

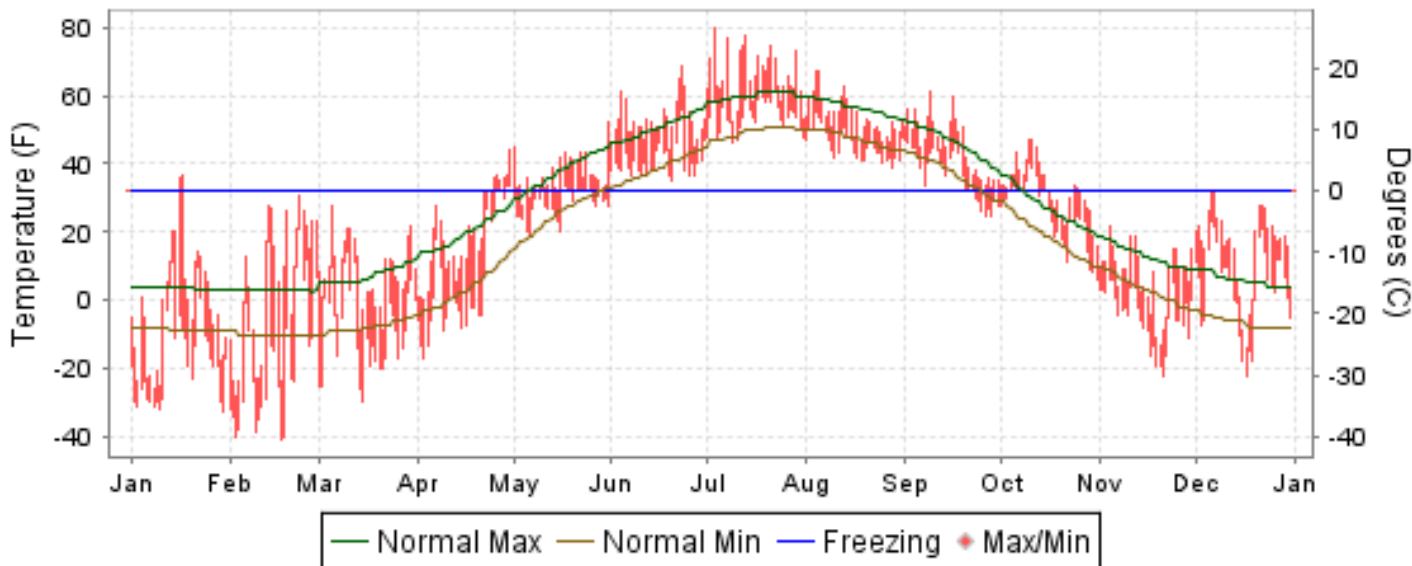


# 2009 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

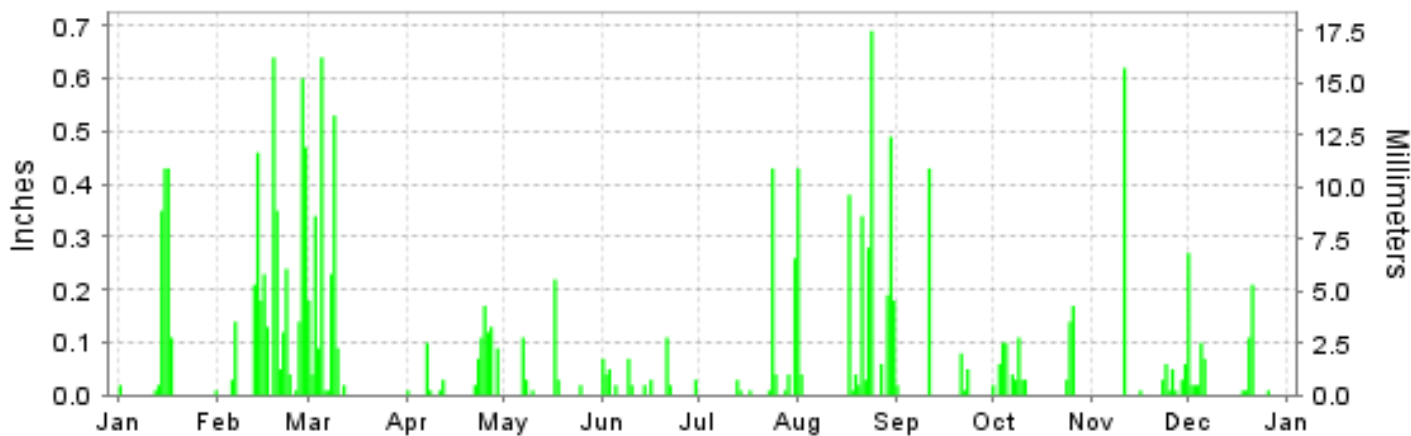
ISSN 0197-9825

## KOTZEBUE, ALASKA (PAOT)

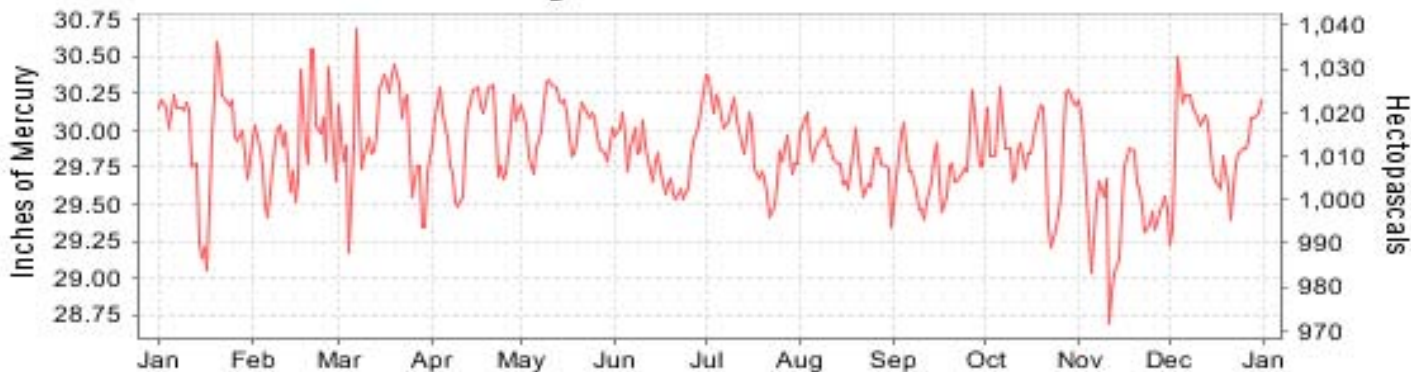
### Daily Max/Min Temperature



### 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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NATIONAL  
CLIMATIC DATA CENTER  
ASHEVILLE, NORTH CAROLINA

*Thomas R. Karl*  
DIRECTOR  
NATIONAL CLIMATIC DATA CENTER

# METEOROLOGICAL DATA FOR 2009

## KOTZEBUE (PAOT)

**LATITUDE:** 66° 53'N    **LONGITUDE:** -162° 35'W    **ELEVATION (FT):** GRND: 7    BARO: 19    **TIME ZONE:** ALASKA (UTC -9)    **WBAN: 26616**

