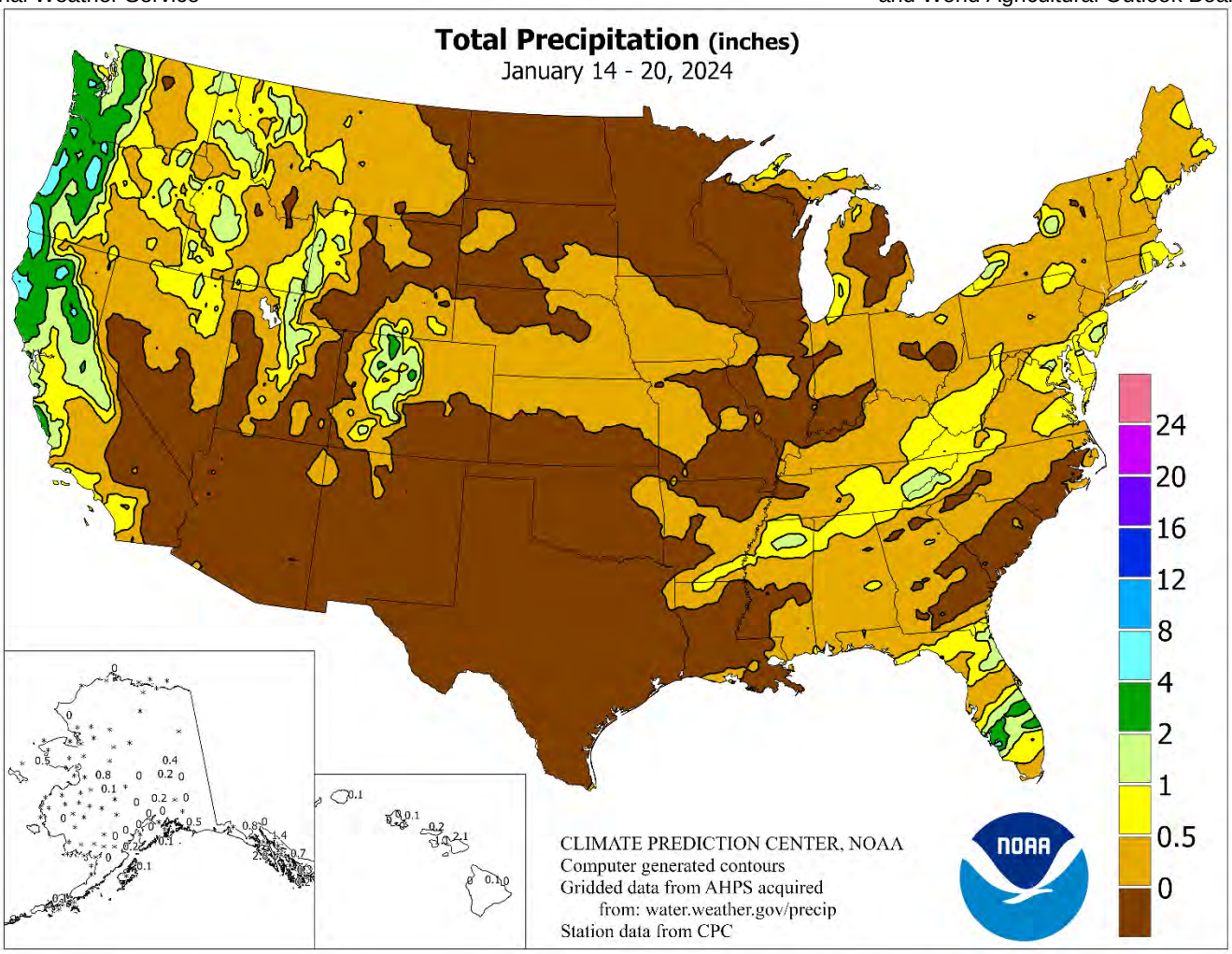
Volume 111, No. 4 www.usda.gov/oce/weather-drought-monitor January 23, 2024

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 14 – 20, 2024

Highlights provided by USDA/WAOB

Following the previous week's two major winter storms, only light precipitation fell across much of the country. In fact, dry weather prevailed in the **north-central U.S.**, as well as the **southern Plains** and much of the **Southwest**. However, other areas—including the **central Plains**, **western Corn Belt**, and **eastern one-third of the nation**—received some precipitation. Accumulating snow fell as far south as the **northern Mississippi Delta** and the **Tennessee Valley**, as well as the **middle Atlantic States**. Meanwhile in the **West**, precipitation increased as cold air

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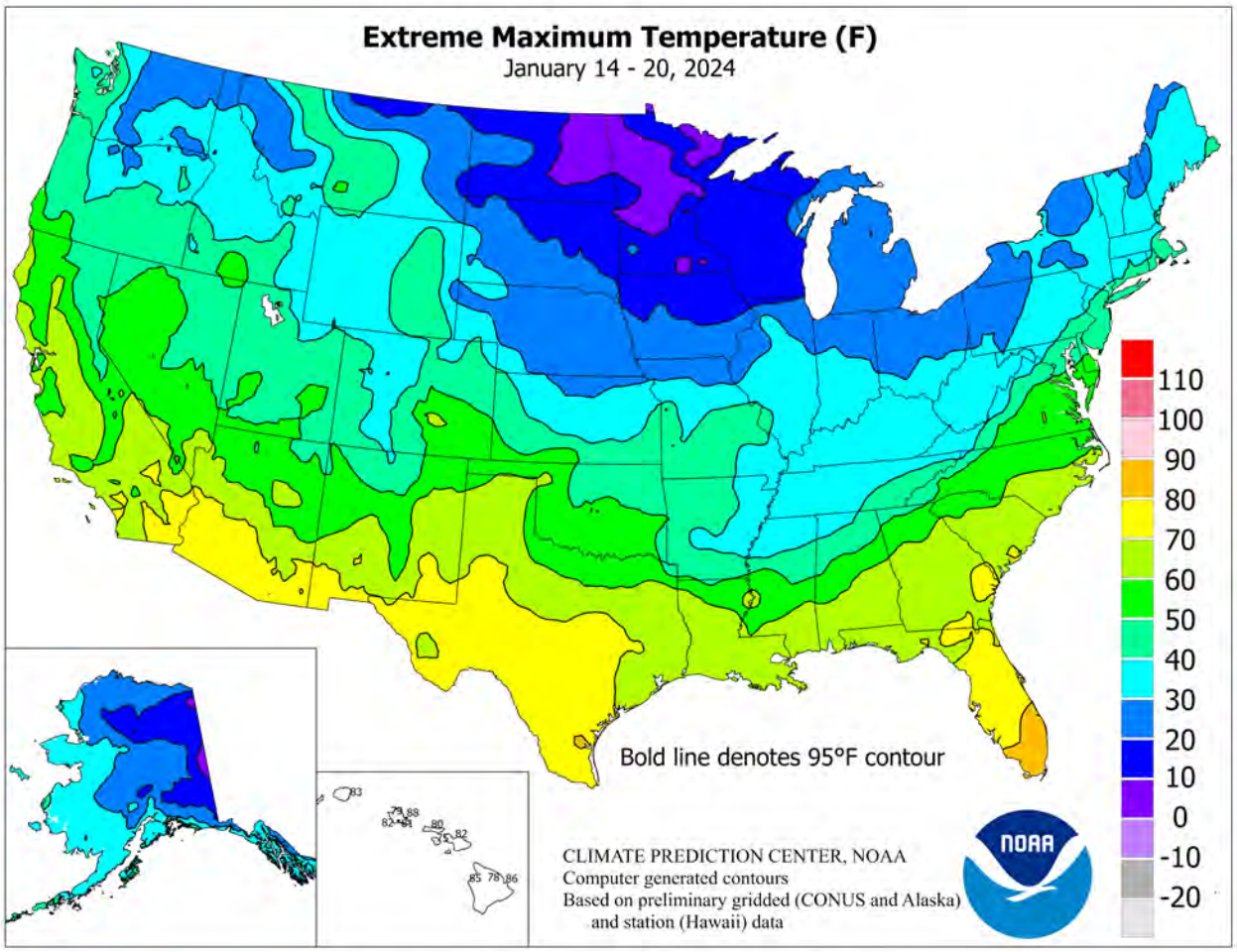
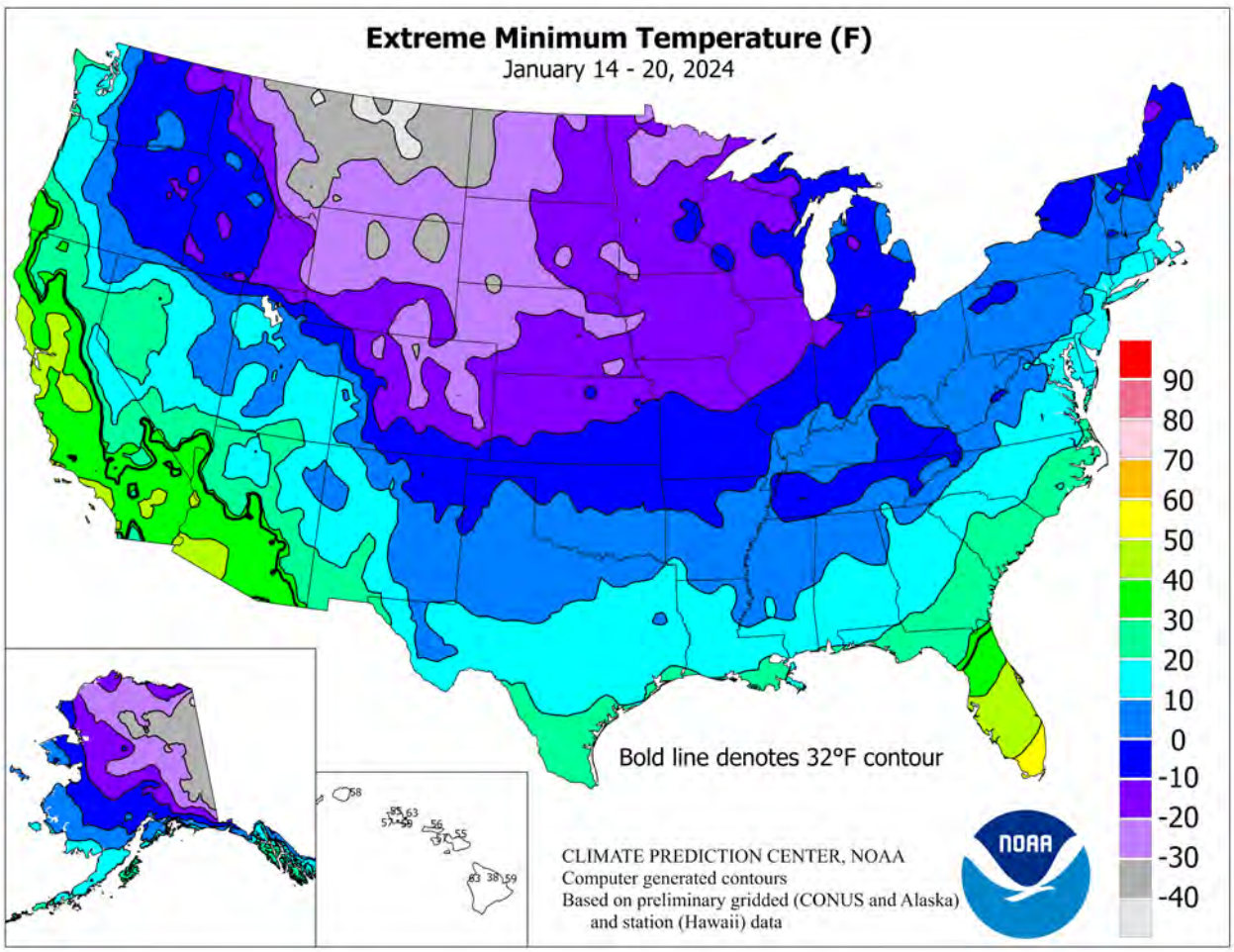
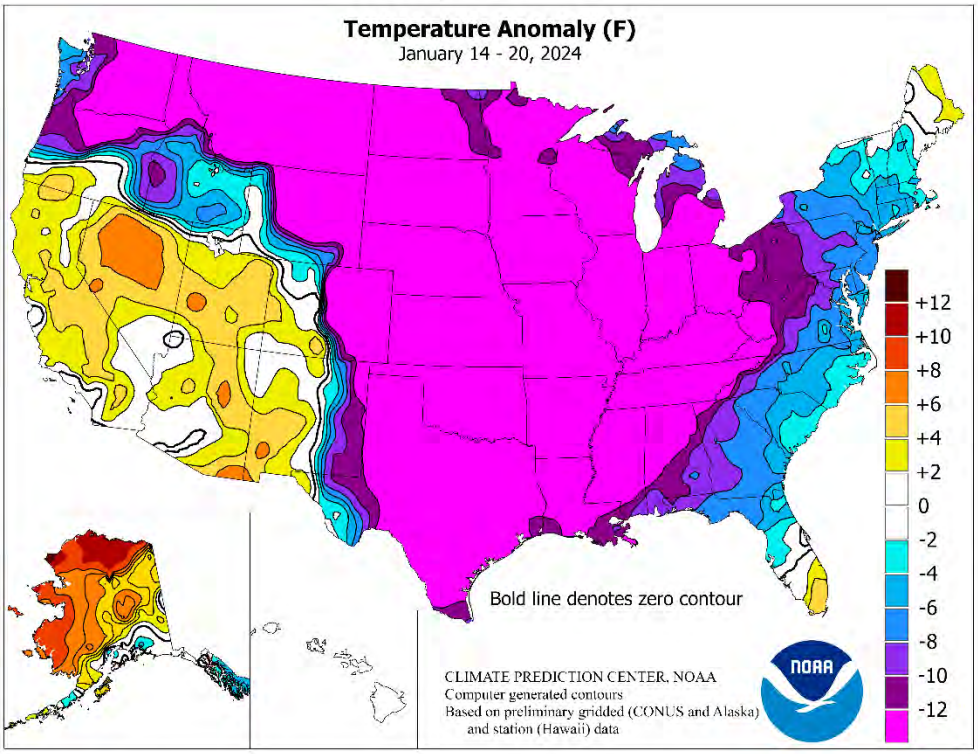

Extreme Maximum Temperature (F)
January 14 - 20, 2024
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
Bold line denotes 95°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data
NOAA


Extreme Minimum Temperature (F)
January 14 - 20, 2024
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

(Continued from front cover)

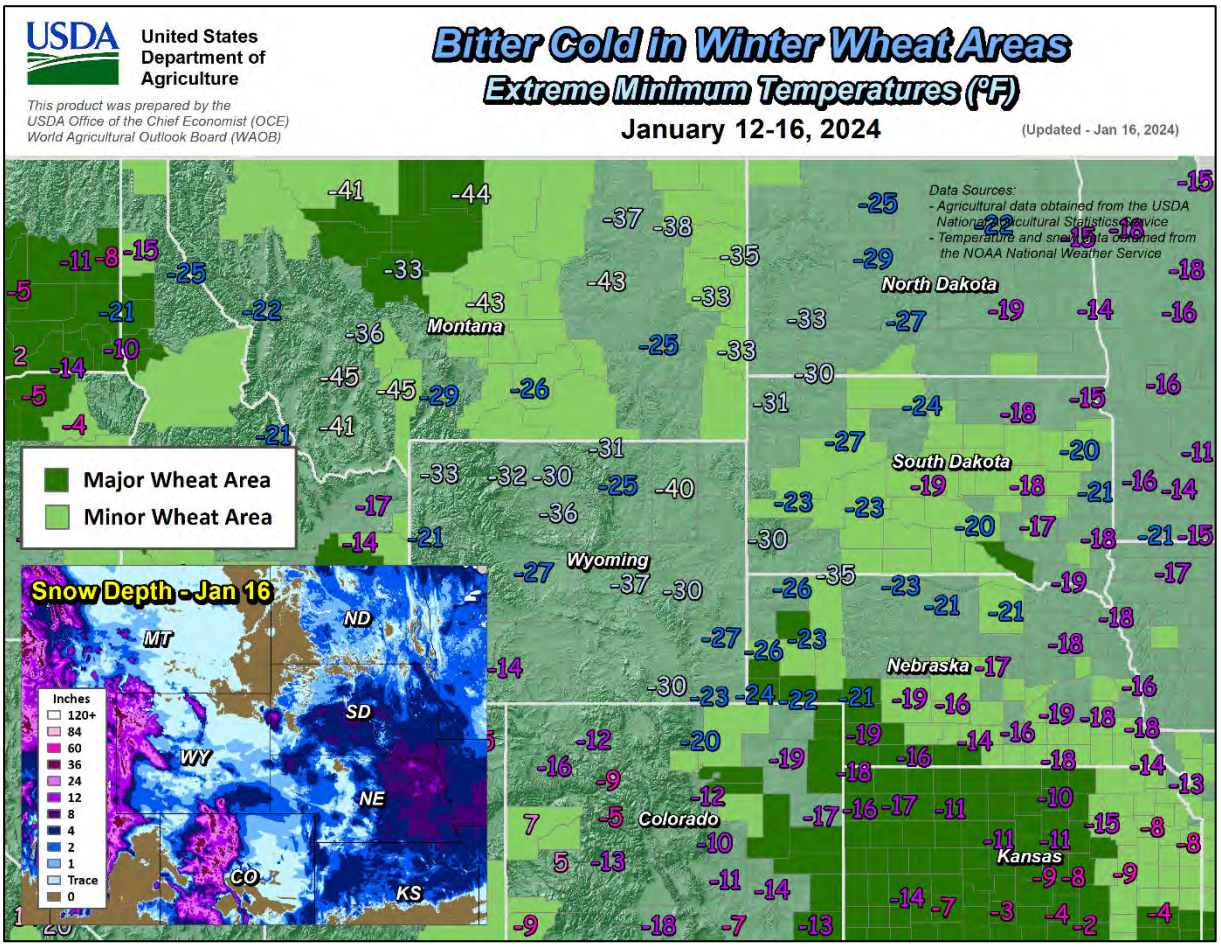
eroded. The heaviest precipitation fell in **northern California** and the **Pacific Northwest**, but most areas from the **West Coast to the northern and central Rockies** received some rain or snow, or a combination of both. Cold air was slower to depart the **Northwest**, resulting in some wintry weather, including freezing rain, as moisture arrived. Livestock producers continued to contend with difficult conditions, especially in areas where bitterly cold weather trailed back-to-back snowstorms. With cold, windy weather lingering for much of week and some additional snow falling, rural travel remained difficult from the **central Plains into parts of the Midwest**. Weekly temperatures averaged at least 10 to 25°F below normal throughout the **Plains**, **Midwest**, **Northwest**, and **mid-South**. The frigid, snowy weather followed the record-setting warmth of December, leading to increased livestock stress. Freezes briefly affected **Deep South Texas**, primarily on January 16-17, although temperatures were not low enough to significantly threaten citrus. Hard freezes occurred in **southern Louisiana**, where most of the sugarcane crop had already been harvested. Temperatures remained above 32°F in **Florida's key winter agricultural areas**. Weekly readings averaged at least 5°F above normal in parts of **southern Florida**, along with several locations in **California**, the **Great Basin**, and the **Southwest**.

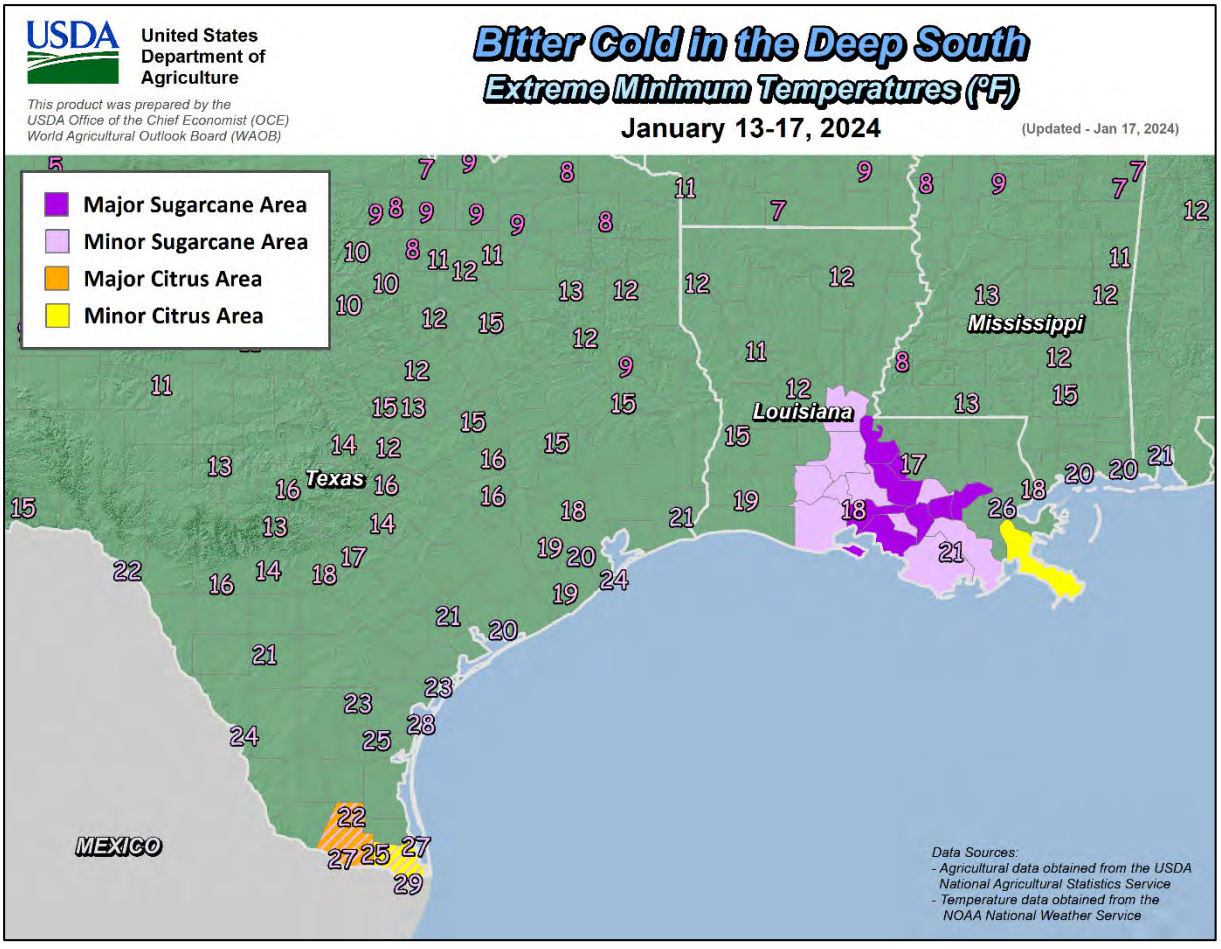


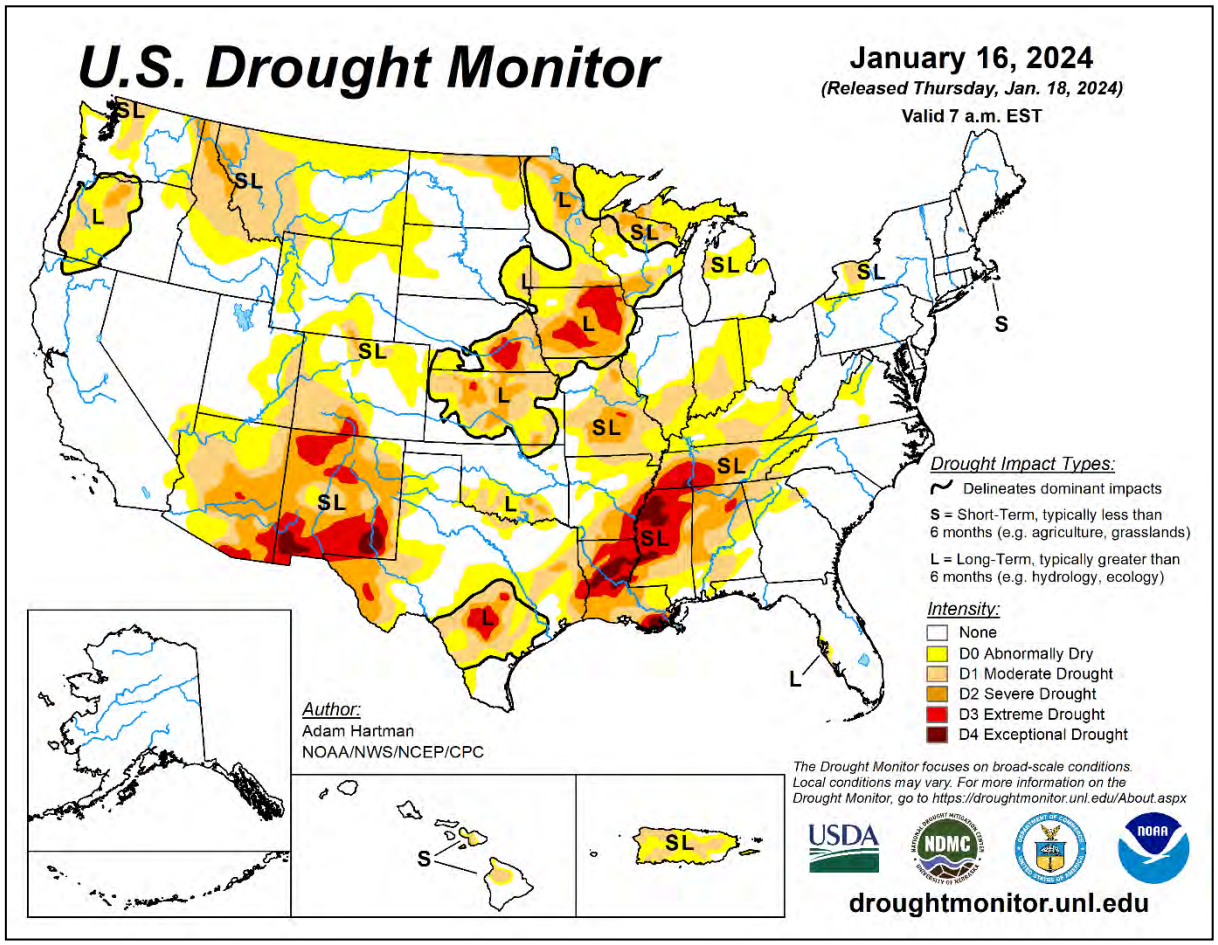
Frigid weather gripped much of the country as the week began, with daily-record lows plunging below -40°F on January 14 in **Montana** locations such as **Havre** and **Dunkirk**—both at -44°F. An observation site near **Saco, MT**, reported -51°F on the 14th, setting an all-time station record (previously, -50°F on January 25, 1969). Farther south, **Kansas City, MO**, reported January 14 maximum and minimum temperatures of -3 and -12°F, respectively, marking the coldest day in that location—based on average temperature—since December 22, 1989. **Kansas City** plunged to -16°F the next day, January 15. Elsewhere on the 15th, a trace of snow fell as far south as **Laredo and Victoria, TX**. By January 16, daily-record lows in **Texas** included 0°F in **Amarillo**, 5°F in **Lubbock**, 26°F in **Harlingen**, and 28°F in **McAllen**. Sub-zero, daily-record for the 16th included -10°F in **Fayetteville, AR**; -7°F in **Joplin, MO**; -6°F in **Jackson, TN**; and -2°F in **Tulsa, OK**. **Jackson, TN**, was even colder on January 17, dipping to -10°F. In **Louisiana**, consecutive daily-record lows were established on January 16-17 in locations such as **Alexandria** (16 and 12°F) and **Lake Charles** (19°F both days). In contrast, lingering warmth in **southern Florida** resulted in daily-record highs of 85°F on January 16 in **Fort Lauderdale** and **West Palm Beach**. Late in the week, a new surge of cold air led to a handful of daily-record lows, including -20°F (on January 20) in **Sioux City, IA**.

