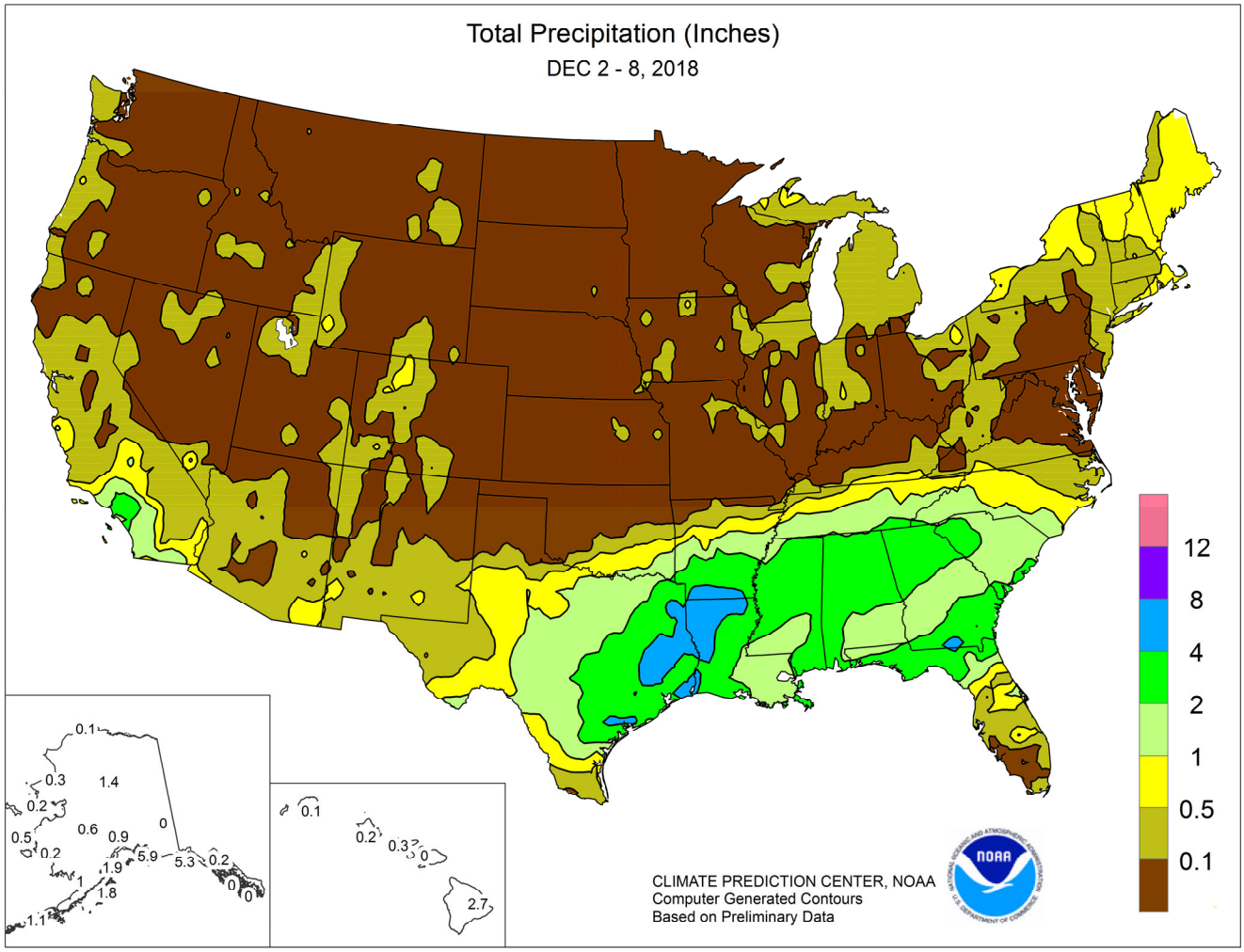
Volume 105, No. 50 http://www.usda.gov/oce/weather December 11, 2018

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
December 2 – 8, 2018

Highlights provided by USDA/WAOB

For much of the week, cold, dry weather covered the country. Any precipitation was generally light and often limited to the **Rockies**, **Intermountain West**, **Midwest**, and **Northeast**. At times, snow squalls affected areas downwind of the **Great Lakes**. One exception to the tranquil weather was a heavy-rainfall event from December 1-3 across the **lower Southeast**. With cold conditions prevailing, weekly temperatures averaged at least 10°F below normal in portions of the **northern Intermountain West** and more than 5°F below normal

(Continued on page 3)

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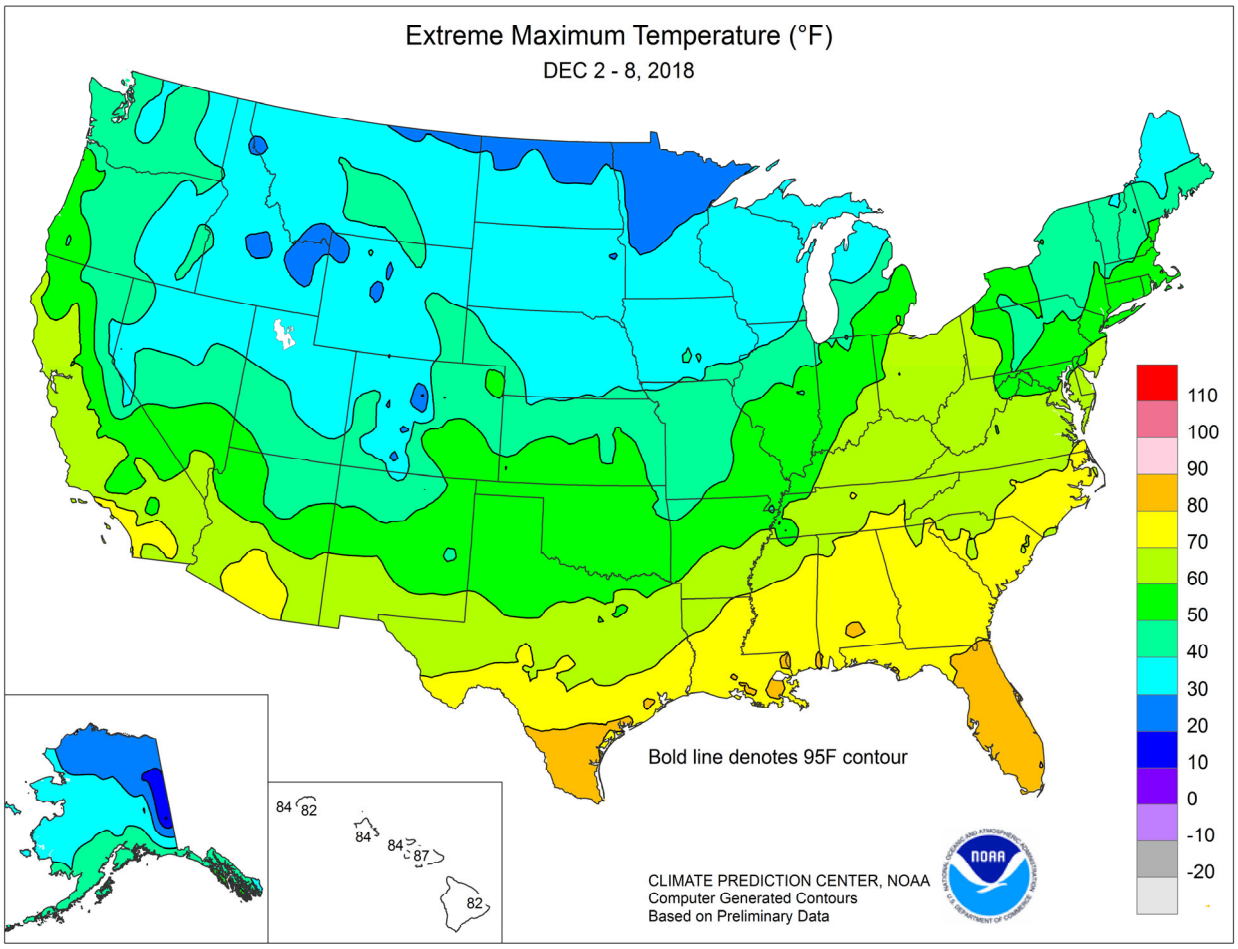
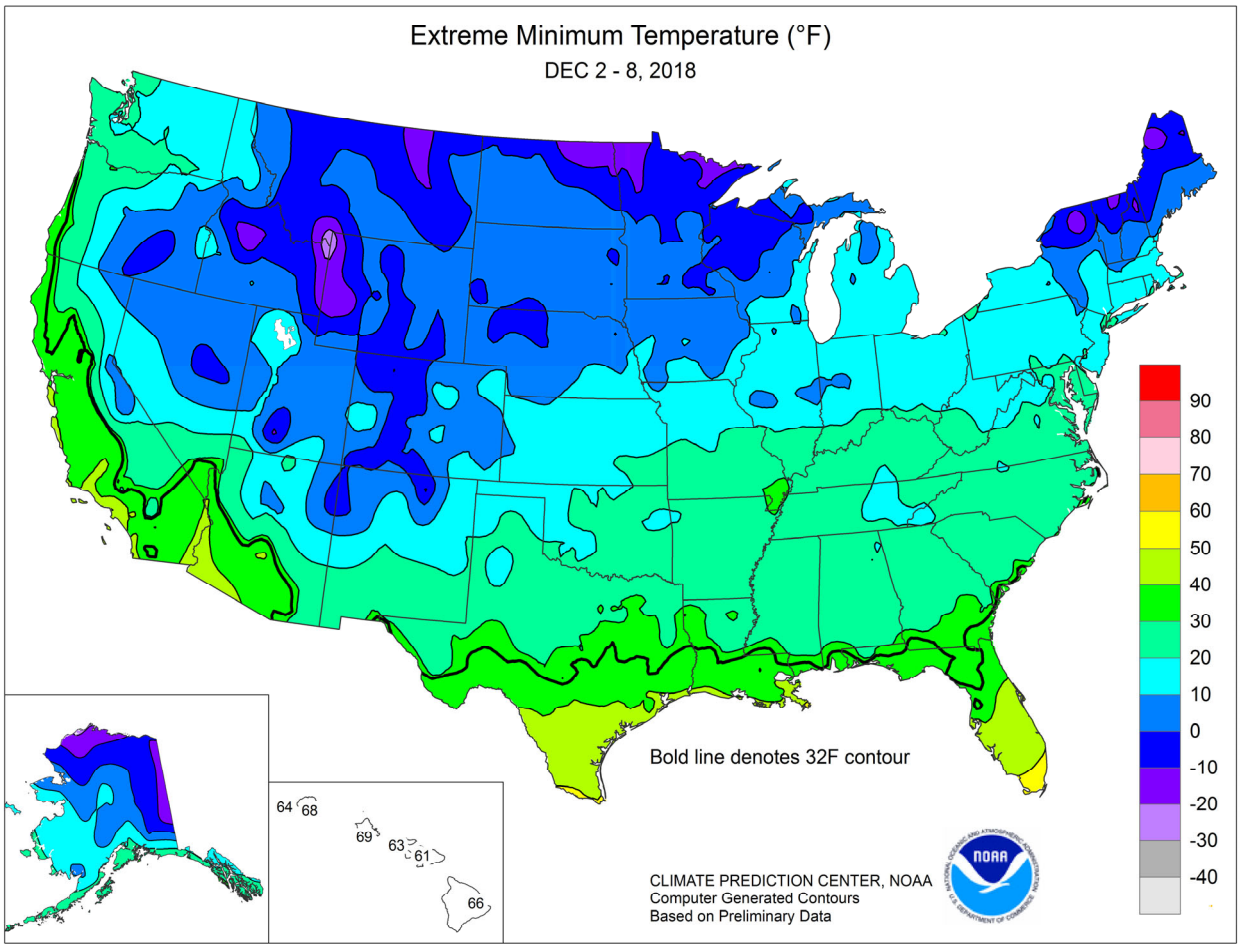
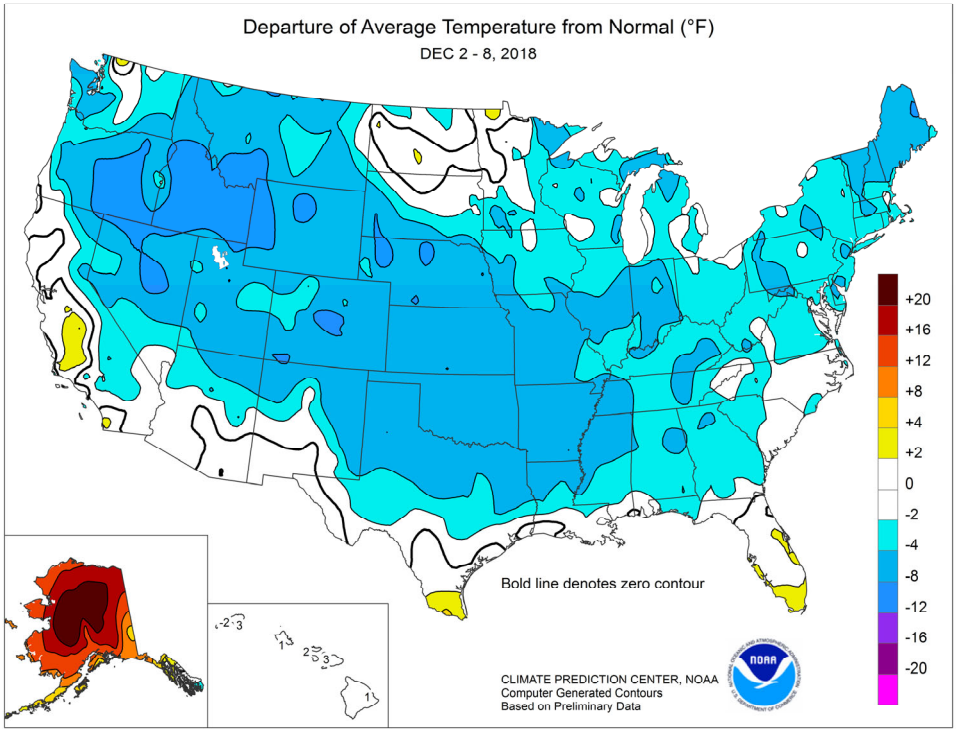

