

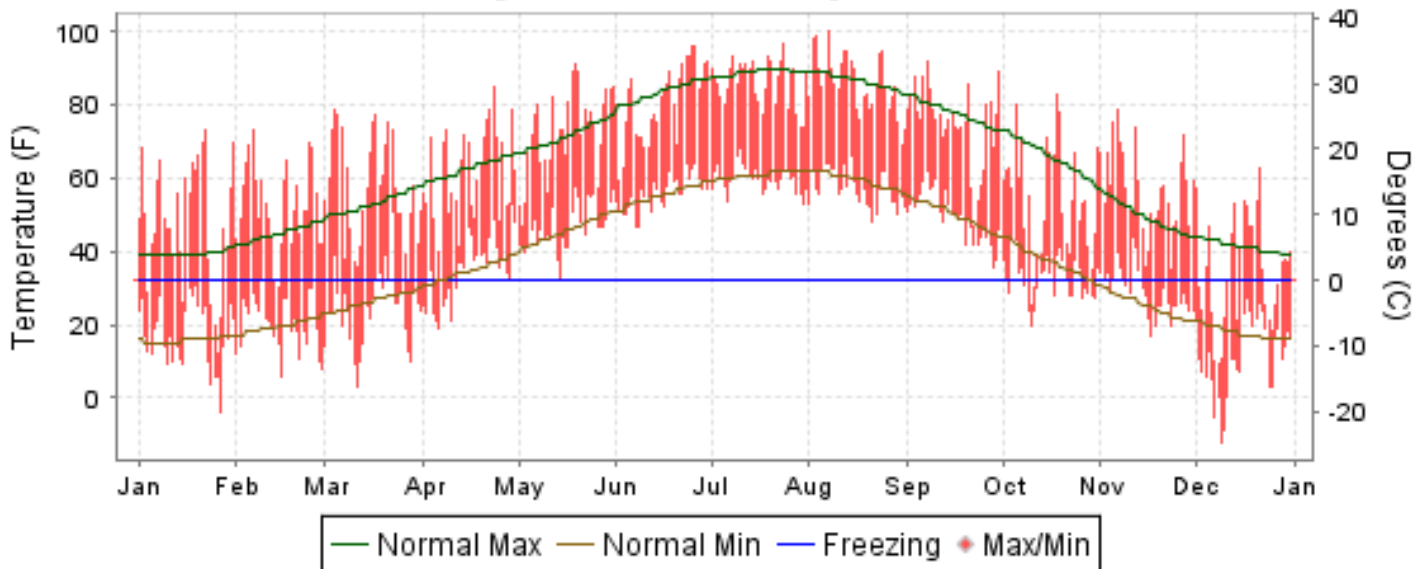


2009 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

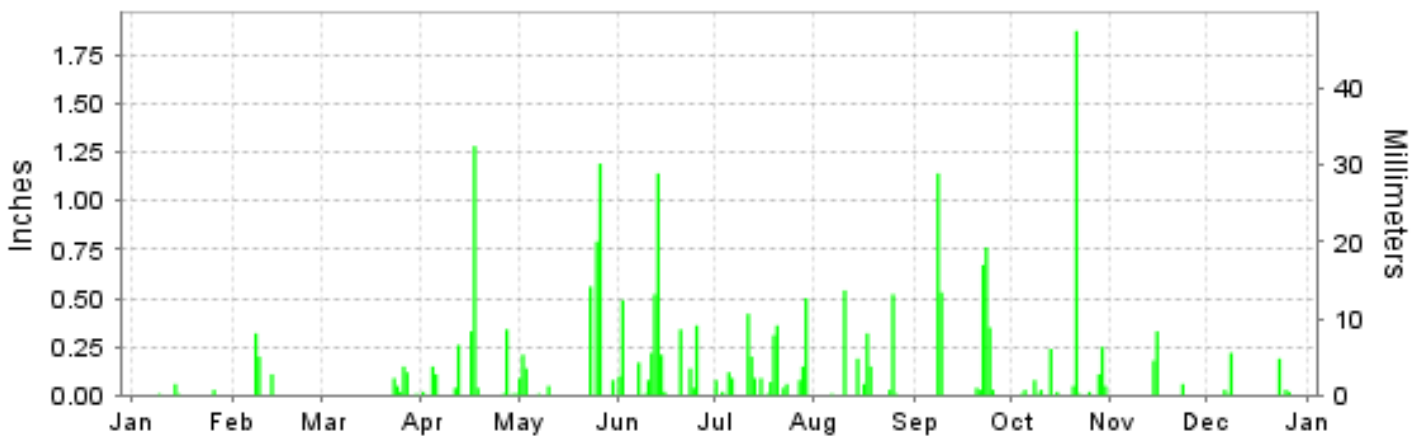
ISSN 0198-2176

GOODLAND, KANSAS (KGLD)

