



Latitude: 37^B 30* 53 (Longitude: -122^B 01* 57 (Elevation (feet): 10

Page 1 of 3

DECEMBER							JANUARY							FEBRUARY						
Date	MAX	MIN	AVG	HDD	CDD	PRCP	Date	MAX	MIN	AVG	HDD	CDD	PRCP	Date	MAX	MIN	AVG	HDD	CDD	PRCP
1	60	44	52	13	0	0.07	1	56	41	49	16	0	0.08	1	60	44	52	13	0	0.10
2	60	43	52	13	0	0.06	2	57	41	49	16	0	0.08	2	60	44	52	13	0	0.11
3	60	43	51	14	0	0.06	3	57	41	49	16	0	0.08	3	60	44	52	13	0	0.11
4	59	43	51	14	0	0.06	4	57	41	49	16	0	0.08	4	60	44	52	13	0	0.11
5	59	43	51	14	0	0.06	5	57	41	49	16	0	0.09	5	60	44	52	13	0	0.11
6	59	43	51	14	0	0.06	6	57	41	49	16	0	0.09	6	60	44	52	13	0	0.11
7	59	43	51	14	0	0.06	7	57	41	49	16	0	0.09	7	60	44	52	13	0	0.11
8	59	42	50	15	0	0.06	8	57	41	49	16	0	0.09	8	61	44	53	12	0	0.11
9	58	42	50	15	0	0.06	9	57	41	49	16	0	0.09	9	61	45	53	12	0	0.11
10	58	42	50	15	0	0.06	10	57	41	49	16	0	0.09	10	61	45	53	12	0	0.11
11	58	42	50	15	0	0.06	11	57	42	49	16	0	0.09	11	61	45	53	12	0	0.10
12	58	42	50	15	0	0.06	12	57	42	49	16	0	0.09	12	61	45	53	12	0	0.10
13	58	42	50	15	0	0.06	13	57	42	49	16	0	0.10	13	61	45	53	12	0	0.10
14	58	41	49	16	0	0.06	14	57	42	49	15	0	0.10	14	61	45	53	12	0	0.10
15	57	41	49	16	0	0.07	15	57	42	50	15	0	0.10	15	62	45	53	12	0	0.10
16	57	41	49	16	0	0.07	16	57	42	50	15	0	0.10	16	62	45	54	12	0	0.10
17	57	41	49	16	0	0.07	17	57	42	50	15	0	0.10	17	62	45	54	11	0	0.10
18	57	41	49	16	0	0.07	18	58	42	50	15	0	0.10	18	62	46	54	11	0	0.10
19	57	41	49	16	0	0.07	19	58	42	50	15	0	0.10	19	62	46	54	11	0	0.10
20	57	41	49	16	0	0.07	20	58	42	50	15	0	0.10	20	62	46	54	11	0	0.10
21	57	41	49	16	0	0.07	21	58	42	50	15	0	0.10	21	62	46	54	11	0	0.10
22	57	41	49	16	0	0.07	22	58	42	50	15	0	0.10	22	62	46	54	11	0	0.10
23	57	41	49	16	0	0.07	23	58	43	50	15	0	0.10	23	62	46	54	11	0	0.10
24	57	41	49	16	0	0.07	24	58	43	51	15	0	0.10	24	62	46	54	11	0	0.10
25	57	41	49	16	0	0.07	25	58	43	51	14	0	0.10	25	63	46	54	11	0	0.10
26	57	41	49	16	0	0.07	26	59	43	51	14	0	0.10	26	63	46	54	11	0	0.10
27	57	41	49	16	0	0.07	27	59	43	51	14	0	0.10	27	63	46	54	11	0	0.10
28	57	41	49	16	0	0.08	28	59	43	51	14	0	0.10	28	63	46	55	11	*	0.10
29	56	41	49	16	0	0.08	29	59	43	51	14	0	0.11							
30	56	41	49	16	0	0.08	30	59	43	51	14	0	0.11							
31	56	41	49	16	0	0.08	31	59	44	51	14	0	0.11							
MTH:	57.7	41.7	49.7	474	0	2.08	MTH:	57.6	42.0	49.8	471	0	2.97	MTH:	61.4	45.1	53.3	331	1	2.89