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	-1.4	4.5	8.1	19.7	36.9	52.9	66.0	54.0	45.8	32.9	7.3	16.0	28.6	
	HIGHEST DAILY MAXIMUM	37	31	28	44	52	69	80	67	61	47	22	32	80	
	DATE OF OCCURRENCE	17	23	05	30	31	23	03	05+	09	11+	04	07+	JUL 03	
	MEAN DAILY MINIMUM	-17.3	-17.2	-8.4	6.1	28.4	40.9	54.0	45.5	37.2	25.4	-4.8	4.1	16.2	
	LOWEST DAILY MINIMUM	-33	-41	-30	-17	19	35	46	39	25	6	-22	-22	-41	
	DATE OF OCCURRENCE	30	17	15	03	06	20	09	28	28+	31	21	17	FEB 17	
	AVERAGE DRY BULB	-9.2	-6.2	-0.0	12.9	32.7	46.9	60.0	49.8	41.5	29.2	1.3	10.1	22.4	
	MEAN WET BULB			0.1	12.8	31.3	43.0	54.8	47.0	38.5					
	MEAN DEW POINT			-4.5	10.1	29.3	39.2	50.5	43.7	34.8		-3.5			
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 70	0	0	0	0	0	0	0	11	0	0	0	0	0	11
	MAXIMUM <= 32°	29	13	31	24	4	0	0	0	0	14	30	31	176	
	MINIMUM <= 32°	31	28	31	26	25	0	0	0	11	23	30	31	236	
MINIMUM <= 0°	27	22	23	15	0	0	0	0	0	0	21	11	119		
H/C	HEATING DEGREE DAYS	2296	1994	2010	1558	996	536	161	465	698	1103	1906	1693	15416	
	COOLING DEGREE DAYS	0	0	0	0	0	0	14	0	0	0	0	0	14	
RH	MEAN (PERCENT)	73	81	78	86	88	78	73	80	79	84	79	79	80	
	HOUR 03 LST	73	80	75	87	90	84	79	85	84	86	78	80	82	
	HOUR 09 LST	74	82	79	87	90	78	78	82	84	87	78	78	81	
	HOUR 15 LST	75	82	78	83	85	72	67	76	71	80	78	78	77	
	HOUR 21 LST	72	83	78	87	85	74	68	77	76	84	79	78	78	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	0	1	2	2	8	5	0	2	1	0	0	0	21	
	THUNDERSTORMS	0	0	0	0	0	0	0	0	0	0	0	0	0	
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.)	29.80	29.94	29.97	29.99	30.04	29.82	29.92	29.80	29.73	29.88	29.49	29.90	29.86	
	MEAN SEA-LEVEL PRESS. (IN.)	29.99	29.95	30.00	30.01	30.06	29.84	29.94	29.83	29.75	29.90	29.51	29.93	29.89	
WINDS	RESULTANT SPEED (MPH)	5.5	5.0	7.4	3.8	6.7	3.8	1.8	3.6	4.1	6.7	6.9	9.5	2.6	
	RES. DIR. (TENS OF DEGS.)	09	12	09	13	28	26	12	27	01	06	08	09	09	
	MEAN SPEED (MPH)	10.4	13.8	12.4	9.3	10.3	9.0	9.6	11.6	9.0	11.7	9.1	13.7	10.8	
	PREVAIL.DIR.(TENS OF DEGS.)	10	11	10	11	29	28	10	29	02	09	09	10	29	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	48	55	49	37	39	31	45	30	28	35	51	44	55	
	DIR. (TENS OF DEGS.)	11	11	11	12	15	17	15	17	07	09	09	11	11	
	DATE OF OCCURRENCE	22	27	08	25	17	06	30	31	22	10	11	05	FEB 27	
	MAXIMUM 3-SECOND WIND:														
SPEED (MPH)	58	64	61	44	47	36	51	38	35	43	61	51	64		
DIR. (TENS OF DEGS.)	11	12	11	16	15	18	15	18	08	08	09	10	12		
DATE OF OCCURRENCE	22	27	08	26	17	06	30	31	22	10	11	21	FEB 27		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	1.38	4.04	2.18	0.87	0.42	0.48	0.84	3.18	0.59	0.86	0.88	0.85	16.57	
	GREATEST 24-HOUR (IN.)	0.54	0.90	0.64	0.29	0.22	0.13	0.43	0.70	0.43	0.31	0.62	0.27	0.90	
	DATE OF OCCURRENCE	16-17	27-28	05	25-26	17	21-22	24	23-24	11	25-26	11	01	FEB 27-28	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	8	17	11	12	6	11	9	14	5	12	9	11	125	
PRECIPITATION 0.10	4	10	5	5	2	1	2	8	1	5	1	4	48		
PRECIPITATION 1.00	0	0	0	0	0	0	0	0	0	0	0	0	0		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	13.6	47.4	21.8	3.6	1.5	0.0	0.0	0.0	0.6	5.6	11.4	11.6	117.1	
	GREATEST 24-HOUR (IN.)	4.7	7.0	6.4	1.0	1.1	0.0	0.0	0.0	0.4	2.8	8.2	5.0	8.2	
	DATE OF OCCURRENCE	15	18	05	07	07				23	26	11	01	NOV 11	
	MAXIMUM SNOW DEPTH (IN.)	28	58	62	53	24	T	0	0	T	4	9	17	62	
	DATE OF OCCURRENCE	31+	19	08	02+	01	03+			30+	31+	30	05	MAR 08	
	NUMBER OF DAYS WITH:														
SNOWFALL >= 1.0	3	13	5	1	1	0	0	0	0	2	2	4	31		





