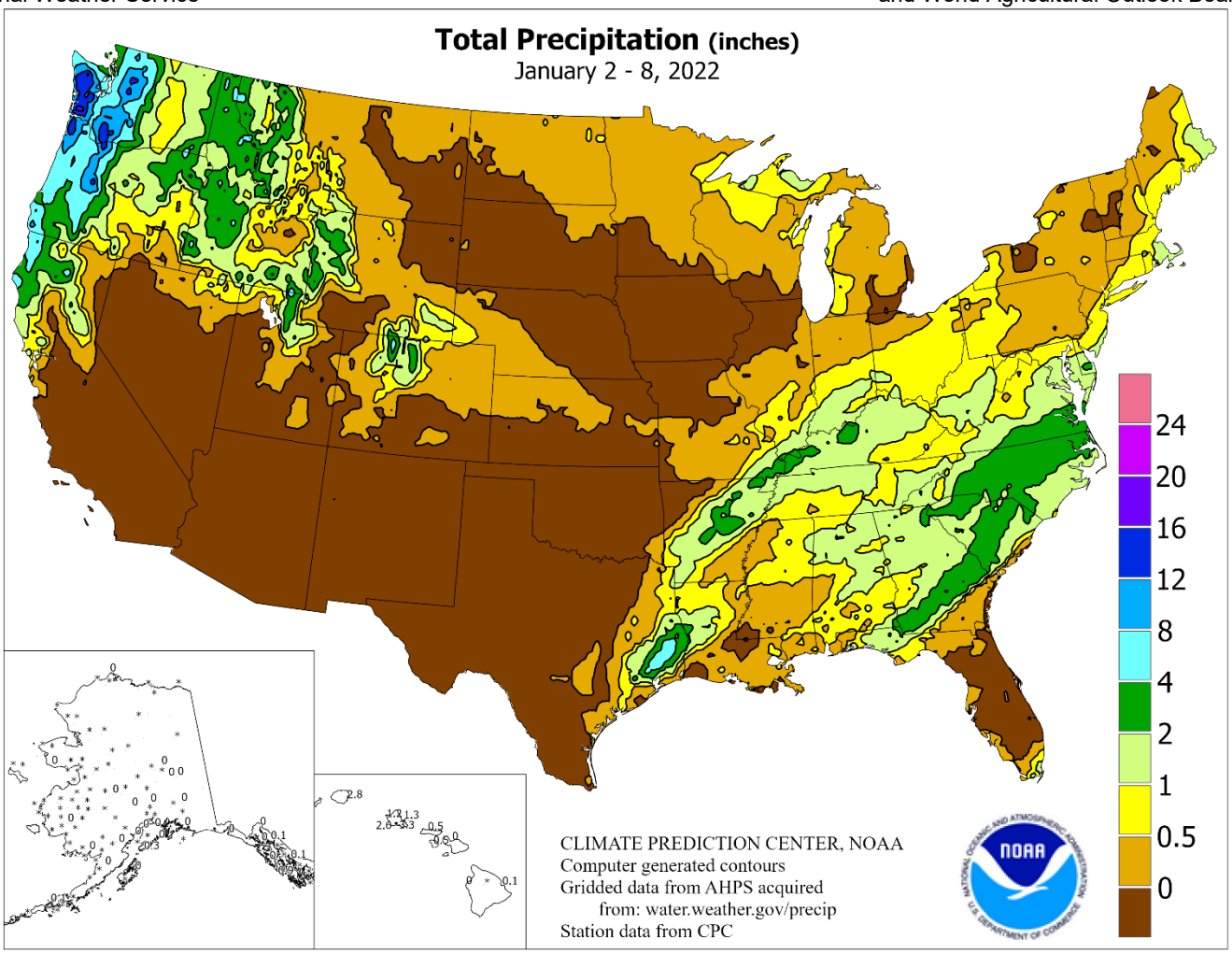
Volume 109, No. 2 www.usda.gov/oce/weather-drought-monitor January 11, 2022

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
January 2 – 8, 2022

Highlights provided by USDA/WAOB

Cold air settled across much of the country in early January, although warmth lingered along the **southern Atlantic Coast**. Weekly temperatures broadly averaged at least 10 to 20°F below normal across the **northern Plains** and **upper Midwest**, while readings averaged at least 10°F above normal in portions of the **southern Atlantic region**. Meanwhile, back-to-back storms delivered snow delivered snow in the **mid-Atlantic**; the second system also produced significant accumulations across the **interior Southeast**. Locally severe thunderstorms swept across the

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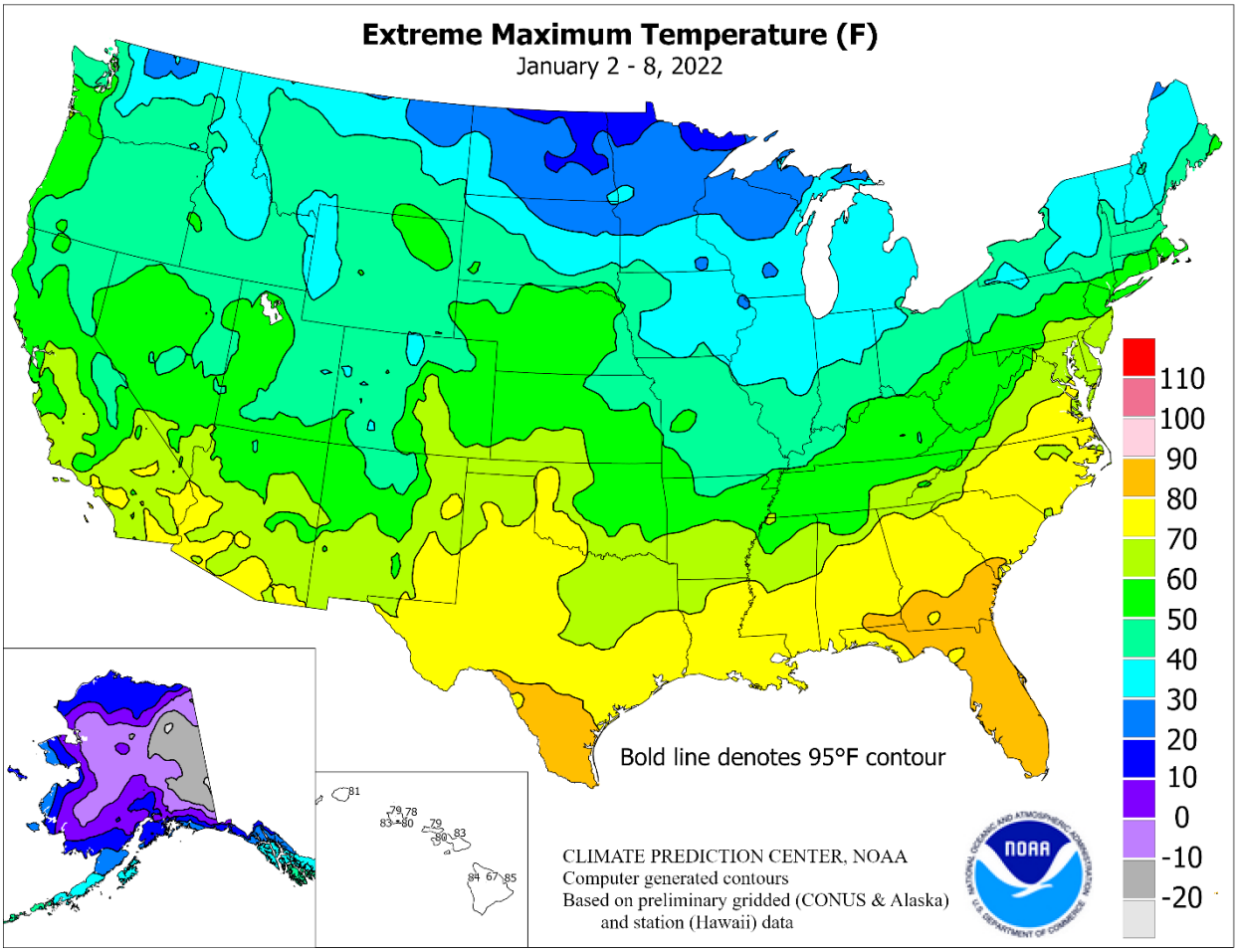
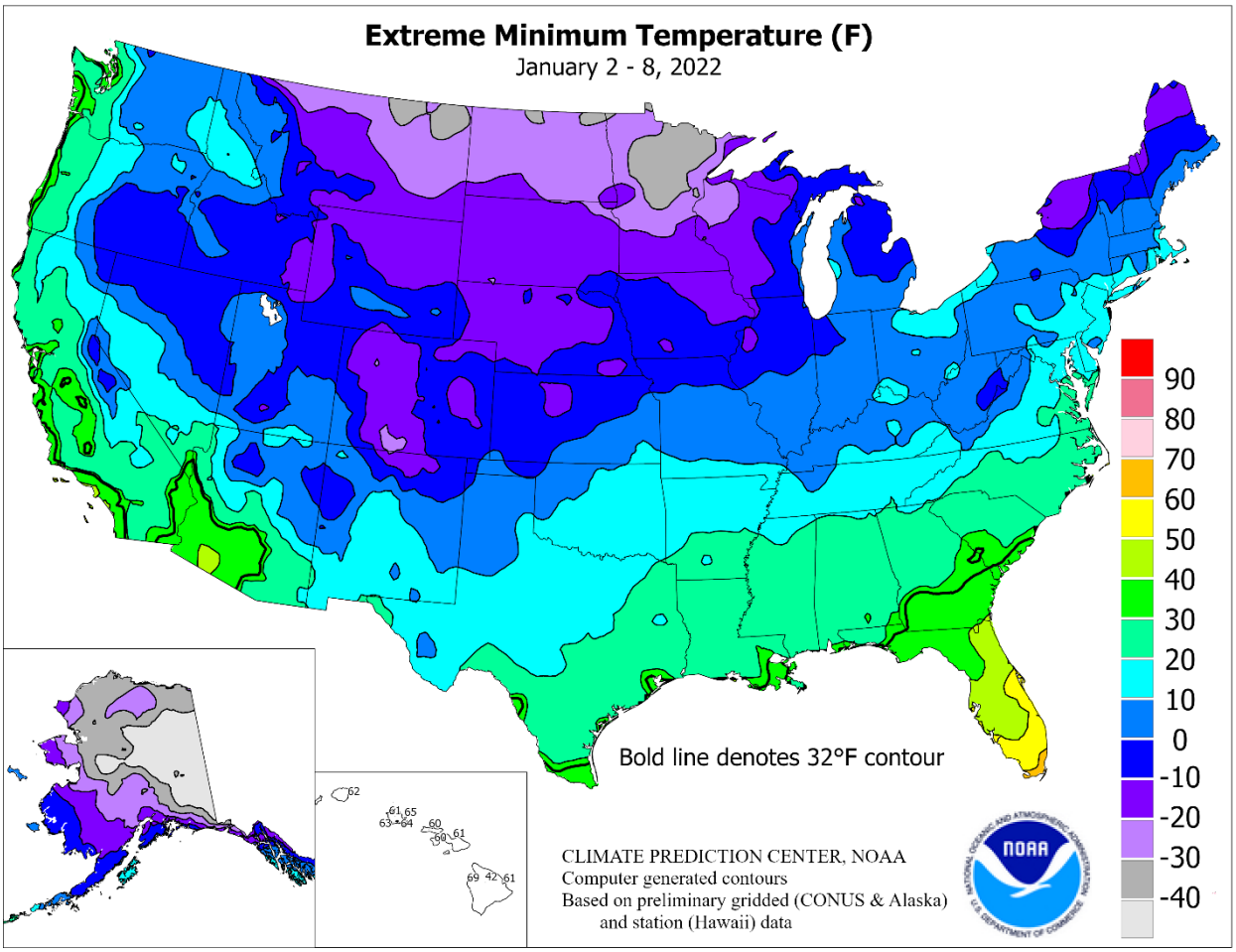
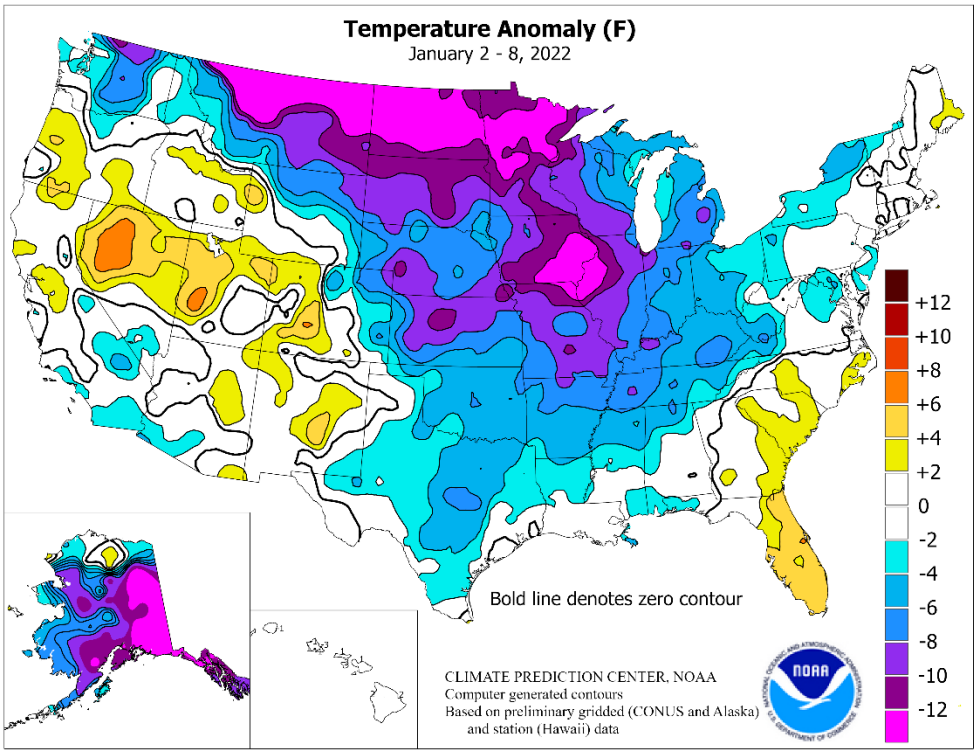

Extreme Maximum Temperature (F)
January 2 - 8, 2022
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
Bold line denotes 95°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS & Alaska)
and station (Hawaii) data
NOAA


Extreme Minimum Temperature (F)
January 2 - 8, 2022
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
Bold line denotes 32°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS & Alaska)
and station (Hawaii) data
NOAA

(Continued from front cover)

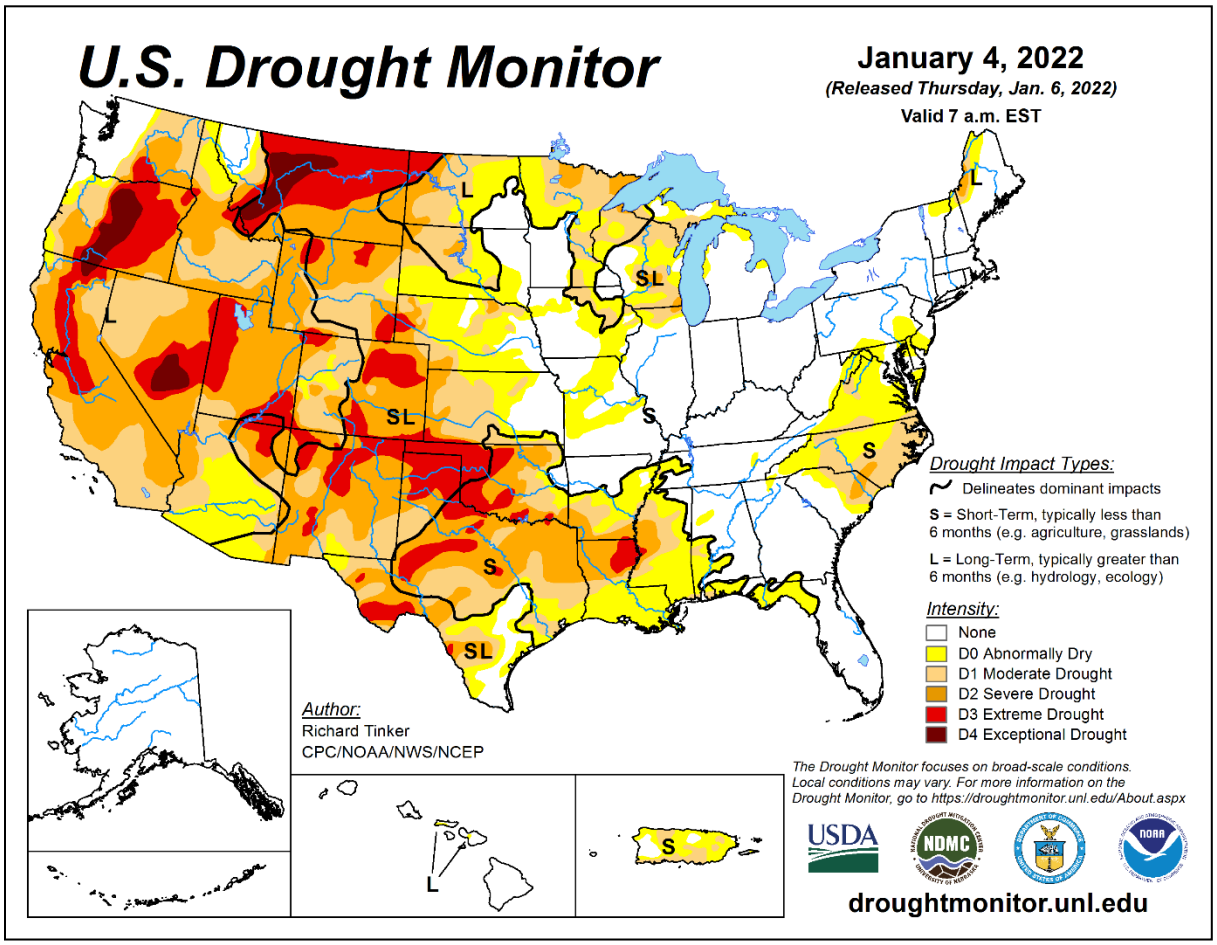
Deep South and **lower Southeast**, primarily on January 2-3 and 8-9. Farther west, however, unfavorably dry conditions persisted across the **southern Plains**, while dry weather returned to the **Southwest**. A band of generally light, mid-week snow affected the **central Plains**. Across the **nation's northern tier**, periods of snow and bitterly cold conditions stressed livestock and occasionally hampered rural travel. Elsewhere, stormy weather prevailed in the **northern Rockies** and **Pacific Northwest**, leading to late-week flooding in the latter region. January 6 was one of the wettest days on record in parts of the **Pacific Northwest**, with 5- to 6-inch rainfall totals reported in locations such as **Astoria, OR**, and **Hoquiam, WA**.

