

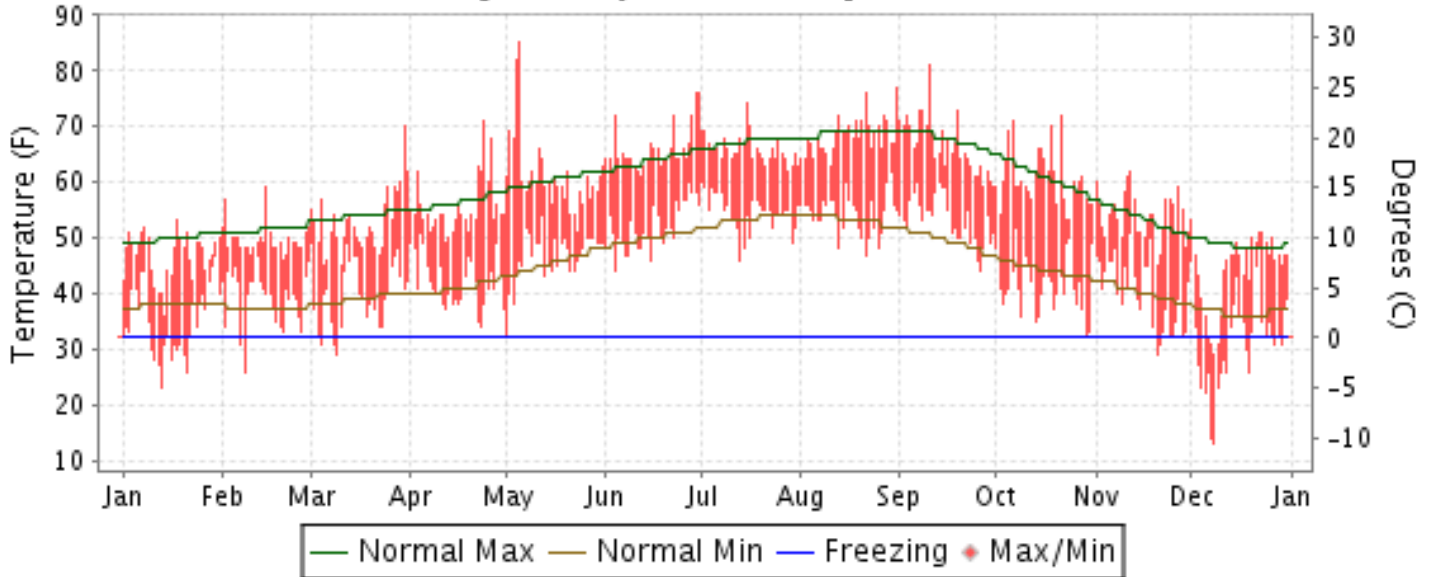


2013 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

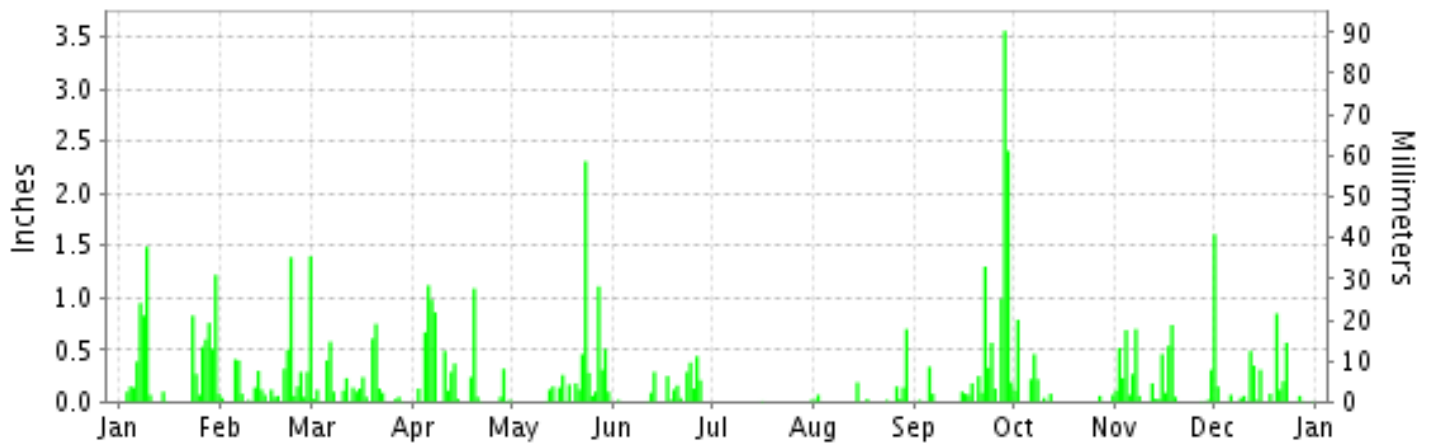
ISSN 0198-4098

ASTORIA, OREGON (KAST)