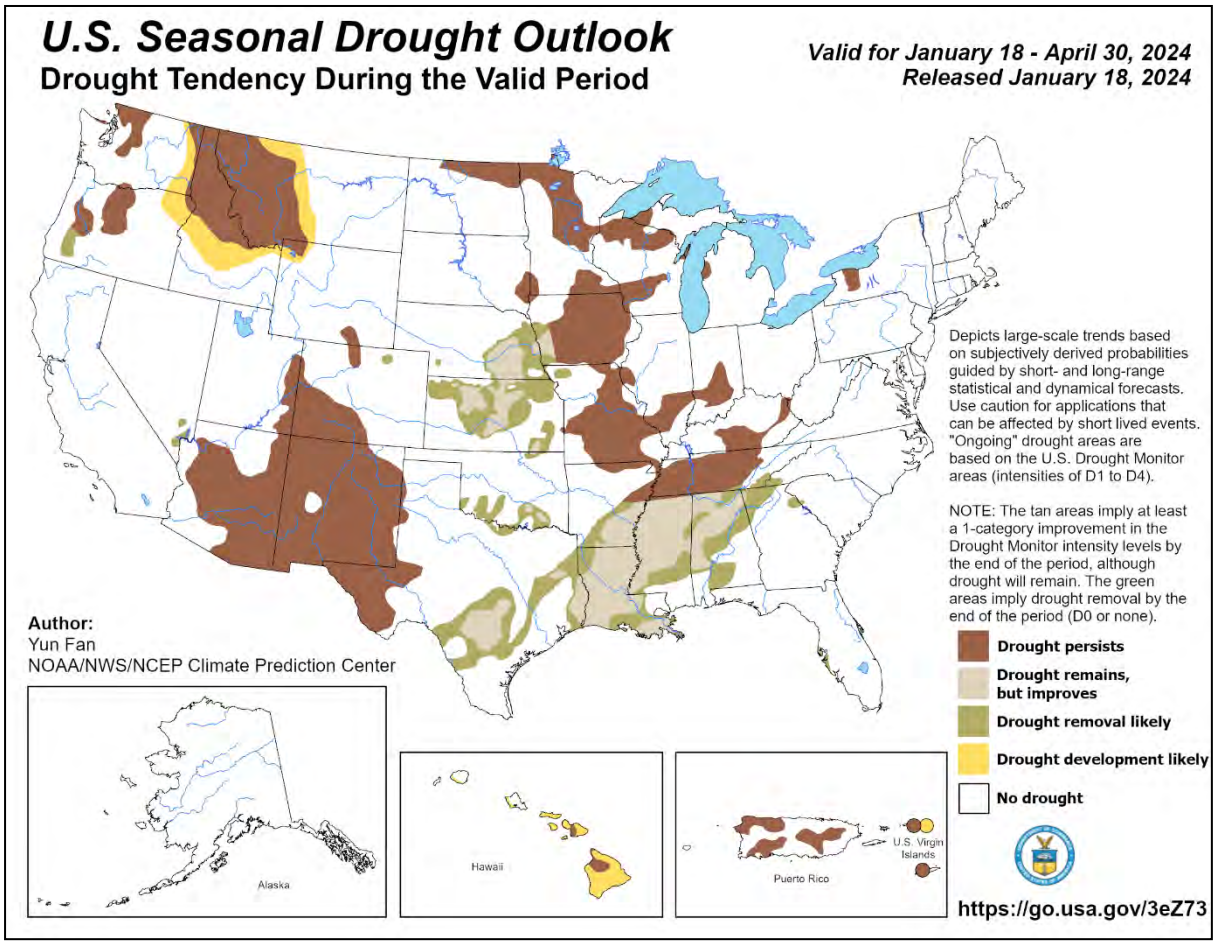
As the week began, snow accumulated from the **mid-South into the mid-Atlantic**. January 14-16 event-total snowfall reached 9.0 inches in **Jackson, KY**, and 8.2 inches in **Knoxville, TN**. **Southern** snowfall totals for January 14-15 included 3.4 inches in **Memphis, TN**, and 3.0 inches in **Little Rock, AR**. On February 15, record-setting snowfall totals in **West Virginia** reached 4.7 inches in **Beckley** and 3.1 inches in **Huntington**. Elsewhere on the 15th, daily-record amounts totaled 6.4 inches in **Jackson, KY**; 6.3 inches in **Nashville, TN**; and 4.1 inches in **Baltimore, MD**. That marked the first 6-inch daily snowfall in **Nashville** since January 6, 2022, when an identical amount fell. For **Baltimore**, a record-setting, 716-day streak without seeing an inch of snow—lasting from January 29, 2022 – January 14, 2024)—ended. Similar streaks (without receiving a calendar-day total of at least an inch of snow) ended on the 15th in **Philadelphia, PA**, with 1.5 inches, and on the 16th at **New York's Central Park**, with 1.3 inches. **Philadelphia's** streak lasted 715 days, starting January 30, 2022, while **New York's** streak endured 701 days, starting February 14, 2022. Previous records had been 672 days in **Baltimore** (last day was December 25, 2012); 661 days in **Philadelphia** (last day was December 15, 1973); and 383 days in **New York** (last day was March 21, 1998). Farther south, **Fort Myers, FL**, netted a daily-record rainfall (3.09 inches on January 15). Meanwhile, squalls persisted downwind of the **Great Lakes**, where **Buffalo, NY**, noted measurable snow each day from January 14-20, totaling 35.4 inches. Precipitation also continued to push inland across the **West**, where **Alta, UT**, received 112.2 inches of snow during the first 20 days of January, more than twice the normal amount. **Western** daily-record snowfall totals for January 17 included 5.8 inches in **Havre, MT**, and 5.1 inches in **Spokane, WA**. **Havre** had just 3 inches of snow on the ground when the temperature fell to -44°F on January 14, but saw its depth increase to 9 inches by the 18th. Late in the week, snow returned across the **central Appalachians** and **mid-Atlantic**, leading to daily-record amounts on the 19th of 8.2 inches in **Elkins, WV**, and 4.9 inches at **Virginia's Dulles Airport**. A daily-record sum had also occurred at **Dulles Airport** just 4 days earlier, with 4.1 inches on January 15.

Mild weather (temperatures averaging as much as 10 to 20°F above normal) in **northern and western Alaska** contrasted with near- or below-normal temperatures across the **state's southern tier**. Significant precipitation was observed in some areas, especially across parts of **southeastern Alaska**. In fact, **Juneau** was blanketed by 29.3 inches of snow from January 12-15. Additionally, **Sitka** netted a daily-record rainfall total of 2.35 inches on January 15. Meanwhile, **Fairbanks** received 7.7 inches of snow from January 14-16. On the **Arctic Coast**, the January 16 maximum temperature of 28°F in **Utqiagvik** represented the highest reading in that location since November 28, 2023. Farther south, **Hawaii** experienced warm weather, with locally heavy showers. On January 17, a daily-record high of 83°F was tied in **Lihue, Kauai**. Largely due to heavy rain earlier in January, month-to-date precipitation through the 20th at the state's major airport observation sites ranged from 1.67 inches (92 percent of normal) in **Lihue** to 4.42 inches (282 percent) in **Kahului, Maui**. **Kahului** also received heavy rain on January 16, with a daily sum of 1.88 inches.


USDA
United States Department of Agriculture
This product was prepared by the USDA Office of the Chief Economist (OCE) World Agricultural Outlook Board (WAOB)
Bitter Cold in Winter Wheat Areas
Extreme Minimum Temperatures (°F)
January 12-16, 2024
(Updated - Jan 16, 2024)
Data Sources:
- Agricultural data obtained from the USDA National Agricultural Statistics Service
- Temperature and snow data obtained from the NOAA National Weather Service
Major Wheat Area
Minor Wheat Area
Snow Depth - Jan 16
Inches
120+
84
60
36
24
12
8
4
2
1
Trace
0
ND
MT
SD
WY
NE
CO
KS
North Dakota
Montana
South Dakota
Wyoming
Nebraska
Colorado
Kansas


USDA
United States Department of Agriculture
This product was prepared by the USDA Office of the Chief Economist (OCE) World Agricultural Outlook Board (WAOB)
Bitter Cold in the Deep South
Extreme Minimum Temperatures (°F)
January 13-17, 2024
(Updated - Jan 17, 2024)
Major Sugarcane Area
Minor Sugarcane Area
Major Citrus Area
Minor Citrus Area
Texas
Louisiana
Mississippi
MEXICO
Data Sources:
- Agricultural data obtained from the USDA National Agricultural Statistics Service
- Temperature data obtained from the NOAA National Weather Service


U.S. Drought Monitor
January 16, 2024
(Released Thursday, Jan. 18, 2024)
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:
Adam Hartman
NOAA/NWS/NCEP/CPC
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


U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid for January 18 - April 30, 2024
Released January 18, 2024
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).
Drought persists
Drought remains, but improves
Drought removal likely
Drought development likely
No drought
Author:
Yun Fan
NOAA/NWS/NCEP Climate Prediction Center
Alaska
Hawaii
U.S. Virgin Islands
Puerto Rico
https://go.usa.gov/3eZ73

National Weather Data for Selected Cities

Weather Data for the Week Ending January 20, 2024

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	27	10	36	4	18	2	0.05	-0.11	0.05	2.28	140	0.46	97	92	55	0	7	1	0
	BARROW	14	-2	27	-17	6	0	0.00	-0.03	0.00	0.00	0	0.00	0	91	73	0	7	0	0
	FAIRBANKS	12	-9	30	-25	2	11	0.39	0.25	0.14	1.37	140	0.43	105	82	64	0	7	3	0
	JUNEAU	30	19	34	9	25	-4	1.39	0.02	1.11	12.81	123	2.36	60	87	61	0	7	3	1
	KODIAK	39	31	43	23	35	4	0.13	-1.76	0.13	11.17	77	5.10	91	76	49	0	4	1	0
	NOME	26	7	34	0	17	11	0.48	0.28	0.38	2.01	121	1.59	260	90	71	0	7	3	0
AL	BIRMINGHAM	40	19	50	10	30	-14	0.20	-0.92	0.13	7.79	96	3.09	96	83	43	0	7	4	0
	HUNTSVILLE	31	16	40	8	23	-19	0.65	-0.46	0.42	8.41	91	3.46	105	88	54	0	7	3	0
	MOBILE	56	29	69	19	42	-9	0.46	-0.82	0.19	11.76	127	5.71	151	86	37	0	5	4	0
	MONTGOMERY	51	23	68	15	37	-11	0.28	-0.74	0.20	6.93	87	5.36	182	89	37	0	7	3	0
AR	FORT SMITH	30	10	50	3	20	-21	0.14	-0.52	0.13	3.60	66	1.66	85	74	41	0	7	2	0
	LITTLE ROCK	31	13	40	1	22	-19	0.35	-0.40	0.30	5.08	67	3.66	151	77	41	0	7	2	0
AZ	FLAGSTAFF	48	21	52	11	34	4	0.04	-0.44	0.04	1.52	45	0.98	69	82	34	0	7	1	0
	PHOENIX	71	46	77	41	58	1	0.00	-0.21	0.00	0.78	58	0.04	5	57	23	0	0	0	0
	PRESCOTT	58	28	61	24	43	3	0.00	-0.28	0.00	0.81	44	0.21	25	80	27	0	6	0	0
	TUCSON	72	41	77	36	56	3	0.00	-0.19	0.00	1.38	90	0.16	28	57	17	0	0	0	0
CA	BAKERSFIELD	61	44	67	38	52	3	0.08	-0.19	0.08	0.95	50	0.31	38	96	60	0	0	1	0
	EUREKA	57	47	67	38	52	4	1.54	0.06	0.93	13.00	103	6.77	151	96	76	0	0	6	1
	FRESNO	59	47	65	43	53	5	0.21	-0.28	0.15	1.67	51	1.00	68	97	68	0	0	2	0
	LOS ANGELES	62	51	67	44	56	-2	0.29	-0.36	0.29	4.05	96	0.48	24	96	67	0	0	1	0
	REDDING	56	43	64	35	49	2	1.25	-0.11	0.62	11.04	107	3.62	92	92	68	0	0	4	1
	SACRAMENTO	58	45	62	42	51	4	1.01	0.17	0.70	6.58	112	1.88	78	97	69	0	0	3	1
	SAN DIEGO	63	50	70	45	57	-2	0.33	-0.13	0.33	1.44	47	0.60	44	94	64	0	0	1	0
	SAN FRANCISCO	59	50	60	47	54	3	1.00	0.13	0.51	6.14	91	2.32	90	90	72	0	0	4	1
	STOCKTON	59	47	63	41	53	5	0.80	0.20	0.28	4.53	109	1.89	108	96	70	0	0	5	0
CO	ALAMOSA	39	4	45	-6	21	5	0.00	-0.07	0.00	0.63	113	0.23	113	89	43	0	7	0	0
	CO SPRINGS	32	4	58	-10	18	-14	0.01	-0.06	0.01	0.76	188	0.17	100	76	38	0	7	1	0
	DENVER INTL	31	2	49	-19	16	-15	0.08	-0.01	0.08	0.32	53	0.19	80	73	44	0	7	1	0
	GRAND JUNCTION	43	22	47	14	32	5	0.09	-0.05	0.06	0.75	74	0.20	50	81	46	0	7	2	0
	PUEBLO	33	4	62	-11	19	-13	0.02	-0.05	0.02	1.48	316	0.18	102	79	36	0	7	1	0
CT	BRIDGEPORT	31	20	43	15	25	-6	0.28	-0.42	0.21	12.26	201	4.06	193	77	46	0	7	3	0
	HARTFORD	29	16	40	12	23	-4	0.32	-0.40	0.30	13.16	210	5.74	265	75	44	0	7	2	0
DC	WASHINGTON	34	23	45	16	29	-8	0.63	-0.01	0.31	10.48	198	4.23	227	75	43	0	7	3	0
DE	WILMINGTON	31	17	46	10	24	-9	0.73	0.00	0.33	12.92	217	4.94	237	81	47	0	7	3	0
FL	DAYTONA BEACH	66	46	75	38	56	-2	0.68	0.07	0.36	7.54	185	2.88	167	93	62	0	0	3	0
	JACKSONVILLE	61	37	70	30	49	-5	1.30	0.53	1.30	10.28	216	3.83	193	90	45	0	2	1	1
	KEY WEST	76	69	81	64	72	2	1.15	0.75	1.14	7.59	229	1.70	146	99	81	0	0	2	1
	MIAMI	78	67	85	56	72	4	0.17	-0.23	0.10	4.68	131	0.86	77	93	66	0	0	3	0
	ORLANDO	70	50	79	42	60	0	0.31	-0.25	0.10	5.21	129	1.55	100	91	55	0	0	5	0
	PENSACOLA	56	30	64	20	43	-10	0.43	-0.70	0.19	9.85	114	5.11	157	84	36	0	4	3	0
	TALLAHASSEE	60	31	70	25	46	-6	0.81	-0.22	0.79	15.40	218	4.78	170	89	33	0	5	2	1
	TAMPA	66	49	73	42	58	-4	0.36	-0.22	0.25	7.33	176	2.90	182	90	58	0	0	3	0
	WEST PALM BEACH	75	64	85	51	70	4	1.28	0.48	1.22	6.23	109	2.37	107	96	66	0	0	3	1
GA	ATHENS	49	22	61	15	36	-8	0.24	-0.71	0.24	10.68	147	6.50	231	81	28	0	6	1	0
	ATLANTA	48	24	61	13	36	-9	0.41	-0.59	0.39	8.24	109	4.60	156	79	32	0	6	2	0
	AUGUSTA	53	26	66	21	39	-8	0.06	-0.78	0.03	6.41	100	2.12	85	89	27	0	7	2	0
	COLUMBUS	53	25	65	17	39	-9	0.13	-0.77	0.05	6.00	79	4.14	151	85	26	0	6	3	0
	MACON	53	23	66	16	38	-9	0.06	-0.87	0.03	6.79	92	4.89	178	90	23	0	6	3	0
	SAVANNAH	59	32	72	25	46	-5	0.00	-0.74	0.00	7.19	137	2.62	129	86	34	0	4	0	0
HI	HILO	83	64	86	59	74	2	0.02	-1.66	0.02	10.47	62	2.74	57	95	60	0	0	1	0
	HONOLULU	79	65	81	59	72	-1	0.01	-0.36	0.01	3.30	95	2.41	189	92	60	0	0	1	0
	KAHULUI	81	63	82	55	72	-1	2.10	1.57	1.19	4.63	105	3.63	230	97	62	0	0	2	2
	LIHUE	80	66	83	58	73	1	0.09	-0.44	0.08	5.87	90	1.65	91	85	54	0	0	2	0
IA	BURLINGTON	10	-6	24	-18	2	-22	0.01	-0.31	0.01	3.02	107	0.99	104	80	61	0	7	1	0
	CEDAR RAPIDS	6	-9	19	-19	-2	-21	0.00	-0.20	0.00	1.15	52	0.22	36	85	67	0	7	0	0
	DES MOINES	8	-9	23	-17	0	-22	2.19	1.96	2.17	4.97	219	3.44	502	79	56	0	7	2	1
	DUBUQUE	6	-8	16	-17	-1	-19	0.04	-0.25	0.04	2.88	109	0.93	112	82	64	0	7	1	0
	SIOUX CITY	6	-10	20	-20	-2	-21	0.08	-0.06	0.08	2.86	198	1.29	285	83	64	0	7	1	0
	WATERLOO	8	-7	18	-15	0	-19	0.00	-0.24	0.00	1.44	67	0.68	96	73	56	0	7	0	0
ID	BOISE	29	15	45	3	22	-10	0.40	0.08	0.32	3.13	126	1.87	197	91	70	0	7	4	0
	LEWISTON	23	13	36	-2	18	-18	0.27	0.03	0.10	2.00	108	0.84	117	83	67	0	7	4	0
	POCATELLO	29	10	41	-14	20	-6	0.42	0.17	0.21	1.99	107	0.96	132	91	67	0	7	3	0
IL	CHICAGO/O_HARE	13	-1	28	-10	6	-19	0.10	-0.36	0.06	5.04	146	2.09	155	76	57	0	7	2	0
	MOLINE	9	-9	25	-18	0	-23	0.13	-0.24	0.13	4.53	144	1.91	173	85	63	0	7	1	0
	PEORIA	12	-3	30	-13	5	-20	0.12	-0.35	0.11	4.64	127	1.80	127	75	55	0	7	2	0
	ROCKFORD	8	-6	21	-16	1	-20	0.07	-0.28	0.05	4.75	159	1.65	155	80	62	0	7	3	0
	SPRINGFIELD	16	-1	38	-12	8	-20	0.15	-0.30	0.09	4.87	144	1.89	152	81	55	0	7	4	0
IN	EVANSVILLE	23	7	36	3	15	-18	0.07	-0.68	0.04	5.39	88	3.44	151	80	48	0	7	3	0
	FORT WAYNE	17	4	26	-6	10	-15	0.25	-0.32	0.12	3.72	88	2.05	117	78	61	0	7	4	0
	INDIANAPOLIS	18	3	32	-6	11	-17	0.13	-0.57	0.08	3.63	71	2.48	114	83	56	0	7	3	0
	SOUTH BEND	15	2	26	-9	9	-15	0.41	-0.21	0.18	5.05	119	2.33	127	82	63	0	7	3	0
KS	CONCORDIA	14	-2	27	-9	6	-23	0.09	-0.04	0.09	2.72	188	1.27	312	76	55	0	7	1	0
	DODGE CITY	25	3	48	-7	14	-19	0.00	-0.12	0.00	3.04	226	0.69	181	81	45	0	7	0	0
	GOODLAND	21	-3	44	-16	9	-21	0.12	0.06	0.12	1.41	214	0.45	239	76	51	0	7	1	0
	TOPEKA	17	-1	37	-8	8	-22	0.15	-0.02	0.14	3.97	195	1.16	210	72	47	0	7	2	0

Based on 1991-2020 normals ***** Not Available**

Weather Data for the Week Ending January 20, 2024

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	23	4	41	-4	13	-20	0.00	-0.17	0.00	4.13	236	1.52	290	66	40	0	7	0	0
KY	LEXINGTON	23	8	34	-1	16	-18	0.36	-0.40	0.14	5.26	83	3.26	146	81	52	0	7	4	0
	LOUISVILLE	25	9	35	3	17	-18	0.08	-0.67	0.04	5.32	83	3.54	155	73	45	0	7	2	0
	PADUCAH	23	8	32	2	16	-20	0.14	-0.72	0.12	7.02	101	5.13	197	83	47	0	7	2	0
LA	BATON ROUGE	53	28	70	17	41	-11	0.14	-1.36	0.10	8.91	93	2.43	57	80	39	0	4	2	0
	LAKE CHARLES	52	30	69	19	41	-12	0.07	-1.33	0.07	5.57	64	3.20	78	89	46	0	4	1	0
	NEW ORLEANS	54	32	67	24	43	-11	0.34	-0.85	0.27	13.23	158	3.86	109	88	47	0	3	2	0
	SHREVEPORT	40	23	63	12	31	-16	***	***	***	***	***	***	***	87	45	0	6	***	***
MA	BOSTON	31	19	41	14	25	-5	0.55	-0.20	0.55	11.08	169	5.37	237	78	46	0	7	1	1
	WORCESTER	26	14	35	9	20	-4	0.49	-0.30	0.46	12.90	196	5.50	239	76	47	0	7	2	0
MD	BALTIMORE	33	19	46	12	26	-8	0.83	0.13	0.36	11.31	198	4.33	216	78	40	0	7	3	0
ME	CARIBOU	22	7	32	-2	14	3	0.42	-0.26	0.27	5.00	89	1.67	85	84	60	0	7	4	0
	PORTLAND	28	15	39	7	21	-2	0.36	-0.41	0.36	12.97	191	6.41	279	79	43	0	7	1	0
MI	ALPENA	17	6	21	3	12	-8	0.09	-0.33	0.05	3.47	112	1.85	151	85	63	0	7	2	0
	GRAND RAPIDS	19	3	24	-5	11	-14	11.01	10.43	5.70	16.70	400	14.92	879	88	73	0	7	6	3
	LANSING	17	2	25	-4	10	-14	0.09	-0.38	0.08	3.81	115	1.66	117	80	58	0	7	2	0
	MUSKEGON	23	11	28	-1	17	-10	0.27	-0.28	0.11	3.49	86	1.85	114	78	60	0	7	5	0
	TRAVERSE CITY	19	11	26	8	15	-8	0.04	-0.33	0.03	1.85	63	0.59	51	82	64	0	7	2	0
MN	DULUTH	3	-11	11	-14	-4	-14	0.02	-0.18	0.01	3.78	177	0.69	106	79	54	0	7	2	0
	INT_L FALLS	0	-17	9	-23	-9	-13	0.01	-0.16	0.01	1.63	105	0.44	78	79	61	0	7	1	0
	MINNEAPOLIS	8	-3	13	-8	2	-13	0.01	-0.18	0.01	2.42	136	0.14	23	74	49	0	7	1	0
	ROCHESTER	4	-9	9	-14	-3	-17	0.02	-0.19	0.02	1.61	84	0.48	76	84	66	0	7	1	0
	ST. CLOUD	5	-7	10	-13	-1	-12	0.00	-0.14	0.00	3.56	268	0.21	46	73	52	0	7	0	0
MO	COLUMBIA	18	0	40	-11	9	-22	0.08	-0.40	0.06	3.88	110	1.15	81	79	49	0	7	3	0
	KANSAS CITY	14	-4	33	-16	5	-24	0.15	-0.10	0.12	4.13	179	1.11	151	78	52	0	7	2	0
	SAINT LOUIS	23	5	43	-7	14	-18	0.08	-0.50	0.04	3.96	92	1.79	101	67	41	0	7	4	0
	SPRINGFIELD	21	3	41	-5	12	-22	0.08	-0.50	0.08	1.82	41	0.71	40	78	47	0	7	1	0
MS	JACKSON	42	21	56	10	31	-15	0.08	-1.13	0.06	5.57	65	2.31	67	83	42	0	7	2	0
	MERIDIAN	45	21	60	11	33	-15	0.17	-1.09	0.07	6.80	77	4.08	114	86	40	0	7	3	0
	TUPELO	30	16	37	8	23	-20	0.64	-0.43	0.46	5.25	57	2.78	88	83	49	0	7	3	0
MT	BILLINGS	13	-5	42	-22	4	-23	0.21	0.09	0.11	0.73	78	0.38	105	78	53	0	7	3	0
	BUTTE	23	-7	45	-33	8	-13	0.04	-0.05	0.04	0.48	63	0.16	57	84	57	0	7	1	0
	CUT BANK	12	-15	42	-40	-2	-24	0.03	-0.01	0.02	0.05	11	0.03	21	85	63	0	7	2	0
	GLASGOW	4	-17	22	-37	-6	-21	0.22	0.13	0.09	0.48	65	0.40	131	84	59	0	7	3	0
	GREAT FALLS	11	-11	43	-32	0	-26	0.08	-0.04	0.08	0.35	39	0.26	74	83	63	0	7	1	0
	HAVRE	3	-22	21	-44	-10	-27	0.56	0.47	0.40	1.13	163	0.93	318	89	64	0	7	3	0
	MISSOULA	13	1	27	-18	7	-18	0.35	0.15	0.28	1.08	63	0.60	94	84	59	0	7	4	0
NC	ASHEVILLE	40	17	53	10	28	-10	0.03	-0.90	0.03	12.06	175	5.73	211	83	42	0	7	1	0
	CHARLOTTE	48	25	58	18	37	-5	0.16	-0.61	0.16	10.93	185	4.66	201	72	29	0	6	1	0
	GREENSBORO	44	21	54	13	32	-7	0.12	-0.66	0.11	11.46	212	4.41	197	73	33	0	7	2	0
	HATTERAS	53	35	65	28	44	-4	0.29	-0.77	0.15	9.16	117	2.08	67	82	40	0	3	2	0
	RALEIGH	47	26	59	18	37	-5	0.21	-0.56	0.20	10.22	180	3.43	151	68	31	0	6	2	0
	WILMINGTON	56	31	66	22	43	-3	0.03	-0.81	0.03	9.59	157	1.48	61	84	33	0	4	1	0
ND	BISMARCK	4	-8	13	-21	-2	-14	0.05	-0.05	0.05	0.74	79	0.31	95	71	56	0	7	1	0
	DICKINSON	4	-13	15	-29	-5	-21	0.00	-0.06	0.00	0.15	42	0.00	0	78	56	0	7	0	0
	FARGO	5	-7	10	-14	-1	-10	0.00	-0.15	0.00	2.75	198	0.13	25	69	56	0	7	0	0
	GRAND FORKS	3	-9	8	-15	-3	-9	0.01	-0.09	0.01	1.11	111	0.18	52	71	58	0	7	1	0
	JAMESTOWN	4	-9	9	-19	-3	-13	0.00	-0.07	0.00	0.58	102	0.00	0	70	57	0	7	0	0
NE	GRAND ISLAND	10	-8	24	-17	1	-24	0.06	-0.06	0.03	1.91	157	0.67	181	79	59	0	7	2	0
	LINCOLN	10	-9	25	-18	0	-24	0.05	-0.09	0.04	2.35	143	0.87	191	76	55	0	7	2	0
	NORFOLK	8	-8	24	-21	0	-22	0.07	-0.06	0.07	2.73	222	1.20	311	75	57	0	7	1	0
	NORTH PLATTE	11	-8	23	-19	2	-24	0.07	0.00	0.07	0.66	95	0.28	114	71	56	0	4	1	0
	OMAHA	9	-7	27	-16	1	-23	0.08	-0.07	0.08	2.48	145	0.81	171	81	58	0	7	1	0
	SCOTTSBLUFF	19	-10	34	-26	5	-24	0.14	0.05	0.10	0.48	61	0.36	141	81	55	0	7	3	0
	VALENTINE	12	-13	28	-23	0	-25	0.04	-0.03	0.04	1.05	167	0.47	238	80	57	0	7	1	0
NH	CONCORD	26	9	38	0	17	-4	0.43	-0.17	0.40	11.20	202	4.32	235	89	49	0	7	2	0
NJ	ATLANTIC_CITY	33	19	49	13	26	-8	0.60	-0.14	0.24	11.93	179	5.35	244	83	46	0	7	3	0
	NEWARK	32	21	45	17	27	-6	0.26	-0.50	0.21	10.83	169	3.35	147	72	39	0	7	3	0
NM	ALBUQUERQUE	53	26	57	16	39	2	0.00	-0.08	0.00	1.22	156	0.22	90	77	31	0	7	0	0
NV	ELY	44	20	48	5	32	5	0.17	0.00	0.12	0.89	77	0.85	176	89	45	0	6	2	0
	LAS VEGAS	59	41	62	36	50	1	0.01	-0.11	0.01	0.11	13	0.05	13	57	29	0	0	1	0
	RENO	52	33	53	26	42	5	0.03	-0.26	0.03	1.39	70	1.01	115	81	41	0	3	1	0
	WINNEMUCCA	48	29	55	21	39	6	0.35	0.13	0.20	1.98	118	1.70	263	85	48	0	4	3	0
NY	ALBANY	26	13	37	7	19	-5	0.23	-0.35	0.22	8.42	168	2.77	159	79	48	0	7	2	0
	BINGHAMTON	21	9	31	4	15	-7	0.34	-0.25	0.19	7.91	164	1.99	114	79	53	0	7	5	0
	BUFFALO	22	9	27	6	15	-10	0.93	0.17	0.34	6.44	107	2.66	117	91	65	0	7	7	0
	ROCHESTER	23	11	30	5	17	-9	15.23	14.65	7.14	19.11	438	16.31	900	82	60	0	7	5	4
	SYRACUSE	25	13	32	7	19	-5	0.13	-0.43	0.06	6.85	136	1.75	99	74	47	0	7	5	0
OH	AKRON-CANTON	19	7	25	2	13	-14	0.30	-0.37	0.20	4.06	83	1.51	76	84	58	0	7	4	0
	CINCINNATI	22	7	33	0	15	-16	0.20	-0.53	0.17	4.91	82	3.03	137	88	50	0	7	2	0
	CLEVELAND	22	9	26	3	15	-13	0.53	-0.15	0.46	5.09	101	1.80	88	81	53	0	7	4	0
	COLUMBUS	22	10	29	6	16	-13	0.12	-0.56	0.11	5.55	107	2.32	113	80	52	0	7	2	0
	DAYTON	20	6	27	0	13	-16	0.17	-0.53	0.11	4.67	90	2.75	129	85	57	0	7	3	0
	MANSFIELD	18	6	24	-3	12	-14	0.30	-0.44	0.17	4.63	89	2.24	102	87	60	0	7	5	0
	TOLEDO	19	6	26	-2	13	-15	0.22	-0.31	0.11	4.45	109	2.74	168	79	57	0	7	3	0

