

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

SAN DIEGO, CA (32°44'N, 117°10'W) 13 feet (4m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1018.5	1017.9	1016.6	1015.5	1014.5	1013.0	1013.3	1013.1	1012.2	1014.3	1016.8	1018.2	1015.3	48
TEMPERATURE (DEGREES F)														
Mean	57.1	58.4	59.5	62.1	64.1	66.8	70.7	72.2	71.2	67.4	62.1	57.7	64.1	48
Mean Daily Maximum	65.4	66.2	66.3	68.4	69.2	71.8	75.9	77.5	77.1	74.2	70.5	66.3	70.8	48
Mean Daily Minimum	48.3	50.0	52.2	55.3	58.4	61.4	65.1	66.5	64.8	60.2	53.2	48.5	57.0	48
Extreme - Highest	88	90	93	98	96	101	95	98	111	107	97	88	111	48
Extreme - Lowest	29	36	39	44	48	51	55	58	51	43	38	34	29	48
RELATIVE HUMIDITY														
Average Percentage	60.5	54.0	41.0	29.7	19.7	5.3	7.7	6.3	-3.2	18.2	43.4	56.6	28.1	48
CLOUD COVER														
Percent of time Clear	36.4	33.7	28.2	26.9	22.6	23.6	29.3	30.8	37.2	33.4	42.8	39.1	32.0	48
Percent of time Scattered	18.3	17.6	19.5	19.2	17.5	16.7	20.1	20.9	18.8	18.6	18.5	19.8	18.8	48
Percent of time Broken	17.7	19.1	21.0	19.8	16.3	12.4	13.6	13.9	12.5	15.3	16.4	17.0	16.2	48
Percent of time Overcast	27.6	29.5	31.4	34.1	43.7	47.3	36.9	34.4	31.5	32.8	22.3	24.0	32.9	48
PRECIPITATION														
Mean Amount (inches)	2.18	1.60	1.93	0.75	0.19	0.08	0.02	0.09	0.18	0.36	1.14	1.41	9.94	48
Greatest Amount (inches)	9.09	5.40	6.96	3.71	1.79	0.87	0.24	2.13	1.90	1.76	5.82	6.60	19.41	48
Least Amount (inches)	T	0.00	T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	3.41	48
Maximum Amount-24 hrs (inches)	2.57	1.71	2.11	1.42	1.49	0.49	0.23	1.44	0.90	1.00	2.04	2.15	2.57	48
Mean Number of Days with Precipitation	9	8	10	7	7	5	3	2	3	4	6	7	71	48
Snow - Mean Amount (inches)	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T	48
Snow - Greatest Amount (inches)	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T	48
Snow - Least Snowfall Amount (inches)	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	48
Snow - Maximum Amount in 24 hours (inches)	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	T	48
Mean Number of Days with Snow	Miss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Miss	Miss	48
WIND														
% of Observations with Gales	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48
Mean Wind Speed (knots)	5.3	5.7	6.6	6.9	7.0	6.8	6.6	6.5	6.3	5.7	5.2	4.9	6.1	48
Direction (percentage of observations)														
North	6.7	6.4	5.5	4.9	3.9	4.5	5.8	6.5	7.0	7.8	7.1	7.4	6.1	48
North Northeast	4.6	4.5	3.8	3.6	3.2	3.2	3.8	4.5	5.5	5.4	5.2	4.9	4.4	48
Northeast	5.5	5.2	4.3	3.4	2.3	2.1	2.1	2.9	3.3	4.8	5.2	5.3	3.9	48
East Northeast	4.9	4.5	3.8	2.7	1.8	1.0	0.7	1.2	1.8	3.5	4.7	4.6	2.9	48
East	4.2	3.9	3.6	2.5	1.3	0.8	0.4	0.7	1.5	2.4	4.4	4.2	2.5	48
East Southeast	4.0	3.8	3.6	2.5	1.5	0.8	0.4	0.5	0.9	1.9	3.7	3.8	2.3	48
Southeast	3.5	3.1	2.6	1.9	1.0	0.7	0.4	0.5	0.8	1.7	2.4	3.3	1.8	48
South Southeast	4.6	3.7	3.3	2.9	2.5	2.2	1.6	1.5	2.2	2.4	3.6	3.5	2.8	48
South	6.0	5.9	6.2	6.6	8.2	8.5	7.2	6.1	5.7	5.1	5.0	5.1	6.3	48
South Southwest	4.6	5.2	6.0	7.4	10.2	10.9	10.3	8.1	6.4	5.4	4.1	4.2	6.9	48
Southwest	4.0	4.3	5.8	7.4	10.0	10.3	9.2	7.5	5.9	5.2	4.1	3.8	6.5	48
West Southwest	3.6	4.5	6.5	7.1	10.5	9.2	7.2	6.9	5.1	4.7	3.8	3.4	6.1	48
West	4.8	5.4	7.4	8.6	9.5	8.2	8.1	8.3	6.8	5.9	4.5	4.3	6.8	48
West Northwest	10.1	11.8	14.7	17.3	16.9	18.1	20.4	21.3	18.3	14.7	11.9	9.6	15.5	48
Northwest	10.4	11.4	10.9	11.6	10.9	12.6	14.5	15.3	17.0	14.0	11.5	10.8	12.6	48
North Northwest	6.6	6.8	5.6	5.5	4.5	5.7	7.0	7.1	8.9	7.8	7.2	7.4	6.7	48
Calm	12.0	10.0	6.7	4.5	2.3	1.8	1.4	1.6	3.5	7.3	11.6	14.6	6.4	48
Direction (Mean Speed, knots)														
North	4.2	4.3	4.5	4.5	4.5	4.9	4.7	4.6	4.5	4.3	4.1	4.2	4.4	48
North Northeast	4.5	4.6	4.6	4.5	4.6	4.5	4.7	4.5	4.5	4.4	4.2	4.5	4.5	48
Northeast	4.6	4.2	4.3	4.3	4.3	4.1	4.2	4.1	4.3	4.2	4.3	4.7	4.3	48
East Northeast	4.4	4.5	4.4	4.1	4.3	4.1	3.9	3.7	4.0	4.2	4.3	4.6	4.3	48
East	4.1	4.1	4.0	4.1	3.7	3.4	3.1	3.7	3.8	3.8	3.9	4.3	4.0	48
East Southeast	5.2	5.3	5.3	5.4	5.1	4.5	4.1	4.5	4.8	5.4	5.1	5.0	5.1	48
Southeast	6.1	6.4	6.5	6.3	5.9	5.4	4.8	5.6	5.2	5.4	5.7	5.8	6.0	48
South Southeast	7.9	8.3	8.7	7.9	6.9	7.1	6.6	6.7	7.1	6.4	6.9	7.0	7.4	48
South	7.1	8.0	8.0	7.4	7.0	6.9	6.3	6.5	6.6	6.1	6.5	6.2	6.9	48
South Southwest	6.6	6.8	7.7	7.7	7.3	7.4	6.7	6.6	6.4	6.6	6.5	6.1	6.9	48
Southwest	6.2	7.1	7.6	7.6	7.6	7.4	6.9	7.0	6.8	7.0	6.4	5.9	7.1	48
West Southwest	6.5	6.9	7.9	7.9	7.7	7.1	6.6	6.7	6.8	7.0	6.4	5.8	7.1	48
West	6.3	6.9	8.1	7.9	7.6	6.9	6.8	6.7	6.7	7.0	6.2	6.3	7.1	48
West Northwest	7.6	7.9	8.8	8.7	8.1	8.0	7.8	8.0	8.0	7.9	7.7	7.5	8.0	48
Northwest	7.0	7.6	8.0	8.2	8.0	7.5	7.3	7.2	7.3	7.4	7.3	7.0	7.5	48
North Northwest	5.3	5.7	5.8	6.1	6.0	5.8	5.6	5.4	5.7	5.5	5.3	5.4	5.6	48
VISIBILITY														
Mean Number of Days with Fog	11	9	8	6	6	7	6	7	9	11	11	11	102	48
% Observations with Visibility <= 1/2 mile	1.63	1.34	0.60	0.53	0.13	0.17	0.13	0.10	0.79	1.60	1.80	1.92	0.89	48

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

LOS ANGELES, CA (33°56'N, 118°23'W) 100 feet (30.5m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1018.5	1017.8	1016.4	1015.5	1014.3	1013.1	1013.3	1013.1	1012.4	1014.5	1017.0	1018.2	1015.3	44
TEMPERATURE (DEGREES F)														
Mean	56.2	57.5	58.1	60.6	62.8	66.0	69.3	70.4	69.7	66.6	61.7	57.3	63.0	49
Mean Daily Maximum	64.8	65.6	65.4	67.6	69.1	72.0	75.3	76.5	76.3	74.1	70.6	66.2	70.3	49
Mean Daily Minimum	47.1	48.9	50.3	53.0	56.1	59.5	62.7	63.8	62.6	58.7	52.4	47.9	55.3	49
Extreme - Highest	88	92	95	102	97	104	97	98	110	106	101	94	110	49
Extreme - Lowest	27	34	37	43	45	48	52	51	47	43	38	32	27	49
RELATIVE HUMIDITY														
Average Percentage	59.8	52.6	39.1	29.9	17.8	5.6	8.3	6.2	-1.1	20.5	45.3	57.2	28.3	44
CLOUD COVER														
Percent of time Clear	33.9	33.2	31.5	34.4	31.3	34.2	36.9	38.4	38.3	35.5	39.1	37.6	35.4	44
Percent of time Scattered	19.3	18.5	21.0	20.0	17.8	16.4	20.9	21.1	19.2	20.5	20.7	20.0	19.6	44
Percent of time Broken	16.1	16.2	16.6	15.7	13.9	11.9	14.2	13.8	13.0	14.5	15.7	15.4	14.7	44
Percent of time Overcast	30.7	32.1	30.9	29.9	36.9	37.5	28.0	26.8	29.5	29.5	24.6	27.0	30.3	44
PRECIPITATION														
Mean Amount (inches)	2.88	2.40	1.97	0.79	0.14	0.05	0.02	0.10	0.20	0.27	1.38	1.61	11.81	49
Greatest Amount (inches)	12.71	11.07	6.37	4.52	2.55	0.74	0.32	2.47	1.91	1.79	7.47	5.70	29.46	49
Least Amount (inches)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.11	49
Maximum Amount-24 hrs (inches)	4.56	3.91	3.10	1.26	1.67	0.74	0.28	2.10	1.66	1.75	5.60	2.84	5.60	49
Mean Number of Days with Precipitation	8	7	8	6	5	4	2	2	3	4	5	6	60	49
Snow - Mean Amount (inches)	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	49
Snow - Greatest Amount (inches)	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	49
Snow - Least Snowfall Amount (inches)	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	49
Snow - Maximum Amount in 24 hours (inches)	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	49
Mean Number of Days with Snow	Miss	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Miss	49
WIND														
% of Observations with Gales	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	44
Mean Wind Speed (knots)	5.8	6.5	7.0	7.4	7.2	6.9	6.7	6.6	6.3	6.0	5.8	5.7	6.5	44
Direction (percentage of observations)														
North	4.7	4.0	3.0	2.1	1.3	0.7	1.1	1.3	1.3	2.5	4.5	5.0	2.6	44
North Northeast	5.5	3.6	2.5	1.3	0.8	0.6	0.6	0.7	1.2	2.0	4.4	5.7	2.4	44
Northeast	7.9	5.6	4.0	2.3	1.4	1.1	0.7	1.0	1.7	3.2	6.3	8.3	3.6	44
East Northeast	9.6	7.3	6.2	4.8	3.2	2.0	1.5	1.6	2.6	5.2	8.4	9.3	5.1	44
East	11.5	10.5	8.8	7.5	5.8	4.2	3.3	3.7	5.3	8.0	10.5	11.1	7.5	44
East Southeast	8.0	7.8	6.2	5.9	4.3	4.0	3.2	3.1	4.5	6.2	7.6	8.2	5.7	44
Southeast	4.1	4.8	4.3	4.0	3.7	4.1	3.3	3.3	3.9	4.1	3.8	3.8	3.9	44
South Southeast	2.2	2.4	2.4	2.3	2.3	2.5	2.2	2.0	2.5	2.2	2.2	2.0	2.3	44
South	2.0	2.5	2.2	2.7	2.4	2.7	2.9	2.5	3.2	2.3	2.0	1.6	2.4	44
South Southwest	1.8	2.0	2.2	2.0	2.2	2.2	2.0	2.3	2.3	1.8	1.6	1.5	2.0	44
Southwest	3.9	5.2	6.3	7.4	9.2	9.8	8.3	8.5	7.4	6.5	4.3	3.3	6.7	44
West Southwest	12.2	15.7	21.6	26.6	31.7	33.9	34.8	33.7	29.4	23.4	14.9	11.3	24.1	44
West	11.0	13.4	16.7	19.3	21.3	20.9	23.3	22.7	20.5	17.5	13.4	10.9	17.6	44
West Northwest	3.1	3.1	3.7	3.6	3.5	3.6	3.8	3.7	3.2	3.7	3.0	3.0	3.4	44
Northwest	2.3	2.0	1.7	1.7	1.2	1.3	2.0	1.9	1.7	1.6	2.0	2.7	1.8	44
North Northwest	3.0	3.0	2.4	2.0	0.9	0.9	1.2	1.4	1.3	1.8	3.0	4.0	2.1	44
Calm	7.4	7.1	6.0	4.7	5.0	5.7	5.9	6.7	8.0	8.3	8.1	8.4	6.8	44
Direction (Mean Speed, knots)														
North	6.3	6.9	6.3	5.9	4.2	3.1	3.3	3.6	3.5	4.8	5.8	6.5	5.7	44
North Northeast	5.5	6.1	5.1	4.7	4.7	3.9	3.6	4.2	4.3	5.0	5.3	5.8	5.3	44
Northeast	5.4	5.5	5.2	5.2	4.5	4.3	3.9	3.7	4.3	4.9	5.2	5.4	5.2	44
East Northeast	5.4	5.2	5.0	5.1	4.7	4.4	4.3	4.5	4.4	4.7	5.0	5.2	5.0	44
East	5.4	5.4	5.3	5.0	4.8	4.6	4.5	4.4	4.6	4.5	5.0	5.1	5.0	44
East Southeast	5.3	5.7	5.4	5.2	5.1	5.0	4.7	4.9	4.9	4.5	5.1	5.1	5.1	44
Southeast	5.8	5.9	6.0	5.5	5.4	5.2	5.1	4.9	4.9	4.8	5.2	5.3	5.4	44
South Southeast	5.3	5.8	5.7	5.6	5.0	4.9	4.8	4.6	4.5	4.3	5.0	5.2	5.1	44
South	5.4	5.9	5.1	5.1	4.5	4.4	4.3	4.2	4.3	4.2	4.6	5.0	4.7	44
South Southwest	7.1	8.4	7.0	6.6	5.9	5.3	4.8	5.0	5.2	5.2	6.4	6.1	6.0	44
Southwest	6.9	7.4	7.9	7.6	7.6	7.2	6.9	6.6	6.8	6.6	6.7	6.4	7.1	44
West Southwest	7.6	8.3	9.2	9.2	8.9	8.6	8.4	8.4	8.4	8.1	7.7	7.4	8.5	44
West	8.1	8.9	9.8	9.9	9.1	8.6	8.3	8.4	8.3	8.4	8.2	7.8	8.7	44
West Northwest	7.1	7.5	8.3	8.3	7.4	6.6	5.9	6.0	6.3	6.5	7.4	6.9	7.0	44
Northwest	7.1	7.8	6.9	6.6	5.4	4.7	4.5	4.4	4.8	5.1	7.0	7.3	6.1	44
North Northwest	7.3	10.0	8.7	9.5	5.9	4.4	4.1	4.0	4.3	6.3	7.9	8.5	7.5	44
VISIBILITY														
Mean Number of Days with Fog	11	10	8	7	6	6	7	8	9	11	11	11	105	49
% Observations with Visibility <= 1/2 mile	2.35	2.29	1.26	1.01	0.33	0.35	0.48	0.64	1.47	2.38	2.99	3.34	1.56	44

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

SAN FRANCISCO, CA (37°37'N, 122°23'W) 8 feet (2.4m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1020.1	1019.3	1018.0	1017.5	1016.1	1014.5	1014.7	1014.7	1014.1	1016.6	1019.0	1020.3	1017.1	43
TEMPERATURE (DEGREES F)														
Mean	48.9	51.9	53.5	55.7	58.3	61.4	62.7	63.4	64.1	61.1	55.0	49.7	57.2	50
Mean Daily Maximum	55.6	59.1	60.8	63.7	66.4	69.9	71.3	71.9	73.3	70.2	62.9	56.2	65.2	50
Mean Daily Minimum	41.6	44.3	45.7	47.2	49.7	52.4	53.7	54.5	54.3	51.5	46.7	42.6	48.7	50
Extreme - Highest	72	77	85	92	97	106	105	100	103	99	85	75	106	50
Extreme - Lowest	26	30	31	36	39	43	44	45	41	37	31	24	24	50
RELATIVE HUMIDITY														
Average Percentage	75.6	67.7	55.4	49.8	36.0	20.2	21.7	22.3	15.5	40.8	64.8	77.8	45.6	43
CLOUD COVER														
Percent of time Clear	25.7	28.8	26.6	31.5	36.8	43.1	49.8	44.8	50.3	43.8	32.6	27.6	36.8	43
Percent of time Scattered	16.3	16.2	19.0	20.4	20.6	20.1	19.6	20.6	17.7	18.4	18.0	16.6	18.6	43
Percent of time Broken	17.1	18.2	21.0	20.2	18.1	14.3	13.7	15.1	14.1	16.1	18.8	17.0	17.0	43
Percent of time Overcast	40.8	36.8	33.3	27.9	24.6	22.5	16.9	19.5	17.9	21.7	30.5	38.8	27.6	43
PRECIPITATION														
Mean Amount (inches)	4.24	3.17	3.02	1.29	0.34	0.13	0.02	0.04	0.20	1.02	2.34	3.47	19.29	50
Greatest Amount (inches)	11.26	9.52	9.01	6.36	3.81	0.86	0.35	0.66	2.30	7.30	7.94	12.30	38.34	50
Least Amount (inches)	0.24	T	0.05	T	T	T	0.00	T	T	T	T	0.01	8.68	50
Maximum Amount -24 hrs (inches)	5.59	2.21	1.99	2.30	1.53	0.81	0.35	0.35	2.29	2.62	2.39	3.16	5.59	50
Mean Number of Days with Precipitation	14	12	15	11	9	7	6	8	6	8	11	13	120	50
Snow - Mean Amount (inches)	0.0	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	50
Snow - Greatest Amount (inches)	1.5	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	1.5	50
Snow - Least Snowfall Amount (inches)	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	50
Snow - Maximum Amount in 24 hours (inches)	1.5	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	1.5	50
Mean Number of Days with Snow	Miss	Miss	Miss	0	0	0	0	0	0	0	0	Miss	Miss	50
WIND														
% of Observations with Gales	0.08	0.06	0.04	0.04	0.08	0.04	0.03	0.00	0.00	0.02	0.04	0.12	0.09	43
Mean Wind Speed (knots)	6.7	7.7	9.4	10.8	11.8	12.0	11.7	11.0	9.8	8.3	6.9	6.8	9.4	43
Direction (percentage of observations)														
North	4.3	3.3	2.5	1.5	0.8	1.0	1.0	0.9	1.3	2.2	3.5	4.7	2.2	43
North Northeast	5.6	3.8	2.3	1.3	1.0	1.2	1.2	1.1	1.9	2.7	3.2	5.0	2.5	43
Northeast	6.0	4.2	2.7	1.8	1.6	1.7	1.8	1.7	2.6	3.7	4.7	5.7	3.2	43
East Northeast	5.8	4.1	2.4	1.8	1.5	1.1	1.1	1.3	1.9	2.7	4.1	6.4	2.8	43
East	5.4	4.1	2.4	1.1	0.7	0.5	0.3	0.4	1.0	1.9	3.6	5.8	2.3	43
East Southeast	6.5	4.5	2.2	0.9	0.5	0.3	0.2	0.2	0.4	1.5	4.4	6.4	2.3	43
Southeast	9.4	6.6	4.2	2.0	0.7	0.5	0.2	0.3	0.7	2.2	6.6	8.9	3.5	43
South Southeast	6.8	5.2	3.9	2.2	1.1	0.5	0.2	0.5	1.0	2.6	5.4	6.9	3.0	43
South	7.2	6.2	5.5	3.7	2.4	1.4	0.8	1.2	2.3	4.2	6.5	7.4	4.1	43
South Southwest	5.1	5.4	4.7	3.8	2.9	2.4	1.0	1.5	2.3	3.6	5.0	4.5	3.5	43
Southwest	4.1	4.6	5.4	4.7	4.3	2.8	2.2	2.2	3.6	3.9	4.5	3.9	3.8	43
West Southwest	3.8	5.1	6.2	7.3	8.9	8.8	6.3	6.5	6.4	5.1	4.1	3.4	6.0	43
West	5.5	8.8	14.5	20.0	24.7	26.5	18.3	19.2	16.2	12.8	7.1	4.9	14.9	43
West Northwest	8.9	17.3	26.4	33.5	33.6	33.3	33.5	32.1	32.5	28.6	17.6	9.5	25.6	43
Northwest	3.7	6.5	7.9	9.9	12.0	15.0	26.7	25.3	20.2	13.3	7.5	4.4	12.7	43
North Northwest	1.5	2.0	1.8	1.2	1.0	1.5	3.1	3.1	2.5	1.8	1.7	1.7	1.9	43
Calm	10.9	8.2	5.0	3.5	2.8	2.1	2.7	3.0	3.8	7.5	10.6	10.6	5.9	43
Direction (Mean Speed, knots)														
North	7.6	8.1	8.3	8.2	6.2	5.5	6.4	6.5	6.7	8.9	7.3	8.5	7.8	43
North Northeast	6.4	6.7	7.8	7.1	6.8	7.0	6.7	6.8	6.3	6.6	6.5	7.0	6.8	43
Northeast	6.2	6.0	6.1	5.9	6.3	6.8	7.1	6.8	6.1	5.7	6.0	6.4	6.2	43
East Northeast	6.1	6.0	5.6	5.7	5.9	5.8	6.0	5.9	5.6	5.3	6.0	6.6	6.0	43
East	6.0	5.5	5.9	5.5	5.1	4.9	5.2	5.3	5.4	5.4	5.6	5.8	5.7	43
East Southeast	6.3	6.4	7.4	7.6	5.3	4.5	4.1	6.0	5.9	6.1	6.4	6.2	6.4	43
Southeast	7.6	8.0	8.9	9.1	6.5	5.7	5.8	5.8	5.9	7.1	7.2	7.5	7.6	43
South Southeast	7.1	7.1	7.8	8.3	7.1	7.4	5.8	5.7	5.6	6.8	6.7	6.8	7.1	43
South	8.0	8.4	8.7	8.6	7.0	6.2	5.9	5.3	5.6	6.9	6.7	7.4	7.5	43
South Southwest	8.8	9.8	9.0	9.1	10.0	8.9	8.3	7.6	7.4	6.7	7.0	8.2	8.5	43
Southwest	8.4	8.3	8.1	9.1	10.1	10.1	9.3	8.3	7.9	6.8	7.3	8.2	8.4	43
West Southwest	8.0	7.8	8.5	9.2	10.2	10.6	10.3	9.7	8.4	7.3	7.1	8.2	9.1	43
West	8.3	9.9	11.2	12.7	13.9	13.8	13.0	12.3	11.3	10.0	8.5	8.3	12.0	43
West Northwest	9.3	10.7	12.4	13.1	13.8	13.5	12.7	12.0	11.4	10.8	9.9	9.4	12.0	43
Northwest	8.2	9.4	10.5	11.4	11.9	12.3	12.8	12.4	11.5	10.3	8.9	9.0	11.4	43
North Northwest	7.1	7.7	8.1	8.0	8.0	8.7	10.0	9.9	9.2	8.3	7.0	8.5	8.6	43
VISIBILITY														
Mean Number of Days with Fog	17	12	7	4	4	3	4	4	6	9	12	17	99	50
% Observations with Visibility <= ½ mile	1.88	1.43	0.12	0.02	0.00	0.00	0.01	0.02	0.04	0.52	0.78	1.52	0.52	43

