U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
ENVIRONMENTAL DATA SERVICE
IN COOPERATION WITH EMPLOYMENT DEVELOPMENT DIVISION
UTAH DEPARTMENT OF EMPLOYMENT SECURITY
CLIMATOGRAPHY OF THE UNITED STATES NO. 20-42

CLIMATOLOGICAL SUMMARY

STATION **Bryce Canyon National Park**

LATITUDE 37° 38'
LONGITUDE 120° 10
ELEV. (GROUND) 8,000

MEANS AND EXTREMES FOR PERIOD 1943-1970 Temp. 1941-1970 Precipitation

Month	Temperature (°F) Means: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Year	Record lowest	Year	** Mean degree days	Precipitation Totals (Inches): Mean	Greatest daily	Year	Snow, Sleet: Mean	Maximum monthly	Year	Greatest daily	Year	Mean number of days: Precip. .10 inch or more	Temperatures: Max. 90° and above	Max. 32° and below	Min. 32° and below	Min. 0° and below	Month
(a)	28	28	28	28		28		28	30	30		30	30		30		30	28	28	28	28	
Jan.	35.6	7.5	21.6	58	1969	-26	1963	1318	1.28	2.08	1943	19.7	63.0	1949	22	1943	4	0	11	31	8	Jan.
Feb.	38.8	10.5	24.7	60	1943	-29	1949	1130	1.21	1.50	1969	16.7	39.0	1944	17	1944	4	0	7	28	5	Feb.
Mar.	43.6	14.9	29.2	67	1966	-13	1952	1107	1.42	1.12	1954	21.2	74.5	1952	20	1952	4	0	4	31	2	Mar.
Apr.	54.0	23.1	38.6	81	1943	- 5	1945	805	1.19	1.19	1965	9.0	61.8	1965	13	1965	3	0	*	28	0	Apr.
May	63.9	29.8	47.1	85	1951	5	1951	557	.85	1.02	1964	2.2	17.5	1965	12	1964+	3	0	0	21	0	May
June	73.8	37.2	55.5	93	1954	20	1955	268	.73	1.51	1949	.4	6.0	1949	5	1954	2	*	0	7	0	June
July	80.3	45.3	62.8	92	1958	28	1955	82	1.30	.95	1953	0	T	1954	T	1951+	4	1	0	*	0	July
Aug.	77.2	44.2	60.7	92	1954	23	1962	140	2.41	3.81	1947	0	T	1953	T	1951+	6	*	0	1	0	Aug.
Sept.	71.5	36.0	53.9	90	1950	18	1970	342	1.50	3.42	1953	.2	4.0	1953	4	1949	3	0	0	10	0	Sept.
Oct.	59.7	26.9	43.3	82	1951	3	1961	664	1.50	1.67	1946	3.7	21.5	1948	11	1948	3	0	*	25	0	Oct.
Nov.	45.7	16.4	31.1	68	1949	-19	1952	1001	1.05	1.04	1960	10.1	22.0	1951	11	1946	3	0	3	29	1	Nov.
Dec.	38.8	10.2	23.9	60	1950	-22	1962	1275	1.39	1.39	1967	18.8	46.7	1967	13	1967+	4	0	9	31	5	Dec.
Year	56.9	25.2	41.0	93	1954	-29	1949	8689	15.83	2.08	1943	102.0	74.5	Mar. 1952	22	Jan. 1943	43	1	34	242	21	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F

+ Also on earlier dates, months, or years.

* Less than one half.

CLIMATE OF BRYCE CANYON NATIONAL PARK

Bryce Canyon National Park is located along the east rim of the Paunsaugunt Plateau. The plateau portion of the park ranges in elevation from about 7300 feet at the park entrance to 9105 feet at Rainbow Point. The canyon, however, drops off rapidly to an elevation of 6600 feet along the eastern boundary of the park.

