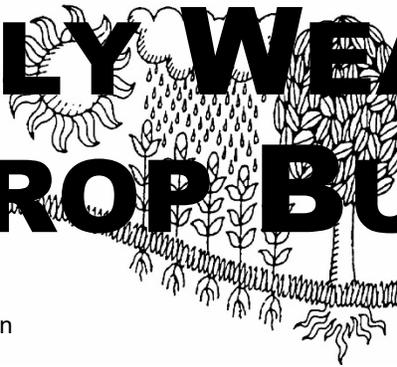
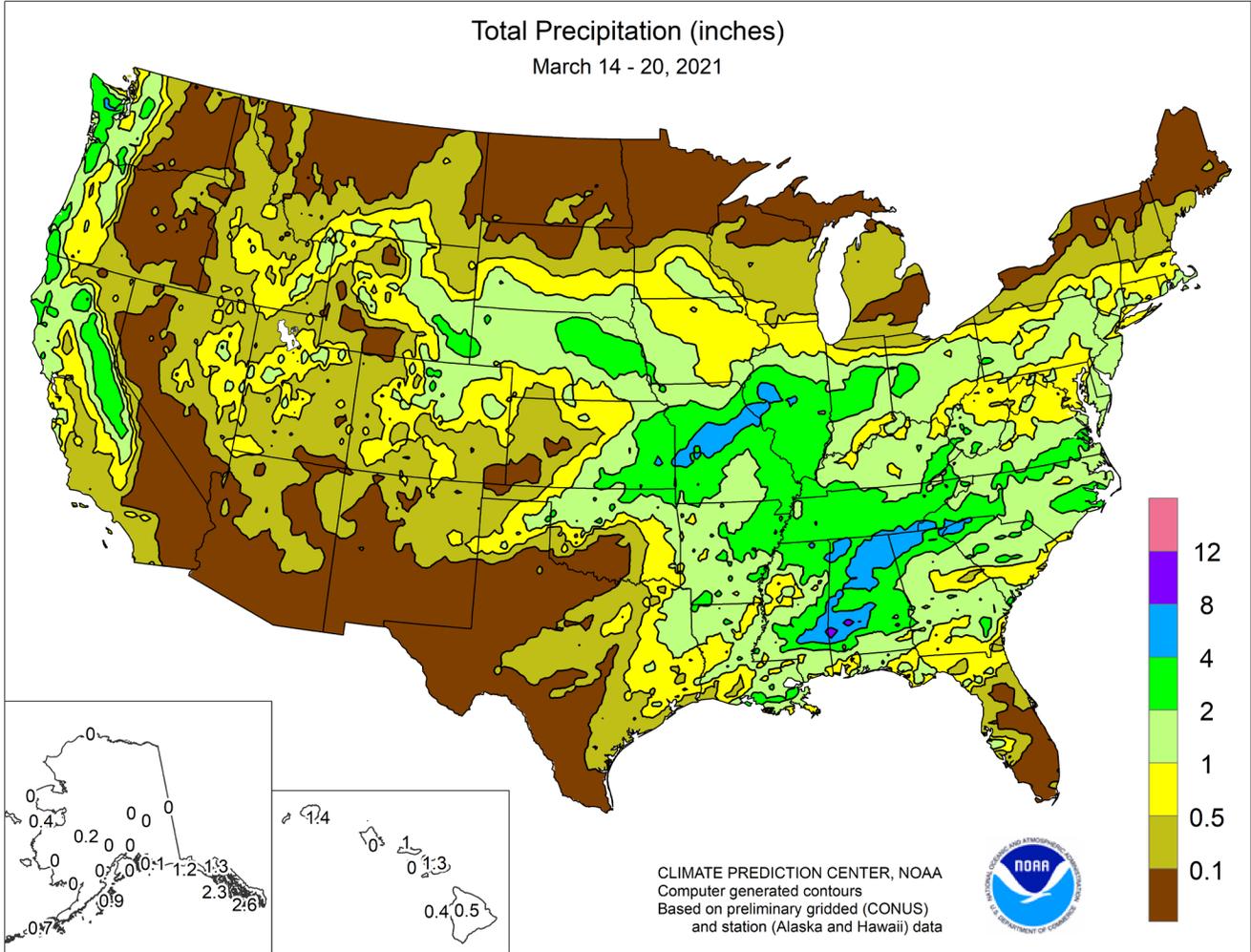


# WEEKLY WEATHER AND CROP BULLETIN



U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Weather Service

U.S. DEPARTMENT OF AGRICULTURE  
National Agricultural Statistics Service  
and World Agricultural Outlook Board



## HIGHLIGHTS

**March 14 – 20, 2021**

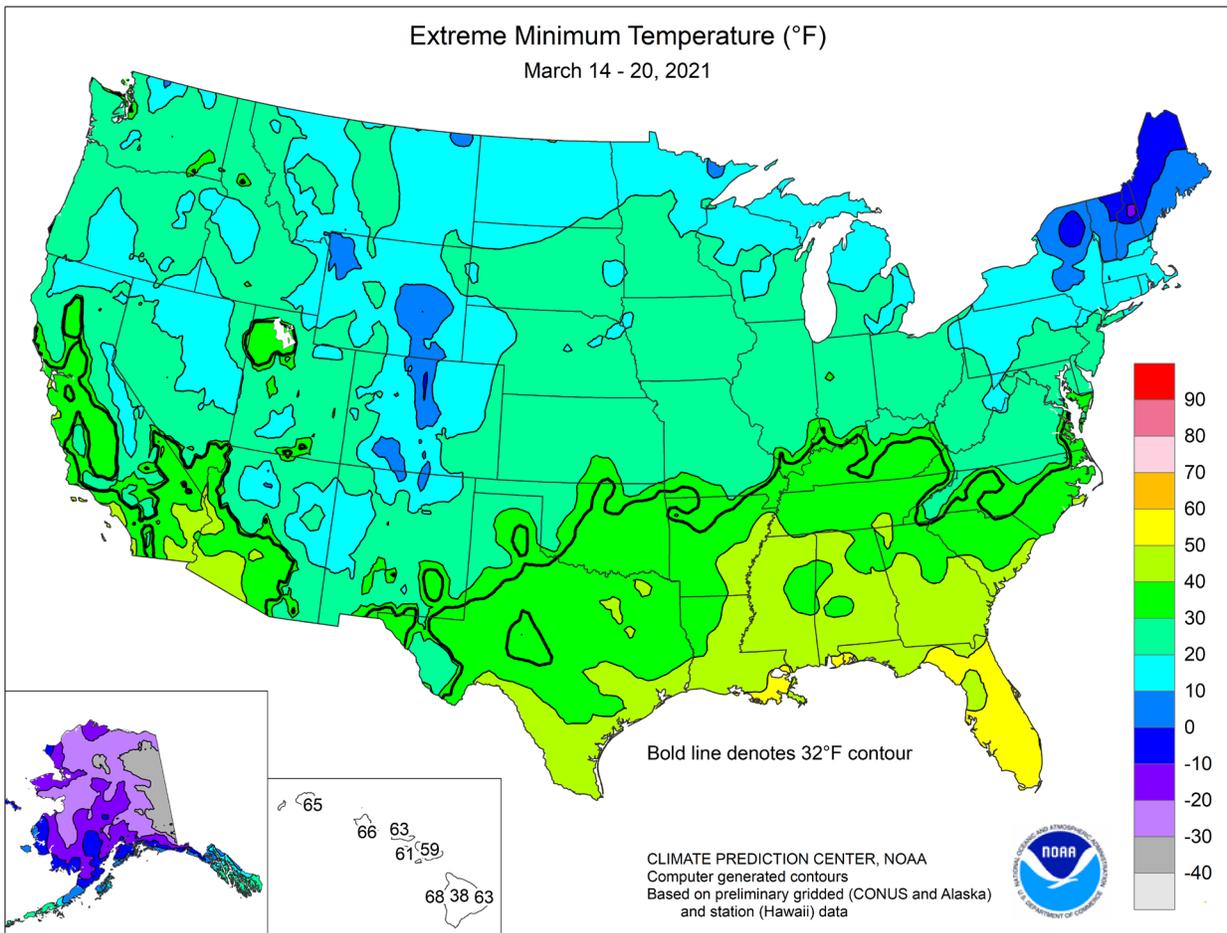
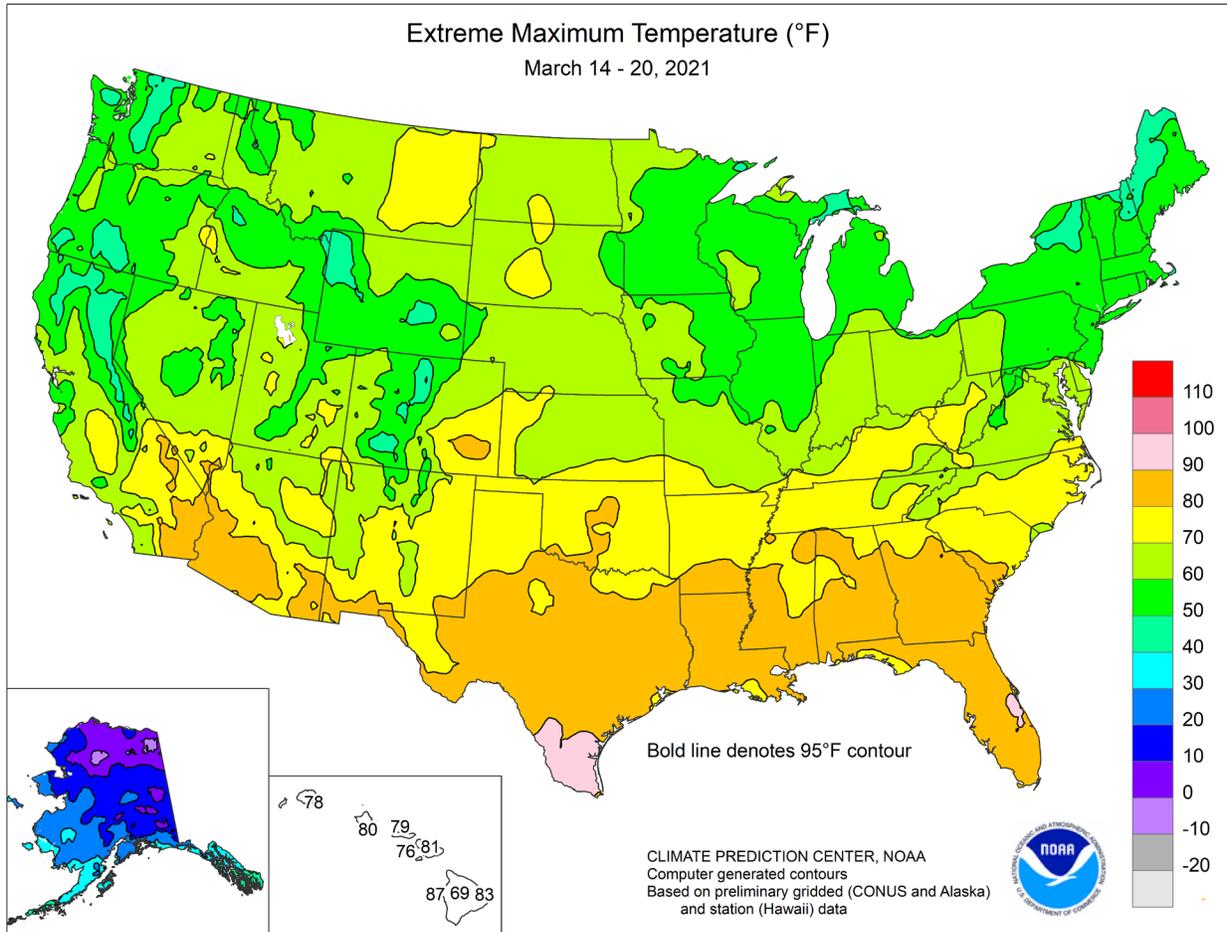
*Highlights provided by USDA/WAOB*

**A**s the week began, heavy snow fell across **central sections of the Rockies** and adjacent **High Plains**, while heavy rain spread eastward from the **central Plains**. Subsequently, a second storm delivered mostly rain, primarily from the **central and southern Plains eastward into the middle Atlantic States**. From March 16-18, that system also sparked a severe weather outbreak and produced locally heavy showers across the **South**, where more than five dozen tornadoes were spotted, based on preliminary reports. The pair of storms produced

*(Continued on page 3)*

## Contents

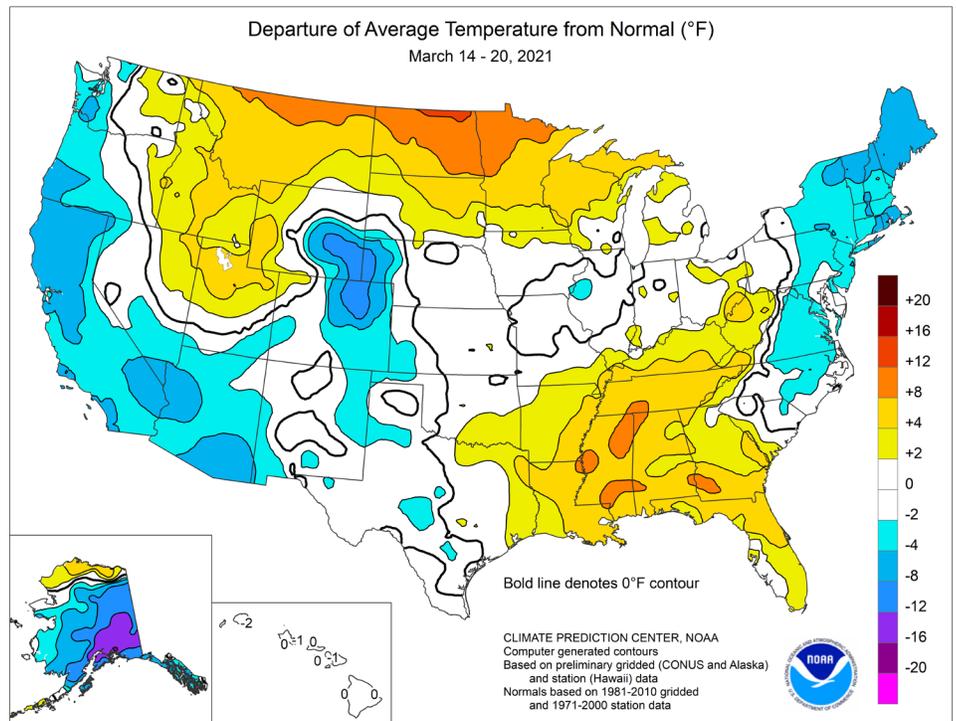
Extreme Maximum & Minimum Temperature Maps.....	2
Temperature Departure Map .....	3
March 16 Drought Monitor & <b>U.S. Seasonal Drought Outlook</b> .....	4
<b>Daily Sierra Nevada Snowpack vs. Normal &amp; California Reservoirs, Recharge and Withdrawal</b> .....	5
Soil Temperature & Snow Cover Maps .....	6
National Weather Data for Selected Cities .....	7
<b>Winter Weather Review</b> .....	10
<b>Winter Precipitation &amp; Temperature Maps</b> .....	12
<b>Winter Weather Data for Selected Cities</b> .....	15
International Weather and Crop Summary .....	16
Bulletin Information & <b>U.S. Spring Flood Outlook</b> .....	26



(Continued from front cover)

widespread, but generally light, precipitation in the **western U.S.**, as the 2020-21 winter wet season began to wind down across **California**. According to the California Department of Water Resources, the average water equivalency of the **Sierra Nevada** snowpack stood at 17.6 inches by March 21, just under two-thirds of the normal peak seasonal accumulation. Elsewhere, generally dry weather prevailed across the **nation's northern and southern tiers**, as drought continued to intensify across portions of the **northern Plains** and from the **Desert Southwest into the Rio Grande Valley**. With the primary storm track displaced southward across the **western and central U.S.**, cool weather was most prominent along the **Pacific Coast** and from the **Desert Southwest to the central and southern High Plains**. Weekly temperatures averaged 5 to 10°F below normal in snow-covered sections of the **High Plains**. Meanwhile, cold air swept into the **Northeast**, with the greatest intensity across **northern New England**. Weekly readings averaged more than 5°F below normal in large sections of **Maine, New Hampshire, and Vermont**. In contrast, unusual warmth prevailed along the **Canadian border from Montana to Minnesota**, where temperatures averaged 10 to 15°F above normal. Warmth (more than 5°F above normal in many locations) was also prevalent in the **Southeast**.