**HEATING DEGREE DAYS (base 65°F) 2009 KOTZEBUE (PAOT)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	284	451	778	1119	1618	2336	1536	1793	1668	1505	925	489	14502
1981-82	419	416	721	1258	1676	2055	2013	1692	1920	1753	1120	526	15569
1982-83	269	348	660	1384	1580	1783	2177	1879	1779	1278	841	675	14653
1983-84	333	527	786	1408	1472	1638	2117	2500	1834	1937	1262	675	16489
1984-85	418	550	591	1133	1706	1858	1509	2019	2153	2115	1184	765	16001
1985-86	333	352	737	1363	1617	1610	2112	1619	2171	1825	1088	634	15461
1986-87	354	458	709	1345	1661	1710	2080	1830	1883	1712	993	508	15243
1987-88	263	356	811	1054	1787	2094	1784	1846	2089	1418	944	603	15049
1988-89	390	395	658	1447	1905	1894	2635	1321	1844	1313	1090	619	15511
1989-90	331	336	577	1275	1936	1843	2283	2499	1961	1468	822	580	15911
1990-91	199	249	739	1249	1827	2229	2107	1952	2106	1509	986	451	15603
1991-92	321	403	568	1098	1719	2164	1977	2135	2166	1667	1291	627	16136
1992-93	236	460	977	1423	1752	2090	2297	1693	1995	1361	970	511	15765
1993-94	184	476	788	1110	1609	1733	1991	1745	2244	1606	991	630	15107
1994-95	290	440	746	1441	1873	2102	2027	1755	2243	1495	880	595	15887
1995-96	278	435	517	1198	1750	2021	2130	1991	1756	1626	929	562	15193
1996-97	312	496	796	1484	1574	2057	2123	1709	2149	1407	849	514	15470
1997-98	330	347	527	1416	1471	2076	2168	1889	1589	1220	971	536	14540
1998-99	280	505	641	1102	1525	1971	2435	2062	2174	1627	1140	591	16053
1999-00	376	371	606	1356	1865	2397	2281	1589	1809	1597	1222	625	16094
2000-01	477	526	779	1267	1515	1608	1740	1442	1962	1479	1342	648	14785
2001-02	332	462	606	1452	1744	2216	2220	1769	1625	1558	841	587	15412
2002-03	363	451	630	1015	1336	1692	1830	1649	2065	1307	984	423	13745
2003-04	426	414	724	1045	1538	2025	2052	1926	1912	1197	787	353	14399
2004-05	165	201	778	1126	1550	1946	2017	1939	1762	1699	916	506	14605
2005-06	269	279	594	1207	1888	2015	2548	1666	2019	1715	1044	640	15884
2006-07	374	518	531	998	1639	1899	1993	1770	2297	1390	1166	555	15130
2007-08	230	211	531	1264	1448	1803	2224	2188	2034	1532	952	639	15056
2008-09	361	433	637	1405	1775	1870	2296	1994	2010	1558	996	536	15871
2009-	161	465	698	1103	1906	1693							