These large elevation changes have a marked influence on the general climate of the area. The average annual precipitation in the park, for example, ranges from near 16 inches at Rainbow Point to 12 inches at the lower elevations in the canyon. Average annual temperatures range from near 40°F in the colder localities on the plateau to the upper 40's at lower elevations.

Winters are cold with an average of 21 days with below zero minimums at park headquarters. Daytime maximums, however are usually above freezing. Summers, by contrast, feature mild daytime temperatures with maximums in the upper 70's or low 80's. Nights are cool with minimums dropping to the mid or low 40's.

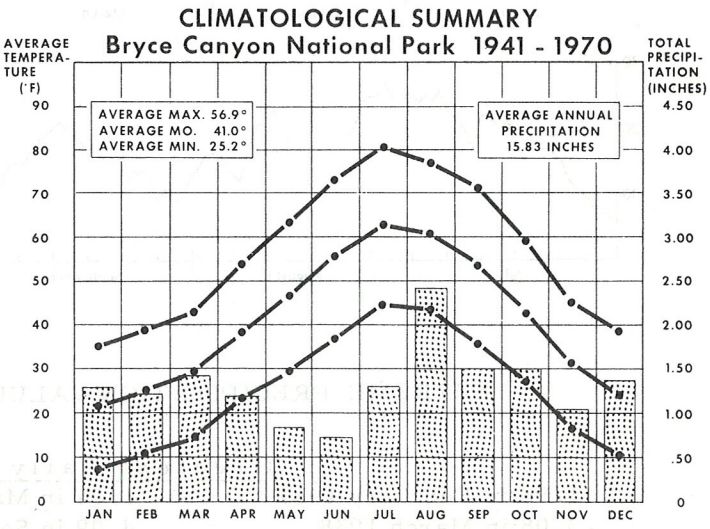
Precipitation is fairly evenly distributed throughout the year. Twenty-five per cent of the moisture falls as snow (about 120 inches) during the winter season as the tail ends of Pacific storm fronts sweep across the plateau. About 22% of the annual precipitation occurs during the three spring months and about 1.3 of the annual moisture is associated with the Summer thunderstorms during July, August and September. The remaining 20% falls during the Autumn season.

Situated, as it is, on the top of a high plateau, there is little to protect the area from the persistent winds which blow at higher elevations in the atmosphere. A study of the extreme winds for the period 1960 through 1968 shows that the prevailing direction of the strong winds from January to March is from the west northwest; and during April, May and June from the southeast. The extreme winds are not exceptionally strong, averaging between 16 to 20 miles per hour. Only rarely have winds above 30 miles an hour been reported.

The length of the growing season ranges from 60 to 80 days on the plateau to 110 to 120 days in the bottom of the canyon. The average last day of 32 degrees in the Spring ranges from June 24th on the plateau to May 25th in the canyon; and the first freeze in the Fall occurs about the 23rd of August on the plateau but not until the 27th of September in the bottom of the canyon.

Greatest and least monthly precipitation totals for the full period of record are as follows:

