

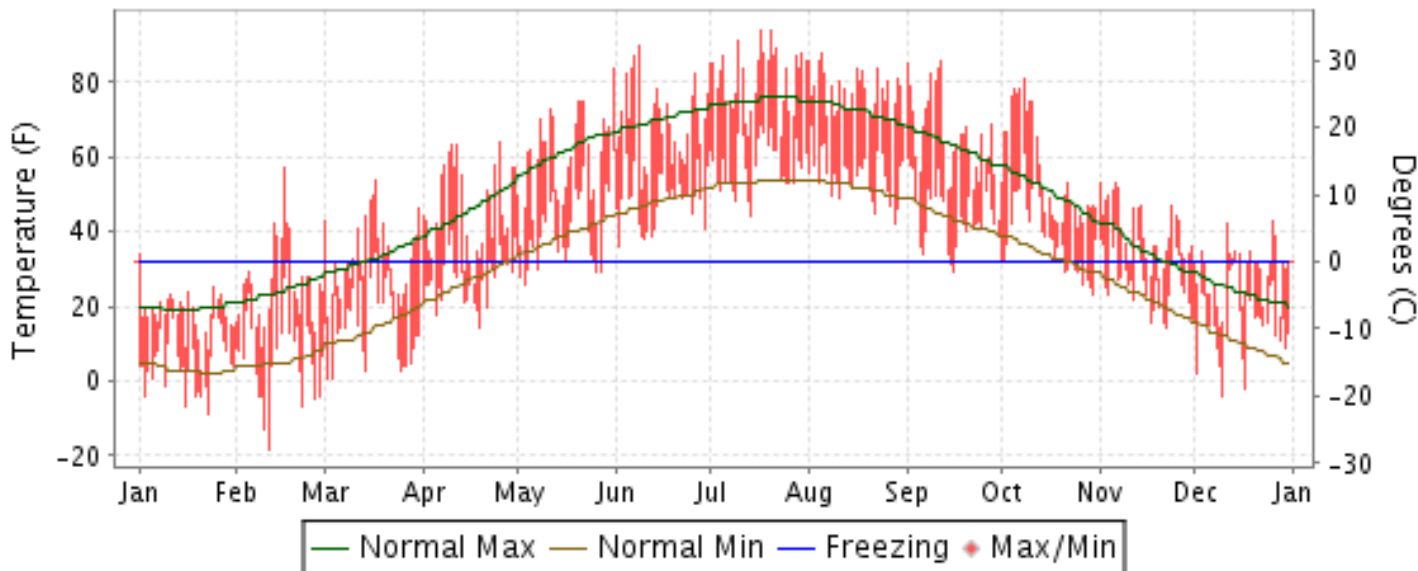


2011 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

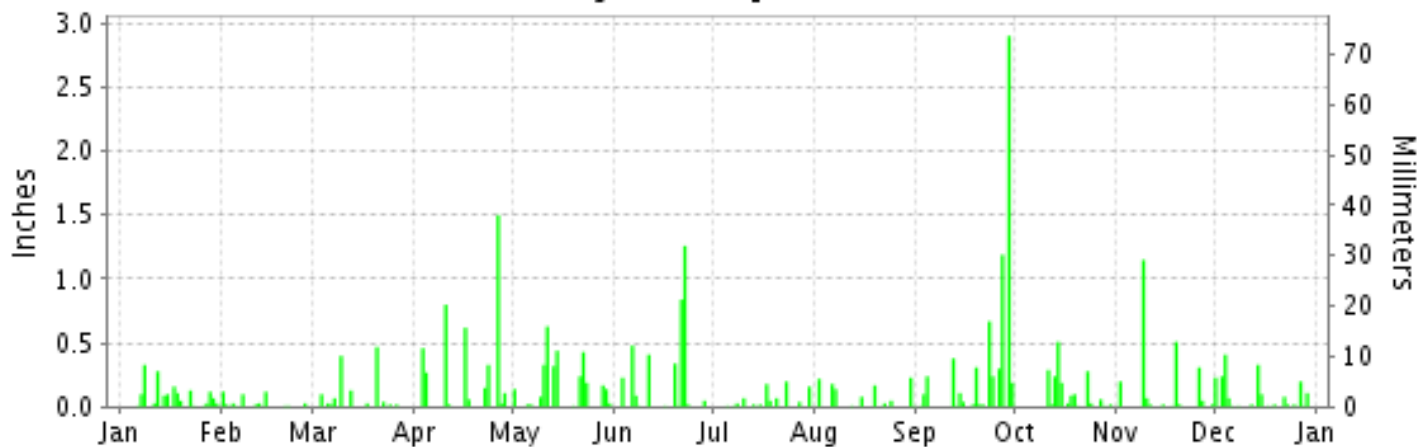
ISSN 0198-263X

MARQUETTE, MICHIGAN (KMQT)

Daily Max/Min Temperature



Daily Precipitation



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NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2011

MARQUETTE (KMQT)