Daily Max/Min Temperature



Daily Precipitation



Daily Station Pressure



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NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
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NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2013

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	46.7	49.6	52.7	55.4	61.3	65.8	65.8	68.4	66.6	60.6	53.8	44.2	57.6	
	HIGHEST DAILY MAXIMUM	53	59	70	71	85	76	74	77	81	72	62	53	85	
	DATE OF OCCURRENCE	18	15	30	24	05	30+	15	31	10	21	12	01	MAY 05	
	MEAN DAILY MINIMUM	34.8	39.2	39.8	42.0	46.6	51.9	54.5	54.4	53.3	41.5	40.0	31.6	44.1	
	LOWEST DAILY MINIMUM	23	26	29	34	32	44	46	47	44	32	29	13	13	
	DATE OF OCCURRENCE	13	08	09	23	01	04	13	21	26	29	20	08	DEC 08	
	AVERAGE DRY BULB	40.8	44.4	46.3	48.7	54.0	58.9	60.2	61.4	59.9	51.0	46.9	37.9	50.9	
	MEAN WET BULB	38.5	42.7	43.8	45.8	50.4	55.1	56.0	58.2	57.2	48.2	44.6	36.5	48.1	
	MEAN DEW POINT	35.9	40.4	41.0	42.6	47.4	52.1	53.3	56.4	55.4	45.8	41.3	34.0	45.5	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MAXIMUM <= 32°	0	0	0	0	15	0	0	0	0	0	0	4	19	
	MINIMUM <= 32°	14	2	4	0	1	0	0	0	0	1	5	17	44	
MINIMUM <= 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	744	570	573	481	334	181	142	105	146	424	536	835	5071	
	COOLING DEGREE DAYS	0	0	0	0	1	3	0	2	3	0	0	0	9	
RH	MEAN (PERCENT)	86	86	84	81	81	81	81	87	87	84	82	86	84	
	HOUR 04 LST	89	90	91	89	91	92	89	96	94	94	87	89	91	
	HOUR 10 LST	83	82	78	74	74	72	74	77	80	75	76	85	78	
	HOUR 16 LST	81	80	75	72	75	72	73	79	79	74	78	84	77	
	HOUR 22 LST	90	89	88	86	87	88	87	94	92	91	86	89	89	
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	4	3	5	0	2	1	1	5	2	10	4	10	47	
	THUNDERSTORMS	0	0	0	0	0	0	0	0	2	0	0	0	2	
PR	MEAN STATION PRESS. (IN.)	30.18	30.17	30.10	30.14	30.05	30.02	30.06	29.98	29.87	30.10	30.08	30.26	30.08	
	MEAN SEA-LEVEL PRESS. (IN.)	30.20	30.20	30.13	30.16	30.07	30.05	30.08	30.01	29.89	30.12	30.11	30.28	30.11	
WINDS	RESULTANT SPEED (MPH)	1.7	3.2	2.5	4.6	3.1	3.9	7.9	3.4	4.0	0.4	1.3	1.5	2.2	
	RES. DIR. (TENS OF DEGS.)	14	22	24	26	24	27	31	27	23	36	18	12	26	
	MEAN SPEED (MPH)	6.0	6.5	6.4	8.2	7.2	7.0	9.3	5.6	6.7	4.4	7.0	5.4	6.6	
	PREVAIL.DIR.(TENS OF DEGS.)	10	20	20	27	22	32	32	24	23	13	09	09	32	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	31	31	33	28	26	26	24	23	39	24	36	30	39	
	DIR. (TENS OF DEGS.)	19	20	20	20	32	22	31	19	20	32	20	21	20	
	DATE OF OCCURRENCE	08	22	20	10	02	10	26	29	29	08	18	20	SEP 29	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	47	46	58	41	36	54	32	33	59	36	48	43	59	
DIR. (TENS OF DEGS.)	19	18	20	17	18	27	01	19	19	22	18	22	19		
DATE OF OCCURRENCE	08	22	20	04	13	13	26	29	29	06	18	20	SEP 29		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	9.10	6.26	3.92	6.84	6.40	2.45	0.03	1.35	10.69	2.05	5.11	5.00	59.20	
	GREATEST 24-HOUR (IN.)	1.54	1.54	1.23	1.53	2.59	0.52	0.02	0.81	3.84	0.81	0.97	1.61	3.84	
	DATE OF OCCURRENCE	29-30	21-22	19-20	06-07	23-24	25-26	31	28-29	27-28	01-02	06-07	01	SEP 27-28	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	19	21	21	18	18	14	2	9	17	9	19	17	184	
PRECIPITATION 0.10	15	13	13	12	15	9	0	4	12	5	11	9	118		
PRECIPITATION 1.00	2	2	0	2	2	0	0	0	3	0	0	1	12		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)														
	GREATEST 24-HOUR (IN.)														
	DATE OF OCCURRENCE														
	MAXIMUM SNOW DEPTH (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	49.8	51.6	53.8	56.4	60.4	63.9	67.4	68.7	67.6	60.9	53.5	48.7	58.6	
