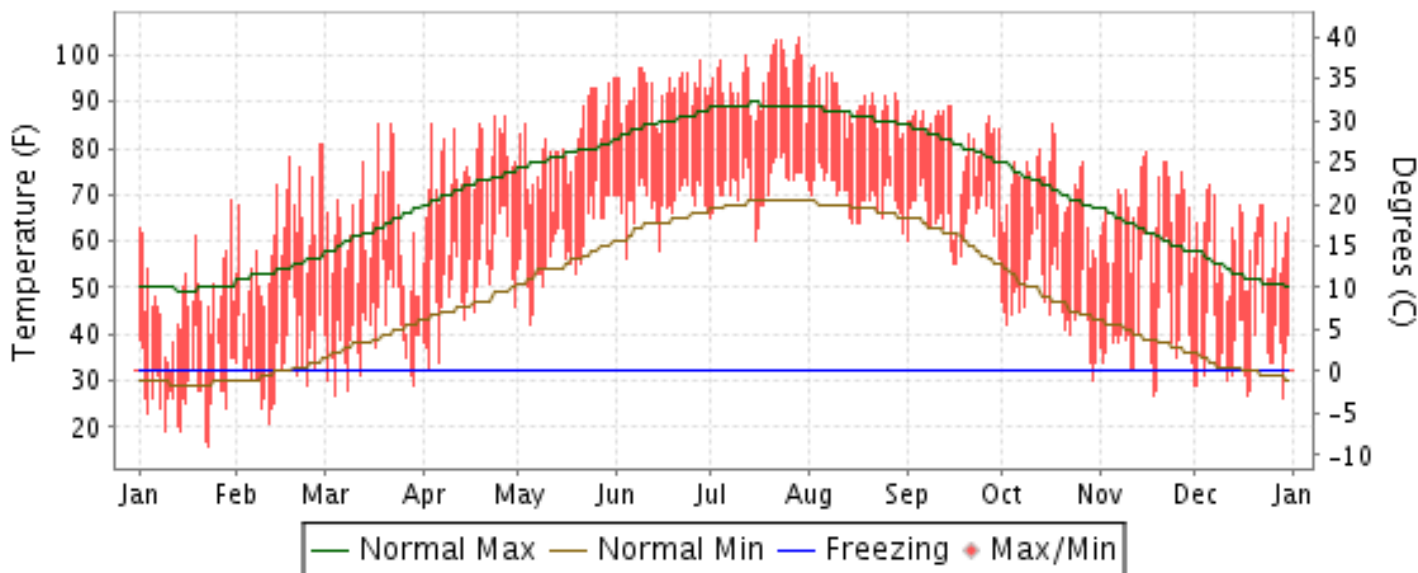




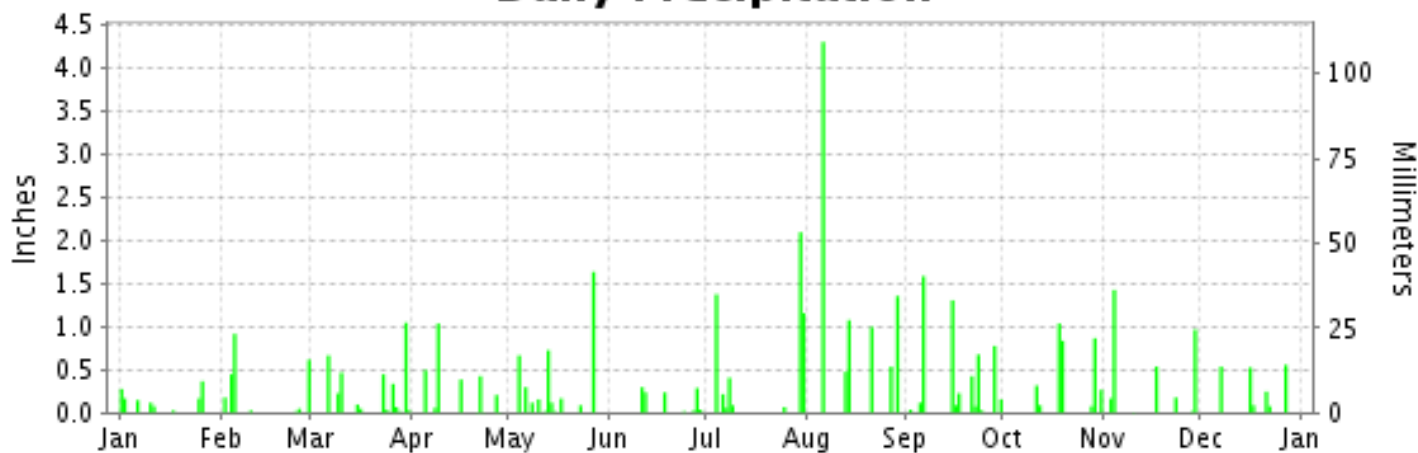
# 2011 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

ISSN 0198-3776

## RALEIGH/DURHAM, NORTH CAROLINA (KRDU) Daily Max/Min Temperature



## Daily Precipitation



## Daily Station Pressure



I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC DATA CENTER.

