OKLAHOMA
MONTHLY SUMMARY
JANUARY 1990

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JANUARY 1990 OKLAHOMA SUMMARY

January featured a contrasting assortment of weather including record-breaking high temperatures, a several-inch snowfall, dry conditions which threatened crops and spurred wildfires, flooding, hail and damaging winds. The month ranks as the fifth wettest January in recorded history (1892-1990) (see Table 1), despite very little precipitation outside of a four-day period during the month's second half. All CD's except CD1 reported more than twice their mean January precipitation resulting in the wettest January since 1949 (see Map 1). Numerous warm days and only about one-half the typical number of days with lows below 32 degrees (see Figure 1) boosted the State-averaged temperature to 44.5 degrees, the fifth highest January value on record.

Several stations reported their lowest temperatures of the month on January 1 while under the influence of a weakening cold Canadian air mass which lowered morning temperatures into the 10 to 20 degree range. A warm, moist Gulf air mass, however, began replacing the cooler air on January 2. On the 3rd of January, this moisture fed thunderstorms which developed along a cold front producing dime-size hail which covered the ground in sections of Grant County. Frozen precipitation fell through the cooler air of the Panhandle whose western section reported 1" of snow. The southern one-third of the State received mostly light and scattered precipitation.

Warmer and drier air dominated the State for the next several days. Grass fires destroyed several hundred acres in eastern Oklahoma and in the Lawton area on January 8. Cloudy nocturnal skies over northeastern Oklahoma insulated the surface and maintained a record high morning low of 47 degrees on January 9 at Tulsa, 2 degrees higher than its mean maximum for the date. Clear skies and southerly winds on January 10 lifted temperatures to record highs (see Table 2). The warm, dry and windy conditions supported another round of vigorous grass fires in eastern and central Oklahoma which engulfed several homes and injured nine fire fighters.

All Oklahoma stations reported some form of precipitation during a 4-day storm pattern which began on January 16 as a strong upper level low steered a surface cold front into Oklahoma. Severe thunderstorms on January 16 generated 3/4" hail over Oklahoma and Canadian Counties. Violent thunderstorms uprooted large trees, unroofed a barn and produced as much as 3 inches of rain in southeastern Oklahoma. The upper level low intensified west of the State and supported a 4 to 5" snowfall in the Panhandle on January 18. Rain and sleet fell elsewhere across the State. This second deluge in southeastern Oklahoma resulted in 3-day accumulations of 5 to 8". Flooding forced the closing of a school in Battiest.

The several-day, widely distributed precipitation permitted the lifting of the outdoor fire ban and supplied vital moisture to Oklahoma's suffering wheat crop. The area with adequate topsoil moisture supplies increased from 0 to 65% of the State during the month. The threat of wildfires was revived, however, as virtually no precipitation fell during the last 10 days of the month.

-R. J. Sladewski

The Oklahoma Climatological Survey has completed its 1989 Annual Business Report. This report, which details the activities of the Survey, is available without charge upon request. The Survey plans to complete its Annual Data Summary in March with distribution in April. This second report will contain useful summary tables of 1989 and long-term climatological values for the entire State.

TABLE 1.

5 GREATEST JANUARY PRECIPITATION AMOUNTS

RANK	YEAR	STATEWIDE-AVERAGED PRECIPITATION (Inches)
1	1949	5.23
2	1916	4.98
3	1932	4.91
4	1898	3.21
5	1990	2.98

5 WARMEST JANUARY'S

RANK	YEAR	STATEWIDE-AVERAGED TEMPERATURE (Degrees F)
1	1923	47.5
2	1933	46.7
3	1952	45.5
4	1914	45.0
5	1990	44.5

Map 1. January 1990 percent of normal precipitation.

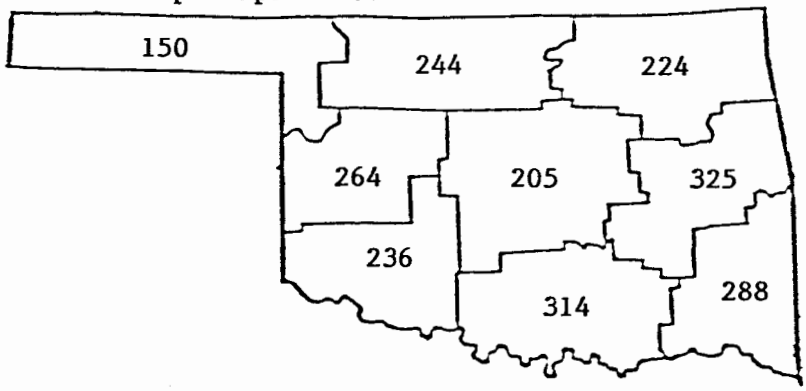
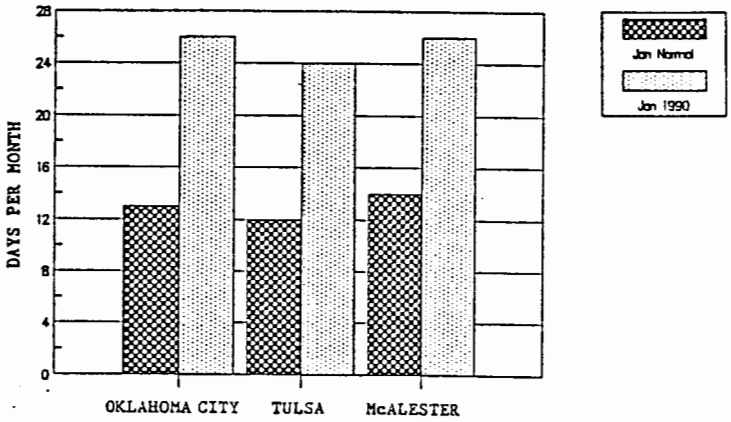


FIGURE 1.

Frequency of Daily Maximum Temperature Exceeding 50 Degrees



Frequency of Daily Minimum Temperature Below 25 Degrees

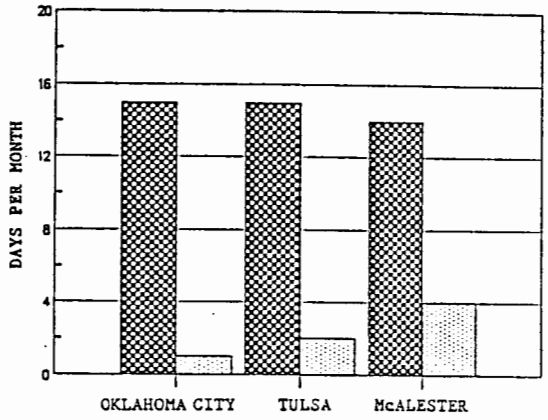


Table 2. January 10 record maximum temperatures established in 1990 (period of record: 1948-1990).

CD	STATION	NEW RECORD*	PREVIOUS RECORD TEMPERATURE*	PREVIOUS RECORD YEAR
1	Gage	80	71	1953
2	Ponca City	72	59	1961
3	Tulsa	76	68	1960
4	Taloga	76	71	1953
5	Oklahoma City	75	65	1953
6	McAlester	74	70	1960
7	Hobart	79	77	1953
8	Ada	75	70	1960
9	Tuskahoma	74	68	1975

* Degrees Farenheit

TABLE OF 1989/1990 COMPARISONS

Station	January Temperatures (F) 1989	1990	January Precipitation (in.) 1989	1990
Arnett	39.3	39.8	.35	.82
Enid	42.0	43.9	1.60	1.99
Mutual	38.6	40.1	.62	2.61
Tulsa	44.4	47.1	3.02	2.93
Elk City	43.3	44.7	1.03	1.90
Oklahoma City	43.5	46.9	1.10	1.85
McAlester	46.2	48.1	5.09	4.72
Altus Irr Sta	46.5	46.5	1.57	1.55
Durant	45.0	46.8	2.96	5.99
Ada	44.6	46.9	1.20	4.13
Antlers	46.5	47.8	2.80	5.90

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (F)	Kenton	1	4	5
	Hammon	4	4	5
Maximum temperature (F)	Optima Lake	1	82	11
Maximum 24-hour precipitation	Flagpole	9	4.80"	16

The Temperature/Precipitation Relationship in Oklahoma
by Howard L. Johnson

January of 1990 ranks as both the 5th warmest and the 5th wettest January (according to statewide averages) in Oklahoma since systematic data collection began in 1892. The occurrence of this warm, moist month following a summer that was among the coolest and wettest in history (see the Oklahoma Monthly Summary for September 1989), and a markedly cold and dry December raises a question as to whether any relationship exists between statewide monthly averages of temperature and precipitation.

A likely first assumption would be that abundant precipitation implies abundant cloudiness, which in turn would decrease the dominant radiation effect (cooling during winter's short days and long nights and warming during the long days and short nights of summer). Such a relationship would lead to a direct connection (warmer/wetter or cooler/drier) between temperature and precipitation in winter and an inverse relationship (warmer/drier or cooler/wetter) in summer.

The implications of this first assumption can be tested against the historical record for a summer month (August) and and a winter month (January).

As it turns out, statewide averaged temperatures for the month of August do reveal a very strong inverse relationship with monthly precipitation. Data for January, however, indicate that during Oklahoma's cool season there is little relationship between the averages of temperature and precipitation.

The table below shows the average precipitation for the five highest and the five lowest January and August temperatures since 1892, the average ranking of the precipitation (greatest equals 1, second greatest equals 2, etc.) and the ranking that the average of the five years would have if it were a separate year.

January	Avg precip	avg rank	rank of avg
5 warmest years	1.54"	44.2	39
5 coolest years	1.46"	44.4	41
August			
5 warmest years	1.27"	83.0	88
5 coolest years	5.27"	9.6	7

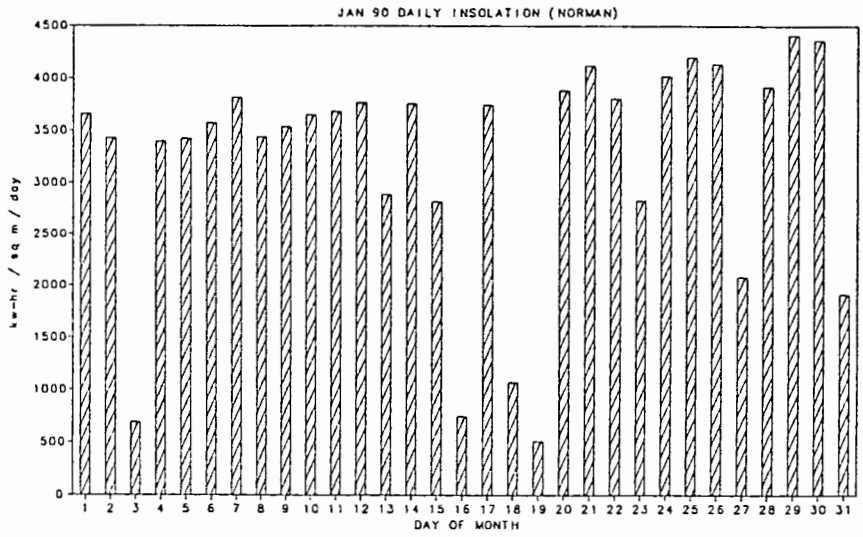
The relationship between monthly mean temperature and total precipitation appears to be very strong during August (and presumably for the entire summer), but very weak to non-existent during January (and for the winter season). One can comfortably state that an unusually dry August will also be hot, but that rain would bring relief. In January, however, a cold month can be either wetter or drier than a warm one.

INSOLATION DATA AVAILABLE

The University of Oklahoma's School of Meteorology is observing and archiving incoming solar radiation data as part of a cooperative effort with the Agricultural Research Service, USDA at Durant, OK. The observation site, operated continuously since September 1987, is located at Max Westheimer Airport in Norman. The data are representative of central Oklahoma and available through the Oklahoma Climatological Survey. The table and chart below depict the January 1990 daily observations.