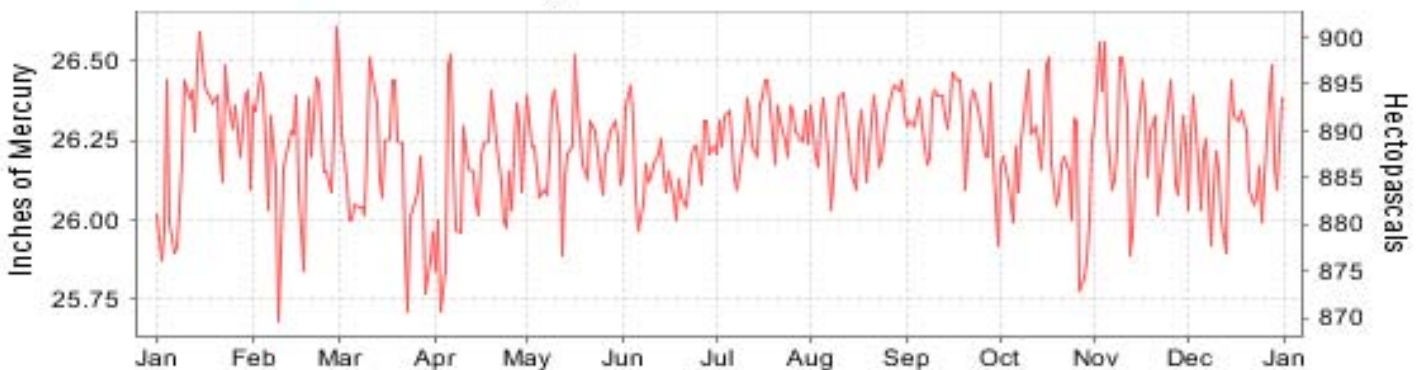
Daily Max/Min Temperature



Daily Precipitation



Daily Station Pressure



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NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2009

GOODLAND (KGLD)

LATITUDE: 39° 22'N LONGITUDE: -101° 41'W ELEVATION (FT): GRND: 3647 BARO: 3657 TIME ZONE: MOUNTAIN (UTC -7) WBAN: 23065

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	48.1	52.6	57.1	60.7	72.6	80.9	86.2	86.0	75.0	54.7	56.6	35.0	63.8	
	HIGHEST DAILY MAXIMUM	73	73	79	85	91	96	97	100	92	83	79	63	100	
	DATE OF OCCURRENCE	22	06	04	23	19	26+	24	07	07	18	06	21	AUG 07	
	MEAN DAILY MINIMUM	17.1	20.2	24.2	35.0	46.9	56.1	59.9	57.4	49.6	32.6	29.0	11.6	36.6	
	LOWEST DAILY MINIMUM	-4	6	3	19	33	47	53	48	36	20	17	-12	-12	
	DATE OF OCCURRENCE	27	15	11	06	14	08+	30	21	28	10	17	09	DEC 09	
	AVERAGE DRY BULB	32.6	36.4	40.7	47.9	59.8	68.5	73.1	71.7	62.3	43.7	42.8	23.3	50.2	
	MEAN WET BULB	24.8	29.0	32.4	40.5	51.1	59.9	63.1	61.0	54.3	38.1	35.4	19.8	42.5	
	MEAN DEW POINT	12.6	18.1	20.4	33.0	44.1	54.8	57.8	54.5	48.9	32.7	28.0	13.0	34.8	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	1	7	13	12	1	0	0	0	0	34
MAXIMUM <= 32°	6	2	1	1	0	0	0	0	0	2	0	14	26		
MINIMUM <= 32°	31	27	27	10	0	0	0	0	0	15	23	31	164		
MINIMUM <= 0°	1	0	0	0	0	0	0	0	0	0	0	5	6		
H/C	HEATING DEGREE DAYS	996	795	748	511	197	39	1	8	123	654	656	1284	6012	
	COOLING DEGREE DAYS	0	0	0	3	40	151	259	225	50	0	0	0	728	
RH	MEAN (PERCENT)	51	55	53	64	63	67	65	61	69	72	64	68	63	
	HOUR 05 LST	62	70	69	80	77	83	82	81	86	83	80	76	77	
	HOUR 11 LST	37	38	40	48	45	50	46	40	47	58	44	53	46	
	HOUR 17 LST	50	52	43	55	50	56	50	47	61	71	66	71	56	
	HOUR 23 LST	59	64	63	76	75	80	81	75	82	82	74	74	74	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	0	0	2	0	2	3	2	1	3	6	2	2	23	
	THUNDERSTORMS	0	0	0	1	6	7	11	6	4	1	0	0	36	
CLOUDNESS	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.)	26.26	26.23	26.14	26.15	26.23	26.17	26.28	26.28	26.31	26.18	26.27	26.20	26.23	
	MEAN SEA-LEVEL PRESS. (IN.)	30.12	30.06	29.93	29.91	29.95	29.85	29.95	29.96	30.04	29.96	30.08	30.08	29.99	
WINDS	RESULTANT SPEED (MPH)	6.2	1.7	2.4	1.6	2.6	1.9	2.5	3.0	2.8	2.7	3.0	5.8	0.9	
	RES. DIR. (TENS OF DEGS.)	31	28	24	12	16	12	15	17	17	33	28	32	27	
	MEAN SPEED (MPH)	13.2	10.9	14.6	15.7	11.7	8.9	9.3	10.4	10.0	12.2	9.9	12.1	11.6	
	PREVAIL.DIR.(TENS OF DEGS.)	33	35	18	16	17	16	18	15	16	31	32	34	16	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	45	40	48	45	41	41	60	40	39	43	32	41	60	
	DIR. (TENS OF DEGS.)	35	32	33	33	18	32	33	19	22	33	33	32	33	
	DATE OF OCCURRENCE	19	09	24	04	19	07	20	14	30	01	23	25	JUL 20	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	60	52	60	55	53	52	72	54	51	54	43	54	72	
DIR. (TENS OF DEGS.)	30	33	34	34	18	33	34	22	23	30	33	31	34		
DATE OF OCCURRENCE	07	09	05	04	19	07	20	14	30	01	23	25	JUL 20		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.11	0.63	0.44	2.60	3.12	3.84	2.69	1.83	3.55	2.78	0.57	0.50	22.66	
	GREATEST 24-HOUR (IN.)	0.07	0.52	0.15	1.44	1.79	1.16	0.67	0.54	1.67	1.89	0.51	0.23	1.89	
	DATE OF OCCURRENCE	14-15	08-09	26	16-17	25-26	13-14	19-20	10	08-09	20-21	14-15	07-08	OCT 20-21	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	4	3	6	12	9	14	17	9	8	14	3	6	105	
PRECIPITATION 0.10	0	3	2	6	5	10	7	5	5	4	2	2	51		
PRECIPITATION 1.00	0	0	0	1	1	1	0	0	1	1	0	0	5		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	3.0	2.0	5.8	3.2	0.0	T	T	0.0	T	5.4	4.9	12.2	36.5	
	GREATEST 24-HOUR (IN.)	1.9	2.0	2.7	1.9	0.0	T	T	0.0	T	4.2	4.0	5.1	5.1	
	DATE OF OCCURRENCE	26	13	26	05		07	20		23	29	15	08	DEC 08	
	MAXIMUM SNOW DEPTH (IN.)	1	2	4	3	0	0	0	0	0	5	3	6	6	
	DATE OF OCCURRENCE	28+	14	28+	05						30	16	09	DEC 09	
	NUMBER OF DAYS WITH:														
SNOWFALL >= 1.0	1	1	2	2	0	0	0	0	0	1	1	4	12		