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AND INFORMATION SERVICE

NATIONAL  
CLIMATIC DATA CENTER  
ASHEVILLE, NORTH CAROLINA

*Thomas R. Karl*  
DIRECTOR  
NATIONAL CLIMATIC DATA CENTER

# METEOROLOGICAL DATA FOR 2011

## RALEIGH/DURHAM (KRDU)

LATITUDE: 35° 53'N      LONGITUDE: -78° 46'W      ELEVATION (FT): GRND: 416 BARO: 430      TIME ZONE: EASTERN (UTC -5)      WBAN: 13722

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	47.6	60.6	62.6	75.3	81.2	92.3	95.3	89.6	82.2	70.8	67.1	59.4	73.7	
	HIGHEST DAILY MAXIMUM	69	81	85	87	95	99	104	98	89	85	79	72	104	
	DATE OF OCCURRENCE	30	28+	22+	27+	31	28	29	03	15+	17	16	06	JUL 29	
	MEAN DAILY MINIMUM	27.8	35.0	40.1	51.8	59.1	68.5	72.0	69.7	64.8	47.6	42.5	37.6	51.4	
	LOWEST DAILY MINIMUM	16	21	27	33	42	56	60	62	55	30	27	26	16	
	DATE OF OCCURRENCE	23	11	04	03	05	04	15	31	17+	30	18	29	JAN 23	
	AVERAGE DRY BULB	37.7	47.8	51.4	63.6	70.2	80.4	83.7	79.7	73.5	59.2	54.8	48.5	62.5	
	MEAN WET BULB	32.9	40.4	44.9	55.6	62.5	68.8	72.3	70.6	66.7	52.7	48.5	43.3	54.9	
	MEAN DEW POINT	24.5	29.8	37.1	48.2	57.6	62.6	67.1	66.0	63.2	47.2	42.2	36.5	48.5	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	6	24	24	13	0	0	0	0	0	67
	MAXIMUM <= 32°	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	MINIMUM <= 32°	25	12	6	0	0	0	0	0	0	1	3	11	58	
MINIMUM <= 0°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
H/C	HEATING DEGREE DAYS	840	481	424	117	27	0	0	0	15	198	319	506	2927	
	COOLING DEGREE DAYS	0	4	9	81	194	470	585	464	277	27	21	1	2133	
RH	MEAN (PERCENT)	63	56	62	61	68	59	62	66	74	69	67	66	64	
	HOUR 01 LST	73	65	72	73	82	74	77	79	83	81	78	75	76	
	HOUR 07 LST	75	72	73	72	76	64	69	74	81	79	82	77	75	
	HOUR 13 LST	47	41	46	45	50	40	42	48	58	48	47	49	47	
	HOUR 19 LST	60	51	61	54	66	58	60	65	75	72	68	68	63	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	2	1	1	2	0	0	1	2	3	0	2	0	14	
	THUNDERSTORMS	0	1	3	7	7	7	11	4	5	0	0	0	45	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (<= 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (<= 12,000 FT.)														
SATELLITE (> 12,000 FT.)															
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	29.55	29.62	29.64	29.51	29.50	29.49	29.50	29.44	29.53	29.56	29.67	29.73	29.56	
	MEAN SEA-LEVEL PRESS. (IN.)	30.04	30.09	30.11	29.98	29.97	29.95	29.96	29.89	29.99	30.03	30.15	30.21	30.03	
WINDS	RESULTANT SPEED (MPH)	1.0	3.4	1.1	5.3	2.3	2.1	2.1	0.5	1.4	0.8	2.4	2.4	1.8	
	RES. DIR. (TENS OF DEGS.)	28	24	11	21	20	24	21	15	16	25	22	22	22	
	MEAN SPEED (MPH)	4.7	7.1	6.9	8.7	5.0	5.8	5.4	5.4	4.5	5.6	6.0	5.2	5.9	
	PREVAIL.DIR.(TENS OF DEGS.)	24	23	23	21	23	23	23	24	16	23	23	23	23	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	22	32	32	38	23	26	31	25	29	26	32	30	38	
	DIR. (TENS OF DEGS.)	29	23	24	25	24	24	20	03	17	25	23	24	25	
	DATE OF OCCURRENCE	12	28	10	05	13	23	24	29	06	19	29	27	APR 05	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	32	41	45	51	30	37	41	39	36	35	37	44	51	
DIR. (TENS OF DEGS.)	29	24	25	26	21	26	19	33	19	26	23	23	26		
DATE OF OCCURRENCE	21	25	10	05	26	18	24	27	06	19	29	27	APR 05		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	1.37	2.27	3.52	2.66	4.04	1.16	5.49	8.77	5.54	3.51	3.32	2.05	43.70	
	GREATEST 24-HOUR (IN.)	0.54	1.31	1.05	1.08	1.64	0.38	3.25	4.31	1.59	1.88	1.60	0.62	4.31	
	DATE OF OCCURRENCE	25-26	04-05	30	08-09	27	11-12	30-31	06	06	18-19	03-04	16-17	AUG 06	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	8	7	12	9	11	7	8	6	12	7	7	6	100	
PRECIPITATION 0.10	6	4	7	5	8	4	5	6	8	5	5	4	67		
PRECIPITATION 1.00	0	0	1	1	1	0	3	4	2	1	1	0	14		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	0.3	0.4	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	
	GREATEST 24-HOUR (IN.)	0.3	0.4	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	
	DATE OF OCCURRENCE	10	10	28										FEB 10	
	MAXIMUM SNOW DEPTH (IN.)	T	0	0	0	0	0	0	0	0	0	0	0	T	
	DATE OF OCCURRENCE	11												JAN 11	
NUMBER OF DAYS WITH:															
SNOWFALL >= 1.0	0	0	0	0	0	0	0	0	0	0	0	0	0		