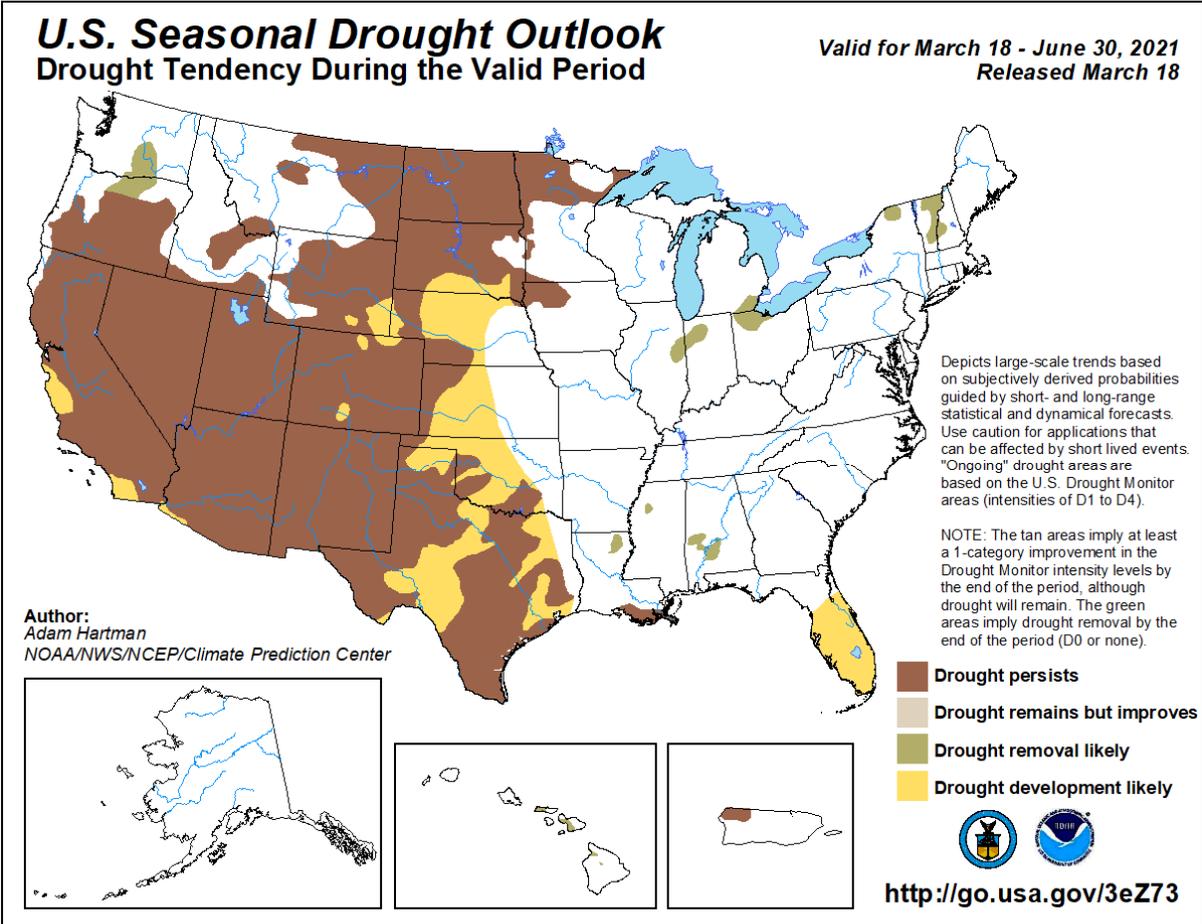
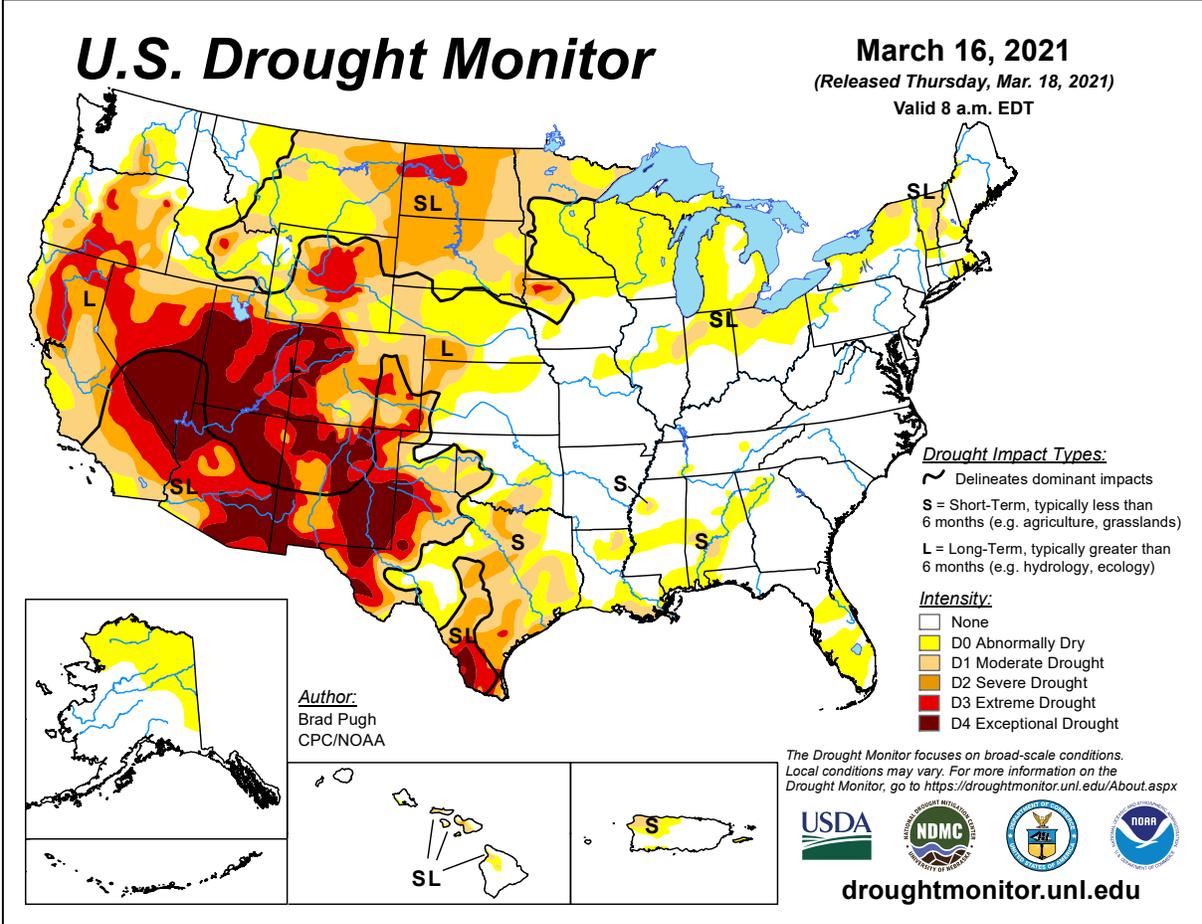
The 14th was the wettest March day on record in **Grand Island, NE** (2.75 inches), eclipsing the 2.56-inch total set the previous day. Prior to this year, the wettest March day in **Grand Island** had been March 21, 1979, when 1.98 inches fell. **Grand Island** also set a 2-day March precipitation record, with 5.31 inches falling on March 13-14. Elsewhere in **Nebraska**, 2-day March precipitation records were broken on March 13-14 in locations such as **Lincoln** (3.76 inches; previously, 2.62 inches on March 22-23, 1987) and **Omaha** (2.92 inches; previously, 2.53 inches on March 27-28, 2004). However, unlike 2 years ago in mid-March 2019, when a similar storm caused catastrophic flooding in **Nebraska** and environs, runoff was limited by an unfrozen and relatively dry soil profile, along with the lack of a pre-existing snow cover. Meanwhile, March 13-14 snowfall totaled 30.8 inches in **Cheyenne, WY**; 27.1 inches in **Denver, CO**; and 26.3 inches in **Casper, WY**. At the height of the storm on March 14, northerly wind gusts were clocked to 54 mph in **Cheyenne** and 48 mph in **Denver**. With 48.9 inches during the first 21 days of the month, **Casper** set a March snowfall record (previously, 36.2 inches in 1975). **Casper** also achieved its snowiest March day (21.2 inches on the 14th), surpassing 14.6 inches on March 18, 1954—and had it second-snowiest day on record behind 24.3 inches on December 24, 1982. **Cheyenne's** total of 22.7 inches on March 14 was a station record for any date (previously, 19.8 inches on November 20, 1979). **Denver's** 19.9-inch total on the 14th was a record for any March day (previously, 18.0 inches on March 5, 1983), and represented the snowiest day in that location since December 24, 1982, when 23.6 inches fell. By March 15, a stripe of snow across the **upper Midwest** resulted in daily-record totals in **Rochester, MN** (7.9 inches), and **Sioux Falls, SD** (4.7 inches). Meanwhile, a new **Western** storm dropped 3.2 inches of snow in **Winnemucca, NV**, a record for March 15. With a daily-record sum of 3.7 inches on March 16, **Casper's** 4-day snowfall climbed to 33.2 inches. At mid-week, heavy rain erupted across the **mid-South**, where record-setting totals for March 17 in **Arkansas** reached 3.22 inches in



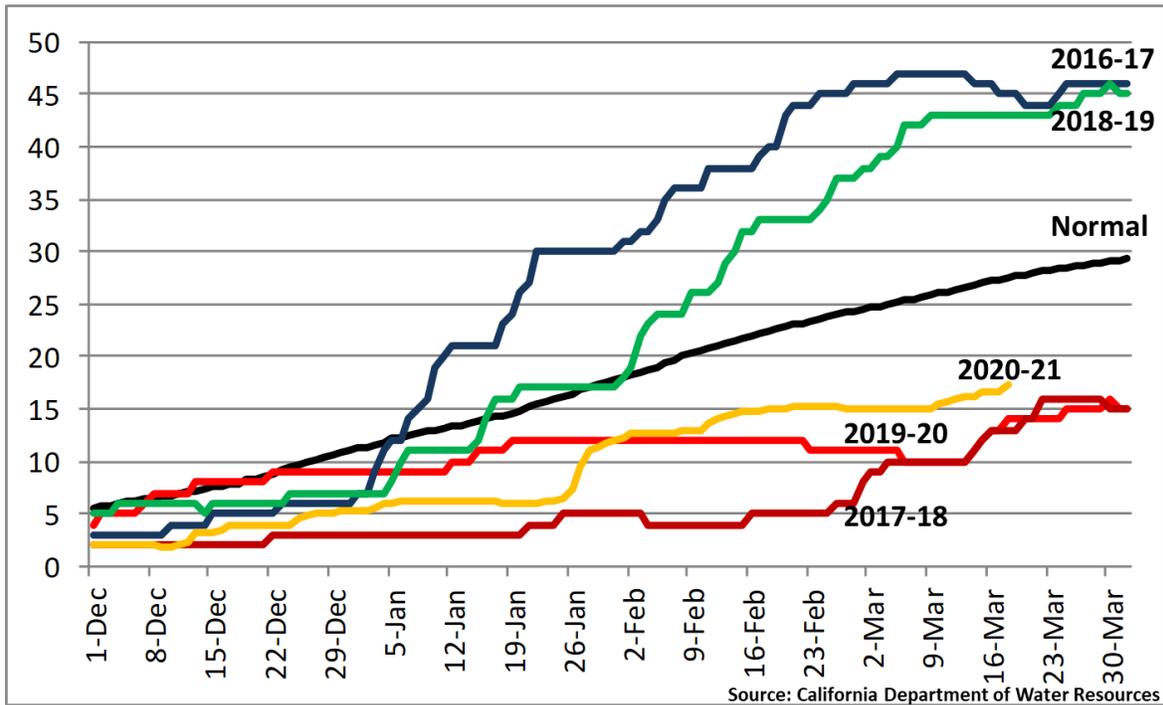
**Jonesboro** and 2.36 inches in **North Little Rock**. Also, on the 17th, daily-record totals in **Missouri** included 2.40 inches in **Columbia** and 1.96 inches in **Cape Girardeau**. As rain spread eastward, daily-record amounts for March 18 totaled 2.19 inches in **Pittsburgh, PA**, and 1.46 inches in **Springfield, IL**. At week's end, precipitation again overspread the **West**, where daily-record totals for March 20 included 0.97 inch in **Ely, NV**; 0.85 inch in **Salt Lake City, UT**; and 0.82 inch in **Pocatello, ID**.

A mid-month surge of cool air into **California** resulted in daily-record lows for March 16 in locations such as **Alturas** (6°F), **Paso Robles** (30°F), and **Stockton** (31°F). By March 17, daily-record lows in **Arizona** included 26°F in **Nogales** and 27°F in **Safford**. Meanwhile, warmth intensified across the **Deep South** from **southern Texas to Florida**. In **Texas**, record-setting highs for March 17 soared to 95°F in **McAllen** and 91°F in **Corpus Christi**. **Fort Pierce, FL**, collected consecutive daily record-tying highs (88 and 90°F, respectively) on March 17-18. Elsewhere in **Florida**, **Melbourne** notched a daily-record high of 91°F on March 18. The last time **Melbourne** topped the 90-degree mark in March was 2013, when the high reached 91°F on March 24. Late in the week, record-setting warmth developed across the **northern Plains**. With a high of 76°F on the 19th, **Glasgow, MT**, exceeded the 75-degree mark in March for the first time since March 24, 2007. On March 20, daily-record highs soared to 68°F in **Jamestown, ND**, and 65°F in **Sisseton, SD**.

Cold, mostly dry weather across much of the **Alaskan mainland** contrasted with stormy conditions in the southeastern part of the state. **Juneau** received measurable snow each day from March 15-20, totaling 17.2 inches. On March 15, daily-record precipitation totals included 1.77 inches in **Sitka** and 0.69 inch (5.1 inches of snow) in **Juneau**. Farther south, rainfall intensity generally decreased across **Hawaii**. However, month-to-date rainfall through March 20 at the state's major airport observation sites ranged from 3.72 inches (272 percent of normal) in **Honolulu, Oahu**, to 19.92 inches (234 percent) in **Hilo**, on the **Big Island**. Impressive March 1-20 totals were also observed in **Lihue, Kauai** (11.65 inches, or 391 percent of normal), and **Kahului, Maui** (9.70 inches, or 622 percent).



### Daily Sierra Nevada Snowpack (Inches) vs. Normal



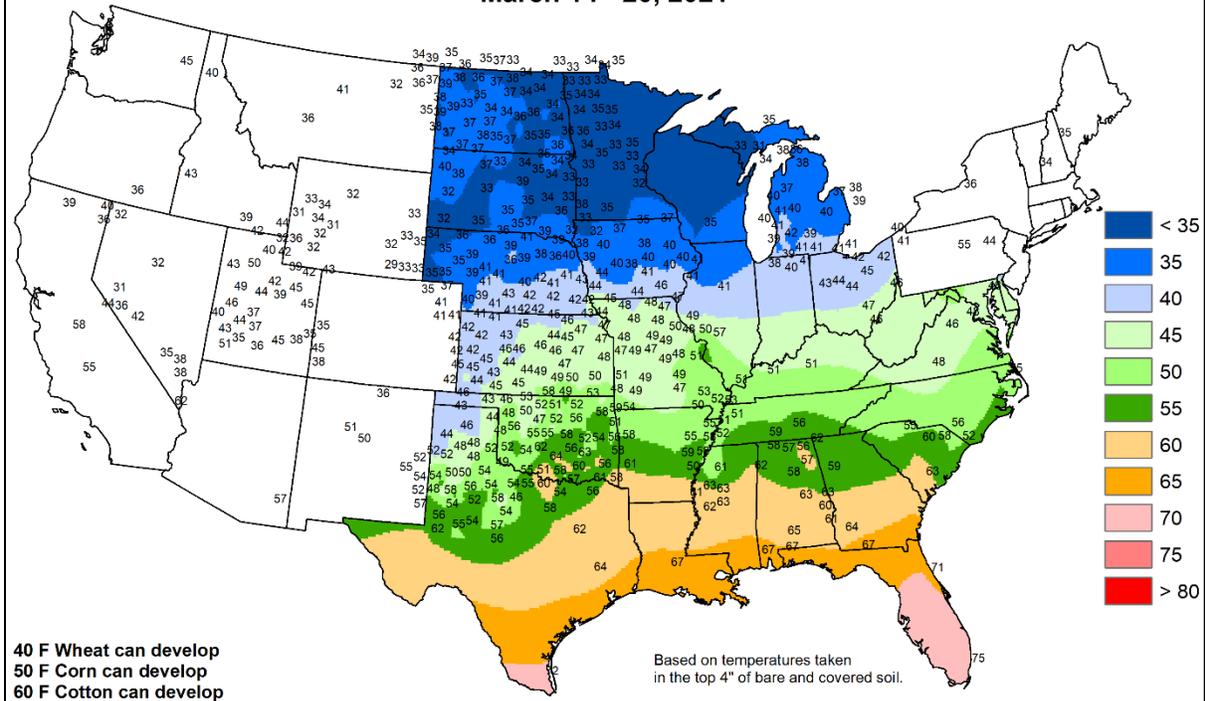
### California Reservoirs, Recharge and Withdrawal Million Acre-Feet and Percent of Average

	<u>Recharge</u>	<u>Withdrawal</u>
<b>2010-11</b>	12.47 (158%)	<b>2011</b> 8.75 (111%)
<b>2011-12</b>	5.75 (73%)	<b>2012</b> 11.54 (146%)
<b>2012-13</b>	6.52 (83%)	<b>2013</b> 11.49 (145%)
<b>2013-14</b>	4.17 (53%)	<b>2014</b> 7.75 (98%)
<b>2014-15</b>	6.46 (82%)	<b>2015</b> 7.13 (90%)
<b>2015-16</b>	14.68 (186%)	<b>2016</b> 7.88 (100%)
<b>2016-17</b>	15.00 (190%)	<b>2017</b> 8.77 (111%)
<b>2017-18</b>	6.88 (87%)	<b>2018</b> 10.84 (137%)
<b>2018-19</b>	14.05 (178%)	<b>2019</b> 10.00 (127%)
<b>2019-20</b>	4.59 (58%)	<b>2020</b> 10.63 (135%)
<b>2020-21</b>	0.99	<b>2021</b> N/A
<b>Avg.</b>	<b>7.90</b>	<b>Avg.</b> <b>7.90</b>

**Notes:** Recharge and withdrawal values are based on end-of-month statistics, not daily readings. Recharge data for 2020-21 is updated through Feb. 28.

### Average Soil Temperature (Deg. F)

March 14 - 20, 2021

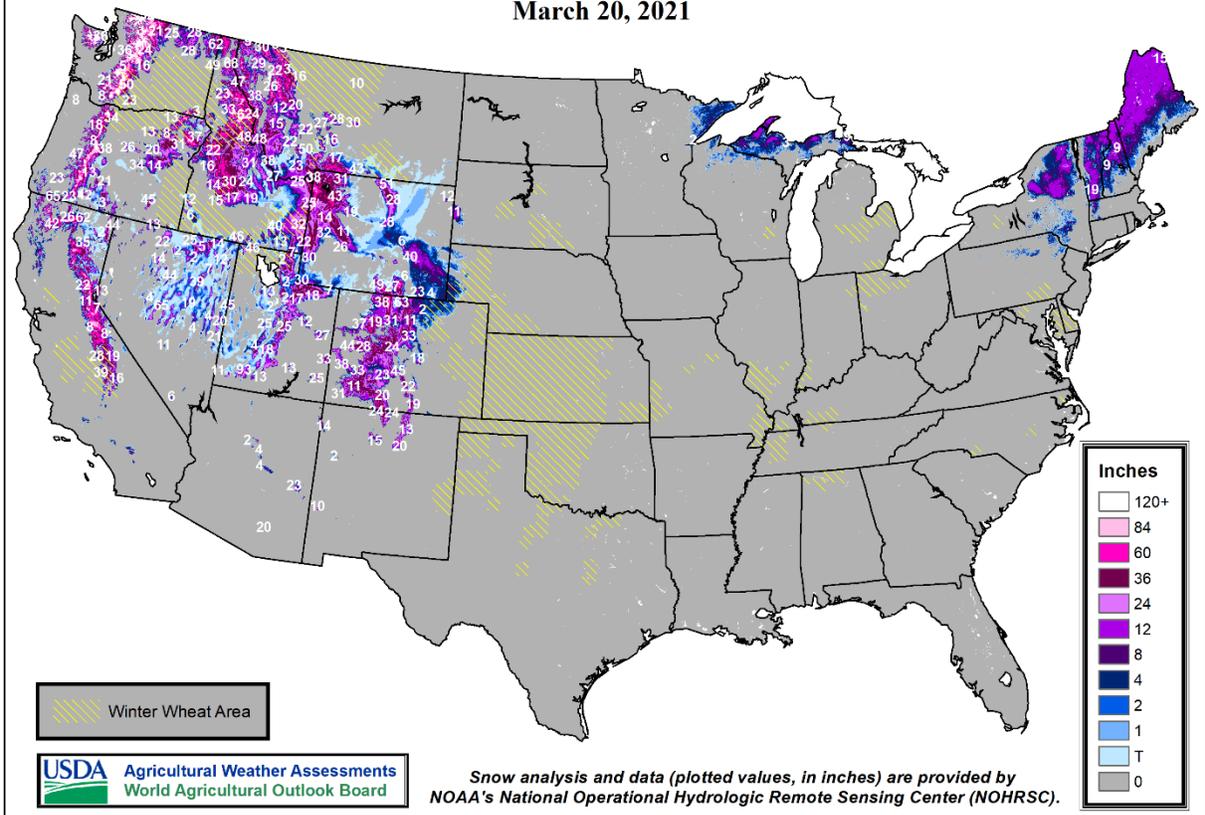


Data provided by the Climate Prediction Center, High Plains Regional Climate Center, Nebraska Mesonet at Univ of Nebraska, CoAgMet at Colorado State Univ, Kansas Mesonet at Kansas State Univ, North Dakota Agricultural Weather Network at North Dakota State Univ, Wyoming State Climate Office at the Univ of Wyoming, Illinois State Water Survey, Iowa State University, Oklahoma Mesonet, Purdue University, University of Missouri, Illinois State Water Survey, Michigan Automated Weather Network, West Texas Mesonet, South Dakota State Univ. Mesonet, Ohio Agricultural Research and Development Center, Univ. of Missouri and USDA/NRCS.



