004	1101	879	837	528	253	74	6014	
	83-84	3	0	81	372	823	1466	1162	893	854	673	183	51	6573	254
	84-85	0	1	183	622	753	990							11064	2569
DILLON	AVE	273	332	513	896	1167	1435	1516	1305	1295	972	704	435	10754	
	83-84	263	224	438	789	1135	1482	1653	1419	1333	1124	675	472	11017	62
	84-85	245	301	510	1004	1161	1380							11360	4601
DURANGO	AVE	9	34	183	493	837	1153	1218	958	862	600	366	125	6948	
	83-84	3	0	124	464	899	1151	1289	1009	835	685	209	113	6771	297
	84-85	0	0	124	695	866	1074							11184	339
EAGLE	AVE	33	60	288	626	1025	1407	1448	1148	1014	705	431	171	8377	
	83-84	30	3	203	573	952	1337	1681	1299	1015	796	336	236	8463	51
	84-85	1	27	252	741	998	1300							11140	3519
EVEN- GREEN	AVE	59	113	327	621	916	1135	1198	1011	1009	730	489	218	7827	
	83-84	72	15	228	605	971	1449	1239	1040	1051	864	375	231	9140	318
	84-85	21	68	826	874									11789	2701
FORT COLLINS	AVE	5	11	171	468	846	1073	1181	930	877	568	291	82	6483	
	83-84	2	0	115	415	843	1432	1225	887	829	661	196	81	6896	35
	84-85	0	0	193	608	745	1027							11111	2571
FORT MORGAN	AVE	0	6	140	438	867	1156	1283	969	874	516	224	47	6520	
	83-84	0	0	77	368	782	1614	1493	998	844	660	158	38	7022	642
	84-85	0	0	185	564	784	1168							11534	386
GRAND JUNCTION	AVE	0	0	65	325	762	1138	1225	882	716	403	148	19	5683	
	83-84	0	0	27	208	678	1066	1366	958	630	474	89	44	5540	240
	84-85	0	0	54	452	719	966							11130	32

DECEMBER 1984 CLIMATIC DATA

Eastern Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
KAUFFMAN 4SSE	43.7	12.9	28.3	-0.5	67	-6	1131	0	42	0.16	-0.10	61.5	1
STERLING	42.8	13.1	28.0	1.0	62	-3	1140	0	28	0.0	-0.31	0.0	0
FORT MORGAN	40.6	13.5	27.1	-0.2	63	3	1168	0	29	0.21	-0.04	84.0	1
AKRON FAA AP	42.4	18.7	30.5	1.9	61	1	1060	0	36	0.26	0.01	104.0	3
HOLYOKE	40.9	14.0	27.4	-2.3	69	1	1159	0	31	0.73	0.36	197.3	3
BURLINGTON	45.1	21.3	33.2	1.3	66	2	980	0	50	0.41	0.09	128.1	2
LIMON WSMO	43.1	17.2	30.1	1.4	66	1	1072	0	39	0.60	0.40	300.0	2
CHEYENNE WELLS	44.8	18.7	31.8	1.1	70	4	1020	0	49	0.22	0.0	100.0	4
LAS ANIMAS	49.2	21.1	35.1	3.4	73	8	916	0	90	0.45	0.21	187.5	1
HOLLY	51.5	19.8	35.6	4.8	76	9	904	0	88	0.20	-0.05	80.0	2
SPRINGFIELD 7WSW	51.3	24.2	37.8	3.6	75	12	834	0	101	0.60	0.29	193.5	4

Foothills/Adjacent Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	45.2	18.0	31.6	1.7	68	4	1027	0	47	0.27	-0.19	58.7	3
GREELEY UNC	41.8	16.3	29.0	-0.7	63	5	1107	0	32	0.50	0.03	106.4	3
ESTES PARK	40.2	16.1	28.1	-0.5	59	-8	1139	0	10	0.40	-0.06	87.0	4
LONGMONT ZESE	46.0	14.0	30.0	0.5	69	-4	1078	0	55	0.33	-0.10	76.7	3
BOULDER	48.1	20.6	34.4	-0.7	68	3	938	0	63	0.43	-0.20	68.3	4
DENVER WSFO AP	45.7	19.9	32.8	0.8	68	4	990	0	54	0.40	-0.14	74.1	4
LAKE GEORGE BSW	36.6	6.5	21.6	3.2	55	-4	1342	0	3	0.21	-0.16	56.8	4
COLORADO SPRINGS	45.3	20.9	33.1	2.4	64	6	982	0	43	0.64	0.25	164.1	7
CANON CITY	50.6	24.6	37.6	-0.4	70	9	841	0	90	0.24	-0.34	41.4	3
PUEBLO WSO AP	49.1	21.8	35.5	3.5	72	10	907	0	80	0.44	0.09	125.7	4
WALSENBERG	50.8	26.0	38.4	3.9	67	8	817	0	80	0.48	-0.27	64.0	4
TRINIDAD FAA AP	50.4	21.7	36.0	2.8	70	5	891	0	90	0.46	-0.11	80.7	3

Mountains/Interior Valleys*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	31.7	8.2	19.9	1.7	44	-15	1389	0	0	0.36	-0.26	58.1	7
LEADVILLE 2SW	31.6	5.5	18.5	0.5	48	-7	1434	0	0	0.59	-0.61	49.2	8
SALIDA	43.2	17.1	30.1	1.3	59	5	1074	0	12	0.40	-0.21	65.6	1
BUENA VISTA	40.7	13.4	27.1	0.9	56	3	1169	0	8	0.39	-0.19	67.2	3
SAGUACHE	36.1	8.5	22.3	1.6	49	-4	1316	0	0	0.56	0.13	130.2	6
HERMIT 7ESE	26.8	-0.2	13.3	0.4	35	-23	1595	0	0	2.05	0.62	143.4	3
ALAMOSA WSO AP	37.2	3.1	20.2	2.7	52	-19	1382	0	2	0.59	0.14	131.1	5
STEAMBOAT SPRINGS	30.7	7.5	19.1	1.9	44	-17	1419	0	0	1.94	-0.60	76.4	10
GRAND LAKE 6SSW	30.4	7.1	18.7	1.1	38	-7	1428	0	0	0.52	-0.35	59.8	15
BERTHOUD PASS	24.3	4.7	14.5	-0.2	37	-9	1558	0	0	2.65	-0.77	77.5	18
DILLON 1E	34.7	5.7	20.2	1.5	47	-8	1380	0	0	0.70	-0.17	88.5	9
AVON	34.6	6.7	20.6	-1.4	48	-6	1368	0	0	1.08	-0.32	77.1	6
CLIMAX	28.3	5.7	17.0	1.6	44	-6	1479	0	0	1.85	-0.26	87.7	12
ASPEN 1SW	35.8	11.2	23.5	1.5	47	0	1282	0	0	3.10	0.89	140.3	10
TAYLOR PARK	23.5	-14.4	4.5	-6.6	36	-42	1866	0	0	1.85	0.20	112.1	14
TELLURIDE	39.9	13.2	26.6	3.4	52	-6	1185	0	2	1.64	-0.07	95.9	13
PAGOSA SPRINGS	40.4	12.5	26.4	2.9	54	-7	1190	0	2	2.77	0.88	146.6	12
SILVERTON	32.4	-1.5	15.5	-3.0	44	-24	1530	0	0	3.74	1.80	192.8	16

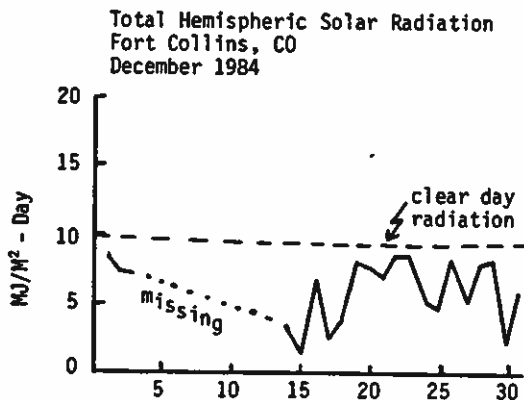
Western Valleys*

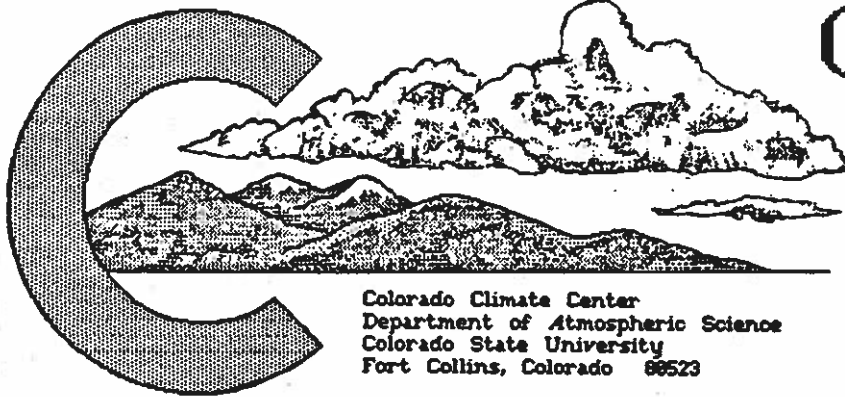
Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
CRAIG 4SW	30.2	7.7	18.9	-2.4	43	-6	1424	0	0	1.21	0.07	106.1	10
HAYDEN	29.3	8.6	19.0	-1.0	42	-12	1418	0	0	1.41	-0.24	85.5	14
MEEKER NO. 2	36.8	12.0	24.4	-0.5	47	-5	1250	0	0	0.68	-0.13	84.0	8
EAGLE FAA AP	36.2	9.6	22.9	3.0	45	-7	1300	0	0	0.92	-0.02	97.9	9
GLENWOOD SPRINGS	39.0	21.0	30.0	5.0	46	9	1076	0	0	2.14	0.69	147.6	14
RIFLE	39.5	17.0	28.2	3.6	48	-1	1134	0	0	2.86	1.73	253.1	13
GRAND JUNCTION WS	40.1	25.1	32.6	4.8	48	15	996	0	0	0.42	-0.18	70.0	6
CEDAREGGE	40.4	21.3	30.8	2.5	50	10	1054	0	0	0.93	-0.07	93.0	8
PAONIA 1SW	41.5	22.7	32.1	3.5	55	12	1012	0	3	1.36	-0.15	90.1	8
DELTA	46.3	20.6	33.5	5.1	55	11	969	0	8	0.13	-0.44	22.8	4
GUNNISON	34.0	6.5	20.3	6.6	44	-13	1381	0	0	0.41	-0.36	53.2	7
MONTROSE NO. 2	40.9	20.0	30.5	3.1	50	11	1864	0	0	0.61	-0.09	87.1	9
YELLOW JACKET 2W	39.5	21.1	30.3	3.0	47	13	1065	0	0	3.01	-8.54	26.1	9
CORTEZ	40.9	19.5	30.2	2.0	51	1	1072	0	1	2.37	1.10	186.6	13
DURANGO	40.8	19.4	30.1	2.6	54	0	1074	0	3	3.21	1.22	161.3	14
IGNACIO 1N	43.9	18.7	31.3	5.9	53	2	1036	0	4	2.04	0.80	164.5	11

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

DECEMBER 1984 SUNSHINE AND SOLAR RADIATION

Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	11	8	12	--	--
Denver	16	8	7	73	65
Grand Junction	5	11	15	53	63
Pueblo	11	8	12	61	74





COLORADO CLIMATE

JANUARY 1985

January in Review:

January was drier than average in most of the Colorado mountains. But in portions of western Colorado and over most of the Eastern Plains, precipitation was near or above average. Temperatures were a little cooler than average over northern and eastern Colorado, while the major southwestern valleys from Alamosa to Grand Junction were all several degrees warmer than normal. It was a fairly "gentle" midwinter month with three episodes of widespread precipitation and few occurrences of extreme temperatures and very strong winds.

A Look Ahead -- March 1985:

Temperatures begin to climb in earnest in March, especially later in the month. Daytime high temperatures average in the 50s with lows mostly in the 20s at locations below 6,000 feet elevation. In the high mountains and eastern foothills the warmup is more gradual. For example, at Estes Park and Climax (Fremont Pass) March temperatures average only about six degrees Fahrenheit warmer than their January temperatures. Most other areas see rises in average temperatures from January to March of at least 10 degrees.

With warmer weather comes an increase in precipitation. March is the snowiest month of the year, on the average, over all of the Eastern Plains. Winds also increase in March over most of the state. The combination of wind and snow leads to occasional blizzard conditions which can be devastating to Colorado ranchers. Fortunately, because of the warmer temperatures in March, snow usually melts within a few days east of the mountains.

Snow continues to pile up in the high mountains in March. On many of the passes 50" to 80" of new snow typically falls during the month. Some melting begins to occur at elevations below 9,000 feet, but in general, snowdepths continue to increase on into April.

New Precipitation Map is Completed:

The Colorado Climate Center has recently completed a new detailed analysis of average annual precipitation for the state. The analysis is based on data for the period 1951-1980. The results are a colored 1:500,000 map (approximately 43" x 52") and an accompanying publication describing the data and the analysis. Copies of the map and the report will be available from the Colorado Climate Center. For more information please contact us at the address shown above or call us at (303) 491-8545.

This new map shows clearly the complexities of our climate here in Colorado. Average annual precipitation varies from less than 7 inches near Alamosa to more than 60 inches in the mountains just east of Steamboat Springs. While there continues to be considerable year to year variations in precipitation, this new analysis indicates there are not significant trends toward either wetter or drier conditions in Colorado based on data since 1931.

JANUARY 1985 DAILY WEATHER

<u>Date</u>	<u>Event</u>
1-2	Snow continued to fall along the Front Range early on the 1st. Then clearing and cold statewide. A few places from Boulder southward to Trinidad picked up 4-8" of fluffy new snow. Temperatures dropped to near zero over the Eastern Plains early on the 2nd. In the mountains temperatures fell far below zero.
3-6	Mostly sunny and warmer as a large high pressure ridge dominated the western U.S. A number of cities had their warmest temperatures for the month on the 4th and 5th such as Greeley's 57° reading on the 4th and Las Animas' 60° on the 5th.
7-11	Upper level storm system approached Colorado from the west while cold arctic air moved southward across the Northern Plains. Snow developed over most of the state on the 8th and was heaviest in extreme southwest Colorado. Telluride, Rico, and Mesa Verde all reported close to 12" of new snow 8-9th. Moderate snow fell over parts of southeastern Colorado on the 9th. Rocky Ford measured 7" of new snow and the Trinidad area received at least 8". Skies cleared on the 10th but a little snow fell on the 11th as another push of arctic air moved across the Eastern Plains.
12-18	Except for some clouds and mountain snow showers 15-16, it was a sunny and dry period. Pleasant days and very cold nights in the mountains throughout the period. Warming trend east of the mountains following a very cold morning on the 12th. Occasional brisk winds. Temperatures soared on the 17th into the 50s and a few 60s east of the mountains. Canon City's 66° reading was the warmest in the state for the month.
19-22	A strong arctic surge which delivered deathly cold temperatures to parts of the Midwest, East and South brought much colder temperatures to the eastern half of Colorado as well. From 3 to 7" of snow fell 19-20th from Sterling to Boulder. Meanwhile strong northwesterly flow aloft and a developing upper level storm system brought heavy snow to portions of the Northern and Central Mountains. The town of Vail received 23" of snow during the 4-day period and Berthoud Pass added 26". The lower elevations of northwest Colorado were also hard hit. Craig totalled 10" and Rifle nearly a foot from the storm.
23-28	A dry period 23-26th. Sunny and cold over all but extreme southwestern Colorado on the 23rd. Then warming a bit 24-25th especially east of the mountains. Clouds covered the state on the 26th as an upper air disturbance approached. Snow began on the 27th over most of the mountains while precipitation at lower elevations was light and scattered. Some parts of the San Juan mountains received heavy snow. Telluride and Wolf Creek Pass totalled 12" and 23" of new snow, respectively.
29-31	A strong polar air mass entered Colorado late on the 29th preceded by a period of snow. Up to 6" of wind driven snow fell on the 29th and 30th east of the mountains with lesser amounts to the west. Then temperatures plummeted to their coldest readings so far this winter. On the morning of the 31st, temperatures were below zero over all but a few of the southwestern valleys. Examples of extremely cold temperatures included -20° at Fort Morgan, -21° at Limon, -30° at Nederland and Silverton, -39° at Walden and -40° at Bonham Reservoir on Grand Mesa.

January 1985 Extremes

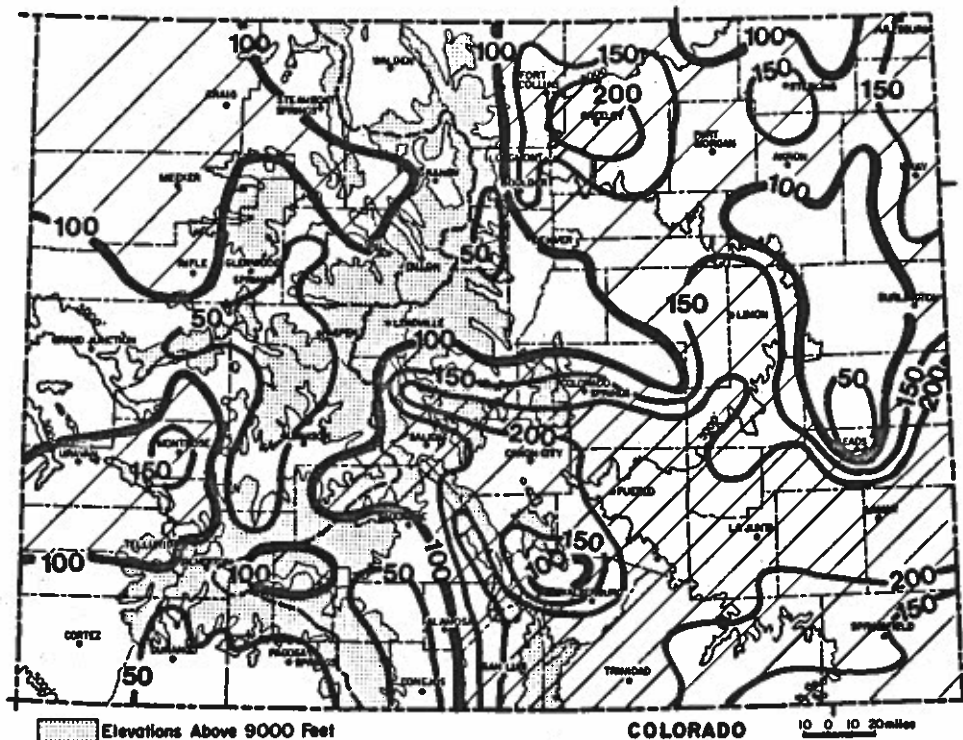
Highest Temperature	66°F	January 17	Canon City
Lowest Temperature	-40°F	January 31	Bonham Reservoir
Greatest Total Precipitation	3.19"		Berthoud Pass
Least Total Precipitation	0.03"		Monte Vista
Greatest Snowfall	69"		Wolf Creek Pass
Greatest Depth of Snow	110"	January 31	Wolf Creek Pass

JANUARY 1985 PRECIPITATION

Precipitation, usually very sparse in January east of the Colorado Rockies, was above average over most of the plains. Totals exceeded 400% of average at both Rocky Ford and Haswell (their averages are only about 0.20"). Most of the Arkansas Valley received at least 200% of average January precipitation. Above average precipitation was also observed in northwestern Colorado and across a small portion of southwestern Colorado from Uravan to Montrose.

Precipitation in most of the higher mountain areas was below average. From Eagle southward to Lake City less than half of the average January precipitation fell. Skiers found ski conditions to be less than ideal for much of January. The first half of the month brought very little new snow, particularly to the Central Mountain ski areas. Then, as snow improved later in the month, temperatures got just a bit too cold to make all day skiing a fun experience.

<u>Greatest</u>		<u>Least</u>	
Berthoud Pass	3.91"	Monte Vista	0.03"
Wolf Creek Pass 1E	2.79"	South Platte	0.07"
Pyramid	2.20"	Manassa	0.09"
Steamboat Springs	2.12"	Eads	0.09"
Ouray	2.01"	Del Norte	0.10"
		Fleming 1S	0.10"



Precipitation for January 1985 as a percent of the 1961-1980 average.

1985 WATER YEAR PRECIPITATION

Four months into the 1985 water year, accumulated precipitation is still above average over most of Colorado. However, with the recent dry January in much of the high country, areas with more than 150% of average precipitation have shrunk noticeably. All of eastern Colorado continues well above average although winter precipitation normally does not make up a large percentage of their total annual precipitation.

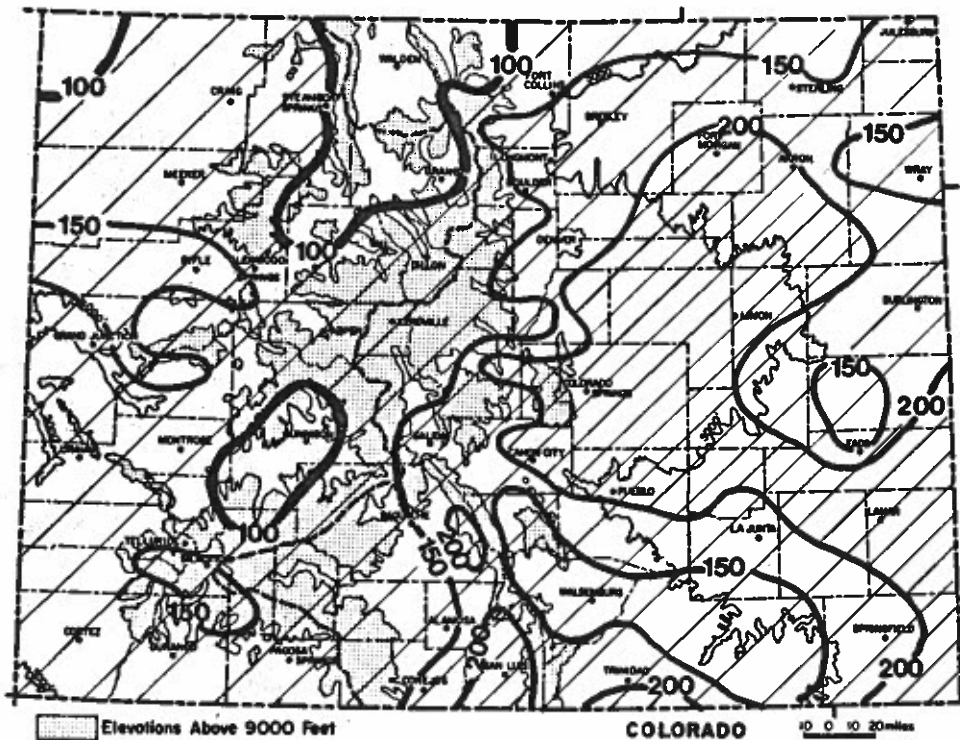
Comparison to Last Year

The San Juan Mountains and the San Luis Valley are both a little wetter than they were last year at this time. The remainder of the mountains and Western Slope have fallen behind last year's pace. East of the mountains has so far been a little wetter than last year.

1985 Water Year to Date through January

<u>Wettest (as % of average)</u>			<u>Driest (as % of average)</u>		
Fountain	412%	6.38"	Blue Mesa Reservoir	66%	2.47"
Fort Carson	381%	6.78"	Spicer	77%	3.02"
Holly	341%	6.20"	Browns Park Refuge	83%	2.07"

<u>Wettest (total precipitation)</u>			<u>Driest (total precipitation)</u>		
Lemon Dam	15.96"	166%	Kauffman 4SSE	1.74"	127%
Berthoud Pass	15.56"	126%	Monte Vista 1E	1.78"	116%
Bonham Reservoir	15.17"	128%	Center 4SSW	1.89"	122%

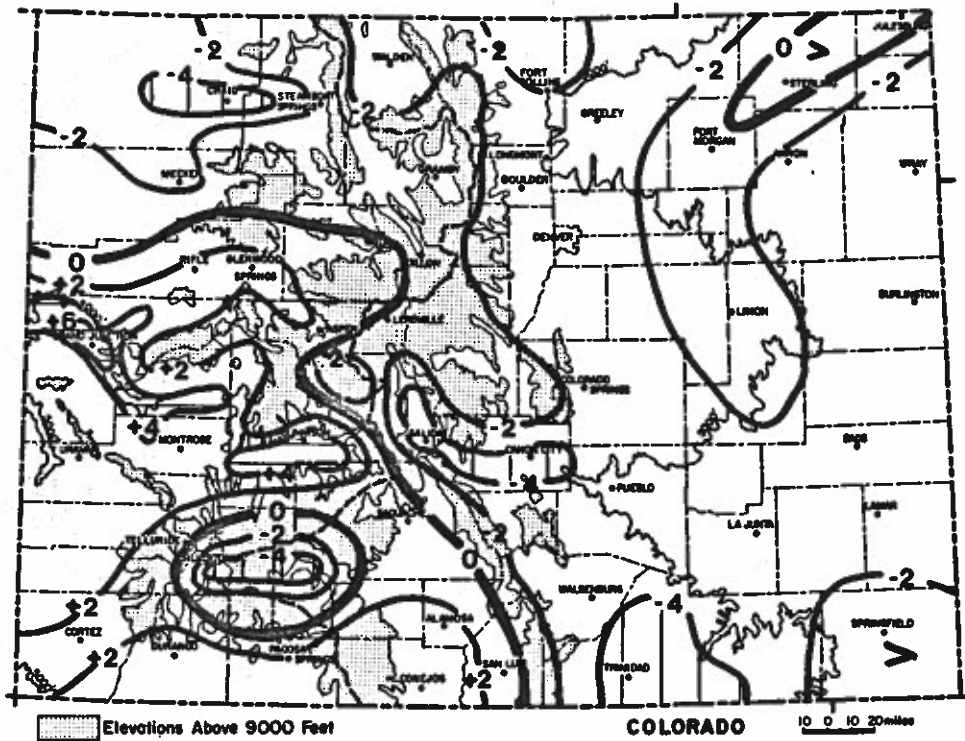


Precipitation for October through January 1985 as a percent of the 1961-1980 average.

JANUARY 1985 TEMPERATURES
AND DEGREE DAYS

January temperatures ranged from 5.4 degrees Fahrenheit below average at Trinidad to 7.4 degrees above average at Grand Junction. The majority of the state was 1 to 4 degrees cooler than average. However, the valleys of westcentral and southwestern Colorado were all warmer than normal. The polar air masses that periodically nipped eastern Colorado and the cold stagnant winter air mass which filled much of the Great Basin were unable to work their way into these portions of our state.

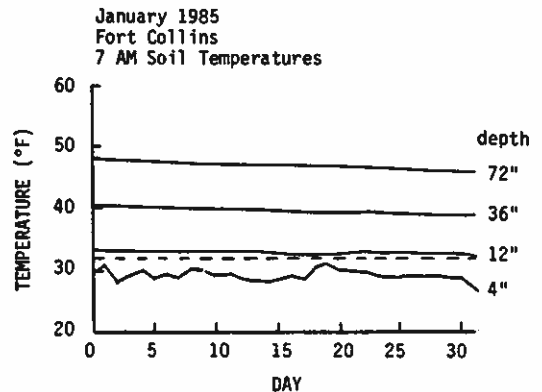
Heating degree day data appear in tables on the following pages. Totals were typically less than last year in western Colorado (see Gunnison for example). East of the mountains totals were quite similar to those of last January.



January 1985 temperature departures from normal.

JANUARY 1985 SOIL TEMPERATURES

Snow cover in Fort Collins during most of January helped to keep soil temperatures very stable. By the end of the month the ground was frozen only to a depth of 12". These measurements are taken at Colorado State University beneath unirrigated sod with an open exposure. These data are not representative of all locations in Colorado.



JANUARY 1985 CLIMATIC DATA

Eastern Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
KAUFFMAN 4SSE	35.5	8.9	22.2	-3.0	58	-22	1318	0	5	0.23	-0.08	74.2	2
STERLING	36.6	11.5	24.0	1.1	52	-14	1260	0	3	0.61	0.27	179.4	6
FORT MORGAN	34.9	9.0	21.9	-0.8	56	-20	1329	0	8	0.19	0.01	105.6	3
AKRON FAA AP	33.5	11.7	22.6	-2.3	52	-13	1308	0	2	0.41	0.13	146.4	7
HOLYOKE	34.6	12.8	23.7	-2.6	48	-12	1273	0	0	0.68	0.30	178.9	5
BURLINGTON	36.3	15.4	25.9	-2.8	59	-6	1207	0	10	0.24	-0.00	100.0	4
LIMON WSWO	34.7	11.0	22.9	-1.6	59	-21	1297	0	9	0.77	0.48	265.5	10
CHEYENNE WELLS	36.2	13.9	25.0	-3.1	56	-15	1231	0	5	0.27	0.11	168.7	5
LAMAR	37.1	14.1	25.6	-2.6	57	-4	1212	0	10	0.90	0.52	236.8	5
LAS ANIMAS	39.2	12.6	25.9	-2.4	60	-8	1204	0	14	0.72	0.51	342.9	3
HOLLY	36.1	11.9	24.0	-2.9	62	-11	1263	0	12	0.77	0.57	385.0	5
SPRINGFIELD 7WSW	42.7	16.5	29.6	-1.2	63	-9	1092	0	29	0.54	0.20	158.8	7

Foothills/Adjacent Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	37.5	11.5	24.5	-1.9	56	-15	1245	0	10	0.80	0.36	181.8	9
GREELEY UNC	34.6	10.7	22.7	-3.4	57	-16	1305	0	7	0.93	0.55	244.7	8
ESTES PARK	36.3	9.7	23.0	-3.8	50	-22	1298	0	0	0.33	-0.11	75.0	8
LONGMONT ZESE	36.6	9.9	23.2	-2.5	58	-18	1287	0	10	0.59	0.18	143.9	9
BOULDER	40.2	14.5	27.3	-4.2	59	-9	1162	0	18	0.99	0.36	157.1	9
DENVER WSWO AP	37.5	13.6	25.5	-3.0	60	-15	1213	0	14	0.68	0.17	133.3	10
EVERGREEN	36.4	7.4	21.9	-4.2	57	-22	1329	0	12	0.30	-0.18	62.5	5
LAKE GEORGE 8SW	30.7	-1.8	14.5	-1.0	45	-21	1559	0	0	0.23	0.0	100.0	6
CANON CITY	42.9	17.7	30.3	-5.2	66	-9	1069	0	30	0.47	0.19	167.9	6
PUEBLO WSO AP	38.5	13.1	25.8	-3.2	59	-10	1208	0	11	0.50	0.28	227.3	8
WALSENBERG	41.5	15.0	28.2	-3.7	60	-10	1131	0	16	1.07	0.53	198.1	8
TRINIDAD FAA AP	39.2	11.1	25.1	-5.4	57	-12	1225	0	11	0.80	0.39	195.1	9

Mountains/Interior Valleys*

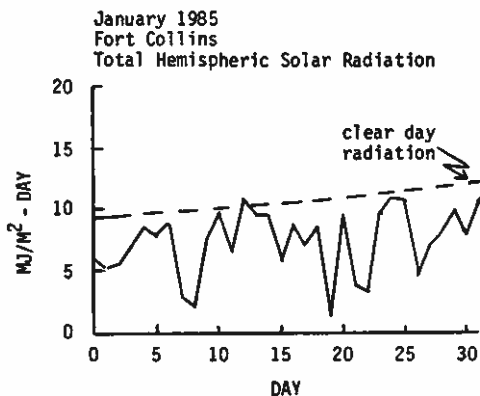
Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	25.8	-2.7	11.5	-3.6	40	-39	1652	0	0	0.50	-0.13	79.4	9
LEADVILLE 2SW	28.0	-0.3	13.9	-1.6	42	-24	1577	0	0	0.58	-0.72	44.6	6
SALIDA	38.8	7.7	23.3	-4.6	53	-10	1285	0	2	0.09	-0.26	25.7	2
BUENA VISTA	38.3	4.9	21.6	-4.1	49	-19	1338	0	0	0.79	0.52	292.6	6
SAGUACHE	32.1	4.4	18.2	0.3	46	-8	1442	0	0	0.25	-0.02	92.6	4
HERMIT ZESE	16.5	-9.5	3.5	-6.8	30	-32	1899	0	0	1.18	0.36	143.9	2
ALAMOSA WSO AP	33.5	1.8	17.6	2.8	47	-13	1462	0	0	0.28	0.03	112.0	4
STEAMBOAT SPRINGS	26.0	-0.4	12.8	-1.7	38	-25	1611	0	0	2.12	-0.61	77.7	11
GRAND LAKE 6SSW	24.0	-1.7	11.2	-1.8	36	-24	1662	0	0	1.05	-0.06	94.6	14
BERTHOUD PASS	19.5	-0.4	9.5	-1.4	32	-28	1714	0	0	3.19	-0.47	87.2	19
DILLON 1E	28.8	-1.2	13.8	-1.7	37	-21	1581	0	0	0.75	-0.11	87.2	13
CLIMAX	24.3	1.1	12.7	0.0	37	-26	1614	0	0	1.66	-0.57	74.4	13
ASPEN 1SW	32.2	6.1	19.2	-0.8	42	-12	1415	0	0	2.75	0.55	125.0	10
TELLURIDE	36.0	7.3	21.7	0.6	52	-16	1335	0	1	1.39	-0.31	81.8	14
PAGOSA SPRINGS	39.3	6.1	22.7	2.5	46	-9	1305	0	0	0.77	-1.11	41.0	7
SILVERTON	33.7	-10.0	11.9	-4.5	45	-30	1640	0	0	1.19	-0.42	73.9	12
WOLF CREEK PASS 1	31.3	7.2	19.3	2.4	48	-17	1410	0	0	2.79	-0.94	74.8	9

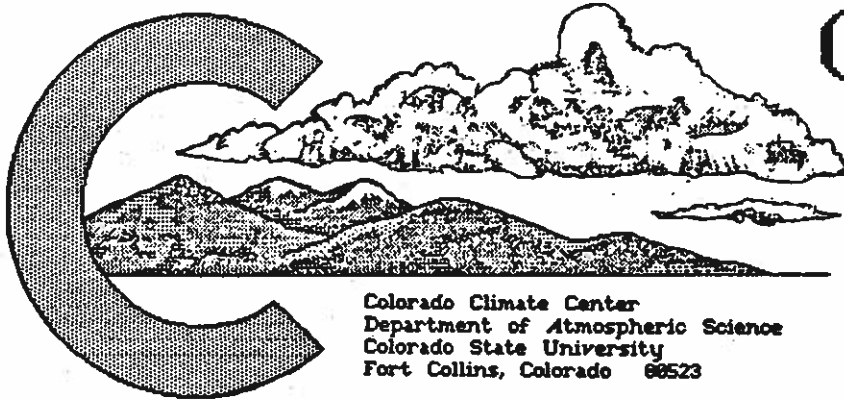
Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
CRAIG 4SW	24.3	1.4	12.8	-4.2	39	-24	1609	0	0	1.47	0.55	159.8	14
HAYDEN	23.9	1.3	12.6	-3.7	37	-29	1617	0	0	1.50	0.01	100.7	16
NEEKER NO. 2	33.1	6.8	19.9	-2.3	45	-21	1392	0	0	1.19	0.38	146.9	5
RANGELY 1E	27.9	-0.2	13.9	-1.7	46	-19	1579	0	0	0.59	0.06	111.3	4
EAGLE FAA AP	32.9	4.1	18.5	0.4	44	-16	1435	0	0	0.36	-0.52	40.9	10
GLENWOOD SPRINGS	36.2	17.0	26.6	4.0	45	0	1184	0	0	1.00	-0.58	63.3	6
RIFLE	37.7	11.5	24.6	3.6	49	-5	1246	0	0	1.08	0.18	120.0	6
GRAND JUNCTION WS	39.2	23.0	31.1	7.4	48	8	1044	0	0	0.51	-0.07	87.9	6
CEDAREEDGE	37.9	17.0	27.5	2.1	47	0	1157	0	0	0.89	0.03	103.5	5
PADNIA 1SW	40.7	17.0	28.9	4.6	50	-3	1113	0	0	1.09	-0.13	89.3	9
DELTA	42.1	20.0	31.0	6.0	52	9	1047	0	3	0.27	-0.08	77.1	8
GUNNISON	28.7	-2.0	13.3	5.0	45	-23	1593	0	0	0.48	-0.37	56.5	5
MONTROSE NO. 2	38.2	16.5	27.3	3.4	50	3	1161	0	0	0.78	0.28	156.0	8
NORWOOD	37.6	10.0	23.8	2.4	46	-13	1268	0	0	1.37	0.29	126.9	4
YELLOW JACKET 2W	37.8	14.9	26.4	2.5	48	-11	1188	0	0	1.10	-0.16	87.3	5
CORTEZ	38.4	15.4	26.9	1.4	47	-12	1173	0	0	0.60	-0.43	58.3	5
DURANGO	40.4	15.3	27.8	3.3	52	-6	1146	0	1	0.74	-1.06	41.1	2
IGNACIO 1N	43.2	14.2	28.7	8.0	52	-8	1118	0	7	0.37	-1.00	27.0	3

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

JANUARY 1985 SUNSHINE AND SOLAR RADIATION

Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	11	5	15	--	--
Denver	11	9	11	62%	72%
Grand Junction	15	4	12	71%	58%
Pueblo	10	8	13	72%	75%





COLORADO CLIMATE

FEBRUARY 1985

February in Review:

Very cold weather dominated Colorado in the first half of February followed by seasonal weather later in the month. Precipitation was below average over the majority of the state, particularly the mountains. Except for the severe cold early in February, major storms and weather extremes were not a big problem.

A Look Ahead -- April 1985:

The Colorado Climate Center does not make forecasts in the sense of predicting specific weather events to occur at specific times. We use historic climate information to describe the most likely or typical weather conditions throughout the year. Climate information, as such, is a very useful planning tool.

April typically brings a combination of stormy wet weather and delightful sunny spring weather to most of the state. But in the higher mountains winter persists. In parts of Colorado's central mountains, April is the wettest month of the year. Throughout the Colorado high country at elevations above about 10,000 feet winter snowdepths reach their maximum value during April. Skiers can continue to enjoy the outdoors although the snowpack becomes steadily denser and mushier. Subzero temperatures still occur but are very infrequent after the first week of the month.

At the lower elevations the chances for snow begin to decrease in April. But when it does snow, it's likely to snow hard. Last year Loveland received 18" of snow on April 20. Fortunately temperatures stay close to 32° during snowstorms, and the snow melts quickly. The first thunderstorms of the year often begin in April -- a sure sign of coming summer. April precipitation averages 1-2" over the Eastern Plains with the greatest amounts usually in the northeast and along the Front Range. Mountain precipitation is extremely variable but generally ranges from 1-4". The western valleys are normally quite dry with less than 1" of total precipitation.

Typical daytime temperatures rise into the 50s and 60s at elevations below 7,500. But readings in the 70s are common and even a few 80s (90s in southeastern Colorado) can occur. Near Grand Junction the last freeze of the spring usually occurs in April. Blossoming fruit orchards are a common site there. Elsewhere episodes of subfreezing temperatures usually persist into May.

New State Record Set:

On February 1 of this year the coldest temperature ever recorded on an official National Weather Service thermometer in Colorado was observed. Maybell, in the Yampa River Valley in northwest Colorado, set the new record with a frigid temperature of -61°F. That same morning, Colorado's traditional ice box -- Taylor Park Reservoir -- dipped to -60° to tie the previous record. A little cold weather is fine, but this is getting a bit ridiculous. A map showing official minimum temperature for February 1, 1985 is shown at the end of this report.

