U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Summary of Daily Normals
1991-2020

Generated on 08/23/2021

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 159 ft. Lat: 45.5181° N Lon: -122.6894° W
Station: **PORTLAND KGW-TV, OR US USC00356749**

December

DATE	MAX	MIN	AVG	HDD	CDD	PRCP
01	48.1	39.0	43.5	21.5	0.0	63.2%
02	47.8	38.8	43.3	21.7	0.0	63.2%
03	47.6	38.7	43.1	21.9	0.0	63.2%
04	47.4	38.5	42.9	22.1	0.0	63.2%
05	47.2	38.4	42.8	22.2	0.0	63.3%
06	46.9	38.2	42.6	22.4	0.0	63.3%
07	46.7	38.1	42.4	22.6	0.0	63.4%
08	46.6	37.9	42.2	22.8	0.0	63.6%
09	46.4	37.8	42.1	22.9	0.0	63.7%
10	46.2	37.7	41.9	23.1	0.0	63.8%
11	46.1	37.5	41.8	23.2	0.0	63.8%
12	45.9	37.4	41.7	23.3	0.0	63.9%
13	45.8	37.3	41.5	23.4	0.0	63.9%
14	45.6	37.2	41.4	23.6	0.0	64.0%
15	45.5	37.1	41.3	23.7	0.0	64.0%
16	45.4	37.0	41.2	23.8	0.0	64.0%
17	45.3	37.0	41.2	23.8	0.0	64.1%
18	45.3	36.9	41.1	23.9	0.0	64.1%
19	45.2	36.8	41.0	24.0	0.0	64.2%
20	45.2	36.7	41.0	24.0	0.0	64.2%
21	45.1	36.7	40.9	24.1	0.0	64.3%
22	45.1	36.6	40.9	24.1	0.0	64.2%
23	45.1	36.6	40.8	24.1	0.0	64.2%
24	45.1	36.6	40.8	24.2	0.0	64.3%
25	45.1	36.6	40.8	24.2	0.0	64.3%
26	45.1	36.5	40.8	24.2	0.0	64.3%
27	45.1	36.5	40.8	24.2	0.0	64.3%
28	45.2	36.5	40.8	24.1	0.0	64.3%
29	45.2	36.5	40.9	24.1	0.0	64.2%
30	45.3	36.5	40.9	24.1	0.0	64.2%
31	45.3	36.5	40.9	24.1	0.0	64.1%
MNTH	45.9	37.3	41.6	725.3	0.0	7.35 b

January

DATE	MAX	MIN	AVG	HDD	CDD	PRCP
01	45.4	36.6	41.0	24.0	0.0	64.1%
02	45.5	36.6	41.0	24.0	0.0	64.1%
03	45.6	36.6	41.1	23.9	0.0	64.0%
04	45.7	36.7	41.2	23.8	0.0	64.0%
05	45.7	36.7	41.2	23.8	0.0	63.9%
06	45.8	36.7	41.3	23.7	0.0	63.9%
07	45.9	36.8	41.4	23.6	0.0	63.8%
08	46.0	36.8	41.4	23.6	0.0	63.7%
09	46.1	36.9	41.5	23.5	0.0	63.6%
10	46.3	36.9	41.6	23.4	0.0	63.4%
11	46.4	37.0	41.7	23.3	0.0	63.3%
12	46.5	37.1	41.8	23.2	0.0	63.1%
13	46.6	37.1	41.8	23.2	0.0	62.9%
14	46.7	37.2	41.9	23.1	0.0	62.7%
15	46.8	37.2	42.0	23.0	0.0	62.5%
16	46.9	37.3	42.1	22.9	0.0	62.2%
17	47.0	37.4	42.2	22.8	0.0	62.0%
18	47.1	37.4	42.3	22.7	0.0	61.7%
19	47.2	37.5	42.3	22.7	0.0	61.5%
20	47.3	37.5	42.4	22.6	0.0	61.3%
21	47.4	37.6	42.5	22.5	0.0	61.0%
22	47.5	37.6	42.6	22.4	0.0	60.8%
23	47.6	37.7	42.7	22.3	0.0	60.6%
24	47.7	37.8	42.7	22.3	0.0	60.3%
25	47.8	37.8	42.8	22.2	0.0	60.0%
26	47.9	37.9	42.9	22.1	0.0	59.8%
27	48.0	37.9	43.0	22.0	0.0	59.6%
28	48.1	38.0	43.0	22.0	0.0	59.4%
29	48.2	38.0	43.1	21.9	0.0	59.1%
30	48.3	38.0	43.2	21.8	0.0	58.9%
31	48.5	38.1	43.3	21.7	0.0	58.6%
MNTH	46.9	37.3	42.1	709.9	0.0	6.36 b
Winter	47.8	37.8	42.8	2005.0	0.0	18.45 b
Annual	62.6	46.9	54.7	4167.1	447.7	44.07 b