### Snow Depth

March 20, 2021



National Weather Data for Selected Cities

Weather Data for the Week Ending March 20, 2021

Data Provided by Climate Prediction Center

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS					
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN. SINCE MAR 1	PCT. NORMAL SINCE MAR 1	TOTAL, IN. SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	TEMP. °F		PRECIP	
																		01 INCH OR MORE	.50 INCH OR MORE		
AK ANCHORAGE	23	6	26	0	15	-12	0.31	0.18	0.27	0.71	175	2.29	121	83	50	0	7	3	0	0	
AK BARROW	0	-12	3	-19	-6	0	0.00	-0.02	0.00	0.18	255	0.79	202	82	68	0	7	0	0	0	
AK FAIRBANKS	16	-15	22	-23	1	-11	0.06	0.00	0.02	0.45	223	1.81	148	81	47	0	7	3	0	0	
AK JUNEAU	36	27	41	20	31	-3	1.88	1.04	0.72	3.21	125	13.73	114	87	57	0	6	6	2	2	
AK KODIAK	36	22	38	14	29	-3	0.89	-0.34	0.76	1.62	45	19.00	105	73	45	0	7	3	1	1	
AK NOME	14	-3	22	-23	6	-5	0.42	0.29	0.19	0.75	172	1.88	79	83	67	0	7	4	0	0	
AL BIRMINGHAM	68	52	81	41	60	5	4.42	3.24	2.37	5.23	153	12.09	94	88	55	0	0	4	3	3	
AL HUNTSVILLE	66	51	80	42	58	5	4.44	3.28	2.20	5.17	155	12.84	98	98	61	0	0	4	2	2	
AL MOBILE	73	58	82	48	65	5	0.37	-1.01	0.35	1.67	42	6.69	45	96	57	0	0	2	0	0	
AL MONTGOMERY	72	54	82	47	63	5	1.79	0.46	1.17	3.20	82	8.37	60	86	52	0	0	3	1	1	
AR FORT SMITH	68	43	77	37	56	2	0.80	-0.05	0.72	1.12	47	4.66	58	89	40	0	0	2	1	1	
AR LITTLE ROCK	68	47	77	38	58	4	1.85	0.79	1.21	1.85	62	9.35	92	88	43	0	0	3	2	2	
AZ FLAGSTAFF	48	21	59	15	35	-3	0.30	-0.19	0.29	1.70	115	6.14	108	86	38	0	7	2	0	0	
AZ PHOENIX	76	49	86	42	63	-3	0.00	-0.24	0.00	0.37	50	0.81	31	53	18	0	0	0	0	0	
AZ PRESCOTT	59	30	70	24	44	-2	0.24	0.00	0.13	0.44	57	2.35	71	82	27	0	4	2	0	0	
AZ TUCSON	74	42	85	35	58	-2	0.00	-0.19	0.00	0.29	54	1.00	41	56	12	0	0	0	0	0	
CA BAKERSFIELD	65	46	77	40	55	-3	0.46	0.18	0.22	0.74	88	1.79	55	79	35	0	0	3	0	0	
CA EUREKA	51	37	57	29	44	-6	0.45	-0.74	0.16	2.07	58	11.06	70	91	64	0	1	5	0	0	
CA FRESNO	62	45	72	38	54	-3	0.90	0.43	0.48	1.32	93	4.97	87	83	42	0	0	3	0	0	
CA LOS ANGELES	60	49	64	44	55	-4	0.30	-0.08	0.30	1.31	94	3.20	43	88	48	0	0	1	0	0	
CA REDDING	56	42	60	37	49	-5	1.49	0.54	0.61	2.54	78	8.65	60	87	51	0	0	4	2	2	
CA SACRAMENTO	58	41	62	36	50	-5	0.52	-0.09	0.40	1.06	53	4.46	49	91	46	0	0	2	0	0	
CA SAN DIEGO	62	52	66	47	57	-3	0.19	-0.20	0.17	1.42	107	3.30	59	78	52	0	0	2	0	0	
CA SAN FRANCISCO	57	48	60	44	52	-3	0.39	-0.26	0.16	1.35	63	5.43	52	82	53	0	0	5	0	0	
CA STOCKTON	58	39	61	32	48	-6	0.33	-0.16	0.19	0.96	63	5.87	86	97	53	0	1	4	0	0	
CO ALAMOSA	52	19	64	14	35	1	0.15	0.02	0.14	0.18	54	0.69	72	90	26	0	7	2	0	0	
CO CO SPRINGS	49	26	73	20	38	-2	0.12	-0.12	0.12	0.87	139	2.29	166	76	38	0	6	1	0	0	
CO DENVER INTL	42	23	60	16	32	-9	1.49	1.28	1.48	2.41	460	3.42	249	87	62	0	6	2	1	1	
CO GRAND JUNCTION	58	32	70	24	45	0	0.08	-0.14	0.08	0.40	71	1.07	63	77	29	0	5	1	0	0	
CO PUEBLO	57	27	80	20	42	-1	0.23	0.00	0.22	0.56	97	1.60	121	85	32	0	6	2	0	0	
CT BRIDGEPORT	44	29	52	20	36	-3	0.75	-0.17	0.74	1.05	41	6.52	77	70	36	0	5	2	1	1	
CT HARTFORD	45	24	59	15	35	-3	0.72	-0.11	0.70	0.97	43	6.66	80	65	28	0	6	2	1	1	
DC WASHINGTON	53	39	66	32	46	-1	0.35	-0.48	0.35	0.62	29	7.06	93	72	39	0	2	1	0	0	
DE WILMINGTON	50	33	60	25	42	-2	1.08	0.14	1.06	1.19	49	7.47	92	75	36	0	4	2	1	1	
FL DAYTONA BEACH	79	58	88	53	69	4	0.38	-0.65	0.38	0.49	18	4.65	56	91	51	0	0	1	0	0	
FL JACKSONVILLE	77	56	86	49	66	5	0.55	-0.31	0.55	1.86	70	9.72	106	95	50	0	0	1	1	1	
FL KEY WEST	81	73	83	66	77	3	0.00	-0.47	0.00	0.05	3	1.45	29	81	63	0	0	0	0	0	
FL MIAMI	83	67	85	58	75	2	0.34	-0.35	0.34	1.87	102	5.26	92	88	56	0	0	1	0	0	
FL ORLANDO	82	59	89	53	71	4	0.00	-0.91	0.00	0.52	22	3.35	47	95	46	0	0	0	0	0	
FL PENSACOLA	73	61	82	52	67	6	0.73	-0.57	0.56	1.91	49	7.60	56	91	63	0	0	3	1	1	
FL TALLAHASSEE	77	55	83	49	66	5	0.46	-0.91	0.43	1.19	28	11.50	86	93	44	0	0	2	0	0	
FL TAMPA	78	63	82	53	71	3	0.37	-0.33	0.37	0.68	34	5.22	74	82	55	0	0	1	0	0	
FL WEST PALM BEACH	83	66	87	60	75	4	0.01	-1.11	0.01	0.56	19	3.46	39	83	53	0	0	1	0	0	
GA ATHENS	67	47	82	39	57	3	2.26	1.26	1.66	2.63	89	9.95	86	80	43	0	0	3	1	1	
GA ATLANTA	67	49	81	41	58	3	0.89	-0.21	0.50	1.29	40	8.54	70	84	52	0	0	5	1	1	
GA AUGUSTA	72	50	82	41	61	5	0.13	-0.81	0.13	1.50	53	12.75	119	85	43	0	0	1	0	0	
GA COLUMBUS	71	52	83	47	61	3	2.05	0.80	1.01	2.79	77	11.00	92	87	48	0	0	4	2	2	
GA MACON	71	50	85	40	61	4	1.65	0.65	1.54	3.66	120	11.19	95	87	50	0	0	3	1	1	
GA SAVANNAH	75	54	85	46	64	5	1.46	0.62	1.34	3.93	165	9.92	112	91	48	0	0	4	1	1	
HI HILO	78	66	83	63	72	0	5.42	2.35	1.80	21.66	254	50.31	184	88	61	0	0	6	4	4	
HI HONOLULU	78	67	80	66	73	-2	0.04	-0.39	0.03	3.66	268	8.38	148	85	54	0	0	2	0	0	
HI KAHULUI	78	65	81	59	72	-1	1.25	0.70	0.83	8.09	521	12.37	196	93	64	0	0	4	1	1	
HI LIHUE	74	67	78	65	71	-2	1.44	0.38	0.71	11.54	386	16.92	171	94	69	0	0	6	1	1	
IA BURLINGTON	46	33	57	31	40	-2	1.88	1.24	0.76	1.99	113	3.72	80	88	59	0	2	4	2	2	
IA CEDAR RAPIDS	44	30	58	26	37	0	0.50	0.02	0.46	0.57	44	1.50	43	86	55	0	5	2	0	0	
IA DES MOINES	48	33	62	30	40	0	1.07	0.53	0.63	1.12	81	2.50	67	84	55	0	2	3	1	1	
IA DUBUQUE	44	30	56	25	37	1	0.59	0.05	0.52	0.78	55	2.62	65	85	51	0	5	2	1	1	
IA SIOUX CITY	47	30	63	20	39	2	1.74	1.24	1.43	1.88	166	3.65	150	91	59	0	3	3	1	1	
IA WATERLOO	46	29	60	19	37	1	0.57	0.10	0.57	0.92	76	2.98	97	84	51	0	5	1	1	1	
ID BOISE	61	37	69	32	49	4	0.19	-0.14	0.19	0.26	29	3.28	104	71	28	0	1	1	0	0	
ID LEWISTON	60	37	71	32	48	3	0.06	-0.21	0.06	0.08	11	2.26	85	77	38	0	1	1	0	0	
ID POCATELLO	57	28	63	24	42	4	0.88	0.58	0.80	1.02	123	2.97	105	84	32	0	6	2	1	1	
IL CHICAGO/O_HARE	44	33	58	28	38	0	0.65	0.11	0.36	0.81	52	3.12	61	84	51	0	3	3	0	0	
IL MOLINE	47	31	60	21	39	-1	1.40	0.74	0.98	1.48	82	4.63	94	86	52	0	3	2	1	1	
IL PEORIA	47	34	57	28	40	-1	2.12	1.48	0.85	2.15	125	6.41	121	84	53	0	3	4	2	2	
IL ROCKFORD	47	30	59	24	39	1	0.50	-0.02	0.30	0.59	42	3.35	80	85	42	0	4	3	0	0	
IL SPRINGFIELD	49	35	59	28	42	-1	2.90	2.31	1.48	3.29	202	7.73	147	92	64	0	2	4	3	3	
IN EVANSVILLE	58	40	65	32	49	3	1.00	0.01	0.35	3.06	117	10.69	120	83	49	0	1	3	0	0	
IN FORT WAYNE	49	29	61	25	39	0	1.07	0.48	0.89	1.09	67	4.38	74	80	42	0	6	3	1	1	
IN INDIANAPOLIS	53	33	62	27	43	0	1.89	1.07	1.22	2.52	116	6.44	90	86	46	0	3	3	2	2	
IN SOUTH BEND	50	29	59	22	40	2	0.19	-0.33	0.11	0.20	13	3.58	62	80	36	0	5	3	0	0	
KS CONCORDIA	52	37	66	28	44	1	0.78	0.29	0.75	1.44	124	2.57	100	89	63	0	1	3	1	1	
KS DODGE CITY	56	33	67	26	44	0	0.42	0.03	0.23	2.22	238	2.60	117	94	47	0	4	3	0	0	
KS GOODLAND	51	28	70	22	40	-1	0.83	0.57	0.83												

Weather Data for the Week Ending March 20, 2021

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS					
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN. SINCE MAR 1	PCT. NORMAL SINCE MAR 1	TOTAL IN. SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	TEMP. °F		PRECIP	
																		01 INCH OR MORE	50 INCH OR MORE		
KY WICHITA	60	37	71	31	48	1	1.52	0.88	1.45	2.99	184	5.88	160	88	47	0	1	3	1		
KY LEXINGTON	58	35	71	27	47	1	1.24	0.28	0.69	2.28	88	11.64	130	88	39	0	2	4	1		
KY LOUISVILLE	61	39	72	33	50	2	1.12	0.15	0.53	2.72	104	12.37	137	82	37	0	0	4	1		
LA PADUCAH	63	44	73	35	54	5	2.02	1.17	1.33	3.30	138	11.88	119	82	48	0	0	4	2		
LA BATON ROUGE	73	59	85	48	66	4	0.66	-0.61	0.45	1.58	45	8.93	62	86	53	0	0	2	0		
LA LAKE CHARLES	73	58	83	44	66	5	0.24	-0.56	0.24	0.61	26	5.41	49	88	50	0	0	1	0		
LA NEW ORLEANS	74	62	83	53	68	5	1.86	0.86	1.21	2.96	100	9.57	71	84	56	0	0	2	2		
LA SHREVEPORT	72	51	85	39	62	3	0.81	-0.03	0.43	2.85	107	8.87	76	84	40	0	0	2	0		
MA BOSTON	46	27	61	17	37	-2	0.66	-0.33	0.66	0.82	30	5.83	62	60	29	0	6	1	1		
MA WORCESTER	42	22	54	13	32	-3	0.70	-0.25	0.69	0.93	36	10.86	117	64	30	0	6	2	1		
MD BALTIMORE	52	37	64	28	45	1	0.54	-0.40	0.54	0.71	29	7.61	91	71	35	0	2	1	1		
ME CARIBOU	33	7	50	-1	20	-5	0.00	-0.54	0.00	0.68	42	4.44	68	64	37	0	7	0	0		
ME PORTLAND	40	18	56	10	29	-4	0.25	-0.71	0.25	0.72	27	5.54	60	74	26	0	7	1	0		
MI ALPENA	42	20	62	11	31	2	0.15	-0.25	0.15	0.18	15	1.61	38	87	36	0	7	1	0		
MI GRAND RAPIDS	48	27	58	23	38	2	0.01	-0.50	0.01	0.05	3	2.74	51	81	34	0	6	1	0		
MI HOUGHTON LAKE	42	21	56	14	32	2	0.36	-0.04	0.20	0.37	33	2.24	58	86	38	0	7	2	0		
MI LANSING	49	25	59	21	37	2	0.01	-0.44	0.01	0.09	7	3.02	69	85	35	0	7	1	0		
MI MUSKEGON	47	28	53	23	38	2	0.08	-0.41	0.07	0.08	5	3.30	62	78	31	0	7	2	0		
MI TRAVERSE CITY	44	25	60	18	35	4	0.36	-0.04	0.20	0.36	31	1.06	19	84	40	0	7	2	0		
MN DULUTH	42	27	55	23	34	8	0.00	-0.33	0.00	1.08	118	2.18	79	80	44	0	6	0	0		
MN INT_L FALLS	49	21	64	13	35	11	0.00	-0.22	0.00	0.00	0	0.69	39	74	29	0	6	0	0		
MN MINNEAPOLIS	46	31	57	28	38	5	0.33	-0.12	0.31	1.04	91	2.42	84	81	40	0	6	2	0		
MN ROCHESTER	42	28	53	25	35	0	1.11	0.69	1.10	1.35	124	3.02	106	83	51	0	7	2	1		
MN ST. CLOUD	44	27	56	22	36	6	0.37	0.00	0.29	1.20	132	2.37	109	85	44	0	6	3	0		
MO COLUMBIA	52	37	63	33	45	0	3.68	3.02	2.39	4.72	267	8.92	150	89	58	0	0	4	2		
MO KANSAS CITY	53	38	63	28	45	0	2.06	1.52	1.07	2.79	199	5.78	146	90	61	0	2	3	2		
MO SAINT LOUIS	53	40	61	32	47	0	3.32	2.56	2.10	3.84	195	9.28	140	82	56	0	1	4	2		
MO SPRINGFIELD	60	38	72	30	49	2	2.53	1.70	1.23	7.55	340	12.72	177	93	52	0	2	3	2		
MS JACKSON	73	55	84	44	64	7	2.48	1.39	1.13	3.46	107	9.23	71	85	54	0	0	3	3		
MS MERIDIAN	71	55	80	40	63	7	4.46	3.26	3.46	5.56	156	13.19	92	87	60	0	0	3	2		
MS TUPELO	73	54	83	42	64	9	2.15	1.12	1.92	3.31	103	11.89	93	90	42	0	0	3	1		
MT BILLINGS	55	30	71	23	43	5	0.63	0.38	0.62	0.63	103	1.93	120	79	36	0	5	2	1		
MT BUTTE	50	24	56	18	37	5	0.13	-0.04	0.13	0.25	57	1.12	80	85	33	0	7	1	0		
MT CUT BANK	56	23	63	17	40	8	0.00	-0.11	0.00	0.00	0	0.13	16	79	25	0	6	0	0		
MT GLASGOW	56	27	76	16	42	10	0.03	-0.07	0.02	0.03	11	0.22	22	72	24	0	6	2	0		
MT GREAT FALLS	58	27	64	17	43	8	0.00	-0.22	0.00	0.20	37	1.09	70	70	24	0	5	0	0		
MT HAVRE	59	25	67	21	42	9	0.00	-0.13	0.00	0.06	19	0.89	86	83	28	0	7	0	0		
MT MISSOULA	58	27	65	22	43	3	0.03	-0.20	0.02	0.11	18	1.83	82	89	31	0	7	2	0		
NC ASHEVILLE	59	41	71	31	50	3	2.80	1.95	1.01	3.44	141	10.83	110	91	49	0	1	5	3		
NC CHARLOTTE	62	43	75	31	52	1	1.68	0.76	1.31	1.87	69	10.79	115	90	47	0	1	5	1		
NC GREENSBORO	56	39	69	31	47	-3	1.64	0.80	1.13	1.92	80	11.28	135	81	47	0	1	4	1		
NC HATTERAS	61	46	72	41	53	2	1.99	0.91	1.60	1.99	65	16.04	130	92	61	0	0	4	1		
NC RALEIGH	60	40	73	30	49	-3	0.00	-0.94	0.00	0.15	5	11.21	119	88	45	0	1	0	0		
NC WILMINGTON	64	47	77	40	55	0	0.79	-0.18	0.54	0.99	35	11.22	110	88	52	0	0	3	1		
ND BISMARCK	50	25	71	13	38	7	0.01	-0.19	0.01	0.01	2	0.43	28	92	43	0	7	1	0		
ND DICKINSON	50	24	67	16	37	7	0.00	-0.15	0.00	0.00	0	0.00	0	88	39	0	7	0	0		
ND FARGO	47	27	63	18	37	9	0.02	-0.30	0.02	0.12	14	0.71	32	87	45	0	6	1	0		
ND GRAND FORKS	49	22	67	16	36	10	0.00	-0.23	0.00	0.00	0	0.44	25	80	34	0	6	0	0		
ND JAMESTOWN	48	25	68	17	37	9	0.02	-0.17	0.02	0.02	4	0.40	28	83	47	0	6	1	0		
NE GRAND ISLAND	50	34	67	25	42	2	2.85	2.41	2.75	5.37	515	6.95	306	88	62	0	2	2	1		
NE LINCOLN	51	33	67	21	42	1	3.03	2.56	2.98	3.78	342	5.43	214	89	58	0	3	3	1		
NE NORFOLK	48	31	65	20	39	1	3.15	2.72	2.72	3.56	355	4.36	183	85	58	0	3	3	1		
NE NORTH PLATTE	50	30	70	21	40	2	1.84	1.61	1.64	3.18	511	5.00	326	87	54	0	4	4	1		
NE OMAHA	50	33	64	26	42	2	2.68	2.21	2.53	3.02	265	5.22	190	93	58	0	3	3	1		
NE SCOTTSBLUFF	42	25	58	18	34	-5	0.31	0.09	0.28	1.44	238	2.43	146	96	75	0	6	2	0		
NE VALENTINE	46	33	69	29	39	3	1.45	1.21	0.89	2.01	324	3.16	222	84	59	0	5	4	1		
NH CONCORD	42	18	56	10	30	-3	0.20	-0.54	0.20	0.41	20	4.89	66	63	26	0	7	1	0		
NJ ATLANTIC_CITY	49	31	59	24	40	-3	1.76	0.76	1.72	1.76	65	10.24	117	83	40	0	5	3	1		
NJ NEWARK	48	31	60	24	39	-3	0.73	-0.25	0.68	0.90	34	8.02	89	65	33	0	4	3	1		
NM ALBUQUERQUE	63	35	79	31	49	0	0.04	-0.09	0.04	0.04	10	0.65	51	65	16	0	2	1	0		
NV ELY	53	25	60	13	39	2	0.91	0.69	0.72	1.24	201	2.29	109	84	30	0	6	3	1		
NV LAS VEGAS	69	46	80	39	57	-3	0.00	-0.10	0.00	0.60	171	0.70	41	59	19	0	0	0	0		
NV RENO	56	35	64	28	46	-1	0.00	-0.16	0.00	0.03	5	1.43	53	64	22	0	2	0	0		
NV WINNEMUCCA	53	29	64	18	41	0	0.43	0.24	0.30	0.60	111	2.70	132	86	36	0	5	4	0		
NY ALBANY	40	20	55	11	30	-5	0.59	-0.16	0.59	0.70	34	4.36	64	72	32	0	7	1	1		
NY BINGHAMTON	38	19	51	11	29	-5	0.82	0.15	0.78	0.99	54	5.43	83	77	40	0	7	3	1		
NY BUFFALO	42	25	52	18	34	-1	0.00	-0.64	0.00	0.04	2	3.13	42	77	32	0	7	0	0		
NY ROCHESTER	42	23	57	18	32	-2	0.04	-0.50	0.03	0.13	8	3.54	59	77	33	0	7	2	0		
NY SYRACUSE	43	22	57	16	32	-2	0.25	-0.42	0.24	0.45	24	4.92	77	70	31	0	6	2	0		
OH AKRON-CANTON	54	27	67	21	40	3	1.00	0.33	1.00	1.36	74	5.24	78	79	35	0	5	1	1		
OH CINCINNATI	55	35	62	31	45	1	0.77	-0.16	0.37	1.48	61	8.42	103	84	43	0	3	3	0		
OH CLEVELAND	49	29	61	24	39	0	0.44	-0.21	0.42	0.44	24	3.37	49	78	38	0	5	2	0		
OH COLUMBUS	54	32	64	26	43	1	1.20	0.52	1.07	1.68	93	6.15	91	85	40	0	4	4	1		
OH DAYTON	53	31	63	25	42	1	1.89	1.13	1.47	2.18	109	6.63	96	74	41	0	4	4	1		
OH MANSFIELD	52	29	67	24	41	3	0.84	0.07	0.83	1.10	54	5.00	68	82	39	0	5	2	1		