	MEAN DAILY MAXIMUM	61	48.4	51.1	52.9	55.8	60.3	64.0	67.6	68.6	67.6	61.0	53.6	48.7	58.3	
	HIGHEST DAILY MAXIMUM	59	67	72	73	83	93	93	100	96	95	85	73	64	100	
	YEAR OF OCCURRENCE		1986	1996	1994	1999	2008	1955	1961	1981	1972	1987	2010	1980	JUL 1961	
	MEAN OF EXTREME MAXS.	61	57.7	61.3	64.6	70.4	76.6	78.3	81.3	81.3	83.1	74.7	63.1	57.5	70.8	
	NORMAL DAILY MINIMUM	30	37.7	37.2	38.9	41.0	45.6	50.0	53.1	53.1	49.4	44.2	40.1	36.6	43.9	
	MEAN DAILY MINIMUM	61	36.7	37.3	38.1	40.5	45.0	49.8	52.8	53.0	49.5	44.4	40.1	37.0	43.7	
	LOWEST DAILY MINIMUM	59	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.	61	24.6	26.1	28.5	32.0	35.8	42.0	45.1	45.3	40.1	33.5	28.7	25.4	33.9	
	NORMAL DRY BULB	30	43.8	44.4	46.4	48.7	53.0	57.0	60.3	60.9	58.5	52.6	46.8	42.7	51.3	
	MEAN DRY BULB	61	42.6	44.2	45.5	48.2	52.7	56.9	60.2	60.8	58.5	52.7	46.9	42.9	51.0	
	MEAN WET BULB	30	40.6	40.8	42.7	44.9	48.9	52.8	55.9	56.8	54.4	49.3	44.4	39.9	47.6	
	MEAN DEW POINT	30	39.5	39.1	41.4	43.6	47.7	51.5	54.8	55.5	53.2	48.3	43.3	38.8	46.4	
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	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	
	MAXIMUM <= 32	30	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	
MINIMUM <= 32	30	6.3	6.0	3.4	1.0	0.0	0.0	0.0	0.0	0.0	0.5	3.6	7.5	28.3		
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	659	577	578	489	372	242	150	131	200	386	546	693	5023	
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	0	0	3	4	5	0	0	0	12	
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)	50	3.5	3.3	2.9	1.9	1.3	1.4	2.3	3.6	5.9	6.4	4.4	2.9	39.8	
	THUNDERSTORMS	61	0.8	0.6	0.7	0.6	0.3	0.2	0.4	0.3	0.8	1.0	1.3	1.1	8.1	
CLOUDINESS	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)	30	30.03	30.01	30.00	30.03	30.03	30.04	30.06	30.03	30.01	30.04	30.01	30.03	30.03	
	MEAN SEA-LEVEL PRES. (IN)	30	30.05	30.04	30.03	30.06	30.06	30.06	30.08	30.05	30.03	30.06	30.03	30.05	30.05	
WINDS	MEAN SPEED (MPH)	30	8.5	8.1	8.2	8.1	7.9	8.0	8.3	7.5	6.8	6.9	8.1	8.4	7.9	
	PREVAIL. DIR. (TENS OF DEGS)	31	09	10	19	23	32	32	32	32	32	12	09	09	32	
	MAXIMUM 2-MINUTE: SPEED (MPH)	19	48	44	47	43	35	32	26	29	39	40	46	55	55	
	DIR. (TENS OF DEGS)		17	19	18	18	20	20	21	19	20	20	19	19	19	
	YEAR OF OCCURRENCE		2000	1999	1999	1996	2010	2003	2012	2008	2013	2007	2012	2007	DEC 2007	
	MAXIMUM 3-SECOND SPEED (MPH)	19	66	64	76	61	53	54	59	48	59	67	74	94	94	
	DIR. (TENS OF DEGS)		17	18	24	19	19	27	33	17	19	19	21	19	19	
YEAR OF OCCURRENCE		2000	1999	2012	1996	2010	2013	2009	2012	2013	1994	2012	2007	DEC 2007		
PRECIPITATION	NORMAL (IN)	30	10.20	7.19	7.45	5.20	3.32	2.55	1.03	1.16	2.14	5.98	11.15	9.89	67.26	
	MAXIMUM MONTHLY (IN)	59	24.10	21.89	15.31	10.07	6.60	5.48	4.39	5.22	10.69	13.15	21.07	20.38	24.10	
	YEAR OF OCCURRENCE		2006	1961	1997	1996	1960	1954	1983	1968	2013	2012	2006	1996	JAN 2006	
	MINIMUM MONTHLY (IN)	59	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)	59	5.14	3.39	2.67	3.00	2.59	2.42	1.98	2.78	3.84	3.71	5.56	3.61	5.56	
	YEAR OF OCCURRENCE		1990	1996	2012	1996	2013	1968	1974	2001	2013	1982	1998	1974	NOV 1998	
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	21.4	17.7	21.0	18.4	16.4	13.2	8.3	7.4	9.4	15.9	21.4	20.6	191.1	
PRECIPITATION >= 1.00	30	2.5	1.5	1.5	0.5	0.3	0.3	0.1	0.2	0.3	1.5	3.0	2.7	14.4		
SNOWFALL	NORMAL (IN)	30	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	1.4	
	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	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.5		