February

DATE	MAX	MIN	AVG	HDD	CDD	PRCP
01	48.6	38.1	43.3	21.7	0.0	58.3%
02	48.7	38.2	43.4	21.6	0.0	58.1%
03	48.8	38.2	43.5	21.5	0.0	57.8%
04	48.9	38.3	43.6	21.4	0.0	57.6%
05	49.0	38.3	43.7	21.3	0.0	57.3%
06	49.1	38.4	43.7	21.3	0.0	57.1%
07	49.3	38.4	43.8	21.2	0.0	56.9%
08	49.4	38.4	43.9	21.1	0.0	56.8%
09	49.5	38.5	44.0	21.0	0.0	56.7%
10	49.7	38.5	44.1	20.9	0.0	56.6%
11	49.8	38.6	44.2	20.8	0.0	56.6%
12	50.0	38.6	44.3	20.7	0.0	56.6%
13	50.1	38.7	44.4	20.6	0.0	56.6%
14	50.3	38.7	44.5	20.5	0.0	56.6%
15	50.4	38.8	44.6	20.4	0.0	56.7%
16	50.6	38.8	44.7	20.3	0.0	56.7%
17	50.8	38.9	44.8	20.2	0.0	56.7%
18	51.0	38.9	44.9	20.1	0.0	56.8%
19	51.1	39.0	45.1	19.9	0.0	56.8%
20	51.3	39.1	45.2	19.8	0.0	56.8%
21	51.5	39.1	45.3	19.7	0.0	56.8%
22	51.7	39.2	45.4	19.5	0.0	56.8%
23	51.9	39.3	45.6	19.4	0.0	56.8%
24	52.1	39.3	45.7	19.3	0.0	56.8%
25	52.3	39.4	45.9	19.1	0.0	56.8%
26	52.5	39.5	46.0	19.0	0.0	56.9%
27	52.7	39.5	46.1	18.9	0.0	57.0%
28	52.9	39.6	46.3	18.7	0.0	57.1%
MNTH	50.5	38.8	44.7	569.8	0.0	4.74 b

a: Probability of precipitation >= 0.01 inches for 29-day windows centered on each day of the year.

b: Long-term averages of seasonal or annual precipitation totals in Inches.

blank: missing or insufficient data.

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151 Patton Avenue
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Current Location: Elev: 159 ft. Lat: 45.5181° N Lon: -122.6894° W
Station: **PORTLAND KGW-TV, OR US USC00356749**

March

DATE	MAX	MIN	AVG	HDD	CDD	PRCP
01	53.1	39.7	46.4	18.6	0.0	57.2%
02	53.4	39.8	46.6	18.4	0.0	57.3%
03	53.6	39.8	46.7	18.3	0.0	57.3%
04	53.8	39.9	46.8	18.2	0.0	57.3%
05	54.0	40.0	47.0	18.0	0.0	57.3%
06	54.2	40.1	47.1	17.9	0.0	57.3%
07	54.4	40.2	47.3	17.7	0.0	57.2%
08	54.6	40.2	47.4	17.6	0.0	57.2%
09	54.8	40.3	47.5	17.5	0.0	57.2%
10	54.9	40.4	47.7	17.3	0.0	57.1%
11	55.1	40.5	47.8	17.2	0.0	57.1%
12	55.3	40.6	47.9	17.1	0.0	57.0%
13	55.5	40.6	48.1	16.9	0.0	57.0%
14	55.6	40.7	48.2	16.8	0.0	57.0%
15	55.8	40.8	48.3	16.7	0.0	57.0%
16	56.0	40.9	48.4	16.6	0.0	56.9%
17	56.1	41.0	48.5	16.5	0.0	56.9%
18	56.3	41.1	48.7	16.3	0.0	56.9%
19	56.4	41.1	48.8	16.2	0.0	56.9%
20	56.6	41.2	48.9	16.1	0.0	56.9%
21	56.7	41.3	49.0	16.0	0.0	57.0%
22	56.8	41.4	49.1	15.9	0.0	57.0%
23	57.0	41.5	49.2	15.8	0.0	57.0%
24	57.1	41.6	49.3	15.7	0.0	57.0%
25	57.2	41.6	49.4	15.6	0.0	56.9%
26	57.3	41.7	49.5	15.5	0.0	56.9%
27	57.4	41.8	49.6	15.4	0.0	56.8%
28	57.6	41.9	49.7	15.3	0.0	56.7%
29	57.7	42.0	49.8	15.2	0.0	56.7%
30	57.8	42.1	49.9	15.1	0.0	56.7%
31	57.9	42.2	50.0	15.0	0.0	56.7%
MNTH	55.8	40.9	48.3	516.2	0.0	4.83 b

April

DATE	MAX	MIN	AVG	HDD	CDD	PRCP
01	58.0	42.3	50.2	14.9	0.0	56.7%
02	58.2	42.4	50.3	14.7	0.0	56.8%
03	58.3	42.5	50.4	14.6	0.0	56.8%
04	58.4	42.6	50.5	14.5	0.0	56.8%
05	58.6	42.7	50.6	14.4	0.0	56.7%
06	58.7	42.8	50.8	14.3	0.0	56.6%
07	58.9	42.9	50.9	14.1	0.0	56.5%
08	59.0	43.0	51.0	14.0	0.0	56.4%
09	59.2	43.1	51.2	13.9	0.0	56.2%
10	59.4	43.3	51.3	13.7	0.0	56.0%
11	59.5	43.4	51.5	13.6	0.0	55.8%
12	59.7	43.5	51.6	13.4	0.1	55.5%
13	59.9	43.7	51.8	13.3	0.1	55.2%
14	60.1	43.8	52.0	13.1	0.1	54.8%
15	60.3	44.0	52.1	12.9	0.1	54.4%
16	60.5	44.1	52.3	12.7	0.1	54.0%
17	60.8	44.3	52.5	12.5	0.1	53.6%
18	61.0	44.4	52.7	12.4	0.1	53.1%
19	61.2	44.6	52.9	12.2	0.1	52.6%
20	61.5	44.8	53.1	12.0	0.1	52.2%
21	61.7	45.0	53.3	11.8	0.1	51.8%
22	62.0	45.1	53.6	11.6	0.1	51.3%
23	62.3	45.3	53.8	11.4	0.2	50.9%
24	62.5	45.5	54.0	11.2	0.2	50.4%
25	62.8	45.7	54.2	11.0	0.2	50.0%
26	63.1	45.9	54.5	10.7	0.2	49.5%
27	63.4	46.1	54.7	10.5	0.2	49.0%
28	63.7	46.3	55.0	10.3	0.3	48.4%
29	64.0	46.4	55.2	10.1	0.3	47.8%
30	64.2	46.6	55.4	9.9	0.3	47.2%
MNTH	60.7	44.2	52.5	379.7	3.2	3.63 b
Spring	61.5	44.8	53.2	1112.4	24.4	11.04 b
Annual	62.6	46.9	54.7	4167.1	447.7	44.07 b

