

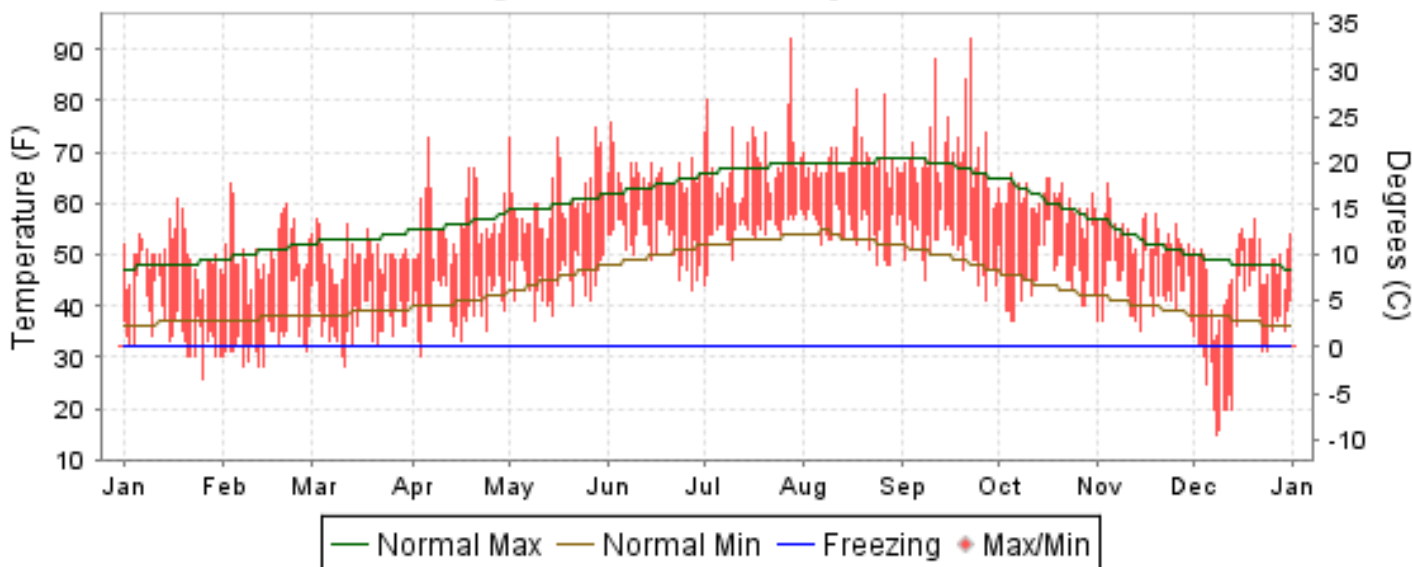


2009 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

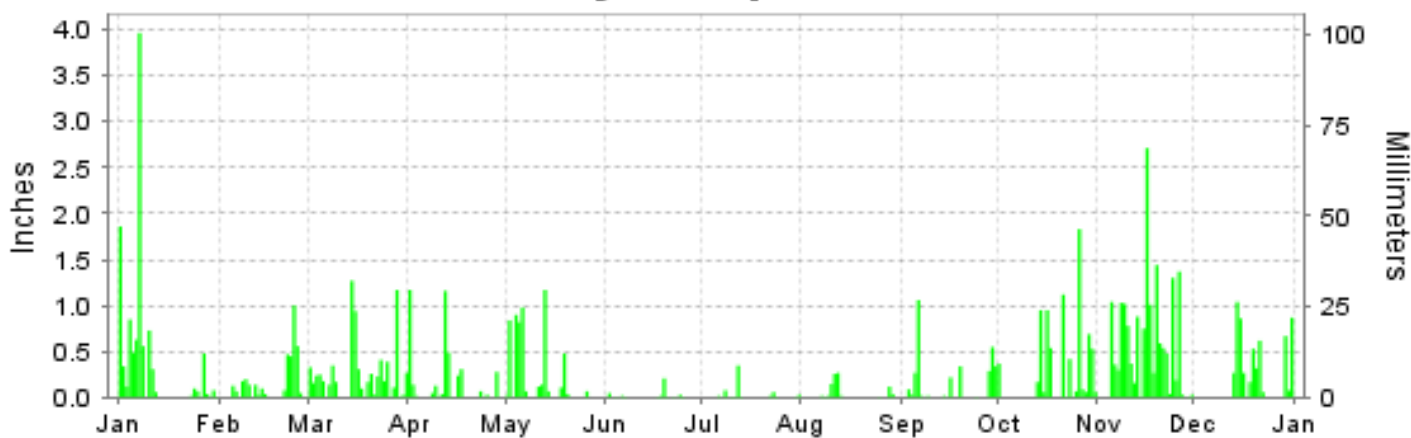
ISSN 0198-4098

ASTORIA, OREGON (KAST)