F E B R U A R Y 1 9 8 5 D A I L Y W E A T H E R

<u>Date</u>	<u>Event</u>
1	Clear, calm, and bone chilling cold. Zero or below at all reporting stations except for a +1°F at Grand Junction. The coldest readings included -61° at Maybell, a new Colorado minimum temperature record, -60° at Taylor Park Reservoir. Numerous locations in the mountains reported temperatures below -40°. It was also plenty cold on the plains such as -25° at Byers and -16° at Eads.
2-7	Very cold period 10 to 30 degrees below average. Light snow, trace to 6" on the 3rd-4th, northeastern plains and from the mountains westward to Utah. Snowshowers continued in the mountains 5-7th as a trough of low pressure stayed over Colorado. Subzero nighttime temperatures over much of the state.
8-10	Much warmer on the 8th as a storm system approached from the northwest. Daytime temperatures mostly in the 40s with 50s in the southeast. Snow began in the west late on the 8th and spread over most of the rest of Colorado on the 9th-10th. Some moderate to heavy snowfall was reported including 5" at Boulder and Craig, 6" at Aspen and more than one foot on parts of the Grand Mesa and the western San Juans. This was the only significant snowstorm of the month for a number of mountain locations.
11-20	Prolonged dry period for most of the state with persistent northwesterly winds aloft. There was just a bit of high elevation snow on the 12th and again on the 17th. Generally seasonal to slightly warmer than average temperatures. However, it was sharply warmer east of the mountains on the 15th and again on the 19th and 20th accompanied by brisk winds. Denver reached 62° on the 15th, Burlington 65°, and Pueblo 73°. Walsh and Springfield shared honors for the Colorado hot spot in February with a 74°.
21-23	Unsettled period as a poorly organized storm sluggishly passed south of Colorado. Periods of snow began in the southern mountains on the 20th and 21st. By the 22nd and 23rd locally heavy snow dropped on parts of southeastern Colorado. Del Norte was surprised by 8" of snow from the storm. Wolf Creek Pass had much more than a foot. As the storm moved into southeastern Colorado some of the snow changed to rain and even a few thunderstorms. Strong, cold northerly winds developed. Some of the heavier precipitation amounts included 0.43" at Burlington and 0.60" at LaJunta. Near the foothills heavy snow was reported. Walsenburg got 8", Rye 9", Strontia Springs 13", Aguilar 14", and 20" on Mount Evans.
24-26	Sunny and pleasant on the 24th. Then windy and much colder again on the 25-26th as a fast moving upper air disturbance zipped across the area. Another dose of snow dropped 10" on Berthoud Pass, 5" on Boulder and 3" from Denver to Burlington.
27-28	Sunshine and warmer temperatures helped quickly melt some of the recent snows and bring back thoughts of spring.

February 1985 Extremes

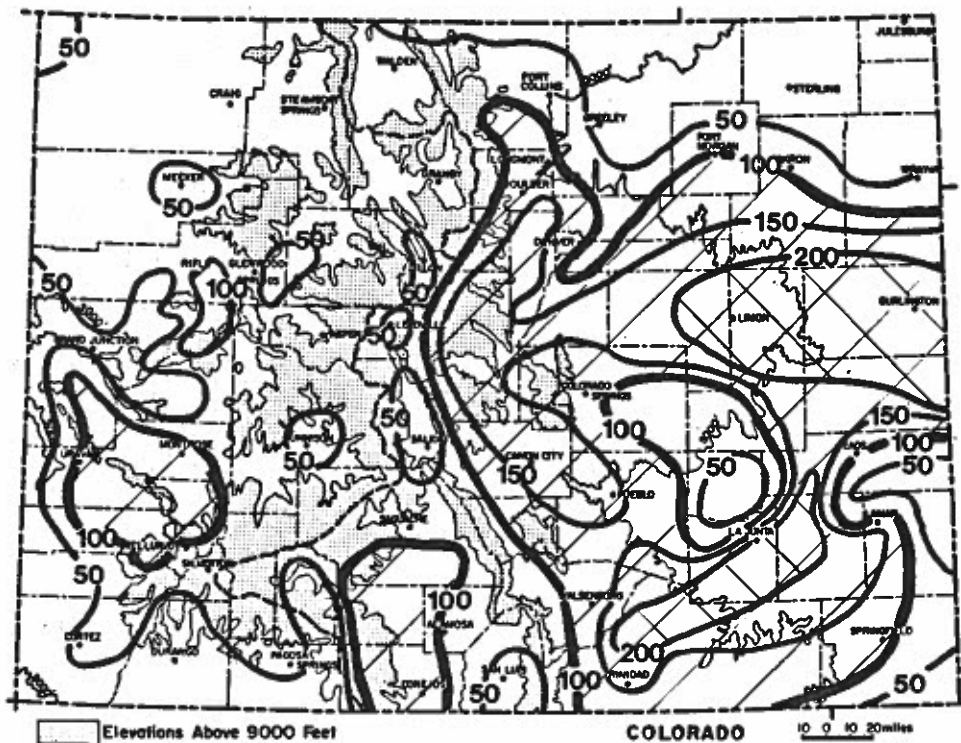
Highest Temperature	74°	February 15	Springfield 7WSW, Walsh
Lowest Temperature	-61°	February 1	Maybell
	-60°	February 1	Taylor Park
Greatest Total Precipitation	3.03"		Bonham Reservoir
Least Total Precipitation	0		Kauffman 4SSE
Greatest Total Snowfall	43"		Bonham Reservoir (estimated)

FEBRUARY 1985 PRECIPITATION

The majority of Colorado was drier than average in February. Mountain areas typically received from 50% to 80% of average. The only wetter than average areas west of the Continental Divide were the northwestern slopes of the San Juans northwestward along the Uncompaghre Plateau and a small area from Rifle to the top of the Grand Mesa.

A typically complex precipitation pattern unfolded over the remainder of Colorado. In the Rio Grande Valley precipitation ranged from just a trace near San Luis to much above average near Creede. The upper Arkansas Valley was very dry while South Park had nearly double the average precipitation. East of the mountains conditions varied from almost no precipitation in extreme northeastern Colorado to more than triple the average at Limon, Burlington and LaJunta. Despite these high percentages, actual precipitation amounts were low. Most areas reported less than 0.75". February is normally one of the driest months of the year east of the Continental Divide.

<u>Greatest</u>		<u>Least</u>	
Bonham Reservoir	3.03"	Kauffman 4SSE	0.00"
Mount Evans	2.44"	Brandon	Trace
Berthoud Pass	2.43"	San Luis 2SE	Trace
Ouray	2.10"	New Raymer	0.01"
Trout Lake	1.90"	Briggsdale	0.02"
		Buena Vista	0.02"



Precipitation for February 1985 as a percent of the 1961-1980 average.

1985 WATER YEAR PRECIPITATION

Precipitation for the first 5 months of the 1985 water year continues above average over almost all of Colorado. However, the areas with 150% or more of average have shrunk considerably in recent months. The higher mountain areas, from which come much of Colorado's surface water supplies, are now just about average for the year. Eastern Colorado continues well above average, but much of this is still a result of a very wet October. Spring is a critical time for moisture for winter wheat and rangeland, so conditions will be monitored closely.

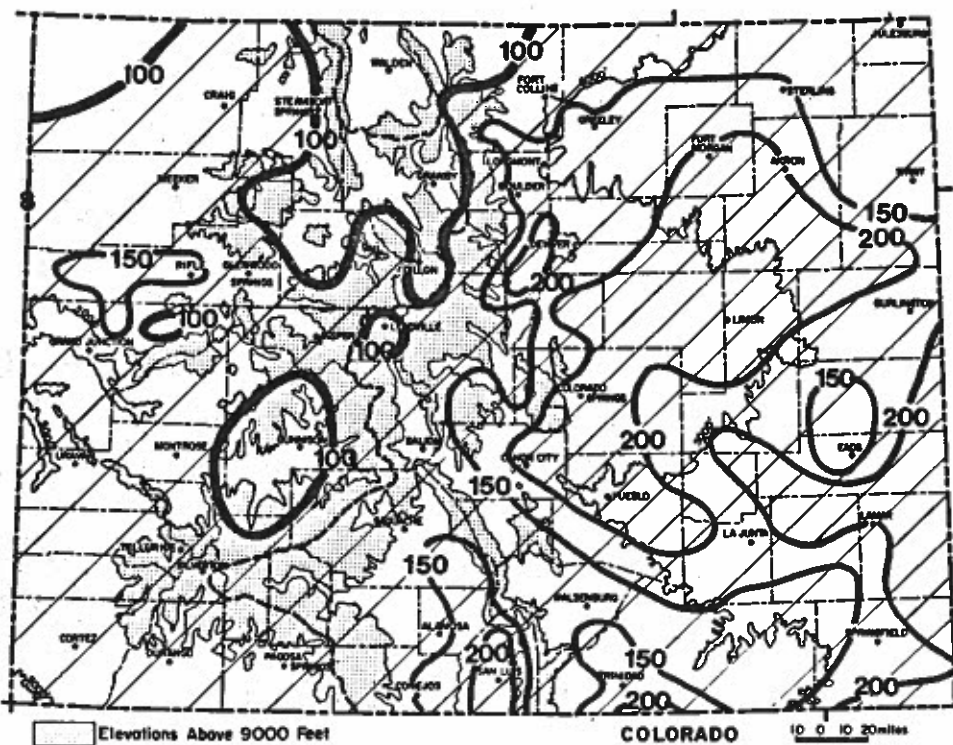
Comparison to Last Year

Except for a few areas in the San Juans, the mountains and Western Slope are now significantly drier than at this time last year. Accumulated precipitation on the plains is similar to last year except in parts of the southeast which is a little wetter this year.

1985 Water Year to Date through February

<u>Wettest (as % of average)</u>			<u>Driest (as % of average)</u>		
Fountain	363%	6.68"	Cimmaron	59%	2.90"
Fort Carson	336%	6.98"	Blue Mesa Reservoir	64%	2.86"
Holly	303%	6.30"	Gunnison	71%	2.61"

<u>Wettest (total precipitation)</u>			<u>Driest (total precipitation)</u>		
Bonham Reservoir	18.20"	125%	Kauffman 4SSE	1.74"	116%
Berthoud Pass	17.99"	117%	Monte Vista 1E	2.14"	122%
Lemon Dam	17.22"	150%	Center 4SSW	2.24"	126%

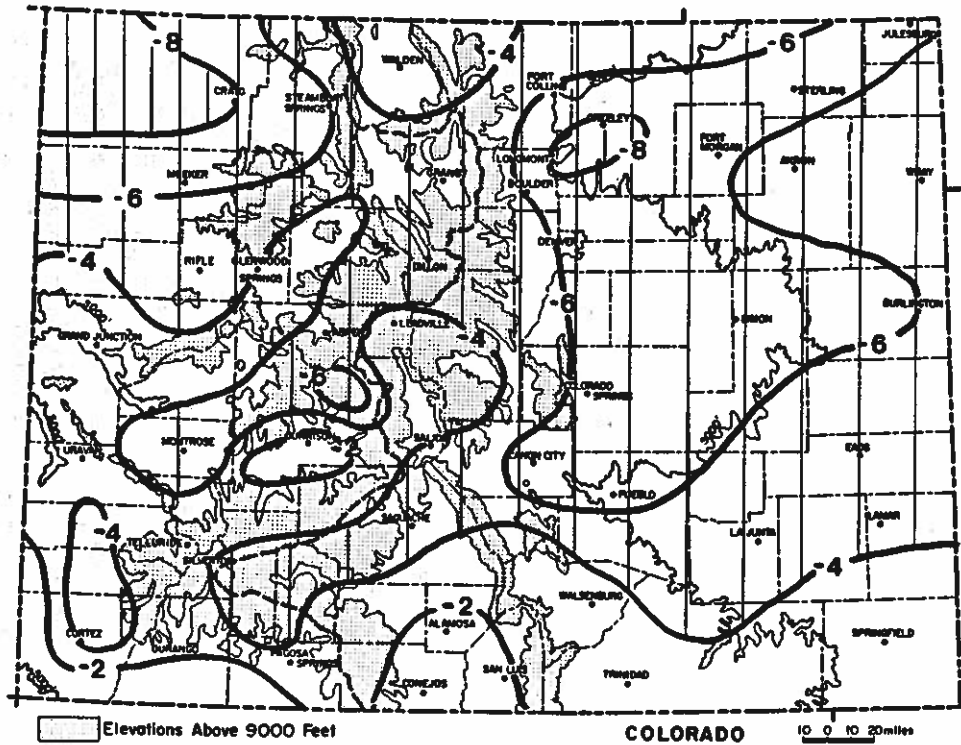


Precipitation for October 1984 through February 1985 as a percent of the 1961-1980 average.

FEBRUARY 1985 TEMPERATURES
AND DEGREE DAYS

Thanks to a very cold beginning, all of Colorado was colder than average in February. Monthly averages were as much as 8 degrees Fahrenheit colder than normal in northwestern Colorado and in the vicinity of Greeley and Longmont. Only the southernmost tier of counties in Colorado and the valleys near Gunnison and Grand Junction were within 0 to 3 degrees of average.

Heating degree day data appear in tables on the following pages. Totals were more than average statewide but were less than last year in some of the larger valleys of western Colorado.



February 1985 temperature departures from 1961-1980 averages (degrees Fahrenheit).

FEBRUARY 1985 SOIL TEMPERATURES

The soil in Fort Collins froze to a depth of about 2 feet in early February. Much deeper frost penetration was observed in areas where the ground was not snow covered. Various parts of the state had frozen water pipe problems due to the extreme cold. The Fort Collins data are taken at the Colorado State University campus beneath unirrigated sod. The exposure is open and undisturbed.

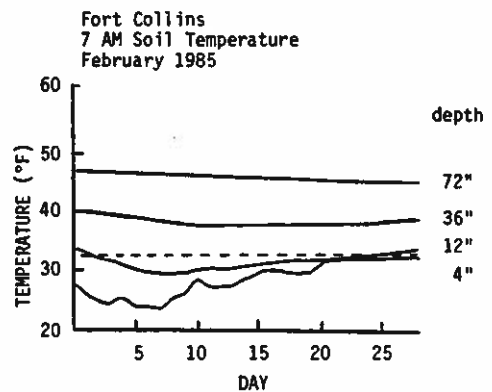


Table 1. Heating Degree Day Data through February 1985 for Colorado.

STATION		HEATING DEGREE DATA												HEATING DEGREE DATA		
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANN		
ALAMOSA	AVE	40	100	303	657	1074	1457	1519	1182	1035	732	453	165	8717	JUL	ANN
	83-84	28	31	213	674	1112	1581	1982	1566	1166	799	300	188	8644		
	84-85	11	56	252	748	1051	1382	1462	1208					6170		
ASPEN	AVE	95	150	348	651	1029	1339	1162	1116	798	524	262	8850	JUL	ANN	
	83-84	97	86	269	622	1021	1392	1470	1200	1108	932	477	345	9019		
	84-85	87	134	345	683	1034	1282	1415	1293					6473		
BOULDER	AVE	0	6	130	357	714	909	1004	804	775	483	220	59	5460	JUL	ANN
	83-84	4	0	84	350	753	1367	1087	830	792	639	168	58	6132		
	84-85	0	1	171	599	716	938	1162	989					4576		
BUENA VISTA	AVE	47	116	285	577	936	1184	1218	1025	983	720	459	184	7734	JUL	ANN
	83-84	45	49	234	595	970	1333	1331	1025	982	808	370	203	7940		
	84-85	16	91	284	628	949	1169	1338	1084					5759		
BURLING- TON	AVE	6	5	108	364	762	1017	1110	871	803	459	200	38	5743	JUL	ANN
	83-84	0	0	87	359	758	1500	1172	884	883	700	200	34	6577		
	84-85	0	0	148	493	699	980	1207	1012					4539		
CANNON CITY	AVE	0	9	81	301	639	831	911	734	707	411	179	33	4836	JUL	ANN
	83-84	0	0	71	314	649	1278	993	760	752	570	134	27	5548		
	84-85	0	0	175	561	702	841	1069	958					4306		
COLORADO SPRINGS	AVE	8	25	162	440	819	1042	1122	910	880	564	296	78	6346	JUL	ANN
	83-84	2	0	101	417	811	1438	1197	911	912	700	220	58	6767		
	84-85	0	6	200	684	791	982	1233	1077					4973		
CORTIZ	AVE	0	11	115	434	813	1132	1181	921	828	555	292	68	6350	JUL	ANN
	83-84	5	0	98	438	854	1154	1271	1018	853	677	239	119	6726		
	84-85	0	0	108	666	839	1072	1173	1085					4943		
CRALIG	AVE	32	58	275	608	996	1342	1479	1193	1094	687	119	193	8376	JUL	ANN
	83-84	41	3	212	579	1005	1471	1730	1420	1194	884	383	267	9189		
	84-85	15	25	304	799	1002	1424	1609	1432					6610		
DELTA	AVE	0	0	94	394	813	1135	1197	890	753	429	167	31	5903	JUL	ANN
	83-84	0	0	60	340	727	1061	1366	1006	736	505	135		3266		
	84-85	0	11	49	477	713	969	1047								
DENVER	AVE	0	0	135	414	789	1004	1101	879	837	528	253	74	6014	JUL	ANN
	83-84	3	0	87	372	833	1466	1162	889	854	673	183	51	4802		
	84-85	0	1	183	622	753	990	1213	1040							
DILLON	AVE	273	332	513	806	1167	1435	1516	1395	1296	972	704	435	10754	JUL	ANN
	83-84	283	224	438	789	1135	1492	1653	1419	1333	1124	675	472	11017		
	84-85	245	301	510	1004	1161	1380	1581	1449					7631		
DURANGO	AVE	9	34	193	493	837	1153	1218	958	862	600	356	125	6848	JUL	ANN
	83-84	3	0	124	484	899	1161	1289	1009	835	665	209	113	6771		
	84-85	0	0	124	484	899	1161	1289	1009					4919		
EAGLE	AVE	33	80	288	626	1026	1407	1448	1148	1014	705	431	171	8377	JUL	ANN
	83-84	30	3	203	579	962	1337	1681	1299	1015	798	338	238	8483		
	84-85	1	27	252	741	998	1300	1435	1219					5973		
EVER-GREEN	AVE	59	113	227	621	916	1135	1199	1011	1009	730	489	218	7827	JUL	ANN
	83-84	72	15	328	695	971	1449	1239	1040	1051	864	375	231	8140		
	84-85	21	68	326	828	874	1088	1329	1123					5655		
FORT COLLINS	AVE	5	11	171	468	846	1073	1181	930	877	558	281	82	6483	JUL	ANN
	83-84	2	0	115	415	843	1432	1225	867	829	661	196	81	6866		
	84-85	0	0	193	606	745	1027	1245	1077					4893		
FORT MORGAN	AVE	0	6	140	438	867	1156	1283	969	874	516	224	47	6520	JUL	ANN
	83-84	0	0	177	368	782	1514	1293	798	844	650	158	38	7022		
	84-85	0	0	105	564	784	1168	1329	1125					5155		
GRAND JUNCTION	AVE	0	0	65	325	762	1138	1295	882	716	463	148	19	5583	JUL	ANN
	83-84	0	0	27	208	678	1066	1368	956	630	474	85	44	5540		
	84-85	0	0	54	462	719	996	1044	919					4184		

F E B R U A R Y 1 9 8 5 C L I M A T I C D A T A

Eastern Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
KAUFFMAN 4SSE	40.8	9.9	25.4	-5.2	60	-22	1105	0	18	0.0	-0.13	0.0	0
STERLING	36.8	10.0	23.4	-7.5	63	-20	1160	0	11	0.10	-0.07	58.8	1
FORT MORGAN	38.8	10.4	24.6	-6.3	61	-22	1125	0	16	0.16	0.02	114.3	2
AKRON FAA AP	37.5	14.6	26.0	-4.9	61	-14	1085	0	13	0.16	-0.02	88.9	4
HOLYOKE	40.4	14.2	27.3	-5.3	61	-15	1051	0	24	0.15	-0.19	44.1	4
BURLINGTON	40.5	16.6	28.6	-6.0	66	-14	1012	0	33	0.61	0.41	305.0	4
LIMON WSMO	37.2	11.4	24.3	-6.8	64	-19	1133	0	16	0.65	0.47	361.1	7
CHEYENNE WELLS	42.8	16.0	29.4	-4.2	66	-13	989	0	42	0.32	0.16	200.0	3
LAMAR	44.1	18.0	31.1	-4.4	72	-9	941	0	47	0.48	0.19	165.5	3
LAS ANIMAS	46.2	15.6	30.9	-5.4	70	-12	948	0	64	0.64	0.38	246.2	3
HOLLY	43.9	15.4	29.6	-4.1	71	-10	983	0	55	0.10	-0.16	38.5	1
SPRINGFIELD 7WSW	49.1	17.6	33.4	-2.4	74	-11	879	0	89	0.43	0.10	130.3	2

Foothills/Adjacent Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	39.4	13.3	26.3	-6.2	58	-15	1077	0	18	0.25	-0.12	67.6	5
GREELEY UNC	38.0	12.4	25.6	-8.2	58	-19	1096	0	15	0.06	-0.22	21.4	1
ESTES PARK	36.0	13.3	24.6	-4.8	52	-26	1125	0	4	0.44	0.06	115.8	8
LONGMONT ZESE	38.0	9.6	23.8	-8.1	61	-18	1147	0	20	0.37	0.0	100.0	3
BOULDER	43.3	15.6	29.5	-6.7	64	-12	989	0	36	0.89	0.25	139.1	7
DENVER WSMO AP	40.4	14.9	27.6	-6.1	62	-14	1040	0	26	0.59	0.01	101.7	8
EVERGREEN	41.9	7.2	24.6	-4.4	61	-23	1123	0	30	1.12	0.36	147.4	4
LAKE GEORGE 8SW	32.9	-0.2	16.4	-3.3	52	-27	1353	0	2	0.66	0.35	212.9	4
COLORADO SPRINGS	39.0	13.5	26.3	-6.2	65	-16	1077	0	23	0.24	-0.06	80.0	5
CANDY CITY	44.9	16.2	30.6	-8.6	70	-15	958	0	51	0.74	0.32	176.2	3
PUEBLO WSO AP	43.9	14.2	29.1	-6.3	73	-16	999	0	53	0.36	0.11	144.0	6
WALSENBERG	47.1	18.0	32.5	-3.0	66	-13	902	0	58	1.11	0.29	135.4	5
TRINIDAD FAA AP	47.1	15.5	31.3	-3.7	70	-14	935	0	59	0.59	0.18	143.9	5

Mountains/Interior Valleys*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	29.8	2.6	16.2	-2.2	44	-45	1358	0	0	0.24	-0.22	52.2	5
LEADVILLE 2SW	29.0	-0.9	14.1	-2.9	47	-38	1418	0	0	0.17	-1.13	13.1	5
SALIDA	40.8	11.4	26.1	-4.1	57	-15	1082	0	11	0.09	-0.55	14.1	3
BUENA VISTA	40.2	11.6	25.9	-2.8	55	-17	1084	0	5	0.02	-0.33	5.7	1
SAGUACHE	32.8	5.7	19.2	-5.6	47	-20	1276	0	0	0.23	-0.03	88.5	2
HERMIT ZESE	23.9	-5.7	9.1	-5.4	38	-40	1557	0	0	0.25	-0.47	34.7	3
ALAMOSA WSO AP	39.1	4.1	21.6	-0.8	54	-18	1208	0	8	0.28	-0.02	93.3	2
STEAMBOAT SPRINGS	27.9	-1.0	13.5	-6.0	47	-44	1433	0	0	1.69	-0.35	82.8	10
GRAND LAKE 6SSW	26.3	-3.7	11.3	-4.8	41	-42	1498	0	0	0.49	-0.32	60.5	12
BERTHOUD PASS	20.1	-3.2	8.5	-4.6	41	-34	1576	0	0	2.39	-0.64	78.9	17
DILLON 1E	29.5	-3.2	13.1	-5.4	48	-36	1449	0	0	0.27	-0.62	30.3	8
CLIMAX	23.9	-3.4	10.2	-4.7	44	-28	1526	0	0	1.08	-0.76	58.7	12
ASPEN 1SW	32.9	4.3	18.6	-4.1	52	-24	1293	0	1	1.50	-0.40	78.9	8
TAYLOR PARK	26.7	-19.4	3.6	-7.7	44	-60	1712	0	0	0.90	-0.16	84.9	10
TELLURIDE	38.0	7.2	22.6	-1.4	51	-24	1179	0	1	1.01	-0.46	68.7	11
WOLF CREEK PASS 1	28.2	1.9	15.0	-3.1	50	-25	1391	0	0	1.31	-2.60	33.5	6

Western Valleys*

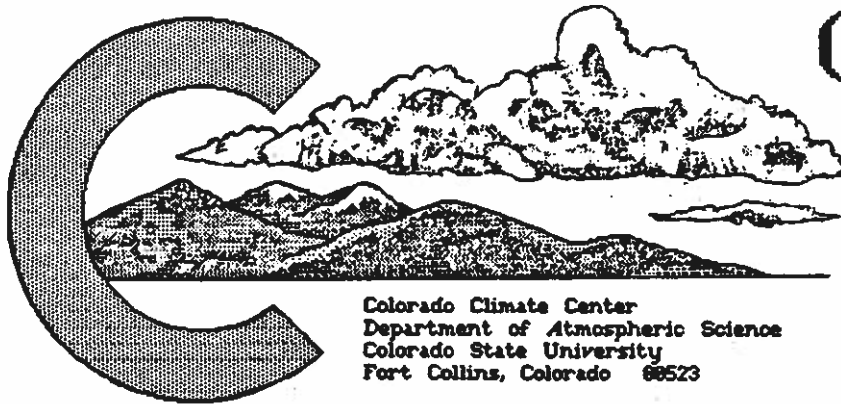
Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
CRAIG 4SW	27.6	-0.5	13.6	-8.3	80	-35	1432	0	15	1.04	0.21	125.3	9
HAYDEN	26.6	2.8	14.7	-7.0	46	-36	1402	0	0	0.75	-0.40	65.2	11
NEEKER NO. 2	36.1	6.7	21.4	-6.1	49	-31	1217	0	0	0.22	-0.47	31.9	2
EAGLE FAA AP	36.5	6.0	21.2	-3.6	51	-28	1219	0	1	0.30	-0.30	50.0	8
RIFLE	39.1	10.0	24.6	-5.1	51	-20	1124	0	2	0.78	0.03	104.0	8
GRAND JUNCTION WS	42.6	21.3	31.9	-2.1	53	1	919	0	13	0.26	-0.21	55.3	5
CEDAREDEGE	40.5	16.7	28.6	-3.6	54	-10	1014	0	3	0.33	-0.49	40.2	5
PAGLIA 1SW	41.6	14.4	28.0	-3.9	56	-12	1029	0	11	0.79	-0.29	73.1	7
GUNNISON	29.7	-2.0	13.8	0.0	43	-31	1426	0	0	0.03	-0.63	4.5	1
MONTROSE NO. 2	39.4	12.0	25.7	-5.8	55	-14	1095	0	6	0.48	0.07	117.1	4
URAKAN	41.3	9.9	25.6	-10.2	61	-14	1095	0	27	0.92	0.36	164.3	5
NORWOOD	38.4	9.5	24.0	-3.6	51	-25	1140	0	1	0.73	0.03	104.3	5
YELLOW JACKET 2W	40.9	14.7	27.8	-1.5	60	-19	1036	0	21	0.45	-0.66	40.5	4
CORTEZ	40.8	11.2	26.0	-5.9	57	-20	1085	0	12	0.56	-0.37	60.2	3
DURANGO	43.0	14.5	28.8	-2.1	56	-11	1008	0	18	0.58	-0.80	42.0	8
IGNACIO 1N	45.0	10.6	27.8	-0.2	57	-28	1033	0	30	0.31	-0.63	33.0	6

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

FEBRUARY 1985 SUNSHINE AND SOLAR RADIATION

Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	9	7	12	--	--
Denver	7	13	8	73%	71%
Grand Junction	6	10	12	76%	64%
Pueblo	12	6	10	89%	74%

Solar data not received for Fort Collins.



COLORADO CLIMATE

MARCH 1985

Colorado Climate Center
Department of Atmospheric Science
Colorado State University
Fort Collins, Colorado 80523

March in Review:

Two major storm episodes during March resulted in above average precipitation over much of the southwestern half of Colorado. East of the mountains, precipitation dwindled. Most of the Eastern Plains were much drier than average. Frequent high winds on the plains produced areas of blowing dust. Temperatures were generally mild.

A Look Ahead -- May 1985:

May is the month when the mountain snowpack begins to melt in earnest and river levels rise. In a normal year, peak flows on Colorado's largest rivers will occur in June, but occasionally peaks occur earlier. Flooding usually does not occur but is a possibility in some river bottom locations when unusually warm weather persists for several days and/or heavy low-elevation rains accompany rapid snowmelt. Flooding has been a problem the last two years. With a few exceptions, the mountain snowpack is less this year and general climatic characteristics have been tracking closer to normal than the past two years.

Precipitation patterns in May are a lot different than during the winter months. Precipitation in the high mountains, much of which may still fall as snow, begins to taper off. Meanwhile, precipitation east of the mountains increases dramatically. From the northern Front Range (Denver to Fort Collins) eastward across the northeastern plains, May is the wettest month of the year, on the average. It's not at all unusual for these areas to get 3" or more of precipitation in May -- more than often falls in the entire November through March period combined. This characteristic of Colorado's climate helps make dryland farming possible. Close to 75% of the average annual precipitation falls during the May-September growing season east of the mountains.

Springtime can be a bit discouraging. While May temperatures are normally quite pleasant (daytime highs average in the 70s with lows in the 40s over most lower elevation areas), farmers and gardeners have to contend with frosts which are likely well into the month. The eastern half of Colorado is particularly prone to periods of damp, cloudy, chilly weather in May that feel more like Seattle winter weather. And then, of course, there is that notorious threat of snow that always lingers, especially along the Front Range urban corridor. Fort Collins was belted by 27.8" of snow from a single storm in early May just a few years ago.

Where Do Climate Data Come From?:

We get lots of calls from people seeking climate information who assume detailed data are collected on temperature, precipitation, wind, pressure, solar radiation, humidity, etc. for almost anywhere in the state and are publicly available at little or no cost. That would be nice -- maybe -- but it's just not true. At this time there are only 6 weather stations in Colorado staffed by National Weather Service personnel. There are a handful of airports where FAA (Federal Aviation Administration) personnel take hourly weather observations a portion of the day. Several more sites have trained observers taking scheduled observations several times daily. But the bulk of the data contained in this report and readily available to the public come from the National Weather Service's cooperative observer network. In

(continued on last page)

MARCH 1985 DAILY WEATHER

<u>Date</u>	<u>Event</u>
1-2	Sunny and mild statewide on the 1st. Increasing clouds on the 2nd.
3-5	Deep low pressure area moved rapidly eastward across Colorado on the 3rd. Very windy and much colder. Blowing dust developed in parts of the Eastern Plains. A major snowstorm was predicted but only a few areas of significant snow fell. Berthoud Pass totalled 11.5" of new snow, and the Longmont-Boulder area received 5-8". Clearing and chilly 4-5th. Many locations reported their coldest temperatures of the month. Denver reported +2°F on the 4th. Subzero temperatures occurred in the mountains. Taylor Park claimed the state's coldest temperature with -33° on the 5th.
6-8	Mountain snowshowers on the 6th. Then partly cloudy and mild statewide. Strong southwesterly flow aloft began pumping moisture toward Colorado.
9-12	Significant winter storm over the Colorado Rockies. Rain and even thunderstorms fell at elevations below 9,000 feet 9-11th. Heavy wet snow above. Rainfall totals included 1.43" at Rifle, 1.32" at Cortez, and 1.17" at Paonia. At higher elevations, 4-day storm totals included 1.35" (20.5" snow) at Crested Butte, 1.77" (24.5" snow) at Berthoud Pass, and 3.16" (45" snow) at Wolf Creek Pass. East of the mountains cloudy and unseasonably warm weather prevailed 9-10th. In extreme southeastern Colorado temperatures reached the low 80s on the 10th for the first time this year. Colder temperatures moved in on the 11th and snow developed from the Front Range eastward. The heaviest precipitation fell in southeastern Colorado. Campo received 0.67" including 2" of snow on the 11th. Pueblo's 0.48" total included 3.2" of wet snow.
13-14	Sunny but chilly statewide. Subzero nighttime temperatures again in some mountain areas. Taylor Park dropped to -25°F on the 14th.
15-21	Unseasonably warm and dry period. An upper air disturbance crossed extreme southern Colorado on the 16th and again on the 19th producing moderate precipitation south of the San Juans. Cortez received 1.38" from the 2 storms.
22	Fast moving Pacific cold front raced across Colorado. A few inches of snow fell in the mountains as colder air briefly invaded the state. Very windy.
23-26	Windy, dry and unseasonably warm. Boulder and Brighton reached 78° on the 25th. John Martin Dam's 83° tied Walsh for the state's highest temperature in March. Severe blowing dust blown by 70 mph winds caused a chain reaction collision along I-25 near Longmont on the 26th.
27-30	A very large winter storm system attacked Colorado. Winds in excess of 70 mph buffeted southern Colorado on the 27th producing more blowing dust. A well developed low pressure center sat nearly stationary over the Four Corners area on the 28-29th and produced some incredibly heavy snows. Paonia, Ridgway, and Cedaredge totalled 28" of snow from the 4-day storm. Meanwhile the higher mountains were buried. Silverton got 37" (more than 4.00" of water content) and Wolf Creek Pass a whopping 60". A few areas east of the Divide were also hard hit. Up to 3 feet were measured near Colorado Springs. Farther east on the plains the snow quickly diminished. A special map showing snowfall totals for this unusual storm is included at the end of this report.
31	Windy again. Strong northwest winds aloft brought snowsqualls to the Northern and Central Mountains -- some locally heavy amounts.

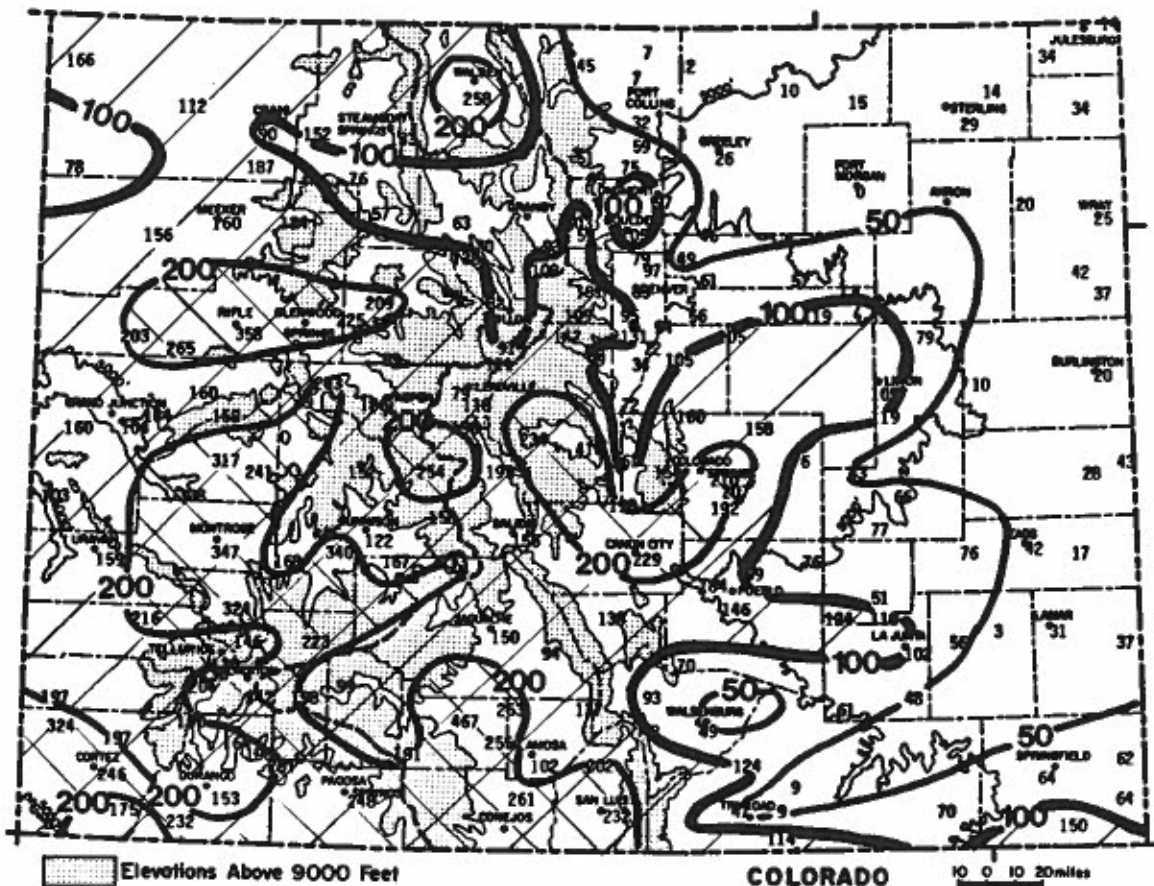
March 1985 Extremes

Highest Temperature	83°	March 10	Walsh,
	83°	March 25	John Martin Dam
Lowest Temperature	-33°	March 5	Taylor Park
Greatest Total Precipitation	9.28"		Wolf Creek Pass 1E
Least Total Precipitation	0		Fort Morgan
Greatest Total Snowfall	130"		Wolf Creek Pass 1E
Greatest Snowdepth	156"	March 29	Wolf Creek Pass 1E

MARCH 1985 PRECIPITATION

Two storm systems produced almost all of Colorado's precipitation for March. Areas skirted by those storms ended up drier than average while the remainder of the state was wet. The above average areas included most of western Colorado, the upper Arkansas Valley, South Park, the Pikes Peak-Palmer Divide area and the San Luis Valley. More than 300% of average March precipitation fell from Ridgway to Cedaredge, near Silverton, Yellow Jacket, Rifle, Del Norte, and also in the vicinity of Eleven Mile Reservoir in South Park. On the Eastern Plains, spring precipitation is critical for dryland farming and ranching. Most of the Plains were very dry and windy in March. Portions of northeastern Colorado received less than 0.25 inches. This was in sharp contrast to the 6.00" and greater totals reported in portions of the San Juans.

<u>Greatest</u>		<u>Least</u>	
Wolf Creek Pass	9.28"	Fort Morgan	0.00"
Trout Lake	6.56"	Kauffman 4SSE	Trace
Silverton	6.53"	Windsor	0.02"
Bonham Reservoir	6.30"	John Martin Dam	0.02"
Redstone 4W	5.48"	Stratton	0.02"



Precipitation for March 1985 as a percent of the 1961-1980 average.

1985 WATER YEAR PRECIPITATION

Precipitation for the first half of the 1985 water year continues above average over most of Colorado. The Northern Mountains are near average for this time of year, but the remainder of Colorado's high country is above average. The dry, windy conditions in eastern Colorado had a noticeable effect on lowering accumulated precipitation departures from average.

Comparison to Last Year

A year ago most of the state was also wetter than average. The Northern and Central Mountains, northwestern valleys, and northeastern plains were noticeably wetter than they are this year. This year, the southern and eastern slopes of the San Juans are wetter than last year.