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

SACRAMENTO, CA (38°31'N, 121°30'W) 18 feet (5.5m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1020.7	1019.1	1017.2	1015.9	1014.0	1012.0	1011.8	1012.2	1012.2	1015.3	1019.0	1020.7	1015.8	47
TEMPERATURE (DEGREES F)														
Mean	45.7	50.7	53.8	58.8	65.2	71.5	75.6	74.8	71.8	64.4	53.4	45.8	61.0	48
Mean Daily Maximum	53.0	59.8	64.1	71.4	79.8	87.3	92.9	91.5	87.5	77.9	63.6	53.2	73.6	48
Mean Daily Minimum	37.8	41.0	43.0	45.8	50.2	55.1	57.9	57.6	55.7	50.3	42.7	37.9	48.0	48
Extreme - Highest	70	76	88	93	105	115	114	109	108	101	87	72	115	48
Extreme - Lowest	20	23	26	32	34	41	48	48	43	35	26	18	18	48
RELATIVE HUMIDITY														
Average Percentage	82.2	66.1	47.0	34.1	14.6	-5.4	-6.7	-2.5	-3.4	28.3	65.2	82.5	33.3	48
CLOUD COVER														
Percent of time Clear	22.8	31.4	34.1	39.2	46.9	63.3	78.5	76.3	71.1	55.2	38.0	22.3	48.5	47
Percent of time Scattered	12.9	16.4	18.6	19.8	21.5	19.0	13.1	13.7	15.2	18.5	17.6	14.1	16.7	47
Percent of time Broken	12.4	16.3	17.4	18.7	17.5	11.4	6.3	7.4	8.7	12.3	14.4	12.4	12.8	47
Percent of time Overcast	51.9	35.9	29.9	22.3	14.1	6.3	2.1	2.5	5.0	13.9	29.9	51.2	22.0	47
PRECIPITATION														
Mean Amount (inches)	3.73	2.83	2.58	1.22	0.45	0.15	0.03	0.06	0.32	0.95	2.21	2.84	17.37	48
Greatest Amount (inches)	9.69	8.77	8.13	4.21	3.13	1.26	0.79	0.65	2.78	7.51	7.41	12.64	33.44	48
Least Amount (inches)	0.16	0.15	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	T	0.00	5.58	48
Maximum Amount-24 hrs (inches)	3.05	2.63	1.85	2.17	1.51	1.14	0.77	0.65	1.79	3.77	2.42	2.87	3.77	48
Mean Number of Days with Precipitation	13	11	11	7	4	2	1	1	2	5	9	12	78	49
Snow - Mean Amount (inches)	T	0.0	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	48
Snow - Greatest Amount (inches)	T	2.0	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	2.0	48
Snow - Least Snowfall Amount (inches)	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	48
Snow - Maximum Amount in 24 hours (inches)	T	2.0	T	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	2.0	48
Mean Number of Days with Snow	Miss	Miss	0	0	0	0	0	0	0	0	0	Miss	Miss	49
WIND														
% of Observations with Gales	0.15	0.05	0.05	0.01	0.01	0.00	0.00	0.01	0.02	0.02	0.03	0.09	0.04	48
Mean Wind Speed (knots)	6.2	6.5	7.4	7.5	7.9	8.4	7.8	7.4	6.4	5.6	5.3	5.8	6.8	48
Direction (percentage of observations)														
North	5.9	5.1	3.7	3.0	2.8	2.0	0.9	1.2	3.2	5.3	5.8	5.8	3.7	48
North Northeast	1.8	1.6	1.3	0.7	0.6	0.4	0.4	0.3	0.8	1.4	1.6	2.1	1.1	48
Northeast	1.8	1.7	1.1	0.8	0.6	0.4	0.2	0.2	0.6	1.3	1.7	1.7	1.0	48
East Northeast	1.4	1.4	0.8	0.7	0.4	0.3	0.1	0.1	0.6	0.8	1.2	1.6	0.8	48
East	3.5	3.2	2.3	1.8	1.0	0.6	0.4	0.4	1.0	2.0	2.9	3.5	1.9	48
East Southeast	5.7	5.2	4.6	3.5	2.1	1.7	1.5	1.7	2.3	3.8	4.6	5.3	3.5	48
Southeast	13.5	11.1	10.0	7.9	6.1	5.0	5.7	6.5	7.1	7.2	9.4	11.5	8.4	48
South Southeast	11.6	10.2	9.2	7.1	6.4	7.8	10.0	9.9	8.0	6.3	8.0	10.9	8.8	48
South	7.0	8.3	9.6	10.2	12.3	14.6	18.3	17.5	12.1	8.3	6.1	6.3	10.9	48
South Southwest	3.4	5.3	9.5	12.6	17.7	21.2	25.0	23.2	15.7	8.4	4.0	2.9	12.5	48
Southwest	2.8	4.8	10.8	16.1	20.5	21.9	21.3	19.7	15.6	9.2	3.8	2.7	12.5	48
West Southwest	1.6	2.2	3.8	4.9	4.8	4.2	4.5	5.0	4.6	3.5	2.1	1.4	3.5	48
West	2.0	2.9	2.9	3.0	2.8	2.5	2.3	2.7	2.8	2.5	2.0	2.1	2.5	48
West Northwest	3.0	3.6	3.8	3.6	3.2	2.8	2.2	2.2	3.1	3.0	3.3	2.8	3.0	48
Northwest	7.4	8.4	8.2	7.9	6.7	5.4	2.5	2.6	5.0	7.7	9.0	8.2	6.6	48
North Northwest	10.1	9.9	9.0	8.8	6.6	5.4	1.7	1.9	6.6	10.2	11.6	11.0	7.7	48
Calm	17.9	15.3	10.0	8.0	6.0	4.5	3.7	5.4	11.3	19.3	23.1	20.3	12.1	48
Direction (Mean Speed, knots)														
North	6.9	7.1	8.2	7.8	8.0	7.3	5.6	5.4	6.7	6.8	6.8	6.6	7.0	48
North Northeast	5.4	5.5	6.1	6.6	6.0	6.9	4.5	5.2	5.1	5.6	5.5	5.6	5.6	48
Northeast	4.6	4.5	4.4	4.9	5.0	5.4	4.2	4.2	4.4	4.5	4.3	4.3	4.5	48
East Northeast	4.3	4.7	5.2	4.9	4.8	4.9	5.3	4.3	4.4	4.4	4.3	4.5	4.6	48
East	4.4	4.4	4.7	4.7	4.0	4.6	3.8	3.8	4.4	4.2	4.4	4.4	4.4	48
East Southeast	5.7	5.7	5.7	5.4	5.1	5.2	4.6	4.9	4.8	4.7	5.0	5.6	5.3	48
Southeast	8.4	8.1	7.8	6.6	5.9	5.8	5.8	5.7	5.7	5.8	7.2	7.9	7.0	48
South Southeast	10.1	9.6	8.8	7.5	6.5	6.4	6.3	6.5	6.1	6.7	8.3	9.9	7.9	48
South	7.4	7.2	7.4	7.1	7.4	8.0	7.5	7.4	6.6	6.2	6.4	6.8	7.2	48
South Southwest	7.8	8.2	8.6	9.1	9.6	10.1	9.4	9.1	8.5	7.9	7.7	7.2	9.0	48
Southwest	7.4	8.5	9.3	9.3	10.0	10.5	9.8	9.4	9.0	8.4	7.4	7.0	9.4	48
West Southwest	6.0	6.4	7.2	7.6	7.9	8.0	7.3	6.9	6.5	6.4	5.3	5.7	7.0	48
West	5.0	4.5	5.8	5.8	5.7	5.9	5.6	5.6	5.1	4.6	4.4	4.4	5.2	48
West Northwest	5.6	6.1	7.0	7.5	7.0	7.0	6.2	6.1	5.5	5.6	5.6	5.5	6.3	48
Northwest	7.3	8.3	9.6	9.6	9.0	8.8	6.8	6.7	7.2	7.3	7.3	7.3	8.1	48
North Northwest	8.7	9.8	10.5	10.6	9.8	9.6	7.0	6.8	8.4	9.1	8.3	8.7	9.2	48
VISIBILITY														
Mean Number of Days with Fog	22	14	8	3	1	Miss	Miss	1	2	7	16	22	96	49
% Observations with Visibility <= ½ mile	9.02	3.89	0.62	0.08	0.03	0.00	0.00	0.01	0.05	0.63	3.19	8.60	2.18	48

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

EUREKA, CA (40°48'N, 124°07'W) 59 feet (18m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
TEMPERATURE (DEGREES F)														
Mean	48.0	49.3	49.4	50.6	53.2	55.7	57.0	58.0	57.4	55.0	51.8	48.7	52.9	47
Mean Daily Maximum	54.1	55.3	55.2	56.0	58.1	60.2	61.4	62.4	62.8	60.9	58.0	54.9	58.3	47
Mean Daily Minimum	41.4	42.8	43.2	44.7	47.8	50.6	52.2	53.1	51.6	48.6	45.1	42.1	46.9	47
Extreme - Highest	78	80	76	80	82	81	76	82	86	87	78	77	87	47
Extreme - Lowest	26	27	30	34	36	41	46	47	42	32	29	21	21	47
PRECIPITATION														
Mean Amount (inches)	6.61	5.01	5.33	2.87	1.67	0.65	0.15	0.37	0.79	2.71	5.64	6.40	38.18	47
Greatest Amount (inches)	13.92	10.80	11.18	10.68	6.05	2.57	1.13	3.42	3.35	13.04	16.58	14.13	67.21	47
Least Amount (inches)	0.66	0.11	1.18	0.31	0.03	T	0.00	T	T	0.04	0.28	0.52	21.09	47
Maximum amount-24 hrs (inches)	3.70	4.84	2.93	2.32	1.46	1.17	0.89	1.57	1.45	5.04	2.78	3.36	5.04	47
Mean Number of days with precipitation	17	16	19	14	12	9	7	7	8	12	15	16	152	32
SNOW														
Snow - Mean Amount (inches)	0.1	0.1	0.0	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	47
Snow - Greatest Amount (inches)	2.8	3.5	1.0	T	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.9	3.5	47
Snow - Least Snowfall Amount (inches)	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	47
Snow - Maximum Amount in 24 hours (inches)	1.5	2.0	0.9	T	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.9	2.0	47
Mean Number of Days with Snow	1	1	Miss	Miss	0	0	0	0	0	0	0	Miss	2	32
VISIBILITY														
Mean Number of Days with Fog	13	11	10	12	13	16	22	23	21	21	15	15	192	32

SEATTLE (Portage Bay), WA (47°39'N, 122°18'W) 20 feet (6.1m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
TEMPERATURE (DEGREES F)														
Mean	41.1	43.7	46.5	51.0	56.5	61.1	65.2	65.0	60.7	53.8	46.8	42.7	52.9	92
Mean Daily Maximum	45.3	48.9	52.7	58.3	64.3	69.0	74.1	73.5	68.1	59.6	51.4	46.7	59.4	92
Mean Daily Minimum	36.4	38.0	39.8	43.2	48.3	52.7	55.8	56.1	52.8	47.5	41.7	38.2	45.9	92
Extreme - Highest	67	70	76	87	92	100	100	97	92	82	73	65	100	92
Extreme - Lowest	0	1	22	30	35	40	44	46	36	19	0	9	0	92
PRECIPITATION														
Mean Amount (inches)	5.07	3.74	3.28	2.16	1.66	1.40	0.66	0.87	1.65	2.99	5.12	5.37	33.99	92
Greatest Amount (inches)	10.93	8.10	7.23	5.25	4.67	3.70	2.16	5.49	5.62	8.04	11.20	15.33	48.14	92
Least Amount (inches)	0.60	0.34	0.42	0.16	0.31	0.03	0.00	T	0.03	0.16	0.50	1.00	19.52	92
Maximum amount-24 hrs (inches)	4.22	2.23	2.57	2.01	1.13	1.42	0.92	1.54	1.70	2.57	2.68	3.40	4.22	92
Mean Number of days with precipitation	28	25	27	24	23	23	17	19	20	25	26	28	285	25
SNOW														
Snow - Mean Amount (inches)	4.0	1.9	0.6	0.1	0.0	0.0	0.0	0.0	0.0	T	0.6	1.4	8.5	92
Snow - Greatest Amount (inches)	31.0	35.4	8.6	2.4	0.0	0.0	0.0	0.0	0.0	T	9.6	13.5	63.6	92
Snow - Least Snowfall Amount (inches)	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	92
Snow - Maximum Amount in 24 hours (inches)	11.5	21.5	5.5	1.5	0.0	0.0	0.0	0.0	0.0	T	6.0	10.0	21.5	92
Mean Number of Days with Snow	7	4	3	1	0	0	0	0	0	Miss	1	3	19	25
VISIBILITY														
Mean Number of Days with Fog	3	2	1	1	1	1	1	3	4	3	3	3	26	25

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

† = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

PORTLAND, OR (45°36'N, 122°36'W) 21 feet (6.4m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1019.4	1018.2	1016.9	1018.0	1017.5	1017.3	1017.5	1016.7	1016.6	1018.1	1018.8	1019.4	1017.9	47
TEMPERATURE (DEGREES F)														
Mean	39.5	43.3	47.5	52.0	57.9	63.4	68.3	68.4	63.6	55.1	46.2	41.4	53.9	62
Mean Daily Maximum	44.7	50.0	55.6	61.2	67.7	73.20	79.50	79.5	74.5	64.0	52.4	46.3	62.5	62
Mean Daily Minimum	33.8	36.1	38.9	42.3	47.6	53.0	56.6	56.7	52.3	45.7	39.5	36.0	44.9	62
Extreme - Highest	65	71	83	90	100	102	107	107	105	92	73	65	107	62
Extreme - Lowest	-2	-3	19	29	29	39	43	44	34	26	13	6	-3	62
RELATIVE HUMIDITY														
Average Percentage	69.2	56.9	43.5	55.1	50.5	48.1	49.5	42.3	40.6	55.7	62.8	68.6	53.7	47
CLOUD COVER														
Percent of time Clear	11.6	11.3	10.2	12.1	14.0	19.0	37.8	33.4	33.9	18.9	10.4	7.9	18.4	47
Percent of time Scattered	8.6	10.5	12.2	13.8	15.9	17.1	17.2	19.1	17.6	15.4	10.4	9.1	13.9	47
Percent of time Broken	12.9	15.8	19.2	21.0	22.9	21.5	16.3	16.5	16.8	18.1	15.9	14.4	17.6	47
Percent of time Overcast	66.8	62.4	58.4	53.2	47.2	42.3	28.8	31.0	31.7	47.5	63.3	68.5	50.2	47
PRECIPITATION														
Mean Amount (inches)	5.38	4.08	3.75	2.49	2.05	1.58	0.53	0.87	1.60	3.06	5.39	6.56	37.33	62
Greatest Amount (inches)	12.83	11.40	8.12	6.22	4.36	4.06	2.68	4.53	4.30	8.41	14.40	17.45	55.47	62
Least Amount (inches)	0.06	0.62	1.10	0.53	0.10	0.02	0.00	T	T	0.19	0.36	1.38	22.48	62
Maximum Amount-24 hrs (inches)	2.48	1.89	2.06	1.83	1.47	1.92	1.06	1.47	2.23	2.44	2.43	3.99	2.48	62
Mean Number of Days with Precipitation	22	19	21	19	16	13	7	8	11	16	21	23	196	48
Snow - Mean Amount (inches)	3.3	1.3	0.5	T	T	0.0	0.0	0.0	0.0	0.0	0.5	1.5	7.0	48
Snow - Greatest Amount (inches)	41.4	13.2	12.9	T	T	0.0	0.0	0.0	0.0	0.0	8.2	15.7	44.3	48
Snow - Least Snowfall Amount (inches)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	48
Snow - Maximum Amount in 24 hours (inches)	9.3	6.1	7.6	T	T	0.0	0.0	0.0	0.0	0.0	7.0	8.0	9.3	48
Mean Number of Days with Snow	6	3	2	1	Miss	0	0	0	0	0	1	4	17	48
WIND														
% of Observations with Gales	0.04	0.04	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.09	47
Mean Wind Speed (knots)	8.6	8.0	7.2	6.4	6.2	6.2	6.6	6.1	5.7	5.7	7.5	8.4	6.9	47
Direction (percentage of observations)														
North	1.3	1.6	2.6	3.8	5.7	8.2	9.6	8.2	5.3	2.9	1.5	1.5	4.4	47
North Northeast	0.8	0.8	1.1	1.2	2.0	2.2	2.7	2.4	2.1	1.3	0.8	0.9	1.5	47
Northeast	1.0	1.0	1.1	2.0	1.8	1.8	1.7	1.8	1.5	1.3	1.0	0.9	1.4	47
East Northeast	2.1	2.1	2.4	2.3	2.2	1.8	1.6	1.5	2.0	1.5	1.3	1.5	1.8	47
East	8.3	7.5	6.1	4.8	3.7	2.4	1.7	1.8	3.8	4.2	5.1	6.8	4.7	47
East Southeast	25.4	22.7	15.0	8.5	4.8	3.4	1.8	2.5	6.2	12.5	20.6	24.8	12.3	47
Southeast	13.7	12.0	7.6	4.4	3.0	1.8	1.1	2.3	4.4	8.6	12.8	14.3	7.1	47
South Southeast	3.8	3.5	3.6	3.1	2.3	1.9	1.4	1.8	2.9	4.1	4.8	3.9	3.1	47
South	8.1	7.6	8.5	7.9	5.8	5.1	2.7	3.8	5.0	7.1	9.0	7.8	6.5	47
South Southwest	8.6	9.3	9.6	7.9	5.6	4.9	2.1	2.8	4.6	6.2	8.8	9.0	6.6	47
Southwest	4.2	4.4	5.1	5.2	4.2	3.0	1.6	2.1	3.4	3.9	4.5	4.5	3.8	47
West Southwest	2.6	2.5	4.0	4.6	3.9	2.9	2.3	2.1	3.7	3.6	3.1	2.7	3.2	47
West	2.8	3.5	4.8	5.7	5.7	5.2	4.5	4.8	6.4	5.8	4.1	3.0	4.7	47
West Northwest	3.7	4.8	7.2	9.6	12.0	11.6	12.3	12.4	11.8	8.2	5.0	3.5	8.5	47
Northwest	2.9	3.8	6.0	10.6	16.0	19.2	25.2	23.7	15.1	8.4	4.3	3.1	11.6	47
North Northwest	1.5	2.0	3.6	6.9	12.1	16.1	22.1	18.6	10.2	5.0	2.1	1.9	8.6	47
Calm	9.5	11.2	11.7	11.6	9.4	8.7	6.0	7.7	11.8	15.6	11.6	10.1	10.4	47
Direction (Mean Speed, knots)														
North	3.8	3.9	4.8	5.1	5.6	6.2	6.0	5.7	5.3	4.8	4.5	4.2	5.5	47
North Northeast	4.4	4.4	4.7	4.7	4.8	5.0	4.9	4.8	5.0	4.8	4.6	4.8	4.8	47
Northeast	4.7	4.7	4.9	4.6	4.8	4.7	4.8	4.7	5.6	4.6	4.5	5.0	4.8	47
East Northeast	9.3	6.9	6.2	5.8	5.6	5.3	5.6	5.8	8.1	6.5	6.7	7.3	6.6	47
East	11.6	9.9	8.2	7.0	5.6	4.9	5.3	5.1	8.6	8.0	10.4	11.1	8.9	47
East Southeast	10.6	9.9	8.6	7.3	6.4	5.7	5.8	5.9	6.7	8.0	10.0	10.8	9.3	47
Southeast	9.1	9.2	8.1	6.5	6.0	5.8	5.9	5.4	5.6	6.8	8.3	9.0	8.0	47
South Southeast	7.6	8.0	7.6	6.8	6.8	6.1	6.3	5.8	5.6	6.3	7.0	7.1	6.9	47
South	10.5	9.9	9.6	8.7	7.6	6.8	6.6	6.4	6.6	7.9	9.4	9.9	8.7	47
South Southwest	12.4	12.4	11.4	10.1	8.6	8.5	8.5	7.6	8.4	9.5	11.1	12.3	10.7	47
Southwest	10.2	10.6	10.0	9.0	8.2	7.9	7.3	7.2	6.8	7.3	9.0	9.9	8.9	47
West Southwest	7.4	7.6	7.8	7.4	7.1	7.1	6.3	5.9	5.6	5.2	6.4	6.8	6.7	47
West	4.9	5.7	6.2	6.3	6.1	6.0	5.6	5.5	5.0	4.7	5.1	5.3	5.5	47
West Northwest	5.5	6.0	6.6	6.8	6.8	7.0	7.1	6.7	6.3	5.6	5.8	5.6	6.5	47
Northwest	5.7	6.2	6.8	7.0	7.2	7.3	7.6	7.2	6.7	6.0	5.8	6.0	7.0	47
North Northwest	5.6	5.3	6.2	6.9	7.2	7.5	7.8	7.4	6.9	6.2	5.5	5.7	7.2	47
VISIBILITY														
Mean Number of Days with Fog	15	12	9	7	5	4	3	5	12	18	17	16	123	48
% Observations with Visibility <= 1/2 mile	3.59	2.34	1.00	0.35	0.07	0.02	0.01	0.02	0.86	3.78	4.00	3.66	1.64	47

