U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
IN COOPERATION WITH Michigan Weather Service
CLIMATOGRAPHY OF THE UNITED STATES NO. 20 — 20

CLIMATOLOGICAL SUMMARY

LATITUDE 44°28'
LONGITUDE 83°43'
ELEV. (GROUND) 800 feet

STATION Hale Loud Dam, Michigan

MEANS AND EXTREMES FOR PERIOD 1935 - 1964

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)	30	30	30	30		30		30	30	30		30	30		30		30	30	30	30	30	
JANUARY	28.6	8.5	18.6	66	1944	-36	1951	1410	1.58	1.60	1940	11.9	30.8	1943	13.0	1947	4	0	20	30	9	JANUARY
FEBRUARY	30.6	7.8	19.2	55	1954	-31	1936	1340	1.40	1.30	1950	10.7	23.9	1959	10.0	1959	4	0	16	28	9	FEBRUARY
MARCH	39.1	16.0	27.6	80	1946+	-31	1943	1140	1.97	1.50	1949	10.2	20.1	1943	10.0	1962+	5	0	8	29	4	MARCH
APRIL	53.5	29.2	41.4	86	1960	0	1936	710	2.52	1.78	1952	2.6	14.4	1952	12.0	1952	6	0	*	21	*	APRIL
MAY	65.9	39.1	52.5	94	1937	16	1947	390	2.84	3.15	1959	0.3	7.0	1935	7.0	1935	7	*	0	7	0	MAY
JUNE	75.9	49.0	62.5	96	1944	25	1947	130	2.59	2.20	1943	0.0					6	1	0	*	0	JUNE
JULY	80.8	53.8	67.3	107	1936	33	1945	50	3.01	3.02	1951	0.0					6	3	0	0	0	JULY
AUGUST	78.8	53.0	65.9	100	1948	33	1947	70	3.19	2.23	1939	0.0					6	2	0	0	0	AUGUST
SEPTEMBER	69.9	44.9	57.4	97	1953	21	1947	250	3.03	3.50	1947	0.0					7	1	0	3	0	SEPTEMBER
OCTOBER	60.1	35.5	47.8	88	1947	14	1936	520	2.07	2.03	1954	0.1	1.0	1964+	1.0	1964+	5	0	0	13	0	OCTOBER
NOVEMBER	44.6	26.7	35.7	77	1950	- 7	1936	880	2.27	1.57	1964	4.7	16.0	1940	7.0	1955	6	0	4	23	*	NOVEMBER
DECEMBER	32.4	15.5	24.0	59	1946	-22	1946	1250	1.55	2.01	1950	8.9	26.0	1951	8.0	1951	4	0	16	30	4	DECEMBER
Year	55.0	31.6	43.3	107	July 1936	-36	Jan. 1951	8140	28.02	3.50	Sept. 1947	49.4	30.8	Jan. 1943	13.0	Jan. 1947	66	7	64	184	26	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 HALE LOUD DAM, MICHIGAN

The Hale Loud Dam station is located 24 miles west of Oscoda and Lake Huron and about 8 miles northeast of the town of Hale. The topography of the area is level to rolling. The soil is mostly sandy, but there are some areas of heavy clay. Some dairying operations are carried on and some of the land is used for grazing. Considerable land is forested.

Weather data for the area show that the highest temperature ever recorded here is 107° on July 13, 1936. The lowest temperature ever recorded is 38° below zero on February 1, 1918. Temperatures seldom reach the 100° mark (only twice in 30 years). Days with temperatures of 90° or higher average seven per summer. At the other extreme, temperatures fall to zero or lower on an average of twenty-six days during the winter season. On the basis of mean temperature, January, 1918, with a mean reading of 6.2° is the coldest month of record and the highest monthly mean temperature of record is 73.8° in July, 1921. The average dates of the last freezing temperature in the spring and the first in the fall are May 25th and September 26th respectively.