Based on 1981-2010 normals

\*\*\* Not Available

Weather Data for the Week Ending March 20, 2021

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS					
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN. SINCE MAR 1	PCT. NORMAL SINCE MAR 1	TOTAL IN. SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	TEMP. °F		PRECIP	
																		01 INCH OR MORE	50 INCH OR MORE		
OK TOLEDO	52	29	65	22	40	2	0.18	-0.36	0.13	0.18	12	3.48	61	76	32	0	6	3	0		
OK YOUNGSTOWN	53	26	66	18	39	2	0.73	0.06	0.72	0.97	53	4.38	67	74	31	0	6	2	1		
OK OKLAHOMA CITY	66	41	79	34	53	1	0.16	-0.58	0.16	0.23	12	2.44	50	81	39	0	0	1	0		
OR TULSA	64	41	76	33	53	1	1.21	0.45	0.63	1.60	78	4.69	84	90	49	0	0	3	2		
OR ASTORIA	50	36	52	27	43	-3	1.14	-0.57	0.44	2.81	56	31.04	138	93	56	0	3	5	0		
OR BURNS	50	26	60	23	38	0	0.09	-0.16	0.08	0.18	24	3.59	121	89	41	0	7	2	0		
OR EUGENE	55	35	63	28	45	-2	0.48	-0.64	0.20	1.37	40	10.89	69	92	53	0	3	5	0		
OR MEDFORD	56	37	65	31	46	-2	0.39	0.01	0.34	1.28	111	4.93	88	82	38	0	1	3	0		
OR PENDLETON	56	35	68	31	46	0	0.11	-0.20	0.06	0.15	16	3.11	90	88	36	0	2	2	0		
OR PORTLAND	54	39	62	31	46	-2	0.48	-0.34	0.16	0.93	37	11.79	107	81	52	0	1	4	0		
OR SALEM	53	35	62	28	44	-3	1.00	0.11	0.43	1.91	70	14.79	111	90	53	0	3	5	0		
PA ALLENTOWN	47	29	59	21	38	-2	1.09	0.32	1.08	1.17	56	7.56	97	70	35	0	5	2	1		
PA ERIE	45	27	52	22	36	1	0.17	-0.48	0.10	0.26	14	5.98	83	72	38	0	6	2	0		
PA MIDDLETOWN	50	33	60	27	41	-1	0.90	0.09	0.90	1.08	51	7.43	101	67	31	0	4	1	1		
PA PHILADELPHIA	50	34	59	27	42	-2	0.92	0.02	0.92	1.01	43	7.40	92	72	35	0	3	1	1		
PA PITTSBURGH	54	30	65	21	42	2	2.17	1.51	2.17	2.67	145	6.78	98	69	31	0	4	1	1		
PA WILKES-BARRE	46	26	57	19	36	-1	1.16	0.57	1.16	1.40	90	6.22	104	70	33	0	5	1	1		
PA WILLIAMSPORT	47	27	59	22	37	-1	0.94	0.26	0.90	1.17	65	6.37	93	68	30	0	5	2	1		
RI PROVIDENCE	45	25	58	18	35	-4	1.02	-0.16	1.01	1.33	42	6.80	66	70	31	0	6	2	1		
SC CHARLESTON	68	51	80	42	60	1	0.26	-0.59	0.24	1.61	68	10.65	118	94	55	0	0	2	0		
SC COLUMBIA	65	48	77	38	56	0	1.63	0.80	1.53	2.03	82	13.64	141	81	50	0	0	2	1		
SC FLORENCE	62	46	77	37	54	-2	0.72	-0.02	0.42	1.19	54	13.57	163	81	53	0	0	4	0		
SC GREENVILLE	61	43	73	33	52	-1	1.93	0.90	0.98	2.27	76	10.86	101	84	46	0	0	3	2		
SD ABERDEEN	47	31	67	25	39	9	0.37	0.10	0.37	0.66	96	1.24	71	85	54	0	5	1	0		
SD HURON	46	31	67	25	39	5	0.52	0.17	0.23	0.72	88	1.44	74	95	59	0	6	4	0		
SD RAPID CITY	45	26	68	21	35	-1	0.67	0.45	0.54	0.83	141	1.43	102	89	57	0	7	2	1		
SD SIOUX FALLS	44	29	63	20	37	3	0.88	0.48	0.38	1.29	139	2.66	126	86	58	0	5	3	0		
TN BRISTOL	65	41	73	30	53	6	1.50	0.73	0.82	2.50	114	10.99	122	87	36	0	1	5	1		
TN CHATTANOOGA	64	50	74	42	57	5	5.48	4.37	2.90	6.56	203	14.69	113	89	52	0	0	4	2		
TN KNOXVILLE	64	47	75	36	55	5	2.53	1.56	1.12	4.00	144	10.89	95	93	50	0	0	5	2		
TN MEMPHIS	69	51	81	41	60	6	1.74	0.59	1.32	2.21	68	12.43	107	87	41	0	0	3	1		
TN NASHVILLE	67	49	79	40	58	8	1.39	0.44	1.17	2.07	79	9.27	89	84	41	0	0	4	1		
TX ABILENE	71	43	81	35	57	0	0.03	-0.36	0.03	0.92	81	2.50	70	71	25	0	0	1	0		
TX AMARILLO	61	35	76	30	47	-1	0.30	-0.06	0.30	0.91	106	1.87	87	82	35	0	3	1	0		
TX AUSTIN	78	51	87	43	64	2	0.02	-0.61	0.01	0.28	15	2.85	47	78	24	0	0	2	0		
TX BEAUMONT	73	55	82	43	64	2	0.22	-0.55	0.20	1.52	67	7.07	63	92	53	0	0	2	0		
TX BROWNSVILLE	81	58	88	49	70	0	0.00	-0.26	0.00	0.06	8	1.16	37	86	40	0	0	0	0		
TX CORPUS CHRISTI	77	55	91	48	66	0	0.10	-0.30	0.08	0.17	13	1.91	40	90	46	1	0	3	0		
TX DEL RIO	81	51	89	44	66	2	0.04	-0.21	0.04	0.04	5	0.68	32	65	19	0	0	1	0		
TX EL PASO	72	43	83	40	58	1	0.00	-0.06	0.00	0.00	0	0.72	63	35	10	0	0	0	0		
TX FORT WORTH	72	47	83	41	60	2	1.09	0.31	1.02	1.21	54	4.32	61	84	27	0	0	2	1		
TX GALVESTON	73	59	82	51	66	2	0.10	0.00	0.04	0.51	0	2.72	0	81	53	0	0	3	0		
TX HOUSTON	75	53	82	42	64	1	0.51	-0.22	0.47	0.94	43	5.06	57	85	45	0	0	3	0		
TX LUBBOCK	66	37	81	31	51	-1	0.00	-0.25	0.00	1.18	172	2.43	114	67	21	0	2	0	0		
TX MIDLAND	69	41	84	32	55	-1	0.00	-0.12	0.00	0.21	57	0.72	43	58	17	0	1	0	0		
TX SAN ANGELO	73	39	84	30	56	-2	0.06	-0.28	0.06	0.30	29	1.82	55	73	20	0	2	1	0		
TX SAN ANTONIO	78	50	84	42	64	1	0.07	-0.45	0.05	0.14	9	2.44	48	81	24	0	0	2	0		
TX VICTORIA	76	50	85	39	63	0	0.34	-0.24	0.25	0.61	36	2.15	34	90	46	0	0	4	0		
TX WACO	73	45	84	35	59	1	0.12	-0.59	0.09	0.39	18	3.05	44	85	32	0	0	2	0		
TX WICHITA FALLS	70	42	82	34	56	1	0.38	-0.09	0.38	0.44	29	1.85	42	86	31	0	0	1	0		
UT SALT LAKE CITY	62	41	71	36	51	7	0.87	0.46	0.83	0.88	80	3.40	94	70	26	0	0	2	1		
VA LYNCHBURG	54	37	65	31	46	0	1.18	0.35	0.60	1.42	63	9.41	114	84	44	0	1	4	1		
VA NORFOLK	56	41	76	37	48	-1	0.91	0.08	0.48	0.98	41	10.91	123	91	56	0	0	4	0		
VA RICHMOND	54	36	66	29	45	-4	1.42	0.42	1.02	1.74	67	10.29	124	92	49	0	2	4	1		
VA ROANOKE	56	38	62	29	47	-1	0.91	0.11	0.56	1.09	51	9.51	120	80	40	0	1	4	1		
VA WASH/DULLES	52	36	65	27	44	-1	0.41	-0.38	0.41	0.58	28	6.67	90	78	40	0	2	1	0		
VT BURLINGTON	39	16	56	8	28	-4	0.04	-0.46	0.04	0.17	12	3.37	64	72	28	0	7	1	0		
WA OLYMPIA	52	30	61	22	41	-4	0.89	-0.31	0.38	1.56	44	20.76	124	96	54	0	5	4	0		
WA QUILLAYUTE	48	34	53	26	41	-3	2.72	0.24	1.76	5.34	74	31.86	99	94	55	0	3	4	2		
WA SEATTLE-TACOMA	52	38	59	33	45	-2	0.70	-0.13	0.28	1.19	48	14.31	124	90	52	0	0	4	0		
WA SPOKANE	55	34	62	30	44	4	0.00	-0.37	0.00	0.00	0	3.54	84	77	37	0	2	0	0		
WA YAKIMA	58	33	63	26	45	2	0.04	-0.09	0.04	0.07	15	2.43	101	71	30	0	3	1	0		
WI EAU CLAIRE	49	25	61	18	37	5	0.09	-0.31	0.09	0.39	40	1.04	38	82	33	0	7	1	0		
WI GREEN BAY	43	26	57	23	34	3	0.24	-0.16	0.16	0.56	49	1.99	58	83	48	0	7	3	0		
WI LA CROSSE	49	31	61	27	40	5	0.33	-0.13	0.33	0.81	67	2.33	69	77	37	0	4	1	0		
WI MADISON	44	27	57	22	35	1	0.39	-0.09	0.22	0.45	35	2.38	60	87	46	0	7	2	0		
WI MILWAUKEE	43	32	53	27	38	2	0.35	-0.15	0.16	0.35	26	3.51	74	82	48	0	3	3	0		
WI BECKLEY	57	33	70	25	45	3	1.20	0.39	0.87	1.93	85	10.56	135	87	37	0	4	3	1		
WI CHARLESTON	62	36	75	27	49	3	1.00	0.08	0.91	1.82	70	8.74	100	92	31	0	3	2	1		
WI ELKINS	61	28	72	18	44	4	0.31	-0.59	0.26	0.79	31	7.37	83	84	24	0	4	3	0		
WI HUNTINGTON	61	38	74	30	49	3	0.52	-0.41	0.35	1.16	46	8.48	99	85	34	0	2	4	0		
WY CASPER	40	19	50	2	29	-7	1.58	1.39	0.89	2.33	477	3.64	230	92	64	0	7	5	1		
WY CHEYENNE	38	19	57	10	29	-8	0.01	-0.23	0.01	0.65	101	1.30	86	89	57	0	7	1	0		
WY LANDER	45	26	56	19	36	0	0.60	0.32	0.47	1.82	270	2.07	121	92	56	0	6	3	0		
WY SHERIDAN	49	25	67	15	37	1	1.07	0.83	0.44	1.07	182	3.05	180	89	47	0	6	4	0		

Based on 1981-2010 normals

\*\*\* Not Available

# Winter Weather Review

*Weather summary provided by USDA/WAOB*

**Highlights:** Historically cold weather struck the nation’s mid-section for 2 weeks in February, resulting in the lowest temperatures in many communities since at least December 1989—and in a few cases, tying or breaking all-time records. The sudden Arctic outbreak, which followed a generally mild November-January period, may have damaged winter wheat on the Plains that did not have an adequate protective snow cover. Deep South Texas was disproportionately affected, as citrus and winter vegetables suffered extensive damage. Producers continue to monitor sugarcane in Texas and Louisiana for potential impacts on the next harvest. Cold-related impacts extended far beyond crops, dairies, livestock, greenhouses, and nurseries, as extended power outages led to cascading effects that included potable water shortages and frozen or broken water lines.

Across portions of the Great Plains, autumn and winter drought—along with potential impacts from February’s extreme cold—left one-fifth to one-third of the winter wheat rated in very poor to poor condition by late February in several states, including Texas, Colorado, Kansas, and Nebraska. Some of the most significant exposure of wheat to sub-zero temperatures occurred across the central Plains, along with minor production areas in northeastern Montana and parts of the western Dakotas.

During the first 2 months of 2021, drought coverage remained nearly steady at 45 to 47 percent of the Lower 48 States, according to the *U.S. Drought Monitor*, down slightly from a December 2020 peak of 49.6 percent. Significant, late-winter improvement in the drought situation was mostly limited to a swath stretching from the Northwest to the central Rockies, while portions of the northern Plains and Southwest noted worsening drought. As winter ended, excessive rainfall in the Kentucky River basin and environs contributed to moderate to major flooding, while a much broader region stretching from northeastern Texas into the central Appalachians and Ohio Valley experienced minor flooding.

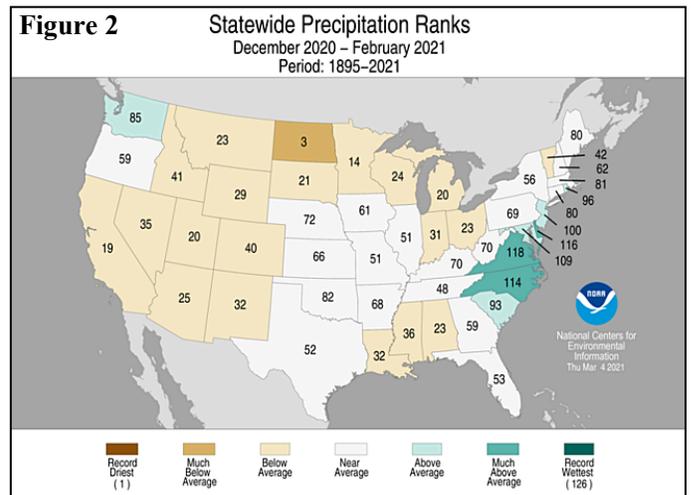
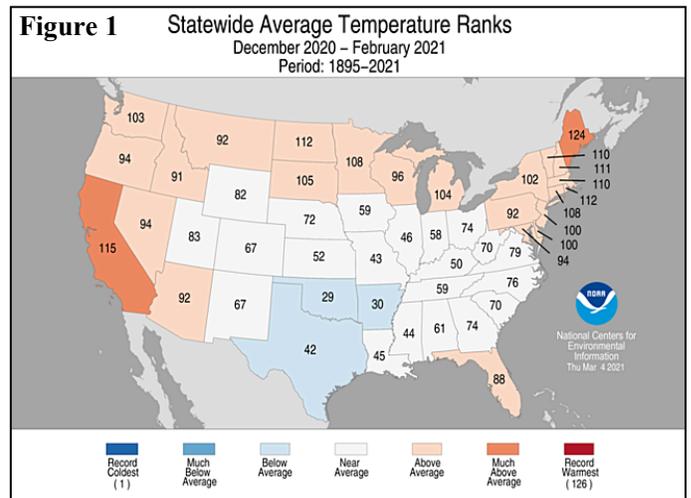
Despite the country experiencing its coldest February in 32 years, winter overall was relatively mild. In fact, above-normal December-February temperatures were common across the North and West, while pockets of below-normal temperatures were mostly limited to the south-central U.S. Winter warmth was especially prominent in northern New England, including Maine, where December-February temperatures averaged nearly 7°F above normal.

Outside the contiguous U.S., near- or above-normal winter temperatures prevailed in much of Hawaii and Alaska, although the latter state experienced its coldest February since 1999. Meanwhile, December-February rainfall in Hawaii was highly variable, with generally wetter conditions developing during the second half of winter. Elsewhere, pockets of dryness in northern and eastern

Alaska contrasted with above-normal winter precipitation in many southern locations.

**Historical Perspective:** According to preliminary data provided by the National Centers for Environmental Information, the contiguous U.S. experienced its 29th-warmest, 26th-driest winter during the 126-year period of record. Across the Lower 48 States, the December-February average temperature of 33.6°F was 1.4°F above the 20th century mean, while precipitation averaged 6.10 inches (90 percent of normal). The “warm” winter ranking occurred despite the country experiencing its coldest February since 1989, as December and January were rather mild.

Winter warmth was most prominent in the North and Far West, while wetness was largely focused across the middle Atlantic States. However, only a handful of states strayed into top-ten territory for winter rankings. It was the third-warmest winter in Maine (figure 1) and the third-driest winter in North Dakota (figure 2). Virginia cracked the top ten for winter wetness, ranking ninth.



**December:** Mild weather and occasional storms benefited winter wheat, with crop conditions improving across the Great Plains between late November and the end of the year. According to USDA/NASS, wheat rated in very poor to poor condition at the end of December stood at 5 percent in Montana, 8 percent in South Dakota, 15 percent in Nebraska, 17 percent in Kansas, and 34 percent in Colorado, compared to respective November 29 values of 10, 11, 26, 22, and 38 percent. Despite the mostly favorable December weather, significant soil moisture shortages persisted across parts of the Plains. By December 31, topsoil moisture was rated at least one-half very short to short in several states, including Colorado (77 percent), North Dakota (71 percent), Montana (61 percent), South Dakota (59 percent) and Nebraska (56 percent).

Meanwhile, significant drought persisted from Oregon and California to the central and southern Rockies. By December 29, drought covered 78.6 percent of the 11-state Western region and 49.0 percent of the contiguous U.S., according to the *Drought Monitor*. A week earlier, U.S. drought coverage had reached a 7-year high, peaking at 49.6 percent. By month's end, the average water equivalency of the high-elevation Sierra Nevada snowpack stood at just over 5 inches, barely one-half of late-December normal and about one-fifth of the typical spring maximum. Spring and summer water-supply concerns continued to mount in areas already experiencing below-average reservoir storage; that list included California, Colorado, Nevada, New Mexico, and Oregon. In contrast, a La Niña-driven storm track primarily affected the Pacific Northwest, delivering heavy precipitation in western Washington.