May

DATE	MAX	MIN	AVG	HDD	CDD	PRCP
01	64.5	46.8	55.7	9.7	0.4	46.6%
02	64.8	47.0	55.9	9.5	0.4	46.0%
03	65.1	47.2	56.2	9.3	0.5	45.5%
04	65.4	47.4	56.4	9.1	0.5	44.9%
05	65.7	47.6	56.6	8.9	0.5	44.4%
06	65.9	47.8	56.9	8.7	0.6	43.9%
07	66.2	48.0	57.1	8.5	0.6	43.3%
08	66.5	48.2	57.3	8.3	0.6	42.8%
09	66.7	48.4	57.6	8.1	0.6	42.4%
10	67.0	48.5	57.8	7.9	0.6	41.9%
11	67.2	48.7	58.0	7.6	0.6	41.5%
12	67.5	48.9	58.2	7.4	0.6	41.1%
13	67.7	49.1	58.4	7.2	0.6	40.8%
14	67.9	49.2	58.6	7.0	0.6	40.5%
15	68.1	49.4	58.8	6.9	0.6	40.2%
16	68.3	49.6	58.9	6.7	0.7	39.9%
17	68.5	49.7	59.1	6.6	0.7	39.7%
18	68.7	49.9	59.3	6.4	0.7	39.4%
19	68.9	50.0	59.4	6.3	0.7	39.1%
20	69.0	50.1	59.6	6.1	0.7	38.8%
21	69.2	50.3	59.7	6.0	0.8	38.5%
22	69.3	50.4	59.9	5.9	0.8	38.2%
23	69.5	50.5	60.0	5.8	0.8	37.8%
24	69.6	50.7	60.1	5.7	0.8	37.5%
25	69.7	50.8	60.3	5.5	0.8	37.2%
26	69.9	50.9	60.4	5.4	0.8	36.9%
27	70.0	51.0	60.5	5.3	0.8	36.7%
28	70.1	51.1	60.6	5.3	0.9	36.4%
29	70.2	51.2	60.7	5.2	0.9	36.1%
30	70.3	51.3	60.8	5.1	1.0	35.8%
31	70.4	51.4	60.9	5.1	1.0	35.5%
MNTH	68.0	49.4	58.7	216.6	21.2	2.58 b

a: Probability of precipitation >= 0.01 inches for 29-day windows centered on each day of the year.

b: Long-term averages of seasonal or annual precipitation totals in Inches.

blank: missing or insufficient data.

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June

DATE	MAX	MIN	AVG	HDD	CDD	PRCP
01	70.5	51.5	61.0	5.0	1.0	35.2%
02	70.6	51.7	61.1	4.9	1.0	34.9%
03	70.7	51.8	61.2	4.8	1.0	34.5%
04	70.8	51.9	61.4	4.7	1.0	34.2%
05	71.0	52.0	61.5	4.6	1.0	33.9%
06	71.1	52.1	61.6	4.5	1.1	33.5%
07	71.2	52.2	61.7	4.4	1.1	33.2%
08	71.3	52.3	61.8	4.3	1.1	32.7%
09	71.5	52.4	61.9	4.3	1.2	32.3%
10	71.6	52.5	62.1	4.2	1.2	31.8%
11	71.8	52.6	62.2	4.1	1.3	31.3%
12	71.9	52.7	62.3	4.0	1.3	30.8%
13	72.1	52.8	62.5	3.8	1.3	30.2%
14	72.3	53.0	62.6	3.7	1.3	29.6%
15	72.5	53.1	62.8	3.6	1.3	29.0%
16	72.7	53.2	62.9	3.5	1.4	28.3%
17	72.9	53.4	63.1	3.4	1.5	27.7%
18	73.1	53.5	63.3	3.3	1.6	27.0%
19	73.3	53.7	63.5	3.2	1.7	26.4%
20	73.6	53.8	63.7	3.1	1.8	25.8%
21	73.8	54.0	63.9	3.0	1.9	25.1%
22	74.1	54.1	64.1	2.9	1.9	24.5%
23	74.3	54.3	64.3	2.7	2.0	23.8%
24	74.6	54.4	64.5	2.6	2.1	23.2%
25	74.9	54.6	64.7	2.5	2.2	22.5%
26	75.2	54.8	65.0	2.4	2.3	21.8%
27	75.5	55.0	65.2	2.2	2.4	21.2%
28	75.8	55.1	65.5	2.1	2.5	20.5%
29	76.1	55.3	65.7	1.9	2.6	19.8%
30	76.4	55.5	65.9	1.8	2.7	19.1%
MNTH	72.9	53.3	63.1	105.1	48.2	1.49 b