Precipitation is heaviest during the summer season averaging 61% of the annual total during the six months, April-September period. Heaviest rainfall is in August which shows an average of 3.19 inches. The greatest monthly rainfall of record is 6.99 inches in April, 1929. Least monthly rainfall of record is 0.07 inch in January, 1961. The heaviest intensity of rainfall occurs in connection with warm weather thunderstorm activity and the heaviest recorded 24-hour amount is 3.50 inches on September 21, 1947. Hourly intensity of rainfall of as much as 1.10 inches occurs with a frequency of once in two years. Two-hourly intensity of 1.40 inches will occur once in two years and a 24-hour total of 2.50 inches will occur about once in 50 years.

Snowfall averages 49.4 inches annually with wide variation from winter to winter. The winter of 1951-52 produced a total of 93.4 inches while only 20.4 inches was recorded in the 1936-37 winter season. Six months of the year usually have measurable snowfall.

Wind, sunshine and cloudiness observations are not available for Hale Loud Dam, but the records at Alpena (nearest Weather Bureau Office) should offer a fair approximation. As shown by these records, the prevailing wind direction is northwest. Mean hourly velocity varies from 9.2 m.p.h. in July to 12.3 m.p.h. in March. Highest wind ever recorded is 61 m.p.h. from the northwest in November, 1940. Sunshine ranges from 22 percent of possible in December to 80 percent of the possible in July. December has an average of 2 clear days, 7 partly cloudy days and 22 cloudy days; July has an average of 11 clear days, 13 partly cloudy days and 7 cloudy days.

Degree day data is provided as an index of heating requirements for buildings. For example, April averages 710 degree days and January 1410 degree days, which means that during an average January, fuel necessary for heating will be almost twice that required for April. Degree days for a single day are obtained by subtracting the mean temperature from 65°. The need for the heating of buildings is considered none or slight is a day has an average temperature of 65° or higher.