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

ASTORIA, OR (46°09'N, 123°53'W) 8 feet (2.4m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1017.6	1017.5	1015.9	1018.0	1018.0	1018.1	1018.9	1018.0	1017.3	1017.7	1017.2	1018.1	1017.7	43
TEMPERATURE (DEGREES F)														
Mean	42.3	44.4	45.7	48.3	52.8	57.1	60.3	60.9	58.7	52.9	46.9	43.0	51.2	43
Mean Daily Maximum	47.9	51.0	53.0	55.8	60.4	64.1	67.6	68.7	67.7	61.2	53.4	48.6	58.3	43
Mean Daily Minimum	36.2	37.3	37.8	40.3	44.7	49.5	52.5	52.6	49.2	44.2	39.9	36.9	43.5	43
Extreme Highest	67	72	73	83	87	93	100	96	95	85	71	64	100	43
Extreme Lowest	11	9	22	29	30	37	39	39	33	26	15	6	6	43
RELATIVE HUMIDITY														
Average Percentage	51.4	49.8	34.1	54.5	54.8	55.9	63.7	54.8	47.6	52.0	46.7	56.5	51.9	47
CLOUD COVER														
Percent of time Clear	11.5	11.7	9.3	10.1	10.1	9.8	18.3	16.9	23.5	16.5	10.8	10.0	13.3	40
Percent of time Scattered	10.2	11.0	12.9	14.1	15.8	15.9	16.3	18.2	18.9	17.0	12.6	12.6	14.6	40
Percent of time Broken	13.1	14.6	17.5	19.0	20.9	18.2	15.5	15.8	16.1	15.6	16.1	15.2	16.4	40
Percent of time Overcast	65.2	62.7	60.4	56.9	53.2	56.2	49.9	49.1	41.6	50.9	60.5	62.2	55.6	40
PRECIPITATION														
Mean Amount (inches)	9.99	7.51	7.06	4.94	2.93	2.57	1.10	1.38	2.75	5.96	10.37	10.50	67.06	43
Greatest Amount (inches)	18.94	21.89	13.47	9.47	6.60	5.48	4.39	5.22	6.93	12.56	17.47	16.57	87.39	43
Least Amount (inches)	0.69	1.35	0.93	1.33	0.37	0.55	0.01	0.08	0.04	0.52	1.45	2.67	41.58	43
Maximum in 24 hrs. (inches)	4.53	2.80	2.50	2.73	1.74	2.07	1.72	1.64	2.41	3.52	3.68	3.59	4.53	43
Mean Number of Days with Precipitation	23	21	23	22	20	19	16	15	15	19	23	24	240	43
Snow - Mean Amount (inches)	2.1	0.4	0.5	0.0	T	0.0	0.0	0.0	0.0	T	0.2	1.1	4.3	42
Snow - Greatest Amount (inches)	26.3	4.0	6.7	1.1	T	0.0	0.0	0.0	0.0	T	4.6	19.0	27.3	42
Snow - Least Snowfall Amount (inches)	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	42
Snow - Least Snowfall Amount (inches)	10.8	4.0	4.5	1.0	T	0.0	0.0	0.0	0.0	T	4.3	5.7	10.8	42
Mean Number of Days with Snow	4	2	2	1	Miss	0	0	0	0	Miss	1	3	13	43
WIND														
% of Observations with Gales (>34kts)	0.12	0.05	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.08	0.09	0.13	45
Mean Wind Speed (Knots)	8.0	7.7	7.7	7.5	7.4	7.4	7.5	7.0	6.5	6.4	7.5	7.8	7.4	45
Direction (percentage of observations)														
North	1.3	1.9	2.2	2.1	2.4	2.2	2.3	2.3	2.5	2.1	1.2	1.0	1.9	45
North Northeast.	1.6	1.5	1.7	1.3	1.0	0.8	0.4	0.8	2.0	1.8	1.4	1.1	1.3	45
Northeast	4.9	4.4	3.3	1.8	1.3	0.9	0.6	0.7	2.8	3.9	4.1	4.5	2.7	45
East Northeast	11.4	10.1	4.9	2.7	1.5	1.0	0.7	0.7	3.2	6.0	9.2	11.5	5.2	45
East	16.5	12.5	7.6	5.2	2.8	2.1	1.2	1.9	4.4	8.2	13.7	16.2	7.7	45
East Southeast	11.5	10.4	9.1	7.4	5.5	4.1	3.4	4.8	7.7	11.1	13.0	13.9	8.5	45
Southeast	7.1	7.3	9.6	8.4	6.6	5.7	4.7	6.5	9.3	11.1	9.6	8.5	7.9	45
South Southeast	4.0	4.7	5.5	5.0	3.9	3.8	3.0	3.7	5.2	5.7	5.8	4.5	4.5	45
South	7.8	8.6	8.6	6.6	5.5	5.1	4.3	5.4	6.4	7.7	8.4	7.5	6.8	45
South Southwest	7.7	8.0	8.0	7.4	6.3	6.6	5.4	6.7	7.6	7.8	7.4	6.5	7.1	45
Southwest	5.8	6.3	7.8	9.5	10.2	11.3	10.4	11.3	9.4	6.9	5.2	4.9	8.3	45
West Southwest	4.1	4.3	5.6	8.6	9.6	9.6	9.2	9.6	6.7	4.3	3.8	4.0	6.6	45
West	3.9	4.4	6.2	8.3	10.4	10.3	10.3	8.6	5.2	3.4	3.2	3.7	6.5	45
West Northwest	2.3	3.0	5.6	8.4	11.1	12.2	14.2	10.9	6.4	3.4	2.7	2.8	7.0	45
Northwest.	1.4	2.6	5.1	8.0	12.0	13.9	18.3	14.5	8.8	4.5	1.8	1.2	7.7	45
North Northwest	0.9	1.5	2.5	3.3	4.2	5.9	7.4	5.5	4.1	2.4	0.8	0.7	3.3	45
Calm	7.7	8.6	6.9	6.3	6.3	5.5	5.4	6.8	8.8	10.2	8.3	7.8	7.4	45
Direction (Mean Speed, knots)														
North	4.5	4.9	5.5	6.1	6.1	6.7	6.7	6.1	5.7	5.5	5.0	5.2	5.8	45
North Northeast.	6.1	6.1	6.9	6.9	6.7	6.0	7.6	6.2	7.4	7.0	6.5	6.2	6.7	45
Northeast	7.1	7.5	7.9	7.9	7.0	6.9	7.4	7.1	8.6	8.2	7.5	7.9	7.7	45
East Northeast	7.6	7.6	7.5	7.1	6.3	5.6	5.8	6.3	7.5	7.1	7.2	7.5	7.3	45
East	7.1	6.7	5.9	5.3	4.2	4.0	4.1	4.0	5.3	5.7	6.4	6.8	6.2	45
East Southeast	6.6	6.1	5.5	5.1	4.4	4.3	4.3	4.2	4.6	5.0	5.8	6.3	5.5	45
Southeast	5.8	5.9	5.5	5.0	4.7	4.4	4.3	4.4	4.5	4.8	5.6	6.1	5.1	45
South Southeast	8.4	8.2	7.5	6.5	5.7	5.4	5.2	5.1	5.5	6.9	8.2	8.4	6.9	45
South	13.1	12.4	10.9	9.3	7.2	6.7	6.3	6.4	7.5	9.4	12.1	12.9	10.0	45
South Southwest	14.0	12.9	11.7	10.2	8.8	8.0	7.4	7.6	8.7	10.2	13.2	13.7	10.7	45
Southwest	11.9	10.8	10.2	9.4	8.6	8.0	7.0	7.2	7.7	8.7	11.2	11.8	8.9	45
West Southwest	10.5	9.5	8.9	8.5	7.8	7.4	6.8	6.7	6.8	7.5	9.1	10.1	7.9	45
West	9.3	8.5	8.7	8.1	7.8	7.5	7.3	6.8	6.6	6.6	8.8	9.6	7.8	45
West Northwest	10.1	9.7	10.2	9.5	9.4	9.2	9.5	9.5	9.0	8.2	10.6	10.7	9.5	45
Northwest	8.6	8.7	9.9	10.7	10.6	10.5	10.5	10.3	9.8	8.7	9.9	10.3	10.2	45
North Northwest	6.1	7.0	7.9	8.6	9.0	9.6	9.3	9.1	8.5	7.5	7.9	7.5	8.7	45
VISIBILITY														
Mean Number of Days with Fog	18	16	15	14	12	13	13	17	18	20	17	18	191	43
Percent Obs with Visibility <= 1/2 mile	1.64	1.37	0.90	0.65	0.34	0.28	0.48	1.33	1.85	2.47	1.81	1.62	1.23	45

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

SEATTLE-TACOMA, WA (47°27'N, 122°18'W) 450 feet (137m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1017.5	1016.9	1016	1017.3	1017.3	1017.2	1017.9	1017	1017	1017.8	1017.3	1017.5	1017.2	48
TEMPERATURE (DEGREES F)														
Mean	39.7	42.9	45.3	49.4	55.6	60.7	65	64.9	60.5	52.6	45.2	40.9	51.9	48
Mean Daily Maximum	44.5	48.8	52.2	57.3	64.3	69.6	75.1	74.6	69.4	59.5	50.4	45.4	59.3	48
Mean Daily Minimum	34.5	36.6	37.9	41	46.3	51.3	54.4	54.7	51.2	45.3	39.5	35.8	44.1	48
Extreme - Highest	64	70	75	85	93	96	100	99	98	89	74	64	100	48
Extreme - Lowest	0	1	11	29	28	38	43	44	35	28	6	6	0	48
RELATIVE HUMIDITY														
Average Percentage	49.7	44.5	35.3	47.7	48.3	46.8	53.6	45.2	44.6	53.2	48	49.6	47.2	48
CLOUD COVER														
Percent of time Clear	9.5	10.6	11.2	11.1	12.9	15.5	31.5	28.4	27.7	15	8.9	7.9	15.9	48
Percent of time Scattered	9.3	11.2	14.1	15.2	18.7	18.5	18.5	19	17.7	15.4	11.1	9.7	14.9	48
Percent of time Broken	13.6	15.7	19.2	21.7	23.5	23	17.9	18.1	17.9	19.1	16.1	15.3	18.4	48
Percent of time Overcast	67.6	62.4	55.5	52	44.9	43	32.1	34.6	36.7	50.4	63.9	67.1	50.8	48
PRECIPITATION														
Mean Amount (inches)	5.60	4.11	3.71	2.52	1.69	1.46	0.79	1.12	1.81	3.43	5.92	5.85	38.01	48
Greatest Amount (inches)	12.92	9.11	8.4	6.53	4.76	3.82	2.39	4.59	5.95	7.75	10.71	11.85	55.14	48
Least Amount (inches)	0.58	0.35	0.57	0.33	0.12	0.13	T	0.01	T	0.31	0.74	1.37	23.71	48
Maximum Amount-24 hrs (inches)	2.98	2.98	2.7	2.64	1.83	1.75	0.85	1.63	1.65	2.72	3.41	2.14	3.41	48
Mean Number of Days with Precipitation	23	19	21	19	16	14	10	11	12	17	22	23	207	48
SNOW														
Snow - Mean Amount (inches)	4.9	1.7	1.3	0.1	T	0	0	0	0	0	0.9	2.6	11.6	48
Snow - Greatest Amount (inches)	57.2	13.1	18.2	2.3	T	0	0	0	0	2	17.5	22.1	60.6	48
Snow - Least Snowfall Amount (inches)	0.0	0	0	0	0	0	0	0	0	0	0	0	T	48
Snow - Maximum Amount in 24 hours (inches)	20.0	7	6	1.2	T	0	0	0	0	2	7.8	9.3	20	48
Mean Number of Days with Snow	7	4	3	1	Miss	0	0	0	0	Miss	2	5	22	48
WIND														
% of Observations with Gales	0.03	0.01	0.01	0.01	0	0	0	0	0	0	0.03	0.03	0.13	48
Mean Wind Speed (knots)	8.4	8.3	8.4	8.2	7.7	7.6	7.2	6.9	7.1	7.4	8.2	8.4	7.8	48
DIRECTION (percentage of observations)														
North	6.4	7.2	7.5	6.7	8.3	9.2	9.9	10.2	12.8	9.8	6.7	6	8.4	48
North Northeast	7.6	7.8	7.2	6.6	7.9	8.3	10.3	9	10.9	9.1	6.9	7.4	8.3	48
Northeast	4.8	4.2	4.1	4.2	4.6	4.3	5	5.1	5.4	4.2	3.8	4	4.5	48
East Northeast	2.8	2.9	1.8	1.5	1.2	1	1.3	1.2	1.8	1.6	2.3	2.6	1.8	48
East	6.5	5.3	4	2.6	1.5	1	0.8	1.1	2.2	3	4.6	6	3.2	48
East Southeast	9.5	7.8	6.2	3.6	2.3	1.4	0.8	1.5	3	6.2	8.3	9.7	5	48
Southeast	9.3	7.9	6.9	5.8	3.6	2.7	1.9	2.9	5.4	8.6	11	10.8	6.4	48
South Southeast	7.2	7.5	6.7	5.7	4.6	3.5	2.8	3.7	4.7	7.1	8.6	8.5	5.9	48
South	14.1	13.7	12.7	12.4	10.6	10.1	8.1	9.7	10.4	13.3	16.1	15.5	12.2	48
South Southwest	13.7	13.7	15.1	15.9	14.9	15.2	13.1	12.5	11	11.5	12.4	13.1	13.5	48
Southwest	6.9	8.1	10.7	13.3	13.4	15.2	13.2	11.3	7.7	7	6.3	6.5	10	48
West Southwest	1.9	2.5	4	5.6	6.4	6.9	7	6.6	3.8	2.7	2	1.9	4.3	48
West	1.0	1.5	1.9	3.2	4.2	4.9	5.8	5.5	3.2	2.1	1.3	1	3	48
West Northwest	0.6	1.1	1.7	2.5	3.8	4	4.6	4.7	3.1	2.3	0.8	0.7	2.5	48
Northwest	0.8	1.2	2	2.5	3.4	3.4	4.1	3.8	2.6	2.1	1	0.6	2.3	48
North Northwest	1.7	2.7	3.7	3.9	5.6	5.2	7.2	6.2	6.1	3.8	2.2	1.5	4.1	48
Calm	5.5	5.5	4.3	4.4	4.2	3.9	4.3	5	6.2	6.1	5.9	5	5	48
DIRECTION (Mean Speed, knots)														
North	8.3	8.3	8.4	8.6	8.5	8.3	8.2	7.8	8.3	7.8	8.2	7.8	8.2	48
North Northeast	7.9	7.9	8	8.2	8.2	8.1	8	7.7	8	8.3	7.8	7.8	8	48
Northeast	7.1	7.4	7.2	7.9	8.1	8	7.9	7.5	7.5	7.2	7.3	7	7.5	48
East Northeast	7.1	6.8	7	6.8	6.5	5.9	6.5	6	5.5	5.7	6.4	6.6	6.5	48
East	7.3	7.2	6.5	6.4	5.3	5.2	4	4.4	5.3	6	6.6	7	6.5	48
East Southeast	7.7	7.4	7	6.4	5.8	5.5	5.4	5.2	5.7	6.5	7.7	7.6	7	48
Southeast	7.0	6.9	6.9	6.8	6.7	6.3	6.2	6.2	6.2	6.6	7.2	7.1	6.8	48
South Southeast	7.5	7.4	7.3	7.1	6.6	6.4	6.6	6.2	6.4	6.8	7.5	7.6	7.1	48
South	9.8	9.4	9	8.5	7.4	7.2	6.7	6.7	7.3	8.5	9.9	9.8	8.6	48
South Southwest	12.1	11.8	11.1	10.1	9	8.5	7.8	7.9	8.8	10.1	11.5	12	10.1	48
Southwest	12.8	12.4	12	11.1	9.8	9.3	8.3	8.2	9.2	10.4	11.7	13	10.4	48
West Southwest	8.9	8.7	9.6	8.7	8.1	7.8	7.1	7.1	7	7.4	8.9	8.9	8	48
West	4.3	5.5	6.3	6.6	6.3	6.3	6.3	6.1	5.9	4.8	5.2	4.5	6	48
West Northwest	5.4	5.5	6.1	6.3	6.3	6.5	6.8	6.5	5.9	5.6	4.8	5.1	6.2	48
Northwest	6.1	6.5	7	7.4	7.2	7.1	7.1	6.9	6.3	6.3	6.8	6.3	6.9	48
North Northwest	8.2	8.1	8	8.7	8.6	8.1	8.4	8.3	8	7.2	7.3	7.3	8.1	48
VISIBILITY														
Mean Number of Days with Fog	18	15	13	10	8	8	8	11	16	19	19	19	164	48
% Observations with Visibility <= ½ mile	3.81	1.93	0.79	0.33	0.24	0.21	0.44	0.8	2.24	4.31	3.85	3.9	1.9	48

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

QUILLAYUTE, WA (47°57'N, 124°33'W) 179 feet (54.6m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1016.6	1016.3	1014.8	1017.0	1017.5	1017.8	1018.9	1017.8	1017.8	1017.8	1015.4	1016.9	1017.1	29
TEMPERATURE (DEGREES F)														
Mean	40.4	42.4	44.0	46.7	51.7	55.9	59.3	59.7	57.1	50.4	44.3	40.7	49.4	29
Mean Daily Maximum	46.3	49.3	51.9	55.1	60.5	64.2	68.2	69.0	67.1	59.1	50.8	46.2	57.4	29
Mean Daily Minimum	34.1	34.9	35.7	37.8	42.4	46.9	49.8	49.9	46.6	41.2	37.4	34.6	41.0	29
Extreme - Highest	65	73	72	83	92	96	97	99	97	83	69	64	99	29
Extreme - Lowest	7	11	19	24	29	33	38	36	28	24	5	7	5	29
RELATIVE HUMIDITY														
Average Percentage	41.3	37.8	22.8	45.4	50.1	53.0	64.3	53.4	52.5	52.9	29.2	44.4	45.7	29
CLOUD COVER														
Percent of time Clear	12.0	13.2	11.9	9.8	10.4	10.9	16.3	20.0	25.0	16.8	8.8	12.5	14.0	29
Percent of time Scattered	9.2	11.3	13.7	12.6	14.9	14.4	16.3	16.3	18.0	16.4	12.6	11.8	14.0	29
Percent of time Broken	11.8	14.1	16.2	18.5	19.5	17.6	14.8	16.9	15.1	15.7	16.3	14.8	15.9	29
Percent of time Overcast	67.1	61.3	58.1	59.1	55.2	57.1	52.7	46.8	41.8	51.1	62.3	60.8	56.0	29
PRECIPITATION														
Mean Amount (inches)	13.75	12.00	10.97	7.76	5.22	3.13	2.37	2.80	4.62	10.09	14.21	14.83	101.75	29
Greatest Amount (inches)	23.99	20.60	21.86	13.90	12.45	8.50	11.02	15.07	10.93	27.17	29.14	27.82	131.64	29
Least Amount (inches)	1.22	0.87	1.84	2.94	1.05	0.40	0.36	0.30	0.12	1.37	4.41	3.63	60.24	29
Maximum Amount-24 hrs (inches)	7.16	5.07	4.00	2.63	3.52	1.58	5.35	4.29	3.25	4.87	5.28	6.71	7.16	29
Mean Number of Days with Precipitation	23	20	22	22	20	19	16	15	15	20	23	24	239	29
Snow - Mean Amount (inches)														
Snow - Greatest Amount (inches)	4.6	2.9	1.6	0.3	T	0.0	0.0	0.0	T	T	1.0	2.7	13.1	29
Snow - Least Snowfall Amount (inches)	40.1	16.1	10.2	2.8	T	0.0	0.0	0.0	T	T	15.6	11.6	58.3	29
Snow - Maximum Amount in 24 hours (inches)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	29
Snow - Mean Number of Days with Snow	8.0	7.1	7.5	2.1	T	0.0	0.0	0.0	T	T	7.7	7.3	8.0	29
	5	4	4	3	Miss	0	0	0	Miss	Miss	2	5	23	29
WIND														
% of Observations with Gales	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47	29
Mean Wind Speed (knots)	5.8	5.9	5.8	5.5	5.2	5.1	4.8	4.5	4.3	4.7	5.6	5.8	5.2	29
Direction (percentage of observations)														
North	2.2	2.4	2.9	2.3	3.2	2.9	3.3	4.2	4.2	3.2	2.4	2.3	3.0	29
North Northeast	3.9	4.0	4.0	2.6	2.4	1.9	2.4	2.3	4.1	4.4	3.5	3.7	3.3	29
Northeast	11.5	10.6	6.7	4.7	3.5	2.4	2.2	2.7	6.0	6.7	9.3	10.0	6.3	29
East Northeast	11.3	11.0	8.2	6.8	4.8	2.9	2.7	2.9	5.8	8.0	11.5	11.3	7.3	29
East	7.2	7.8	6.3	5.5	3.8	2.3	2.1	2.6	3.8	5.9	8.2	8.2	5.3	29
East Southeast	4.8	5.0	5.0	4.4	3.1	2.3	1.6	1.9	2.6	4.7	5.4	5.2	3.8	29
Southeast	6.6	7.1	6.8	5.1	3.4	2.7	2.1	2.0	3.0	5.9	7.7	7.8	5.0	29
South Southeast	10.0	10.0	9.0	7.0	5.5	5.3	3.6	4.8	6.2	9.1	10.5	11.1	7.7	29
South	8.1	9.6	9.3	9.1	8.3	9.0	7.4	8.8	8.7	9.5	8.6	7.6	8.7	29
South Southwest	4.5	4.5	5.5	6.1	6.5	6.8	6.3	6.6	5.7	4.2	4.2	3.9	5.4	29
Southwest	3.3	3.9	4.3	5.2	6.5	7.1	6.7	6.9	4.7	3.5	2.9	2.6	4.8	29
West Southwest	2.7	2.9	3.9	6.3	7.6	7.5	8.2	7.2	5.2	3.6	2.2	2.3	5.0	29
West	3.3	2.8	3.9	6.7	7.0	7.3	7.4	5.5	3.9	3.2	2.8	2.9	4.7	29
West Northwest	2.5	2.2	4.3	7.0	8.0	9.3	8.8	7.0	4.4	3.0	3.1	2.7	5.2	29
Northwest	1.3	1.4	2.9	3.9	6.3	8.3	9.7	7.2	3.8	2.0	1.6	1.5	4.2	29
North Northwest	1.1	1.5	1.9	2.6	4.2	5.0	6.0	5.2	3.9	2.1	1.2	1.2	3.0	29
Calm	15.8	13.7	14.8	14.8	16.4	17.6	19.5	22.4	24.0	20.9	14.8	15.9	17.6	29
Direction (Mean Speed, knots)														
North	3.9	4.2	4.4	4.4	4.3	4.5	4.7	4.3	4.4	4.0	4.1	4.1	4.3	29
North Northeast	5.8	5.8	5.7	5.2	5.0	5.0	4.4	4.6	5.2	5.2	5.4	5.6	5.3	29
Northeast	7.0	7.2	6.5	5.7	5.1	5.1	4.5	4.4	5.6	5.5	6.3	6.9	6.2	29
East Northeast	5.1	5.3	5.0	4.5	4.2	4.1	4.0	4.1	4.4	4.5	4.9	5.2	4.8	29
East	4.5	4.5	4.4	4.2	3.9	3.6	3.7	3.5	3.8	4.1	4.4	4.5	4.2	29
East Southeast	5.0	5.0	5.2	4.8	4.4	4.2	4.0	4.0	4.2	4.5	4.9	5.2	4.8	29
Southeast	7.3	7.4	7.4	6.9	5.9	5.5	5.5	5.4	5.8	6.9	7.5	7.7	7.0	29
South Southeast	8.5	8.5	8.3	7.3	6.8	6.1	5.8	6.2	6.4	7.7	8.4	8.6	7.7	29
South	8.3	8.1	8.1	7.4	6.7	6.0	5.8	5.8	6.2	7.2	8.3	8.5	7.2	29
South Southwest	8.9	8.3	8.1	7.5	7.1	6.7	6.4	6.0	6.1	7.0	8.7	9.0	7.3	29
Southwest	9.4	9.0	8.7	8.1	7.1	7.2	6.7	6.4	6.5	7.2	8.8	9.6	7.6	29
West Southwest	9.0	7.7	7.9	7.3	7.2	6.8	6.6	6.6	6.3	6.5	8.0	8.6	7.1	29
West	7.6	6.5	7.2	7.3	6.9	6.4	6.3	6.3	5.8	5.8	6.4	7.1	6.6	29
West Northwest	8.5	7.8	7.5	7.1	7.1	6.7	6.4	6.2	6.4	6.6	7.4	8.5	7.0	29
Northwest	7.0	7.5	7.5	7.3	7.0	6.8	6.5	6.5	6.4	6.5	6.8	7.9	6.8	29
North Northwest	5.7	5.1	6.5	6.3	6.4	6.0	6.3	6.1	5.5	5.1	6.0	5.4	6.0	29
VISIBILITY														
Mean Number of Days with Fog	21	19	20	17	17	18	19	20	20	22	21	22	236	29
% Observations with Visibility <= 1/2 mile	1.87	1.50	1.58	1.12	1.01	1.08	2.07	4.36	3.92	3.45	1.89	1.85	2.16	29