1985 Water Year to Date through February

Wettest (as % of average)

Fountain	318%	8.23"
Fort Carson	298%	8.42"
Colorado Springs	270%	8.13"

Driest (as % of average)

Red Feather Lakes	72%	3.90"
Williams Fork Resvr	73%	5.17"
Cimarron	77%	4.50"

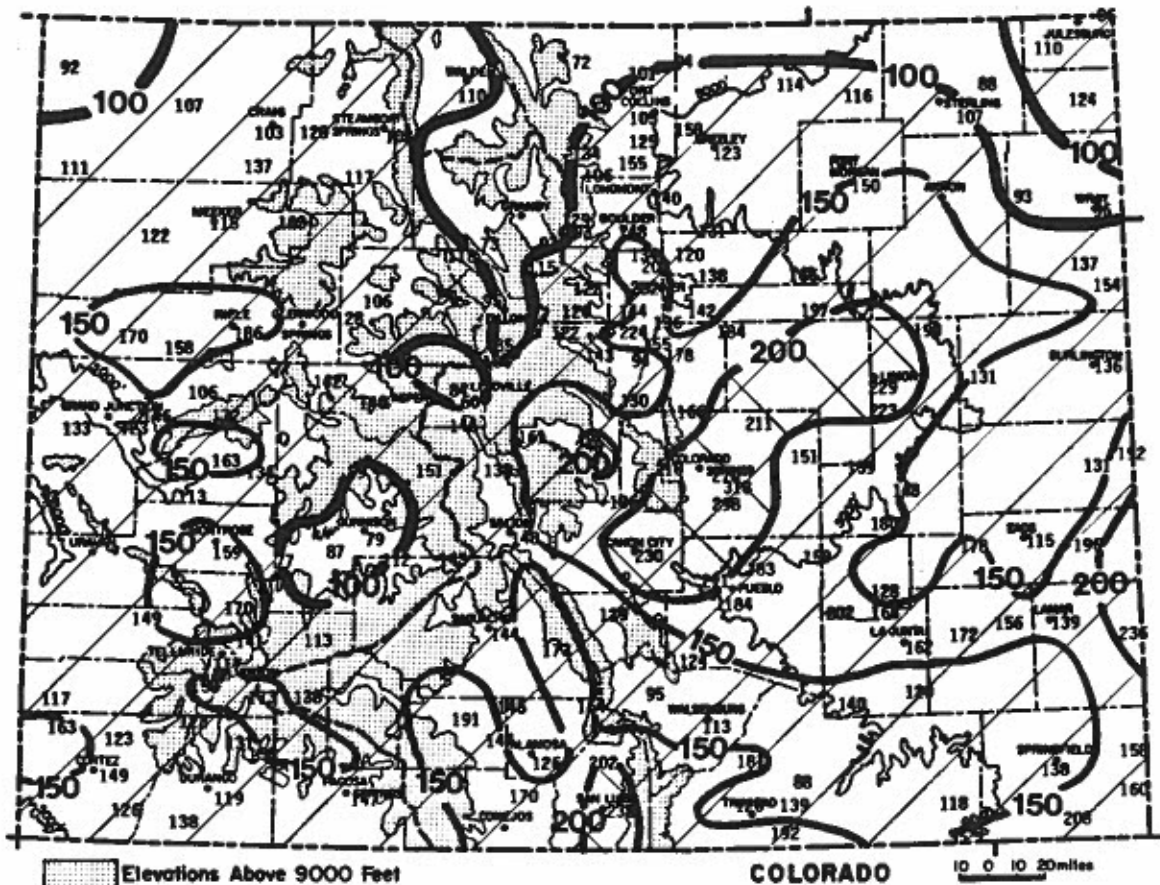
Wettest (total precipitation)

Wolf Creek Pass	*30.00"	118%
Bonham Reservoir	24.50"	132%
Trout Lake	22.30"	158%

Driest (total precipitation)

Kauffman 4SSE	1.74"	81%
Briggsdale	2.50"	114%
Julesburg	2.75"	86%

* Estimated, December 1984 data missing.

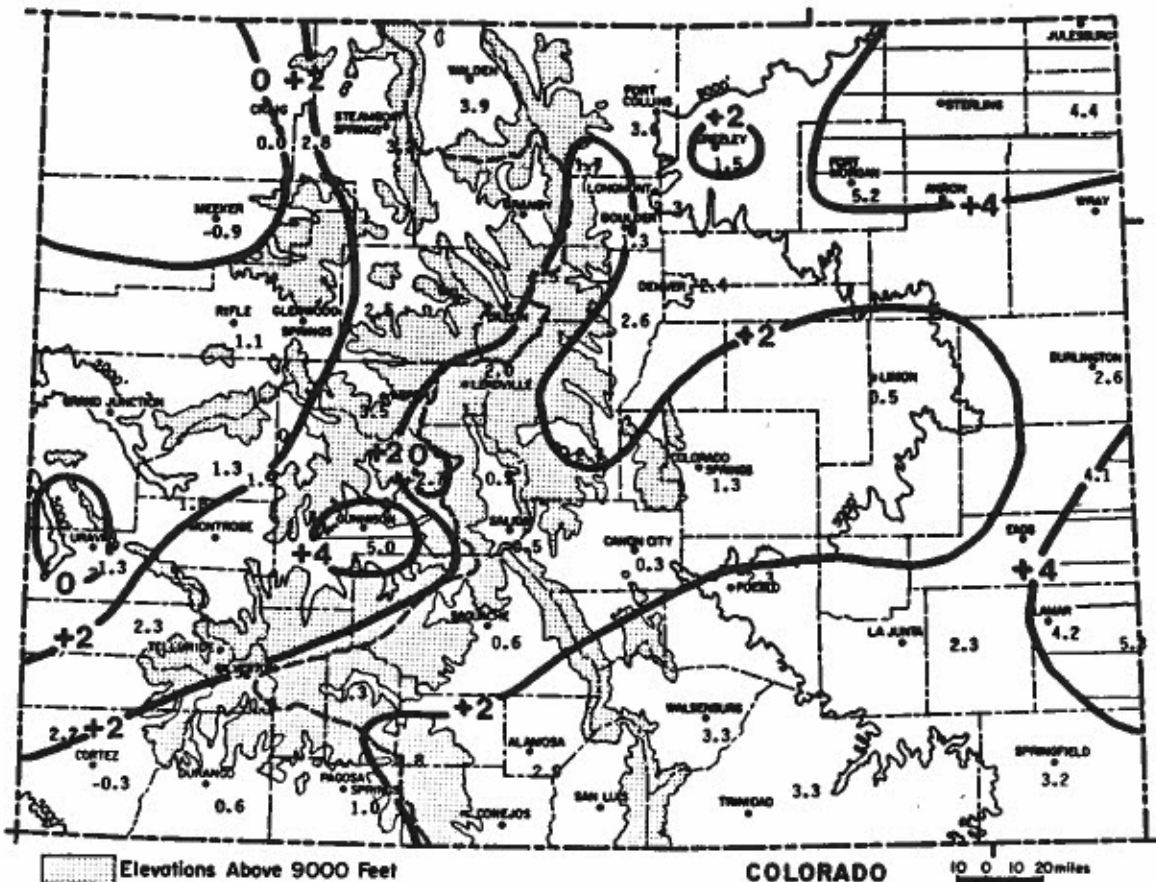


Precipitation for October 1984 through March 1985 as a percent of the 1961-1980 average.

MARCH 1985 TEMPERATURES
AND DEGREE DAYS

Colorado experienced a warmer than average March. There were a few pockets with near or slightly below average temperatures such as the Meeker-Craig area, the upper Arkansas Valley, and the Silverton-Durango-Cortez area. The warmest areas were the lower Arkansas and lower South Platte valleys where some stations were more than 4 degrees Fahrenheit above average.

Heating degree day data appear in the table on the following page. Totals were less than average and less than last year (March 1984 was chillier than normal).



March 1985 temperature departures from 1961-1980 averages (degrees Fahrenheit).

MARCH 1985 SOIL TEMPERATURES

Deep soil temperatures are leveling off now while near surface temperatures are rapidly responding to the warm, March sun in areas where the snow has all melted. The measurements shown here are taken at Colorado State University beneath unirrigated sod with an open exposure. These data are not representative of all locations in Colorado.

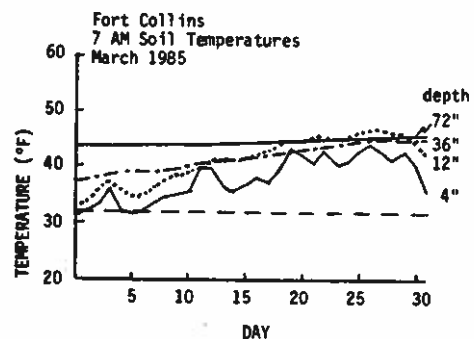


Table 1. Colorado Heating Degree Day Data through March 1985.

HEATING DEGREE DATA														
STATION	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANN	
ALAMOSA AVE 83-84 84-85	40 28 15	100 56 35	303 232 112	657 513 248	1074 974 748	1657 1581 1382	1519 1462 1206	1182 1006 836	1035 836 536	732 599 453	453 300 186	165 9644 7106	185 186	8717 9644 7106
ASPEN AVE 83-84 84-85	95 87 67	150 85 134	348 269 345	621 621 683	1029 1021 1034	1329 1332 1282	1376 1471 1415	1239 1203 1293	1162 1108 1047	798 932 1047	524 477 345	262 345 7520	262 345	8950 9019 7520
BOULDER AVE 83-84 84-85	0 0 0	6 84 1	130 350 171	357 599 599	714 753 716	908 1367 938	1004 1087 1162	894 830 989	775 792 717	483 639 702	220 168 168	59 58 58	59 58	5460 6132 5293
BUENA VISTA AVE 83-84 84-85	47 45 16	116 285 91	285 595 828	577 595 828	936 970 949	1184 1333 1169	1218 1331 1338	1025 1020 1084	983 982 958	720 808 808	459 370 203	184 203 6715	184 203	7734 7940 6715
BURLING- TON AVE 83-84 84-85	0 0 0	5 0 0	108 87 148	364 359 493	762 758 699	1017 1500 980	1110 1172 1207	871 884 1012	803 884 886	459 700 803	200 200 200	38 34 5225	38 34	5743 6577 5225
CANON CITY AVE 83-84 84-85	0 0 0	9 0 0	81 314 175	301 649 561	639 1278 702	831 993 841	911 1069 1069	734 968 968	707 752 676	411 570 676	179 134 27	33 27 4982	33 27	4836 5548 4982
COLORADO SPRINGS AVE 83-84 84-85	8 2 0	25 0 6	162 440 200	440 819 684	819 1042 982	1042 1122 1233	1122 1197 1077	910 911 830	880 912 830	564 700 677	296 220 239	78 58 5903	78 58	6346 6767 5903
CORTEZ AVE 83-84 84-85	0 0 0	11 0 0	95 438 666	319 854 639	639 1154 839	1132 1271 1072	1181 1018 1173	921 1018 1085	828 853 827	555 677 677	292 239 419	68 69 193	68 69	6350 6726 8376
CRAIG AVE 83-84 84-85	32 41 15	59 212 25	275 509 304	608 789 799	996 1005 1002	1342 1471 1424	1479 1730 1609	1193 1420 1432	1094 1194 1063	607 884 429	167 135 505	31 4887 7673	31	5903 4887 7673
DELTA AVE 83-84 84-85	0 0 0	0 0 1	94 372 183	340 572 622	727 833 753	1061 1466 990	1366 1162 1213	1006 889 1040	735 854 742	429 526 972	167 183 1124	74 51 435	74 51	6014 6573 10754
DENVER AVE 83-84 84-85	273 263 245	332 224 301	513 438 510	806 789 1004	1167 1135 1135	1435 1492 1380	1516 1653 1581	1305 1419 1449	1296 1333 1219	972 1124 1219	167 675 600	704 472 125	704 472	10754 8850 6848
DILLON AVE 83-84 84-85	0 0 0	34 0 6	193 124 124	493 464 695	837 899 866	1153 1218 1074	1218 1009 1146	958 835 1008	862 835 831	600 665 798	366 209 431	125 113 171	125 113	6848 6771 8377
DURANGO AVE 83-84 84-85	0 0 0	3 0 1	124 626 252	464 626 741	899 1026 998	1161 1407 1300	1218 1448 1435	1218 1040 1219	958 1015 910	665 664 705	209 375 489	113 231 218	113 231	6771 5750 8483
EAGLE AVE 83-84 84-85	30 30 21	60 203 68	288 224 272	626 509 564	1026 962 826	1407 1337 1088	1448 1681 1329	1148 1299 1123	1014 1015 928	705 798 730	431 338 489	171 238 218	171 238	8377 6883 8483
EVER- GREEN AVE 83-84 84-85	59 72 21	113 228 326	327 605 826	621 971 741	916 1449 998	1135 1329 1300	1199 1040 1435	1011 1051 1219	1009 1015 910	730 864 928	366 209 431	125 113 171	125 113	6848 6771 8377
FORT COLLINS AVE 83-84 84-85	5 2 0	11 0 0	171 115 193	468 415 606	846 843 745	1073 1432 1027	1181 1225 1245	930 829 1077	877 829 734	558 661 734	281 196 196	82 81 5627	82 81	6483 6688 5627
FORT MORGAN AVE 83-84 84-85	0 0 0	6 0 0	140 77 185	438 368 564	867 782 664	1156 1614 1168	1283 1493 1329	969 984 1125	874 844 687	516 650 687	224 158 188	47 38 5642	47 38	6520 5620 5642
GRAND JUNCTION AVE 83-84 84-85	0 0 0	0 0 0	65 27 54	325 208 452	762 678 719	1139 1066 996	1225 1366 1044	882 958 919	716 630 645	403 474 85	148 85 4829	148 85	148 85	5683 5540 4829

56
MARCH 1985 CLIMATIC DATA

Eastern Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT MORGAN	57.4	27.8	42.6	5.2	79	11	687	0	146	0.0	-0.56	0.0	0
HOLYOKE	59.5	26.4	43.0	4.4	78	9	674	0	173	0.38	-0.75	33.6	4
BURLINGTON	56.8	28.4	42.6	2.6	76	12	686	0	140	0.16	-0.66	19.5	2
LIMON WSMO	51.8	21.6	36.7	0.5	73	7	868	0	87	0.78	0.04	105.4	6
CHEYENNE WELLS	58.7	28.4	43.5	4.1	80	13	659	0	165	0.19	-0.50	27.5	2
LAMAR	62.5	31.4	46.9	4.2	86	18	551	1	217	0.29	-0.64	31.2	2
LAS ANIMAS	63.1	28.5	45.8	2.3	82	11	586	0	221	0.35	-0.27	56.5	2
HOLLY	62.3	29.8	46.0	5.3	81	15	580	0	205	0.26	-0.44	37.1	2
SPRINGFIELD TWSW	59.9	29.7	44.8	3.2	82	8	619	0	180	0.58	-0.33	63.7	2

Foothills/Adjacent Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	56.0	26.3	41.1	3.6	75	8	734	0	119	0.35	-0.75	31.8	3
GREELEY UNC	56.8	26.2	41.5	1.5	79	11	719	0	139	0.25	-0.70	26.3	3
ESTES PARK	46.3	22.1	34.2	1.7	59	7	944	0	20	0.37	-0.36	50.7	7
LONGMONT ZESE	55.9	25.4	40.7	3.3	78	-1	748	0	136	0.88	-0.03	96.7	3
BOULDER	55.6	27.5	41.6	1.3	78	5	717	0	114	1.43	0.07	105.1	4
DENVER WSFO AP	54.5	27.1	40.8	2.4	74	2	742	0	107	0.69	-0.45	60.5	4
EVERGREEN	48.5	21.1	34.8	2.6	67	-1	928	0	54	1.24	-0.86	95.4	4
LAKE GEORGE BSW	41.4	16.5	28.9	2.4	55	-5	1110	0	7	2.27	1.72	412.7	8
COLORADO SPRINGS	51.0	24.8	37.9	1.3	70	7	830	0	77	0.0	-0.80	0.0	0
CANON CITY	56.7	29.4	43.0	0.3	72	9	676	0	134	1.90	1.07	228.9	4
PUEBLO WSO AP	59.2	27.5	43.3	2.3	77	11	664	0	167	0.72	-0.01	98.6	4
WALSENBERG	57.1	29.3	43.2	3.3	69	9	669	0	133	0.65	-0.67	49.2	4
TRINIDAD FAA AP	59.5	27.7	43.6	3.3	76	13	658	0	171	0.88	-0.81	9.0	3

Mountains/Interior Valleys*

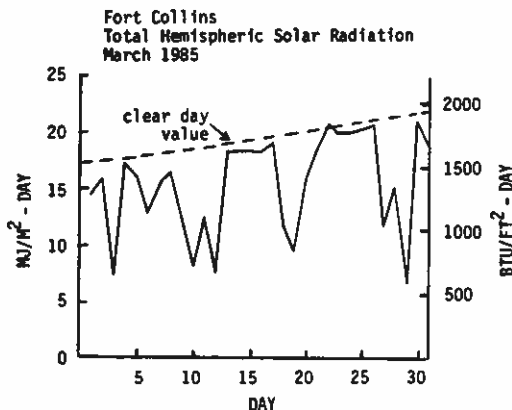
Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	40.7	15.3	28.0	3.9	55	-1	1138	0	4	1.47	0.90	257.9	11
LEADVILLE TSW	36.6	9.6	23.1	1.1	47	-5	1291	0	0	1.77	0.27	118.0	14
SALIDA	48.1	23.4	35.7	-0.5	61	7	900	0	41	1.22	0.44	156.4	5
BUENA VISTA	47.3	20.5	33.9	0.3	59	6	956	0	21	1.23	0.60	195.2	5
SAGUACHE	46.4	20.7	33.5	0.6	60	7	967	0	17	0.63	0.21	150.0	4
HERMIT ZESE	32.7	8.5	20.6	1.3	40	-10	1370	0	0	1.45	-0.01	99.3	5
ALAMOSA WSO AP	48.5	20.5	34.5	2.9	61	3	936	0	34	0.44	0.01	102.3	4
STEAMBOAT SPRINGS	42.6	17.3	30.0	3.2	54	-1	1077	0	4	2.55	0.63	132.8	11
BERTHOUD PASS	30.6	6.8	18.7	1.5	44	-12	1425	0	0	4.23	0.32	108.2	17
DILLON IE	38.7	12.2	25.5	2.2	52	-4	1219	0	1	0.91	-0.20	82.0	8
CLIMAX	33.0	7.8	20.4	2.0	45	-8	1375	0	0	2.37	0.24	111.3	16
ASPEN ISW	43.4	18.6	31.0	3.5	55	1	1047	0	6	4.10	1.90	186.4	13
TAYLOR PARK	36.3	-5.3	15.5	-2.7	47	-33	1524	0	0	3.20	1.94	254.0	14
TELLURIDE	44.1	19.6	31.9	3.5	57	-4	1020	0	10	2.53	0.58	129.7	14
PAGOSA SPRINGS	47.9	18.8	33.3	1.0	62	-3	971	0	32	3.57	2.13	247.9	12
SILVERTON	39.5	7.9	23.7	-0.3	51	-14	1272	0	1	6.53	4.62	341.9	15
WOLF CREEK PASS I	33.8	14.2	24.0	2.8	43	-2	1263	0	0	9.28	4.42	190.9	16

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dev	High	Low	Heat	Cool	Grow	Total	Dev	%Norm	# days
CRAIG 4SW	41.9	18.9	30.4	0.0	61	3	1063	0	14	1.40	0.42	142.9	13
HAYDEN	42.3	20.1	31.2	2.8	59	2	1039	0	10	1.79	0.61	151.7	10
MEEKER NO. 2	48.6	18.8	33.7	-0.9	62	-3	963	0	41	2.11	0.79	159.8	9
EAGLE FAA AP	49.1	21.7	35.4	2.5	64	10	910	0	43	1.61	0.84	209.1	9
RIFLE	53.4	24.2	38.8	1.1	69	12	804	0	96	3.04	2.19	357.6	9
CEDAREGGE	52.5	27.6	40.1	1.3	65	12	765	0	70	3.17	2.17	317.0	8
PADONIA 1SW	53.5	28.1	40.8	1.9	69	17	742	0	107	3.09	1.81	241.4	9
DELTA	56.4	29.3	42.8	1.8	70	16	683	0	125	1.48	1.00	308.3	9
GUNNISON	43.4	17.5	30.5	5.0	59	-5	1065	0	11	0.84	0.15	121.7	5
URAVAN	55.3	28.4	41.9	-1.3	75	17	711	0	126	1.54	0.57	158.8	12
NORWOOD	48.0	24.2	36.1	2.3	61	-2	887	0	29	2.40	1.29	216.2	8
YELLOW JACKET 2W	47.5	26.9	37.2	2.2	63	2	854	0	26	3.43	2.37	323.6	10
CORTEZ	50.9	25.1	38.0	-0.3	66	4	827	0	57	3.30	1.96	246.3	13
DURANGO	50.2	25.6	37.9	0.6	65	5	831	0	48	2.49	0.86	152.8	12

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

MARCH 1985 SUNSHINE AND SOLAR RADIATION

Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	10	7	14	--	--
Denver	12	7	12	68%	71%
Grand Junction	12	5	14	71%	64%
Pueblo	10	11	10	85%	75%



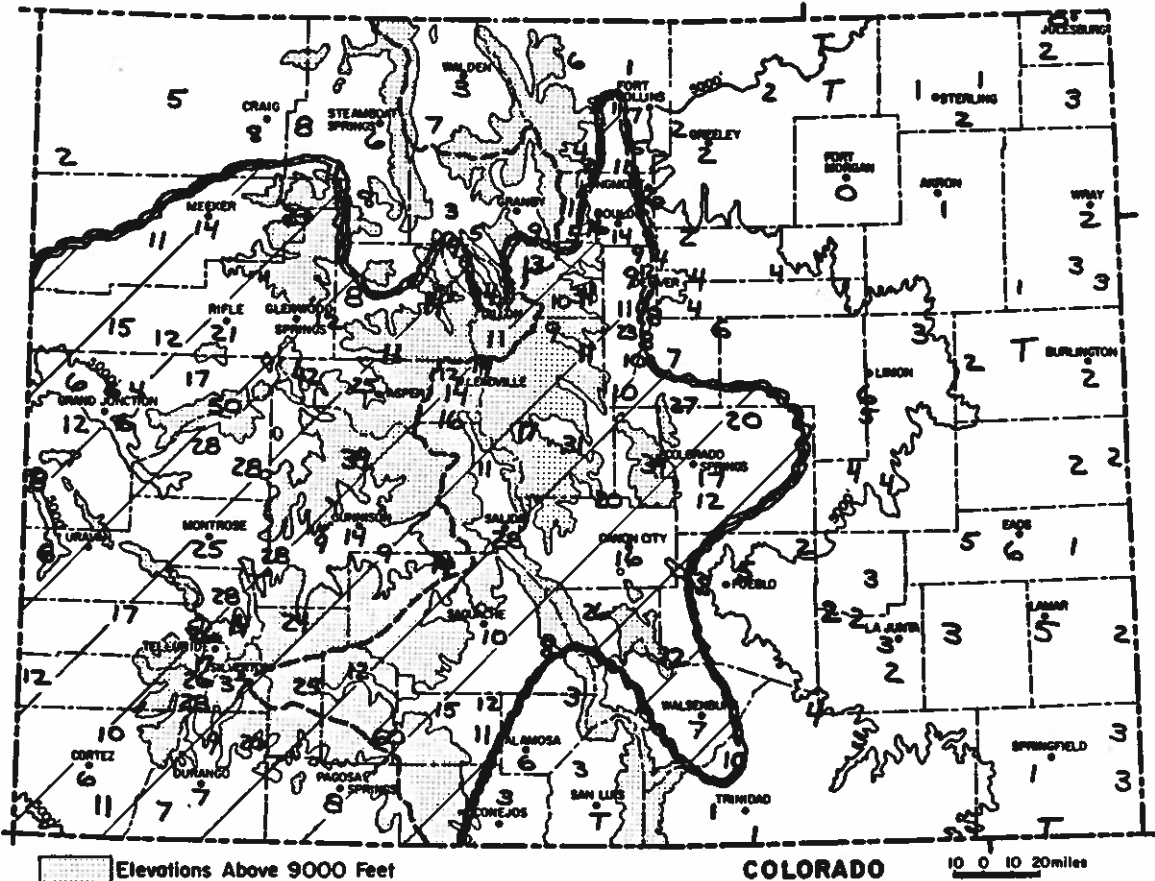
Where Do Climate Data Come From?: (continued from first page)

Colorado there are more than 200 stations in this network, mostly local citizens volunteering their time and effort to take basic once-daily measurements of precipitation using a standard raingage (8" diameter). About 2/3 of these observers also record daily high and low temperatures. There are no fancy computers and expensive automatic weather stations. Data are transmitted by the U.S. mail, not by satellite communications. It's far from "state-of-the-art," but it still works and has worked for almost a century.

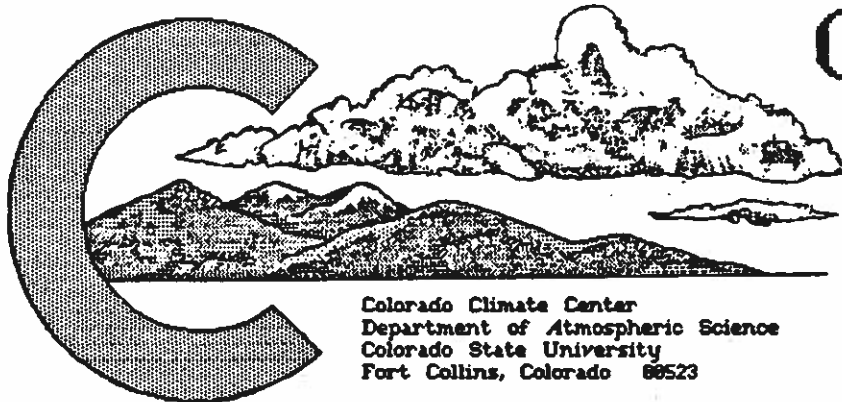
There are a growing number of sophisticated automated weather stations cropping up all over the state for a number of special purposes. The USDA's Soil Conservation Service mountain snowpack measurement network is a great example of a "high tech" data collection system for the purpose of monitoring and projecting water supplies. Many other more localized networks or single stations exist to meet special local data requirements. Evapotranspiration calculation for irrigation scheduling is another example.

No matter where we travel in this state we are likely to spot new weather stations. There is truly an avalanche of climate data being collected. Unfortunately, not all of the data being collected are readily available to you and me. No single group or agency is responsible for archiving all the weather data being collected. For that reason, and many others as well, we find that the old standby National Weather Service network -- old fashioned as it may seem -- continues to be invaluable for basic climate monitoring and analysis. It may take us a few weeks each month to get all the data in from the observers and get it assembled. But when we finally have it, it is a public information resource that is available to all of us, even if we don't have our own home computer -- and all at a very low cost.

Note: From time to time in future issues of Colorado Climate other data-gathering networks and climate information sources will be described. Also changes in existing networks will be discussed and how that might affect you and me.



Storm snowfall totals (inches) for March 27-30, 1985.



COLORADO CLIMATE

APRIL 1985

Colorado Climate Center
Department of Atmospheric Science
Colorado State University
Fort Collins, Colorado 80523

April in Review:

A week of cool, wet weather in late April brought precipitation totals above average over most of Colorado. However, it could not compensate for the unusual warmth early in the month. The entire state ended up a few degrees warmer than average.

A Look Ahead -- June 1985:

Mountain snows finally cease in June and the snowmelt progresses full throttle. Kayakers and rafters love the raging torrents as Colorado's major rivers normally reach their peak flows in June. However, local flooding and bank erosion can be a problem.

June brings an abrupt transition from the occasional periods of cool and wet weather of spring to the low-humidity heat of summer and the traditional afternoon and evening thundershowers. The cool, damp periods often persist into mid June, but by the end of the month almost every day dawns bright and sunny. As this transition occurs, Colorado gets its share of severe weather. More tornadoes have occurred in June than in any other month. It was in early June of 1981 when the myth was broken that Colorado's Front Range cities need not be concerned about tornadoes. Thornton and other parts of the Denver metropolitan area were blasted by several tornadoes on 6/3/81. Damaging hail storms are also a threat, especially across the Eastern Plains. In just a few seconds, entire wheat fields can be destroyed. It was just last year when millions of dollars of property damage occurred in Denver from a slow moving hail storm.

June precipitation is reliable and abundant (averaging about 3") in northeastern Colorado but typically decreases steadily toward the southwest. The Northern and Central Mountains receive only 1"-2" of precipitation in most Junes. In the San Juan Mountains and southwestern Colorado, June is actually the sunniest and driest month of the year. This is a convenient characteristic of our climate which helps minimize the potential flood threat. Interestingly, the past two Junes have been exceptions to this rule with both years bringing heavy June precipitation to Western Colorado enhancing existing flood problems.

June temperatures are fairly consistent year to year. Most low elevation sites begin with daytime temperatures in the 70s early in the month rising into the 80s and 90s by late June. Frost is no longer a threat in June except in the mountains where temperatures on clear nights continue to drop into the 20s and 30s (°F).

Berthoud Pass -- Where Did You Go?:

We have some bad news to report. As of April 30, 1985, the Berthoud Pass climatological and avalanche reporting station is closed. The station has been operated during the winter months since 1950 and year-round 365 days a year since 1962 supplying detailed and very accurate information on temperature, precipitation, snow, wind, snowpack conditions and avalanche behavior. Funding for these observations has come from the U.S. Forest Service Rocky Mountain Forest and Range Experiment Station through their avalanche research program. The valuable Berthoud Pass weather data have long been unselfishly shared with and used by countless other groups with interest and concerns about high elevation climate. Termination of the Forest Service's avalanche research resulted in closing the Berthoud Pass station.

(continued on last page)

APRIL 1985 DAILY WEATHER

<u>Date</u>	<u>Event</u>
1-3	Chilly morning on the 1st, then sunny, breezy and mild. Lower elevations saw temperatures in the 70s and 80s 2-3rd, but cold mornings still prevailed. Taylor Park dropped to -15°F on the 3rd, the coldest in the state for April. Very strong winds and a few thundersprinkles developed on the 3rd as a Pacific front approached. Winds gusted to 69 mph at Fort Collins and 57 mph in Greeley.
4-5	Cloudy, colder and more strong winds as an upper level storm system passed Colorado. Scattered light rain and snow fell east of the mountains. Aguilar and Walsenburg picked up 5" of snow. Heavier snows fell in the Central Mountains such as 12" at Berthoud Pass and Mount Evans.
6-8	Northwesterly winds aloft. Warming west of the mountains but still chilly east. Northeastern Colorado had their coldest temperatures of the month on the morning of the 8th with readings near 20°F.
9	Weak upper level disturbance triggered morning rain and snow showers and thundershowers from the Western Slope over the mountains onto parts of the plains. The heaviest precipitation reported was 0.68" at Pitkin near Gunnison.
10-18	Unusually warm period with temperatures generally 10-20 degrees above average. Temperatures soared into the 80s at many lower elevation sites 15-17th while in the mountains, 50s and 60s helped to get the snow melt started early. Several new daily temperature records were set such as 85° at Greeley on both the 15th and 16th, and 84° at Fort Collins and Denver on the 16th. The highest temperature in Colorado was 92° recorded near Wray on the 15th and again on the 18th at Holly. Sunny and dry throughout the period until thundershowers spread northeastward across the state on the 18th.
19-23	Heavy clouds and precipitation and cooler temperatures moved into Colorado from the west and southwest. Precipitation was widespread and heavy west of the Continental Divide with snow above about 6,500 feet and rain and snow mixed below. Some totals for the storm included 1.58" at Grand Junction, 1.88" at Cortez, 2.21" at Rifle, 2.91" at Steamboat Springs (19" snow) and 4.30" at Bonham Reservoir (30" snow). Precipitation was much more spotty east of the Divide with areas like Canon City recording just a trace while La Junta got more than 1". Very strong winds occurred across the plains on the 19th producing blowing dust in some areas.
24-30	A brief respite between storms followed by another onslaught by an even stronger, colder storm which developed quickly over Utah on the 24th. This storm brought cold rain and snow to most of the state on the 25-26 but focused on the Front Range, northeastern plains and the upper Arkansas Valley. Heavier precipitation totals 24-26th included 1.05" at Buena Vista, 1.16" at Bailey (10" snow), 1.20" at Akron, and 1.26" at Fort Collins (3.7" snow). The storm then took an interesting route dropping south of Arizona on the 27-28th and then moving back northeastward hitting southern and eastern Colorado a second time. This time the heaviest precipitation fell in southern and southeastern Colorado. Wolf Creek Pass received 1.74" of precipitation (25" snow) 28-29th. Other totals included 1.28" at Del Norte, 1.33" at Parker, 1.99" at Rye, 2.40" at Palmer Lake, and 2.57" at Aguilar. As the storm gradually drifted out of Colorado on the 30th, sunny and warm conditions promptly returned to western Colorado.

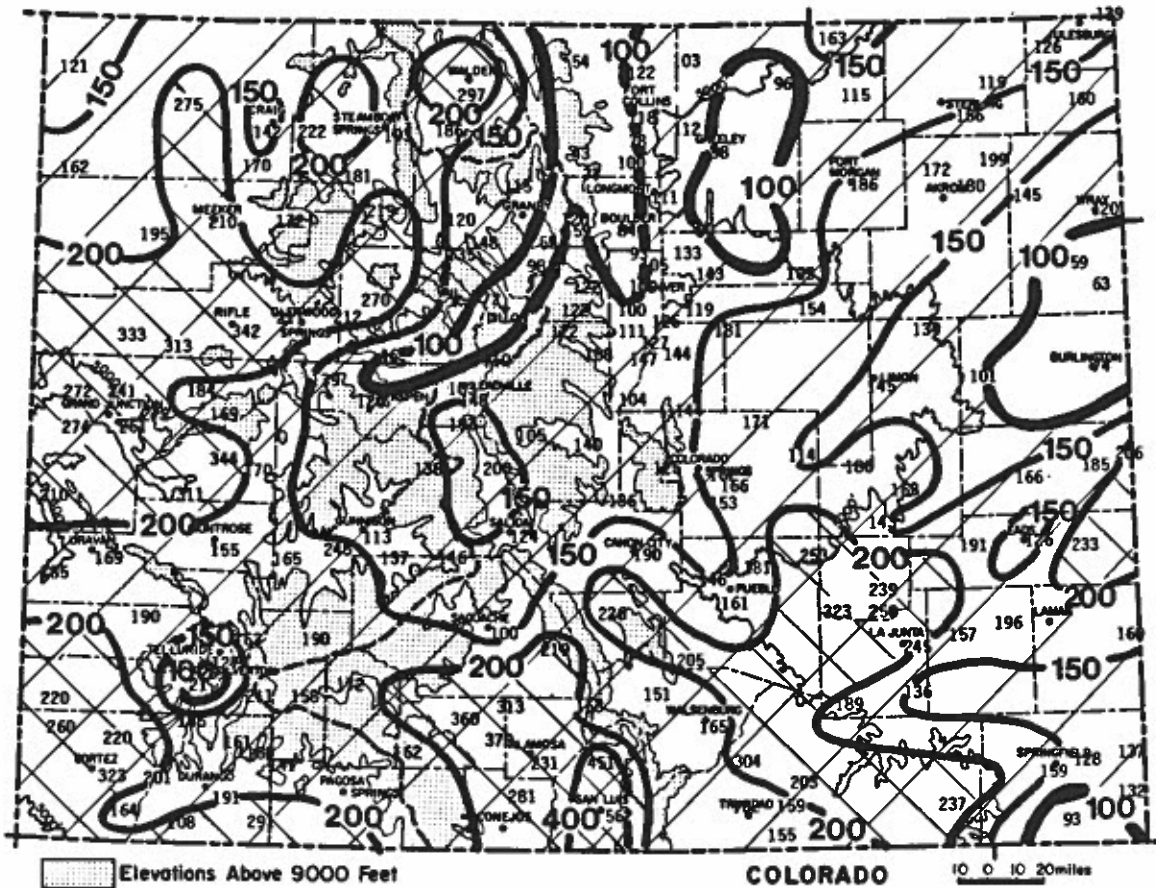
April 1985 Extremes

Highest Temperature	92°	April 15	Wray 1E,
	92°	April 18	Holly
Lowest Temperature	-15°	April 3	Taylor Park
Greatest Total Precipitation	5.45"		Bonham Reservoir
Least Total Precipitation	0.51"		Saguache
Greatest Total Snowfall	69"		Wolf Creek Pass 1E

APRIL 1985 PRECIPITATION

April got off to a dry start, but precipitation during the latter portion of the month brought totals above average for almost all of Colorado. More than double the April average fell in several lower elevation areas of the state including North Park, the Colorado River Valley from Eagle to Grand Junction, the San Luis Valley, extreme southwestern Colorado and portions of the southeast. All of the state received appreciable precipitation, but below average totals were recorded in parts of Weld County, in east central Colorado near Burlington, in the eastern foothills from Denver north to Wyoming, along the Continental Divide from near Aspen to Grand Lake, and in a tiny area just south of Telluride.

<u>Greatest</u>		<u>Least</u>	
Bonham Reservoir	5.45"	Sagauche	0.51"
Wolf Creek Pass	4.77"	Ames	0.53"
Rye	4.43"	Estes Park	0.56"
Mount Evans	4.27"	Trout Lake	0.60"
Research Center		Gunnison	0.63"
Agular	4.26"		



Precipitation for April 1985 as a percent of the 1961-1980 average.

1985 WATER YEAR PRECIPITATION

Almost all of Colorado continues to be wetter than average through the first seven months of the 1985 water year. The only areas which are average or below are the extreme northwest corner, a small area in the Gunnison Valley, and a narrow band from Leadville northeastward through Grand Lake and on toward Cheyenne, Wyoming. There are still a few limited areas in south central and southeastern Colorado which have received more than double the average precipitation so far this year.

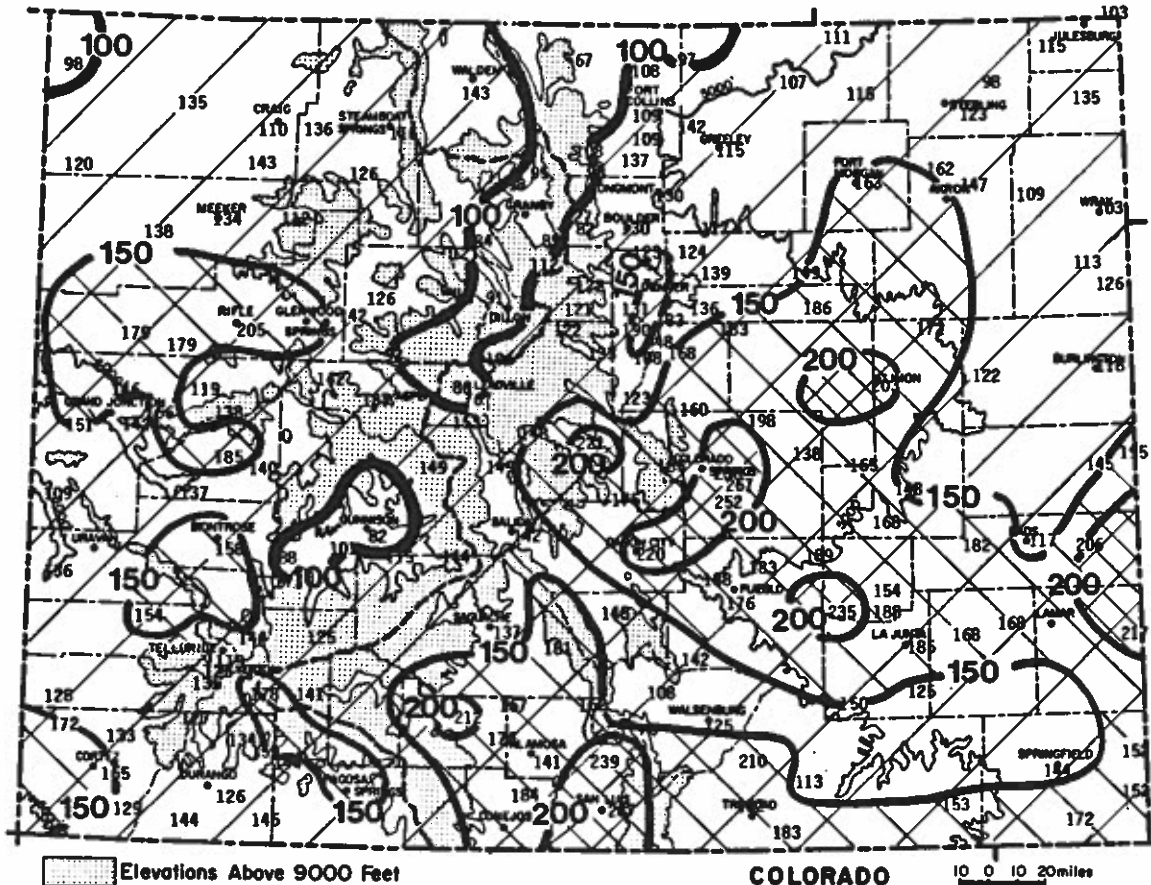
Comparison to Last Year

Last year was also a wet year. Most of western Colorado (except for the southern slopes of the San Juans) while still above average is considerably drier than a year ago at this time. The northern Front Range and the northeastern plains are also drier than last year. The San Luis Valley, the southern half of the San Juans and the oil shale areas north of Grand Junction are all wetter than they were at this time last year.