July

DATE	MAX	MIN	AVG	HDD	CDD	PRCP
01	76.7	55.7	66.2	1.7	2.8	18.5%
02	77.0	55.9	66.4	1.5	2.9	17.9%
03	77.3	56.0	66.7	1.3	3.0	17.2%
04	77.6	56.2	66.9	1.2	3.1	16.6%
05	77.9	56.4	67.2	1.1	3.2	15.9%
06	78.2	56.6	67.4	0.9	3.3	15.3%
07	78.5	56.8	67.6	0.8	3.5	14.8%
08	78.8	56.9	67.9	0.8	3.7	14.2%
09	79.1	57.1	68.1	0.7	3.8	13.7%
10	79.4	57.3	68.3	0.7	4.0	13.2%
11	79.7	57.4	68.5	0.6	4.1	12.7%
12	79.9	57.6	68.7	0.6	4.3	12.3%
13	80.2	57.7	68.9	0.5	4.5	11.9%
14	80.4	57.9	69.1	0.5	4.6	11.5%
15	80.6	58.0	69.3	0.5	4.8	11.2%
16	80.8	58.2	69.5	0.4	4.9	10.9%
17	81.0	58.3	69.7	0.4	5.1	10.6%
18	81.2	58.4	69.8	0.4	5.2	10.3%
19	81.4	58.5	69.9	0.4	5.3	10.0%
20	81.5	58.6	70.1	0.4	5.4	9.7%
21	81.6	58.7	70.2	0.4	5.5	9.5%
22	81.8	58.8	70.3	0.3	5.6	9.2%
23	81.9	58.9	70.4	0.3	5.7	9.0%
24	81.9	59.0	70.5	0.3	5.8	8.8%
25	82.0	59.0	70.5	0.3	5.8	8.6%
26	82.1	59.1	70.6	0.2	5.8	8.5%
27	82.1	59.1	70.6	0.2	5.9	8.4%
28	82.1	59.2	70.7	0.2	5.9	8.3%
29	82.2	59.2	70.7	0.2	5.9	8.3%
30	82.2	59.2	70.7	0.2	5.9	8.2%
31	82.1	59.2	70.7	0.2	5.9	8.2%
MNTH	80.3	57.9	69.1	18.2	145.2	0.43 b
Summer	77.9	56.6	67.3	136.2	348.9	2.46 b
Annual	62.6	46.9	54.7	4167.1	447.7	44.07 b

August

DATE	MAX	MIN	AVG	HDD	CDD	PRCP
01	82.1	59.3	70.7	0.2	5.9	8.3%
02	82.1	59.3	70.7	0.2	5.8	8.3%
03	82.0	59.3	70.6	0.2	5.8	8.4%
04	82.0	59.2	70.6	0.2	5.8	8.5%
05	81.9	59.2	70.6	0.2	5.8	8.6%
06	81.8	59.2	70.5	0.2	5.7	8.7%
07	81.7	59.2	70.5	0.3	5.7	8.8%
08	81.6	59.1	70.4	0.3	5.7	8.9%
09	81.5	59.1	70.3	0.3	5.6	9.0%
10	81.4	59.1	70.2	0.3	5.6	9.2%
11	81.3	59.0	70.2	0.3	5.5	9.3%
12	81.2	59.0	70.1	0.3	5.4	9.5%
13	81.1	58.9	70.0	0.3	5.3	9.7%
14	81.0	58.8	69.9	0.4	5.3	9.9%
15	80.8	58.8	69.8	0.4	5.2	10.2%
16	80.7	58.7	69.7	0.4	5.1	10.4%
17	80.6	58.7	69.6	0.4	5.0	10.7%
18	80.4	58.6	69.5	0.4	5.0	11.0%
19	80.3	58.5	69.4	0.5	4.9	11.3%
20	80.2	58.4	69.3	0.5	4.8	11.7%
21	80.0	58.4	69.2	0.5	4.7	12.1%
22	79.9	58.3	69.1	0.5	4.6	12.6%
23	79.8	58.2	69.0	0.5	4.5	13.0%
24	79.6	58.1	68.9	0.5	4.4	13.4%
25	79.5	58.0	68.8	0.5	4.3	13.8%
26	79.4	57.9	68.6	0.5	4.2	14.3%
27	79.2	57.9	68.5	0.6	4.1	14.7%
28	79.1	57.8	68.4	0.7	4.1	15.1%
29	78.9	57.7	68.3	0.7	4.0	15.5%
30	78.8	57.6	68.2	0.8	4.0	15.9%
31	78.6	57.5	68.0	0.9	3.9	16.2%
MNTH	80.6	58.6	69.6	12.9	155.5	0.54 b

a: Probability of precipitation >= 0.01 inches for 29-day windows centered on each day of the year.

b: Long-term averages of seasonal or annual precipitation totals in Inches.

blank: missing or insufficient data.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Summary of Daily Normals
1991-2020

Generated on 08/23/2021

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 159 ft. Lat: 45.5181° N Lon: -122.6894° W
Station: **PORTLAND KGW-TV, OR US USC00356749**