NORMALS, MEANS, AND EXTREMES GOODLAND (KGLD)

LATITUDE: 39° 22'N LONGITUDE: -101° 41'W ELEVATION (FT): GRND: 3647 BARO: 3657 TIME ZONE: MOUNTAIN (UTC -7) WBAN: 23065

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	39.4	45.0	53.2	62.7	71.7	83.6	89.1	86.7	78.0	66.0	49.6	41.3	63.9
	MEAN DAILY MAXIMUM	102	40.9	43.9	52.3	62.1	72.7	82.5	89.3	87.9	78.4	67.9	51.9	42.9	64.4
	HIGHEST DAILY MAXIMUM	88	79	81	89	96	104	109	111	110	105	96	87	83	111
	YEAR OF OCCURRENCE		1951	2006	1963	1992	2003	1936	1940	1947	1939	1926	1927	1964	JUL 1940
	MEAN OF EXTREME MAXS.	103	65.3	69.0	77.2	85.8	91.5	99.0	101.8	99.9	95.5	87.5	74.5	66.8	84.5
	NORMAL DAILY MINIMUM	30	15.8	19.7	26.4	34.8	45.7	55.5	61.1	59.6	50.0	37.5	25.2	17.8	37.4
	MEAN DAILY MINIMUM	102	15.3	18.3	24.6	33.8	45.1	54.2	60.2	59.3	48.9	37.7	25.0	17.7	36.7
	LOWEST DAILY MINIMUM	88	-26	-22	-20	0	21	31	42	38	19	7	-12	-27	-27
	YEAR OF OCCURRENCE		1959	1982	1960	1936	1967	1951	1952	1964	1985	1993	1925	1989	DEC 1989
	MEAN OF EXTREME MINS.	103	-5.3	-0.4	5.5	19.7	31.6	43.5	51.9	50.2	35.0	22.4	8.2	-1.5	21.7
	NORMAL DRY BULB	30	27.6	32.4	39.8	48.8	58.7	69.6	75.1	73.2	64.0	51.8	37.4	29.6	50.7
	MEAN DRY BULB	102	28.2	31.1	38.5	48.0	58.9	68.5	74.8	73.6	63.7	52.8	38.4	30.3	50.6
	MEAN WET BULB	26	23.2	26.0	32.4	40.1	50.5	58.7	63.0	62.3	53.4	42.3	31.1	24.1	42.3
	MEAN DEW POINT	26	18.5	21.1	26.8	34.2	46.3	54.4	58.6	58.2	48.1	36.3	26.0	18.9	37.3
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.2	1.0	8.7	16.7	14.1	6.0	0.5	0.0	0.0	47.2
	MAXIMUM <= 32	30	8.8	6.1	2.7	0.4	0.0	0.0	0.0	0.0	0.0	0.3	3.2	6.8	28.3
MINIMUM <= 32	30	30.1	26.4	23.8	11.7	1.4	0.0	0.0	0.0	0.9	8.1	24.1	29.8	156.3	
MINIMUM <= 0	30	3.7	1.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.3	8.5	
H/C	NORMAL HEATING DEG. DAYS	30	1147	916	776	490	224	35	5	10	117	407	812	1084	6023
	NORMAL COOLING DEG. DAYS	30	0	0	0	4	26	173	320	266	99	6	0	0	894
RH	NORMAL (PERCENT)	30	67	66	64	61	66	62	60	63	59	59	65	66	63
	HOURLY 05 LST	30	76	77	79	80	85	83	82	84	79	75	77	75	79
	HOURLY 11 LST	30	58	56	53	48	53	47	46	48	45	45	54	55	51
	HOURLY 17 LST	30	62	54	48	44	48	42	40	43	41	45	60	62	49
	HOURLY 23 LST	30	74	73	72	71	78	74	71	73	69	68	73	73	72
S	PERCENT POSSIBLE SUNSHINE	5	64	60	68	65	65	73	76	76	75	73	68	67	69
W/O	MEAN NO. DAYS WITH: HEAVY FOG (VISIBY <= 1/4 MI)	46	2.4	3.0	2.9	1.8	2.5	1.2	1.2	2.2	2.1	2.0	2.6	1.9	25.8
	THUNDERSTORMS	62	0.0	0.2	0.7	2.5	7.4	9.9	10.7	8.8	3.9	1.5	0.2	0.1	45.9
CLOUDNESS	MEAN: SUNRISE-SUNSET (OKTAS)	1	4.8	5.2	3.6	5.6	3.2	3.0	3.2	4.0	2.8	2.8	3.2	2.8	3.7
	MIDNIGHT-MIDNIGHT (OKTAS)	1	4.8	5.2	3.6	5.6	3.2	3.2	3.2	4.0	2.8	2.8	4.4	1.6	3.7