1985 Water Year to Date through April

<u>Wettest (as % of average)</u>			<u>Driest (as % of average)</u>		
San Luis 2SE	287%	7.11"	Red Feather Lakes	67%	5.13"
Fountain	267%	10.39"	Leadville 2SW	76%	6.74"
Fort Carson	252%	10.41"	Gunnison	82%	4.08"

<u>Wettest (total precipitation)</u>			<u>Driest (total precipitation)</u>		
Wolf Creek Pass 1E	34.00"	119%	Kauffman 4SSE	3.68"	111%
Bonham Reservoir	29.95"	138%	Briggsdale	3.73"	107%
Berthoud Pass	26.39"	112%	Center 4SSW	4.05"	167%

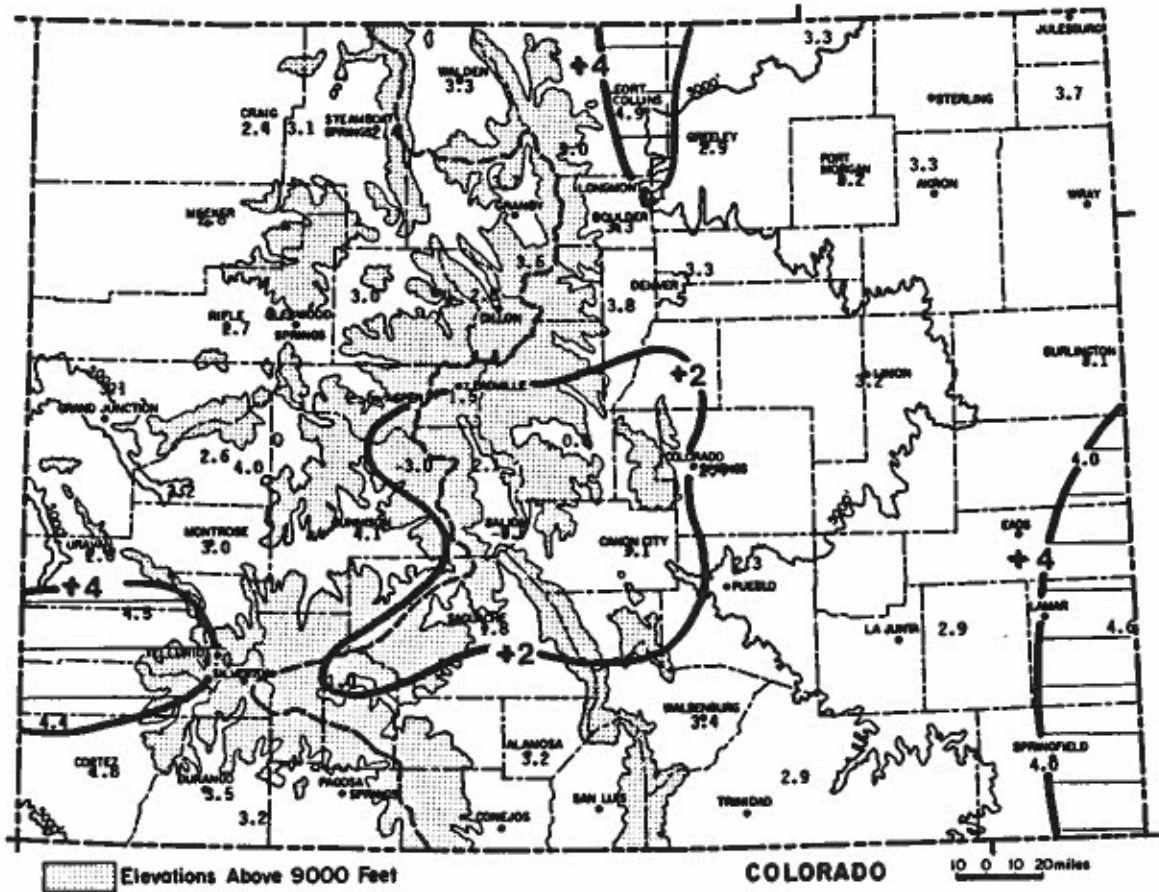


Precipitation for October 1984 through April 1985 as a percent of the 1961-1980 average.

APRIL 1985 TEMPERATURES
AND DEGREE DAYS

April was a mild month with practically the entire state having above average temperatures. Departures from average were remarkably uniform with the majority of the state between 2 and 4 degrees Fahrenheit higher than average. This was the second consecutive warmer than normal month.

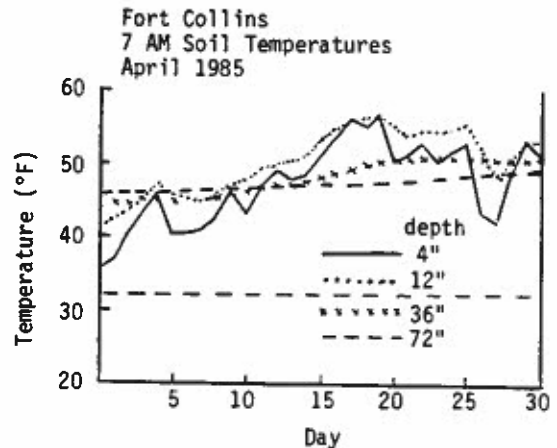
Heating degree day data appear in the table on the following page. April totals were less than average and considerably less than April 1984 (20 to 40%). This indicates energy consumed for space heating should have been down in April.



April 1985 temperature departures from 1961-1980 averages (degrees Fahrenheit).

APRIL 1985 SOIL TEMPERATURES

Warm April air temperatures helped to warm soil temperatures more quickly than usual. The measurements shown here are taken at Colorado State University beneath sparse unirrigated sod with an open exposure. These data are not representative of all locations in Colorado.



APRIL 1985 CLIMATIC DATA

Eastern Plains*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
KAUFFMAN 4SSE	63.9	33.6	48.8	3.3	84	10	480	0	228	1.94	0.75	163.0	5
FORT MORGAN	66.5	36.8	51.7	3.2	86	23	395	1	263	2.18	1.01	186.3	7
AKRON FAA AP	63.9	36.1	50.0	3.3	83	20	442	1	229	2.27	0.95	172.0	9
HOLYOKE	69.6	36.6	53.1	3.7	89	22	353	4	302	2.43	0.91	159.9	10
BURLINGTON	67.7	39.1	53.4	3.1	85	25	347	7	279	0.89	-0.31	74.2	6
LIMON WSMO	63.0	33.5	48.3	3.2	79	20	496	0	212	1.52	0.47	144.8	8
CHEYENNE WELLS	69.1	38.8	53.9	4.0	85	23	325	3	295	1.63	0.75	185.2	7
LAS ANIMAS	73.6	39.8	56.7	2.9	90	26	257	16	361	1.57	0.57	157.0	6
HOLLY	72.3	41.9	57.1	4.6	92	27	259	27	341	1.55	0.58	159.8	6
SPRINGFIELD 7MSW	72.3	39.0	55.6	4.0	88	22	281	7	344	2.32	0.86	158.9	11

Foothills/Adjacent Plains*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	66.8	36.9	51.9	4.9	84	24	389	0	264	2.11	0.32	117.9	8
GREELEY UNC	66.6	36.8	51.7	2.9	85	24	391	0	271	1.91	-0.03	98.5	7
ESTES PARK	56.6	28.8	42.7	3.0	71	10	662	0	121	0.56	-0.74	43.1	10
LONGMONT ZESE	66.4	36.3	51.4	4.1	85	24	400	0	263	2.13	0.21	110.9	7
BOULDER	65.5	38.8	52.1	3.3	85	26	385	7	252	1.82	-0.34	84.3	9
DENVER USFO AP	63.8	38.1	51.0	3.3	84	26	412	1	229	2.61	0.79	143.4	9
EVERGREEN	58.5	29.9	44.2	3.8	75	19	616	0	149	2.26	-0.01	99.6	6
LAKE GEORGE BSM	51.0	23.7	37.3	0.8	64	-5	824	0	68	1.29	0.37	140.2	9
COLORADO SPRINGS	62.2	35.1	48.7	2.4	80	18	481	0	203	2.07	0.79	161.7	11
CANON CITY	66.9	38.8	52.9	1.1	82	21	362	3	269	2.13	1.01	190.2	6
PUEBLO WSO AP	70.2	37.7	53.9	2.3	85	23	326	0	314	1.70	0.76	180.9	8
WALSENBERG	66.7	37.0	51.8	3.4	79	14	386	0	261	2.69	1.06	165.0	9
TRINIDAD FAA AP	68.7	36.6	52.6	2.9	81	17	366	1	289	2.05	1.04	203.0	9

Mountains/Interior Valleys*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	52.4	23.1	37.8	3.3	68	8	810	0	80	2.35	1.56	297.5	13
LEADVILLE 2SM	45.0	20.0	32.5	1.5	56	7	967	0	13	2.36	0.76	147.5	9
SALIDA	59.5	27.7	43.6	-0.7	72	2	635	0	156	1.55	0.30	124.0	6
BUENA VISTA	57.4	28.9	43.2	2.1	68	10	646	0	128	1.40	0.70	200.0	6
SAGUACHE	57.7	28.3	43.0	1.8	70	17	655	0	130	0.51	0.0	100.0	4
HERMIT ZESE	45.1	18.1	31.6	1.0	75	11	997	0	13	2.00	0.84	172.4	7
ALAMOSA WSO AP	61.1	26.7	43.9	3.2	71	13	625	0	176	0.97	0.55	231.0	7
STEAMBOAT SPRINGS	55.6	25.2	40.4	2.4	69	16	730	0	118	4.16	2.01	193.5	12
GRAND LAKE 6SSW	50.0	24.0	37.0	3.7	63	15	832	0	53	1.26	0.16	114.5	12
BERTHOUD PASS	39.2	18.1	28.6	3.6	52	6	1085	0	2	4.17	-0.09	97.9	18
DILLON 1E	48.4	22.7	35.6	2.8	63	12	874	0	48	0.81	-0.31	72.3	10
CLIMAX	41.4	18.9	30.1	4.4	53	3	1037	0	4	2.65	0.25	110.4	12
ASPEN 1SW	52.6	28.6	40.6	2.6	68	14	726	0	81	2.75	0.75	137.5	11
TAYLOR PARK	47.5	5.1	26.3	-3.0	58	-15	1155	0	25	1.50	0.41	137.6	12
TELLURIDE	55.8	25.4	40.6	4.0	70	11	723	0	112	2.41	8.51	126.8	10

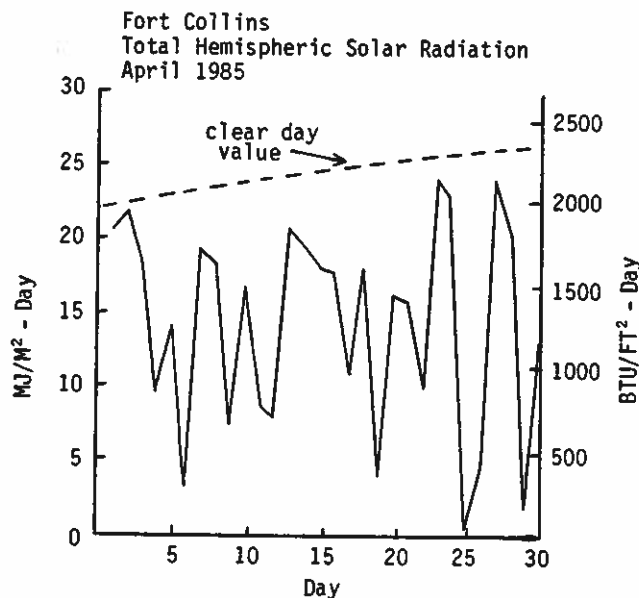
Western Valleys*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
CRAIG 4SW	57.6	31.3	44.4	2.4	74	25	611	0	147	2.55	1.27	199.2	11
HAYDEN	59.3	29.9	44.6	3.1	74	21	604	0	162	3.31	1.82	222.1	11
MEEKER NO. 2	61.4	29.4	45.4	2.8	74	19	581	0	182	2.54	1.33	209.9	8
EAGLE FAA AP	60.6	28.7	44.7	3.0	76	20	602	0	173	1.81	1.14	270.1	10
GLENWOOD SPRINGS	62.5	34.4	48.4	3.1	79	22	490	0	207	3.12	1.64	218.8	11
RIFLE	66.1	31.9	49.0	2.7	81	20	472	0	258	2.60	1.84	342.1	7
GRAND JUNCTION WS	67.9	41.1	54.5	3.1	82	31	310	4	277	1.78	1.04	248.5	8
CEDAREGGE	63.8	35.2	49.5	2.6	78	25	457	0	218	2.79	1.98	344.4	7
PAONIA 1SW	65.4	36.9	51.2	4.0	80	26	405	0	241	2.28	0.94	170.1	9
DELTA	69.8	36.3	53.1	3.2	82	23	353	0	307	1.43	0.97	310.9	13
GUNNISON	58.5	24.5	41.5	4.1	70	16	699	0	140	0.63	0.07	112.5	4
MONTROSE NO. 2	64.4	36.0	50.2	3.0	79	25	438	0	223	1.15	0.41	155.4	12
URAJAN	69.9	37.2	53.5	2.0	84	29	337	0	305	1.77	0.72	168.6	9
NORWOOD	60.6	31.4	46.0	4.5	73	17	562	0	173	1.82	0.86	189.6	7
YELLOW JACKET 2W	60.7	34.6	47.7	4.4	72	22	514	0	175	2.21	1.36	260.0	7
CORTEZ	63.8	31.6	47.7	1.8	76	23	511	0	218	2.39	1.65	323.0	9
DURANGO	64.8	31.9	48.3	3.5	77	25	494	0	232	2.01	0.96	191.4	10
IGNACIO 1N	65.5	28.0	46.7	3.2	77	18	544	0	245	2.30	1.51	291.1	9

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

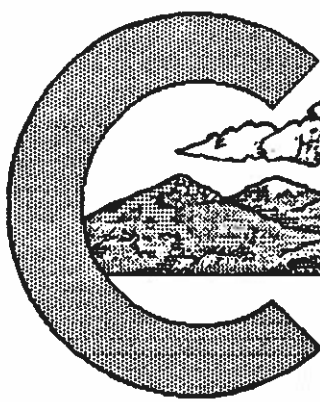
APRIL 1985 SUNSHINE AND SOLAR RADIATION

Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	10	7	13	--	--
Denver	8	8	14	59%	67%
Grand Junction	11	7	12	82%	67%
Pueblo	10	9	11	74%	74%



Berthoud Pass -- Where Did You Go?: continued

There are other sources of high elevation climatological data in Colorado such as the Soil Conservation Service's SNOWTEL system for remote measurements of snowpack water content. Monitoring climate in Colorado's high country is incredibly important for predicting water supplies and anticipating potential flood and droughts. Data collection in the mountains will continue and will probably even expand as water supplies become ever more precious. But even with the finest of remote automated measurement equipment it will be hard, if not impossible, to match the quality and consistency of the Berthoud Pass observations of the past 23 years. Our hats are off to Mr. Ed Henion who as conscientiously collected the Berthoud Pass weather data for that entire period. It is indeed sad to see this station go. We do hope that what has been learned about climate and avalanches at Berthoud Pass will continue to save lives.



COLORADO CLIMATE

Colorado Climate Center
Department of Atmospheric Science
Colorado State University
Fort Collins, Colorado 80523

MAY 1985

May in Review:

The Front Range from Denver northward to Wyoming did not receive the typical heavy precipitation which often falls in May. But most of the remainder of Colorado received average to above average precipitation. Two storm systems in mid month accounted for practically all of the May precipitation. Temperatures for the month were comfortably mild with most areas about two degrees Fahrenheit warmer than average.

A Look Ahead -- July 1985:

July is the heart of Colorado's summer and reliably the hottest month of the year. It is also the month when temperatures are most predictable, changing little from day to day. Only rarely does the monthly mean temperature deviate by more than 3 degrees from the long term average. July is also the month when the relationship between temperature and elevation is most clear and pronounced. For example, average afternoon high temperatures average in the 90s where elevations are below 5,000 feet, average 80° where elevations are near 7,500 feet, average 70° near 10,000 feet, and struggle to reach 60° at elevation of 12,000 feet and above. It's no wonder the mountains are a popular place to be in the summer. Tourists often are surprised (and unprepared) for the nighttime chill in the mountains. Temperatures near 32° at night are not uncommon and temperatures in the mid 20s occur on occasion. Climax reported a low of 20°F on July 13, 1975. At lower elevations nighttime temperatures average in the 50s and 60s allowing for comfortable sleep even after the hottest of days -- and their have been some hot ones. Temperatures in excess of 110° have occurred at a number of eastern Colorado locations in July.

July is the month of the classic "afternoon and evening thundershowers." The pattern often works like a clock. The morning dawns crystal clear and by 10 a.m. a few puffy cumulus begin to appear, especially over the higher mountains. Between noon and 2 p.m. these clouds grow into eye-catching thundershowers which drop intense, but normally brief, showers over the mountains -- often accompanied by small, soft hail. The lightning sends hikers and mountain climbers hurrying off exposed peaks and ridges. As the afternoon progresses these storms drift eastward toward the Eastern Plains and often dissipate only to redevelop in the late afternoon as raging storms producing awesome nighttime lightning displays as they cross into Kansas and Nebraska about midnight.

While this cloud pattern holds true throughout the summer, precipitation amounts change a lot throughout the month. Early in July rainfall is quite light, especially in the western two-thirds of the state. As the month progresses, precipitation amounts often increase and storms become more numerous. The "Southwest Monsoon," warm moist winds moving northward across Mexico into the southwestern U.S., can get very well established in July and continue through much of August. This added moisture helps produce localized but very heavy rainfalls. A number of major flash flood events have occurred in Colorado during the last week of July such as the Big Thompson Canyon flood of 1976. Average July precipitation ranges from close to 1 inch in Colorado's dry western valleys to more than 4" near Pikes Peak.

Sad News:

On June 8, 1985 R. Wayne Light passed away. For people familiar with Steamboat Springs, the Light family has been well known for nearly 8 decades. R. Wayne Light observed the weather diligently for the National Weather Service since September 1945. His contribution to documenting the climate of Colorado has been great. We will certainly miss him.

(National Climatic Data Center story on last page)

MAY 1985 DAILY WEATHER

<u>Date</u>	<u>Event</u>
1-2	Large high pressure ridge aloft over Colorado brought sunny skies and warm temperatures.
3-4	Increasing clouds but still warm -- 70s and 80s over much of the state. Limon hit 86°F on the 3rd. A few showers in western Colorado on the 3rd. Thundershowers developed on the 4th as a Pacific cold front crossed the state. Some vivid lightning on the evening of the 4th along the Front Range but rainfall was scattered and very light.
5-7	Cooler, especially east of the mountains. Showery as weak, moist, easterly "upslope" flow developed. Precipitation totals were mostly light but some locally heavy thunderstorms were reported. Rocky Ford received 0.75" and Fort Carson 1.05" on the 6th. Cheyenne Wells was hit by 1.12" from a storm late on the 7th.
8-10	Unusually warm temperatures, 10 to 15 degrees F above average persisted. Rapid snowmelt produced high waters on several major rivers and tributaries. Moist southwesterly flow aloft began triggering showers over Colorado on the 10th, especially in the west.
11-14	A pair of storm systems in close succession brought nasty weather to much of Colorado. The first storm whipped across the state on the 11th with winds gusting to 50 mph or more in some locations. Several inches of snow fell in the mountains. The Shoshone Hydroelectric Plant near Glenwood Springs received 1.68" of rain on the 10-11th. Another low pressure area developed over the Texas Panhandle on the 12-13th and spread strong winds and very heavy rains over the eastern Colorado plains with more snow in the Colorado high country. Mount Evans received 18" of snow from the storm. The rain even turned to snow in parts of northeastern Colorado where up to 6" was reported on the 13th. Precipitation (water content) totals for the storm varied from just a trace in parts of extreme southern Colorado to 3.05" at Burlington. In just 24 hours 2.72" fell at the small town of Joes. As the storm moved out, and skies cleared the coldest temperatures of the month occurred on the morning of the 14th. Temperatures were generally in the 20s and 30s with many locations recording their last freeze of the spring. At Bonham Reservoir the mercury dipped to +2°F, the coldest in the state.
15-22	Chilly and unsettled spring weather. Mostly sunny on the 15th, then clouds, showers and afternoon thunderstorms each day. All of the state received some rain (snow in the higher mountains) but totals were heaviest from the central mountains across the eastern plains. Colorado Springs totalled 2.11" for the period and Aguilar received 2.26". Near Timpas, northeast of Pueblo, 2.05" of rain fell in a short period on the 20th including 2" of pea-sized hail.
23-29	A return to warmer and drier conditions. A few scattered thundershowers developed mostly 25-27th. Daytime temperatures rose into the 80s across much of Colorado with some 90s in southeastern and extreme western Colorado.
30-31	A deep low pressure area developed over the Dakotas on the 30th. Some light showers fell, particularly in Western Colorado. Very strong, dry winds and blowing dust developed behind the cold front as it crossed the state. Holly reached 98°F on the 30th, the hottest in the state in May, before the cold front arrived.

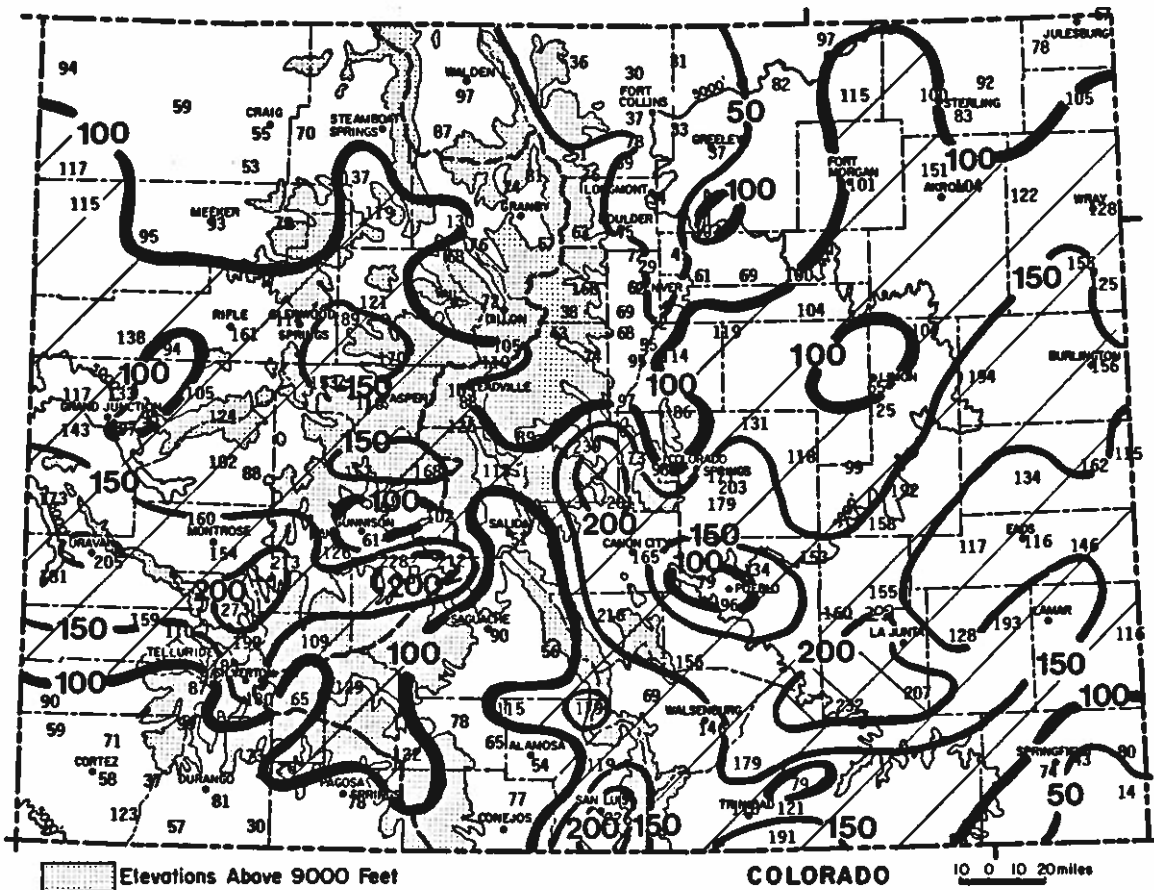
May 1985 Extremes

Highest Temperature	98°F	May 30	Holly
Lowest Temperature	2°	May 14	Bonham Reservoir
Greatest Total Precipitation	4.86"		Mount Evans Research Center
Least Total Precipitation	0.26"		Ignacio 1N
Greatest Total Snowfall	44"		Mount Evans Research Center

MAY 1985 PRECIPITATION

May precipitation ranged from well below average along the northern Front Range and in the southwestern and extreme southeastern corners of Colorado to much above average in a band from Uravan to Burlington through the center of the state. The scattered nature of thunderstorm activity helped complicate the pattern. In the mountains, fairly average May precipitation and warmer than average temperatures resulted in an early snowmelt. By the end of May many rivers had already reached their peak runoff flow rates except the southern and eastern slopes of the San Juan mountains where unusually high snowpack still remained.

<u>Greatest</u>		<u>Least</u>	
Mount Evans		Ignacio IS	0.26"
Research Center	4.86"	Monte Vista	0.31"
Cheyenne Wells	4.85"	Stonington	0.36"
Akron	4.69"	Alamosa	0.37"
La Junta 20S	4.51"	Gunnison	0.38"
Idalia	4.33"		



Precipitation for May 1985 as a percent of the 1961-1980 average.

1985 WATER YEAR PRECIPITATION

With two-thirds of the water year complete most of Colorado continues wetter than average. Sizable areas, mostly in the southern half of the state have received at least 150% of the October through May average. The small drier than average areas are still the same as last month -- the immediate Gunnison area and a band from Leadville north-northeastward to Cheyenne, Wyoming.

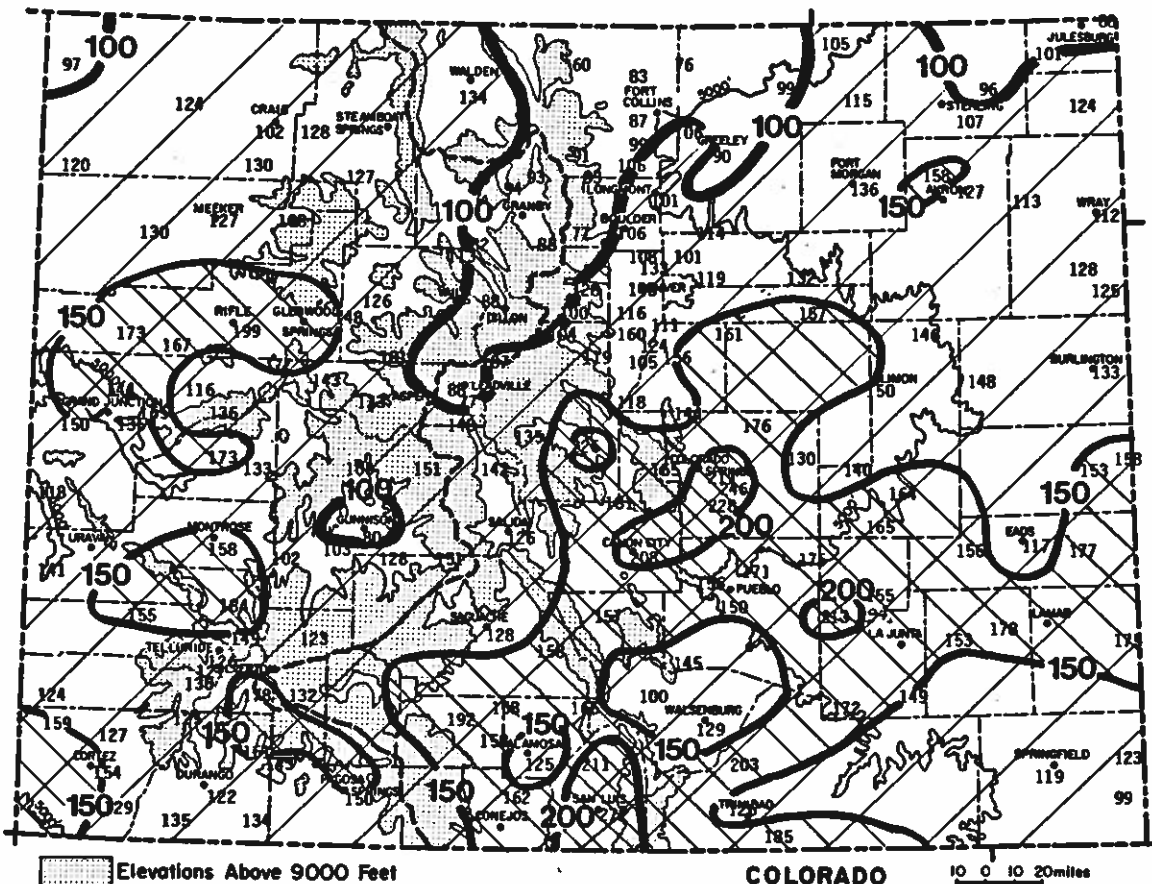
Comparison to Last Year

Last year was also a very wet year. The northern and central mountains are not nearly as wet as they were last year at this time. On the other hand, the San Juan Mountains (especially the southern slopes) are much wetter now than they were a year ago. The northern Front Range and the extreme southeastern plains are a bit drier than last year, while the San Luis Valley and the Arkansas basin are each wetter.

1985 Water Year to Date through May

<u>Wettest (as % of average)</u>			<u>Driest (as % of average)</u>		
San Luis 2SE	272%	8.85"	Red Feather Lakes	60%	5.94"
Fountain	246%	14.16"	Nunn	76%	6.22"
Fort Carson	228%	14.00"	Leadville 2SW	77%	7.89"

<u>Wettest (total precipitation)</u>			<u>Driest (total precipitation)</u>		
Wolf Creek Pass 1E	36.00"	118%	Gunnison	4.46"	80%
Bonham Reservoir	32.95"	136%	Alamosa	4.51"	125%
Mount Evans			Monte Vista	4.62"	158%
Research Center	27.73"	128%			

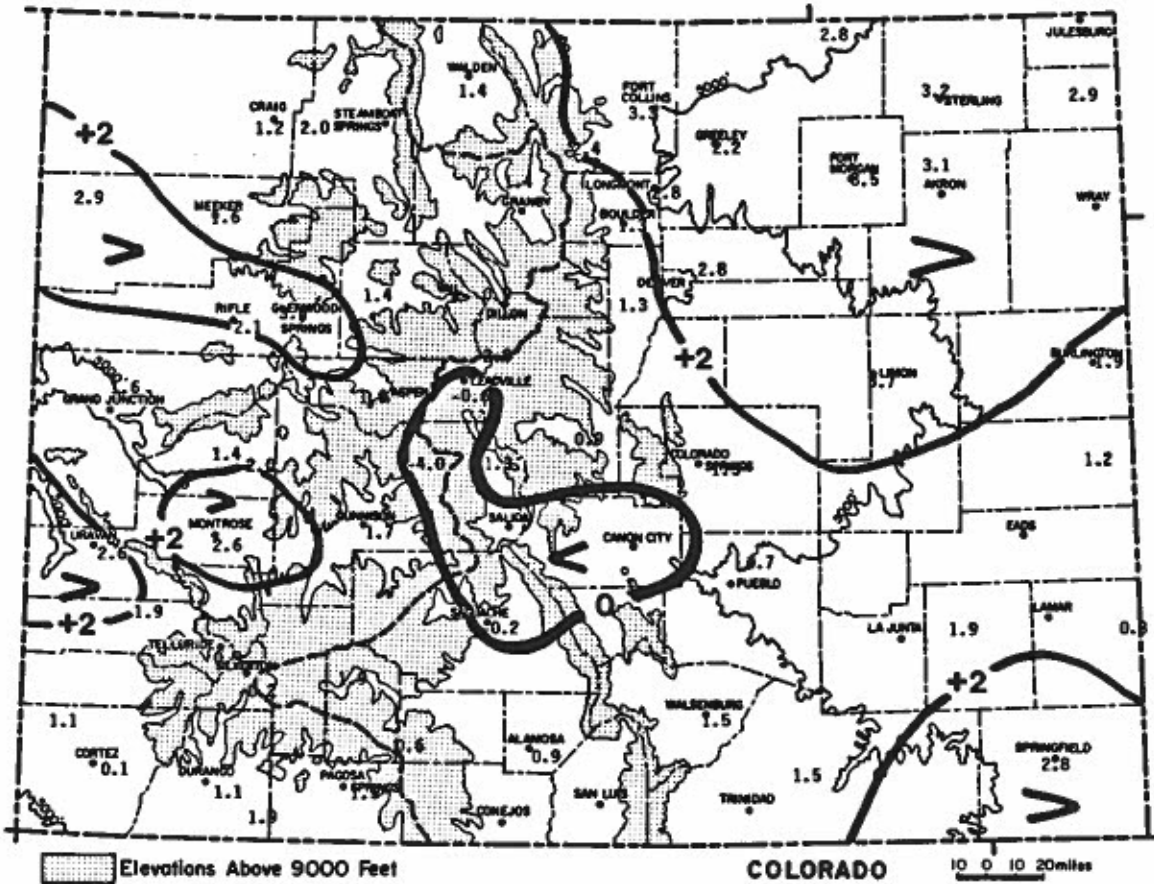


Precipitation for October 1984 through May 1985 as a percent of the 1961-1980 average.

MAY 1985 TEMPERATURES
AND DEGREE DAYS

For the third consecutive month Colorado experienced warmer than average temperatures. Except for a small area in the center of the state that was slightly below average, most of Colorado ended up 1 to 3 degrees Fahrenheit warmer than average.

Heating degree day data appear in the table on the following page. The May climatic data tables include cooling and growing degree days as well. The warm temperatures in May resulted in fewer than average heating degree days.



May 1985 temperature departures from 1961-1980 averages (degrees Fahrenheit).

MAY 1985 SOIL TEMPERATURES

May soil temperatures got off to a warm start and remained favorable for seed germination. These measurements were taken at Colorado State University beneath sparse, unirrigated sod with an open exposure. These data are not representative of all locations in Colorado.

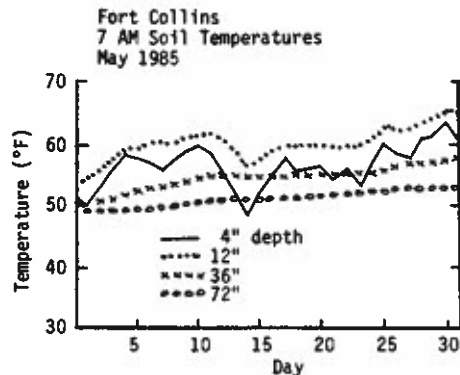


Table 1. Colorado heating degree day data through May 1985.

