

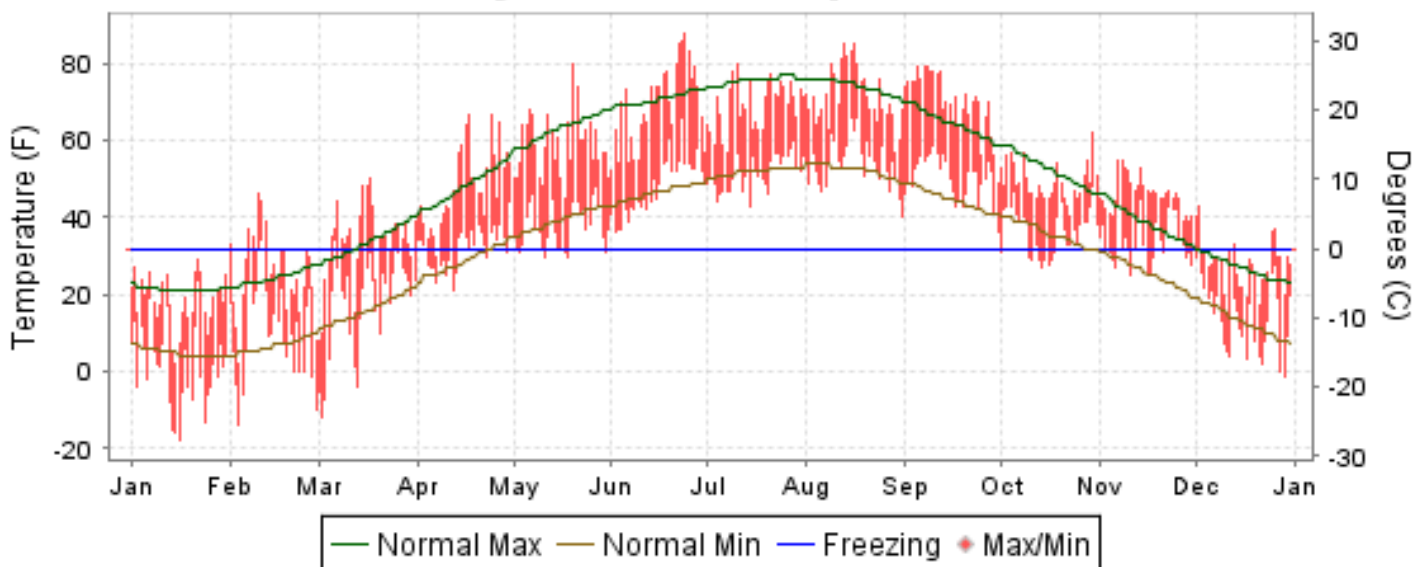


2009 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

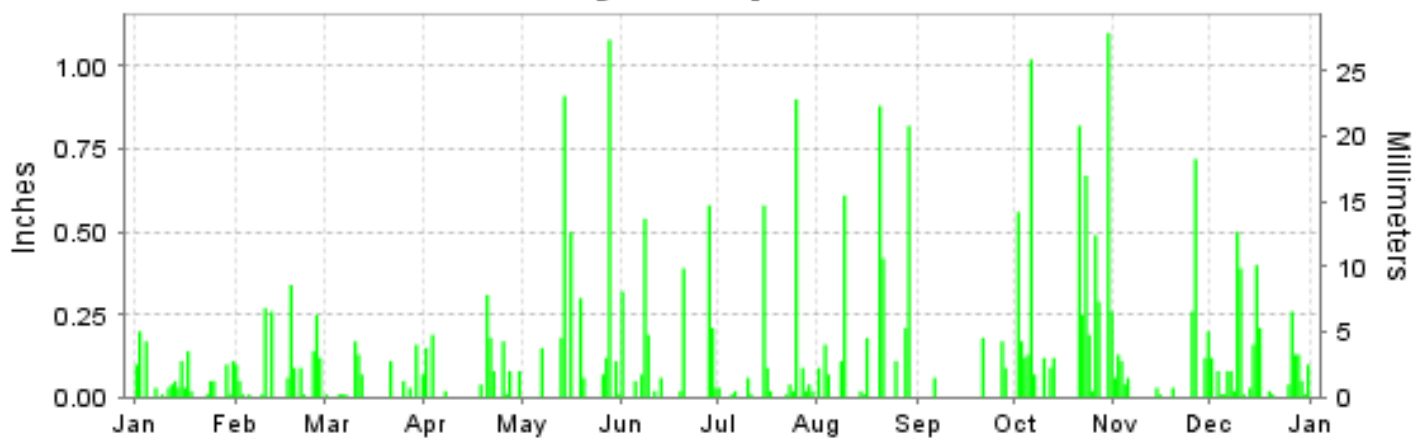
ISSN 0198-2672

SAULT STE MARIE, MICHIGAN (KANJ)

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

SAULT STE MARIE (KANJ)