	MEAN NO. DAYS WITH: CLEAR	3	6.0	8.0	7.3	8.0	8.0	14.0	13.0	14.5	9.0	11.5	8.0	13.5	120.8
	PARTLY CLOUDY	3	3.7	3.7	4.0	3.0	5.3	4.0	5.0	4.5	3.0	3.0	3.5	2.0	69.1
	CLOUDY	3	8.7	7.7	5.0	11.0	6.0	3.7	2.5	6.0	3.0	5.5	5.0	5.0	69.1
PR	MEAN STATION PRESSURE (IN)	26	26.24	26.23	26.18	26.15	26.17	26.20	26.26	26.28	26.27	26.25	26.24	26.24	26.23
	MEAN SEA-LEVEL PRES. (IN)	26	30.11	30.07	29.98	29.91	29.88	29.87	29.92	29.95	29.97	30.01	30.05	30.10	29.99
WINDS	MEAN SPEED (MPH)	26	12.0	12.2	13.5	14.1	13.1	12.2	11.4	10.8	11.6	11.8	11.9	11.8	12.2
	PREVAIL. DIR. (TENS OF DEGS)	34	34	34	34	34	17	16	17	17	17	17	34	34	17
	MAXIMUM 2-MINUTE: SPEED (MPH)	17	53	51	62	60	59	58	64	60	41	61	53	49	64
	DIR. (TENS OF DEGS)		34	36	33	32	30	29	30	23	36	27	33	30	30
	YEAR OF OCCURRENCE		1996	2002	2000	1999	1994	2000	1993	1994	2006	1997	2005	1993	JUL 1993
	MAXIMUM 3-SECOND SPEED (MPH)	17	64	62	71	71	96	66	76	92	63	72	64	62	96
	DIR. (TENS OF DEGS)		34	35	32	31	31	30	01	24	15	29	33	35	31
YEAR OF OCCURRENCE		1996	2002	2000	1999	1994	2000	2004	1994	2004	1997	2005	2000	MAY 1994	
PRECIPITATION	NORMAL (IN)	30	0.43	0.44	1.20	1.51	3.46	3.30	3.54	2.49	1.12	1.05	0.82	0.40	19.76
	MAXIMUM MONTHLY (IN)	88	1.59	2.07	3.60	5.69	8.21	9.46	10.10	9.29	5.39	4.94	2.63	2.90	10.10
	YEAR OF OCCURRENCE		1988	1939	1981	1944	1981	1982	1985	1993	1973	1930	1946	1924	JUL 1985
	MINIMUM MONTHLY (IN)	88	0.00	T	0.03	T	0.31	0.10	0.30	0.13	0.01	T	T	0.00	0.00
	YEAR OF OCCURRENCE		1933	1970	1997	1963	1927	1976	1924	1964	1992	1988	1959	2002	DEC 2002
	MAXIMUM IN 24 HOURS (IN)	88	1.27	1.79	1.73	3.13	3.49	4.28	3.74	3.45	2.61	2.85	1.47	1.54	4.28
	YEAR OF OCCURRENCE		1988	1939	2006	1981	1972	1999	1985	1991	1940	1930	1975	1924	JUN 1999
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	4.6	4.4	6.9	7.6	10.6	8.9	9.9	8.1	5.4	4.4	5.1	4.0	79.9
PRECIPITATION >= 1.00	30	*	0.0	0.1	0.2	0.8	0.8	1.0	0.6	0.2	0.2	0.1	0.0	4.0	
SNOWFALL	NORMAL (IN)	30	7.2	5.4	9.1	5.0	0.6	0.0	0.0	0.0	0.4	3.0	5.8	5.3	41.8
	MAXIMUM MONTHLY (IN)	68	19.4	25.4	27.4	22.0	6.5	3.5	T	T	5.6	19.5	23.3	25.0	27.4
	YEAR OF OCCURRENCE		1988	1984	1940	1988	1990	1989	2009	2007	1985	1997	1983	2006	MAR 1940
	MAXIMUM IN 24 HOURS (IN)	68	14.0	11.2	15.2	13.0	6.5	3.5	T	T	5.6	19.3	15.1	11.7	19.3
	YEAR OF OCCURRENCE		1988	1984	1940	1988	1990	1989	2009	1990	1985	1997	1983	1979	OCT 1997
	MAXIMUM SNOW DEPTH (IN)	20	18	10	11	4	1	T	0	0	1	16	7	20	20
	YEAR OF OCCURRENCE		2007	1997	2006	2008	2008	1993			2000	1997	1994	2006	DEC 2006
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	1.9	1.5	2.5	1.3	0.3	0.0	0.0	0.0	0.1	0.7	1.6	1.4	11.3	