HEATING DEGREE DATA		HEATING DEGREE DATA												HEATING DEGREE DATA		
STATION		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANN		
ALAMOSA	AVE	40	100	303	657	1074	1457	1519	1182	1035	732	453	165	8717	384	10591
	83-84	28	35	213	674	1112	1581	1982	1566	1166	799	300	188	9644	630	110671
	84-85	11	56	252	748	1051	1382	1462	1208	936	625	415	262	8850	524	10416
ASPEN	AVE	95	150	348	621	1029	1339	1376	1162	1116	798	524	262	8850	524	10416
	83-84	97	86	269	622	1021	1392	1470	1200	1108	932	477	345	9019	589	10627
	84-85	87	134	345	883	1034	1282	1415	1293	1047	726	492	213	8738	661	10632
BOULDER	AVE	6	130	357	714	908	1004	804	775	483	220	59	5460	111	188	393
	83-84	4	0	84	350	753	1367	1087	830	792	639	168	58	6132	84	75
	84-85	0	1	271	599	716	938	1162	989	717	385	174	58	5852	64	143
BUENA VISTA	AVE	47	116	285	577	936	1184	1218	1025	983	720	459	184	7734	111	188
	83-84	45	49	234	595	970	1333	1331	1020	982	808	370	203	7940	75	60
	84-85	16	91	284	628	949	1169	1338	1084	956	646	422	184	7734	64	143
BURLING-TOM	AVE	6	5	108	364	762	1017	1110	871	803	459	200	36	5743	272	337
	83-84	0	0	87	359	758	1500	1172	884	883	700	200	34	6577	308	316
	84-85	0	0	148	493	699	980	1207	1012	686	347	145	33	4836	308	366
CANON CITY	AVE	0	9	81	301	639	831	911	734	707	411	179	33	4836	8	6
	83-84	0	0	71	314	649	1278	993	760	652	570	134	27	5548	7	0
	84-85	0	0	175	561	702	841	1069	958	756	362	174	27	5548	1	230
COLORADO SPRINGS	AVE	8	25	162	440	819	1042	1122	910	880	564	296	78	6346	0	6
	83-84	2	0	101	417	811	1438	1197	911	912	700	220	58	6767	1	0
	84-85	0	6	200	684	791	982	1233	1077	830	481	246	58	6530	0	3
CORTEZ	AVE	0	11	115	434	813	1132	1181	921	828	555	292	68	6350	28	56
	83-84	5	0	98	438	854	1154	1271	1018	853	677	239	119	6726	12	145
	84-85	0	0	108	666	839	1072	1173	1085	827	511	289	119	6570	17	228
CRATIG	AVE	32	58	275	608	996	1342	1479	1193	1094	687	419	193	8376	0	10
	83-84	41	3	212	579	1005	1471	1730	1420	1194	884	383	267	8189	0	390
	84-85	15	25	304	799	1002	1424	1609	1432	1063	611	375	267	8189	0	102
DELTA	AVE	0	0	94	394	813	1135	1197	890	753	429	167	31	5903	0	8
	83-84	0	0	60	340	727	1066	1006	736	505	135	5240	31	5936	51	190
	84-85	0	11	49	477	713	969	1047	938	683	353	5240	31	5936	51	190
DENVER	AVE	0	0	135	414	789	1004	1101	879	837	528	253	74	6014	0	89
	83-84	3	0	87	372	833	1466	1162	889	854	673	183	51	6573	0	32
	84-85	0	1	183	622	753	990	1213	1040	742	412	167	6123	0	127	
DILLON	AVE	273	332	513	806	1167	1435	1516	1305	1296	972	704	435	10754	6	24
	83-84	263	224	438	789	1135	1492	1653	1419	1333	1124	875	472	11017	0	86
	84-85	245	301	510	1004	1161	1380	1581	1449	1219	874	667	435	10754	0	131
DURANGO	AVE	9	34	193	493	837	1153	1218	958	862	600	366	125	6848	113	169
	83-84	3	0	124	464	899	1161	1289	1009	835	665	209	113	6771	61	334
	84-85	0	6	124	695	966	1074	1146	1008	831	494	319	5563	62	103	
ENGLE	AVE	33	80	288	626	1026	1407	1448	1148	1014	705	431	171	8377	0	6
	83-84	30	3	203	579	962	1337	1681	1299	1015	798	338	238	8483	1	98
	84-85	1	27	252	741	998	1300	1435	1219	910	662	381	171	8377	0	189
EVER-GREEN	AVE	59	113	327	621	916	1135	1199	1011	1009	730	489	218	7827	163	223
	83-84	72	15	228	605	971	1449	1239	1040	1051	864	375	231	8140	108	130
	84-85	21	68	326	626	874	1088	1329	1123	928	616	448	218	7827	99	165
FORT COLLINS	AVE	5	11	171	488	846	1073	1181	930	877	558	281	82	6483	0	85
	83-84	2	0	115	415	843	1432	1225	887	829	687	196	81	6886	0	98
	84-85	0	0	193	606	745	1027	1245	1077	734	369	167	81	6886	0	189
FORT MORGAN	AVE	0	6	140	438	887	1156	1283	969	874	516	224	47	6520	158	295
	83-84	0	0	77	368	782	1614	1453	998	844	650	138	38	7022	108	130
	84-85	0	0	185	564	784	1180	1329	1125	687	395	155	38	7022	122	184
GRAND JUNCTION	AVE	0	0	65	325	762	1138	1225	882	716	403	148	19	5683	0	8
	83-84	0	0	27	208	678	1066	1366	958	630	474	89	44	5220	0	310
	84-85	0	0	94	452	719	996	1044	919	645	310	81	44	5220	0	113

MAY 1985 CLIMATIC DATA

Eastern Plains*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
KAUFFMAN 4SSE	73.2	42.4	57.8	2.8	85	32	225	8	370	2.29	-0.08	96.6	8
STERLING	75.1	47.2	61.2	3.2	90	35	148	36	405	3.20	0.01	100.3	11
FORT MORGAN	76.3	47.4	61.8	3.5	89	36	135	45	427	2.48	0.02	100.8	8
AKRON FAA AP	72.5	46.7	59.6	3.1	84	30	182	23	370	4.69	1.59	151.3	10
HOLYOKE	77.0	46.9	62.0	2.9	89	38	123	38	436	3.19	0.15	104.9	10
BURLINGTON	74.4	48.2	61.3	1.9	88	32	145	40	409	4.30	1.54	155.8	7
LIMON WSMO	71.1	42.6	56.8	3.7	86	31	254	6	336	1.41	-0.77	64.7	8
CHEYENNE WELLS	74.9	46.9	60.9	1.2	88	36	143	25	404	4.85	1.85	161.7	10
LAS ANIMAS	81.8	48.5	65.2	1.9	93	38	72	85	494	2.50	0.55	128.2	6
HOLLY	77.8	48.2	63.0	0.8	98	42	107	54	432	3.05	0.41	115.5	8
SPRINGFIELD 7WSW	77.9	48.3	63.1	2.8	92	32	115	63	457	2.00	-0.69	74.3	9

Foothills/Adjacent Plains*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	73.7	45.5	59.6	3.3	85	31	167	7	381	0.97	-1.66	36.9	9
GREELEY UNC	75.1	45.0	60.0	2.2	87	34	162	15	401	0.97	-1.68	36.6	9
ESTES PARK	64.1	36.7	50.4	2.4	74	27	446	0	226	1.00	-0.97	50.8	8
LONGMONT ZESE	74.6	45.2	59.9	2.8	86	33	170	19	400	0.80	-1.56	33.9	6
BOULDER	74.6	44.8	59.7	1.3	86	31	174	21	403	1.37	-1.67	45.1	11
DENVER WSFO AP	73.0	46.9	59.9	2.8	85	35	167	19	375	1.33	-0.86	60.7	10
EVERGREEN	64.6	36.1	50.3	1.3	81	26	448	0	242	1.79	-0.79	69.4	10
LAKE GEORGE BSW	59.8	34.4	47.1	0.9	69	27	546	0	167	2.85	1.66	239.5	11
COLORADO SPRINGS	69.5	44.5	57.0	1.5	84	34	246	5	314	3.36	1.39	170.6	9
PUEBLO WSO AP	76.8	47.0	61.9	0.7	90	38	125	36	427	1.46	0.37	133.9	8
WALSENBERG	73.7	44.3	59.0	1.5	85	30	187	10	385	2.06	0.65	146.1	6
TRINIDAD FAA AP	75.8	45.2	60.5	1.5	89	32	159	28	410	1.21	-0.33	78.6	6

Mountains/Interior Valleys*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	62.3	28.8	45.5	1.4	71	17	592	0	204	1.09	-0.03	97.3	13
LEADVILLE 2SW	54.5	27.4	40.9	-0.6	61	17	737	0	93	1.15	-0.15	88.5	8
BUENA VISTA	66.7	35.6	51.2	1.3	75	27	422	0	268	1.02	0.12	113.3	10
SAGUACHE	64.9	35.3	50.1	-0.2	77	29	456	0	242	0.62	-0.07	89.9	9
HERMIT ZESE	57.8	28.9	43.4	1.9	69	18	664	0	134	1.30	0.29	128.7	4
ALAMOSA WSO AP	67.6	35.1	51.4	0.9	78	22	415	0	283	0.37	-0.32	53.6	6
GRAND LAKE 6SSW	58.4	31.8	45.1	1.4	67	22	610	0	146	0.99	-0.35	73.9	15
DILLON 1E	57.6	28.8	43.2	0.9	68	19	667	0	138	0.86	-0.34	71.7	16
CLIMAX	49.8	27.1	38.4	2.8	57	10	818	0	34	2.03	0.18	109.7	11
ASPEN 1SW	62.1	35.8	48.9	1.9	74	22	492	0	206	2.30	0.50	127.8	14
TAYLOR PARK	56.5	18.0	37.3	-4.0	66	9	854	0	122	1.95	0.79	168.1	12
TELLURIDE	61.4	32.5	47.0	0.9	70	13	550	0	196	2.99	1.36	183.4	12
PAGOSA SPRINGS	68.5	32.7	50.6	1.5	77	21	438	0	293	0.83	-0.23	78.3	16
SILVERTON	58.5	26.8	42.7	-0.2	69	16	685	0	150	2.49	1.11	180.4	12
WOLF CREEK PASS 1	49.8	29.6	39.7	0.6	59	10	774	0	36	2.35	0.42	121.8	8

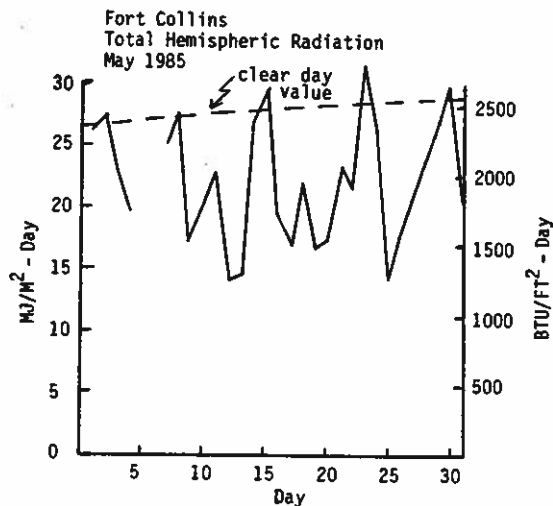
Western Valleys*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
CRAIG 4SW	67.5	37.8	52.7	1.2	75	27	375	0	282	0.91	-0.37	71.1	10
HAYDEN	68.9	38.2	53.5	2.0	77	27	348	0	300	0.90	-0.38	70.3	10
MEEKER NO. 2	69.6	36.5	53.0	1.6	77	27	360	0	311	1.27	-0.10	92.7	8
RANGELY 1E	75.1	43.5	59.3	2.9	83	32	170	2	395	1.05	0.14	115.4	7
EAGLE FAA AP	69.6	35.3	52.5	1.4	79	23	381	0	315	0.81	0.14	120.9	13
GLENWOOD SPRINGS	74.8	40.9	57.9	3.4	85	29	217	4	394	1.66	0.21	114.5	10
RIFLE	74.1	40.9	57.5	2.1	85	29	228	1	380	1.55	0.59	161.5	7
GRAND JUNCTION WS	76.5	50.6	63.6	1.6	86	37	81	45	457	1.09	0.27	132.9	7
CEDAREDGE	72.9	42.9	57.9	1.4	81	30	214	1	365	1.14	0.02	101.8	10
PAONIA 1SW	74.0	43.7	58.8	2.0	82	32	186	2	382	1.14	-0.15	88.4	6
GUNNISON	66.2	31.5	48.8	1.7	74	19	495	0	258	0.38	-0.24	61.3	5
MONTROSE NO. 2	73.7	45.2	59.4	2.6	83	31	178	15	388	1.17	0.41	153.9	8
URAVAN	78.7	49.1	63.9	2.6	90	32	78	51	484	2.07	1.06	205.0	6
NORWOOD	67.5	38.5	53.0	1.9	76	27	365	0	282	1.61	0.60	159.4	7
YELLOW JACKET 2W	68.2	41.5	54.8	1.1	77	29	305	0	287	0.70	-0.49	58.8	5
CORTEZ	72.3	38.8	55.5	0.1	81	25	289	0	353	0.53	-0.39	57.6	7
DURANGO	71.1	37.7	54.4	1.1	81	27	319	0	337	0.91	-0.21	81.3	10
IGNACIO 1N	73.0	35.5	54.3	1.9	82	20	325	0	364	0.26	-0.60	30.2	3

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

MAY 1985 SUNSHINE AND SOLAR RADIATION

Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	7	12	12	--	--
Denver	11	10	10	59%	65%
Grand Junction	7	17	7	80%	71%
Pueblo	10	10	11	82%	73%



The National Climatic Data Center:

Nolan Doesken, Assistant State Climatologist at the Colorado Climate Center, just returned from 3 weeks at the National Climatic Data Center (NCDC). He was a participant in their State Climatologist Exchange Program.

NCDC occupies an interesting old indoor shopping mall in downtown Asheville, North Carolina, and employs a few hundred people. NCDC is a national resource for climate information. Data are received continuously from not only the U.S. but from marine locations and most foreign countries. Data are processed each month from many thousands of surface and upper air weather stations. These data are archived, summarized, computerized, published and widely disseminated.

Several periodicals are published which contain climate information for Colorado.

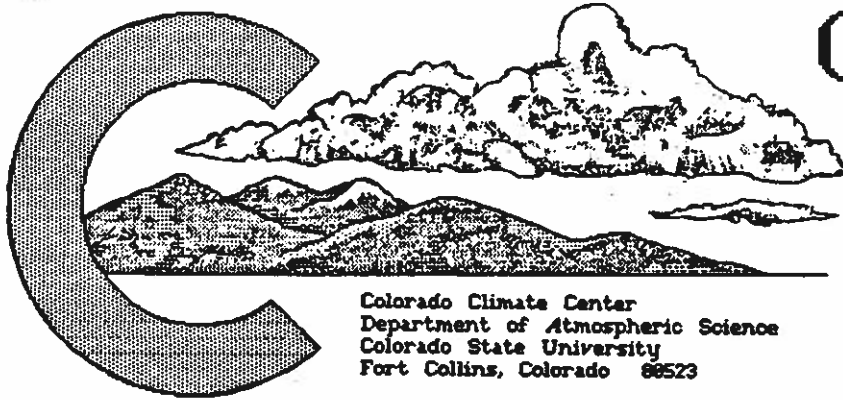
<u>Publication</u>	<u>Annual Subscription</u>
Local Climatological Data by city (Alamosa, Colorado Springs, Denver, Grand Junction, Pueblo)	\$ 5.20/city
Climatological Data -- Colorado	\$ 9.75
Storm Data (national)	\$ 13.80
Hourly Precipitation Data -- Colorado	\$ 17.55

Many, many other publications are available which present summarized climatic information. Most of these are described in a large report, Selective Guide to Climatic Data Sources, which is available free of charge.

For more information please contact the Colorado Climate Center or the National Climatic Data Center.

National Climatic Data Center
Federal Building
Asheville, NC 28801-2696

or call (704) 259-0682
or (704) CLIMATE



COLORADO CLIMATE

JUNE 1985

June in Review:

The majority of Colorado was drier than average in June. Hailstorms were less numerous than in recent years, but there was a rare early summer storm which brought mountain snows and record cold to much of the state late in the month. For the month as a whole, temperatures ended up a little cooler than usual east of the mountains but well above average on the west side.

A Look Ahead -- August 1985:

For 3 years in a row August has been unusually hot with higher than average humidity. Parts of the plains, especially the southeast, have been dry while heavy August rains have fallen in much of the mountains. But if we follow the trend of recent months, August 1985 is likely to be closer to average.

What can we normally expect in August? August is actually a lot like July. Morning sunshine followed by afternoon and evening thunderstorms is again the rule, but August storms tend to be more gentle than their early summer cousins. Damaging hail is less likely and tornadoes occur only about 1/3 as often as in July. However, lots of rain can fall. The southwest monsoon circulation is typically in full swing early in the month bringing plenty of subtropical moisture northward into most of the state. Precipitation totals of more than 1" can occur from some of the slow moving early August storms. Localized flash flooding is possible. Statistically the first week of August is the wettest week of the entire summer in Colorado. As the month progresses the subtropical moisture begins a slow retreat southward, continuing to bring frequent thundershowers to the San Juan, Elk and Sangre de Cristo Mountains, but leaving the northern part of the state noticeably drier. Average August precipitation ranges from about 1" in extreme western and northwestern Colorado, 1-2" from the Front Range northeast toward Nebraska and in the Arkansas and Rio Grande Valleys, 2-3 inches over much of the mountains and from Colorado Springs east to Burlington, and more than 3" near Pikes Peak and across the San Juan mountains.

August temperatures average about 2 degrees cooler than July over the entire state. However, about 1 year in 3 August is the hottest month of the year. Similar to July, August temperatures vary little from day to day and are closely related to elevation -- the higher you go, the cooler it gets. Typical afternoon high temperatures range from the low 90s in the Arkansas and lower Colorado valleys to the 50s and 60s in the high mountains. While temperatures can soar into the 90s and 100s at lower elevations, prolonged heat waves are much rarer in August than in July. By late August temperatures are normally quite comfortable with a crisp evening chill becoming noticeable -- a hint of fall.

How Heavy is Heavy?:

Colorado is considered to be a semiarid state. More than half of the land area in Colorado receives less than 16 inches of precipitation annually. But there have been occurrences of more rain than that in just a matter of hours. The greatest 24-hour precipitation total at an official National Weather Service station was 11.08" at Holly on June 17, 1965. That same storm system produced unofficial totals in excess of 18 inches in Elbert and Prowers County. On May 30, 1935 bucket survey results suggested 24-hour rainfall amounts of close to 24" near Elbert. The well-known Big Thompson Canyon flood of July 31, 1976 resulted from approximately 12" of rain in 5 hours at Glen Haven. Fortunately, such heavy rainfalls occur very infrequently and are very localized.

(continued on last page)

JUNE 1985 DAILY WEATHER

<u>Date</u>	<u>Event</u>
1-4	Typical late spring weather -- seasonally cool with widely scattered showers. High pressure on the Great Plains strengthened on the 3rd creating moist upslope flow along the Front Range. A few very heavy thunderstorms developed with reports of hail. Fort Collins received 1.46" of rain in a short period. Sterling topped that with 3.11" late on the 3rd. Low clouds covered most of eastern Colorado on the 4th keeping temperatures in the 50s and 60s. West of the mountains skies cleared and a warming trend began.
5-8	Dry, sunny and much warmer statewide. A few very light showers fell near the mountains. Strong dry west winds developed over the state on the 8th as a deep low pressure area moved eastward along the Canadian border. Very hot temperatures for early June were felt statewide on the 8th including a 70° reading at Climax, 90° at Evergreen, 100° at Brighton and Greeley, 102° at Pueblo, 107° at Las Animas, and 108° at Holly -- the hottest temperature for the month. Some thundershowers developed across the plains late on the 8th as a cold front approached bringing welcome relief from the heat.
9-12	Pleasantly cooler weather. Clouds and scattered thundershowers 9-10 from the northern and central mountains eastward across the plains. Most rainfall amounts were less than 0.25, but Colorado Springs picked up 0.61" and Cabin Creek (near Georgetown) received 1.12" from showers on the 9th. Dry statewide 11-12 with chilly nighttime temperatures. It was 21°F at Creede and Taylor Park on the morning of the 12th.
13-16	Hot summer weather returned with dry northwesterly winds aloft. Daytime temperatures were mostly in the 80s and 90s except cooler in the mountains and hotter in the Arkansas Valley. Pueblo's 102° on the 16th set a new record for that day.
17-19	A cooler air mass moved into the northeastern half of the state. A few thunderstorms rumbled across southeastern Colorado. Nearly 3/4" of rain fell near Trinidad.
20-24	Mostly hot days, cool nights and dry. A fast moving cold front crossed the state on the 21st accompanied by some strong winds, a few thundershowers, and briefly cooler temperatures in the northeast half of the state.
25-27	An unusually strong springlike storm system brought much colder temperatures and precipitation to most of Colorado beginning late on the 24th and continuing through the 26th. Rain and heavy thunderstorms turned to snow at many locations in the mountains above 8,000 feet. Southern Colorado missed the brunt of the storm but in the north heavy precipitation fell. Boulder totalled 1.26" of rain from the storm. Evergreen received 1.32", Allenspark 1.82", Nederland's total exceeded 2.35". Mount Evans accumulated 3" of new snow, but most of the mountain snow melted quickly after it fell. Skies cleared on the morning of the 27th and many new record lows were set such as 39° at Fort Collins, 38° at Colorado Springs, 33° at Limon and 24° at Yampa. Creede's 16° reading was the coldest in the state.
28-30	Seasonal temperatures quickly returned. A few light thundershowers were noted on the 30th, mostly on the eastern plains.

June 1985 Extremes

Highest Temperature	108°F	June 8	Holly
Lowest Temperature	16°	June 27	Creede 1S
Greatest Total Precipitation	3.62"		Sterling
Least Total Precipitation	0.00"		Northdale
Greatest Total Snowfall	3"		Mount Evans Research Center

JUNE 1985 PRECIPITATION

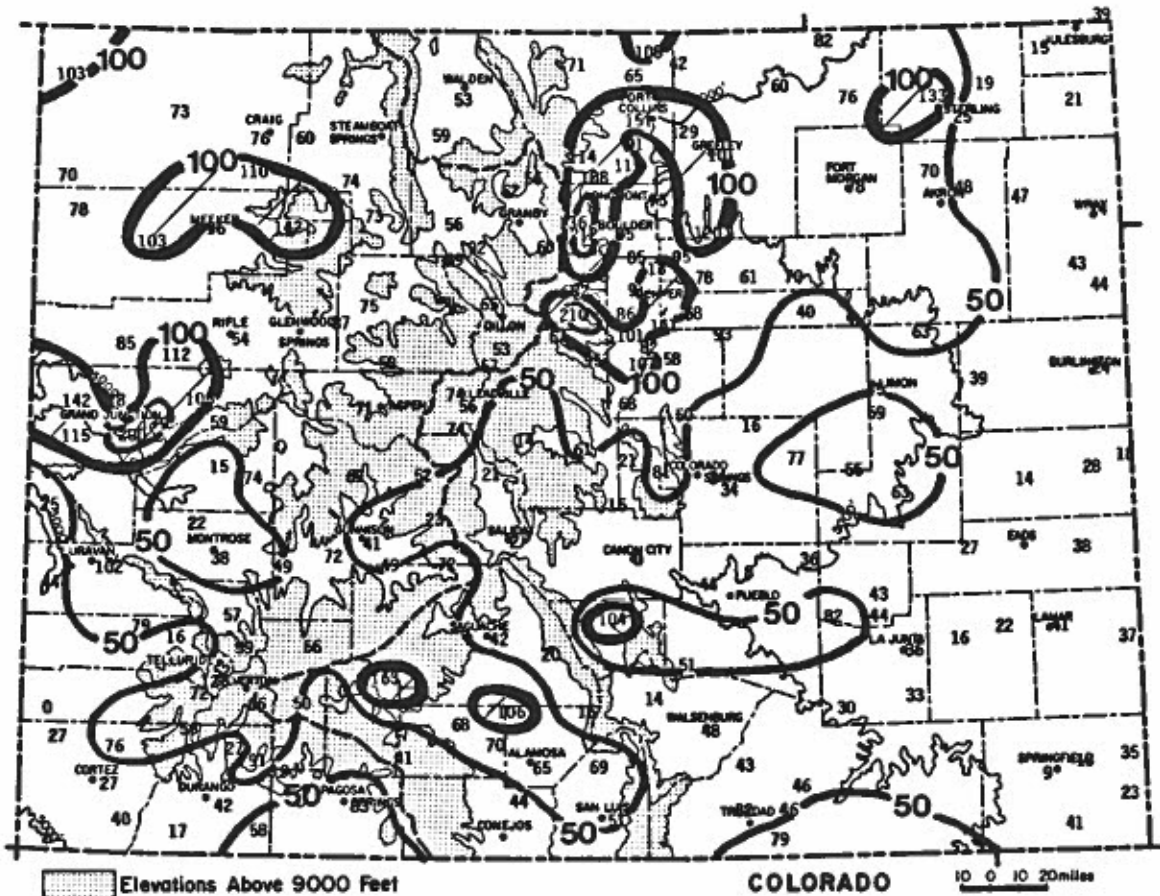
June was a dry month in Colorado. After 2 consecutive years with abnormally cool and wet Junes in the mountains, this year brought dry weather to most of Colorado's high country. Much of the eastern plains were also very dry. Large areas of eastern and southern Colorado received less than 50% of average precipitation and a number of weather stations totalled less than 0.25" for the month. A few places fared better. Small areas in western Colorado near Grand Junction and Meeker were wetter than average. Colorado's Front Range was also quite wet. The Nederland and Cabin Creek weather stations each received more than double their June average.

Greatest

Sterling	3.62"
Nederland 2NNE	3.07"
Cabin Creek	2.92"
Fort Collins	2.77"
Littleton	2.75"

Least

Northdale	0.00"
Canon City	T
Hermit 7ESE	T
Salida	0.02"
Pueblo	0.10"



Precipitation for June 1985 as a percent of the 1961-1980 average.

1985 WATER YEAR PRECIPITATION

Despite a dry June, water year precipitation totals continue above average over most of Colorado. Areas with more than 150% of average precipitation since October 1, 1984 have shrunken significantly. The northeastern and southeastern corners of the state have now dropped below average to join the previously drier than average band from Leadville north-northeastward to Wyoming.

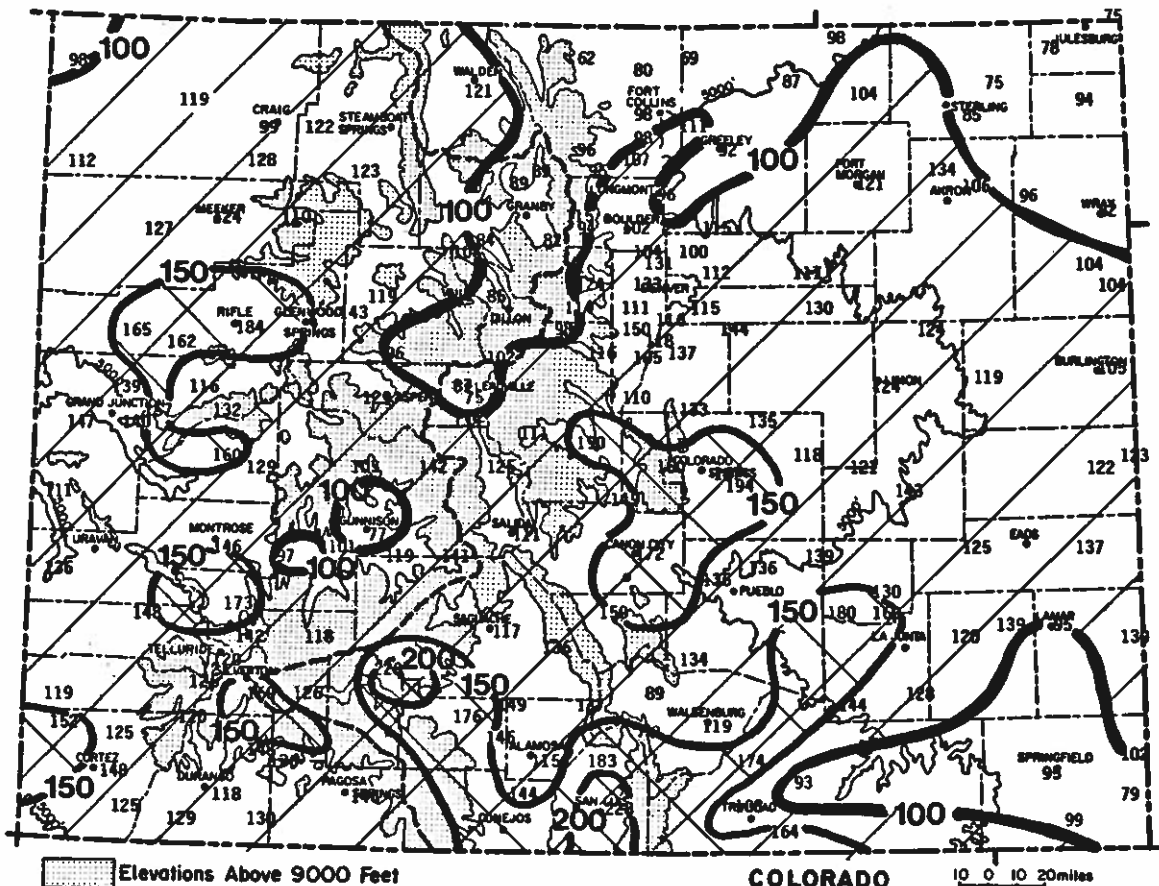
Comparison to Last Year

At this time a year ago most of the state was wetter than average. In fact, most of the mountains and western valleys were considerably wetter than this year with the exception of the southern and eastern slopes of the San Juans. Moisture on the plains this year has been fairly similar to last year.

1985 Water Year to Date through June

<u>Wettest (as % of average)</u>			<u>Driest (as % of average)</u>		
Creede 1S	229%	15.20"	Red Feather Lakes	62%	7.14"
San Luis 2SE	228%	9.26"	Nunn	69%	7.02"
Fountain	194%	14.80"	Fleming 1S	75%	8.47"

<u>Wettest (total precipitation)</u>			<u>Driest (total precipitation)</u>		
Wolf Creek Pass 1E	37.00"	115%	Gunnison	4.68"	77%
Bonham Reservoir	33.84"	132%	Monte Vista	4.94"	146%
Mount Evans			Alamosa	4.98"	115%
Research Center	29.29"	124%			

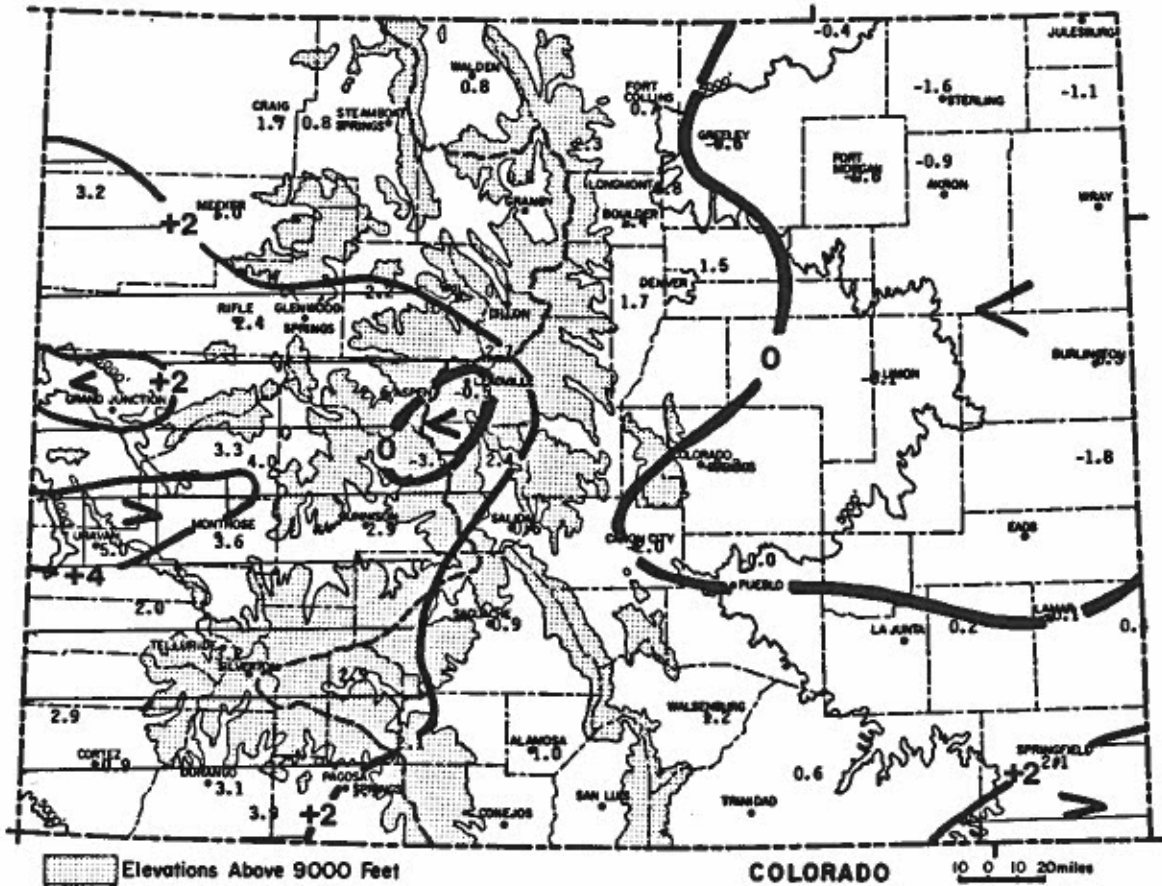


Precipitation for October 1984 through June 1985 as a percent of the 1961-1980 average.

81
JUNE 1985 TEMPERATURES
AND DEGREE DAYS

June temperatures in western Colorado were generally 2 to 4 degrees Fahrenheit above average. The remainder of the state was near average with some eastern plains locations as much as 2 degrees cooler than average.

Heating degree day data for the complete 1984-85 heating season are shown on the table on the following page. Totals for the year ended up near average with eastern Colorado tending toward slightly above average totals and western Colorado tending slightly below average. In comparison with the 1983-84 heating season, degree day totals were considerably (5-12%) less than last year east of the mountains but were very similar in the rest of the state.



June 1985 temperature departures from 1961-1980 averages (degrees Fahrenheit).

JUNE 1985 SOIL TEMPERATURES

These soil temperature measurements were taken at Colorado State University beneath sparse unirrigated sod with a flat, open exposure. These data are not representative of all Colorado locations.

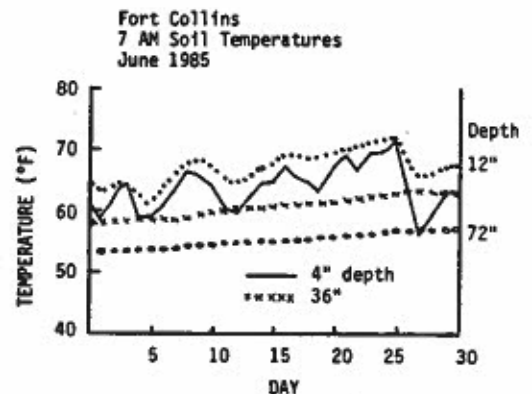


Table 1. Colorado Heating Degree Day Data through June 1985.

STATION		HEATING DEGREE DATA													
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUN	ANN
ALAMOSA		AVE	40	100	303	657	1074	1457	1519	1182	1036	732	453	165	8717
AVE		83-84	28	35	213	674	1112	1581	1582	1556	1166	799	300	186	9484
AVE		84-85	11	56	252	748	1051	1382	1482	1208	936	625	415	144	8292
ASPEN		AVE	95	150	348	651	1029	1339	1116	1162	798	524	242	8850	
AVE		83-84	97	166	369	622	1021	1382	1470	1200	1108	832	477	346	9019
AVE		84-85	87	134	345	883	1034	1282	1415	1293	1047	726	482	223	8981
BOULDER		AVE	4	6	130	357	714	908	1004	804	775	483	220	58	5460
AVE		83-84	4	0	84	350	753	1367	1087	830	792	618	58	6132	
AVE		84-85	0	1	171	599	716	938	1182	989	717	385	174	38	5890
BUENA VISTA		AVE	47	116	295	577	936	1184	1218	1025	983	720	459	184	7134
AVE		83-84	45	49	234	595	970	1333	1331	1020	982	808	370	203	7940
AVE		84-85	16	91	284	828	949	1169	1338	1084	956	646	422	130	7913
BURLINGTON		AVE	6	5	108	364	762	1017	1110	871	803	459	200	38	5743
AVE		83-84	0	0	87	359	758	1500	1172	884	883	700	200	34	6437
AVE		84-85	0	0	148	493	699	980	1207	1012	686	347	145	50	5767
CANYON CITY		AVE	0	9	81	301	639	831	911	734	707	411	179	33	4836
AVE		83-84	0	0	71	314	649	1278	993	760	752	570	134	27	5548
AVE		84-85	0	0	175	561	702	841	1069	958	676	362	174	40	5558
COLORADO SPRINGS		AVE	8	25	162	440	819	1042	1127	910	880	564	290	78	6346
AVE		83-84	2	0	101	417	811	1438	1197	911	912	700	220	58	6767
AVE		84-85	0	6	200	684	791	982	1233	1077	830	481	246	77	6607
CORTIZ		AVE	0	11	115	434	813	1132	1181	921	828	585	292	68	6350
AVE		83-84	5	0	98	438	854	1154	1271	1018	853	677	239	119	6726
AVE		84-85	0	0	108	666	839	1072	1173	1085	827	511	289	66	6636
CRAIG		AVE	32	58	275	608	996	1342	1479	1193	1094	687	313	193	8376
AVE		83-84	41	3	212	579	1005	1471	1730	1420	1194	884	380	267	9189
AVE		84-85	15	25	304	799	1002	1424	1609	1432	1063	611	375	132	8791
DELTA		AVE	0	0	94	394	613	1135	1197	890	753	429	167	31	5903
AVE		83-84	0	0	60	340	727	1061	1366	1006	736	505	132	5372	
AVE		84-85	0	11	49	477	713	969	1047	938	683	353	132	5372	
DENVER		AVE	0	0	135	414	789	1004	1101	879	837	528	253	74	6014
AVE		83-84	3	0	87	372	633	1466	1162	889	854	673	163	41	6573
AVE		84-85	0	1	183	622	753	990	1213	1040	742	412	167	42	6165
DILLON		AVE	273	332	513	806	1167	1435	1516	1305	1296	972	704	435	10754
AVE		83-84	263	224	438	789	1135	1492	1653	1419	1333	1124	675	472	11017
AVE		84-85	245	301	510	1004	1161	1380	1581	1449	1219	874	667	404	10795
DURANGO		AVE	9	34	193	493	837	1153	1218	958	862	600	366	125	6848
AVE		83-84	3	0	124	464	899	1161	1289	1009	835	665	209	113	6771
AVE		84-85	0	6	124	695	866	1074	1146	1008	831	494	319	59	6622
EAGLE		AVE	33	80	288	626	1026	1407	1448	1148	1014	705	431	171	8377
AVE		83-84	30	3	203	579	962	1337	1681	1299	1015	798	338	238	8483
AVE		84-85	1	27	252	741	998	1300	1435	1219	910	602	381	103	7969
EVER-GREEN		AVE	59	113	327	621	916	1135	1199	1011	1009	730	489	218	7827
AVE		83-84	72	15	228	605	971	1449	1239	1040	1051	864	375	231	8140
AVE		84-85	21	68	326	628	874	1088	1329	1123	928	616	448	165	7812
FORT COLLINS		AVE	5	11	171	488	846	1073	1181	930	877	588	281	82	6483
AVE		83-84	2	0	115	415	843	1432	1225	887	829	661	196	81	6886
AVE		84-85	0	0	193	606	745	1027	1245	1077	734	389	167	61	6244
FORT MORGAN		AVE	0	6	140	438	867	1156	1283	989	874	516	224	47	6520
AVE		83-84	0	0	77	368	782	1614	1493	998	844	650	159	38	7022
AVE		84-85	0	0	185	564	784	1168	1329	1125	867	395	135	57	6429
GRAND JUNCTION		AVE	0	0	65	325	762	1138	1225	882	716	403	148	19	5883
AVE		83-84	0	0	27	208	678	1066	1366	958	630	474	89	44	5540
AVE		84-85	0	0	94	452	719	996	1044	919	645	310	81	12	5232
GRAND JUNCTION		AVE	0	0	65	325	762	1138	1225	882	716	403	148	19	5883
AVE		83-84	0	0	27	208	678	1066	1366	958	630	474	89	44	5540
AVE		84-85	0	0	94	452	719	996	1044	919	645	310	81	12	5232

STATION		HEATING DEGREE DATA													
		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUN	ANN
GRAND LAKE		AVE	214	264	468	775	1128	1473	1593	1369	1318	951	654	384	10591
AVE		83-84	233	156	703	1052	1436	1743	1486	1301	1120	630	610	31	10671
AVE		84-85	155	213	405	688	1096	1428	1662	1498	1238	832	610	361	10416
Greeley		AVE	0	0	149	450	861	1128	1240	946	856	522	238	52	6442
AVE		83-84	3	0	72	375	843	1507	1344	955	848	661	170	49	6827
AVE		84-85	0	0	213	601	769	1107	1305	1096	719	391	162	41	6404
Gunnison		AVE	111	188	393	719	1119	1590	1714	1422	1231	816	543	276	10122
AVE		83-84	75	60	299	641	1128	1486	2112	1752	1435	986	432	307	10713
AVE		84-85	64	143	372	850	1072	1381	1593	1426	1065	699	495	203	9363
LAS ANIMAS		AVE	0	0	45	296	729	998	1101	820	698	348	102	9	5146
AVE		83-84	0	0	25	222	682	1357	1246	826	761	502	98	3	5722
AVE		84-85	0	0	132	473	653	916	1204	948	596	257	72	7	5254
LEAD-VILLE		AVE	272	337	522	817	1173	1435	1473	1318	1320	1038	726	439	10870
AVE		83-84	308	316	488	832	1189	1629	1594	1389	1327	1171	702	515	11360
AVE		84-85	388	366	536	1074	1217	1434	1377	1418	1291	967	737	440	11365
Limon		AVE	8	6	144	448	834	1070	1156	960	936	570	299	100	6531
AVE		83-84	7	0	109	442	874	1491	1334	1057	866	743	282	100	6998
AVE		84-85	1	1	230	694	862	1072	1297	1133	868	496	254	100	6998
LONGMONT		AVE	0	6	162	453	843	1082	1194	938	874	546	256	78	6432
AVE		83-84	1	0	91	382	649	1500	1357	915	988	688	197	54	6902
AVE		84-85	0	3	237	679	812	1078	1267	1147	743	400	170	42	6598
MEEKER		AVE	28	56	261	564	927	1240	1345	1006	998	651	394	164	7714
AVE		83-84	12	2	145	512	887	1298	1571	1217	1006	781	311	204	7956
AVE		84-85	1	17	228	690	907	1250	1392	1217	963	581	360	116	7722
MONTROSE		AVE	0	10	135	437	837	1159	1218	941	818	522	254	89	6400
AVE		83-84	0	0	73	390	633	1147	1332	1049	948	598	153	86	6509
AVE		84-85	0	8	102	604	791	1064	1161	1093	741	438	178	31	6213
PAGOSA SPRINGS		AVE	82	113	290	608	981	1305	1380	1123	1026	732	487	233	8387
AVE		83-84	51	10	190	566	987	1306	1524	1219	986	726	468	220	9183
AVE		84-85	4	39	245	782	970	1190	1305	1207	971	628	438	173	7950
PUEBLO		AVE	0	0	89	346	744	998	1091	834	756	421	163	23	5465
AVE		83-84	0	0	52	330	689	1375	1183	834	765	507	120	2	5867
AVE		84-85	0	0	127	474	713	907	1208	999	664	326	125	9	5582
RIFLE		AVE	6	24	177	499	876	1249	1321	1002	856	555	298	82	6948
AVE		83-84	3	0											