Based on 1991-2020 normals

***** Not Available**

Weather Data for the Week Ending January 20, 2024

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
	YOUNGSTOWN	21	9	26	0	15	-12	0.25	-0.44	0.11	4.30	81	1.66	80	80	53	0	7	5	0
OK	OKLAHOMA CITY	28	9	49	1	18	-20	0.00	-0.30	0.00	2.53	96	0.80	96	69	35	0	7	0	0
	TULSA	26	6	47	-3	16	-22	0.13	-0.22	0.13	3.17	90	1.37	126	69	39	0	7	1	0
OR	ASTORIA	42	34	50	24	38	-6	1.79	-0.68	0.99	19.76	111	7.26	102	90	69	0	3	5	1
	BURNS	37	15	43	-5	26	0	0.38	0.09	0.19	3.26	135	1.64	186	90	61	0	5	5	0
	EUGENE	38	29	49	19	33	-8	0.35	-0.98	0.28	10.46	92	4.26	104	97	84	0	3	2	0
	MEDFORD	52	40	60	30	46	5	0.43	-0.16	0.13	5.62	103	3.42	181	97	63	0	1	5	0
	PENDLETON	20	10	29	-3	15	-20	0.53	0.20	0.31	3.07	122	1.61	160	87	70	0	7	4	0
	PORTLAND	33	27	43	17	30	-12	1.48	0.37	0.89	13.76	151	5.16	154	79	57	0	4	4	1
	SALEM	37	26	47	16	31	-11	1.75	0.41	0.85	13.54	123	6.01	149	92	72	0	5	4	1
PA	ALLENTOWN	27	14	38	6	20	-9	0.42	-0.34	0.21	12.25	204	3.78	176	76	42	0	7	3	0
	ERIE	23	12	25	6	17	-11	0.79	0.02	0.34	5.47	84	2.26	96	81	52	0	7	4	0
	MIDDLETOWN	29	19	38	14	24	-6	0.51	-0.18	0.21	9.41	175	4.25	220	76	42	0	7	3	0
	PHILADELPHIA	31	21	46	14	26	-7	0.71	0.01	0.30	12.38	206	4.61	226	82	43	0	7	3	0
	PITTSBURGH	24	12	29	7	18	-11	0.26	-0.43	0.16	4.47	92	1.97	99	78	50	0	7	3	0
	WILKES-BARRE	25	13	34	8	19	-9	0.36	-0.24	0.18	9.38	207	3.61	209	75	47	0	7	3	0
	WILLIAMSPORT	27	12	36	5	20	-8	0.43	-0.26	0.25	9.27	177	4.13	210	77	45	0	7	3	0
RI	PROVIDENCE	30	18	43	13	24	-6	0.63	-0.27	0.55	12.72	174	5.92	225	88	48	0	7	4	1
SC	CHARLESTON	60	33	71	25	46	-3	0.01	-0.75	0.01	8.50	155	1.65	78	83	33	0	4	1	0
	COLUMBIA	53	28	64	23	40	-5	0.01	-0.76	0.01	6.70	112	2.13	93	89	30	0	6	1	0
	FLORENCE	54	29	65	21	41	-5	0.08	-0.57	0.08	5.82	106	2.57	129	86	33	0	5	1	0
	GREENVILLE	47	23	58	15	35	-7	0.12	-0.78	0.12	11.42	156	6.55	241	74	27	0	6	1	0
SD	ABERDEEN	6	-9	17	-16	-2	-14	0.05	-0.06	0.05	1.95	195	0.13	33	76	59	0	7	1	0
	HURON	7	-10	20	-18	-1	-17	0.13	0.01	0.13	1.72	165	0.49	130	77	59	0	7	1	0
	RAPID CITY	17	-9	28	-23	4	-21	0.03	-0.04	0.02	0.35	63	0.05	25	81	50	0	7	2	0
	SIOUX FALLS	7	-9	19	-19	-1	-19	0.13	0.01	0.13	2.91	238	1.11	283	72	56	0	7	1	0
TN	BRISTOL	32	14	45	3	23	-14	0.84	0.01	0.72	5.53	91	1.93	83	91	59	0	7	4	1
	CHATTANOOGA	36	18	47	11	27	-14	0.81	-0.34	0.61	10.41	122	4.27	130	84	50	0	7	4	1
	KNOXVILLE	30	13	44	0	22	-17	1.42	0.33	1.06	10.58	131	4.60	149	92	58	0	7	5	1
	MEMPHIS	28	12	41	2	20	-22	0.60	-0.31	0.26	6.02	73	3.46	127	85	45	0	7	3	0
	NASHVILLE	26	10	37	-1	18	-21	0.63	-0.27	0.36	6.03	86	3.28	127	80	49	0	7	3	0
TX	ABILENE	42	18	66	8	30	-17	0.00	-0.24	0.00	2.70	140	1.31	195	60	33	0	6	0	0
	AMARILLO	38	8	66	0	23	-15	0.00	-0.16	0.00	1.93	168	0.20	45	72	25	0	7	0	0
	AUSTIN	44	23	77	16	33	-19	0.00	-0.60	0.00	3.68	81	1.59	89	72	31	0	6	0	0
	BEAUMONT	52	32	66	21	42	-12	0.06	-1.22	0.06	6.74	79	2.74	77	90	49	0	4	1	0
	BROWNSVILLE	63	43	79	29	53	-10	0.10	-0.11	0.07	0.91	48	0.80	120	95	55	0	2	2	0
	CORPUS CHRISTI	54	33	79	24	44	-14	0.00	-0.29	0.00	2.58	91	2.07	231	86	48	0	3	0	0
	DEL RIO	52	28	73	22	40	-13	0.00	-0.13	0.00	0.67	61	0.05	13	62	27	0	5	0	0
	EL PASO	62	37	73	21	49	3	0.00	-0.08	0.00	0.22	24	0.03	12	39	18	0	2	0	0
	FORT WORTH	37	19	60	11	28	-18	0.01	-0.57	0.01	4.83	106	1.30	77	66	32	0	6	1	0
	GALVESTON	52	36	62	24	44	-12	0.04	-0.97	0.02	6.70	95	3.76	133	91	58	0	3	2	0
	HOUSTON	48	28	66	18	38	-15	0.06	-0.82	0.04	5.41	83	2.87	117	87	51	0	5	2	0
	LUBBOCK	41	13	71	5	27	-14	0.00	-0.14	0.00	0.59	51	0.01	2	64	28	0	7	0	0
	MIDLAND	43	18	74	9	31	-15	0.00	-0.15	0.00	0.56	56	0.00	0	58	31	0	6	0	0
	SAN ANGELO	43	19	77	11	31	-16	0.00	-0.21	0.00	2.41	166	0.28	49	69	33	0	6	0	0
	SAN ANTONIO	47	24	72	18	36	-16	0.00	-0.44	0.00	1.82	56	0.73	60	68	36	0	6	0	0
	VICTORIA	48	28	73	21	38	-16	0.02	-0.61	0.02	2.47	60	1.79	101	83	47	0	5	1	0
	WACO	40	19	73	12	30	-18	0.00	-0.59	0.00	4.70	102	1.59	91	77	33	0	6	0	0
	WICHITA FALLS	34	13	56	5	23	-19	0.00	-0.27	0.00	2.09	89	0.71	91	66	30	0	7	0	0
UT	SALT LAKE CITY	42	25	50	12	33	2	0.04	-0.29	0.04	1.47	62	0.50	54	93	55	0	7	1	0
VA	LYNCHBURG	37	19	52	9	28	-8	0.03	-0.78	0.02	8.09	141	3.06	136	76	36	0	7	1	0
	NORFOLK	45	28	58	22	37	-5	0.17	-0.59	0.08	9.32	171	2.92	135	77	38	0	4	3	0
	RICHMOND	40	23	57	14	32	-6	0.38	-0.36	0.20	12.53	223	3.72	176	80	38	0	7	3	0
	ROANOKE	36	21	51	13	28	-9	0.34	-0.40	0.33	7.36	144	3.20	158	72	43	0	7	2	0
	WASH/DULLES	33	18	46	8	25	-8	0.65	-0.02	0.34	9.95	192	4.27	226	80	45	0	7	3	0
VT	BURLINGTON	24	15	35	5	19	-1	0.26	-0.22	0.19	7.52	191	1.85	130	78	50	0	7	4	0
WA	OLYMPIA	40	26	45	12	33	-7	1.79	-0.06	1.13	15.18	116	4.82	92	90	66	0	4	5	1
	QUILLAYUTE	45	32	51	22	38	-3	3.77	0.06	1.44	22.65	93	7.91	76	82	67	0	3	5	3
	SEATTLE-TACOMA	39	29	49	19	34	-9	0.72	-0.63	0.38	11.24	117	2.95	77	82	52	0	4	5	0
	SPOKANE	19	8	30	-4	13	-16	0.64	0.20	0.49	4.56	124	1.26	93	84	63	0	7	3	0
	YAKIMA	21	7	33	-2	14	-17	0.54	0.28	0.37	2.34	104	0.92	114	79	56	0	7	3	0
WI	EAU CLAIRE	7	-7	12	-12	0	-14	0.00	-0.23	0.00	1.56	76	0.14	21	75	54	0	7	0	0
	GREEN BAY	11	-2	20	-9	5	-13	0.00	-0.31	0.00	1.94	72	0.63	68	75	56	0	7	0	0
	LA CROSSE	9	-5	14	-8	2	-17	0.00	-0.28	0.00	1.63	71	0.68	84	74	53	0	7	0	0
	MADISON	8	-5	14	-11	2	-17	0.06	-0.28	0.04	3.01	117	1.39	148	81	57	0	7	2	0
	MILWAUKEE	12	3	20	-5	7	-16	0.07	-0.34	0.04	4.62	150	2.42	203	68	53	0	7	3	0
WV	BECKLEY	25	11	36	2	18	-14	0.82	0.10	0.46	5.50	103	2.76	136	85	55	0	7	6	0
	CHARLESTON	27	14	37	7	20	-14	0.79	0.04	0.28	4.49	79	2.44	115	90	49	0	7	6	0
	ELKINS	26	9	34	3	17	-13	0.65	-0.15	0.24	4.86	84	2.19	100	89	53	0	7	6	0
	HUNTINGTON	26	13	35	6	20	-15	0.61	-0.10	0.19	4.75	85	3.07	153	81	46	0	7	6	0
WY	CASPER	22	-9	46	-21	6	-19	0.06	-0.04	0.03	0.42	45	0.35	111	77	56	0	7	2	0
	CHEYENNE	27	3	47	-14	15	-15	0.25	0.17	0.17	0.52	73	0.41	182	73	41	0	7	3	0
	LANDER	16	-7	35	-24	4	-17	0.07	-0.04	0.07	1.17	123	0.46	144	81	57	0	7	1	0
	SHERIDAN	18	-9	36	-24	4	-20	0.15	0.00	0.08	0.38	42	0.28	75	78	51	0	7	3	0

Based on 1991-2020 normals

***** Not Available**

2023 U.S. Weather Review

Annual "Weather Review" provided by USDA/WAOB; rankings provided by National Centers for Environmental Information.

The year began with La Niña in progress but ended with a strong El Niño well underway. The transition to the warm (El Niño) phase of the Southern Oscillation began by late winter and was fully complete by late spring, with the National Weather Service (NWS) issuing an El Niño advisory on June 8. Although many months passed before the atmosphere fully responded to the abrupt changes in the equatorial Pacific Ocean, meteorological signs of the presence of El Niño were apparent by the end of 2023. Late-year developments related to El Niño included unusually mild weather across the northern U.S. and increasingly stormy conditions in parts of the South and East. On November 9, the NWS noted "above-average sea surface temperatures across the equatorial Pacific Ocean were indicative of a strong El Niño." By December 14, the NWS added that "the coupled ocean-atmosphere system reflected a strong El Niño."

Despite the arrival and evolution of El Niño, above-average tropical activity was observed during 2023 in the Atlantic Basin, with 19 named tropical cyclones and one unnamed system. The unnamed subtropical storm, a short-lived system, unexpectedly developed in the dead of winter, on January 16, less than 350 miles southeast of Nantucket, MA, before sweeping across Atlantic Canada the following day. The total of 20 tropical or subtropical cyclones tied 1933 for the fourth-highest sum on record, behind 2020 (30); 2005 (28); and 2021 (21). The final count of 20 Atlantic tropical cyclones was a record for an El Niño year, as above-average sea surface temperatures helped to offset the typical suppression of activity related to increased westerly wind shear. However, the mainland U.S. escaped with direct strikes from just three cyclones, including Category 3 Hurricane Idalia, which struck Florida's Big Bend region on August 30, and Tropical Storms Harold and Ophelia. Harold made landfall on Padre Island, TX, on August 22, followed by Ophelia moving inland near Emerald Isle, NC, on September 23. Meanwhile in the Pacific Basin, former Hurricane Hilary became to first tropical cyclone to result in the issuance of an official NWS Tropical Storm Warning for southern California, when the weakening system arrived on August 20. Several other Pacific tropical cyclones helped to enhance rainfall in parts of the central and southern U.S., with October featuring moisture contributions from the remnants of Tropical Storm Max and Hurricanes Lidia, Norma, and Otis.

Severe thunderstorms were a common occurrence during 2023, with the National Oceanic and Atmospheric Administration cataloguing at least 19 individual outbreaks that caused at least $1 billion in property damage. The bulk of the severe weather, which included high winds, large hail, and isolated tornadoes, occurred in the spring and summer, with all but one of the outbreaks noted from March to August. Three of the severe weather outbreaks—on March 2-3, March 31-April 1, and June 21-26—caused more than $5 billion in property damage. The first two occurred before summer crops had been planted, but the June outbreak, which primarily struck from the High Plains into parts of the Midwest and mid-South, resulted in some crop and agricultural infrastructure losses. For the year, the NWS reported 83 tornado-related fatalities, the most since 2021 (103 deaths), and before that, 2011 (553 deaths). There were deadly U.S. tornado outbreaks in each of the first 6 months of the year, as well as one apiece in August and December. There were 23 tornado fatalities on March 24 in Alabama and Mississippi, as well as 26 deaths on March 31 – April 1, mostly across the mid-South and lower Midwest.

Overall, it was a relatively quiet year for U.S. wildfires, with only 2.6 million acres of vegetation burned, based on preliminary statistics provided by the National Interagency Fire Center. Although that total was only about 37 percent of the 10-year average of 7.1 million acres, the U.S. also endured its deadliest wildfire in more than a century. On August 8 in Hawaii, the historic town of Lahaina, Maui, was destroyed by a fast-moving fire, resulting in 100 fatalities and at least $5.6 billion in property damage. Several factors, including strong easterly winds and short-term drought following a late-spring wet spell, contributed to the Lahaina disaster. The high winds occurred as the Hawaiian Islands were briefly caught between two weather systems—a strong ridge of high pressure to the north and Hurricane Dora passing several hundred miles to the south. In modern times, the previous most deadly wildfire had occurred in November 2018, when the Camp Fire resulted in 85 fatalities and destroyed the town of Paradise, CA.

After 126 weeks (September 29, 2020 – February 21, 2023), drought coverage across the contiguous U.S. finally fell below 40 percent, according to the U.S. Drought Monitor. By May 30, coverage had dipped to 19 percent, only to rebound to more than 40 percent for 2 weeks in October. For the remainder of 2023, drought coverage generally decreased, falling to 32 percent by December 26. The biggest improvement in drought during 2023 occurred across the Plains and parts of the West, especially in California, the Great Basin, and the Intermountain West. During October, California attained drought-free status for the first time since February 2020. Before significant drought improvement occurred on the Plains, the U.S. endured its highest winter wheat abandonment rate since 1917, with the U.S. Department of Agriculture indicating that nearly 33 percent of the planted acreage was not harvested. Meanwhile, a net worsening of drought conditions occurred during 2023 in several regions, including parts of the western Corn Belt and the Southwest. Extreme summer heat and poor monsoon-related rainfall contributed to increased drought coverage and intensity in the latter region. Farther east, a significant "flash drought" gripped parts of the South during the summer and autumn months, accompanied by record-setting heat, with profound impacts on pastures and a variety of summer crops, including cotton and sugarcane. Some of the worst heat- and drought-related impacts stretched from the Mississippi Delta into the Tennessee Valley.

Even amid ongoing pockets of significant drought, several significant flood events affected various parts of the country. Notably, incessant storminess during the Western winter wet season of 2022-23 greatly reduced Western drought coverage, but also led to periods of extensive flooding, especially in some

of California's key agricultural areas. In the 11-state Western region, drought coverage decreased from 74 percent on September 27, 2022, to less than 15 percent by June 27, 2023. In January, a record crest (3.09 feet above flood stage) was reported on January 9 in Paso Robles, California. Farther downstream, the Salinas River at Bradley crested 5.88 feet above flood stage on January 10. It was the third-highest crest in Bradley, below the high-water marks of March 1995 and February 1969. Due to broken or compromised levees in the Salinas Valley, significant agricultural land remained under water after the crest passed. Two months later, on March 11, the Pajaro River at Chittenden, California, achieved its highest crest since February 1998. Along the same waterway, extensive levee breaks flooded the northern Monterey County community of Pajaro, as well as neighboring agricultural land. Later in March, the Tulare Lake basin (in California's San Joaquin Valley) began to fill, covering pastures, fields, and orchards, while threatening low-lying communities such as Alpaugh and Allensworth. The historic lakebed, normally kept dry by a network of canals and levees, partially floods during and after extremely wet seasons, such as 1968-69; 1982-83; and 1997-98. Another of the year's more consequential floods occurred in July across the Northeast. In Vermont, crests on Otter Creek at Center Rutland and Williams River near Rockingham were second only to the Hurricane Irene-induced high-water marks of August 28-29, 2011.

Overall, 2023 was dominated by above-normal temperatures (figure 1), with records being set for warmest year on record in countless communities across the South and East. According to preliminary information provided by the National Centers for Environmental Information (NCEI), it was officially the warmest year on record in Louisiana, Massachusetts, Mississippi, New Hampshire, and Texas, and among the ten warmest in New Mexico, Oklahoma, Washington, and all states bordering the Mississippi River to the Atlantic Coast (figure 2). Nevada, with its 52nd-warmest year, was the only state not to appear in the upper (warmest) one-third of the 1895-2023 historical distribution. For the Lower 48 States, it was the fifth-warmest year during the 1895-2023 period of record, with an annual average temperature of 54.4°F (2.4°F above the 20th century mean). The four warmer years—2012, 2016, 2017, and 2021—all occurred in the 21st century.

Meanwhile, 2023 precipitation averaged 29.46 inches across Lower 48 States, slightly below the 1901-2000 mean of 29.94 inches (figure 3). That marked the nation's 43rd-lowest annual total in the last 129 years. Annual state precipitation rankings ranged from the eighth-driest year in Louisiana to top-ten wetness in all six states in New England (figure 4).

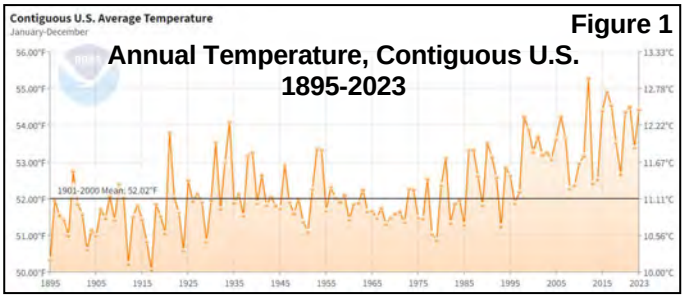


Figure 1

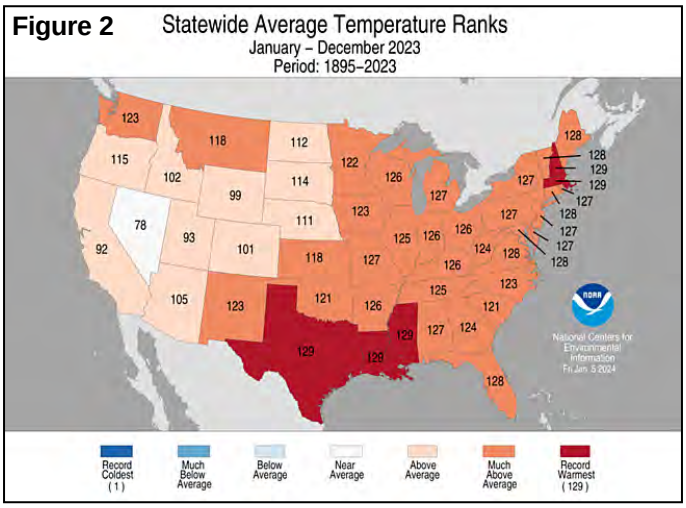


Figure 2

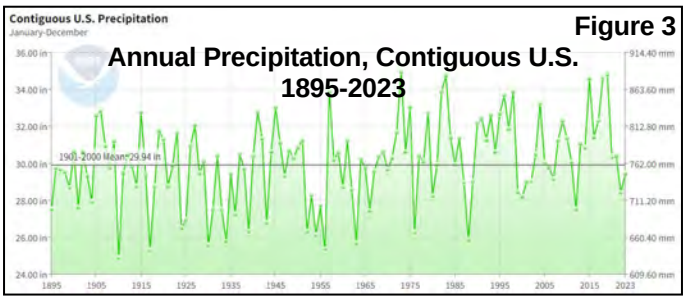


Figure 3

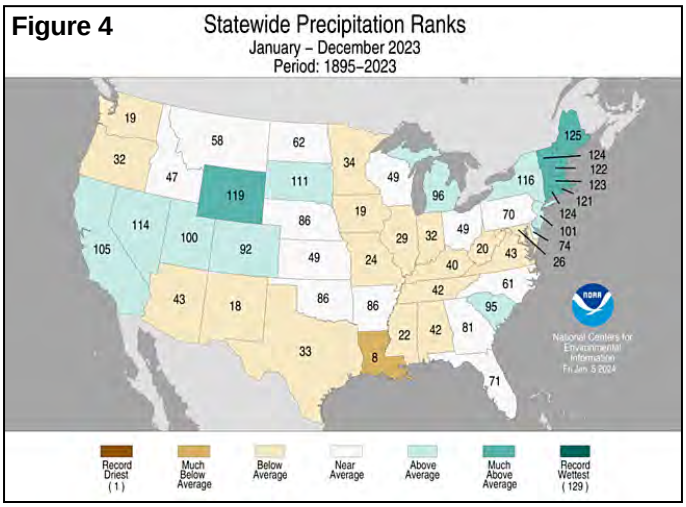


Figure 4

Winter (December 2022 – February 2023)

Although the winter of 2022-23 was overall mild and wet across the Lower 48 States, the central and southern Plains continued to suffer from soil moisture shortages and poor rangeland, pasture, and winter wheat conditions. By February 26, at least 40 percent of the winter wheat was rated in very poor to poor condition in Kansas (51 percent), Texas (49 percent), Oklahoma (41 percent), and Nebraska (40 percent). On the same date, statewide topsoil moisture in Texas was rated 72 percent very short to short, while rangeland and pastures were rated 68 percent very poor to poor. Western Texas dealt with a pair of late-winter dust storms, the second of which (on February 26) featured wind gusts of 60 to 100 mph or higher.