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

TATOOSH ISLAND, WA (48°23'N, 124°44'W) 115 feet (35.1m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1015.6	1015.7	1014.8	1016.9	1017.6	1017.7	1018.5	1017.7	1016.5	1016.2	1015.8	1015.0	1016.5	19
TEMPERATURE (DEGREES F)														
Mean	41.4	43.3	43.5	46.9	50.6	53.4	55.4	56.2	55.1	52.0	47.3	44.1	49.1	18
Mean Daily Maximum	44.7	46.9	47.4	51.0	54.6	57.2	59.2	60.1	59.5	55.9	50.8	47.4	52.9	18
Mean Daily Minimum	37.6	39.2	39.1	42.4	46.1	49.2	51.1	51.8	50.2	47.7	43.3	40.3	44.8	18
Extreme - Highest	57	63	66	69	74	82	80	76	80	70	64	61	82	18
Extreme - Lowest	14	20	25	33	37	43	46	45	43	36	19	14	14	18
RELATIVE HUMIDITY														
Average Percentage	30.9	31.9	23.2	44.4	51.4	52.0	60.5	52.1	40.1	36.7	32.5	24.9	40.1	19
CLOUD COVER														
Percent of time Clear	11.0	11.3	9.2	10.1	10.3	9.6	15.9	13.5	20.1	13.8	10.5	7.4	11.9	19
Percent of time Scattered	11.6	11.3	14.0	14.4	16.4	12.8	12.4	12.3	15.9	16.5	13.9	11.6	13.6	19
Percent of time Broken	13.0	13.9	17.7	16.3	18.4	15.8	13.6	13.9	13.5	15.7	14.7	14.0	15.1	19
Percent of time Overcast	64.4	63.6	59.1	59.2	55.0	61.7	58.1	60.3	50.5	54.0	60.9	67.1	59.5	19
PRECIPITATION														
Mean Amount (inches)	10.93	9.59	7.91	5.48	2.63	2.59	2.06	2.35	3.38	8.65	11.52	12.52	79.62	18
Greatest Amount (inches)	20.02	21.16	14.80	10.20	6.10	6.31	6.05	4.78	7.04	13.65	22.17	16.81	101.64	18
Least Amount (inches)	1.84	4.23	2.94	0.68	0.87	0.47	0.03	0.18	1.18	2.50	4.47	7.25	68.70	18
Maximum Amount-24 hrs (inches)	2.93	2.74	2.68	3.05	1.64	2.18	1.50	2.14	1.95	3.80	3.76	3.28	3.80	18
Mean Number of Days with Precipitation	25	22	24	20	19	19	18	19	16	20	23	26	251	18
Snow - Mean Amount (inches)	4.4	2.1	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	3.0	13.5	17
Snow - Greatest Amount (inches)	32.3	10.4	24.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	7.5	20.2	34.5	17
Snow - Least Snowfall Amount (inches)	0.0	0.0	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	17
Snow - Maximum Amount in 24 hours (inches)	8.5	5.2	10.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	4.7	7.0	10.3	17
Mean Number of Days with Snow	6	4	4	Miss	0	0	0	0	0	0	1	4	19	18
WIND														
% of Observations with Gales	6.09	3.59	1.21	1.01	0.19	0.07	0.02	0.02	0.28	2.06	3.87	5.49	2.32	19
Mean Wind Speed (knots)	17.4	15.9	14.1	12.2	10.3	9.1	8.9	8.9	10.4	14.1	16.6	17.4	12.9	19
Direction (percentage of observations)														
North	0.8	1.5	1.9	2.1	1.7	1.5	1.2	1.7	2.9	1.4	0.8	1.0	1.5	19
North Northeast	0.4	0.3	0.4	0.4	0.6	0.7	0.7	0.7	1.1	0.5	0.7	0.4	0.6	19
Northeast	3.9	4.9	5.6	5.4	4.9	3.6	3.4	4.2	10.6	8.4	4.1	2.5	5.1	19
East Northeast	10.0	9.1	8.4	6.8	3.8	3.6	3.4	4.0	11.5	12.5	10.6	9.9	7.8	19
East	31.5	24.2	22.1	13.7	8.6	5.8	4.0	6.3	12.9	23.8	30.4	27.2	17.5	19
East Southeast	4.0	3.2	2.3	1.5	0.7	0.6	0.3	0.4	1.0	1.7	3.3	3.3	1.8	19
Southeast	6.5	5.7	5.3	4.3	2.4	1.4	1.4	1.8	2.2	4.8	6.9	6.3	4.1	19
South Southeast	5.6	6.1	5.7	3.5	3.0	3.5	2.7	3.5	4.3	6.1	5.6	6.3	4.6	19
South	13.0	13.8	12.6	14.2	15.5	19.5	24.1	30.6	20.9	15.2	12.9	14.5	17.2	19
South Southwest	3.1	2.5	3.6	5.4	5.9	9.1	12.6	11.8	6.1	4.1	2.7	2.9	5.8	19
Southwest	6.4	7.9	8.8	11.8	14.7	17.6	21.8	17.5	10.0	6.7	6.5	7.2	11.5	19
West Southwest	2.9	2.9	4.2	5.5	7.3	8.0	6.5	4.7	3.2	2.7	2.8	2.6	4.5	19
West	6.7	10.5	11.1	14.6	21.1	17.6	12.2	7.5	7.5	6.5	6.9	8.7	11.0	19
West Northwest	1.7	2.7	2.9	4.1	4.4	3.0	1.6	0.9	1.3	2.2	2.0	2.8	2.5	19
Northwest	1.5	3.1	3.1	4.0	2.7	1.6	1.2	1.4	1.5	1.4	2.2	2.5	2.2	19
North Northwest	0.4	0.4	0.4	0.5	0.4	0.4	0.3	0.2	0.3	0.2	0.4	0.3	0.3	19
Calm	1.3	1.3	1.8	2.4	2.4	2.7	2.8	2.8	2.7	1.9	1.1	1.6	2.1	19
Direction (Mean Speed, knots)														
North	8.1	6.6	6.7	5.8	5.3	5.2	5.8	4.7	5.3	5.2	8.1	7.2	5.9	19
North Northeast	11.0	7.5	10.0	7.9	8.4	6.6	6.7	6.4	7.7	6.6	11.1	10.1	8.2	19
Northeast	18.1	13.8	12.2	11.8	11.4	9.7	8.2	9.5	10.8	12.7	14.6	12.4	12.0	19
East Northeast	18.4	16.9	15.5	13.7	13.2	10.5	10.9	10.3	13.8	17.6	17.4	19.0	15.8	19
East	18.5	16.6	15.8	13.2	11.9	10.3	9.3	8.2	11.8	15.2	17.4	19.2	15.8	19
East Southeast	14.7	14.7	13.9	11.6	11.5	8.0	6.7	7.6	11.3	14.3	15.7	14.3	13.8	19
Southeast	12.9	13.4	11.8	11.5	8.4	8.2	8.3	8.9	9.5	12.0	13.3	13.9	12.0	19
South Southeast	15.8	16.4	15.2	14.5	12.9	11.3	11.2	11.3	12.9	16.3	16.1	17.9	14.9	19
South	19.1	17.9	14.8	14.3	11.8	10.9	10.6	10.8	11.6	15.0	19.0	20.1	13.9	19
South Southwest	22.9	18.9	15.5	14.4	11.9	10.3	11.1	9.5	10.5	14.4	22.2	21.7	13.1	19
Southwest	20.1	17.7	14.2	12.3	9.9	9.0	8.7	8.1	8.3	13.5	19.0	18.1	11.7	19
West Southwest	16.1	15.6	13.6	11.8	9.4	8.1	7.7	7.3	8.6	10.9	15.3	15.5	10.7	19
West	16.6	15.0	14.0	11.5	9.7	7.9	6.7	6.5	7.7	11.3	14.6	15.8	11.0	19
West Northwest	16.4	16.2	17.1	12.2	10.3	9.4	7.4	6.6	10.6	15.3	16.8	16.6	13.2	19
Northwest	13.8	13.4	10.1	10.3	8.0	7.7	6.3	5.5	6.5	11.6	14.4	13.1	10.4	19
North Northwest	10.8	10.5	7.1	6.0	6.3	7.3	6.6	5.2	5.2	5.5	11.1	8.8	7.8	19
VISIBILITY														
Mean Number of Days with Fog	11	11	9	9	10	14	18	21	17	13	10	12	155	18
% Observations with Visibility <= ½ mile	0.96	0.74	0.46	0.67	2.73	4.97	9.50	15.12	9.81	3.96	0.95	0.43	4.19	19

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

HILO, HI (19°43'N, 155°04'W) 36 feet (10.9m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1016	1016	1017.6	1017.8	1017.7	1017.5	1016.8	1016.3	1015.3	1015.6	1016.1	1016.2	1016.6	46
TEMPERATURE (DEGREES F)														
Mean	71.7	71.5	71.9	72.7	73.8	75.2	75.9	76.4	76.3	75.7	74.1	72.3	74.0	46
Mean Daily Maximum	79.5	79.3	79.2	79.5	80.9	82.4	82.8	83.4	83.7	83.0	81.0	79.6	81.2	46
Mean Daily Minimum	63.4	63.3	64.2	65.3	66.3	67.5	68.6	69.0	68.5	67.9	66.7	64.6	66.3	46
Extreme - Highest	91	92	93	89	94	90	89	93	92	91	90	93	94	46
Extreme - Lowest	54	53	54	59	59	61	62	63	61	62	58	55	53	46
RELATIVE HUMIDITY														
Average Percentage	34.6	35.1	50.6	52.7	52.2	50.4	43.0	37.6	28.4	31.1	36.5	37.4	40.7	46
CLOUD COVER														
Percent of time Clear	11.1	11.1	4.7	1.3	1.6	1.8	1.6	2.0	3.2	3.8	4.5	8.6	4.6	46
Percent of time Scattered	27.1	25.4	22.2	17.1	17.5	22.8	21.1	22.1	25.8	24.3	21.3	24.6	22.6	46
Percent of time Broken	26.1	25.8	28.5	30.5	30.6	34.0	33.8	33.7	32.4	31.8	29.1	28.5	30.4	46
Percent of time Overcast	35.6	37.7	44.5	51.0	50.2	41.4	43.4	42.1	38.5	40.1	45.2	38.3	42.3	46
PRECIPITATION														
Mean Amount (inches)	9.22	11.54	13.53	13.55	9.49	6.44	10.16	10.70	8.24	9.75	15.35	12.65	130.60	46
Greatest Amount (inches)	32.24	45.55	49.93	43.24	25.01	13.29	28.59	26.92	21.82	26.10	45.75	50.82	211.22	46
Least Amount (inches)	0.36	0.58	0.88	2.93	2.71	1.80	3.83	2.66	1.59	2.40	1.01	0.28	68.09	46
Maximum Amount-24 hrs (inches)	9.51	16.87	15.66	9.66	7.89	2.83	5.91	9.64	8.67	8.63	15.41	9.33	16.87	46
Mean Number of Days with Precipitation	21	20	26	28	29	28	30	29	26	27	26	24	314	46
Snow - Mean Amount (inches)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46
Snow - Greatest Amount (inches)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46
Snow - Least Snowfall Amount (inches)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46
Snow - Maximum Amount in 24 hours (inches)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46
Mean Number of Days with Snow	0	0	0	0	0	0	0	0	0	0	0	0	0	46
WIND														
% of Observations with Gales	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	46
Mean Wind Speed (knots)	6.5	6.7	6.7	6.5	6.4	6.1	6.0	5.9	5.9	5.8	5.9	6.3	6.2	46
Direction (percentage of observations)														
North	6.5	7.1	6.5	5.9	5.3	4.5	5.7	5.4	5.5	5.0	5.1	5.7	5.7	46
North Northeast	4.6	5.2	5.6	5.7	5.4	5.7	6.7	6.6	6.1	4.7	3.7	4.4	5.4	46
Northeast	3.5	4.7	5.8	7.1	6.8	8.1	8.5	8.2	6.5	5.8	4.8	3.7	6.1	46
East Northeast	3.4	3.9	6.1	7.4	7.0	8.6	8.0	7.9	6.1	5.6	4.9	4.0	6.1	46
East	4.1	4.4	6.0	6.1	6.9	7.2	5.9	5.8	5.1	5.0	4.8	3.9	5.4	46
East Southeast	5.5	5.6	5.9	5.2	5.9	4.6	3.6	3.5	4.1	4.8	5.4	5.5	5.0	46
Southeast	4.8	4.5	3.9	3.2	2.7	2.5	2.0	2.0	2.4	3.0	3.8	4.5	3.3	46
South Southeast	4.3	3.2	2.3	2.0	1.9	1.6	1.4	1.5	1.8	2.4	3.0	3.5	2.4	46
South	5.9	5.8	4.6	4.4	4.2	3.2	3.0	3.1	3.4	3.9	4.9	5.7	4.3	46
South Southwest	12.1	10.7	9.0	8.1	7.6	7.3	5.7	6.6	8.5	9.5	9.5	11.1	8.8	46
Southwest	18.3	17.0	15.0	14.1	14.3	15.2	13.8	14.8	18.4	18.9	19.0	18.6	16.4	46
West Southwest	9.9	9.3	10.7	11.8	11.8	13.2	13.6	13.1	13.7	13.8	12.4	11.4	12.1	46
West	4.3	5.0	5.4	6.4	6.8	6.8	7.6	7.5	6.7	5.7	5.8	4.7	6.1	46
West Northwest	1.9	2.4	2.6	2.9	3.2	2.8	3.3	3.7	2.5	2.6	2.8	2.5	2.8	46
Northwest	2.3	2.8	2.4	2.7	2.8	2.0	2.7	2.5	2.2	2.3	2.2	2.7	2.5	46
North Northwest	4.2	4.1	3.6	3.1	3.0	2.2	3.3	2.8	2.6	2.5	3.1	4.1	3.2	46
Calm	4.9	4.5	4.8	4.5	5.0	5.2	5.6	5.4	5.0	5.0	5.5	4.5	5.0	46
Direction (Mean Speed, knots)														
North	8.6	9.1	8.8	7.9	7.7	6.5	6.5	6.8	6.8	6.7	7.6	8.3	7.7	46
North Northeast	8.0	8.7	8.1	8.1	8.1	7.5	7.4	7.3	7.2	7.3	7.3	7.6	7.7	46
Northeast	7.5	8.3	8.2	7.9	7.8	7.9	7.7	7.4	7.3	7.1	7.0	7.7	7.7	46
East Northeast	7.5	8.2	8.1	8.3	8.3	8.2	8.1	8.1	7.7	7.3	7.5	7.7	8.0	46
East	7.9	8.3	8.7	8.6	8.7	8.4	8.1	8.0	8.0	7.8	7.5	7.4	8.2	46
East Southeast	9.4	9.7	9.7	9.7	9.1	9.1	8.5	8.5	8.4	8.6	8.0	8.6	9.0	46
Southeast	9.3	9.3	9.6	9.7	8.3	7.5	7.3	7.6	8.0	8.3	8.4	8.8	8.7	46
South Southeast	8.3	7.7	7.2	7.2	6.3	5.8	5.3	5.9	6.1	6.7	6.9	7.8	7.1	46
South	6.0	5.3	5.2	5.1	5.0	4.2	4.3	4.4	4.6	4.6	5.1	5.4	5.0	46
South Southwest	5.2	5.1	5.1	5.0	5.0	4.8	4.7	4.7	4.8	4.8	4.9	5.0	4.9	46
Southwest	5.4	5.5	5.4	5.2	5.3	5.2	5.2	5.1	5.3	5.3	5.3	5.4	5.3	46
West Southwest	5.8	5.7	5.7	5.6	5.7	5.6	5.5	5.5	5.7	5.5	5.5	5.7	5.6	46
West	5.4	5.5	5.4	5.4	5.5	5.4	5.4	5.5	5.5	5.3	5.4	5.4	5.4	46
West Northwest	5.8	5.8	5.5	5.6	5.5	5.3	5.3	5.3	5.3	5.4	5.6	5.5	5.5	46
Northwest	7.0	7.0	6.9	6.3	6.5	5.5	5.5	5.7	5.6	5.8	6.2	6.9	6.3	46
North Northwest	8.5	8.9	8.4	7.3	7.5	6.1	6.0	6.6	6.3	6.6	7.6	8.4	7.5	46
VISIBILITY														
Mean Number of Days with Fog	Miss	Miss	Miss	Miss	0	Miss	Miss	Miss	Miss	Miss	Miss	Miss	1	46
% Observations with Visibility <= ½ mile	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	46