LATITUDE: 46° 28'N LONGITUDE: -84° 22'W ELEVATION (FT): GRND: 722 BARO: 727 TIME ZONE: EASTERN (UTC -5) WBAN: 14847

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	18.4	25.8	33.7	48.1	59.1	69.6	69.1	71.6	70.2	49.2	46.0	27.8	49.1	
	HIGHEST DAILY MAXIMUM	29	46	50	67	80	88	80	85	79	62	55	43	88	
	DATE OF OCCURRENCE	22	10	17	24+	20	24	10	16+	08+	30	08+	02	JUN 24	
	MEAN DAILY MINIMUM	1.3	10.2	17.9	32.2	37.5	48.2	51.6	54.2	50.4	36.5	33.8	14.6	32.4	
	LOWEST DAILY MINIMUM	-18	-14	-12	21	30	36	43	40	36	27	25	-1	-18	
	DATE OF OCCURRENCE	16	04	02	12	18+	02	14	31	30	14	17+	29	JAN 16	
	AVERAGE DRY BULB	9.9	18.0	25.8	40.2	48.3	58.9	60.4	62.9	60.3	42.9	39.9	21.2	40.7	
	MEAN WET BULB	9.2	16.7	23.1	34.3	42.3	53.8	55.9	58.5	55.9	39.7	37.9	19.9	37.3	
	MEAN DEW POINT	3.8	11.1	16.6	25.8	34.8	49.6	52.7	55.7	52.8	36.0	34.4	15.5	32.4	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MAXIMUM <= 32°	7	7	9	1	0	0	0	0	0	0	0	26	50	
	MINIMUM <= 32°	31	27	30	13	9	0	0	0	0	9	15	31	165	
MINIMUM <= 0°	14	8	4	0	0	0	0	0	0	0	0	2	28		
H/C	HEATING DEGREE DAYS	1703	1310	1208	740	511	207	143	110	150	680	748	1351	8861	
	COOLING DEGREE DAYS	0	0	0	0	0	33	8	53	18	0	0	0	112	
RH	MEAN (PERCENT)	74	72	69	62	63	74	79	80	80	80	82	77	74	
	HOUR 01 LST	75	77	73	70	76	89	91	91	91	84	86	79	82	
	HOUR 07 LST	77	78	74	64	71	80	86	89	91	86	88	82	81	
	HOUR 13 LST	68	66	59	51	50	56	63	67	60	69	73	72	63	
	HOUR 19 LST	74	73	69	63	58	69	76	78	80	81	81	74	73	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	2	3	4	0	1	1	2	6	10	2	9	7	47	
	THUNDERSTORMS	0	0	0	2	1	2	3	2	2	0	0	0	12	
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.)	29.18	29.22	29.33	29.18	29.18	29.10	29.12	29.17	29.31	29.16	29.26	29.19	29.20	
	MEAN SEA-LEVEL PRESS. (IN.)	30.00	30.03	30.14	29.97	29.95	29.87	29.89	29.94	30.08	29.95	30.07	30.00	29.99	
WINDS	RESULTANT SPEED (MPH)	0.9	1.8	0.2	1.7	3.0	1.8	4.2	1.4	0.7	0.4	0.5	0.4	1.2	
	RES. DIR. (TENS OF DEGS.)	26	34	36	32	29	28	29	28	32	23	14	26	30	
	MEAN SPEED (MPH)	5.8	7.2	7.8	8.6	8.7	6.0	6.7	5.9	4.6	6.7	5.8	6.6	6.7	
	PREVAIL.DIR.(TENS OF DEGS.)	24	11	31	31	30	30	30	31	31	07	13	08	30	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	25	29	37	29	32	28	25	22	22	37	26	26	37	
	DIR. (TENS OF DEGS.)	31	25	28	30	29	21	32	21	21	23	30	26	23	
	DATE OF OCCURRENCE	23	01	11	08	16	05	13	01	27	30	15	10	OCT 30	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	36	38	56	41	45	36	36	32	29	47	43	35	56	
DIR. (TENS OF DEGS.)	31	25	28	31	30	20	30	22	32	24	29	24	28		
DATE OF OCCURRENCE	23	01	11	08	16	05	11	01	29	30	15	11	MAR 11		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	1.29	1.81	0.83	1.31	3.49	2.48	1.96	3.69	0.50	6.49	1.77	2.85	28.47	
	GREATEST 24-HOUR (IN.)	0.20	0.34	0.20	0.37	1.14	0.73	0.92	1.03	0.23	1.10	0.72	0.50	1.14	
	DATE OF OCCURRENCE	02	18	10-11	20-21	27-28	08-09	24-25	28-29	27-28	30	26	09	MAY 27-28	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	19	15	12	11	11	12	16	13	4	18	12	23	166	
PRECIPITATION 0.10	3	6	4	5	8	6	2	9	2	15	6	10	76		
PRECIPITATION 1.00	0	0	0	0	1	0	0	0	0	2	0	0	3		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	21.7	19.5	7.7	1.3	0.3	0.0	0.0	0.0	0.0	0.6	4.1	45.8	101.0	
	GREATEST 24-HOUR (IN.)	3.9	4.2	2.6	0.9	0.3	0.0	0.0	0.0	0.0	0.6	2.7	8.8	8.8	
	DATE OF OCCURRENCE	02	18	11	03	16					12	30	10	DEC 10	
	MAXIMUM SNOW DEPTH (IN.)	23	26	25	14	0	0	0	0	0	0	T	15	26	
	DATE OF OCCURRENCE	31+	03+	02+	01							30+	16	FEB 03+	
	NUMBER OF DAYS WITH:														
SNOWFALL >= 1.0	7	7	4	0	0	0	0	0	0	0	1	14	33		