In contrast, a phenomenal winter wet season unfolded across the West—excluding areas from the Pacific Northwest to the northern Rockies—with periods of intense precipitation concentrated in early December, late December to mid-January, and during the final days of February. Some of the worst large-scale flooding occurred in early January in the heavily agricultural Salinas Valley, which endured breached levees and inundation of fields, roads, and farm infrastructure and equipment. By March 1, the average water equivalency of the Sierra Nevada snowpack grew to nearly 45 inches, on par with end-of-season values in California's last two wet winters—2016-17 and 2018-19—according to the California Department of Water Resources.

The band of unusually stormy weather extended northeastward across portions of the northern Plains and upper Midwest, where some locations that received snow in November retained coverage throughout the winter. With wintry conditions lingering through the end of winter in the north-central U.S., some farmers struggled through the early stages of lambing and calving season. Additionally, livestock producers in parts of the eastern Corn Belt contended with muddy conditions. Farther south, spring-like thunderstorms spawned dozens of tornadoes in the heart of winter, especially from January 2-4, 11-12, and 24-25. Tornadoes were reported as far north as central Illinois (on January 3) and eastern Iowa (on January 16). The first tornado-related deaths of the year occurred on January 12, with seven fatalities in Autauga County, Alabama, and one in Spalding County, Georgia. The nation's preliminary monthly count of 168 January tornadoes was second only to 214 in 1999.

Although much of the winter was cold in the West and mild across the South, East, and lower Midwest, there were notable exceptions. Winter's harshest cold outbreak struck for about a week during the second half of December, resulting in freezes in nearly all areas east of the Rockies, except southern Florida. Another cold wave arrived as January ended and February began, contributing to a multi-day ice storm from central Texas into the mid-South. Later in February, an extended spell of record-setting warmth across the South contributed to an increased risk of spring freezes causing damage to blooming fruit crops.

According to NCEI, the winter of 2022-23 was mild and wet, based on national statistics. The contiguous U.S. experienced its 17th-warmest, 21st-wettest December-February period in the last 128 years. The national average temperature of 34.9°F was 2.7°F above the 1901-2000 mean, while precipitation averaged 7.69 inches—113 percent of normal. Meanwhile, state temperature rankings ranged from the 31st-coolest winter in California to the warmest winter on record in Massachusetts (figure 5). In fact, top-ten rankings for winter warmth were noted in Arkansas, Louisiana, Missouri, and Texas, along with every state east of the Mississippi River, except Wisconsin. Meanwhile, state precipitation rankings ranged from the 23rd-driest winter in Florida to the wettest winter on record in Wisconsin (figure 6). Additionally, it was among the ten wettest winters on record in Iowa, Minnesota, Nebraska, Nevada, South Dakota, and Utah. For California, the sporadic nature of heavy precipitation—short bursts of rain and snow, followed by stretches of mostly dry weather—led to the 11th-wettest winter in the last 128 years, although it was the second-wettest December-February period of the 21st century, behind only 2016-17.

Figure 5 Statewide Average Temperature Ranks
December 2022 – February 2023
Period: 1895–2023

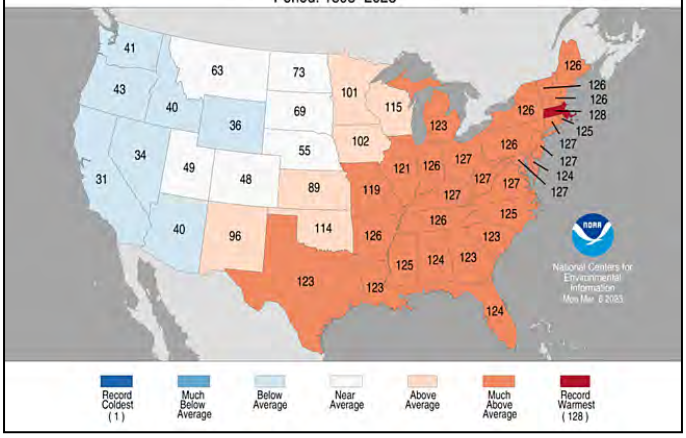
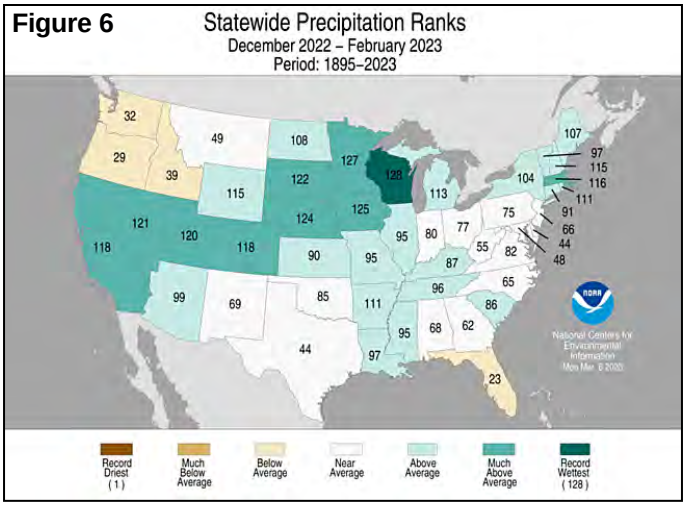


Figure 6 Statewide Precipitation Ranks
December 2022 – February 2023
Period: 1895–2023



Spring (March-May)

The West's frenetically stormy winter continued through March and into early April, followed by the return of more typical conditions. Still, long-term Western drought was largely eradicated by mid-spring, except across the region's northern tier. However, early- to mid-spring precipitation largely bypassed a core drought area in the nation's mid-section, leaving extreme to exceptional drought (D3 to D4) intact, mainly from eastern Nebraska into parts of Texas. The lack of rain, following winter drought and temperature extremes, left a portion of the winter wheat crop in terrible shape. By May 30, more than one-third (35 percent) of the U.S. winter wheat crop was rated in very poor to poor condition, led by Kansas at 69 percent. Other states reporting more than one-quarter of the winter wheat in very poor to poor condition on that date were Nebraska (51 percent), Texas (40 percent), Colorado (39 percent), Oklahoma (27 percent) and Oregon (27 percent).

During May, however, plentiful rain developed across the High Plains, with positive impacts on rangeland, pastures, immature winter wheat, and emerging summer crops. U.S. rangeland and pastures started the season on May 7 rated 37 percent very poor to poor, improving to 22 percent by May 28. On the later date, Kansas led the U.S. with 51 percent of its rangeland and pastures rated very poor to poor, followed by Nebraska at 43 percent. Several episodes of severe weather accompanied the unsettled conditions, with the most notable outbreaks occurring on March 24 and March 31 – April 1. There were 23 tornado-related fatalities on March 24 in Alabama, Arkansas, and Mississippi, followed by 26 deaths—mostly across the mid-South and lower Midwest—on March 31 and April 1. Meanwhile, emerging drought in the Northeast left 34 percent of Pennsylvania's pastures in very poor to poor condition by May 28. In contrast, the West benefited from the stormy winter and early spring, with rangeland and pastures rated at least one-half good to excellent on May 28 in six states, led by California (90 percent).

Midwestern spring dryness favored corn and soybean planting but reduced topsoil moisture for crop emergence and establishment. However, concerns were more acute west of the Mississippi River, where some longer-term drought issues already existed. By May 28, nearly all (92 percent) of the intended U.S. corn acreage had been planted, versus the 5-year average of 84 percent. Soybean planting also advanced quickly—compared to the 5-year average pace of 65 percent—with 83 percent of the national acreage planted by May 28.

According to NCEI, the spring of 2023 featured near-normal temperatures and precipitation, based on national statistics. The contiguous U.S. experienced its 46th-warmest, 61st-driest March-May period in the last 129 years. The national average temperature of 51.5°F was 0.6°F above the 1901-2000 mean, while precipitation averaged 7.86 inches—99 percent of normal. State temperature rankings ranged from the 15th-coolest spring on record in North Dakota to the fourth-warmest spring in Florida (figure 7). Massachusetts joined Florida on the top-ten list for warmest springs. Meanwhile, state precipitation rankings ranged from the ninth-driest spring in Maryland and Pennsylvania to the 20th-wettest spring in California (figure 8). Kansas, with its 13th-driest spring, narrowly missed the top-ten list while experiencing its driest March-May period since 2014.

Figure 7 Statewide Average Temperature Ranks
March – May 2023
Period: 1895–2023

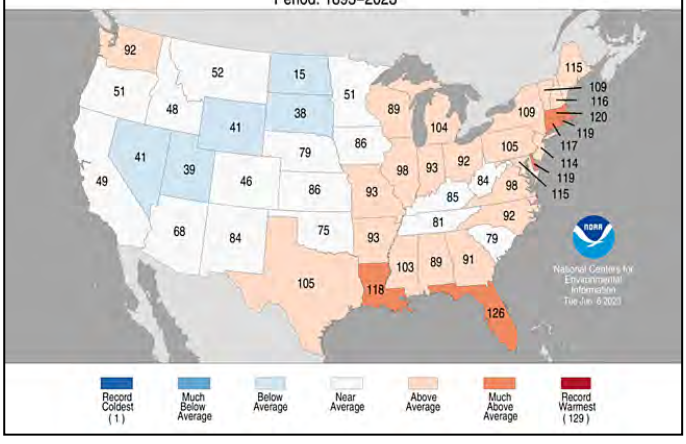
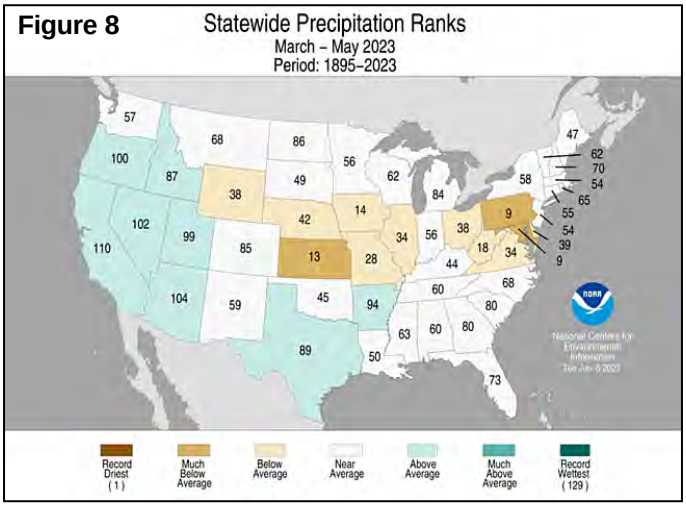


Figure 8 Statewide Precipitation Ranks
March – May 2023
Period: 1895–2023



Summer (June-August)

The tropics came alive during the last half of the final month of meteorological summer, with Hilary, an eastern Pacific storm, moving into southern California on August 20, and Atlantic Basin cyclones Harold and Idalia making landfall in Texas (on August 22) and Florida (on August 30), respectively. Hilary, the first tropical storm with an inland position over California since September 1939, was an extraordinarily rare event, while Idalia became the first major hurricane (Category 3 or higher) in modern history to strike Florida's Big Bend region. Harold was a much weaker tropical system, with sustained winds near 50 mph while moving ashore on Padre Island, Texas.

Before the tropical activity ramped up, summer weather in the U.S. was dominated by a pair of high-pressure ridges. The first, a sprawling, sub-tropical ridge, maintained hotter- and drier-than-normal weather across much of the Deep South, including the western and central Gulf Coast States and parts of the Southwest. The other, focused across higher latitudes of North America, led to dry weather in the Pacific Northwest and upper Midwest. The Northern high also contributed to rampant Canadian wildfires, which charred more than 40 million acres of vegetation by the end of August and nearly 46 million acres for the year. Wildfire smoke frequently drifted southward across the Canadian border, resulting in hazy sunshine and reduced air quality. Moisture squeezing between the ridges of high pressure kept several areas rather wet. Notably, abundant rain fell across much of the Intermountain West, as well as portions of the High Plains. Much of the eastern U.S. also experienced a wetter-than-normal summer, although excessive July rainfall in New England sparked near-record flooding.

According to the *U.S. Drought Monitor*, drought coverage across the Lower 48 States increased from a 3-year low of 19 percent at the end of May to 34 percent by August 29. Near the end of August, extreme to exceptional drought (D3 to D4) covered parts of fifteen states, including 74 percent of Louisiana, 32 percent of Texas, and 10 to 20 percent of Iowa, Kansas, Minnesota, Mississippi, Nebraska, New Mexico, and Wisconsin. During the summer of 2023, worsening drought was observed in several areas, including the western and central Gulf Coast States; parts of the Southwest; and an area across the nation's

northern tier, from the Pacific Northwest into the upper Midwest. Conversely, broad improvement in the drought situation occurred during the summer months across the Intermountain West; large sections of the Plains; and an area stretching from the eastern Corn Belt into the Northeast.

According to NCEI, the summer of 2023 featured rather hot weather and near-normal precipitation. The contiguous U.S. experienced its 15th-hottest, 60th-driest June-August period since 1895. The nation's summer average temperature of 73.01°F was 1.61°F above the 20th century mean, while precipitation averaged 8.35 inches—very close to the 1901-2000 mean of 8.32 inches. State temperature rankings ranged from the 32nd-coolest summer in West Virginia to the hottest June-August period on record in Louisiana (figure 9). Joining Louisiana on the top-ten list for summer heat were Oregon, Washington, New Mexico, Texas, Florida, and Mississippi. Meanwhile, state precipitation rankings ranged from the third-driest summer in Louisiana and New Mexico to the wettest June-August period on record in New Hampshire, Vermont, and Wyoming (figure 10). Top-ten rankings for summer dryness affected Arizona, Minnesota, Texas, and Wisconsin, while top-ten wetness covered New York and all New England.

Figure 9 Statewide Average Temperature Ranks
June – August 2023
Period: 1895–2023

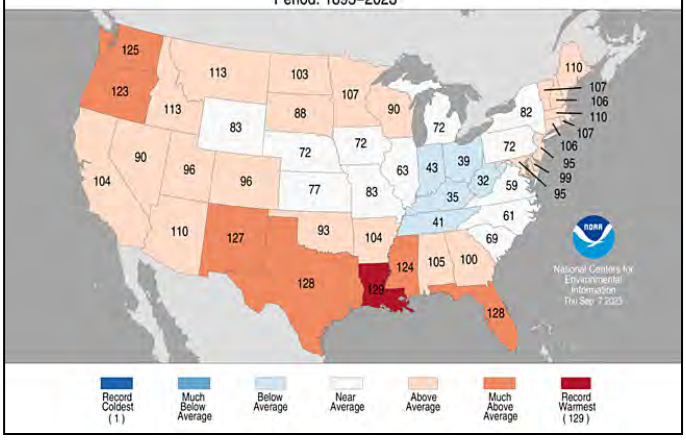
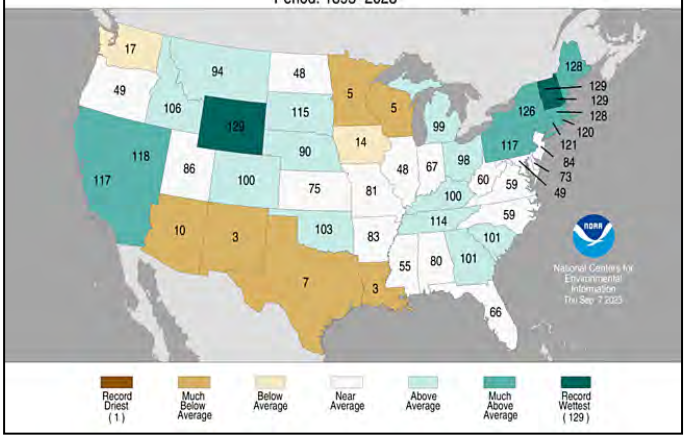


Figure 10 Statewide Precipitation Ranks
June – August 2023
Period: 1895–2023



Autumn (September-November)

The tropics remained active in September and October, with U.S. impacts occurring from cyclones in both the Atlantic and Pacific Basins. Post-Tropical Cyclone Idalia moved away from the mainland U.S. in early September, with diminishing impacts along the Atlantic Coast. About 2 weeks later, former Hurricane Lee passed just east of Maine, with mostly minor wind- and rainfall-related impacts in parts of New England. Later, short-lived Tropical Storm Ophelia made landfall near Emerald Isle, NC, on September 23. Even after Ophelia's dissipation, lingering rain along the Atlantic Coast resulted in locally extensive flooding on September 29 in the New York City metropolitan area. In October, the tropical focus shifted to the Pacific Ocean, where four cyclones contributed to U.S. rainfall. On October 9 and 10, respectively, Tropical Storm Max and Hurricane Lidia made landfall on Mexico's Pacific Coast, with residual rainfall eventually reaching the southern U.S., from southern Texas to the southern Atlantic Coast. Later in October, a tropically enhanced plume of moisture racing northeastward in advance of a cold front led to significant rainfall from Texas into the Great Lakes States. The front entrained moisture associated with the terrain-shredded remnants of Hurricanes Norma and Otis, both of which made landfall in Mexico.

Despite autumn warmth dominating the country, cold weather made periodic appearances, especially in late October. Still, the lack of sustained cold conditions allowed most summer crops to dry down without freeze-related concerns. By the time sub-freezing temperatures engulfed the country—excluding warmer areas of the Far West, Desert Southwest, and Deep South—crops were largely mature or had already been harvested. Meanwhile, winter wheat planting and emergence proceeded roughly on schedule, although pockets of drought resulted in uneven stands across parts of the Plains and Northwest. Nationally, wheat headed into dormancy in its best overall shape in 4 years, since autumn 2019.

According to the *U.S. Drought Monitor*, extreme to exceptional drought (D3 to D3) covered parts of 20 contiguous states on November 29, including 89 percent of Mississippi, 87 percent of Louisiana, 43 percent of New Mexico, 35 percent of Tennessee, 33 percent of Alabama, and 27 percent of Iowa. During much of the autumn of 2023, worsening drought gripped the Southeast, although some relief arrived in late November. Elsewhere, drought developed or intensified in parts of the Southwest and lower Midwest, while improving conditions were noted across portions of the nation's norther tier and much of an area broadly extending from Texas into the upper Great Lakes region. Given the protracted drought across much of the Mississippi River watershed, autumn water levels dipped to record-low levels at some gauge sites—mainly from Cairo, Illinois, near the confluence of the Ohio and Mississippi Rivers, downstream into the northern Mississippi Delta. Between October 15 and 17, modern record-low levels set just last year were broken along the Mississippi from New Madrid, Missouri, to Memphis, Tennessee. In Memphis, the October 17 minimum gauge reading of -12.04 feet stood 1.23 feet below the October 2022 low-water mark.

According to NCEI, the autumn of 2023 featured warmer- and drier-than-normal conditions across much of the country. The contiguous U.S. experienced its sixth-warmest autumn, with warmer September-November periods occurring in 1963, 1998, 2015, 2016, and 2021. The nation's autumn average temperature of 56.08°F was 2.53°F above the 20th century mean. Meanwhile, autumn precipitation averaged 5.35 inches, just 82 percent of the 1901-2000 mean of 6.88 inches. It was the nation's driest autumn since 1999, and before that, 1956. All states ranked in the upper half of the autumn temperature distribution (figure 11). South Carolina, with its 50th-warmest autumn, was the "coolest" state. Top-ten rankings for September-November warmth covered thirteen states, led by New Mexico and Texas—both third warmest. Joining New Mexico and Texas on the top-ten list for autumn warmth were eleven states: four in New England and seven across the Rockies, Plains, Midwest, and Southwest. Meanwhile, state precipitation rankings ranged from top-ten autumn dryness in Indiana, Kentucky, Mississippi, and Tennessee, to the 23rd-wettest autumn in Massachusetts and South Dakota (figure 12).

Figure 11 Statewide Average Temperature Ranks
September – November 2023
Period: 1895–2023

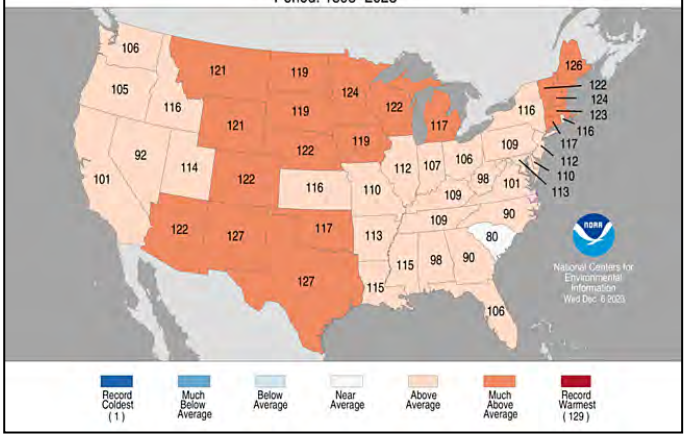
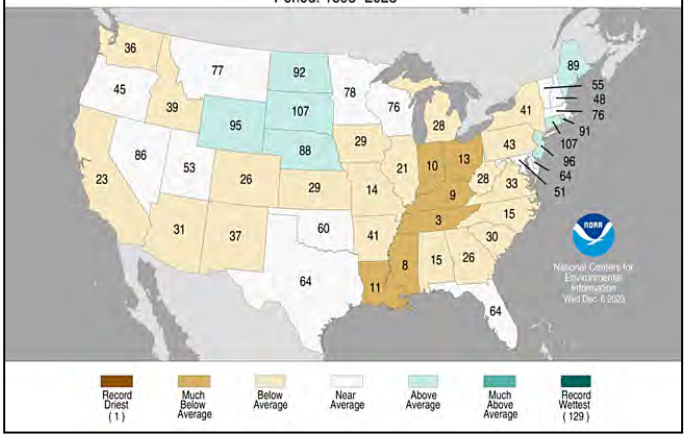


Figure 12 Statewide Precipitation Ranks
September – November 2023
Period: 1895–2023



December

According to NCEI, the contiguous U.S. experienced its warmest December during the 129-year period of record, with a monthly average temperature of 40.0°F that was 7.3°F above the 1901-2000 mean. Previously, the top-three listing for highest December average temperature included 2021 (39.3°F); 2015 (38.7°F); and 1939 (37.7°F). Meanwhile, it was the nation's 54th-wettest December on record, with a monthly average precipitation of 2.55 inches, 109 percent of the long-term mean.

As December began, producers had completed most harvest activities for 2023 crops. By November 26, only 4 percent of the U.S. corn acreage had not been harvested, compared to the 5-year average of 5 percent. On the same date, the U.S. cotton harvest was 83 percent complete, ahead of the 5-year average of 79 percent. Thereafter, December featured periods of significant precipitation in several areas of the country, including large sections of the Plains, upper Midwest, and Atlantic Coast States. However, drier-than-normal December weather dominated the mid-South and interior sections of the western U.S. In the latter region, mountain snowpack was slow to build, due to a combination of mild weather and lack of storminess. According to the California Department of Water Resources, the average water equivalency of the Sierra Nevada snowpack stood at 2.5 inches by month's end, approximately one quarter of the end-of-December average.

Mild December weather covered not only the West, but also the remainder of the country. Characteristic of El Niño, which developed during the first half of 2023 but only by late in the year began to strongly influence North American weather patterns, the warmest weather—with temperatures averaging at least 6 to 12°F above normal—stretched from the northern and central Plains into the Northeast. Even relatively cooler areas, such as the lower Southeast, noted near- or slightly above-normal December temperatures.

The mild weather, accompanied by periods of rain and snow, favored overwintering wheat, despite lingering pockets of drought. Based on *U.S. Drought Monitor*-derived statistics, drought covered 30 percent of the nation's winter wheat production area on December 26, down from a recent (October 2023) peak of 49 percent. According to USDA/NASS, winter wheat rated in very poor to poor condition improved in a few key production states between November 26 and the end of December. For example, winter wheat rated very poor to poor in Kansas decreased from 32 to 21 percent during that 5-week period. At the same time, wheat rated good to excellent jumped from 53 to 67 percent in Oklahoma and from 32 to 43 percent in Kansas.

Nationally, drought coverage decreased from 36 to 32 percent between November 28 and December 26, according to the *U.S. Drought Monitor*. General improvement in the drought situation was noted across the central and southern Plains, upper Midwest, and Pacific Northwest, as well as an area stretching from the central Gulf Coast into the middle Atlantic States. Record-setting December wetness affected portions of the mid-Atlantic. However, drought improvements were partially offset by worsening conditions in a few areas, including the mid-South, lower Midwest, and portions of the northern Rockies and environs.