Extreme Maximum Temperature (°F)
DEC 2 - 8, 2018
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
84
82
84
84
87
82
Bold line denotes 95F contour
CLIMATE PREDICTION CENTER, NOAA
Computer Generated Contours
Based on Preliminary Data
NOAA


Extreme Minimum Temperature (°F)
DEC 2 - 8, 2018
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
64
68
69
63
61
66
Bold line denotes 32F contour
CLIMATE PREDICTION CENTER, NOAA
Computer Generated Contours
Based on Preliminary Data
NOAA

(Continued from front cover)

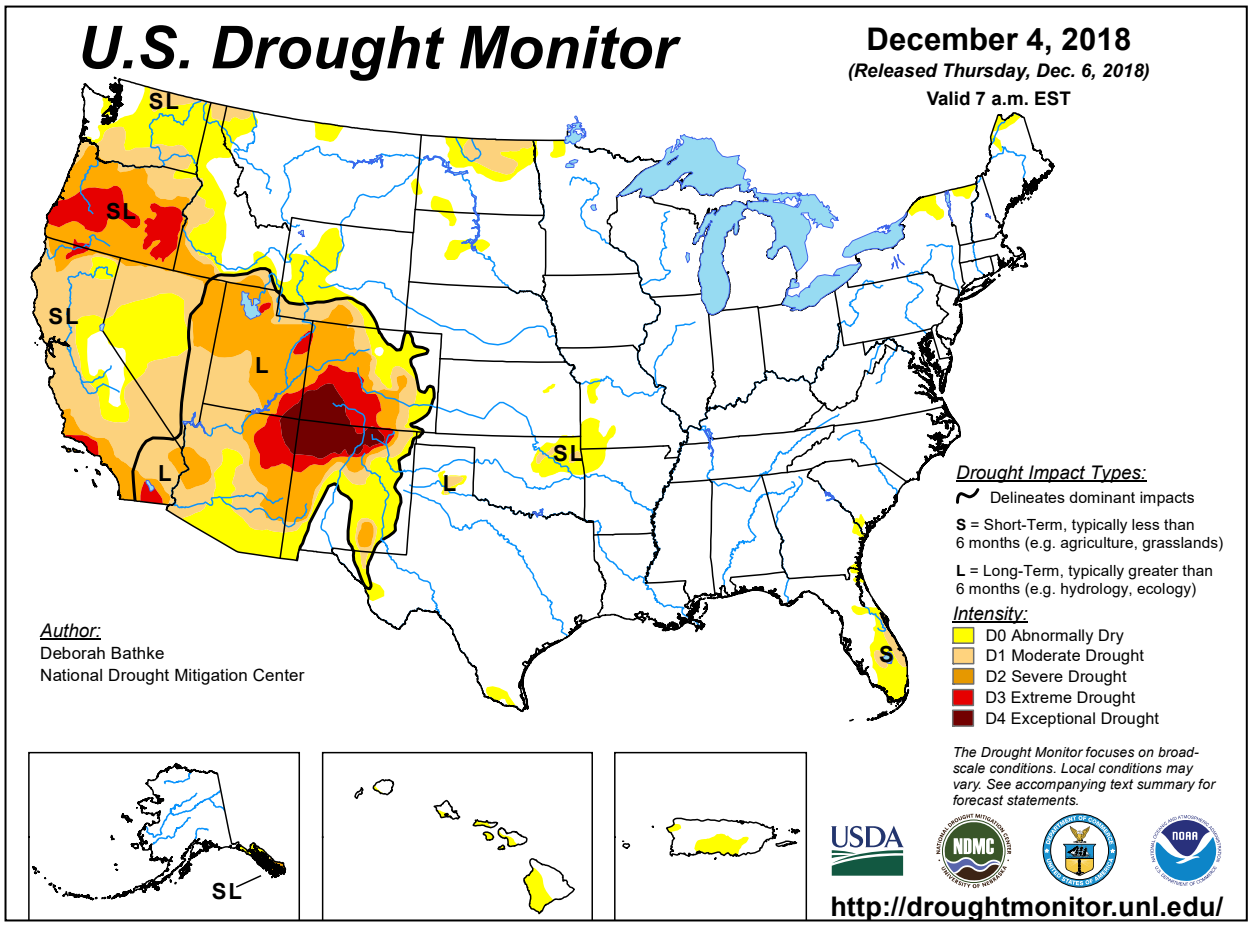
across much of the **western and central U.S.** Slightly above-normal temperatures were confined to parts of **California** and **southernmost sections of Texas and Florida**. During the second half of the week, a slow-moving storm arrived in **southern California** and traversed the **nation's southern tier**. Heavy rain triggered flash flooding in **southern California** and temporarily slowed fieldwork in the **Desert Southwest**. Toward week's end, heavy rain (locally 4 inches or more) developed in the **western Gulf Coast region** and spread eastward, curtailing summer crop harvesting and winter wheat planting. A band of heavy snow developed from the **southern High Plains to the southern Appalachians**, causing travel and electrical disruptions. By December 9, storm-total snowfall reached 1 to 2 feet in an area centered across **southwestern Virginia** and **northwestern North Carolina**.