WBAN : 26616

**COOLING DEGREE DAYS (base 65°F) 2009 KOTZEBUE (PAOT)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1980	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	5	0	0	0	0	0	5
1982	0	0	0	0	0	12	3	0	0	0	0	0	15
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	3	1	0	0	0	0	4
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	5	9	0	0	0	0	0	14
1988	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	4	15	1	0	0	0	0	20
1991	0	0	0	0	0	17	1	0	0	0	0	0	18
1992	0	0	0	0	0	0	8	0	0	0	0	0	8
1993	0	0	0	0	0	0	9	0	0	0	0	0	9
1994	0	0	0	0	0	0	3	1	0	0	0	0	4
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	5	0	0	0	0	0	5
1999	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	13	15	11	0	0	0	0	39
2005	0	0	0	0	0	0	11	3	0	0	0	0	14
2006	0	0	0	0	0	0	1	0	0	0	0	0	1
2007	0	0	0	0	0	0	2	2	0	0	0	0	4
2008	0	0	0	0	0	0	11	0	0	0	0	0	11
2009	0	0	0	0	0	0	14	0	0	0	0	0	14

**SNOWFALL (inches) 2009 KOTZEBUE (PAOT)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0.0	0.0	2.1	4.1	2.5	3.3	9.6	5.2	7.3	6.3	0.9	0.0	41.3
1981-82	0.0	0.0	0.4	5.3	4.5	6.1	12.9	2.3	6.4	3.3	T	T	41.2
1982-83	0.0	0.0	0.4	12.7	12.3	3.0	3.0	1.8	2.7	2.8	T	T	38.7
1983-84	0.0	T	1.6	4.1	12.3	6.1	6.1	0.2	2.8	5.2	6.7	0.0	45.1
1984-85	0.0	0.0	T	5.6	7.8	9.4	5.3	1.6	9.3	5.3	4.4	0.0	48.7
1985-86	0.0	0.0	1.5	4.1	8.0	6.5	10.1	3.3	T	3.8	T	0.0	37.3
1986-87	0.0	0.0	2.0	4.1	2.9	11.6	6.0	9.2	3.7	1.0	T	T	40.5
1987-88	0.0	0.0	T	3.8	4.7	21.7	2.8	4.8	9.4	0.6	T	T	47.8
1988-89	0.0	0.0	0.4	6.6	4.9	23.6	4.3	11.3	2.0	16.0	3.4	T	72.5
1989-90	0.0	0.0	T	8.8	4.7	8.6	5.8	6.7	9.5	5.1	0.4	0.0	49.6
1990-91	0.0	0.0	3.1	9.6	22.8	15.4	12.7	6.2	13.4	6.9	0.4	T	90.5
1991-92	0.0	0.0	0.0	6.6	1.1	4.4	5.7	6.8	14.0	1.7	3.7	0.0	44.0
1992-93	0.0	0.0	0.4	10.0	14.8	10.8	7.2	3.1	10.2	1.3	0.3	T	58.1
1993-94	0.0	0.0	5.0	4.1	24.3	11.0	7.0	1.9	10.4	3.7	0.6	T	68.0
1994-95	0.0	0.0	T	14.9	8.2	7.8	5.1	4.0	1.4	2.6	0.5	T	44.5
1995-96	0.0	0.0	0.0	7.1	7.6	17.9	6.5	19.1	2.1	1.9	T	T	62.2
1996-97	0.0	0.0	6.3	9.2	12.4	3.8	11.3	6.4	0.3	7.9	0.1	0.0	57.7
1997-98	0.0	0.0	0.0	7.5	12.6	5.2	3.2	4.9	2.6	10.5	3.1	T	49.6
1998-99	0.0	0.0	0.0	2.5	6.6	6.4	22.8	10.0	4.5	19.6	1.7	T	74.1
1999-00	0.0	0.0	T	T	0.4	4.3	18.9	7.3	1.1	0.6	1.0	0.0	33.6
2000-01	T	0.0	T	7.1	10.4	9.3	13.7	9.6	1.5	15.1	1.2	0.8	68.7
2001-02	0.0	0.0	0.6	2.1	0.6	6.9	22.4	16.7	5.1	18.4	1.0	T	73.8
2002-03	0.2	0.0	0.9	0.9	10.8	12.8	8.0	22.2	7.7	4.4	T	0.0	67.9
2003-04	0.0	0.0	T	4.6	45.6	19.0	4.0	11.6	2.9	2.7	T	0.0	90.4
2004-05	0.0	0.0	0.7	7.0	17.4	34.0	10.5	31.8	15.9	2.2	0.3	T	119.8
2005-06	0.0	0.0	0.0	6.9	5.2	21.1	2.8	12.7	7.4	2.7	3.0	0.5	62.3
2006-07	0.0	0.0	0.0	7.1	8.9	8.5	36.9	1.2	0.3	3.4	T	0.0	66.3
2007-08	0.0	0.0	0.5	3.3	12.0	12.6	24.8	16.5	11.0	6.3	T	T	87.0
2008-09	0.0	0.0	0.0	4.6	7.3	6.9	13.6	47.4	21.8	3.6	1.5	0.0	106.7
2009-	0.0	0.0	0.6	5.6	11.4	11.6							
POR= 69 YRS	T	T	1.1	6.1	8.3	7.8	8.3	7.4	6.5	5.2	1.3	0.2	52.2