National Weather Data for Selected Cities

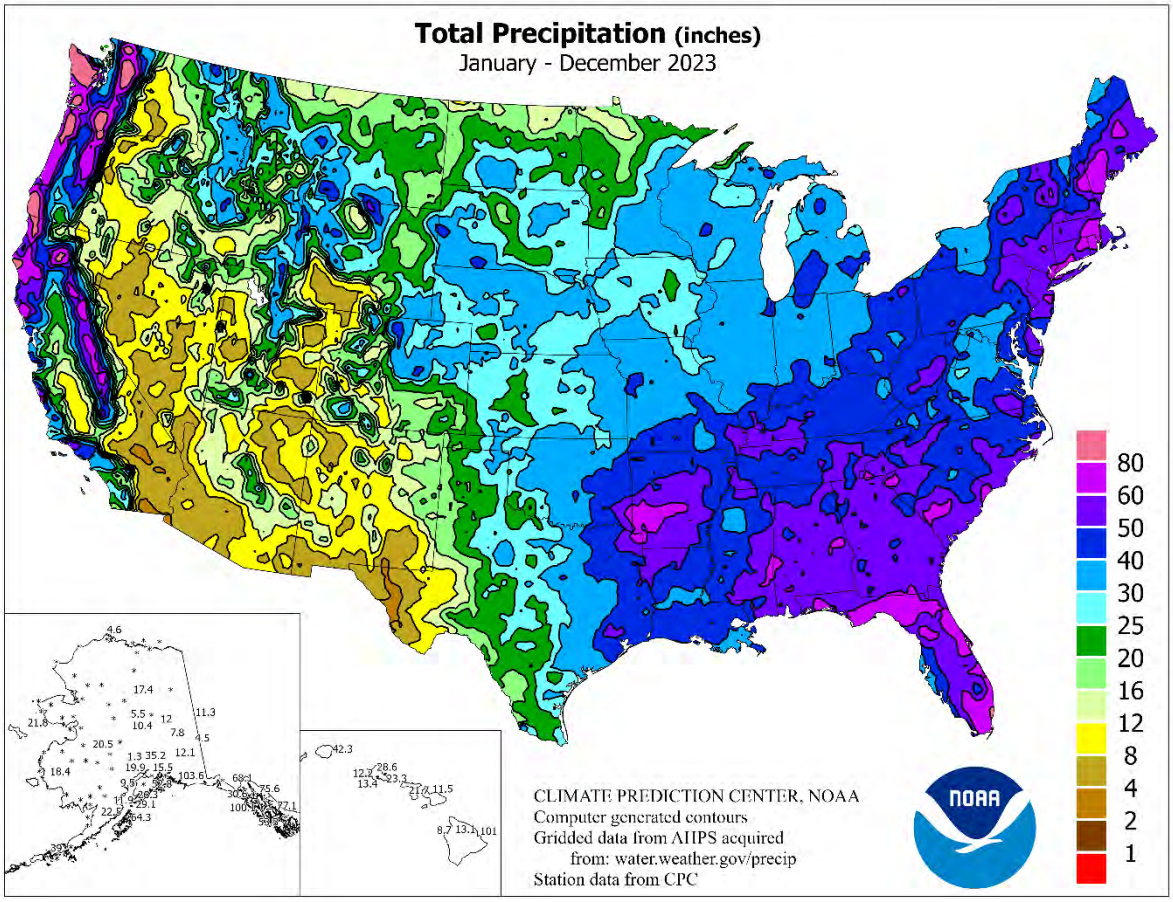
January - December 2023

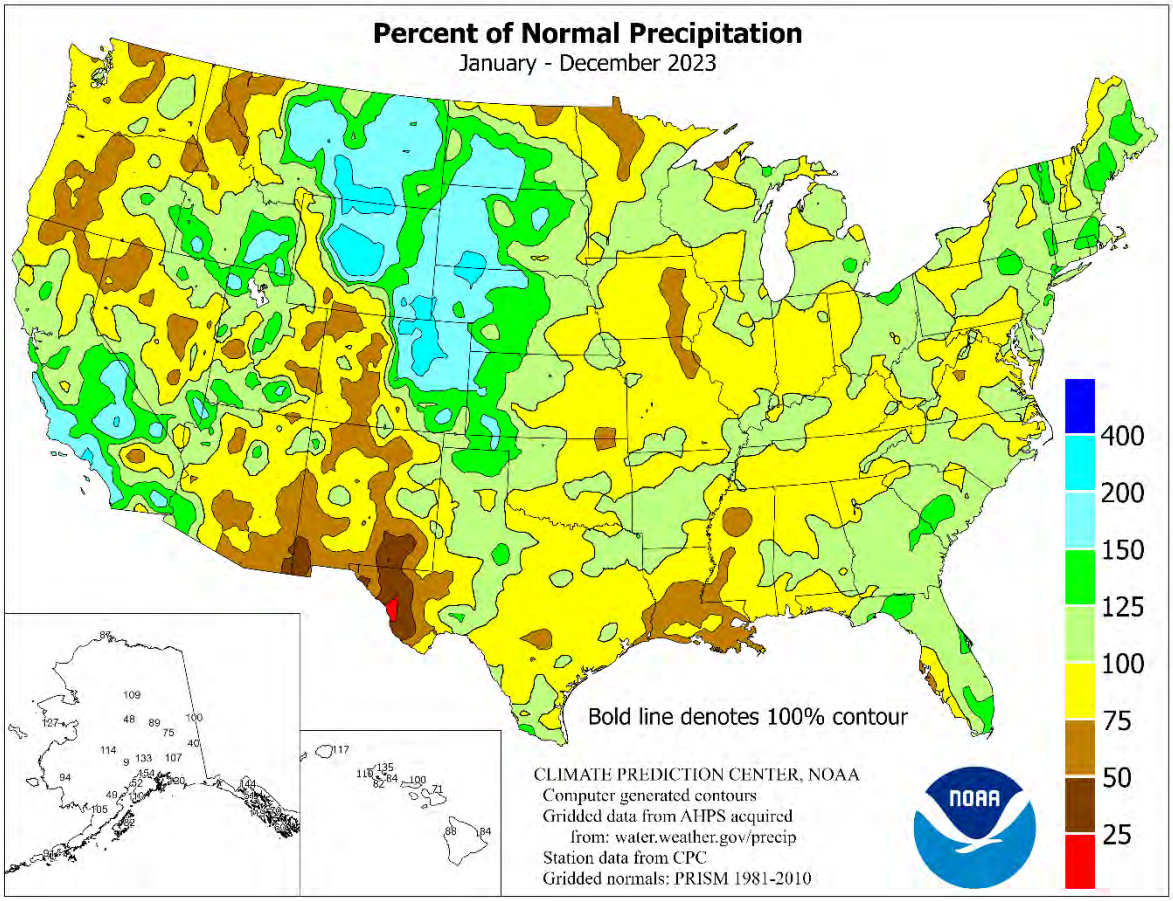
Data Provided by Climate Prediction Center

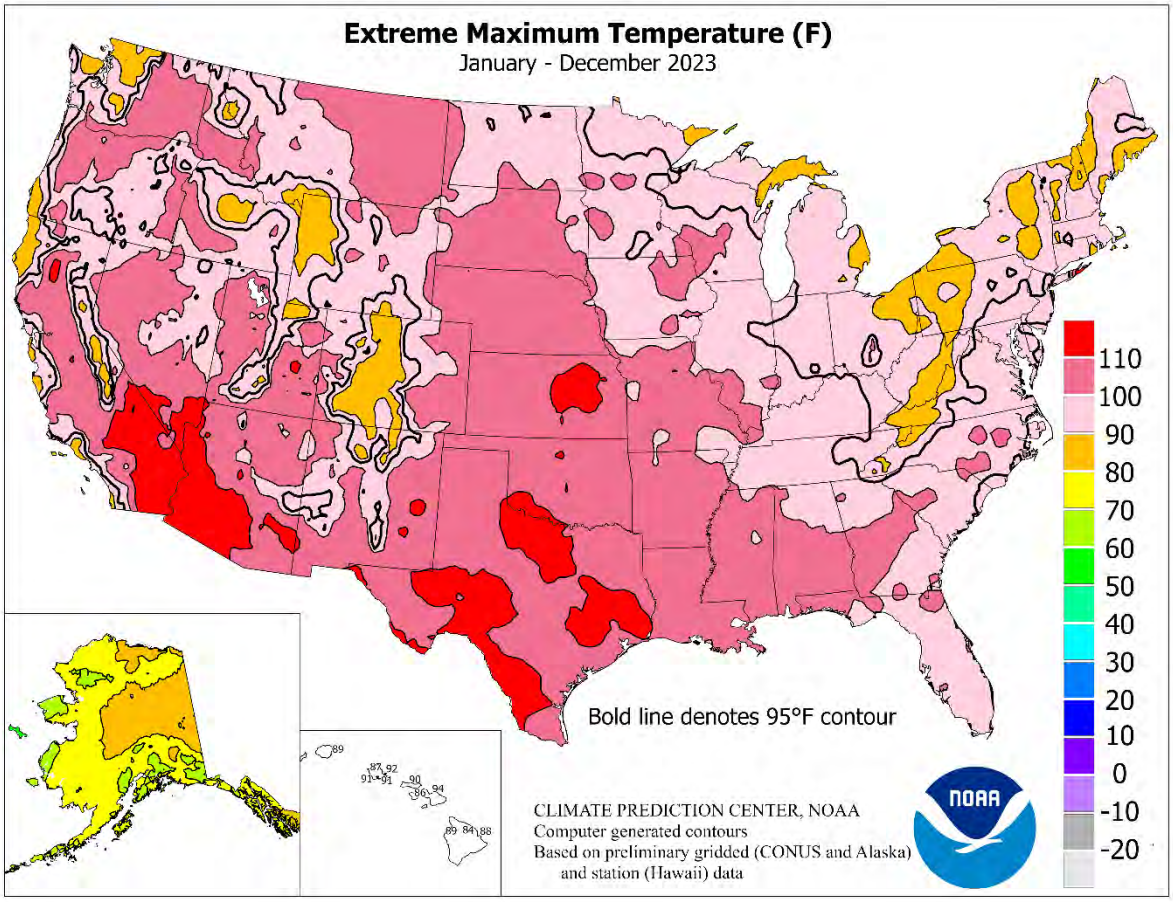
STATES AND STATIONS	TEMP, ˚F		PRECIP.		STATES AND STATIONS	TEMP, ˚F		PRECIP.		STATES AND STATIONS	TEMP, ˚F		PRECIP.	
	AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE
AK ANCHORAGE	38	0	25.67	9.24	WICHITA	59	1	30.39	-3.91	TOLEDO	54	2	30.78	-4.23
BARROW	18	0	4.59	-0.70	KY LEXINGTON	59	3	40.37	-9.34	YOUNGSTOWN	52	2	35.85	-5.35
FAIRBANKS	30	2	10.43	-1.24	LOUISVILLE	61	2	38.44	-9.90	OK OKLAHOMA CITY	62	2	34.78	-1.60
JUNEAU	44	2	75.57	8.59	PADUCAH	61	2	54.10	3.76	TULSA	62	1	36.85	-4.09
KODIAK	41	-1	64.33	-13.98	LA BATON ROUGE	73	4	48.81	-13.13	OR ASTORIA	52	1	57.80	-12.48
NOME	27	-1	21.82	4.60	LAKE CHARLES	71	1	42.62	-17.13	BURNS	46	-1	13.67	3.27
AL BIRMINGHAM	66	2	48.23	-8.39	NEW ORLEANS	73	3	39.36	-23.98	EUGENE	55	2	28.07	-12.74
HUNTSVILLE	64	1	43.56	-10.72	SHREVEPORT	70	3	***	***	MEDFORD	57	1	12.99	-5.45
MOBILE	71	3	55.87	-11.22	MA BOSTON	54	2	47.22	3.65	PENDLETON	54	2	9.99	-2.86
MONTGOMERY	68	2	46.33	-4.82	WORCESTER	52	3	63.13	14.84	PORTLAND	57	2	35.29	-1.61
AR FORT SMITH	65	2	41.52	-5.82	MD BALTIMORE	59	3	41.76	-3.25	SALEM	55	1	35.94	-4.06
LITTLE ROCK	66	4	53.70	3.28	ME CARIBOU	43	2	39.35	-1.36	PA ALLENTOWN	54	0	45.85	-1.50
AZ FLAGSTAFF	47	0	24.41	3.87	PORTLAND	49	1	55.04	6.93	ERIE	52	1	41.94	-1.04
PHOENIX	77	1	3.98	-3.24	MI ALPENA	47	2	29.36	-0.31	MIDDLETOWN	57	2	37.52	-6.68
PRESCOTT	56	0	9.90	-2.94	GRAND RAPIDS	51	1	35.11	-4.28	PHILADELPHIA	58	2	41.70	-2.41
TUCSON	72	1	9.86	-0.67	HOUGHTON LAKE	44	2	19.66	-2.37	PITTSBURGH	54	2	30.81	-8.81
CA BAKERSFIELD	66	0	9.23	2.87	LANSING	51	2	36.22	2.89	WILKES-BARRE	53	2	45.36	6.65
EUREKA	52	-1	34.43	-5.97	MUSKEGON	52	3	30.79	-4.29	WILLIAMSPORT	54	2	41.27	-2.25
FRESNO	66	1	13.49	2.50	TRAVERSE CITY	50	3	24.22	-4.94	RI PROVIDENCE	53	1	56.64	9.09
LOS ANGELES	62	-1	25.37	13.13	MN DULUTH	43	2	34.65	3.46	SC CHARLESTON	69	2	53.54	1.03
REDDING	64	1	39.76	6.25	INT_L FALLS	41	3	23.86	-1.52	COLUMBIA	65	1	54.66	9.42
SACRAMENTO	62	0	19.04	0.89	MINNEAPOLIS	50	3	29.15	-2.44	FLORENCE	65	0	40.66	-4.63
SAN DIEGO	63	-2	14.22	4.44	ROCHESTER	47	2	29.26	-5.40	GREENVILLE	62	1	50.42	0.75
SAN FRANCISCO	59	1	25.16	5.51	ST. CLOUD	46	3	27.67	-0.82	SD ABERDEEN	45	1	23.58	1.76
STOCKTON	63	-1	16.58	3.14	MO COLUMBIA	58	2	33.35	-8.10	HURON	48	2	18.60	-4.71
CO ALAMOSA	43	1	4.23	-3.16	KANSAS CITY	57	2	35.27	-4.03	RAPID CITY	48	1	20.89	3.43
CO SPRINGS	51	1	25.46	9.55	SAINT LOUIS	60	3	32.02	-9.69	SIOUX FALLS	50	2	18.61	-9.23
DENVER INTL	51	0	18.48	4.00	SPRINGFIELD	59	2	42.79	-1.94	TN BRISTOL	58	2	38.90	-5.07
GRAND JUNCTION	55	1	7.41	-1.66	MS JACKSON	69	3	39.96	-17.38	CHATTANOOGA	64	2	46.89	-8.11
PUEBLO	54	1	12.73	0.70	MERIDIAN	67	1	54.04	-2.96	KNOXVILLE	61	2	46.37	-5.58
CT BRIDGEPORT	55	1	51.46	7.37	TUPELO	66	2	45.96	-11.78	MEMPHIS	65	2	53.88	-1.06
HARTFORD	54	2	63.93	16.89	MT BILLINGS	50	1	16.88	2.58	NASHVILLE	63	2	37.09	-13.41
DC WASHINGTON	61	2	35.38	-6.44	BUTTE	40	0	17.63	4.87	TX ABILENE	69	3	22.61	-2.57
DE WILMINGTON	58	2	51.32	5.98	CUT BANK	45	3	7.83	-2.94	AMARILLO	60	2	17.37	-2.28
FL DAYTONA BEACH	73	2	60.29	9.05	GLASGOW	46	2	12.81	-0.60	AUSTIN	72	2	25.18	-11.06
JACKSONVILLE	71	1	51.69	-1.73	GREAT FALLS	47	2	17.16	2.40	BEAUMONT	73	3	39.75	-22.37
KEY WEST	81	2	34.69	-5.73	HAVRE	45	2	11.32	-0.50	BROWNSVILLE	78	1	20.86	-5.90
MIAMI	80	2	77.51	10.10	MISSOULA	48	2	12.96	-1.16	CORPUS CHRISTI	75	2	26.23	-5.52
ORLANDO	75	2	48.55	-2.90	NC ASHEVILLE	58	1	37.99	-11.62	DEL RIO	75	4	14.72	-5.09
PENSACOLA	72	3	57.86	-10.46	CHARLOTTE	63	2	45.08	1.48	EL PASO	69	3	4.21	-4.60
TALLAHASSEE	71	2	59.35	0.54	GREENSBORO	60	1	44.64	0.72	FORT WORTH	70	3	28.23	-8.80
TAMPA	76	2	36.46	-13.01	HATTERAS	65	0	49.52	-11.69	GALVESTON	74	2	28.44	-18.78
WEST PALM BEACH	78	2	72.26	10.50	RALEIGH	64	2	44.33	-1.73	HOUSTON	73	2	40.81	-11.04
GA ATHENS	64	0	49.07	0.14	WILMINGTON	66	2	57.91	-2.25	LUBBOCK	64	2	16.46	-1.87
ATLANTA	66	2	40.69	-9.74	ND BISMARCK	44	1	20.38	1.33	MIDLAND	67	1	7.40	-6.13
AUGUSTA	64	-1	61.76	17.66	DICKINSON	44	1	14.78	-0.83	SAN ANGELO	69	2	19.13	-1.81
COLUMBUS	67	0	46.57	-2.24	FARGO	45	3	21.35	-2.61	SAN ANTONIO	73	3	19.61	-12.78
MACON	66	1	43.56	-3.35	GRAND FORKS	42	2	14.74	-7.02	VICTORIA	73	3	29.84	-10.56
SAVANNAH	69	1	41.42	-6.70	JAMESTOWN	43	1	16.47	-3.26	WACO	68	1	28.90	-7.50
HI HILO	75	1	100.97	-19.42	NE GRAND ISLAND	53	1	15.50	-11.12	WICHITA FALLS	66	3	21.59	-6.28
HONOLULU	79	1	13.41	-2.98	LINCOLN	54	2	19.76	-9.57	UT SALT LAKE CITY	56	1	17.56	2.03
KAHULUI	77	0	11.46	-4.75	NORFOLK	52	3	26.38	-0.42	VA LYNCHBURG	59	2	43.01	0.26
LIHUE	77	1	42.30	6.08	NORTH PLATTE	50	0	21.26	0.18	NORFOLK	63	1	48.51	-0.67
IA BURLINGTON	54	2	27.17	-10.69	OMAHA	54	1	24.75	-7.11	RICHMOND	61	2	42.79	-2.71
CEDAR RAPIDS	51	3	18.24	-17.67	SCOTTSBLUFF	50	0	19.56	3.90	ROANOKE	60	2	32.98	-9.83
DES MOINES	54	3	24.77	-11.78	VALENTINE	49	0	31.45	10.55	WASH/DULLES	58	3	34.58	-8.67
DUBUQUE	50	3	31.33	-6.87	NH CONCORD	49	2	41.46	-0.49	VT BURLINGTON	50	2	43.99	6.46
SIOUX CITY	51	2	24.74	-4.45	NJ ATLANTIC_CITY	56	1	41.20	-4.75	WA OLYMPIA	52	1	40.63	-9.99
WATERLOO	52	3	22.17	-14.06	NEWARK	59	3	50.63	4.03	QUILLAYUTE	52	2	81.27	-20.04
ID BOISE	55	1	10.93	-0.58	NM ALBUQUERQUE	59	1	5.30	-3.56	SEATTLE-TACOMA	54	0	34.42	-4.93
LEWISTON	56	2	10.59	-2.27	NV ELY	43	-3	11.43	2.02	SPOKANE	51	2	13.42	-3.04
POCATELLO	46	-1	14.08	2.27	LAS VEGAS	69	-1	4.21	0.04	YAKIMA	52	2	6.93	-1.09
IL CHICAGO/O_HARE	54	3	33.26	-4.61	RENO	54	-1	10.47	3.11	WI EAU CLAIRE	48	3	26.09	-6.90
MOLINE	54	3	28.71	-9.55	WINNEMUCCA	52	0	8.33	0.87	GREEN BAY	48	3	25.57	-6.07
PEORIA	56	3	33.24	-4.31	NY ALBANY	52	3	46.56	5.87	LA CROSSE	51	2	23.34	-11.88
ROCKFORD	51	2	31.97	-5.26	BINGHAMTON	50	3	45.23	3.19	MADISON	50	3	29.32	-7.81
SPRINGFIELD	56	1	33.74	-4.30	BUFFALO	51	2	39.41	-1.27	MILWAUKEE	52	3	33.01	-1.56
IN EVANSVILLE	59	2	40.06	-7.77	ROCHESTER	51	1	36.37	1.29	WV BECKLEY	54	1	40.10	-3.43
FORT WAYNE	53	2	33.06	-6.44	SYRACUSE	52	3	43.69	3.80	CHARLESTON	57	1	35.25	-11.01
INDIANAPOLIS	56	2	33.95	-9.68	OH AKRON-CANTON	53	1	37.05	-4.53	ELKINS	52	0	42.14	-5.07
SOUTH BEND	53	3	39.12	-0.10	CINCINNATI	56	2	38.91	-6.35	HUNTINGTON	58	1	32.04	-13.05
KS CONCORDIA	58	3	23.86	-4.53	CLEVELAND	54	1	43.88	2.85	WY CASPER	45	-1	15.26	3.02
DODGE CITY	57	1	23.42	1.41	COLUMBUS	55	2	41.00	-0.56	CHEYENNE	47	0	18.77	3.35
GOODLAND	53	1	20.71	1.61	DAYTON	56	1	34.11	-7.22	LANDER	43	-2	17.76	4.53
TOPEKA	58	2	23.60	-12.93	MANSFIELD	52	2	41.74	-0.74	SHERIDAN	46	1	22.33	7.40