Although heavy snow bypassed much of the West, occasional December accumulations occurred from the Plains into the Midwest and Northeast. At mid-month, one of the most significant winter storms in several years deposited 1 to 3 feet of snow in parts of the Northeast. About a week later, a holiday storm produced blizzard conditions (on December 23) in the upper Midwest and sparked a rain-to-snow event (on December 24-25) from the Appalachians into the lower Great Lakes region. A sharp but short-lived cold outbreak trailed the wintry weather into the Midwest and East. By December 26, freezes occurred as far south as northern Florida, remaining north of the state's citrus, sugarcane, strawberries, and winter vegetables. Other cool spells in Florida peaked on December 1-2, 8-9, and 17-18.

However, significant early-winter cold outbreaks were scarce, as December temperatures averaged more than 10°F above normal in parts of North Dakota and eastern Montana. In fact, near- or above-normal temperatures covered the country, except for cooler-than-normal conditions in the southern Atlantic States and parts of the Southwest. Despite a cool December, the warmest year on record wrapped up in numerous Southeastern locations, mainly across Florida, but extending as far north as the mid-Atlantic. In addition, several communities in Virginia, including Lynchburg and Roanoke, as well as some places

in neighboring states, completed a record-wet year. Southeastern wetness hampered late-season harvest efforts for crops such as cotton and soybeans.

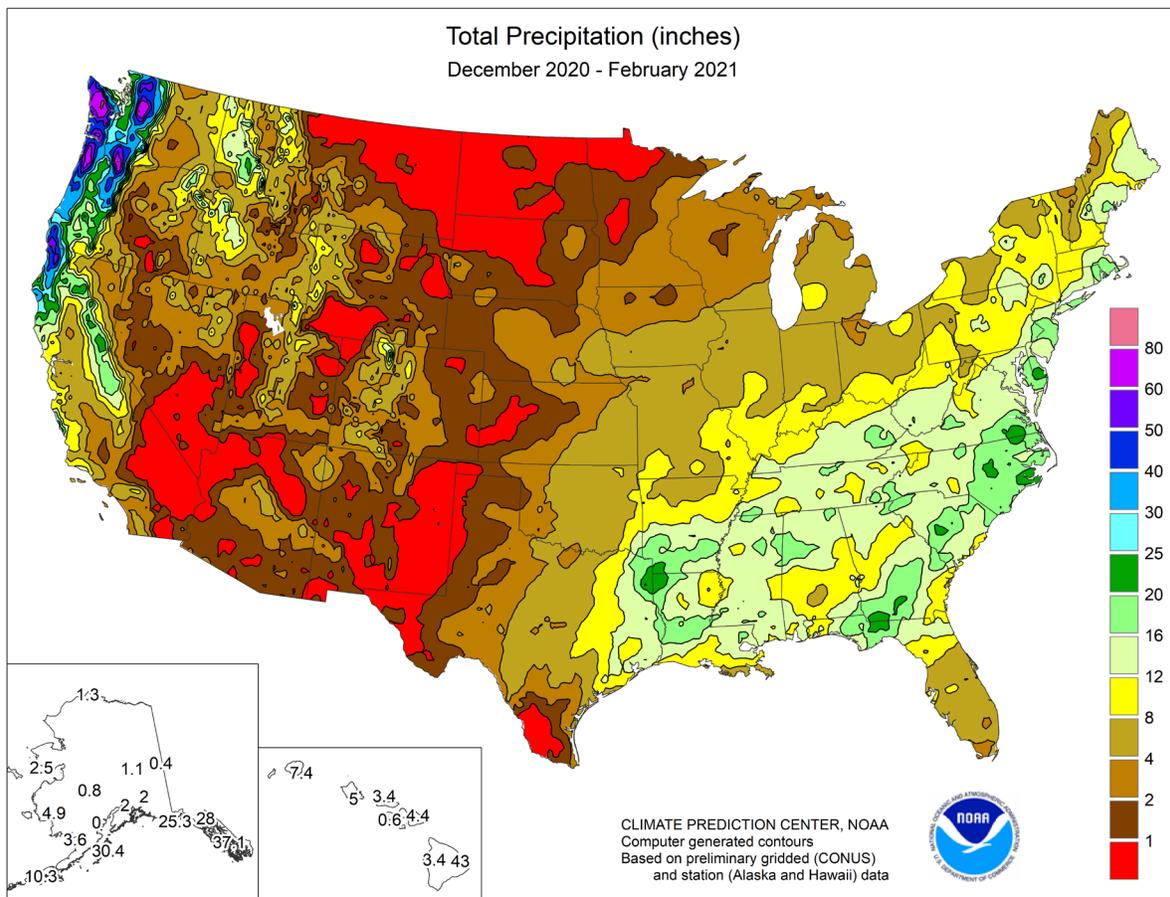
**January:** Arctic air was notably absent from the U.S. in January, helping to boost monthly temperatures more than 10°F above normal in parts of Minnesota, Montana, and the Dakotas. Northern warmth was particularly impressive during the first half of January, followed by modest, late-month cold outbreaks. In fact, near- or above-normal temperatures covered the entire country, except for pockets of colder-than-normal weather in the Rockies and Southwest.

Meanwhile, drought coverage remained nearly steady in January at 45 to 46 percent of the Lower 48 States, according to the *U.S. Drought Monitor*, down slightly from a December 2020 peak of 49.6 percent. During the second half of January, Western storms provided some limited drought relief in the Pacific Coast States and parts of the Southwest. The most impressive storm to strike the West was a sprawling, slow-moving, late-month system, which primarily impacted California but also affected other areas. During a 10-day period ending in early February, the average water equivalency of the high-elevation Sierra Nevada snowpack increased from 6 to nearly 13 inches—but was still only 70 percent of normal at the end of the stormy period—according to the California Department of Water Resources. Dry conditions persisted through the end of January, however, across the northern Plains, leading to drought expansion and intensification.

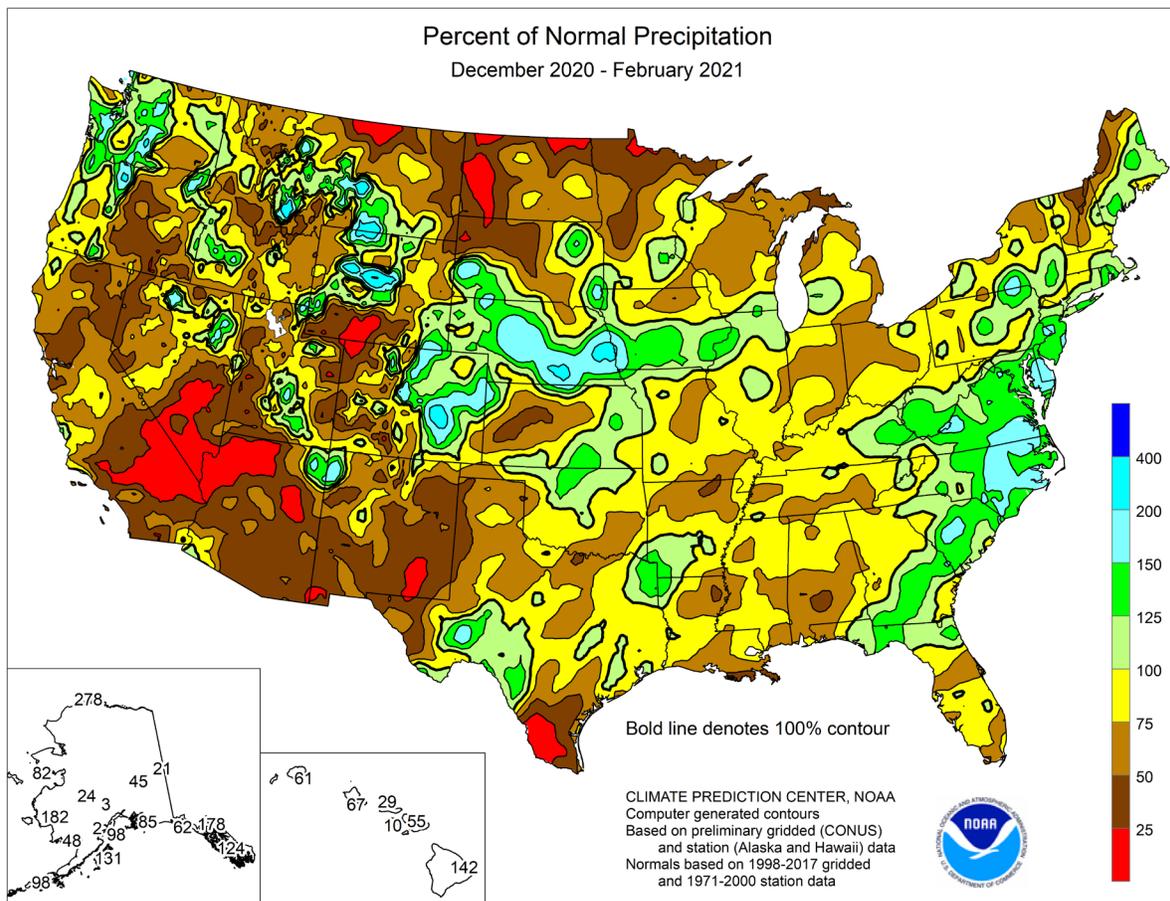
By January 24, USDA/NASS categorized statewide topsoil moisture as being at least one-half very short to short throughout the Great Plains, except in Oklahoma (40 percent). Wyoming led the region with topsoil moisture rated 90 percent very short to short on that date, followed by Colorado (79 percent), North Dakota (75 percent), South Dakota (62 percent), Nebraska (60 percent), Montana (57 percent), Kansas (55 percent), and Texas (51 percent). In some areas, winter wheat condition reflected the lack of moisture, despite few temperature extremes. Among the Plains' major winter wheat production states, Texas led on January 24 with 41 percent of its crop rated very poor to poor, followed by Colorado (36 percent) and Kansas (24 percent).

Across the central Plains, however, a late-month storm—peaking on January 25—delivered heavy snow and beneficial moisture. The storm propelled Lincoln, Nebraska, to its snowiest January on record, with a monthly total of 18.9 inches. Periods of precipitation also fell in the Corn Belt, especially on January 25-26 and 30-31, although parts of the upper Midwest remained mostly dry. Several storms crossed the South and East, with some of the heaviest precipitation falling from western Florida to the middle Atlantic Coast. In contrast, near-record January dryness covered much of Florida's peninsula.

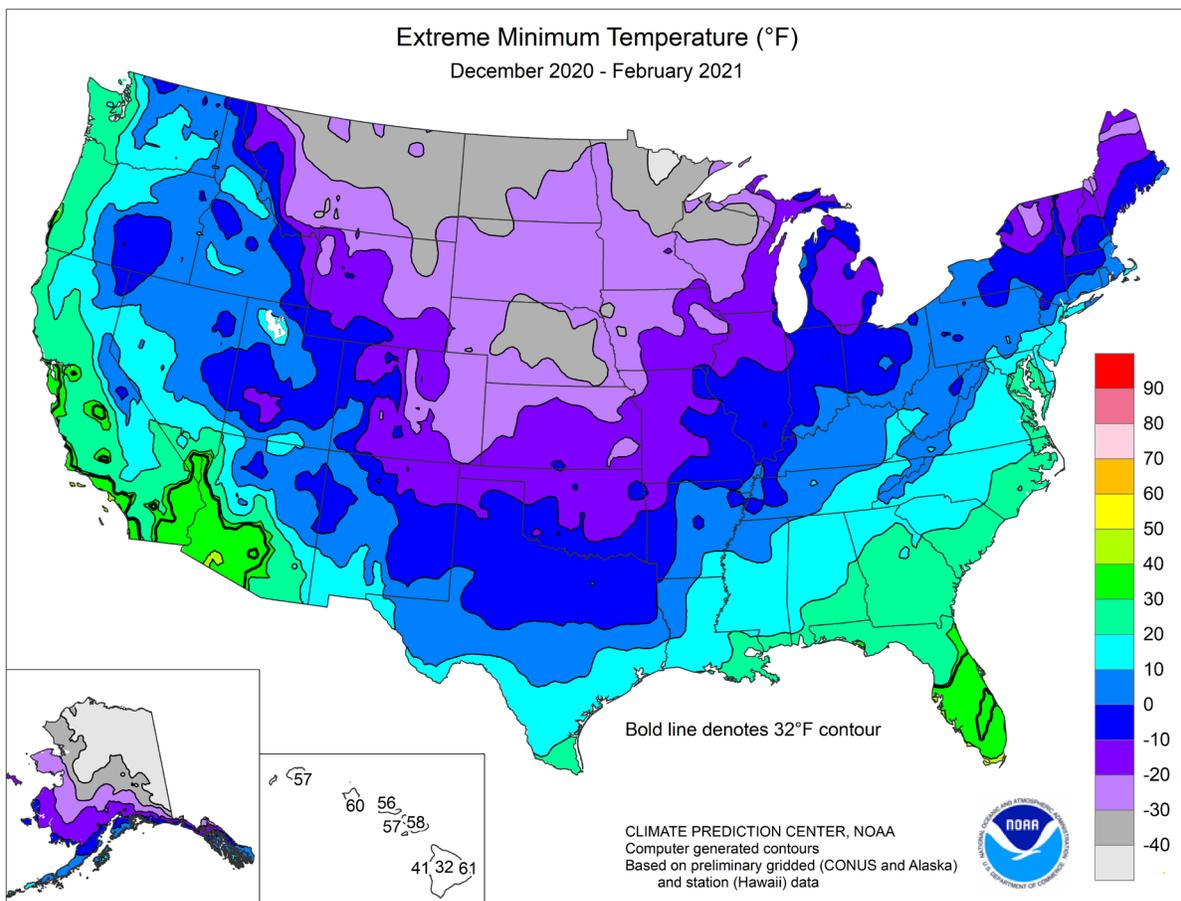
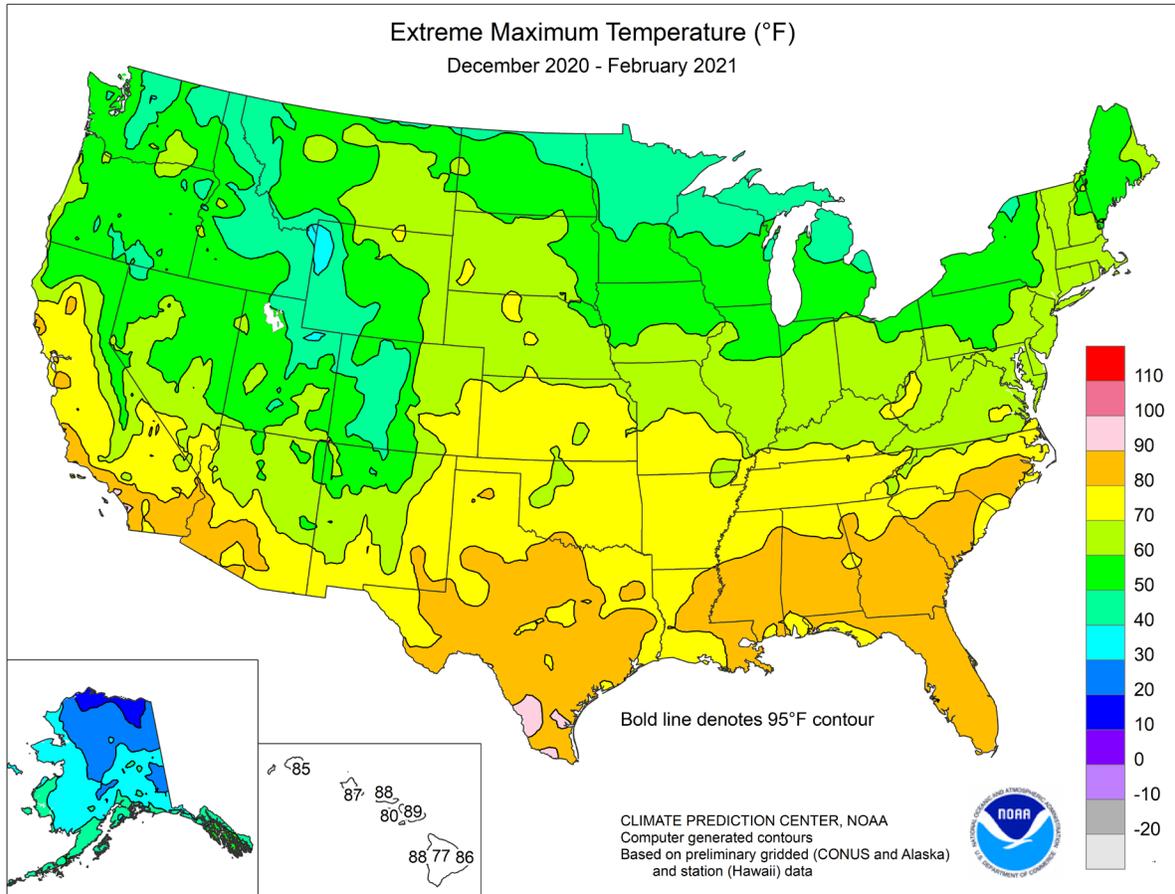
**February:** A complete summary appeared in the *Weekly Weather and Crop Bulletin* dated March 9, 2021.