	September						October							November						
DATE	**MAX**	**MIN**	**AVG**	**HDD**	**CDD**	**PRCP**	**DATE**	**MAX**	**MIN**	**AVG**	**HDD**	**CDD**	**PRCP**	**DATE**	**MAX**	**MIN**	**AVG**	**HDD**	**CDD**	**PRCP**
01	78.5	57.4	67.9	0.9	3.8	16.6%	**01**	69.5	51.8	60.7	5.0	0.6	30.7%	**01**	56.6	44.2	50.4	14.6	0.0	52.7%
02	78.3	57.3	67.8	1.0	3.7	17.0%	**02**	69.1	51.5	60.3	5.2	0.5	31.3%	**02**	56.3	44.0	50.1	14.9	0.0	53.4%
03	78.1	57.1	67.6	1.0	3.7	17.5%	**03**	68.6	51.3	59.9	5.5	0.5	31.9%	**03**	55.9	43.8	49.9	15.1	0.0	54.1%
04	77.9	57.0	67.5	1.1	3.6	17.9%	**04**	68.2	51.0	59.6	5.8	0.4	32.5%	**04**	55.6	43.6	49.6	15.4	0.0	54.8%
05	77.8	56.9	67.3	1.2	3.5	18.4%	**05**	67.7	50.7	59.2	6.1	0.4	33.1%	**05**	55.3	43.4	49.4	15.6	0.0	55.4%
06	77.6	56.8	67.2	1.2	3.4	18.8%	**06**	67.2	50.5	58.9	6.4	0.3	33.8%	**06**	55.0	43.2	49.1	15.9	0.0	56.0%
07	77.4	56.6	67.0	1.3	3.3	19.2%	**07**	66.8	50.2	58.5	6.8	0.3	34.5%	**07**	54.7	43.1	48.9	16.1	0.0	56.5%
08	77.2	56.5	66.8	1.4	3.2	19.7%	**08**	66.3	49.9	58.1	7.1	0.2	35.2%	**08**	54.4	42.9	48.6	16.4	0.0	57.0%
09	77.0	56.4	66.7	1.5	3.1	20.1%	**09**	65.9	49.6	57.8	7.4	0.2	35.9%	**09**	54.1	42.7	48.4	16.6	0.0	57.5%
10	76.7	56.2	66.5	1.5	3.0	20.6%	**10**	65.4	49.4	57.4	7.8	0.2	36.6%	**10**	53.8	42.5	48.2	16.8	0.0	58.0%
11	76.5	56.1	66.3	1.6	2.9	21.0%	**11**	64.9	49.1	57.0	8.1	0.1	37.2%	**11**	53.5	42.4	47.9	17.1	0.0	58.4%
12	76.3	55.9	66.1	1.7	2.7	21.5%	**12**	64.5	48.8	56.7	8.4	0.1	37.9%	**12**	53.2	42.2	47.7	17.3	0.0	58.9%
13	76.0	55.8	65.9	1.7	2.6	22.0%	**13**	64.0	48.6	56.3	8.8	0.1	38.6%	**13**	52.9	42.0	47.5	17.5	0.0	59.3%
14	75.7	55.6	65.7	1.8	2.5	22.5%	**14**	63.6	48.3	55.9	9.1	0.1	39.3%	**14**	52.7	41.8	47.2	17.7	0.0	59.7%
15	75.5	55.4	65.4	2.0	2.4	23.0%	**15**	63.1	48.0	55.6	9.5	0.1	40.0%	**15**	52.4	41.7	47.0	18.0	0.0	60.1%
16	75.2	55.2	65.2	2.1	2.3	23.5%	**16**	62.7	47.8	55.2	9.8	0.1	40.7%	**16**	52.1	41.5	46.8	18.2	0.0	60.5%
17	74.9	55.0	65.0	2.2	2.2	23.9%	**17**	62.3	47.5	54.9	10.2	0.1	41.5%	**17**	51.8	41.3	46.6	18.4	0.0	60.9%
18	74.6	54.9	64.7	2.4	2.1	24.4%	**18**	61.8	47.3	54.6	10.5	0.0	42.2%	**18**	51.5	41.2	46.3	18.7	0.0	61.2%
19	74.2	54.7	64.4	2.5	1.9	24.7%	**19**	61.4	47.0	54.2	10.8	0.0	43.0%	**19**	51.2	41.0	46.1	18.9	0.0	61.4%
20	73.9	54.4	64.2	2.7	1.8	25.1%	**20**	61.0	46.8	53.9	11.1	0.0	43.7%	**20**	51.0	40.8	45.9	19.1	0.0	61.7%
21	73.5	54.2	63.9	2.8	1.7	25.5%	**21**	60.6	46.5	53.6	11.4	0.0	44.5%	**21**	50.7	40.6	45.7	19.3	0.0	61.9%
22	73.2	54.0	63.6	3.0	1.6	26.0%	**22**	60.2	46.3	53.3	11.8	0.0	45.2%	**22**	50.4	40.5	45.4	19.6	0.0	62.1%
23	72.8	53.8	63.3	3.2	1.5	26.4%	**23**	59.8	46.1	52.9	12.1	0.0	46.0%	**23**	50.1	40.3	45.2	19.8	0.0	62.3%
24	72.4	53.6	63.0	3.4	1.4	26.9%	**24**	59.4	45.8	52.6	12.4	0.0	46.8%	**24**	49.9	40.1	45.0	20.0	0.0	62.4%
25	72.0	53.3	62.7	3.6	1.3	27.4%	**25**	59.0	45.6	52.3	12.7	0.0	47.6%	**25**	49.6	40.0	44.8	20.2	0.0	62.6%
26	71.6	53.1	62.4	3.8	1.2	27.9%	**26**	58.7	45.4	52.0	13.0	0.0	48.4%	**26**	49.3	39.8	44.6	20.4	0.0	62.7%
27	71.2	52.8	62.0	4.1	1.1	28.4%	**27**	58.3	45.2	51.7	13.3	0.0	49.2%	**27**	49.1	39.6	44.3	20.7	0.0	62.8%
28	70.8	52.6	61.7	4.3	1.0	28.9%	**28**	58.0	45.0	51.5	13.5	0.0	49.9%	**28**	48.8	39.5	44.1	20.9	0.0	62.9%
29	70.4	52.3	61.4	4.5	0.9	29.5%	**29**	57.6	44.8	51.2	13.8	0.0	50.7%	**29**	48.6	39.3	43.9	21.1	0.0	63.0%
30	70.0	52.1	61.0	4.7	0.7	30.1%	**30**	57.3	44.6	50.9	14.1	0.0	51.3%	**30**	48.3	39.1	43.7	21.3	0.0	63.1%
							31	56.9	44.4	50.6	14.4	0.0	52.0%							
MNTH	74.9	55.1	65.0	70.2	70.1	1.58 b	**MNTH**	62.9	47.9	55.4	301.9	4.3	3.96 b	**MNTH**	52.3	41.6	46.9	541.5	0.0	6.58 b
							Autumn	63.3	48.2	55.8	913.5	74.4	12.12 b							
							Annual	62.6	46.9	54.7	4167.1	447.7	44.07 b							