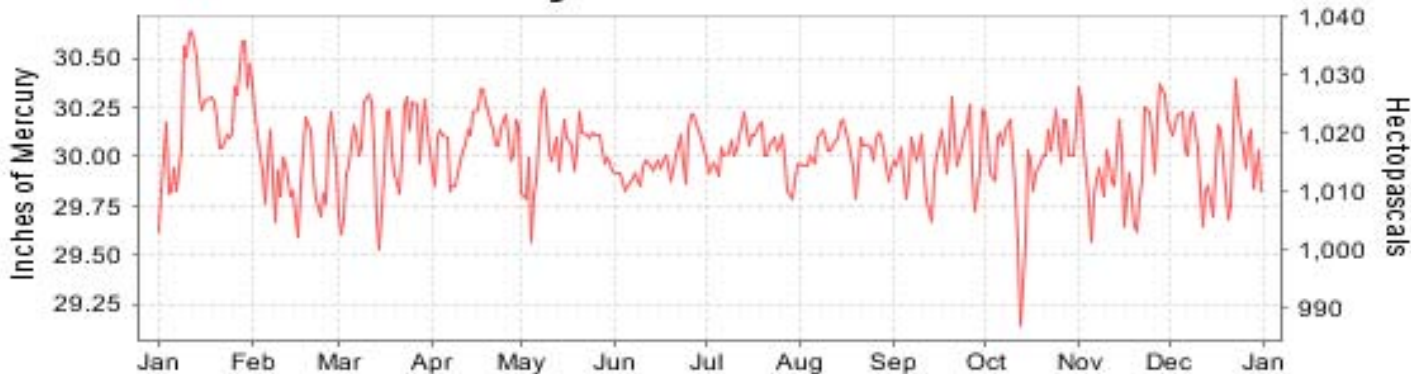
Daily Max/Min Temperature



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.

NATIONAL
OCEANIC AND
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NATIONAL
ENVIRONMENTAL SATELLITE, DATA
AND INFORMATION SERVICE

NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2009

ASTORIA (KAST)

LATITUDE: 46° 9' N LONGITUDE: -123° 52' W ELEVATION (FT): GRND: 9 BARO: 12 TIME ZONE: PACIFIC (UTC -8) WBAN: 94224

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	50.0	51.1	50.1	56.4	61.4	65.6	68.6	68.7	70.0	60.8	54.1	47.3	58.7	
	HIGHEST DAILY MAXIMUM	61	64	57	73	75	76	92	82	92	66	64	57	92	
	DATE OF OCCURRENCE	18	03	02	06	28	02	28	18	22	05	04	20	SEP 22	
	MEAN DAILY MINIMUM	36.3	33.6	36.9	39.9	44.9	52.5	54.7	54.8	50.9	45.9	42.8	33.1	43.9	
	LOWEST DAILY MINIMUM	26	28	28	30	37	43	44	48	41	37	35	15	15	
	DATE OF OCCURRENCE	26	14+	11	04	09	27	01	28+	27	06+	14	08	DEC 08	
	AVERAGE DRY BULB	43.2	42.4	43.5	48.2	53.2	59.1	61.7	61.8	60.5	53.4	48.5	40.2	51.3	
	MEAN WET BULB	40.1	39.5	40.8	44.5	49.3	54.7	57.0	57.5	56.0	50.1	46.1	36.8	47.7	
	MEAN DEW POINT	36.4	36.0	36.9	40.3	45.5	51.3	54.3	54.5	52.5	46.8	43.2	31.4	44.1	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	0	0	0	1	0	1	0	0	0	2
	MAXIMUM <= 32°	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MINIMUM <= 32°	8	16	4	1	0	0	0	0	0	0	0	15	44		
MINIMUM <= 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	671	625	660	497	359	172	108	98	149	354	488	761	4942	
	COOLING DEGREE DAYS	0	0	0	0	0	0	13	3	20	0	0	0	36	
RH	MEAN (PERCENT)	80	81	78	76	77	77	81	79	77	80	82	73	78	
	HOUR 04 LST	84	87	86	85	87	87	90	88	87	86	85	78	86	
	HOUR 10 LST	78	74	72	68	69	69	74	72	67	73	80	69	72	
	HOUR 16 LST	74	72	69	67	68	69	71	71	66	74	79	69	71	
	HOUR 22 LST	85	85	82	82	83	83	88	86	85	86	84	77	84	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	3	4	5	6	2	1	5	6	6	4	5	1	48	
	THUNDERSTORMS	1	2	3	0	0	0	1	0	2	1	8	0	18	
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.)	30.22	29.94	30.04	30.09	30.03	29.97	30.03	30.03	30.00	29.98	29.97	30.01	30.03	
	MEAN SEA-LEVEL PRESS. (IN.)	30.25	29.96	30.07	30.12	30.06	29.99	30.05	30.06	30.03	30.01	30.00	30.03	30.05	
WINDS	RESULTANT SPEED (MPH)	1.5	2.0	3.1	3.6	4.0	4.8	4.6	4.0	1.8	1.8	4.5	4.0	1.7	
	RES. DIR. (TENS OF DEGS.)	16	11	25	27	27	29	27	29	24	19	18	11	25	
	MEAN SPEED (MPH)	6.9	5.6	8.2	7.3	8.3	7.8	6.8	6.2	6.7	6.4	9.0	7.5	7.2	
	PREVAIL.DIR.(TENS OF DEGS.)	08	10	22	29	32	33	23	24	22	13	18	08	08	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	37	30	33	30	32	29	25	26	29	31	43	33	43	
	DIR. (TENS OF DEGS.)	19	20	25	19	18	21	33	31	23	20	26	19	26	
	DATE OF OCCURRENCE	07	24	15	12	04	04	19	01	06	14	22	31	NOV 22	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	54	26	47	49	46	43	59	43	44	47	66	48	66	
DIR. (TENS OF DEGS.)	18	27	19	20	20	22	33	33	03	18	18	20	18		
DATE OF OCCURRENCE	07	26	02	12	04	04	08	30	24	30	16	15	NOV 16		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	10.71	3.65	7.70	4.14	5.83	0.39	0.61	0.92	3.26	7.92	16.71	5.76	67.60	
	GREATEST 24-HOUR (IN.)	4.06	1.36	1.73	1.26	1.40	0.23	0.36	0.47	1.23	1.87	3.36	1.66	4.06	
	DATE OF OCCURRENCE	07-08	23-24	14-15	12-13	04-05	18-19	12-13	11-12	05-06	25-26	16-17	14-15	JAN 07-08	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	18	16	24	14	14	11	11	10	13	16	25	12	184	
PRECIPITATION 0.10	12	10	21	8	9	1	1	4	7	10	20	10	113		
PRECIPITATION 1.00	2	1	2	2	1	0	0	0	1	2	8	1	20		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)														
	GREATEST 24-HOUR (IN.)														
	DATE OF OCCURRENCE														
	NUMBER OF DAYS WITH:														
SNOWFALL >= 1.0															

