

2002

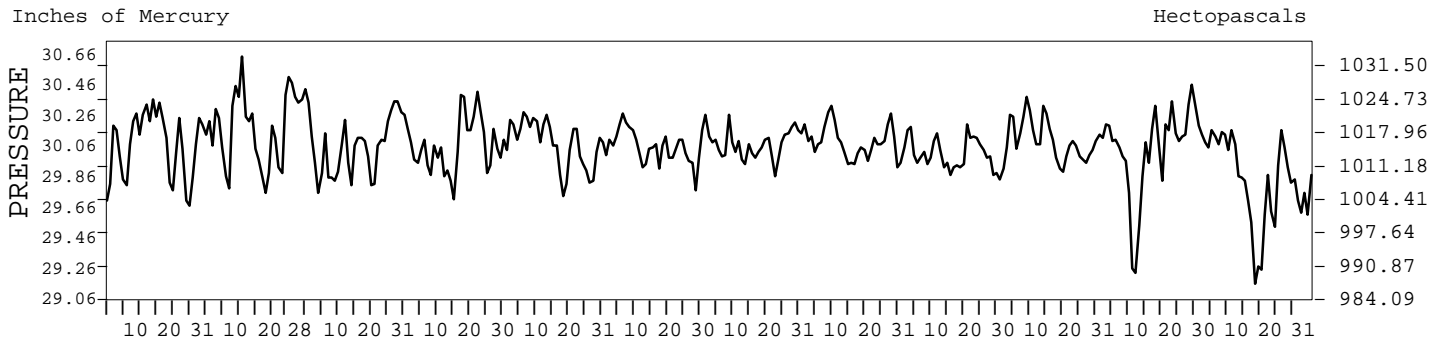
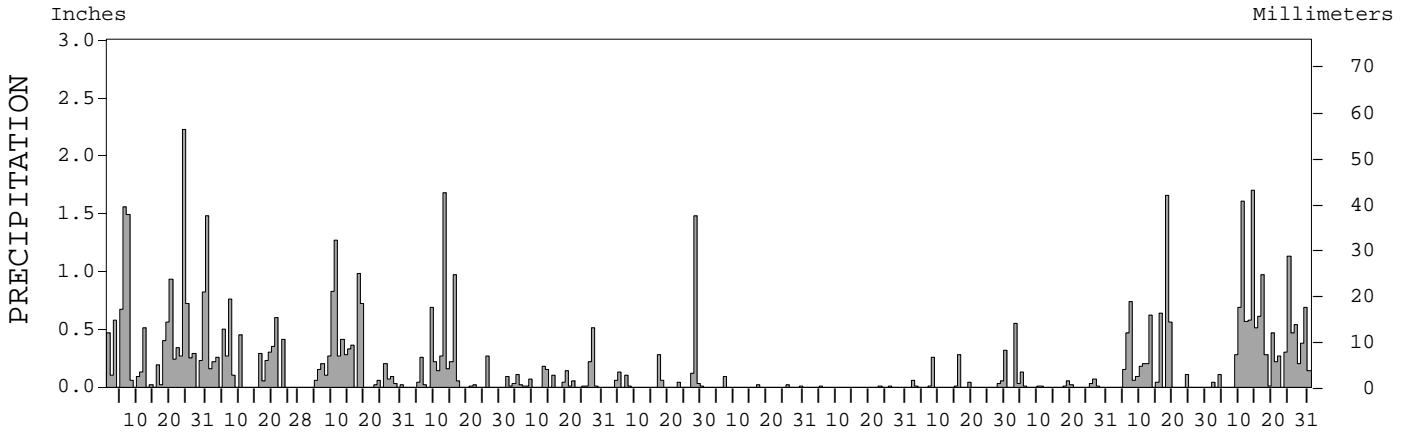