a: Probability of precipitation >= 0.01 inches for 29-day windows centered on each day of the year.

b: Long-term averages of seasonal or annual precipitation totals in Inches.

blank: missing or insufficient data.

I. Description - Daily Normals

The 1991-2020 U.S. Climate Normals are conventional 30-year normals of many weather and climate variables. Normals are organized into hourly, daily, monthly, seasonal and annual normals. This document describes the elements of the daily normals. These observations are compiled from many surface weather station records, predominantly from National Weather Service (NWS) and Federal Aviation Administration stations at airports, the NWS Cooperative Observer Network, and other sources. For the first time, 1991-2020 normals include precipitation from the USDA Snow Telemetry (SNOTEL) network and the citizen science Community Collaborative Rain, Hail and Snow (CoCoRaHS) Network. These records were merged and then subject to quality control at NOAA's National Centers for Environmental Information (NCEI).

The 1991-2020 U.S. daily normals provide a suite of descriptive statistics based on daily observations at more than 15,000 stations from across the United States and its Pacific and Caribbean territories that have at least precipitation normals, and more than 7300 have temperature normals. Statistics are provided as 30-year averages and standard deviations, frequencies of occurrence, and percentiles for each day of the year. These products are useful in examination of the annual cycle of a variable.

Daily normals are based on daily observations of temperature and precipitation that in the end yield about 90 different variables based on averages and statistics of both modified and raw values. While daily precipitation and snowfall are calculated as month-to-date averages, ratios are used to ensure that the last month-to-date values matched the average monthly totals. Daily temperature averages are constrained further, to match with the monthly temperature averages that have been corrected, or homogenized, for station changes during the 30-year period. These constrained temperature values are used for most statistics, including heating, cooling, and growing degree days, season length and frost probabilities, and percentiles. The daily values of all precipitation statistics have been derived from a sampling window 29 days wide centered on the day in question. Temperature statistics for degree days were gathered in sampling windows 15 days wide centered on the day in question. Daily averages are further smoothed. However, threshold exceedance counts are based on the raw temperature measurements.

The data for daily normals are from the Global Historical Climatology Network (GHCN) Daily dataset compiled at NCEI (https://www.ncdc.noaa.gov/ghcn-daily-description). Normals are "standard" above 80% data availability, and will be calculated with 30 years if the station has at least 10 years of valid observations (considered "representative"), with the remaining years estimated using surrounding stations with more complete values. If a station does not have reliable surrounding neighbors to fill its 30-year period, a normal is still calculated and is flagged as "provisional". Below this, temperature and precipitation averages will be estimated statistically from relationships with surrounding stations if at least two full years of data are available for all days. Temperature averages are estimated for February 29 by averaging the results for February 28 and March 1; precipitation averages are not estimate for February 29.

II. Format/Element (Value) Definitions

(Note: the term 'element' is used throughout this document and refers to an individual meteorological / climatological measurement or statistical value such as temperature, precipitation, snowfall, etc.)

A. Initial section

Each record represents all selected elements available for a given station-day. The initial section of eachrecord is ordered as follows with the following definitions:

STATION ID (11 characters) is the station identification code. Please see for a complete station metadata record the NCEI Historical Observing Metadata Repository at https://www.ncdc.noaa.gov/homr/.

STATION_NAME (max 50 characters) is the name of the station (usually city/airport name).

GEOGRAPHIC_LOCATION is the latitude (decimal degrees w/northern hemisphere values > 0, southern hemisphere values < 0), longitude (decimal degrees w/western hemisphere values < 0, eastern hemisphere values > 0) and elevation above mean sea level.