# NORMALS, MEANS, AND EXTREMES RALEIGH/DURHAM (KRDU)

**LATITUDE:**  
35° 53'N

**LONGITUDE:**  
-78° 46'W

**ELEVATION (FT):**  
GRND: 416 BARO: 430

**TIME ZONE:**  
EASTERN (UTC -5)

**WBAN: 13722**

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	49.8	54.0	62.5	71.8	78.7	85.5	89.1	87.2	81.3	71.8	62.4	53.3	70.6
	MEAN DAILY MAXIMUM	64	50.5	54.0	62.0	72.2	79.1	86.0	89.1	87.5	81.6	72.0	62.6	53.0	70.8
	HIGHEST DAILY MAXIMUM	67	80	84	92	95	97	104	105	105	104	98	88	81	105
	YEAR OF OCCURRENCE		2002	1977	1945	1980	1953	1954	1952	2007	1954	1954	1950	2007	AUG 2007
	MEAN OF EXTREME MAXS.	64	71.0	73.6	81.0	87.7	90.6	95.8	96.8	95.7	91.9	85.5	78.7	72.0	85.0
	NORMAL DAILY MINIMUM	30	29.6	31.9	38.9	46.4	55.3	63.8	68.5	67.2	61.0	48.2	39.5	32.6	48.6
	MEAN DAILY MINIMUM	64	30.0	31.9	38.5	47.0	55.7	63.8	68.3	67.3	60.7	48.5	39.1	32.1	48.6
	LOWEST DAILY MINIMUM	67	-9	0	11	23	31	38	48	46	37	19	11	4	-9
	YEAR OF OCCURRENCE		1985	1996	1980	1985	1977	1977	1975	1965	1983	1962	1970	1983	JAN 1985
	MEAN OF EXTREME MINS.	64	12.1	15.8	22.6	30.6	40.6	51.3	58.4	57.2	46.3	31.8	22.9	15.4	33.8
	NORMAL DRY BULB	30	39.7	43.0	50.7	59.1	67.0	74.7	78.8	77.2	71.2	60.0	51.0	43.0	59.6
	MEAN DRY BULB	64	40.2	42.9	50.3	59.6	67.4	75.0	78.7	77.5	71.2	60.2	50.9	42.6	59.7
	MEAN WET BULB	28	34.3	36.3	42.9	50.9	59.7	67.5	70.9	70.1	64.2	54.1	45.2	37.1	52.8
	MEAN DEW POINT	28	30.3	32.5	38.7	47.1	57.1	65.6	69.5	68.7	62.6	51.8	41.9	33.1	49.9
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	*	0.4	1.7	8.4	14.4	11.0	3.2	0.2	0.0	0.0	39.3
	MAXIMUM <= 32	30	1.9	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*	0.8	3.7
MINIMUM <= 32	30	19.1	15.8	8.8	2.1	*	0.0	0.0	0.0	0.0	1.2	8.8	16.9	72.7	
MINIMUM <= 0	30	0.1	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
H/C	NORMAL HEATING DEG. DAYS	30	783	627	456	214	61	5	0	1	20	194	425	679	3465
	NORMAL COOLING DEG. DAYS	30	0	1	9	38	119	293	429	379	206	39	6	2	1521
RH	NORMAL (PERCENT)	30	68	65	63	63	72	74	76	77	78	75	70	70	71
	HOURLY 01 LST	30	74	72	71	74	84	87	88	89	89	87	80	76	81
	HOURLY 07 LST	30	80	79	80	81	86	87	89	92	92	90	85	81	85
	HOURLY 13 LST	30	56	53	50	46	54	56	57	59	59	53	53	56	54
	HOURLY 19 LST	30	65	60	56	54	66	67	70	73	77	77	69	67	67
S	PERCENT POSSIBLE SUNSHINE	42	52	56	60	63	59	60	60	58	58	60	57	53	58
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	48	3.3	2.6	2.0	1.5	1.8	1.4	2.3	2.6	2.6	2.7	3.0	3.2	29.0
	THUNDERSTORMS	64	0.5	0.8	2.2	3.6	5.9	7.3	10.4	7.7	2.9	1.2	0.8	0.3	43.6
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS)	47	5.0	4.7	4.7	4.4	4.7	4.6	4.8	4.7	4.7	3.9	4.2	4.6	4.6
	MIDNIGHT-MIDNIGHT (OKTAS)	32	4.7	4.4	4.3	4.1	4.6	4.4	4.7	4.6	4.2	3.7	4.0	4.3	4.3
	MEAN NO. DAYS WITH: CLEAR	48	9.0	8.7	9.4	9.6	8.2	7.6	7.2	7.3	9.5	12.8	11.3	10.0	110.6
	PARTLY CLOUDY	48	6.7	6.1	7.3	9.1	10.0	11.8	12.2	12.3	9.1	7.1	7.3	7.0	106.0
	CLOUDY	48	15.2	13.5	14.3	11.3	12.8	10.7	11.6	11.3	11.4	11.1	11.4	14.0	148.6
PR	MEAN STATION PRESSURE(IN)	28	29.61	29.62	29.59	29.53	29.55	29.54	29.56	29.57	29.60	29.63	29.66	29.64	29.59
	MEAN SEA-LEVEL PRES. (IN)	28	30.13	30.10	30.06	30.00	30.01	30.00	30.02	30.03	30.06	30.10	30.13	30.15	30.07
WINDS	MEAN SPEED (MPH)	28	7.2	7.4	8.1	8.1	7.2	6.5	6.2	5.8	6.1	5.7	6.1	6.4	6.7
	PREVAIL.DIR.(TENS OF DEGS)	42	24	23	23	23	24	23	24	23	03	04	23	24	24
	MAXIMUM 2-MINUTE: SPEED (MPH)	15	43	45	46	38	41	36	39	36	48	26	38	40	48
	DIR. (TENS OF DEGS)		24	23	24	25	23	03	23	24	20	25	22	22	20
	YEAR OF OCCURRENCE		2009	1997	1999	2011	2002	2007	2008	2001	2004	2011	2006	2000	SEP 2004
	MAXIMUM 3-SECOND SPEED (MPH)	15	70	64	61	55	52	44	53	44	79	38	45	51	79
	DIR. (TENS OF DEGS)		24	23	23	26	22	03	22	18	18	24	22	24	18
YEAR OF OCCURRENCE		1999	1997	1999	2006	2002	2007	2007	2005	2004	2010	2006	2009	SEP 2004	
PRECIPITATION	NORMAL (IN)	30	4.02	3.47	4.03	2.80	3.79	3.42	4.29	3.78	4.26	3.18	2.97	3.04	43.05
	MAXIMUM MONTHLY (IN)	67	7.52	6.42	7.78	6.10	7.67	10.45	10.27	12.18	21.79	9.35	9.03	6.65	21.79
	YEAR OF OCCURRENCE		1954	1989	1983	1978	1974	2006	1991	1986	1999	2002	2006	1983	SEP 1999
	MINIMUM MONTHLY (IN)	67	0.87	0.69	1.03	0.23	0.58	0.33	0.80	0.81	0.23	0.44	0.48	0.25	0.23
	YEAR OF OCCURRENCE		1981	1991	1985	1976	1999	1993	1953	1950	1985	2000	2007	1965	SEP 1985
	MAXIMUM IN 24 HOURS (IN)	67	3.11	3.22	3.70	4.04	4.40	5.65	4.27	5.20	5.41	5.78	4.70	3.18	5.78
	YEAR OF OCCURRENCE		1984	1973	1983	1978	1957	2006	1997	5020	1999	2002	1963	1958	OCT 2002
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	10.5	9.5	10.2	9.1	10.1	9.8	11.2	9.6	8.2	6.8	8.4	9.7	113.1
	PRECIPITATION >= 1.00	30	1.3	1.0	0.9	0.6	0.8	0.8	1.0	1.1	1.3	1.1	0.7	0.6	11.2
SNOWFALL	NORMAL (IN)	30	2.3	3.0	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	7.1
	MAXIMUM MONTHLY (IN)	67	25.8	17.2	14.0	1.8	T	T	T	T	0.0	0.0	2.6	10.6	25.8
	YEAR OF OCCURRENCE		2000	1979	1960	1983	2006	1996	1993				1975	1958	JAN 2000
	MAXIMUM IN 24 HOURS (IN)	67	17.9	10.4	9.3	1.8	T	T	T	0.0	0.0	0.0	2.6	9.1	17.9
	YEAR OF OCCURRENCE		2000	1979	1969	1983	1995	1996	1993				1975	1958	JAN 2000
	MAXIMUM SNOW DEPTH (IN)	63	20	10	11	0	0	0	0	0	0	0	2	9	20
	YEAR OF OCCURRENCE		2000	1979	1980								2000	1958	JAN 2000
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	0.6	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.8	