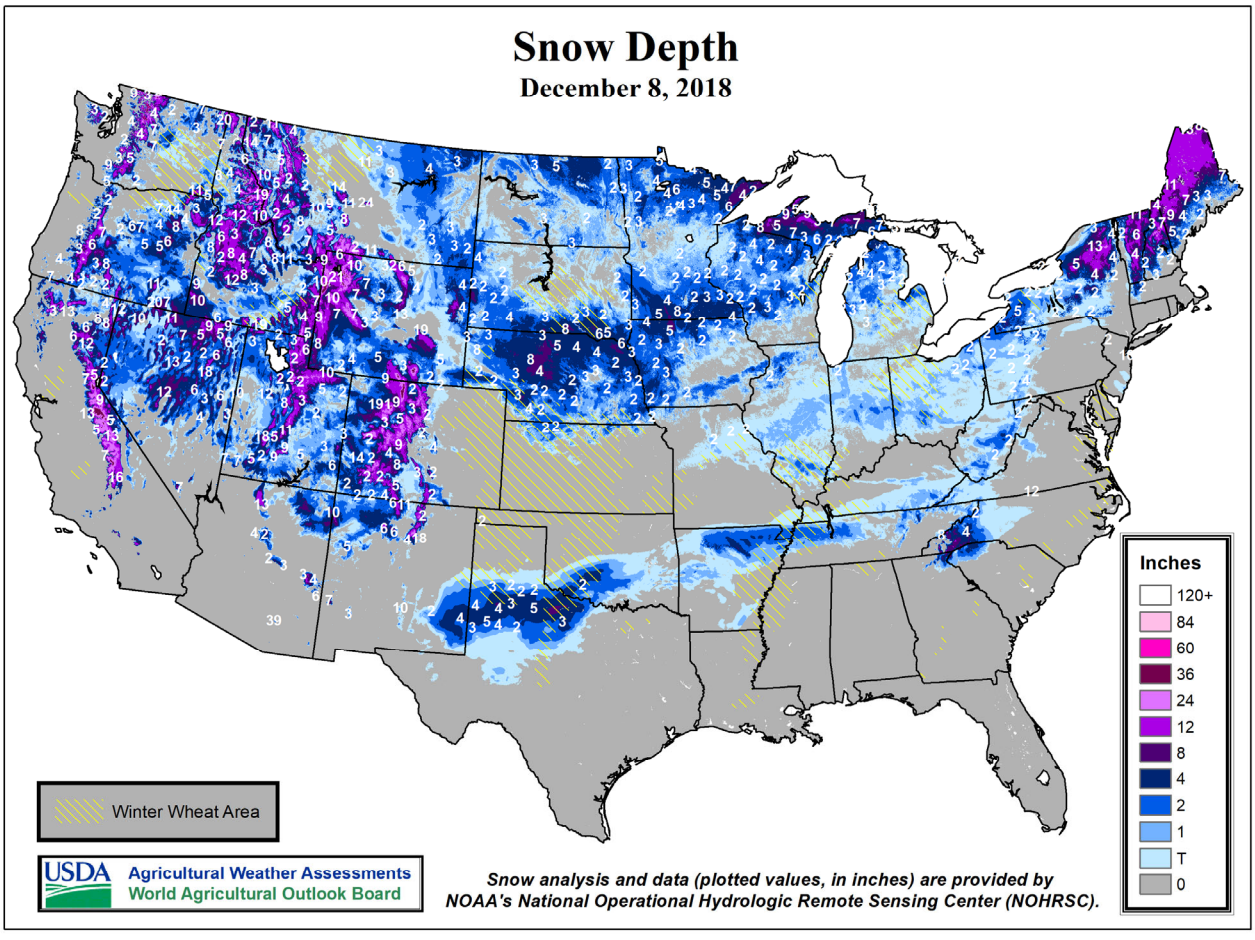


In some snow-covered areas of the **West**, early-week temperatures plunged to sub-zero levels. For example, daily-record lows on December 3 dipped to -2°F in **South Lake Tahoe, CA**, and -13°F at **Utah's Bryce Canyon Airport**. Elsewhere in **Utah**, **Randolph** posted a daily-record low of -17°F on December 5. In contrast, warmth lingered early in the week across the **South**. On December 2, **Vero Beach, FL**, notched a monthly record high of 89°F. **Vero Beach's** previous record of 87°F had been most recently set on December 1, 2016. Daily-record highs for December 2 rose to 83°F in **New Orleans, LA**; 81°F in **Mobile, AL**; 75°F in **Athens, GA**; and 74°F in **Chattanooga, TN**. On December 3 in **Florida**, monthly record highs were tied in **Melbourne** (90°F; previously achieved on December 6, 1942) and **Vero Beach** (89°F; attained the previous day).

The severe weather outbreak of December 1-2, which included two EF-3 tornadoes, shifted from the **Midwest** into the **Southeast**. The first EF-3 tornado cut a 12.7-mile path through **Christian County, IL**, just after 5 pm CST on December 1. The other EF-3 twister sliced 7.5 miles across **Camden County, GA**, with a docked Coast Guard vessel at the **Naval Submarine Base Kings Bay** reporting a peak gust to 144 mph during the afternoon of December 2. Elsewhere in **Georgia**, daily-record rainfall totals for December 2 included 2.92 inches in **Savannah** and 2.05 inches in **Saint Simons Island**. December 1-3 rainfall at **Saint Simons Island** totaled 4.78 inches. Farther north, squalls downwind of **Lake Superior** led to daily-record precipitation and snowfall amounts (1.62 and 14.2 inches, respectively) in **Marquette, MI**, for December 2. Meanwhile, a storm system affecting the **Intermountain West** produced daily-record snowfall amounts for the 2nd in locations such as **Salt Lake City, UT** (5.9 inches), and **Boise, ID** (3.4 inches). Later, the same system produced a daily-record snowfall (0.9 inch on December 4) in **Evansville, IN**, and 4.8 inches of snow (not a record for December 5) in **Atlantic City, NJ**. By December 6, a new storm arrived in **southern California**, where daily-record rainfall totals reached 3.24 inches at **Santa Ana's John Wayne Airport**; 1.97 inches in **Oceanside**; 1.91 inches in **downtown Los Angeles**; and 1.46 inches in **Lancaster**. Farther east, heavy rain erupted in the **western Gulf Coast region**, where record-breaking rainfall amounts for December 7 topped the 4-inch mark in **Texas** locations such as **Lufkin** (4.83 inches) and **College Station** (4.01 inches). Elsewhere on the 7th, daily-record amounts included 3.58 inches in **Victoria, TX**; 2.95 inches in **Shreveport, LA**; and 2.60 inches in **El Dorado, AR**. Another daily record, 2.02 inches, was set in **El Dorado** on December 8. Daily rainfall records were also set on the 8th in **Monroe, LA** (4.01 inches); **Mobile, AL** (3.46 inches); and **Vicksburg, MS** (2.37 inches). Meanwhile in **Texas**, snowfall on December 8 totaled 10.0 inches in **Lubbock** and 3.0 inches in **Abilene**. It was **Lubbock's** greatest single-day snowfall since December 27, 2015, when 11.0 inches fell. More details on the storm, which produced heavy snow in the **Southeast** on December 9, will appear next week.

Mild, wet weather dominated **Alaska**. Weekly temperatures averaged at least 20°F above normal at many locations across **interior Alaska**, and were more than 10°F above normal in most mainland communities. Daily-record highs were established in several places, including **Yakutat** (47°F on December 6) and **McGrath** (37°F on December 2). **Kotzebue** posted consecutive daily-record highs of 32°F on December 2-3. **McGrath** received 9.5 inches of snow during the first 8 days of the month, and reported a daily-record precipitation total (0.31 inch, melted from 3.4 inches of snow) on December 5. Similarly, **Bettles** reported 24.3 inches of snow from December 1-8. Weekly precipitation topped the 4-inch mark in locations such as **Yakutat** (5.50 inches) and **Valdez** (4.63 inches). Farther south, mostly dry weather persisted in **Hawaii's** leeward areas. Through December 8, month-to-date rainfall at the state's major airport observation sites ranged from 0.07 inch (6 percent of normal) in **Lihue, Kauai**, to 2.73 inches (84 percent) at **Hilo**, on the **Big Island**. Late in the week, on December 7-8, winds associated with a cold front gusted to 53 mph at the **Lanai Airport** and 58 mph on the **Big Island** at **Kohala Ranch**.


U.S. Drought Monitor
December 4, 2018
(Released Thursday, Dec. 6, 2018)
Valid 7 a.m. EST
Author:
Deborah Bathke
National Drought Mitigation Center
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:
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
USDA
NDMC
http://droughtmonitor.unl.edu/


Snow Depth
December 8, 2018
Inches
120+
84
60
36
24
12
8
4
2
1
T
0
Winter Wheat Area
USDA Agricultural Weather Assessments
World Agricultural Outlook Board
Snow analysis and data (plotted values, in inches) are provided by
NOAA's National Operational Hydrologic Remote Sensing Center (NOHRSC).