LATITUDE: 46° 31'N LONGITUDE: -87° 32'W ELEVATION (FT): GRND: 1415 BARO: 1415 TIME ZONE: EASTERN (UTC -5) WBAN: 94850

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	MEAN DAILY MAXIMUM	18.1	26.0	33.3	46.0	60.1	69.5	81.0	77.5	65.5	56.4	40.1	18.1	49.3
	HIGHEST DAILY MAXIMUM	34	57	54	64	84	90	94	88	86	81	53	34	94
	DATE OF OCCURRENCE	01	16	17	25	31	08	20+	05	12	08	06+	01	JUL 20+
	MEAN DAILY MINIMUM	5.3	7.8	15.8	27.3	40.5	48.5	58.0	54.9	44.9	38.2	26.9	5.3	31.1
	LOWEST DAILY MINIMUM	-9	-18	1	14	26	36	44	42	29	23	14	-9	-18
	DATE OF OCCURRENCE	23	11	03+	19	03	02	14	28	16	30	22	23	FEB 11
	AVERAGE DRY BULB	0.2	16.9	24.6	36.7	50.3	59.0	69.5	66.2	55.2	47.3	33.5		
	MEAN WET BULB													
	MEAN DEW POINT													
	NUMBER OF DAYS WITH:													
	MAXIMUM >= 90°	0	0	0	0	0	1	3	0	0	0	0	0	4
	MAXIMUM <= 32°	30	22	16	3	0	0	0	0	0	0	5	30	106
	MINIMUM <= 32°	31	27	30	26	6	0	0	0	2	12	22	31	187
MINIMUM <= 0°	8	7	0	0	0	0	0	0	0	0	0	8	23	
H/C	HEATING DEGREE DAYS	1644	1337	1248	844	458	196	32	34	309	549	935	1644	9230
	COOLING DEGREE DAYS	0	0	0	0	10	23	182	81	22	6	0	0	324
RH	MEAN (PERCENT)													
	HOUR 01 LST													
	HOUR 07 LST													
	HOUR 13 LST													
	HOUR 19 LST													
S	PERCENT POSSIBLE SUNSHINE													
W/O	NUMBER OF DAYS WITH:													
	HEAVY FOG(VISBY <= 1/4 MI)													
	THUNDERSTORMS													
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.)													
	MEAN SEA-LEVEL PRESS. (IN.)													
WINDS	RESULTANT SPEED (MPH)													
	RES. DIR. (TENS OF DEGS.)													
	MEAN SPEED (MPH)													
	PREVAIL.DIR.(TENS OF DEGS.)													
	MAXIMUM 2-MINUTE WIND													
	SPEED (MPH)													
	DIR. (TENS OF DEGS.)													
	DATE OF OCCURRENCE													
MAXIMUM 3-SECOND WIND:														
SPEED (MPH)														
DIR. (TENS OF DEGS.)														
DATE OF OCCURRENCE														
PRECIPITATION	WATER EQUIVALENT:													
	TOTAL (IN.)	1.66	0.50	1.33	4.35	3.19	3.75	0.86	1.12	6.75	1.88	2.38	1.66	29.43
	GREATEST 24-HOUR (IN.)	0.33	0.12	0.47	1.50	0.63	1.26	0.20	0.23	2.90	0.60	1.17	0.33	2.90
	DATE OF OCCURRENCE	08	14+	20	26	11	22	23	30	29	13-14	09-10	08	SEP 29
	NUMBER OF DAYS WITH:													
PRECIPITATION 0.01	17	11	11	11	15	12	12	10	17	14	11	17	158	
PRECIPITATION 0.10	8	3	4	8	10	6	3	5	11	6	4	8	76	
PRECIPITATION 1.00	0	0	0	1	0	1	0	0	2	0	1	0	5	
SNOWFALL	SNOW,ICE PELLETS,HAIL													
	TOTAL (IN.)	47.4	13.7	17.4	15.2	T	0.0	0.0	0.0	T	T	20.7	47.4	161.8
	GREATEST 24-HOUR (IN.)	8.0	4.9	3.0	4.9	T	0.0	0.0	0.0	T	T	11.4	8.0	11.4
	DATE OF OCCURRENCE	08	01	20	16	11+				14	28+	09	08	NOV 09
	MAXIMUM SNOW DEPTH (IN.)	25	26	21	13	0	0	0	0	0	0	11	25	26
	DATE OF OCCURRENCE	28	02	10	05							10	28	FEB 02
NUMBER OF DAYS WITH:														
SNOWFALL >= 1.0	12	3	7	6	0	0	0	0	0	0	3	12	43	

NORMALS, MEANS, AND EXTREMES MARQUETTE (KMQT)

LATITUDE:
46° 31'N

LONGITUDE:
-87° 32'W

ELEVATION (FT):
GRND: 1415 BARO: 1415

TIME ZONE:
EASTERN (UTC -5)