**PRECIPITATION (inches) 2011 RALEIGH/DURHAM (KRDU)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1982	3.43	4.97	3.02	3.33	4.20	8.39	3.34	1.83	1.55	3.93	2.34	4.02	44.35
1983	1.79	6.00	7.78	3.54	5.89	3.09	1.10	1.81	2.13	3.59	3.86	6.65	47.23
1984	4.93	5.65	5.40	4.45	5.43	3.08	9.20	1.13	2.31	0.73	1.64	2.32	46.27
1985	4.83	4.44	1.03	0.64	3.95	2.87	6.28	3.73	0.23	1.75	7.61	0.81	38.17
1986	1.88	1.65	3.06	1.01	2.98	1.92	4.32	12.18	0.95	1.28	2.77	2.95	36.95
1987	6.53	5.52	2.88	4.68	1.19	2.11	1.78	5.80	5.48	1.71	1.39	3.02	42.09
1988	3.15	2.42	1.76	3.56	2.85	2.88	2.69	3.40	4.90	5.67	3.34	1.04	37.66
1989	1.35	6.42	5.40	4.91	3.88	7.30	5.46	5.08	3.96	3.44	3.94	3.01	54.15
1990	3.07	3.82	5.02	2.19	6.97	1.03	2.22	2.65	0.30	5.69	1.51	3.08	37.55
1991	4.12	0.69	4.59	1.04	2.89	2.05	10.27	1.87	3.16	1.40	0.73	2.65	35.46
1992	3.80	2.23	2.95	1.93	2.60	5.12	3.45	7.63	2.22	3.79	5.02	2.44	43.18
1993	4.50	2.22	6.13	4.84	3.32	0.33	2.11	1.77	3.50	2.95	2.66	3.72	38.05
1994	3.55	2.97	5.91	0.86	2.85	2.20	4.67	4.20	1.99	4.62	1.32	1.27	36.41
1995	4.50	4.52	2.49	1.32	3.91	7.75	3.29	2.70	2.46	9.10	4.67	1.88	48.59
1996	4.24	2.94	3.39	3.98	3.26	3.28	6.98	3.72	16.65	3.48	4.33	2.89	59.14
1997	3.13	2.83	3.41	4.75	2.21	3.83	6.51	1.01	3.07	3.26	4.05	2.75	40.81
1998	7.49	5.79	7.36	3.12	3.79	3.45	4.84	4.66	3.55	2.79	2.40	3.44	52.68
1999	5.77	1.96	3.69	3.53	0.58	1.16	3.00	3.20	21.79	2.45	1.20	2.31	50.64
2000	6.27	2.20	1.76	4.66	1.23	2.50	6.19	6.64	3.82	T	2.56	1.51	39.34
2001	1.30	2.34	7.11	1.72	3.53	4.54	4.13	4.88	0.86	1.86	0.50	2.01	34.78
2002	5.97	1.27	4.18	1.13	1.13	2.75	4.76	4.71	3.49	9.35	3.56	5.04	47.34
2003	1.84	4.64	5.23	4.47	4.28	4.16	4.40	8.57	4.47	2.62	1.81	3.52	50.01
2004	1.23	3.32	3.31	1.72	3.44	4.22	8.16	9.26	4.49	2.51	3.89	1.48	47.03
2005	2.64	2.29	3.54	3.13	2.07	1.50	7.64	3.90	0.82	2.06	3.72	4.24	37.55
2006	2.07	1.65	1.25	4.93	1.58	10.45	3.31	4.42	8.53	3.47	9.03	3.00	53.69
2007	3.12	1.74	3.52	3.88	1.43	4.46	4.94	0.90	2.22	4.66	0.48	4.45	35.80
2008	1.26	3.16	5.53	3.92	3.12	4.08	5.96	5.92	9.24	1.17	4.05	3.06	50.47
2009	2.53	1.65	6.83	1.69	4.13	2.34	2.16	1.65	3.35	1.10	6.91	6.09	40.43
2010	3.89	2.43	3.30	1.47	5.00	2.11	2.89	3.04	6.66	2.31	1.45	2.39	36.94
2011	1.37	2.27	3.52	2.66	4.04	1.16	5.49	8.77	5.54	3.51	3.32	2.05	43.70
POR= 64 YRS	3.48	3.29	3.84	2.89	3.56	3.54	4.59	4.45	3.89	2.99	3.05	3.09	42.66