A. H. Eichmeier
State Climatologist
Weather Bureau Office
East Lansing, Michigan

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1935	1.23	1.47	2.24	0.78	1.17	3.67	3.69	2.84	1.71	1.54	2.12	0.98	23.44
1936	1.57	1.99	1.04	2.08	2.43	0.89	2.17	2.38	4.35	3.88	1.21	2.16	26.15
1937	2.01	1.02	0.52	3.64	0.89	1.62	2.53	1.34	4.80	2.20	2.17	0.86	23.60
1938	3.22	2.70	2.57	0.74	2.47	2.21	2.69	4.60	2.82	0.78	1.02	2.34	28.16
1939	2.31	2.31	1.21	2.69	2.62	3.98	1.08	5.81	1.88	1.52	0.39	1.12	26.92
1940	2.17	1.41	0.93	1.73	3.50	5.60	1.75	6.35	3.12	2.71	2.81	2.00	34.08
1941	1.55	1.13	1.41	2.72	2.79	0.86	5.00	5.57	3.71	5.78	2.57	1.49	34.58
1942	1.33	0.50	3.42	1.87	5.26	3.13	2.02	2.09	5.94	1.53	2.02	2.45	31.56
1943	2.86	1.00	3.45	2.81	2.76	3.56	2.96	3.24	1.60	1.83	2.58	0.25	28.90
1944	1.05	1.27	2.75	2.15	2.31	3.01	3.60	3.27	2.73	1.36	3.55	0.63	27.68
1945	0.20	1.33	1.19	2.56	5.69	4.83	2.85	3.15	4.09	2.47	1.92	1.39	31.67
1946	2.06	1.41	1.48	0.49	3.21	3.09	2.53	1.38	2.78	0.92	2.97	2.53	24.85
1947	2.48	0.46	2.52	3.25	5.24	1.69	2.13	3.21	5.38	0.47	2.48	1.18	30.49
1948	0.68	1.27	3.60	2.32	1.56	2.69	1.94	1.53	0.74	0.67	3.73	1.68	22.41
1949	2.38	1.88	2.54	2.40	1.55	2.73	1.55	3.58	3.24	0.94	1.68	2.20	26.67
1950	3.08	2.52	2.16	2.10	0.99	2.81	4.30	3.06	4.53	1.43	1.71	2.69	31.38
1951	2.14	1.48	2.53	4.60	2.67	3.09	4.64	2.06	3.04	5.25	2.52	2.36	36.38
1952	2.71	0.80	2.55	3.48	1.81	0.73	4.61	2.67	1.18	0.11	3.48	2.10	26.23
1953	1.23	2.24	1.81	3.06	3.91	1.41	3.62	2.98	3.18	1.76	1.54	1.36	28.10
1954	1.42	1.72	2.18	3.61	3.05	5.47	0.93	1.79	3.69	5.95	2.84	1.92	34.57
1955	1.01	1.25	2.16	2.47	3.85	0.64	3.10	4.27	0.41	2.67	2.09	1.68	25.60
1956	0.33	1.31	2.20	3.93	2.79	1.05	3.94	5.07	1.25	0.58	1.52	1.43	25.40
1957	1.20	0.48	1.23	3.21	2.43	4.85	2.08	0.82	3.12	2.47	2.77	1.86	26.52
1958	1.16	1.01	0.20	1.29	0.45	1.82	2.32	1.91	1.92	3.22	2.88	0.43	18.61
1959	1.38	2.01	1.93	4.89	5.27	0.77	2.09	5.65	3.81	3.72	3.14	2.59	37.25
1960	1.30	1.25	2.07	2.56	4.31	1.83	3.08	2.43	2.20	1.91	2.28	0.15	25.37
1961	0.07	1.77	2.17	1.98	1.29	3.45	5.21	3.15	5.34	0.60	2.36	1.18	28.57
1962	1.79	2.28	1.24	1.71	3.11	2.85	3.80	3.17	3.73	2.25	0.83	0.91	27.67
1963	0.55	0.48	2.69	1.73	3.99	2.04	2.71	2.51	1.71	0.60	1.50	0.99	21.50
1964	0.94	0.32	1.20	2.72	1.82	1.26	5.42	3.79	2.97	1.07	3.33	1.65	28.17