WBAN: 94850

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	19.7	24.2	33.1	45.8	61.5	70.3	75.2	72.6	63.2	50.9	35.4	24.1	48.0	
	MEAN DAILY MAXIMUM	50	21.0	24.5	34.2	47.6	61.9	71.3	76.3	72.8	64.7	52.2	36.8	25.1	49.0	
	HIGHEST DAILY MAXIMUM	33	49	61	71	92	93	96	99	96	93	87	73	59	99	
	YEAR OF OCCURRENCE		2006	1981	2000	1980	2006	1995	1988	2001	2002	1992	1999	1998	1988	JUL 1988
	MEAN OF EXTREME MAXS.	50	38.0	43.9	55.4	72.7	84.1	87.9	89.7	87.1	82.3	74.0	56.4	40.9	67.7	
	NORMAL DAILY MINIMUM	30	3.3	5.4	14.3	26.9	39.1	48.3	53.5	52.0	43.8	34.0	22.4	10.2	29.4	
	MEAN DAILY MINIMUM	50	4.8	5.2	14.0	27.4	39.1	48.4	53.8	51.3	44.7	35.0	23.3	11.0	29.8	
	LOWEST DAILY MINIMUM	33	-27	-34	-30	-9	17	28	36	-8	24	14	-8	-28	-34	
	YEAR OF OCCURRENCE		1996	1979	2003	2003	1983	1986	2000	2010	1993	1984	2005	1983	1983	FEB 1979
	MEAN OF EXTREME MINS.	50	-16.7	-17.5	-11.1	8.6	24.6	34.1	40.4	37.2	29.7	21.9	5.0	-10.7	12.1	
	NORMAL DRY BULB	30	11.5	14.8	23.7	36.4	50.3	59.3	64.4	62.3	53.5	42.5	28.9	17.2	38.7	
	MEAN DRY BULB	50	13.7	16.3	25.3	38.2	50.7	60.1	65.6	62.6	55.6	44.5	31.2	19.1	40.2	
	MEAN WET BULB															
	MEAN DEW POINT															
	NORMAL NO. DAYS WITH:															
MAXIMUM >= 90	30	0.0	0.0	0.0	*	0.1	0.7	1.4	0.6	0.1	0.0	0.0	0.0	0.0		
MAXIMUM <= 32	30	27.2	21.2	13.6	3.3	0.1	0.0	0.0	0.0	0.0	0.6	11.1	23.9			
MINIMUM <= 32	30	31.0	27.9	29.1	22.5	8.7	0.6	0.0	*	2.7	15.0	26.4	30.5			
MINIMUM <= 0	30	12.2	10.5	4.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	7.1		
H/C	NORMAL HEATING DEG. DAYS	30	1659	1405	1280	859	468	200	92	134	348	700	1083	1484		
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	12	30	72	50	3	0	0	0		
RH	NORMAL (PERCENT)	30														
	hour 01 LST	30														
	hour 07 LST	30														
	hour 13 LST	30														
	hour 19 LST	30														
S	PERCENT POSSIBLE SUNSHINE	24	37	44	50	53	62	66	67	63	57	46	36	34	51	
W/O	MEAN NO. DAYS WITH:															
	HEAVY FOG(VISBY <= 1/4 MI) THUNDERSTORMS	43 44	1.0 0.0	1.0 0.0	2.1 0.4	2.6 0.9	2.5 2.2	2.0 4.5	1.7 4.8	2.8 4.1	2.2 2.8	2.2 1.3	1.8 0.2	1.6 0.0	23.5 21.2	
CLOUDINESS	MEAN:															
	SUNRISE-SUNSET (OKTAS)															
	MIDNIGHT-MIDNIGHT (OKTAS)															
	MEAN NO. DAYS WITH:															
	CLEAR															
	PARTLY CLOUDY															
	CLOUDY															
PR	MEAN STATION PRESSURE(IN) MEAN SEA-LEVEL PRES. (IN)															
WINDS	MEAN SPEED (MPH)															
	PREVAIL.DIR(TENS OF DEGS)															
	MAXIMUM 2-MINUTE:															
	SPEED (MPH)	6	44	31	40	44	34	38	35	37	35	38	31	35	44	
	DIR. (TENS OF DEGS)		32	32	32	32	36	32	32	32	28	14	32	22	32	
	YEAR OF OCCURRENCE		1980	1985	1982	1982	1981	1984	1982	1984	1983	1984	1979	1982	APR 1982	
	MAXIMUM 3-SECOND SPEED (MPH)															
	DIR. (TENS OF DEGS)															
	YEAR OF OCCURRENCE															
PRECIPITATION	NORMAL (IN)	30	2.60	1.85	3.13	2.79	3.07	3.21	3.01	3.55	3.74	3.66	3.27	2.43	36.31	
	MAXIMUM MONTHLY (IN)	33	6.61	5.35	6.08	6.56	6.95	6.61	5.40	8.59	7.48	7.59	8.25	5.05	8.59	
	YEAR OF OCCURRENCE		1997	2002	1979	1985	2006	1981	1991	1988	2007	1979	1988	2004	AUG 1988	
	MINIMUM MONTHLY (IN)	33	0.70	0.48	0.28	0.90	0.06	0.61	0.57	0.44	1.21	1.65	1.00	0.37	0.06	
	YEAR OF OCCURRENCE		2003	1994	2010	1998	1986	1992	1981	2008	1989	1994	1990	1994	MAY 1986	
	MAXIMUM IN 24 HOURS (IN)	33	2.23	2.05	2.42	3.09	3.77	2.80	2.64	2.34	4.29	3.66	2.97	2.48	4.29	
	YEAR OF OCCURRENCE		1988	1983	2006	1985	2006	1989	1985	1988	2007	1985	1988	1985	SEP 2007	
	NORMAL NO. DAYS WITH:															
PRECIPITATION >= 0.01	30	17.6	13.3	14.3	11.5	10.4	11.5	11.0	11.5	13.8	14.1	15.9	17.2	162.1		
PRECIPITATION >= 1.00	30	0.3	0.1	0.7	0.5	0.7	0.6	0.5	0.5	0.8	0.7	0.6	0.2	6.5		
SNOWFALL	NORMAL (IN)	30	42.1	29.7	31.8	12.5	1.5	0.*	0.0	0.*	0.1	5.9	22.6	38.3	184.5	
	MAXIMUM MONTHLY (IN)	33	91.7	91.9	83.1	55.2	22.6	T	T	43.3	1.7	18.6	48.9	89.5	91.9	
	YEAR OF OCCURRENCE		1997	2002	2002	2007	1990	2009	2007	2010	1993	1979	1991	2000	FEB 2002	
	MAXIMUM IN 24 HOURS (IN)	32	23.3	20.6	28.0	20.0	17.2	T	T	9.2	1.7	12.7	24.4	25.8	28.0	
	YEAR OF OCCURRENCE		1988	1983	1997	1985	1990	2009	2000	2010	1993	1989	2001	1985	MAR 1997	
	MAXIMUM SNOW DEPTH (IN)	48	54	56	63	41	12	0	0	30	1	10	27	47	63	
	YEAR OF OCCURRENCE		1969	1971	1997	1997	1990			2010	1974	1989	1975	1983	MAR 1997	
	NORMAL NO. DAYS WITH:															
SNOWFALL >= 1.0	30	9.4	6.5	6.5	3.1	0.3	0.0	0.0	0.0	0.1	1.8	6.1	8.5	42.3		