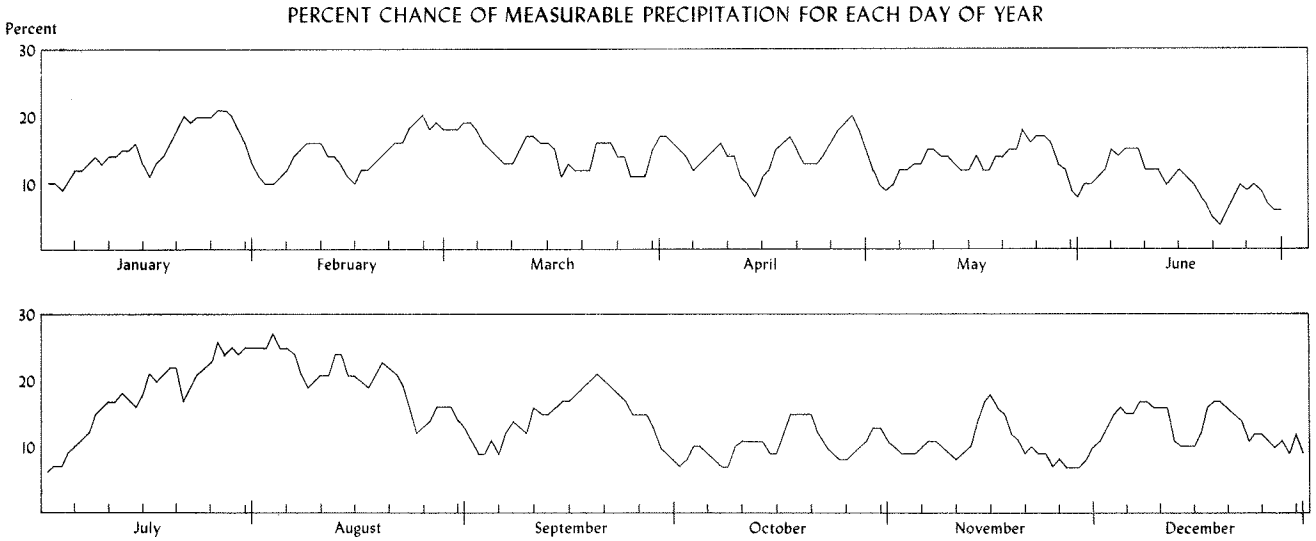
Month	Greatest	Year	Least	Year
January	4.10	1949	.01	1970
February	5.30	1969	Trace	1967+
March	4.95	1938	.02	1956
April	5.75	1965	.02	1969
May	2.76	1934	0	1943+
June	4.05	1949	0	1950+
July	2.90	1957	.13	1944
August	7.68	1963	.08	1962
September	8.83	1939	Trace	1957
October	5.80	1941	0	1964
November	3.66	1946	.08	1937
December	3.80	1947	Trace	1958
Annual	24.11	1941	8.09	1956



Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1943	2.89	1.09	1.30	1.00	0.00	0.02	1.03	3.28	2.00	1.37	0.25	1.83	16.24
1944	2.23	3.56	1.48	1.87	0.88	1.13	0.13	1.17	0.26	0.14	1.22	1.08	15.15
1945	2.13	1.08	4.12	1.22	0.57	0.85	2.33	2.55	1.54	3.60	0.93	1.08	22.00
1946	0.68	0.12	2.34	1.04	1.64	0.00	1.29	5.03	0.31	5.23	3.66	2.00	23.34
1947	0.47	0.58	0.18	0.81	1.16	0.98	0.70	6.48	0.26	2.55	1.65	3.80	19.62
1948	0.41	1.87	1.36	1.21	0.23	2.47	0.43	1.53	0.10	2.66	0.19	2.53	14.99
1949	4.10	1.59	2.05	0.42	0.87	4.05	0.57	0.56	2.27	1.01	0.13	1.82	19.44
1950	1.26	0.32	0.62	0.27	0.28	0.00	2.20	0.90	0.58	0.00	0.60	0.22	7.25
1951	0.72	0.91	0.71	1.22	1.48		1.34	3.46	0.79	0.98	1.95	1.90	15.46
1952	2.45	0.57	3.12	1.70	0.67	1.45	0.81	2.30	1.83	0.00	1.24	2.15	18.29