National Weather Data for Selected Cities

Weather Data for the Week Ending December 8, 2018

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
AL	BIRMINGHAM	53	36	75	25	45	-3	2.55	1.52	2.42	3.80	322	55.56	110	90	44	0	3	2	1
	HUNTSVILLE	51	37	72	25	44	-2	2.19	0.88	2.04	2.71	181	52.62	99	88	60	0	2	2	1
	MOBILE	65	44	81	31	54	0	3.46	2.29	3.46	4.15	307	59.03	94	84	47	0	1	1	1
	MONTGOMERY	59	38	79	26	49	-2	1.96	0.74	1.96	3.26	233	48.58	95	91	40	0	2	1	1
AK	ANCHORAGE	37	29	45	23	33	14	1.70	1.48	1.12	1.71	684	17.80	117	90	83	0	7	3	1
	BARROW	14	-2	24	-21	6	14	0.11	0.11	0.08	0.15	1500	9.57	237	93	79	0	7	3	0
	FAIRBANKS	25	7	32	2	16	20	0.00	-0.14	0.00	0.00	0	12.65	130	93	88	0	7	0	0
	JUNEAU	37	29	48	18	33	3	0.20	-0.97	0.13	0.20	15	50.37	93	96	90	0	4	3	0
	KODIAK	43	36	45	28	39	7	1.76	0.19	0.69	1.81	101	68.96	99	92	80	0	3	5	2
	NOME	28	20	33	14	24	13	0.24	-0.01	0.19	0.41	146	15.21	96	92	81	0	7	5	0
AZ	FLAGSTAFF	39	15	49	1	27	-5	0.56	0.16	0.30	0.61	133	21.22	99	91	49	0	7	3	0
	PHOENIX	66	48	73	42	57	1	0.05	-0.12	0.03	0.05	26	9.15	121	77	52	0	0	2	0
	PRESCOTT	52	27	59	20	39	0	0.02	-0.26	0.02	0.02	6	13.00	71	87	36	0	5	1	0
	TUCSON	65	44	73	37	54	0	0.72	0.55	0.64	0.72	360	12.67	112	73	52	0	0	2	1
AR	FORT SMITH	45	33	53	23	39	-5	0.21	-0.76	0.21	0.24	21	48.89	118	82	58	0	3	1	0
	LITTLE ROCK	46	33	61	26	39	-7	1.88	0.62	1.28	2.00	138	63.10	132	88	58	0	5	3	1
CA	BAKERSFIELD	59	46	69	42	52	3	0.33	0.19	0.31	0.52	325	5.09	87	80	65	0	0	2	0
	FRESNO	57	45	60	38	51	4	0.10	-0.15	0.07	0.15	54	8.24	81	92	76	0	0	2	0
	LOS ANGELES	66	52	71	50	59	0	1.45	1.13	1.39	1.45	392	8.10	69	69	46	0	0	2	1
	REDDING	59	37	64	30	48	1	0.07	-0.87	0.07	0.20	19	21.28	71	84	60	0	3	1	0
	SACRAMENTO	57	39	61	34	48	0	0.13	-0.37	0.13	0.44	76	16.49	103	97	58	0	0	1	0
	SAN DIEGO	68	53	71	50	61	2	2.67	2.45	1.61	2.67	1068	7.30	75	76	50	0	0	3	2
	SAN FRANCISCO	57	46	60	42	52	1	0.43	-0.15	0.39	0.52	79	14.60	82	82	69	0	0	3	0
	STOCKTON	58	41	63	35	50	3	0.14	-0.25	0.10	0.34	77	12.13	97	93	84	0	0	2	0
CO	ALAMOSA	35	6	43	-5	20	-1	0.05	-0.02	0.05	0.05	56	5.49	78	87	63	0	7	1	0
	CO SPRINGS	38	15	50	12	27	-4	0.02	-0.04	0.01	0.02	33	15.35	90	79	35	0	7	2	0
	DENVER INTL	40	17	49	14	29	-2	0.00	-0.06	0.00	0.00	0	8.80	66	87	34	0	7	0	0
	GRAND JUNCTION	34	22	42	12	28	-3	0.16	0.06	0.10	0.20	167	7.46	87	89	73	0	7	2	0
	PUEBLO	43	12	58	8	27	-6	0.03	-0.05	0.03	0.03	33	7.63	63	84	51	0	7	1	0
CT	BRIDGEPORT	44	30	57	20	37	-2	1.18	0.41	1.18	1.21	136	56.62	136	75	49	0	5	1	1
	HARTFORD	40	22	57	13	31	-4	0.81	-0.02	0.80	0.84	88	59.14	136	86	54	0	5	2	1
DC	WASHINGTON	48	36	62	27	42	-1	0.10	-0.57	0.10	0.32	42	60.79	164	72	47	0	2	1	0
DE	WILMINGTON	45	29	58	19	37	-3	0.51	-0.25	0.51	0.72	83	55.90	139	86	54	0	5	1	1
FL	DAYTONA BEACH	74	54	86	40	64	1	0.20	-0.39	0.17	0.27	40	58.22	123	98	57	0	0	2	0
	JACKSONVILLE	69	47	83	34	58	1	0.14	-0.41	0.11	0.67	106	55.55	110	92	54	0	0	3	0
	KEY WEST	82	73	86	64	78	5	0.00	-0.45	0.00	0.00	0	35.59	95	81	63	0	0	0	0
	MIAMI	82	66	87	54	74	2	0.00	-0.55	0.00	0.00	0	59.87	105	89	59	0	0	0	0
	ORLANDO	76	56	87	43	66	1	1.13	0.59	0.71	1.13	182	46.19	99	90	53	0	0	2	1
	PENSACOLA	64	46	74	36	55	-1	2.95	2.06	2.06	7.23	709	80.70	132	84	50	0	0	3	2
	TALLAHASSEE	66	45	80	34	56	0	6.11	5.27	4.65	7.98	831	72.11	120	89	58	0	0	3	2
	TAMPA	76	57	81	43	66	1	0.44	-0.07	0.24	0.44	76	54.09	126	86	55	0	0	2	0
	WEST PALM BEACH	80	63	87	48	71	1	0.39	-0.55	0.21	0.39	36	52.93	89	97	61	0	0	3	0
GA	ATHENS	55	36	75	25	46	-2	1.91	1.11	1.89	4.08	443	62.45	139	82	51	0	2	2	1
	ATLANTA	54	38	74	28	46	-2	1.80	0.90	1.76	3.42	329	61.62	130	73	52	0	2	3	1
	AUGUSTA	59	40	73	26	49	-1	0.98	0.41	0.65	1.54	237	52.44	125	87	55	0	3	3	1
	COLUMBUS	59	39	76	27	49	-3	1.30	0.30	1.30	2.09	182	60.04	132	86	37	0	2	1	1
	MACON	59	38	76	25	48	-2	1.21	0.38	0.86	1.83	195	46.13	110	95	46	0	3	2	1
	SAVANNAH	61	44	71	30	53	-1	3.39	2.89	3.05	3.97	696	43.45	92	89	58	0	1	3	1
HI	HILO	81	68	82	66	74	1	2.73	-0.34	1.29	2.75	77	165.80	139	90	77	0	0	5	2
	HONOLULU	82	71	84	69	77	1	0.20	-0.37	0.13	0.28	43	16.58	103	78	65	0	0	2	0
	KAHULUI	85	69	87	61	77	3	0.03	-0.56	0.01	0.06	9	21.21	129	82	68	0	0	3	0
	LIHUE	81	73	82	68	77	3	0.07	-0.99	0.05	0.08	7	47.48	132	69	62	0	0	3	0
ID	BOISE	31	17	38	11	24	-9	0.37	0.04	0.37	0.67	176	9.84	88	83	76	0	7	1	0
	LEWISTON	36	23	43	16	30	-6	0.01	-0.23	0.01	0.02	7	12.11	101	83	75	0	6	1	0
	POCATELLO	26	11	31	2	19	-9	0.15	-0.10	0.09	0.15	54	8.34	71	88	78	0	7	2	0
IL	CHICAGO/O'HARE	33	25	44	16	29	-3	0.12	-0.51	0.11	1.25	174	46.71	135	82	64	0	6	2	0
	MOLINE	34	24	41	15	29	-2	0.21	-0.34	0.15	1.15	183	44.84	123	83	69	0	6	2	0
	PEORIA	35	25	48	16	30	-3	0.16	-0.50	0.11	0.99	130	42.83	125	87	67	0	6	5	0
	ROCKFORD	32	22	39	11	27	-2	0.34	-0.22	0.32	1.07	167	53.31	151	83	66	0	6	2	0
	SPRINGFIELD	36	22	52	8	29	-6	0.20	-0.45	0.14	1.52	205	42.71	127	91	67	0	6	5	0
IN	EVANSVILLE	41	31	58	25	36	-3	0.09	-0.86	0.07	1.39	128	55.71	133	85	70	0	5	3	0
	FORT WAYNE	38	28	59	18	33	0	0.21	-0.48	0.13	0.85	109	42.17	122	88	69	0	5	3	0
	INDIANAPOLIS	37	26	58	17	31	-5	0.15	-0.63	0.06	1.15	128	45.06	116	88	70	0	5	3	0
	SOUTH BEND	34	23	51	14	29	-4	0.18	-0.59	0.15	0.70	79	50.16	134	88	66	0	6	2	0
IA	BURLINGTON	35	23	43	13	29	-3	0.12	-0.45	0.12	0.69	106	40.04	110	86	63	0	6	1	0
	CEDAR RAPIDS	31	19	38	6	25	-3	0.09	-0.33	0.09	0.62	127	42.99	133	95	71	0	7	1	0
	DES MOINES	32	19	41	10	26	-4	0.12	-0.23	0.12	1.33	324	40.90	121	91	71	0	7	1	0
	DUBUQUE	30	20	36	9	25	-2	0.15	-0.32	0.15	0.71	131	50.60	147	84	71	0	7	1	0
	SIOUX CITY	28	16	33	5	22	-5	0.04	-0.14	0.04	0.60	286	39.56	155	88	79	0	7	1	0
	WATERLOO	30	19	36	8	25	-2	0.12	-0.21	0.12	0.52	137	54.36	168	86	74	0	7	1	0
KS	CONCORDIA	33	20	43	15	27	-7	0.01	-0.21	0.01	1.18	454	33.75	121	86	73	0	7	1	0
	DODGE CITY	40	21	54	14	30	-6	0.00	-0.17	0.00	0.00	0	26.51	122	82	52	0	7	0	0
	GOODLAND	39	17	50	12	28	-4	0.00	-0.09	0.00	0.13	130	20.91	107	90	63	0	7	0	0
	TOPEKA	38	24	49	19	31	-4	0.05	-0.34	0.04	1.11	241	28.45	82	78	62	0	7	2	0