WBAN : 13722

**AVERAGE TEMPERATURE (°F) 2011 RALEIGH/DURHAM (KRDU)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1982	35.5	45.5	51.7	57.4	71.0	74.7	79.1	76.5	70.5	60.6	51.9	47.5	60.2
1983	38.1	40.7	50.7	55.1	65.4	72.5	79.1	79.1	70.7	60.4	50.9	39.5	58.5
1984	36.3	45.7	47.2	55.9	65.5	75.5	74.9	76.6	67.5	66.3	47.1	49.7	59.0
1985	34.0	41.9	52.7	62.0	67.3	73.9	76.8	75.2	69.7	63.7	58.4	39.4	59.6
1986	38.5	44.5	51.7	61.2	67.4	78.4	81.7	75.6	72.3	63.0	52.9	42.6	60.8
1987	38.3	40.4	49.2	56.9	69.3	76.3	81.2	79.2	73.0	54.6	52.8	44.5	59.6
1988	34.7	41.9	50.6	57.8	66.0	72.4	79.0	80.3	70.3	54.4	52.0	42.4	58.5
1989	44.8	42.9	50.7	58.0	65.0	77.0	78.1	76.2	71.7	61.3	51.4	34.6	59.3
1990	48.0	51.0	54.9	60.3	67.4	75.2	80.0	78.0	72.2	64.1	54.2	48.1	62.8
1991	41.9	46.8	54.3	62.3	72.3	75.8	80.6	77.8	71.6	61.1	50.0	47.0	61.8
1992	43.4	46.2	50.5	59.2	63.2	72.0	80.4	74.1	71.5	58.1	51.9	42.5	59.4
1993	43.3	40.9	47.9	56.9	69.0	76.1	82.5	78.2	73.7	59.6	51.8	40.3	60.0
1994	36.9	44.2	52.2	63.6	64.2	77.0	79.6	76.0	69.1	59.3	54.0	47.9	60.3
1995	42.9	41.0	52.7	61.0	68.5	73.8	80.4	80.6	70.5	63.4	47.1	39.5	60.1
1996	38.3	42.5	45.3	58.4	67.7	76.4	78.6	75.2	70.3	61.0	45.7	45.8	58.8
1997	41.3	46.7	54.6	55.2	63.9	71.5	79.5	76.6	70.9	59.6	47.3	40.9	59.0
1998	44.7	46.1	50.2	58.8	69.2	77.3	79.5	77.8	74.6	61.1	52.0	46.6	61.5
1999	45.7	45.7	47.5	61.5	66.8	74.5	81.3	80.0	69.1	58.6	54.4	43.9	60.8
2000	38.4	45.8	53.4	57.6	70.0	77.2	77.0	76.1	69.4	60.2	48.0	35.5	59.1
2001	41.6	47.2	49.1	60.8	68.0	76.9	76.2	79.6	69.0	59.4	55.8	47.6	60.9
2002	42.7	44.6	52.6	63.3	67.0	77.9	80.6	78.4	73.1	61.6	49.1	40.5	61.0
2003	36.7	41.1	53.3	58.2	66.3	73.7	78.3	78.9	69.9	59.6	56.5	41.0	59.5
2004	38.0	41.4	52.6	60.4	73.3	76.2	79.2	75.3	71.3	62.6	53.6	43.5	60.6
2005	43.7	44.6	47.8	59.2	64.8	76.3	82.3	80.2	76.0	62.6	52.9	40.7	60.9
2006	47.8	43.5	51.5	62.7	65.6	74.6	79.8	80.5	69.7	58.8	53.0	47.8	61.3
2007	45.2	40.8	55.9	60.0	68.2	76.5	78.6	84.1	75.0	67.4	50.7	48.5	62.6
2008	41.6	47.8	53.3	60.4	66.5	80.7	79.0	78.5	72.6	59.3	49.4	47.4	61.4
2009	40.1	46.1	52.2	62.4	71.3	78.4	79.6	80.4	70.9	60.3	53.2	40.5	61.3
2010	37.9	37.6	52.0	63.0	71.9	81.5	82.3	81.2	77.3	63.4	51.7	34.9	61.2
2011	37.7	47.8	51.4	63.6	70.2	80.4	83.7	79.7	73.5	59.2	54.8	48.5	62.5
POR= 64 YRS	40.2	42.9	50.3	59.6	67.4	75.0	78.7	77.5	71.2	60.2	50.9	42.6	59.7