PRECIPITATION (inches) 2011 MARQUETTE (KMQT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1982	3.80	0.59	1.89	4.45	2.76	1.24	4.65	3.45	5.00	3.87	2.53	2.83	37.06
1983	2.67	3.14	4.85	3.17	6.49	1.62	1.45	3.21	4.98	5.75	5.68	3.35	46.36
1984	1.27	3.68	3.99	2.46	0.79	2.81	1.92	4.29	4.29	2.03	2.35	2.60	32.48
1985	2.96	2.91	4.63	6.56	3.59	1.49	3.76	4.78	6.32	4.88	5.74	3.97	51.59
1986	2.94	1.21	4.77	2.36	0.06	2.45	3.07	4.62	2.85	4.50	1.04	0.52	30.39
1987	1.42	1.53	2.07	2.30	3.93	2.01	4.88	3.58	2.66	4.31	4.05	3.56	36.30
1988	4.02	0.95	3.66	1.48	1.34	0.71	1.46	8.59	3.97	5.01	8.25	2.36	41.80
1989	1.82	1.60	2.89	1.48	2.15	5.36	0.91	2.61	1.21	3.49	3.43	2.58	29.53
1990	1.74	1.96	1.88	2.32	4.25	3.13	2.01	2.70	4.76	5.27	1.00	1.71	32.73
1991	0.92	1.78	3.75	3.50	2.64	3.06	5.40	0.81	3.10	4.73	5.87	1.51	37.07
1992	1.28	2.66	2.57	2.12	1.76	0.61	4.93	3.28	3.35	1.98	4.27	2.46	31.27
1993	2.39	0.68	0.99	4.11	4.61	2.42	1.95	3.98	4.41	3.32	2.84	1.31	33.01
1994	1.65	0.48	2.27	2.27	2.31	2.60	1.48	3.98	2.92	1.65	2.17	0.37	24.15
1995	1.45	2.89	3.31	2.31	3.85	1.49	3.93	4.31	3.60	6.37	2.97	2.48	38.96
1996	5.22	2.91	2.09	6.50	1.70	3.94	4.43	2.11	3.58	3.64	1.87	4.45	42.44
1997	6.61	0.97	3.65	1.03	2.96	3.44	1.60	3.01	1.36	2.38	3.48	2.40	32.89
1998	2.71	1.12	5.35	0.90	1.93	3.06	0.59	2.70	3.56	1.93	2.89	1.60	28.34
1999	4.93	3.15	1.04	2.21	5.74	3.05	4.78	2.35	3.09	3.47	2.27	1.54	37.62
2000	2.34	1.26	3.34	1.11	1.22	3.63	2.10	3.50	1.90	2.80	3.66	3.02	29.88
2001	2.80	2.00	1.72	3.18	2.37	4.21	3.03	1.26	3.93	3.19	4.89	1.66	34.24
2002	1.08	5.35	5.71	5.12	3.13	3.81	3.39	3.07	5.71	5.09	2.13	0.56	44.15
2003	0.70	1.93	3.35	3.49	6.17	1.62	2.86	1.36	4.57	3.36	3.13	2.77	35.31
2004	1.99	2.63	4.69	2.91	5.52	2.86	3.18	3.18	1.64	3.57	2.11	5.05	39.33
2005	1.67	1.91	2.54	2.12	2.80	3.41	2.07	1.95	3.97	5.18	4.30	1.72	33.64
2006	2.15	2.90	3.58	1.27	6.95	1.28	2.36	2.46	2.77	1.72	1.93	2.91	32.28
2007	2.27	1.62	4.46	5.07	2.06	1.93	2.36	0.85	7.48	5.14	2.19	3.18	38.61
2008	2.18	1.53	2.07	6.39	2.03	3.28	2.85	0.44	3.69	2.62	3.25	3.46	33.79
2009	1.59	3.14	0.96	3.43	2.51	1.79	1.93	4.82	1.84	6.95	1.16	1.59	31.71
2010	1.99	2.96	0.28	1.63	1.46	6.25	5.15	1.99	6.88	2.41	1.84	1.99	34.83
2011	1.66	0.50	1.33	4.35	3.19	3.75	0.86	1.12	6.75	1.88	2.38	1.66	29.43
POR= 50 YRS	2.31	1.93	2.80	2.85	3.11	3.30	2.89	3.12	3.97	3.67	2.55	2.49	34.99