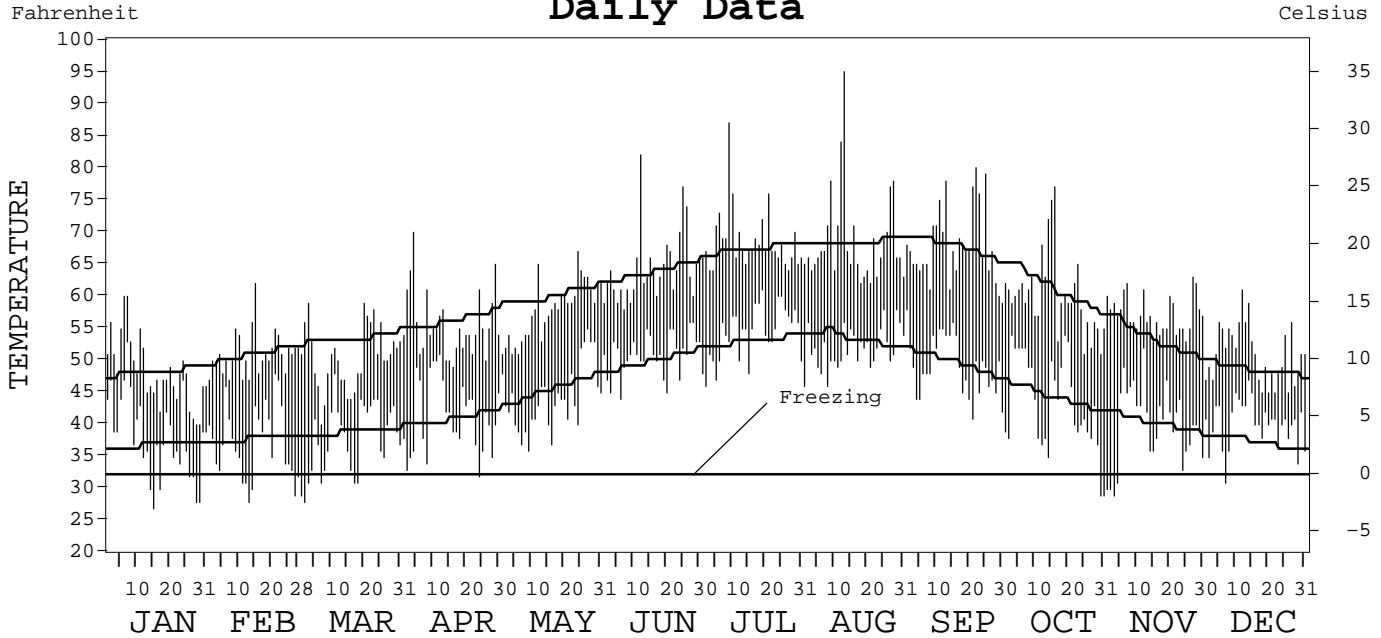
LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-4098