WBAN : 26616

**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></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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# 2009 KOTZEBUE ALASKA (PAOT)

Kotzebue is located 26 miles inside the Arctic Circle and very near the north end of a long narrow peninsula bounded on the north and west by Kotzebue Sound and on the east by Hotham Inlet, known locally as Kobuk Lake. These water bodies produce a maritime type of climate when the water is ice-free, which is roughly from late May to late October, although the western portion of the sound is not completely frozen until about December and not completely free of ice again until the middle of July. Local topography is nearly uniform with a general low relief, so that there are no significant terrain barriers in the immediate area to impede surface air flow or produce pronounced local variations in temperature and precipitation. The mountainous Seward Peninsula to the south, however, does deflect some low pressure systems which originate in or beyond the Bering Sea area and move toward this region.

During the ice-free period cloudy skies prevail, fog occurs, daily temperatures are relatively uniform, relative humidity is high, and westerly winds predominate. These normal conditions are altered only by cyclonic storms or by pressure systems strong enough to overcome local circulation tendencies.

When the water surrounding the peninsula becomes frozen, the climatic characteristics approach the continental type. The change from maritime to approximately continental conditions becomes progressively more pronounced as the ice cover advances across the sound toward the Arctic Ocean. A similar, but inverse, change occurs as the ice diminishes.

Average winter temperatures are not as severe as might be expected at this latitude. Cyclonic storms and the influence of the Arctic Ocean, which is often relatively free of ice, moderate the winter temperatures.

Precipitation is very light. Snow generally falls in every month of the year except July and August. The total for a normal year is 8 inches.

Cyclonic storms are frequent, especially from October to April, and many of them are accompanied by high winds and blizzard conditions during the winter months. The absence of pronounced sheltering terrain results in unimpeded air movement throughout the year. Windy weather, somewhat characteristic of the area, results largely from the numerous cyclonic storms and uneven heat radiation of adjoining land and water areas.

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