NORMALS, MEANS, AND EXTREMES SAULT STE MARIE (KANJ)

LATITUDE: 46° 28'N **LONGITUDE:** -84° 22'W **ELEVATION (FT):** GRND: 722 BARO: 727 **TIME ZONE:** EASTERN (UTC -5) **WBAN: 14847**

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	21.5	24.5	33.6	48.0	63.2	70.7	75.7	74.1	64.8	52.8	38.9	27.2	49.6
	MEAN DAILY MAXIMUM	78	22.3	23.7	32.8	47.2	61.3	69.9	75.6	73.8	64.7	53.2	39.0	27.5	49.3
	HIGHEST DAILY MAXIMUM	69	45	49	75	85	89	93	97	98	95	81	68	62	98
	YEAR OF OCCURRENCE		1973	2004	1946	1990	2006	1983	1988	1947	1976	2005	2008	2001	AUG 1947
	MEAN OF EXTREME MAXS.	79	37.5	40.1	49.6	68.7	80.4	84.8	87.2	86.0	81.3	71.6	55.8	43.3	65.5
	NORMAL DAILY MINIMUM	30	4.9	6.6	16.1	28.8	39.3	46.5	52.0	52.4	44.8	36.0	25.9	13.1	30.5
	MEAN DAILY MINIMUM	78	6.6	6.6	15.8	29.1	39.1	46.8	52.8	53.0	45.9	37.0	26.5	14.0	31.1
	LOWEST DAILY MINIMUM	69	-36	-35	-24	-2	18	26	36	29	25	16	-10	-31	-36
	YEAR OF OCCURRENCE		1982	1979	1943	1982	1966	1982	1992	1982	1993	1981	1976	1993	JAN 1982
	MEAN OF EXTREME MINS.	79	-16.9	-14.6	-6.4	14.4	27.3	34.6	41.4	41.0	32.1	24.3	9.0	-8.4	14.8
	NORMAL DRY BULB	30	13.2	15.6	24.9	38.4	51.3	58.6	63.9	63.3	54.8	44.4	32.4	20.2	40.1
	MEAN DRY BULB	78	14.5	15.2	24.3	38.2	50.2	58.5	64.2	63.5	55.3	45.2	32.7	20.8	40.2
	MEAN WET BULB	26	13.7	15.3	22.2	33.8	44.4	54.1	58.9	58.8	52.6	41.3	31.0	20.4	37.2
	MEAN DEW POINT	26	10.3	11.2	18.0	28.4	40.1	51.1	56.5	56.7	50.5	38.9	28.3	17.8	34.0
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.3	*	0.0	0.0	0.0	1.3
	MAXIMUM <= 32	30	25.9	21.2	13.4	2.0	0.0	0.0	0.0	0.0	0.0	0.1	7.3	20.3	90.2
MINIMUM <= 32	30	30.7	27.7	28.4	20.5	6.7	0.9	0.0	*	1.9	10.7	22.3	29.6	179.4	
MINIMUM <= 0	30	11.8	9.8	3.9	*	0.0	0.0	0.0	0.0	0.0	0.0	0.2	5.7	31.4	
H/C	NORMAL HEATING DEG. DAYS	30	1606	1399	1253	798	434	212	91	107	320	642	979	1383	9224
	NORMAL COOLING DEG. DAYS	30	0	0	0	1	6	20	56	50	12	0	0	0	145
RH	NORMAL (PERCENT)	30	78	75	73	68	69	75	78	80	82	80	81	81	77
	HOURLY 01 LST	30	79	79	79	77	80	88	90	92	91	87	84	83	84
	HOURLY 07 LST	30	80	79	81	79	80	85	89	92	93	89	86	84	85
	HOURLY 13 LST	30	72	67	65	58	54	62	63	64	67	68	74	77	66
	HOURLY 19 LST	30	78	75	71	64	59	65	68	72	80	80	81	81	73
S	PERCENT POSSIBLE SUNSHINE	55	36	47	55	54	57	58	62	57	45	38	24	27	47
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	46	2.5	2.4	3.5	2.6	2.3	2.9	3.9	4.5	4.9	3.5	3.3	3.6	39.9
	THUNDERSTORMS	62	0.1	0.1	0.7	1.5	2.9	5.4	5.8	5.1	4.2	1.9	0.4	0.1	28.2
CLOUDNESS	MEAN: SUNRISE-SUNSET (OKTAS)	55	6.3	5.8	5.5	5.4	5.2	5.0	4.7	4.9	5.7	5.9	6.7	6.6	5.6
	MIDNIGHT-MIDNIGHT (OKTAS)	32	6.2	5.7	5.2	5.1	4.8	4.8	4.6	4.5	5.3	5.9	6.4	6.5	5.4