January 1990 Daily Insolation Data for Norman, OK
(Insolation units are watt-hours per square meter per day)

DATE	INSOLATION AMOUNT
1	3653.64
2	3428.08
3	691.12
4	3394.19
5	3423.08
6	3570.31
7	3814.75
8	3438.08
9	3537.81
10	3648.08
11	3679.47
12	3764.75
13	2885.02
14	3754.47
15	2817.52
16	746.09
17	3742.53
18	1070.04
19	508.23
20	3883.09
21	4120.03
22	3803.92
23	2826.69
24	4020.31
25	4200.31
26	4137.53
27	2083.57
28	3918.64
29	4407.54
30	4362.53
31	1916.04



JANUARY 1990 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
ARNETT	332	1	39.8	31	6.5	78.	11	16.	28	781.0	-202.0	.0	.0	.821	31	.39	.77	19
BEAVER	593	1	36.7	31	3.9	80.	11	11.	29	876.5	-121.5	.0	.0	.950	31	.57	.76	19
BOISE CITY 2 E	908	1	36.0	31	1.9	76.	10	9.	28	899.5	-58.5	.0	.0	.660	31	.30	.60	19
BUFFALO	1243	1	42.3	31	7.6	80.	10	11.	28	704.5	-234.5	.0	.0	.430	31	-.10	.30	19
FARGO	3070	1	*****	0	*****	****	0	****	0	******	******	******	******	.721	31	.26	.66	19
GAGE FAA APT	3407	1	41.7	31	8.4	80.	10	12.	28	721.0	-262.0	.0	.0	.490	31	.04	.29	19
GATE	3489	1	40.1	31	*****	81.	11	15.	28	771.0	******	.0	******	.850	31	*****	.56	19
GOODWELL RES ST	3628	1	35.3	31	1.8	79.	11	11.	28	920.5	-56.5	.0	.0	.942	31	.69	.70	19
GUYMON	3835	1	37.8	28	*****	80.	10	8.	22	762.0	******	.0	******	.781	29	*****	.78	19
HOOKER	4298	1	35.1	31	1.9	80.	11	11.	28	928.0	-58.0	.0	.0	1.730	31	1.32	1.60	19
KENTON	4766	1	33.1	31	-1.3	70.	11	4.	5	987.5	38.5	.0	.0	.990	31	.69	.65	19
LAVERNE	5045	1	*****	0	*****	****	0	****	0	******	******	******	******	.731	31	.10	.30	19
OPTIMA LAKE	6740	1	35.3	31	*****	82.	11	9.	28	921.5	******	.0	******	.850	31	*****	.76	19
REGNIER	7534	1	*****	0	*****	****	0	****	0	******	******	******	******	1.120	31	.85	.67	19
TURPIN 4 SSE	9017	1	34.6	31	*****	79.	11	11.	29	942.0	******	.0	******	1.130	31	*****	1.10	19

JANUARY 1990 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
ALVA	193	2	43.2	31	*****	79.	10	16.	1	675.0	******	.0	******	1.440	31	*****	.80	19
VANCE AFB	302	2	*****	0	*****	****	0	****	0	******	******	******	******	.991	30	*****	.74	19
BILLINGS	755	2	42.1	31	*****	74.	11	12.	1	708.5	******	.0	******	1.771	31	.86	.90	19
BLACKWELL 2E	818	2	42.3	31	*****	71.	10	12.	1	703.0	******	.0	******	1.800	31	*****	.92	20
BRAMAN	1075	2	*****	0	*****	****	0	****	0	******	******	******	******	1.911	31	*****	.98	19
CHEROKEE	1724	2	43.5	31	9.0	77.	10	16.	1	667.0	-279.0	.0	.0	2.450	31	1.76	1.45	19
ENID	2912	2	44.2	31	8.8	74.	10	18.	1	645.0	-273.0	.0	.0	1.990	31	1.08	.90	19
FT SUPPLY DAM	3304	2	40.0	31	5.4	80.	11	11.	28	774.5	-167.5	.0	.0	.630	31	.13	.55	19
FREEDOM	3358	2	40.5	31	*****	80.	10	10.	1	758.5	******	.0	******	1.040	31	*****	.48	19
GREAT SALT PLNS	3740	2	42.8	31	*****	76.	11	19.	1	688.0	******	.0	******	2.620	22	*****	1.35	17
HARDY	3909	2	*****	0	*****	****	0	****	0	******	******	******	******	1.293	31	*****	.82	19
HELENA 1 SSE	4019	2	40.3	31	*****	75.	11	15.	2	767.0	******	.0	******	1.972	31	1.26	.96	19
JEFFERSON	4573	2	42.0	31	7.6	75.	10	10.	1	712.5	-236.5	.0	.0	1.900	31	1.20	.88	18
LAMONT	5013	2	*****	0	*****	****	0	****	0	******	******	******	******	1.480	31	*****	.87	19
MEDFORD	5768	2	*****	0	*****	****	0	****	0	******	******	******	******	2.971	31	*****	1.25	16
MORRISON	6065	2	*****	0	*****	****	0	****	0	******	******	******	******	1.310	31	*****	.67	19
MUTUAL	6139	2	40.1	31	6.0	79.	11	15.	1	770.5	-187.5	.0	.0	2.612	31	2.11	1.83	17
NEWKIRK	6278	2	43.0	31	9.6	70.	11	15.	1	681.0	-299.0	.0	.0	.620	31	-.24	.25	19
ORIENTA	6751	2	*****	0	*****	****	0	****	0	******	******	******	******	1.490	31	*****	.64	19
PERRY	7012	2	38.5	31	2.2	67.	10	12.	13	820.5	-69.5	.0	.0	1.571	31	.70	.88	19
PONCA CITY FAA	7201	2	43.4	31	11.0	72.	10	14.	1	669.0	-342.0	.0	.0	2.383	31	1.47	1.61	20
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	******	******	******	******	1.620	31	.75	.92	19
RENFROW	7556	2	*****	0	*****	****	0	****	0	******	******	******	******	3.030	31	2.32	1.47	16
WAYNOKA	9404	2	42.1	31	6.9	81.	10	13.	1	709.0	-215.0	.0	.0	1.470	31	.87	1.02	19
WOODWARD	9760	2	*****	0	*****	****	0	****	0	******	******	******	******	.830	31	*****	.75	19

JANUARY 1990 SUMMARY FOR NORTHEAST DIVISION (CD3)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
BARNSDALL	535	3	42.3	31	*****	75.	10	11.	13	703.0	******	.0	******	1.890	31	.69	1.12	20
BIXBY	782	3	42.5	31	7.1	75.	11	14.	13	697.0	-221.0	.0	.0	3.080	31	1.63	1.58	20
BURBANK	1256	3	*****	0	*****	****	0	****	0	******	******	******	******	1.871	31	*****	1.80	19
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	******	******	******	******	3.370	31	*****	1.54	20
CLAREMORE	1828	3	42.5	31	8.0	76.	11	14.	13	698.0	-248.0	.0	.0	3.854	31	2.47	1.58	20
CLEVELAND 5 WSW	1902	3	45.7	28	*****	79.	25	15.	13	541.0	******	.0	******	1.700	30	*****	.70	20
FORAKER	3250	3	*****	0	*****	****	0	****	0	******	******	******	******	1.000	31	-.02	.27	17
HOLLOW	4258	3	*****	0	*****	****	0	****	0	******	******	******	******	2.830	31	1.48	1.45	20
HOMINY	4289	3	*****	0	*****	****	0	****	0	******	******	******	******	1.692	31	.62	.82	20
HULAH DAM	4393	3	41.9	20	*****	73.	11	13.	2	462.0	******	.0	******	2.020	23	*****	.80	20
JAY TOWER	4567	3	46.0	27	*****	69.	16	18.	13	513.0	******	.0	******	5.540	28	*****	2.69	17
KANSAS 1 ESE	4672	3	44.9	31	*****	70.	10	17.	1	623.5	******	.0	******	6.880	31	*****	3.60	17
KEYSTONE DAM	4812	3	44.0	21	*****	76.	11	15.	2	441.0	******	.0	******	1.993	21	*****	1.09	22
LENAPAH	5118	3	*****	0	*****	****	0	****	0	******	******	******	******	2.620	31	*****	1.20	20
MANNFORD 6 NW	5522	3	45.7	31	*****	79.	10	15.	1	599.0	******	.0	******	1.870	31	.75	1.18	20
MARAMEC	5540	3	*****	0	*****	****	0	****	0	******	******	******	******	1.631	31	.58	.83	20
MIAMI	5855	3	44.5	31	9.8	71.	10	15.	13	636.5	-302.5	.0	.0	3.370	31	1.84	1.17	20
NOWATA	6485	3	43.0	31	8.3	75.	10	15.	1	680.5	-258.5	.0	.0	2.380	31	1.10	1.25	20
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	******	******	******	******	2.880	31	*****	1.46	20
PAWHUSKA	6935	3	42.6	31	8.1	74.	10	11.	13	695.0	-251.0	.0	.0	1.912	31	.80	1.58	19
PAWHUSKA	6937	3	*****	0	*****	****	0	****	0	******	******	******	******	1.660	31	*****	.70	19
PAWNEE	6940	3	*****	0	*****	****	0	****	0	******	******	******	******	1.540	31	.53	.75	19
PRYOR 6 N	7309	3	41.3	30	6.4	74.	11	10.	13	712.0	-221.0	.0	.0	4.041	30	*****	1.70	20
RALSTON	7390	3	43.9	31	*****	78.	10	13.	13	655.5	******	.0	******	2.001	31	1.00	.85	17
RAMONA 4 N	7394	3	*****	0	*****	****	0	****	0	******	******	******	******	1.830	31	*****	.96	19
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	******	******	******	******	2.400	31	1.21	1.28	20
SPAVINAW	8380	3	45.9	30	*****	72.	10	18.	1	572.5	******	.0	******	3.931	31	2.40	1.65	20
TULSA WSO APT	8992	3	47.1	31	11.9	76.	10	20.	13	555.5	-368.5	.0	.0	2.930	31	1.58	1.75	20
UPPER SPAVINAW	9101	3	43.9	22	*****	70.	10	15.	29	464.0	******	.0	******	5.511	31	*****	2.65	17
VINITA 2 N	9203	3	42.9	31	8.4	73.	10	10.	13	684.0	-262.0	.0	.0	2.930	31	1.40	1.76	20
WAGONER	9247	3	47.5	31	10.6	76.	10	16.	13	544.0	-327.0	.0	.0	5.800	31	4.08	2.46	17
WANN	9298	3	*****	0	*****	****	0	****	0	******	******	******	******	2.320	31	*****	1.29	20
WYNONA	9792	3	46.5	31	*****	76.	10	22.	13	575.0	******	.0	******	2.002	31	*****	1.10	20

JANUARY 1990 SUMMARY FOR WEST CENTRAL DIVISION (CD4)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
CANTON DAM	1445	4	43.2	21	*****	74.	16	18.	29	458.5	******	.0	******	.890	21	*****	.80	19
CHEYENNE	1738	4	*****	0	*****	****	0	****	0	******	******	******	******	.390	31	*****	.39	17
CLINTON	1909	4	45.0	31	8.6	75.	14	18.	7	620.0	-267.0	.0	.0	1.590	31	.88	1.20	19
COLONY	2039	4	*****	0	*****	****	0	****	0	******	******	******	******	1.262	28	*****	.90	19
CORDELL	2125	4	*****	0	*****	****	0	****	0	******	******	******	******	1.481	31	.78	1.04	19
ELK CITY 1 E	2849	4	44.7	31	*****	75.	14	20.	28	628.0	******	.0	******	1.902	31	1.35	.98	19
ERICK 4 E	2944	4	44.6	31	7.6	76.	14	13.	7	631.0	-237.0	.0	.0	1.450	31	.97	.90	20
GEARY	3497	4	44.5	27	*****	73.	10	19.	5	554.5	******	.0	******	1.500	31	.84	1.00	23
HAMMON 1 NNE	3871	4	40.7	31	5.0	77.	11	4.	5	752.5	-155.5	.0	.0	1.540	31	1.03	.85	18
LEEDEY	5090	4	*****	0	*****	****	0	****	0	******	******	******	******	1.210	31	.75	.65	17
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	******	******	******	******	2.160	31	1.66	1.50	19
OKEENE	6629	4	44.4	31	8.0	75.	14	18.	5	637.5	-249.5	.0	.0	1.140	31	.55	1.12	19
RETROP	7565	4	*****	0	*****	****	0	****	0	******	******	******	******	1.840	31	*****	1.33	19
REYDON	7579	4	43.5	29	*****	77.	10	15.	28	624.5	******	.0	******	1.130	31	.74	.65	19
SAYRE	7952	4	*****	0	*****	****	0	****	0	******	******	******	******	1.140	31	.72	.89	19
SWEETWATER 2 E	8652	4	*****	0	*****	****	0	****	0	******	******	******	******	1.261	31	*****	1.08	18
TALOGA	8708	4	42.1	31	7.0	76.	10	12.	1	709.5	-217.5	.0	.0	2.000	31	1.45	.88	19
THOMAS	8815	4	*****	0	*****	****	0	****	0	******	******	******	******	1.440	31	*****	1.25	19
VICI	9172	4	*****	0	*****	****	0	****	0	******	******	******	******	1.051	31	*****	.90	19
WATONGA	9364	4	43.6	31	*****	74.	10	17.	5	663.0	******	.0	******	1.730	31	.96	.90	19
WEATHERFORD	9422	4	43.3	31	6.7	74.	11	18.	1	674.0	-206.0	.0	.0	1.341	31	.70	.91	19