WBAN : 94850

AVERAGE TEMPERATURE (°F) 2011 MARQUETTE (KMQT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1982	4.8	12.1	23.1	32.8	54.9	54.0	66.0	59.8	53.8	45.4	29.1	23.3	38.3
1983	18.0	21.9	26.0	33.8	44.1	60.5	70.1	67.9	57.5	43.2	31.9	8.7	40.3
1984	9.0	25.3	17.5	40.3	48.2	62.0	64.4	65.4	52.4	46.7	30.5	18.7	40.0
1985	11.3	11.8	26.7	40.9	52.1	56.8	62.6	61.4	54.7	44.0	26.2	9.7	38.2
1986	14.4	14.8	26.4	42.0	54.8	57.1	66.3	60.0	53.2	42.7	25.2	21.3	39.9
1987	18.0	22.9	30.1	44.6	53.7	63.8	67.8	62.7	56.9	39.0	32.6	23.5	43.0
1988	11.6	10.8	23.1	38.5	54.7	62.3	68.6	65.0	54.9	38.0	31.8	16.3	39.6
1989	19.1	8.4	19.4	34.7	50.8	57.5	66.7	63.2	55.7	45.3	24.8	9.2	37.9
1990	22.0	18.1	28.5	42.3	46.9	59.9	63.7	63.2	53.7	41.3	34.0	18.0	41.0
1991	10.0	20.1	26.7	42.2	55.7	62.9	64.9	65.2	52.4	41.0	27.0	19.8	40.7
1992	17.0	19.8	22.6	34.6	52.6	56.3	58.4	59.2	53.5	41.4	28.4	20.2	38.7
1993	16.9	13.9	25.6	34.4	49.8	57.8	66.1	65.4	49.9	40.3	27.0	20.8	39.0
1994	2.8	7.7	27.3	36.8	50.2	61.9	64.0	60.7	58.2	47.3	33.7	27.5	39.8
1995	17.4	15.0	28.2	32.1	50.4	66.3	65.6	68.1	53.9	44.3	22.8	16.1	40.0
1996	10.5	11.9	19.5	31.5	46.6	62.3	61.6	64.6	56.3	43.8	26.8	19.5	37.9
1997	12.9	16.9	21.2	35.8	44.8	64.6	63.6	59.6	56.0	44.0	27.3	24.7	39.3
1998	17.8	28.4	24.7	41.7	55.0	59.5	65.5	65.8	58.3	47.4	34.1	22.4	43.4
1999	11.7	21.5	26.8	39.3	54.0	62.3	68.8	62.2	56.7	41.8	37.2	20.7	41.9
2000	12.9	20.1	32.9	35.8	53.9	58.0	62.8	62.4	54.4	47.3	31.4	12.1	40.3
2001	20.8	12.6	23.7	41.8	53.3	61.4	65.2	66.2	55.4	43.2	39.9	25.9	42.5
2002	21.3	21.8	17.8	36.2	45.2	62.1	69.6	65.0	59.9	38.0	25.9	22.2	40.4
2003	11.8	8.1	20.4	35.2	49.9	60.0	64.8	65.9	56.9	43.7	30.4	23.2	39.2
2004	8.1	20.4	25.3	36.3	48.2	58.2	61.9	59.4	61.8	45.1	33.9	16.8	39.6
2005	12.2	20.0	21.0	42.6	49.1	65.1	67.3	65.6	60.9	47.8	29.4	18.5	41.6
2006	24.0	14.5	27.3	43.9	52.8	60.9	68.7	63.6	53.6	40.0	34.7	25.5	42.5
2007	5.8	10.5	28.5	35.8	54.8	63.8	66.2	64.7	57.9	49.2	28.6	17.8	40.3
2008	4.6	12.0	20.0	37.9	45.9	60.4	64.8	63.6	56.8	44.4	31.2	13.4	37.9
2009	7.2	15.9	25.4	37.2	47.9	57.7	59.8	61.9	59.5	39.1	37.3	-4.3	37.1
2010	17.6	19.4	34.8	45.0	55.7	59.4	68.0	6.1	51.2	46.0	33.4	6.1	36.9
2011	0.2	16.9	24.6	36.7	50.3	59.0	69.5	66.2	55.2	47.3	33.5	22.4	40.2
POR= 50 YRS	13.7	16.3	25.3	38.2	50.7	60.1	65.6	62.6	55.6	44.5	31.2	19.1	40.2