NORMALS, MEANS, AND EXTREMES ASTORIA (KAST)

LATITUDE:
46° 9' N

LONGITUDE:
-123° 52' W

ELEVATION (FT):
GRND: 9 BARO: 12

TIME ZONE:
PACIFIC (UTC -8)

WBAN: 94224

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	48.1	50.8	53.3	56.1	60.0	63.6	67.2	68.3	67.5	61.0	53.1	48.4	58.1	
	MEAN DAILY MAXIMUM	57	48.3	51.1	53.0	55.9	60.4	64.1	67.7	68.6	67.6	61.1	53.7	48.8	58.4	
	HIGHEST DAILY MAXIMUM	55	67	72	73	83	93	93	100	96	95	85	71	64	100	
	YEAR OF OCCURRENCE		1986	1996	1994	1999	2008	1955	1961	1981	1972	1987	1999	1980	JUL 1961	
	MEAN OF EXTREME MAXS.	57	57.7	61.4	64.6	70.8	76.9	78.6	81.6	81.0	83.1	74.6	63.0	57.6	70.9	
	NORMAL DAILY MINIMUM	30	36.7	37.6	38.6	40.8	45.4	49.8	52.9	53.2	49.5	44.1	40.1	37.1	43.8	
	MEAN DAILY MINIMUM	57	36.7	37.2	38.0	40.5	45.1	49.7	52.8	52.9	49.3	44.4	40.2	37.1	43.7	
	LOWEST DAILY MINIMUM	55	11	9	22	29	30	37	39	39	33	26	15	6	6	
	YEAR OF OCCURRENCE		1980	1989	1971	2008	1954	1980	1971	1973	1983	1971	1955	1990	1990	DEC 1990
	MEAN OF EXTREME MINS.	57	24.4	26.1	28.5	31.8	36.0	41.9	45.1	45.3	39.8	33.5	28.8	25.5	33.9	
	NORMAL DRY BULB	30	42.4	44.2	46.0	48.5	52.7	56.7	60.1	60.8	58.5	52.6	46.6	42.8	51.0	
	MEAN DRY BULB	57	42.5	44.2	45.5	48.2	52.7	57.0	60.3	60.8	58.5	52.7	46.9	42.9	51.0	
	MEAN WET BULB	26	40.9	41.0	43.1	45.4	49.5	53.1	56.4	57.1	54.5	49.7	44.7	40.3	48.0	
	MEAN DEW POINT	26	39.2	38.7	41.1	43.4	47.6	51.2	54.7	55.3	52.8	48.1	43.2	38.7	46.2	
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.0	0.0	0.1	*	0.1	0.1	0.0	0.0	0.0	0.3	
MAXIMUM <= 32	30	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	1.5		
MINIMUM <= 32	30	8.7	6.2	4.5	1.3	0.1	0.0	0.0	0.0	0.0	0.5	4.5	7.9	33.7		
MINIMUM <= 0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
H/C	NORMAL HEATING DEG. DAYS	30	695	583	573	492	375	244	151	130	197	386	542	688	5056	
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	1	2	4	7	7	1	0	0	22	
RH	NORMAL (PERCENT)	30	84	82	82	81	81	81	82	83	82	84	84	84	83	
	HOURLY 04 LST	30	86	87	89	89	90	90	90	91	91	90	87	86	89	
	HOURLY 10 LST	30	84	82	80	75	75	75	76	77	76	81	83	84	79	
	HOURLY 16 LST	30	77	74	72	70	70	71	70	71	70	73	78	80	73	
	HOURLY 22 LST	30	85	86	87	86	86	86	85	86	88	88	89	87	87	
S	PERCENT POSSIBLE SUNSHINE															
W/O	MEAN NO. DAYS WITH: HEAVY FOG (VISIBY <= 1/4 MI)	46	3.3	3.2	2.9	2.0	1.3	1.4	2.4	3.6	5.9	6.5	4.3	2.7	39.5	
	THUNDERSTORMS	57	0.8	0.5	0.6	0.6	0.3	0.3	0.4	0.3	0.8	1.0	1.3	1.1	8.0	
CLOUDNESS	MEAN: SUNRISE-SUNSET (OKTAS)	1	7.2	8.4	7.6	8.8	7.2	6.4	6.8	4.8	5.6	5.6	5.6	8.0	6.8	