WINTER SEASON:							58.9 42.9 50.9 1276 1 7.94													
MARCH							APRIL							MAY						
Date	MAX	MIN	AVG	HDD	CDD	PRCP	Date	MAX	MIN	AVG	HDD	CDD	PRCP	Date	MAX	MIN	AVG	HDD	CDD	PRCP
1	63	46	55	11	0	0.10	1	66	48	57	8	0	0.05	1	70	51	61	5	1	0.02
2	63	46	55	10	0	0.09	2	66	49	58	8	0	0.05	2	70	51	61	5	1	0.02
3	63	46	55	10	0	0.09	3	67	49	58	8	0	0.05	3	70	52	61	5	1	0.02
4	63	46	55	10	0	0.09	4	67	49	58	8	0	0.05	4	70	52	61	5	1	0.02
5	63	47	55	10	0	0.09	5	67	49	58	7	0	0.04	5	70	52	61	5	1	0.02
6	63	47	55	10	0	0.09	6	67	49	58	7	0	0.04	6	70	52	61	5	1	0.02
7	63	47	55	10	0	0.09	7	67	49	58	7	0	0.04	7	70	52	61	5	1	0.02
8	63	47	55	10	0	0.09	8	67	49	58	7	0	0.04	8	70	52	61	5	1	0.02
9	63	47	55	10	0	0.09	9	67	49	58	7	0	0.04	9	71	52	61	5	1	0.02
10	64	47	55	10	0	0.09	10	68	49	58	7	0	0.04	10	71	52	61	5	1	0.02
11	64	47	55	10	0	0.09	11	68	49	59	7	0	0.04	11	71	52	62	5	1	0.02
12	64	47	55	10	0	0.08	12	68	49	59	7	0	0.03	12	71	52	62	5	1	0.01
13	64	47	55	10	0	0.08	13	68	50	59	7	0	0.03	13	71	53	62	4	1	0.01
14	64	47	56	10	0	0.08	14	68	50	59	7	0	0.03	14	71	53	62	4	1	0.01
15	64	47	56	10	0	0.08	15	68	50	59	7	0	0.03	15	71	53	62	4	1	0.01
16	64	47	56	9	0	0.08	16	68	50	59	6	1	0.03	16	71	53	62	4	1	0.01
17	64	47	56	9	0	0.08	17	68	50	59	6	1	0.03	17	72	53	62	4	1	0.01
18	64	47	56	9	0	0.08	18	68	50	59	6	1	0.03	18	72	53	62	4	1	0.01
19	65	48	56	9	0	0.07	19	69	50	59	6	1	0.03	19	72	53	62	4	1	0.01
20	65	48	56	9	0	0.07	20	69	50	60	6	1	0.02	20	72	53	63	4	1	0.01
21	65	48	56	9	0	0.07	21	69	50	60	6	1	0.02	21	72	53	63	4	2	0.01
22	65	48	56	9	0	0.07	22	69	50	60	6	1	0.02	22	72	54	63	4	2	0.01
23	65	48	56	9	0	0.07	23	69	50	60	6	1	0.02	23	72	54	63	4	2	0.01
24	65	48	56	9	0	0.07	24	69	51	60	6	1	0.02	24	73	54	63	4	2	0.01
25	65	48	57	9	0	0.06	25	69	51	60	6	1	0.02	25	73	54	63	3	2	0.01
26	65	48	57	9	*	0.06	26	69	51	60	6	1	0.02	26	73	54	63	3	2	0.01
27	66	48	57	8	*	0.06	27	69	51	60	6	1	0.02	27	73	54	63	3	2	0.01
28	66	48	57	8	*	0.06	28	69	51	60	6	1	0.02	28	73	54	64	3	2	0.01
29	66	48	57	8	*	0.06	29	70	51	60	5	1	0.02	29	73	54	64	3	2	0.01
30	66	48	57	8	*	0.06	30	70	51	60	5	1	0.02	30	73	54	64	3	2	0.01
31	66	48	57	8	*	0.05								31	74	55	64	3	2	0.01
MTH:	64.3	47.3	55.8	290	6	2.39	MTH:	68.1	49.8	59.0	197	15	0.94	MTH:	71.5	52.9	62.2	129	42	0.42
SPRING SEASON:							68.0 50.0 59.0 616 63 3.75													