**HEATING DEGREE DAYS (base 65°F) 2011 RALEIGH/DURHAM (KRDU)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1982-83	0	0	14	182	392	542	828	675	438	305	79	7	3462
1983-84	0	0	59	180	417	784	882	553	545	283	83	5	3791
1984-85	0	0	63	42	530	468	954	644	395	146	42	4	3288
1985-86	0	0	36	96	207	789	812	569	415	157	59	0	3140
1986-87	0	11	12	149	370	687	820	681	484	248	29	0	3491
1987-88	0	0	1	319	362	631	932	665	444	228	62	22	3666
1988-89	0	0	8	336	386	695	619	623	459	257	102	0	3485
1989-90	0	3	30	167	404	934	518	390	357	186	37	0	3026
1990-91	0	0	18	124	323	520	709	501	354	153	18	0	2720
1991-92	0	0	24	156	451	562	659	537	446	226	114	3	3178
1992-93	0	0	29	224	390	691	666	670	524	244	15	0	3453
1993-94	0	0	19	198	405	758	863	576	394	113	101	0	3427
1994-95	0	0	8	190	326	527	679	665	380	165	36	0	2976
1995-96	0	0	18	123	532	787	819	646	601	227	72	2	3827
1996-97	0	0	9	142	569	590	729	510	326	300	97	45	3317
1997-98	0	0	14	223	524	742	624	525	475	207	21	7	3362
1998-99	0	0	7	146	383	573	593	533	536	160	36	2	2969
1999-00	2	0	29	216	314	646	818	548	365	235	24	0	3197
2000-01	0	0	40	181	511	910	718	492	490	200	36	0	3578
2001-02	0	0	50	211	287	532	687	566	393	151	91	0	2968
2002-03	0	0	0	186	479	754	871	663	365	216	55	5	3594
2003-04	0	0	16	178	274	739	830	677	387	190	26	0	3317
2004-05	0	0	7	120	354	660	662	564	527	193	77	3	3167
2005-06	0	0	0	154	368	748	524	595	432	135	76	0	3032
2006-07	0	0	19	217	357	524	603	670	312	207	59	0	2968
2007-08	0	0	3	73	419	511	718	500	359	169	37	0	2789
2008-09	0	0	8	205	459	539	765	524	408	130	29	0	3067
2009-10	0	0	8	176	349	752	835	763	392	124	26	0	3425
2010-11	0	0	0	109	393	925	840	481	424	117	27	0	3316
2011-	0	0	15	198	319	506							

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**COOLING DEGREE DAYS (base 65°F) 2011 RALEIGH/DURHAM (KRDU)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1982	0	0	3	24	208	299	443	363	183	53	5	7	1588
1983	0	0	0	16	97	238	441	447	239	42	0	0	1520
1984	0	0	0	16	108	324	311	366	143	90	0	0	1358
1985	0	3	20	65	121	277	373	323	181	64	14	0	1441
1986	0	0	7	51	142	408	526	349	237	96	15	0	1831
1987	0	0	0	11	170	347	508	447	250	0	2	0	1735
1988	0	3	5	17	98	249	438	482	172	14	3	0	1481
1989	0	11	23	54	110	367	412	359	237	59	4	0	1636
1990	0	3	49	51	117	312	472	410	239	102	4	5	1764
1991	0	0	28	78	253	333	493	403	230	40	9	13	1880
1992	0	0	3	58	65	218	487	285	228	15	3	0	1362
1993	0	0	0	12	147	338	550	417	286	34	17	0	1801
1994	0	0	6	78	86	367	462	350	139	21	3	1	1513
1995	3	0	3	53	154	270	486	490	191	81	3	0	1734
1996	0	0	0	35	164	352	427	324	176	26	0	0	1504
1997	1	3	14	11	68	249	451	368	199	64	0	0	1428
1998	3	0	23	29	158	382	457	401	302	32	0	12	1799
1999	3	0	0	64	100	292	513	474	161	24	0	0	1631
2000	0	0	9	19	185	374	380	351	176	38	8	0	1540
2001	0	0	3	83	137	364	356	461	176	46	17	2	1645
2002	4	0	15	104	160	391	489	422	253	86	6	0	1930
2003	0	0	7	19	101	274	419	436	171	16	24	0	1467
2004	0	0	10	58	294	342	445	329	200	52	17	0	1747
2005	6	0	0	23	80	351	544	481	339	85	12	0	1921
2006	0	0	18	75	101	294	456	485	168	29	5	0	1631
2007	1	0	34	65	163	352	430	602	311	153	1	7	2119
2008	0	4	6	36	90	475	441	426	244	36	0	2	1760
2009	0	0	18	60	231	406	458	483	189	36	1	0	1882
2010	0	0	0	70	249	501	544	510	373	68	1	0	2316
2011	0	4	9	81	194	470	585	464	277	27	21	1	2133