	MEAN NO. DAYS WITH: CLEAR	55	3.7	4.7	6.6	6.4	7.1	6.9	8.2	7.5	4.6	4.7	1.9	3.2	65.5
	PARTLY CLOUDY	55	5.8	6.1	7.0	7.4	8.7	9.6	10.6	10.5	8.6	6.6	4.3	4.3	89.5
	CLOUDY	55	21.5	17.4	17.4	16.2	15.2	13.5	11.7	12.5	16.3	19.2	23.3	22.9	207.1
PR	MEAN STATION PRESSURE(IN)	26	29.19	29.23	29.24	29.19	29.18	29.16	29.18	29.23	29.23	29.21	29.19	29.19	29.20
	MEAN SEA-LEVEL PRES. (IN)	26	30.01	30.04	30.05	29.98	29.97	29.94	29.95	30.00	30.01	30.00	29.99	30.00	30.00
WINDS	MEAN SPEED (MPH)	26	8.0	8.1	8.5	8.9	8.5	7.4	7.0	6.7	7.3	8.0	8.8	8.3	8.0
	PREVAIL.DIR(TENS OF DEGS)	35	10	32	32	31	31	31	31	31	32	31	12	11	31
	MAXIMUM 2-MINUTE: SPEED (MPH)	13	39	39	39	34	32	31	35	33	34	37	43	40	43
	DIR. (TENS OF DEGS)		29	29	29	24	29	21	24	27	32	23	28	31	28
	YEAR OF OCCURRENCE		2008	2001	2002	1997	2009	2007	2006	2004	1998	2009	2005	1999	NOV 2005
	MAXIMUM 3-SECOND SPEED (MPH)	13	61	47	56	51	49	44	48	47	48	47	54	52	61
	DIR. (TENS OF DEGS)		28	28	28	23	26	25	31	26	30	24	22	31	28
	YEAR OF OCCURRENCE		2008	2001	2009	1997	2002	2008	1999	1998	1998	2009	2005	2008	JAN 2008
PRECIPITATION	NORMAL (IN)	30	2.64	1.60	2.41	2.57	2.50	3.00	3.14	3.47	3.71	3.32	3.40	2.91	34.67
	MAXIMUM MONTHLY (IN)	68	4.52	3.74	4.97	5.16	7.41	7.35	7.23	9.48	7.78	6.84	7.72	6.24	9.48
	YEAR OF OCCURRENCE		1982	1971	1976	1954	1970	1969	1996	1974	1970	2001	1988	1995	AUG 1974
	MINIMUM MONTHLY (IN)	68	0.51	0.21	0.35	0.60	0.62	0.37	0.57	0.50	0.50	0.16	0.87	0.58	0.16
	YEAR OF OCCURRENCE		1961	1993	1993	1949	1996	2006	1989	1947	2009	1963	1962	1994	OCT 1963
	MAXIMUM IN 24 HOURS (IN)	68	1.37	1.11	1.81	2.67	5.10	5.06	2.79	5.92	2.71	2.08	2.42	1.67	5.92
	YEAR OF OCCURRENCE		1950	1977	1976	1954	1970	1970	1965	1974	1986	2001	1988	1995	AUG 1974
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	19.9	13.9	13.1	10.7	11.0	11.2	10.8	11.4	13.1	14.5	17.3	19.6	166.5
	PRECIPITATION >= 1.00	30	0.1	*	0.1	0.4	0.3	0.5	0.6	0.7	0.7	0.4	0.4	0.1	4.3
SNOWFALL	NORMAL (IN)	30	35.0	19.5	15.0	7.6	0.2	0.0	0.0	0.0	0.*	2.5	16.5	36.3	132.6
	MAXIMUM MONTHLY (IN)	60	71.0	41.3	34.7	25.8	4.6	T	T	T	2.7	12.5	46.8	98.7	98.7
	YEAR OF OCCURRENCE		1982	1972	1964	1982	1947	1951	1995	1986	1956	1943	1989	1995	DEC 1995
	MAXIMUM IN 24 HOURS (IN)	60	15.3	12.6	11.9	11.5	4.6	T	T	T	2.7	10.1	14.3	27.8	27.8
	YEAR OF OCCURRENCE		1988	1968	1964	1979	1947	1951	1995	1986	1956	1943	1943	1995	DEC 1995
	MAXIMUM SNOW DEPTH (IN)	53	38	40	50	26	2	0	0	0	1	6	14	49	50
	YEAR OF OCCURRENCE		1982	1972	1972	1972	1984				1965	1972	1989	1995	MAR 1972
	NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	10.5	6.2	4.6	2.2	0.0	0.0	0.0	0.0	0.0	0.8	5.8	10.3	40.4