HEATING DEGREE DAYS (base 65°F) 2011 MARQUETTE (KMQT)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1982-83	37	190	350	598	1069	1289	1446	1201	1205	929	638	207	9159
1983-84	35	38	264	672	989	1740	1737	1145	1469	733	517	124	9463
1984-85	71	72	369	560	1028	1431	1658	1486	1178	724	400	249	9226
1985-86	111	146	323	645	1156	1709	1564	1400	1191	684	334	250	9513
1986-87	71	169	349	684	1185	1348	1450	1171	1075	606	387	106	8601
1987-88	58	130	247	800	964	1278	1650	1569	1295	787	347	166	9291
1988-89	37	101	305	833	988	1504	1416	1584	1412	902	432	245	9759
1989-90	65	117	283	610	1199	1727	1324	1308	1123	702	556	176	9190
1990-91	104	111	347	726	921	1454	1703	1250	1182	678	334	115	8925
1991-92	74	112	385	739	1133	1394	1483	1308	1306	905	398	276	9513
1992-93	208	202	340	732	1092	1383	1485	1424	1215	910	474	233	9698
1993-94	38	78	446	760	1130	1366	1927	1601	1164	844	470	135	9959
1994-95	84	153	220	538	932	1155	1471	1395	1137	978	452	106	8621
1995-96	68	21	336	637	1259	1509	1688	1538	1407	997	566	141	10167
1996-97	126	73	294	649	1140	1402	1607	1343	1350	867	620	89	9560
1997-98	111	193	276	649	1127	1243	1455	1019	1243	690	326	203	8535
1998-99	65	51	221	538	920	1314	1646	1213	1178	764	346	153	8409
1999-00	40	111	289	711	827	1364	1609	1295	990	867	349	208	8660
2000-01	117	108	317	543	1000	1632	1365	1460	1268	693	357	189	9049
2001-02	94	63	302	672	745	1205	1345	1203	1456	861	614	150	8710
2002-03	34	62	209	830	1169	1321	1641	1588	1375	888	460	194	9771
2003-04	78	62	272	652	1031	1289	1759	1285	1223	852	519	221	9243
2004-05	137	195	143	610	926	1486	1630	1257	1358	662	486	75	8965
2005-06	77	72	177	542	1060	1435	1264	1411	1162	629	400	159	8388
2006-07	41	89	347	765	901	1218	1472	1520	1124	872	341	121	8811
2007-08	80	83	247	496	1088	1452	1511	1533	1389	806	587	157	9429
2008-09	54	79	268	631	1007	1594	1783	1366	1222	826	524	251	9605
2009-10	166	148	177	798	826	1783	1463	1270	929	592	328	182	8662
2010-11	22	1463	408	581	938	1463	1644	1337	1248	844	458	196	10602
2011-	32	34	309	549	935	1644							

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COOLING DEGREE DAYS (base 65°F) 2011 MARQUETTE (KMQT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1982	0	0	0	0	7	2	75	35	23	0	0	0	142
1983	0	0	0	0	0	78	200	135	47	1	0	0	461
1984	0	0	0	0	3	42	59	89	0	0	0	0	193
1985	0	0	0	7	7	10	44	41	21	0	0	0	130
1986	0	0	0	1	21	17	119	21	0	0	0	0	179
1987	0	0	0	3	41	77	150	65	13	0	0	0	349
1988	0	0	0	0	32	89	157	106	8	0	0	0	392
1989	0	0	0	0	1	27	123	70	13	1	0	0	235
1990	0	0	0	24	0	29	70	63	14	0	0	0	200
1991	0	0	0	0	51	60	77	126	13	0	0	0	327
1992	0	0	0	0	21	22	8	30	3	5	0	0	89
1993	0	0	0	0	10	22	79	97	0	0	0	0	208
1994	0	0	0	0	18	49	62	29	24	0	0	0	182
1995	0	0	0	0	8	152	93	123	8	5	0	0	389
1996	0	0	0	0	3	70	29	67	40	0	0	0	209
1997	0	0	0	0	0	80	74	33	9	3	0	0	199
1998	0	0	0	0	25	47	86	83	26	0	0	0	267
1999	0	0	0	0	13	77	162	31	47	0	0	0	330
2000	0	0	0	0	14	7	57	35	6	1	0	0	120
2001	0	0	0	5	1	91	110	109	21	0	0	0	337
2002	0	0	0	7	8	73	185	71	63	0	0	0	407
2003	0	0	0	0	0	49	75	100	36	2	0	0	262
2004	0	0	0	0	4	23	48	29	52	0	0	0	156
2005	0	0	0	0	0	86	155	100	60	15	0	0	416
2006	0	0	0	0	29	43	163	52	10	0	0	0	297
2007	0	0	0	1	32	95	125	80	41	12	0	0	386
2008	0	0	0	0	0	25	55	44	28	0	0	0	152
2009	0	0	0	0	0	38	10	58	18	0	0	0	124
2010	0	0	0	0	48	21	124	0	0	0	0	0	193
2011	0	0	0	0	10	23	182	81	22	6	0	0	324