JANUARY 1990 SUMMARY FOR CENTRAL DIVISION (CD5)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
AMBER	200	5	*****	0	*****	****	0	****	0	******	******	******	******	1.810	31	*****	.83	19
ARCADIA	288	5	*****	0	*****	****	0	****	0	******	******	******	******	1.710	31	*****	.85	19
TINKER AFB	325	5	*****	0	*****	****	0	****	0	******	******	******	******	1.541	31	*****	.77	20
BLANCHARD 2 SSW	830	5	47.0	31	*****	74.	10	21.	1	557.0	******	.0	******	1.601	31	*****	1.04	19
BRISTOW	1144	5	44.4	30	7.7	76.	10	13.	13	618.0	-259.0	.0	.0	3.880	31	2.73	1.33	20
CHANDLER	1684	5	46.7	30	9.3	77.	10	18.	13	550.0	-306.0	.0	.0	2.490	31	1.34	.96	19
CHICKASHA EX ST	1750	5	45.2	31	7.4	75.	10	14.	1	612.5	-230.5	.0	.0	1.920	31	1.02	1.20	19
COX CITY 1 E	2196	5	*****	0	*****	****	0	****	0	******	******	******	******	2.151	30	*****	1.30	19
CUSHING	2318	5	44.5	31	9.7	78.	11	21.	2	634.5	-301.5	.0	.0	.380	31	-.66	.38	17
EL RENO 1 N	2818	5	45.2	31	9.0	74.	10	17.	13	614.0	-279.0	.0	.0	1.000	31	.17	.91	19
GUTHRIE	3821	5	46.2	31	10.0	77.	10	17.	2	582.0	-311.0	.0	.0	2.151	31	1.24	1.10	19
HENNESSEY 2 SE	4055	5	43.6	31	8.1	72.	10	16.	1	663.5	-251.5	.0	.0	1.560	31	.85	.97	19
INGALLS	4489	5	*****	0	*****	****	0	****	0	******	******	******	******	.720	31	*****	.39	18
KINGFISHER 2 SE	4861	5	44.3	31	8.3	75.	10	17.	13	640.5	-258.5	.0	.0	1.710	31	.88	.97	19
KONAWA	4915	5	*****	0	*****	****	0	****	0	******	******	******	******	4.170	31	2.84	1.58	20
MARSHALL	5589	5	*****	0	*****	****	0	****	0	******	******	******	******	1.520	31	.76	.70	19
MEEKER 4 W	5779	5	46.1	30	9.6	76.	10	14.	13	566.0	-318.0	.0	.0	2.710	31	1.64	1.09	19
MULHALL	6110	5	*****	0	*****	****	0	****	0	******	******	******	******	1.370	31	*****	.96	19
NORMAN 3 S	6386	5	45.9	31	*****	76.	10	18.	13	591.5	******	.0	******	1.660	31	.53	.90	19
OKEMAH	6638	5	46.9	31	9.0	74.	10	22.	13	560.0	-280.0	.0	.0	3.050	31	1.67	1.36	20
OKLAHOMA CTY WS	6661	5	46.9	31	11.0	75.	10	23.	1	561.0	-341.0	.0	.0	1.851	31	.89	.71	19
PERKINS	7003	5	*****	0	*****	****	0	****	0	******	******	******	******	2.040	31	.92	.78	19
PIEDMONT	7068	5	*****	0	*****	****	0	****	0	******	******	******	******	1.480	31	*****	.92	19
PRAGUE	7264	5	*****	0	*****	****	0	****	0	******	******	******	******	2.571	31	1.33	1.25	19
PURCELL 5 SW	7327	5	45.2	31	8.3	75.	10	14.	13	614.5	-256.5	.0	.0	3.370	31	2.30	1.25	19
SEMINOLE	8042	5	47.7	31	8.6	74.	10	18.	13	537.0	-266.0	.0	.0	2.451	31	1.15	1.10	19
SHAWNEE	8110	5	*****	0	*****	****	0	****	0	******	******	******	******	2.460	31	1.24	.96	19
STELLA	8479	5	*****	0	*****	****	0	****	0	******	******	******	******	2.130	31	*****	1.22	19
STILLWATER 2 W	8501	5	41.7	31	6.4	76.	11	13.	13	722.0	-199.0	.0	.0	1.850	31	.95	.86	19
STROUD 1 N	8563	5	*****	0	*****	****	0	****	0	******	******	******	******	2.941	31	*****	1.05	20
TECUMSEH	8751	5	*****	0	*****	****	0	****	0	******	******	******	******	2.680	31	*****	1.79	20
TROUSDALE	8960	5	*****	0	*****	****	0	****	0	******	******	******	******	3.290	31	*****	1.43	19
UNION CITY 1 SE	9086	5	*****	0	*****	****	0	****	0	******	******	******	******	2.140	31	1.05	1.24	17
WELTY 1 SSE	9479	5	*****	0	*****	****	0	****	0	******	******	******	******	2.800	31	*****	1.40	20
WEWOKA	9575	5	*****	0	*****	****	0	****	0	******	******	******	******	2.620	31	1.20	1.69	19

JANUARY 1990 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ASHLAND	364	6	*****	0	*****	****	0	****	0	******	******	******	******	5.360	31	*****	1.86	20
BEGGS	631	6	*****	0	*****	****	0	****	0	******	******	******	******	1.970	31	*****	.85	17
BOYNTON	1027	6	*****	0	*****	****	0	****	0	******	******	******	******	5.102	31	*****	2.30	20
CALVIN	1391	6	*****	0	*****	****	0	****	0	******	******	******	******	4.740	31	3.34	1.95	19
CHECOTAH	1711	6	*****	0	*****	****	0	****	0	******	******	******	******	5.050	31	3.56	1.84	17
CLAYTON 11 WNW	1858	6	*****	0	*****	****	0	****	0	******	******	******	******	6.720	31	*****	3.80	17
DEWAR 2 NE	2485	6	*****	0	*****	****	0	****	0	******	******	******	******	4.760	31	3.35	2.62	20
DUSTIN	2690	6	*****	0	*****	****	0	****	0	******	******	******	******	4.650	31	*****	1.81	20
EUFAULA	2993	6	47.5	31	*****	73.	10	21.	13	543.5	******	.0	******	4.871	31	3.34	1.95	16
HANNA	3884	6	46.6	31	*****	75.	10	15.	13	571.5	******	.0	******	5.640	31	4.18	1.92	17
HARTSHORNE	3946	6	*****	0	*****	****	0	****	0	******	******	******	******	5.410	31	*****	2.04	19
HASKELL	3956	6	*****	0	*****	****	0	****	0	******	******	******	******	4.991	31	3.36	1.44	17
HOLDENVILLE	4235	6	46.4	31	7.6	75.	10	16.	13	575.5	-236.5	.0	.0	4.180	31	2.84	1.95	20
LAKE EUFAULA	4975	6	46.2	31	*****	75.	11	21.	13	583.5	******	.0	******	5.130	31	*****	2.70	17
LYONS 2 N	5437	6	*****	0	*****	****	0	****	0	******	******	******	******	5.690	31	3.97	1.79	16
MARBLE CITY	5546	6	*****	0	*****	****	0	****	0	******	******	******	******	6.180	31	*****	2.28	17
MCALESTER FAA	5664	6	48.1	31	10.0	74.	10	17.	13	527.5	-306.5	3.0	3.0	4.720	31	3.10	2.10	17
MCCURTAIN 1 SE	5693	6	48.9	31	*****	75.	10	15.	13	498.0	******	.0	******	6.340	31	4.46	2.05	17
MUSKOGEE	6130	6	46.5	29	*****	74.	10	16.	13	537.0	******	.0	******	5.000	31	3.37	2.22	19
OKTAHA 2 NE	6678	6	*****	0	*****	****	0	****	0	******	******	******	******	3.260	31	*****	1.64	17
QUINTON	7372	6	*****	0	*****	****	0	****	0	******	******	******	******	5.032	31	3.41	1.81	19
SALLISAW 2 NE	7862	6	44.8	31	6.4	75.	10	11.	13	625.0	-200.0	.0	.0	6.541	31	4.76	2.92	17
SCIPIO	7979	6	*****	0	*****	****	0	****	0	******	******	******	******	4.150	31	*****	2.35	17
SCRAPER	7993	6	*****	0	*****	****	0	****	0	******	******	******	******	7.180	31	*****	3.57	17
SHORT	8170	6	*****	0	*****	****	0	****	0	******	******	******	******	7.010	31	*****	2.18	19
STILWELL 1 NE	8506	6	45.5	31	*****	72.	10	14.	13	605.0	******	.0	******	5.520	31	3.56	1.76	17
TAHLEQUAH	8677	6	45.0	31	8.0	72.	11	12.	13	620.0	-248.0	.0	.0	4.920	31	3.14	2.69	20
WEBBERS FALLS	9445	6	43.9	31	8.0	73.	11	15.	13	654.0	-248.0	.0	.0	4.820	31	3.19	1.95	17
WESTVILLE	9523	6	*****	0	*****	****	0	****	0	******	******	******	******	6.430	31	*****	2.50	17
WETUMKA 3 NE	9571	6	*****	0	*****	****	0	****	0	******	******	******	******	3.082	31	1.66	1.10	17

JANUARY 1990 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ALTUS IRR STA	179	7	46.5	31	7.2	78.	10	17.	7	574.0	-223.0	.0	.0	1.550	31	.77	1.54	19
ALTUS DAM	184	7	44.7	31	*****	78.	11	17.	5	629.0	******	.0	******	1.830	31	1.21	1.20	19
ANADARKO	224	7	43.4	25	*****	75.	10	12.	1	540.0	******	.0	******	1.231	27	*****	.82	19
APACHE	260	7	*****	0	*****	****	0	****	0	******	******	******	******	2.330	31	*****	1.50	20
ALTUS AFB	447	7	*****	0	*****	****	0	****	0	******	******	******	******	1.602	31	*****	1.53	19
CARNEGIE 2 ENE	1504	7	44.6	31	7.3	76.	10	13.	1	633.5	-225.5	.0	.0	1.850	31	1.07	1.10	19
CHATTANOOGA	1706	7	46.1	31	7.1	76.	10	16.	7	587.0	-219.0	.0	.0	1.540	31	.63	.88	19
DUNCAN 12 W	2668	7	*****	0	*****	****	0	****	0	******	******	******	******	1.670	31	*****	1.20	19
FREDERICK	3353	7	46.1	29	*****	72.	14	24.	1	547.5	******	.0	******	1.431	29	*****	1.10	18
GRANDFIELD 4 NW	3709	7	*****	0	*****	****	0	****	0	******	******	******	******	1.420	31	.34	1.09	19
HOBART FAA APT	4204	7	45.3	31	9.1	79.	10	18.	5	609.5	-283.5	.0	.0	1.651	31	1.04	.95	19
HOLLIS	4249	7	44.5	31	5.6	79.	10	12.	7	635.0	-174.0	.0	.0	.762	31	.23	.76	19
LAWTON	5063	7	44.5	31	5.7	71.	15	21.	13	635.0	-177.0	.0	.0	1.940	31	.87	1.34	18
FORT SILL	5068	7	46.5	31	*****	74.	10	23.	13	574.5	******	.0	******	2.000	31	.93	1.28	19
LOOKEBA 2 ENE	5329	7	*****	0	*****	****	0	****	0	******	******	******	******	2.690	31	*****	1.06	17
MANGUM RES STA	5509	7	45.0	30	6.4	77.	14	15.	7	599.5	-218.5	.0	.0	3.030	31	2.40	2.03	19
RANDLETT 9 E	7403	7	*****	0	*****	****	0	****	0	******	******	******	******	2.700	31	*****	1.41	19
ROOSEVELT	7727	7	*****	0	*****	****	0	****	0	******	******	******	******	1.580	31	.90	1.58	19
SEDAN	8016	7	*****	0	*****	****	0	****	0	******	******	******	******	1.250	31	*****	1.06	19
VINSON 3 WNW	9212	7	*****	0	*****	****	0	****	0	******	******	******	******	1.021	31	.55	.97	19
WALTERS	9278	7	47.1	31	7.2	76.	10	20.	1	554.5	-223.5	.0	.0	1.720	31	.52	1.25	19
WICHITA MT WLR	9629	7	43.5	31	5.7	74.	11	17.	13	665.0	-178.0	.0	.0	2.650	31	1.75	1.60	18
WILLOW	9668	7	*****	0	*****	****	0	****	0	******	******	******	******	2.941	31	*****	1.95	19