PRECIPITATION (inches) 2009 SAULT STE MARIE (KANJ)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	3.42	0.82	1.14	3.45	0.80	3.94	1.77	2.64	3.32	2.43	2.11	4.14	29.98
1981	0.68	2.55	1.17	3.28	1.15	5.59	0.80	2.45	2.18	4.50	1.89	2.42	28.66
1982	4.52	0.62	3.20	3.75	1.37	1.72	1.72	3.34	6.12	2.88	3.89	4.40	37.53
1983	2.13	1.21	2.57	2.60	4.70	1.65	3.27	2.73	3.35	3.66	3.17	3.04	34.08
1984	1.52	1.90	2.06	1.67	1.16	3.91	2.24	2.99	5.08	3.50	3.78	5.10	34.91
1985	2.61	2.78	2.77	4.36	4.37	1.63	3.29	4.24	3.37	2.81	3.69	3.45	39.37
1986	1.70	0.95	4.14	1.22	1.80	5.12	4.76	4.57	5.23	3.14	2.57	2.21	37.41
1987	1.74	0.80	1.14	1.32	1.96	2.86	3.14	4.50	1.85	5.06	3.42	3.07	30.86
1988	3.12	0.92	2.91	2.17	1.49	0.52	2.14	4.77	3.01	4.54	7.72	3.63	36.94
1989	2.30	1.78	2.37	1.98	2.12	2.61	0.57	2.64	1.05	2.43	4.31	1.73	25.89
1990	2.48	2.04	2.39	1.79	3.29	4.99	1.67	2.33	3.95	3.75	3.90	2.48	35.06
1991	1.51	0.63	3.70	3.39	1.62	1.09	3.86	1.55	5.85	3.97	3.52	2.51	33.20
1992	2.86	1.07	1.52	2.50	1.46	1.55	4.09	3.27	5.72	3.29	5.03	3.45	35.81
1993	2.23	0.21	0.35	3.82	4.51	3.79	3.23	1.86	3.66	5.22	2.49	2.56	33.93
1994	2.18	0.98	1.54	2.34	2.99	2.79	3.91	4.05	1.50	2.17	2.96	0.58	27.99
1995	2.42	1.20	1.63	4.17	2.65	2.17	3.54	6.52	4.95	6.55	3.80	6.24	45.84
1996	4.02	2.24	1.57	4.21	0.62	3.32	7.23	1.32	6.47	4.95	2.95	4.07	42.97
1997	3.99	0.86	2.59	1.55	3.38	3.41	1.17	2.14	3.12	2.06	2.21	1.38	27.86
1998	2.36	0.62	3.59	2.31	2.16	3.10	3.14	3.01	2.91	2.78	4.47	2.75	33.20
1999	3.35	3.11	0.40	2.50	3.51	2.51	4.72	3.76	3.21	3.36	1.18	2.68	34.29
2000	3.33	1.16	2.31	0.94	1.39	3.67	1.10	1.68	2.06	1.48	2.67	0.61	22.40
2001	0.93	1.52	0.42	2.97	5.27	1.83	2.05	4.53	5.53	6.84	4.12	2.45	38.46
2002	0.66	1.11	2.72	1.94	3.35	3.22	2.49	4.14	2.59	4.20	1.47	1.30	29.19
2003	0.77	0.90	1.38	1.91	1.69	1.95	4.08	3.01	4.65	2.60	5.05	2.40	30.39
2004	1.01	0.67	2.06	1.95	4.98	2.27	3.21	3.59	1.30	5.55	2.88	2.45	31.92
2005	1.04	1.21	0.70	1.20	1.74	1.31	3.07	3.14	3.23	3.15	3.98	1.71	25.48
2006	2.43	1.71	0.90	1.34	2.98	0.37	2.95	2.28	4.41	3.16	2.96	3.33	28.82
2007	1.86	1.10	2.38	1.79	2.28	1.74	1.50	1.03	5.60	5.68	2.62	2.55	30.13
2008	3.32	2.08	2.78	4.15	2.59	2.39	3.69	1.10	3.29	1.37	3.59	4.53	34.88
2009	1.29	1.81	0.83	1.31	3.49	2.48	1.96	3.69	0.50	6.49	1.77	2.85	28.47
POR= 78 YRS	2.25	1.57	2.00	2.29	2.73	3.02	2.76	3.22	3.72	3.28	3.35	2.61	32.80