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1935	17.0	17.3	30.1	40.8	47.4	59.5	71.3	66.0	54.7	45.6	35.0	19.7	42.0
1936	16.8	7.0	30.0	36.3	55.6	59.1	69.5	65.9	58.6	43.2	30.0	26.8	41.6
1937	22.9	23.9	25.1	40.3	53.7	62.8	68.0	69.3	57.4	43.2	34.7	21.9	43.6
1938	14.5	22.8	33.5	42.5	52.3	62.1	67.7	70.5	55.2	49.3	38.2	25.9	44.5
1939	21.4	17.7	23.6	37.8	54.6	63.3	67.9	67.2	58.1	45.5	35.4	29.0	43.5
1940	15.9	20.3	21.6	37.2	51.0	61.6	67.6	65.1	58.1	46.9	32.4	25.8	42.0
1941	18.3	19.0	21.1	46.1	55.3	64.3	68.4	65.0	59.7	47.6	38.3	29.9	44.4
1942	19.4	16.3	30.5	48.1	52.4	62.9	66.5	65.0	56.3	47.4	35.2	21.1	43.4
1943	14.7	19.6	21.8	36.9	50.7	65.6	66.8	66.4	56.6	46.4	36.1	25.1	42.2
1944	29.0	23.2	26.6	38.8	58.2	66.2	67.7	67.7	59.2	46.7	37.9	20.9	45.2
1945	12.9	21.1	40.3	45.2	47.7	58.3	64.2	65.0	55.9	43.5	35.8	18.4	42.4
1946	18.6	15.4	36.5	41.0	48.3	59.0	65.2	60.4	56.3	49.1	36.2	22.8	42.4
1947	19.2	15.0	22.8	36.5	45.9	58.6	63.9	69.3	57.3	53.9	31.9	26.5	41.7
1948	14.8	16.4	27.3	46.3	51.0	63.1	67.9	68.0	62.4	46.8	41.6	27.6	44.4
1949	25.7	24.0	29.1	42.3	53.9	67.1	69.9	67.8	55.4	51.2	33.8	26.7	45.6
1950	24.3	19.1	18.0	34.2	51.7	61.8	64.4	62.1	54.7	49.8	33.2	19.9	41.1
1951	18.2	20.4	28.6	40.8	54.7	61.3	66.9	62.9	55.6	48.1	28.5	24.2	42.5
1952	21.4	23.9	27.6	44.3	52.7	65.0	69.7	65.6	59.2	42.7	37.4	30.5	45.0
1953	24.7	24.4	30.7	39.1	53.3	64.3	67.8	66.4	56.8	49.6	39.0	28.4	45.4
1954	17.1	27.8	26.1	41.9	49.1	65.6	65.8	64.4	57.6	48.4	37.8	23.9	43.8
1955	19.0	19.5	27.1	47.4	55.9	63.9	72.2	71.4	57.3	49.7	32.6	20.9	44.7
1956	19.9	19.4	23.0	38.4	48.6	63.1	63.5	64.6	52.4	51.6	36.0	27.6	42.3
1957	14.5	23.6	29.7	43.9	51.0	63.0	67.2	63.6	56.8	45.3	36.5	27.6	43.6
1958	20.8	16.2	33.6	43.8	51.7	57.7	65.8	66.3	58.1	49.8	37.5	16.0	43.1
1959	13.6	13.4	25.5	41.4	57.7	64.9	68.8	71.9	61.6	46.4	29.5	28.0	43.6
1960	22.0	20.4	21.0	42.7	54.2	61.4	65.3	64.6	58.4	47.8	38.9	19.8	43.0
1961	15.2	24.4	30.8	39.3	50.5	60.6	67.9	65.6	62.8	49.7	36.2	24.5	44.0
1962	14.8	14.3	28.7	41.9	57.7	61.9	64.8	65.0	56.0	49.4	35.4	21.0	42.6
1963	10.3	10.7	28.4	43.2	50.3	64.6	67.6	62.5	55.6	54.0	39.7	15.7	41.9
1964	20.1	20.7	28.0	42.3	58.1	61.7	69.4	61.8	57.9	46.6	40.0	24.0	44.2

DATES OF FREEZING TEMPERATURES IN THE SPRING AND FALL (1921 - 1950)

	Spring			Fall		
Minimum Temperature	Earliest	Average	Latest	Earliest	Average	Latest
32° or lower	5/10/33	5/25	6/23/22	09/02/46	09/26	10/15/27
28° or lower	4/11/27	5/10	6/04/47	09/19/29	10/08	10/31/26
24° or lower	4/04/27	4/26	5/20/24	09/25/47	10/23	12/01/48
20° or lower	3/29/33*	4/16	5/13/46	10/01/47	11/09	12/06/41
16° or lower	3/11/45	4/05	5/10/47	10/27/36	11/20	12/18/48

*Also on 3/29/27

Example in using table: The average date of the last temperature of 32° or colder in the spring is May 25th. The earliest date of this event in all springs of the 1921-1950 period was May 10th in 1933. The latest date was June 23rd in 1922. In the fall, 32° or colder occurred for the first time as early as September 2, 1946 and as late as October 15, 1927. The average date is September 26th.

STATION HISTORY

This station was established in April, 1913 under the name of Five Channels Dam. The name was later changed to Hale Five Channels Dam and later to Hale Loud Dam. It is located now (1965) eight miles northeast of the Hale Post Office and has been at this location since established.