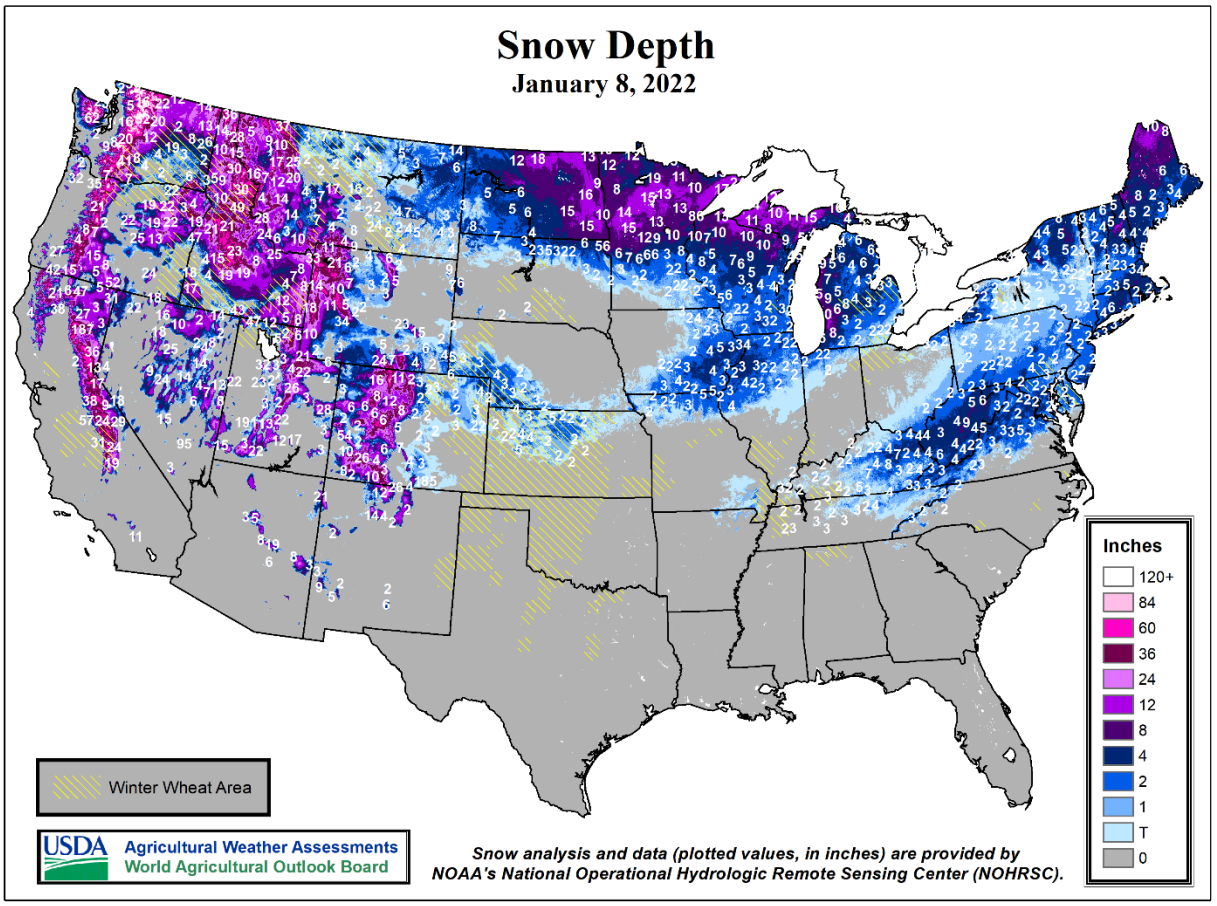


A final round of record-setting warmth affected the **South** in early 2022. On January 2 along the **southern Atlantic Coast**, monthly record highs of 83°F were tied in **Tallahassee, FL**, and **Saint Simons Island, GA**. The warmth extended into the **mid-Atlantic**, where daily-record highs for January 2 included 70°F in **Salisbury, MD**, and 68°F in **Georgetown, DE**. A monthly record high of 75°F was tied on January 3 on **Cape Hatteras, NC**, a mark most recently attained on January 1, 1985. Farther west, however, scattered daily-record lows included 31°F (on January 2) in **Half Moon Bay, CA**, and -17°F (on January 3) in **Marysvale, UT**. By mid-week, a quick-hitting blast of cold air arrived across the **Plains**, accompanied by high winds. Temperatures briefly dropped below 0°F throughout the **northwestern half of the Plains**, while lows ranging from -20 to -40°F affected **northern tier** communities from **northern and eastern Montana into northern Wisconsin**. On January 4, wind gusts were clocked to 72 mph in **Rapid City, SD**, and 69 mph in **Buffalo, WY**. Farther south, mid- to late-week warmth returned across the **Deep South**, starting in the **western Gulf Coast region**. On January 5-6, **Galveston, TX**, posted consecutive daily-record highs (74 and 77°F, respectively). Other record-setting highs for January 6 included 86°F in **Brownsville, TX**, and 78°F in **New Iberia, LA**. In contrast, **Russell, KS**, reported a January 6 high of 9°F, tied with 1968 for lowest on record on that date. Meanwhile, mild weather returned across the **western U.S.**, starting in the **Pacific Coast States**. Daily-record highs for January 6 reached 58°F in **Troutdale, OR**, and 56°F in **Montague, CA**. The following day, record-setting highs for January 7 rose to 68°F in **Colorado Springs, CO**, and 60°F in **Provo, UT**. Elsewhere, **Florida's peninsula** remained warm through week's end, with **Fort Myers** notching a daily record-tying high of 85°F on January 7.

Early in the week, a developing winter storm dropped some light snow across the **mid-South**. Daily-record snowfall totals of 0.3 inch were reported on January 2 in **Tupelo, MS**, and **Memphis, TN**. The following day, heavy, wet snow pounded the **middle Atlantic region**, where daily-record amounts for January 3 reached 13.0 inches in **Atlantic City, NJ**; 6.9 inches in **Washington, DC**; and 6.8 inches in **Baltimore, MD**. Major travel and electrical disruptions occurred south of **Washington, DC**, where snowfall locally exceeded a foot. Meanwhile in **North Carolina**, record-setting precipitation totals for January 3 included 2.40 inches in **Greensboro** and 2.29 inches in **Raleigh-Durham**. Concurrently, **Northwestern** wetness led to daily-record amounts for January 3 in **Oregon** locations such as **Roseburg** (1.71 inches) and **Portland** (1.49 inches). **Portland** posted another record-setting total (1.15 inches) on January 5. In **Washington**, daily-record amounts reached 0.63 inch (on January 3) in **Yakima** and 0.59 inch (on January 4) in **Dallesport**. **Pacific Northwestern** precipitation further intensified on January 6, when **Hoquiam, WA**, experienced its wettest day on record, with 5.78 inches. Previously, **Hoquiam's** wettest day had been October 20, 2003, with 5.39 inches, while the wettest January day had been January 4, 2015, with 4.58 inches. In **Astoria, OR**, where 5.07 inches fell on January 6, it was the wettest day since November 25, 1998, when 5.56 inches fell, and the second-wettest January day behind 6.98 inches on January 22, 1919. Subsequently, the **Chehalis River** crested at its second-highest level on record in **western Washington** communities such as **Porter** and **Grand Mound**. The crest in **Porter**, 4.01 feet above flood stage on January 8, was the highest since December 5, 2007, when the river rose 5.17 feet above flood stage. Inland, at least 23 inches of snow fell in a 24-hour period on January 5-6 at two reporting sites in **Wenatchee, WA**, breaking stations records that had been set on December 9, 1971. Farther east, snow squalls developed downwind of the **Great Lakes**. In **Michigan**, record-setting snowfall totals for January 5 reached 15.4 inches in **Marquette** and 8.0 inches in **Grand Rapids**. In **Buffalo, NY**, 17.8 inches of snow fell on the 6th—the greatest single-day accumulation during January in that location since January 11, 1982, when 18.3 inches fell. Meanwhile, impressive snow accumulations occurred on January 6 from the **Tennessee Valley to the central Appalachians**; daily-record amounts included 9.9 inches in **Lexington, KY**; 8.3 inches in **Charleston, WV**; and 6.3 inches in **Nashville, TN**. **Washington, DC**, received 2.6 inches of snow on January 7, just four days after a 6.9-inch total. In **eastern Texas**, showers and thunderstorms dumped 6.30 inches of rain on **Houston, TX**, on January 8-9.

Frigid, mostly dry weather covered much of **Alaska**, with temperatures falling to -50°F or below at some interior locations. In fact, **Bettles** opened the week with a low of -51°F on January 2. Meanwhile in **southeastern Alaska**, **Juneau** reported it first two sub-zero readings of the winter on January 5-6, followed by a trend toward milder, wetter weather. **Juneau** received 10.9 inches of snow on January 8-9, boosting its snow depth to 26 inches. Farther south, **Hawaii's western islands** received some heavy showers, especially early in the New Year. During the first 5 days of January, rainfall in **Honolulu, Oahu**, totaled 6.04 inches. Similarly, **Lihue, Kauai**, received 5.53 inches from January 1-3. In contrast, month-to-date rainfall through January 8 totaled just 0.09 inch in **Hilo**, on the **Big Island**, and 0.05 inch in **Kahului, Maui**.


U.S. Drought Monitor
January 4, 2022
(Released Thursday, Jan. 6, 2022)
Valid 7 a.m. EST
Drought Impact Types:
Delineates dominant impacts
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)
Intensity:
None
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought
Author:
Richard Tinker
CPC/NOAA/NWS/NCEP
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx
droughtmonitor.unl.edu


Snow Depth
January 8, 2022
Inches
120+
84
60
36
24
12
8
4
2
1
T
0
Winter Wheat Area
USDA Agricultural Weather Assessments
World Agricultural Outlook Board
Snow analysis and data (plotted values, in inches) are provided by NOAA's National Operational Hydrologic Remote Sensing Center (NOHRSC).

National Weather Data for Selected Cities

Weather Data for the Week Ending January 8, 2022

Data Provided by Climate Prediction Center

STATES AND STATIONS		TEMPERATURE ˚F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS			
																	TEMP. ˚F		PRECIP	
		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 DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AK	ANCHORAGE	9	-3	12	-8	3	-15	0.00	-0.19	0.00	0.93	69	0.00	0	73	44	0	7	0	0
	BARROW	-4	-18	16	-33	-11	0	0.00	-0.05	0.00	1.10	518	0.00	0	82	68	0	7	0	0
	FAIRBANKS	-19	-39	-6	-47	-29	0	0.00	-0.15	0.00	6.52	807	0.08	46	73	61	0	7	0	0
	JUNEAU	16	5	29	-6	11	-18	0.09	-1.14	0.06	3.41	47	0.67	47	69	42	0	7	2	0
	KODIAK	31	25	37	18	28	-3	0.02	-1.96	0.02	1.29	11	0.02	0	76	61	0	6	1	0
	NOME	11	-5	23	-17	3	-3	0.00	-0.24	0.00	3.91	286	0.00	0	70	44	0	7	0	0
AL	BIRMINGHAM	55	32	74	24	43	-1	0.00	-1.00	0.00	0.00	0	0.00	0	92	64	0	5	0	0
	HUNTSVILLE	47	26	60	22	37	-5	1.24	0.13	0.68	7.39	104	2.72	213	94	63	0	6	3	2
	MOBILE	62	34	77	27	48	-3	0.28	-0.93	0.26	4.96	77	0.28	20	95	58	0	2	2	0
	MONTGOMERY	61	34	76	28	47	1	0.93	0.00	0.70	5.38	90	0.93	88	87	53	0	3	2	1
AR	FORT SMITH	44	25	53	19	34	-5	0.02	-0.60	0.02	5.92	148	1.49	208	82	42	0	6	1	0
	LITTLE ROCK	49	27	66	20	38	-3	0.69	-0.20	0.63	5.96	99	1.88	184	79	45	0	6	3	1
AZ	FLAGSTAFF	46	13	57	-7	29	0	0.00	-0.50	0.00	4.63	190	0.20	34	87	29	0	7	0	0
	PHOENIX	66	42	72	36	54	-1	0.00	-0.22	0.00	1.59	136	0.08	31	73	25	0	0	0	0
	PRESCOTT	55	24	62	13	39	1	0.00	-0.28	0.00	2.13	162	0.31	98	83	28	0	7	0	0
	TUCSON	70	37	77	31	53	2	0.00	-0.22	0.00	1.52	124	0.23	90	72	16	0	1	0	0
CA	BAKERSFIELD	58	39	60	33	48	2	0.00	-0.26	0.00	2.56	191	0.00	0	89	58	0	0	0	0
	EUREKA	52	44	55	33	48	0	1.87	0.30	0.59	6.95	70	1.87	103	96	80	0	0	5	2
	FRESNO	57	40	61	33	48	3	0.00	-0.50	0.00	3.58	151	0.00	0	92	59	0	0	0	0
	LOS ANGELES	62	47	66	44	54	-2	0.00	-0.62	0.00	8.22	297	0.00	0	89	48	0	0	0	0
	REDDING	53	42	60	30	48	3	1.15	-0.22	0.50	6.49	82	1.15	73	92	72	0	1	4	1
	SACRAMENTO	55	41	60	30	48	3	0.05	-0.74	0.04	7.05	170	0.05	5	100	75	0	2	2	0
	SAN DIEGO	62	45	67	39	53	-3	0.00	-0.46	0.00	2.56	123	0.00	0	92	50	0	0	0	0
	SAN FRANCISCO	56	47	59	36	52	2	0.41	-0.56	0.25	10.13	197	0.41	36	95	76	0	0	2	0
	STOCKTON	57	41	62	28	49	4	0.00	-0.57	0.00	3.82	133	0.00	0	97	71	0	2	0	0
CO	ALAMOSA	40	-1	54	-22	19	3	0.00	-0.06	0.00	0.19	41	0.16	222	90	38	0	7	0	0
	CO SPRINGS	51	18	68	1	34	4	0.02	-0.06	0.01	0.22	45	0.15	162	65	22	0	6	2	0
	DENVER INTL	43	13	57	-2	28	-3	0.23	0.12	0.16	0.51	99	0.36	303	80	44	0	7	2	0
	GRAND JUNCTION	31	10	42	-2	20	-6	0.03	-0.11	0.03	2.08	279	0.03	20	88	64	0	7	1	0
	PUEBLO	51	10	70	-12	31	1	0.02	-0.07	0.02	0.32	62	0.20	196	83	32	0	7	1	0
CT	BRIDGEPORT	39	26	52	16	32	2	0.73	0.02	0.42	2.87	69	1.17	143	85	49	0	6	3	0
	HARTFORD	37	20	51	11	28	2	0.68	-0.01	0.44	3.82	91	0.89	112	86	50	0	7	3	0
DC	WASHINGTON	42	28	63	22	35	-1	1.29	0.68	0.98	2.35	62	1.72	245	86	49	0	6	4	1
DE	WILMINGTON	41	25	63	16	33	1	0.50	-0.16	0.21	3.22	76	0.92	122	85	50	0	6	3	0
FL	DAYTONA BEACH	74	53	82	48	64	6	0.00	-0.60	0.00	3.65	110	0.00	0	91	50	0	0	0	0
	JACKSONVILLE	70	45	84	40	58	5	0.11	-0.52	0.11	1.70	48	0.11	15	97	54	0	0	1	0
	KEY WEST	79	69	83	63	74	4	0.17	-0.25	0.15	1.10	40	0.17	35	95	72	0	0	2	0
	MIAMI	81	66	83	62	74	5	0.52	0.16	0.33	1.67	67	0.52	126	93	61	0	0	2	0
	ORLANDO	78	56	84	50	67	6	0.01	-0.52	0.01	2.08	65	0.01	1	90	47	0	0	1	0
	PENSACOLA	63	39	78	34	51	0	0.60	-0.35	0.58	2.24	39	0.60	55	89	61	0	0	2	1
	TALLAHASSEE	67	39	83	33	53	2	0.10	-0.76	0.07	0.87	18	0.10	10	92	51	0	0	2	0
	TAMPA	78	58	82	50	68	8	0.02	-0.46	0.02	0.34	11	0.02	3	84	51	0	0	1	0
	WEST PALM BEACH	80	62	85	54	71	6	0.00	-0.77	0.00	2.11	49	0.00	0	91	54	0	0	0	0
GA	ATHENS	56	35	70	28	46	2	1.30	0.45	1.02	4.98	107	1.31	136	90	46	0	4	3	1
	ATLANTA	56	34	73	28	45	2	1.55	0.70	1.34	7.68	158	1.61	168	85	45	0	4	3	1
	AUGUSTA	62	37	75	29	49	4	1.56	0.71	1.46	7.08	163	1.56	161	92	40	0	4	2	1
	COLUMBUS	60	35	73	30	47	1	0.34	-0.48	0.26	5.16	98	0.34	36	86	46	0	4	2	0
	MACON	61	36	74	28	48	2	0.80	-0.10	0.78	5.80	114	0.80	77	93	47	0	4	2	1
	SAVANNAH	66	42	83	33	54	5	0.31	-0.41	0.31	1.46	38	0.31	37	93	50	0	0	1	0
HI	HILO	82	66	85	61	74	2	0.09	-1.87	0.06	24.64	178	0.10	4	88	63	0	0	2	0
	HONOLULU	78	67	80	64	73	-1	3.33	2.68	2.19	17.22	434	6.58	884	91	69	0	0	4	2
	KAHULUI	81	64	83	61	73	1	0.04	-0.67	0.04	7.45	180	0.05	6	90	61	0	0	1	0
	LIHUE	78	65	81	62	71	-1	2.81	1.88	2.21	13.44	213	6.87	646	100	73	0	0	2	2
IA	BURLINGTON	22	1	36	-9	11	-14	0.01	-0.29	0.01	0.70	28	0.04	12	85	62	0	7	1	0
	CEDAR RAPIDS	16	-3	32	-13	6	-13	0.00	-0.23	0.00	1.16	68	0.00	0	93	72	0	7	0	0
	DES MOINES	21	2	39	-8	11	-11	0.00	-0.23	0.00	0.93	54	0.16	60	77	56	0	7	0	0
	DUBUQUE	17	-1	28	-13	8	-11	0.00	-0.27	0.00	1.58	73	0.07	23	88	70	0	7	0	0
	SIOUX CITY	30	2	52	-8	16	-4	0.01	-0.13	0.01	0.67	68	0.01	7	71	40	0	7	1	0
	WATERLOO	18	-1	33	-12	9	-10	0.00	-0.20	0.00	1.28	88	0.00	0	76	61	0	7	0	0
ID	BOISE	38	25	49	6	31	1	0.89	0.57	0.40	2.46	126	0.89	238	88	63	0	5	5	0
	LEWISTON	37	27	46	20	32	-2	1.04	0.78	0.73	2.81	217	1.04	355	89	60	0	6	5	1
	POCATELLO	36	20	48	-5	28	4	0.24	-0.02	0.13	1.54	100	0.25	85	87	58	0	6	4	0
IL	CHICAGO/O_HARE	26	10	35	-1	18	-6	0.09	-0.35	0.05	2.56	93	0.27	54	78	57	0	7	2	0
	MOLINE	22	2	34	-11	12	-11	0.04	-0.33	0.04	1.54	59	0.30	70	79	59	0	7	1	0
	PEORIA	25	5	36	-5	15	-10	0.07	-0.38	0.07	2.02	68	0.49	94	79	60	0	7	1	0
	ROCKFORD	23	4	32	-6	13	-8	0.04	-0.30	0.03	2.50	105	0.13	31	79	60	0	7	2	0
	SPRINGFIELD	28	11	39	1	20	-7	0.01	-0.45	0.01	2.41	79	0.46	86	80	60	0	7	1	0
IN	EVANSVILLE	35	18	46	5	27	-6	0.51	-0.19	0.36	6.74	148	2.70	341	85	58	0	7	3	0
	FORT WAYNE	29	14	38	5	22	-4	0.12	-0.44	0.11	4.64	136	0.41	63	86	60	0	7	2	0
	INDIANAPOLIS	33	14	41	3	24	-5	0.20	-0.48	0.20	4.76	121	0.61	79	85	55	0	7	1	0
	SOUTH BEND	26	11	36	2	19	-6	0.13	-0.45	0.04	4.25	130	0.40	59	83	58	0	7	4	0
KS	CONCORDIA	30	8	49	-5	19	-10	0.02	-0.08	0.02	0.38	37	0.20	162	79	52	0	7	1	0
	DODGE CITY	38	10	62	-6	24	-7	0.05	-0.08	0.04	0.17	16	0.17	113	84	42	0	7	2	0
	GOODLAND	39	9	58	-4	24	-6	0.14	0.04	0.08	0.31	52	0.26	232	82	42	0	7	2	0
	TOPEKA	33	13	50	0	23	-7	0.04	-0.13	0.04	0.40	25	0.29	142	76	45	0	7	1	0