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

HONOLULU, HI (21°20'N, 157°55'W) 7 feet (2.1m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1015.6	1015.8	1017.3	1017.5	1017.4	1017.2	1016.5	1015.9	1015.0	1015.2	1015.7	1015.8	1016.2	46
TEMPERATURE (DEGREES F)														
Mean	73.0	73.0	74.2	75.7	77.4	79.4	80.4	81.3	81.0	79.6	77.3	74.5	77.2	46
Mean Daily Maximum	79.9	80.0	81.0	82.3	84.1	86.0	86.9	87.9	87.9	86.4	83.7	81.0	83.9	46
Mean Daily Minimum	65.5	65.5	67.0	68.6	70.2	72.2	73.4	74.2	73.5	72.3	70.4	67.5	70.0	46
Extreme - Highest	87	88	89	89	93	92	94	93	95	94	93	89	95	46
Extreme - Lowest	52	53	55	56	60	65	66	67	66	61	57	54	52	46
RELATIVE HUMIDITY														
Average Percentage	31.3	32.9	48.3	49.6	48.8	46.6	39.9	33.8	25.4	27.5	32.1	33.4	37.5	46
CLOUD COVER														
Percent of time Clear	12.4	10.7	7.4	4.4	3.6	3.2	2.9	3.3	5.9	5.9	6.5	9.9	6.3	46
Percent of time Scattered	44.3	44.7	46.5	44.4	48.0	52.6	56.3	56.0	55.7	49.6	46.7	42.7	49.0	46
Percent of time Broken	26.3	27.9	28.7	34.5	34.4	35.1	34.5	32.7	30.8	31.8	31.8	30.1	31.6	46
Percent of time Overcast	17.0	16.7	17.4	16.7	14.0	9.0	6.3	7.9	7.5	12.8	15.0	17.3	13.1	46
PRECIPITATION														
Mean Amount (inches)	3.39	2.64	2.81	1.34	0.98	0.38	0.57	0.58	0.70	2.04	2.59	3.55	21.57	46
Greatest Amount (inches)	13.33	13.68	20.79	8.92	7.23	2.46	2.33	3.08	2.08	11.15	14.72	17.29	42.78	46
Least Amount (inches)	0.18	0.06	0.01	0.01	0.09	T	0.03	T	0.05	0.11	0.03	0.06	5.03	46
Maximum Amount-24 hrs (inches)	6.40	5.52	15.32	3.90	3.44	2.00	2.18	2.10	1.35	7.47	5.39	7.89	15.32	46
Mean Number of Days with Precipitation	17	16	19	20	19	19	20	18	17	18	19	18	220	46
SNOW														
Snow - Mean Amount (inches)	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	46
Snow - Greatest Amount (inches)	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	46
Snow - Least Snowfall Amount (inches)	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	46
Snow - Maximum Amount in 24 hours (inches)	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	46
Mean Number of Days with Snow	0	0	0	0	0	0	0	0	0	0	0	0	0	46
WIND														
% of Observations with Gales	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.95	46
Mean Wind Speed (knots)	8.3	8.8	9.9	10.2	10.3	11.0	11.4	11.2	9.8	9.1	9.3	9.1	9.9	46
DIRECTION (percentage of observations)														
North	5.8	5.4	5.1	4.4	3.0	1.4	0.9	1.3	2.5	3.8	4.6	5.0	3.6	46
North Northeast	5.1	4.7	4.9	4.6	4.1	2.7	2.4	2.5	3.7	4.3	4.5	4.7	4.0	46
Northeast	13.6	17.1	20.5	26.7	28.2	31	30.8	30.6	25.9	23.3	20.7	18.5	23.9	46
East Northeast	18.9	22.7	31.8	37.4	40.4	47.4	52.1	49.8	43.1	35.6	35.1	27.9	36.9	46
East	5.1	5.6	7.7	6.7	7.8	8.8	9.0	8.9	7.7	8.1	8.3	6.5	7.5	46
East Southeast	1.8	1.6	1.2	1.0	1.2	1.0	0.9	0.9	1.3	1.4	1.7	1.7	1.3	46
Southeast	3.0	2.8	2.3	1.8	1.6	0.8	0.7	1.1	1.7	2.5	2.2	2.8	1.9	46
South Southeast	4.2	3.0	2.7	2.1	1.7	1.1	0.5	0.7	1.9	2.3	2.6	3.3	2.2	46
South	5.5	4.1	3.1	2.1	1.9	0.9	0.4	0.6	1.8	2.4	2.5	3.5	2.4	46
South Southwest	4.2	3.1	2.2	1.3	1.0	0.6	0.1	0.2	0.8	1.5	1.5	2.3	1.6	46
Southwest	4.6	3.9	2.0	1.1	0.8	0.4	0.1	0.2	0.7	1.2	1.3	2.6	1.6	46
West Southwest	3.3	2.8	1.5	0.6	0.5	0.2	0.1	0.2	0.4	0.6	0.6	1.4	1.0	46
West	2.8	2.7	1.5	0.6	0.6	0.2	0.1	0.2	0.5	0.9	0.8	1.8	1.0	46
West Northwest	3.8	3.7	2.1	1.1	1.2	0.6	0.3	0.5	1.2	1.8	2.0	3.0	1.8	46
Northwest	7.8	7.4	5.1	3.5	2.6	1.1	0.8	1.1	2.6	4.0	5.0	6.6	4.0	46
North Northwest	6.0	6.0	4.3	3.3	2.2	1.0	0.6	0.8	2.2	3.4	4.0	5.3	3.3	46
Calm	5.1	3.9	2.5	2.2	1.8	1.2	0.7	1.0	2.4	3.2	2.9	3.4	2.5	46
DIRECTION (Mean Speed, knots)														
North	5.8	6.1	6.4	5.9	5.7	4.7	5.0	4.9	4.9	5.0	5.6	6.0	5.7	46
North Northeast	7.4	7.8	8.4	8.3	8.8	8.1	8.9	8.2	7.4	7.4	7.7	7.7	8.0	46
Northeast	9.6	10.9	11.5	11.8	11.5	11.8	11.9	11.7	10.9	10.6	10.6	10.9	11.3	46
East Northeast	10.7	11.3	12.0	11.9	11.5	11.7	11.9	11.9	11	10.7	11.3	11.4	11.5	46
East	9.7	9.6	10.4	10.2	9.8	10.5	10.7	10.4	9.5	9.6	10.2	9.9	10.1	46
East Southeast	9.2	8.6	9.5	8.5	8.4	8.4	9.4	10.0	8.3	8.8	9.4	9.1	9.0	46
Southeast	9.9	10.3	11.1	9.4	10.3	10.1	10.7	11.6	11.1	10.6	10.5	10.3	10.4	46
South Southeast	9.9	9.6	9.8	10.1	9.3	10.5	9.8	9.9	9.0	9.5	10.1	9.7	9.7	46
South	8.8	7.9	7.9	7.7	7.2	7.6	7.1	8.2	7.6	7.6	7.6	8.3	8.0	46
South Southwest	9.3	8.2	8.4	8.2	7.8	7.8	6.2	9.0	8.2	7.9	7.5	8.8	8.4	46
Southwest	9.7	9.0	9.4	8.7	8.6	8.0	8.9	9.2	8.6	8.0	8.1	8.8	9.0	46
West Southwest	10.1	9.5	9.5	7.4	7.8	7.5	6.4	10.1	7.5	8.0	7.6	8.7	9.1	46
West	7.5	7.6	6.6	4.9	4.2	4.9	3.1	5.0	4.1	4.4	4.6	6.5	6.3	46
West Northwest	5.4	5.4	5.4	5.0	4.5	4.5	4.5	4.4	4.4	4.6	4.7	5.1	5.0	46
Northwest	5.6	5.8	5.8	5.5	5.3	5.2	5.2	5.1	4.9	5.0	5.5	5.5	5.5	46
North Northwest	6.0	6.2	5.7	5.8	5.5	4.8	4.9	4.9	4.8	5.0	5.5	5.9	5.7	46
VISIBILITY														
Mean Number of Days with Fog	0	0	Miss	Miss	Miss	Miss	0	0	0	Miss	Miss	Miss	Miss	46
% Observations with Visibility <= 1/2 mile	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	46

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

CLIMATOLOGICAL TABLES

T = trace (not measurable) of precipitation.
MISS or (blank) is a missing value.

LIHUE, HI (21°59'N, 159°21'W) 103 feet (31.4m)

WEATHER ELEMENTS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	YEAR	YEARS OF RECORD
SEA LEVEL PRESSURE*														
Mean (Millibars)	1015.9	1016.2	1017.8	1018.2	1018.2	1017.9	1017.4	1016.7	1015.7	1015.8	1016.2	1016.2	1016.8	45
TEMPERATURE (DEGREES F)														
Mean	71.6	71.6	72.5	73.9	75.7	77.8	78.9	79.6	79.3	77.8	75.7	73.1	75.6	46
Mean Daily Maximum	77.9	77.9	78.2	79.2	81.0	83.0	83.9	84.7	84.8	83.3	80.8	78.6	81.1	46
Mean Daily Minimum	64.8	64.8	66.3	68.0	69.9	72.1	73.3	74.0	73.3	71.8	70.0	67.1	69.7	46
Extreme - Highest	85	86	88	88	88	89	89	90	90	90	89	86	90	46
Extreme - Lowest	50	52	51	56	59	61	62	66	65	61	57	52	50	46
RELATIVE HUMIDITY														
Average Percentage	34.1	36.7	53.1	56.5	56.6	54.2	48.8	42.5	31.9	33.4	37.0	37.0	43.4	45
CLOUD COVER														
Percent of time Clear	16.1	15.9	9.2	4.1	3.1	3.2	1.8	2.5	4.9	6.4	7.1	11.8	7.1	45
Percent of time Scattered	31.4	31.7	30.6	28.7	33.0	38.7	37.9	38.0	44.9	37.8	32.8	31.0	34.8	45
Percent of time Broken	29.2	29.0	32.2	36.0	37.3	37.8	40.5	38.7	35.4	34.4	33.7	31.9	34.7	45
Percent of time Overcast	23.4	23.4	28.0	31.2	26.6	20.4	19.8	20.8	14.8	21.3	26.4	25.4	23.4	45
PRECIPITATION														
Mean Amount (inches)	5.42	3.62	4.25	3.05	2.61	1.59	2.10	1.96	2.24	4.48	5.43	5.59	42.35	46
Greatest Amount (inches)	17.56	11.35	14.54	10.65	12.59	4.83	8.85	8.13	10.87	18.04	18.45	22.91	74.40	46
Least Amount (inches)	0.30	T	0.30	0.32	0.42	0.41	0.75	0.70	0.45	1.02	0.58	0.51	16.40	46
Maximum Amount-24 hrs (inches)	10.73	5.40	5.15	5.33	4.99	2.09	4.97	5.31	7.15	7.85	9.75	11.24	10.73	46
Mean Number of Days with Precipitation	20	19	23	24	23	23	26	25	22	24	24	22	275	46
Snow														
Snow - Mean Amount (inches)	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	46
Snow - Greatest Amount (inches)	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	46
Snow - Least Snowfall Amount (inches)	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	46
Snow - Maximum Amount in 24 hours	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	46
Mean Number of Days with Snow	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	46
WIND														
% of Observations with Gales	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.97	45
Mean Wind Speed (knots)	9.6	9.9	10.9	11.5	11.0	11.3	11.9	11.4	10.1	10.0	10.5	10.2	10.7	45
Direction (percentage of observations)														
North	4.9	5.5	4.5	4.3	2.9	1.1	1.0	1.3	2.1	3.6	4.9	5.2	3.4	45
North Northeast	6.5	6.6	7.2	7.7	7.0	4.5	5.7	5.4	5.5	7.0	7.2	7.0	6.4	45
Northeast	13.6	18.3	23.8	31.3	34.7	36.5	41.2	39.7	31.3	26.2	22.6	19.9	28.3	45
East Northeast	14.8	17.4	25.8	30.2	31.9	42.8	42.2	40.9	35.7	29.4	26.6	19.7	29.9	45
East	7.1	7.7	9.4	8.9	8.8	7.0	6.1	7.1	8.5	8.7	8.8	8.0	8.0	45
East Southeast	2.2	2.6	2.3	1.3	1.6	0.8	0.5	0.6	1.4	1.8	2.1	2.4	1.6	45
Southeast	1.3	1.4	0.8	0.7	0.7	0.4	0.2	0.3	0.5	1.1	1.1	1.6	0.8	45
South Southeast	2.2	1.6	1.1	0.9	0.6	0.3	0.1	0.3	0.4	1.0	1.3	1.7	1.0	45
South	4.5	2.9	2.0	1.7	0.8	0.6	0.2	0.4	0.7	1.6	2.6	3.3	1.8	45
South Southwest	4.4	3.0	1.5	0.6	0.4	0.1	0.0	0.1	0.4	0.8	1.2	2.6	1.2	45
Southwest	7.1	5.4	2.2	0.7	0.6	0.2	0.0	0.2	0.7	1.1	2.0	3.9	2.0	45
West Southwest	7.6	6.1	3.5	1.3	1.2	0.6	0.2	0.3	1.4	2.4	2.8	4.7	2.7	45
West	12.6	10.9	7.8	4.3	4.0	2.6	1.0	1.6	5.2	7.1	7.7	9.7	6.2	45
West Northwest	6.1	5.6	4.3	3.2	2.9	1.6	0.9	1.3	3.7	4.8	5.1	5.6	3.7	45
Northwest	1.9	1.9	1.5	1.0	1.0	0.6	0.5	0.4	1.1	1.3	1.4	1.6	1.2	45
North Northwest	3.1	3.0	2.6	1.7	1.2	0.7	0.6	0.6	1.2	1.9	2.5	2.8	1.8	45
Calm	0.4	0.6	0.4	0.4	0.4	0.2	0.1	0.1	0.4	0.6	0.3	0.4	0.4	45
Direction (Mean Speed, knots)														
North	9.0	8.7	8.8	8.1	7.7	5.8	6.6	5.9	6.2	7.2	8.9	8.4	8.1	45
North Northeast	12.1	12.0	11.9	11.6	11.0	9.7	10.4	10.3	9.8	10.7	11.6	11.7	11.1	45
Northeast	12.3	12.5	12.9	12.9	12.2	11.8	11.9	11.5	11.1	11.3	12.3	12.7	12.0	45
East Northeast	11.8	12.2	13.2	13.1	12.1	12.2	12.6	12.1	11.2	11.6	12.5	12.7	12.2	45
East	10.4	10.6	11.7	12.1	10.7	10.9	11.9	11.3	10.2	10.8	11.4	11.2	11.1	45
East Southeast	8.1	8.5	9.5	9.7	9.5	10.3	12.2	10.8	8.9	8.9	10.5	9.3	9.4	45
Southeast	8.5	8.4	8.3	8.5	7.9	8.6	10.2	9.9	8.9	8.8	8.7	8.6	8.6	45
South Southeast	9.4	9.7	9.5	10.1	8.5	10.6	9.1	10.4	8.6	9.7	9.9	10.7	9.8	45
South	9.8	9.1	9.1	9.5	8.1	8.0	8.0	9.6	7.5	8.4	9.6	9.9	9.3	45
South Southwest	10.7	10.1	10.1	9.1	8.6	9.4	8.0	12.5	8.7	9.5	9.4	10.5	10.1	45
Southwest	10.5	10.5	10.2	8.0	7.8	7.4	7.5	9.3	7.9	7.9	8.3	10.0	9.8	45
West Southwest	7.8	8.3	7.0	5.9	6.7	5.7	6.5	5.7	6.2	5.9	6.4	6.8	7.1	45
West	6.1	5.9	5.6	5.4	5.2	5.1	5.0	5.1	5.5	5.5	5.4	5.9	5.7	45
West Northwest	5.9	5.8	5.5	5.6	5.5	5.2	5.3	5.4	5.6	5.7	5.5	5.6	5.6	45
Northwest	5.9	6.4	5.8	6.2	5.7	5.0	5.1	5.4	5.5	5.7	6.0	6.3	5.9	45
North Northwest	7.1	7.8	7.7	7.1	6.4	5.8	6.0	6.3	5.9	6.2	7.2	7.4	7.0	45
VISIBILITY														
Mean Number of Days with Fog	Miss	Miss	Miss	Miss	Miss	Miss	Miss	0	0	Miss	Miss	Miss	1	46
% Observations with Visibility <= 1/2 mile	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	45

* Sea level pressure is station pressure reduced to sea level.

These tables were prepared by the National Climatic Data Center (NCDC), National Environmental Satellite, Data & Information Service (NESDIS), NOAA

METEOROLOGICAL TABLE FOR COASTAL AREA OFF SAN DIEGO, CA

Boundaries: Between 31°N TO 34°N FROM 116°W TO 120°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	0.4	0.5	0.4	0.4	0.3	0.1	0.0	0.0	0.1	0.1	0.2	0.5	0.2
Wave Height > 9 ft (1)	0.8	1.3	1.7	1.8	1.2	0.8	0.5	0.3	0.4	0.6	0.9	1.2	0.9
Visibility < 2 nm (1)	4.4	4.5	2.8	2.4	1.5	3.2	2.9	2.2	3.0	4.7	3.3	4.0	3.2
Precipitation (1)	3.6	3.6	2.4	1.7	1.2	1.4	0.8	0.5	0.9	0.9	2.1	3.1	1.8
Temperature > 69 F (1)	1.2	0.8	1.2	1.4	1.9	3.0	9.2	14.7	14.8	9.0	4.4	1.7	5.4
Mean Temperature (F)	58.3	58.4	58.5	59.3	60.4	62.1	64.7	66.4	66.5	65.2	62.7	59.9	61.9
Temperature < 33 F (1)	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
Mean RH (%)	77	79	78	79	81	83	84	84	83	81	77	76	80
Overcast or Obscured (1)	19.4	21.4	22.2	25.7	37.9	48.1	45.7	38.8	31.4	26.3	15.4	16.7	29.3
Mean Cloud Cover (8ths)	3.8	3.9	4.1	4.2	5.0	5.5	5.6	5.3	4.6	4.2	3.4	3.5	4.4
Mean SLP (mbs)	1018	1018	1017	1015	1015	1013	1013	1013	1012	1014	1017	1018	1015
Ext. Max. SLP (mbs)	1040	1040	1037	1034	1030	1029	1027	1027	1028	1031	1035	1040	1040
Ext. Min. SLP (mbs)	996	996	995	998	999	998	999	998	997	997	999	995	995
Prevailing Wind Direction	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW
Thunder and Lightning (1)	0.1	0.1	0.2	0.1	0.0	0.1	0.2	0.1	0.3	0.2	0.1	0.1	0.1

METEOROLOGICAL TABLE FOR COASTAL AREA OFF POINT MUGU, CA

Boundaries: Between 34°N TO 36°N FROM 119°W TO 125°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	1.0	1.5	2.0	2.2	1.8	1.5	0.7	0.4	0.5	0.9	1.1	1.4	1.3
Wave Height > 9 ft (1)	4.4	6.0	8.1	10.4	10.6	8.1	5.3	4.4	3.9	3.8	4.6	6.4	6.4
Visibility < 2 nm (1)	4.5	6.3	4.6	4.9	5.7	5.8	8.5	8.0	7.7	8.7	5.5	5.6	6.3
Precipitation (1)	5.5	5.8	5.0	3.2	1.6	1.7	1.5	1.6	1.4	1.4	3.4	4.8	3.0
Temperature > 69 F (1)	0.6	0.5	0.5	0.5	0.7	1.4	3.4	3.6	4.2	2.6	1.5	0.8	1.7
Mean Temperature (F)	55.5	55.8	55.9	56.7	57.6	59.4	61.1	62.1	62.8	61.7	59.5	57.4	58.8
Temperature < 33 F (1)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean RH (%)	79	79	80	80	82	84	86	86	85	84	81	79	82
Overcast or Obscured (1)	21.2	25.7	24.4	24.5	32.1	40.0	50.6	48.2	36.6	29.4	18.9	20.4	31.4
Mean Cloud Cover (8ths)	4.1	4.3	4.3	4.2	4.5	4.7	5.4	5.4	4.6	4.3	3.7	3.9	4.5
Mean SLP (mbs)	1019	1019	1018	1017	1016	1015	1015	1015	1014	1016	1018	1019	1017
Ext. Max. SLP (mbs)	1036	1036	1045	1043	1035	1031	1033	1030	1032	1034	1040	1039	1045
Ext. Min. SLP (mbs)	987	992	990	996	997	995	998	998	996	998	996	991	987
Prevailing Wind Direction	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW
Thunder and Lightning (1)	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1

METEOROLOGICAL TABLE FOR COASTAL AREA OFF SAN FRANCISCO, CA

Boundaries: Between 36°N TO 38°N FROM 121°W TO 126°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	2.2	2.2	2.9	2.9	2.9	2.4	1.1	0.8	1.0	1.5	1.9	2.9	2.1
Wave Height > 9 ft (1)	6.2	5.9	7.8	9.1	9.8	7.4	5.8	4.8	4.2	3.8	5.3	7.1	6.5
Visibility < 2 nm (1)	7.8	7.3	4.6	3.4	4.7	6.2	7.9	7.6	8.2	8.9	8.8	8.1	6.9
Precipitation (1)	9.4	7.4	6.9	3.8	2.7	2.6	2.0	2.1	2.0	2.6	5.2	7.7	4.4
Temperature > 69 F (1)	0.2	0.1	0.2	0.2	0.4	0.7	1.1	2.0	2.4	1.3	0.5	0.3	0.8
Mean Temperature (F)	53.7	53.9	54.1	54.2	55.6	57.6	59.2	60.5	61.0	59.7	57.4	55.2	56.9
Temperature < 33 F (1)	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean RH (%)	82	83	81	81	83	85	86	87	85	85	83	81	84
Overcast or Obscured (1)	30.2	30.6	28.9	25.7	31.8	38.4	49.8	46.9	35.9	30.3	25.3	27.4	33.7
Mean Cloud Cover (8ths)	4.8	4.8	4.8	4.4	4.7	4.7	5.3	5.1	4.5	4.3	4.3	4.5	4.7
Mean SLP (mbs)	1019	1019	1018	1018	1017	1016	1016	1016	1015	1017	1019	1019	1017
Ext. Max. SLP (mbs)	1050	1051	1049	1041	1040	1042	1032	1031	1039	1033	1044	1042	1051
Ext. Min. SLP (mbs)	984	985	983	989	994	995	999	998	1000	997	996	989	983
Prevailing Wind Direction	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	N	NW
Thunder and Lightning (1)	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1

(1) Percentage Frequency

These data are based upon observations made by ships in passage. Such ships tend to avoid bad weather when possible thus biasing the data toward good weather samples.