PRECIPITATION (inches) 2009 GOODLAND (KGLD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	0.61	0.49	2.75	2.67	2.80	1.92	7.25	3.38	2.24	0.19	0.12	T	24.42
1981	1.04	0.03	3.60	3.86	8.21	0.29	1.99	0.77	0.33	0.13	1.91	T	22.16
1982	0.21	0.61	0.39	0.87	5.03	9.46	3.26	0.81	3.42	0.43	0.41	1.58	26.48
1983	0.29	0.87	2.20	1.76	2.43	2.39	3.68	1.39	0.43	0.15	1.78	0.26	17.63
1984	0.74	1.54	1.82	3.35	1.51	3.43	3.24	1.15	0.22	3.25	0.28	0.61	21.14
1985	0.43	0.25	0.33	1.03	4.56	0.71	10.10	0.70	1.74	1.16	0.51	0.44	21.96
1986	0.00	0.44	0.76	1.27	3.37	3.78	1.38	0.84	1.30	1.61	0.50	0.11	15.36
1987	0.34	1.01	2.50	0.48	3.54	5.39	2.96	0.50	1.52	0.03	1.01	0.46	19.74
1988	1.59	0.24	0.41	1.99	4.82	1.85	3.44	3.47	2.19	T	0.39	0.47	20.86
1989	0.23	0.14	0.26	0.89	2.76	8.18	1.09	2.84	1.06	0.32	0.05	0.22	18.04
1990	0.70	0.44	1.63	0.76	4.14	1.74	4.06	1.97	1.49	0.86	1.47	0.14	19.40
1991	0.24	0.11	1.08	0.92	4.03	5.36	3.29	4.07	0.76	0.88	1.32	1.18	23.24
1992	0.20	0.50	1.91	0.01	1.38	6.70	4.03	5.59	0.01	0.90	0.52	0.18	21.93
1993	0.31	0.73	0.81	0.42	2.91	1.94	7.96	9.29	0.30	2.33	0.93	0.01	27.94
1994	0.38	0.10	0.27	2.96	1.53	2.10	2.95	1.58	0.45	1.81	1.26	0.45	15.84
1995	0.36	0.22	1.00	2.40	4.87	3.95	4.19	1.06	1.55	0.77	0.36	0.13	20.86
1996	0.30	0.02	0.24	1.22	4.54	1.38	6.65	3.40	0.70	0.56	0.14	0.04	19.19
1997	0.17	0.88	T	0.76	1.94	2.18	2.96	5.29	0.75	2.56	0.64	0.54	18.67
1998	0.07	0.68	0.16	0.92	1.69	1.63	7.20	1.69	0.35	1.69	2.11	0.12	18.31
1999	0.45	0.12	0.89	3.17	2.68	5.50	1.30	4.87	0.84	0.02	0.14	0.31	20.29
2000	0.26	0.72	2.33	1.22	0.50	2.10	3.32	2.59	0.89	4.24	0.30	0.11	18.58
2001	0.91	0.53	0.56	0.74	2.86	0.86	6.09	0.86	1.69	0.45	0.88	0.63	17.06
2002	0.30	0.24	0.41	0.84	1.03	1.67	0.41	2.20	1.29	1.44	0.06	0.00	9.89
2003	0.18	0.65	1.22	1.71	2.34	4.93	1.12	0.52	0.36	0.07	0.06	0.71	13.87
2004	0.06	1.02	0.29	2.97	0.82	3.66	4.04	1.06	3.23	2.08	2.10	0.18	21.51
2005	0.09	0.25	0.25	2.12	2.94	2.63	1.47	2.77	0.33	2.61	0.50	0.12	16.08
2006	0.51	0.07	2.00	0.56	3.96	4.51	1.19	5.40	1.03	2.73	0.06	2.79	24.81
2007	0.54	0.44	2.23	2.44	0.81	0.98	1.08	3.63	1.11	0.63	0.17	1.04	15.10
2008	0.12	0.49	0.32	1.11	1.21	1.03	2.88	6.01	1.95	4.28	0.83	0.19	20.42
2009	0.11	0.63	0.44	2.60	3.12	3.84	2.69	1.83	3.55	2.78	0.57	0.50	22.66
POR= 102 YRS	0.35	0.47	1.03	1.59	2.82	2.91	2.87	2.47	1.37	1.15	0.61	0.47	18.11