Based on 1981-2010 normals ***** Not Available**

Weather Data for the Week Ending January 8, 2022

STATES AND STATIONS		TEMPERATURE ˚F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS TEMP. ˚F		NUMBER OF DAYS PRECIP	
		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 DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	40	15	59	6	28	-4	0.01	-0.16	0.01	0.06	4	0.04	22	79	47	0	7	1	0
KY	LEXINGTON	39	18	55	7	28	-5	0.63	-0.09	0.54	7.49	157	2.85	341	85	55	0	7	3	1
	LOUISVILLE	41	21	57	11	31	-4	0.81	0.07	0.59	6.41	137	2.85	336	82	50	0	7	3	1
	PADUCAH	38	20	49	6	29	-5	1.49	0.65	1.29	7.91	142	3.95	411	82	50	0	7	3	1
LA	BATON ROUGE	64	36	75	28	50	-5	0.03	-1.06	0.02	3.54	62	0.05	4	93	55	0	3	2	0
	LAKE CHARLES	64	38	74	28	51	-1	0.25	-0.99	0.24	2.46	40	0.25	17	92	53	0	3	2	0
	NEW ORLEANS	65	42	78	35	54	0	0.11	-1.04	0.07	3.17	48	0.12	9	87	60	0	0	3	0
	SHREVEPORT	58	32	69	24	45	-1	0.06	-0.85	0.04	2.39	41	0.11	10	80	40	0	4	2	0
MA	BOSTON	38	23	51	17	31	1	0.76	-0.01	0.47	3.20	69	0.89	101	81	50	0	7	3	0
	WORCESTER	35	19	48	10	27	2	0.85	0.08	0.52	4.62	98	1.02	116	85	55	0	7	3	1
MD	BALTIMORE	42	23	65	15	33	0	1.25	0.57	0.93	2.77	67	1.97	257	90	50	0	6	4	1
ME	CARIBOU	23	4	35	-13	14	2	0.48	-0.15	0.28	3.86	97	0.53	72	86	65	0	7	3	0
	PORTLAND	33	18	41	8	25	2	0.65	-0.13	0.39	4.41	89	0.70	79	88	53	0	7	3	0
MI	ALPENA	24	8	33	-8	16	-4	0.28	-0.11	0.21	2.77	125	0.30	64	85	63	0	7	2	0
	GRAND RAPIDS	29	12	35	1	20	-5	0.21	-0.32	0.09	2.75	88	0.52	84	92	62	0	7	3	0
	HOUGHTON LAKE	24	6	31	-7	15	-4	0.17	-0.21	0.15	2.71	129	0.18	41	89	58	0	7	2	0
	LANSING	29	10	36	3	19	-5	0.11	-0.30	0.08	2.40	102	0.31	66	83	55	0	7	4	0
	MUSKEGON	32	18	39	13	25	-1	0.60	0.09	0.18	2.94	94	0.71	122	84	56	0	7	5	0
	TRAVERSE CITY	28	15	37	9	22	-1	0.07	-0.61	0.06	1.63	50	0.07	8	83	54	0	7	2	0
MN	DULUTH	12	-7	24	-21	2	-8	0.23	-0.02	0.10	2.93	196	0.23	80	82	64	0	7	3	0
	INT_L FALLS	6	-18	19	-37	-6	-10	0.13	-0.05	0.06	1.93	187	0.13	65	82	66	0	7	4	0
	MINNEAPOLIS	18	-3	32	-17	8	-8	0.11	-0.12	0.10	2.03	141	0.11	42	78	62	0	7	2	0
	ROCHESTER	15	-3	29	-16	6	0	0.02	-0.17	0.01	1.41	95	0.02	10	84	67	0	7	2	0
	ST. CLOUD	15	-10	26	-28	3	-9	0.21	0.04	0.17	2.23	215	0.21	110	80	63	0	7	3	0
MO	COLUMBIA	33	14	47	7	23	-6	0.05	-0.40	0.04	2.51	84	0.48	92	77	51	0	7	2	0
	KANSAS CITY	31	12	48	1	22	-7	0.00	-0.24	0.00	0.80	44	0.29	108	74	44	0	7	0	0
	SAINT LOUIS	34	15	46	7	25	-7	0.13	-0.47	0.13	3.50	99	0.76	110	73	47	0	7	1	0
	SPRINGFIELD	37	16	48	9	26	-6	0.19	-0.42	0.15	2.00	53	0.71	101	84	53	0	7	2	0
MS	JACKSON	58	32	71	26	45	-1	0.25	-0.78	0.24	3.27	51	0.27	23	89	57	0	4	2	0
	MERIDIAN	60	32	74	29	46	1	0.33	-0.67	0.32	4.17	67	0.93	82	84	56	0	5	2	0
	TUPELO	49	29	63	22	39	-2	0.57	-0.48	0.35	6.27	83	1.62	134	84	55	0	6	2	0
MT	BILLINGS	30	3	47	-9	17	-10	0.28	0.17	0.27	1.23	192	0.28	221	70	44	0	7	2	0
	BUTTE	30	7	42	-1	19	0	0.51	0.40	0.21	0.87	132	0.51	382	83	47	0	7	3	0
	CUT BANK	15	-10	41	-20	3	-19	0.00	-0.06	0.00	0.21	63	0.00	5	81	62	0	7	0	0
	GLASGOW	10	-13	26	-28	-1	-14	0.09	-0.02	0.07	1.02	181	0.09	71	79	66	0	7	2	0
	GREAT FALLS	18	-3	42	-17	7	-17	0.41	0.29	0.20	1.32	189	0.41	291	79	56	0	7	4	0
	HAVRE	9	-8	36	-22	1	-16	0.06	-0.04	0.04	0.82	147	0.06	53	80	64	0	7	2	0
	MISSOULA	30	13	42	1	21	-3	1.04	0.81	0.59	2.14	161	1.04	398	87	58	0	7	5	1
NC	ASHEVILLE	47	28	64	19	38	1	1.37	0.60	0.77	2.52	56	1.60	180	90	50	0	5	3	2
	CHARLOTTE	56	35	71	26	45	6	2.21	1.44	1.77	4.44	108	2.34	264	82	38	0	4	2	1
	GREENSBORO	52	31	71	19	41	3	3.02	2.34	2.34	4.48	120	3.02	391	81	44	0	4	2	2
	HATTERAS	62	44	75	35	53	7	1.00	-0.17	0.80	4.54	80	1.36	102	86	60	0	0	4	1
	RALEIGH	54	33	70	21	44	3	3.09	2.33	2.10	5.11	130	3.52	406	85	47	0	5	2	2
	WILMINGTON	62	39	78	29	50	5	1.31	0.48	0.91	3.72	82	1.31	138	87	48	0	3	3	1
ND	BISMARCK	11	-10	23	-23	1	-12	0.10	-0.01	0.07	1.13	176	0.10	76	83	65	0	7	2	0
	DICKINSON	20	-9	37	-22	6	-10	0.03	-0.06	0.03	0.27	69	0.03	30	78	62	0	7	1	0
	FARGO	9	-13	20	-28	-2	-12	0.19	0.02	0.08	1.79	168	0.19	92	78	64	0	7	4	0
	GRAND FORKS	6	-16	21	-30	-5	-12	0.19	0.06	0.06	1.55	205	0.19	123	81	69	0	7	4	0
	JAMESTOWN	10	-13	22	-24	-1	-12	0.01	-0.10	0.01	0.57	99	0.01	8	80	66	0	7	1	0
NE	GRAND ISLAND	34	6	59	-7	20	-5	0.00	-0.11	0.00	0.28	36	0.06	44	74	38	0	7	0	0
	LINCOLN	28	5	51	-8	17	-8	0.00	-0.14	0.00	0.32	28	0.08	50	73	44	0	7	0	0
	NORFOLK	30	2	54	-12	16	-6	0.00	-0.13	0.00	0.52	56	0.02	13	71	40	0	7	0	0
	NORTH PLATTE	32	1	56	-20	16	-8	0.19	0.09	0.12	0.67	121	0.27	246	84	51	0	7	2	0
	OMAHA	25	5	43	-8	15	-8	0.00	-0.16	0.00	0.43	34	0.05	28	76	50	0	7	0	0
	SCOTTSBLUFF	38	7	53	-8	22	-4	0.43	0.32	0.38	0.69	108	0.44	373	78	48	0	7	2	0
	VALENTINE	35	6	51	-10	20	-3	0.00	-0.07	0.00	0.74	148	0.03	38	68	39	0	6	0	0
NH	CONCORD	32	15	39	3	23	2	0.54	-0.07	0.37	4.48	115	0.65	93	88	52	0	7	3	0
NJ	ATLANTIC_CITY	42	21	62	10	31	-2	1.74	0.99	1.24	2.54	56	1.89	223	94	56	0	6	4	1
	NEWARK	40	24	59	18	32	0	0.43	-0.38	0.27	2.63	55	1.26	135	86	47	0	6	3	0
NM	ALBUQUERQUE	50	25	58	15	37	2	0.00	-0.10	0.00	0.22	35	0.10	89	72	26	0	6	0	0
NV	ELY	41	15	48	-5	28	3	0.01	-0.15	0.01	2.01	255	0.01	6	83	44	0	7	1	0
	LAS VEGAS	56	37	63	28	46	-1	0.00	-0.14	0.00	0.27	40	0.00	0	52	21	0	2	0	0
	RENO	51	31	59	17	41	6	0.00	-0.25	0.00	2.90	216	0.00	0	77	39	0	4	0	0
	WINNEMUCCA	46	27	56	-3	36	7	0.00	-0.23	0.00	2.33	190	0.00	0	77	48	0	3	0	0
NY	ALBANY	32	17	41	8	25	2	0.15	-0.43	0.07	2.87	80	0.26	39	83	55	0	7	3	0
	BINGHAMTON	29	15	40	8	22	-1	0.15	-0.40	0.10	3.09	89	0.28	45	91	60	0	7	3	0
	BUFFALO	32	17	42	5	25	-1	0.91	0.11	0.74	3.54	73	1.23	133	83	54	0	7	3	1
	ROCHESTER	31	15	42	5	23	-2	0.23	-0.33	0.19	2.43	74	0.48	75	87	59	0	7	3	0
	SYRACUSE	33	15	43	-3	24	-1	0.28	-0.34	0.14	2.69	68	0.56	79	93	51	0	7	4	0
OH	AKRON-CANTON	33	19	45	13	26	0	0.17	-0.44	0.05	4.23	119	0.63	89	78	54	0	7	5	0
	CINCINNATI	36	18	47	11	27	-4	0.33	-0.35	0.18	4.78	115	1.35	171	80	52	0	7	3	0
	CLEVELAND	33	19	42	14	26	-2	0.11	-0.56	0.11	3.33	86	0.55	70	75	54	0	7	1	0
	COLUMBUS	34	18	46	11	26	-3	0.13	-0.52	0.08	5.93	160	1.44	193	83	54	0	7	3	0
	DAYTON	34	17	42	8	25	-2	0.10	-0.57	0.08	5.66	146	1.20	157	73	50	0	7	2	0
	MANSFIELD	31	16	40	10	24	-2	0.03	-0.66	0.03	7.04	172	0.60	75	85	62	0	7	1	0

Based on 1981-2010 normals ***** Not Available**

Weather Data for the Week Ending January 8, 2022

STATES AND STATIONS		TEMPERATURE ˚F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS TEMP. ˚F		NUMBER OF DAYS PRECIP	
		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 DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	31	14	39	10	23	-3	0.11	-0.41	0.07	3.74	114	0.30	50	78	53	0	7	2	0
	YOUNGSTOWN	32	17	45	9	25	-1	0.05	-0.57	0.04	3.54	95	0.50	70	81	56	0	7	2	0
OK	OKLAHOMA CITY	44	22	57	11	33	-6	0.04	-0.24	0.04	0.57	25	0.39	119	77	42	0	6	1	0
	TULSA	44	24	57	14	34	-4	0.00	-0.38	0.00	2.13	72	0.47	107	73	42	0	5	0	0
OR	ASTORIA	48	39	62	34	44	1	7.95	5.50	4.15	20.43	161	7.95	284	89	68	0	0	7	5
	BURNS	36	19	43	-7	28	4	0.76	0.46	0.28	2.36	122	0.76	216	91	66	0	5	5	0
	EUGENE	52	40	57	31	46	6	3.43	1.76	2.09	14.41	147	3.43	179	93	70	0	1	5	3
	MEDFORD	50	39	54	27	45	5	0.61	-0.03	0.51	4.56	108	0.61	83	97	64	0	1	4	1
	PENDLETON	42	27	48	4	35	1	1.31	0.96	0.65	3.29	173	1.31	321	92	61	0	6	4	1
	PORTLAND	48	37	56	30	42	2	3.96	2.78	1.59	10.90	159	3.96	292	88	67	0	1	6	3
	SALEM	52	39	56	30	46	5	3.68	2.23	2.34	13.48	158	3.68	221	91	66	0	1	6	2
PA	ALLENTOWN	36	20	57	12	28	0	0.27	-0.39	0.17	2.11	49	0.85	114	83	51	0	7	3	0
	ERIE	33	19	44	13	26	-2	0.31	-0.43	0.12	4.39	96	0.75	87	77	53	0	7	4	0
	MIDDLETOWN	39	24	60	17	31	1	0.45	-0.19	0.28	2.05	51	1.19	162	80	48	0	6	3	0
	PHILADELPHIA	42	27	63	20	34	1	0.30	-0.37	0.16	2.51	58	0.87	115	82	45	0	6	3	0
	PITTSBURGH	34	17	49	6	26	-3	0.25	-0.36	0.12	4.09	115	1.12	159	84	53	0	7	4	0
	WILKES-BARRE	36	19	52	11	27	1	0.28	-0.22	0.14	1.93	59	0.60	104	83	52	0	7	3	0
	WILLIAMSPORT	35	20	51	9	28	1	0.22	-0.35	0.11	1.84	51	0.49	74	83	51	0	7	3	0
RI	PROVIDENCE	40	22	55	14	31	2	0.87	0.03	0.38	2.76	53	1.05	109	88	51	0	6	3	0
SC	CHARLESTON	63	41	78	33	52	4	0.35	-0.44	0.27	3.31	82	0.35	38	91	49	0	0	3	0
	COLUMBIA	59	37	74	30	48	4	1.74	0.96	1.34	5.65	138	1.74	195	84	43	0	3	3	1
	FLORENCE	61	37	77	28	49	4	1.94	1.20	1.51	3.91	102	1.94	229	79	42	0	4	3	1
	GREENVILLE	54	33	70	23	43	2	2.19	1.34	1.34	5.09	100	2.25	232	82	43	0	4	2	2
SD	ABERDEEN	13	-9	25	-19	2	-9	0.06	-0.06	0.04	0.85	126	0.06	44	79	62	0	7	2	0
	HURON	19	-5	34	-16	7	-9	0.00	-0.12	0.00	0.22	32	0.00	0	77	60	0	7	0	0
	RAPID CITY	31	-1	48	-14	15	-10	0.00	-0.09	0.00	0.60	107	0.00	0	81	46	0	7	0	0
	SIOUX FALLS	25	-1	43	-10	12	-4	0.00	-0.13	0.00	1.31	153	0.00	0	71	49	0	7	0	0
TN	BRISTOL	46	25	63	15	35	0	1.63	0.91	0.87	4.27	102	2.44	296	92	58	0	6	3	1
	CHATTANOOGA	48	29	66	20	39	-1	1.27	0.19	0.85	6.86	111	2.21	180	87	52	0	5	3	1
	KNOXVILLE	44	26	61	20	35	-3	1.58	0.64	0.71	6.78	121	3.27	304	97	69	0	6	3	2
	MEMPHIS	47	27	61	20	37	-4	0.26	-0.71	0.13	6.01	87	1.50	134	85	50	0	6	3	0
	NASHVILLE	45	24	58	13	34	-3	0.76	-0.05	0.42	5.81	112	2.54	275	77	51	0	6	3	0
TX	ABILENE	56	29	73	16	42	-2	0.00	-0.22	0.00	0.10	6	0.06	23	66	28	0	4	0	0
	AMARILLO	55	20	73	7	38	1	0.00	-0.14	0.00	0.04	4	0.04	25	72	22	0	5	0	0
	AUSTIN	58	33	74	25	46	-5	0.13	-0.40	0.11	1.82	60	0.13	21	83	38	0	3	2	0
	BEAUMONT	66	40	76	28	53	1	0.12	-1.15	0.12	1.53	22	0.12	8	93	51	0	1	1	0
	BROWNSVILLE	77	51	86	40	64	3	0.00	-0.25	0.00	1.30	90	0.00	0	92	45	0	0	0	0
	CORPUS CHRISTI	68	40	82	25	54	-3	0.08	-0.30	0.08	0.72	32	0.08	18	94	47	0	1	1	0
	DEL RIO	69	36	83	28	53	1	0.00	-0.16	0.00	0.25	29	0.00	0	62	20	0	2	0	0
	EL PASO	61	31	70	23	46	2	0.00	-0.11	0.00	0.59	64	0.02	16	64	18	0	5	0	0
	FORT WORTH	54	30	65	19	42	-3	0.03	-0.42	0.03	0.52	16	0.07	13	78	36	0	4	1	0
	GALVESTON	69	49	77	39	59	4	0.07	0.00	0.05	1.27	0	0.07	0	83	56	0	0	2	0
	HOUSTON	65	39	77	31	52	-1	2.42	1.69	2.41	4.50	99	2.42	290	86	47	0	2	2	1
	LUBBOCK	55	21	74	8	38	-2	0.00	-0.13	0.00	0.40	43	0.17	113	69	28	0	7	0	0
	MIDLAND	59	25	74	14	42	-1	0.00	-0.11	0.00	0.07	9	0.04	31	63	19	0	5	0	0
	SAN ANGELO	60	28	73	16	44	-2	0.00	-0.20	0.00	0.04	3	0.01	5	64	22	0	4	0	0
	SAN ANTONIO	60	34	77	26	47	-4	0.16	-0.22	0.16	1.05	44	0.16	36	82	39	0	3	1	0
	VICTORIA	66	37	80	23	52	-2	0.24	-0.33	0.22	0.80	27	0.24	36	89	43	0	2	2	0
	WACO	55	28	66	18	42	-5	0.04	-0.43	0.04	0.09	2	0.05	9	85	40	0	5	1	0
	WICHITA FALLS	53	24	76	14	38	-3	0.00	-0.26	0.00	0.62	32	0.33	111	79	34	0	6	0	0
UT	SALT LAKE CITY	44	26	58	10	35	6	0.39	0.08	0.33	1.99	112	0.39	111	87	46	0	5	3	0
VA	LYNCHBURG	46	26	65	15	36	1	2.09	1.42	1.13	3.07	77	2.19	286	86	47	0	5	3	2
	NORFOLK	50	35	70	26	42	2	2.16	1.40	1.61	3.93	95	2.16	252	93	57	0	4	3	1
	RICHMOND	49	28	72	19	38	0	2.23	1.56	1.63	3.42	85	2.35	308	92	52	0	5	2	2
	ROANOKE	47	27	65	15	37	0	1.77	1.13	0.86	2.72	74	2.04	278	79	45	0	6	3	2
	WASH/DULLES	40	24	64	14	32	-1	1.02	0.45	0.71	2.11	58	1.67	258	90	54	0	6	4	1
VT	BURLINGTON	29	11	38	-1	20	0	0.23	-0.23	0.14	2.82	96	0.24	45	83	55	0	7	2	0
WA	OLYMPIA	46	33	53	30	39	0	7.50	5.70	3.96	16.40	172	7.50	366	91	72	0	3	6	4
	QUILLAYUTE	43	33	49	28	38	-3	5.33	2.01	2.49	18.62	111	5.33	141	100	82	0	3	7	3
	SEATTLE-TACOMA	44	35	50	30	39	-2	4.12	2.80	1.89	8.38	122	4.12	274	94	74	0	1	6	3
	SPOKANE	35	23	42	10	29	1	1.10	0.65	0.56	2.43	86	1.10	217	92	68	0	7	5	1
	YAKIMA	31	17	48	10	24	-5	1.35	1.04	0.63	1.69	88	1.35	384	91	68	0	7	4	1
WI	EAU CLAIRE	18	-5	31	-19	7	-8	0.00	-0.20	0.00	0.32	25	0.00	0	85	59	0	7	0	0
	GREEN BAY	23	7	32	1	15	-2	0.17	-0.09	0.12	1.83	101	0.17	56	83	59	0	7	2	0
	LA CROSSE	21	1	34	-13	11	-7	0.02	-0.22	0.02	1.73	105	0.02	7	81	58	0	7	1	0
	MADISON	21	4	31	-8	13	-6	0.04	-0.25	0.02	1.76	85	0.07	22	83	61	0	7	2	0
	MILWAUKEE	27	10	34	3	19	-4	0.03	-0.38	0.03	2.52	100	0.18	38	74	51	0	7	1	0
WV	BECKLEY	37	18	54	7	27	-4	0.90	0.25	0.38	5.60	150	3.17	428	90	61	0	7	4	0
	CHARLESTON	43	21	57	6	32	-2	0.80	0.13	0.59	5.99	149	2.94	385	91	52	0	6	3	1
	ELKINS	41	20	58	0	31	1	0.91	0.20	0.55	5.46	135	3.13	390	80	44	0	6	2	1
	HUNTINGTON	42	20	56	7	31	-3	0.52	-0.15	0.50	5.76	142	2.35	308	86	53	0	6	2	1
WY	CASPER	37	10	47	-12	23	-1	0.25	0.14	0.21	0.87	135	0.25	188	72	42	0	6	2	0
	CHEYENNE	40	13	52	-5	27	-2	0.37	0.28	0.34	0.83	136	0.43	415	74	41	0	6	2	0
	LANDER	33	7	50	-6	20	-1	0.33	0.22	0.33	0.71	99	0.33	262	81	40	0	7	1	0
	SHERIDAN	35	-1	54	-11	17	-6	0.09	-0.03	0.04	1.09	157	0.09	64	77	39	0	7	3	0

Based on 1981-2010 normals ***** Not Available**

December Weather and Crop Summary

Weather

Weather summary provided by USDA/WAOB

Highlights: December 2021 featured some notable weather extremes. In fact, monthly temperatures averaged at least 10°F above normal at numerous locations from the southern Plains to the Mississippi Delta, setting records for the warmest-ever December. That warmth, along with frigid conditions (locally more than 5°F below normal) near the Canadian border from the Pacific Northwest to the northern Plains, fueled an active storm track and periods of severe thunderstorms and heavy precipitation. The month's first significant severe-weather outbreak occurred across the mid-South and lower Midwest on December 5-6. Less than a week later, on the 10th, the deadliest December tornado in the nation's history—an EF-4 with winds estimated near 190 mph—traveled nearly 166 miles, starting in Obion County, TN, and devastating the Kentucky communities of Mayfield and Dawson Springs. Nearly five dozen deaths occurred during that tornado's rampage, according to preliminary reports, while dozens of additional tornadoes—some with fatalities—swarmed other parts of the mid-South and lower Midwest.