**SNOWFALL (inches) 2011 RALEIGH/DURHAM (KRDU)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1982-83	0.0	0.0	0.0	0.0	0.0	T	T	2.7	7.3	1.8	0.0	0.0	11.8
1983-84	0.0	0.0	0.0	0.0	0.0	0.0	T	6.9	T	0.0	0.0	0.0	6.9
1984-85	0.0	0.0	0.0	0.0	0.0	0.0	4.1	T	0.0	0.0	0.0	0.0	4.1
1985-86	0.0	0.0	0.0	0.0	0.0	T	T	0.9	T	0.0	0.0	0.0	0.9
1986-87	0.0	0.0	0.0	0.0	T	0.0	0.6	10.2	T	T	0.0	0.0	10.8
1987-88	0.0	0.0	0.0	0.0	0.6	0.0	7.3	T	0.0	0.0	0.0	0.0	7.9
1988-89	0.0	0.0	0.0	0.0	0.0	0.1	0.0	11.1	0.5	0.3	0.0	0.0	12.0
1989-90	0.0	0.0	0.0	0.0	0.0	2.7	0.0	T	T	0.0	0.0	0.0	2.7
1990-91	0.0	0.0	0.0	0.0	0.0	T	T	T	T	0.0	0.0	0.0	T
1991-92	0.0	0.0	0.0	0.0	T	0.0	T	T	0.0	0.0	0.0	0.0	T
1992-93	0.0	0.0	0.0	0.0	0.0	T	T	1.6	0.9	0.0	0.0	0.0	2.5
1993-94	T	0.0	0.0	0.0	0.0	3.1	T	1.1	0.2	0.0	0.0	0.0	4.4
1994-95	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.4	T	0.0	T	0.0	2.2
1995-96	0.0	0.0	0.0	0.0	T	T	5.6	8.1	0.9	0.0	T	T	14.6
1996-97							0.4	T	0.0	0.0	T	T	
1997-98	0.0	0.0	0.0	0.0	0.0	0.4	2.0	0.0	T	0.0	0.0	T	2.4
1998-99	0.0	0.0	0.0	0.0	0.0	T	T	T	T	0.0	0.0	0.0	T
1999-00	0.0	0.0	0.0	0.0	0.0	T	25.8	0.0	0.0	0.0	0.0	T	25.8
2000-01	0.0	0.0	0.0	0.0	2.2	0.1	T	0.3	T	T	T	0.0	2.6
2001-02	0.0	0.0	0.0	0.0	0.0	0.0	10.8	T	0.0	0.0	0.0	0.0	10.8
2002-03	0.0	0.0	0.0	0.0	0.0	2.3	3.5	1.6	T	0.0	0.0	0.0	7.4
2003-04	0.0	0.0	0.0	0.0	0.0	T	5.7	9.2	T	0.0	0.0	0.0	14.9
2004-05	0.0	0.0	0.0	0.0	0.0	T	0.7	T	0.2	0.0	0.0	0.0	0.9
2005-06	T	0.0	0.0	0.0	0.0	T	T	T	T	T	T	0.0	T
2006-07	0.0	0.0	0.0	0.0	T	0.0	1.0	0.6	0.0	T	0.0	0.0	1.6
2007-08	0.0	0.0	0.0	0.0	0.0	T	0.5	T	0.0	0.0	0.0	0.0	0.5
2008-09	0.0	0.0	0.0	0.0	0.4	0.0	3.5	T	3.2	0.0	0.0	0.0	7.1
2009-10	0.0	0.0	0.0	0.0	0.0	0.1	5.0	2.1	0.8	0.0	0.0	0.0	8.0
2010-11	0.0	0.0	0.0	0.0	0.0	8.3	0.3	0.4	T	0.0	0.0	0.0	9.0
2011-	0.0	0.0	0.0	0.0	0.0	0.0							
POR= 63 YRS	T	0.0	0.0	0.0	0.1	0.7	2.7	2.4	1.1	T	T	T	7.0

WBAN : 13722

**REFERENCE NOTES :**

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1971 - 2000). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD. CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED.</p>	<p>GENERAL CONTINUED: WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY. ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER. STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED HISTORY GO TO "MULTI-NETWORK MEDADATA SYSTEM", URL IS: <a href="https://mi3.ncdc.noaa.gov/mi3qry/login.cfm">https://mi3.ncdc.noaa.gov/mi3qry/login.cfm</a> SNOWFALL STOPPED MONTH &amp; YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.</p> <p><b>NOTE:</b> The "Period of Record:(POR) for all "averages" is based on the "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p>
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# 2011

## Raleigh/Durham

### NORTH CAROLINA (KRDU)

The Raleigh-Durham Airport is located in the zone of transition between the Coastal Plain and the Piedmont Plateau. The surrounding terrain is rolling, with an average elevation of around 400 feet, the range over a 10-mile radius is roughly between 200 and 550 feet. Being centrally located between the mountains on the west and the coast on the south and east, the Raleigh-Durham area enjoys a favorable climate. The mountains form a partial barrier to cold air masses moving eastward from the interior of the nation. As a result, there are few days in the heart of the winter season when the temperature falls below 20 degrees. Tropical air is present over the eastern and central sections of North Carolina during much of the summer season, bringing warm temperatures and rather high humidities to the Raleigh-Durham area. Afternoon temperatures reach 90 degrees or higher on about one-fourth of the days in the middle of summer, but reach 100 degrees less than once per year. Even in the hottest weather, early morning temperatures almost always drop into the lower 70s.