SNOWFALL (inches) 2011 MARQUETTE (KMQT)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1982-83	0.0	0.0	0.0	7.2	15.1	17.4	42.4	42.9	54.1	20.2	T	0.0	199.3
1983-84	0.0	0.0	T	2.5	31.6	54.3	30.2	38.1	46.3	1.1	T	0.0	204.1
1984-85	0.0	0.0	T	T	13.6	30.6	56.2	51.4	59.1	18.1	0.0	0.0	229.0
1985-86	0.0	0.0	0.0	T	28.1	56.4	49.8	17.4	49.1	6.8	0.1	0.0	207.7
1986-87	0.0	T	0.0	2.3	15.7	10.5	21.9	27.7	19.3	11.3	0.1	0.0	108.8
1987-88	0.0	0.0	T	8.3	21.4	36.1	62.8	28.0	49.0	5.8	0.0	0.0	211.4
1988-89	0.0	0.0	0.0	10.9	42.0	41.7	43.1	33.7	44.3	7.8	0.2	0.0	223.7
1989-90	0.0	T	0.5	16.6	41.7	58.4	26.4	35.8	16.3	17.1	22.6	T	235.4
1990-91	0.0	0.0	T	9.6	2.5	27.8	25.7	35.2	21.1	9.0	0.6	0.0	131.5
1991-92	0.0	0.0	T	2.9	48.9	30.7	33.3	49.6	23.3	16.7	T	0.0	205.4
1992-93	0.0	0.0	T	11.5	30.0	25.7	40.9	19.9	18.1	29.1	T	0.0	175.2
1993-94	0.0	0.0	1.7	8.7	29.0	22.9	46.8	12.4	28.3	2.7	0.1	T	152.6
1994-95	0.0	0.0	0.0	T	14.6	7.4	23.8	63.6	45.9	10.2	0.0	0.0	165.5
1995-96	0.0	0.0	T	3.3	31.7	45.1	66.6	37.8	22.9	43.4	0.6	0.0	251.4
1996-97	0.0	0.0	0.0	1.5	15.6	79.8	91.7	18.7	50.4	5.4	9.1	0.0	272.2
1997-98	0.0	0.0	0.0	8.3	37.2	38.8	41.7	15.3	35.4	5.7	0.0	T	182.4
1998-99	0.0	0.0	T	0.3	9.3	28.0	67.7	34.4	20.9	1.8	0.0	0.0	162.4
1999-00	0.0	0.0	0.0	3.5	7.5	30.0	44.4	30.8	27.4	8.8	0.0	T	152.4
2000-01	T	0.0	0.0	12.1	38.0	89.5	44.5	41.5	40.2	2.2	0.0	0.0	268.0
2001-02	0.0	0.0	0.0	13.7	39.3	37.4	35.2	91.9	83.1	18.0	1.2	0.0	319.8
2002-03	0.0	0.0	0.0	17.0	38.4	11.4	23.2	38.5	32.1	22.5	0.0	0.0	183.1
2003-04	0.0	0.0	0.1	10.5	23.5	41.4	51.5	39.6	43.1	7.0	T	0.0	216.7
2004-05	0.0	0.0	0.0	2.8	8.0	81.1	38.2	40.7	44.1	3.5	1.6	0.0	220.0
2005-06	0.0	0.0	T	0.5	40.3	34.6	31.0	54.9	29.4	2.0	0.7	T	193.4
2006-07	0.0	0.0	T	7.3	8.6	36.1	52.7	25.5	45.1	55.2	T	0.0	230.5
2007-08	T	0.0	0.0	0.1	26.5	48.4	35.1	24.6	31.4	38.5	T	T	204.6
2008-09	0.0	0.0	0.0	2.2	43.6	68.9	43.1	58.9	8.1	21.1	0.1	T	246.0
2009-10	0.0	T	0.0	2.0	4.6	43.1	43.3	44.7	0.3	9.9	7.6	0.0	155.5
2010-11	0.0	43.3	0.0	T	8.2	43.3	47.4	13.7	17.4	15.2	T	0.0	188.5
2011-	0.0	0.0	T	T	20.7	47.4							
POR= 50 YRS	T	0.9	0.2	5.2	20.3	36.7	37.9	30.0	28.8	12.0	1.4	T	173.4

WBAN : 94850

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: https://mi3.ncdc.noaa.gov/mi3qry/login.cfm SNOWFALL STOPPED MONTH & YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.</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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2011 MARQUETTE COUNTY AIRPORT MICHIGAN (KMQT)

The Marquette County Airport lies about 7.5 miles southwest of the nearest shoreline of Lake Superior and about 8 miles west of the city of Marquette. Lake Superior is the largest body of fresh water in the world and the deepest and coldest of the Great Lakes. An irregular northwest-southeast ridge line lies just to the east of the airport. There are several water storage basins in the vicinity of the station. One basin, about 20 miles long, is 3 miles northwest and another, about 8 miles in diameter, is 3 miles west.

The climate is influenced considerably by the proximity of Lake Superior. As a consequence of the cool expanse of water in the summer, there is rarely a long period of sweltering hot weather. Periods of drought are extremely rare. In the winter, cold outbreaks are tempered considerably by the waters of Lake Superior if the lake is

unfrozen. However, winds blowing across these relatively warmer waters pick up moisture and cause cloudy weather throughout the winter, as well as frequent periods of light snow. Lake-formed snow showers and snow squalls are intensified near the station by upslope winds, especially from the northwest through northeast. With a northeast through east wind, especially in autumn, the upslope condition will cause light snow at the airport, while along the lakeshore, only drizzle or no precipitation may occur.