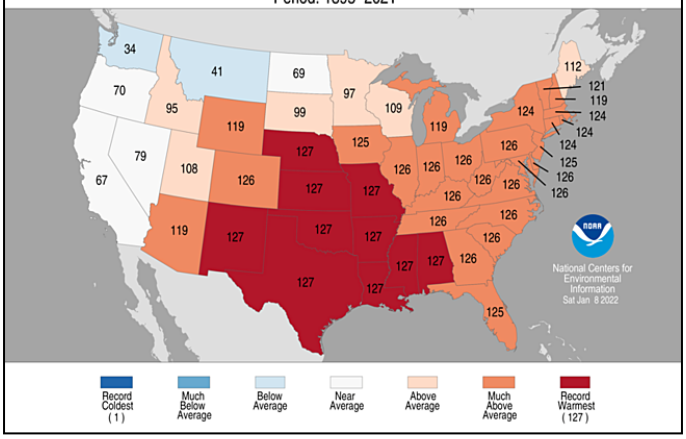
A mid-December wind and dust storm, which raked the central and southern Plains with wind gusts of 75 to 100 mph or higher, further increased concerns regarding the overwintering wheat crop. By the end of December, only 33 percent of Kansas' winter wheat was rated in good to excellent condition, down from 62 percent in late-November 2021. Similarly, Nebraska's the portion of Nebraska's wheat rated good to excellent dropped from 64 to 39 percent between November 28 and December 31. Across the southern High Plains, Texas communities such as Amarillo and Borger ended the year on an 80-day streak (October 13 – December 31) without any precipitation—not even a trace. Lingering drought across the northern High Plains also maintained stress on winter wheat; in Montana, 71 percent of the crop was rated very poor to poor at year's end. The Plains' drought was also reflected in moisture shortages; at the end of December, among reporting states, topsoil moisture was rated at least one-half very short to short in Colorado (84 percent), New Mexico (80 percent), Montana (77 percent), Kansas (72 percent), and Nebraska (68 percent), and North Dakota (50 percent). Toward month's end, wind-driven wildfires near Boulder, CO—including the 6,219-acre Marshall Fire—swept through thousands of acres of drought-cured brush, timber, and grass, as well as portions of the communities of Louisville and Superior, destroying as many as 1,000 structures.

In contrast, consistent and widespread storminess delivered December drought relief—in the form of improvements in soil moisture and mountain snowpack—west of the Rockies. Although drought coverage in the 11-state Western region decreased only 5 percentage points (from 94 to 89 percent) between November 30, 2021, and January 4, 2022, there was a substantial decrease in the higher-end drought categories. For example, Western coverage of extreme to exceptional drought (D3 to D4) during that 5-week period decreased from 44 to 24 percent, according to the *U.S. Drought Monitor*. Despite the promising start to the Western winter wet season, additional storminess will be needed in early 2022 to sustain the recovery from a multi-year drought. By December 31, the average water equivalency of the high-elevation Sierra Nevada snowpack stood at just over 15 inches, more than 150 percent of average for the date, but only 55 percent of the typical end-of-season accumulation. In addition, many large reservoirs—including Lake Mead on the Colorado River—remained at historically low levels and will be unlikely to significantly recover, even with ongoing wetness.

Historical Perspective: According to preliminary data provided by the National Centers for Environmental Information, the contiguous U.S. experienced its warmest December on record, with a monthly average temperature of 39.3°F, nearly 6.7°F above the 20th century mean. The previous record of 38.7°F had been set in 2015, while the pre-2000 standard had been 37.7°F in 1939. Meanwhile, it was the nation's 62nd-driest December during the 127-year period of record, squarely in the middle of the historical distribution. Precipitation across the country averaged 2.38 inches, very close to the 1901-2000 mean of 2.35 inches.

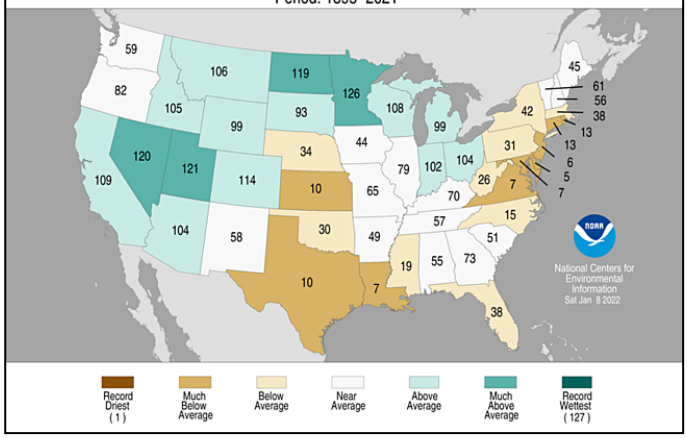
State temperature rankings ranged from the 34th-coldest December in Washington to the warmest on record in ten states (figure 1): Alabama, Arkansas, Kansas, Louisiana, Mississippi, Missouri, Nebraska, New Mexico, Oklahoma, and Texas. In seven of those states (all except Kansas, Nebraska, and New Mexico), monthly temperatures averaged more than 10°F above normal. And, in Oklahoma and Texas, previous records were set by more than 5°F. For example,

Figure 1 Statewide Average Temperature Ranks
December 2021
Period: 1895–2021



Texas' monthly average temperature of 59.0°F was 12.1°F above normal and 5.7°F above the December 1933 standard. Meanwhile, state precipitation rankings ranged from the fifth-driest December in Delaware to the second wettest in Minnesota (figure 2).

Figure 2 Statewide Precipitation Ranks
December 2021
Period: 1895–2021



Summary: In early December, historically warm weather spread eastward from the western and central U.S., resulting in dozens of monthly record highs. During the first wave of monthly records on December 1, high temperatures soared to 85°F in Salinas, CA; 74°F in Sidney, NE; and 71°F in Mobridge, SD, and Hettinger, ND. Hettinger also set a state record for December, eclipsing the long-standing mark of 70°F, set on December 12, 1894, in the community of Napoleon. Also on December 1, monthly records were shattered by at least 5°F in Washington locations such as Ellensburg (66°F), Ephrata (69°F), Wenatchee (70°F), Yakima (72°F), and Omak (74°F). Elsewhere on the 1st, Helena, MT (70°F), achieved its warmest winter day on record, surpassing 69°F on February 24, 1995, and broke its December record by 6°F. The parade of records continued through December 2, with highs rising to monthly record levels in locations such as Russell, KS (79°F); Sidney, NE (78°F); Sheridan, WY (77°F); and Rapid City, SD (75°F). By the morning of December 3, only 6 percent of the continental U.S. was covered by snow—lowest on record for that date going back to at least 2003. Although warmth was slightly less anomalous after the 2nd, Greenville-Spartanburg, SC, tied a monthly record with a high of 79°F on December 3. On the 4th, Galveston, TX (80°F), attained a reading of 80°F or higher in December for only the fifth time on record. In addition, hundreds of daily-record highs were established in early December, with many sites setting records on multiple days. As warmth became prominent in the South, daily-record highs for December 2included 81°F in Gage, OK; 80°F in Batesville, AR; and 78°F in Poplar Bluff, MO. The following day, record-setting highs for December 3 climbed to 88°F in San Angelo, TX; 82°F in Columbia, SC; 81°F in Lumberton, NC; and 80°F in Harrison, AR. Meanwhile, relative normalcy returned across the northern Plains, following a high-wind event as the month began. In Montana, the winds fanned several wildfires, including the West Wind Fire, which burned 10,644 acres of vegetation in and near Denton between November 30 and December 4. Peak wind gusts in Montana on December 1 included 77 mph in Cut Bank and 71 mph in Great Falls. Relief came to Montana in the form of colder weather and occasional snow. Following a monthly record-tying high of 69°F on December 1, Glasgow, MT, received a daily-record snowfall of 4.6 inches on December 4. Elsewhere across the North, December 4-5 snowfall totaled 2.5 inches in Havre, MT, and 7.1 inches in Grand Forks, ND.

On December 5-6, a precursor event to a major tornado outbreak occurred across the mid-South and lower Midwest. In the initial outbreak, more than a dozen tornadoes were spotted across five states, mostly in Kentucky and Tennessee. In addition, daily-record rainfall totals were set on December 6 in locations such as Cape Girardeau, MO (1.72 inches), and Columbus, OH (1.44 inches). Farther north, snow blanketed parts of the north-central U.S. Record-setting snowfall totals for December 5 reached 7.8 inches in Rhinelander, WI, and 6.9 inches in Grand Forks, ND. In Montana, Billings received 6.3 inches of snow on December 5-6. Later, showers along the southern Atlantic Coast resulted in a daily-record sum (1.91 inches) for December 8 in Charleston, SC. As rain exited the East Coast, another powerful storm took aim on the West. Daily-record precipitation amounts for December 9 totaled 0.57 inch in Ely, NV, and Grand Junction, CO. Salt Lake City, Utah, received its first measurable snow of the season (1.4 inches) on December 9, followed by 0.8 inch on the 10th. In Colorado, Denver's first measurable snow (0.3 inch) occurred on December 10, breaking the record for its latest first accumulation originally set when 1.0 inch fell on November 21, 1934. (Later in the month, another city—Chicago—would set a record for latest first accumulating snow, with 1.5 inches on December 28. Chicago's previous record had been set on December 20, 2012.)

A tragic and deadly tornado outbreak struck the mid-South and lower Midwest on Friday evening, December 10. A nearly continuous path of catastrophic wind damage occurred along a primary path extending well over 200 miles from northeastern Arkansas into Kentucky, clipping the Bootheel of Missouri and northwestern Tennessee. Other deadly tornadoes struck parts of Illinois, Missouri, and Tennessee. The Kentucky communities of Mayfield, in Graves County, and Dawson Springs, in Hopkins and Caldwell Counties, were particularly devastated. Kentucky Mesonet stations recorded wind gusts to 120 mph (before incurring major damage) in Caldwell County and 107 mph in Graves County. Other hard-hit cities and towns included Monette, AR; Defiance, MO; Edwardsville, IL; and Bowling Green, KY. The "Western Kentucky" tornado spent nearly three hours on the ground, from 8:49 to 11:47 pm CST, traveling 165.7 miles and becoming the nation's deadliest tornado since May 22, 2011, when the Joplin, MO, tragedy—with 158 deaths—unfolded. Before this year, the country's deadliest December tornado had occurred on December 5, 1953, when 38 individuals perished in Vicksburg, MS. Prior to December 10, there had been only 14 tornado-related fatalities, nationwide, in 2021. Meanwhile, snow returned across parts of the north-central U.S. on December 9-10. Valentine, NE, noted daily-record snowfall both days, totaling 2.0 and 6.7

inches, respectively. Record-setting snowfall amounts in South Dakota for December 10 included 9.5 inches in Sioux Falls, 8.3 inches in Mitchell, and 6.5 inches in East Rapid City. From December 9-11, Marquette, MI, received precipitation totaling 1.53 inches, including 11.8 inches of snow.

Record-shattering warmth across the South helped to fuel both tornado outbreaks. On December 5, for example, a surge of warmth in advance of a cold front resulted in daily-record highs of 82°F in Hobart, OK, and Childress, TX. Very warm weather also covered the Desert Southwest, where Thermal, CA, posted a daily-record high (89°F) for the 5th. Farther north, however, the temperature in Denver, CO, fell 43°F (from 64 to 21°F) in a little over 8 hours on December 5, accompanied by blowing dust and northeasterly wind gusts as high as 46 mph. On the same date, wind gusts in New Mexico were clocked to 62 mph at Cannon AFB and 60 mph in Clovis. Meanwhile, Galveston, TX, reported highs of 80°F or greater on 9 December days, starting with the 4th, 6th, and 9th. Prior to this year, Galveston had reached or exceeded the 80-degree mark in December just four times going back to 1874: once apiece in 1918, 2007, 2016, and 2018. On December 9 and 10, Houston, TX, tied a monthly record with highs of 85°F. Daily-record highs in Texas on the 9th included 89°F in Laredo and 88°F in Brownsville. Del Rio, TX, posted a daily-record high of 90°F on December 10. Elsewhere in Texas, consecutive daily-record highs occurred on December 9-10 in Abilene (83 and 84°F); Waco (82 and 84°F); and Wichita Falls (79 and 84°F). On December 10, the day of the tornado outbreak, daily-record highs surged to 85°F in Vicksburg and Greenwood, MS, and to 80°F in Pine Bluff, AR, and Memphis, TN. Warmth spread into the East on December 11, when daily-record high surged to 87°F in Fort Myers, FL; 82°F in Montgomery, AL; 77°F in New Bern, NC; 70°F in Washington, DC; and 69°F in Newark, NJ. High winds accompanied the Northeastern warmth; in New York, peak gusts of 74 mph in Niagara Falls and 66 mph in Buffalo were recorded on December 11.

Just 5 days after the deadly December 10 tornado outbreak, extreme weather returned across the Plains and Midwest in the form of high winds and isolated tornadoes. Unrelated to thunderstorm activity, winds of 75 to 100 mph or greater raked the central Plains, raising dust, hampering travel, and fanning several grassfires. In Kansas alone, wildfires on December 15 charred more than 160,000 acres of grass and other drought- and freeze-dried vegetation. Outside of Kansas, the day's largest grassfire—the North 207 Fire—scorched 23,810 acres near Skellytown, TX. December 15 wind gusts were clocked to 107 mph in Lamar, CO, and 100 mph in Russell, KS, along with 93 mph in Lincoln, NE, and 92 mph in Colorado Springs, CO. Gusts to 89 mph were measured in Pueblo, CO, and Garden City, KS. Elsewhere in Kansas, Dodge City's peak gust to 84 mph set a station record, originally achieved with a thunderstorm wind gust to 79 mph on June 23, 2018. Goodland, KS (81 mph), recorded its fourth-highest gust, behind 96 mph on May 24, 1994; 92 mph on August 9, 1994, and 82 mph on April 10, 1991. Farther north, winds of 60 to 80 mph or higher were mostly associated with severe thunderstorms, as a derecho swept northeastward hundreds of miles from the east-central Plains into Wisconsin. Isolated tornadoes, including the first five (based on preliminary reports) ever noted during December in Minnesota, accompanied the outbreak. In Iowa, gusts reached or exceeded 80 mph in Marshalltown, Mason City, and Ottumwa.

Another round of record-setting warmth preceded a mid-month cold front. Notably, December 15 featured monthly record-high temperatures in numerous Midwestern locations, including Columbia, MO (76°F); Ottumwa, IA (75°F); Moline, IL (75°F); Lincoln, NE (74°F); La Crosse, WI (69°F); and Rochester, MN (64°F). Mid-December readings of 80°F or higher briefly occurred as far north as western Oklahoma and were common in the western Gulf Coast region and across Florida's peninsula. Tampa, FL, collected daily-record highs of 86°F on December 13, 16, and 17. Prior to the mid-month surge of warmth, above-normal temperatures were already in place across the nation's mid-section. From December 12-14, Borger, TX, tallied a trio of daily-record highs (76, 74, and 81°F). To the north, monthly record warmth lasted into early December 16 across Wisconsin, where highs included 65°F in Green Bay and 68°F (tying December 5, 2001) in Milwaukee. Green Bay's previous December record of 64°F had been set on December 5, 2001, and December 15, 2021. Warmth briefly reached the Northeast on December 16-17, resulting in consecutive daily-record highs in locations such as Providence, RI (65 and 63°F), and Montpelier, VT (63°F both days). In contrast, lows in California dipped to daily-record levels on December 16 in Ramona (26°F) and San Diego (38°F). On December 18, Tonopah, Nevada, posted a daily-record low of -1°F.

Significant precipitation reached the Pacific Coast States in mid-December before surging inland. On December 9, before the stormy regime developed, the average water equivalency of the Sierra Nevada snowpack stood at 1 inch—less than 20 percent of average for the date. That number would increase to more than 15 inches (greater than 150 percent of normal) by year's end, according to the California Department of Water Resources. In California, record-setting rainfall totals for December 13 included 3.39 inches in Oakland, 2.51 inches in Sacramento, 1.38 inches in Modesto, and 0.91 inch in Paso Robles. On December 13-14, Santa Barbara, CA, netted consecutive daily-record totals (0.90 and 1.44 inches, respectively). On December 14, daily-record amounts in southern California topped an inch in downtown Los Angeles (2.16 inches), Burbank (1.81 inches), Santa Barbara (1.44 inches), and Bishop (1.35 inches). For Bishop, it was the wettest day since January 17, 2019, when 1.49 inches fell. Farther inland, 24-hour snowfall totals in Utah on December 14-15 reached 12.3 inches in Tooele and 11.0 inches in downtown Salt Lake City. In Nevada, December 14-16 snowfall included 13.2 inches in Winnemucca and 8.9 inches in Ely. Within days, rain returned across storm-ravaged areas of the mid-South, while snow arrived in parts of the North. In Arkansas, record-setting rainfall totals for December 17 reached 2.21 inches in Harrison and 1.22 inches in Batesville. On the same date in South Dakota, daily-record snowfall amounts included 9.7 inches in Sisseton and 4.0 inches in Aberdeen.

Even with mid-month snow in the North and West, less than 27 percent of the contiguous U.S. had snow on the ground on the morning of December 25—the fourth year in a row with Christmas Day coverage less than 30 percent. In fact, record-shattering high temperatures continued in many areas of the country in the days leading up to the 2021 holiday season, most notably from the central and southern Plains into the Southeast. On December 19, Vero Beach, FL, logged a monthly record high of 90°F (previously, 89°F on December 2 and 3, 2018). Subsequently, Wichita Falls, TX, posted a December record high with a reading of 91°F on the 24th. Wichita Falls had never reached or exceeded the 90-degree mark so late in the year; the monthly record had been 88°F on December 4, 1954. It was the warmest Christmas Day on record in dozens of locations across the South; record highs for December 25 included 84°F in Houston, TX; 80°F in Pine Bluff, AR; and 76°F in Nashville, TN. Rio Grande Village, TX, reported a high of 94°F, an all-time national record for December 25. Holiday warmth extended into the Midwest, where daily-record highs for December 25 rose to 77°F in Poplar Bluff, MO; 74°F in Carbondale, IL; and 72°F in Evansville, IN. Meanwhile, frigid conditions were limited to the nation's northern tier, where frequent, late-month readings below -10°F occurred from Montana to Maine. Shortly after reporting a monthly record-tying high of 69°F (on December 1), Glasgow, MT, registered sub-zero minimum temperatures on December 5-7, 15-18, 20-21, and 24-31. Glasgow's temperature remained continuously below 0°F from December 27 – January 1.

The next round of Western storminess originated in the Pacific Northwest. As precipitation moved inland on December 19, daily-record totals included 1.05 inches in Hermiston, OR, and 0.69 inch in Pasco, WA. Several days later, on December 23, southern California received its most significant precipitation of the season. On that date, daily-record amounts reached 3.10 inches in Santa Barbara, 1.48 inches in Los Angeles (LAX Airport), and 1.32 inches in Long Beach. For Santa Barbara, it was the wettest December day on record, surpassing 2.80 inches on December 18, 2010—and the wettest day at any time of year since February 17, 2017, when 4.16 inches fell. Precipitation later spread inland across the Great Basin and Southwest. On December 23-24, Ely, NV, received precipitation totaling 0.88 inch, as well as 6.6 inches of snow). During a 24-hour period on December 23-24, Scipio, UT, measured precipitation totaling 1.58 inches and 9.0 inches of snow. In Arizona, daily-record amounts for December 24 included 1.67 inches (5.9 inches of snow) in Flagstaff and 1.00 inch in Phoenix. For Flagstaff, it was the wettest December day since 2009, when 1.75 inches fell on December 7. Similarly, it was the wettest December day in Phoenix since December 8, 1992, when 1.06 inches fell. On December 25, locally heavy showers developed across the middle Ohio Valley and environs. It was the wettest Christmas Day on record in locations such as Morgantown, WV (1.34 inches), and Columbus, OH (0.82 inch). However, the storm focus soon turned westward again. Elko, NV, netted a daily-record snowfall (4.5 inches) for December 26, while Utah's Bryce Canyon Airport received 5.2 inches in a 24-hour period on December 26-27. By the 27th, heavy snow overspread the north-central U.S., where Grand Forks, ND, received a daily-record sum of 5.9 inches. Rare holiday snow fell in the Pacific Northwest, where Portland, OR, measured consecutive daily-record totals (0.7 and 1.0 inch, respectively) on December 26-27. In fact, Portland received at least a trace of snow each day from December 25-30, totaling 3.5 inches. During the same 6-day period, Seattle, WA, reported 5.2 inches of snow, nearly half (2.5 inches) of which fell on December 26. At the same time, frigid weather gripped the northern Plains and Northwest. In Washington, consecutive daily-record lows were set on December 26-27 in Seattle (20 and 17°F) and Bellingham (9 and 7°). In Montana, record-setting lows for the 27th dipped to -28°F in Choteau and -26°F in Cut Bank. Later, Grand Forks, ND, collected consecutive daily-record lows (-33 and -37°F, respectively) on December 31 – January 1.

On December 29-30, the year's final Western storm delivered consecutive daily-record rainfall totals (2.72 and 2.10 inches, respectively) in Oxnard, CA. Other daily-record totals on the 30th included 3.12 inches in Los Angeles (LAX Airport) and 2.03 inches in Sandberg. Woodland Hills, CA, reported 4.19 inches in 24 hours on December 29-30. Farther inland, heavy snow again fell across the Intermountain West. Lewiston, ID, measured a daily-record snowfall (7.2 inches) for December 30, while Manti, UT, tallied 6.0 inches in 24 hours on December 30-31. In Donner Pass, CA, the Central Sierra Snow Lab—with continuous snow depth records dating to 1879, reported a December record with approximately 214 inches of snow (previously, 179 inches in 1970). Meanwhile, a wide array of daily- and monthly record highs spanned the South. In the latter category, Abilene, TX, notched a December record high on the 26th with a high of 90°F (previously, 89°F on December 4, 1954, and December 24, 1955). Two days later, on the 28th, a high of 82°F in Galveston, TX, edged the monthly record of 81°F, set on December 13, 2016, and December 6, 2021. On December 30 in Alabama, highs of 85°F in Montgomery and 82°F in Mobile tied or broke monthly records. The late-month warmth capped the warmest December on record in a multitude of Southern communities. In many locations, monthly temperatures were more than 10°F above normal, while former December records were broken by at least 5°F. In Del Rio, TX, for example, the monthly average temperature of 65.5°F was 12.0°F above normal; the former December record had been 58.6°F in 1933. Del Rio also set an annual average temperature record (74.3°F), clipping the 2020 standard of 74.2°F. It was also the warmest year on record in several Northern towns and cities, including Boston, MA (54.4°F; previously, 54.2°F in 2012), and Bismarck, ND (47.2°F; previously, 46.5°F in 2016). Elsewhere, horrific wildfires broke out on December 30 southeast of Boulder, CO, driven by winds that were clocked to 108 mph near Boulder, 102 mph northeast of Crisman, and 90 mph northwest of Marshall. Near Louisville, CO, the Marshall Fire torched more than 6,000 acres of vegetation and destroyed hundreds of homes. Adverse weather complicated wildfire recovery efforts, with Boulder reporting more than 11 inches of snow and sub-zero temperatures in the fire's wake.