Rainfall is well distributed throughout the year as a whole. July and August have the greatest amount of rainfall, and October and November the least. There are times in spring and summer when soil moisture is scanty. This usually results from too many days between rains rather than from a shortage of total rainfall, but occasionally the accumulated total during the growing season falls short of plant needs. Most summer rain is produced by thunderstorms, which may occasionally be accompanied by strong winds, intense rains, and hail. The Raleigh-Durham area is far enough from the coast so that the bad weather effects of coastal storms are reduced. While snow and sleet usually occur each year, excessive accumulations of snow are rare.

From September 1887 to December 1950, the office was located in the downtown areas of Raleigh. The various buildings occupied were within an area of three blocks. All thermometers were exposed on the roof, and this, plus the smoke over the city, had an effect on the temperature record of that period. Lowest temperatures at the city office were frequently from 2 to 5 degrees higher than those recorded in surrounding rural areas. Maximum temperatures in the city were generally a degree or two lower. These observations are supported by a period of simultaneous record from the Municipal Airport and the city office location between 1937 and 1940.

From September 1946 to May 1954, simultaneous records were kept at a surface location on the North Carolina State College campus in Raleigh, and at the Raleigh-Durham Airport 10 1/2 air miles to the northwest.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is October 27 and the average last occurrence in the spring is April 11.

# Station History

RALEIGH/DURHAM, NC

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
RALEIGH DURHAM AP	1954-01-01	1969-01-01	35° 52'	-78° 46'	434		AIRWAYS, COOP
RALEIGH DURHAM AP	1981-12-31	1996-02-01	35° 52'	-78° 46'	416		COOP
RALEIGH DURHAM INTL AP	1996-02-01	2009-03-27	35° 52'	-78° 47'	416		ASOS, COOP
RALEIGH DURHAM AP	1944-05-01	1948-08-01	35° 52'	-78° 46'			AIRWAYS
RALEIGH DURHAM INTL AP	2009-03-27	2011-06-22	35° 52'	-78° 46'	416		ASOS, COOP
RALEIGH DURHAM INTL AP	2011-06-22	Present	35° 53'	-78° 46'	416		ASOS, COOP
RALEIGH DURHAM AP	1948-08-01	1954-01-01	35° 52'	-78° 46'	443		AIRWAYS, COOP
DURHAM	1944-01-01	1944-05-01	35° 52'	-78° 46'			AIRWAYS
RALEIGH DURHAM AP	1969-01-01	1979-12-14	35° 52'	-78° 46'	434		COOP, WXSVC
RALEIGH DURHAM AP	1979-12-14	1981-12-31	35° 52'	-78° 46'	416		COOP, WXSVC

# Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
PRECIP	1930-09-01	1968-08-22	DAILY	2400	UNIV	RCRD	
PRECIP	1992-06-08	1995-07-01	DAILY	2400	UNIV	RCRD	
MAX/MINTEM	1995-07-01	2009-03-27	ONCE DAILY	2400	PALMER		
PRECIP	1995-07-01	2009-03-27	HOURLY	2400	UNIV	RCRD	
PRECIP	2009-03-27	2011-06-22	HOURLY	2400	AHTB	RCRD;HTD	
TEMP	1930-09-01	1968-08-22	DAILY	2400			
TEMP	1970-10-01	1991-08-19	DAILY	2400			
TEMP	2011-06-22	Present	DAILY	2400	ATEMP		
PRECIP	2011-06-22	Present	DAILY	2400	PCPNX		
PRECIP	1970-10-01	1991-08-19	HOURLY	2400			
MAX/MINTEM	1991-08-19	1992-06-08	ONCE DAILY	2400	SOILX		
TEMP	1991-08-19	1992-06-08	DAILY	2400	HYGR		
PRECIP	2009-03-27	2011-06-22	DAILY	2400	PCPN1		
MAX/MINTEM	1968-08-22	1970-10-01	ONCE DAILY	2400	SOILX		
TEMP	1995-07-01	2009-03-27	DAILY	2400	HYGR		
PRECIP	1968-08-22	1970-10-01	DAILY	2400	UNIV	RCRD	
MAX/MINTEM	1970-10-01	1991-08-19	ONCE DAILY	2400	SOILX		
PRECIP	1970-10-01	1991-08-19	DAILY	2400	UNIV	RCRD	
PRECIP	1991-08-19	1992-06-08	DAILY	2400	UNIV	RCRD	
PRECIP	1991-08-19	1992-06-08	HOURLY	2400			
TEMP	1968-08-22	1970-10-01	DAILY	2400			
MAX/MINTEM	1970-10-01	1991-08-19	ONCE DAILY	2400	SOILX		
PRECIP	1995-07-01	2009-03-27	DAILY	2400	UNIV	RCRD	
TEMP	1992-06-08	1995-07-01	DAILY	2400	HYGR		
PRECIP	1992-06-08	1995-07-01	HOURLY	2400			
MAX/MINTEM	1992-06-08	1995-07-01	ONCE DAILY	2400	PALMER		
MAX/MINTEM	1995-07-01	2009-03-27	ONCE DAILY	2400	PALMER		
PRECIP	2011-06-22	Present	HOURLY	2400	AHTB	RCRD;HTD	
MAX/MINTEM	1968-08-22	1970-10-01	ONCE DAILY	2400	SOILX		
MAX/MINTEM	1991-08-19	1992-06-08	ONCE DAILY	2400	SOILX		
MAX/MINTEM	1992-06-08	1995-07-01	ONCE DAILY	2400	PALMER		
TEMP	2009-03-27	2011-06-22	DAILY	2400	ATEMP		

\* For explanation of codes and abbreviations see Station Metadata link below.

Other Station Information can be found at:

ASOS Implementation by NWS: <http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm>

Station Metadata website: <http://www.ncdc.noaa.gov/homr>

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Visit our Web Site for other weather data: [www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)