Based on 1971-2000 normals

***** Not Available**

Weather Data for the Week Ending December 8, 2018

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 JAN01	PCT. NORMAL SINCE JAN01	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	40	24	50	18	32	-5	0.00	-0.33	0.00	0.02	5	29.85	101	84	60	0	7	0	0
KY	JACKSON	43	31	69	24	37	-5	0.12	-0.92	0.07	0.40	34	61.81	133	87	58	0	5	4	0
	LEXINGTON	43	31	67	24	37	-3	0.05	-0.86	0.03	1.15	111	72.13	168	79	61	0	5	2	0
	LOUISVILLE	44	32	67	27	38	-4	0.02	-0.88	0.02	1.64	159	67.33	161	75	48	0	4	1	0
	PADUCAH	43	33	59	29	38	-3	0.01	-1.14	0.01	1.24	95	59.75	129	74	59	0	4	1	0
LA	BATON ROUGE	64	43	79	34	53	-2	1.94	0.78	1.94	2.19	166	59.54	101	90	45	0	0	1	1
	LAKE CHARLES	67	46	81	38	57	1	2.36	1.32	2.24	2.38	200	56.85	106	86	45	0	0	2	1
	NEW ORLEANS	68	51	83	43	59	2	1.22	-0.04	1.22	1.40	97	59.99	99	79	55	0	0	1	1
	SHREVEPORT	53	39	66	33	46	-5	4.57	3.52	2.94	4.57	381	60.41	126	84	57	0	0	3	2
ME	CARIBOU	24	9	35	-5	16	-6	0.80	0.09	0.60	0.80	99	38.97	111	83	67	0	7	4	1
	PORTLAND	38	21	53	11	30	-2	0.78	-0.22	0.78	0.78	68	49.64	116	84	49	0	5	1	1
MD	BALTIMORE	46	30	58	19	38	-2	0.15	-0.59	0.15	0.33	39	67.25	171	79	52	0	5	1	0
MA	BOSTON	43	30	58	20	37	-2	0.75	-0.10	0.75	0.75	77	52.79	133	70	42	0	5	1	1
	WORCESTER	36	22	51	13	29	-4	0.93	0.07	0.93	0.94	96	59.02	128	88	52	0	7	1	1
MI	ALPENA	31	18	40	12	25	-3	0.86	0.45	0.82	0.86	183	31.43	116	87	71	0	7	2	1
	GRAND RAPIDS	34	24	47	15	29	-3	0.42	-0.32	0.35	0.60	71	45.95	130	87	65	0	6	2	0
	HOUGHTON LAKE	29	19	37	9	24	-4	0.68	0.26	0.59	0.90	188	30.81	113	85	80	0	7	5	1
	LANSING	35	24	54	16	29	-2	0.29	-0.30	0.26	0.52	76	39.14	130	90	70	0	6	4	0
	MUSKEGON	36	27	46	20	31	-1	0.57	-0.10	0.46	0.89	116	43.56	141	76	63	0	6	2	0
	TRAVERSE CITY	32	25	38	18	29	-2	0.31	-0.27	0.23	0.85	129	35.68	113	85	65	0	6	3	0
MN	DULUTH	23	10	29	1	17	-2	0.01	-0.30	0.01	0.01	3	29.39	97	83	72	0	7	1	0
	INT'L FALLS	22	7	27	-11	15	1	0.01	-0.19	0.01	0.01	4	24.77	106	93	67	0	7	1	0
	MINNEAPOLIS	27	17	34	6	22	-2	0.00	-0.28	0.00	0.19	59	33.46	116	83	74	0	7	0	0
	ROCHESTER	25	14	32	-5	19	-3	0.25	-0.06	0.25	1.01	281	42.12	137	93	83	0	7	1	0
	ST. CLOUD	25	12	31	-1	19	-1	0.01	-0.17	0.01	0.06	29	29.32	110	88	66	0	7	1	0
MS	JACKSON	56	37	77	28	47	-3	2.66	1.44	2.33	2.74	197	72.71	140	89	46	0	3	2	1
	MERIDIAN	58	38	78	27	48	-4	2.02	0.80	1.96	2.81	201	64.11	117	86	48	0	2	2	1
	TUPELO	51	37	70	28	44	-2	2.46	1.08	1.84	3.53	225	70.38	137	82	55	0	3	2	2
MO	COLUMBIA	37	26	45	20	32	-4	0.10	-0.60	0.09	1.04	128	35.92	93	84	63	0	6	2	0
	KANSAS CITY	35	23	45	17	29	-6	0.07	-0.38	0.04	1.03	198	40.14	109	87	63	0	7	3	0
	SAINT LOUIS	40	28	56	22	34	-4	0.24	-0.55	0.13	1.03	113	41.35	112	88	67	0	5	2	0
	SPRINGFIELD	39	29	47	26	34	-5	0.00	-0.96	0.00	0.00	0	40.70	95	76	62	0	6	0	0
MT	BILLINGS	35	18	46	7	26	-2	0.02	-0.10	0.02	0.02	14	22.62	159	81	51	0	7	1	0
	BUTTE	26	-2	30	-10	12	-8	0.00	-0.11	0.00	0.00	0	14.08	114	82	50	0	7	0	0
	CUT BANK	29	6	35	-11	17	-7	0.01	-0.05	0.01	0.06	86	11.24	92	87	59	0	7	1	0
	GLASGOW	23	7	33	-9	15	-5	0.26	0.20	0.23	0.67	1117	13.43	123	87	81	0	7	2	0
	GREAT FALLS	33	10	40	2	22	-5	0.01	-0.10	0.01	0.19	146	16.61	116	87	53	0	7	1	0
	HAVRE	27	9	33	-3	18	-4	0.00	-0.08	0.00	0.11	122	14.75	134	87	76	0	7	0	0
	MISSOULA	26	13	31	1	19	-7	0.00	-0.24	0.00	0.02	7	15.62	121	82	75	0	7	0	0
NE	GRAND ISLAND	31	18	37	12	24	-5	0.01	-0.19	0.01	1.55	646	31.44	123	86	72	0	7	1	0
	LINCOLN	32	19	37	10	25	-5	0.09	-0.16	0.09	1.34	462	37.71	136	84	69	0	7	1	0
	NORFOLK	28	12	34	3	20	-7	0.03	-0.17	0.03	1.28	533	34.44	131	88	76	0	7	1	0
	NORTH PLATTE	30	13	34	4	22	-6	0.02	-0.07	0.02	0.62	620	26.52	137	88	72	0	7	1	0
	OMAHA	30	19	36	12	25	-5	0.16	-0.13	0.16	1.13	342	36.80	124	84	70	0	7	1	0
	SCOTTSBLUFF	36	15	48	6	25	-3	0.09	-0.05	0.05	0.20	125	23.08	145	94	72	0	7	3	0
	VALENTINE	30	9	37	-4	20	-7	0.00	-0.09	0.00	0.68	618	34.22	177	84	73	0	7	0	0
NV	ELY	35	8	46	-2	21	-7	0.04	-0.04	0.03	0.08	89	7.53	79	85	69	0	7	2	0
	LAS VEGAS	55	43	62	39	49	0	0.10	0.04	0.09	0.10	167	3.32	80	62	44	0	0	2	0
	RENO	36	28	41	21	32	-4	0.25	0.06	0.14	0.33	150	8.47	124	80	69	0	7	2	0
	WINNEMUCCA	33	14	36	6	24	-8	0.17	0.00	0.14	0.30	158	8.07	105	88	78	0	7	2	0
NH	CONCORD	36	19	48	6	28	-3	0.87	0.16	0.86	0.87	107	51.23	145	87	53	0	6	2	1
NJ	NEWARK	44	29	55	23	37	-3	0.91	0.07	0.91	0.99	103	57.28	131	75	51	0	5	1	1
NM	ALBUQUERQUE	46	27	54	20	36	-2	0.08	0.00	0.07	0.08	89	9.21	102	77	43	0	6	2	0
NY	ALBANY	38	23	51	14	31	-2	0.53	-0.12	0.50	0.72	96	43.25	120	79	53	0	5	2	1
	BINGHAMTON	33	20	46	13	26	-5	0.30	-0.46	0.14	0.53	61	55.89	153	87	75	0	6	6	0
	BUFFALO	37	24	57	18	31	-3	1.19	0.27	0.66	1.31	124	39.57	105	89	67	0	6	4	1
	ROCHESTER	39	25	58	18	32	-1	0.38	-0.28	0.12	0.53	70	33.20	104	91	69	0	6	6	0
	SYRACUSE	36	22	50	14	29	-4	0.59	-0.24	0.33	1.00	104	41.55	110	91	71	0	6	5	0
NC	ASHEVILLE	49	32	69	24	41	-1	0.94	0.15	0.92	1.41	155	70.03	157	79	48	0	3	2	1
	CHARLOTTE	55	36	70	23	45	-2	0.51	-0.16	0.44	1.20	156	53.35	130	88	47	0	3	2	0
	GREENSBORO	51	33	66	24	42	-2	0.20	-0.47	0.20	0.39	51	57.51	141	81	51	0	3	1	0
	HATTERAS	58	47	73	40	53	0	0.44	-0.49	0.44	1.45	136	83.64	154	82	61	0	0	1	0
	RALEIGH	54	37	71	25	46	0	0.00	-0.64	0.00	0.32	43	54.39	133	88	49	0	4	0	0
	WILMINGTON	58	40	72	28	49	-3	0.73	-0.10	0.69	1.20	128	97.13	179	91	49	0	2	3	1
ND	BISMARCK	29	15	37	9	22	2	0.00	-0.09	0.00	0.00	0	20.76	126	86	71	0	7	0	0
	DICKINSON	30	15	35	6	22	0	0.00	-0.08	0.00	0.07	78	19.92	124	88	60	0	7	0	0
	FARGO	25	13	33	-3	19	2	0.00	-0.11	0.00	0.00	0	26.38	127	87	71	0	7	0	0
	GRAND FORKS	23	7	30	-13	15	-1	0.00	-0.11	0.00	0.00	0	23.83	124	90	72	0	7	0	0
	JAMESTOWN	24	12	33	5	18	0	0.00	-0.08	0.00	0.00	0	25.44	140	93	74	0	7	0	0
	WILLISTON	27	13	32	4	20	3	0.01	-0.12	0.01	0.27	180	22.05	160	83	71	0	7	1	0
OH	AKRON-CANTON	38	29	63	19	33	-2	0.25	-0.48	0.10	0.66	79	49.09	135	80	66	0	5	6	0
	CINCINNATI	41	28	65	21	34	-5	0.05	-0.72	0.02	1.89	215	56.50	141	85	61	0	5	3	0
	CLEVELAND	39	29	64	17	34	-1	0.41	-0.40	0.21	0.76	82	54.90	150	85	62	0	5	5	0
	COLUMBUS	40	29	66	20	35	-2	0.10	-0.64	0.05	0.94	111	57.11	157	80	62	0	5	4	0
	DAYTON	38	28	64	19	33	-3	0.10	-0.64	0.04	1.21	142	50.57	135	88	65	0	5	3	0
	MANSFIELD	36	25	62	12	31	-3	0.21	-0.62	0.10	0.72	75	49.91	122	94	65	0	6	3	0