ASTORIA,
OREGON (AST)

Daily Data



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METEOROLOGICAL DATA FOR 2002

ASTORIA, OR (AST)

LATITUDE: 46° 09' 29" N LONGITUDE: 123° 52' 39" 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	48.3	51.1	50.5	55.6	57.8	64.4	68.5	68.7	67.9	60.3	57.2	51.0	58.4	
	HIGHEST DAILY MAXIMUM	60	62	59	70	67	82	87	95	80	77	63	61	95	
	DATE OF OCCURRENCE	07+	15	20+	04	24	12	09	13	22	16	27	12	AUG 13	
	MEAN DAILY MINIMUM	38.1	37.2	37.8	41.4	44.1	51.0	54.2	51.9	49.2	43.5	40.0	40.1	44.0	
	LOWEST DAILY MINIMUM	27	28	28	32	36	44	46	46	41	29	29	31	27	
	DATE OF OCCURRENCE	15	13	02	24	09	06	02	08+	21	31+	03	07	JAN 15	
	AVERAGE DRY BULB	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	
	MEAN WET BULB		41.8	41.4	45.4	48.2	54.4	57.4	56.4	55.0	48.7		43.6		
	MEAN DEW POINT		38.2	37.7	42.3	44.8	51.5	54.5	53.7	52.4	45.2		41.1		
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	MAXIMUM ≤ 32°	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MINIMUM ≤ 32°	7	6	6	1	0	0	0	0	0	2	4	1	1	27	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
H/C	HEATING DEGREE DAYS	667	577	639	487	429	214	114	148	187	400	486	593	4941	
	COOLING DEGREE DAYS	0	0	0	0	0	1	9	13	1	0	0	0	24	
RH	MEAN (PERCENT)	89	81	80	81	80	81	80	81	83	82	83	85	82	
	HOUR 04 LST	91	86	86	89	89	89	90	91	94	91	86	88	89	
	HOUR 10 LST	90	79	78	76	73	78	74	75	76	77	81	85	78	
	HOUR 16 LST	86	73	72	70	70	72	70	69	69	70	76	81	73	
	HOUR 22 LST	91	83	85	86	84	87	85	86	90	86	87	87	86	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	1	3	2	1	1	3	2	1	10	8	5	1	38	
	THUNDERSTORMS	2	0	1	0	0	0	0	1	1	0	1	1	6	
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.)	30.06	30.17	30.07	30.06	30.08	30.05	30.08	30.08	30.00	30.11	30.03	29.82	30.05	
	MEAN SEA-LEVEL PRESS. (IN.)	30.09	30.19	30.09	30.09	30.10	30.07	30.10	30.10	30.02	30.13	30.05	29.84	30.07	
WINDS	RESULTANT SPEED (MPH)	4.3	2.0	2.8	4.3	4.3	4.7	5.5	4.9		0.4	3.7	5.0		
	RES. DIR. (TENS OF DEGS.)	19	16	23	25	27	27	29	29		05	15	13		
	MEAN SPEED (MPH)	9.1	8.2	8.6	8.9	7.7	7.6	8.1	7.1	5.9	5.7	6.8	8.8	7.7	
	PREVAIL. DIR. (TENS OF DEGS.)	11	08	21	20	24	23	31	31	30	08	09	08	24	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	41	30	35	31	26	26	24	23	24	24	40	44	44	
	DIR. (TENS OF DEGS.)	19	30	19	27	19	19	30	31	31	07	19	19	19	
	DATE OF OCCURRENCE	07	10	11	13+	28	28	11	09	23+	12	16	27	DEC 27	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	60	40	48	45	43	37	28	26	30	29	56	59	60	
DIR. (TENS OF DEGS.)	18	18	19	26	21	19	30	30	21	08	17	20	18		
DATE OF OCCURRENCE	06	21	11	13	28	28	20+	28+	13	31	16	27	JAN 06		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	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	
	GREATEST 24-HOUR (IN.)	2.37	0.76	1.48	1.76	0.52	1.48	0.09	0.01	0.33	0.55	2.16	1.70	2.37	
	DATE OF OCCURRENCE	06-07	07	10-11	12-13	27-28	28	07	26	29-30	03	18-19	14	JAN 06-07	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	26	15	21	15	20	11	4	3	10	12	14	24	175	
PRECIPITATION ≥ 0.10	22	14	14	10	7	5	0	0	3	2	11	22	110		
PRECIPITATION ≥ 1.00	4	0	1	1	0	1	0	0	0	0	1	3	11		
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, OR (AST)