METEOROLOGICAL TABLE FOR COASTAL AREA OFF POINT ARENA, CA

Boundaries: Between 38°N TO 40°N FROM 122°W TO 127°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	3.6	3.1	3.3	4.1	6.1	4.8	4.0	2.4	2.6	2.8	2.6	3.4	3.6
Wave Height > 9 ft (1)	9.8	9.8	10.3	12.6	15.3	11.1	11.2	8.1	7.6	6.0	7.4	9.1	10.1
Visibility < 2 nm (1)	8.0	8.6	5.7	4.1	5.2	7.0	9.4	10.0	11.8	9.7	9.4	10.4	8.2
Precipitation (1)	11.1	10.5	9.4	5.6	3.2	2.3	1.8	1.6	2.0	4.4	9.0	12.0	5.6
Temperature > 69 F (1)	0.2	0.1	1.0	0.3	1.2	2.4	2.3	3.8	3.1	1.6	0.7	0.1	1.5
Mean Temperature (F)	52.3	52.9	53.6	53.6	55.3	57.4	59.1	60.4	60.5	58.9	56.2	53.5	56.4
Temperature < 33 F (1)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean RH (%)	82	81	80	80	82	84	85	85	85	85	82	82	83
Overcast or Obscured (1)	33.6	34.2	29.5	25.1	26.3	31.2	39.2	38.6	34.2	29.0	31.4	34.9	32.3
Mean Cloud Cover (8ths)	5.0	5.0	4.7	4.4	4.2	4.3	4.7	4.6	4.3	4.2	4.6	5.0	4.6
Mean SLP (mbs)	1019	1019	1018	1018	1017	1016	1016	1015	1015	1017	1019	1019	1017
Ext. Max. SLP (mbs)	1047	1036	1041	1043	1043	1042	1035	1030	1030	1033	1041	1051	1051
Ext. Min. SLP (mbs)	985	984	982	994	993	996	998	997	1000	995	985	991	982
Prevailing Wind Direction	N	NW	NW	NW	NW	NW	NW	NW	NW	NW	N	N	NW
Thunder and Lightning (1)	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.2	0.2	0.1	0.3	0.2

METEOROLOGICAL TABLE FOR COASTAL AREA OFF EUREKA, CA

Boundaries: Between 40°N TO 42°N FROM 124°W TO 127°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	6.5	5.1	4.4	3.2	4.6	3.4	3.7	2.4	3.2	2.9	4.2	6.0	4.1
Wave Height > 9 ft (1)	10.8	8.8	10.7	5.5	9.9	7.4	8.8	5.9	6.9	5.0	7.7	11.3	8.2
Visibility < 2 nm (1)	6.9	7.2	5.3	3.2	4.6	6.6	11.0	11.0	11.1	9.8	8.9	7.4	7.7
Precipitation (1)	15.1	12.9	12.2	8.2	4.3	3.2	2.1	3.2	3.3	6.1	12.3	15.0	7.6
Temperature > 69 F (1)	0.0	0.0	0.0	0.1	0.2	0.8	0.9	2.2	1.7	0.8	0.2	0.0	0.6
Mean Temperature (F)	51.7	51.8	52.1	52.6	54.2	56.7	58.2	59.5	59.5	57.6	55.0	52.5	55.3
Temperature < 33 F (1)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Mean RH (%)	84	83	82	81	83	84	86	87	86	85	83	83	84
Overcast or Obscured (1)	38.8	39.8	35.8	31.6	31.4	32.4	40.4	40.5	35.5	33.2	36.5	37.5	36.1
Mean Cloud Cover (8ths)	5.4	5.5	5.3	4.9	4.8	4.6	4.8	4.8	4.3	4.5	5.2	5.4	4.9
Mean SLP (mbs)	1018	1018	1018	1019	1019	1018	1017	1017	1015	1017	1018	1018	1018
Ext. Max. SLP (mbs)	1042	1060	1047	1036	1050	1045	1043	1042	1044	1043	1037	1038	1060
Ext. Min. SLP (mbs)	960	982	984	985	992	992	998	993	990	987	978	984	960
Prevailing Wind Direction	S	S	N	N	N	N	N	N	N	N	N	S	N
Thunder and Lightning (1)	0.3	0.8	0.2	0.3	0.1	0.2	0.1	0.0	0.2	0.4	0.5	0.4	0.3

METEOROLOGICAL TABLE FOR COASTAL AREA OFF NORTH BEND, OR

Boundaries: Between 42°N TO 44°N FROM 124°W TO 127°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	6.5	5.8	4.0	2.4	1.6	2.3	2.1	1.3	1.4	1.8	4.5	5.6	2.9
Wave Height > 9 ft (1)	11.9	11.4	9.8	5.5	5.4	4.7	5.2	3.2	3.3	4.9	11.3	12.0	6.5
Visibility < 2 nm (1)	6.3	6.9	4.5	5.0	4.5	4.9	7.7	14.8	8.7	9.8	5.9	7.1	7.4
Precipitation (1)	18.7	17.7	15.9	10.1	7.6	5.7	3.6	4.0	4.6	6.8	15.2	18.2	9.3
Temperature > 69 F (1)	0.0	0.0	0.0	0.1	0.3	0.7	1.3	1.5	1.2	0.4	0.1	0.1	0.6
Mean Temperature (F)	49.7	50.0	50.3	51.5	53.6	56.5	58.9	59.3	59.8	57.0	54.0	51.1	55.0
Temperature < 33 F (1)	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Mean RH (%)	83	82	82	81	82	84	86	87	86	85	83	83	84
Overcast or Obscured (1)	42.9	43.2	39.4	34.0	33.6	37.0	37.6	43.6	32.9	34.4	41.4	40.4	38.0
Mean Cloud Cover (8ths)	5.7	5.7	5.6	5.2	5.1	5.3	4.8	5.2	4.4	4.7	5.5	5.6	5.2
Mean SLP (mbs)	1018	1017	1017	1019	1019	1019	1019	1017	1016	1018	1018	1018	1018
Ext. Max. SLP (mbs)	1037	1051	1039	1043	1042	1046	1040	1037	1038	1050	1050	1045	1051
Ext. Min. SLP (mbs)	969	973	984	980	988	995	997	992	985	982	976	961	961
Prevailing Wind Direction	S	S	S	N	N	N	N	N	N	N	S	S	N
Thunder and Lightning (1)	0.4	0.7	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.3	0.6	0.5	0.3

(1) Percentage Frequency

These data are based upon observations made by ships in passage. Such ships tend to avoid bad weather when possible thus biasing the data toward good weather samples.

METEOROLOGICAL TABLE FOR COASTAL AREA OFF NEWPORT, OR

Boundaries: Between 44°N TO 46°N FROM 123°W TO 127°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	6.0	3.8	3.2	1.2	0.6	0.5	0.4	0.3	0.4	2.0	4.6	7.9	2.0
Wave Height > 9 ft (1)	12.4	7.7	8.9	3.5	2.8	2.2	1.8	1.7	2.2	4.4	9.9	13.9	4.6
Visibility < 2 nm (1)	6.1	8.0	4.5	3.4	4.2	4.0	4.4	7.5	6.5	7.1	6.5	7.3	5.7
Precipitation (1)	20.7	18.1	16.3	12.7	8.8	7.9	4.7	5.9	6.7	11.4	16.9	19.5	10.8
Temperature > 69 F (1)	0.0	0.0	0.0	0.0	0.2	0.6	1.5	1.7	1.5	0.4	0.1	0.0	0.6
Mean Temperature (F)	48.2	48.6	48.9	50.4	53.6	57.0	59.9	60.4	60.7	57.4	53.0	49.7	55.1
Temperature < 33 F (1)	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.1
Mean RH (%)	82	82	81	81	81	82	84	85	84	83	82	84	83
Overcast or Obscured (1)	44.8	42.6	39.4	34.6	35.5	40.6	40.0	40.1	34.0	33.6	40.4	44.1	38.8
Mean Cloud Cover (8ths)	6.0	5.8	5.7	5.5	5.5	5.8	5.5	5.5	4.8	5.0	5.7	5.9	5.5
Mean SLP (mbs)	1017	1017	1016	1019	1019	1019	1019	1018	1017	1018	1017	1017	1018
Ext. Max. SLP (mbs)	1040	1055	1042	1052	1049	1044	1042	1041	1055	1040	1043	1044	1055
Ext. Min. SLP (mbs)	970	960	972	986	993	990	996	992	985	966	981	964	960
Prevailing Wind Direction	S	S	S	N	N	N	N	N	N	N	S	S	N
Thunder and Lightning (1)	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.6	0.3	0.3

METEOROLOGICAL TABLE FOR COASTAL AREA OFF ASTORIA, WA

Boundaries: Between 46°N TO 48°N FROM 122°W TO 127°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	5.1	4.9	3.9	1.4	0.7	0.3	0.1	0.3	0.5	2.4	5.1	6.6	2.3
Wave Height > 9 ft (1)	8.0	6.9	5.9	3.4	1.9	1.7	1.3	0.9	1.3	4.0	8.7	9.3	4.0
Visibility < 2 nmi (1)	8.0	7.0	5.8	3.6	4.5	4.7	5.7	8.7	6.7	7.5	5.7	7.8	6.3
Precipitation (1)	21.1	19.7	17.6	13.1	10.9	8.6	5.1	6.5	7.8	12.5	20.0	22.0	13.0
Temperature > 69 F (1)	0.0	0.0	0.0	0.0	0.2	0.6	2.1	2.0	1.2	0.2	0.0	0.0	0.6
Mean Temperature (F)	45.6	47.0	47.7	49.6	52.9	56.4	59.5	60.3	59.8	56.1	50.9	47.6	53.4
Temperature < 33 F (1)	2.3	0.6	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.4	0.4
Mean RH (%)	84	84	82	82	84	84	85	87	85	84	83	84	84
Overcast or Obscured (1)	46.4	43.7	38.4	35.0	36.3	41.5	42.1	41.9	32.3	35.4	41.7	45.6	39.9
Mean Cloud Cover (8ths)	6.0	5.9	5.6	5.6	5.7	6.0	5.6	5.5	4.8	5.2	5.8	6.0	5.6
Mean SLP (mbs)	1017	1016	1016	1018	1018	1018	1019	1018	1017	1017	1016	1017	1017
Ext. Max. SLP (mbs)	1045	1041	1058	1040	1050	1043	1038	1037	1049	1040	1042	1050	1058
Ext. Min. SLP (mbs)	970	975	974	978	985	988	991	991	978	980	964	963	963
Prevailing Wind Direction	S	S	S	NW	NW	NW	NW	NW	N	S	S	S	NW
Thunder and Lightning (1)	0.2	0.3	0.3	0.1	0.2	0.1	0.1	0.2	0.3	0.3	0.5	0.3	0.2

METEOROLOGICAL TABLE FOR COASTAL AREA OFF SEATTLE, WA

Boundaries: Between 48°N TO 50°N FROM 122°W TO 129°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	3.6	2.8	2.3	1.2	0.8	0.6	0.3	0.3	0.5	1.7	3.1	3.4	1.6
Wave Height > 9 ft (1)	17.4	18.0	16.8	15.0	6.7	6.1	1.9	2.1	4.7	16.0	24.0	30.5	12.3
Visibility < 2 nm (1)	11.4	10.4	8.1	7.1	6.6	6.7	9.2	14.0	12.0	13.2	11.7	12.1	10.3
Precipitation (1)	24.4	24.4	19.6	16.7	13.5	10.8	7.5	5.8	9.2	16.6	24.0	24.9	15.6
Temperature > 69 F (1)	0.0	0.0	0.0	0.1	0.5	1.6	3.0	2.8	1.2	0.3	0.0	0.0	0.9
Mean Temperature (F)	44.0	45.3	46.1	48.7	52.8	56.3	58.8	59.3	58.2	53.7	48.3	45.5	52.1
Temperature < 33 F (1)	3.3	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.9	0.4
Mean RH (%)	84	84	82	82	82	82	84	85	84	84	83	84	83
Overcast or Obscured (1)	46.3	43.3	34.5	32.8	32.7	33.1	32.6	32.9	30.6	36.5	38.4	41.3	35.8
Mean Cloud Cover (8ths)	6.2	6.0	5.5	5.5	5.4	5.5	5.1	5.0	4.7	5.4	5.9	6.0	5.5
Mean SLP (mbs)	1014	1015	1014	1016	1017	1017	1018	1017	1017	1016	1014	1014	1016
Ext. Max. SLP (mbs)	1041	1057	1041	1060	1044	1042	1048	1040	1050	1041	1043	1048	1060
Ext. Min. SLP (mbs)	951	974	967	977	987	988	993	990	973	967	966	964	951
Prevailing Wind Direction	SE	SE	SE	NW	NW	NW	NW	NW	NW	SE	SE	SE	NW
Thunder and Lightning (1)	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.2

(1) Percentage Frequency

These data are based upon observations made by ships in passage. Such ships tend to avoid bad weather when possible thus biasing the data

METEOROLOGICAL TABLE FOR COASTAL AREA OFF HAWAIIAN (Windward) ISLANDS

Boundaries: Between 18°N TO 22°N FROM 154°W TO ISLAND

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	1.4	0.8	1.3	0.4	0.0	0.1	0.2	0.2	0.1	0.2	1.1	1.9	0.6
Wave Height > 9 ft (1)	4.0	4.0	5.6	3.9	2.5	1.3	1.9	1.8	0.5	1.8	4.7	6.3	3.2
Visibility < 2 nm (1)	1.2	0.6	0.3	0.5	0.2	0.3	0.2	1.0	0.6	0.4	0.6	0.3	0.5
Precipitation (1)	5.7	5.5	5.6	5.8	3.1	6.4	4.0	5.4	3.1	2.7	5.7	4.0	4.8
Temperature > 69 F (1)	89.9	84.7	87.5	85.8	93.2	94.2	99.7	99.9	99.8	99.6	99.1	95.5	93.8
Mean Temperature (F)	74.1	73.5	73.5	74.1	75.6	76.7	77.7	78.5	78.7	78.3	76.8	75.0	76.0
Temperature < 33 F (1)	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
Mean RH (%)	79	79	78	78	77	77	78	79	77	77	78	78	78
Overcast or Obscured (1)	12.5	13.0	14.7	13.2	7.6	7.1	6.9	7.0	5.7	8.4	11.9	11.0	9.9
Mean Cloud Cover (8ths)	4.1	4.2	4.5	4.5	4.1	4.3	4.2	4.1	3.9	4.0	4.4	4.1	4.2
Mean SLP (mbs)	1015	1016	1017	1017	1017	1017	1017	1016	1015	1015	1016	1016	1016
Ext. Max. SLP (mbs)	1030	1033	1038	1030	1028	1030	1030	1030	1031	1030	1033	1028	1038
Ext. Min. SLP (mbs)	998	996	997	1001	1002	1002	1002	1002	1001	999	1000	1001	996
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning (1)	0.7	0.4	0.4	0.3	0.1	0.1	0.1	0.3	0.2	0.3	0.4	0.4	0.3

METEOROLOGICAL TABLE FOR COASTAL AREA OFF HAWAIIAN (Leeward) ISLANDS

Boundaries: Between 18°N TO 22°N FROM ISLANDS TO 160°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	0.5	0.4	0.8	0.4	0.1	0.1	0.1	0.2	0.1	0.2	0.4	0.9	0.3
Wave Height > 9 ft (1)	2.3	2.5	2.9	2.0	0.9	0.7	1.2	0.9	0.9	1.5	2.2	4.5	1.8
Visibility < 2 nm (1)	0.7	0.7	0.3	0.5	0.3	0.3	0.2	0.2	0.2	0.3	0.5	0.4	0.4
Precipitation (1)	4.0	4.6	4.0	3.7	3.2	2.2	2.1	2.2	2.1	2.8	3.9	4.5	3.2
Temperature > 69 F (1)	94.7	93.6	93.1	97.0	99.1	99.8	99.8	99.9	99.9	99.8	99.7	97.6	97.8
Mean Temperature (F)	75.1	74.7	74.7	75.7	77.1	78.5	79.2	79.7	80.0	79.3	77.9	76.2	77.4
Temperature < 33 F (1)	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
Mean RH (%)	77	77	77	78	77	77	77	77	77	77	78	78	77
Overcast or Obscured (1)	9.0	10.4	11.9	11.6	7.0	5.4	4.1	4.2	4.8	7.4	9.6	10.4	8.0
Mean Cloud Cover (8ths)	3.7	3.8	4.1	4.2	4.0	4.0	3.8	3.6	3.6	3.9	4.0	4.0	3.9
Mean SLP (mbs)	1015	1015	1016	1017	1017	1016	1016	1016	1015	1015	1015	1015	1016
Ext. Max. SLP (mbs)	1032	1030	1037	1031	1031	1031	1031	1032	1031	1032	1032	1033	1037
Ext. Min. SLP (mbs)	993	998	1000	1000	1001	1002	1003	1001	1000	999	998	998	993
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning (1)	0.4	0.5	0.5	0.3	0.2	0.1	0.2	0.1	0.2	0.4	0.7	0.5	0.3

METEOROLOGICAL TABLE FOR COASTAL AREA OFF BARKING SANDS, HI

Boundaries: Between 36°N TO 38°N FROM 72°W TO 76°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	0.6	0.4	0.6	0.2	0.1	0.3	0.2	0.1	0.0	0.2	0.8	0.7	0.3
Wave Height > 9 ft (1)	3.0	6.2	5.0	5.3	1.8	1.5	2.9	1.4	0.9	1.7	4.5	7.7	3.4
Visibility < 2 nm (1)	0.7	0.4	0.3	0.3	0.2	0.1	0.1	0.2	0.5	0.4	0.4	0.6	0.3
Precipitation (1)	3.8	3.5	4.3	3.9	2.4	1.8	2.1	3.0	2.0	3.1	4.6	5.3	3.3
Temperature > 69 F (1)	84.1	77.0	80.4	88.0	96.1	98.5	99.8	99.9	99.5	99.0	98.3	93.3	93.0
Mean Temperature (F)	73.4	72.7	73.0	73.7	75.2	76.9	77.9	78.8	79.1	78.0	76.6	74.5	75.9
Temperature < 33 F (1)	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
Mean RH (%)	78	78	78	78	79	80	79	79	78	77	78	78	78
Overcast or Obscured (1)	11.3	13.9	13.5	12.4	8.7	5.1	4.6	4.7	3.6	8.7	11.9	14.7	9.3
Mean Cloud Cover (8ths)	3.9	4.2	4.3	4.4	4.2	3.9	4.0	4.0	3.7	3.9	4.1	4.3	4.1
Mean SLP (mbs)	1015	1016	1018	1018	1018	1018	1017	1017	1016	1016	1016	1016	1017
Ext. Max. SLP (mbs)	1028	1031	1031	1032	1030	1030	1027	1026	1030	1026	1032	1029	1032
Ext. Min. SLP (mbs)	997	999	998	1000	1007	1002	1004	1002	1002	1001	1002	995	995
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning (1)	0.6	0.3	0.3	0.5	0.3	0.1	0.3	0.5	0.3	0.5	0.7	0.7	0.4

(1) Percentage Frequency

These data are based upon observations made by ships in passage. Such ships tend to avoid bad weather when possible thus biasing the data toward good weather samples.

METEOROLOGICAL TABLE FOR COASTAL AREA OFF FRENCH FRIGATE SHOALS

Boundaries: Between 23°N TO 25°N FROM 165°W TO 168°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	1.7	1.3	0.4	0.9	0.2	0.0	0.3	0.0	0.1	0.3	1.6	1.4	0.7
Wave Height > 9 ft (1)	6.7	5.4	3.5	5.2	1.5	0.5	1.5	0.3	0.4	3.0	3.1	7.5	3.1
Visibility < 2 nm (1)	1.1	0.9	0.8	0.3	0.3	0.2	0.4	0.4	0.0	0.3	0.6	0.6	0.5
Precipitation (1)	5.4	4.8	6.1	4.8	4.2	1.8	2.8	4.2	2.9	4.0	6.7	4.5	4.4
Temperature > 69 F (1)	68.7	66.4	68.5	80.7	94.1	99.6	99.9	99.9	100.0	99.8	97.9	87.1	88.9
Mean Temperature (F)	72.0	71.7	71.9	73.1	75.0	77.9	78.7	79.4	79.4	78.5	76.4	73.8	75.7
Temperature < 33 F (1)	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
Mean RH (%)	77	78	79	78	79	79	79	79	78	77	78	76	78
Overcast or Obscured (1)	16.8	14.1	16.1	16.1	10.8	3.9	4.4	7.0	5.0	9.5	14.9	13.6	11.0
Mean Cloud Cover (8ths)	4.6	4.2	4.6	4.8	4.3	3.9	4.2	4.2	3.9	4.3	4.5	4.4	4.3
Mean SLP (mbs)	1015	1016	1018	1019	1018	1018	1018	1017	1016	1016	1016	1016	1017
Ext. Max. SLP (mbs)	1029	1027	1030	1031	1026	1027	1029	1026	1022	1026	1029	1034	1034
Ext. Min. SLP (mbs)	991	1000	1001	998	1002	1004	1009	1007	1002	1004	1003	991	991
Prevailing Wind Direction	E	E	E	E	E	E	E	E	E	E	E	E	E
Thunder and Lightning (1)	0.1	0.3	0.4	0.4	0.1	0.2	0.2	0.4	0.2	0.6	0.7	0.5	0.4

METEOROLOGICAL TABLE FOR COASTAL AREA OFF MIDWAY ISLAND

Boundaries: Between 27°N TO 28°N FROM 176°W TO 179°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Wind > 33 Knots (1)	4.1	3.0	2.2	0.8	0.1	0.0	0.2	0.0	0.1	0.3	1.3	3.4	1.4
Wave Height > 9 ft (1)	11.0	12.2	4.7	2.8	1.6	0.2	1.0	0.9	1.4	2.0	7.3	11.2	5.3
Visibility < 2 nm (1)	0.9	0.4	0.6	0.8	0.7	1.1	0.1	0.0	0.1	0.2	1.1	0.8	0.6
Precipitation (1)	7.6	6.2	5.3	6.6	4.0	4.5	5.9	5.3	5.9	4.7	6.5	6.0	5.7
Temperature > 69 F (1)	23.9	17.0	27.2	38.6	65.6	96.4	99.7	99.8	99.8	97.0	81.6	49.5	64.5
Mean Temperature (F)	67.7	66.8	68.1	69.4	72.5	76.9	79.3	80.2	79.7	76.7	73.8	70.4	73.2
Temperature < 33 F (1)	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
Mean RH (%)	77	77	79	79	80	80	80	80	78	78	78	78	79
Overcast or Obscured (1)	24.3	21.9	22.6	22.0	16.6	13.3	7.4	9.4	13.2	12.8	17.3	21.2	17.1
Mean Cloud Cover (8ths)	5.3	5.0	5.0	5.1	4.9	4.5	4.3	4.5	4.5	4.6	4.8	5.0	4.8
Mean SLP (mbs)	1015	1016	1019	1021	1019	1019	1020	1019	1017	1018	1017	1017	1018
Ext. Max. SLP (mbs)	1030	1033	1032	1044	1030	1029	1032	1033	1035	1029	1030	1035	1044
Ext. Min. SLP (mbs)	987	998	993	1001	998	1002	1008	1002	1002	1002	1001	983	983
Prevailing Wind Direction	W	W	E	E	E	E	E	E	E	E	E	SW	E
Thunder and Lightning (1)	0.9	0.2	0.4	0.3	0.0	0.0	1.3	0.4	0.7	0.3	0.5	0.1	0.4

(1) Percentage Frequency

These data are based upon observations made by ships in passage. Such ships tend to avoid bad weather when possible thus biasing the data toward good weather samples.