JANUARY 1990 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

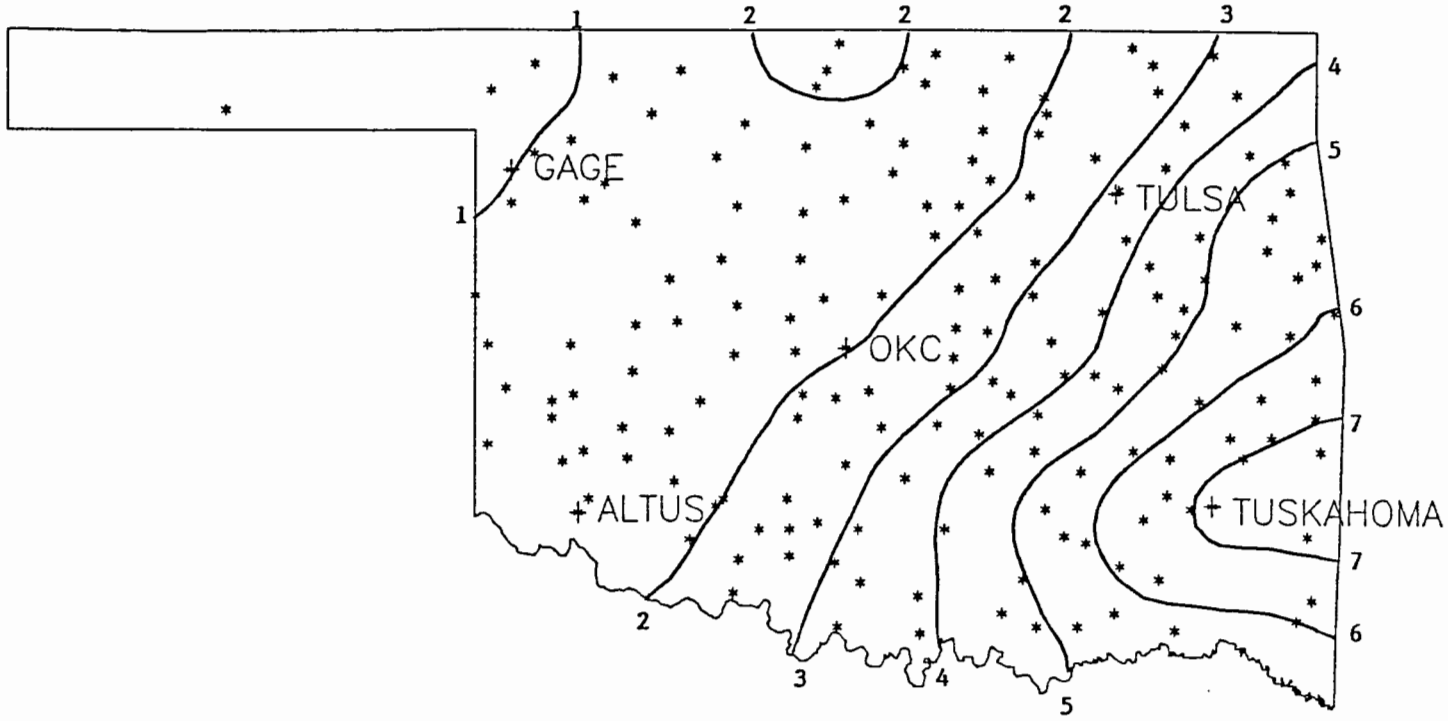
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ADA	17	8	46.9	31	7.3	75.	10	18.	13	560.5	-226.5	.0	.0	4.130	31	2.77	1.88	19
ALLEN	147	8	*****	0	*****	****	0	****	0	******	******	******	******	6.400	31	*****	2.75	17
ARDMORE	292	8	49.1	31	7.1	76.	10	25.	29	491.5	-206.5	.0	.0	4.622	31	3.27	3.10	19
ATOKA DAM	394	8	47.2	31	*****	74.	11	18.	13	550.5	******	.0	******	6.720	31	*****	2.88	17
BOKCHITO	917	8	*****	0	*****	****	0	****	0	******	******	******	******	4.950	31	*****	2.50	17
CANEY	1437	8	48.4	29	*****	75.	10	17.	13	480.5	******	.0	******	6.740	31	*****	3.40	17
CENTRAHOMA	1648	8	*****	0	*****	****	0	****	0	******	******	******	******	5.950	31	*****	2.20	19
CHICKASAW NRA	1745	8	44.5	31	*****	76.	11	16.	13	634.0	******	.0	******	4.430	31	*****	2.10	19
COLEMAN	2011	8	*****	0	*****	****	0	****	0	******	******	******	******	4.530	31	*****	2.68	19
COMANCHE	2054	8	*****	0	*****	****	0	****	0	******	******	******	******	2.390	31	*****	1.20	19
DAISY 4 ENE	2354	8	*****	0	*****	****	0	****	0	******	******	******	******	8.281	31	6.33	3.82	17
DUNCAN	2660	8	45.3	31	5.4	75.	11	21.	1	609.5	-168.5	.0	.0	2.450	31	1.47	1.36	19
DURANT USDA	2678	8	46.8	31	*****	75.	11	19.	13	564.0	******	.0	******	5.990	31	4.25	3.01	17
FARRIS 3 WNW	3083	8	*****	0	*****	****	0	****	0	******	******	******	******	7.810	31	*****	4.52	17
GRADY	3688	8	*****	0	*****	****	0	****	0	******	******	******	******	3.511	31	*****	1.74	19
HEALDTON	4001	8	47.0	31	*****	77.	10	16.	13	558.5	******	.0	******	3.580	31	2.24	2.24	19
HENNEPIN	4052	8	*****	0	*****	****	0	****	0	******	******	******	******	4.280	31	*****	2.53	19
KETCHUM RANCH	4780	8	*****	0	*****	****	0	****	0	******	******	******	******	2.330	31	*****	1.50	19
KINGSTON	4865	8	*****	0	*****	****	0	****	0	******	******	******	******	5.921	31	4.21	2.25	20
LEHIGH	5108	8	*****	0	*****	****	0	****	0	******	******	******	******	5.481	31	*****	2.35	19
LINDSAY 2 W	5216	8	46.4	27	*****	74.	10	14.	13	502.5	******	.0	******	2.341	31	1.21	1.70	19
LOCO 6 SE	5247	8	*****	0	*****	****	0	****	0	******	******	******	******	3.890	31	*****	2.70	19
MADILL	5468	8	42.9	28	*****	77.	10	8.	7	618.5	******	.0	******	2.640	31	.95	.84	19
MARIETTA	5563	8	49.3	31	8.1	77.	10	21.	13	487.5	-250.5	.0	.0	3.581	31	2.10	1.63	19
MARLOW 1 WSW	5581	8	47.0	31	*****	75.	10	18.	29	557.0	******	.0	******	2.010	31	1.11	1.39	18
MCGEE CREEK DAM	5713	8	47.1	31	*****	76.	11	18.	13	555.0	******	.0	******	7.720	31	*****	4.45	17
OSWALT	6787	8	*****	0	*****	****	0	****	0	******	******	******	******	3.450	31	*****	1.30	19
PAULS VALLEY	6926	8	46.9	31	7.7	75.	10	15.	13	562.5	-237.5	.0	.0	4.320	31	3.01	1.90	19
TISHOMINGO NWLR	8884	8	46.5	31	*****	77.	10	14.	13	574.0	******	.0	******	5.361	31	3.83	2.37	19
TUSSY	9032	8	*****	0	*****	****	0	****	0	******	******	******	******	3.490	31	*****	2.01	19
WAURIKA	9395	8	48.6	31	7.6	77.	10	20.	1	509.5	-234.5	.0	.0	2.530	31	1.40	1.04	19
WAURIKA DAM	9399	8	47.3	21	*****	76.	11	22.	16	371.0	******	.0	******	2.691	21	*****	1.52	19

JANUARY 1990 SUMMARY FOR SOUTHEAST DIVISION (CD9)

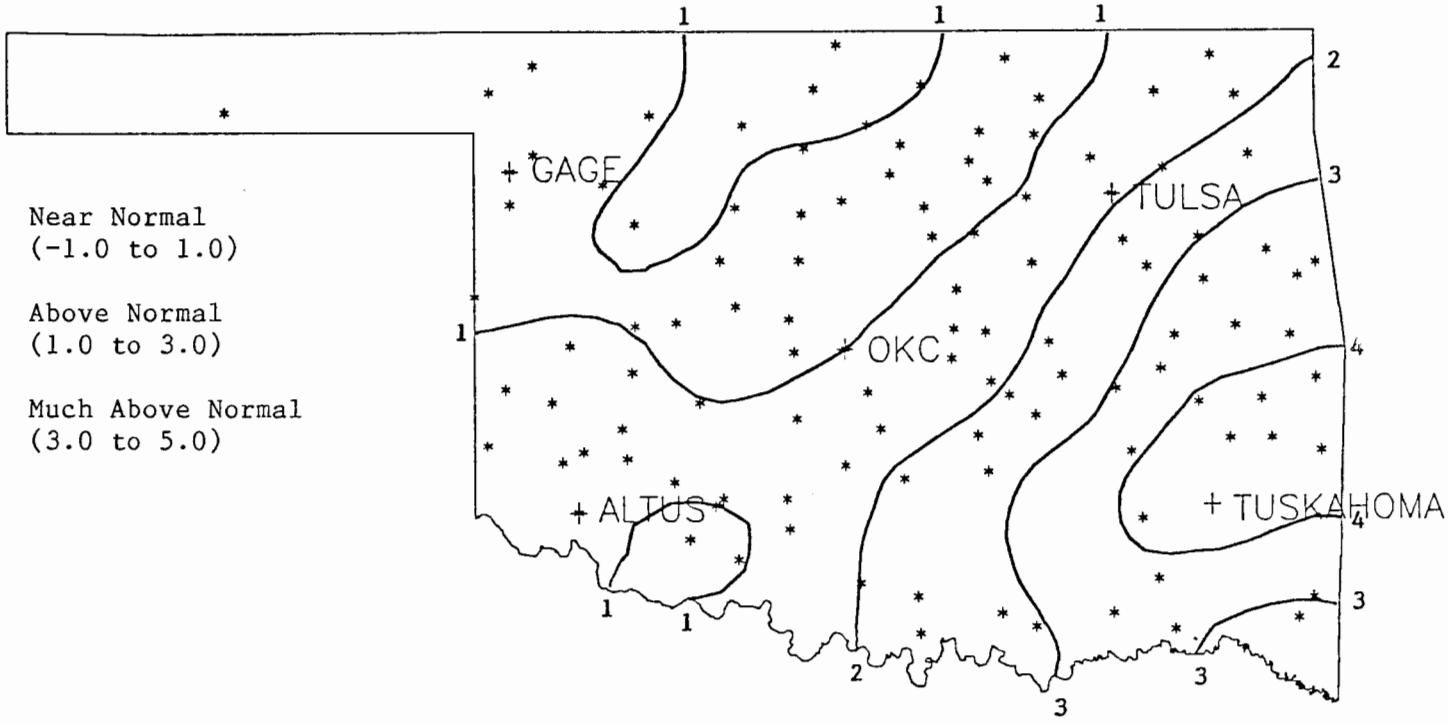
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ANTLERS	256	9	47.6	31	7.4	74.	10	15.	13	539.0	-230.0	.0	.0	5.901	31	3.70	1.80	16
BATTIEST 1 SSW	567	9	43.4	19	*****	71.	10	15.	13	410.0	******	.0	******	7.790	29	*****	3.05	18
BEAR MT TWR	584	9	49.0	25	*****	73.	24	23.	13	399.5	******	.0	******	5.661	26	*****	3.14	19
BENGAL	670	9	*****	0	*****	****	0	****	0	******	******	******	******	7.850	31	*****	3.87	17
BOSWELL 4 NNW	980	9	49.9	31	*****	75.	10	22.	13	469.0	******	.0	******	5.430	31	3.33	1.94	17
BROKEN BOW 1 N	1162	9	*****	0	*****	****	0	****	0	******	******	******	******	3.680	31	.65	.95	19
BROKEN BOW DAM	1168	9	46.4	31	*****	74.	24	20.	12	577.0	******	.0	******	8.380	31	*****	3.30	18
CARNASAW TWR	1499	9	*****	0	*****	****	0	****	0	******	******	******	******	6.760	31	3.59	3.35	19
CARTER TWR	1544	9	*****	0	*****	****	0	****	0	******	******	******	******	5.810	31	3.12	3.15	19
FANSHAWE	3065	9	*****	0	*****	****	0	****	0	******	******	******	******	8.660	31	6.78	3.85	17
FLAGPOLE TWR	3169	9	*****	0	*****	****	0	****	0	******	******	******	******	6.620	31	*****	4.80	16
HEAVENER 1 SE	4008	9	*****	0	*****	****	0	****	0	******	******	******	******	5.590	31	3.34	2.32	17
HEE MT TWR	4017	9	*****	0	*****	****	0	****	0	******	******	******	******	5.750	31	*****	2.93	19
HUGO	4384	9	49.9	31	7.6	78.	11	21.	13	469.0	-235.0	.0	.0	5.131	31	2.91	2.10	19
IDABEL	4451	9	47.5	30	5.5	74.	25	19.	14	525.5	-187.5	.0	.0	6.351	30	*****	2.60	19
JADIE TOWER	4560	9	*****	0	*****	****	0	****	0	******	******	******	******	7.190	31	*****	2.72	19
POTEAU W W	7254	9	45.4	31	*****	74.	11	12.	12	608.0	******	.0	******	9.312	31	*****	3.22	16
SMITHVILLE 1 W	8285	9	44.0	31	*****	71.	24	11.	13	651.5	******	.0	******	8.400	31	*****	2.92	18
SOBAL TOWER	8305	9	49.0	29	*****	73.	24	27.	13	464.0	******	.0	******	8.922	29	*****	2.82	31
SPIRO	8416	9	*****	0	*****	****	0	****	0	******	******	******	******	5.190	31	3.37	1.85	17
TUSKAHOMA	9023	9	48.0	31	*****	74.	10	12.	13	528.5	******	.0	******	8.592	31	*****	4.60	17
VALLIANT 3 W	9118	9	*****	0	*****	****	0	****	0	******	******	******	******	3.990	31	1.47	1.98	19
WILBURTON 9 ENE	9634	9	47.0	31	7.7	74.	10	13.	13	559.5	-237.5	.0	.0	8.001	31	6.09	2.50	16