Latitude: 37^B 30* 53 (Longitude: -122^B 01* 57 (Elevation (feet): 10

Page 2 of 3

JUNE							JULY							AUGUST						
Date	MAX	MIN	AVG	HDD	CDD	PRCP	Date	MAX	MIN	AVG	HDD	CDD	PRCP	Date	MAX	MIN	AVG	HDD	CDD	PRCP
1	74	55	64	3	2	0.01	1	78	57	67	1	3	0.01	1	79	58	68	0	4	0.00
2	74	55	64	3	2	0.01	2	78	57	67	1	3	0.00	2	79	58	68	0	4	0.00
3	74	55	64	3	2	0.01	3	78	57	68	1	3	0.00	3	79	58	68	0	4	0.00
4	74	55	65	3	2	0.01	4	78	57	68	1	3	0.00	4	79	58	68	0	4	0.00
5	75	55	65	2	2	0.01	5	78	57	68	1	3	0.00	5	79	58	68	0	3	0.00
6	75	55	65	2	2	0.01	6	78	57	68	1	3	0.00	6	79	58	68	0	3	0.00
7	75	55	65	2	2	0.01	7	78	57	68	1	3	0.00	7	79	58	68	0	3	0.00
8	75	55	65	2	2	0.01	8	78	57	68	1	3	0.00	8	79	58	68	0	3	0.00
9	75	55	65	2	2	0.01	9	78	57	68	1	3	0.00	9	79	58	68	0	3	0.00
10	75	55	65	2	2	0.01	10	78	58	68	1	3	0.00	10	79	58	68	0	3	0.00
11	75	56	66	2	2	0.01	11	78	58	68	1	3	0.00	11	79	59	69	0	3	0.00
12	76	56	66	2	3	0.01	12	78	58	68	1	3	0.00	12	78	59	69	0	3	0.00
13	76	56	66	2	3	0.00	13	78	58	68	1	4	0.00	13	78	59	69	0	3	0.00
14	76	56	66	2	3	0.00	14	78	58	68	1	4	0.00	14	78	59	69	0	4	0.00
15	76	56	66	2	3	0.00	15	78	58	68	1	4	0.00	15	78	59	69	0	4	0.00
16	76	56	66	2	3	0.00	16	78	58	68	1	4	0.00	16	78	59	69	0	4	0.00
17	76	56	66	2	3	0.00	17	78	58	68	1	4	0.00	17	78	59	69	0	4	0.00
18	76	56	66	2	3	0.00	18	78	58	68	1	4	0.00	18	78	59	69	0	4	0.00
19	76	56	66	1	3	0.00	19	78	58	68	1	4	0.00	19	78	59	69	0	4	0.00
20	77	56	66	1	3	0.00	20	78	58	68	0	4	0.00	20	78	59	69	0	4	0.00
21	77	56	67	1	3	0.00	21	78	58	68	0	4	0.00	21	78	59	69	0	4	0.00
22	77	56	67	1	3	0.00	22	78	58	68	0	4	0.00	22	78	59	69	0	4	0.00
23	77	56	67	1	3	0.00	23	79	58	68	0	4	0.00	23	78	59	69	0	4	0.00
24	77	57	67	1	3	0.00	24	79	58	68	0	4	0.00	24	79	58	69	0	4	0.00
25	77	57	67	1	3	0.00	25	79	58	68	0	4	0.00	25	79	58	69	1	4	0.01
26	77	57	67	1	3	0.00	26	79	58	68	0	4	0.00	26	79	58	69	1	4	0.01
27	77	57	67	1	3	0.00	27	79	58	68	0	4	0.00	27	79	58	68	1	4	0.01
28	77	57	67	1	3	0.00	28	79	58	68	0	4	0.00	28	79	58	68	1	4	0.01
29	77	57	67	1	3	0.00	29	79	58	68	0	4	0.00	29	79	58	68	1	4	0.01
30	78	57	67	1	3	0.00	30	79	58	69	0	4	0.01	30	79	58	68	1	4	0.01
MTH: 75.9 55.9 65.9 52 79 0.12							MTH: 78.3 57.7 68.0 19 112 0.03							MTH: 78.6 58.4 68.5 7 115 0.07						
SUMMER SEASON:							77.6 57.3 67.5 78 306 0.22													