LATITUDE: 46° 09' 29" N LONGITUDE: 123° 52' 39" 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	48	48.0	51.0	52.9	55.9	60.2	64.0	67.5	68.8	67.6	61.3	53.7	48.6	58.3
	HIGHEST DAILY MAXIMUM	48	67	72	73	83	87	93	100	96	95	85	71	64	100
	YEAR OF OCCURRENCE		1986	1996	1994	1999	1985	1955	1961	1981	1972	1987	1999	1980	JUL 1961
	MEAN OF EXTREME MAXS.	49	57.6	61.3	64.6	70.5	76.2	77.9	80.8	81.2	83.3	75.1	63.0	57.5	70.8
	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	48	36.1	37.3	37.8	40.5	44.9	49.6	52.5	52.8	49.2	44.2	40.0	37.0	43.5
	LOWEST DAILY MINIMUM	48	11	9	22	29	30	37	39	39	33	26	15	6	6
	YEAR OF OCCURRENCE		1980	1989	1971	1968	1954	1980	1971	1973	1983	1971	1955	1990	DEC 1990
	MEAN OF EXTREME MINS.	49	23.5	26.1	28.1	31.7	35.7	41.7	44.8	45.0	39.5	33.7	28.8	25.6	33.7
	NORMAL DRY BULB	30	41.9	44.2	45.7	48.2	52.5	56.9	60.0	60.7	58.4	52.6	46.9	42.4	50.9
	MEAN DRY BULB	49	42.0	44.2	45.4	48.2	52.6	56.8	60.0	60.8	58.5	52.7	46.9	42.9	50.9
	MEAN WET BULB	44	40.1	41.6	42.5	45.0	49.1	53.2	56.2	56.8	54.8	50.0	44.6	41.1	47.9
	MEAN DEW POINT	44	37.3	38.5	39.4	41.7	46.1	50.5	53.5	54.4	52.2	47.4	42.1	38.5	45.1
	NORMAL NO. DAYS WITH:														
	MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.4
	MAXIMUM ≤ 32°	30	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.8
MINIMUM ≤ 32°	30	9.5	6.5	5.7	2.1	0.1	0.0	0.0	0.0	0.0	0.5	4.2	8.7	37.3	
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	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	83	82	81	80	80	80	80	82	81	83	83	84	82
	HOUR 04 LST	30	86	87	87	88	89	89	89	91	90	89	87	86	88
	HOUR 10 LST	30	84	82	79	74	74	75	75	77	75	81	83	84	79
	HOUR 16 LST	30	77	74	70	69	69	70	69	70	69	72	77	80	72
	HOUR 22 LST	30	84	85	85	84	84	85	86	87	87	88	86	86	86
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG(VISBY≤1/4 MI)	48	3.6	2.9	2.6	2.2	1.5	1.4	2.2	3.9	6.0	6.5	3.9	3.4	40.1
	THUNDERSTORMS	48	0.8	0.5	0.5	0.6	0.3	0.3	0.4	0.3	0.8	1.0	1.3	0.9	7.7
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	1	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)	29	30.03	30.01	29.99	30.05	30.05	30.06	30.07	30.03	30.02	30.04	30.00	30.04	30.03
	MEAN SEA-LEVEL PRES. (IN)	46	30.04	30.04	30.03	30.07	30.08	30.06	30.09	30.06	30.04	30.05	30.03	30.06	30.05