JANUARY 1990 CLIMATE DIVISION SUMMARY

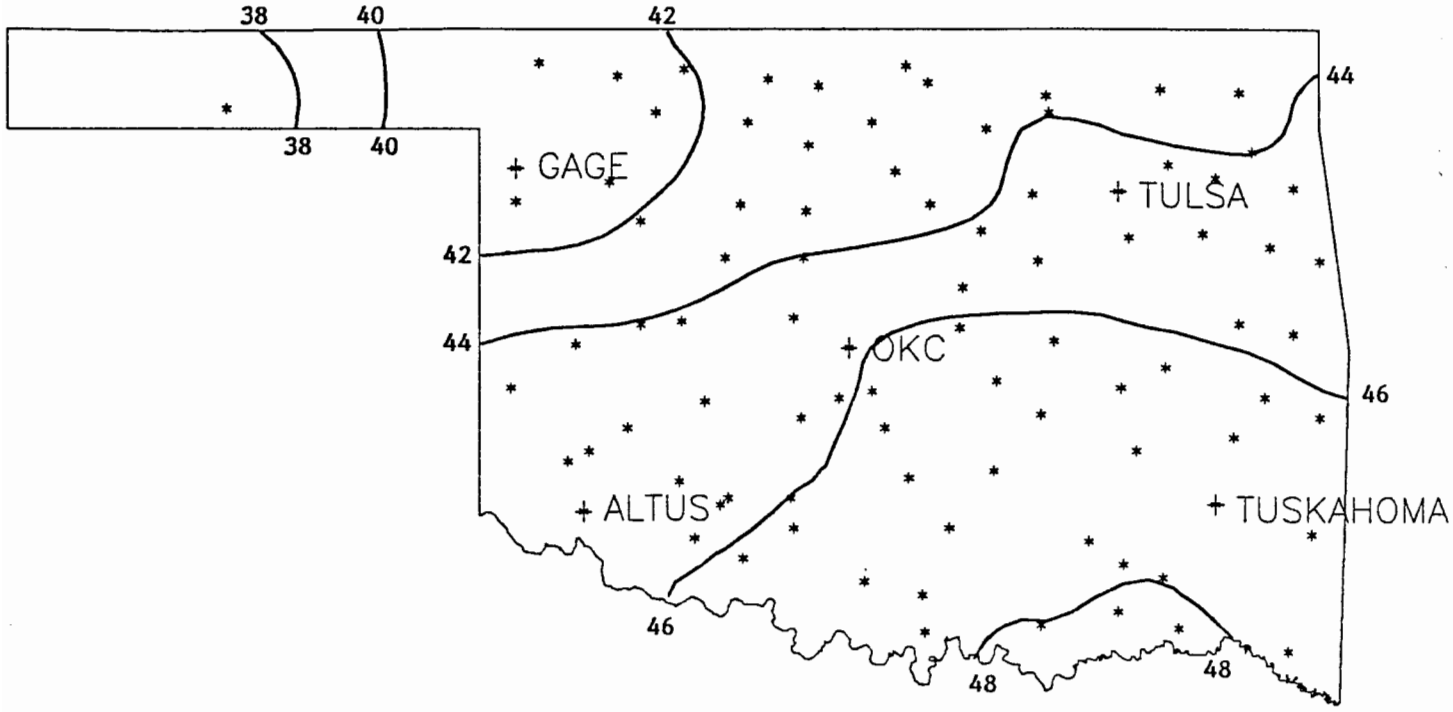
CLIMATE DIV	MEAN TEMP	NUM STA	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEGREE DAYS	DEV FROM NORM	COOL DEGREE DAYS	DEV FROM NORM	TOT PPT	NUM STA	DEV FROM NORM	MAX 24-HR	DAY
1	37.3	11	3.6	82.0	11	4.0	5	859.4	-112.3	.0	.0	.89	14	.48	1.60	19
2	41.9	15	7.4	81.0	10	10.0	1	716.6	-229.8	.0	.0	1.72	23	.98	1.83	17
3	44.2	15	9.4	79.0	10	10.0	13	642.1	-295.2	.0	.0	2.79	28	1.51	3.60	17
4	43.6	8	7.4	77.0	10	4.0	5	664.4	-230.3	.0	.0	1.44	19	.87	1.50	19
5	45.5	16	8.9	78.0	11	13.0	13	601.5	-279.4	.0	.0	2.17	34	1.10	1.79	20
6	46.3	10	8.6	75.0	10	11.0	13	580.3	-267.5	.3	.3	5.15	30	3.54	3.80	17
7	45.3	11	6.8	79.0	10	12.0	7	608.8	-211.9	.0	.0	1.89	21	1.07	2.03	19
8	47.1	13	6.5	77.0	10	8.0	7	554.9	-200.6	.0	.0	4.58	31	3.18	4.52	17
9	47.3	9	6.3	78.0	11	11.0	13	547.4	-198.3	.0	.0	6.64	19	4.23	4.80	16



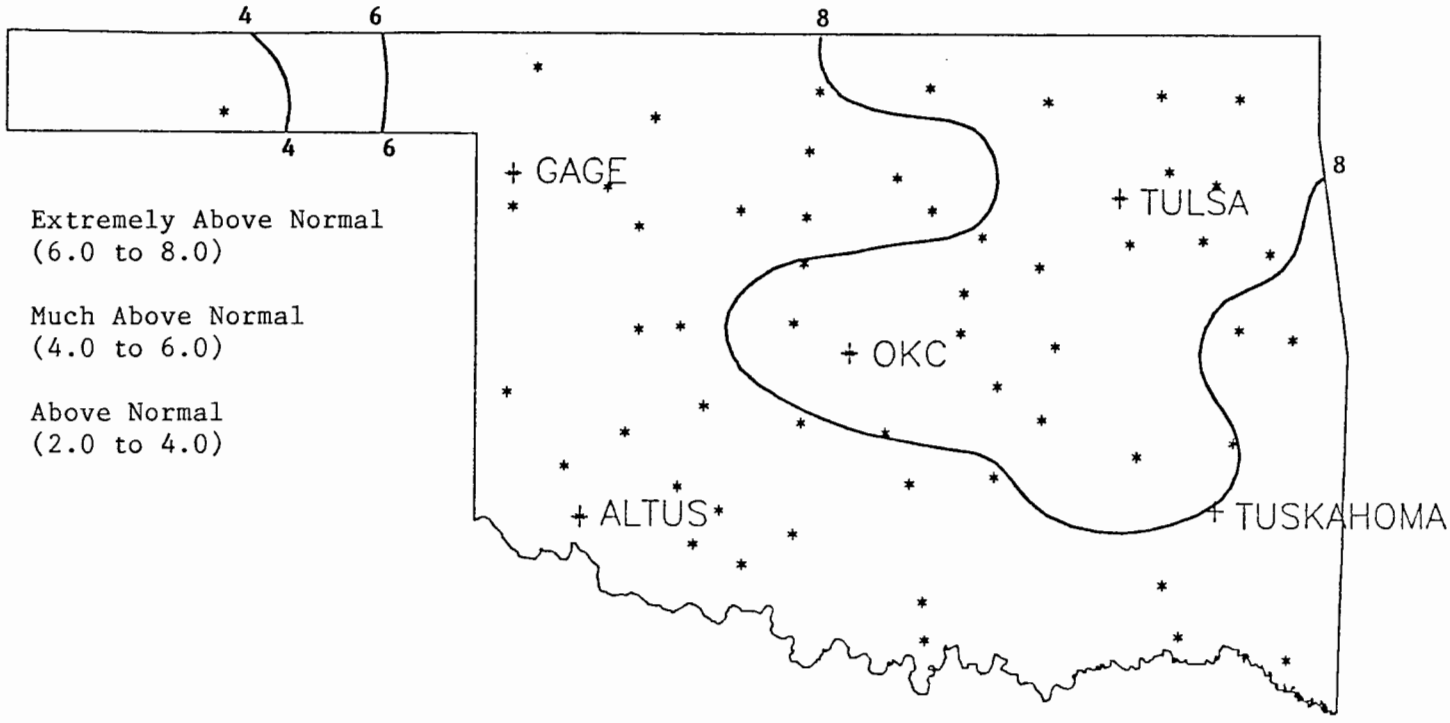
JANUARY 1990 TOTAL PRECIPITATION
(Inches)



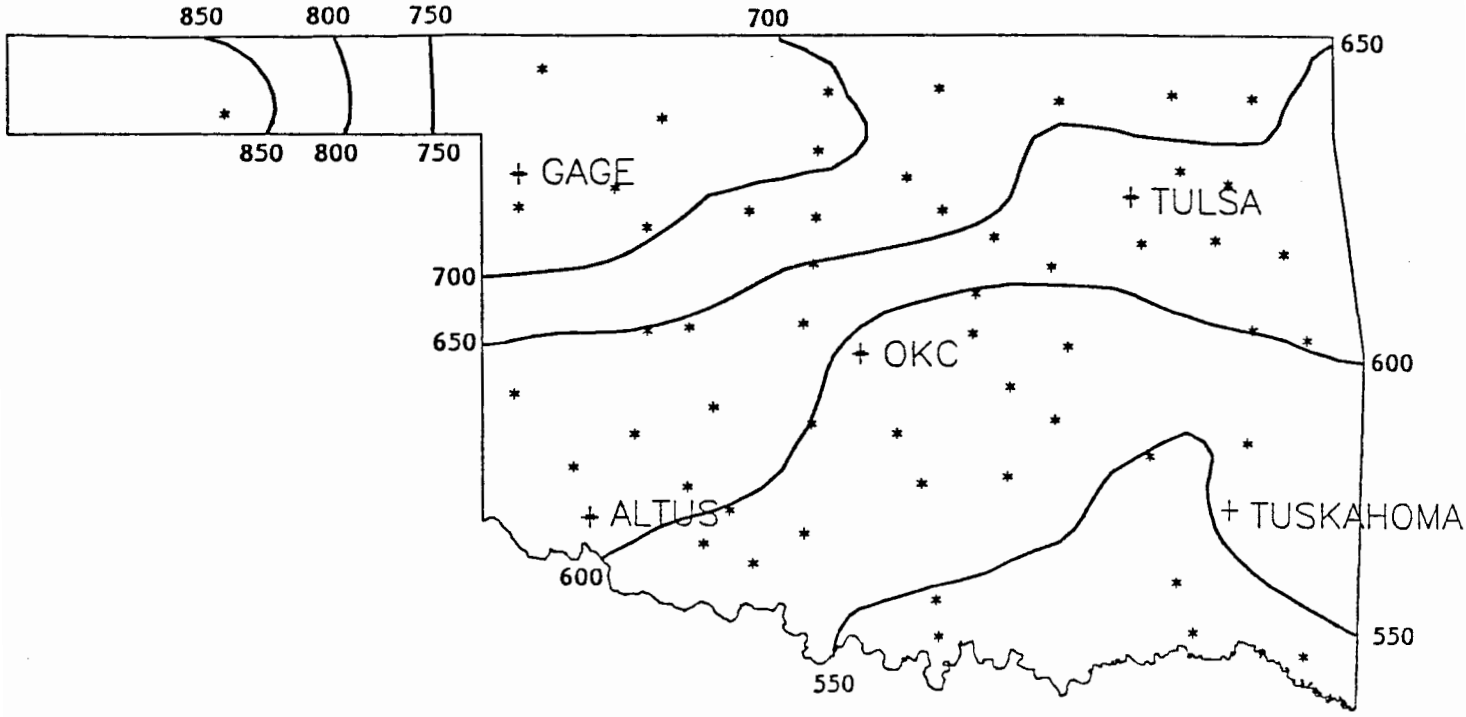
JANUARY 1990 DEVIATION FROM NORMAL PRECIPITATION
(Inches)