1953	0.65	0.15	0.97	0.61	0.45	0.21	2.32	2.24	3.63	1.70	1.20	0.34	14.47
1954	1.70	0.41	2.30	0.38	0.87	0.89	0.95	0.26	2.35	3.15	0.50	1.29	15.05
1955	2.40	1.30	0.23	0.11	0.38	0.23	1.96	2.19	0.08	0.01	0.97	0.62	10.48
1956	1.13	0.34	0.02	1.14	0.63	0.43	1.04	1.87	0.32	0.88	0.10	0.19	8.09
1957	2.46	0.57	0.80	1.58	2.31	0.82	2.90	3.26		4.71	2.89	0.85	23.15
1958	0.73	1.85	2.78	1.59	1.51		0.88	2.29	3.16	0.87	1.14		16.80
1959	0.28	1.69	0.41	0.44	0.48	0.07	0.35	4.20	0.69	0.88	0.35	2.13	11.97
1960	0.81	1.67	0.19	0.46	0.27	0.68	0.29	0.77	2.22	2.58	1.51	0.67	12.12
1961	0.26	0.21	1.73	0.82	0.67	0.07	2.30	4.14	3.54	0.61	0.45	0.99	15.79
1962	0.78	2.89	1.21	0.11	0.86	1.34	0.51	0.08	2.07	1.84	0.15	0.62	12.46
1963	0.27	0.77	1.41	1.50		0.31	0.63	7.68	3.89	0.27	0.85	0.14	17.72
1964	0.87		1.41	1.17	1.67	0.37	1.11	1.64	0.80	0.00	1.29	0.86	
1965	0.86	0.46	1.00	5.75	1.95	0.71	2.19	1.42	1.33	0.41	2.74	3.68	22.50
1966	0.27	1.26	0.34	0.13	0.50	0.19	1.10	1.74	1.38	0.68	0.39	2.19	10.17
1967	1.32		0.82	0.98	1.85	0.92	2.09	1.62	4.55	0.03	1.19	3.42	18.29
1968	1.73	1.22	0.99	1.15	1.45	0.14	1.73	3.48	1.13		0.34	0.77	14.13
1969	2.97	5.30	2.24	0.02	0.55	1.21	1.22	1.73	1.40	0.82	0.43	0.16	18.05
1970	0.01	0.67	1.54	0.44	0.17	1.40	1.31	2.97	0.64	0.21	1.04	1.39	11.79