WBAN : 14847

AVERAGE TEMPERATURE (°F) 2009 SAULT STE MARIE (KANJ)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	15.0	12.4	22.5	41.1	54.1	54.8	63.1	64.9	52.2	37.7	29.2	12.8	38.3
1981	8.8	18.6	27.2	39.3	50.7	56.2	63.4	62.8	50.3	38.9	32.5	21.7	39.2
1982	4.7	11.5	21.6	31.7	56.2	51.5	62.7	57.6	54.2	46.8	32.3	24.3	37.9
1983	15.9	21.0	27.5	37.0	45.3	60.9	69.2	68.0	58.5	44.8	33.0	11.2	41.0
1984	7.3	23.7	20.9	44.5	47.5	59.7	63.4	64.9	51.9	46.7	31.7	20.6	40.2
1985	11.9	12.9	26.5	38.8	51.2	54.6	60.7	62.8	57.6	45.8	32.1	13.9	39.1
1986	12.6	15.1	25.8	43.5	54.3	55.3	65.2	60.3	53.9	44.5	30.3	25.8	40.6
1987	20.0	22.1	29.7	45.9	53.0	61.3	66.8	63.0	57.3	42.2	33.5	26.0	43.4
1988	13.5	12.2	23.0	39.2	53.6	59.1	67.5	64.8	55.3	41.1	36.6	19.2	40.4
1989	19.5	11.2	19.4	36.9	52.3	58.1	66.7	63.3	56.1	45.9	28.1	7.3	38.7
1990	23.5	17.9	26.6	41.1	48.8	57.1	62.9	62.6	55.0	43.4	35.9	22.2	41.4
1991	12.9	18.9	27.0	42.9	55.7	63.0	64.5	66.2	54.0	44.9	32.2	21.5	42.0
1992	16.6	17.7	21.8	35.6	51.9	56.4	57.4	60.4	54.0	43.4	30.9	23.7	39.2
1993	16.8	11.8	26.4	36.9	48.3	56.4	64.2	65.2	50.8	40.9	29.6	21.3	39.1
1994	0.8	8.1	25.1	36.3	49.3	60.1	63.0	60.0	56.3	47.3	35.3	29.3	39.2
1995	20.8	11.8	28.2	34.5	49.7	63.4	63.7	66.1	52.8	46.1	25.7	16.2	39.9
1996	10.5	12.5	19.6	32.3	47.3	59.5	58.9	62.7	58.0	44.8	29.9	23.5	38.3
1997	11.2	17.6	22.9	36.7	44.7	62.6	63.7	61.8	57.0	45.1	32.9	26.0	40.2
1998	18.3	29.1	28.8	44.0	57.6	60.2	66.7	68.5	60.3	48.5	37.9	25.8	45.5
1999	13.4	22.4	26.7	43.8	55.4	61.9	67.8	62.7	57.6	43.4	38.2	24.4	43.1
2000	14.1	22.5	33.9	40.2	52.0	58.0	64.4	64.2	55.4	46.7	34.2	13.4	41.6
2001	20.0	15.1	25.0	40.7	53.6	61.7	64.7	68.0	57.8	47.3	40.6	31.0	43.8
2002	23.5	22.4	22.2	37.9	47.1	61.4	69.6	66.3	62.4	42.0	30.6	26.4	42.7
2003	13.9	10.9	24.9	37.7	53.2	59.1	64.6	65.8	57.7	43.9	34.2	26.1	41.0
2004	6.2	21.0	27.7	37.6	47.5	56.4	62.7	60.1	61.6	46.7	36.3	18.6	40.2
2005	11.5	20.6	23.3	43.6	49.5	64.9	68.4	66.1	61.2	49.1	33.9	21.0	42.8
2006	24.6	17.6	28.1	43.6	54.4	61.8	69.2	64.2	56.3	42.8	36.0	28.0	43.9
2007	19.5	11.2	27.2	38.3	54.2	63.3	65.3	65.9	58.3	50.9	32.2	23.0	42.4
2008	20.5	14.9	20.8	42.4	46.9	59.8	64.5	65.1	57.4	45.6	34.8	17.1	40.8
2009	9.9	18.0	25.8	40.2	48.3	58.9	60.4	62.9	60.3	42.9	39.9	21.2	40.7
POR= 78 YRS	14.5	15.2	24.3	38.2	50.2	58.5	64.2	63.5	55.3	45.2	32.7	20.8	40.2