PRECIPITATION (inches) 2013 ASTORIA (KAST)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
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
2010	11.19	7.41	7.15	7.67	4.45	3.88	0.60	1.12	4.56	7.96	12.45	11.37	79.81
2011	12.20	7.42	11.85	8.01	4.04	1.66	1.39	0.08	3.02	3.97	10.40	4.85	68.89
2012	10.80	6.80	14.13	7.40	4.94	4.82	0.50	0.06	0.22	13.15	13.84	14.63	91.29
2013	9.10	6.26	3.92	6.84	6.40	2.45	0.03	1.35	10.69	2.05	5.11	5.00	59.20
POR= 61 YRS	10.50	7.41	7.46	5.10	3.21	2.55	1.03	1.32	2.73	6.11	10.61	10.58	68.61

WBAN : 94224

AVERAGE TEMPERATURE (°F) 2013 ASTORIA (KAST)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
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
2010	48.3	47.7	48.2	48.7	51.0	56.3	59.5	60.2	59.8	53.1	44.7	44.6	51.8
2011	42.3	40.6	45.1	44.9	50.2	56.7	59.1	61.0	59.7	53.2	44.6	40.2	49.8
2012	42.3	44.1	43.7	48.8	51.5	55.1	59.3	60.7	58.1	52.2	47.9	43.7	50.6
2013	40.8	44.4	46.3	48.7	54.0	58.9	60.2	61.4	59.9	51.0	46.9	37.9	50.9
POR= 61 YRS	42.6	44.2	45.5	48.2	52.7	56.9	60.2	60.8	58.5	52.7	46.9	42.9	51.0

HEATING DEGREE DAYS (base 65°F) 2013 ASTORIA (KAST)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
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
2009-10	108	98	149	354	488	761	514	476	515	486	427	253	4629
2010-11	170	156	153	364	601	626	697	677	612	594	452	242	5344
2011-12	174	118	157	361	606	764	697	601	656	481	410	291	5316
2012-13	169	139	209	390	508	651	744	570	573	481	334	181	4949
2013-	142	105	146	424	536	835							

WBAN : 94224

COOLING DEGREE DAYS (base 65°F) 2013 ASTORIA (KAST)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
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
2010	0	0	0	0	0	0	8	17	2	0	0	0	27
2011	0	0	0	0	0	1	0	3	2	0	0	0	6
2012	0	0	0	0	0	0	0	16	9	0	0	0	25
2013	0	0	0	0	1	3	0	2	3	0	0	0	9

SNOWFALL (inches) 2013 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

WBAN : 94224

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. 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 CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS.</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</p>	<p>PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY. ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER. STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED STATION HISTORY INFORMATION GO TO "Historical Observing Metadata Repository", URL IS: http://www.ncdc.noaa.gov/homr/ 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 "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p>
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2013 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.