Frigid weather prevailed for much of the month in southeastern Alaska, while mild weather replaced previously

cold conditions across the mainland. In fact, monthly temperatures averaged more than 5°F above normal in parts of southwestern Alaska. Substantial precipitation and frequently hazardous conditions accompanied the transition to milder weather. On November 30 – December 1, Anchorage received 5.5 inches. On December 3, significant snow fell in Kotzebue and Nome, with easterly wind gusts clocked to 59 and 42 mph, respectively. In southeastern Alaska, Juneau received 4.1 inches of snow during the first 3 days of December. The 4th was the first day in nearly a month with a low temperature above 0°F in locations such as Bethel (first since November 12) and King Salmon (first since November 10). With the arrival of mild weather, King Salmon's daily precipitation totals topped one-half inch on December 6 and 9. Fairbanks received 9.4 inches of snow from December 7-11. Bettles was blanketed by 10.1 inches of snow on December 6-7. Snow also fell in parts of southeastern Alaska, where Juneau reported 15.9 inches during the first 10 days of December. By mid-month, bitterly cold weather briefly returned across much of Alaska. On December 16, the northern Alaskan community of Deadhorse notched a daily-record low of -44°F. Consecutive lows of -40°F were reported in Fairbanks on December 14-15, followed by 12.7 inches of snow during the ensuing 5 days. Similarly, Bettles registered a low of -46°F on December 14, followed by 9.5 inches of snow from December 16-19. Meanwhile in southeastern Alaska, Juneau reported 19 consecutive days (December 13-31) with lows below 20°F, including a reading of 0°F on December 26. A day earlier, on the 25th, Ketchikan had logged a daily-record low of 0°F. In contrast, sudden warmth across the Alaskan mainland was accompanied by historically stormy weather, featuring snow, sleet, freezing rain, and rain. By December 26, some of the warmest winter weather on record developed in western and southern Alaska, with monthly record highs shattered on that date in Kodiak (65°F; previously, 56°F on December 22, 1984) and Cold Bay (62°F; previously, 54°F on December 24, 1973, and December 11, 1990). Meanwhile, an epic winter storm occurred in Fairbanks and surrounding areas. On December 25-26, Fairbanks reported 2.45 inches of precipitation, including freezing rain and 9.3 inches of snow. Prior to December 26, when 1.93 inches fell, the wettest winter day in Fairbanks had been January 20, 1937, with 1.33 inches. Significant precipitation occurred in other areas of the state, with daily-record totals being set in locations such as Bethel (0.92 inch on December 22) and Nome (0.43 inch on December 25). December precipitation totaled at least 300 percent of normal in Fairbanks (5.73 inches, or 1,005 percent of normal), Nome (3.96 inches, or 377 percent), Bethel (3.92 inches, or 370 percent), and Utqiaġvik (0.86 inch, or 391 percent). For Fairbanks, it was the wettest December on record (previously, 3.23 inches in 1984) and—with 49.7 inches of snow, 456 percent of normal—the second-snowiest December behind only 50.7 inches in 1984.

Hawaii's long stretch of tranquil weather ended early in the month with the arrival of a "Kona low," which resulted in snow, blowing snow, and blizzard conditions across the Big Island summits of Mauna Loa and Mauna Kea, beginning on December 3 and continuing for several days. On December 4, a wind gust to 105 mph was clocked on the Mauna Kea summit. Meanwhile, intense rainfall sparked widespread flash flooding, starting on December 5, especially in Maui and Hawaii Counties. December 6 was the second-wettest day on record in Honolulu, Oahu, behind only 15.32 inches on March 5, 1958. Honolulu's daily sum, 7.92 inches, represented its wettest-ever December day (previously, 7.89 inches on December 12, 1987). Other Hawaiian daily-record totals included 3.27 inches (on December 6) in Lihue, Kauai, and 2.40 inches (on December 5) in Kahului, Maui. A southerly wind gust to 52 mph accompanied Kahului's rain. Following a mid-month reprieve, locally heavy showers returned across parts of Hawaii. On the Big Island, Hilo reported more than an inch of rain each day from December 18-22 and 30-31. December rainfall at the state's major airport observation sites ranged from 7.45 inches (266 percent of normal) in Kahului to 24.99 inches (207 percent) in Hilo. Drought, which had covered 57 percent of Hawaii at the end of November, was fully eradicated by January 4, 2022, according to the *U.S. Drought Monitor*.

Fieldwork

Fieldwork summary provided by USDA/NASS

Most of the nation was warmer than average during December. Much of the Mississippi Valley, southern Ohio Valley, and southern Plains were at least 9°F above normal for the month. In contrast, large parts of the Pacific Northwest, northern Plains, and northern Rockies were cooler than normal. Parts of northern Montana averaged 6°F or more below normal. Meanwhile, December was drier than normal for much of the Delta, Gulf Coast, mid-Atlantic, Northeast, and central and southern Plains. Conversely, large parts of the northern Plains, Rockies, and Southwest received at least twice the normal amount of precipitation for the month.

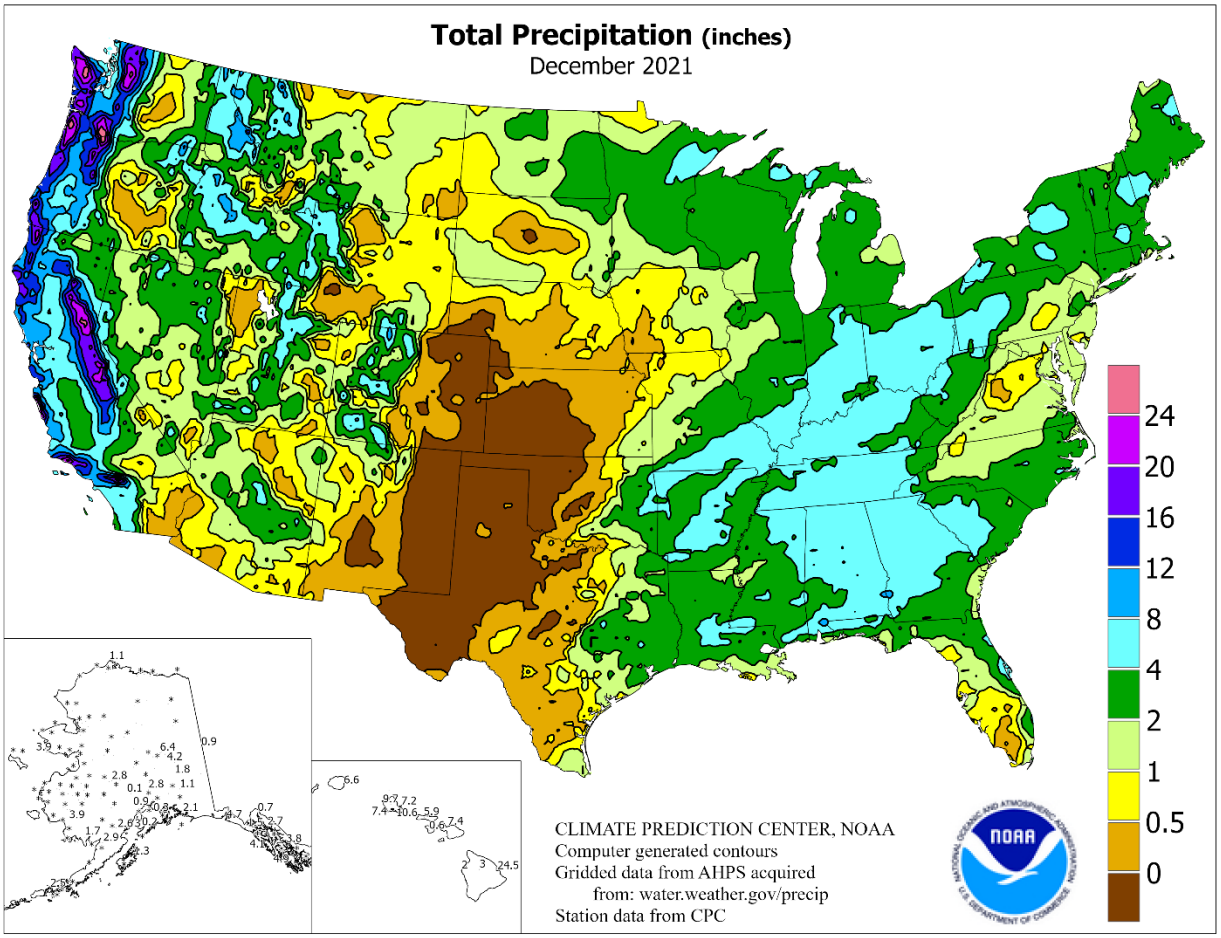
Nationwide, 92 percent of the winter wheat acreage had emerged by November 28, equal to last year but 1 percentage point ahead of the 5-year average. As of November 28, forty-four percent of the 2022 winter wheat acreage was reported in good to excellent condition, 2 percentage points below the same time last year.

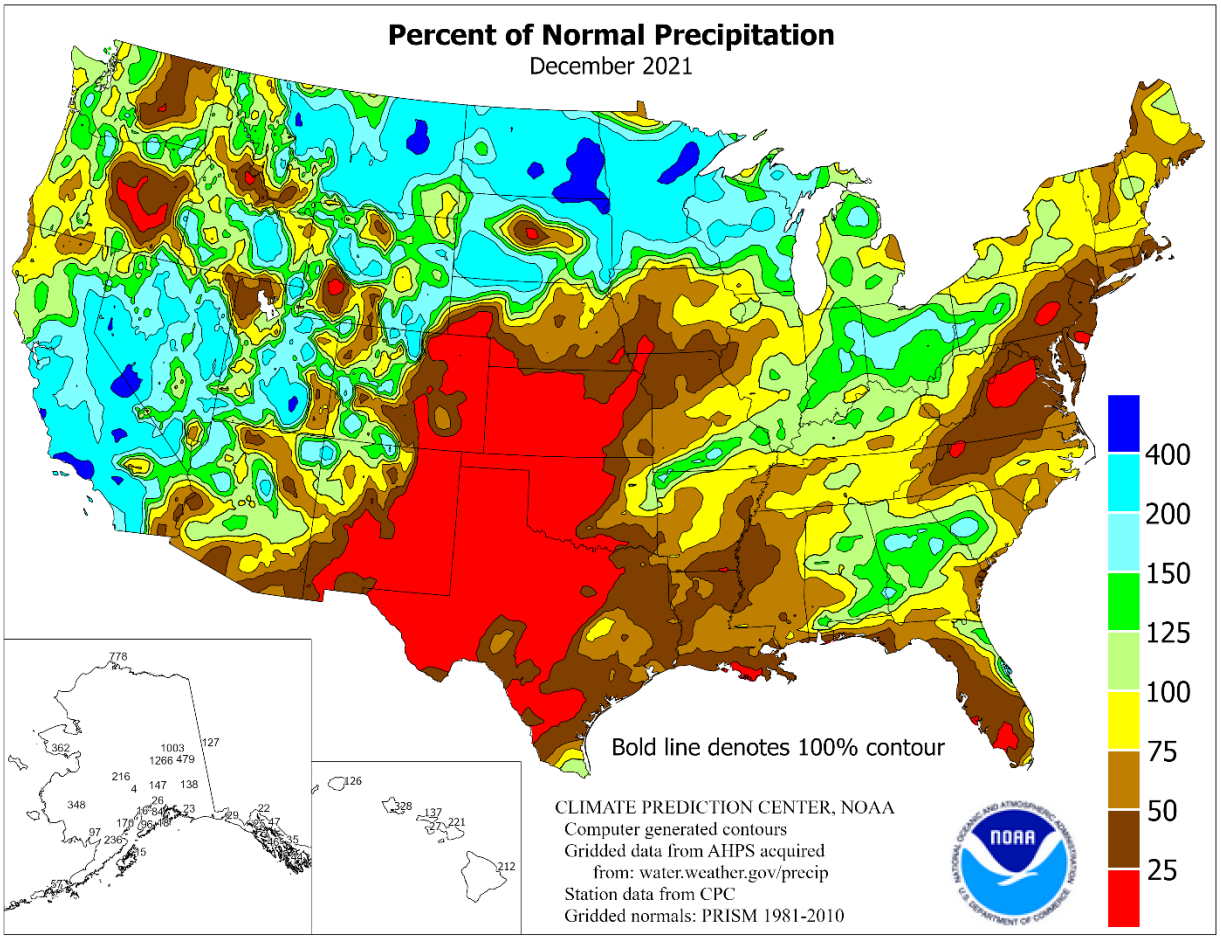
By November 28, eighty-five percent of the nation's cotton acreage had been harvested, 2 percentage points ahead of last year and 6 points ahead of the 5-year average.

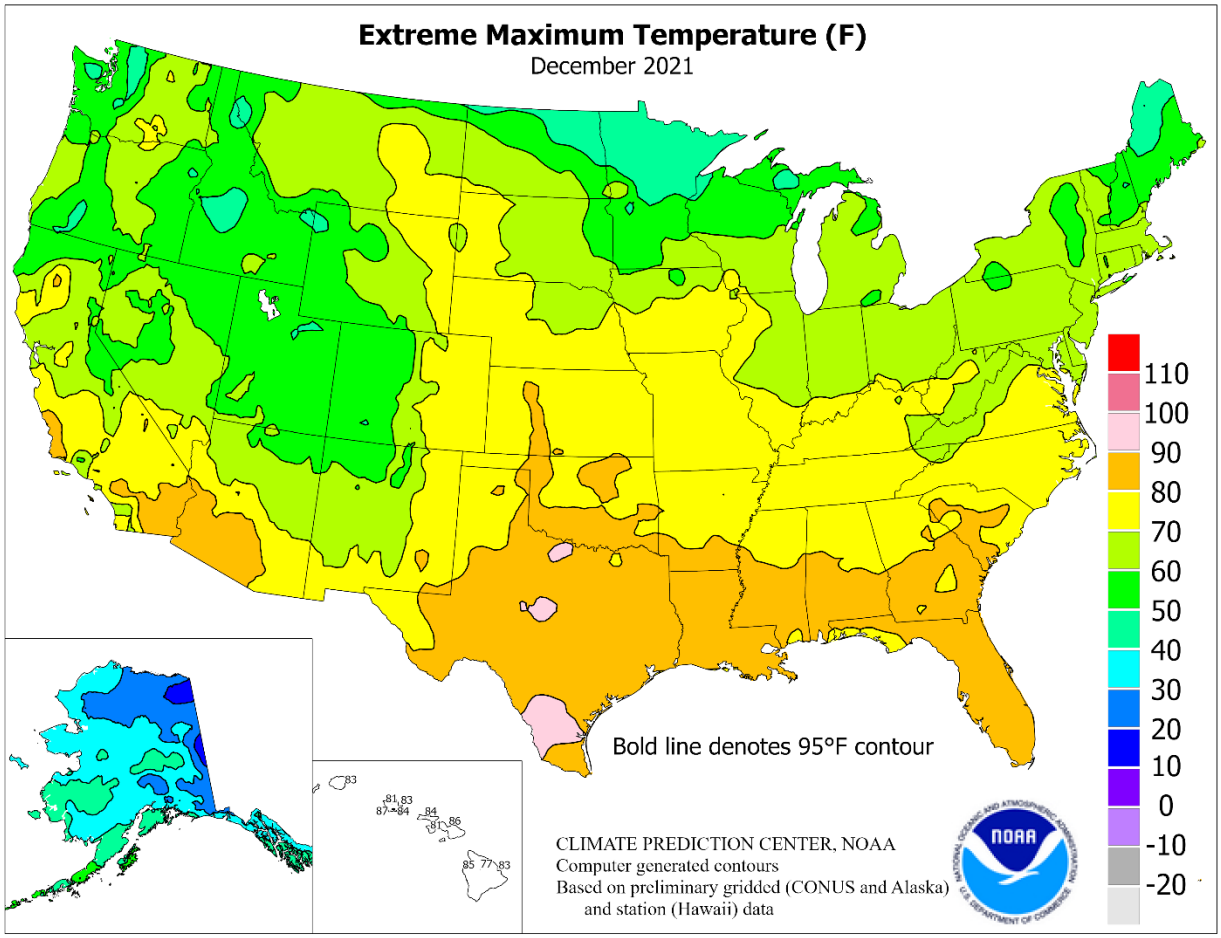
Ninety-seven percent of the 2021 sorghum acreage had been harvested by November 28, two percentage points behind last year but 1 point ahead of the 5-year average.

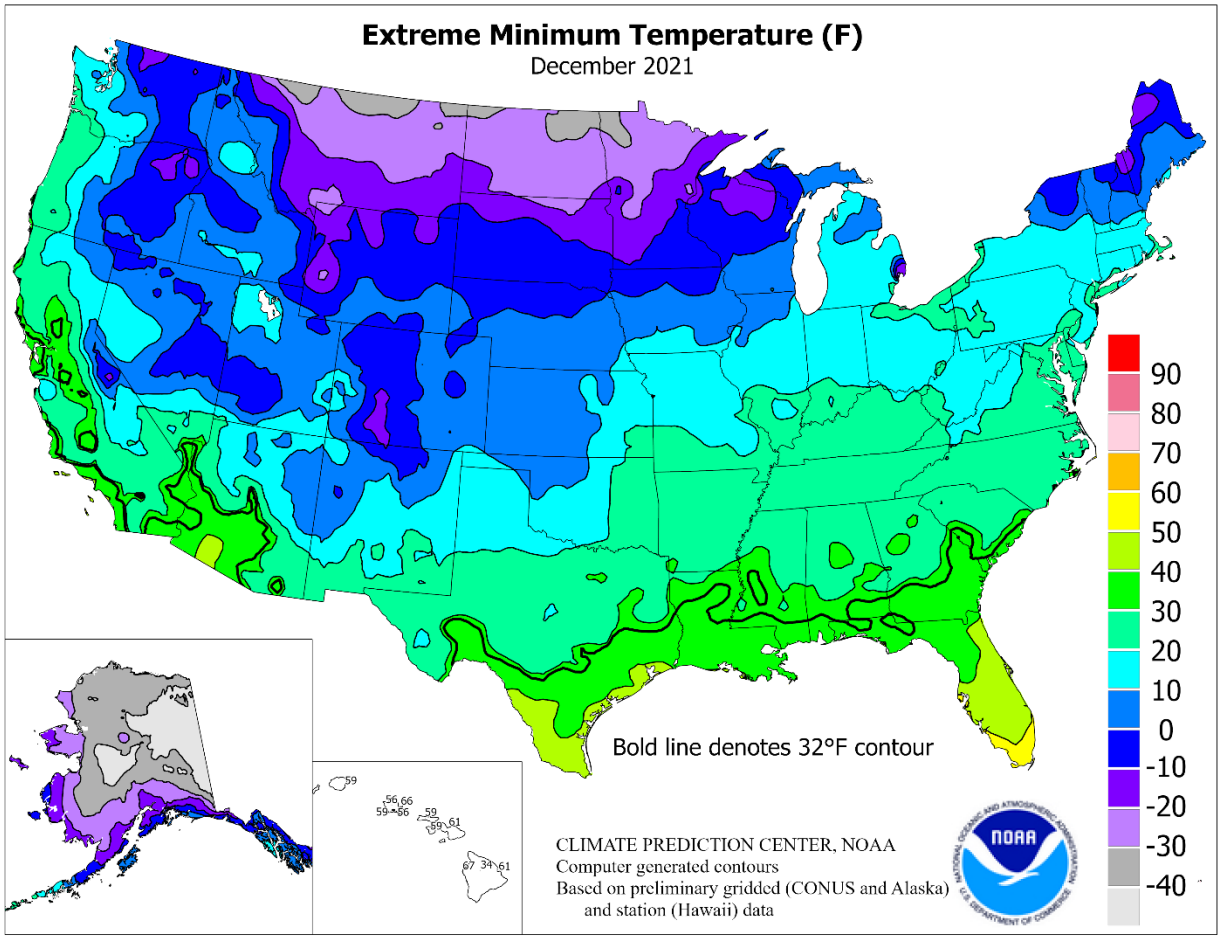
Ninety-six percent of the nation's peanut acreage had been harvested as of November 28, equal to both last year and the 5-year average.