SEPTEMBER							OCTOBER							NOVEMBER						
Date	MAX	MIN	AVG	HDD	CDD	PRCP	Date	MAX	MIN	AVG	HDD	CDD	PRCP	Date	MAX	MIN	AVG	HDD	CDD	PRCP
1	79	58	69	1	4	0.00	1	77	56	66	1	3	0.01	1	69	51	60	6	*	0.05
2	79	58	69	1	4	0.00	2	76	56	66	1	3	0.01	2	69	50	59	6	*	0.05
3	79	58	69	1	4	0.00	3	76	56	66	1	2	0.02	3	68	50	59	6	0	0.05
4	79	58	68	1	4	0.00	4	76	56	66	1	2	0.02	4	68	50	59	6	0	0.05
5	79	58	68	1	4	0.00	5	76	56	66	1	2	0.02	5	68	50	59	7	0	0.05
6	79	58	68	1	4	0.00	6	76	56	66	1	2	0.02	6	67	49	58	7	0	0.06
7	79	58	68	1	4	0.00	7	76	55	66	2	2	0.02	7	67	49	58	7	0	0.06
8	78	58	68	1	5	0.00	8	76	55	65	2	2	0.02	8	67	49	58	7	0	0.06
9	78	58	68	1	5	0.00	9	75	55	65	2	2	0.02	9	66	49	57	8	0	0.06
10	78	58	68	1	4	0.00	10	75	55	65	2	2	0.02	10	66	48	57	8	0	0.06
11	78	58	68	1	4	0.01	11	75	55	65	2	2	0.02	11	66	48	57	8	0	0.06
12	78	58	68	1	4	0.01	12	75	55	65	2	2	0.02	12	65	48	57	8	0	0.06
13	78	58	68	1	4	0.01	13	74	55	65	2	1	0.02	13	65	48	56	9	0	0.06
14	78	58	68	1	4	0.01	14	74	54	64	2	1	0.03	14	65	47	56	9	0	0.06
15	78	58	68	1	4	0.01	15	74	54	64	2	1	0.03	15	64	47	56	9	0	0.06
16	78	58	68	1	4	0.01	16	74	54	64	2	1	0.03	16	64	47	56	10	0	0.06
17	78	58	68	1	4	0.01	17	74	54	64	2	1	0.03	17	64	47	55	10	0	0.06
18	78	57	68	1	4	0.01	18	73	54	64	3	1	0.03	18	63	46	55	10	0	0.06
19	78	57	68	1	4	0.01	19	73	53	63	3	1	0.03	19	63	46	55	10	0	0.06
20	78	57	68	1	4	0.01	20	73	53	63	3	1	0.03	20	63	46	55	11	0	0.07
21	78	57	68	1	4	0.01	21	72	53	63	3	1	0.03	21	63	46	54	11	0	0.07
22	78	57	67	1	4	0.01	22	72	53	63	3	1	0.04	22	62	46	54	11	0	0.07
23	78	57	67	1	4	0.01	23	72	53	62	3	1	0.04	23	62	45	54	11	0	0.07
24	77	57	67	2	4	0.01	24	72	52	62	4	1	0.04	24	62	45	54	11	0	0.07
25	77	57	67	2	4	0.01	25	71	52	62	4	1	0.04	25	62	45	53	12	0	0.07
26	77	57	67	2	4	0.01	26	71	52	62	4	1	0.04	26	61	45	53	12	0	0.07
27	77	57	67	2	3	0.01	27	71	52	61	4	0	0.04	27	61	44	53	12	0	0.07
28	77	57	67	2	3	0.01	28	70	51	61	5	0	0.04	28	61	44	53	12	0	0.07
29	77	56	67	1	3	0.01	29	70	51	61	5	0	0.04	29	61	44	52	13	0	0.06
30	77	56	67	1	3	0.01	30	70	51	60	5	0	0.05	30	60	44	52	13	0	0.06
MTH: 78.0 57.5 67.8 35 118 0.20							MTH: 73.5 53.8 63.7 82 40 0.90							MTH: 64.4 47.1 55.8 280 2 1.84						
AUTUMN SEASON:							72.0 52.8 62.4 397 160 2.94													
ANNUAL:							69.1 50.8 60.0 2367 530 14.85													