HEATING DEGREE DAYS (base 65°F) 2009 SAULT STE MARIE (KANJ)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	70	44	383	841	1066	1613	1740	1297	1164	763	438	262	9681
1981-82	89	83	435	799	968	1336	1868	1495	1337	991	273	393	10067
1982-83	97	228	339	556	976	1256	1520	1229	1153	832	604	169	8959
1983-84	34	25	236	619	951	1665	1787	1193	1362	608	535	177	9192
1984-85	82	51	391	560	990	1367	1643	1453	1184	776	424	306	9227
1985-86	135	100	242	590	978	1579	1619	1392	1207	639	325	285	9091
1986-87	60	153	325	625	1036	1209	1386	1195	1086	568	393	142	8178
1987-88	53	105	229	699	938	1202	1586	1525	1295	767	358	197	8954
1988-89	39	103	291	733	847	1413	1403	1502	1409	835	388	211	9174
1989-90	34	119	271	582	1099	1785	1281	1317	1186	719	494	240	9127
1990-91	96	99	303	662	866	1319	1609	1282	1169	657	292	92	8446
1991-92	68	56	338	615	976	1341	1495	1367	1331	875	405	256	9123
1992-93	230	165	326	661	1014	1277	1486	1482	1187	834	512	252	9426
1993-94	66	66	421	740	1054	1346	1993	1592	1229	855	481	177	10020
1994-95	101	161	258	543	885	1099	1362	1487	1131	910	470	113	8520
1995-96	81	48	363	579	1171	1510	1686	1518	1401	973	542	174	10046
1996-97	184	97	228	617	1043	1282	1658	1321	1296	840	623	96	9285
1997-98	97	121	235	613	956	1204	1443	996	1114	622	232	175	7808
1998-99	24	14	157	507	805	1210	1591	1188	1181	629	298	139	7743
1999-00	36	96	244	661	796	1251	1570	1226	955	734	402	213	8184
2000-01	80	64	293	561	917	1592	1388	1389	1232	724	345	146	8731
2001-02	84	30	230	542	726	1052	1280	1188	1322	806	547	145	7952
2002-03	18	30	139	707	1025	1188	1576	1509	1239	813	359	195	8798
2003-04	54	51	224	649	917	1197	1816	1270	1148	816	536	259	8937
2004-05	95	165	132	560	853	1429	1649	1239	1283	638	474	60	8577
2005-06	44	30	139	501	924	1358	1247	1324	1139	637	340	114	7797
2006-07	13	55	265	679	863	1140	1403	1496	1166	792	347	117	8336
2007-08	67	46	217	435	978	1298	1374	1448	1361	671	554	162	8611
2008-09	54	36	238	594	902	1478	1703	1310	1208	740	511	207	8981
2009-	143	110	150	680	748	1351							

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COOLING DEGREE DAYS (base 65°F) 2009 SAULT STE MARIE (KANJ)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1980	0	0	0	0	10	16	19	48	6	0	0	0	99
1981	0	0	0	0	1	5	46	22	0	0	0	0	74
1982	0	0	0	0	6	0	30	5	21	0	0	0	62
1983	0	0	0	0	0	52	171	124	49	0	0	0	396
1984	0	0	0	0	0	24	41	56	3	0	0	0	124
1985	0	0	0	0	4	1	8	38	28	0	0	0	79
1986	0	0	0	1	2	1	75	12	0	0	0	0	91
1987	0	0	0	1	27	35	114	52	2	0	0	0	231
1988	0	0	0	0	12	25	126	104	8	0	0	0	275
1989	0	0	0	0	0	9	97	74	11	0	0	0	191
1990	0	0	0	10	0	7	36	30	9	0	0	0	92
1991	0	0	0	0	12	39	57	98	14	0	0	0	220
1992	0	0	0	0	8	2	0	27	2	0	0	0	39
1993	0	0	0	0	2	3	48	79	3	0	0	0	135
1994	0	0	0	0	2	34	47	13	3	0	0	0	99
1995	0	0	0	0	0	72	50	91	5	0	0	0	218
1996	0	0	0	0	0	13	4	33	23	0	0	0	73
1997	0	0	0	0	0	31	62	29	3	0	0	0	125
1998	0	0	0	0	9	40	81	132	23	0	0	0	285
1999	0	0	0	0	7	53	133	32	30	0	0	0	255
2000	0	0	0	0	7	10	66	45	11	0	0	0	139
2001	0	0	0	0	0	55	83	128	22	0	0	0	288
2002	0	0	0	0	0	42	166	78	67	3	0	0	356
2003	0	0	0	0	0	25	48	85	12	0	0	0	170
2004	0	0	0	0	0	6	32	19	37	0	0	0	94
2005	0	0	0	0	0	65	156	72	34	16	0	0	343
2006	0	0	0	0	15	25	151	38	10	0	0	0	239
2007	0	0	0	0	23	70	85	79	25	2	0	0	284
2008	0	0	0	0	0	13	45	44	16	2	0	0	120
2009	0	0	0	0	0	33	8	53	18	0	0	0	112