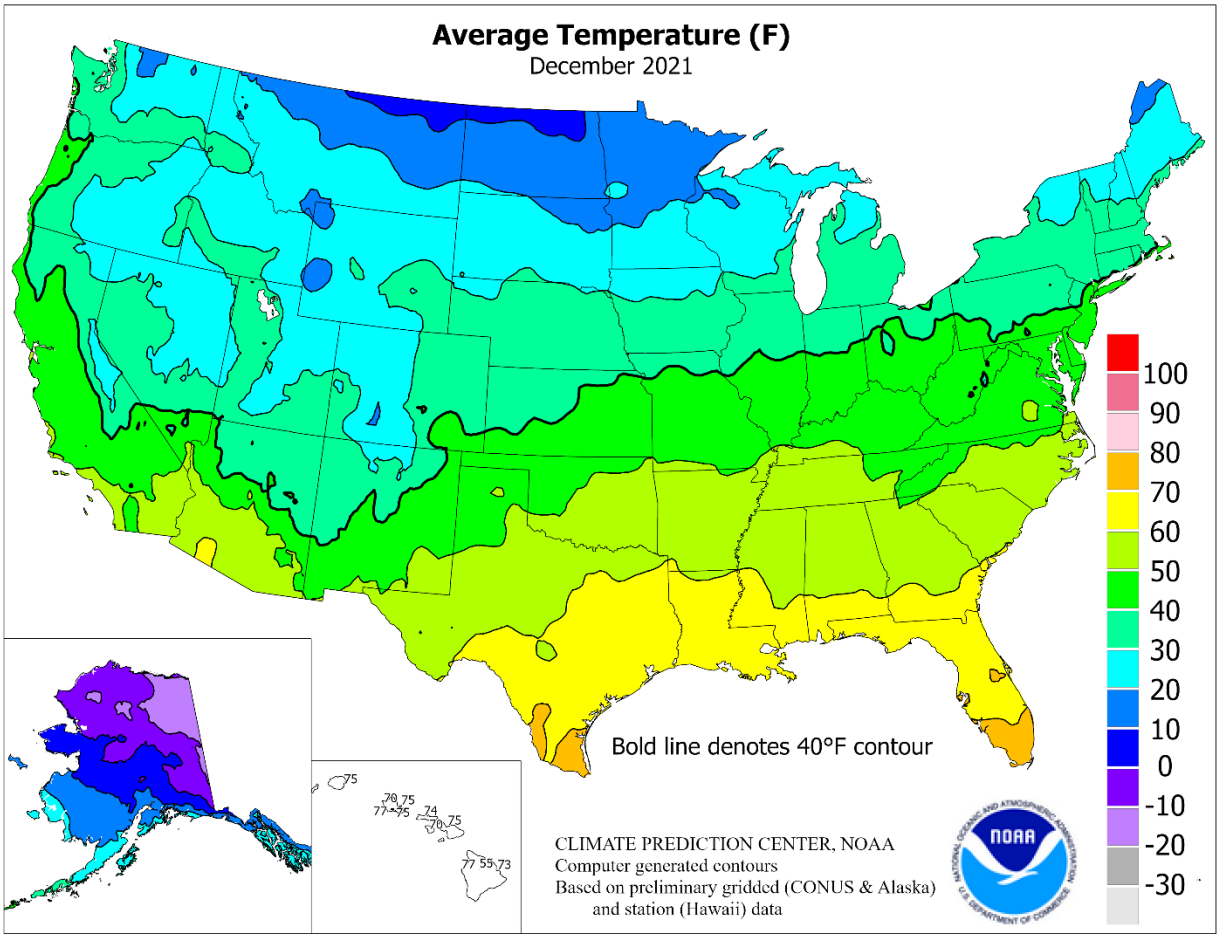
By November 28, ninety-four percent of the nation's sunflower crop had been harvested, 2 percentage points behind last year but 8 points ahead of the 5-year average.

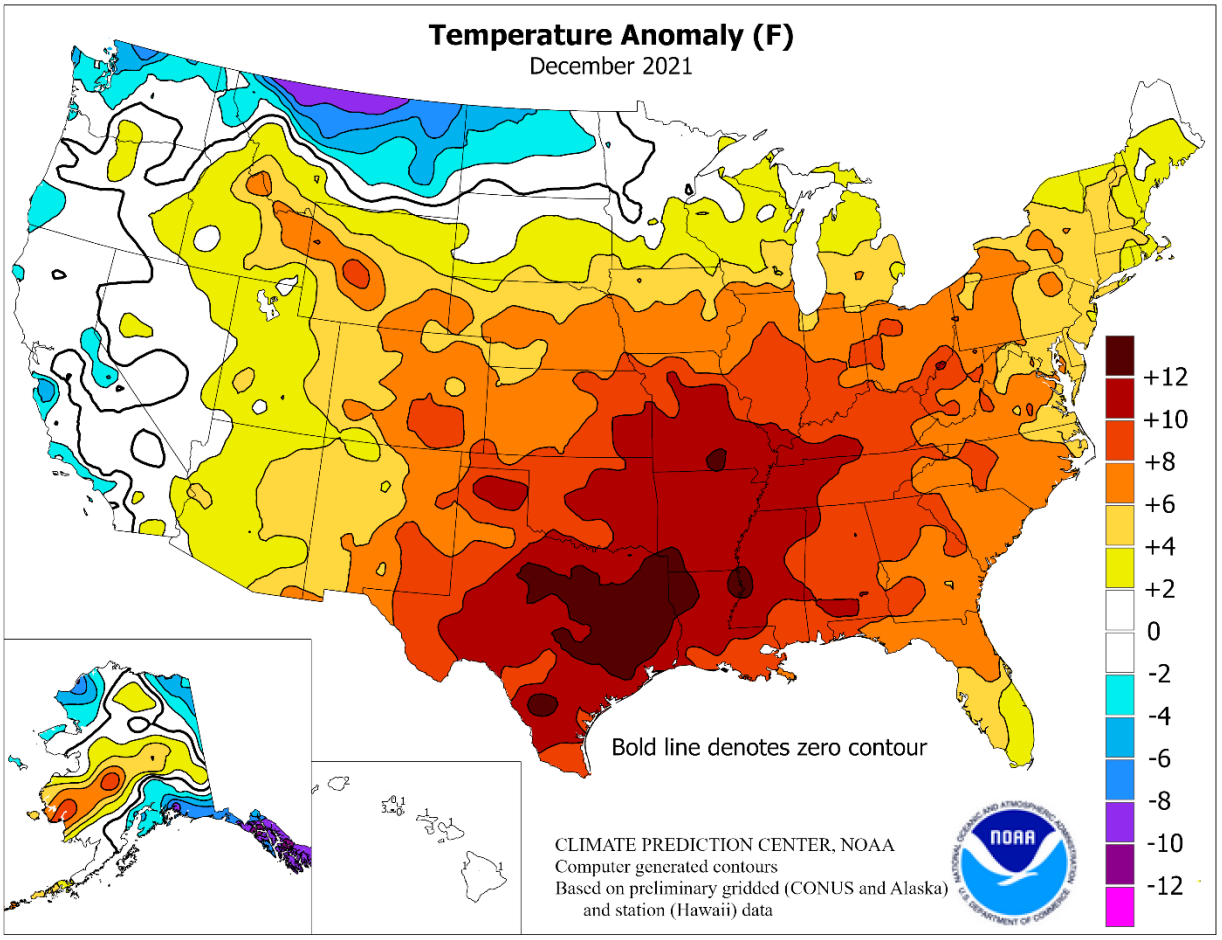

Total Precipitation (inches)
December 2021
24
20
16
12
8
4
2
1
0.5
0
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Gridded data from AHPS acquired
from: water.weather.gov/precip
Station data from CPC
NOAA


Percent of Normal Precipitation
December 2021
400
200
150
125
100
75
50
25
Bold line denotes 100% contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Gridded data from AHPS acquired
from: water.weather.gov/precip
Station data from CPC
Gridded normals: PRISM 1981-2010
NOAA


Extreme Maximum Temperature (F)
December 2021
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
Bold line denotes 95°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data
NOAA


Extreme Minimum Temperature (F)
December 2021
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
Bold line denotes 32°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data
NOAA


Average Temperature (F)
December 2021
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
Bold line denotes 40°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS & Alaska)
and station (Hawaii) data
NOAA


Temperature Anomaly (F)
December 2021
+12
+10
+8
+6
+4
+2
0
-2
-4
-6
-8
-10
-12
Bold line denotes zero contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data
NOAA

National Weather Data for Selected Cities

December 2021

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	18	-1	0.93	-0.19	WICHITA	44	10	0.01	-1.19	TOLEDO	39	9	3.44	0.76
BARROW	-6	0	1.10	0.94	KY LEXINGTON	46	10	4.64	0.72	YOUNGSTOWN	39	9	3.04	0.06
FAIRBANKS	1	0	6.44	5.80	LOUISVILLE	50	12	3.57	-0.24	OK OKLAHOMA CITY	51	10	0.18	-1.70
JUNEAU	21	-8	2.74	-3.10	PADUCAH	50	13	3.96	-0.64	TULSA	52	13	1.65	-0.83
KODIAK	31	0	1.27	-7.48	LA BATON ROUGE	64	7	3.49	-0.93	OR ASTORIA	41	-2	12.48	2.60
NOME	8	-1	3.91	2.81	LAKE CHARLES	64	11	2.21	-2.48	BURNS	27	3	1.60	0.03
AL BIRMINGHAM	57	11	0.00	-4.46	NEW ORLEANS	66	10	3.04	-2.20	EUGENE	42	2	10.98	3.15
HUNTSVILLE	54	10	4.67	-1.10	SHREVEPORT	63	15	2.29	-2.50	MEDFORD	39	0	3.95	0.49
MOBILE	62	10	4.68	-0.39	MA BOSTON	39	4	2.31	-1.45	PENDLETON	35	2	1.97	0.48
MONTGOMERY	59	11	4.46	-0.41	WORCESTER	35	6	3.60	-0.21	PORTLAND	41	1	6.94	1.45
AR FORT SMITH	54	13	4.43	1.17	MD BALTIMORE	45	8	0.80	-2.55	SALEM	42	2	9.81	2.95
LITTLE ROCK	55	12	4.07	-0.91	ME CARIBOU	21	3	3.33	0.08	PA ALLENTOWN	39	7	1.26	-2.31
AZ FLAGSTAFF	32	3	4.43	2.57	PORTLAND	32	3	3.70	-0.32	ERIE	41	9	3.64	-0.06
PHOENIX	59	4	1.51	0.59	MI ALPENA	30	5	2.48	0.72	MIDDLETOWN	42	8	0.86	-2.35
PRESCOTT	41	2	1.82	0.82	GRAND RAPIDS	35	5	2.23	-0.26	PHILADELPHIA	45	8	1.64	-1.90
TUCSON	57	5	1.29	0.33	HOUGHTON LAKE	29	5	2.53	0.87	PITTSBURGH	41	8	2.97	0.14
CA BAKERSFIELD	49	1	2.56	1.52	LANSING	36	8	2.09	0.22	WILKES-BARRE	40	9	1.33	-1.33
EUREKA	45	-2	5.09	-3.04	MUSKEGON	37	6	2.23	-0.31	WILLIAMSPORT	38	7	1.35	-1.57
FRESNO	48	2	3.58	1.80	TRAVERSE CITY	32	5	1.56	-0.91	RI PROVIDENCE	40	5	1.71	-2.51
LOS ANGELES	55	-1	8.22	6.17	MN DULUTH	19	4	2.70	1.49	SC CHARLESTON	59	8	2.96	-0.14
REDDING	47	1	5.34	-0.93	INT_L FALLS	13	4	1.80	0.97	COLUMBIA	55	8	3.91	0.71
SACRAMENTO	46	0	7.00	3.77	MINNEAPOLIS	24	4	1.92	0.75	FLORENCE	56	9	1.97	-1.02
SAN DIEGO	56	-1	2.56	1.02	ROCHESTER	25	0	1.39	0.14	GREENVILLE	52	8	2.85	-1.27
SAN FRANCISCO	51	0	9.73	5.70	ST. CLOUD	20	4	2.02	1.17	SD ABERDEEN	19	4	0.79	0.26
STOCKTON	47	2	3.82	1.61	MO COLUMBIA	46	14	2.03	-0.41	HURON	24	5	0.22	-0.31
CO ALAMOSA	26	8	0.04	-0.36	KANSAS CITY	43	11	0.50	-1.03	RAPID CITY	26	1	0.60	0.15
CO SPRINGS	40	11	0.07	-0.32	SAINT LOUIS	47	12	2.73	-0.10	SIOUX FALLS	28	9	1.31	0.61
DENVER INTL	38	8	0.15	-0.24	SPRINGFIELD	49	14	1.29	-1.73	TN BRISTOL	47	9	1.83	-1.52
GRAND JUNCTION	33	4	2.05	1.46	MS JACKSON	60	13	3.00	-2.17	CHATTANOOGA	53	10	4.65	-0.27
PUEBLO	39	9	0.12	-0.29	MERIDIAN	60	13	3.24	-1.84	KNOXVILLE	51	10	3.52	-1.01
CT BRIDGEPORT	40	5	1.70	-1.60	TUPELO	57	13	4.65	-1.62	MEMPHIS	57	14	4.51	-1.24
HARTFORD	38	6	2.93	-0.48	MT BILLINGS	26	-1	0.95	0.44	NASHVILLE	53	13	3.28	-0.96
DC WASHINGTON	47	8	0.63	-2.41	BUTTE	24	7	0.36	-0.17	TX ABILENE	60	15	0.04	-1.18
DE WILMINGTON	43	6	2.30	-1.16	CUT BANK	14	-8	0.20	-0.06	AMARILLO	48	11	0.00	-0.72
FL DAYTONA BEACH	68	7	3.65	1.04	GLASGOW	12	-4	0.93	0.50	AUSTIN	65	13	1.69	-0.69
JACKSONVILLE	63	8	1.59	-1.20	GREAT FALLS	20	-5	0.91	0.35	BEAUMONT	66	12	1.41	-3.89
KEY WEST	75	4	0.93	-1.28	HAVRE	13	-7	0.76	0.32	BROWNSVILLE	73	11	1.30	0.14
MIAMI	74	4	1.15	-0.90	MISSOULA	28	5	1.11	0.04	CORPUS CHRISTI	69	10	0.65	-1.18
ORLANDO	70	7	2.07	-0.50	NC ASHEVILLE	47	8	0.92	-2.66	DEL RIO	65	13	0.25	-0.41
PENSACOLA	65	11	1.64	-2.94	CHARLOTTE	53	11	2.10	-1.12	EL PASO	53	8	0.57	-0.23
TALLAHASSEE	62	9	0.77	-3.10	GREENSBORO	50	9	1.46	-1.50	FORT WORTH	61	14	0.45	-2.12
TAMPA	71	8	0.32	-2.15	HATTERAS	56	7	3.18	-1.11	GALVESTON	70	13	1.20	0.00
WEST PALM BEACH	72	4	2.11	-1.24	RALEIGH	52	9	1.58	-1.45	HOUSTON	68	13	2.08	-1.63
GA ATHENS	54	9	3.67	-0.02	WILMINGTON	58	10	2.41	-1.18	LUBBOCK	51	11	0.23	-0.55
ATLANTA	56	11	6.07	2.19	ND BISMARCK	17	1	1.03	0.52	MIDLAND	56	11	0.03	-0.56
AUGUSTA	56	9	5.53	2.16	DICKINSON	19	1	0.24	-0.05	SAN ANGELO	60	13	0.03	-0.85
COLUMBUS	58	9	4.81	0.54	FARGO	14	0	1.60	0.74	SAN ANTONIO	64	11	0.89	-1.01
MACON	57	9	5.00	0.96	GRAND FORKS	11	-1	1.36	0.76	VICTORIA	67	12	0.56	-1.75
SAVANNAH	60	9	1.14	-1.79	JAMESTOWN	15	0	0.56	0.12	WACO	62	14	0.04	-2.70
HI HILO	73	1	24.54	12.96	NE GRAND ISLAND	35	9	0.22	-0.42	WICHITA FALLS	55	13	0.29	-1.34
HONOLULU	75	0	10.64	7.42	LINCOLN	36	9	0.24	-0.73	UT SALT LAKE CITY	35	5	1.60	0.18
KAHULUI	75	1	7.40	4.08	NORFOLK	33	8	0.50	-0.26	VA LYNCHBURG	47	10	0.89	-2.33
LIHUE	75	2	6.57	1.35	NORTH PLATTE	34	8	0.40	-0.04	NORFOLK	50	6	1.77	-1.48
IA BURLINGTON	38	9	0.66	-1.43	OMAHA	36	10	0.37	-0.68	RICHMOND	49	8	1.07	-2.18
CEDAR RAPIDS	31	8	1.16	-0.26	SCOTTSBLUFF	35	9	0.25	-0.27	ROANOKE	48	9	0.69	-2.24
DES MOINES	35	9	0.76	-0.66	VALENTINE	31	7	0.70	0.29	WASH/DULLES	45	8	0.44	-2.52
DUBUQUE	32	9	1.51	-0.33	NH CONCORD	31	5	3.83	0.65	VT BURLINGTON	32	6	2.58	0.20
SIOUX CITY	32	9	0.66	-0.16	NJ ATLANTIC_CITY	43	6	0.65	-3.01	WA OLYMPIA	39	0	8.90	1.45
WATERLOO	31	9	1.28	0.06	NEWARK	45	8	1.37	-2.42	QUILLAYUTE	37	-4	13.30	0.30
ID BOISE	34	3	1.57	-0.01	NM ALBUQUERQUE	41	5	0.12	-0.39	SEATTLE-TACOMA	38	-3	4.26	-1.09
LEWISTON	35	1	1.78	0.77	NV ELY	27	1	2.00	1.41	SPOKANE	28	1	1.33	-0.97
POCATELLO	31	7	1.29	0.06	LAS VEGAS	50	2	0.27	-0.24	YAKIMA	33	4	0.34	-1.21
IL CHICAGO/O_HARE	38	10	2.29	0.05	RENO	37	1	2.90	1.85	WI EAU CLAIRE	23	4	0.32	-0.70
MOLINE	36	10	1.24	-0.93	WINNEMUCCA	30	0	2.33	1.37	GREEN BAY	28	7	1.66	0.15
PEORIA	40	11	1.53	-0.90	NY ALBANY	36	8	2.61	-0.31	LA CROSSE	28	7	1.71	0.35
ROCKFORD	35	10	2.38	0.40	BINGHAMTON	34	7	2.81	0.00	MADISON	31	8	1.69	-0.06
SPRINGFIELD	42	11	1.95	-0.57	BUFFALO	38	8	2.31	-1.56	MILWAUKEE	35	9	2.33	0.31
IN EVANSVILLE	46	11	4.04	0.29	ROCHESTER	37	7	1.94	-0.67	WV BECKLEY	44	10	2.43	-0.54
FORT WAYNE	38	9	4.23	1.46	SYRACUSE	38	8	2.12	-1.07	CHARLESTON	46	9	3.04	-0.20
INDIANAPOLIS	42	10	4.14	1.00	OH AKRON-CANTON	40	10	3.60	0.77	ELKINS	42	10	2.33	-0.91
SOUTH BEND	37	8	3.85	1.26	CINCINNATI	44	10	3.42	0.07	HUNTINGTON	47	10	3.41	0.12
KS CONCORDIA	40	10	0.17	-0.70	CLEVELAND	40	8	2.79	-0.28	WY CASPER	30	6	0.62	0.11
DODGE CITY	41	8	0.00	-0.87	COLUMBUS	42	8	4.48	1.53	CHEYENNE	34	7	0.41	-0.10
GOODLAND	37	7	0.06	-0.43	DAYTON	42	11	4.45	1.36	LANDER	32	11	0.38	-0.21
TOPEKA	43	11	0.11	-1.25	MANSFIELD	39	9	6.43	3.16	SHERIDAN	27	4	1.01	0.44

Based on 1981-2010 normals

***** Not Available**

International Weather and Crop Summary

January 2-8, 2021

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

HIGHLIGHTS

EUROPE: Warm but wet weather maintained overall favorable conditions for winter crops across the region.

MIDDLE EAST: Locally heavy rain in southern and eastern Iran contrasted with dry weather in central growing areas.

NORTHWESTERN AFRICA: Warm, dry weather exacerbated drought in Morocco, while showers favored winter grains across central and eastern growing areas.