CLIMATOGRAPHY OF THE UNITED STATES NO. 84, 1971-2000

Daily Normals of Temperature, Precipitation, and Heating and Cooling Degree Days

Station Name: NEWARK (OAKLAND) OAK CALIFORNIA Station Number: 046144
Latitude: 37° 30' 53" N Longitude: -122° 01' 57" W Elevation (feet): 10
Climate Division: CA 04 Central Coast Drainage Basin

Page 3 of 3

PRECIPITATION PROBABILITIES													
Probability	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
0.005	0.04	0.04	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.16
0.010	0.07	0.07	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	4.78
0.050	0.26	0.25	0.18	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.22	6.82
0.100	0.47	0.45	0.33	0.16	0.00	0.00	0.00	0.00	0.00	0.03	0.14	0.46	8.12
0.200	0.87	0.84	0.64	0.29	0.00	0.00	0.00	0.00	0.00	0.13	0.33	0.81	9.92
0.300	1.28	1.24	0.97	0.42	0.02	0.00	0.00	0.00	0.00	0.26	0.56	1.11	11.38
0.400	1.73	1.68	1.34	0.56	0.08	0.00	0.00	0.00	0.03	0.40	0.84	1.41	12.74
0.500	2.24	2.18	1.76	0.72	0.16	0.01	0.00	0.00	0.08	0.58	1.18	1.74	14.11
0.600	2.85	2.78	2.27	0.91	0.28	0.05	0.00	0.00	0.14	0.80	1.61	2.11	15.57
0.700	3.61	3.52	2.91	1.14	0.45	0.11	0.00	0.01	0.23	1.08	2.18	2.56	17.24
0.800	4.66	4.55	3.80	1.46	0.71	0.21	0.03	0.07	0.36	1.48	2.99	3.16	19.33
0.900	6.42	6.27	5.29	1.99	1.19	0.39	0.13	0.22	0.59	2.17	4.41	4.12	22.51
0.950	8.14	7.96	6.77	2.51	1.70	0.59	0.21	0.40	0.83	2.87	5.84	5.04	25.37
0.990	12.07	11.82	10.16	3.69	2.93	1.05	0.39	0.85	1.39	4.49	9.22	7.06	31.34
0.995	13.74	13.46	11.61	4.19	3.48	1.26	0.47	1.05	1.64	5.19	10.68	7.91	33.73

PRECIPITATION QUINTILES												
Level	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0 <	0.14	0.16	0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
1	0.14	0.16	0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
	0.87	0.84	0.64	0.29	0.00	0.00	0.00	0.00	0.00	0.13	0.33	0.81
2	0.88	0.85	0.65	0.30	0.01	0.00	0.00	0.00	0.01	0.14	0.34	0.82
	1.73	1.68	1.34	0.56	0.08	0.00	0.00	0.00	0.03	0.40	0.84	1.41
3	1.74	1.69	1.35	0.57	0.09	0.01	0.00	0.00	0.04	0.41	0.85	1.42
	2.85	2.78	2.27	0.91	0.28	0.05	0.00	0.00	0.14	0.80	1.61	2.11
4	2.86	2.79	2.28	0.92	0.29	0.06	0.01	0.01	0.15	0.81	1.62	2.12
	4.66	4.55	3.80	1.46	0.71	0.21	0.03	0.07	0.36	1.48	2.99	3.16
5	4.67	4.56	3.81	1.47	0.72	0.22	0.04	0.08	0.37	1.49	3.00	3.17
	8.36	10.79	7.17	3.50	2.06	1.10	0.38	0.65	0.86	2.87	6.04	5.67
6 >	8.36	10.79	7.17	3.50	2.06	1.10	0.38	0.65	0.86	2.87	6.04	5.67