J U N E 1 9 8 5 C L I M A T I C D A T A

Eastern Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
KAUFFMAN 4SSE	82.2	45.9	64.0	-0.4	98	31	102	81	483	2.06	-0.44	82.4	6
STERLING	81.8	51.3	66.6	-1.6	102	40	71	127	496	3.62	0.89	132.6	7
FORT MORGAN	83.5	52.2	67.8	-0.6	103	41	57	149	510	1.57	-0.45	77.7	6
AKRON FAA AP	80.3	51.7	66.0	-0.9	97	39	81	119	487	1.84	-0.80	69.7	11
HOLYOKE	85.0	50.9	68.0	-1.1	102	38	61	156	516	0.71	-2.65	21.1	5
BURLINGTON	85.0	54.9	70.0	0.3	100	40	50	205	560	0.56	-1.76	24.1	2
LIMON WSMO	80.8	47.0	63.9	-0.1	96	33	100	73	452	0.81	-0.99	45.0	5
CHEYENNE WELLS	84.7	50.8	67.8	-1.8	100	39	56	145	506	0.61	-1.54	28.4	4
LAMAR	89.1	57.1	73.1	-0.1	104	47	9	260	611	0.94	-1.38	40.5	5
LAS ANIMAS	92.5	54.6	73.6	0.2	107	43	7	273	594	0.28	-1.46	16.1	2
HOLLY	91.5	54.4	73.0	0.4	108	42	18	264	587	1.15	-1.92	37.5	7
SPRINGFIELD 7WSJ	89.7	54.8	72.2	2.1	104	41	14	240	589	0.18	-1.93	8.5	4

Foothills/Adjacent Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	80.6	51.5	66.1	0.7	95	39	61	97	487	2.77	0.93	150.5	10
GREELEY UNC	83.0	51.7	67.3	-0.6	100	42	41	119	510	1.83	0.02	101.1	9
ESTES PARK	74.5	43.2	58.9	2.3	86	37	191	15	381	2.00	0.24	113.6	10
LONGMONT ZESE	81.4	52.1	66.8	0.8	99	42	42	105	493	1.50	-0.50	75.0	9
BOULDER	83.8	53.4	68.6	1.4	98	41	38	153	543	1.91	-0.35	84.5	7
DENVER WSO AP	82.0	53.9	67.9	1.5	98	43	42	137	518	1.46	-0.41	78.1	6
EVERGREEN	75.3	43.4	59.4	1.7	90	33	158	9	363	1.82	-0.29	86.3	4
COLORADO SPRINGS	79.8	50.1	64.9	-0.3	95	38	77	83	463	0.78	-1.54	33.6	7
CANON CITY	83.5	51.9	67.7	-2.0	97	38	40	129	517	0.0	-1.30	0.0	0
PUEBLO WSO AP	88.6	53.1	70.9	-0.0	102	41	9	192	558	0.10	-1.22	7.6	3
WALSENBERG	83.8	51.9	67.8	1.2	96	40	32	124	534	0.59	-0.63	48.4	7
TRINIDAD FAA AP	85.4	52.8	69.1	0.6	97	40	25	154	544	0.71	-0.82	46.4	10

Mountains/Interior Valleys*

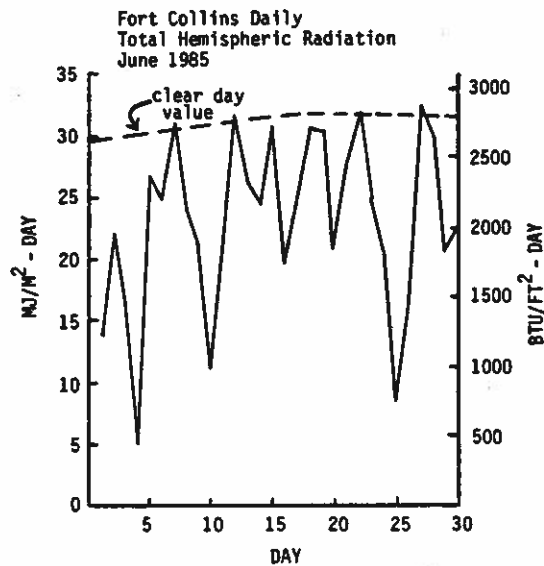
Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	72.7	35.4	54.0	0.8	81	28	320	0	347	0.54	-0.48	52.9	7
LEADVILLE 2SW	67.1	33.0	50.0	-0.5	75	25	440	0	263	0.62	-0.48	56.4	4
SALIDA	79.7	42.5	61.1	0.6	91	29	118	8	448	0.82	-0.89	2.2	1
BUENA VISTA	79.1	43.1	61.1	2.4	88	30	130	21	442	0.17	-0.64	21.0	2
SAGUACHE	75.5	43.2	59.3	0.9	83	35	166	4	389	0.24	-0.33	42.1	5
HERMIT ZESE	72.9	31.8	52.3	2.9	82	22	371	0	351	0.8	-0.72	0.0	0
ALAMOSA WSO AP	78.6	41.9	60.2	1.0	88	32	146	9	434	0.47	-0.25	65.3	7
GRAND LAKE 6SSW	69.2	36.1	52.7	0.8	77	30	361	0	295	0.81	-0.49	62.3	7
DILLON 1E	68.4	34.2	51.3	0.7	76	24	404	0	284	0.75	-0.41	64.7	8
CLIMAX	60.8	34.9	47.8	2.7	70	22	506	0	176	0.85	-0.63	57.4	8
ASPEN 1SW	73.2	42.1	57.6	2.6	86	32	223	6	354	1.00	-0.41	70.9	5
TAYLOR PARK	69.0	24.7	46.8	-3.5	79	18	536	0	293	0.55	-0.51	51.9	4
TELLURIDE	76.8	37.7	57.3	3.2	84	27	224	0	408	0.64	-0.58	52.5	4
PAGOSA SPRINGS	80.5	37.6	59.0	1.9	90	30	173	3	458	0.64	-0.13	83.1	7
WOLF CREEK PASS 1	63.0	35.9	49.5	2.1	72	28	457	0	204	0.67	-0.97	40.9	7

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
CRAIG 4SW	78.7	43.5	61.1	1.7	88	35	132	23	440	1.02	-0.23	81.6	7
HAYDEN	78.5	42.8	60.7	0.8	89	35	139	16	431	0.73	-0.49	59.8	4
MEEKER NO. 2	80.8	43.2	62.0	1.0	90	34	116	32	466	0.82	-0.03	96.5	2
RANGELY 1E	87.6	51.0	69.3	3.2	97	33	34	172	556	0.57	-0.16	78.1	3
EAGLE FAA AP	82.4	41.1	61.7	2.2	92	31	103	15	480	0.64	-0.21	75.3	5
RIFLE	85.7	46.3	66.0	2.4	94	37	47	85	517	0.45	-0.38	54.2	5
CEDAREGGE	87.1	50.6	68.8	3.3	95	38	28	150	553	0.11	-0.62	15.1	2
PAONIA 1SW	87.0	52.0	69.5	4.0	97	41	28	167	556	0.59	-0.21	73.8	5
GUNNISON	78.8	37.2	58.0	2.9	87	26	203	0	439	0.22	-0.32	40.7	2
MONTROSE NO. 2	86.4	52.6	69.5	3.6	95	39	31	172	573	0.23	-0.38	37.7	3
URAVAN	92.9	57.6	75.2	5.0	102	43	3	319	663	0.43	0.01	102.4	3
NORWOOD	80.3	43.8	62.1	2.0	88	32	109	27	459	0.68	-0.18	79.1	3
YELLOW JACKET 2W	83.2	49.2	66.2	2.9	89	33	56	97	529	0.13	-0.36	26.5	2
CORTEZ	84.6	46.4	65.5	0.9	97	33	66	86	506	0.11	-0.30	26.8	3
DURANGO	85.2	43.9	64.5	3.1	93	33	59	49	508	0.24	-0.33	42.1	3
IGNACIO 1N	87.4	42.8	65.1	3.9	95	32	53	65	520	0.31	-0.22	58.5	3

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

JUNE 1985 SUNSHINE AND SOLAR RADIATION

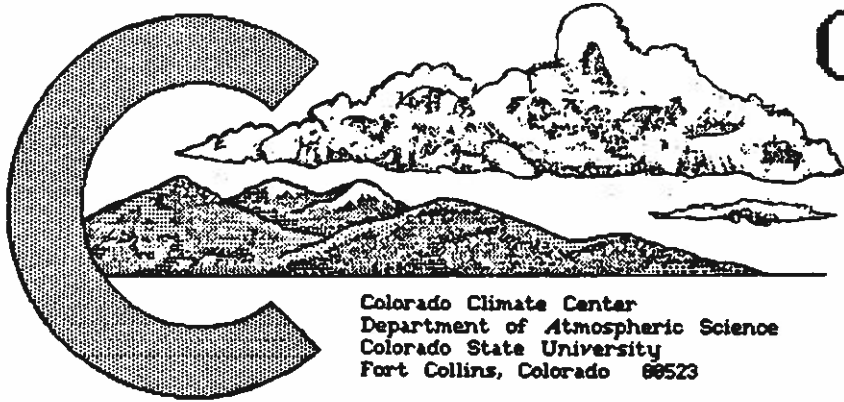
Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	7	16	7	--	--
Denver	9	12	9	69%	71%
Grand Junction	18	9	3	86%	79%
Pueblo	11	12	7	81%	79%



How Heavy is Heavy?: (continued)

Here are some examples of heaviest precipitation events at selected Colorado locations during the years 1951-1980. The heaviest 1-day rainfalls tend to be at elevations less than 8,000 feet east of the mountains, but very heavy amounts have also been observed in the San Juan Mountains.

<u>Station</u>	<u>Greatest 24-hour precipitation (inches) 1951-1980</u>	<u>Date of Occurrence</u>
Akron	5.50"	Jul 26, 1957
Alamosa	1.77"	Sep 30, 1959
Aspen	2.87"	Mar 14, 1960
Boulder	3.37"	May 7, 1969
Burlington	3.42"	Aug 20, 1965
Climax	2.00"	May 27, 1973
Colorado Springs	3.00"	Jul 22, 1951
Denver	3.27"	May 6, 1973
Dillon	1.27"	Aug 7, 1968
Durango	3.65"	Oct 19, 1972
Estes Park	3.59"	Aug 1, 1976
Fort Collins	4.43"	Jul 25, 1977
Fort Morgan	4.60"	Jul 31, 1956
Grand Junction	1.39"	Jul 18, 1974
Gunnison	1.25"	Nov 4, 1959
Lamar	5.64"	May 29, 1964
Pueblo	2.95"	Aug 29, 1955
Steamboat Springs	2.55"	Sep 22, 1961



COLORADO CLIMATE

JULY 1985

Colorado Climate Center
Department of Atmospheric Science
Colorado State University
Fort Collins, Colorado 80523

July in Review:

Hot and dry weather in the first half of July gave way to a damp and stormy second half. Temperatures ended up fairly close to average for the month as a whole. Precipitation was above average over most of Colorado. Record breaking July rains fell in a few areas producing local flash floods and associated havoc.

A Look Ahead -- September 1985:

September is a beautiful month in Colorado. Sunshine is abundant statewide and precipitation is quite light. Thunderstorms become few in number and light in intensity. Mountain streams flow low and crystal clear exposing the resident trout. Chilly nights mean that stands of aspen begin their transformation into groves of gold.

September marks the end of summer in Colorado -- a season which is admittedly shorter than most of us might prefer. Daylength decreases by more than an hour during the month. With the lengthening darkness comes colder nighttime temperatures. Despite warm days with temperatures often in the 70s and 80s at elevations below 7,500 feet, nighttime readings drop steadily through the month. Readings in the 20s and 30s are to be expected by the end of September across practically the entire state (see special "Frost" article following this section).

The word "snow" returns to the vocabulary of climatologists, skiers and frustrated Californians in September. Snow doesn't occur every year but it is a possibility even at low elevations. Front Range cities have been buried on rare occasions by as much as one to two feet of wet heavy snow (with heavier amounts in the mountains). Fortunately these early snows melt quickly even in the mountains and are quickly replaced by sunshine.

September precipitation can be quite variable. Little or no precipitation has occurred in some years while a few years have been very wet. On the average, September precipitation is surprisingly uniform across the state with the majority of the area receiving between 1.00" and 1.50". Drier areas include the interior San Luis Valley, the Arkansas Valley from Pueblo to La Junta and the extreme western valleys near Grand Junction. The wettest area is the San Juan Mountains where lingering moisture from the Southwest Monsoon and an occasional dying hurricane have brought some very heavy September rains. Wolf Creek Pass averages almost 4.00" and once received 11.25" in September 1970.

A Chilling Look at Autumn Frost:

It may seem cruel to start talking about cold weather already, but let's face it -- frost is right around the corner and snow isn't far behind. Frost is defined as the feathery deposit of ice formed by the sublimation of water vapor on terrestrial objects whose temperatures are below freezing. In other words, it's the visible indication that it's downright chilly outside. Frost can form on low vegetation and rooftops when measured air temperatures are far above freezing. It is also possible, if the air is very dry, that no frost will form even when the nighttime temperature dips well below freezing.

We often talk about the first autumn frost. But since visible frost and actual air temperature don't always correlate well, climatologists prefer to use the concept of the first fall freeze. This is defined as the first occurrence after July 20 (or some other appropriate midsummer date) of an air temperature of 32.0°F or colder. (Official air temperature measurements are taken at a height of about 5 feet above the ground, preferably over natural grass.) The date of the first fall freeze is significant because

(continued on last page)

JULY 1985 DAILY WEATHER

<u>Date</u>	<u>Event</u>
1-3	Comfortable summer temperatures. A few light scattered thundershowers from the mountains eastward onto the plains, although Nunn was deluged by 1.67" by a thunderstorm on the 1st. Most areas of the state experienced their coldest morning temperatures of the month on the 1-3rd. For example, Denver had 51° and Colorado Springs 48° on the 2nd. Readings in the 20s and 30s were observed in the mountains including 25° at Silverton and Rio Grande Reservoir on the 1st and also at Creede on the 3rd, the coldest July temperatures in the state.
4-8	Hot and dry. Temperatures soared into the 90s and 100s over most of the state below 6500 feet. Readings on the 6th and 7th approached all time record highs for the date over much of the state. Examples included 90° at Steamboat Springs and 101° at Fort Morgan on the 6th, 99° at Limon, 100° at Cherry Creek Dam, 106° at Julesburg and Palisade and 108° at Las Animas on the 7th (the hottest in the state in July). Widely scattered thundersprinkles occurred on the 7th and 8th setting off a number of grass and forest fires. Smoke from raging fires in California was visible near sunset in parts of northern Colorado.
9-13	A huge high pressure ridge held its grip over the western U.S. with continued hot and mostly dry conditions in Colorado. Fire danger continued very high, but humidities and thundershower activity increased each day across the state.
14-31	A change in the weather pattern allowed moisture to stream northward into Colorado. This circulation, called the Southwest Monsoon, brought heavy thunderstorms almost every day for the remainder of the month. Increased cloud cover meant warmer nights but cooler days. The 101°F reading at Las Animas on the 19th was the last time temperatures reached above the mid 90s anywhere in the state during the month. Here is a highlight of <u>some</u> of the especially noteworthy storms.
15	Storms just after midnight dropped from 1" to 2.5" of rain in less than an hour on parts of Larimer and Weld counties.
18-19	Cold front crossed eastern Colorado triggering heavy storms beginning on the 18th. More than 3" of rain was reported the next morning at a number of stations from Byers to Burlington. Chilly, damp "upslope" flow on the 19th brought rain, low clouds and daytime temperatures in the 60s to parts of northeastern Colorado. Very heavy thunderstorms accompanied by a tornado struck the Denver area at the evening rush hour with from 1 to 3.5 inches of rain causing considerable flooding. Close to 40 official weather stations, mostly in the eastern half of the state reported more than 1" of rain on the 19th making this date one of the 10 wettest days in Colorado in the past 35 years.
20-22	More heavy storms particularly in western and southeastern Colorado with reports of funnel clouds and local flash flooding. Paradox reported 1.15" on the 20th -- close to their average for the whole month. Numerous other locations in the central mountains and western valleys received from 0.50 to 2.00 inches. Walsh reported more than 2" of rain on the 21-22nd.
28-29	Cold front dropped southward across eastern Colorado setting off ferocious storms that continued into the morning of the 29th especially in southern Colorado. Cheyenne Wells reported 2.09" of rain and Wolf Creek Pass got 2.40" but Fountain (near Colorado Springs) was hardest hit with 4.13".
30-31	Thunderstorms rumbled across the northeastern plains with numerous official rainfall totals of 1 to 2".

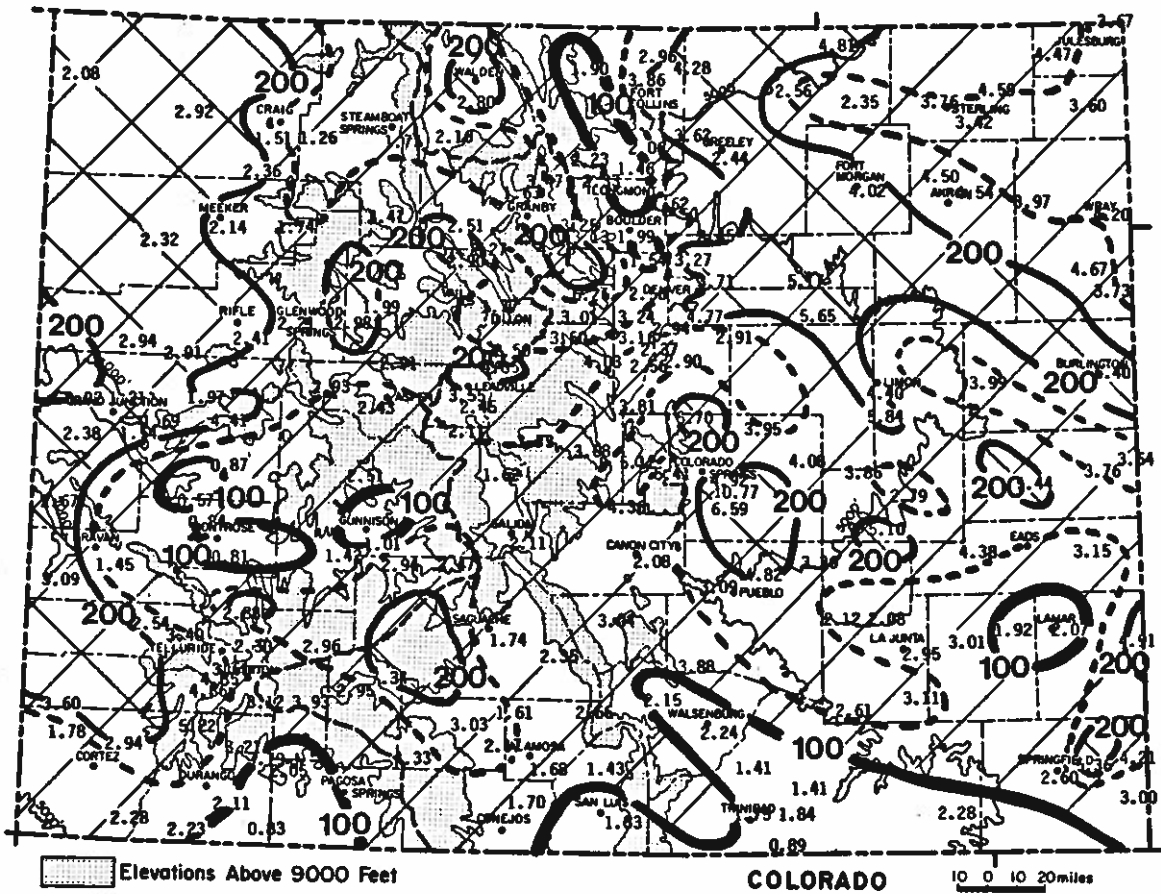
July 1985 Extremes

Highest Temperature	108°F	July 7	Las Animas
Lowest Temperature	25°	July 1	Rio Grande Resvr and Silverton
Greatest Total Precipitation	25°	July 3	Creede 1S
Least Total Precipitation	10.77"		Fountain
Greatest Total Snowfall	0.57"		Delta
	none reported		

JULY 1985 PRECIPITATION

Heavy thunderstorm rains over practically all of Colorado in the last half of July terminated the short term drought conditions that had developed during early summer. The entire state was wetter than average except an area in southeastern Colorado from Walsenburg southeast to the Oklahoma Panhandle, a small strip of the eastern foothills from Red Feather Lakes to Boulder and miscellaneous spots such as Lamar, Gunnison and Breckenridge. Many areas received at least double the July average including much of extreme western Colorado, a strip from Fort Collins and Greeley to Burlington, the area south of Colorado Springs and a number of small local areas such as Creede, Climax and Walden. Maybell's 2.92" total was more than 4 times their July normal.

<u>Greatest</u>		<u>Least</u>	
Fountain	10.77"	Delta	0.57"
Creede 1S	7.34"	Montrose	0.81"
Fort Carson	6.59"	Ignacio 1N	0.83"
Burlington	6.40"	Olathe 4SSW	0.84"
Mount Evans	6.26"	Cedaredge	0.87"



Precipitation amounts (inches) for July 1985 and contours of precipitation as a percent of the 1961-1980 average. The dashed line is the 150% contour.

1985 WATER YEAR PRECIPITATION

Colorado is well on its way to completing a 4th consecutive wetter than average year. The entire state continues wetter than average except small areas on the extreme northeastern and southeastern plains and a band in north central Colorado from Breckenridge to Red Feather Lakes.

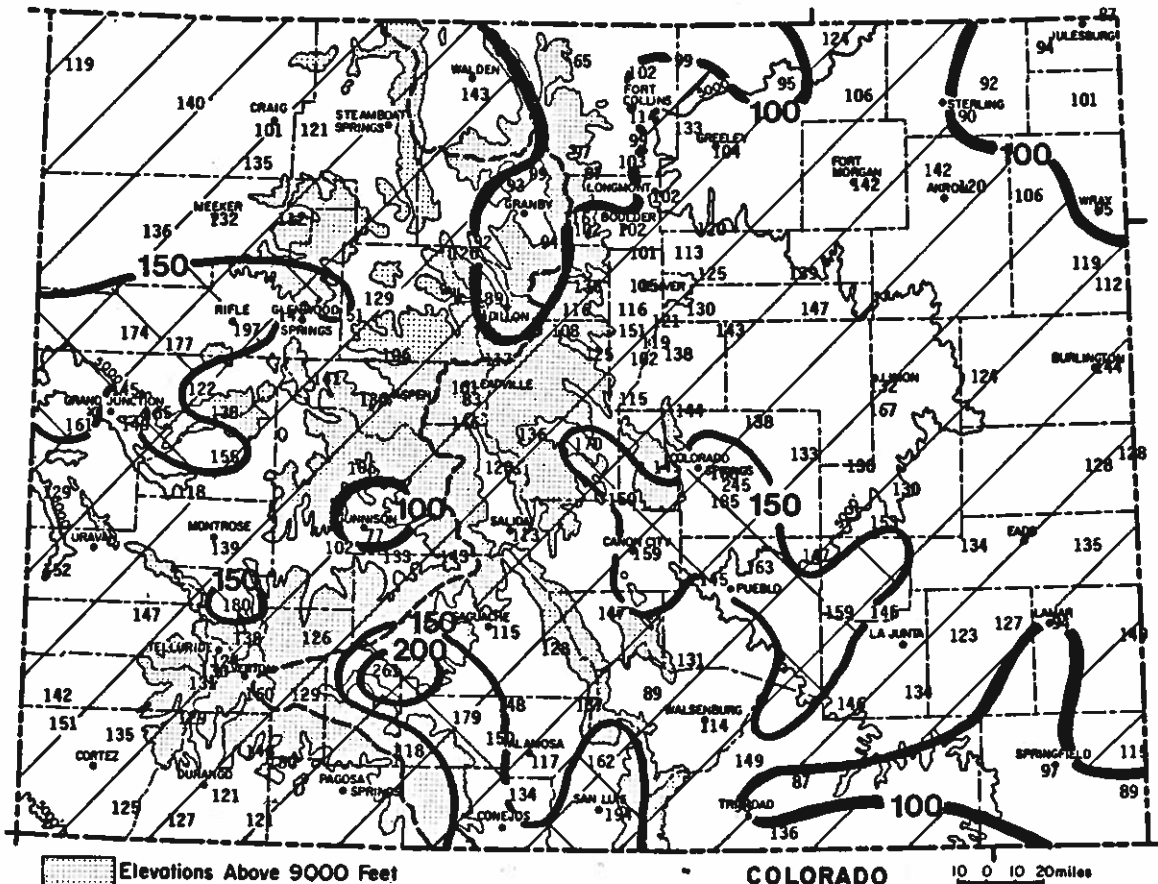
Comparison to Last Year

Much of the Eastern Plains and the Rio Grande drainage have received more precipitation during the first 10 months of the 1985 water year than during the same period a year ago. West central and extreme southwest areas are comparably wet to a year ago. For most of the mountains, however, last year's precipitation totals were significantly higher. Grand Lake, for example, has received 16.23" of precipitation so far this water year compared to 23.37" last year.

1985 Water Year to Date through July

<u>Wettest (as % of average)</u>			<u>Driest (as % of average)</u>		
Creeede 1S	261%	22.54"	Red Feather Lakes	65%	9.04"
Fountain	245%	25.57"	Gunnison	77%	5.69"
San Luis 2SE	194%	10.59"	Trinidad FAA	87%	8.70"

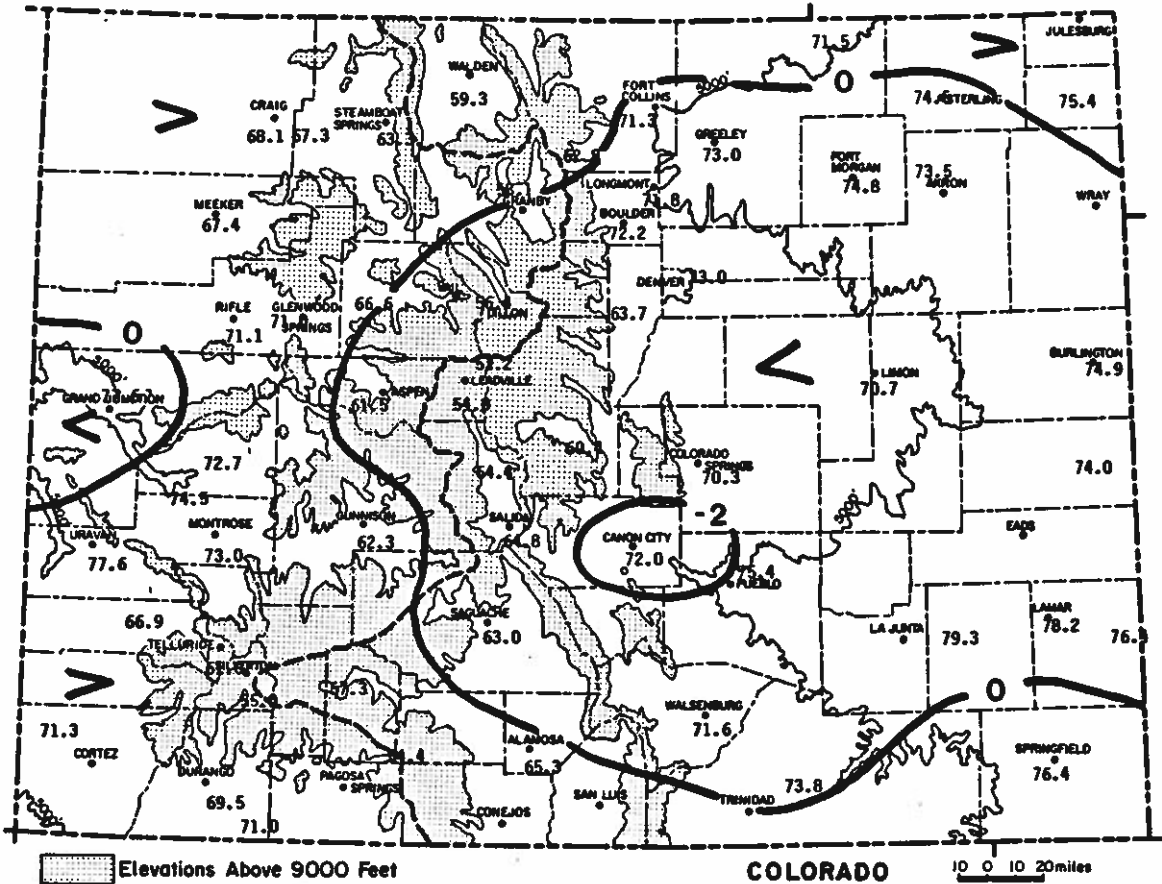
<u>Wettest (total precipitation)</u>			<u>Driest (total precipitation)</u>		
Wolf Creek Pass 1E	41.53"	118%	Gunnison	5.69"	77%
Bonham Reservoir	38.25"	138%	Delta	6.51"	118%
Mount Evans			Alamosa	6.66"	117%
Research Center	35.55"	136%			



Precipitation for October 1984 through July 1985 as a percent of the 1961-1980 average.

JULY 1985 TEMPERATURES
AND DEGREE DAYS

July temperatures for the month as a whole rarely vary more than about 2 degrees Fahrenheit from average and this year was no exception. Temperatures across the state were almost all within a degree of average with most of eastern Colorado ending up slightly cooler than average while the western part of the state was a bit warmer than usual. The first half of the month was actually 3 to 6 degrees above average but the last half was comparably below average.



July 1985 temperatures (degrees Fahrenheit) and contours of departures from 1961-1980 averages.

JULY 1985 SOIL TEMPERATURES

Soil temperatures in the top one foot layer reflected the hot air temperatures early in July and cooler weather following. At greater depths temperatures continued their gradual summertime climb.

These soil temperature measurements were taken at Colorado State University beneath sparse unirrigated sod with a flat, open exposure. These data are not representative of all Colorado locations.

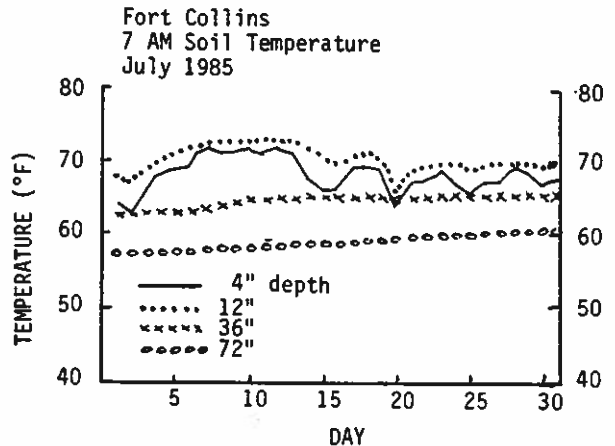


Table 1. Colorado Heating Degree Day Data through July 1985.

HEATING DEGREE DATA		HEATING DEGREE DATA													
STATION	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	ANN	
ALAMOSA	40	100	303	657	1074	1457	1519	1182	1035	732	463	165	8717	384	10591
84-85	11	56	252	748	1051	1382	1462	1208	936	625	415	146	8532	654	384
85-86	30												206	610	361
ASPER	95	150	348	651	1029	1339	1376	1162	1116	798	524	262	8850	238	52
84-85	87	134	345	683	1034	1282	1415	1293	1047	726	492	223	8961	162	41
85-86	119												119	162	41
BOULDER	0	6	130	357	714	908	1004	804	775	483	220	59	5460	543	276
84-85	0	1	171	599	716	938	1162	969	717	395	174	38	5890	495	203
85-86	0												0	689	495
BUENA VISTA	47	116	285	577	936	1184	1218	1025	983	720	459	194	7734	349	102
84-85	16	91	284	828	949	1169	1338	1084	956	646	422	130	7913	586	257
85-86	63												63	72	7
BURLING-TOM	6	5	108	364	762	1017	1110	871	803	459	200	38	5743	726	439
84-85	0	0	148	493	699	980	1207	1012	686	347	145	50	5767	967	737
85-86	0												0	967	737
CANON CITY	0	9	81	301	639	831	911	734	707	411	179	33	4836	299	100
84-85	0	0	175	561	702	841	1069	958	676	362	174	40	5558	360	116
85-86	0												0	360	116
COLORADO SPRINGS	8	25	162	440	819	1042	1122	910	880	564	296	78	6346	546	256
84-85	0	6	200	684	791	982	1233	1077	830	481	246	77	6607	400	170
85-86	5												5	400	170
CORTEZ	0	11	115	434	813	1132	1181	921	828	555	292	68	6350	651	394
84-85	0	0	108	666	839	1072	1173	1085	827	511	289	66	6636	581	360
85-86	0												0	581	360
CRAIG	32	58	275	608	996	1342	1479	1193	1094	687	419	193	8376	641	164
84-85	15	25	304	799	1002	1424	1609	1432	1063	611	375	132	8791	522	254
85-86	10												10	438	178
DELTA	0	0	94	394	813	1135	1197	890	753	429	167	31	5903	732	487
84-85	0	11	49	477	713	969	1047	938	683	353	132		5372	626	438
85-86	0												0	626	438
DENVER	0	0	135	414	789	1004	1101	879	837	528	253	74	6014	421	163
84-85	0	1	183	622	753	990	1213	1040	742	412	167	42	6165	756	421
85-86	0												0	756	421
DILLON	273	332	513	806	1167	1435	1516	1205	1296	972	704	435	10754	856	595
84-85	245	301	510	1094	1161	1380	1581	1449	1219	874	667	404	10795	804	472
85-86	260												260	804	472
DURANGO	9	34	193	493	837	1153	1218	958	862	600	366	125	6848	810	533
84-85	0	6	124	695	866	1074	1146	1008	831	494	319	59	6622	1277	810
85-86	3												3	1277	810
EAGLE	33	80	288	626	1026	1407	1448	1148	1014	705	431	171	8377	896	528
84-85	1	27	252	741	998	1300	1435	1219	910	602	381	103	7969	678	51
85-86	19												19	678	51
EVER-GREEN	59	113	327	621	916	1135	1199	1011	1009	730	409	218	7827	1141	849
84-85	21	68	326	826	874	1088	1329	1123	928	616	448	165	7812	1151	849
85-86	62												62	1151	849
FORT COLLINS	5	11	171	468	846	1073	1181	930	877	558	281	82	6483	1184	810
84-85	0	0	193	606	745	1027	1245	1077	734	389	167	61	6244	1277	810
85-86	1												1	1277	810
FORT MORGAN	0	6	140	438	867	1156	1283	969	874	516	224	47	6520	1277	915
84-85	0	0	185	564	784	1168	1329	1125	887	395	135	57	6429	1277	915
85-86	0												0	1277	915
GRAND JUNCTION	0	0	65	325	762	1138	1225	882	716	403	148	19	5893	1277	915
84-85	0	0	54	452	719	996	1044	919	645	310	81	12	5832	1277	915
85-86	0												0	1277	915

J U L Y 1 9 8 5 C L I M A T I C D A T A

Eastern Plains*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
KAUFFMAN 4SSE	87.1	56.0	71.5	0.4	101	48	0	211	627	4.81	2.65	222.7	7
STERLING	89.4	59.6	74.5	-0.2	103	54	0	302	686	3.76	1.19	146.3	12
FORT MORGAN	90.8	58.7	74.8	-0.4	104	53	0	308	681	4.02	2.32	236.5	7
AKRON FAA	87.1	60.0	73.5	-0.1	100	53	1	273	677	4.50	1.87	171.1	12
HOLYOKE	90.2	60.5	75.4	0.4	103	53	0	326	705	3.60	0.82	129.5	9
BURLINGTON	87.7	62.1	74.9	-0.9	104	56	0	315	716	6.40	4.43	324.9	6
LIMON WSMO	85.7	55.6	70.7	-0.0	99	46	1	185	604	4.40	1.50	151.7	15
CHEYENNE WELLS	89.9	58.0	74.0	-1.4	102	42	0	288	674	3.76	1.29	152.2	8
LAMAR	93.0	63.4	78.2	-0.7	105	49	0	413	770	2.07	-0.33	86.2	8
LAS ANIMAS	96.0	62.5	79.3	-0.0	108	48	0	449	761	3.01	0.76	133.8	7
HOLLY	94.1	58.8	76.4	-2.3	107	43	0	352	675	4.91	2.84	237.2	9
SPRINGFIELD 7WSW	92.4	60.4	76.4	1.1	103	50	0	362	720	2.60	0.16	106.6	9

Foothills/Adjacent Plains*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	84.9	57.6	71.3	-0.2	99	52	1	205	631	3.71	1.94	209.6	13
GREELEY UNC	88.1	57.9	73.0	-0.5	99	51	0	254	660	2.44	1.23	201.7	6
ESTES PARK	78.4	47.2	62.8	0.5	86	39	78	18	458	2.23	0.06	102.8	23
LONGMONT 2ESE	85.4	58.2	71.8	-0.6	96	52	0	220	648	1.62	0.56	152.8	11
BOULDER	86.0	58.4	72.2	-1.3	97	51	0	232	656	1.99	0.10	105.3	17
DENVER WSWF AF	86.3	59.6	73.0	-0.3	98	51	0	256	669	3.71	1.81	195.3	15
EVERGREEN	78.7	48.6	63.7	-0.1	89	40	62	31	470	3.24	0.99	144.0	14
LAKE GEORGE BSW	74.1	46.6	60.4	-0.9	83	39	143	6	387	3.08	0.55	121.7	16
COLORADO SPRINGS	84.2	56.5	70.3	-0.9	97	48	5	180	607	4.92	2.02	169.7	14
CANYON CITY	86.4	57.5	72.0	-5.6	96	49	0	223	644	2.08	0.17	108.9	12
PUEBLO WSO AP	91.5	59.2	75.4	-1.8	103	49	0	329	698	4.82	2.88	248.5	13
WALSBERG	87.0	56.2	71.6	-0.6	96	50	0	213	633	2.24	-0.16	93.3	12
TRINIDAD FAA AP	89.6	58.0	73.8	-0.2	99	52	0	279	676	1.41	-0.76	65.0	8