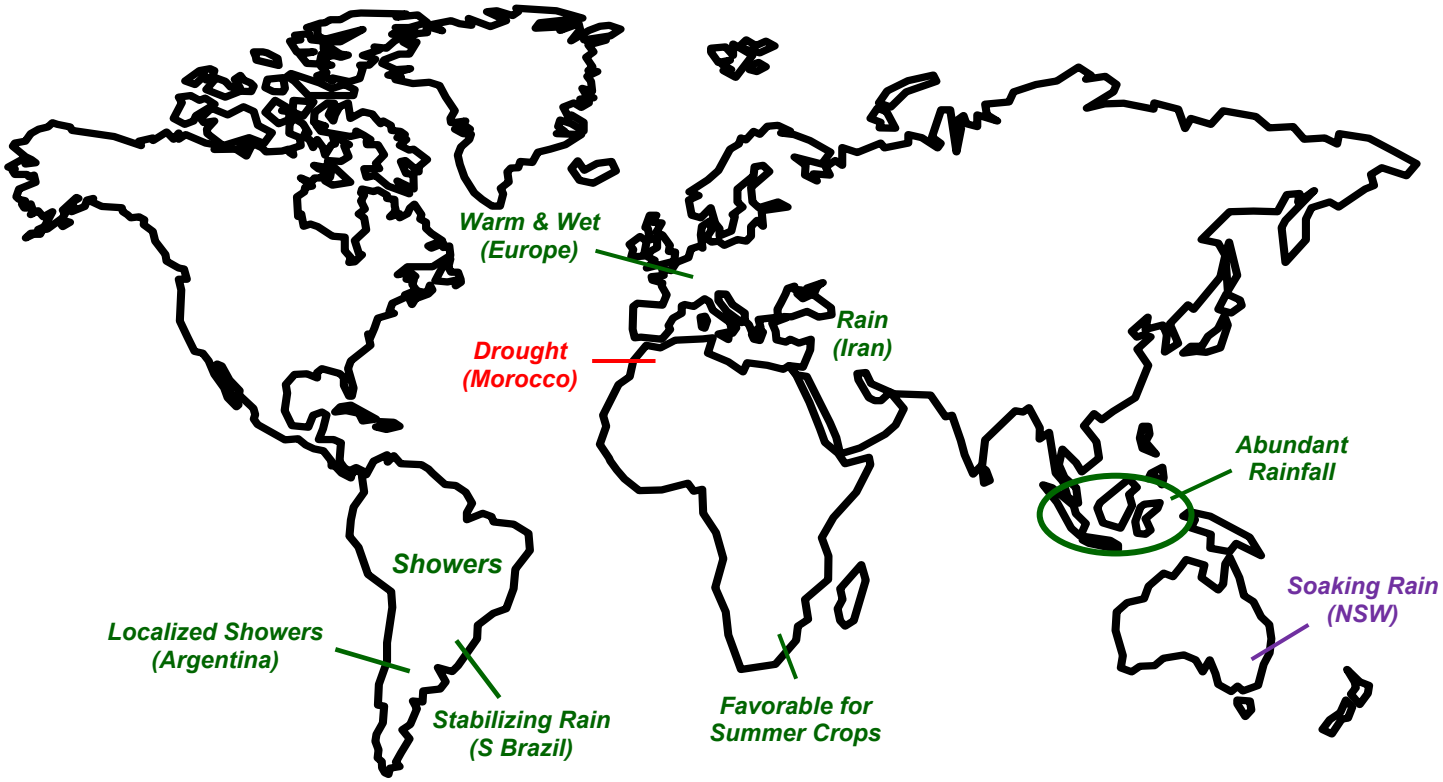
SOUTHEAST ASIA: Downpours continued in southern portions of the region, locally halting oil palm harvesting but generally maintaining abundant moisture for rice.

AUSTRALIA: Soaking rain disrupted fieldwork in New South Wales, while winter crop harvesting neared completion elsewhere.

SOUTH AFRICA: Mild, showery weather continued, benefiting corn and other predominantly rain-fed summer crops.

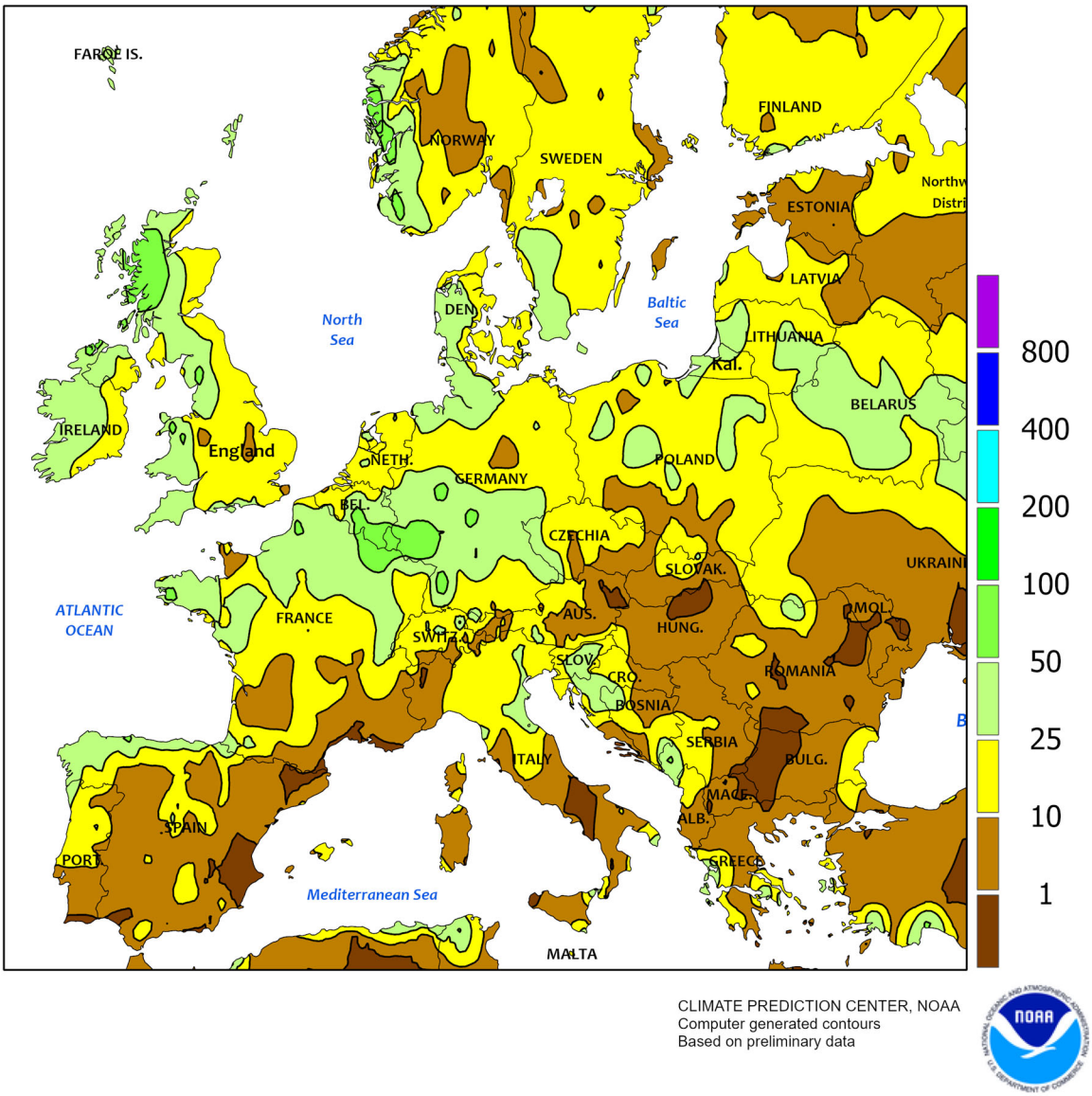
ARGENTINA: Showers brought some relief from heat and dryness, although pockets of dryness persisted.

BRAZIL: Rain helped to stabilize drought-stressed corn and soybeans in southern farming areas, as widespread rain maintained favorable crop prospects farther north.



For additional information contact: mark.brusberg@usda.gov

EUROPE
Total Precipitation(mm)
January 2 - 8, 2022

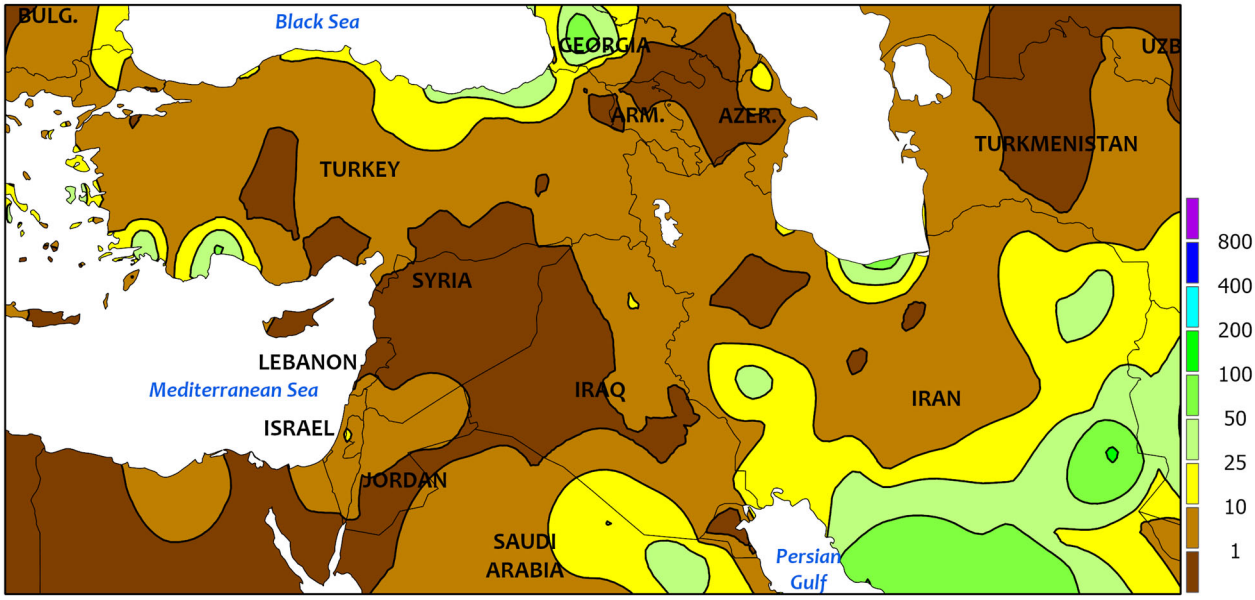


EUROPE

Warm but wet weather prevailed over much of Europe. From England and France eastward into Poland and the Baltic States, widespread rain and eastern snow (10-95 mm liquid equivalent) maintained adequate to abundant moisture reserves for dormant winter crops. Snow cover at week's end was shallow (2-10 cm) and limited to the coldest northeastern growing areas, though a ribbon of shallow snow also extended from Serbia into western Romania and southern Hungary. Farther south, widespread showers (5-40 mm) maintained overall favorable conditions for semi-dormant to vegetative winter grains in Spain and Italy, while lighter showers (1-25 mm) lingered in Greece. Temperatures averaged 1 to 3°C above normal across western Europe, while unseasonable warmth (4-9°C above normal) prevailed over the eastern third of the continent.

For additional information contact: mark.brusberg@usda.gov

MIDDLE EAST
Total Precipitation(mm)
January 2 - 8, 2022



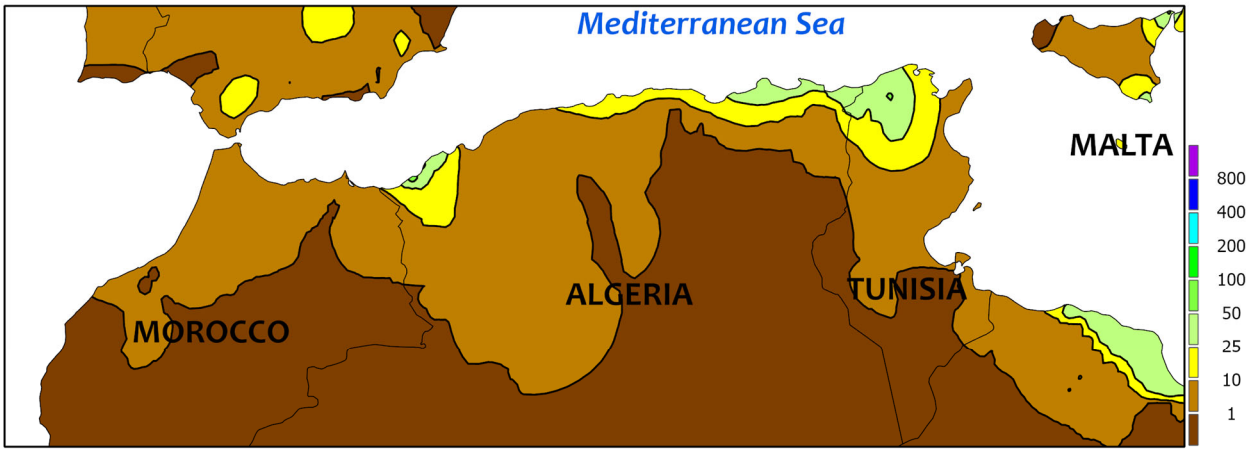
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

MIDDLE EAST

Moderate to heavy rain in southern and eastern Iran contrasted with dry conditions over many central and western growing areas. Mostly dry, very warm weather in central Turkey (up to 7°C above normal) maintained favorable conditions for dormant winter grains but melted the region's protective snow cover. Light showers in northwestern Turkey (1-15 mm) maintained good moisture supplies for semi-dormant to dormant winter wheat, while locally heavy showers (up to 65 mm) in southwestern Turkey caused additional lowland flooding but had little significant impact on regional agriculture. Meanwhile, dry weather prevailed across the eastern Mediterranean Coast and adjacent crop areas; heavy late-December rain alleviated dryness and drought concerns over most of Syria and neighboring environs save for the GAP Region in southeastern Turkey and Al Hasaka in eastern Syria. Farther east, light to moderate showers (1-12 mm) in northern and central Iraq improved prospects for winter grain establishment following a dry start to the 2021-22 Water Year. In Iran, 15 to 105 mm of rainfall across the Persian Gulf Region maintained excellent early-season prospects for vegetative winter wheat and barley, while 10 to 30 mm in Khorasan (northeastern Iran) provided much-needed moisture for winter grains following a very dry November and December. Conditions in northwestern Iran remained overall favorable for dormant wheat and barley.

For additional information contact: mark.brusberg@usda.gov

NORTHWESTERN AFRICA
Total Precipitation(mm)
January 2 - 8, 2022

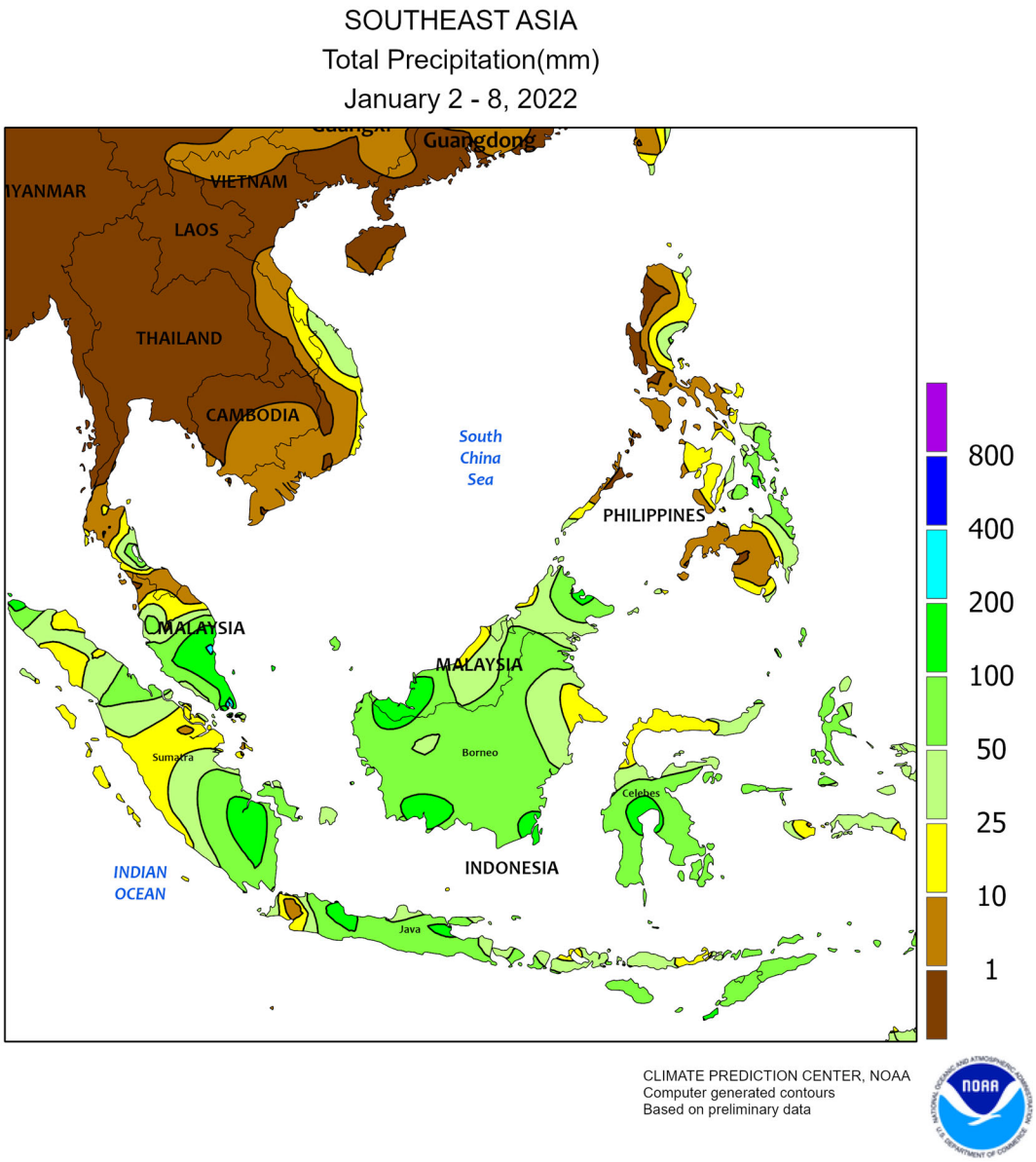


CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

NORTHWESTERN AFRICA

Intensifying drought in Morocco contrasted with showers elsewhere. Another week without rain pushed Morocco further into drought, with the country's central and southern growing areas reporting the driest start to the winter crop growing campaign (September – May) over the past 30 years. Rainfall since September 1 has averaged 20 percent of normal in southwestern Morocco and less than 30 percent of normal in the country's primary croplands between the central Atlantic Coast and Atlas Mountains. Elsewhere, widespread albeit highly variable showers (5-92 mm) maintained favorable prospects for vegetative winter grains across Algeria and northern Tunisia and eased drought impacting central Tunisia's Steppe Region. However, even with this week's rain, the 2021-22 Water Year remained the driest of the past 30 years in central Tunisia with season-to-date rainfall averaging a meager 25 percent of normal.

For additional information contact: mark.brusberg@usda.gov

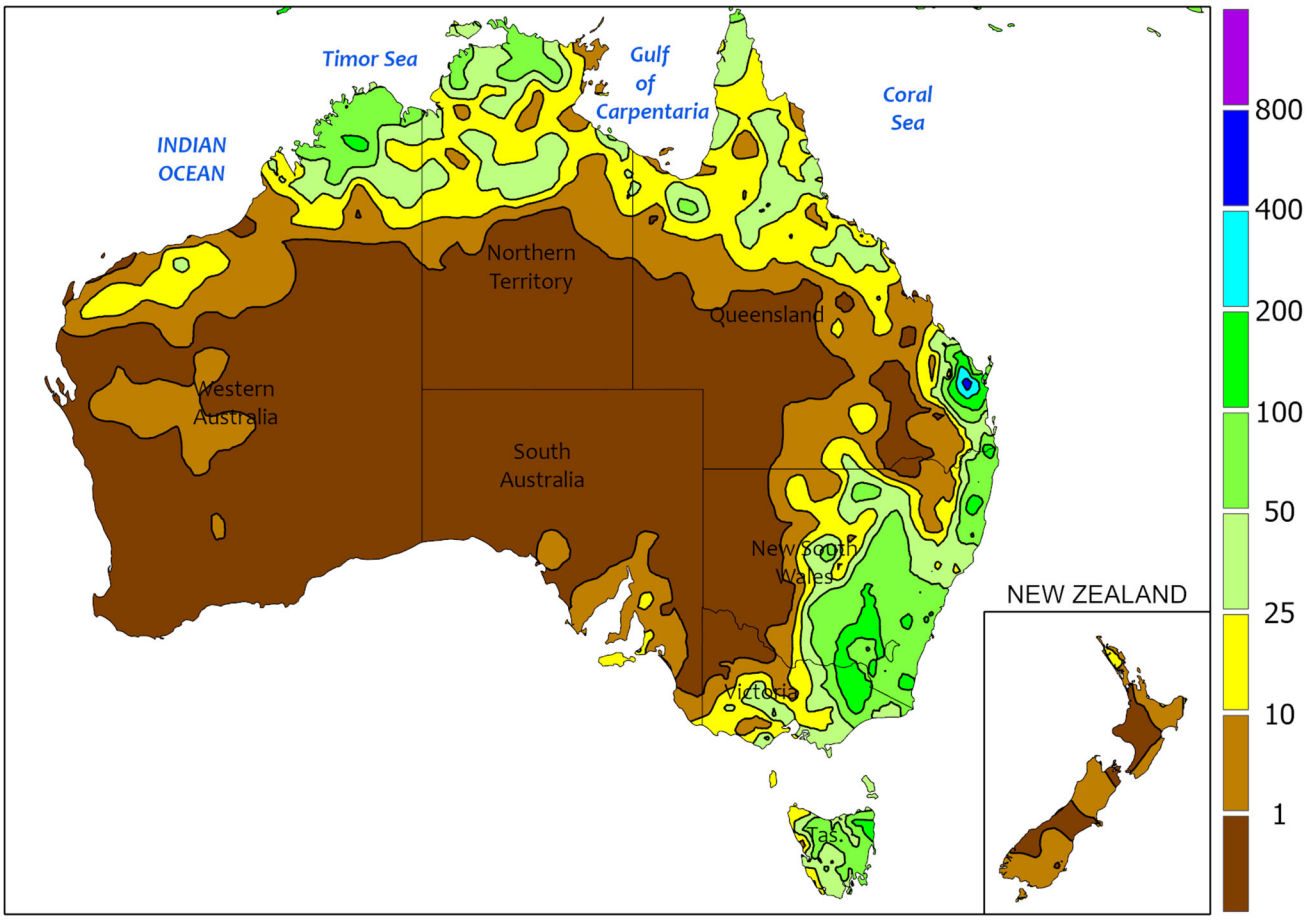


SOUTHEAST ASIA

Wet weather continued across southern sections of the region, with most locales receiving over 50 mm of rain. Some oil palm areas in Malaysia recorded as much as 400 mm of rain, halting oil palm harvesting, but for the areas receiving lesser amounts the moisture was welcome. In particular, the consistent downpours in southern Indonesia (Java) since November 1 have maintained 30-year record rainfall totals, ensuring ample moisture supplies for first-crop rice as well as for subsequent rice crops. Meanwhile in the Philippines, the bulk of the rainfall (25-100 mm) was limited to the seasonally wetter eastern and southern portions of the country. Some locations in the northeast received similar amounts, easing moisture deficits that have accumulated for the current growing season, but more moisture is needed for rice and corn. Elsewhere, unseasonable heat (maximum temperatures in the mid-30s degrees C) in Thailand and environs increased already limited irrigation needs for dry-season rice.