	MIDNIGHT-MIDNIGHT (OKTAS)	1	7.2	8.8	8.0	7.2	7.2	7.2	6.8	4.8	5.6	5.6	9.2	8.0	7.1	
	MEAN NO. DAYS WITH: CLEAR	1	5.0	5.5			7.5	2.0	5.0	6.0	1.0	2.0	1.0	3.0		
	PARTLY CLOUDY	1	8.0	4.5		5.0	5.5	7.0	9.0	6.0	2.0	4.0	2.0	2.0		
	CLOUDY	2	15.0	15.0	2.0	19.0	14.5	12.0	10.0	8.0	2.0	5.0	8.0	3.0	113.5	
PR	MEAN STATION PRESSURE (IN)	26	30.03	30.01	30.01	30.04	30.03	30.04	30.06	30.03	30.01	30.04	30.01	30.03	30.03	
	MEAN SEA-LEVEL PRES. (IN)	26	30.05	30.03	30.04	30.06	30.06	30.07	30.08	30.05	30.04	30.06	30.04	30.05	30.05	
WINDS	MEAN SPEED (MPH)	26	8.7	8.3	8.2	8.1	8.0	8.2	8.4	7.6	7.0	7.0	8.3	8.6	8.0	
	PREVAIL. DIR. (TENS OF DEGS)	27	09	10	19	23	32	32	32	32	32	14	09	09	32	
	MAXIMUM 2-MINUTE: SPEED (MPH)	15	48	44	47	43	32	32	26	29	36	40	45	55	55	
	DIR. (TENS OF DEGS)		17	19	18	18	18	20	31	19	17	20	17	19	19	
	YEAR OF OCCURRENCE		2000	1999	1999	1996	2009	2003	2001	2008	1997	2007	2003	2007	DEC 2007	
	MAXIMUM 3-SECOND SPEED (MPH)	15	66	64	66	61	46	45	59	43	53	67	67	94	94	
	DIR. (TENS OF DEGS)		17	18	18	19	20	21	33	33	17	19	18	19	19	
YEAR OF OCCURRENCE		2000	1999	1999	1996	2009	2003	2009	2009	1997	1994	2006	2007	DEC 2007		
PRECIPITATION	NORMAL (IN)	30	9.62	7.87	7.37	4.93	3.28	2.57	1.16	1.21	2.61	5.61	10.50	10.40	67.13	
	MAXIMUM MONTHLY (IN)	55	24.10	21.89	15.31	10.07	6.60	5.48	4.39	5.22	7.27	12.56	21.07	20.38	24.10	
	YEAR OF OCCURRENCE		2006	1961	1997	1996	1960	1954	1983	1968	1997	1975	2006	1996	JAN 2006	
	MINIMUM MONTHLY (IN)	55	0.69	1.35	0.93	1.33	0.37	0.39	0.01	0.03	0.04	0.52	1.45	2.67	0.01	
	YEAR OF OCCURRENCE		1985	1993	1965	1956	1982	2009	1960	2002	1975	1987	1976	1985	JUL 1960	
	MAXIMUM IN 24 HOURS (IN)	55	5.14	3.39	2.66	3.00	1.83	2.42	1.98	2.78	2.63	3.71	5.56	3.61	5.56	
	YEAR OF OCCURRENCE		1990	1996	1997	1996	2005	1968	1974	2001	1997	1982	1998	1974	NOV 1998	
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	20.8	18.8	20.7	18.2	16.1	13.1	8.3	7.2	9.4	14.8	20.9	21.2	189.5	
PRECIPITATION >= 1.00	30	2.4	1.7	1.5	0.5	0.2	0.3	0.2	0.2	0.5	1.4	2.6	3.2	14.7		
SNOWFALL	NORMAL (IN)	30	2.2	0.4	0.4	0.*	T	0.0	0.0	0.0	0.0	T	0.2	1.4	4.6	
	MAXIMUM MONTHLY (IN)	42	26.3	4.0	6.7	1.1	T	T	0.0	0.0	T	T	4.6	19.0	26.3	
	YEAR OF OCCURRENCE		1969	1962	1966	1975	1991	1989			1972	1992	1985	1964	JAN 1969	
	MAXIMUM IN 24 HOURS (IN)	42	10.8	4.0	5.9	1.0	T	T	0.0	0.0	T	T	4.3	7.2	10.8	
	YEAR OF OCCURRENCE		1971	1962	1960	1975	1991	1989			1972	1992	1985	1964	JAN 1971	
	MAXIMUM SNOW DEPTH (IN)	41	18	4	5	T	0	0	0	0	0	0	2	5	18	
	YEAR OF OCCURRENCE		1969	1969	1960	1975							1955	1985	JAN 1969	
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.7		