WBAN : 23065

AVERAGE TEMPERATURE (°F) 2009 GOODLAND (KGLD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	24.4	32.4	35.1	47.1	56.9	71.9	79.2	75.2	66.6	52.0	41.1	36.4	51.5
1981	33.0	32.1	40.5	55.5	55.5	71.6	75.2	70.8	65.8	51.9	43.2	33.8	52.4
1982	25.7	28.4	40.3	47.0	59.0	64.6	74.5	74.7	64.5	52.4	37.5	31.8	50.0
1983	31.0	36.5	38.8	44.1	54.8	66.4	78.9	82.6	68.4	53.0	37.8	14.6	50.6
1984	25.3	34.1	36.0	42.6	58.5	67.8	74.3	75.0	61.8	48.6	41.0	30.0	49.6
1985	25.1	28.1	42.0	53.3	62.2	69.1	76.7	73.3	61.0	50.6	30.8	26.5	49.9
1986	38.9	33.9	46.2	52.3	59.5	71.7	77.2	73.6	66.2	52.0	39.0	32.9	53.6
1987	31.6	37.5	37.5	51.8	62.6	71.3	76.1	72.5	64.5	52.4	39.7	30.2	52.3
1988	23.8	31.5	39.0	48.5	60.9	75.1	76.1	75.9	64.7	52.7	40.9	34.4	52.0
1989	34.0	22.7	40.8	51.4	60.3	66.1	75.6	72.7	63.4	53.5	42.0	25.9	50.7
1990	32.7	31.7	41.5	50.3	56.9	74.4	74.1	74.2	68.6	53.8	42.7	25.4	52.2
1991	26.1	40.0	41.6	49.7	62.3	72.9	75.7	73.2	65.8	52.7	35.6	33.8	52.5
1992	31.3	40.0	43.8	52.6	60.3	66.7	71.5	68.7	64.2	52.1	32.7	22.8	50.6
1993	22.8	22.5	39.6	46.6	58.3	67.5	72.6	70.4	59.6	49.9	33.5	32.9	48.0
1994	28.1	26.0	43.2	48.2	62.5	73.2	72.3	74.1	66.2	52.3	35.6	33.0	51.2
1995	31.9	36.2	39.4	44.6	51.9	66.4	73.6	77.1	62.7	50.8	42.4	31.9	50.7
1996	25.5	33.8	35.3	49.5	59.0	70.3	73.6	71.2	61.8	51.8	35.2	31.7	49.9
1997	27.3	30.3	42.9	43.5	57.2	69.3	74.7	71.3	66.2	50.9	35.9	29.0	49.9
1998	31.9	36.0	36.5	47.2	62.3	67.3	75.3	73.1	69.4	52.5	42.9	30.1	52.0
1999	32.6	39.3	40.1	46.1	58.3	67.9	77.1	73.4	60.4	52.9	46.4	34.7	52.4
2000	31.6	38.8	40.8	50.6	62.6	69.0	76.7	77.3	65.8	53.2	31.1	26.3	52.0
2001	29.6	28.0	39.3	52.5	60.4	71.3	78.9	75.3	65.5	53.3	43.3	33.8	52.6
2002	31.5	34.6	33.9	51.8	59.2	76.9	78.7	74.7	65.5	46.1	40.7	34.7	52.4
2003	33.0	28.8	42.7	52.3	59.8	67.1	80.2	75.8	63.2	56.9	37.7	32.9	52.5
2004	30.6	31.7	46.0	50.2	62.8	67.4	73.0	69.8	67.8	53.4	38.7	34.7	52.2
2005	30.0	36.6	41.6	49.2	59.9	70.5	77.9	73.6	68.6	53.7	43.5	31.0	53.0
2006	38.7	32.0	39.9	53.4	62.6	73.1	78.5	74.1	59.5	50.0	40.0	30.8	52.7
2007	18.7	25.0	47.3	47.1	61.3	70.1	76.8	77.4	66.9	54.5	40.7	26.6	51.0
2008	27.8	31.9	40.4	47.9	57.7	69.7	77.5	72.1	63.3	52.2	41.7	28.2	50.9
2009	32.6	36.4	40.7	47.9	59.8	68.5	73.1	71.7	62.3	43.7	42.8	23.3	50.2
POR= 102 YRS	28.2	31.1	38.5	48.0	58.9	68.5	74.8	73.6	63.7	52.8	38.4	30.3	50.6