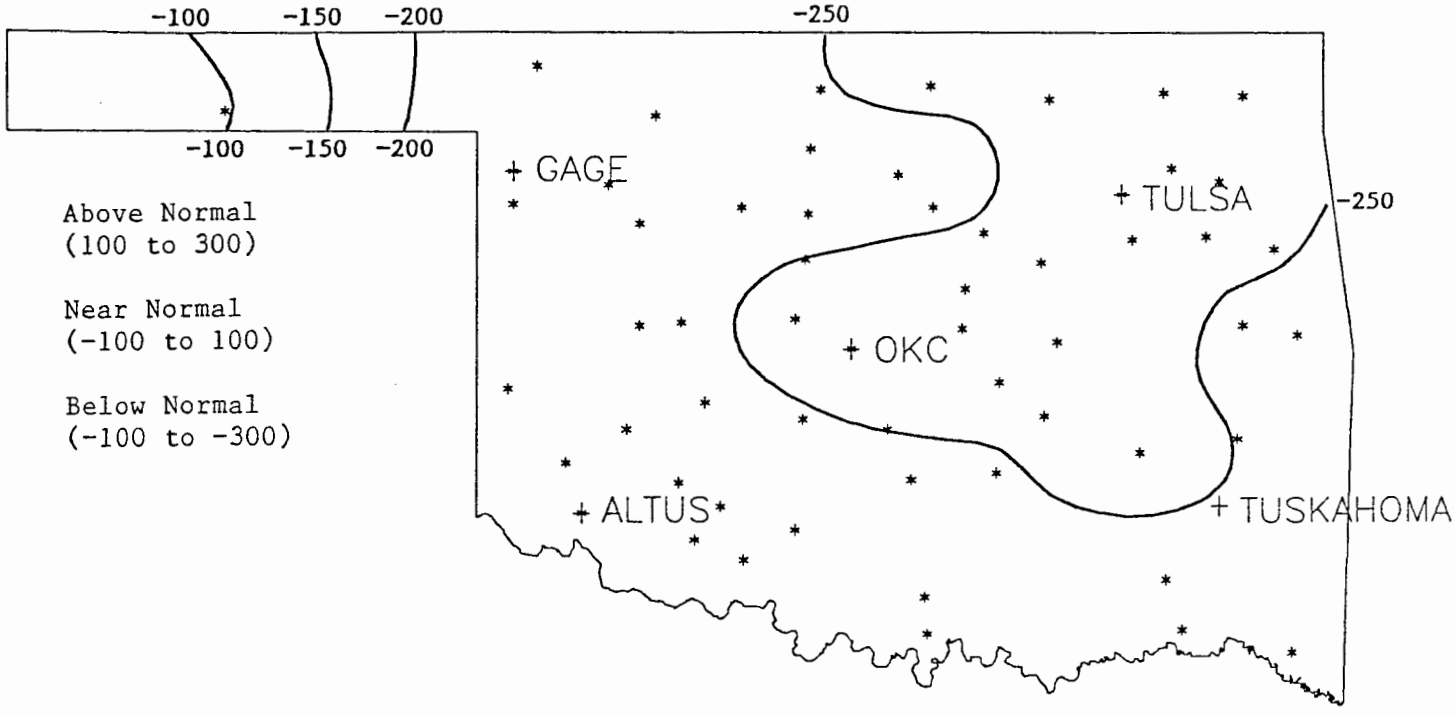
JANUARY 1990 AVERAGE MONTHLY TEMPERATURES
(Degrees F)



JANUARY 1990 DEVIATION FROM NORMAL TEMPERATURES
(Degrees F)

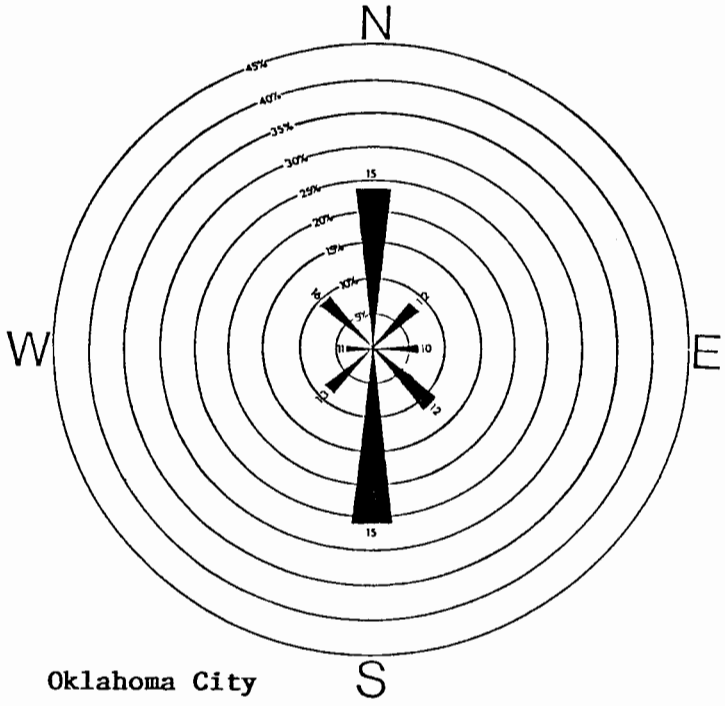


JANUARY 1990 HEATING DEGREE DAYS

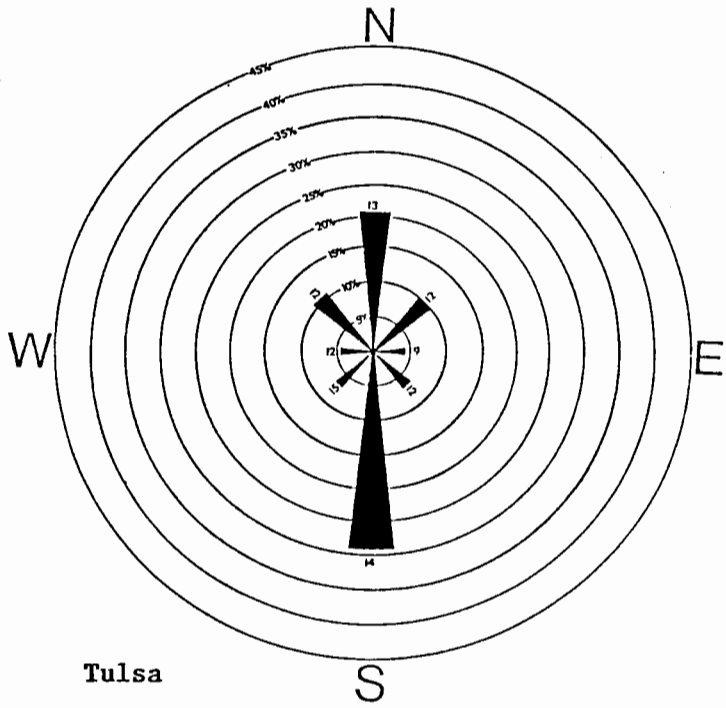


JANUARY 1990 DEVIATION FROM NORMAL HEATING DEGREE DAYS

March wind roses for Oklahoma City and Tulsa for 10-year (1965-1974) mean winds (data adapted from NOAA Airport Climatology Series). Percents represent the percentages for winds coming from a direction. The numbers at the end of the bars indicate the average speed (miles per hour) of winds from that direction.