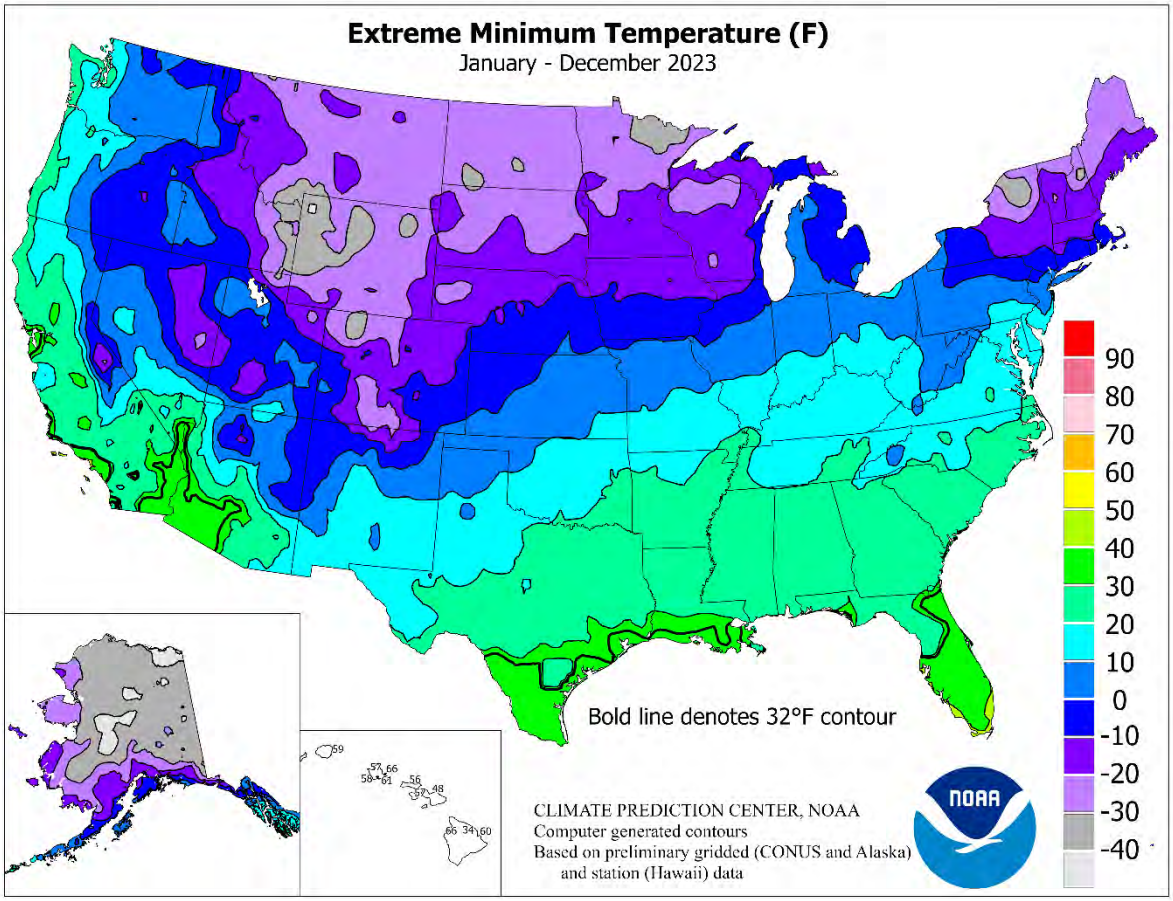
Based on 1991-2020 normals

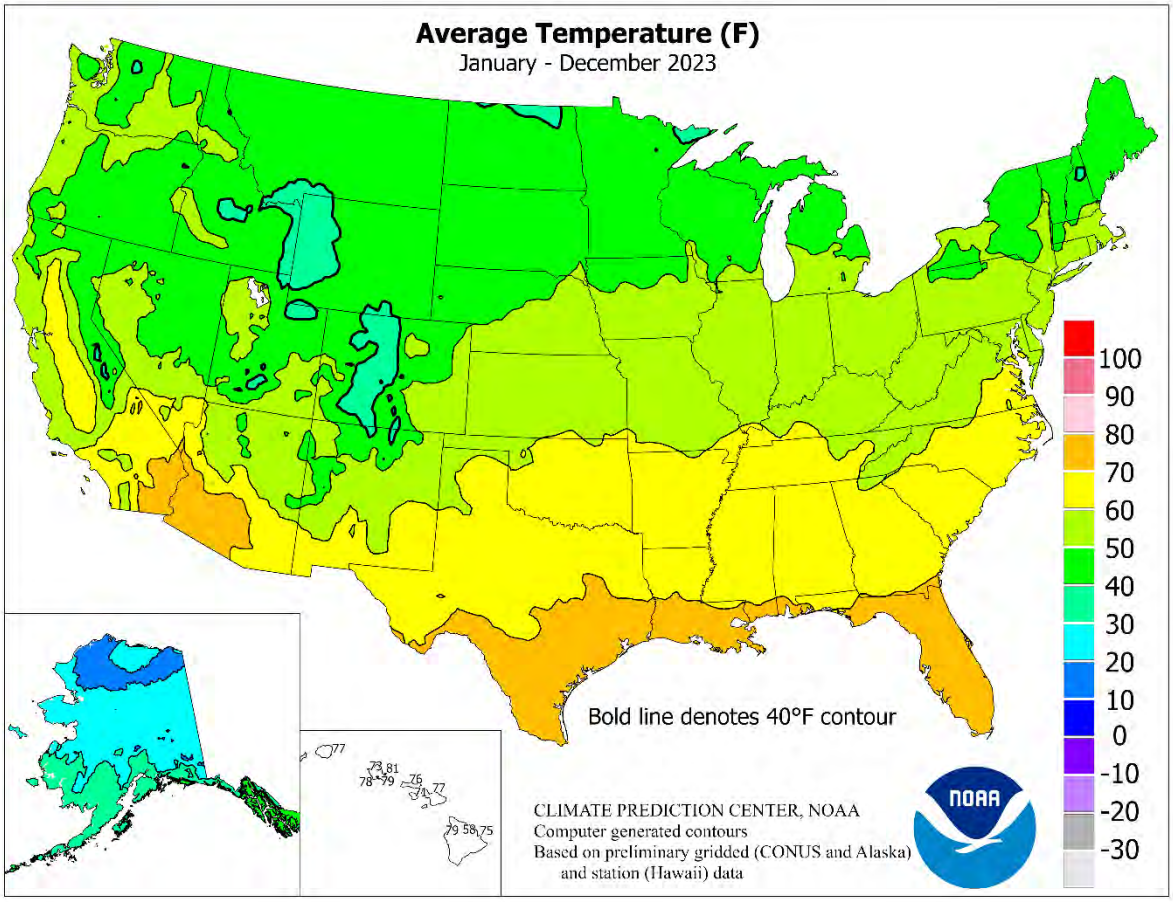
***** Not Available**

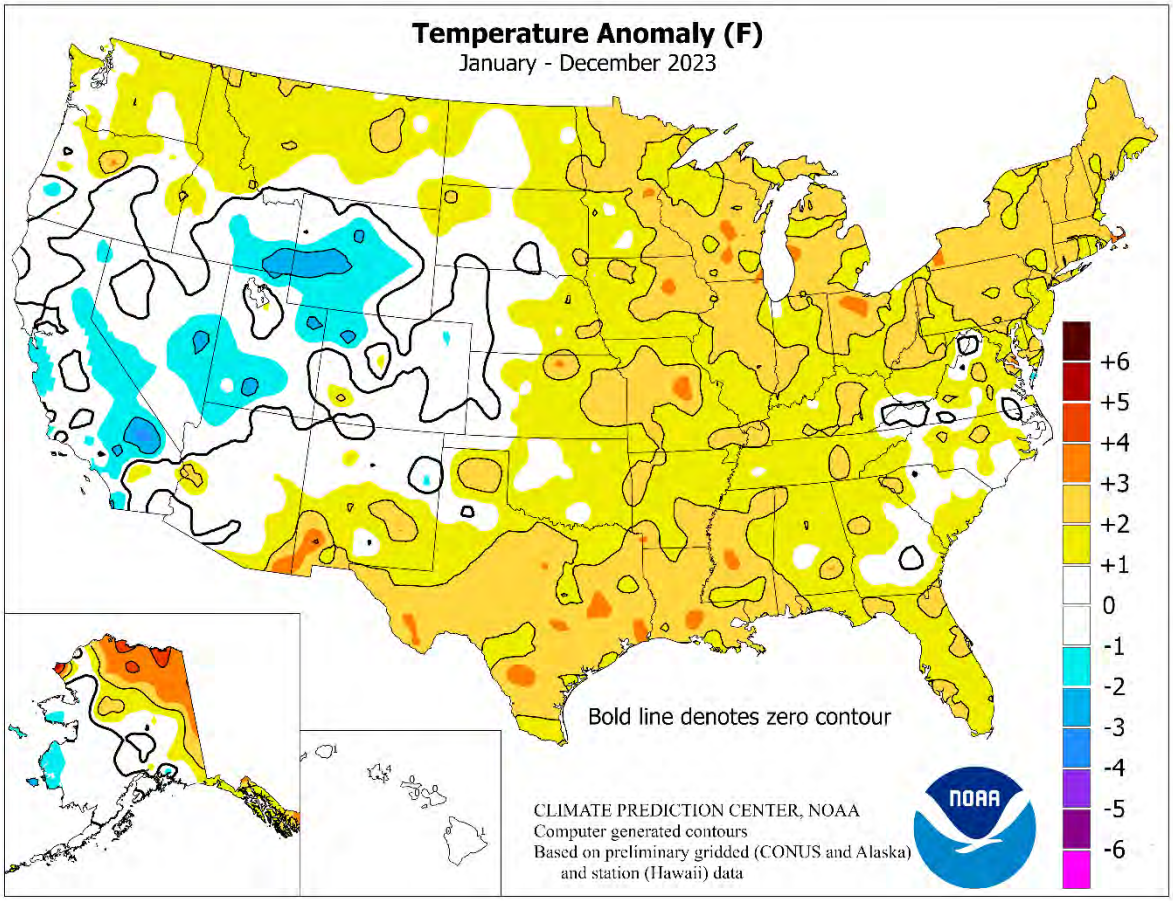

Total Precipitation (inches)
January - December 2023
80
60
50
40
30
25
20
16
12
8
4
2
1
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Gridded data from AHPS acquired
from: water.weather.gov/precip
Station data from CPC
NOAA


Percent of Normal Precipitation
January - December 2023
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)
January - December 2023
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)
January - December 2023
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)
January - December 2023
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 and Alaska)
and station (Hawaii) data
NOAA


Temperature Anomaly (F)
January - December 2023
+6
+5
+4
+3
+2
+1
0
-1
-2
-3
-4
-5
-6
Bold line denotes zero contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data
NOAA

2023 U.S. Fieldwork Highlights

Highlights, released on January 12, 2024, were provided by USDA/NASS.

April: Cooler-than-normal conditions prevailed during April across much of the western half of the nation. Large parts of the northern Plains and Rockies recorded temperatures 6°F or more below normal. In contrast, the eastern half of the country, excluding the lower Mississippi Valley, was warmer than normal. Portions of Florida, southern Georgia, the mid-Atlantic, and Northeast recorded temperatures 4°F or more above normal for the month. Meanwhile, most of the Southwest was drier than normal, but above-normal precipitation was observed in much of the Great Lakes, mid-Atlantic, Pacific Northwest, and the South. Parts of the Pacific Northwest and South recorded more than 7 inches of April precipitation.

By April 16, producers had planted 8 percent of the nation's corn crop, 4 percentage points ahead of last year and 3 points ahead of the 5-year average. Nationwide, 8 percent of the cotton crop was planted by April 16, two percentage points behind the previous year and 1 point behind average. By April 30, producers had planted 26 percent of the nation's corn crop, 13 percentage points ahead of last year but equal to the 5-year average. Nationwide, 15 percent of the cotton crop was planted by April 30, equal to the previous year but 1 percentage point ahead of the 5-year average.

May: Except for the East and Southwest, May was warmer than average. Parts of the upper Midwest, Pacific Northwest, northern Plains, and northern Rockies recorded temperatures 6°F or more above normal. In contrast, some locations in Alabama, southern Arizona, southern California, and the Carolinas recorded temperatures 4°F or more below normal. Meanwhile, most of the eastern half of the nation was drier than normal during May. However, at least twice the normal amount of May rainfall was recorded in portions of the Great Basin, Great Plains, and Southwest, as well as some locations in Maine and the Southeast. A few locations on the Great Plains recorded at least 8 inches of rain for the month.

By May 14, producers had planted 65 percent of the nation's corn crop, 20 percentage points ahead of last year and 6 points ahead of the 5-year average. Thirty percent of the nation's corn acreage had emerged by May 14, seventeen percentage points ahead of the previous year and 5 points ahead of the 5-year average. Nationwide, 35 percent of the cotton crop was planted by May 14, equal to the previous year but 1 percentage point behind the 5-year average. Twenty-eight percent of the nation's sorghum acreage was planted by May 14, three percentage points ahead of the previous year but equal to the 5-year average. Fifty-one percent of the nation's barley crop was planted by May 14, eight percentage points behind last year and 16 points behind the 5-year average. Eighty-three percent of the nation's soybean acreage was planted by May 28, nineteen percentage points ahead of last year and 18 points ahead of the 5-year average. By May 28, eighty-five percent of the spring wheat crop was seeded, 15 percentage points ahead of last year but 1 point behind the 5-year average.

June: June was warmer than average for most of the upper Midwest, lower Mississippi Valley, Pacific Northwest, northern Plains, and southern Texas. Parts of the northern Plains, as well as some locations in southern Texas and coastal Louisiana, recorded temperature 6°F or more above normal. In contrast, most of the Great Basin, East, central Plains, Rockies, and Southwest recorded below-average June temperatures. A few locations in California, Oklahoma, and along the Nevada-Utah border recorded temperatures 6°F or more below normal. Meanwhile, most of the western Gulf Coast region, Midwest, Pacific Northwest, and Southwest was drier than normal for the month of June. However, parts of the Great Basin, California, central Plains, and Rockies received at least twice the normal amount of precipitation. Some locations in central Maine and the Southeast also recorded twice the normal amount of June rainfall.

By June 4, producers had planted 96 percent of the nation's corn crop, 3 percentage points ahead of last year and 5 points ahead of the 5-year average. Ninety-two percent of the nation's barley crop was planted by June 4, two percentage points ahead of last year but 3 points behind the 5-year average. Nationally, producers had planted 93 percent of the 2023 peanut acreage by June 11, equal to last year but 1 percentage point ahead of the 5-year average. By June 11, ninety percent of the nation's spring wheat crop had emerged, 20 percentage points ahead of the previous year and 3 points ahead of the 5-year average. By June 11, ninety-four percent of the nation's rice acreage had emerged, equal to both last year and the 5-year average. Ninety-three percent of the nation's corn acreage had emerged by June 11, six percentage points ahead of both the previous year and the 5-year average. Eighty-eight percent of the nation's barley crop had emerged by June 11, three percentage points ahead of the previous year but 2 points behind the 5-year average. Nationwide, 81 percent of the cotton crop was planted by June 11, eight percentage points behind the previous year and 5 points behind the 5-year average. Ninety-six percent of the nation's soybean acreage was planted by June 11, nine percentage points ahead of last year and 10 points ahead of the 5-year average. Ninety-six percent of the nation's soybean acreage had emerged by June 25, six percentage points ahead of last year and 7 points ahead of the 5-year average. Eighty-five percent of the nation's sorghum acreage was planted by June 25, four percentage points behind the previous year and 7 points behind the 5-year average.

July: July was warmer than average for much of the nation. Parts of Louisiana, Maine, Oregon, Texas, Utah, and the Southwest recorded temperatures 4°F or more above normal. In contrast, much of the upper Midwest, and Great Plains, as well as portions of the Rockies, were cooler than average. Some places in the Great Basin and northern Plains recorded temperatures 4°F or more below normal. Meanwhile, the southern Delta, upper Midwest, Southwest, and West experienced drier-than-normal July weather. In contrast, parts of the Great Lakes, Mississippi Valley, Northeast, and Great Plains, as well as several locations in the mid-Atlantic, Rockies, and Southwest, recorded at least twice the normal amount of precipitation. Heavy Northeastern rainfall led to catastrophic flooding in parts of New York and New England. Many locations in Connecticut, Massachusetts, and Vermont recorded July rainfall totaling 12 inches or more.

Seventy-eight percent of the nation's oat acreage had headed by July 2, thirteen percentage points ahead of last year and 3 points ahead of the 5-year average. Thirty-seven percent of the nation's barley acreage had reached the headed stage by July 2, three percentage points behind last year and 10 points behind average. By July 2, fifty-one percent of the spring wheat crop had reached the headed stage, 33 percentage points ahead of the previous year and 5 points ahead of average. By July 16, fifty-six percent of the soybean acreage had reached the blooming stage, 10 percentage points ahead of last year and 5 points ahead of average. By July 16, thirty-six percent of the rice acreage had reached the headed stage, 9 percentage points ahead of the previous year and 7 points ahead of average. Nationally, 20 percent of the soybean acreage had begun setting pods by July 16, seven percentage points ahead of last year and 3 points ahead of average. Eighty-six percent of the cotton acreage had reached the squaring stage by July 30, two percentage points behind last year and 1 point behind average. By July 30, forty-seven percent of the cotton acreage had begun setting bolls, 10 percentage points behind last year and 3 points behind average. By July 30, eighty-four percent of the corn acreage had reached the silking stage, 7 percentage points ahead of last year and 2 points ahead of average. By July 30, forty-five percent of the sorghum acreage had reached the headed stage, 3 percentage points ahead of last year but 2 points behind average. By July 30, eighty-eight percent of the nation's peanut crop had reached the pegging stage, equal to the previous year but 1 percentage point ahead of average.

August: Summer ended on a warm note, with August featuring above-average temperatures for much of the nation. Large parts of the lower Mississippi Valley and southern Plains recorded monthly temperatures 6°F or more above normal. In contrast, much of the Great Basin, southern California, Great Lakes, Northeast, and Ohio Valley were cooler than normal. Meanwhile, much of the lower Mississippi Valley and southern Plains experienced drier-than-normal weather. However, the effects of Tropical Storm Hilary delivered at least eight times the normal amount of August precipitation to much of the Great Basin and California. In addition, at least twice the normal amount of precipitation fell across parts of the Great Lakes, middle Mississippi Valley, Northeast, Pacific Northwest, northern Plains, Rockies, Southeast, and Southwest. Due in large part to the effects of Hurricane Idalia at the end of the month, more than 10 inches of rain was recorded in parts of the Carolinas, Florida, and Georgia.

By August 6, ninety-three percent of the nation's corn acreage had reached the silking stage, 4 percentage points ahead of last year and 2 points ahead of the 5-year average. By August 6, forty-seven percent of the corn acreage was at or beyond the dough stage, 5 percentage points ahead of last year and 1 point ahead of average. By August 13, ninety-four percent of the soybean acreage had reached the blooming stage, 2 percentage points ahead of both last year and the average. By August 13, eighty-seven percent of the rice acreage had reached the headed stage, 5 percentage points ahead of the previous year and 4 points ahead of average. By August 20, producers had harvested 49 percent of the barley crop, 7 percentage points ahead of last year but 3 points behind average. On August 20, forty-nine percent of the barley acreage was rated in good to excellent condition, 5 percentage points below the same time in 2022. By August 27, fifty-four percent of the spring wheat had been harvested, 6 percentage points ahead of the previous year but 9 points behind average. On August 27, thirty-seven percent of the spring wheat was rated in good to excellent condition, 31 percentage points below the same time in 2022. By August 27, eighty-nine percent of the sorghum acreage had reached the headed stage, 2 percentage points ahead of last year but 2 points behind average. Eighty-two percent of the oat acreage had been harvested by August 27, three percentage points ahead of last year but 3 points behind average. By August 27, ninety-one percent of the soybean acreage had begun setting pods, 1 percentage point ahead of both last year and the 5-year average. By August 27, ninety percent of the nation's cotton acreage had begun setting bolls, 3 percentage points behind last year but equal to the 5-year average.

September: Like summer, September was warmer than normal for most of the nation. Portions of the upper Midwest, New England, Great Plains, and Southwest recorded monthly temperatures 4°F or more above normal. In contrast, most of the Great Basin and California, as well as large sections of the southern Atlantic States and Pacific Northwest, were cooler than normal. A few locations in California, Nevada, and Utah recorded temperatures 4°F or more below normal. Meanwhile, much of the East was drier than normal during September, but parts of the northern Atlantic Coast and some locations near Lake Superior recorded at least twice the normal amount of precipitation. Portions of Florida and the northern Atlantic Coast received at least 8 inches. In the West, large sections of California and

Texas were mostly dry, while much of the Great Basin and large parts of the Pacific Northwest, as well as some locations on the Plains, Rockies, and Southwest, recorded at least twice the normal amount of September precipitation.

By September 3, sixty-seven percent of this year's corn acreage was denting, 6 percentage points ahead of last year and 2 points ahead of the 5-year average. Ninety percent of the oat acreage had been harvested by September 3, one percentage point ahead of last year but 2 points behind average. Nationally, 45 percent of the rice acreage was harvested by September 10, twelve percentage points ahead of last year and 10 points ahead of average. On September 10, seventy-one percent of the rice acreage was rated in good to excellent condition, 1 percentage point below the same time in 2022. Fifty-four percent of the corn acreage was mature by September 17, sixteen percentage points ahead of last year and 10 points ahead of average. By September 17, producers had harvested 93 percent of the barley crop, 1 percentage point behind the previous year and 2 points behind average. By September 17, ninety-three percent of the spring wheat had been harvested, equal to both the previous year and the 5-year average. Nationally, soybeans leaves dropping advanced to 54 percent complete by September 17, fifteen percentage points ahead of last year and 11 points ahead of average. Eighty-five percent of the sorghum acreage was at or beyond the coloring stage by September 17, two percentage points ahead of last year but 2 points behind average. Nationwide, producers had sown 15 percent of the intended 2024 winter wheat acreage by September 17, four percentage points behind last year and 1 point behind average. By September 24, sixty-five percent of the nation's cotton had open bolls, 1 percentage point behind last year but 3 points ahead of the 5-year average.

October: October was warmer than normal for most of the nation, with parts of the Northeast recording temperatures 6°F or more above normal. In contrast, parts of the northern Plains, northern Rockies, and Southeast were moderately cooler than normal. Meanwhile, much of the country was drier than normal for the month; however, parts of the upper Midwest, Great Plains, and northern Rockies recorded at least twice the normal amount of monthly precipitation. Portions of Texas recorded more than10 inches of rain.

Soybean harvest across the nation was 62 percent complete by October 15, two percentage points ahead of last year and 10 points ahead of the 5-year average. Nationally, 88 percent of the rice acreage was harvested by October 15, equal to both last year and the 5-year average. Forty-five percent of the 2023 corn acreage had been harvested by October 15, two percentage points ahead of last year and 3 points ahead of average. As of October 15, fifty-three percent of the corn acreage was rated in good to excellent condition, equal to the same time in 2022. Fifty-three percent of the 2023 sorghum acreage had been harvested by October 15, two percentage points behind last year but 2 points ahead of average. Forty-two percent of the sorghum acreage was rated in good to excellent condition on October 15, twenty percentage points above the same time in 2022. Nationwide, producers had sown 68 percent of the intended 2024 winter wheat acreage by October 15, one percentage point ahead of last year but equal to the 5-year average. Fifty-five percent of the peanut acreage was harvested by October 22, eleven percentage points behind last year and 3 points behind average. On October 22, forty-eight percent of the peanut acreage was rated in good to excellent condition, 14 percentage points below the same time in 2022. By October 29, forty-nine percent of the cotton acreage was harvested, 5 percentage points behind last year but 2 points ahead of average. On October 29, twenty-nine percent of the cotton acreage was rated in good to excellent condition, 1 percentage point below the same time in 2022. By October 29, sugarbeet producers had harvested 84 percent of the nation's crop, 4 percentage points behind last year but 3 points ahead of the 5-year average.

November: Most of the country recorded above-normal November temperatures. Parts of the Great Plains and northern Rockies observed temperatures 6°F or more above normal. In contrast, most of the mid-Atlantic and Northeast, as well as portions of the Great Lakes, Southeast, South Texas, and West, were moderately cooler than normal. Meanwhile, much of the nation was drier than normal for the month of November. However, at least twice the normal amount of monthly precipitation was recorded in parts of Florida, the Southwest, Rockies, and South Texas.

By November 5, sugarbeet producers had harvested 95 percent of the nation's crop, 2 percentage points ahead of last year and 4 points ahead of the 5-year average. Nationwide, producers had sown 93 percent of the intended 2024 winter wheat acreage by November 12, two percentage points behind last year but equal to the average. Eighty-one percent of the winter wheat acreage had emerged by November 12, one percentage point ahead of both last year and the 5-year average. Soybean harvest across the nation was 95 percent complete by November 12, one percentage point behind last year but 4 points ahead of average. Eighty-seven percent of the nation's peanut acreage was harvested by November 12, three percentage points behind last year but 1 point ahead of average. Eighty-eight percent of the 2023 corn acreage was harvested by November 12, four percentage points behind last year but 2 points ahead of average. Ninety-six percent of the 2023 sorghum acreage had been harvested by November 19, equal to last year but 4 percentage points ahead of average. By November 26, eighty-six percent of this year's sunflower crop was harvested, 12 percentage points behind last year but 2 points ahead of average. As of November 26, fifty percent of the 2024 winter wheat acreage was reported in good to excellent condition, 16 percentage points above the same time in 2022. By November 26, eighty-three percent of the nation's cotton acreage was harvested, equal to last year but 4 percentage points ahead of the 5-year average.

2023 U.S. Crop Production Highlights

Highlights, released on January 12, 2024, were provided by USDA/NASS.

Corn: U.S. corn for grain production was estimated at a record-high 15.3 billion bushels, up 12 percent from the 2022 estimate. The average U.S. yield was estimated at a record-high 177.3 bushels per acre, 3.9 bushels above the 2022 yield of 173.4 bushels per acre.

Estimated yields in 2023 were up from the previous year on the northern Plains. Record-high yields were estimated in Indiana, New Jersey, Ohio, South Carolina, and Utah.

Corn planted area, at 94.6 million acres, was up 7 percent from the 2022 estimate. Area harvested for grain was estimated at 86.5 million acres, up 10 percent from the 2022 estimate. Record-high harvested for grain acres were estimated for North Dakota.

The 2023 corn objective yield data indicated the highest number of ears per acre for the combined ten objective yield States (Iowa, Illinois, Indiana, Kansas, Minnesota, Missouri, Nebraska, Ohio, South Dakota, and Wisconsin).

Corn silage production was estimated at 130 million tons for 2023, up 1 percent from the 2022 estimate. The U.S. silage yield was estimated at 20.1 tons per acre, up 1.4 tons from 2022. Record-high silage yields were estimated in Delaware, Georgia, Kentucky, New York, and Rhode Island. Area harvested for silage was estimated at 6.47 million acres, down 6 percent from the 2022 estimate. Record-low acres harvested for silage were estimated in Alabama, Connecticut, Massachusetts, Rhode Island, and West Virginia. Record-high acres harvested for silage were estimated in Texas.

Sorghum: Grain production in 2023 was estimated at 318 million bushels, up 69 percent from the 2022 total. Planted area for 2023 was estimated at 7.20 million acres, up 14 percent from 2022. Area harvested for grain, at 6.12 million acres, was up 34 percent from 2022. Grain yield was estimated at 52.0 bushels per acre, up 10.9 bushels from 2022.

Silage production was estimated at 4.98 million tons, down 12 percent from 2022. Area harvested for silage was estimated at 384,000 acres, down 27 percent from the previous year. Silage yield averaged 13.0 tons per acre, up 2.2 tons per acre from 2022.

Oats: Production in 2023 was estimated at 57.0 million bushels, down 1 percent from 2022. Yield was estimated at 68.6 bushels per acre, up 3.1 bushels from 2022. Harvested area, at 831 thousand acres, was 6 percent below 2022.

Record-low acres were planted in California, Minnesota, Ohio, Texas, and Wisconsin. Record-low acres were harvested in Georgia and Ohio. Record-high yields were estimated in Illinois, Kansas, Missouri, and Oklahoma.

Barley: Production was estimated at 185 million bushels, up 6 percent from the 2022 total of 175 million bushels. The average yield, at 72.4 bushels per acre, was up 0.8 bushel from the previous year. Producers seeded 3.10 million acres in 2023, up 5 percent from 2022. Harvested area, at 2.56 million acres, was up 4 percent from 2022.

Record-low planted acres were estimated in California, Michigan, New York, Utah, and Wisconsin. Record-low harvested acres were estimated in Wisconsin. Record-high yields were estimated in California, Delaware, Idaho, Maryland, New York, and Pennsylvania. Record-low production was estimated in Wisconsin.

All wheat: Production totaled 1.81 billion bushels in 2023, up 10 percent from the 2022 total of 1.65 billion bushels. Area harvested for grain totaled 37.3 million acres, up 5 percent from the previous year. The U.S. yield was estimated at 48.6 bushels per acre, up 2.1 bushels from the previous year. The levels of production and changes from 2022 by type were: winter wheat, 1.25 billion bushels, up 13 percent; other spring wheat, 505 million bushels, up 5 percent; and Durum wheat, 59.3 million bushels, down 7 percent.

Winter wheat: Production for 2023 totaled 1.25 billion bushels, up 13 percent from the 2022 total of 1.10 billion bushels. The U.S. yield, at 50.6 bushels per acre, was up 3.6 bushels from 2022. Area harvested for grain was estimated at 24.7 million acres, up 5 percent from 2022.

Record-low planted and harvested acres were estimated in Utah. Record-high yields were estimated in Delaware, Illinois, Indiana, Kentucky, Maryland, Missouri, Montana, New Jersey, New York, North Carolina, Ohio, Tennessee, Texas, and Virginia. The eastern one-third of the U.S. had better growing conditions than the rest of the country.

Compared with 2022, harvested acreage was up 2 percent in the major Hard Red Winter (HRW) growing states, the primary winter wheat-producing area. HRW production totaled 601 million bushels, up 13 percent from 2022.

In the Soft Red Winter (SRW) growing area, planted and harvested acreage increased from 2022. On the strength of several states estimating record-high yields, SRW production totaled 449 million bushels, up 34 percent from 2022.

White winter wheat production totaled 198 million bushels, down 16 percent. Harvested acreage was down 3 percent.

Other spring wheat: Production for 2023 was estimated at 505 million bushels, up 5 percent from the 2022 total of 483 million bushels. Harvested area totaled 11.0 million acres, up 5 percent from 2022. The U.S. yield was estimated at 46.0 bushels per acre, down 0.2 bushel from 46.2 bushels per acre in 2022. Of the total production, 468 million bushels were Hard Red Spring wheat, up 5 percent from the 2022 total.

Durum wheat: Production for 2023 was estimated at 59.3 million bushels, down 7 percent from the 2022 total of 64.0 million bushels. Area harvested for grain totaled 1.60 million acres, up 1 percent from 2022. The U.S. yield was estimated at 37.0 bushels per acre, down 3.5 bushels from the 2022 yield.

A record-high yield was estimated in California in 2023. Production in Montana and North Dakota, the largest Durum wheat-producing states, was up 11 and 3 percent, respectively, from 2022.

Rice: Production in 2023 totaled 218 million cwt, up 36 percent from the 2022 total. Planted area for 2023 was estimated at 2.89 million acres, up 30 percent from 2022. Area harvested, at 2.85 million acres, was up 32 percent from the previous crop year. The average yield for all U.S. rice was estimated at 7,649 pounds per acre, up 264 pounds from 2022. Yield estimates increased in every state, except for California. Production estimates increased from the previous year in all states but Texas.