PERCENT CHANCE OF MEASURABLE PRECIPITATION FOR EACH DAY OF YEAR



EXTREME PRECIPITATION VALUES WHICH OCCURRED PRIOR TO 1941

Greatest Daily Precipitation

1.98 in February 1935 — 1.04 in May 1937 — 1.35 in November 1935

3.08 in March 1938 — 4.09 in September 1939 — 2.60 in December 1936

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1943	26.4	28.2	34.4	45.4	49.2	54.0	63.2	60.4	56.0	43.8	31.7	23.8	43.0
1944	18.6	22.6	28.0	34.6	46.6	52.3	61.8	62.0	56.2	44.3	28.4	23.7	39.9
1945	23.2	26.7	25.6	34.2	47.8	53.0	62.3	61.0	53.4	44.0	29.4	21.0	40.1
1946	19.6	24.6	32.6	43.2	46.8	58.3	63.6	61.2	53.8	38.0	26.4	25.0	41.0
1947	19.2	29.6	34.0	39.0	50.2	54.0	62.2	59.0	56.8	45.0	24.8	19.8	41.1
1948	22.8	21.5	22.4	38.2	48.2	55.8	64.6	63.1	52.8	41.9	26.3	20.9	39.9
1949	11.8	15.0	27.7	40.3	46.0	54.1	61.8	60.8	57.2	41.0	39.4	21.6	39.7
1950	17.9	26.4	32.0	42.0	46.0	56.2	62.8	60.9	52.4	47.7	36.3	32.3	42.7
1951	23.0	26.1	30.3	40.0	47.2	55.2	64.4	59.8	54.8	41.4	28.8	19.9	40.9
1952	17.0	20.7	23.7	37.9	48.1	54.4	61.8	61.6	55.2	47.3	25.2	19.6	39.4
1953	28.6	24.6	30.9	37.4	41.3	56.3	64.3	59.0	55.5	42.2	34.5	24.4	41.6
1954	23.9	31.3	28.9	44.2	50.8	56.2	64.1	59.6	53.4	44.6	35.2	21.5	42.8
1955	16.3	16.2	27.7	35.0	45.0	52.9	60.7	61.1	53.8	44.5	30.2	26.2	39.2
1956	27.8	19.7	32.4	38.0	47.6	58.4	62.0	58.2	56.0	41.9	28.8	26.2	41.4
1957	20.5	29.8	31.3	36.8	42.5	57.6	62.2	60.2	52.5	40.7	25.9	25.8	40.5
1958	22.5	28.2	25.1	34.8	50.3	58.3	62.8	64.3	53.5	43.2	31.1	31.6	42.2
1959	24.6	23.4	32.6	41.9	46.8	60.8	65.7	60.3	52.4	43.6	32.8	25.5	42.5
1960	16.6	20.5	32.5	40.7	47.6	58.8	63.2	61.3	55.4	40.4	31.3	22.8	40.9
1961	22.3	26.8	28.9	38.0	45.7	58.2	61.8	58.9	49.0	41.2	29.0	20.1	40.0
1962	22.1	26.5	23.6	42.4	45.2	54.6	60.1	60.8	54.4	44.3	35.6	26.9	41.4
1963	19.6	32.1	28.3	36.3	50.0	54.2	65.0	60.1	54.8	47.5	32.2	24.3	42.1
1964	19.3	19.6	23.8	36.2	44.9	53.4	64.3	60.6	51.9	46.3	27.3	23.9	39.3
1965	24.6	24.5	27.2	35.6	43.8	51.5	60.9	59.6	49.4	46.7	34.5	24.3	40.2
1966	18.7	18.8	32.5	40.9	50.2	56.2	63.0	63.2	54.6	43.3	34.7	23.9	41.7
1967	24.0	27.3	35.6	34.6	45.5	52.7	63.8	62.1	54.1	46.6	35.9	18.8	41.8
1968	22.3	29.0	31.8	34.7	45.1	56.6	60.8	56.0	51.7	43.3	31.0	20.2	40.2
1969	27.2	21.0	24.9	39.4	50.6	52.9	62.8	63.1	54.8	37.9	31.1	26.4	41.0
1970	24.5	30.4	29.5	33.8	48.4	56.7	62.3	62.0	50.6	40.4	33.8	21.3	41.1

Temperature Change Between One Day And The Next (Interdiurnal Change) Frequency In Percent

Class Interval in °F	Maximum Temperature					Minimum Temperature				
	Winter	Spring	Summer	Fall	Annual	Winter	Spring	Summer	Fall	Annual
0-2	35%	37%	53%	46%	43%	33%	31%	37%	35%	34%
3-5	33	33	33	35	34	27	28	34	30	30
6-8	20	16	10	11	14	18	23	16	16	18
9-11	6	7	3	5	5	10	9	7	9	9
12-14	4	4	*	2	2	8	6	4	4	5
15-17	1	2	*	1	1	2	3	2	3	3
18-20	*	*	0	*	*	2	1	*	1	1
20	*	*	0	*	*	1	1	*	1	1
Mean	4.4	4.5	2.9	3.6	3.8	5.5	5.5	4.3	5.0	5.0

* Less than 0.5%

Daily Range Of Temperature - - Max. To Min.

	W	S	Su	F	Ann.
5-9	3%	*%	0%	1%	1%
10-14	8	3	*	3	4
15-19	12	9	2	7	7
20-24	12	14	6	10	10
25-29	22	17	14	11	16
30-34	22	22	24	24	20
35-39	14	19	24	24	20
40-44	5	13	21	17	15
45-49	1	2	8	5	4
49	0	*	1	*	*
Mean	26.7	30.0	35.3	31.9	31.2

* Less than 0.5%

Average Dates Of Occurrence Of Various Temperature Values

Temp. = or Less Than:	Average Dates of Occurrences Last in Spring	First in Fall	Length of Period
40°	July 21	Aug. 4	14
36°	July 6	Aug. 14	39
32°	June 19	Aug. 25	67
28°	June 9	Sept. 10	93
24°	May 25	Sept. 26	124
20°	May 12	Oct. 17	158
16°	Apr. 27	Oct. 29	185