Station History

ASTORIA, OR

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
ASTORIA REGIONAL AIRPORT	1998-01-01	2006-07-04	46° 9'	-123° 52'	9		ASOS, COOP, USHCN
ASTORIA REGIONAL AIRPORT	2006-07-04	Present	46° 9'	-123° 52'	9		ASOS, COOP, USHCN
ASTORIA CLATSOP AP	1953-01-01	1953-01-15	46° 9'	-123° 52'	10		AIRWAYS, COOP, USHCN
ASTORIA REGIONAL AIRPORT	1997-01-05	1998-01-01	46° 9'	-123° 52'	9	600 FT NNW	ASOS, COOP, USHCN
CLATSOP	1946-11-01	1946-11-15	46° 9'	-123° 52'			AIRWAYS
ASTORIA CLATSOP COUNTY AP	1953-01-15	1969-01-01	46° 9'	-123° 52'	10		AIRWAYS, COOP, USHCN
ASTORIA CLATSOP COUNTY AP	1969-01-01	1976-01-01	46° 9'	-123° 52'	10		COOP, USHCN, WXSVC
ASTORIA REGIONAL AIRPORT	1993-03-01	1997-01-05	46° 9'	-123° 52'	8		ASOS, COOP, USHCN
ASTORIA	1897-02-01	1903-12-31	46° 10'	-123° 49'			WXSVC
ASTORIA CLATSOP AP	1946-11-15	1953-01-01	46° 9'	-123° 52'			AIRWAYS
ASTORIA CLATSOP COUNTY AP	1976-01-01	1993-03-01	46° 9'	-123° 52'	8		COOP, USHCN, WXSVC

Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
TEMP	2001-01-30	2006-07-04	DAILY	2400	ATEMP		
PRECIP	2001-01-30	2006-07-04	HOURLY	2400	TB	RCRD	
PRECIP	2006-07-04	Present	DAILY	2400	PCPNX		
TEMP	1982-01-01	1990-05-14	DAILY	2400			
PRECIP	1997-01-05	2001-01-30	DAILY	2400	TB	RCRD	
TEMP	1997-01-05	2001-01-30	DAILY	2400	HYGR		
PRECIP	2001-01-30	2006-07-04	DAILY	2400	TB	RCRD	
PRECIP	1982-01-01	1990-05-14	HOURLY	2400			
TEMP	1995-07-01	1997-01-05	DAILY	2400	HYGR		
PRECIP	1997-01-05	2001-01-30	HOURLY	2400	TB	RCRD	
PRECIP	1982-01-01	1990-05-14	DAILY	2400	UNIV	RCRD	
PRECIP	1990-05-14	1995-07-01	HOURLY	2400			
PRECIP	1995-07-01	1997-01-05	DAILY	2400	UNIV	RCRD	
TEMP	1899-01-01	1982-01-01	DAILY	2400			
PRECIP	2006-07-04	Present	HOURLY	2400	AWPAG	SHLD;RCRD;HTD	
PRECIP	1899-01-01	1982-01-01	DAILY	2400	UNIV	RCRD	
PRECIP	1990-05-14	1995-07-01	DAILY	2400	UNIV	RCRD	
PRECIP	1995-07-01	1997-01-05	HOURLY	2400	UNIV	RCRD	
TEMP	2006-07-04	Present	DAILY	2400	ATEMP		
TEMP	1990-05-14	1995-07-01	DAILY	2400	HYGR		

* 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>

INQUIRES/COMMENTS CALL: (828) 271-4800, option 2

Fax Number : (828) 271-4876

TDD : (828) 271-4010

Email : ncdc.orders@noaa.gov

NOAA/National Climatic Data Center

Attn: User Engagement & Services Branch

151 Patton Avenue

Asheville, NC 28801-5001

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