WINDS	MEAN SPEED (MPH)	33	9.1	8.7	8.6	8.5	8.3	8.5	8.6	7.9	7.4	7.4	8.5	8.9	8.4
	PREVAIL.DIR (TENS OF DEGS)	20	09	09	13	22	30	31	31	31	22	13	09	09	11
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	8	48	44	47	43	30	30	26	28	36	40	45	46	48
	DIR. (TENS OF DEGS)		17	19	18	18	18	18	31	18	17	18	19	18	17
	YEAR OF OCCURRENCE		2000	1999	1999	1996	2001	1994	2001	2001	1997	1994	2001	1996	JAN 2000
	MAXIMUM 5-SECOND:														
SPEED (MPH)	8	66	64	66	61	44	45	32	39	53	67	63	67	67	
DIR. (TENS OF DEGS)		17	18	18	19	17	19	32	20	17	19	19	18	18	
YEAR OF OCCURRENCE		2000	1999	1999	1996	1994	1994	2001	2001	1997	1994	1998	1994	DEC 1994	
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)	48	18.94	21.89	15.31	10.07	6.60	5.48	4.39	5.22	7.27	12.56	19.60	20.38	21.89
	YEAR OF OCCURRENCE		1954	1961	1997	1996	1960	1954	1983	1968	1997	1975	1998	1996	FEB 1961
	MINIMUM MONTHLY (IN)	48	0.69	1.35	0.93	1.33	0.37	0.55	0.01	0.03	0.04	0.52	1.45	2.67	0.01
	YEAR OF OCCURRENCE		1985	1993	1965	1956	1982	1992	1960	2002	1975	1987	1976	1985	JUL 1960
	MAXIMUM IN 24 HOURS (IN)	48	5.14	3.39	2.66	3.00	1.82	2.42	1.98	2.78	2.63	3.71	5.56	3.61	5.56
	YEAR OF OCCURRENCE		1990	1996	1997	1996	1979	1968	1974	2001	1997	1982	1998	1974	NOV 1998
	NORMAL NO. DAYS WITH:														
	PRECIPITATION ≥ 0.01	30	21.5	19.0	20.6	18.0	15.0	12.2	7.6	7.7	10.1	15.1	21.0	22.2	190.0
PRECIPITATION ≥ 1.00	30	2.6	1.6	1.3	0.5	0.3	0.3	0.1	0.1	0.4	1.3	2.6	3.3	14.4	
SNOWFALL	NORMAL (IN)	30	2.2	0.4	0.4	0.*	T	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) 2002 ASTORIA, OR (AST)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1973	5.72	2.60	5.71	2.38	3.16	4.26	0.07	0.46	4.19	5.92	14.93	15.75	65.15
1974	12.47	8.38	10.73	4.88	4.37	2.33	4.20	0.29	0.67	1.85	8.95	13.84	72.96
1975	15.21	8.03	5.66	3.90	2.41	1.99	0.22	2.82	0.04	12.56	12.28	15.66	80.78
1976	11.67	7.86	7.17	3.55	2.20	1.27	2.46	2.55	1.58	2.96	1.45	4.20	48.92
1977	3.20	5.22	9.74	1.65	6.00	1.36	0.44	3.85	5.44	4.38	12.37	14.34	67.99
1978	8.66	5.43	4.40	6.35	4.75	3.07	0.90	2.61	6.93	1.01	8.43	4.99	57.53
1979	3.83	11.76	4.52	4.38	4.19	1.82	0.92	0.81	4.35	8.46	7.87	13.18	66.09
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
POR= 49 YRS	10.27	7.78	7.23	5.03	3.03	2.59	1.07	1.35	2.65	6.02	10.46	10.77	68.25