Mountains/Interior Valleys*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	76.9	41.6	59.3	0.4	89	34	171	1	422	2.80	1.87	301.1	13
LEADVILLE 2SW	70.0	37.9	54.0	-2.5	80	30	333	0	318	2.45	0.15	106.5	19
SALIDA	81.5	48.0	64.8	-0.9	93	39	44	47	492	2.11	0.42	124.9	13
BUENA VISTA	79.7	49.0	64.4	-0.5	91	42	63	51	483	1.62	0.05	103.2	11
SAGUACHE	76.8	49.2	63.0	-1.0	87	44	67	16	441	1.74	0.13	108.1	12
HERMIT 7ESE	74.2	40.5	57.3	1.5	88	31	234	0	383	2.95	0.63	127.2	12
ALAMOSA WSO AP	81.9	48.6	65.3	0.2	90	39	30	47	515	1.68	0.34	125.4	10
STEAMBOAT SPRINGS	81.2	45.4	63.3	1.7	90	37	57	11	495	1.77	0.49	138.3	17
GRAND LAKE 6SSW	71.7	44.4	58.1	-0.0	83	36	206	0	347	1.63	0.28	120.7	16
DILLON 1E	72.5	40.2	56.4	-0.5	82	33	260	0	358	1.77	0.22	114.2	13
CLIMAX	63.3	39.0	51.2	-0.5	87	33	353	0	182	4.85	2.77	233.2	14
ASPEN 1SW	76.1	46.8	61.5	-0.5	88	41	119	13	409	2.43	0.73	142.9	11
TELLURIDE	77.5	44.5	61.0	1.0	89	35	121	8	430	3.61	1.19	149.2	19
SILVERTON	72.9	37.1	55.0	-0.9	82	25	305	0	362	3.12	0.39	114.3	16
WOLF CREEK PASS 1	67.6	41.2	54.4	1.3	76	36	321	0	280	4.33	1.10	134.1	11

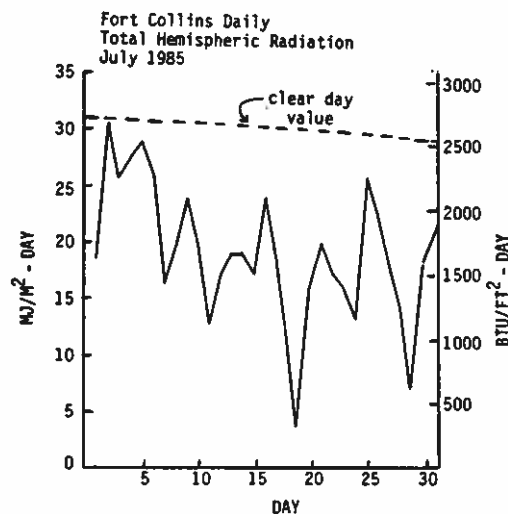
Western Valleys*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
CRAIG 4SW	84.1	52.1	68.1	1.4	93	45	10	114	555	1.51	0.57	160.6	13
HAYDEN	83.1	51.5	67.3	0.5	93	45	9	88	540	1.26	0.18	116.7	11
MEEKER NO. 2	84.4	50.4	67.4	0.2	93	44	6	86	541	2.14	1.03	192.8	10
EAGLE FAA AP	85.3	48.0	66.6	0.1	95	40	19	79	538	1.99	0.96	193.2	12
GLENWOOD SPRINGS	87.4	54.7	71.0	1.1	98	48	0	195	605	2.21	0.94	174.0	15
RIFLE	88.3	53.8	71.1	0.8	100	41	1	200	601	2.41	1.72	349.3	12
GRAND JUNCTION WS	91.4	63.7	77.6	-1.5	102	58	0	396	762	1.21	0.65	216.1	8
CEDAREGGE	89.5	56.0	72.7	0.8	100	48	0	249	641	0.87	0.03	103.6	8
DELTA	92.3	56.8	74.5	0.8	101	50	0	301	666	0.57	-0.09	86.4	8
GUNNISON	80.7	43.9	62.3	1.1	91	34	84	8	474	1.01	-0.30	77.1	8
MONTROSE NO. 2	88.9	57.1	73.0	0.7	98	48	0	255	658	0.81	-0.07	92.0	9
URAVAN	95.5	59.7	77.6	0.4	110	50	0	397	711	1.45	0.29	125.0	7
NORWOOD	82.8	50.9	66.9	0.6	93	41	29	95	527	2.54	0.78	144.3	9
YELLOW JACKET 2W	87.0	55.5	71.3	0.7	99	48	2	204	618	1.78	0.48	136.9	10
DURANGO	86.0	53.0	69.5	0.7	95	44	3	150	575	2.11	0.60	139.7	10
IGNACIO IN	90.6	51.5	71.0	2.8	98	42	1	195	593	0.83	-0.52	61.5	6

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

JULY 1985 SUNSHINE AND SOLAR RADIATION

Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	2	18	11	--	--
Denver	3	19	9	60%	71%
Fort Collins	3	18	10	--	--
Grand Junction	8	13	10	78%	78%
Pueblo	5	18	8	71%	78%



A Chilling Look at Autumn Frost: (continued)

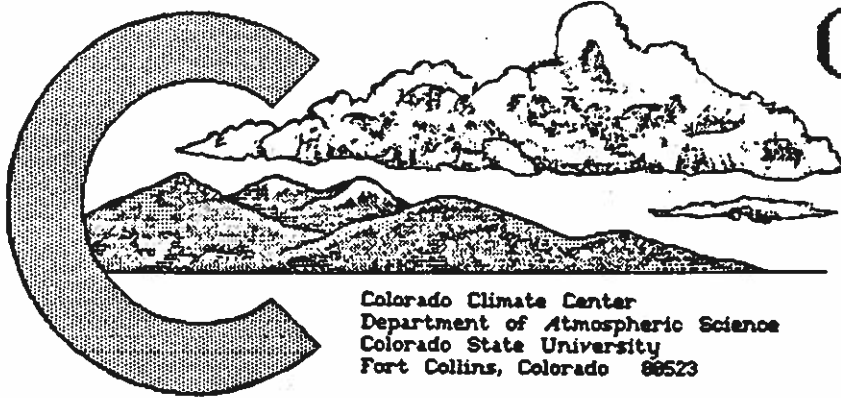
it affects what agricultural crops can be grown in a particular area. Some locations in the Colorado mountains can experience a freeze on any day of the year. Other locations, such as the fruit growing areas near Grand Junction typically don't experience the first fall freeze until mid or late October.

The date of the first fall freeze is a very interesting element to study. It can vary by several weeks from one year to the next and can also differ by several weeks in a given year over a surprisingly small area. Again using Grand Junction as an example, the average date of the first fall freeze at the airport is October 23; while at Fruita, just a few miles down the road in the same valley, the first freeze date averages September 30. In each of the last two years the first fall freeze has hit broad areas of the state simultaneously and abnormally early (Sep 21, 1983 and Sep 29, 1984). In both cases it brought an abrupt and economically inopportune conclusion to the agricultural growing season.

We could write a book on the subject, but for now here are a few statistics about first fall freezes at selected locations in Colorado. For more information on this subject, please contact our office.

Probability that the first fall freeze (32°F)
will occur on or before this date.

Station	Elevation	10%	20%	50%	80%	90%
Akron	4663 ft	Sep 17	Sep 21	Oct 1	Oct 10	Oct 15
Alamosa	7536	Aug 27	Aug 31	Sep 7	Sep 14	Sep 18
Boulder	5375	Sep 24	Sep 30	Oct 12	Oct 24	Oct 30
Burlington	4165	Sep 15	Sep 21	Oct 3	Oct 15	Oct 21
Canon City	5355	Sep 26	Oct 2	Oct 14	Oct 26	Nov 1
Colorado Springs	6090	Sep 19	Sep 25	Oct 7	Oct 19	Oct 25
Cortez	6212	Sep 14	Sep 20	Oct 1	Oct 12	Oct 17
Craig	6440	Aug 23	Aug 30	Sep 10	Sep 22	Sep 28
Denver (airport)	5286	Sep 21	Sep 27	Oct 8	Oct 20	Oct 26
Durango	6600	Sep 6	Sep 10	Sep 18	Sep 25	Sep 29
Fort Collins	5004	Sep 17	Sep 21	Sep 30	Oct 9	Oct 14
Fort Morgan	4321	Sep 17	Sep 23	Oct 3	Oct 13	Oct 18
Fraser	8560	Jul 20	Jul 21	Jul 23	Jul 25	Jul 27
Grand Junction	4849	Oct 7	Oct 13	Oct 24	Nov 3	Nov 9
Lamar	3620	Sep 28	Oct 3	Oct 11	Oct 19	Oct 23
Montrose	5785	Sep 20	Sep 25	Oct 7	Oct 18	Oct 23
Pueblo	4640	Sep 27	Oct 3	Oct 13	Oct 23	Oct 28
Rifle	5320	Aug 31	Sep 6	Sep 18	Sep 29	Oct 5
Steamboat Springs	6770	Jul 28	Aug 3	Aug 14	Aug 25	Aug 31
Sterling	3938	Sep 12	Sep 17	Sep 27	Oct 7	Oct 12
Trinidad	5746	Sep 22	Sep 28	Oct 9	Oct 19	Oct 25



COLORADO CLIMATE

AUGUST 1985

August in Review:

August was dominated by hot and dry weather over most of the state. The Southwest Monsoon, which had been alive and well during the last 3 weeks of July, came to an abrupt halt in early August. As a result, less than half of the average August precipitation fell in most areas.

A Look Ahead -- October 1985:

Summer is but a memory as the calendar turns to October. Temperatures drop steadily throughout the month as daylength continues to shorten. Early in October, temperatures remain pleasant at lower elevations. Readings often climb into the 70s during the day and stay above freezing at night. But by the middle of the month a killing freeze normally brings an end to the growing season to even the warmest parts of the state (Grand Junction and the Arkansas Valley). By the end of the month freezing nighttime temperatures are common statewide and daytime temperatures struggle to stay above 60°F. In the mountains it's just plain cold. At Berthoud Pass, for example, October 31 temperatures typically vary from an afternoon high of 38°F to a nighttime low of 15°F. The coldest October temperature officially reported in Colorado in recent years was -14°F at Antero Reservoir on October 25, 1975.

Despite the dropping temperatures, October weather conditions can be just grand. Winds normally remain light and sunshine is abundant, especially in the first half of the month. With low humidity and crisp clear air, working outdoors can be comfortable and invigorating.

Cloud patterns are noticeably different in October than during the summer. The classic towering cumulus clouds that dot the Colorado afternoon skies from May into September become rare in October and are replaced by higher, flatter altocumulus clouds. Wave formations begin to appear in these clouds near the mountains indicating strengthening westerly winds aloft -- a signal of winter's approach.

October marks the beginning of a new water year. It is the month when high elevation snows (above about 10,000 feet) begin to accumulate. It is common for the first widespread major mountain snowstorm of the winter to strike in the middle of October. At lower elevations, especially east of the mountains, Halloween is always a good guess for when the first snowstorm will hit. On the average, October is a relatively dry month statewide. Average precipitation totals for the month range from 0.50"-0.75" across the Eastern Plains to about 1" along the Front Range urban corridor to 1"-2" in the northern and central mountains and then back down to about 1" in the western valleys. The San Juan Mountains are the wettest area of the state in October averaging 2-4" of precipitation. More than 60% of the time October precipitation totals are below average. But the wet years can be very wet. Last year was a good example as many parts of Colorado received from 3 to 6" of precipitation. October 1972 is particularly memorable in southwestern Colorado. Many stations reported their wettest month of all time including Durango (11.79") and Vallecito Dam (12.42").

There Are Better Places To Sell Umbrellas Than Alamosa:

We almost always talk about precipitation in terms of how much falls. For most purposes, that's what matters most. But from a human comfort and enjoyment perspective what leaves a lasting impression is how often it precipitates and at what time of day. For example, even though Orlando, Florida, gets 44" more of rain per year than San Diego, (continued on last page)

AUGUST 1985 DAILY WEATHER

<u>Date</u>	<u>Event</u>
1-2	High humidity. Scattered thunderstorms across much of Colorado. Close to 1" of rain in the Colorado Springs area on the 1st and 1.30" near Hermit on the 2nd. More than 6" of rain fell in about 3 hours in Cheyenne, Wyoming, during the evening of the 1st. The resulting flash flood claimed a dozen lives and caused millions of dollars of damage. The 60,000 foot high storm cloud was visible in Colorado at sunset more than 100 miles away.
3-4	A weak cold front brought much drier air into Colorado and an early end to the summer Southwest Monsoon circulation. Thunderstorm activity occurred in southern Colorado. Springfield reported 0.92" on the 3rd and Campo measured 1.45" the following morning.
5-8	Hot and dry. Readings in the 90s (a few low 100s in the Arkansas Valley) were common at low elevations, but low humidity meant bearable conditions with cool nights. Morning lows in the mountains were near 32°F in many locations throughout the period. Thundershowers developed ahead of an approaching cool front on the 8th over northwestern Colorado and continued overnight over the northern mountains.
9-15	A series of cold fronts brought autumn-like weather to the state. Considerably cooler over parts of northern Colorado on the 9-10. Denver's high on the 9th was only 73°, 21° cooler than the previous day. Frost formed in many mountain valleys on the morning of the 10th. Walden dipped to 26°. A brief warming trend was promptly squashed by another strong cold front on the 11th. Cold rains developed in the northern and central mountains and turned to snow above 11,000 feet. More than 0.50" of rain fell in several mountain locations 11-12th. Taylor Park Reservoir awoke to a 17° temperature on the 13th, the coldest in the state this month. Severe thunderstorms developed in southeastern Colorado late on the 13th and continued into the night. There were numerous reports of hail, and rainfall totals included 1.10" at John Martin Dam and 2.37" at Limon. Low clouds lingered in northeastern Colorado on the 14th holding high temperatures in the 60s and low 70s.
16-30	A great time to be in the mountains. A large stationary high pressure ridge over the western U.S. produced scorching daytime temperatures in Colorado for most of the period. But low humidities and cool nighttime temperatures helped keep Coloradoans cool. Significant thundershower activity was limited to the southern mountains 18-21st and the Eastern Plains mostly 18-19th, although Cheyenne Wells did pick up 1.03" from a late night storm on the 22nd. Temperatures were especially high 25-31st. Numerous records were matched or broken including 95° at Fort Collins and 97° at Denver on the 26th, and 90° at Buena Vista and 101° at Pueblo on the 31st. The 108° reading at Wray on the 31st was the hottest temperature in the state for August. Temperatures even climbed into the 70s as high up as 11,000 feet. Forest and grassland fire danger once again soared and several small fires were ignited.

August 1985 Extremes

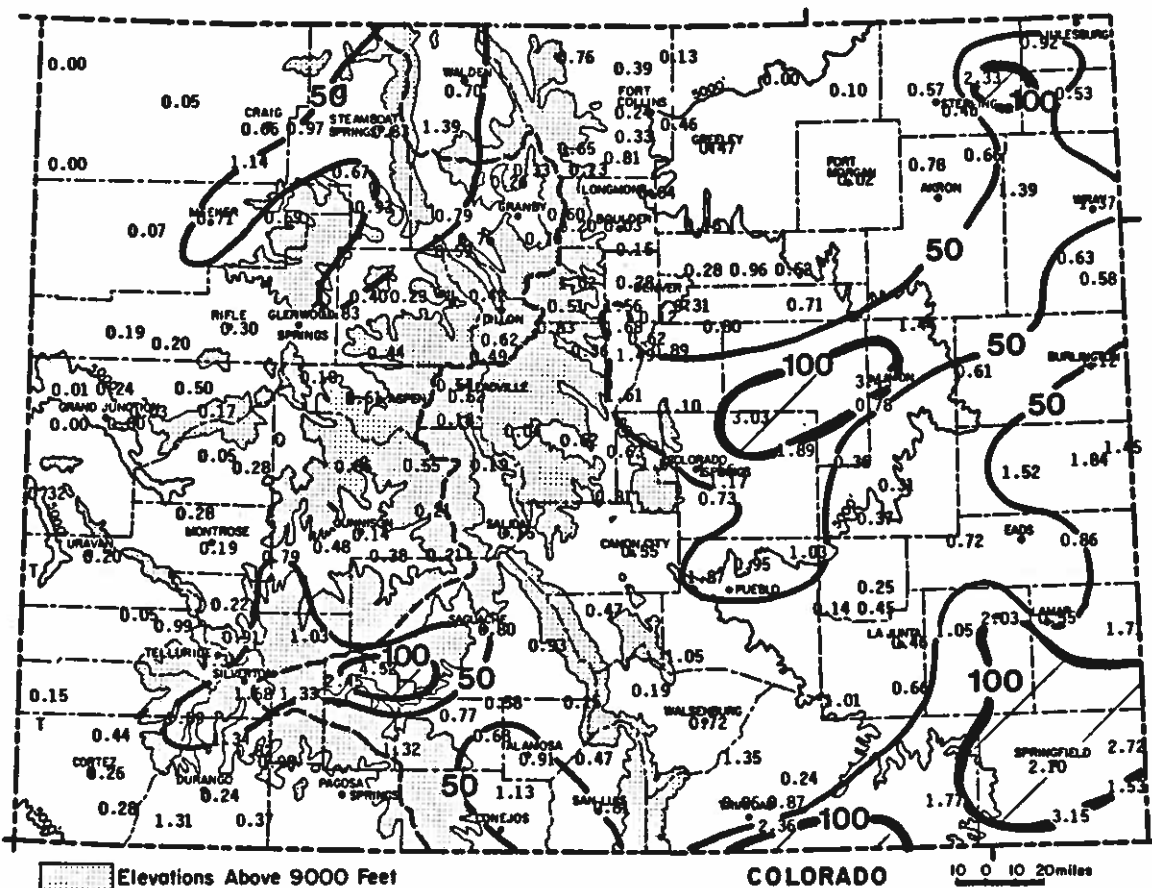
Highest Temperature	108°F	August 31	Wray
Lowest Temperature	17°	August 13	Taylor Park Rsvr
Greatest Total Precipitation	4.52"		Creede 1S
Least Total Precipitation	0.00"		Dinosaur National Monument (and other stations)
Greatest Total Snowfall	0.5"		Climax

AUGUST 1985 PRECIPITATION

In sharp contrast to July, August was considerably drier than average over most of Colorado. A large number of official reporting stations received less than 25% of the August average. The only areas which received above average precipitation were a band from northeast of Colorado Springs to Limon, a tiny area near Creede and Hermit, and parts of Baca, Prowers, Bent and Las Animas counties in southeastern Colorado.

Wet stormy weather in July gave the overall impression that Colorado was in the midst of a wet summer, but in truth the majority of the summer has been very dry. Next month's publication will include a summer and water year wrap-up story.

<u>Greatest</u>		<u>Least</u>	
Creede 1S	4.52"	Dinosaur Natl Monument	0.00"
Limon WSMO	3.45"	Colorado Natl Monument	0.00"
Campo 7S	3.15"	Browns Park Refuge	0.00"
Eastonville 1NNW	3.03"	Briggsdale	0.00"
Walsh	2.72"	Grand Junction 6ESE	0.00"



Precipitation amounts (inches) for August 1985 and contours of precipitation as a percent of the 1961-1980 average.

1985 WATER YEAR PRECIPITATION

Areas with below average precipitation for the first 11 months of the 1985 water year are spreading in northern portions of Colorado. However, the majority of the state continues above average, and water supplies this year have been very good.

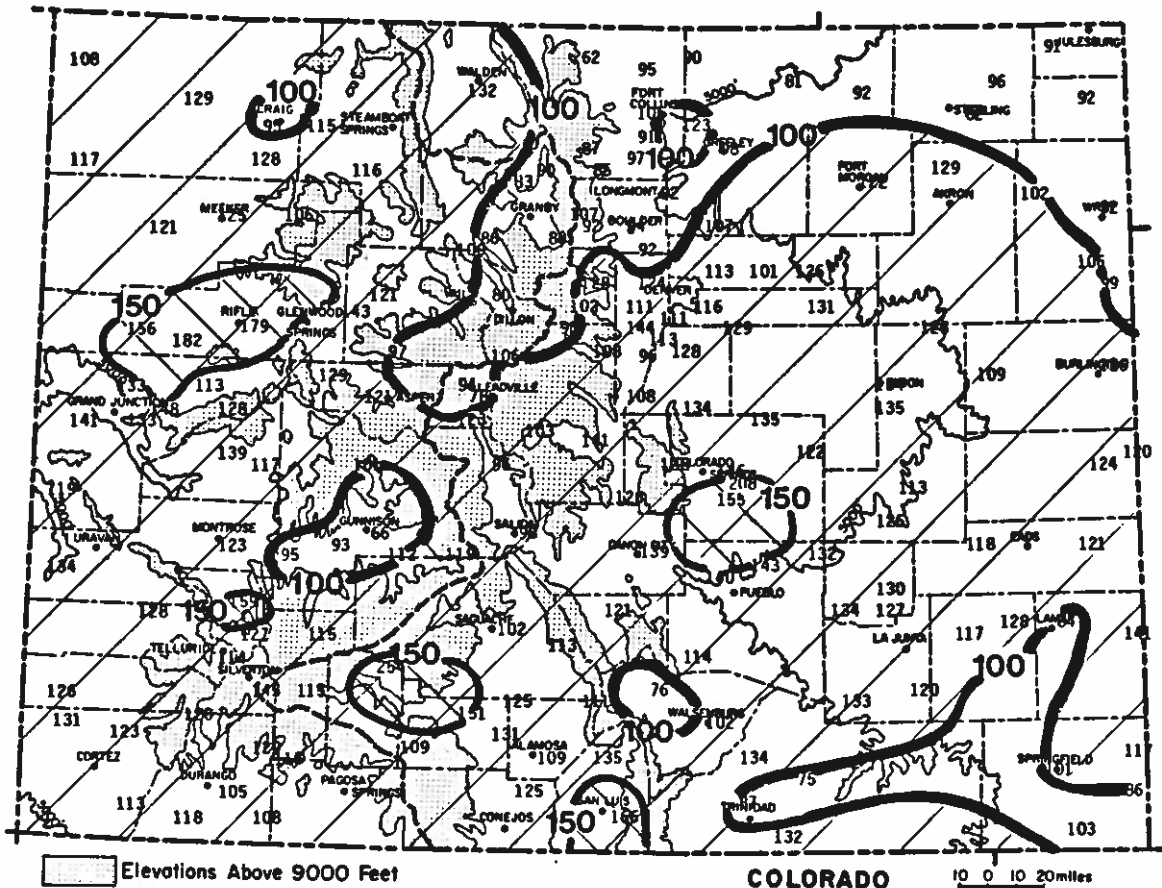
Comparison to Last Year

The 1985 precipitation has not kept pace with the 1984 water year. This year has been noticeably drier in the northern and central mountains and in the eastern foothills. Areas that are wetter than last year include some of the eastern central plains, the Pikes Peak area, and the Rio Grande Valley.

1985 Water Year to Date through August

<u>Wettest (as % of average)</u>			<u>Driest (as % of average)</u>		
Creede 1S	254%	27.06"	Red Feather Lakes	62%	9.80"
Fountain	208%	26.74"	Gunnison	66%	5.83"
Parachute	182%	20.55"	Trinidad FAA	75%	8.94"

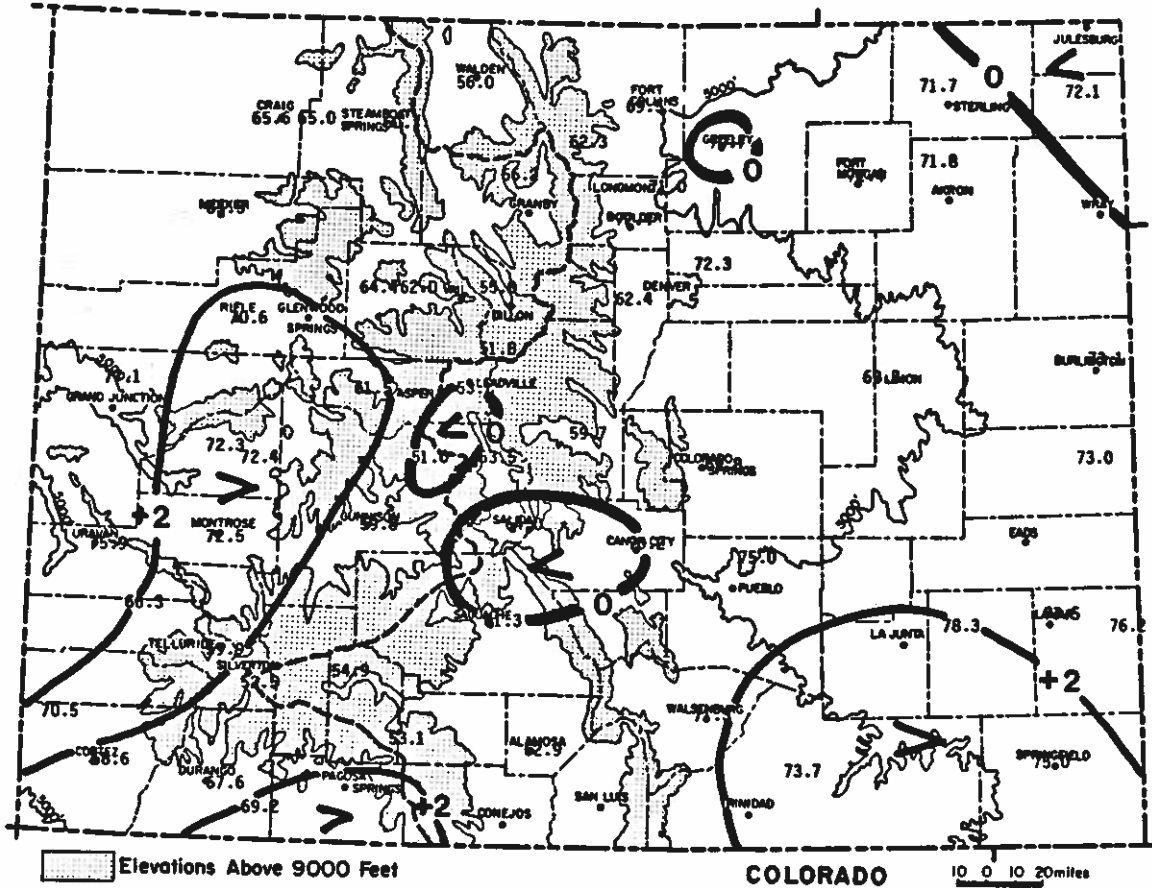
<u>Wettest (total precipitation)</u>			<u>Driest (total precipitation)</u>		
Wolf Creek Pass 1E	42.85"	109%	Gunnison	5.83"	66%
Bonham Reservoir	38.42"	128%	Center 4SSW	7.52"	125%
Mount Evans			Alamosa	7.57"	109%
Research Center	36.57"	128%			



Precipitation for October 1984 through August 1985 as a percent of the 1961-1980 average.

AUGUST 1985 TEMPERATURES
AND DEGREE DAYS

August temperatures on the whole were above average over most of Colorado. The Western Slope and southeastern plains were the warmest areas, relative to average, with August temperatures two to three degrees Fahrenheit warmer than usual. Low humidities and below average cloud cover during August resulted in a larger than average diurnal temperature range. Daily high temperatures were more than four degrees above average at many locations, but nighttime temperatures were actually a little cooler than usual over most of Colorado. Low temperatures below 50° occurred surprisingly often across the northeastern plains. In the mountains, nighttime freezes occurred more often than usual.

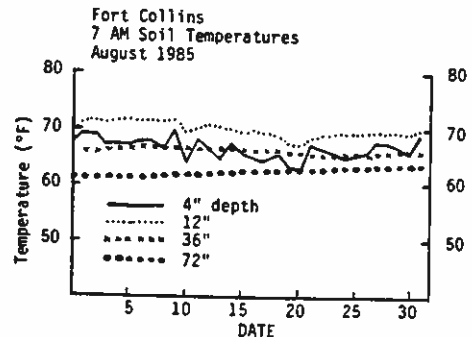


August 1985 temperatures (degrees Fahrenheit) and contours of departures from 1961-1980 averages.

AUGUST 1985 SOIL TEMPERATURES

Soil temperatures in the top 3 feet of soil have reached their summer peaks and are now cooling down. Deep soil temperatures lag several weeks behind and will continue to rise on into autumn.

These soil temperature measurements were taken at Colorado State University beneath sparse unirrigated sod with a flat, open exposure. These data are not representative of all Colorado locations.



AUGUST 1985 CLIMATIC DATA

Eastern Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
STERLING	86.7	56.7	71.7	0.2	99	46	6	221	630	0.57	-1.26	31.1	3
FORT MORGAN	89.3	55.5	72.4	0.5	100	47	2	236	624	0.02	-1.48	1.3	1
AKRON FAA AP	86.3	57.2	71.8	0.7	98	46	11	228	635	0.78	-1.00	43.8	4
HOLYOKE	86.9	57.4	72.1	-0.3	98	47	3	232	649	0.53	-1.40	27.5	6
BURLINGTON	87.0	59.2	73.1	0.4	100	49	5	263	670	1.12	-1.07	51.1	2
LIMON WSMO	84.4	54.2	69.3	0.8	93	46	12	154	589	3.45	1.00	140.8	8
CHEYENNE WELLS	88.9	57.2	73.0	0.3	100	48	2	260	651	1.84	-0.08	95.8	4
LAMAR	92.8	62.2	77.5	1.6	104	53	2	398	738	0.55	-1.39	28.4	4
LAS ANIMAS	95.9	60.6	78.3	2.3	106	53	0	418	727	1.05	-0.38	73.4	5
HOLLY	92.5	59.8	76.2	1.8	9999	50	0	275	556	1.71	-0.16	91.4	3
SPRINGFIELD 7WSW	90.4	59.6	75.0	2.2	99	52	0	317	705	2.10	0.42	125.0	8

Foothills/Adjacent Plains*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	85.2	53.9	69.5	0.8	95	46	8	156	591	0.24	-1.13	17.5	5
GREELEY UNC	88.0	53.4	70.7	-0.2	98	45	6	191	594	0.47	-0.68	40.9	5
ESTES PARK	79.5	45.1	62.3	2.1	87	35	90	13	473	0.65	-1.41	31.6	10
LONGMONT ZESE	87.2	54.8	71.0	1.3	99	48	6	199	606	0.04	-1.13	3.4	2
BOULDER	88.8	55.9	72.4	1.4	96	45	0	234	647	0.03	-1.23	2.4	3
DENVER WSFO AP	87.7	57.0	72.3	1.3	97	49	1	238	645	0.28	-1.25	18.3	6
EVERGREEN	81.0	43.9	62.4	0.9	90	38	90	19	482	1.56	-0.44	78.0	11
LAKE GEORGE BSW	75.7	43.8	59.7	0.9	83	36	155	1	408	0.62	-1.57	28.3	7
COLORADO SPRINGS	84.2	55.4	69.8	1.2	93	50	8	164	601	1.56	-1.25	55.5	8
CANON CITY	87.3	53.2	70.2	-2.9	95	46	6	175	595	0.55	-1.16	32.2	7
PUEBLO WSO AP	91.7	58.3	75.0	0.8	101	52	0	318	686	0.95	-0.85	52.8	7
WALSENBERG	87.2	55.4	71.3	1.9	94	46	0	202	633	0.72	-1.31	35.5	9
TRINIDAD FAA AP	90.0	57.4	73.7	2.2	98	49	0	277	676	0.24	-1.61	13.0	5

Mountains/Interior Valleys*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	76.3	35.7	56.0	0.1	86	25	271	0	415	0.70	-0.50	58.3	8
LEADVILLE 2SW	71.5	34.7	53.1	-1.4	76	27	359	0	341	0.62	-1.38	31.0	8
SALIDA	83.7	44.3	64.0	-0.0	89	32	46	21	524	0.15	-1.37	9.9	4
BUENA VISTA	81.9	45.1	63.5	1.4	90	40	54	14	499	0.19	-1.79	9.6	6
SAGUACHE	77.2	45.4	61.3	-0.0	85	35	111	1	430	0.80	-0.74	51.9	4
HERMIT ZESE	74.2	35.6	54.9	1.1	82	25	305	0	384	2.45	0.33	115.6	4
ALAMOSA WSO AP	80.4	45.5	62.9	0.6	88	37	66	9	481	0.91	-0.33	73.4	4
STEAMBOAT SPRINGS	81.8	39.5	60.7	1.1	89	30	130	3	494	0.83	-0.67	55.3	9
GRAND LAKE 6SSW	73.8	38.5	56.2	-0.0	79	31	265	0	375	0.26	-1.33	16.4	3
DILLON 1E	73.8	36.3	55.0	0.3	80	28	300	0	377	0.42	-1.22	25.6	4
AVON	81.1	42.8	62.0	1.0	88	31	96	10	473	0.23	-0.97	19.2	1
CLIMAX	65.1	38.6	51.8	2.5	71	27	480	0	243	0.49	-1.82	21.2	8
ASPEN 1SW	77.1	46.0	61.5	2.0	84	32	187	5	427	0.61	-1.29	32.1	6
TAYLOR PARK	72.3	29.6	51.0	-3.4	78	17	429	0	352	0.55	-1.30	29.7	2
TELLURIDE	78.9	41.0	59.9	2.0	89	32	152	3	455	1.31	-1.39	48.5	9
SILVERTON	73.1	31.8	52.5	-1.5	82	23	381	0	366	1.48	-1.30	56.4	10
WOLF CREEK PASS 1	67.3	38.9	53.1	1.9	74	34	362	0	275	1.32	-2.60	33.7	8

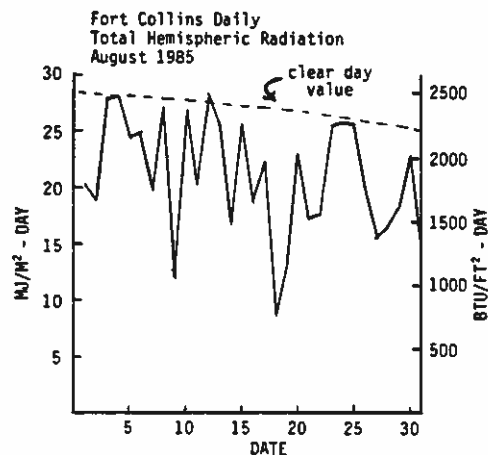
Western Valleys*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
CRAIG 4SW	84.4	46.8	65.6	0.7	93	38	42	66	533	0.66	-0.65	50.4	6
HAYDEN	83.4	46.6	65.0	0.8	90	37	46	53	533	0.97	-0.52	65.1	6
MEEKER NO. 2	84.6	46.3	65.5	0.7	90	35	31	54	547	0.71	-0.45	61.2	4
EAGLE FAA AP	85.4	43.4	64.4	0.6	92	33	52	42	542	0.40	-0.48	45.5	6
RIFLE	90.5	50.8	70.6	2.6	97	39	6	186	599	0.30	-0.74	26.8	3
GRAND JUNCTION WS	92.5	61.7	77.1	1.1	98	48	0	382	746	0.24	-0.52	31.6	3
CEDAREGGE	89.7	54.8	72.3	2.9	95	45	2	234	641	0.05	-1.02	4.7	2
PADRIA 1SW	90.4	54.4	72.4	2.5	95	47	1	236	636	0.28	-0.94	23.0	5
GUNNISON	81.3	38.4	59.8	1.4	88	27	152	0	490	0.14	-1.30	9.7	4
MONTROSE NO. 2	89.3	55.6	72.5	2.9	95	47	0	239	653	0.19	-0.85	18.3	4
URAVAN	93.9	58.0	75.9	1.3	102	47	0	344	689	0.20	-0.99	16.8	1
NORWOOD	83.2	49.3	66.3	2.3	89	41	14	59	537	0.05	-1.58	3.1	1
YELLOW JACKET 2W	87.0	54.0	70.5	2.7	93	49	0	180	619	0.0	-1.70	0.0	0
CORTEZ	86.3	50.9	68.6	-0.8	93	43	4	125	580	0.26	-1.09	19.3	5
DURANGO	86.9	48.3	67.6	1.5	92	40	8	97	559	0.24	-2.07	10.4	6
IGNACIO 1N	89.5	48.8	69.2	3.5	96	44	3	142	566	0.37	-1.33	21.8	8

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

AUGUST 1985 SUNSHINE AND SOLAR RADIATION

Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	19	6	6	--	--
Denver	11	14	6	80%	73%
Fort Collins	8	18	5	--	--
Grand Junction	20	9	2	90%	76%
Pueblo	20	7	4	84%	78%



There Are Better Places To Sell Umbrellas Than Alamosa: (continued)

California, at 8 a.m. you have the same chance of getting wet at either place (4 p.m. is quite a different story).

How does Colorado stack up with the rest of the country? During an average year, Denver receives measurable precipitation (> 0.01 inches) in 367 hours or 4.2% of the total number of hours in a year. San Diego, known for year round sunshine and climatic uniformity, averages just 171 hours of precipitation (2.0%). St. Louis comes in with 462 hours (5.3%), New York City totals 702 hours (8.0%) and Portland, Oregon, gets dribbled with rain for 723 hours in an average year (8.3% of the time).

Colorado gets its fair share of variety right here within the State borders. The Colorado Climate Center has compiled statistics for more than 80 locations where hourly precipitation has been measured to the nearest 0.01" for at least 20 years. Based on frequency of precipitation, the southeastern Colorado plains are the driest in the state receiving measurable precipitation less than 2% of the time (less than San Diego). Frequencies increase as we approach the mountains. The Climax weather station on Fremont Pass receives measurable precipitation 8.3% of the time. So right here in our own state we see the full range of extremes experienced by major population centers across the entire U.S.

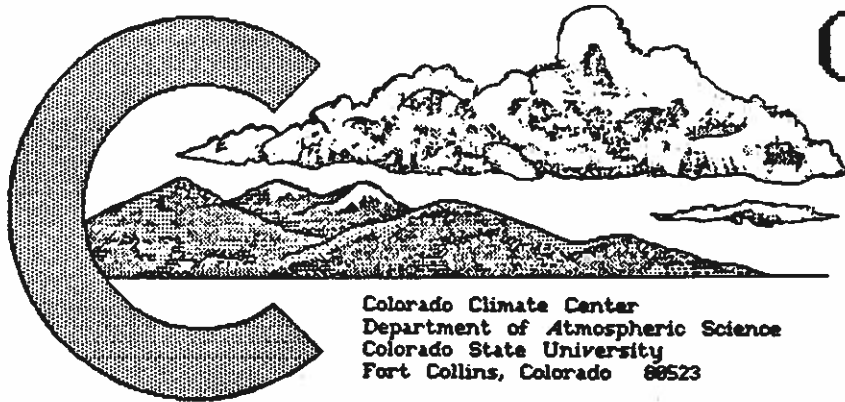
The frequency and timing of precipitation is very complex. In the summer most precipitation in Colorado falls during the afternoon. In the winter this pattern reverses, especially in the mountains. The most likely time to receive snow in many mountain locations is between 2 and 4 a.m. Many factors work together to produce the precipitation patterns we experience. They are all a part of our fascinating climate.

The following table shows the frequency of measurable precipitation for selected locations in Colorado. Some seasonal information is presented for a few sites.

Measurable Precipitation (> 0.01") Statistics for Colorado

(Based on 1953-1972 data)

Station	# Hours Per Year	% of Hours	Percent of Time By Month			
			Jan	Apr	Jul	Oct
Akron	267	3.1%	2.3	4.1	3.1	1.8
Alamosa	188	2.2%	1.8	2.2	3.3	1.9
Burlington	221	2.5%				
Climax	729	8.3%	12.8	11.5	5.3	4.7
Craig	342	3.9%	5.0	5.3	2.5	3.1
Crested Butte	562	6.4%	9.3	8.4	3.4	3.8
Denver	367	4.2%	3.8	6.2	3.2	2.9
Durango	400	4.6%	6.7	4.6	4.3	4.1
Eads	170	1.9%	1.0	2.2	2.7	1.1
Evergreen	329	3.8%				
Fort Collins	294	3.4%				
Grand Junction	243	2.8%	3.8	3.0	1.4	2.4
Grand Lake	436	5.0%				
Greeley	227	2.6%				
Pueblo	233	2.7%				
Springfield	162	1.9%				
Silverton	517	5.9%				
Walsenburg	258	3.0%	2.8	3.8	2.7	2.1
Woodland Park	262	3.0%				



COLORADO CLIMATE

SEPTEMBER 1985

Colorado Climate Center
Department of Atmospheric Science
Colorado State University
Fort Collins, Colorado 80523

September in Review:

Frequent shower activity and an early siege of record-breaking cold and snow characterized September. For the month as a whole temperatures were below average statewide, and most areas of the state were wetter than normal.