The growing season averages 117 days. Precipitation is rather evenly distributed throughout the year, with an average precipitation of 4 inches or more in June and September and less than 2 inch averages only in January and February. One hundred inches or more of snow occur in nine of ten winter seasons.

Station History

MARQUETTE, MI

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
MARQUETTE COUNTY AP	1957-08-01	1959-10-01	46° 31'	-87° 34'			AIRWAYS
MARQUETTE WSO AP	1995-01-01	1995-05-21	46° 31'	-87° 33'	1415		COOP, WXSVC
MARQUETTE WSO AP	2005-05-18	Present	46° 31'	-87° 32'	1415		COOP, WXSVC
MARQUETTE WSO AP	1979-02-01	1995-01-01	46° 31'	-87° 33'	1415	.2 MI SE	COOP, WXSVC
MARQUETTE FAA AP	1959-10-01	1960-01-01	46° 31'	-87° 34'	1414		AIRWAYS, COOP
MARQUETTE FAA AP	1960-01-01	1979-02-01	46° 31'	-87° 34'	1417		AIRWAYS, COOP
MARQUETTE WSO AP	1995-05-21	1995-07-01	46° 31'	-87° 32'	1415	480 FT E	COOP, WXSVC
MARQUETTE WSO AP	1995-07-01	2005-05-18	46° 31'	-87° 32'	1415		COOP, WXSVC

Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
PRECIP	2005-05-18	2007-08-01	DAILY	0800	SRG	SHLD	
PRECIP	2012-01-31	Present	DAILY	2400	SRG	SHLD	
PRECIP	2012-01-31	Present	DAILY	VAR	SRG	SHLD	
TEMPATOBS	2005-05-18	2007-08-01	DAILY	0800	FRONTIER		
SNOWDPH	2005-05-18	2007-08-01	DAILY	0800	SNWSTK		
TEMPATOBS	2007-08-01	2008-09-30	DAILY	0800	FRONTIER		
SNOWDPH	2007-08-01	2008-09-30	DAILY	0700	SNWSTK		
TEMP	2008-09-30	2009-09-25	DAILY	2400	NIMBUS		
PRECIP	2008-09-30	2009-09-25	DAILY	2400	SRG	SHLD	
SNOWDPH	2008-09-30	2009-09-25	DAILY	2400	SNWSTK		
TEMP	2005-05-18	2007-08-01	DAILY	0800	NIMBUS		
PRECIP	2007-08-01	2008-09-30	DAILY	0700	SRG	SHLD	
PRECIP	2007-08-01	2008-09-30	HOURLY	2400	FPU	RCRD	
PRECIP	2009-09-25	2012-01-31	DAILY	2400	SRG		
TEMPATOBS	2012-01-31	Present	DAILY	0700	FRONTIER	SHLD	
TEMP	1979-02-01	1991-12-24	DAILY	2400	MXMN		
TEMP	1991-12-24	1995-05-21	DAILY	2400	MXMN		
PRECIP	1991-12-24	1995-05-21	DAILY		SRG		
PRECIP	2005-05-18	2007-08-01	HOURLY	2400	FPU	RCRD	
TEMPATOBS	2008-09-30	2009-09-25	DAILY	0700	FRONTIER		
TEMP	2012-01-31	Present	DAILY	2400	NIMBUS	SHLD	
PRECIP	2012-01-31	Present	HOURLY	2400	FPU	SHLD;RCRD	
PRECIP	1995-05-21	2005-05-18	HOURLY		F&P	RCRD	
TEMPATOBS	2007-08-01	2008-09-30	DAILY	0700	FRONTIER		
PRECIP	2008-09-30	2009-09-25	HOURLY	2400	FPU	RCRD	
TEMP	2009-09-25	2012-01-31	DAILY	2400	NIMBUS		
PRECIP	1979-02-01	1991-12-24	DAILY	2400	SRG		
TEMP	1995-05-21	2005-05-18	DAILY		MMTS		
PRECIP	2008-09-30	2009-09-25	DAILY	0700	SRG	SHLD	
TEMPATOBS	2009-09-25	2012-01-31	DAILY	0700	FRONTIER		
TEMPATOBS	2012-01-31	Present	DAILY	1900	FRONTIER	SHLD	
SNOWWTREQ	2012-01-31	Present	DAILY	VAR	ADIRK	SHLD	
PRECIP	1991-12-24	1995-05-21	HOURLY	2400	UNIV	RCRD	
PRECIP	1995-05-21	2005-05-18	DAILY		SRG		
TEMP	2007-08-01	2008-09-30	DAILY	0700	NIMBUS		
SNOWDPH	2012-01-31	Present	DAILY	2400	SNWSTK	SHLD	
PRECIP	1979-02-01	1991-12-24	HOURLY	2400	UNIV	RCRD	
SNOWDPH	2009-09-25	2012-01-31	DAILY	2400	SNWSTK		
PRECIP	2009-09-25	2012-01-31	HOURLY	2400	FPU	RCRD	

* 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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