MEAN SURFACE WATER TEMPERATURES (T) AND DENSITIES (D)

Stations	Year	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		Mean	
		(T) °C	(D)	(T) °C	(D)	(T) °C	(D)	(T) °C	(D)	(T) °C	(D)	(T) °C	(D)	(T) °C	(D)	(T) °C	(D)	(T) °C	(D)	(T) °C	(D)	(T) °C	(D)	(T) °C	(D)	(T) °C	(D)
La Jolla, CA	56	13.9	24.9	13.9	24.8	14.4	24.8	15.4	24.9	16.9	25.0	18.4	25.0	19.9	25.0	20.8	25.0	19.3	24.9	18.0	24.9	16.3	24.9	14.9	24.9	16.8	24.9
Newport Bay, CA	17	14.0	24.4	14.5	24.4	15.4	24.5	16.6	24.5	17.7	24.9	19.0	25.0	20.3	25.0	21.2	25.0	19.9	25.0	18.7	24.9	16.4	24.6	14.7	24.5	17.4	24.7
Los Angeles (Outer Harbor), CA	49	13.9	24.7	14.2	24.6	14.7	24.8	15.4	24.9	16.2	25.1	17.7	25.1	18.9	25.1	19.7	25.1	19.0	25.1	18.1	25.0	16.5	24.9	14.8	24.8	16.6	24.9
Santa Monica, CA	27	13.5	24.9	13.7	24.9	13.9	25.0	14.7	25.0	15.7	25.2	17.5	25.2	19.2	25.2	19.9	25.2	19.0	25.1	17.6	25.0	15.7	25.0	14.3	24.9	16.2	25.0
Avila Beach, CA	27	12.4	24.5	12.5	24.4	12.3	24.7	12.5	24.9	13.1	25.2	14.1	25.4	15.4	25.4	15.9	25.3	15.7	25.2	15.0	25.1	13.9	24.9	12.8	24.8	13.8	25.0
Pacific Grove, CA	51	11.8	24.7	12.0	24.6	12.2	24.6	12.4	24.7	12.8	24.9	13.4	25.0	13.8	25.0	13.9	25.0	14.2	25.0	13.7	24.9	12.9	24.8	12.4	24.8	13.0	24.8
San Francisco (Pt. Point), CA	51	10.4	21.1	10.9	20.0	11.6	19.9	12.4	20.0	13.1	20.7	13.9	21.5	14.7	22.9	15.2	23.7	15.5	23.8	14.8	23.8	13.0	23.2	11.2	22.4	13.1	21.9
Alameda, CA	33	10.3	17.3	11.9	15.6	13.9	15.7	16.1	16.5	17.8	17.6	19.4	18.7	20.5	20.5	20.5	21.8	20.2	22.4	17.7	21.9	14.4	21.1	11.4	19.5	16.2	19.0
Crescent City, CA	37	9.6	20.8	9.9	20.7	10.2	21.1	10.7	21.8	11.5	22.6	12.5	23.3	13.6	24.0	14.3	24.1	13.5	24.2	12.1	24.0	11.2	22.8	10.2	21.8	11.7	22.6
Astoria (Tongue Pt.), OR	48	4.7	0.1	5.4	-0.2	7.4	-0.5	10.5	-0.7	13.4	-0.7	15.8	-0.6	18.6	-0.5	19.3	-0.2	17.5	0.4	14.0	1.0	9.4	0.9	6.2	0.5	11.8	0.0
Neah Bay, WA	37	7.3	22.4	7.4	22.2	7.9	22.5	9.1	22.7	10.6	23.2	11.6	23.2	11.8	23.7	11.6	23.9	11.3	23.8	10.6	23.4	9.4	22.9	8.2	22.5	9.7	23.0
Seattle (Elliot Bay), WA	50	8.6	20.4	8.2	20.0	8.2	19.9	8.9	19.5	10.3	19.5	11.9	19.9	13.1	20.7	13.4	21.4	13.0	21.8	12.2	21.8	10.8	21.5	9.6	20.9	10.7	20.6
Hilo, HI	26	22.3	19.6	22.2	19.2	22.1	19.0	22.2	17.6	22.7	18.2	23.3	18.9	23.7	18.5	23.9	18.6	24.2	19.2	24.1	19.5	23.5	19.3	22.7	18.9	23.1	18.9
Honolulu, HI	28	24.4	25.4	24.3	25.6	24.3	25.6	24.7	25.8	25.4	25.8	26.0	25.8	26.4	25.9	26.8	25.9	26.9	25.9	26.9	25.9	26.1	25.8	25.0	25.7	25.6	25.8
Kaneohe Bay, HI	16	22.7	25.3	22.7	25.4	23.3	25.1	23.8	25.3	25.1	25.4	26.2	25.9	26.3	25.9	26.6	26.0	26.7	26.0	26.2	25.9	24.7	25.6	23.1	25.4	24.8	25.6
Midway Islands	28	19.7	26.4	19.5	26.4	20.1	26.5	21.0	26.5	22.7	26.6	25.1	26.7	26.4	26.7	26.9	26.6	26.9	26.6	25.1	26.5	23.2	26.5	21.3	26.4	23.2	26.5

F (Fahrenheit) = 1.8C (Celsius) + 32
Density as used in this table is the specific gravity of the sea water or the ratio between the weight of a sea-water sample and the weight of an equal volume of distilled water at 15°C (59°F).

DETERMINATION OF WIND SPEED BY SEA CONDITION

Miles Per Hour	Knots	Descriptive	Sea Conditions	Wind Force (Beaufort)	Probable Wave Height (ft.)
0-1	0-1	Calm	Sea smooth and mirror-like.	0	-
1-3	1-3	Light air	Scale-like ripples without foam crests	1	$\frac{1}{4}$
4-7	4-6	Light breeze	Small, short wavelets; crests have a glassy appearance and do not break.	2	$\frac{1}{2}$
8-12	7-10	Gentle breeze	Large wavelets; some crests begin to break; foam has glassy appearance. Occasional white foam crests.	3	2
13-18	11-16	Moderate breeze	Small waves, become longer; fairly frequent white foam crests.	4	4
19-24	17-21	Fresh breeze	Moderate waves, taking a more pronounced long form; many white foam crests; there may be some spray.	5	6
25-31	22-27	Strong breeze	Large waves begin to form; white foam crests are more extensive everywhere; there may be some spray.	6	10
32-38	28-33	Near gale	Sea heaps up and white foam from breaking waves begin to be blown in streaks along the direction of the wind; spindrift begins.	7	14
39-46	34-40	Gale	Moderately high waves of greater length; edges of crests break into spindrift; foam is blown in well-marked streaks along the direction of the wind.	8	18
47-54	41-47	Strong gale	High waves; dense streaks of foam along the direction of the wind; crests of waves begin to topple, tumble and roll over; spray may reduce visibility.	9	23
55-63	48-55	Storm	Very high waves with long overhanging crests. The resulting foam in great patches is blown in dense white streaks along the direction of the wind. On the whole, the surface of the sea is white in appearance. The tumbling of the sea becomes heavy and shock-like. Visibility is reduced.	10	29
64-72	56-63	Violent storm	Exceptionally high waves that may obscure small and medium-sized ships. The sea is completely covered with long white patches of foam lying along the direction of the wind. Everywhere the edges of the wave crests are blown into froth. Visibility is reduced.	11	37
73+	64+	Hurricane	The air is filled with foam and spray. Sea completely white with driving spray; visibility is very much reduced.	12	45

ATMOSPHERIC PRESSURE CONVERSION TABLE

Inches	Millibars	Inches	Millibars	Inches	Millibars
28.44	963	29.32	993	30.21	1023
28.53	966	29.41	996	30.30	1026
28.62	969	29.50	999	30.39	1029
28.70	972	29.59	1002	30.48	1032
28.79	975	29.68	1005	30.56	1035
28.88	978	29.77	1008	30.65	1038
28.97	981	29.86	1011	30.74	1041
29.06	984	29.94	1014	30.83	1044
29.15	987	30.03	1017	30.92	1047
29.24	990	30.12	1020	31.01	1050

PACIFIC OCEAN DISTANCES

(Nautical Miles)

	Midway Island	Port Allen, HI.	Nawiliwili, HI	Pearl Harbor, HI	Honolulu, HI	Kahului, HI	Kauai, HI	Hilo, HI	Kuliak Bay, AK	UNIMAK PASS, AK	Kodiak, AK	Anchorage, AK	Seward, AK	Port Valdez, AK	CAPE SPENCER, AK	Sitka, AK	Ketchikan, AK	Seattle, WA	SWIFTSURE BANK, WA	CAPE FLATTERY, WA	Portland, OR	Astoria, OR	San Francisco, CA	Los Angeles, CA	Long Beach, CA	San Diego, CA
PANAMA CANAL 8°53.0N., 79°31.0W.	5707	4777	4767	4690	4685	4609	4594	4527	5604	5228	4924	5117	4940	4984	4603	4538	4387	4044	-	3920	3888	3803	3270	2939	2939	2867
San Diego, CA 32°43.0N., 117°10.5W.	3097	2347	2330	2283	2278	2212	2219	2175	2806	2412	2115	2303	2124	2174	1787	1723	1575	1228	-	1104	1074	989	455	95	94	-
Long Beach, CA 33°46.2N., 118°13.3W.	3034	2302	2284	2241	2236	2173	2183	2143	2725	2331	2034	2223	2043	2092	1707	1643	1497	1148	-	1024	992	908	374	3	-	-
Los Angeles, CA 33°45.0N., 118°16.2W.	3031	2299	2281	2238	2233	2170	2180	2140	2722	2328	2031	2220	2040	2089	1703	1639	1493	1144	-	1020	989	904	371	-	-	-
San Francisco, CA 37°48.5N., 122°24.0W.	2792	2146	2128	2096	2091	2036	2051	2019	2403	1990	1693	1882	1702	1745	1366	1302	1156	807	-	683	652	567	-	-	-	-
Astoria, OR 46°11.7N., 123°50.0W.	2724	2281	2262	2251	2246	2207	2235	2214	2071	1626	1261	1435	1242	1239	883	815	660	278	-	153	85	-	-	-	-	-
Portland, OR 45°53.0N., 122°41.7W.	2809	2366	2347	2336	2331	2292	2320	2299	2156	1711	1346	1520	1327	1324	968	900	745	362	-	238	-	-	-	-	-	-
CAPE FLATTERY, WA 48°26.0N., 124°47.0W.	2694	2308	2289	2290	2285	2245	2276	2260	-	-	-	-	-	-	-	-	-	124	-	10	-	-	-	-	-	-
SWIFTSURE BANK, WA 48°31.0N., 125°00.0W.	-	-	-	-	-	-	-	-	1973	1510	1124	1294	1100	1100	739	681	518	134	-	-	-	-	-	-	-	-
Seattle, WA 47°56.2N., 122°20.3W.	2818	2432	2413	2414	2409	2369	2400	2384	2107	1644	1258	1428	1234	1234	976*	815	659*	-	-	-	-	-	-	-	-	-
Ketchikan, AK 55°20.5N., 131°38.7W.	2570	2387	2368	2388	2383	2361	2405	2398	1656	1193	742	892	682	713	307	224	-	-	-	-	-	-	-	-	-	-
Sitka, AK 57°03.1N., 135°20.5W.	2481	2380	2361	2390	2385	2365	2412	2410	1490	1027	564	708	494	479	85	-	-	-	-	-	-	-	-	-	-	-
CAPE SPENCER, AK 58°10.0N., 136°38.3W.	2472	2407	2388	2416	2411	2398	2445	2447	1450	987	505	641	422	400	-	-	-	-	-	-	-	-	-	-	-	-
Port Valdez, AK 61°06.0N., 146°24.0W.	2386	2445	2429	2473	2468	2463	2513	2524	1224	761	280	385	144	-	-	-	-	-	-	-	-	-	-	-	-	-
Seward, AK 60°06.0N., 149°26.0W.	2250	2351	2332	2378	2373	2377	2432	2439	1115	652	175	274	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anchorage, AK 61°14.2N., 149°53.3W.	2305	2459	2440	2482	2477	2479	2535	2542	1151	688	242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kodiak, AK 57°47.1N., 152°25.1W.	2088	2203	2184	2235	2230	2233	2289	2296	968	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UNIMAK PASS, AK 54°20.0N., 164°45.0W.	1680	1972	1963	2024	2028	2044	2110	2126	463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kulak Bay, AK 51°51.6N., 176°37.6W.	1460	1990	1989	2057	2061	2099	2164	2198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hilo, HI 19°44.1N., 155°03.5W.	1338	297	287	201	196	121	83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kauai, HI 20°02.3N., 155°49.9W.	1278	240	230	145	140	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kahului, HI 20°54.0N., 156°28.2W.	1232	193	181	94	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Honolulu, HI 21°18.5N., 157°52.3W.	1150	106	96	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pearl Harbor, HI 21°20.0N., 157°58.3W.	1146	102	92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nawiliwili, HI 21°57.4N., 159°21.5W.	1069	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Port Allen, HI 24°51.1N., 159°35.6W.	1042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Midway Island 28°13.0N., 177°22.0W.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Via inside passage

PACIFIC COAST DISTANCES
SAN DIEGO, CALIFORNIA, TO CAPE FLATTERY, WASHINGTON
(Nautical Miles)

	Cape Flattery, WA	Aberdeen, WA	South Bend, WA	Portland, OR	Vancouver, WA	Longview, WA	Astoria, OR	Garbaldi, OR	Depoe Bay, OR	Newport, OR	Florence, OR	Gardnar, OR	Coos Bay, OR	Crescent City, CA	Eureka, CA	Sacramento, CA	Stockton, CA	Oakland, CA	San Francisco, CA	Monterey, CA	Port San Luis, CA	Santa Barbara, CA	Port Hueneeme, CA	Los Angeles, CA	Long Beach, CA	Newport Beach, CA
	1104	1031	1019	1074	1070	1034	989	937	891	881	848	832	817	704	653	530	526	458	455	370	259	174	147	95	94	78
	1038	965	953	1007	1003	967	922	871	825	815	782	766	751	638	587	464	460	392	389	304	193	108	81	27	25	-
	1024	951	939	992	988	953	908	857	810	800	768	751	736	624	572	449	445	377	374	290	179	94	66	3	-	
	1020	947	935	989	985	949	904	853	807	797	764	748	733	620	569	446	442	374	371	286	175	90	62	-		
	961	888	876	930	925	890	845	794	748	737	706	689	674	561	510	387	383	315	312	228	116	29	-			
	937	864	852	905	901	866	821	770	723	713	681	664	649	537	485	362	358	290	287	203	91	-				
	854	781	769	823	819	783	739	687	641	631	599	582	567	455	403	280	276	208	205	121	-					
	746	673	661	714	710	675	630	579	532	522	490	474	459	346	294	171	167	100	96	-						
	683	610	598	652	647	612	567	516	469	459	427	411	396	283	232	79	75	3	-							
	686	613	601	655	651	615	570	520	473	463	430	414	399	287	235	82	78	-								
	755	682	670	723	719	684	639	588	541	531	498	482	467	354	303	75	-									
	758	685	673	727	722	687	642	591	544	534	502	486	471	358	307	-										
	468	395	383	436	432	397	352	301	254	244	212	195	180	64	-											
	411	339	327	381	377	341	296	245	199	188	156	140	125	-												
	321	244	232	285	281	246	201	150	101	92	59	42	-													
	298	221	209	262	258	223	178	127	78	69	36	-														
	273	196	184	238	234	198	153	102	54	43	-															
	235	158	146	200	196	160	115	63	16	-																
	222	144	133	186	182	146	101	50	-																	
	179	102	90	142	138	103	58	-																		
	153	75	63	85	80	45	-																			
	198	119	108	39	34	-																				
	234	155	143	13	-																					
	238	159	147	-																						
	131	53	-																							
	117	-																								
	-																									

DISTANCES ON COLUMBIA RIVER SYSTEM
(Nautical and Statute Miles)

	Johnson Bar Landing, ID	Lewiston, ID	Central Ferry, WA	Ice Harbor Dam, WA	Harrisburg, OR	Corvallis, OR	Albany, OR	Salem, OR	Oregon City, OR	Portland, OR	Richland, WA	Pasco, WA	Port of Walla Walla, WA	McNary Lock & Dam	Umatilla, OR	Arlington, OR	John Day Lock & Dam	The Dalles Lock & Dam	Hood River (town), OR	Bonneville Lock & Dam	Vancouver, WA	St. Helens, OR	Longview, WA	Astoria, OR	Warrenton, OR	Ilwaco, WA	Columbia River Mouth	
Columbia River	Columbia River Mouth 46°14.8'N., 124°05.5'W.	483	404	354	291	230	203	192	162	110	97	293	285	276	254	251	210	188	166	148	126	92	75	58	12	11	6	-
	Ilwaco, WA	484	404	355	292	230	203	193	163	111	98	294	286	276	254	252	211	189	167	149	127	93	76	59	13	12	-	7
	Warrenton, OR	475	396	346	283	222	195	184	154	103	89	285	277	268	246	244	202	180	159	140	118	84	67	50	4	-	14	13
	Astoria, OR	470	391	342	278	217	190	180	149	98	85	281	273	263	241	239	198	175	154	136	114	80	62	45	-	5	15	14
	Longview, WA	425	345	296	233	171	144	134	104	52	39	235	227	217	195	193	152	130	108	90	68	34	17	-	52	58	68	67
	St. Helens, OR	411	332	282	219	158	131	121	90	39	25	222	214	204	182	180	138	117	95	76	55	20	-	20	71	77	87	86
	Vancouver, WA	391	312	262	199	145	118	108	77	26	13	202	193	184	162	160	118	96	75	56	35	-	23	39	92	97	107	106
	Bonneville Lock & Dam	356	277	228	164	180	153	142	112	61	47	167	159	149	127	125	84	62	40	22	-	40	63	78	131	136	146	145
	Hood River (town), OR	335	256	206	143	201	174	164	134	82	69	145	137	128	106	103	62	40	18	-	5	64	87	104	157	161	171	170
	The Dalles Lock & Dam	316	237	188	124	220	193	183	152	101	87	127	119	109	87	85	44	22	-	21	46	86	109	124	177	183	192	191
Willamette River	John Day Lock & Dam	294	215	166	102	242	215	204	174	123	109	105	97	87	65	63	22	-	25	46	71	110	135	150	203	207	217	216
	Arlington, OR	273	194	144	81	263	236	226	195	144	130	83	75	66	44	42	-	25	51	71	97	136	159	175	228	232	243	242
	Umatilla, OR	231	152	103	39	305	278	268	237	186	172	42	34	24	2	-	48	72	98	119	144	184	207	222	275	281	290	289
	McNary Lock & Dam	229	150	101	37	307	280	270	239	188	174	40	32	22	-	2	51	75	100	122	146	186	209	224	277	283	292	292
	Port of Walla Walla, WA	207	128	79	15	329	302	292	261	210	196	18	10	-	25	28	76	100	125	147	171	212	235	250	303	308	318	318
	Pasco, WA	204	125	75	12	339	312	301	271	220	206	8	-	12	37	39	86	112	137	158	183	222	246	261	314	319	329	328
	Richland, WA	212	133	83	20	347	320	309	279	228	214	-	9	21	46	48	96	121	146	167	192	232	255	270	323	328	338	337
	Portland, OR	403	324	275	211	133	106	96	65	14	-	246	237	226	200	198	150	125	100	79	54	15	29	45	98	102	113	112
	Oregon City, OR	417	338	288	225	119	92	82	51	-	16	262	253	242	216	214	166	142	116	94	70	30	45	60	113	119	128	127
	Salem, OR	468	389	340	276	68	41	31	-	59	75	321	312	300	275	273	224	200	175	154	129	89	104	120	171	177	188	186
Snake River	Albany, OR	499	420	370	307	37	10	-	36	94	110	356	346	336	311	308	260	235	211	189	163	124	139	154	207	212	222	221
	Corvallis, OR	509	430	380	317	27	-	12	47	106	122	368	359	348	322	320	272	247	222	200	176	136	151	166	219	224	234	234
	Harrisburg, OR	536	457	407	344	-	31	43	78	137	153	399	390	379	353	351	303	278	253	231	207	167	182	197	250	255	265	265
	Ice Harbor Dam, WA	192	113	63	-	396	365	353	318	259	243	23	14	17	43	45	93	117	143	165	189	229	252	268	320	326	336	335
	Central Ferry, WA	129	50	-	72	468	437	426	391	331	316	96	86	91	116	119	166	191	216	237	262	302	325	341	394	398	409	407
Statute miles on the bottom (shaded, slanted type)	Lewiston, ID	79	-	58	130	526	495	483	448	389	373	153	144	147	173	175	223	247	273	295	319	359	382	397	450	456	465	465
	Johnson Bar Landing, ID	-	91	148	221	617	586	574	539	480	464	244	235	238	264	266	314	338	364	386	410	450	473	489	541	547	557	556

Nautical miles on top (upright text)

Statute miles on the bottom (shaded, slanted type)

HAWAII DISTANCES

[illegible]

Distance of Visibility of Objects of Various Elevations at Sea

This table gives the approximate geographic range of visibility for an object which may be seen by an observer. It is necessary to add to the distance for the height of any object the distance corresponding to the height of the observer's eye above sea level.