DATE is the month and day.

B. Elements (values) and flags (attributes)

Following this initial section of the record, all selected elements and flags are given in the following order:

1st Element, Measurement Flag, Completeness Flag, Number of Years, 2nd Element, Measurement Flag, Completeness Flag, Number of Years, 3rd Element…etc., for all elements selected.

Element(s)/Value(s) is/are defined in **Table 2** below. Please note only elements selected by user willappear in the specific output.

Measurement Flag (Attribute) is defined in **Table 1** below

Completeness Flag (Attribute) is defined in **Table 1** below

Flags accompany every Normals value and indicate certain measurement conditions (if necessary only, blank otherwise) and the completeness of the data record used to compute each value, accounting for methodological differences for different product classes. The flag options are described in **Table 1** below. Due to methodological differences, the flags are applied somewhat differently between the temperature-based normals and the precipitation-based normals. For the precipitation-based normals, the following flags were assigned independently for each normals value reported based on number of years available for that individual calculation. For temperature-

based normals, strong precedence is given to the monthly normals of maximum and minimum temperature or derived from the flags for these two variables.

Table 1 (Flags)

Measurement Flags:

M Missing
V Year-round risk of frost-freeze; "too cold to compute"
W Not used
X Nonzero value has rounded to zero
Y Insufficient values to perform computation
Z Computed valued created logical inconsistency with other values

Completeness Flags:

S Standard - meets WMO standards for data availability for 24 or more years
(missing months are filled with estimates based on surrounding stations)

R Representative - meets WMO standards for data availability for 10 or more years
(missing months are filled with estimates based on surrounding stations)

P Provisional - meets WMO standards for data availability for 10 or more years
(missing months cannot be filled due to lack of surrounding stations)

E Estimated - meets WMO standards for data availability for 2 or more years for all months
(nearby stations with standard normals are available to estimate normals statistically)

Blank - the data value is reported as a special missing value such as -9999 when other values in the column are available

Table 2 (Elements/Values)

dly-tavg-normal	Long-term averages of daily average temperature
dly-tavg-stddev	Long-term standard deviations of daily average temperature
dly-tmax-normal	Long-term averages of daily maximum temperature
dly-tmax-stddev	Long-term standard deviations of daily maximum temperature
dly-tmin-normal	Long-term averages of daily minimum temperature
dly-tmin-stddev	Long-term standard deviations of daily minimum temperature
mtd-prcp-normal	Long-term average month-to-date liquid precipitation amount
mtd-snow-normal	Long-term average month-to-date snowfall amount
ytd-prcp-normal	Long-term average year-to-date liquid precipitation amount
ytd-snow-normal	Long-term average year-to-date snowfall amount
dly-cldd-base40	Long-term averages of daily cooling degree days with base 40F
dly-cldd-base45	Long-term averages of daily cooling degree days with base 45F
dly-cldd-base50	Long-term averages of daily cooling degree days with base 50F
dly-cldd-base55	Long-term averages of daily cooling degree days with base 55F
dly-cldd-base57	Long-term averages of daily cooling degree days with base 57F
dly-cldd-base60	Long-term averages of daily cooling degree days with base 60F
dly-cldd-base70	Long-term averages of daily cooling degree days with base 70F
dly-cldd-base72	Long-term averages of daily cooling degree days with base 72F
dly-cldd-normal	Long-term averages of daily cooling degree days with base 65F
dly-dutr-normal	Long-term averages of daily diurnal temperature range
dly-dutr-stddev	Long-term standard deviations of daily diurnal temperature range
dly-grdd-base40	Long-term averages of daily growing degree days with base 40F
dly-grdd-base45	Long-term averages of daily growing degree days with base 45F
dly-grdd-base50	Long-term averages of daily growing degree days with base 50F
dly-grdd-base55	Long-term averages of daily growing degree days with base 55F
dly-grdd-base57	Long-term averages of daily growing degree days with base 57F
dly-grdd-base60	Long-term averages of daily growing degree days with base 60F
dly-grdd-base70	Long-term averages of daily growing degree days with base 70F
dly-grdd-base72	Long-term averages of daily growing degree days with base 72F
dly-grdd-tb4886	Long-term averages of daily growing degree days with base 48F limit 86F
dly-grdd-tb5086	Long-term averages of daily growing degree days with base 50F limit 86F
dly-htdd-base40	Long-term averages of daily heating degree days with base 40F
dly-htdd-base45	Long-term averages of daily heating degree days with base 45F
dly-htdd-base50	Long-term averages of daily heating degree days with base 50F
dly-htdd-base55	Long-term averages of daily heating degree days with base 55F
dly-htdd-base57	Long-term averages of daily heating degree days with base 57F
dly-htdd-base60	Long-term averages of daily heating degree days with base 60F
dly-htdd-normal	Long-term averages of daily heating degree days with base 65F
dly-prcp-25pctl	First quartile of daily nonzero precipitation totals
dly-prcp-50pctl	Second quartile of daily nonzero precipitation totals
dly-prcp-75pctl	Third quartile of daily nonzero precipitation totals
dly-prcp-20pctl	First quintile of daily nonzero precipitation totals
dly-prcp-40pctl	Second quintile of daily nonzero precipitation totals
dly-prcp-60pctl	Third quintile of daily nonzero precipitation totals
dly-prcp-80pctl	Fourth quintile of daily nonzero precipitation totals
dly-prcp-33pctl	First tercile of daily nonzero precipitation totals