Based on 1971-2000 normals

***** Not Available**

Weather Data for the Week Ending December 8, 2018

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 JAN01	PCT. NORMAL SINCE JAN01	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	39	26	63	14	33	0	0.08	-0.58	0.06	0.79	104	36.57	117	79	60	0	5	3	0
	YOUNGSTOWN	37	28	63	15	33	-1	0.37	-0.39	0.13	0.55	63	52.98	147	85	69	0	6	7	0
OK	OKLAHOMA CITY	42	28	52	20	35	-8	0.11	-0.30	0.10	0.11	23	41.81	121	88	59	0	6	2	0
	TULSA	43	30	53	24	37	-6	0.00	-0.68	0.00	0.00	0	30.80	76	76	59	0	5	0	0
OR	ASTORIA	47	34	49	31	40	-4	0.30	-2.24	0.18	0.65	22	55.04	92	86	69	0	4	2	0
	BURNS	26	5	33	-6	16	-11	0.00	-0.28	0.00	0.31	100	6.31	66	89	80	0	7	0	0
	EUGENE	43	29	48	23	36	-5	0.16	-1.91	0.11	0.77	32	22.80	51	90	81	0	5	3	0
	MEDFORD	48	28	56	24	38	-1	0.00	-0.72	0.00	0.48	58	9.28	57	92	61	0	5	0	0
	PENDLETON	34	24	40	20	29	-7	0.01	-0.34	0.01	0.01	2	8.89	76	91	81	0	7	1	0
	PORTLAND	46	35	49	32	40	-2	0.02	-1.37	0.02	0.10	6	22.29	68	72	59	0	2	1	0
	SALEM	47	30	52	25	39	-3	0.19	-1.41	0.16	0.45	25	25.25	71	84	71	0	5	2	0
PA	ALLENTOWN	43	26	53	17	34	-2	0.50	-0.31	0.50	0.79	85	64.27	150	76	52	0	5	1	1
	ERIE	39	31	64	25	35	-2	0.83	-0.10	0.32	0.95	89	45.73	114	71	61	0	5	5	0
	MIDDLETOWN	42	28	51	20	35	-3	0.23	-0.59	0.23	0.58	62	62.19	163	82	51	0	5	1	0
	PHILADELPHIA	44	31	58	23	38	-3	0.52	-0.23	0.49	0.65	76	59.18	149	77	54	0	5	2	0
	PITTSBURGH	38	28	63	18	33	-3	0.21	-0.49	0.07	0.70	86	58.62	164	92	62	0	6	4	0
	WILKES-BARRE	39	24	51	17	31	-4	0.20	-0.46	0.15	0.31	41	59.23	166	90	58	0	5	4	0
	WILLIAMSPORT	40	27	50	19	34	-1	0.16	-0.62	0.15	0.38	43	65.71	166	78	56	0	5	2	0
RI	PROVIDENCE	44	27	59	18	36	-2	0.69	-0.26	0.69	0.69	63	60.49	139	77	47	0	5	1	1
SC	CHARLESTON	60	43	73	31	52	-1	2.91	2.28	1.88	3.40	472	54.25	111	96	52	0	2	3	2
	COLUMBIA	57	38	72	25	47	-3	1.44	0.80	1.16	2.26	310	45.07	99	96	58	0	3	2	1
	FLORENCE	58	41	73	26	50	0	1.08	0.45	0.91	1.49	210	56.29	134	91	45	0	3	2	1
	GREENVILLE	53	35	69	23	44	-2	2.10	1.27	1.20	3.23	344	59.73	126	89	47	0	3	2	2
SD	ABERDEEN	28	12	36	1	20	-1	0.00	-0.06	0.00	0.00	0	18.44	93	87	74	0	7	0	0
	HURON	29	15	38	7	22	-1	0.02	-0.07	0.02	0.07	64	22.43	109	86	67	0	7	1	0
	RAPID CITY	28	10	37	2	19	-8	0.02	-0.04	0.02	0.53	883	25.53	157	87	69	0	7	1	0
	SIOUX FALLS	28	17	33	8	23	0	0.00	-0.16	0.00	0.16	84	42.40	174	84	73	0	7	0	0
TN	BRISTOL	48	33	69	23	40	0	0.21	-0.57	0.16	0.36	40	49.36	127	92	51	0	4	3	0
	CHATTANOOGA	53	37	74	22	45	0	2.34	1.19	2.33	3.14	240	60.06	118	77	55	0	2	2	1
	KNOXVILLE	48	35	69	21	42	-2	0.70	-0.32	0.68	1.10	94	55.47	124	85	51	0	2	2	1
	MEMPHIS	47	34	62	28	41	-6	1.34	-0.13	1.02	2.00	118	59.31	117	84	63	0	3	3	1
	NASHVILLE	48	35	71	24	41	-3	0.44	-0.67	0.41	0.88	69	55.71	124	79	48	0	2	2	0
TX	ABILENE	52	35	62	28	43	-5	1.15	0.91	0.70	1.15	426	31.43	138	85	65	0	3	2	1
	AMARILLO	44	24	54	21	34	-5	0.03	-0.05	0.03	0.03	33	12.96	68	84	56	0	7	1	0
	AUSTIN	59	43	70	37	51	-3	4.11	3.59	3.49	4.15	692	33.29	105	74	57	0	0	3	2
	BEAUMONT	68	47	81	40	58	2	4.31	3.18	2.67	4.32	335	87.32	156	83	55	0	0	3	2
	BROWNSVILLE	75	58	84	51	67	4	0.25	-0.03	0.21	0.25	76	22.66	85	92	75	0	0	2	0
	CORPUS CHRISTI	70	53	81	47	61	1	0.72	0.36	0.48	0.72	176	40.48	131	80	61	0	0	2	0
	DEL RIO	62	45	78	39	53	-1	1.24	1.07	1.24	1.24	653	26.17	148	89	64	0	0	1	1
	EL PASO	57	41	61	35	49	2	0.15	0.00	0.10	0.15	88	8.09	92	66	43	0	0	2	0
	FORT WORTH	51	38	58	29	44	-5	1.28	0.75	0.64	1.28	213	52.91	162	82	57	0	2	3	1
	GALVESTON	66	54	76	46	60	0	1.67	0.85	1.65	1.67	178	58.15	141	89	57	0	0	2	1
	HOUSTON	66	45	78	38	56	0	4.75	3.90	4.26	4.75	485	56.16	124	87	60	0	0	3	1
	LUBBOCK	46	27	53	17	37	-5	0.59	0.45	0.41	0.59	369	14.43	79	88	63	0	7	2	0
	MIDLAND	54	35	68	32	44	-3	0.53	0.40	0.32	0.53	353	17.20	120	86	64	0	3	2	0
	SAN ANGELO	56	34	71	28	45	-3	1.44	1.25	1.05	1.44	655	33.03	164	87	62	0	2	2	1
	SAN ANTONIO	62	46	75	40	54	-1	1.63	1.19	1.57	1.63	320	40.51	129	75	51	0	0	3	1
	VICTORIA	67	47	80	42	57	-1	4.08	3.53	3.58	4.08	648	37.28	97	84	56	0	0	2	2
	WACO	54	39	62	31	47	-4	2.16	1.53	1.57	2.16	304	32.42	104	86	62	0	2	3	1
	WICHITA FALLS	48	30	57	21	39	-7	0.86	0.51	0.60	0.86	215	35.52	129	86	68	0	4	2	1
UT	SALT LAKE CITY	34	25	37	19	29	-4	0.38	0.10	0.36	0.38	123	12.30	79	93	70	0	7	3	0
VT	BURLINGTON	34	19	46	0	27	-3	0.67	0.09	0.30	0.67	100	37.37	108	87	66	0	7	5	0
VA	LYNCHBURG	48	30	60	21	39	-2	0.02	-0.70	0.02	0.19	23	60.74	149	83	50	0	5	1	0
	NORFOLK	53	41	70	28	47	-1	0.09	-0.52	0.05	0.16	23	52.86	122	84	54	0	1	2	0
	RICHMOND	50	32	65	22	41	-3	0.10	-0.55	0.07	0.19	26	61.89	149	84	55	0	4	2	0
	ROANOKE	48	34	62	28	41	-1	0.01	-0.67	0.01	0.20	26	57.62	143	70	46	0	4	1	0
	WASH/DULLES	45	29	58	18	37	-3	0.07	-0.64	0.07	0.32	40	61.54	156	83	56	0	5	1	0
WA	OLYMPIA	44	24	46	17	34	-5	0.02	-1.92	0.02	0.03	1	37.01	82	97	93	0	6	1	0
	QUILLAYUTE	46	27	50	20	37	-5	0.27	-3.22	0.16	0.39	10	82.13	90	94	78	0	6	3	0
	SEATTLE-TACOMA	46	35	48	31	41	-1	0.08	-1.31	0.08	0.13	8	29.78	90	71	61	0	2	1	0
	SPOKANE	31	21	36	14	26	-3	0.00	-0.55	0.00	0.14	22	13.48	90	92	75	0	7	0	0
	YAKIMA	36	26	45	20	31	0	0.05	-0.25	0.05	0.10	30	4.48	62	85	76	0	7	1	0
WV	BECKLEY	41	29	64	23	35	-3	0.24	-0.45	0.18	0.33	42	55.73	142	83	60	0	5	4	0
	CHARLESTON	45	33	69	23	39	-2	0.30	-0.53	0.11	0.47	49	61.95	149	91	57	0	5	4	0
	ELKINS	41	26	67	14	33	-3	0.38	-0.43	0.10	0.50	54	66.22	152	84	63	0	5	5	0
	HUNTINGTON	44	33	69	24	38	-3	0.14	-0.63	0.07	0.46	52	58.93	148	81	53	0	5	4	0
WI	EAU CLAIRE	25	13	35	-2	19	-4	0.00	-0.30	0.00	0.03	9	36.99	118	87	69	0	7	0	0
	GREEN BAY	30	21	35	11	25	-1	0.19	-0.22	0.19	0.43	91	38.69	137	81	65	0	6	1	0
	LA CROSSE	30	22	36	6	26	-1	0.45	0.09	0.45	0.87	207	41.76	132	76	63	0	7	1	0
	MADISON	30	21	35	14	25	-3	0.07	-0.39	0.06	0.65	123	54.65	172	82	66	0	7	2	0
	MILWAUKEE	32	24	41	16	28	-3	0.30	-0.27	0.30	1.32	200	46.60	140	76	58	0	6	1	0
WY	CASPER	31	12	39	0	21	-5	0.05	-0.09	0.04	0.05	31	19.33	154	83	65	0	7	2	0
	CHEYENNE	32	13	42	5	22	-7	0.09	-0.02	0.04	0.09	69	19.97	132	84	59	0	7	3	0
	LANDER	27	7	34	2	17	-6	0.00	-0.15	0.00	0.00	0	17.16	132	88	56	0	7	0	0
	SHERIDAN	36	13	45	4	25	0	0.02	-0.12	0.02	0.02	13	21.95	155	81	68	0	7	1	0

Based on 1971-2000 normals ***** Not Available**

November Weather and Crop Summary

Weather

Weather summary provided by USDA/WAOB

Highlights: Overall, weather patterns remained similar to those observed during September and October, though there were subtle changes. For example, generally wet weather continued across the central and eastern U.S., although drier conditions developed across southern Florida and the southern Plains. In addition, drier-than-normal weather persisted for much of the month in the western U.S., contributing to an historic wildfire outbreak in California, but late-November storminess eased Western drought and curbed the wildfire threat. However, the late-month Western storminess also interrupted wildfire recovery efforts and triggered debris flows in recently burned areas.

California's wildfires, many of which started on November 8, caused extensive destruction and loss of life. In fact, northern California's Camp Fire became the nation's deadliest wildfire in a century, with at least 85 fatalities reported in Butte County. The Camp Fire also scorched more than 153,000 acres of vegetation and destroyed nearly 14,000 homes. Concurrent fires in southern California collectively burned nearly 100,000 acres and destroyed more than 400 homes.