For additional information contact: mark.brusberg@usda.gov

AUSTRALIA
Total Precipitation(mm)
January 2 - 8, 2022



Gridded data from the Australian Bureau of Meteorology: www.bom.gov.au/
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CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

AUSTRALIA

In New South Wales, widespread soaking rain (15-50 mm, locally more) maintained abundant to locally excessive moisture supplies for cotton, sorghum, and other summer crops. The rain caused flooding in isolated areas and further slowed final winter crop harvests. Farther north, more widely scattered, albeit locally heavy showers (5-25 mm or more) fell across southern Queensland. In the drier areas of the state, sunny skies and abundant moisture supplies helped promote summer crop development. Temperatures averaged near normal (within 1ºC of normal) in eastern Australia, with maximum temperatures generally in the middle 30s (degrees C). Elsewhere in the wheat belt, mostly dry weather in northwestern Victoria, South Australia, and Western Australia enabled winter crop harvesting to advance closer to completion.

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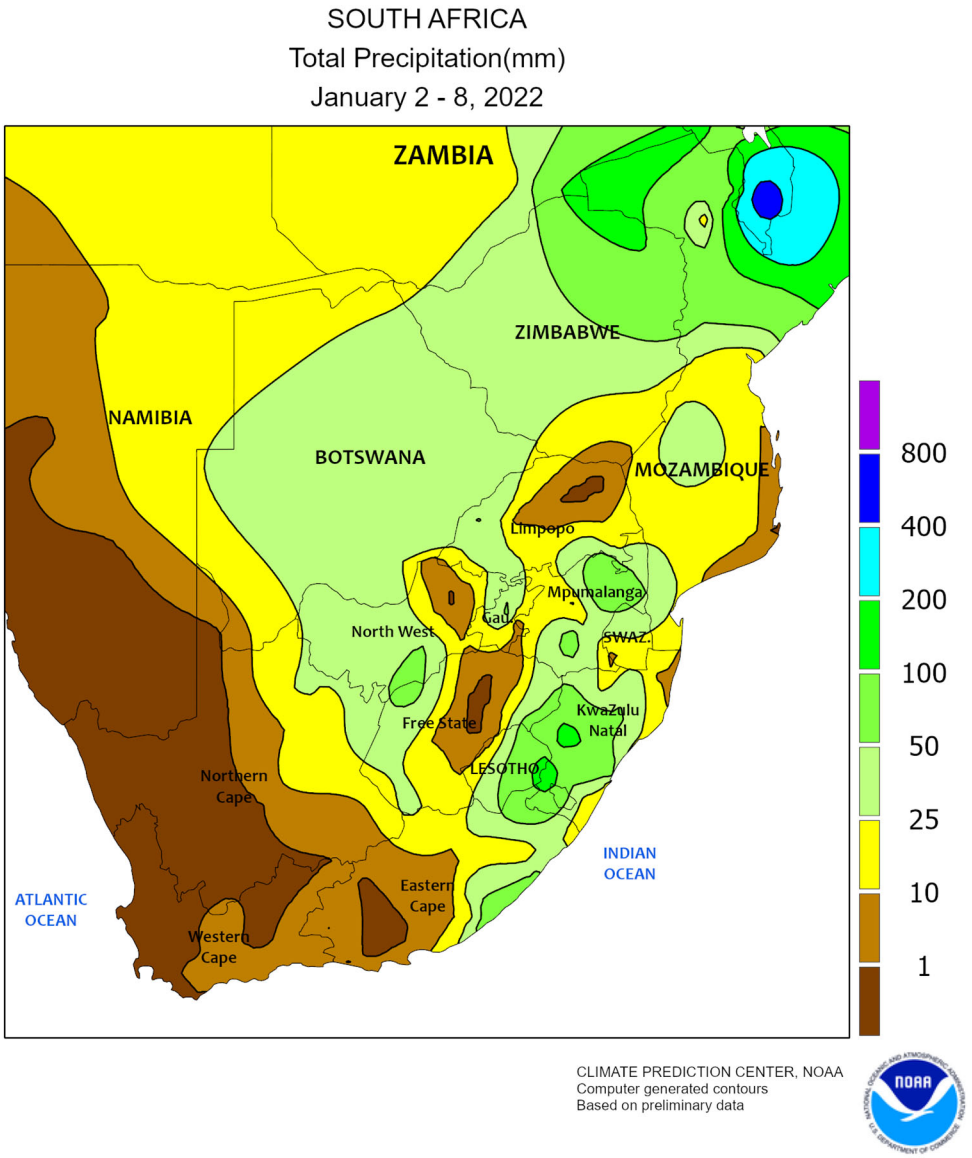

SOUTH AFRICA

Warm, showery weather continued throughout much of the region, maintaining generally favorable conditions for corn and other rain-fed summer crops. Rainfall varied from less than 10 mm to more than 50 mm across the corn belt (North West and Free State eastward), where seasonable warmth (daytime highs in the upper 20s and lower 30s degrees C) favored crop development in the absence of stressful heat. Conditions were particularly favorable for corn in and around Mpumalanga, which was planted earlier and likely in or nearing reproduction. Similar conditions prevailed in sugarcane regions of KwaZulu-Natal and eastern Mpumalanga, while unseasonably heavy rain (10-50 mm) sustained irrigation reserves from the Orange River Valley of eastern Northern Cape southeastward. In contrast, dry, occasionally hot weather favored developing tree and vine crops in Western Cape.

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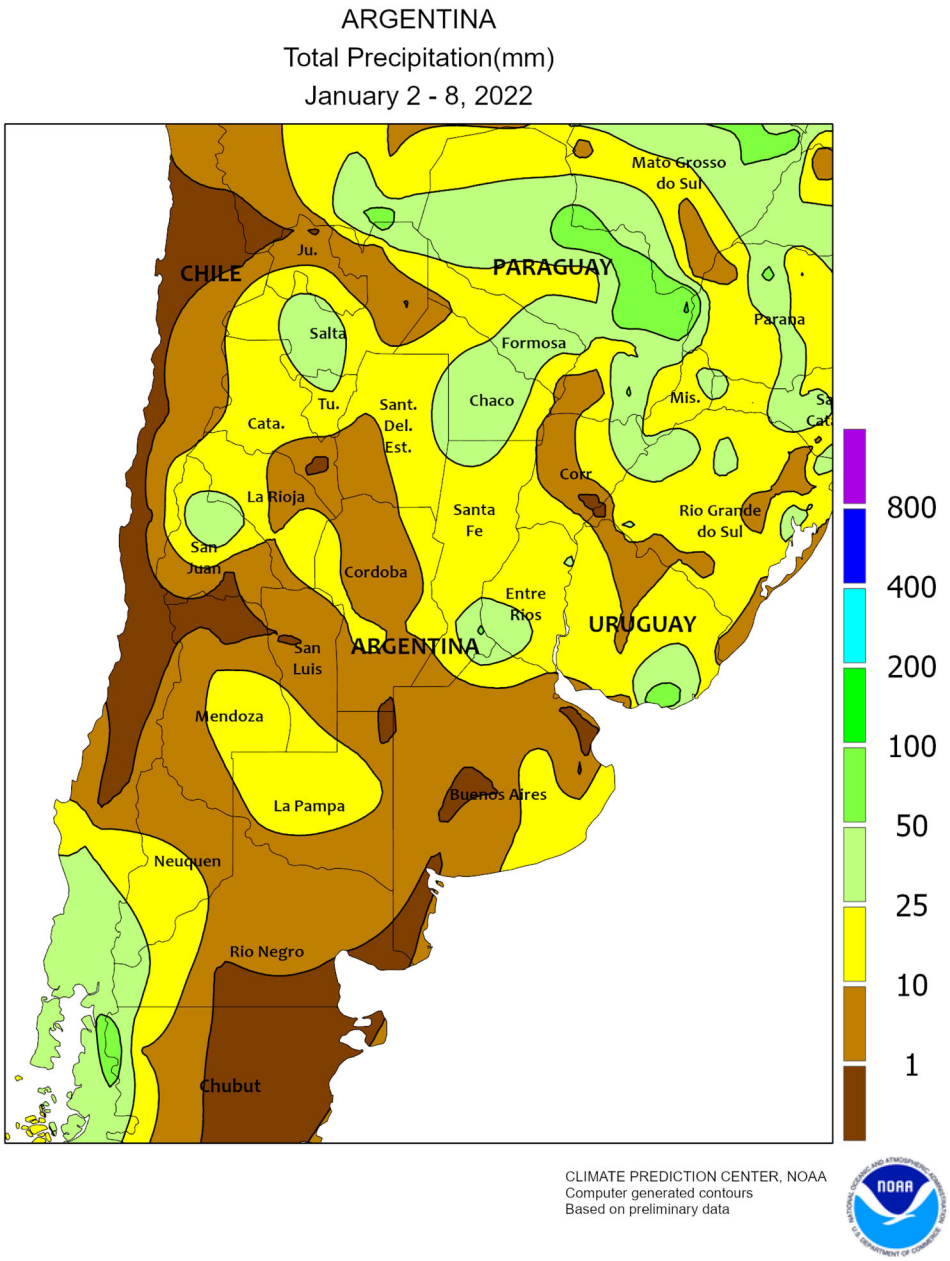

ARGENTINA

Scattered showers brought localized relief from dryness to corn and soybeans in central Argentina. Rainfall totaled 25 to 50 mm near the southern border between Santa Fe and Entre Rios, but most other locations recorded generally lesser amounts. Little to no rain fell over a broad section of Buenos Aires and neighboring locations in southern-most Cordoba, with much of the region receiving less than 5 mm. Early-week heat (daytime highs reaching the middle and upper 30s degrees C) gave way to more seasonable temperatures as showers advanced through the region, even in the drier locations. Somewhat heavier rain fell farther north, with most of the region from Salta eastward reporting 10 to 25 mm of rainfall. However, near- to above-normal temperatures maintained high evaporative losses, particularly in northwestern farming areas that recorded daytime highs in the lower 40s. According to the government of Argentina, cotton was 95 percent planted as of January 6; corn and soybeans were 84 and 93 percent planted, respectively. Meanwhile, wheat was 99 percent harvested, slightly ahead of last year (97 percent). A return to a more seasonable pattern of rainfall is needed to ensure uniform germination of later-planted summer crops and to prevent significant declines in yield potential of crops currently advancing through reproduction.

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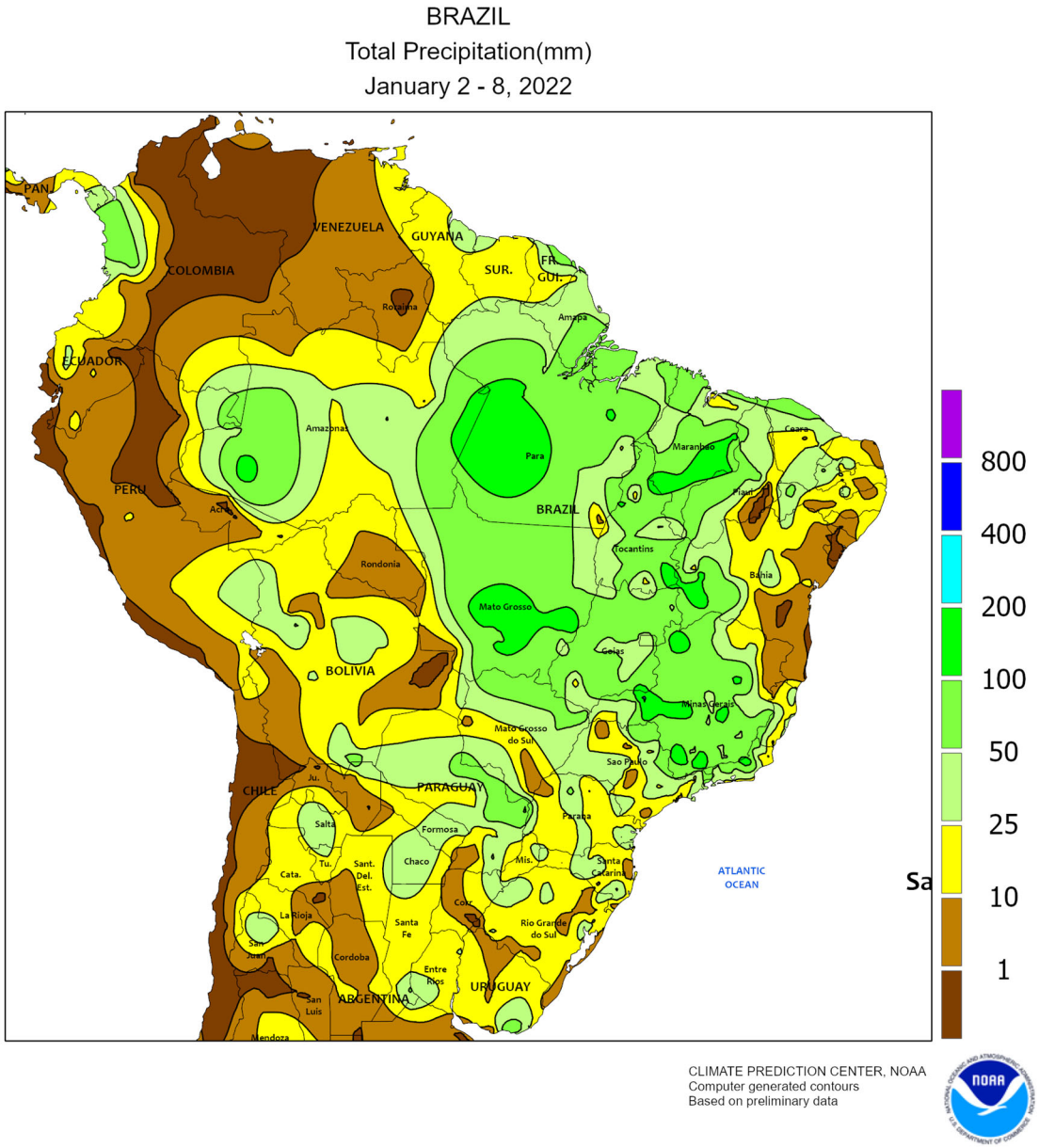

BRAZIL

Showers brought much-needed drought relief to summer crops in key southern production areas, though much more rain will be needed in the coming weeks as crops advance through reproductive to filling stages of development. Rainfall totaled 10 to 50 mm in most areas from Mato Grosso do Sul and São Paulo southward through Rio Grande do Sul; the showers also helped to bring temperatures back down to more seasonable levels following a warm spell (temperatures reaching the upper 30s degrees C) that lingered into the early part of the week. According to the government of Paraná, about 80 percent of both soybeans and first-crop corn were in flowering and filling stages of development as of January 3. In Rio Grande do Sul, corn was 94 percent planted as of January 6, with 65 percent of the emerged crop ranging from flowering to mature (40 percent mature or harvested); soybeans were 94 percent planted and 24 percent of the crop had reached flowering. Elsewhere, moderate to heavy rain (50-100 mm, locally exceeding 150 mm) fell from Mato Grosso eastward, including a large section of eastern Brazil stretching from Minas Gerais northward into Maranhão, maintaining excellent soybean prospects and sustaining favorable levels of soil moisture for the upcoming second-crop corn and cotton crops. Mild weather accompanied the wetness, with daytime highs generally confined to the upper 20s and lower 30s.

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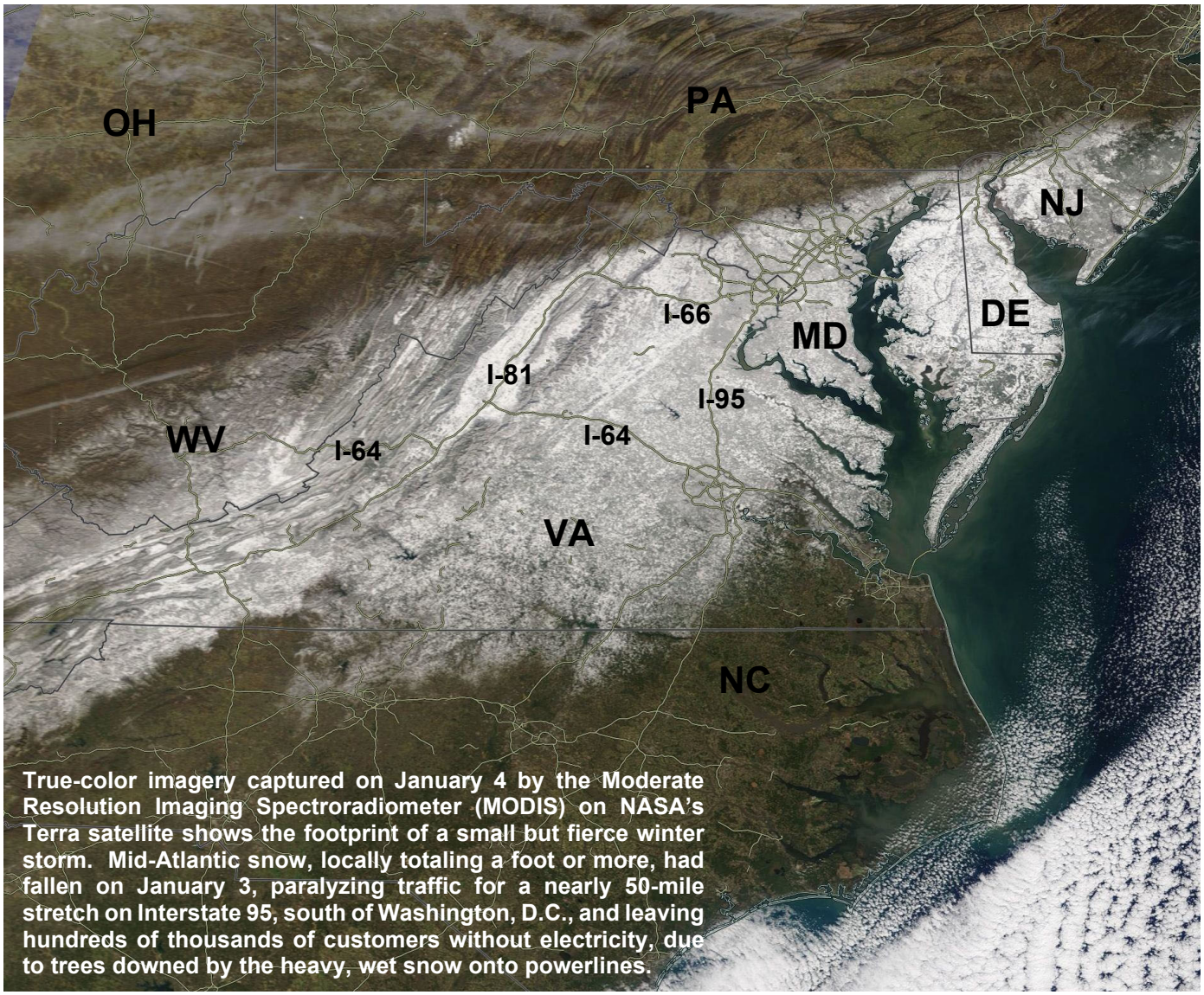

True-color imagery captured on January 4 by the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Terra satellite shows the footprint of a small but fierce winter storm. Mid-Atlantic snow, locally totaling a foot or more, had fallen on January 3, paralyzing traffic for a nearly 50-mile stretch on Interstate 95, south of Washington, D.C., and leaving hundreds of thousands of customers without electricity, due to trees downed by the heavy, wet snow onto powerlines.

The *Weekly Weather and Crop Bulletin* (ISSN 0043-1974) is jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the *Weekly Weather Chronicle*. It is issued under general authority of the Act of January 12, 1895 (44-USC 213), 53rd Congress, 3rd Session. The contents may be redistributed freely with proper credit.

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