All hay: Production of all dry hay for 2023 was estimated at 119 million tons, up 6 percent from the 2022 total. Area harvested was estimated at 52.8 million acres, up 8 percent from 2022. The average yield, at 2.25 tons per acre, was down 0.04 ton from 2022.

Record-high production was estimated in Florida and Oklahoma, while record-low production was estimated in Indiana, Michigan, Minnesota, New York, Vermont, and Wisconsin. Record-high harvested acres were estimated in Arizona, Florida, and Oklahoma, while record lows were estimated in Illinois, Michigan, Minnesota, Ohio, and Wisconsin. Record-high yields were estimated in Florida and South Carolina.

Alfalfa and alfalfa mixtures: Production in 2023 was estimated at 49.9 million tons, up 2 percent from the 2022 total. Harvested area, at 15.6 million acres, was 3 percent above 2022. Average yield was estimated at 3.19 tons per acre, down 0.03 ton from 2022.

Record-low production was estimated in Arkansas and New Jersey. Record-low harvested acres were estimated in Arkansas, Oklahoma, and Rhode Island. A record-high yield was estimated in Idaho.

All other hay: Production in 2023 totaled 68.9 million tons, up 9 percent from the 2022 total. Harvested area, at 37.2 million acres, was up 11 percent. Average yield was estimated at 1.85 tons per acre, down 0.02 ton from 2022.

Record-high production was estimated in Arizona, Florida, and Oklahoma, while record-low production was estimated in Iowa, Minnesota, and Wisconsin. Record-high harvested acres were estimated in Florida and Oklahoma, while record-low harvested acres were estimated in Indiana and Iowa. Record-high yields were estimated in Idaho, Florida, and South Carolina.

Forage: In 2023, seventeen states were included in the forage estimation program, which measures annual production of forage crops. Haylage and greenchop production was converted to 13 percent moisture and combined with dry hay production to derive the total forage production. The total 2023 all haylage and greenchop production was 25.5 million tons, of which 15.8 million tons were from alfalfa and alfalfa mixtures. The 17-state total for all forage production was 73.6 million tons. Of this total, 37.9 million tons were produced from alfalfa and alfalfa mixtures.

Peanuts: Production was estimated at 5.89 billion pounds, up 6 percent from 2022. Planted area was estimated at 1.65 million acres, up 14 percent from 2022. Harvested area was estimated at 1.57 million acres, up 14 percent from 2022. The average yield was estimated at 3,742 pounds per acre, down 270 pounds from 2022.

Record-high peanut yields were estimated in Arkansas and Virginia.

Canola: Production in 2023 was estimated at a record-high 4.16 billion pounds, up 9 percent from 2022. The average yield, at 1,793 pounds per acre, is up 30 pounds from last year's average and is the fifth-highest yield on record. Planted area was estimated at 2.34 million acres, 6 percent above the previous year's acreage. Harvested area, at 2.32 million acres, was up 7 percent from 2022. Both the planted and harvested area are the highest on record for the nation.

Production in North Dakota, the leading canola-producing state, was estimated at a record-high 3.47 billion pounds, an increase of 7 percent from 2022. Planted and harvested area in North Dakota were both up 7 percent from 2022 and both were record highs.

Planted and harvested area for 2023 in Washington were record highs. A record-high yield was estimated in Minnesota, while a record low was estimated in Kansas. Record-high production was estimated in Washington, while record-low production was estimated in Kansas and Oklahoma.

Sunflower: The 2023 sunflower production totaled 2.26 billion pounds, down 19 percent from 2022. The U.S. average yield of 1,786 pounds per acre increased 30 pounds from 2022. Planted area, at 1.32 million acres, was 22 percent below the previous year. Area harvested decreased 21 percent from 2022 to 1.27 million acres.

North Dakota, the leading sunflower-producing state during 2023, produced 1.12 billion pounds, a decrease of 16 percent from 2022. Compared with 2022, planted area in North Dakota decreased 20 percent and yield increased 77 pounds to 1,998 pounds per acre. Meanwhile, production in South Dakota decreased 25 percent from 2022 to 817 million pounds. Planted acreage in South Dakota, at 495 thousand acres, decreased 24 percent from the previous year. The average yield in South Dakota decreased 36 pounds from 2022 to 1,710 pounds per acre.

U.S. production of oil-type sunflower varieties, at 1.97 billion pounds, decreased 23 percent from 2022. Compared with the previous year, harvested acres were down 25 percent and the average yield increased by 2 pounds to 1,747 pounds per acre, representing the second-highest yield on record for the nation. The average yield for oil-type sunflower varieties in North Dakota was a record high.

Production of non-oil sunflower varieties was estimated at 297 million pounds, an increase of 23 percent from 2022. Area harvested, at 142,000 acres, was up 7 percent from 2022. The average yield increased by 206 pounds from 2022 to a record-high 2,090 pounds per acre. The 2022 average yield for non-oil sunflower varieties in Minnesota, North Dakota, and South Dakota were record highs, while Kansas was a record low.

Soybeans: Production in 2023 totaled 4.16 billion bushels, down 2 percent from 2022. The average yield was estimated at 50.6 bushels per acre, 1.0 bushel above 2022. Planted area for the nation, at 83.6 million acres, was down 4 percent from the 2022 planted acreage. Soybean growers harvested 82.4 million acres, down 4 percent from 2022.

Record-high planted and harvested acreage was estimated in New York. Record-high yields occurred in Arkansas, Indiana, Mississippi, Ohio, South Carolina, and Tennessee. Record-high production was estimated in Mississippi and New York.

The 2023 soybean objective yield survey data indicated that final average pod counts were higher than 2022 in the combined eleven objective yield states. Compared with final counts for 2022, pod counts were up in all eleven published states. An increase of more than 200 pods per 18 square feet from 2022's final pod count occurred in Iowa, Ohio, and South Dakota.

Cotton: Upland cotton production was forecasted at 12.1 million 480-pound bales, down 13 percent from the previous year. The U.S. yield for upland cotton is forecasted at 841 pounds per acre, down 104 pounds from 2022. Upland planted area, forecasted at 10.1 million acres, was down 26 percent from the previous year. Harvested area, at 6.92 million acres, was down 3 percent from the previous year.

Record lows were forecasted in California and Arizona for upland planted acres. California and New Mexico upland harvested area were at record-low levels. If realized, the forecasted yields for upland and all cotton in Arkansas and Tennessee will be record highs. New Mexico upland cotton yield is forecasted at a record high.

In the Southeast States (Alabama, Florida, Georgia, North Carolina, South Carolina, and Virginia), planting was mostly completed by mid-June. The crop was rated in mostly good to excellent condition throughout the growing season.

In the Delta region, planting was complete by mid-June. Overall, the cotton crop looked very good through the season. However, June and July were mostly hot and dry.

In Texas, continued dry conditions and extremely high temperatures mixed with spotty late rains were the main story of the growing season. The crop was rated in mostly very poor to fair condition throughout the growing season.

American Pima producers planted 147,000 acres in 2023, down 19 percent from 2022. Harvested area, at 139,800 acres, was down 21 percent from the previous year. Production was forecasted at 307 thousand 480-pound bales, down 35 percent from 2022. The U.S. yield was forecasted at 1,054 pounds per acre, down 227 pounds from the previous year.

Ginnings totaled 11,187,050 running bales prior to January 1.

Sugarbeets: Production for 2023 was estimated at 35.2 million tons, up 8 percent from the previous year's revised production. Growers in the 11 major sugarbeet-producing states planted 1.14 million acres, down 2 percent from 2022. Harvested area, at 1.13 million acres, was down 1 percent from the previous year. Estimated yield, at 31.2 tons per acre, was up 2.5 tons from last year.

Sugarcane: Production of sugarcane for sugar and seed in 2023 was estimated at 33.0 million tons, of which 31.3 million tons were utilized for sugar and 1.69 million tons for seed. Total production for sugar and seed was down 5 percent from 2022. Sugarcane producers harvested 931,500 acres for sugar and seed in 2023, up slightly from the previous year. Yield for sugar and seed was estimated at 35.4 tons per acre, down 1.9 tons from 2022.

International Weather and Crop Summary

January 14-20, 2024

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

HIGHLIGHTS

EUROPE: Cold and snowy weather in the north transitioned to warm and wet conditions over much of southern Europe.

MIDDLE EAST: Warmer-than-normal weather continued, with additional locally heavy rain from Turkey into northwestern Iran juxtaposed with increasingly dry conditions in eastern and southern Iran.

NORTHWESTERN AFRICA: Despite some light showers, drought intensified in Morocco and western Algeria.

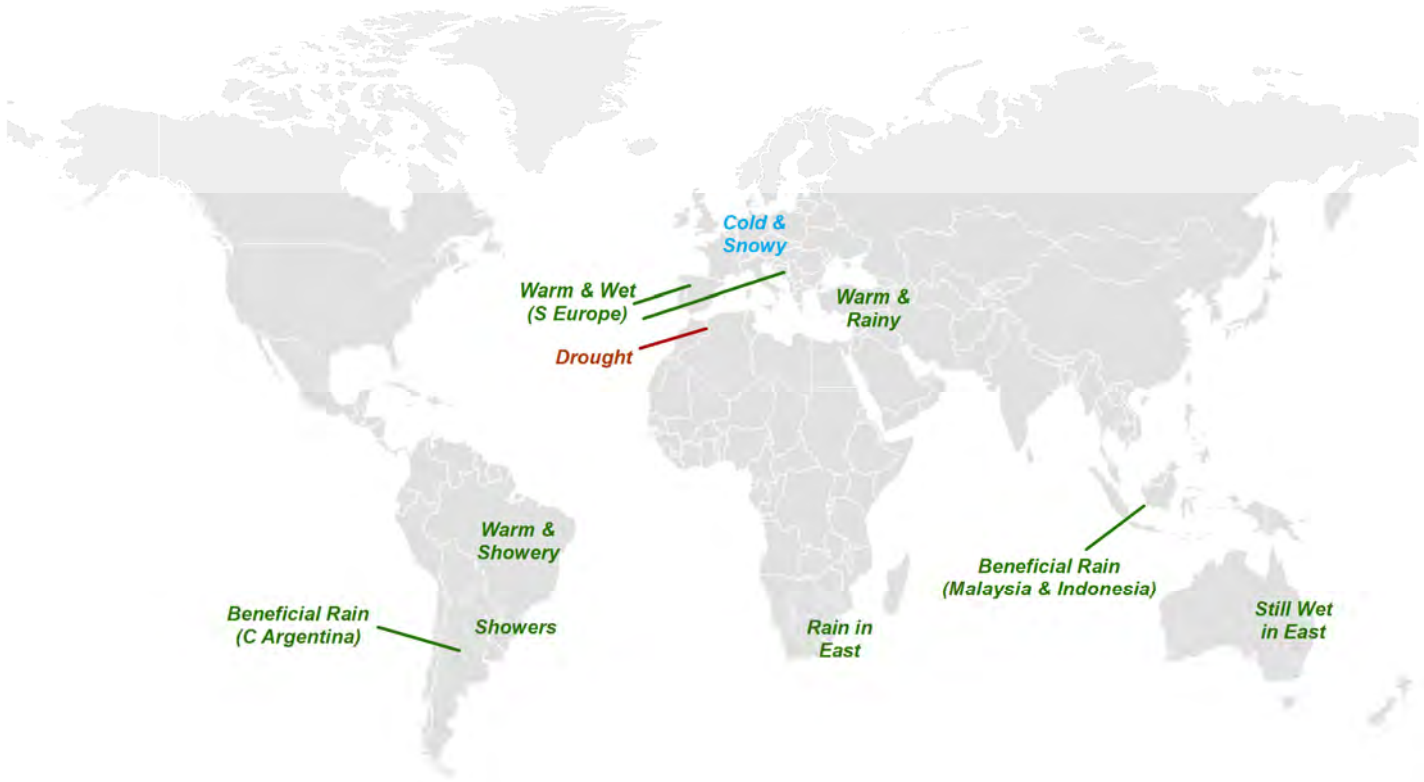
SOUTHEAST ASIA: Beneficial rainfall continued in Indonesia and Malaysia, although seasonal moisture deficits remained a concern.

AUSTRALIA: Wet weather persisted in the east, favoring summer crop development.

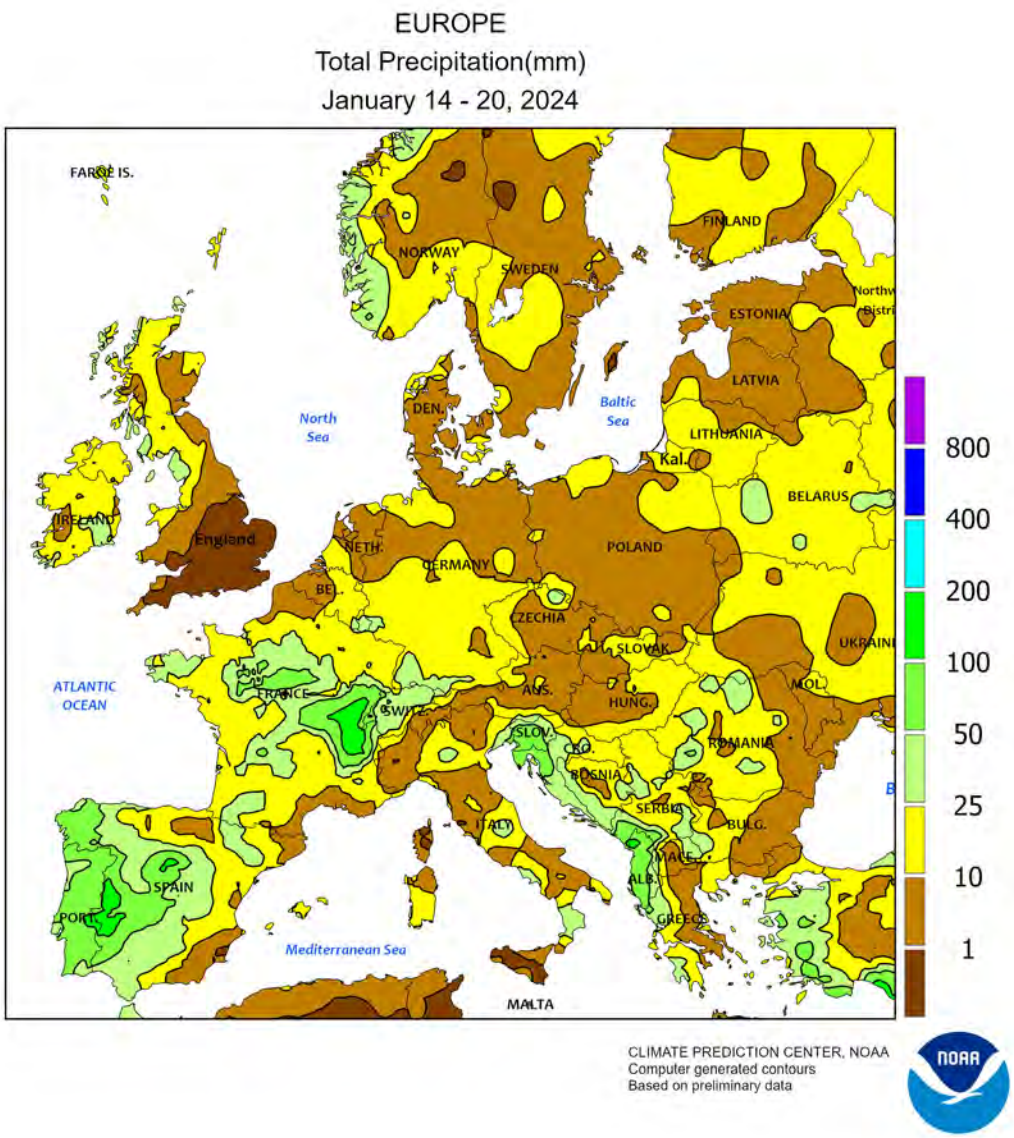
SOUTH AFRICA: Warm, showery weather prevailed in eastern agricultural areas.

ARGENTINA: Heavy rain fell in high-yielding corn and soybean areas.

BRAZIL: Showers overspread most major agricultural areas, but above-normal temperatures hastened maturation of soybeans and other crops while maintaining high evaporative losses.



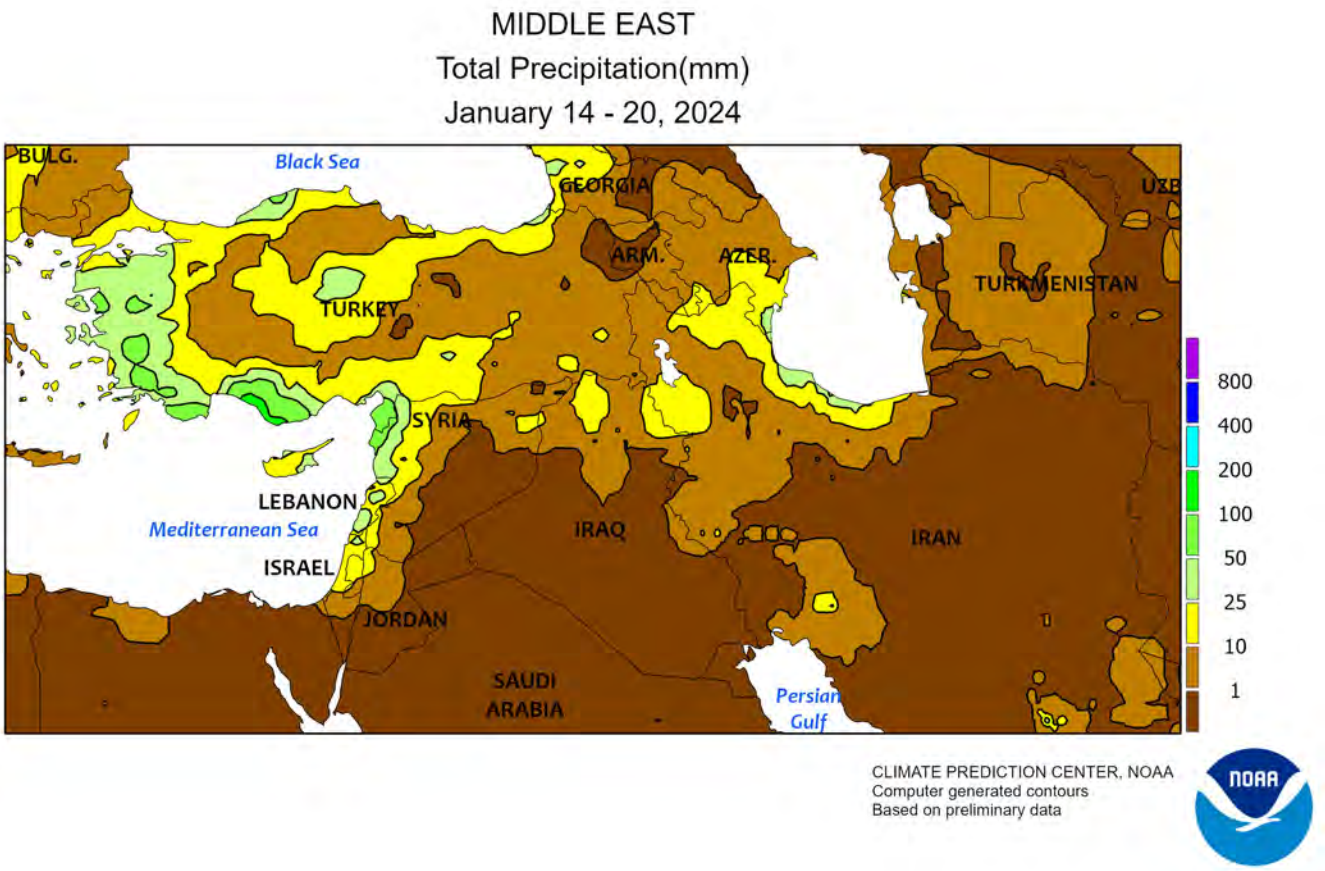
For additional information contact: mark.brusberg@usda.gov



EUROPE

Cold and snowy weather over central and northern Europe gave way to warm and wet conditions in southern portions of the continent. The first widespread snowfall of the season (2-20 cm) was noted over northern France, Germany, Poland, and the Baltic States. The snowpack provided good insulation to dormant winter crops against colder-than-normal temperatures (up to 7°C below normal) in northwestern Europe, though nighttime lows remained above the threshold for winterkill (-17°C or lower). Farther south, abnormal warmth (2-6°C above normal) prevailed from the Iberian Peninsula eastward into Italy and the Balkans. Widespread heavy showers fell in Portugal and Spain (25-215 mm), while somewhat lighter showers (10-50 mm) overspread Italy. Farther east, rain changed to snow on sharply colder weather at week's end from the western and southern Balkans into northern and central Greece.

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



MIDDLE EAST

Unseasonable warmth continued across the region along with additional moderate to heavy rain in western and central growing areas. Temperatures averaged 3 to 7°C above normal nearly everywhere, though somewhat cooler temperatures (1-3°C above normal) were noted across the eastern Mediterranean Coast and neighboring environs. As a result, the region's colder northern croplands remained devoid of snow cover, though nighttime lows remained well above the threshold for winterkill. Moderate to heavy showers (10-100 mm, locally more) over much of Turkey kept soils sufficiently moist for dormant (center and north) to vegetative (south and southeast) winter grains, though lighter showers (2-30 mm) were noted on the climatologically drier Anatolian Plateau. Variable showers (2-65 mm) also moistened soils locally from Syria into northwestern Iran. On the other hand, mostly dry weather in eastern and southern Iran further reduced moisture reserves for dormant (Khorasan) to vegetative (Persian Gulf Region) winter wheat and barley.

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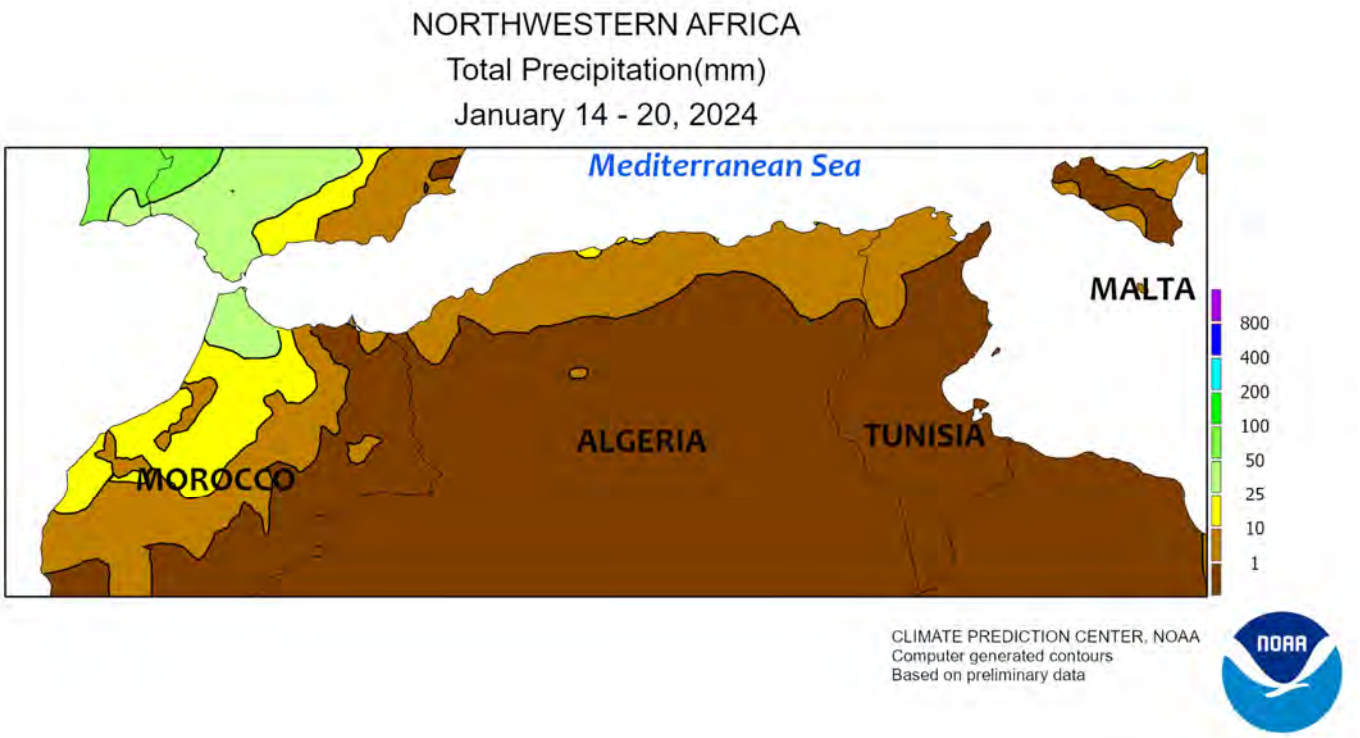

NORTHWESTERN AFRICA

Despite some light showers, intensifying drought in the west contrasted with more favorable conditions in the east. In Morocco, light to moderate showers (2-20 mm) moistened soils locally but offered little significant relief from this season's extreme drought. Since September 1, rainfall in Morocco's primary winter grain areas adjacent to the central Atlantic Coast remained mired at 45 percent of normal, the second lowest of the past 30 years. In neighboring western Algeria, mostly dry weather also plunged this locale deeper into drought (48 percent of normal since the onset of autumn, driest of the past 30 years). Time has nearly run out in western growing areas to salvage the 2023-24 growing campaign, with some producers already switching to less-water-intensive specialty crops with shorter growing seasons. Light to moderate showers (1-10 mm) lingered in coastal locales of eastern Algeria and northern Tunisia; most eastern croplands have benefitted from December and early-January rainfall. Nevertheless, significant long-term deficits lingered in northern and central Tunisia, where season-to-date rainfall stood at 71 and 53 percent of normal in the Tell and Steppe Regions, respectively. Unseasonable warmth (4-9°C above normal) regionwide accelerated winter grain development in areas with sufficient moisture, with barley approaching or entering reproduction two to three weeks ahead of average in warmer growing areas of southwestern Morocco and central Tunisia. Winter wheat was also developing one to three weeks ahead of average and was on pace to reach reproduction in late February or early March.