Cold air, which had begun to settle across the nation's mid-section and the Northeast in mid- to late October, became more fully entrenched during November. Monthly temperatures averaged at least 5°F below normal across portions of the Plains, Midwest, and mid-South, contributing to slow rates of drying and extensive fieldwork delays. On November 25, national harvest progress for crops such as cotton (70 percent complete) and soybeans (94 percent) was less advanced on that date than any of the previous 25 years.

In the East, where it was generally cool, excessive rainfall also caused fieldwork interruptions. On November 25, more than one-third (35 percent) of the cotton in South Carolina and 36 percent of the soybeans in North Carolina had not yet been harvested. On the same date, topsoil moisture was rated at least one-half surplus in Louisiana (59 percent surplus) and North Carolina (50 percent). Ohio led the Midwest with topsoil moisture rated 65 percent surplus, while seven of the ten Atlantic Coast States from Maine to Maryland—all but New Hampshire, New Jersey, and Rhode Island—reported topsoil moisture ranging from 50 to 100 percent surplus.

Farther west, mid- to late-month precipitation frequently fell as snow, maintaining abundant to locally excessive moisture reserves across the Plains and Midwest but curtailing fieldwork such as summer crop harvesting and late-season winter wheat planting efforts. Cool, wet conditions also limited winter wheat emergence and establishment. During the weekend after Thanksgiving, an early-season winter storm snarled transportation from the central Plains into the lower Great Lakes region, along an axis that included Kansas City and Chicago. Another winter storm began to unfold across the Plains and Midwest on November 30, with effects carrying into early December.

Historical Perspective: According to preliminary data provided by the National Centers for Environmental Information, the contiguous U.S. experienced its 27th-coldest, 31st-wettest November during the 124-year period of record. The nation's average temperature of 40.1°F was 1.6°F below the 1901-2000 mean, while precipitation averaged 2.64 inches—118 percent of normal.

Figure 1 Statewide Average Temperature Ranks
November 2018
Period: 1895–2018

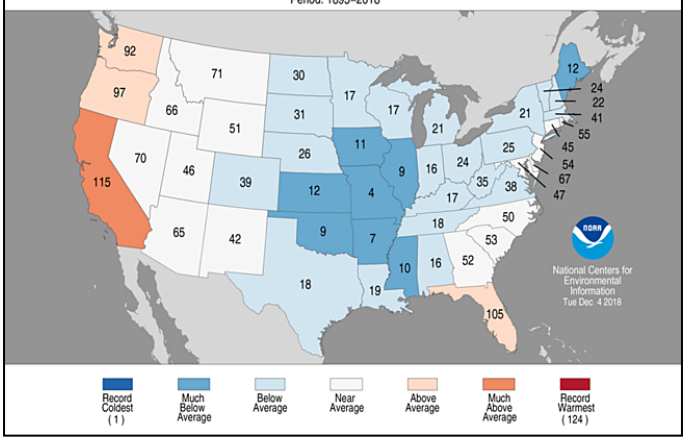
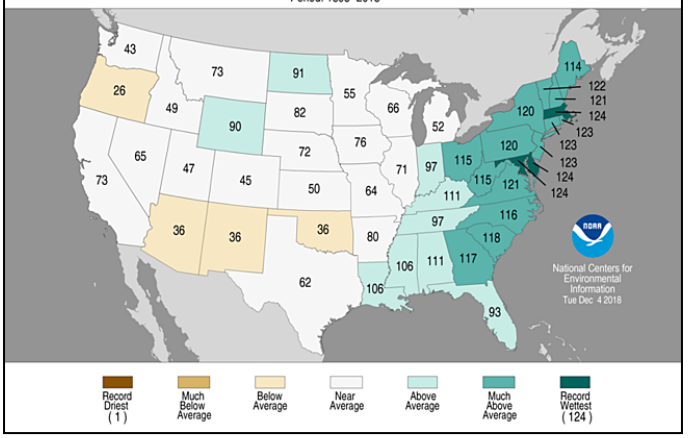


Figure 2 Statewide Precipitation Ranks
November 2018
Period: 1895–2018



State temperature rankings ranged from the fourth-coldest November in Missouri to the tenth-warmest November in California (figure 1). In addition to Missouri, top-ten rankings for cold November weather were observed in Arkansas, Illinois, Mississippi, and Oklahoma. Meanwhile, state precipitation

rankings ranged from the 26th-driest November in Oregon to the wettest on record in Delaware, Maryland, and Massachusetts (figure 2). Top-ten rankings for November wetness occurred in all other East Coast States from Georgia to New Hampshire, along with Ohio, Vermont, and West Virginia.

Summary: The month opened in the midst of a late-season severe weather outbreak across parts of the South and East. From October 31 – November 2, severe thunderstorms stretched from the Gulf Coast to the middle and southern Atlantic States. A tornado-related fatality occurred in Claiborne County, MS, early on November 1, followed by two deaths in Baltimore, MD, on November 2. Those deaths marked only the sixth, seventh, and eighth tornado-related fatalities in the country this year. In addition, November 1 featured daily-record totals in excess of the 2-inch mark in locations such as Greenville, MS (3.46 inches); Dayton, OH (2.86 inches); and Paducah, KY (2.59 inches). Heavy rain swept into the East on November 2, when daily-record amounts in Pennsylvania reached 3.45 inches in Allentown and 1.96 inches in Harrisburg. Farther west, record-setting precipitation totals in Montana for November 2 included 0.40 inch in Glasgow and 0.55 inch in Miles City. Glasgow also received an inch of snow. A chilly rain fell across the northern Plains on November 3, when South Dakota locations such Mitchell (0.49 inch) and Sisseton (0.28 inch) collected daily-record totals. By November 4, daily-record rainfall totals included 1.77 inches in La Crosse, WI, and 1.17 inches in Moline, IL. It was the wettest November day in La Crosse since November 1, 1991, when 2.80 inches fell. Later, Eastern daily-record totals for November 5 reached 1.44 inches in Washington, DC, and 1.22 inches in Richmond, VA. Philadelphia, PA, received rainfall totaling 2.20 inches on November 5-6, with a daily-record sum of 1.65 inches falling on the latter date. A few days later, periods of snow developed across the nation's mid-section. Record-setting snowfall totals for November 8 included 3.6 inches in Grand Island, NE; 2.3 inches in Concordia, KS; and 1.5 inches in Columbia, MO. It was Grand Island's greatest 1-day November snowfall since November 28, 2004, when 5.3 inches fell. By November 9, snow moved into the Midwest, where daily-record amounts in Illinois totaled 1.8 inches in Rockford and 1.6 inches in Lincoln and Springfield. The last time Rockford received at least an inch of snow on a November day was November 3, 1992, when 1.6 inches fell. Downwind of the Great Lakes, Grand Rapids, MI, netted a daily-record snowfall (3.8 inches) on November 10. Meanwhile, another round of heavy rain swept across the East, while high winds developed in California. On November 9, record-setting rainfall amounts totaled 1.61 inches in Atlantic City, NJ, and 1.25 inches in Islip, NY. On the night of November 8-9, wind gusts in southern California were clocked to 77 mph at Camp Nine in Los Angeles County and 74 mph in Fremont Canyon in Orange County. In addition to the aforementioned Camp Fire, the Woolsey and Hill Fires—both in Ventura County—collectively burned nearly 100,000 acres and destroyed more than 400 homes.

Meanwhile, early-November warmth developed in the Far West and lingered across Florida. Gilroy, CA, collected a daily-record high of 90°F on November 1. In Nevada, Reno posted a daily-record high (77°F) for November 2. Record-setting California highs for November 3 reached 98°F in Thermal and 92°F in Santa Maria. Other warmth was largely limited to Florida's peninsula. In southern Florida, Key West collected daily-record highs (88, 88, 87, and 87°F) on November 4, 6, 8, and 10. Elsewhere in Florida, daily-record highs soared to 89°F in Gainesville (on November 8) and Fort Myers (on November 9). Ahead of a powerful cold front, there was a brief surge of warmth into the western Gulf Coast region on November 7, when daily-record highs in Texas surged to 90°F in Brownsville and 89°F in Houston. Meanwhile, California experienced large temperature fluctuations due to very dry air. For example, Paso Robles, CA, noted a November 4-10 weekly average high temperature of 78°F and an average low of 33°F. Paso Robles also notched a daily-record low of 27°F on November 10. South Lake Tahoe, CA. posted a daily-record high of 68°F on November 4 and a daily-record low of 11°F on November 9. In Oregon, Klamath Falls observed five consecutive daily-record lows (14, 13, 14, 7, and 12°F) from November 6-10. Elsewhere, consecutive daily-record lows occurred on November 9-10 in locations such as Burns, OR (0 and 4°F); Winnemucca, NV (2 and 7°F); Kansas City, MO (13 and 9°F); and Topeka, KS (16 and 12°F). On the 9th, daily-record lows dipped to sub-zero levels in Crested Butte, CO (-17°F), and Chadron, NE (-1°F).

By mid-November, California's wildfire and air-quality situation gradually improved as winds subsided and smoke diffused, although dry conditions persisted. However, locally high winds persisted in southern California through November 11, when a wind gust to 66 mph was clocked in Fremont Canyon in Orange County. On the same date, daily-record lows of 31°F were reported in California locations such as Modesto, Sacramento, and Stockton. Cold weather also covered parts of the East, where record-setting lows for November 11 included 17°F in Bluefield, WV, and 20°F in Dayton, OH. Later, another surge of cold air trailed an early-season snowfall. On the Plains, daily-record lows fell to 7°F (on November 12) in Garden City, KS, and 12°F (on November 13) in Dalhart, TX. Elsewhere in Texas, consecutive daily-record lows were set on November 13-14 in San Antonio (28 and 23°F) and Victoria (32 and 28°F). Similarly, McAllen posted a pair of daily-record lows (33 and 36°F, respectively) on November 14-15. Meanwhile, frigid air invaded the Northeast in advance of an approaching storm. Northeastern daily-record lows for November 15 plunged to 4°F in Montpelier, VT, and 6°F in Caribou, ME. In contrast, warmth lingered through mid-month in Florida, where Fort Myers tallied a daily-record high of 90°F on November 14. Elsewhere in Florida, the high temperature in Sarasota-Bradenton reached or exceeded the 85-degree mark each day from November 7-14, peaking at 89°F—a record for the date—on the 14th.