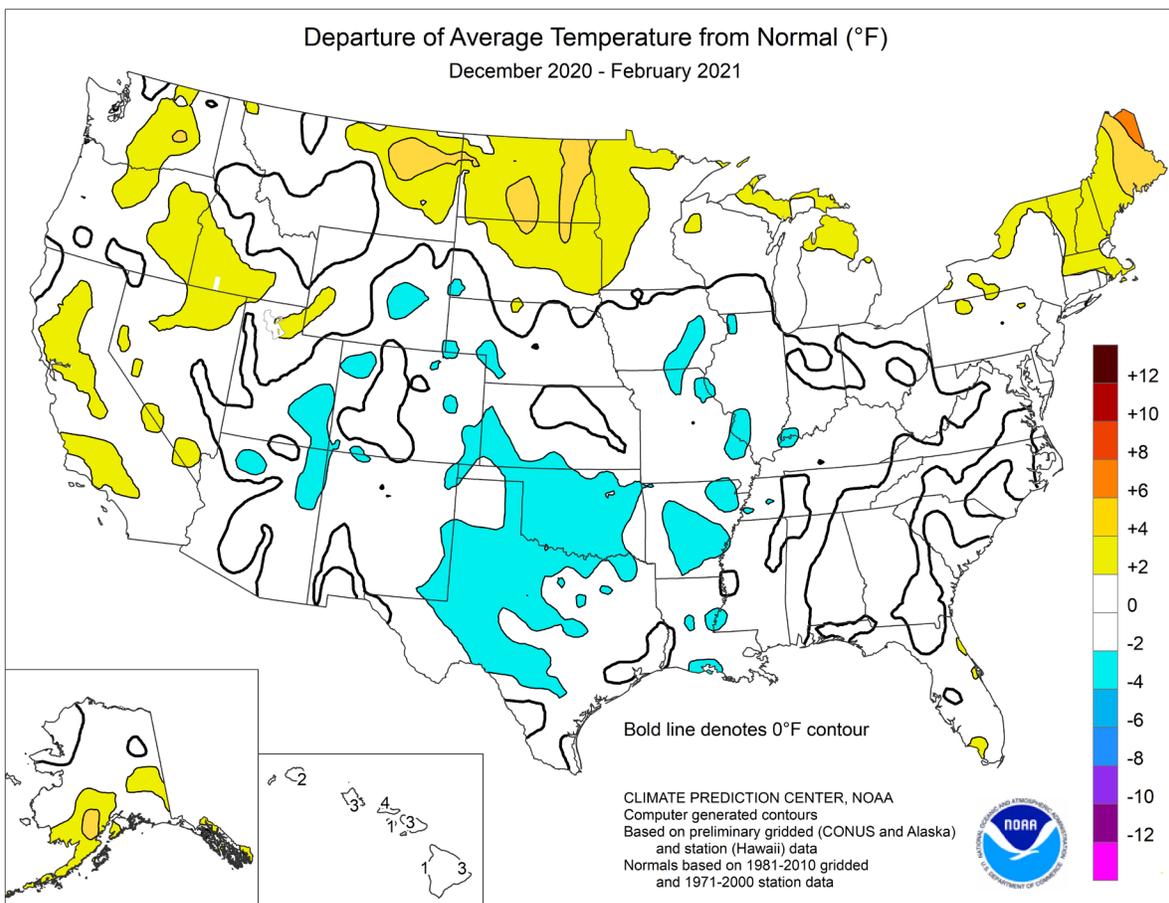
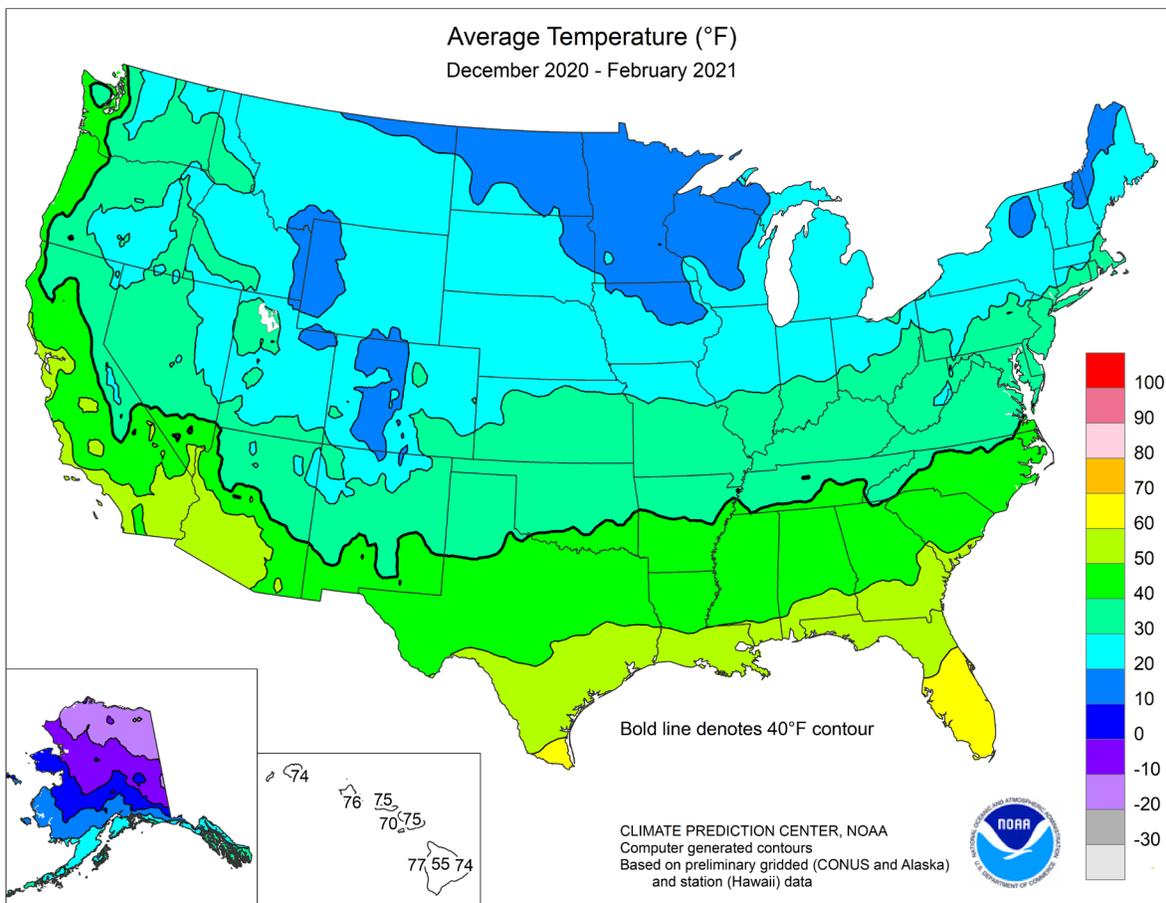


CPC gridded precipitation data supplemented with AHPS (water.weather.gov/precip/) for quality control purposes



CPC gridded precipitation data supplemented with AHPS (water.weather.gov/precip/) for quality control purposes





National Weather Data for Selected Cities

Winter 2020-21

Data Provided by Climate Prediction Center

STATES AND STATIONS	TEMP, °F		PRECIP.		STATES AND STATIONS	TEMP, °F		PRECIP.		STATES AND STATIONS	TEMP, °F		PRECIP.	
	AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE
AK ANCHORAGE	20	1	3.03	0.43	WICHITA	33	-1	4.54	1.30	TOLEDO	29	1	4.56	-2.22
BARROW	-10	0	1.35	0.86	KY LEXINGTON	33	-2	11.93	1.67	YOUNGSTOWN	30	2	7.03	-0.63
FAIRBANKS	-3	-5	1.59	-0.07	LOUISVILLE	37	-1	12.11	1.93	OK OKLAHOMA CITY	37	-4	4.92	0.06
JUNEAU	32	3	23.42	8.09	PADUCAH	37	0	11.11	-1.08	TULSA	38	-2	6.41	0.42
KODIAK	33	2	30.43	7.25	LA BATON ROUGE	52	-4	11.57	-3.72	OR ASTORIA	44	0	36.25	8.94
NOME	8	1	2.44	-0.58	LAKE CHARLES	52	-1	9.18	-4.19	BURNS	29	3	4.12	0.32
AL BIRMINGHAM	46	0	10.65	-3.21	NEW ORLEANS	55	0	10.63	-5.07	EUGENE	44	3	15.88	-4.25
HUNTSVILLE	42	-1	12.25	-3.27	SHREVEPORT	48	-1	14.06	0.30	MEDFORD	42	1	6.57	-1.34
MOBILE	51	-1	9.60	-6.25	MA BOSTON	32	1	8.48	-1.86	PENDELTON	37	1	3.93	-0.11
MONTGOMERY	50	1	7.05	-7.76	WORCESTER	29	2	15.97	5.48	PORTLAND	44	2	15.86	1.82
AR FORT SMITH	40	-1	7.19	-1.63	MD BALTIMORE	37	2	11.41	2.17	SALEM	43	1	19.24	1.85
LITTLE ROCK	41	-2	12.26	0.07	ME CARIBOU	21	7	6.17	-1.98	PA ALLENTOWN	31	1	10.49	1.24
AZ FLAGSTAFF	31	0	4.78	-1.28	PORTLAND	28	3	8.78	-1.85	ERIE	32	2	9.15	0.13
PHOENIX	58	1	0.89	-1.91	MI ALPENA	24	3	2.67	-2.07	MIDDLETOWN	35	3	10.50	2.04
PRESCOTT	39	-1	1.98	-1.54	GRAND RAPIDS	27	0	4.77	-1.59	PHILADELPHIA	36	1	10.72	1.54
TUCSON	55	2	0.96	-1.88	HOUGHTON LAKE	22	2	3.62	-0.77	PITTSBURGH	30	0	7.92	0.00
CA BAKERSFIELD	52	3	1.39	-2.06	LANSING	26	0	4.96	-0.04	WILKES-BARRE	31	3	8.32	1.27
EUREKA	46	-2	12.79	-7.46	MUSKEGON	28	1	5.61	-0.78	WILLIAMSPORT	31	2	9.83	1.89
FRESNO	51	3	4.78	-1.24	TRAVERSE CITY	27	4	1.35	-5.41	RI PROVIDENCE	33	2	12.88	1.55
LOS ANGELES	58	1	3.53	-4.45	MN DULUTH	15	2	1.91	-1.11	SC CHARLESTON	50	0	10.74	1.03
REDDING	49	2	8.46	-8.89	INT_L FALLS	12	4	1.54	-0.49	COLUMBIA	46	0	14.47	4.12
SACRAMENTO	50	2	4.95	-5.34	MINNEAPOLIS	20	1	2.13	-0.75	FLORENCE	47	0	15.35	6.26
SAN DIEGO	58	1	2.49	-3.29	ROCHESTER	18	0	1.80	-1.19	GREENVILLE	43	-1	11.32	-0.56
SAN FRANCISCO	54	3	5.45	-6.87	ST. CLOUD	17	2	1.62	-0.48	SD ABERDEEN	21	6	0.90	-0.68
STOCKTON	51	4	6.70	-0.77	MO COLUMBIA	32	0	4.84	-1.76	HURON	22	3	1.04	-0.61
CO ALAMOSA	20	2	0.87	-0.14	KANSAS CITY	32	0	4.25	0.17	RAPID CITY	26	0	0.89	-0.38
CO SPRINGS	31	0	1.94	0.80	SAINT LOUIS	33	-1	7.02	-0.44	SIoux FALLS	22	3	1.80	-0.08
DENVER INTL	31	0	1.52	0.28	SPRINGFIELD	34	-1	6.66	-1.33	TN BRISTOL	39	1	12.00	1.89
GRAND JUNCTION	30	0	0.98	-0.72	MS JACKSON	47	0	10.76	-4.13	CHATTANOOGA	44	2	12.57	-2.11
PUEBLO	31	0	1.20	0.04	MERIDIAN	47	0	11.24	-4.58	KNOXVILLE	40	0	10.49	-2.65
CT BRIDGEPORT	34	2	9.52	0.35	TUPELO	44	0	13.63	-2.11	MEMPHIS	42	-1	16.30	2.18
HARTFORD	30	1	10.46	0.98	MT BILLINGS	28	1	1.65	0.15	NASHVILLE	41	1	10.54	-1.39
DC WASHINGTON	39	1	11.16	2.69	BUTTE	22	2	0.97	-0.49	TX ABILENE	45	-1	3.38	-0.25
DE WILMINGTON	35	1	11.44	2.33	CUT BANK	23	0	0.34	-0.41	AMARILLO	36	-2	1.20	-0.81
FL DAYTONA BEACH	60	0	4.72	-3.39	GLASGOW	22	6	0.20	-0.94	AUSTIN	52	-1	5.23	-1.39
JACKSONVILLE	55	0	9.40	0.15	GREAT FALLS	26	1	0.99	-0.57	BEAUMONT	53	-1	11.26	-2.87
KEY WEST	71	1	2.84	-2.91	HAVRE	23	3	0.91	-0.23	BROWNSVILLE	63	0	2.14	-1.39
MIAMI	70	1	4.96	-0.96	MISSOULA	28	1	2.15	-0.51	CORPUS CHRISTI	58	-1	3.44	-1.87
ORLANDO	62	0	3.87	-3.40	NC ASHEVILLE	40	1	11.39	0.41	DEL RIO	55	2	1.88	-0.11
PENSACOLA	54	1	10.47	-3.82	CHARLOTTE	43	1	11.85	1.92	EL PASO	47	0	0.74	-0.97
TALLAHASSEE	53	0	13.43	0.34	GREENSBORO	40	-1	13.33	4.40	FORT WORTH	46	-2	6.07	-1.27
TAMPA	63	1	7.21	-0.28	HATTERAS	48	1	20.72	7.13	GALVESTON	57	0	6.19	0.00
WEST PALM BEACH	69	1	5.15	-4.12	RALEIGH	42	-1	16.63	6.91	HOUSTON	54	0	8.56	-1.70
GA ATHENS	47	2	10.34	-1.89	WILMINGTON	48	0	12.98	2.06	LUBBOCK	40	-2	1.32	-0.89
ATLANTA	47	1	9.52	-3.24	ND BISMARCK	21	5	0.68	-0.81	MIDLAND	43	-2	1.02	-0.87
AUGUSTA	48	1	14.35	3.16	DICKINSON	22	4	0.00	-1.00	SAN ANGELO	46	-2	2.54	-0.65
COLUMBUS	49	0	11.32	-1.22	FARGO	16	4	1.17	-1.03	SAN ANTONIO	52	-1	3.14	-2.31
MACON	49	1	9.79	-2.88	GRAND FORKS	15	5	0.85	-0.85	VICTORIA	55	-1	4.10	-2.80
SAVANNAH	53	1	7.71	-1.66	JAMESTOWN	19	6	0.63	-0.70	WACO	47	-1	7.09	-0.38
HI HILO	74	3	42.94	12.55	NE GRAND ISLAND	27	0	2.42	0.55	WICHITA FALLS	42	-2	2.62	-1.90
HONOLULU	76	3	5.02	-2.47	LINCOLN	25	-2	2.74	0.34	UT SALT LAKE CITY	33	2	2.86	-1.06
KAHULUI	75	3	4.42	-3.65	NORFOLK	25	0	1.30	-0.84	VA LYNCHBURG	38	2	12.82	3.58
LIHUE	74	2	7.41	-4.68	NORTH PLATTE	26	0	2.54	1.19	NORFOLK	44	1	14.11	4.37
IA BURLINGTON	25	-3	3.55	-1.41	OMAHA	25	-1	3.33	0.67	RICHMOND	39	0	15.22	6.24
CEDAR RAPIDS	20	-3	1.59	-2.01	SCOTTSBLUFF	28	0	1.39	-0.19	ROANOKE	39	1	12.03	3.33
DES MOINES	24	-1	3.30	-0.43	VALENTINE	27	2	1.56	0.34	WASH/DULLES	36	1	11.87	3.53
DUBUQUE	20	-2	3.11	-1.35	NH CONCORD	26	3	8.17	-0.33	VT BURLINGTON	25	3	4.38	-1.81
SIoux CITY	22	0	2.13	0.02	NJ ATLANTIC_CITY	36	1	13.53	3.82	WA OLYMPIA	41	1	26.43	5.85
WATERLOO	20	-1	2.89	-0.20	NEWARK	35	1	10.80	0.65	QUILLAYUTE	42	0	42.24	4.30
ID BOISE	35	2	3.57	-0.26	NM ALBUQUERQUE	38	0	0.82	-0.61	SEATTLE-TACOMA	43	1	19.69	5.28
LEWISTON	37	1	2.80	-0.11	NV ELY	28	1	1.41	-0.66	SPOKANE	32	2	5.82	0.38
POCATELLO	28	3	2.36	-0.87	LAS VEGAS	51	1	0.13	-1.71	YAKIMA	35	3	2.94	-0.57
IL CHICAGO/O_HARE	27	1	4.86	-0.90	RENO	38	1	1.67	-1.46	WI EAU CLAIRE	19	1	0.83	-1.96
MOLINE	25	-1	5.91	0.63	WINNEMUCCA	33	2	2.49	0.02	GREEN BAY	22	3	1.87	-1.89
PEORIA	27	-1	5.50	-0.50	NY ALBANY	26	0	7.35	-0.32	LA CROSSE	21	1	1.81	-1.74
ROCKFORD	25	1	4.50	-0.26	BINGHAMTON	26	1	10.23	2.71	MADISON	20	-1	3.06	-1.35
SPRINGFIELD	28	-1	5.50	-0.64	BUFFALO	29	2	6.84	-2.67	MILWAUKEE	27	2	5.28	-0.15
IN EVANSVILLE	35	0	9.61	-0.35	ROCHESTER	28	1	5.28	-1.69	WV BECKLEY	33	0	21.85	13.32
FORT WAYNE	28	1	4.54	-2.53	SYRACUSE	29	2	7.08	-0.69	CHARLESTON	35	-1	10.63	1.23
INDIANAPOLIS	30	0	5.34	-2.74	OH AKRON-CANTON	30	2	6.31	-1.40	ELKINS	32	1	10.29	0.76
SOUTH BEND	28	1	5.91	-0.90	CINCINNATI	33	0	8.69	-0.41	HUNTINGTON	35	-1	11.26	1.96
KS CONCORDIA	31	1	1.81	-0.47	CLEVELAND	30	0	5.51	-2.59	WY CASPER	23	-2	2.00	0.40
DODGE CITY	33	-1	1.42	-0.72	COLUMBUS	31	-1	6.68	-1.22	CHEYENNE	28	-1	1.12	-0.25
GOODLAND	29	-2	1.50	0.09	DAYTON	31	1	5.35	-2.65	LANDER	23	1	0.85	-0.77
TOPEKA	32	0	3.84	0.27	MANSFIELD	29	1	5.80	-2.72	SHERIDAN	26	1	2.25	0.59

## International Weather and Crop Summary

March 14-20, 2021

International Weather and Crop Highlights and Summaries provided by USDA/WAOB

### HIGHLIGHTS

**EUROPE:** Cool, wet weather maintained good moisture supplies for barley, wheat, and rapeseed development but kept northeastern winter crops dormant.

**MIDDLE EAST:** Moderate to heavy rain in Turkey boosted moisture supplies for greening to vegetative wheat and barley.

**NORTHWESTERN AFRICA:** Timely rain in Algeria and Tunisia improved soil moisture for winter grains approaching or progressing through reproduction.

**EASTERN ASIA:** Warmer-than-normal weather across eastern and southern China continued to advance development of wheat and rapeseed at a rapid pace.

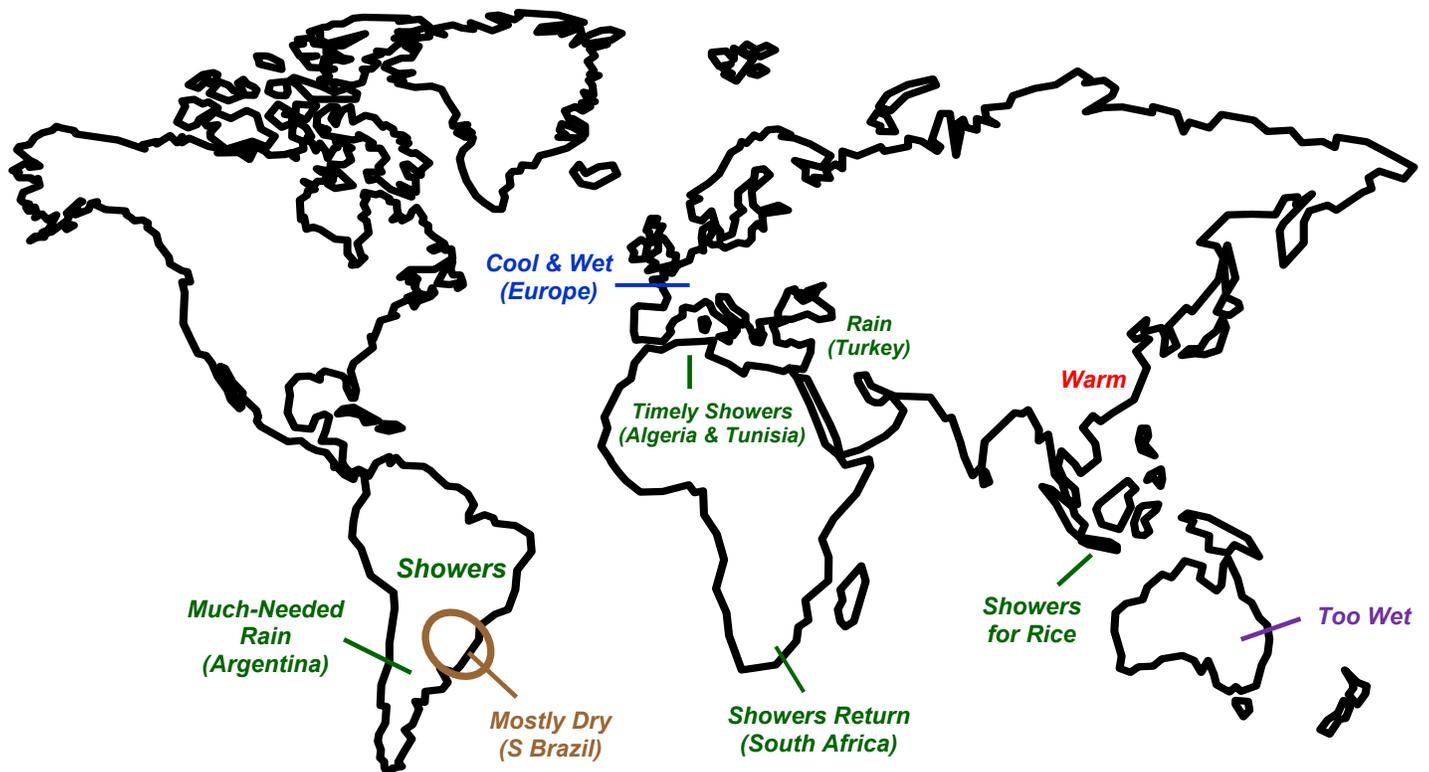
**SOUTHEAST ASIA:** Showers throughout Indonesia maintained ample moisture reserves for second-crop rice that will be sown in the coming weeks.