SNOWFALL (inches) 2009 SAULT STE MARIE (KANJ)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0.0	0.0	0.0	5.2	14.6	69.3	13.6	29.9	8.7	0.4	0.0	0.0	141.7
1981-82	0.0	0.0	0.0	6.3	11.7	25.9	71.0	10.8	17.1	25.8	0.0	0.0	168.6
1982-83	0.0	0.0	0.0	T	12.2	22.7	22.6	15.7	9.4	4.4	T	0.0	87.0
1983-84	0.0	0.0	T	T	5.6	57.5	23.3	10.8	7.8	2.5	0.9	0.0	108.4
1984-85	0.0	0.0	0.1	T	8.2	44.8	43.8	31.5	16.8	9.7	0.0	0.0	154.9
1985-86	0.0	0.0	0.0	0.4	15.7	56.4	28.7	17.0	29.9	0.4	0.1	0.0	148.6
1986-87	0.0	T	0.0	T	25.4	29.0	29.2	10.2	7.2	2.0	0.0	0.0	103.0
1987-88	0.0	0.0	0.0	4.6	16.7	27.7	43.0	14.5	23.4	5.2	0.0	0.0	135.1
1988-89	0.0	0.0	0.0	6.6	7.4	50.2	25.6	23.7	24.7	4.1	T	0.0	142.3
1989-90	0.0	0.0	0.1	0.4	46.8	28.8	31.5	27.3	7.4	16.2	0.9	0.0	159.4
1990-91	0.0	0.0	T	0.4	16.7	29.2	25.9	11.3	15.2	8.5	T	0.0	107.2
1991-92	0.0	0.0	0.4	2.2	19.1	25.1	37.6	12.8	10.5	5.0	0.4	0.0	113.1
1992-93	0.0	0.0	T	10.8	13.6	35.0	28.9	2.8	1.9	8.7	0.0	0.0	101.7
1993-94	0.0	0.0	0.0	5.0	12.6	28.4	33.4	8.4	15.4	3.6	T	0.0	106.8
1994-95	0.0	0.0	0.0	T	15.9	5.1	26.8	15.6	15.3	15.0	0.0	0.0	93.7
1995-96	T	0.0	0.0	1.0	36.4	98.7	44.2	18.7	9.2	13.6	0.2	0.0	222.0
1996-97	0.0	0.0	0.0	0.7	21.6	45.4							
1997-98													
1998-99													
1999-00					2.3	25.9	39.1	9.3	7.5				
2000-01													
2001-02													
2002-03													
2003-04													
2004-05													
2005-06		0.0	0.0	0.0	14.3	29.2	24.5	32.6	4.9	4.7	T	0.0	
2006-07	0.0	0.0	0.0	1.7	13.8	13.7	32.7	30.9	13.0	8.9	0.0	0.0	114.7
2007-08	0.0	0.0	0.0	0.1	14.8	29.6	36.6	32.5	18.9	9.3	0.0	0.0	141.8
2008-09	0.0	0.0	0.0	0.3	29.9	46.7	21.7	19.5	7.7	1.3	0.3	0.0	127.4
2009-	0.0	0.0	0.0	0.6	4.1	45.8							
POR= 66 YRS	T	T	0.1	1.8	14.0	27.1	26.0	17.4	12.4	5.0	0.4	0.0	104.2

WBAN : 14847

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 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

SAULT STE. MARIE

MICHIGAN (KANJ)

Sault Ste. Marie is located at the extreme eastern tip of the Upper Peninsula of Michigan at the intersection of Lake Superior, Michigan, and Huron. Consequently, the regional climate is essentially maritime during ice-free periods of the year. Lake ice development usually begins in December and progresses to maximum coverage in February. As ice cover develops, the character of the regional climate gradually changes to continental polar by the time of maximum lake ice development. Lake Superior, to the northwest, is the largest, deepest, and coldest of the Great Lakes and is the dominant climatic control for the area. Water in the northern Great Lakes remains relatively cool during the summer and seldom freezes over during the winter. Therefore, temperatures are moderated throughout most of the year, whereas cloudiness and precipitation are increased.

Terrain on the Michigan side of the international border is nearly flat and lies 700 to 800 feet above sea level. Very little climatological influence is related to Michigan terrain. However, terrain on the Canadian side of the border rises rather abruptly to about 1,500 feet above sea level and this definite topographic influence increases the rain and snow shower activity over the Canadian hills.

Heavy fog occurrences reach a maximum in August, September, and October and form in response to the passage of relatively cold air masses over the warmer waters of the northern Great Lakes. Destructive tornadoes and thunderstorms have occurred on rare occasions. Occurrences of river and flash flooding are very rare. Summer and fall pollen counts are extremely low and sources of industrial pollutants are almost non-existent.

Changing weather patterns are common because of the high frequency of migratory low pressure systems moving toward the east and the northeast through the northern Great Lakes. Summer rains are most frequent during periods of southeasterly circulation whereas winter snows most frequently accompany post-frontal northwest winds.

Most summers pass without a temperature reaching 90 degrees. Winters are cold and snowy with total seasonal snowfall ranging from about 30 inches to more than 175 inches. November 21 is the average date for the appearance of the permanent winter snow cover which normally lasts until April 7.

Annual percent of possible sunshine is low but is especially low during late fall and early winter because of cloud cover produced by lake moisture evaporated into the cold air. Sunshine amounts increase as ice development increases in the winter season. Daylight during most of June and July lasts almost 16 hours, whereas winter daylight reaches a minimum of less than 9 hours a day in late December.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is September 27 and the average last occurrence in the spring is May 26.

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