HEATING DEGREE DAYS (base 65°F) 2009 GOODLAND (KGLD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0	2	61	402	714	878	985	915	751	289	297	18	5312
1981-82	1	9	59	405	649	958	1216	1019	761	534	197	73	5881
1982-83	1	12	106	383	820	1022	1049	791	805	623	326	72	6010
1983-84	0	0	76	366	807	1556	1226	892	893	664	208	39	6727
1984-85	0	0	178	503	712	1079	1232	1026	704	351	129	48	5962
1985-86	0	4	237	439	1020	1188	804	867	577	375	185	9	5705
1986-87	0	2	58	399	773	987	1026	762	845	410	111	10	5383
1987-88	14	24	76	396	749	1072	1270	966	797	487	180	8	6039
1988-89	3	4	102	375	713	942	953	1180	745	435	189	70	5711
1989-90	0	1	152	361	685	1203	994	928	723	444	266	9	5766
1990-91	13	1	66	347	662	1224	1203	694	718	453	138	0	5519
1991-92	5	8	87	396	878	964	1039	716	650	379	188	38	5348
1992-93	8	31	88	397	963	1301	1301	1184	779	541	218	57	6868
1993-94	0	29	188	474	938	987	1135	1086	669	510	119	1	6136
1994-95	3	7	82	385	873	987	1018	800	788	603	397	65	6008
1995-96	14	3	167	446	671	1017	1219	898	914	460	227	18	6054
1996-97	4	0	151	419	886	1025	1163	965	679	637	251	25	6205
1997-98	5	13	76	460	865	1111	1019	806	876	527	145	81	5984
1998-99	1	0	33	380	660	1076	999	713	766	562	219	45	5454
1999-00	3	3	190	373	550	930	1026	752	740	427	145	41	5180
2000-01	0	0	126	373	1011	1194	1091	1029	788	377	182	41	6212
2001-02	0	0	87	370	646	960	1030	847	959	401	222	4	5526
2002-03	0	1	86	582	723	934	984	1006	683	385	196	40	5620
2003-04	0	6	122	277	812	985	1056	960	581	438	138	57	5432
2004-05	22	23	57	358	783	932	1080	789	719	468	208	28	5467
2005-06	1	1	46	363	637	1047	809	916	771	343	157	3	5094
2006-07	0	10	180	478	718	1052	1426	1114	543	532	132	28	6213
2007-08	0	0	67	342	722	1182	1145	954	758	509	250	21	5950
2008-09	0	3	97	389	693	1131	996	795	748	511	197	39	5599
2009-	1	8	123	654	656	1284							

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COOLING DEGREE DAYS (base 65°F) 2009 GOODLAND (KGLD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1980	0	0	0	4	11	230	447	324	117	6	0	0	1139
1981	0	0	0	11	8	223	323	200	90	3	0	0	858
1982	0	0	0	1	17	71	301	320	98	0	0	0	808
1983	0	0	0	0	17	122	438	551	184	3	0	0	1315
1984	0	0	0	0	12	133	292	316	87	0	0	0	840
1985	0	0	0	6	47	178	372	267	127	1	0	0	998
1986	0	0	0	3	21	213	387	271	104	1	0	0	1000
1987	0	0	0	18	44	205	364	264	69	9	0	0	973
1988	0	0	0	0	59	315	355	350	100	0	0	0	1179
1989	0	0	0	30	49	109	334	248	107	11	0	0	888
1990	0	0	0	9	25	296	305	292	180	5	0	0	1112
1991	0	0	0	3	63	244	342	268	117	23	0	0	1060
1992	0	0	0	10	48	95	216	151	70	5	0	0	595
1993	0	0	0	0	17	137	243	203	32	13	0	0	645
1994	0	0	0	9	49	253	235	298	126	0	0	0	970
1995	0	0	0	0	0	115	286	388	102	16	0	0	907
1996	0	0	0	3	49	182	274	199	60	15	0	0	782
1997	0	0	0	0	16	163	314	215	120	31	0	0	859
1998	0	0	0	0	68	155	327	259	173	0	0	0	982
1999	0	0	0	0	17	139	385	270	60	6	0	0	877
2000	0	0	0	3	80	168	372	388	157	13	0	0	1181
2001	0	0	0	8	46	239	439	322	112	14	0	0	1180
2002	0	0	0	12	50	370	431	307	106	3	0	0	1279
2003	0	0	0	8	42	110	477	349	76	33	0	0	1095
2004	0	0	0	2	77	136	278	179	148	4	0	0	824
2005	0	0	0	1	58	198	409	272	159	17	0	0	1114
2006	0	0	0	2	92	254	426	300	21	19	0	0	1114
2007	0	0	0	2	26	185	373	393	131	22	0	0	1132
2008	0	0	0	0	32	167	394	227	54	1	0	0	875
2009	0	0	0	3	40	151	259	225	50	0	0	0	728