**AUSTRALIA:** Another round of soaking rain further impeded summer crop drydown and harvesting and caused local flooding.

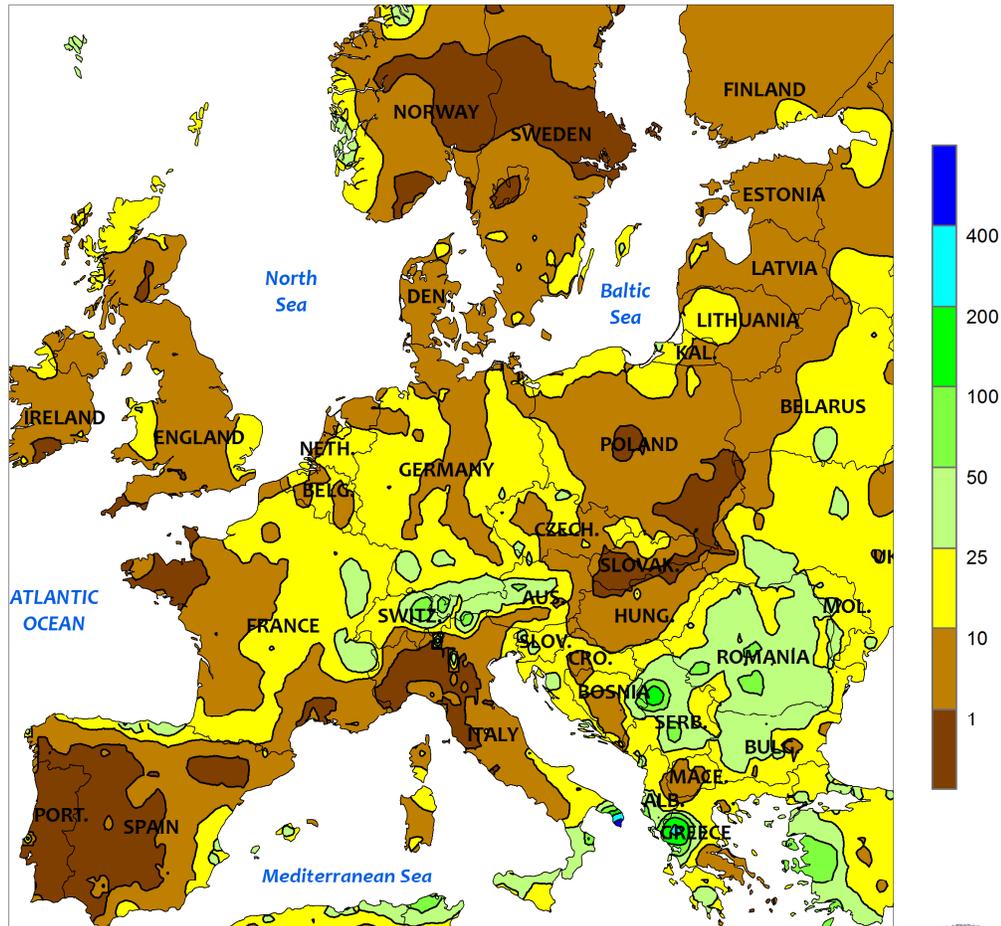
**SOUTH AFRICA:** Showers returned to western and southern sections of the corn belt.

**ARGENTINA:** Much-needed rain benefited later-planted corn and soybeans.

**BRAZIL:** Scattered showers benefited northern corn and cotton, but unseasonable dryness continued in southern farmlands.



EUROPE  
Total Precipitation (mm)  
March 14 - 20, 2021



CLIMATE PREDICTION CENTER, NOAA  
Computer generated contours  
Based on preliminary gridded data

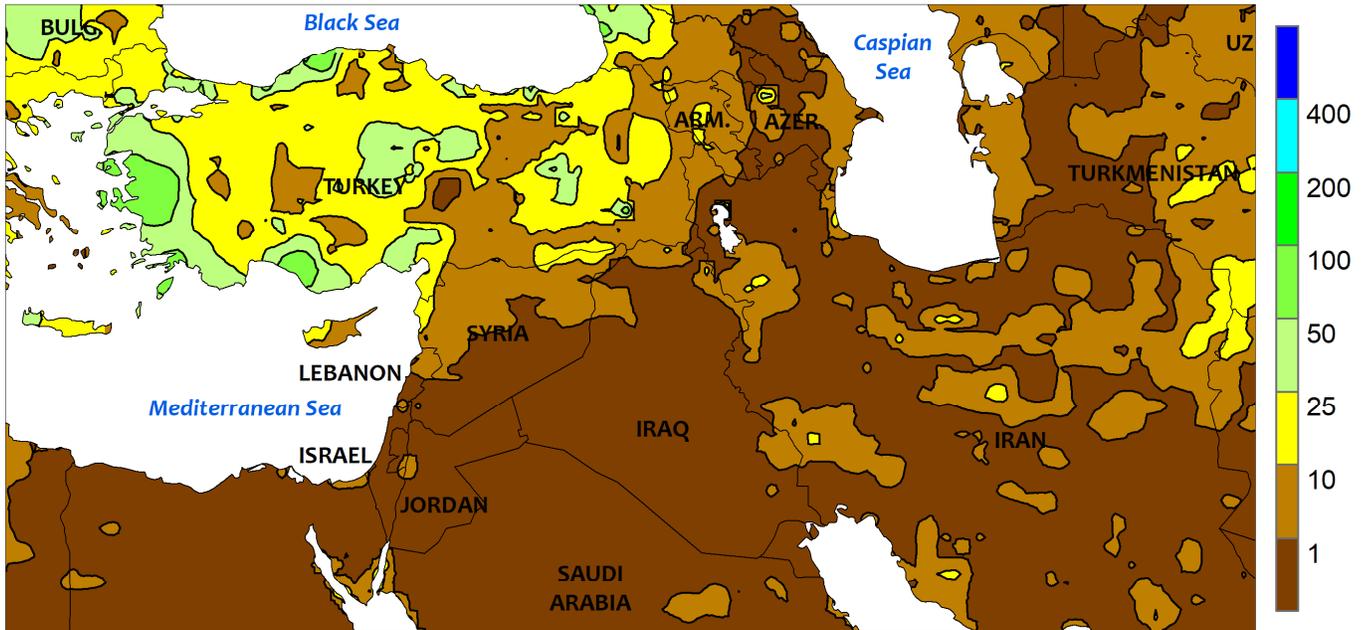


**EUROPE**

Cool, wet weather maintained overall good early season prospects for winter crops. For the second consecutive week, temperatures averaging 1 to 3°C below normal across most of the continent slowed early winter crop growth in France, Italy, and the Balkans and kept winter crops dormant or semi-dormant from Germany into the Baltic States. Widespread light to moderate showers (2-25 mm) over much of central and northern Europe maintained or improved soil moisture for winter grains and oilseeds, though pockets of short-term

dryness (30-day precipitation less than 50 percent of normal) lingered across western France and from northern Italy northeastward into Hungary and Poland. Moderate to heavy rain (10-60 mm) developed over the Balkans as the week progressed, eliminating the short-term dryness that had developed in this region. Overall, winter crop prospects remained favorable across most of Europe following a wet fall and winter, with good rains to start the spring further boosting early yield potential.

MIDDLE EAST  
Total Precipitation (mm)  
March 14 - 20, 2021



CLIMATE PREDICTION CENTER, NOAA  
Computer generated contours  
Based on preliminary gridded data

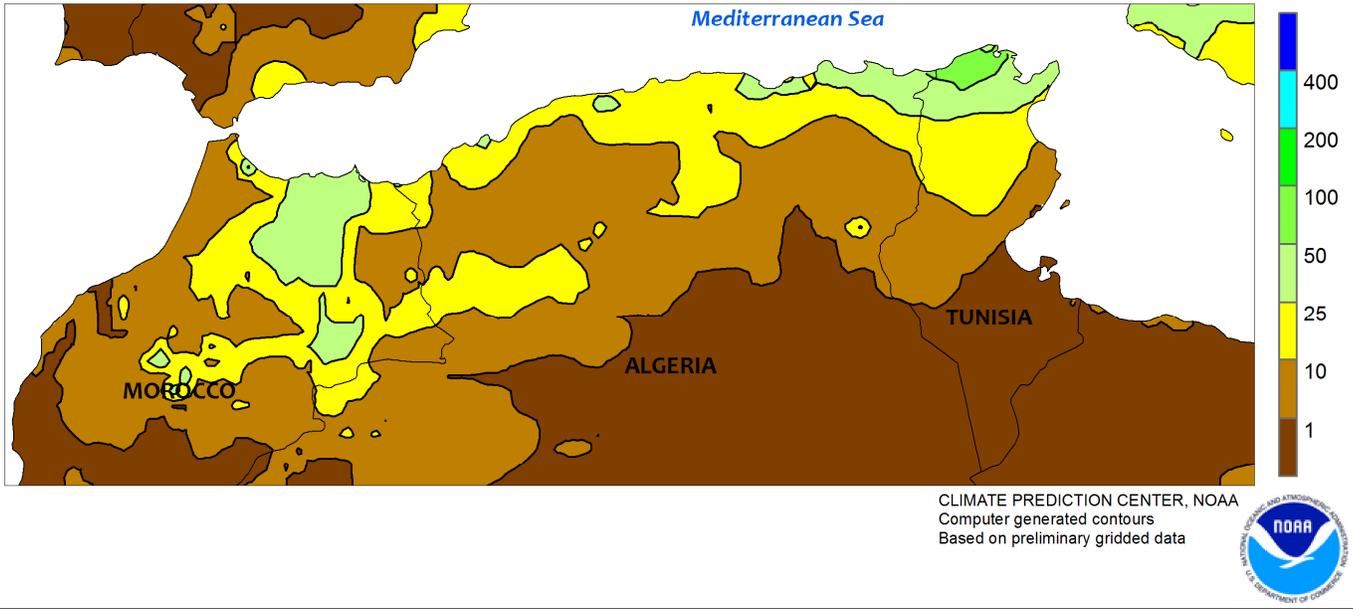


MIDDLE EAST

Additional rain further improved winter grain prospects in Turkey, while sunny skies and near- to above-normal temperatures elsewhere favored fieldwork and winter grain development. For the second consecutive week, widespread rain in Turkey (5-45 mm, more than 50 mm in the Aegean Region) improved soil moisture for greening (Anatolian Plateau) to vegetative (south and southeast) winter wheat and barley. In eastern Turkey, moderate to heavy rain and snow (10-35 mm liquid equivalent) provided a late-season boost to mountain snowpacks in the Armenian Highlands and improved spring runoff prospects for irrigated warm-season crops. Meanwhile, the rest of the region was dry and warm (1-5°C above normal), though a few light showers (1-10 mm)

spilled into northern-most portions of Syria and Iraq as well as parts of western Iran. Winter grains were vegetative across many of these central and eastern croplands but approaching or entering reproduction in the south. The satellite-derived Vegetation Health Index (VHI) continued to depict very poor conditions in eastern Syria; the poor VHI in Syria could be a function of localized drought, logistical difficulties, or a combination of both. In Turkey, the impacts of autumn drought continued to linger in the VHI, especially on the Anatolian Plateau. Farther east, the latest VHI indicated good to excellent conditions across much of Iraq — save for locales near the Syrian border — as well as much of western and southern Iran.

NORTHWESTERN AFRICA  
 Total Precipitation (mm)  
 March 14 - 20, 2021

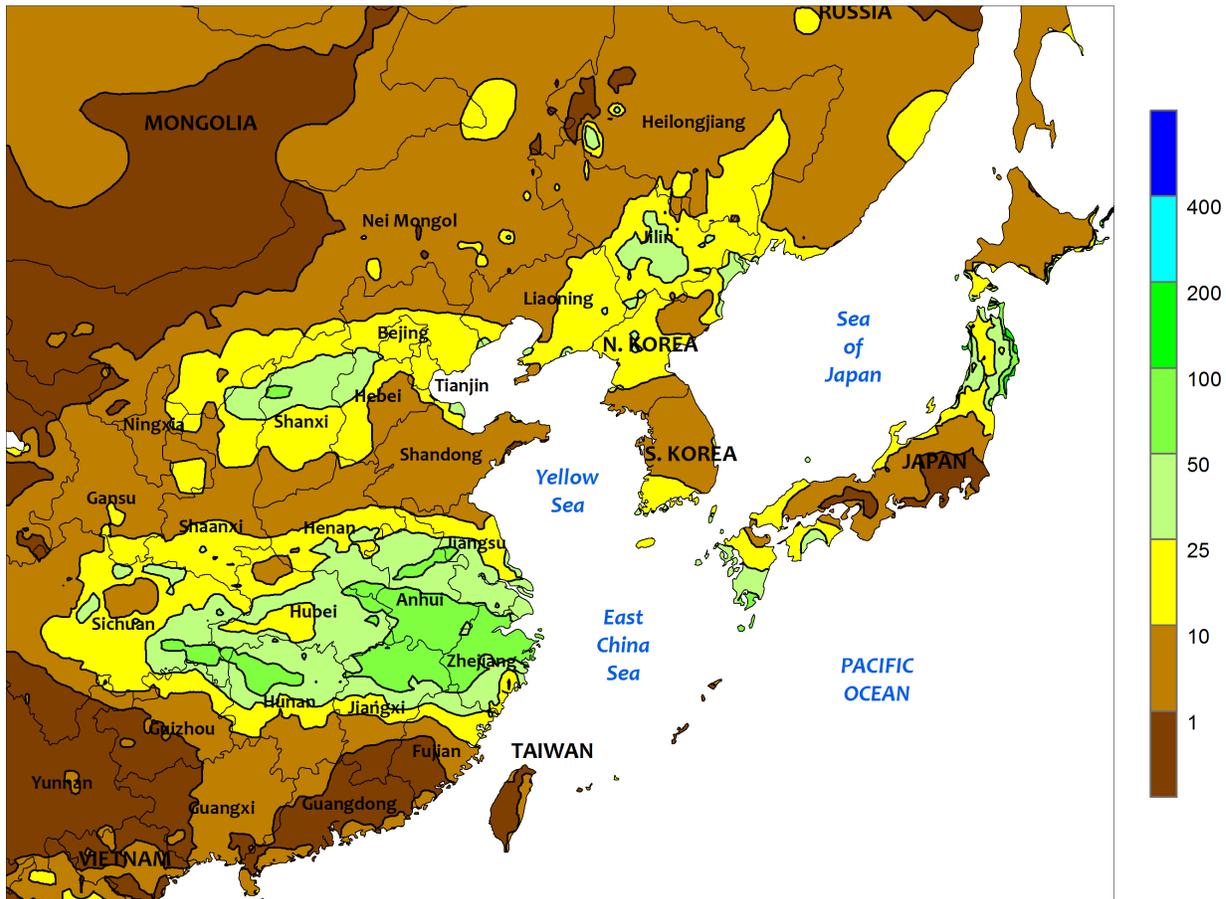


**NORTHWESTERN AFRICA**

Timely rain in central and eastern growing areas eased dryness concerns and boosted moisture supplies for winter wheat and barley. After a very dry January and February in Algeria and Tunisia, showers during the 7-day monitoring period totaled 5 to 50 mm (locally more in northern Tunisia); the rain — accompanied by temperatures up to 3°C below normal — sustained a wetter pattern that began in early March and has been coincident with winter grains approaching or entering reproduction. Meanwhile, conditions in Morocco varied from additional showers in

the north (3-50 mm) to sunny and cool (near-normal temperatures) in the west and south. The latest satellite-derived Vegetation Health Index (VHI) continued to indicate Moroccan winter grain prospects are much better than average and vastly improved over last year’s drought-afflicted crops. Farther east, the VHI has improved over the past several weeks in response to the recent uptick in shower activity, and vast stretches of farmland from Algeria into Tunisia are now better than last year and on par with or better than the long-term average.

EASTERN ASIA  
Total Precipitation (mm)  
March 14 - 20, 2021



CLIMATE PREDICTION CENTER, NOAA  
Computer generated contours  
Based on preliminary gridded data

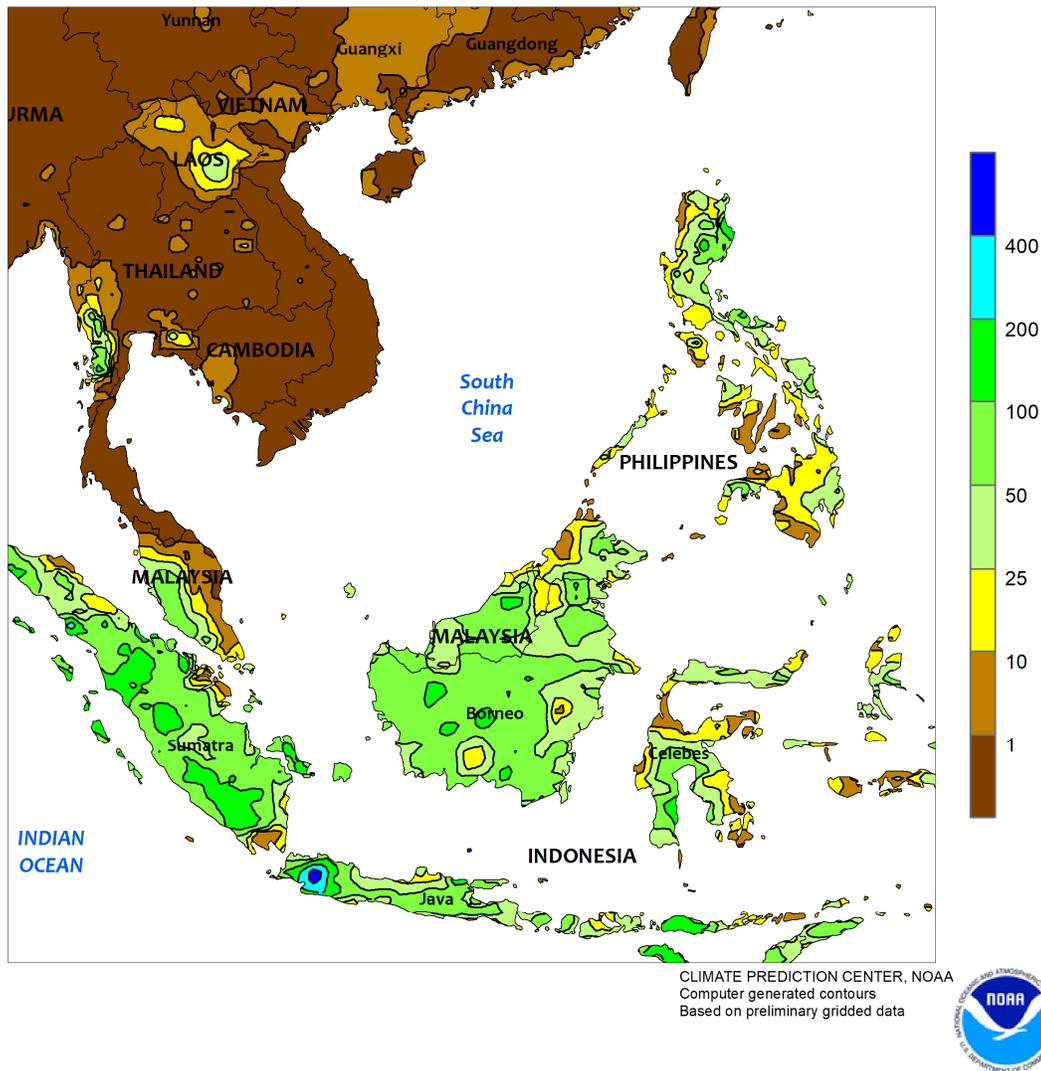


**EASTERN ASIA**

Unseasonably warm weather (temperatures averaging 1-5°C above normal) continued across eastern and southern China, promoting development of crops. On the North China Plain, wheat was vegetative and over three weeks ahead of the long-term average but on par with last year’s development. In the Yangtze Valley, rapeseed was starting

to flower nearly two weeks earlier than normal but also on par with last year’s development. Additionally, the warmth aided early-crop rice establishment in the southern provinces. Furthermore, showers (25-50 mm) in the Yangtze Valley and southern sections of the North China Plain maintained adequate soil moisture for crops.