PRECIPITATION (inches) 2009 ASTORIA (KAST)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	7.21	9.60	6.31	4.85	1.45	1.57	0.64	1.24	2.51	2.79	12.02	12.44	62.63
1981	2.63	8.69	5.80	7.30	2.97	5.47	1.06	0.62	2.77	8.67	10.66	11.80	68.44
1982	13.98	10.87	7.19	6.52	0.37	1.22	0.75	0.63	3.72	8.31	9.62	12.14	75.32
1983	13.52	8.66	8.84	4.26	3.59	4.53	4.39	1.14	1.83	1.87	16.75	9.44	78.82
1984	6.60	8.34	5.90	5.02	5.34	3.90	0.05	0.52	3.16	8.10	15.19	6.51	68.63
1985	0.69	4.09	7.00	2.95	1.90	3.09	0.78	1.11	3.23	8.11	5.96	2.67	41.58
1986	11.19	8.93	6.11	3.58	3.30	0.94	1.69	0.14	3.62	5.45	11.42	7.34	63.71
1987	10.38	5.08	8.52	3.02	3.97	0.65	1.10	0.16	0.95	0.52	4.33	8.85	47.53
1988	6.57	3.60	7.86	3.99	4.09	3.50	0.96	0.88	1.23	2.14	13.06	7.32	55.20
1989	8.20	6.61	10.09	2.27	3.01	2.58	1.64	0.84	0.50	5.30	6.73	7.40	55.17
1990	16.09	11.83	5.15	4.44	4.00	3.47	0.54	1.57	0.67	8.44	11.28	5.11	72.59
1991	6.76	8.57	5.65	9.47	2.68	1.86	0.33	2.31	0.07	2.44	10.53	6.60	57.27
1992	9.34	5.69	1.19	7.49	0.52	0.55	0.24	0.77	2.66	4.10	10.11	5.99	48.65
1993	6.27	1.35	6.93	9.01	4.74	3.70	1.81	0.57	0.12	2.23	6.68	9.59	53.00
1994	6.81	11.34	6.48	4.31	2.52	2.27	0.81	1.49	2.83	9.52	12.56	14.84	75.78
1995	10.59	5.94	8.76	5.80	2.14	2.63	0.64	1.95	2.19	7.14	17.47	11.26	76.51
1996	9.08	14.52	4.70	10.07	3.96	1.38	1.92	0.71	3.34	11.14	11.51	20.38	92.71
1997	12.74	3.95	15.31	6.62	3.61	4.53	1.35	2.90	7.27	11.56	7.65	7.99	85.48
1998	16.20	10.52	10.23	2.49	3.75	1.67	0.33	0.25	0.66	6.86	19.60	16.59	89.15
1999	13.87	18.26	9.53	2.59	5.61	3.43	0.78	1.04	0.21	3.54	15.87	12.85	87.58
2000	11.67	5.05	5.46	3.83	4.14	4.17	0.24	0.61	2.15	4.62	3.86	5.81	51.61
2001	4.60	3.43	5.23	5.59	3.12	2.83	0.85	3.67	0.89	4.21	14.21	11.83	60.46
2002	14.65	4.95	6.72	5.02	1.78	2.32	0.14	0.03	1.07	0.93	5.72	12.77	56.10
2003	12.07	4.75	13.45	5.79	2.18	0.87	0.34	0.10	1.91	6.20	9.75	9.80	67.21
2004	12.90	6.97	5.47	2.85	3.36	1.68	0.15	3.97	4.27	8.43	6.70	7.24	63.99
2005	5.78	3.30	7.64	8.32	5.46	1.67	2.26	0.25	1.22	8.89	10.53	14.36	69.68
2006	24.10	2.94	5.66	3.41	3.30	2.14	1.19	0.56	1.44	3.29	21.07	10.75	79.85
2007	7.62	10.78	8.85	3.00	1.63	2.48	2.81	0.84	1.78	7.34	5.07	12.19	64.39
2008	9.24	5.49	8.79	5.12	2.09	2.58	0.46	2.99	0.48	4.16	11.49	9.95	62.84
2009	10.71	3.65	7.70	4.14	5.83	0.39	0.61	0.92	3.26	7.92	16.71	5.76	67.60
POR= 57 YRS	10.47	7.44	7.34	4.93	3.08	2.50	1.06	1.37	2.60	6.06	10.62	10.69	68.16