SNOWFALL (inches) 2009 GOODLAND (KGLD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0.0	0.0	0.0	0.3	2.6	T	16.6	0.9	20.6	0.8	0.0	0.0	41.8
1981-82	0.0	0.0	0.0	0.0	3.4	0.1	5.6	10.5	2.2	0.8	1.8	0.0	24.4
1982-83	0.0	0.0	0.0	0.2	2.4	14.4	4.3	6.8	13.8	6.3	0.0	0.0	48.2
1983-84	0.0	0.0	T	0.0	23.3	7.2	12.1	17.2	20.0	22.0	T	0.0	101.8
1984-85	0.0	0.0	0.7	6.4	1.1	6.7	6.7	7.5	3.5	T	1.0	0.0	33.6
1985-86	0.0	0.0	5.6	0.0	5.6	6.8	0.0	7.5	5.8	0.7	0.0	0.0	32.0
1986-87	0.0	0.0	0.0	5.5	4.6	1.5	6.1	7.5	21.5	4.5	0.0	0.0	51.2
1987-88	0.0	0.0	0.0	0.0	7.2	9.0	19.4	3.6	7.3	13.4	2.2	0.0	62.1
1988-89	0.0	0.0	0.0	0.0	3.1	2.1	1.0	2.2	2.8	12.5	T	3.5	27.2
1989-90	0.0	0.0	0.0	1.0	0.3	7.0	10.3	6.3	5.8	1.4	6.5	0.0	38.6
1990-91	0.0	0.0	0.0	6.1	13.4	2.1	4.2	0.1	11.4	T	1.4	T	38.7
1991-92	T	0.0	0.0	7.5	3.3	8.3	1.9	0.5	1.3	T	0.0	T	22.8
1992-93	T	0.0			10.5	4.3	11.3	12.5	5.8	0.3		T	
1993-94	T	0.0	0.0	1.3	6.2	0.7	10.8	3.1	1.0	20.4	T	T	43.5
1994-95	T	T	0.0	0.0	10.1	2.5	1.5	5.7	15.1	0.0	0.0	T	34.9
1995-96	0.0	0.0	5.8	5.2	1.7	0.8	13.5	1.0	2.9	4.3	T	0.0	35.2
1996-97	T	T	0.0	T	0.5	0.6	3.0	17.0	T	2.3	T	T	23.4
1997-98	T	0.0	0.0	19.5	6.1	7.2	2.0	1.0	1.7	0.0	T	T	37.5
1998-99	0.0	T	0.0	T	5.0	5.9	3.5	1.7	11.5	3.6	T	T	31.2
1999-00	T	0.0	0.0	0.0	1.8	1.6	2.8	4.9	8.6	T	0.0	0.0	19.7
2000-01	T	0.0	0.5	T	2.8	2.8	14.2	10.7	2.5	T	T	T	33.5
2001-02	T	0.0	T	0.3	T	3.0	5.7	2.5	8.7	T	T	0.0	20.2
2002-03	0.0	T	0.0				3.4	9.5	1.7	2.1	T	0.0	
2003-04	T	0.0	0.0	0.0	1.3	7.8	1.7	7.5	1.7	4.1	T	T	24.1
2004-05	T	T	T	0.0	3.7	2.6	0.7	2.5	2.3	2.4	T	T	14.2
2005-06	T	T	0.0	0.0	3.1	2.2	4.2	0.7	13.6	0.1	2.5	T	26.4
2006-07	0.0	T	0.0	T	1.5	25.0	9.8	7.0	T	5.4	0.0	0.0	48.7
2007-08	0.0	T	0.0	T	3.3	14.2	2.0	8.3	1.9	6.0	0.7	T	36.4
2008-09	0.0	0.0	T	2.0	2.1	2.6	3.0	2.0	5.8	3.2	0.0	T	20.7
2009-	T	0.0	T	5.4	4.9	12.2							
POR= 87 YRS	T	T	0.2	1.7	3.9	5.4	4.7	5.1	8.1	3.8	0.5	0.1	33.5

WBAN : 23065

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 EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER. STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED HISTORY GO TO "MULTI-NETWORK METADATA SYSTEM", URL IS: https://mi3.ncdc.noaa.gov/mi3qry/login.cfm</p> <p>NOTE: 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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2009 GOODLAND KANSAS (KGLD)

Goodland is situated on an intermediate plain with few native trees. The terrain rises from east to west with only minor variations from north to south. The rate of rise is about 1,600 feet per 150 miles east of Goodland and about 2,500 feet per 150 miles west. This gradual slope in terrain makes conditions favorable for upslope fog, low clouds, and drizzle with easterly winds.

This is a typical steppe climate with wide variations in precipitation from year to year. Evaporation generally exceeds precipitation during the summer months. The number of subnormal years of precipitation nearly equals the above normal years. The mean monthly rainfall increases in the spring to a maximum in June. General storms provide the main source of precipitation during the spring months, while thunderstorms are the major factor during the summer months. Inadequate moisture received from March through June, often results in drought conditions throughout the summer months with thunderstorms providing only local relief. The frequency of thunderstorms increases to a maximum in July with a marked decrease in September. Hail is most frequent in May and June. Winds during thunderstorms have been recorded with gusts up to 80 mph.

Snow is an important factor in the production of winter wheat, and residual soil moisture often offsets the effects of subnormal spring precipitation. When snow is accompanied by strong winds it can become a dangerous enemy. As little as 1 inch of snow accompanied by strong winds can result in serious blocking of roads and highways. The heaviest snowfall is most likely to occur in March, although heavy snows have been recorded in every month from October through May. Snow may cover the ground about one third of the time from November through March.

Temperatures are typical of continental climates with January normally the coldest month and July the warmest. Winters are often modified by persistent foehn winds but polar outbreaks have been known to drop the temperature as much as 70 degrees in a 24-hour period. Low relative humidity during the summer months makes most nights comfortable even in the hottest weather.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is October 7 and the average last occurrence in the spring is May 4. The growing season is 156 days.

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