Oklahoma City



Tulsa

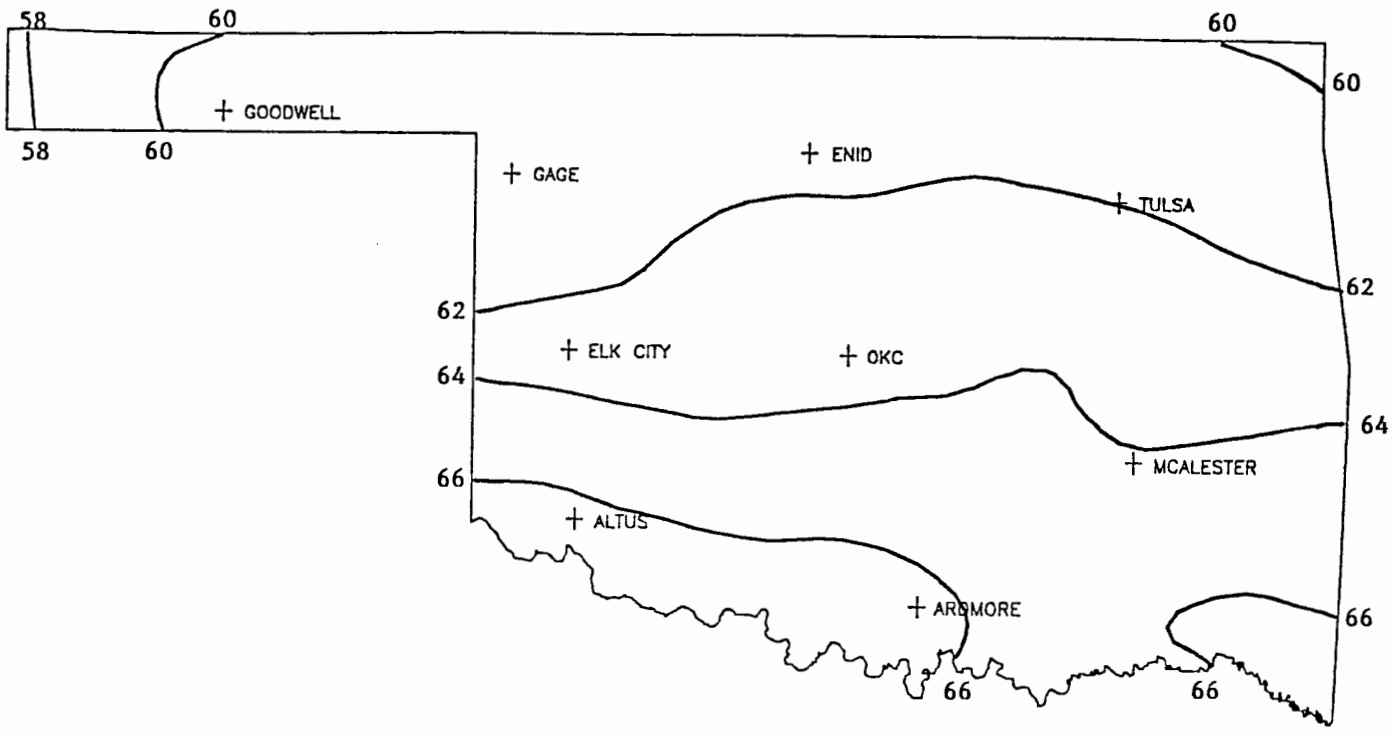
MARCH 1990 SUNRISE AND SUNSET

Oklahoma City

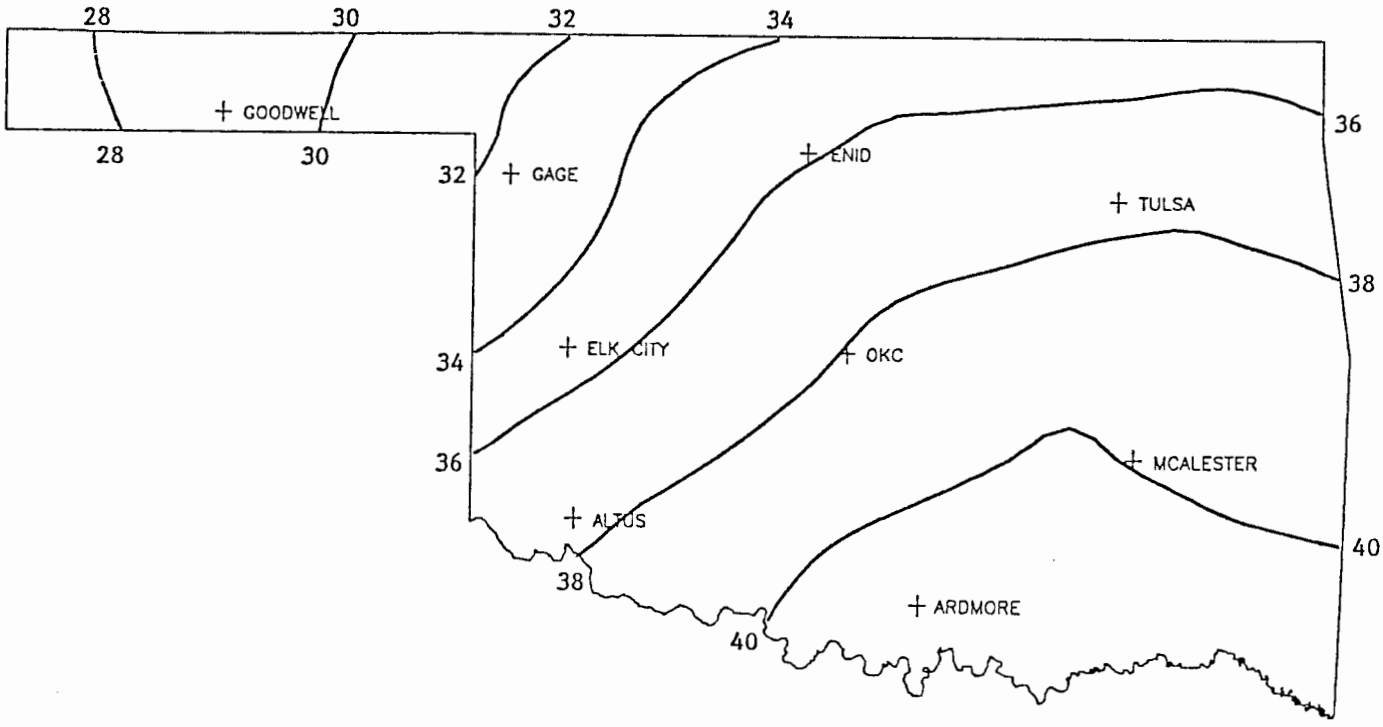
DATE	SUNRISE	SUNSET	DAYLIGHT
900301	7: 2AM	6:25PM LT	11:23
900302	7: 0AM	6:26PM LT	11:25
900303	6:59AM	6:26PM LT	11:27
900304	6:58AM	6:27PM LT	11:29
900305	6:57AM	6:28PM LT	11:32
900306	6:55AM	6:29PM LT	11:34
900307	6:54AM	6:30PM LT	11:36
900308	6:53AM	6:31PM LT	11:38
900309	6:51AM	6:32PM LT	11:41
900310	6:50AM	6:33PM LT	11:43
900311	6:48AM	6:33PM LT	11:45
900312	6:47AM	6:34PM LT	11:47
900313	6:46AM	6:35PM LT	11:49
900314	6:44AM	6:36PM LT	11:52
900315	6:43AM	6:37PM LT	11:54
900316	6:41AM	6:38PM LT	11:56
900317	6:40AM	6:38PM LT	11:58
900318	6:39AM	6:39PM LT	12: 1
900319	6:37AM	6:40PM LT	12: 3
900320	6:36AM	6:41PM LT	12: 5
900321	6:34AM	6:42PM LT	12: 7
900322	6:33AM	6:43PM LT	12:10
900323	6:31AM	6:43PM LT	12:12
900324	6:30AM	6:44PM LT	12:14
900325	6:29AM	6:45PM LT	12:16
900326	6:27AM	6:46PM LT	12:19
900327	6:26AM	6:47PM LT	12:21
900328	6:24AM	6:47PM LT	12:23
900329	6:23AM	6:48PM LT	12:25
900330	6:21AM	6:49PM LT	12:28
900331	6:20AM	6:50PM LT	12:30

Tulsa

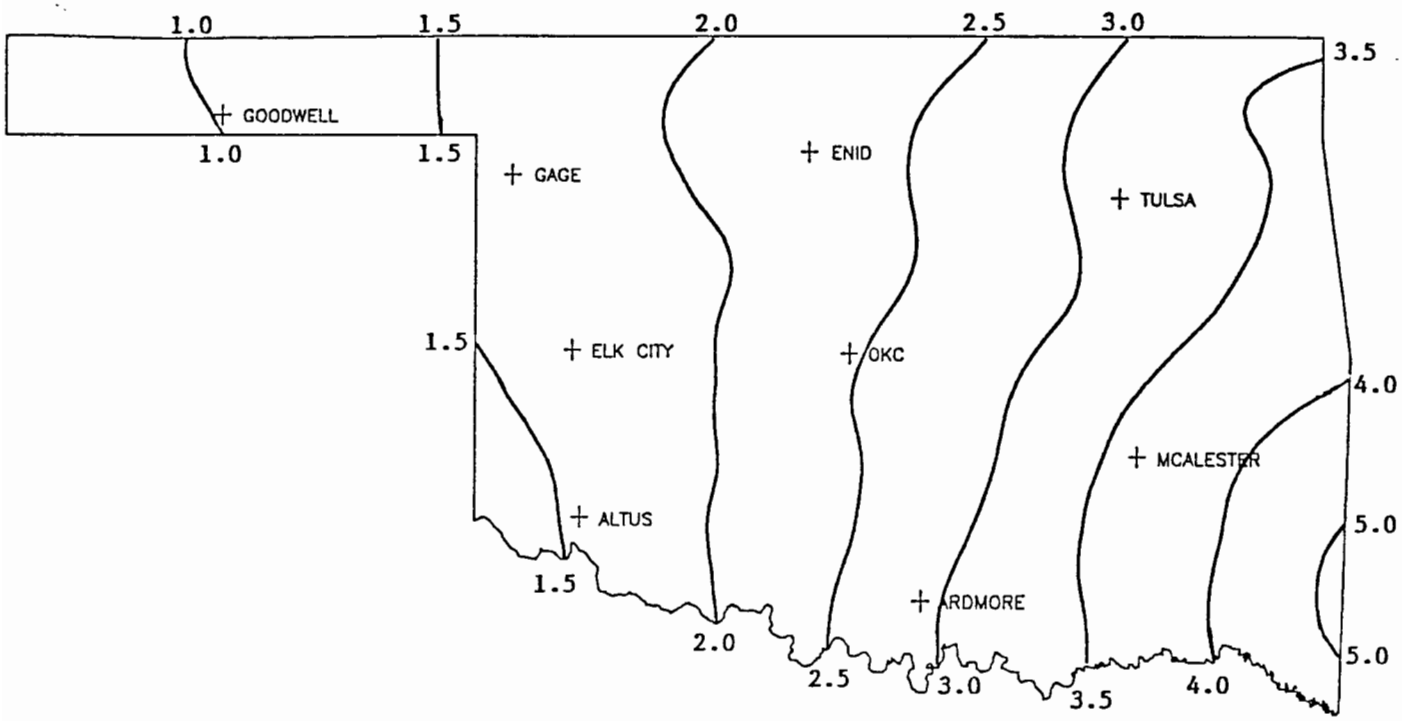
DATE	SUNRISE	SUNSET	DAYLIGHT
900301	6:56AM	6:17PM LT	11:22
900302	6:54AM	6:18PM LT	11:24
900303	6:53AM	6:19PM LT	11:26
900304	6:52AM	6:20PM LT	11:28
900305	6:50AM	6:21PM LT	11:31
900306	6:49AM	6:22PM LT	11:33
900307	6:48AM	6:23PM LT	11:35
900308	6:46AM	6:24PM LT	11:38
900309	6:45AM	6:25PM LT	11:40
900310	6:43AM	6:25PM LT	11:42
900311	6:42AM	6:26PM LT	11:44
900312	6:41AM	6:27PM LT	11:47
900313	6:39AM	6:28PM LT	11:49
900314	6:38AM	6:29PM LT	11:51
900315	6:36AM	6:30PM LT	11:54
900316	6:35AM	6:31PM LT	11:56
900317	6:33AM	6:32PM LT	11:58
900318	6:32AM	6:32PM LT	12: 1
900319	6:30AM	6:33PM LT	12: 3
900320	6:29AM	6:34PM LT	12: 5
900321	6:28AM	6:35PM LT	12: 7
900322	6:26AM	6:36PM LT	12:10
900323	6:25AM	6:37PM LT	12:12
900324	6:23AM	6:38PM LT	12:14
900325	6:22AM	6:38PM LT	12:17
900326	6:20AM	6:39PM LT	12:19
900327	6:19AM	6:40PM LT	12:21
900328	6:17AM	6:41PM LT	12:24
900329	6:16AM	6:42PM LT	12:26
900330	6:14AM	6:42PM LT	12:28
900331	6:13AM	6:43PM LT	12:31



30-YEAR MEAN MARCH DAILY MAXIMUM TEMPERATURE



30-YEAR MEAN MARCH DAILY MINIMUM TEMPERATURE



30-YEAR MEAN MARCH PRECIPITATION

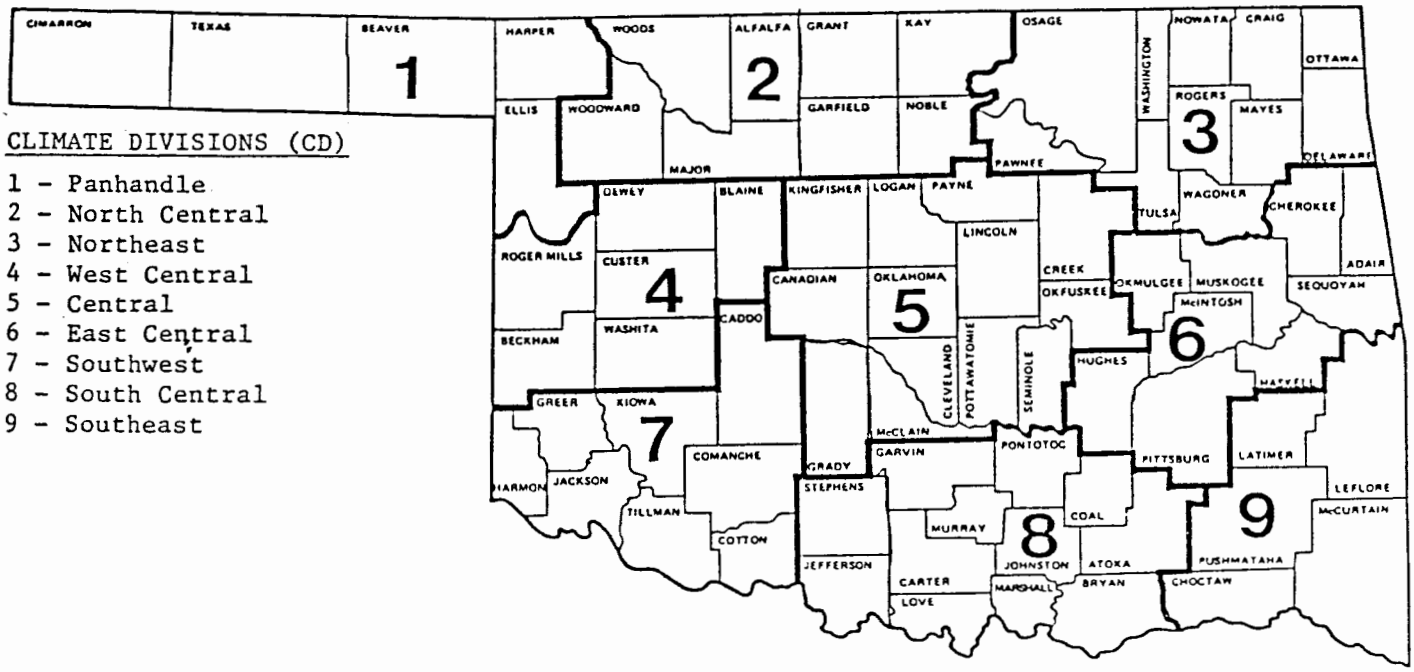
30- and 90-DAY NATIONAL WEATHER SERVICE OUTLOOK

30-DAY OUTLOOK (MID FEBRUARY - MID MARCH)

Precipitation - Near Normal in the Panhandle
Above Normal Elsewhere
Temperature - Above Normal Statewide

90-DAY OUTLOOK (FEBRUARY-APRIL)

Precipitation - Near Normal Statewide
Temperature - Near Normal Statewide



CLIMATE DIVISIONS (CD)

1 - Panhandle
2 - North Central
3 - Northeast
4 - West Central
5 - Central
6 - East Central
7 - Southwest
8 - South Central
9 - Southeast

EXPLANATION OF TABLES

Two kinds of tables appear in this summary. The first is a set of tables containing all reporting stations grouped by climate division. The figure above shows the locations of the climate divisions. Each table contains the following information for each station:

Station Name:

Station Identification Number: These are usually assigned by the National Climatic Data Center.