WBAN : 94224

AVERAGE TEMPERATURE (°F) 2009 ASTORIA (KAST)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	38.7	46.4	44.8	49.5	52.3	55.4	60.7	58.8	58.9	55.0	50.1	47.5	51.5
1981	48.2	46.6	48.1	49.5	53.4	57.7	60.4	62.4	59.1	52.7	49.0	45.3	52.7
1982	41.7	44.0	45.2	46.8	52.2	57.8	59.3	61.3	59.7	55.5	46.6	43.5	51.1
1983	47.3	50.2	50.9	50.2	55.7	59.8	61.2	61.7	56.5	50.4	48.6	37.9	52.5
1984	43.5	45.4	48.4	46.7	50.8	55.6	59.6	59.9	58.4	50.3	46.7	39.6	50.4
1985	39.3	40.3	42.8	48.4	52.5	56.8	60.6	59.4	56.2	50.7	39.2	39.3	48.8
1986	46.9	44.1	49.3	47.5	52.8	58.4	58.7	61.1	55.7	54.9	47.9	44.4	51.8
1987	43.7	46.3	48.0	50.4	55.0	57.4	59.2	60.4	58.4	54.5	49.6	40.9	52.0
1988	41.8	45.8	45.4	48.9	52.5	55.7	59.9	59.2	56.6	55.5	47.4	43.3	51.0
1989	42.1	37.1	45.1	51.5	53.1	58.7	59.8	60.5	60.4	52.8	49.2	44.0	51.2
1990	44.7	43.1	47.6	50.3	52.9	57.6	62.3	62.7	60.8	51.1	47.8	36.9	51.5
1991	41.3	48.0	43.3	46.8	50.8	54.5	59.6	59.7	60.6	51.2	47.3	44.5	50.6
1992	45.2	48.3	49.0	50.9	54.8	58.6	60.7	60.6	56.3	52.6	46.3	40.7	52.0
1993	38.9	41.9	47.4	49.2	56.2	57.5	59.0	60.7	56.6	54.1	42.3	42.7	50.5
1994	45.1	42.1	48.1	50.0	53.8	56.5	59.6	61.7	60.3	50.3	41.9	42.4	51.0
1995	46.3	46.1	46.3	48.3	53.8	57.3	61.8	59.7	61.3	52.9	50.5	45.2	52.5
1996	42.4	44.0	46.5	50.4	51.1	56.5	60.5	60.3	56.8	51.7	45.7	43.6	50.8
1997	43.6	43.8	45.9	48.9	56.8	58.1	61.4	63.9	61.9	52.7	50.2	43.9	52.6
1998	45.7	46.7	46.5	48.2	52.0	55.8	60.1	61.2	58.6	52.4	47.2	41.9	51.4
1999	43.1	44.3	44.5	47.5	51.5	56.5	59.1	61.5	57.8	52.5	54.4	47.4	51.7
2000	43.2	45.8	45.5	51.2	53.9	58.2	62.2	61.3	59.6	56.1	46.6	44.9	52.4
2001	44.4	43.0	46.1	46.9	52.9	55.2	58.6	60.7	57.6	51.4	48.7	44.3	50.8
2002	43.2	44.2	44.2	48.5	51.0	57.7	61.4	60.3	58.6	51.9	48.6	45.6	51.3
2003	48.4	44.1	47.6	48.4	52.5	58.6	61.8	61.4	59.6	55.5	45.3	44.1	52.3
2004	42.9	45.6	48.0	50.9	55.0	59.5	62.9	63.8	58.4	53.6	46.2	45.3	52.7
2005	44.7	44.7	48.3	49.8	56.4	58.3	62.1	62.3	56.0	53.2	45.2	43.5	52.0
2006	46.2	42.7	44.8	48.8	53.3	58.7	60.5	59.1	58.4	51.0	46.5	42.7	51.1
2007	40.1	43.9	46.7	47.8	52.8	56.2	62.0	61.3	57.5	51.1	45.2	42.2	50.6
2008	40.4	43.6	43.3	45.2	53.3	54.3	58.6	60.3	58.7	52.5	49.9	40.1	50.0
2009	43.2	42.4	43.5	48.2	53.2	59.1	61.7	61.8	60.5	53.4	48.5	40.2	51.3
POR= 57 YRS	42.5	44.2	45.5	48.2	52.7	57.0	60.3	60.8	58.5	52.7	46.9	42.9	51.0