SOUTHEAST ASIA  
Total Precipitation (mm)  
March 14 - 20, 2021

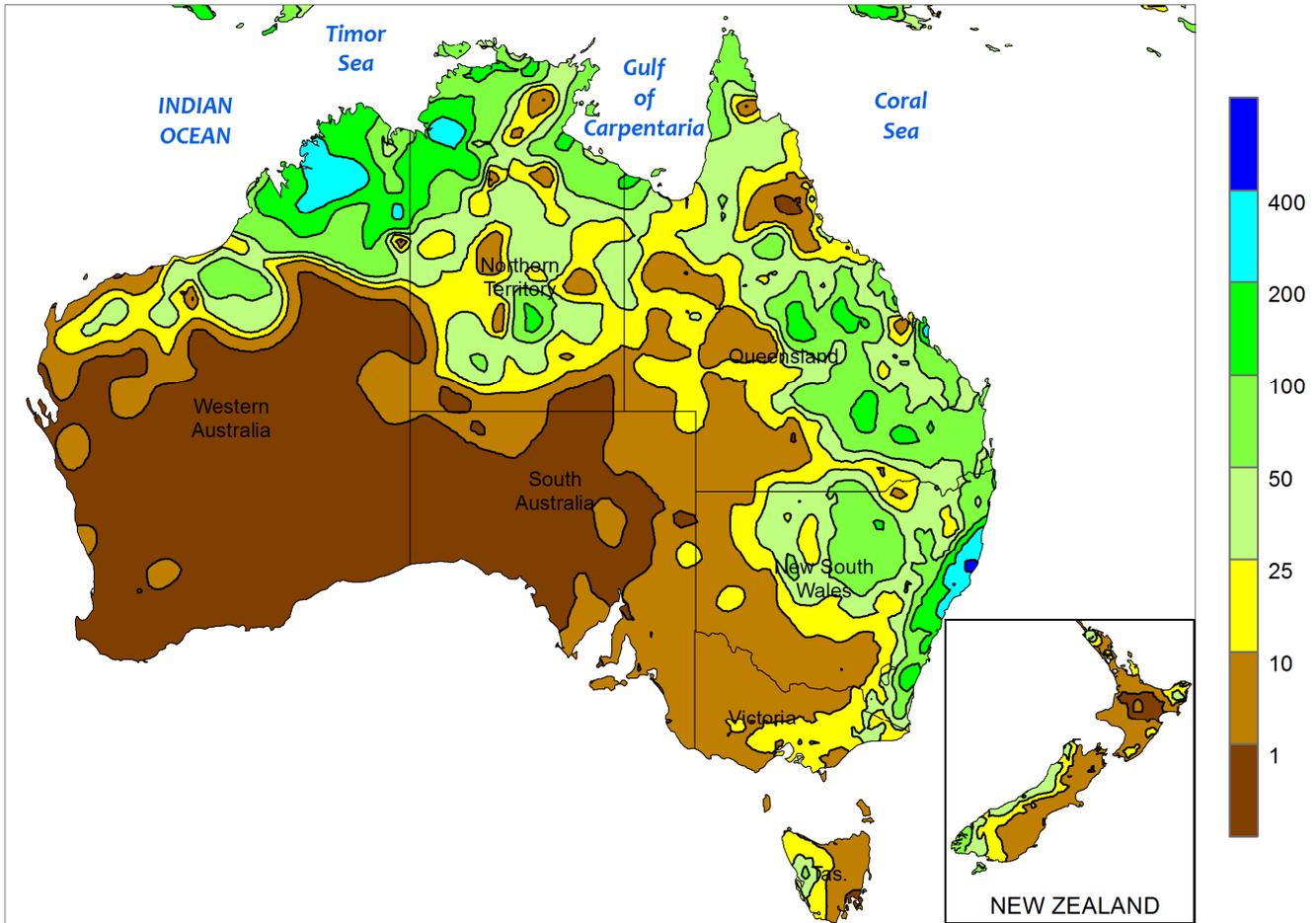


**SOUTHEAST ASIA**

Widespread showers continued across southern- and eastern-most portions of the region. In Indonesia, rainfall totals were between 25 and 50 mm in Java and up to 100 mm in Sumatra and Kalimantan, boosting soil moisture for oil palm and moisture reserves for second-crop rice sowing that begins in April. Malaysia received similar rainfall amounts, but they were far more localized, leaving

most oil palm areas with short-term dryness. Meanwhile in the Philippines, wet weather remained concentrated in the eastern regions (25-100 mm), maintaining favorable moisture supplies for spring-grown rice and corn. Elsewhere, seasonal heat (daytime temperatures over 35°C) continued to build in Thailand and environs, as dry-season rice harvesting continued.

AUSTRALIA  
Total Precipitation (mm)  
March 14 - 20, 2021



Gridded data from the Australian Bureau of Meteorology: [www.bom.gov.au/](http://www.bom.gov.au/)  
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<https://creativecommons.org/licenses/by/3.0/au/legalcode>

CLIMATE PREDICTION CENTER, NOAA  
Computer generated contours  
Based on preliminary gridded data

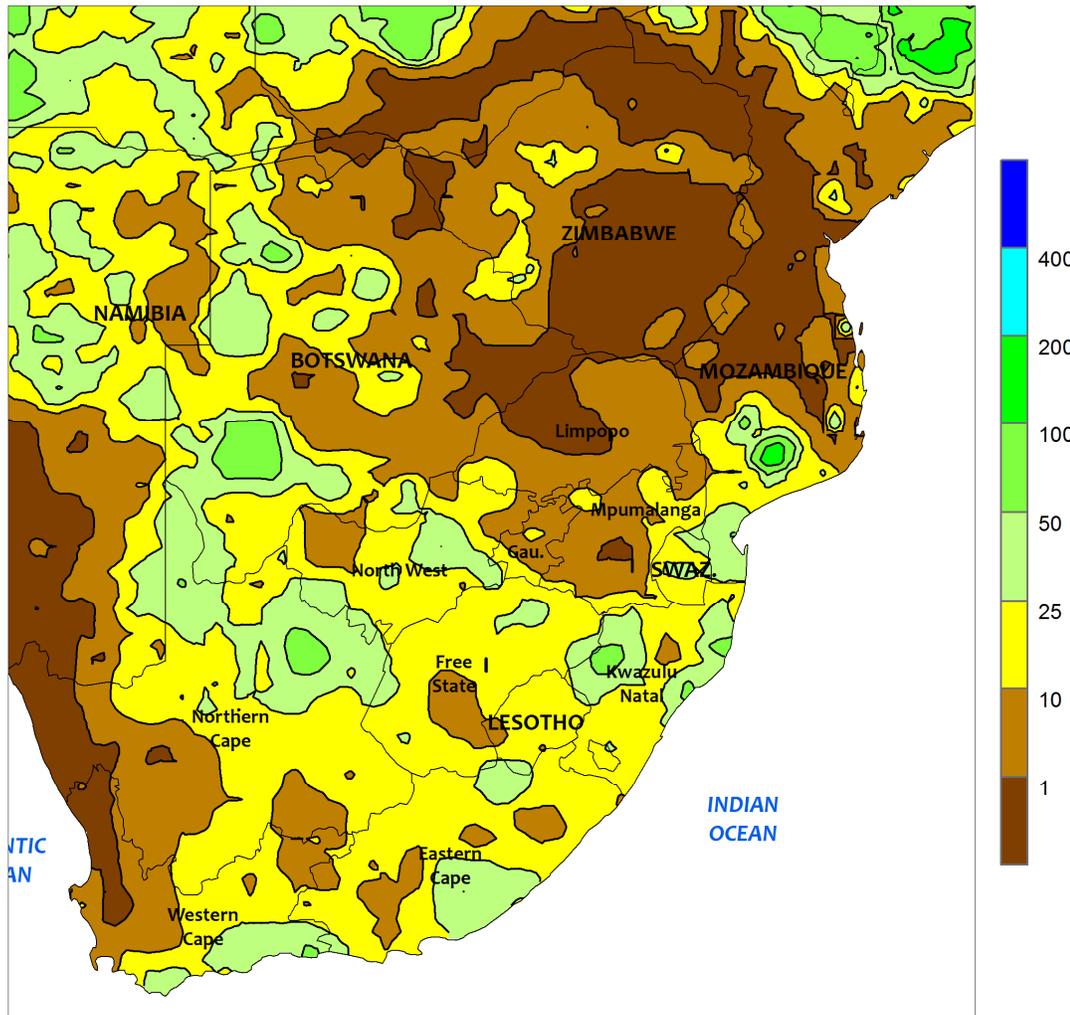


**AUSTRALIA**

Another round of soaking rain (25-100 mm) overspread southern Queensland and northern New South Wales, maintaining unfavorably wet conditions for maturing summer crops and causing local flooding. The rain further impeded drydown and harvesting and may have reduced the quality of some open boll cotton and other crops. Although the rain was

unfavorable for maturing summer crops, the wet weather helped fill the soil moisture profile in advance of wheat and other winter crop planting, which typically begins in mid-April each year. Relatively cool weather (temperatures averaging 2-4°C below normal) accompanied the rainfall, with maximum temperatures in the upper 20s (degrees C) in most areas.

SOUTH AFRICA  
 Total Precipitation (mm)  
 March 14 - 20, 2021



CLIMATE PREDICTION CENTER, NOAA  
 Computer generated contours  
 Based on preliminary gridded data

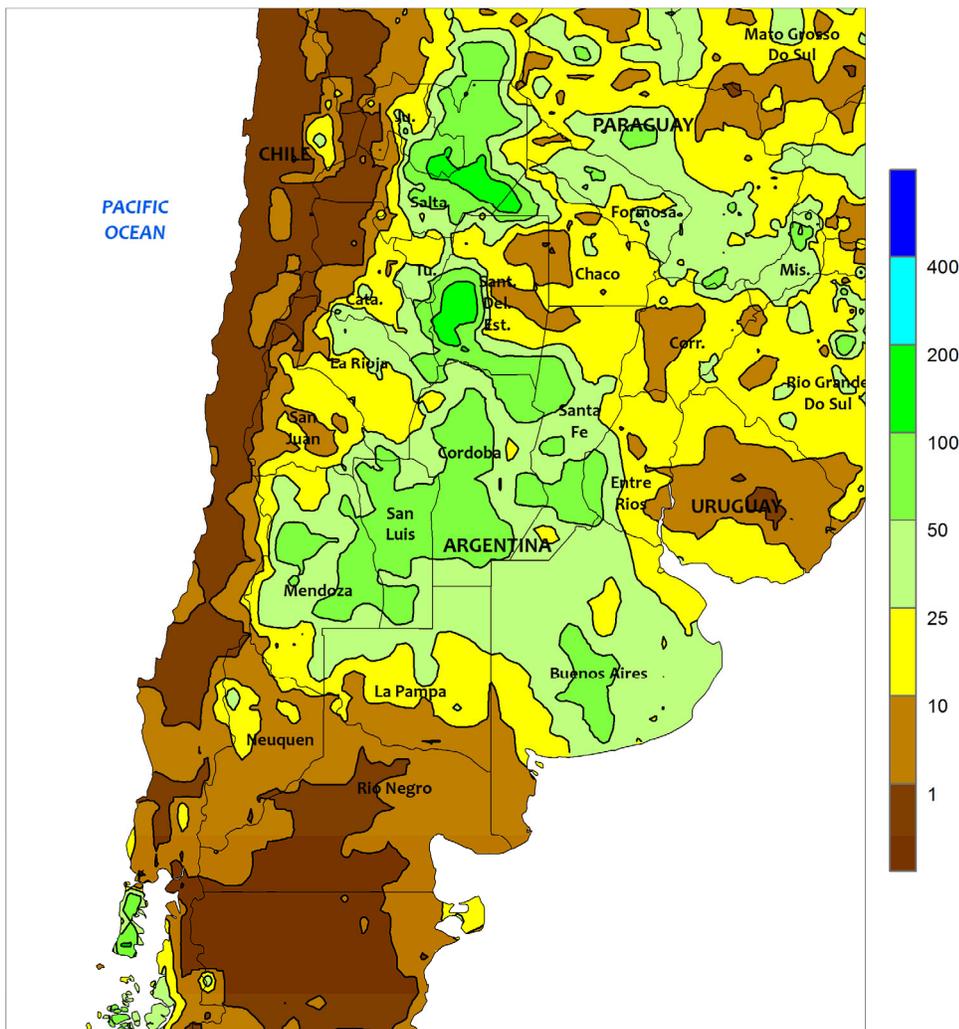


**SOUTH AFRICA**

Showers returned to much of the corn belt, increasing moisture for immature summer crops following several weeks of dryness. Rainfall totaled 10 to 50 mm over much of North West and from eastern Free State eastward across northern KwaZulu-Natal and southern Mpumalanga; drier weather prevailed farther north despite a few scattered showers. The moisture was particularly timely in western farmlands, where crops are traditionally planted in December and some later plantings may still benefit. Weekly temperatures generally averaged within 1°C of

normal, with highest daytime values ranging from the upper 20s to lower 30s (degrees C); slightly higher temperatures (35°C or higher) were recorded in the irrigated sugarcane region of eastern Mpumalanga and northeastern KwaZulu-Natal. Elsewhere, moderate to heavy rain (10-50 mm) also fell in the Orange River Valley, and along the Indian Coast. While giving a late-season boost in moisture to irrigated corn, cotton, and sugarcane, the showers in Western Cape was untimely for maturing tree and vine crops.

ARGENTINA  
Total Precipitation (mm)  
March 14 - 20, 2021



CLIMATE PREDICTION CENTER, NOAA  
Computer generated contours  
Based on preliminary gridded data

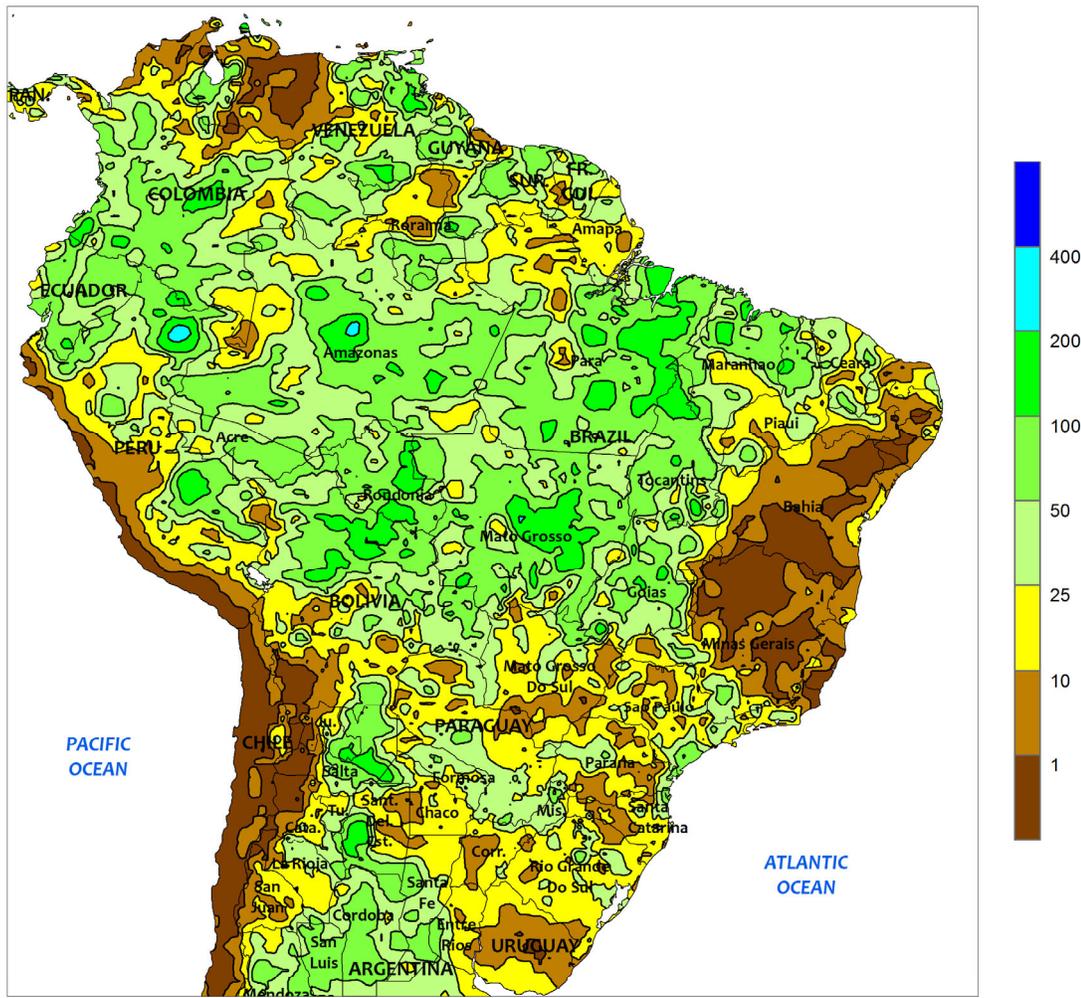


**ARGENTINA**

Much-needed rain overspread nearly all major agricultural districts, greatly increasing moisture for late summer crop development but coming too late for most corn and soybeans. Rainfall totaled 25 to 100 mm from southern Buenos Aires northward. Lighter amounts (10-25 mm) were confined to outlying farming areas, including southwestern Buenos Aires and parts of the northeast (northeastern Buenos Aires to Corrientes). The moisture ushered cooler weather into the region, with weekly temperatures averaging up to 3°C below normal in and around Cordoba; nighttime lows drop below 5°C in Buenos

Aires but no freeze was recorded. Daytime highs mostly reached the upper 20s and lower 30s (degrees C) except for the far north (Chaco, Formosa, and environs), where daytime highs briefly approached 40°C. According to the government of Argentina, sunflower harvesting was 58 percent complete (versus 56 percent last year) as of March 18; harvesting jumped to 43 percent complete in Buenos Aires, 14 points ahead of last year's pace. Additionally, corn and first-crop soybeans were reportedly mostly in filling to maturing stages of development in the high-yielding farming areas of central Argentina.

BRAZIL  
Total Precipitation (mm)  
March 14 - 20, 2021



CLIMATE PREDICTION CENTER, NOAA  
Computer generated contours  
Based on preliminary gridded data



**BRAZIL**

Widely scattered showers benefited corn and cotton in Brazil’s main northern farming areas, although pockets of dryness developed in several states. Rainfall was highly variable from Mato Grosso and Mato Grosso do Sul eastward, ranging from less than 10 mm in spots to nearly 100 mm. Daytime highs reaching the lower 30s (degrees C) maintained high rates of crop growth as well as high evaporative losses. Conditions were also generally favorable for fieldwork; according to the government of Mato Grosso, corn was 98 percent planted and soybeans 92 percent harvested as of March 19. Mostly light rain (3-25 mm)

fell farther south, including much of the region stretching from southern Mato Grosso to Rio Grande do Sul. While supporting seasonal fieldwork delayed by earlier periods of wetness, late-developing soybeans could still benefit from March rainfall. According to the government of Rio Grande do Sul, soybeans were still 69 percent flowering to filling on March 18, with 5 percent harvested; the earlier-planted corn crop was 64 percent harvested. In Parana, first plantings of soybeans and corn were 58 and 64 percent harvested, respectively, as of March 15; second-crop corn was 72 percent planted.