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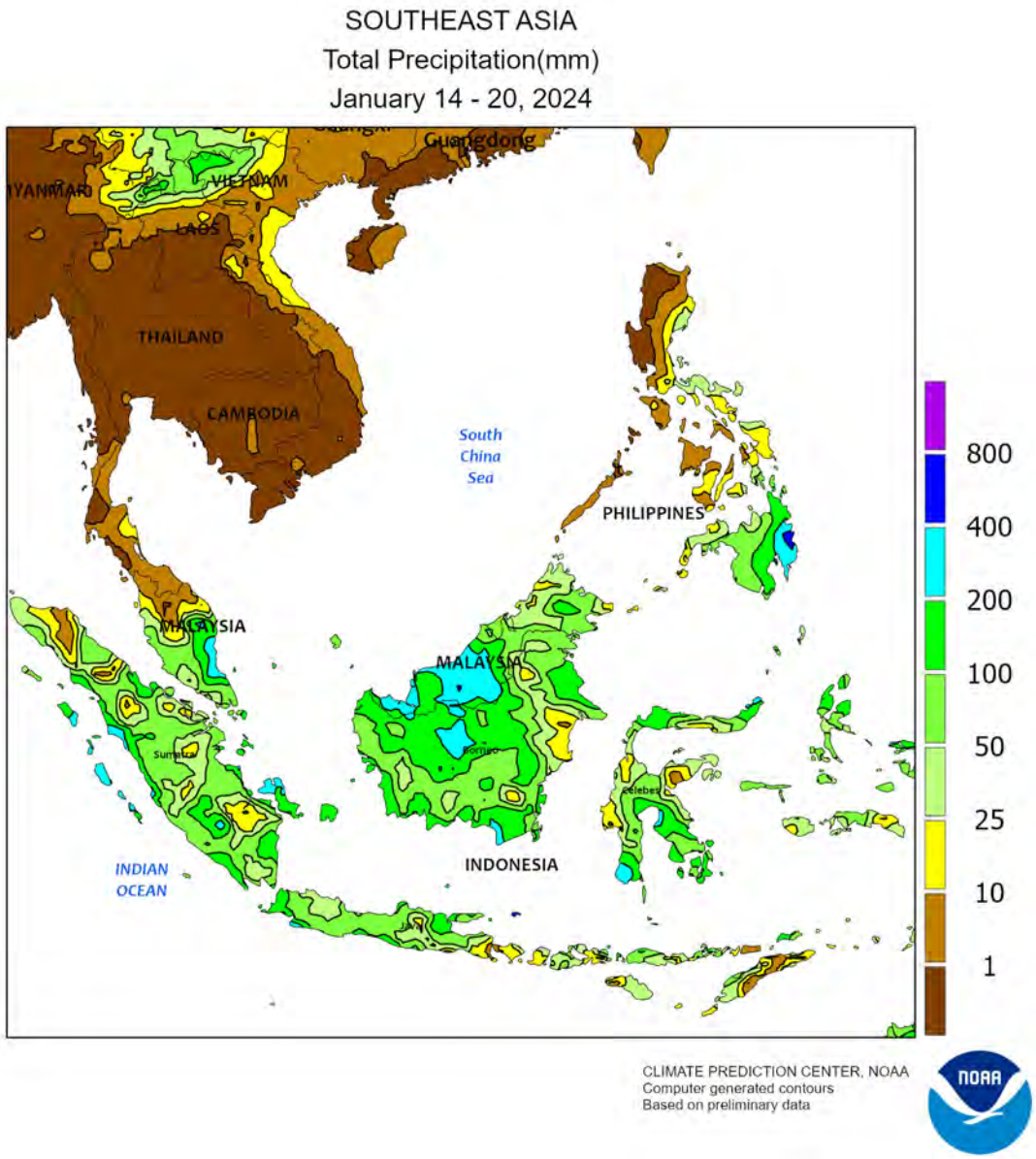

SOUTHEAST ASIA

Showers prevailed across southern and eastern-most sections of the region, favoring rice and other crops. Rainfall totals in Java, Indonesia, averaged around 80 mm, providing good moisture to main-season rice in various stages of development. However, despite recent improvements in moisture conditions, seasonal rainfall deficits (270 mm below average) continued to limit irrigation recharge for second- and third-crop rice sown later in the year. Elsewhere, short-term (4-6 weeks) soil moisture for oil palm in the remainder of Indonesia and neighboring Malaysia remained favorable with the exception of eastern-most Malaysia (70 percent of normal precipitation). Meanwhile, showers (25-100 mm) continued in the eastern and southern Philippines, benefiting rice and corn, but largely missed key producing areas in the north.

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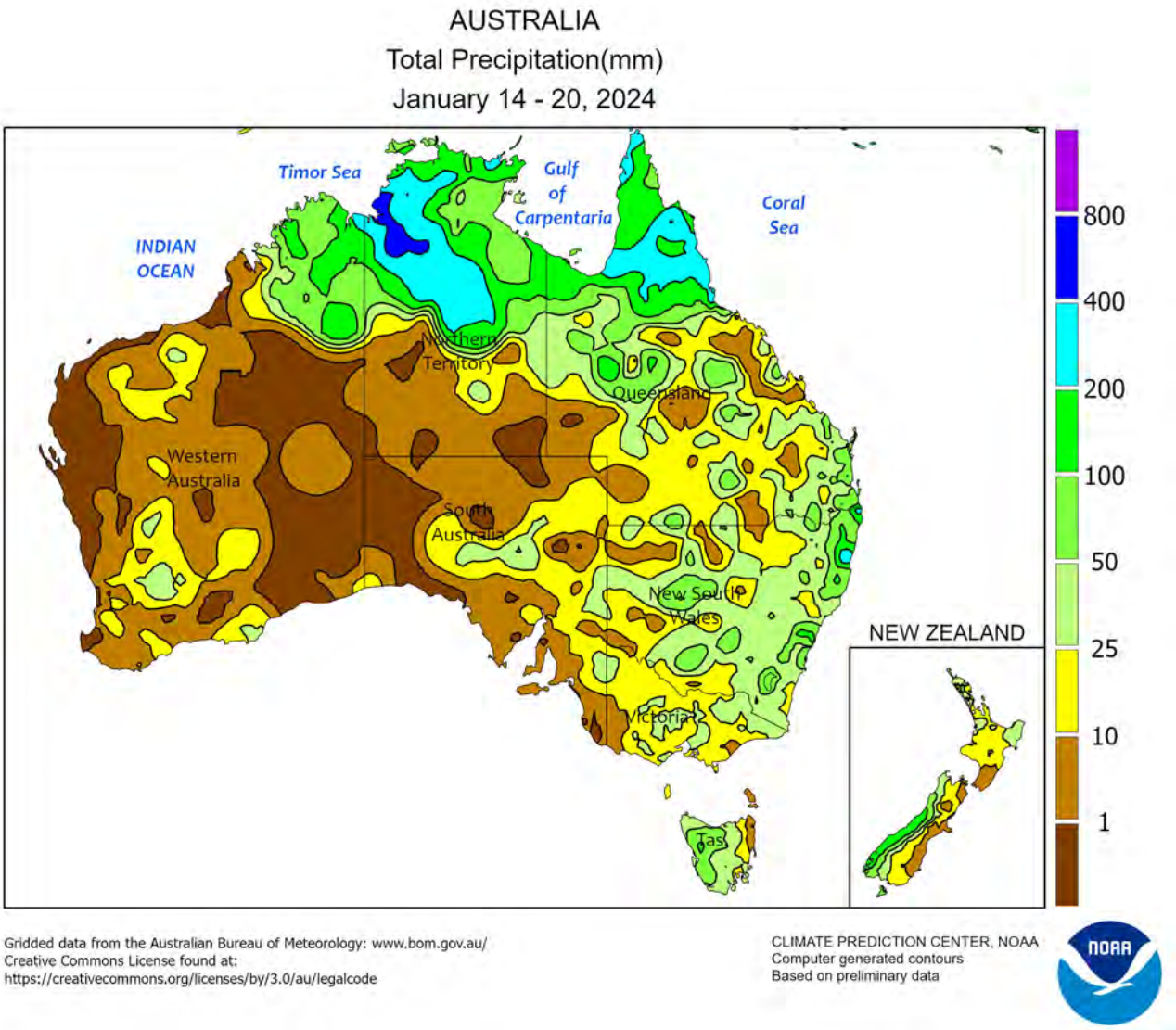

AUSTRALIA

Widespread showers (generally 10-50 mm) persisted across eastern Australia, favoring cotton, sorghum, and other summer crop development. The added rain helped maintain average to above-average soil moisture throughout the east and reduced the need for supplemental irrigation. Although spring dryness reportedly reduced the acreage sown to some summer crops, the wet weather since then has led to reasonably good crop prospects. Temperatures averaged within 2°C of normal in southern Queensland and northern New South Wales and 3 to 5°C below normal in central and southern New South Wales and northern Victoria.

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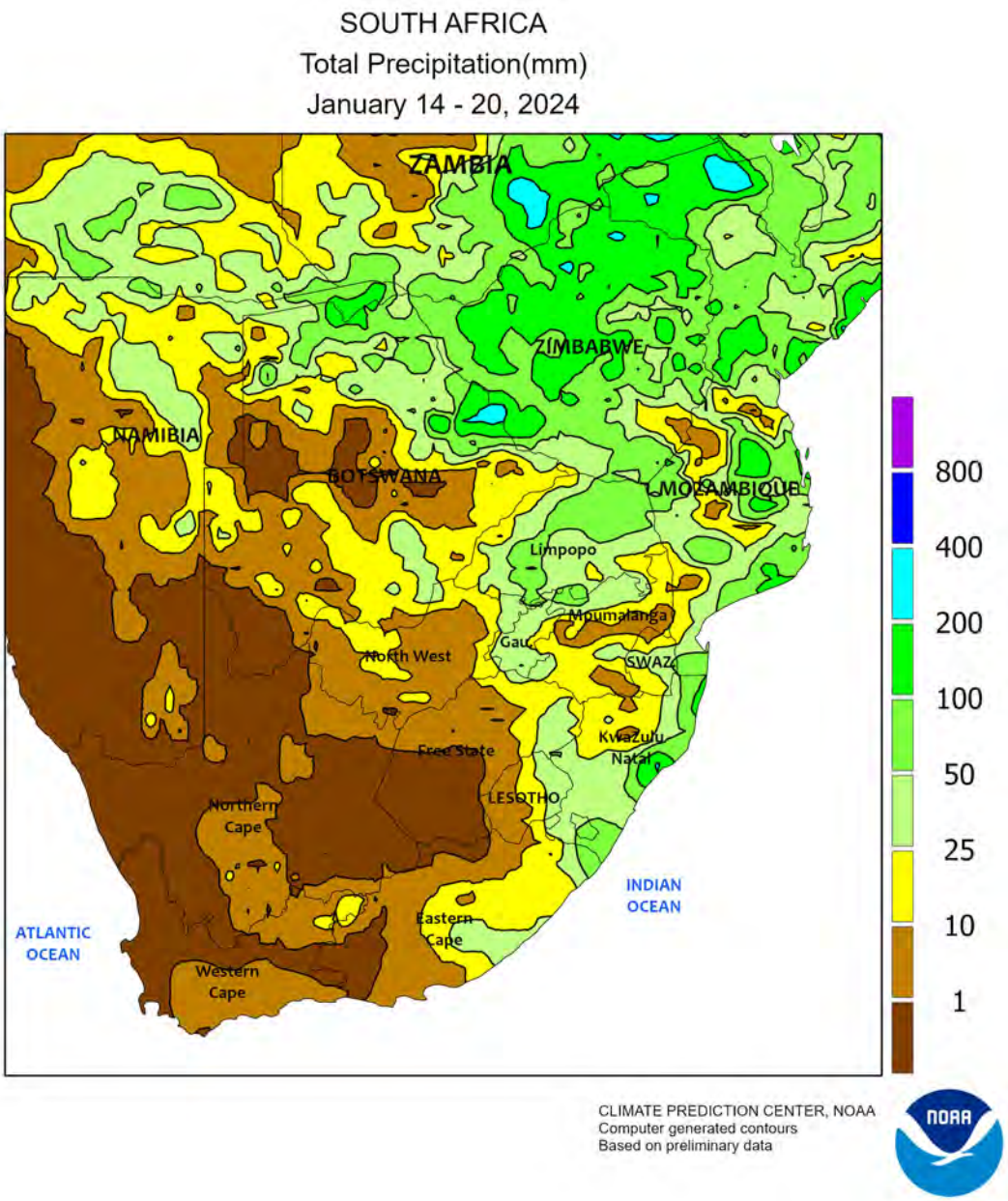

SOUTH AFRICA

Showers and seasonable warmth maintained overall favorable conditions for rain-fed summer crops in eastern commercial farming areas. Rainfall totaled 10 to 50 mm – locally higher – from Limpopo southward, including the eastern half of the corn belt (Gauteng eastward) and rain-fed sugarcane areas in southern KwaZulu-Natal. Drier conditions prevailed in summer crop areas in North West and western Free State, although moisture reserves were likely adequate for vegetative corn after last week's heavy rain. Weekly temperatures averaged near to as much as 2°C below normal, with highest daytime temperatures from the upper 20s to middle 30s (degrees C) at most locations promoting growth of vegetative to reproductive summer crops without added stress. Farther west, sunny, occasionally hot weather (highs reaching the upper 30s and lower 40s) fostered rapid growth of irrigated crops, including corn and cotton in the Orange River Valley, along with tree and vine crops in Western Cape.

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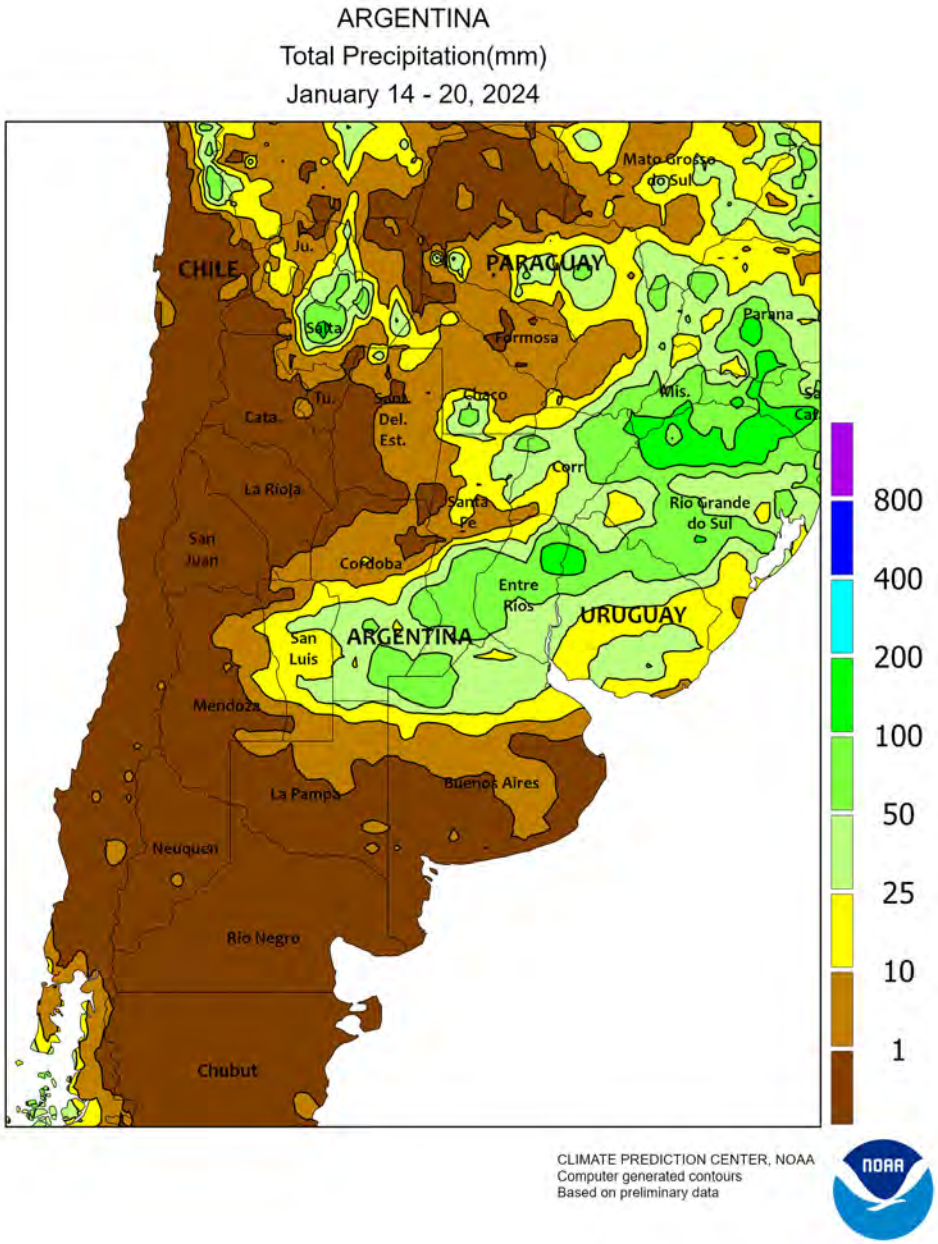

ARGENTINA

Heavy showers maintained abundant levels of moisture for corn and soybeans in high-yielding farming areas of central Argentina. Rainfall totaling 25 to 100 mm spread from southern and central Córdoba northeastward into southern sections of Paraguay and Brazil. Areas receiving the beneficial rainfall included Entre Rios and neighboring locations in the lower Paraná Valley that were dry last week. Mostly dry, sunny weather prevailed to the south (southern growing areas of La Pampa and Buenos Aires) and northwest (northern Córdoba to Formosa) of the wet area, fostering rapid summer crop growth following recent periods of beneficial rainfall. Weekly average temperatures ranged from 2°C below normal in the south and northeast to as much as 3°C above normal in the far north, where highest daytime temperatures reached the lower and middle 40s (degrees C). According to the government of Argentina, corn and soybeans were 92 and 98 percent planted, respectively, as of January 18; cotton was 93 percent planted, compared with 86 percent last year.

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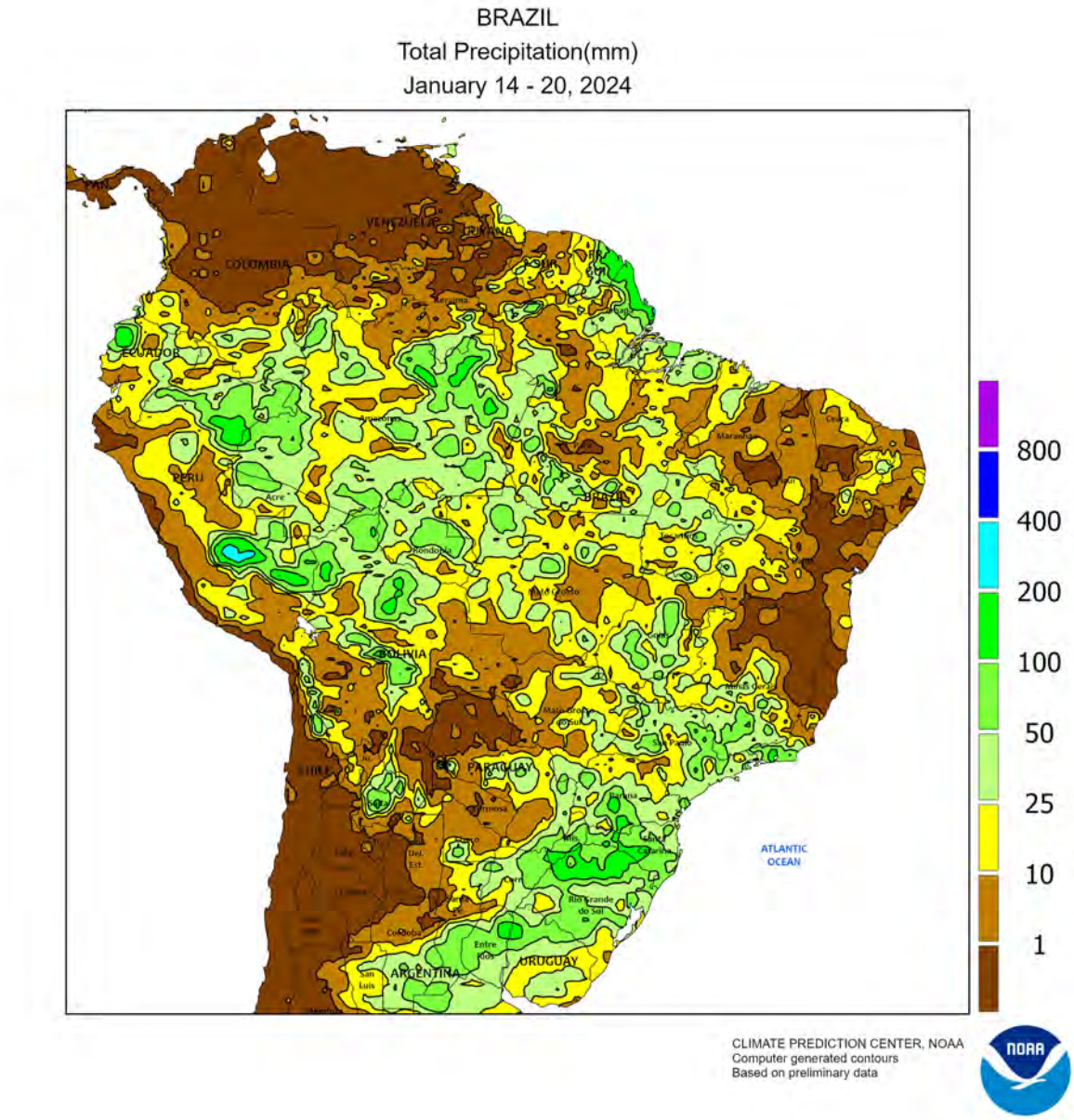

BRAZIL

Warm, showery weather prevailed throughout central and northeastern farming areas, helping to stabilize the condition of immature soybeans while fostering rapid rates of development. Rainfall was patchy from Mato Grosso and Mato Grosso do Sul eastward, though many locations recorded 25 to more than 50 mm. Temperatures averaged 1 to 2°C above normal throughout the region as highs reached the middle and upper 30s (degrees C) on several days. According to the government of Mato Grosso, soybeans were 13 percent harvested as of January 19, compared with 7 percent last year; corn and cotton planting were 4 and 56 completed, respectively, ahead of last year's pace for both crops. Similar conditions were recorded farther south, with the heaviest rainfall (25-100 mm) concentrated from Paraná southward and in sections of São Paulo and southern Minas Gerais. Temperatures also occasionally reached the middle and upper 30s in the warmest locations, fostering rapid growth of first-season crops. According to government reports, Paraná's first-crop corn and soybeans were 5 and 7 percent harvested, respectively, as of January 15; second-crop corn was 4 percent planted. In Rio Grande do Sul, corn was 96 percent planted as of January 18, with about 60 percent of crops flowering to mature and 20 percent harvested; soybeans were fully planted but only 20 percent had reached flowering.

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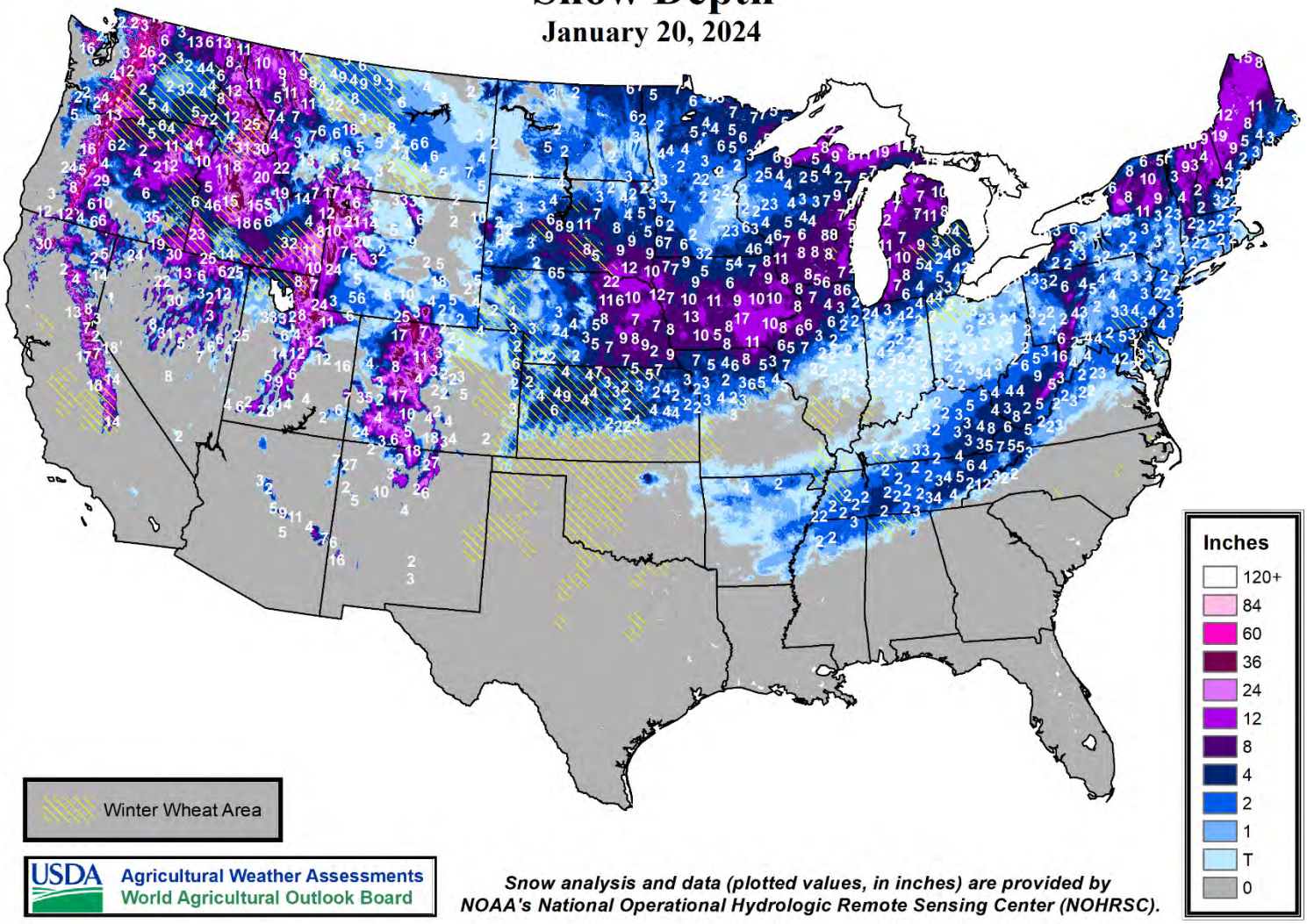
Snow Depth

January 20, 2024



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Correspondence to the meteorologists should be directed to:
***Weekly Weather and Crop Bulletin*, NOAA/USDA, Joint Agricultural Weather Facility, USDA South Building, Room 4443B, Washington, DC 20250.**
Internet URL: **www.usda.gov/oce/weather-drought-monitor**
E-mail address: ***brad.rippey@usda.gov***

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