A Look Ahead -- November 1985:

Few people choose November as their favorite month. Climate is not the sole reason for this, but it may play a part. Long nights, shortening days, dropping temperatures, more frequent clouds, snow and blustery winds over the mountains and the occasional return of the "brown cloud" of visible pollution over many of the Front Range cities let everyone know that winter is here to stay. This may sound drab, dreary and depressing, but compared to many parts of the country, Colorado's Novembers aren't too bad.

The Continental Divide becomes a distinct line of climatic demarkation during the winter. Cloudiness normally increases along and west of the mountains as the strengthening late autumn jet stream carries Pacific moisture toward Colorado. But even so, Grand Junction still receives 63% of the possible sunshine. November precipitation west of the Divide averages 1 to 2" over most areas but with the higher mountain areas receiving more (typically 2-4") and the lower valleys less (0.5 to 1"). As the upper level westerly winds of winter increase, moisture east of the Continental Divide becomes more scarce. East of the Divide most areas average less than 1" of precipitation with several areas of the northeastern plains, the San Luis Valley, South Park and an area from Pueblo. Colorado Springs and Limon southeastward to near Lamar averaging less than 0.50". Some rain falls at low elevations early in November, but the majority of precipitation statewide falls as snow. Mountain snowpack builds slowly in November but 2 to 4 feet of snow may be on the ground above 11,000 feet by the end of the month.

Temperatures drop sharply through the month. Daily highs still average in the mid and upper 50s early in November at most low elevation locations with a few days in the 60s and even the 70s, but by the end of the month averages are in the mid 40s with a few days at or below 32°. Nighttime temperatures average in the 20s early in the month, but by late November temperatures in the teens become common. Mountain temperatures are, of course, colder with daytime highs mostly in the 30s and 40s dropping to the 20s and 30s late in the month. Lows average in the teens with warmer temperatures occurring during stormy periods but much colder readings occurring with clear, dry weather. Subzero temperature occur infrequently at low elevations (below 6,000 feet) in November, but higher areas near the mountains have seen extreme cold such as Fraser's -37° on November 22, 1957.

November weather is generally not too extreme. Other than the typical wintry weather in the higher mountains, the threatening situations to look out for are "downslope" windstorms along the Front Range and occasional widespread snowstorms such as the pre-Thanksgiving storm of 1979 and the post Thanksgiving storm of 1983. These storms occur infrequently but are actually more likely in November than in December, January or February.

1985 Water Year Wrap-Up: (Special Feature)

See pages 4 and 5.

SEPTEMBER 1985 DAILY WEATHER

A nearly stationary low pressure area aloft lingered near the West Coast throughout the first 15 days of September producing a steady flow of air from the southwest over Colorado. This southwesterly flow brought abundant subtropical moisture into Colorado. The dip in the jet stream began shifting eastward in mid September and gradually moved over Colorado during the last 10 days of the month. As it did, it pulled down cold arctic air which clashed with the warm moist air it was replacing. This produced plenty of clouds and precipitation culminating in a significant late-month snowstorm.

<u>Date</u>	<u>Event</u>
1-4	A weak cold front brought clouds and cooler weather to northeastern Colorado. The rest of the state was unseasonably hot and humid with thunderstorms each day, some of them heavy.
5-9	A clearer, drier period except on the 7th when an upper air disturbance brought widespread clouds, cold rain (in excess of 0.50" in some locations) and high mountain snows to much of southwestern and central Colorado.
9-11	A large high pressure area over the northern plains pushed cool air into eastern Colorado. Widespread rain and low clouds were east of the mountains on the 11th. At the same time a surge of moisture accompanied an upper level disturbance into southwestern Colorado. Most of the state ended up with moderate precipitation but a few local areas were really drenched. Most of the San Juan Mountains received at least 1" of rain. Wolf Creek Pass totalled 2.12" and Creede received 3.19". Canon City measured 1.02" while the Trinidad area received from 1" to 2.50".
12-14	Clearing and dry. The first freeze of autumn in some areas in and near the mountains.
15-18	Sunny, breezy and warm east of the mountains but the mountains and Western Slope received widespread rainfall on the 15th and on the 18th. Some rainfall amounts were again heavy with Creede and Wolf Creek Pass totalling 3.59 and 4.46", respectively, for the period.
19-23	Summer bowed out less than gracefully as a strong cold front crossed the state. Shower activity daily, especially in and near the mountains. Snow in the mountains on the 22nd spread into the lower foothills. Climax and Mount Evans both picked up 10" of snow. Clearing 23rd with the first freeze of the fall over much of northeastern Colorado.
24-25	Another cold front brought strong winds and some mountain snows.
26-30	Briefly warmer on the 26th and 27th before a strong cold front rudely banged into Colorado. Snow developed over most areas from the mountains eastward to Kansas 28-29th as temperatures plummeted into the 20s. Snowfall totals included 4" at Fort Collins, 7" at Fort Morgan, Evergreen and Akron, 9" at Denver and 11" at Boulder. Even Las Animas totalled 1". Temperatures hovered near or below freezing on the 29th and dropped to record shattering lows in the teens and low 20s across most of the Eastern Plains on the 29th and 30th. Red Feather Lakes reported -2°F on the 30th for the state's coldest temperature. <u>All told, it was the coldest siege of September weather ever to hit eastern Colorado in recorded history.</u>

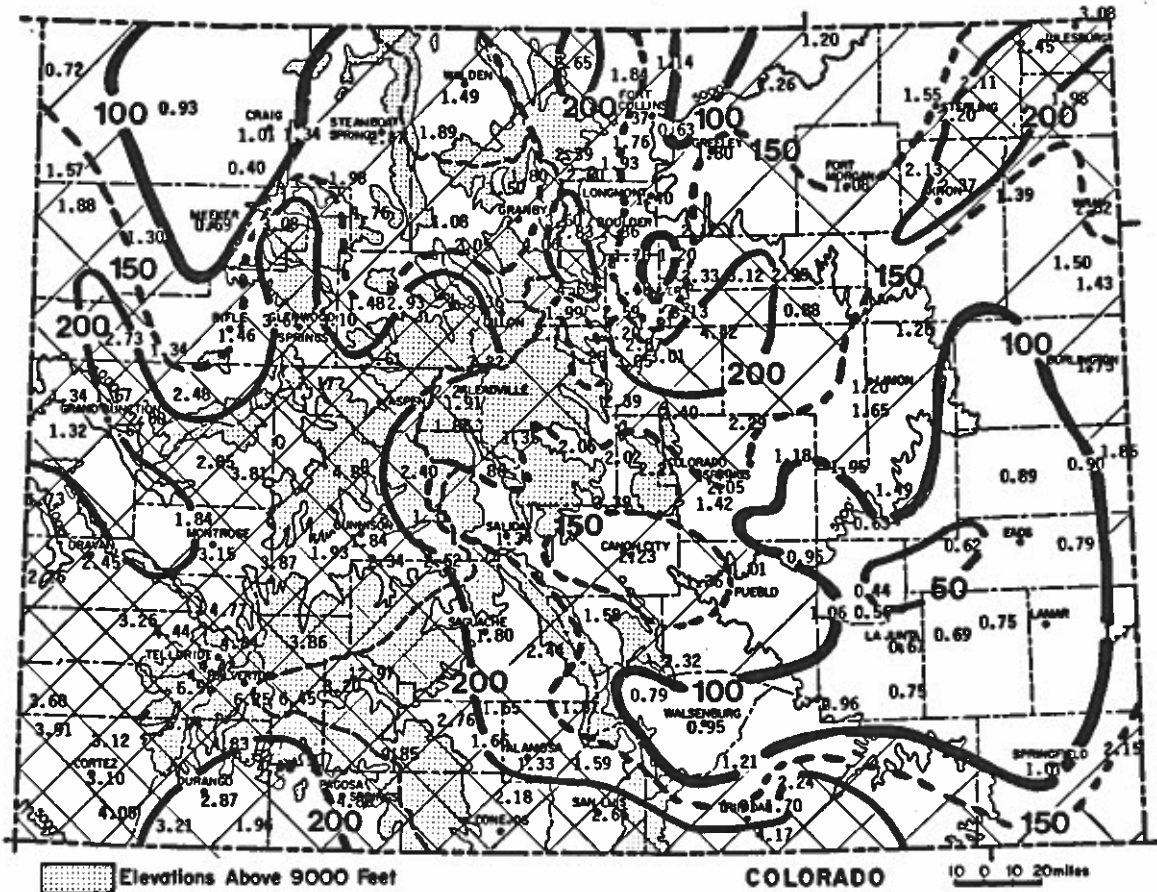
September 1985 Extremes

Highest Temperature	105°F	September 1	La Junta 20S
Lowest Temperature	-2°F	September 30	Red Feather Lakes 2SE
Greatest Total Precipitation	12.97"		Creede 1S
Least Total Precipitation	0.40"		Hamilton
Greatest Total Snowfall	35"		Mount Evans Research Center

SEPTEMBER 1985 PRECIPITATION

Colorado precipitation in recent months has been on a roller coaster ride of alternating very wet and very dry periods. September was another wet one with much of the state well above average and many stations receiving measurable precipitation on 10 to 20 days. The wettest areas included the southern and central mountains and a narrow band northeastward from South Park to Julesburg. Most of these areas received at least double their average September precipitation. Creede was deluged by nearly 13" of rain, 10 times their average. As usual, parts of the state were missed by the storms. A small area in northwestern Colorado near Craig, Maybell and Meeker was below average along with a sizable portion of southeastern Colorado.

<u>Greatest</u>		<u>Least</u>	
Creede 1S	12.97"	Hamilton	0.40"
Wolf Creek Pass 1E	9.85"	Ordway 2ENE	0.44"
Redstone 4W	7.17"	Rocky Ford 2SE	0.56"
Trout Lake	6.55"	Haswell	0.62"
Rio Grande Reservoir	6.45"	Ordway 21N	0.63"



Precipitation amounts (inches) for September 1985 and contours of precipitation as a percent of the 1961-1980 average.

1985 WATER YEAR WRAP-UP

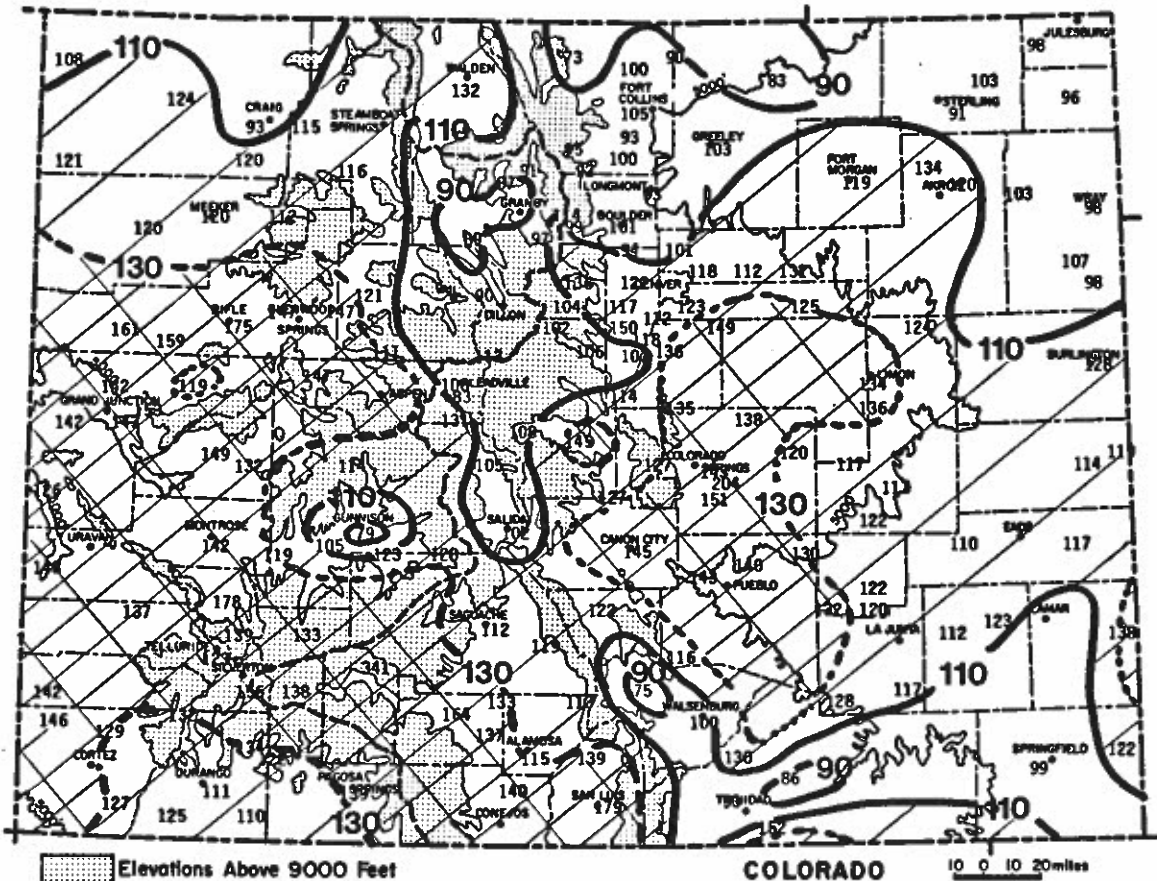
Most of Colorado was wetter than average for the recently completed 1985 water year (October 1984-September 1985). Much of west central and southwestern Colorado was 40 to 60% above average. Based on past records, this much precipitation falls in one year an average of only once in 10 to 30 years. Also excessively wet compared to average was the area from central Arapahoe County southward to just east of Walsenburg, including the cities of Pueblo and Colorado Springs. The Fountain weather station southeast of Colorado Springs totalled 28.79" for the year shattering their previous record year, 1965.

There were a few areas with near and slightly below average precipitation for the water year. These included portions of the central and northern mountains from Leadville to Granby, much of the northern Front Range and the perimeter counties of northeastern Colorado. A narrow band in southeastern Colorado including Walsenburg, Trinidad, Lamar and Springfield was also near or slightly below average.

1985 Water Year Statistics

<u>Wettest (as % of average)</u>			<u>Driest (as % of average)</u>		
Creede 1S	341%	40.03"	Red Feather Lakes	73%	12.45"
Fountain	204%	28.79"	Redwing 1WSW	75%	10.53"
Ridgway	178%	22.51"	Gunnison	79%	7.67"

<u>Wettest (total precipitation)</u>			<u>Driest (total precipitation)</u>		
Wolf Creek Pass 1E	52.70"	122%	Gunnison	7.67"	79%
Mount Evans			Browns Park Refuge	8.78"	108%
Research Center	41.26"	136%	Alamosa	8.90"	115%
Creede 1E	40.03"	341%			



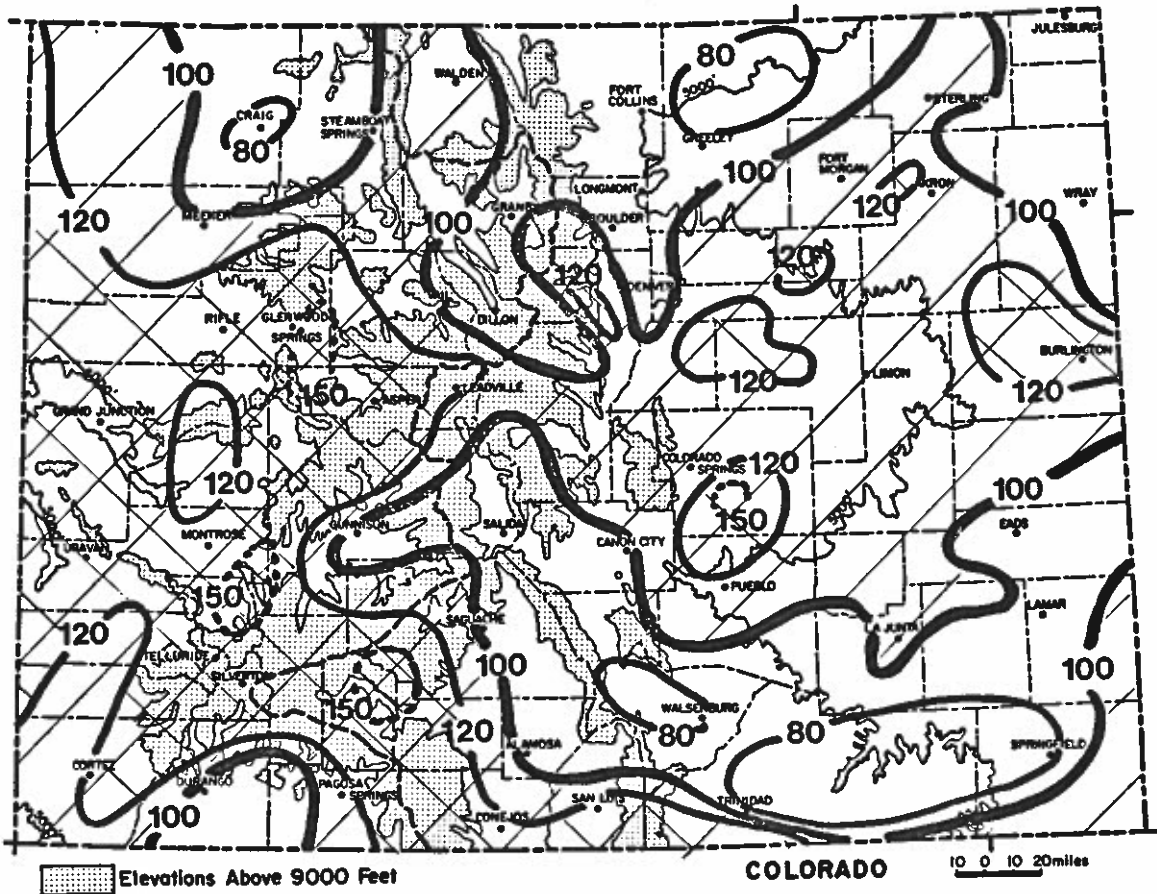
Precipitation for the complete 1985 Water Year (October 1984 through September 1985) as a percent of the 1961-1980 average.

1985 Water Year Wrap-Up (Continued)

The 1985 water year began with a cold, stormy October and ended with a similarly (but not as extreme) cold and wet September. Sandwiched between was a mild and fairly dry late fall and early winter, followed by a period of severe cold in late January and early February. The months of March through May were warmer than average across all of Colorado with above average precipitation across most of the mountains and western valleys and adequate moisture over most of the Eastern Plains. The summer months, June, July and August, were warmer than average across southern and western Colorado and slightly cooler than average in the northeast. The summer was unusually dry with less thunderstorm activity than normal. However, a barrage of storms in the last half of July offset much of the dryness of the rest of the summer.

Precipitation for the May through September growing season was actually quite close to average over most of the state. Significantly wetter than normal conditions were reported over west central Colorado, the San Juan Mountains and a few small areas east of the mountains. Drier than average conditions were noted in parts of Weld, Huerfano and Las Animas counties and in a small portion of northwestern Colorado.

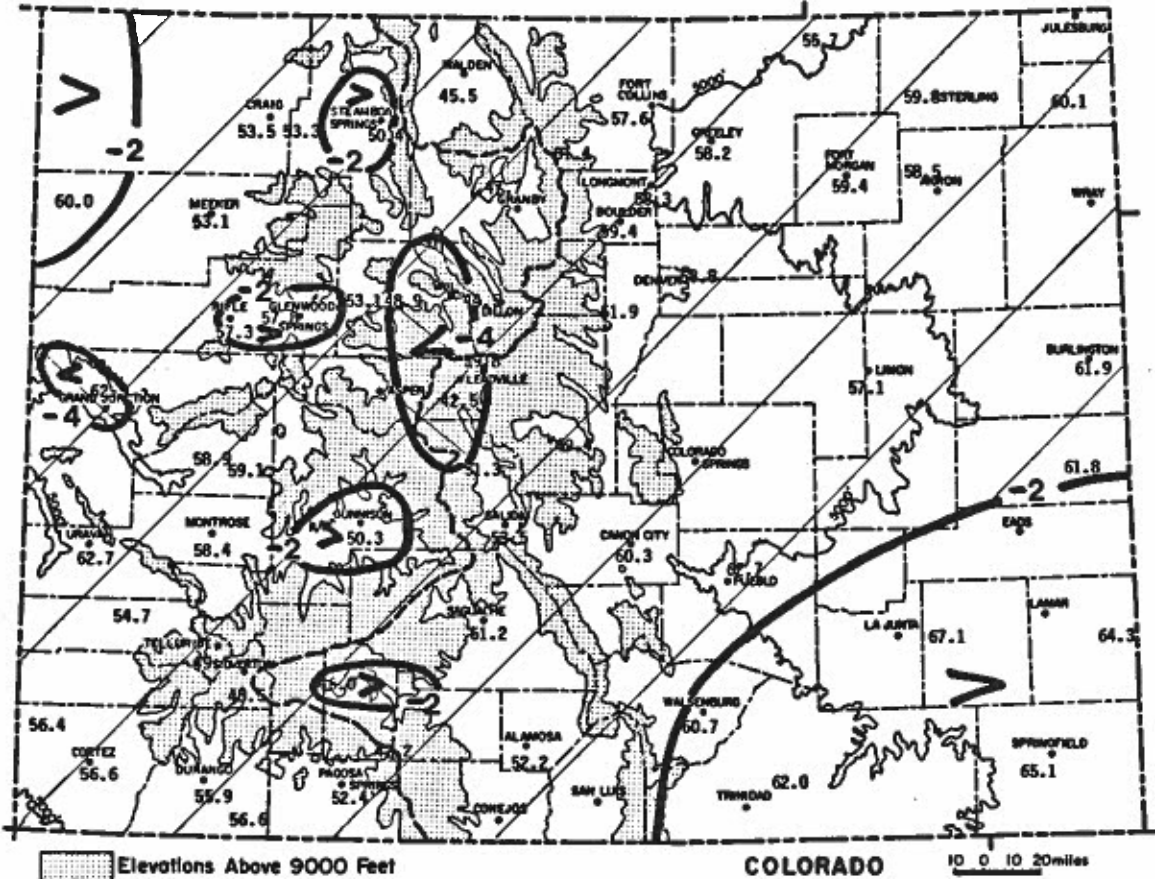
Special Note: The 1985 Water Year was the 4th consecutive wetter than average year over the majority of the state. Consecutive wet years, especially in the mountains where most of our surface water supplies originate, should be viewed as a blessing and not taken for granted. This has been a very unusual period in Colorado's recent history and is not likely to continue much longer.



Growing season (May-September 1985) precipitation as a percent of the 1961-1980 average.

SEPTEMBER 1985 TEMPERATURES
AND DEGREE DAYS

Early September temperatures were warmer than average. Unseasonably cold temperatures in the last 10 days of the month more than offset the early warmth resulting in below normal temperatures for the entire state. Most of the state ended up 2 to 4 degrees Fahrenheit colder than average. The Grand Junction area and a few locations in the Central Mountains were even colder. Only southeastern Colorado remained near average for September. This was the third consecutive year with abnormally early freezing temperatures across most of Colorado's agricultural areas. This year's record-shattering cold wave in late September even damaged some cold-hardy crops.



September 1985 temperatures (degrees Fahrenheit) and contours of departures from 1961-1980 averages.

SEPTEMBER 1985 SOIL TEMPERATURES

Soil temperatures near the surface normally drop steadily during September. This year the drop was particularly sharp. Early cold does not foretell abnormally deep frost penetration later in the winter.

These soil temperature measurements were taken at Colorado State University beneath sparse unirrigated sod with a flat, open exposure. These data are not representative of all Colorado locations.

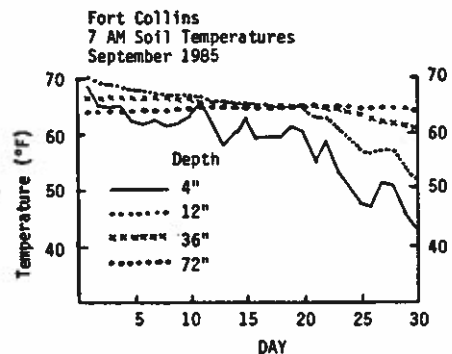


Table 1. Colorado Heating Degree Day Data through September 1985.

HEATING DEGREE DATA		HEATING DEGREE DATA												HEATING DEGREE DATA														
STATION		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANN	
ALAMOSA	AVE	40	100	303	657	1074	1457	1519	1182	1035	732	453	165	8717	214	254	468	775	1128	1473	1593	1369	1318	951	654	384	10591	
	84-85	11	56	252	748	1051	1382	1462	1208	936	625	415	146	8292	84-85	155	213	435	868	1096	1428	1662	1498	1238	832	610	361	10416
	85-86	30	66	378										474	85-86	206	265	513									984	
ASPEN	AVE	95	150	348	651	1029	1339	1376	1162	1116	798	524	262	8850	AVE	0	0	149	450	861	1128	1240	946	856	522	238	52	6442
	84-85	87	134	345	683	1034	1282	1415	1293	1047	726	492	223	8961	84-85	0	0	213	769	1107	1305	1096	719	391	162	41	6404	
	85-86	119	107											226	85-86	0	6	249									255	
BOULDER	AVE	0	6	130	357	714	908	1004	804	775	483	220	59	5460	AVE	111	188	393	719	1119	1590	1714	1422	1231	816	543	276	10122
	84-85	0	1	171	599	716	938	1162	969	717	385	174	38	5890	84-85	64	143	372	850	1072	1381	1593	1426	1065	699	495	203	9363
	85-86	0	0	222										222	85-86	84	152	433									669	
BUENA VISTA	AVE	47	116	285	577	936	1184	1218	1025	983	720	459	184	7734	AVE	0	0	45	296	729	998	1101	820	698	348	102	9	5146
	84-85	16	91	284	828	949	1169	1338	1084	956	646	422	130	7913	84-85	0	0	132	479	653	916	1204	948	566	257	72	7	5254
	85-86	63	54	405										522	85-86	0	0	134									134	
BURLING- TON	AVE	6	5	108	364	762	1017	1110	871	803	459	200	38	5743	AVE	272	337	522	817	1173	1435	1473	1318	1320	1038	726	439	10870
	84-85	0	0	148	493	699	960	1207	1012	886	347	145	50	5767	84-85	308	366	536	1074	1217	1434	1577	1418	1291	967	737	440	11365
	85-86	0	5	206										211	85-86	333	359	686									1358	
CANON CITY	AVE	0	9	81	301	639	831	911	734	707	411	179	33	4836	AVE	8	5	144	448	834	1070	1156	960	936	570	299	100	6531
	84-85	0	0	175	561	702	841	1069	958	676	362	174	40	5558	84-85	1	1	230	694	852	1072	1297	1133	868	496	254	100	6998
	85-86	0	6	186										192	85-86	1	12	274									287	
COLORADO SPRINGS	AVE	8	25	162	440	819	1042	1122	910	880	564	296	78	6346	AVE	0	6	162	453	843	1082	1194	938	874	546	256	78	6432
	84-85	0	6	200	664	791	962	1233	1077	830	481	246	77	6607	84-85	0	2	237	679	812	1078	1287	1147	743	400	170	42	6598
	85-86	5	8	253										266	85-86	0	6	236									242	
CORTEZ	AVE	0	11	115	434	813	1132	1181	921	828	555	292	68	6360	AVE	28	56	261	564	927	1340	1345	1066	998	651	394	164	7714
	84-85	0	0	108	666	839	1072	1173	1085	827	511	289	66	6638	84-85	1	17	228	680	907	1250	1392	1217	963	581	360	116	7722
	85-86	0	4	264										288	85-86	6	31	358									395	
CRAIG	AVE	32	75	275	608	986	1342	1479	1193	1094	687	419	193	8326	AVE	82	113	297	608	981	1305	1380	1123	1025	732	487	233	8367
	84-85	15	23	304	795	1002	1424	1609	1432	1063	611	375	132	8781	84-85	4	39	245	782	970	1190	1305	1207	971	626	438	173	7850
	85-86	10	42	353										465	85-86	0	0	211									211	
DELTA	AVE	0	0	94	384	813	1135	1197	890	753	429	167	31	5803	AVE	0	10	135	437	837	1159	1218	941	818	522	264	69	6400
	84-85	0	11	113	467	713	969	1047	938	683	353	132	5372	84-85	0	8	102	604	791	1064	1161	1095	741	438	178	31	8213	
	85-86	0	1	241										113	85-86	0	0	211									211	
DENVER	AVE	0	0	135	414	789	1004	1101	879	837	528	253	74	6014	AVE	0	0	89	346	744	998	1091	834	756	421	163	23	5465
	84-85	0	1	183	622	753	990	1213	1040	742	412	167	42	6165	84-85	0	0	127	474	713	907	1208	999	664	326	125	9	5552
	85-86	0	1	241										242	85-86	0	0	172									172	
DILLON	AVE	273	332	513	805	1167	1435	1516	1305	1296	972	704	435	10754	AVE	6	24	177	499	876	1249	1321	1002	856	555	288	82	6945
	84-85	246	301	510	1004	1161	1360	1581	1449	1219	874	667	404	10795	84-85	0	1	131	622	829	1134	1246	1124	804	472	228	47	6638
	85-86	260	300	609										1169	85-86	1	6	232									239	
DURANGO	AVE	9	34	193	493	837	1153	1218	958	862	600	366	125	6848	AVE	113	169	390	704	1101	1476	1541	1277	1184	810	533	297	9595
	84-85	0	6	124	695	866	1074	1146	1098	831	494	319	59	6622	84-85	82	103	397	834	1047	1419	1611	1433	1077	730	8733	8733	
	85-86	3	8	274										285	85-86	57	130	434									621	
EAGLE	AVE	33	80	288	626	1026	1407	1448	1148	1014	705	431	171	8377	AVE	0	6	157	462	876	1163	1274	966	896	528	235	51	6614
	84-85	1	27	252	741	998	1300	1435	1219	910	602	381	103	7969	84-85	0	0	189	552	784	1140	1260	1160	678	148	71	236	
	85-86	19	52	356										427	85-86	0	6	230									236	
EVER-GREEN	AVE	59	113	327	621	916	1135	1199	1011	1009	730	489	218	7827	AVE	163	223	396	676	1026	1293	1339	1151	1141	849	589	318	9164
	84-85	21	68	326	826	874	1088	1329	1123	928	616	448	165	7812	84-85	99	165	337	867	984	1185	1335	1179	1020	723	550	224	8668
	85-86	62	90	387										736	85-86	121	152	463									736	
FORT COLLINS	AVE	5	11	171	468	846	1073	1181	930	877	558	281	82	6483	AVE	0	0	86	359	738	973	1051	846	781	468	207	35	5544
	84-85	0	0	193	606	745	1027	1245	1077	734	389	167	61	6244	84-85	0	0	138	507	652	891	1225	935	658	366	159	25	5556
	85-86	1	8	243										252	85-86	0	0	175									175	
FORT MORGAN	AVE	0	6	140	438	867	1156	1263	969	874	516	224	47	6520	AVE	198	285	501	822	1170	1457	1535	1313	1277	915	642	351	10466
	84-85	0	0	185	564	784	1168	1329	1125	687	396	135	57	6429	84-85	122	184	448	942	1130	1389	1652	1358	1138	8			

S E P T E M B E R 1 9 8 5 C L I M A T I C D A T A

Eastern Plains*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
KAUFFMAN 4SSE	70.2	41.2	55.7	-3.8	89	14	303	33	340	1.20	0.03	102.6	6
STERLING	74.1	45.4	59.8	-1.4	98	14	230	79	396	1.55	0.45	140.9	9
FORT MORGAN	75.1	43.6	59.4	-2.8	102	11	239	78	400	1.08	-0.10	91.5	10
AKRON FAA AP	70.9	46.2	58.5	-3.2	91	17	265	79	383	2.13	1.05	197.2	12
HOLYOKE	72.4	47.9	60.1	-2.7	90	18	234	95	413	1.98	0.69	153.5	14
BURLINGTON	74.6	49.2	61.9	-2.2	95	20	206	119	438	1.75	0.25	116.7	8
LIMON WSMO	71.0	43.1	57.1	-2.6	89	17	274	46	365	1.20	0.30	133.3	11
CHEYENNE WELLS	77.5	46.2	61.8	-2.2	92	18	207	119	452	0.90	-0.89	50.3	6
LAS ANIMAS	83.7	50.5	67.1	-0.2	101	22	134	204	522	0.69	-0.35	66.3	6
HOLLY	81.3	47.4	64.3	-1.1	103	19	175	161	474	1.71	0.16	110.3	5
SPRINGFIELD 7WSW	80.4	49.9	65.1	-0.2	96	21	143	157	507	1.01	-0.16	86.3	11

Foothills/Adjacent Plains*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
FORT COLLINS	71.1	44.1	57.6	-2.4	86	18	243	28	360	1.37	0.13	110.5	11
GREELEY UNC	72.1	44.3	58.2	-4.0	88	17	249	53	376	1.80	0.67	159.3	10
ESTES PARK	63.8	39.0	51.4	-1.9	87	13	410	8	248	2.39	1.04	177.0	11
LONGMONT 2ESE	72.3	44.3	58.3	-2.3	89	18	236	44	378	1.40	-0.03	97.9	11
BOULDER	73.4	45.5	59.4	-3.2	87	15	222	63	409	2.86	1.00	153.8	13
DENVER WSFO AP	71.5	46.1	58.8	-3.1	87	17	241	63	388	2.33	0.95	168.8	9
EVERGREEN	67.1	36.7	51.9	-2.0	80	8	387	0	285	2.59	1.14	178.6	13
LAKE GEORGE 8SW	63.1	35.6	49.4	-2.4	81	16	461	1	217	2.06	0.98	190.7	9
CANON CITY	74.7	46.0	60.3	-4.4	95	25	186	51	409	2.23	1.14	204.6	10
PUEBLO WSO AP	77.0	48.4	62.7	-2.9	95	27	172	114	455	1.01	0.12	113.5	7
WALSENBERG	75.4	45.9	60.7	-1.8	86	21	165	45	433	0.95	-0.27	77.9	6
TRINIDAD FAA AP	77.3	46.7	62.0	-1.6	92	24	175	96	461	2.24	1.17	209.3	8

Mountains/Interior Valleys*

Name	Temperature					Degree Days			Precipitation				
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
WALDEN	61.3	29.7	45.5	-2.6	81	8	578	0	198	1.49	0.37	133.0	12
LEADVILLE 2SW	57.0	27.9	42.5	-5.5	72	14	666	0	135	1.91	0.61	146.9	18
SALIDA	69.6	37.4	53.5	-3.4	86	21	342	2	304	1.34	0.42	145.7	8
BUENA VISTA	67.7	35.0	51.3	-3.8	81	20	405	0	279	1.86	0.81	177.1	8
SAGUACHE	66.1	36.4	51.2	-2.9	83	21	408	1	250	1.80	0.85	189.5	7
HERMIT 7ESE	62.8	29.2	46.0	-1.4	75	11	565	0	200	3.20	1.77	223.8	4
ALAMOSA WSO AP	69.1	35.3	52.2	-2.5	84	15	378	0	295	1.33	0.50	160.2	8
STEAMBOAT SPRINGS	67.0	33.8	50.4	-1.2	81	13	434	2	267	2.37	0.77	148.1	15
GRAND LAKE 6SSW	61.0	34.4	47.7	-1.3	77	15	513	0	183	1.50	0.26	121.0	14
DILLON 1E	59.8	29.1	44.5	-3.5	79	15	609	0	181	2.36	1.02	176.1	16
AVON	44.7	33.0	48.9	-4.6	85	18	478	2	241	2.93	1.73	244.2	9
CLIMAX	51.8	27.8	39.8	-3.1	71	8	749	0	84	3.22	1.66	206.4	11
TELLURIDE	64.7	34.2	49.5	-2.0	77	18	463	0	228	4.42	2.28	206.5	17
PAGOSA SPRINGS	69.6	35.2	52.4	-2.2	90	21	376	6	298	4.88	2.78	232.4	13
SILVERTON	60.1	27.0	43.5	-4.3	79	11	636	0	166	6.25	3.71	246.1	19
WOLF CREEK PASS 1	53.0	31.4	42.2	-3.0	75	17	677	0	78	9.85	5.86	246.9	13

Western Valleys*

Name	Temperature						Degree Days			Precipitation			
	Max	Min	Mean	Dep	High	Low	Heat	Cool	Grow	Total	Dep	%Norm	# days
CRAIG 4SW	69.4	37.6	53.5	-2.6	90	16	353	15	307	1.01	-0.15	87.1	10
HAYDEN	68.6	38.0	53.3	-2.3	83	14	352	7	295	1.34	0.13	110.7	11
NEEKER NO. 2	70.3	35.9	53.1	-3.9	86	17	358	7	314	0.69	-0.33	67.6	5
RANGELY 1E	75.9	44.2	60.0	-0.2	94	26	180	37	412	1.88	0.79	172.5	8
EAGLE FAA AP	69.3	36.8	53.1	-2.2	89	21	356	5	299	1.48	0.30	125.4	11
GLENWOOD SPRINGS	73.3	42.3	57.8	-0.9	86	30	223	12	366	3.61	2.02	227.0	16
RIFLE	73.3	41.2	57.3	-1.9	90	22	232	8	359	1.46	0.38	135.2	9
GRAND JUNCTION WS	74.8	49.9	62.3	-4.4	91	32	139	67	430	1.67	0.95	231.9	11
CEDAREGGE	73.4	44.5	58.9	-2.4	93	27	201	28	377	2.85	1.66	239.5	11
PAGNIA 1SW	73.7	44.5	59.1	-2.9	94	31	199	29	373	3.81	2.46	282.2	13
GUNNISON	68.8	31.9	50.3	-1.0	81	14	433	0	290	1.84	0.93	202.2	16
MONTROSE NO. 2	73.1	43.7	58.4	-2.7	92	29	211	22	363	3.15	1.98	269.2	14
URAJAN	78.0	47.3	62.7	-3.1	100	31	129	65	440	2.45	1.38	229.0	11
NORWOOD	68.8	40.6	54.7	-1.8	82	23	307	4	298	3.26	1.66	203.8	10
YELLOW JACKET 2W	68.9	43.8	56.4	-3.9	86	29	263	10	300	3.91	2.53	283.3	12
CORTEZ	72.4	40.9	56.6	-4.6	91	28	264	19	345	3.10	1.90	258.3	16
DURANGO	71.9	39.9	55.9	-2.6	88	24	274	8	340	2.87	1.14	165.9	12
IGNACIO IN	73.8	39.5	56.6	-1.2	93	21	260	16	363	1.96	0.43	128.1	8

* Data are received by the Colorado Climate Center for more locations than appear in these tables. Please contact the Colorado Climate Center if additional information is needed.

SEPTEMBER 1985 SUNSHINE AND SOLAR RADIATION

Station	Number of Days			% of possible sunshine	average % of possible
	clear	partly cloudy	cloudy		
Colorado Springs	11	7	12	--	--
Denver	11	7	12	63%	75%
Fort Collins	9	7	14	--	--
Grand Junction	11	11	8	74%	79%
Pueblo	11	7	12	71%	80%