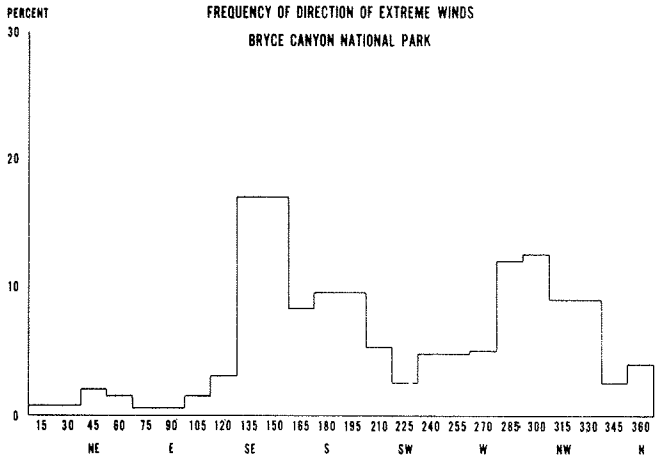
Average Number Of Rainy And Dry Periods Bryce Canyon National Park

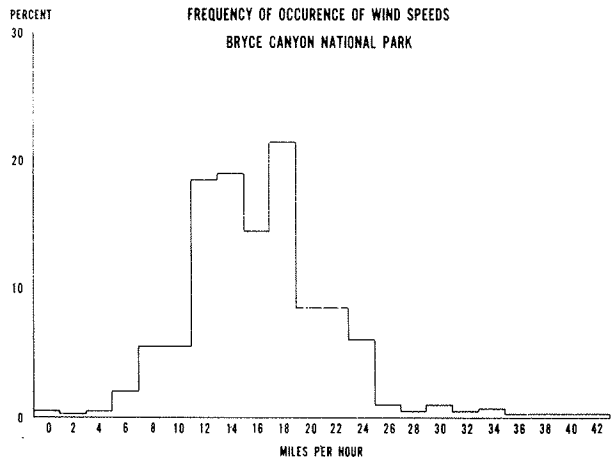
Mean No. Wet Periods	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Annual
1 day or more	3	4	3	3	3	3	4	5	4	2	2	3	3
2 days or more	1	1	1	1	1	1	2	3	2	1	1	1	1
3 days or more	1	1	1	1	*	1	1	2	1	*	1	1	1
Longest Wet Periods in 10 years of record	3	3	7	10	7	5	5	9	5	4	6	8	10
Mean No. Dry Periods													
1 day or more	3	3	4	3	3	2	5	5	4	2	2	3	3
2 days or more	2	2	3	2	3	2	3	3	3	2	2	3	2
3 days or more	2	2	3	2	3	2	2	2	2	1	2	2	2
5 days or more	2	1	2	1	2	2	2	1	1	1	1	2	2
Longest Dry Period in 10 years of record ending in this month	48	21	47	19	38	19	44	22	27	33	49	37	49

STATION HISTORY

The first weather observations in the vicinity of Bryce Canyon National Park were taken by the Forest Service at the East Fork Ranger Station some 2-1/2 miles west of Ruby's Inn. These observations, precipitation only, were taken during some of the summer months from 1916 through 1922. In May 1923 the station was moved to Ruby's Inn where Steve Ralston, the manager, took precipitation observations until August 1928.

In January 1933 the station was re-established under the name Bryce Canyon with a ranger of the Park Service, Mr. Maurice Cope, as the official observer. The precipitation gage was set up some 1500 feet from the rim of the canyon near the ranger's home. In November 1942 temperature equipment was sent to the station and complete climate observations were begun. The excellent weather observations begun by Ranger Cope have been continued by the National Park Service personnel to the present time. Our sincere thanks to the personnel of this organization for their untiring efforts.





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