WBAN : 94224

AVERAGE TEMPERATURE (°F) 2002 ASTORIA, OR (AST)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1973	40.5	44.3	44.4	48.9	53.4	56.6	59.7	57.6	57.9	51.2	44.3	45.2	50.3
1974	38.9	42.0	44.7	48.0	50.5	56.1	59.3	62.1	60.9	51.9	48.0	45.6	50.7
1975	42.9	43.1	43.8	44.9	52.8	55.6	60.7	59.7	59.2	50.9	46.2	44.7	50.4
1976	44.1	42.6	43.7	48.7	52.8	55.9	61.1	61.7	60.8	53.2	48.0	43.5	51.3
1977	39.9	46.8	44.6	48.9	50.2	56.8	58.7	62.7	57.0	51.7	44.6	43.9	50.5
1978	44.0	46.0	47.0	48.8	52.3	59.4	60.9	61.5	58.1	54.3	41.7	37.6	51.0
1979	35.3	41.8	47.3	49.2	53.8	56.8	62.4	61.8	61.4	55.0	46.9	47.4	51.6
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
POR= 49 YRS	42.2	44.2	45.4	48.2	52.6	56.9	60.1	60.7	58.5	52.7	46.9	42.9	50.9

HEATING DEGREE DAYS (base 65°F) 2002 ASTORIA, OR (AST)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1973-74	164	225	213	421	614	611	803	639	623	503	445	257	5518
1974-75	174	97	130	398	502	596	678	606	653	598	373	273	5078
1975-76	133	155	183	429	558	624	642	640	651	483	374	269	5141
1976-77	117	105	128	361	503	660	774	504	628	475	453	238	4946
1977-78	190	82	231	403	606	646	643	524	551	482	389	161	4908
1978-79	125	110	202	324	693	843	910	641	543	467	338	243	5439
1979-80	91	92	111	305	537	540	807	529	617	459	388	279	4755
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-	114	148	187	400	486	593							

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COOLING DEGREE DAYS (base 65°F) 2002 ASTORIA, OR (AST)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1973	0	0	0	0	0	0	6	0	7	0	0	0	13
1974	0	0	0	0	0	0	5	11	13	0	0	0	29
1975	0	0	0	0	1	0	5	0	17	0	0	0	23
1976	0	0	0	0	0	3	4	8	8	1	0	0	24
1977	0	0	0	0	0	0	0	18	0	0	0	0	18
1978	0	0	0	0	0	0	6	8	0	0	0	0	14
1979	0	0	0	0	0	0	15	0	11	1	0	0	27
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

SNOWFALL (inches) 2002 ASTORIA, OR (AST)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1973-74	0.0	0.0	0.0	0.0	T	T	0.4	T	1.7	0.0	T	0.0	2.1
1974-75	0.0	0.0	0.0	0.0	T	T	0.3	0.2	T	1.1	T	0.0	1.6
1975-76	0.0	0.0	0.0	T	1.1	T	T	0.1	T	T	0.0	0.0	1.2
1976-77	0.0	0.0	0.0	0.0	0.0	T	T	T	T	0.0	T	0.0	T
1977-78	0.0	0.0	0.0	0.0	0.1	T	T	T	0.0	T	0.0	0.0	0.1
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	T	T	T	0.0	0.0	0.6
1996-97													
1997-98													
1998-99													
1999-00													
2000-01													
2001-02													
2002-													
POR= 44 YRS	0.0	0.0	T	T	0.2	1.1	2.1	0.4	0.5	T	T	T	4.3

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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 (1961 - 1990). 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.</p>	<p>GENERAL CONTINUED: 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. 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.</p> <p>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.</p>
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2002
ASTORIA,
OREGON (AST)

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 LOCATION

ASTORIA, OREGON

LOCATION	Occupied From	Occupied To	Airline Distances and Directions from previous Location	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE										AUTOMATIC OBSERVING EQUIPMENT *	* TYPE M = AMOS T = AUTOB S = ASOS W = AWOS REMARKS
						SEA LEVEL		GROUND									
						GROUND TEMPERATURE	WIND INSTRUMENT	EXTREME THERMOMETER	PSYCHROMETER	SUNSHINE SWITCH	TIPPING GAUGE BUCKET	WEIGHING RAIN GAGE	8 INCH RAIN GAGE	HYGROMETER			
*NOTE: <u>AIRPORT</u> Clatsop Airport 3 miles SW of Post Office Building	11/15/46	1/15/53	NA	46°09'	123°53'	67	5	4				4	4			SAWRS station.	
Clatsop County Airport	1/15/53	2/11/76	No Chg	46°09'	123°53'	8	46	c20	6	5		a4	4	b4		Weather Bureau Station established. a. Shielded 11/18/60. b. Commissioned 545 feet ONE of thermometer site 10/7/64. c. Effective 10/7/64.	
National Weather Service Building Clatsop County Airport+ + - Port of Astoria Airport effective 7/24/84.	2/11/76	03/01/93	400ft. S	46°09'	123°53'	8	d20	5	5	NA	5	5	4	d4 e4 f4	NA	d. Not moved 2/11/76. e. Type change 10/25/79. f. Type change 10/4/85.	
Clatsop County Airport	03/01/93	Present	NA	46°09'	123°53'	g9									S	ASOS Commissioned 03/01/93 g. ground elevation	

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* NOTES: For earlier station history see previous edition.