Abbreviations:

MAX = Maximum Temperature (degrees Fahrenheit)
MIN = Minimum Temperature (degrees Fahrenheit)
AVG = Average Temperature (degrees Fahrenheit)

NOTES

HDD = Heating Degree Days (base 65)
CDD = Cooling Degree Days (base 65)
PRCP = Precipitation Amount (inches)

MTH = Monthly Means / Totals
SEASON = Seasonal Means / Totals
ANNUAL = Annual Means / Totals

This publication presents daily temperature, precipitation, and heating and cooling degree day normals for stations based on the 1971-2000 record *adjusted* to the present station location. Stations contained in the monthly normals (Climatology of the United States No. 81) are included. Precipitation-only stations have no data in the temperature and degree day fields on Pages 1 and 2. Latitude and longitude values are presented in DD MM SS, where DD=Degrees, MM=Minutes, and SS=Seconds. Small differences between monthly values in this publication and the monthly normals presented in Climatology of the United States No.81 are attributable to smoothing techniques applied to this data set, as described below.

Daily Normals Tables:

The daily values presented in these tables are not simple means of the observed daily values. They are interpolated from the much less variable monthly normals by use of the natural spline function. The procedure involved constructing a cumulative series of monthly sums from the monthly normals. The cumulative series was for a 24-month period (July, August, ..., December, January, ..., December, January, ..., June), so that the interpolating function could adequately fit the end points in the annual series. This process was applied independently to all six elements. No normal values for February 29 are included; in common practice, the normal values for the 28th are used for the 29th in each leap year. Thus, for leap years, the February monthly total degree days or precipitation are calculated by adding the daily value for the 28th to the monthly total. February temperature averages are likewise not adjusted for leap years. For most stations, the monthly heating and cooling degree day normals (base 65 degrees Fahrenheit) are derived from monthly normal temperature using an estimation technique developed by H.C.S. Thom. An asterisk (*) for a daily degree day value indicates a daily normal of less than one degree day, but not equal to zero. Seasonal means / totals correspond to the three months listed immediately above.

Precipitation Probabilities and Quintiles Tables:

The precipitation probabilities are the monthly precipitation totals that correspond to the indicated probability levels. The probability levels are based on the 1971-2000 historical sequential monthly precipitation. The historical precipitation data are the adjusted values from the monthly normals (Climatology of the United States No. 81).

When historical climate data are accumulated and examined, they generally follow a certain pattern called a statistical distribution. While temperature usually follows a Gaussian or bell-shaped distribution, precipitation does not because it is zero-bounded. Precipitation generally follows a Gamma distribution, where most values are near zero with rapidly diminishing higher values. Thus, the Gamma distribution was used to estimate the precipitation values in the probability and quintile tables published above. The probability table shows the amount of precipitation expected at fifteen probability levels (0.005, 0.01, 0.05, 0.10, 0.20, 0.30, 0.40, 0.50, 0.60, 0.70, 0.80, 0.90, 0.95, 0.99, and 0.995) for each month of the year and for the annual total. For example, if 1.77 inches corresponds to the 0.20 probability level, that means that on average, 2 out of 10 years will have 1.77 inches or less of precipitation in that month. It also means that, on average, 8 out of 10 years will have *more than* 1.77 inches of precipitation in that month.

The precipitation quintiles show the expected precipitation values at the five quintile levels for each of the twelve months: 1. First Quintile (0-20%); 2. Second Quintile (20-40%); 3. Third Quintile (40-60%); 4. Fourth Quintile (60-80%); 5. Fifth Quintile (80-100%). For example, if 2.91 and 4.07 inches are the bounds for the second quintile (level 2), then a monthly total precipitation amount for that month falling in the range 2.91 to 4.07 would be classified as a second quintile precipitation amount and that month would be considered relatively dry. The first line (level 0 <) in the table shows the minimum precipitation value derived from the historical record. Quintile level 0 would be used if a future precipitation observation is less than the 1971-2000 value. Level 6 > would be used if the observed value is more than the 1971-2000 maximum.

Release Date: May 15, 2002^a

National Climatic Data Center/NESDIS/NOAA, Asheville, North Carolina