dly-prcp-67pctl	Second tercile of daily nonzero precipitation totals
dly-prcp-pctall-ge001hi	Probability of daily precipitation >= 0.01 inches
dly-prcp-pctall-ge010hi	Probability of daily precipitation >= 0.10 inches
dly-prcp-pctall-ge025hi	Probability of daily precipitation >= 0.25 inches
dly-prcp-pctall-ge050hi	Probability of daily precipitation >= 0.50 inches
dly-prcp-pctall-ge100hi	Probability of daily precipitation >= 1.00 inches
dly-prcp-pctall-ge200hi	Probability of daily precipitation >= 2.00 inches
dly-prcp-pctall-ge400hi	Probability of daily precipitation >= 4.00 inches
dly-prcp-pctall-ge600hi	Probability of daily precipitation >= 6.00 inches
dly-snow-25pctl	First quartile of daily nonzero snowfall totals
dly-snow-50pctl	Second quartile of daily nonzero snowfall totals
dly-snow-75pctl	Third quartile of daily nonzero snowfall totals
dly-snow-20pctl	First quintile of daily nonzero snowfall totals
dly-snow-40pctl	Second quintile of daily nonzero snowfall totals
dly-snow-60pctl	Third quintile of daily nonzero snowfall totals
dly-snow-80pctl	Fourth quintile of daily nonzero snowfall totals
dly-snow-33pctl	First tercile of daily nonzero snowfall totals
dly-snow-67pctl	Second tercile of daily nonzero snowfall totals
dly-snow-pctall-ge001ti	Probability of daily snowfall >= 0.1 inch
dly-snow-pctall-ge010ti	Probability of daily snowfall >= 1.0 inch
dly-snow-pctall-ge020ti	Probability of daily snowfall >= 2.0 inches
dly-snow-pctall-ge030ti	Probability of daily snowfall >= 3.0 inches
dly-snow-pctall-ge040ti	Probability of daily snowfall >= 4.0 inches
dly-snow-pctall-ge050ti	Probability of daily snowfall >= 5.0 inches
dly-snow-pctall-ge100ti	Probability of daily snowfall >= 10 inches
dly-snow-pctall-ge200ti	Probability of daily snowfall >= 20 inches
dly-snwd-25pctl	First quartile of daily nonzero snow depth totals
dly-snwd-50pctl	Second quartile of daily nonzero snow depth totals
dly-snwd-75pctl	Third quartile of daily nonzero snow depth totals
dly-snwd-20pctl	First quintile of daily nonzero snow depth totals
dly-snwd-40pctl	Second quintile of daily nonzero snow depth totals
dly-snwd-60pctl	Third quintile of daily nonzero snow depth totals
dly-snwd-80pctl	Fourth quintile of daily nonzero snow depth totals
dly-snwd-33pctl	First tercile of daily nonzero snow depth totals
dly-snwd-67pctl	Second tercile of daily nonzero snow depth totals
dly-snwd-pctall-ge001wi	Probability of daily snow depth >= 1 inch
dly-snwd-pctall-ge002wi	Probability of daily snow depth >= 2 inches
dly-snwd-pctall-ge003wi	Probability of daily snow depth >= 3 inches
dly-snwd-pctall-ge004wi	Probability of daily snow depth >= 4 inches
dly-snwd-pctall-ge005wi	Probability of daily snow depth >= 5 inches
dly-snwd-pctall-ge010wi	Probability of daily snow depth >= 10 inches
dly-snwd-pctall-ge020wi	Probability of daily snow depth >= 20 inches

III. Additional Information

A. Units

Degrees Fahrenheit to the nearest tenth (or Celsius if user specifies metric output option) for maximum, minimum, and average air temperatures, heating and cooling degree day normals, and standard deviations, e.g., 70.3.

Tenths of days for the number of days per month above or below certain threshold, such as days above 90 °F, e.g., 25.6 days.

Inches or millimeters for average monthly/seasonal/annual precipitation, month-to-date/year-to-date precipitation, and percentiles of precipitation days depending on user specification between standard or metric units..

Inches or millimeters for average monthly/seasonal/annual snowfall, month-to-date/year-to-date snowfall, and percentiles of snowfall days depending on user specification between standard or metric units.

Inches or millimeters for percentiles of snow depth days depending on user specification between standard or metric units.

Tenths of percent for probabilities of precipitation, snowfall, or snow depth exceeding a specific threshold, as well as cloud and wind percentages, e.g., 20.7 F.

B. Special values

-9999: missing or insufficient data (*.csv data)
blank: missing or insufficient data (pdf only)

C. Summary

1991-2020 U.S. Climate Normals averages, percentiles, and frequencies of occurrence of the above at daily time scales are available at more than 15,000 locations for precipitation and more than 7,300 locations for temperature in the U.S. and its territories. Daily normals provide a means of understanding how conditions change with the seasons at a location. For hourly, monthly, and seasonal values, please use the normals products created for those timescales.

For more detailed information, view complete documentation of normals calculations are at:
https://www.ncei.noaa.gov/data/normals-daily/1991-2020/doc/Normals_Calculation_Methodology_2020.pdf

For information on reading archive and access *.csv file versions of normals:
https://www.ncei.noaa.gov/data/normals-daily/1991-2020/doc/Readme_By-Variable_By-Station_Normals_Files.txt