Height (feet)	Distance - Naut. miles	Distance - Statute miles	Height (meters)	Height (feet)	Distance - Naut. miles	Distance - Statute miles	Height (meter)
1	1.2	1.3	0.3	120	12.8	14.7	36.6
2	1.7	1.9	0.6	125	13.1	15.1	38.1
3	2.0	2.3	0.9	130	13.3	15.4	39.6
4	2.3	2.7	1.2	135	13.6	15.6	41.2
5	2.6	3.0	1.5	140	13.8	15.9	42.7
6	2.9	3.3	1.8	145	14.1	16.2	44.2
7	3.1	3.6	2.1	150	14.3	16.5	45.7
8	3.3	3.8	2.4	160	14.8	17.0	48.8
9	3.5	4.0	2.7	170	15.3	17.6	51.8
10	3.7	4.3	3.1	180	15.7	18.1	54.9
11	3.9	4.5	3.4	190	16.1	18.6	57.9
12	4.1	4.7	3.7	200	16.5	19.0	61.0
13	4.2	4.9	4.0	210	17.0	19.5	64.0
14	4.4	5.0	4.3	220	17.4	20.0	67.1
15	4.5	5.2	4.6	230	17.7	20.4	70.1
16	4.7	5.4	4.9	240	18.1	20.9	73.2
17	4.8	5.6	5.2	250	18.5	21.3	76.2
18	5.0	5.7	5.5	260	18.9	21.7	79.3
19	5.1	5.9	5.8	270	19.2	22.1	82.3
20	5.2	6.0	6.1	280	19.6	22.5	85.3
21	5.4	6.2	6.4	290	19.9	22.9	88.4
22	5.5	6.3	6.7	300	20.3	23.3	91.4
23	5.6	6.5	7.0	310	20.6	23.7	94.5
24	5.7	6.6	7.3	320	20.9	24.1	97.5
25	5.9	6.7	7.6	330	21.3	24.5	100.6
26	6.0	6.9	7.9	340	21.6	24.8	103.6
27	6.1	7.0	8.2	350	21.9	25.2	106.7
28	6.2	7.1	8.5	360	22.2	25.5	109.7
29	6.3	7.3	8.8	370	22.5	25.9	112.8
30	6.4	7.4	9.1	380	22.8	26.2	115.8
31	6.5	7.5	9.5	390	23.1	26.6	118.9
32	6.6	7.6	9.8	400	23.4	26.9	121.9
33	6.7	7.7	10.1	410	23.7	27.3	125.0
34	6.8	7.9	10.4	420	24.0	27.6	128.0
35	6.9	8.0	10.7	430	24.3	27.9	131.1
36	7.0	8.1	11.0	440	24.5	28.2	134.1
37	7.1	8.2	11.3	450	24.8	28.6	137.2
38	7.2	8.3	11.6	460	25.1	28.9	140.2
39	7.3	8.4	11.9	470	25.4	29.2	143.3
40	7.4	8.5	12.2	480	25.6	29.5	146.3
41	7.5	8.6	12.5	490	25.9	29.8	149.4
42	7.6	8.7	12.8	500	26.2	30.1	152.4
43	7.7	8.8	13.1	510	26.4	30.4	155.5
44	7.8	8.9	13.4	520	26.7	30.7	158.5
45	7.8	9.0	13.7	530	26.9	31.0	161.5
46	7.9	9.1	14.0	540	27.2	31.3	164.6
47	8.0	9.2	14.3	550	27.4	31.6	167.6
48	8.1	9.3	14.6	560	27.7	31.9	170.7
49	8.2	9.4	14.9	570	27.9	32.1	173.7
50	8.3	9.5	15.2	580	28.2	32.4	176.8
55	8.7	10.0	16.8	590	28.4	32.7	179.8
60	9.1	10.4	18.3	600	28.7	33.0	182.9
65	9.4	10.9	19.8	620	29.1	33.5	189.0
70	9.8	11.3	21.3	640	29.5	34.1	195.1
75	10.1	11.7	22.9	660	30.1	34.6	201.2
80	10.5	12.0	24.4	680	30.5	35.1	207.3
85	10.8	12.4	25.9	700	31.0	35.6	213.4
90	11.1	12.8	27.4	720	31.4	36.1	219.5
95	11.4	13.1	29.0	740	31.8	36.6	225.6
100	11.7	13.5	30.5	760	32.3	37.1	231.7
105	12.0	13.8	32.0	780	32.7	37.6	237.7
110	12.3	14.1	33.5	800	33.1	38.1	243.8
115	12.5	14.4	33.1	820	33.5	38.6	249.9

Example: Determine the geographic visibility of an object 65 feet above the water, for an observer whose eye is 35 above the water:

Height of object	65 feet	9.4 nautical miles
Height of observer	35 feet	6.9 nautical miles
Computed geographic visibility		16.3 nautical miles

Conversion of Degrees to Points and Points to Degrees

°	'	Points	°	'	Points
000	00	N	180	00	S
002	49		182	49	
005	38	N ½ E	185	38	S ½ W
008	26		188	26	
011	15	N x E	191	15	S x W
014	04		194	04	
016	53	N x E ½ E	196	53	S x W ½ W
019	41		199	41	
022	30	NNE	202	30	SSW
025	19		205	19	
028	08	NNE ½ E	208	08	SSW ½ W
030	56		210	56	
033	45	NE x N	213	45	SW x W
036	34		216	34	
039	23	NE ½ N	219	23	SW ½ S
042	11		222	11	
045	00	NE	225	00	SW
047	49		227	49	
050	38	NE ½ E	230	38	SW ½ W
053	26		233	26	
056	15	NE x E	236	15	SW x W
059	04		239	04	
061	53	NE x E ½ E	241	53	SW x W ½ W
064	41		244	41	
067	30	ENE	247	30	WSW
070	19		250	19	
073	08	ENE ½ E	253	08	WSW ½ W
075	56		255	56	
078	45	E x N	258	45	W x S
081	34		261	34	
084	23	E ½ N	264	23	W ½ S
087	11		267	11	
090	00	E	270	00	W
092	49		272	49	
095	38	E ½ S	275	38	W ½ S
098	26		278	26	
101	15	E x S	281	15	W x N
104	04		284	04	
106	53	ESE ½ E	286	53	WNW ½ W
109	41		289	41	
112	30	ESE	292	30	WNW
115	19		295	19	
118	08	SE x E ½ E	298	08	NW x W ½ W
120	56		300	56	
123	45	SE x E	303	45	NW x W
126	34		306	34	
129	23	SE ½ E	309	23	NW ½ W
132	11		312	11	
135	00	SE	315	00	NW
137	49		317	49	
140	38	SE ½ S	320	38	NW ½ N
143	26		323	26	
146	15	SE x S	326	15	NW x N
149	04		329	04	
151	53	SSE ½ E	331	53	NNW ½ W
154	41		334	41	
157	30	SSE	337	30	NNW
160	19		340	19	
163	08	S x E ½ E	343	08	N x W ½ W
165	56		345	56	
168	45	S x E	348	45	N x W
171	34		351	34	
174	23	S ½ E	354	23	N ½ W
177	11		357	11	

Table For Estimating Time of Transit

Distance	Speed in knots															
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Nautical Miles	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours	Days-hours
10	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
20	0-3	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2
30	0-4	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3
40	0-5	0-4	0-4	0-4	0-3	0-3	0-3	0-3	0-3	0-2	0-2	0-2	0-2	0-2	0-2	0-2
50	0-6	0-6	0-5	0-5	0-4	0-4	0-4	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3
60	0-8	0-7	0-6	0-5	0-5	0-5	0-4	0-4	0-4	0-4	0-3	0-3	0-3	0-3	0-3	0-3
70	0-9	0-8	0-7	0-6	0-6	0-5	0-5	0-5	0-4	0-4	0-4	0-4	0-4	0-3	0-3	0-3
80	0-10	0-9	0-8	0-7	0-7	0-6	0-6	0-5	0-5	0-5	0-4	0-4	0-4	0-4	0-4	0-4
90	0-11	0-10	0-9	0-8	0-8	0-7	0-6	0-6	0-6	0-5	0-5	0-5	0-5	0-4	0-4	0-4
100	0-13	0-11	0-10	0-9	0-8	0-8	0-7	0-7	0-6	0-6	0-6	0-5	0-5	0-5	0-5	0-5
200	1-1	0-22	0-20	0-18	0-17	0-15	0-14	0-13	0-13	0-12	0-11	0-11	0-10	0-10	0-9	0-8
300	1-14	1-9	1-6	1-3	1-1	0-23	0-21	0-20	0-19	0-18	0-17	0-16	0-15	0-14	0-14	0-13
400	2-2	1-20	1-16	1-12	1-9	1-7	1-5	1-3	1-1	1-0	0-22	0-21	0-20	0-19	0-18	0-17
500	2-15	2-8	2-2	1-21	1-18	1-14	1-12	1-9	1-7	1-5	1-4	1-2	1-1	1-0	0-23	0-21
600	3-3	2-19	2-12	2-7	2-2	1-22	1-19	1-16	1-14	1-11	1-9	1-8	1-6	1-5	1-3	1-2
700	3-16	3-6	2-22	2-16	2-10	2-6	2-2	1-23	1-20	1-17	1-15	1-13	1-11	1-9	1-8	1-6
800	4-4	3-17	3-8	3-1	2-19	2-14	2-9	2-5	2-2	1-23	1-20	1-18	1-16	1-14	1-12	1-11
900	4-17	4-4	3-18	3-10	3-3	2-21	2-16	2-12	2-8	2-5	2-2	1-23	1-21	1-19	1-17	1-15
1,000	5-5	4-15	4-4	3-19	3-11	3-5	2-23	2-19	2-15	2-11	2-8	2-5	2-2	2-0	1-21	1-19
2,000	10-10	9-6	8-8	7-14	6-23	6-10	5-23	5-13	5-5	4-22	4-15	4-9	4-4	3-23	3-19	3-15
3,000	15-15	13-21	12-12	11-9	10-10	9-15	8-22	8-8	7-20	7-8	6-23	6-14	6-6	5-23	5-16	5-10
4,000	20-20	18-21	16-16	15-4	13-21	12-20	11-22	11-3	10-10	9-19	9-6	8-19	8-8	7-22	7-14	7-6
5,000	26-1	23-4	20-20	18-23	17-9	16-1	14-21	13-21	13-1	12-6	11-14	10-23	10-10	9-22	9-11	9-1
6,000	31-6	27-19	25-0	22-17	20-20	19-6	17-21	16-16	15-15	14-17	13-21	13-4	12-12	11-22	11-9	10-21

STANDARD ABBREVIATIONS FOR BROADCASTS

AIDS TO NAVIGATION

Aeronautical	
Radiobeacon	AERO RBN
Articulated	
Daybeacon	ART DBN
Articulated Light	ART LT
Destroyed	DESTR
Discontinued	DISCONTD
Established	ESTAB
Exposed Location	
Buoy	ELB
Fog Signal Station	FOG SIG
Large Navigation	
Buoy	LNB
Light	LT
Light List Number	LLNR
Lighted Bell Buoy	LBB
Lighted Buoy	LB
Lighted Gong Buoy	LGB
Lighted Horn Buoy	LHB
Lighted Whistle Buoy	LWB
Ocean Data	
Acquisition System	ODAS
Privately Maintained	PRIV MAINTD
Radar Responder	
Buoy	RACON
Radar Reflector	RA REF
Radiobeacon	RBN
Temporarily Replaced	
by Unlighted Buoy	TRUB
Temporarily Replaced	
by Lighted Buoy	TRLB
Whistle	WHIS

CHARACTERISTICS

Fixed	F
Occulting	OC
Group-Occulting	OC(2)
Composite	
Group-Occulting	OC(2+1)
Isophase	ISO
Single-Flashing	FL
Group-Flashing	FL(3)
Composite Group	
Flashing	FL(2+1)
Continuous	
Quick-Flashing	Q
Interrupted	
Quick-Flashing	IQ
Morse Code	MO(a)
Fixed and Flashing	FFL
Alternating	AL
Characteristics	CHAR

Color¹

Black	B
Blue	BU
Green	G
Orange	OR
Red	R
White	W
Yellow	Y

ORGANIZATIONS

Coast Guard	CG
Commander, Coast	
Guard District (#)	CCCD(#)
Corp of Engineers	COE
National Geospatial-	
Intelligence Agency	NGA
National Ocean Service	NOS
National Weather	
Service	NWS

VESSELS

Aircraft	A/C
Fishing Vessel	F/V
Liquified Natural	
Gas Carrier	LNG
Motor Vessel	M/V ²
Pleasure Craft	P/C
Research Vessel	R/V
Sailing Vessel	S/V

COMPASS DIRECTIONS

East	E
North	N
Northeast	NE
Northwest	NW
South	S
Southeast	SE
Southwest	SW
West	W

MONTHS

January	JAN
February	FEB
March	MAR
April	APR
May	MAY
June	JUN
July	JUL
August	AUG
September	SEP
October	OCT
November	NOV
December	DEC

¹ Color refers to light characteristics of Aids to Navigation only.

² M/V includes: Steam Ship, Container Vessel, Cargo Vessel, etc.

STANDARD ABBREVIATIONS FOR BROADCASTS (Cont'd)

DAYS OF THE WEEK

Monday	MON
Tuesday	TUE
Wednesday	WED
Thursday	THU
Friday	FRI
Saturday	SAT
Sunday	SUN

COUNTRIES AND STATES

Alabama	AL
Alaska	AK
American Samoa	AS
Arizona	AZ
Arkansas	AR
California	CA
Canada	CN
Colorado	CO
Connecticut	CT
Delaware	DE
District of Columbia	DC
Federated States of Micronesia	FSM
Florida	FL
Georgia	GA
Guam	GU
Hawaii	HI
Idaho	ID
Illinois	IL
Indiana	IN
Iowa	IA
Kansas	KS
Kentucky	KY
Louisiana	LA
Maine	ME
Maryland	MD
Massachusetts	MA
Mexico	MX
Michigan	MI
Minnesota	MN
Mississippi	MS
Missouri	MO
Montana	MT
Nebraska	NE
New Hampshire	NH
Nevada	NV
New Jersey	NJ
New Mexico	NM
New York	NY
North Carolina	NC
North Dakota	ND
Ohio	OH
Oklahoma	OK
Oregon	OR
Pennsylvania	PA
Puerto Rico	PR
Rhode Island	RI
South Carolina	SC
South Dakota	SD
Tennessee	TN
Texas	TX

United States	US
Utah	UT
Vermont	VT
Virgin Islands	VI
Virginia	VA
Washington	WA
West Virginia	WV
Wisconsin	WI
Wyoming	WY

VARIOUS

Anchorage	ANCH
Anchorage Prohibited	ANCH PROHIB
Approximate	APPROX
Atlantic	ATLC
Authorized	AUTH
Average	AVG
Bearing	BRG
Breakwater	BKW
Broadcast Notice to Mariners	BNM
Channel	CHAN
Code of Federal Regulations	CFR
Continue	CONT
Degrees (temperature; Geographic Position)	DEG
Diameter	DIA
Edition	ED
Effect/Effective	EFF
Entrance	ENTR
Explosive Anchorage	EXPLOS ANCH
Fathom(s)	FM(S)
Foot/Feet	FT
Harbor	HBR
Height	HT
Hertz	HZ
Horizontal Clearance	HOR CL
Hour	HR
International Regulations For Preventing Collisions at Sea	COLREGS
Kilohertz	KHZ
Kilometer	KM
Knot(s)	KT(S)
Latitude	LAT
Local Notice to Mariners	LMN
Longitude	LONG
Maintained	MAINTD
Maximum	MAX
Megahertz	MHZ
Millibar	MB
Millimeter	MM
Minute (temperature; geographic position)	MIN
Moderate	MOD
Mountain, Mount	MT
Nautical Mile(s)	NM
Notice to Mariners	NM
Obstruction	OBSTR
Occasion/Occasionally	OCCASION

STANDARD ABBREVIATIONS FOR BROADCASTS (Cont'd)

Operating Area	OPAREA	Statute Mile(s)	SM
Pacific	PAC	Storm Signal Station	S SIG STA
Point(s)	PT(S)	Temporary	TEMP
Position	PSN	Through	THRU
Position Approximate	PA	Thunderstorm	TSTM
Pressure	PRES	True	T
Private, Privately	PRIV	Uncovers, Dries	UNCOV
Prohibited	PROHIB	Universal Coordinate	
Publication	PUB	Time	UTC
Range	RGE	Urgent Marine	
Reported	REP	Information Broadcast	UMIB
Restricted	RESTR	Velocity	VEL
Rock	RK	Vertical Clearance	VERT CL
Saint	ST	Visibility	VSBY
Second (time; geographic position)	SEC	Warning	WARN
Signal Station	SIG STA	Weather	WX
Station	STA	Wreck	WK
		Yard(s)	YD

MEASUREMENT AND CONVERSION FACTORS

EQUIVALENCIES

nautical mile	1,852.0 meters 6,076.12 feet
statute mile	5,280 feet; 1,609.3 meters; 1.6 093 kilometers
cable	0.1 nautical mile (Canada); 720 feet (U.S.)
fathom	6 feet; 1.8 288 meters
foot	0.3 048 meter
inch	2.54 centimeters
meter	39.37 inches; 3.281 feet; 1.0 936 yards
kilometer	1,000 meters
knot	1.6 877 feet per second 0.5 144 meters per second
miles (statute) per hour	1.466 feet per second 0.44 704 meters per second
acre	43,560 square feet 4,046.82 square meters
pound (avoirdupois)	453.59 gram
gram	0.0 022 046 pound (avoirdupois)
short ton	2,000 pounds
long ton	2,240 pounds
metric ton	2,204.6 pounds;
gram	0.035 274 ounce
kilogram	2.2 pounds
liter	1.0 567 quarts
barrel (petroleum)	42 gallons (U.S.)

CONVERSION FACTORS

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL
<u>LINEAR</u>				
in	inches	25.40	millimeters	mm
in	inches	2.540	centimeters	cm
cm	centimeters	0.032 808	feet	ft
ft	feet	30.48	centimeters	cm
ft	feet	0.3 048	meters	m
ft	feet	0.00 016 458	nautical miles	nm
yd	yards	0.9 144	meters	m
m	meters	3.2 808	feet	ft
m	meters	1.094	yards	yd
m	meters	0.0 005 399	nautical miles	nm
sm	statute miles	0.86 897	nautical miles	nm
sm	statute miles	1.6 093	kilometers	km
sm	statute miles	1,609.3	meters	m
nm	nautical miles	1.151	statute miles	sm
<u>AREA</u>				
ft ²	square feet	0.0 929	square meters	m ²
m ²	square meters	10.764	square feet	ft ²
	acres	4,046.9	square meters	m ²
	acres	43,560	square feet	ft ²
m ²	square meters	0.0 002 471	acres	
ft ²	square feet	0.00 002 296	acres	
ha	hectare	2.471 054	acre	
ha	hectare	10,000	square meters	m ²
ha	hectare	1.07 639x10 ⁵	square feet	ft ²
	acre	0.404 685	hectare	ha
<u>DEPTHS</u>				
	fathoms	1.8 288	meters	m
m	meters	0.54 681	fathoms	
m	meters	3.2 808	feet	ft
ft	feet	0.3 048	meters	m

CONVERSION FACTORS (Cont'd)

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL
<u>RATES</u>				
ft/sec	feet per second	0.5 925	knots	kt
ft/sec	feet per second	0.6 818	miles per hour	mph
ft/sec	feet per second	30.48	centimeters per second	cm/s
mph	statute miles per hour	0.8 689	knots	kt
mph	statute miles per hour	1.467	feet per second	fps
mph	statute miles per hour	0.447	meters per second	m/s
kt	knots	1.151	miles per hour	mph
kt	knots	0.5 144	meters per second	m/s
kt	knots	1.6 878	feet per second	fps
cm/sec	centimeter per second	0.01 944	knots	kt
cm/sec	centimeter per second	0.02 237	miles per hour	mph
cm/sec	centimeter per second	0.032 808	feet per second	fps
<u>MASS</u>				
g	grams	0.035 275	ounces (avoirdupois)	oz
g	grams	0.002 205	pounds (avoirdupois)	lb
oz	ounces (avoirdupois)	28.349	grams	g
lb	pounds	0.45 359	kilograms	kg
	short tons	2,000	pounds	Lb
	short tons	0.89 286	long tons	
	short tons	0.9 072	metric tons	t
	long tons	2,240	pounds	Lb
	long tons	1.12	short tons	
	long tons	1.016	metric tons	t
t	metric tons	1,000	kilograms	kg
t	metric tons	0.9 842	long tons	
t	metric tons	1.1 023	short tons	
t	metric tons	2,204.6	pounds	Lb
<u>VOLUME</u>				
	barrels (petroleum)	42	gallons (U.S.)	gal
	barrels (petroleum)	158.99	liters	L
	barrels (liquid, U.S.)	31.5	gallons (U.S.)	gal
	barrels (liquid, U.S.)	26.229	gallons (British)	gal
	barrels (liquid, U.S.)	119.24	liters	L
gal	gallons (U.S.)	0.02 381	barrels (petroleum)	
L	liters	0.26 417	gallons (U.S.)	Gal
gal	gallons (U.S.)	3.7 854	liters	L
<u>TEMPERATURE</u>				
	Degrees Fahrenheit	5/9 (after subtracting 32)	Degrees Celsius	
	Degrees Celsius	9/5 (then add 32)	Degrees Fahrenheit	

METRIC STYLE GUIDE

Prefixes: Some of the metric units listed include prefixes such as kilo, centi, and milli. Prefixes, added to a unit name, create larger or smaller units by factors that are powers of 10. For example, add the prefix kilo, which means a thousand, to the unit gram to indicate 1000 grams; thus 1000 grams become 1 kilogram. The more common prefixes follow.

Factor		Prefix	Symbol
1 000 000	10^6	mega	M
1 000	10^3	kilo	k
1/100	10^{-2}	centi	c
1/1000	10^{-3}	milli	m
1/1 000 000	10^{-6}	micro	μ

Spelling: All units and prefixes should be spelled as shown in this guide.

Conversions: Conversions should follow a rule of reason; do not include figures that imply more accuracy than justified by the original data. For example, 36 inches should be converted to 91 centimeters, not 91.44 centimeters (36 inches x 2.54 centimeters per inch = 91.44 centimeters), and 40.1 inches converts to 101.9 centimeters, not 101.854.

Capitalization of Units: The names of all units start with a lower case letter except, of course, at the beginning of the sentence. There is one exception: in "degree Celsius" (symbol °C) the unit "degree" is lower case but the modifier "Celsius" is capitalized. Thus body temperature is written as 37 degrees Celsius.

Capitalization of Symbols: Unit symbols are written in lower case letters except for liter and those units derived from the name of a person (m for meter, but W for Watt, Pa for Pascal, etc.).

Capitalization of Prefixes: Symbols of prefixes that mean a million or more are capitalized and those less than a million are lower case (M for mega (millions), m for milli (thousandths)).

Pluralizations of Units: Names of units are made plural only when the numerical value that precedes them is more than 1. For example, 0.25 liter or 1/4 liter, but 250 milliliters. Zero degrees Celsius is an exception to this rule.

Pluralization of Symbols: Symbols for units are never pluralized (250 mm=250 millimeters).

Incorrect Terms: The prefix "kilo" stands for one thousand of the named unit. It is not a stand-alone term in the metric system. The most common misuse of this is the use of "kilo" for a "kilogram" of something. The word "micron" is an obsolete term for the quantity "micrometer." Also "degree centigrade" is no longer the correct unit term for temperature in the metric system; it has been replaced by degree Celsius.

Spacing: A space is used between the number and the symbol to which it refers. For example: 7 m, 31.4 kg, 37° C.

When a metric value is used as a one-thought modifier before a noun, hyphenating the quantity is not necessary. However, if a hyphen is used, write out the name of the metric quantity with the hyphen between the numeral and the quantity. For example:

a 2-liter bottle, not a 2-L bottle;
a 100-meter relay, not a 100-m relay;
35-millimeter film, not 35-mm film.

In names or symbols for units having prefixes, there is no space between letters making up the symbol or name. Examples: milligram, mg; kilometer, km.

Spaces (not commas) are used in writing metric values containing five or more digits. Examples 1 234 567 km, 0.123 456 mm. For values with four digits, either a space or no space is acceptable.

Period: Do not use a period with metric unit names and symbols except at the end of a sentence.

Decimal Point: The dot or period is used as the decimal point within numbers. In numbers less than one, zero should be written before the decimal point. Examples: 7.038 g; 0.038 g.