HEATING DEGREE DAYS (base 65°F) 2009 ASTORIA (KAST)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	140	186	183	309	439	533	513	507	518	458	354	211	4351
1981-82	139	107	173	372	474	604	714	581	610	538	391	212	4915
1982-83	171	112	152	288	546	661	543	407	430	438	282	149	4179
1983-84	109	98	249	445	485	834	658	559	509	541	433	276	5196
1984-85	160	155	199	452	542	780	788	686	683	493	383	252	5573
1985-86	131	172	259	438	769	788	551	577	481	520	373	194	5253
1986-87	188	120	273	308	505	635	654	517	519	431	306	229	4685
1987-88	171	139	194	321	455	741	713	552	601	476	382	273	5018
1988-89	159	173	250	289	520	663	703	773	612	399	363	199	5103
1989-90	157	135	150	371	464	643	621	606	533	435	365	221	4701
1990-91	82	74	127	424	510	863	727	469	667	537	435	309	5224
1991-92	170	155	147	420	523	631	607	479	491	416	309	188	4536
1992-93	129	144	253	379	555	747	803	641	541	469	268	218	5147
1993-94	182	144	247	331	674	688	611	634	516	440	340	249	5056
1994-95	164	93	144	447	686	697	573	520	569	493	338	239	4963
1995-96	98	155	114	365	423	606	692	600	563	432	424	248	4720
1996-97	137	136	240	408	573	656	659	588	584	477	252	201	4911
1997-98	106	46	99	374	437	649	589	503	567	500	396	272	4538
1998-99	149	112	189	385	526	709	674	574	628	522	413	249	5130
1999-00	175	105	219	380	312	538	670	547	598	409	342	203	4498
2000-01	88	110	161	268	543	614	628	610	578	538	369	286	4793
2001-02	192	132	216	415	482	633	667	577	639	487	429	214	5083
2002-03	114	148	187	400	486	593	506	578	532	490	382	191	4607
2003-04	100	105	161	289	582	639	677	555	519	417	304	163	4511
2004-05	76	43	193	346	555	604	622	562	508	450	268	195	4422
2005-06	87	84	262	358	589	658	576	619	618	479	360	189	4879
2006-07	146	176	196	426	548	682	768	585	563	510	375	257	5232
2007-08	96	109	227	424	587	699	755	611	666	588	371	316	5449
2008-09	191	140	189	379	444	765	671	625	660	497	359	172	5092
2009-	108	98	149	354	488	761							

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COOLING DEGREE DAYS (base 65°F) 2009 ASTORIA (KAST)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1980	0	0	0	0	0	0	13	0	7	8	0	0	28
1981	0	0	0	0	0	0	4	36	2	0	0	0	42
1982	0	0	0	0	0	6	0	4	1	1	0	0	12
1983	0	0	0	0	0	0	0	4	1	0	0	0	5
1984	0	0	0	0	0	0	3	1	5	0	0	0	9
1985	0	0	0	0	3	11	1	6	0	0	0	0	21
1986	0	0	0	0	2	0	0	5	0	0	0	0	7
1987	0	0	0	0	2	5	0	5	5	3	0	0	20
1988	0	0	0	0	0	0	10	3	6	0	0	0	19
1989	0	0	0	1	0	15	0	1	17	0	0	0	34
1990	0	0	0	0	0	5	5	12	10	0	0	0	32
1991	0	0	0	0	0	0	7	0	24	1	0	0	32
1992	0	0	0	0	0	6	1	18	1	0	0	0	26
1993	0	0	0	0	2	0	0	16	2	0	0	0	20
1994	0	0	0	0	0	0	4	1	9	0	0	0	14
1995	0	0	0	0	0	16	8	0	13	0	0	0	37
1996	0	0	0	0	0	1	8	0	0	3	0	0	12
1997	0	0	0	0	5	0	0	18	13	0	0	0	36
1998	0	0	0	0	0	0	2	3	0	0	0	0	5
1999	0	0	0	3	3	0	0	2	12	0	0	0	20
2000	0	0	0	0	0	7	11	1	6	0	0	0	25
2001	0	0	0	0	1	0	0	5	0	0	0	0	6
2002	0	0	0	0	0	1	9	13	1	0	0	0	24
2003	0	0	0	0	1	8	9	2	3	0	0	0	23
2004	0	0	0	0	0	5	19	13	0	0	0	0	37
2005	0	0	0	0	9	0	3	4	0	0	0	0	16
2006	0	0	0	0	6	7	11	0	6	0	0	0	30
2007	0	0	0	0	0	0	10	3	10	0	0	0	23
2008	0	0	0	0	14	3	0	2	7	0	0	0	26
2009	0	0	0	0	0	0	13	3	20	0	0	0	36