Climate Division: See the figure above.

Number of Temperature Observations: These are the actual number of temperature reports recorded at the station during the current month. Missing observations may result in artificially high or low mean monthly temperatures.

Deviation from Normal: The deviation of the observed mean monthly temperature from the monthly station normal. A positive value indicates the month was warmer than normal. A negative value indicates the month was cooler than normal. Normal monthly temperatures may be calculated by subtracting the deviation from the observed temperature.

Maximum Daily Maximum: The maximum daily maximum temperature observed during the current month and year and the day which it occurred.

Minimum Daily Minimum: The minimum daily minimum temperature observed during the current month and year and the day which it occurred.

Heating Degree Days: HDD are calculated each day of the month for which there is a temperature report and summed. They are a qualitative measure of how much heat was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value. For February 1984 HDD would be calculated as:

$$\sum_{i=1}^{29} 65-((TMAX_i + TMIN_i)/2)$$

Deviation from Normal Heating Degree Days: A positive value indicates higher than normal heating requirements for the month as a whole. A negative value indicates lower than normal heating requirements for the month as a whole. Normal HDD may be calculated by subtracting the deviation from observed HDD.

Cooling Degree Days: CDD are calculated each day of the month for which there is a temperature report and summed. They are a proxy measure of how much cooling was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value. For June, CDD would be calculated as:

$$\sum_{i=1}^{30} ((TMAX_i + TMIN_i)/2)-65$$

Deviation from Normal Cooling Degree Days: A positive value indicates higher than normal cooling requirements for the month as a whole. A negative value indicates lower than normal cooling requirements for the month as a whole. Normal cooling degree days may be found by subtracting the deviation from the observed cooling degree days.

Total Precipitation: Often incorrectly referred to as mean precipitation, this value is the sum of all precipitation reported during the month at a station. If snow occurred, it is to be melted and its water equivalent recorded.

Number of Precipitation Observations: The number of days a rain or no-rain observation was reported. Missing observations frequently result in artificially low total precipitation values.

Deviation from Normal Precipitation: A positive value indicates more rain than normal was received. A negative value indicates less than was expected rainfall was received. Normal rainfall may be calculated by subtracting the deviation from monthly total.

Maximum 24-Hour Report and Day: The maximum amount of precipitation recorded during the station's 24-hour observation period for the current month and year and the day on which it was recorded.

The second set of tables contain similar information but are the average or extreme over all the stations reporting in each climate division.

EXPLANATION OF MAPS

To give a Statewide perspective, a series of maps is produced each month from the information contained in the station tables. Each map is calculated using between 50 and 200 observations. Only stations with complete monthly records are used. Each observation is put into one of three categories and assigned a plus (+), minus (-), or a dot (.). The minus is the lowest numeric category, the dot is the middle and the plus the highest numeric category. If a map location has no report, a value is estimated. Each map is accompanied by its own legend. The categories will vary from month to month throughout the year. The categories for the deviations from normal maps will always remain constant. This is to facilitate comparisons between months and across years.

MARCH 1990

CLIMATE CALENDAR

The data on this calendar are for Oklahoma City. Normal values are calculated for the period 1948-1987. Extremes are found for the period of record (1924-present).

Normal	1	Actual
58.6	max	
33.2	min	
.088	pcpn	
19	HDD	
0	CDD	
Highest Max		85-1976
Lowest Max		20-1980
Lowest Min		9-1980
Highest Min		56-1940
Greatest pcpn		1.71-1948

Normal	2	Actual
58.8	max	
35.6	min	
.065	pcpn	
18	HDD	
0	CDD	
Highest Max		85-1976
Lowest Max		27-1960
Lowest Min		8-1980
Highest Min		62-1976
Greatest pcpn		2.04-1988

Normal	3	Actual
57.0	max	
34.9	min	
.115	pcpn	
19	HDD	
0	CDD	
Highest Max		84-1955
Lowest Max		18-1960
Lowest Min		3-1960
Highest Min		59-1955
Greatest pcpn		1.46-1985

Normal	4	Actual
55.5	max	
32.1	min	
.047	pcpn	
21	HDD	
0	CDD	
Highest Max		84-1938
Lowest Max		18-1960
Lowest Min		8-1960
Highest Min		60-1938
Greatest pcpn		1.00-1982

Normal	5	Actual
55.9	max	
33.0	min	
.019	pcpn	
20	HDD	
0	CDD	
Highest Max		87-1956
Lowest Max		25-1960
Lowest Min		10-1960
Highest Min		56-1956
Greatest pcpn		1.71-1933

Normal	6	Actual
59.0	max	
34.1	min	
.059	pcpn	
18	HDD	
0	CDD	
Highest Max		83-1929
Lowest Max		21-1943
Lowest Min		8-1943
Highest Min		48-1974
Greatest pcpn		1.45-1973

Normal	7	Actual
57.0	max	
34.3	min	
.050	pcpn	
19	HDD	
0	CDD	
Highest Max		79-1974
Lowest Max		22-1932
Lowest Min		9-1943
Highest Min		61-1974
Greatest pcpn		.61-1976

Normal	8	Actual
56.9	max	
34.8	min	
.119	pcpn	
19	HDD	
0	CDD	
Highest Max		77-1977
Lowest Max		26-1932
Lowest Min		9-1967
Highest Min		57-1974
Greatest pcpn		1.38-1974

Normal	9	Actual
59.8	max	
36.4	min	
.050	pcpn	
17	HDD	
0	CDD	
Highest Max		81-1986
Lowest Max		29-1932
Lowest Min		11-1932
Highest Min		61-1986
Greatest pcpn		.70-1952

Normal	10	Actual
60.7	max	
37.5	min	
.120	pcpn	
16	HDD	
0	CDD	
Highest Max		89-1955
Lowest Max		26-1932
Lowest Min		4-1948
Highest Min		56-1967
Greatest pcpn		1.48-1974

Normal	11	Actual
58.5	max	
37.5	min	
.116	pcpn	
17	HDD	
0	CDD	
Highest Max		93-1967
Lowest Max		16-1948
Lowest Min		1-1948
Highest Min		56-1972
Greatest pcpn		1.48-1945

Normal	12	Actual
58.4	max	
36.4	min	
.047	pcpn	
18	HDD	
0	CDD	
Highest Max		90-1967
Lowest Max		27-1950
Lowest Min		4-1948
Highest Min		59-1972
Greatest pcpn		.78-1966

Normal	13	Actual
59.8	max	
36.1	min	
.022	pcpn	
17	HDD	
0	CDD	
Highest Max		90-1967
Lowest Max		36-1956
Lowest Min		14-1950
Highest Min		56-1933
Greatest pcpn		.43-1953

Normal	14	Actual
62.5	max	
36.7	min	
.050	pcpn	
15	HDD	
0	CDD	
Highest Max		83-1955
Lowest Max		32-1937
Lowest Min		17-1954
Highest Min		56-1955
Greatest pcpn		.87-1982

Normal	15	Actual
59.5	max	
38.1	min	
.024	pcpn	
16	HDD	
0	CDD	
Highest Max		84-1943
Lowest Max		37-1937
Lowest Min		21-1937
Highest Min		56-1935
Greatest pcpn		2.34-1944

Normal	16	Actual
60.8	max	
38.0	min	
.077	pcpn	
15	HDD	
0	CDD	
Highest Max		79-1966
Lowest Max		37-1960
Lowest Min		22-1934
Highest Min		56-1930
Greatest pcpn		1.25-1987

Normal	17	Actual
63.4	max	
38.3	min	
.061	pcpn	
14	HDD	
0	CDD	
Highest Max		87-1989
Lowest Max		34-1970
Lowest Min		20-1934
Highest Min		56-1977
Greatest pcpn		.69-1953

Normal	18	Actual
62.8	max	
39.7	min	
.050	pcpn	
14	HDD	
0	CDD	
Highest Max		86-1963
Lowest Max		30-1965
Lowest Min		19-1965
Highest Min		59-1968
Greatest pcpn		.48-1968

Normal	19	Actual
61.9	max	
39.0	min	
.076	pcpn	
15	HDD	
0	CDD	
Highest Max		88-1976
Lowest Max		26-1965
Lowest Min		16-1965
Highest Min		61-1982
Greatest pcpn		.90-1944

Normal	20	Actual
61.2	max	
38.4	min	
.209	pcpn	
15	HDD	
0	CDD	
Highest Max		85-1938
Lowest Max		35-1964
Lowest Min		12-1965
Highest Min		64-1935
Greatest pcpn		2.18-1985

Normal	21	Actual
59.7	max	
36.4	min	
.038	pcpn	
17	HDD	
0	CDD	
Highest Max		84-1938
Lowest Max		29-1955
Lowest Min		17-1974
Highest Min		62-1935
Greatest pcpn		.54-1926

Normal	22	Actual
63.8	max	
37.3	min	
.087	pcpn	
14	HDD	
0	CDD	
Highest Max		85-1929
Lowest Max		38-1952
Lowest Min		13-1955
Highest Min		59-1935
Greatest pcpn		1.37-1979

Normal	23	Actual
62.9	max	
38.6	min	
.203	pcpn	
14	HDD	
0	CDD	
Highest Max		88-1929
Lowest Max		36-1974
Lowest Min		17-1983
Highest Min		60-1947
Greatest pcpn		2.35-1984

Normal	24	Actual
61.2	max	
39.5	min	
.050	pcpn	
15	HDD	
0	CDD	
Highest Max		91-1929
Lowest Max		36-1965
Lowest Min		23-1965
Highest Min		59-1928
Greatest pcpn		1.24-1973

Normal	25	Actual
60.8	max	
39.4	min	
.104	pcpn	
15	HDD	
0	CDD	
Highest Max		88-1976
Lowest Max		33-1964
Lowest Min		18-1955
Highest Min		60-1976
Greatest pcpn		.81-1948

Normal	26	Actual
62.9	max	
39.9	min	
.064	pcpn	
14	HDD	
0	CDD	
Highest Max		85-1972
Lowest Max		33-1937
Lowest Min		13-1955
Highest Min		60-1989
Greatest pcpn		2.02-1938

Normal	27	Actual
65.2	max	
40.9	min	
.057	pcpn	
12	HDD	
0	CDD	
Highest Max		84-1945
Lowest Max		36-1931
Lowest Min		18-1955
Highest Min		60-1985
Greatest pcpn		1.87-1989

Normal	28	Actual
66.1	max	
43.0	min	
.061	pcpn	
11	HDD	
1	CDD	
Highest Max		88-1928
Lowest Max		36-1931
Lowest Min		16-1931
Highest Min		62-1985
Greatest pcpn		2.84-1988

Normal	29	Actual
63.5	max	
41.8	min	
.043	pcpn	
13	HDD	
1	CDD	
Highest Max		86-1967
Lowest Max		34-1987
Lowest Min		21-1944
Highest Min		65-1963
Greatest pcpn		.59-1981

Normal	30	Actual
63.8	max	
41.7	min	
.138	pcpn	
12	HDD	
0	CDD	
Highest Max		85-1946
Lowest Max		28-1926
Lowest Min		22-1987
Highest Min		64-1967
Greatest pcpn		1.82-1963

Normal	31	Actual
68.6	max	
43.9	min	
.025	pcpn	
10	HDD	
1	CDD	
Highest Max		94-1940
Lowest Max		41-1926
Lowest Min		20-1926
Highest Min		62-1967
Greatest pcpn		1.29-1988

MARCH AVERAGES

Temperature	:	37.6
Precipitation	:	2.33"
Heating Degree Days:		489
Cooling Degree Days:		3