SNOWFALL (inches) 2009 ASTORIA (KAST)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1978-79	0.0	0.0	0.0	T	0.1	2.5	0.3	T	T	T	0.0	0.0	2.9
1979-80	0.0	0.0	0.0	T	0.3	0.2	0.5	1.7	0.5	T	0.0	0.0	3.2
1980-81	0.0	0.0	0.0	0.0	T	T	0.0	0.0	0.0	T	0.0	0.0	T
1981-82	0.0	0.0	0.0	0.0	T	T	6.1	T	T	T	0.0	0.0	6.1
1982-83	0.0	0.0	0.0	0.0	T	0.0	T	0.0	T	T	T	0.0	T
1983-84	0.0	0.0	0.0	0.0	T	T	0.0	T	T	T	T	0.0	T
1984-85	0.0	0.0	0.0	T	T	T	0.0	1.1	T	T	T	0.0	1.1
1985-86	0.0	0.0	0.0	0.0	4.6	0.4	T	T	T	T	0.0	0.0	5.0
1986-87	0.0	0.0	0.0	0.0	T	0.0	T	0.0	T	T	0.0	0.0	T
1987-88	0.0	0.0	0.0	0.0	T	T	T	0.0	T	T	0.0	0.0	T
1988-89	0.0	0.0	0.0	0.0	T	T	T	1.5	T	T	T	T	1.5
1989-90	0.0	0.0	0.0	T	T	0.0	T	1.8	T	T	0.0	0.0	1.8
1990-91	0.0	0.0	0.0	0.0	T	1.4	0.0	0.0	T	T	T	0.0	1.4
1991-92	0.0	0.0	0.0	0.0	T	0.0	T	T	0.0	T	0.0	0.0	T
1992-93	0.0	0.0	0.0	T	0.0	T	5.2	3.4	0.0	0.0	0.0	0.0	8.6
1993-94	0.0	0.0	0.0	0.0	T	0.0	T	T	T	T	0.0	0.0	T
1994-95	0.0	0.0	0.0	T	T	0.6	T	T	T	0.0	0.0	0.0	0.6
1995-96	0.0	0.0	0.0	0.0	0.0	T	0.2						
1996-97													
1997-98													
1998-99													
1999-00													
2000-01													
2001-02													
2002-03													
2003-04													
2004-05													
2005-2006-2008-09													
POR= 43 YRS	0.0	0.0	0.0	T	0.2	1.1	2.0	0.4	0.5	T	T	T	4.2

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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</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 ASTORIA OREGON (KAST)

Astoria is ringed by low mountains on the north, east, and south. On the west, the area is open to the Pacific Ocean at the mouth of the Columbia River. North of the station, 8 to 12 miles distant, the Washington hills rise to 1,000 to 1,200 feet. Maximum visibility is 19 miles north-northeastward to the Willapa Hills. East-northeastward 2 to 4 miles, the Astoria hills rise to 600 feet. East-southeastward 4 to 14 miles, consecutively, rise other ridges of the Coast Ranges, and southeastward is the most prominent landmark, Saddle Mountain, 3,283 feet high. Forests cover most of the uplands. From Seaside northward to the south bank of the Columbia are 18 miles of sandy beaches, and a 2 to 3 mile wide stretch of dune lands.

The airport sits by the south bank of the Columbia estuary, west of Youngs Bay, on the flood plain or tidal flats. Low dikes prevent flooding and increase the bog-like characteristics of the area. When air temperature falls below water temperature, fog forms easily, or rolls in from the ocean, river, or bay. This usually begins from late afternoon to early morning, and may persist well into the following day. During the summer months, sea breezes commonly blow up the river by noon and stop the diurnal rise in temperature. In winter, cold air may funnel down the Columbia from the interior.

Weather hazards occasionally occur. For flying, the greatest are fog and gales. Even with moderate surface velocities, wind and turbulence at 800 feet may be severe enough to upset a heavy plane. Even in fair weather, wind and wave may combine to produce a type of breaker known as the widow-maker and swamp a boat. Heavy rains inundate lowlands, and high tides aggravated by gales may push seawater across highways or up beaches. Rains may cause earthslides, mostly in highway cuts. Lightning strikes are rare. Showers of ice pellets may briefly whiten the ground during many of the months. Occasionally in winter there may be rather brief periods of freezing temperatures, with snow or ice.

The climate is generally healthful, except for dampness and a lack of sunshine in winter. Heat waves are uncommon and usually brief. Soil leaching necessitates supplementary mineral diets for both animals and plants.

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