On November 11-12, another early-season snowfall occurred across the nation's mid-section, where totals reached 4.4 inches in Amarillo, TX, and 4.2 inches in Pueblo, CO. Daily-record snowfall totals for November 12 included 2.0 inches in Wichita, KS; 1.7 inches in Springfield, MO; 1.6 inches in Tulsa, OK; and 1.5 inches in Springfield, IL. Paducah, KY, and Evansville, IN, reported measurable snow each day from November 13-15, totaling 2.3 and 1.1 inches, respectively. On November 14, the earliest measurable snowfall on record occurred in locations such as Monroe, LA (0.4 inch;

previously, 0.1 inch on November 24, 1950), and El Dorado, AR (0.2 inch; previously, 0.7 inch on November 26, 1980). Meanwhile, heavy rain drenched the South on November 12, when daily-record totals reached 3.91 inches in Anniston, AL; 3.72 inches in Shreveport, LA; 2.95 inches in Meridian, MS; and 2.71 inches in Danville, VA. In eastern North Carolina, record-setting rainfall totals for November 13 included 4.17 inches on Cape Hatteras and 1.82 inches in New Bern. A few days later, another wave of precipitation moved across the East, resulting in major snow and ice accumulations. Storm-total snowfall locally topped a foot in the Northeast; official November 15-16 totals included 11.0 inches in Scranton, PA, and 10.9 inches in Syracuse, NY. New York's Central Park received 6.4 inches on the 15th. In Maine, Caribou measured a daily-record snowfall (9.3 inches) for November 16. Disruptive snow stretched as far west as the middle Mississippi Valley, where Saint Louis, MO, received 3.9 inches of snow on November 14-15. Springfield, IL, achieved its snowiest November on record (11.4 inches, or 1,900 percent of normal; previously; 9.2 inches in 1951), aided by a 5.3-inch total on the 15th. Later, snow preceded a cold front crossing the northern Rockies, northern Plains, and Midwest. In Montana on November 16, Great Falls received a daily-record total of 4.2 inches of snow and clocked a peak wind gust to 57 mph. The following day, Rockford, IL, netted a record-setting snowfall (2.1 inches) for November 17. Riverton, WY, reported 5.9 inches of snow on November 16-17. In the front's wake, sub-zero temperatures were reported on the morning of November 17 in Montana locations such as Great Falls (-1°F), Lewistown (-2°F), and Cut Bank (-3°F).

The cold air soon settled across the Midwest and Northeast, intensifying in the latter region by Thanksgiving. On November 18, daily-record lows plunged to sub-zero levels in locations such as Rochester, MN (-5°F); Mason City, IA (-6°F); and Houlton, ME (-6°F). With a low of -7°F, Houlton collected another daily-record low on November 19. Farther west, however, warmth quickly returned to the northern High Plains. On November 20, Choteau, MT, logged a daily-record high of 65°F. Two days later, on Thanksgiving Day, Valentine, NE, notched a daily-record high of 74°F. In contrast, a severe, early-season cold wave engulfed the Great Lakes and Northeastern States. In Michigan, Pellston posted consecutive daily-record lows (-8 and -15°F, respectively) on November 21-22. Similarly, consecutive daily-record lows were established on November 22-23 in New York locations such as Watertown (-7°F both days) and Binghamton (3 and 0°F). Both locations also set monthly records; previous standards had been -3°F in Watertown on November 28, 1996, and 3°F in Binghamton on November 30, 1976, and November 24, 2000. Scranton, PA, also set a monthly record with a low of 5°F on November 23 (previously, 6°F on November 30, 1929, and November 26, 1938). It was the coldest Thanksgiving Day on record for several Northeastern locations, including Portland, ME, and Binghamton, with high temperatures peaking at 6 and 3°F, respectively. Portland's previous coldest Thanksgiving had been November 23, 1978, when the high reached 7°F. Binghamton's previous coldest Thanksgiving had been November 28, 1996, with a high of 9°F. In Maine, Thanksgiving Day highs of 12°F in Houlton and 14°F in Bangor tied monthly records originally set on November 27, 1978. Farther south, November 22 highs of 16°F in Worcester, MA, and 21°F in Hartford, CT, broke monthly records (20 and 23°F, respectively) most recently attained on November 30, 1958. In fact, late-month warmth was mostly limited to Florida's peninsula, where Melbourne posted a daily-record high of 87°F on November 26. However, a subsequent surge of cool air into Florida resulted in a daily-record low of 38°F on November 28 in Vero Beach. Farther north, record-setting lows for November 28 dipped to 16°F in Blacksburg, VA, and 18°F in Cape Girardeau, MO.

Periods of precipitation accompanied the cold weather. On November 18, for example, daily-record snowfall totals included 1.6 inches in Hastings, NE, and 1.0 inch in Brainerd, MN. Downwind of Lake Superior, monthly snowfall in Marquette, MI, totaled 37.7 inches (155 percent of normal), aided by a daily-record sum of 8.9 inches on November 19. In Maine, a heavy snow event on November 20 resulted in daily-record totals in locations such as Portland (7.1 inches) and Bangor (6.4 inches). At daybreak on November 22, Portland still had a 7-inch snow depth, tying a Thanksgiving Day record originally set on November 27, 2014. During the Thanksgiving holiday week, significant precipitation overspread parts of the West. In California, November 21-23 rainfall totaled 1.96 inches in Oakland and 2.19 inches in downtown San Francisco. Farther inland, 7.18 inches of rain soaked Blue Canyon, CA, from November 21-24. Northern California's Camp Fire was fully contained by month's end. Farther east, separate late-month storms produced heavy precipitation in the East and wind, rain, and snow in the West. In Utah, Salt Lake City noted a wind gust to 52 mph (and 1.7 inches of snow) on November 24, while storm-total snowfall reached 17.2 inches in Alta. On the 24th, snow also developed across the central Plains, where North Platte, NE, netted a daily-record precipitation total of 0.33 inch (and 1.2 inches of snow). Meanwhile, record-setting Eastern precipitation totals for November 24 included 2.54 inches in Wilmington, DE, and 2.28 inches in North Myrtle Beach, SC.

In late November, a band of heavy, wind-driven snow spread from the central Plains into northern New England. November 25 featured a daily-record snowfall of 5.8 inches in Kansas City, MO, accompanied by a peak wind gust of 55 mph. In northern Illinois, November 25-26 snowfall totaled 11.7 inches in Rockford and 8.4 inches in Chicago, accompanied by wind gusts of 46 and 51 mph, respectively. In fact, Rockford's measurable snow all fell on the 25th, which became that city's snowiest November day on record (previously, 6.6 inches on November 27, 1995). Elsewhere on the 25th, wind gusts were clocked to 60 mph in Dalhart, TX; 58 mph in Russell, KS; and 55 mph in Guymon, OK. On November 26 in Michigan, snowfall totaled 6.6 inches in Lansing and 4.2 inches in Flint—records for the date in both cities. Similarly, Burlington, VT, received 8.2 inches on November 27-28, aided by a daily-record total of 6.3 inches on the former date. Meanwhile, heavy precipitation overspread the Pacific Coast. In western Washington, record-setting rainfall amounts for November 26 included 4.04 inches in Quillayute and 2.52 inches in Hoquiam. Seattle, WA, collected consecutive daily-record rainfall totals (1.42 and 1.84 inches, respectively) on November 26-27. Shortly thereafter, precipitation returned across California, where record-setting rainfall totals for November 28 reached 1.08 inches in Paso Robles and 1.16 inches in Merced. Paso Robles also netted a daily-record total (0.87 inch) the following day, November 29.

Other record-setting totals in California on the 29th included 2.85 inches on Palomar Mountain; 2.52 inches in Redding; and 2.32 inches in Red Bluff. Farther inland, Laketown, UT, reported 13.5 inches of snow in a 48-hour period from November 28-30. At month's end and continuing into early December, heavy precipitation (and locally severe thunderstorms) erupted across parts of the central Plains, Midwest, and Southeast.

In the Mid-Atlantic region, November precipitation records were broken in several locations, including Atlantic City, NJ (10.59 inches); Allentown, PA (9.73 inches); Islip, NY (8.42 inches); Trenton, NJ (8.24 inches); Baltimore, MD (8.14 inches); and Washington, DC (7.56 inches). Records in Trenton and Washington had stood since 1889 and 1877, respectively. In addition, annual precipitation were eclipsed during November in several communities from the Ohio Valley to the Mid-Atlantic coast. By November 30, year-to-date precipitation climbed to 65.28 inches (170 percent of normal) in Baltimore, MD, and 61.52 inches (151 percent) in Charleston, WV. In both locations, previous records (62.66 and 61.01 inches, respectively) had been set in 2003. In Kentucky, Lexington's annual precipitation record was broken on December 1, as the total surpassed the 2011 standard of 66.35 inches. Meanwhile, November snowfall records were shattered in several Midwestern locations, including the Illinois cities of Rockford (15.8 inches, or 929 percent of normal) and Springfield (11.4 inches, or 1,900 percent). Previous snowfall records had been 14.8 inches in 1947 and 9.2 inches in 1951, respectively. Finally, Melbourne, FL, completed its warmest, driest autumn on record, while several communities from eastern Texas into the Mid-Atlantic States experienced a record-set autumn. Melbourne's September-November rainfall totaled 4.06 inches (26 percent of normal), well below the 1942 standard of 5.18 inches, while its autumn average temperature of 78.4°F tied a record first set in 2015. In contrast, September-November precipitation reached 29.21 inches in Dallas-Fort Worth, TX; 26.22 inches in Danville, VA; and 25.00 inches in Atlantic City, NJ. Meanwhile in West Virginia, autumn precipitation totals of 18.71 inches in Charleston and 17.69 inches in Beckley toppled records originally set in September-November 2003.

Above-normal November temperatures prevailed in Alaska, accompanied by variable precipitation. In fact, monthly readings averaged more than 8°F above normal at some interior locations, including King Salmon (+9.8°F); Fairbanks (+9.1°F); and McGrath (+8.9°F). Periods of abnormal warmth were embedded within the overall mild pattern. In King Salmon, consecutive daily-record highs (49 and 51°F, respectively) occurred on November 11-12. Daily-record highs were set on November 17 in locations such as Sitka (54°F) and Yakutat (50°F). On November 18-19, consecutive daily-record highs were reported in Juneau (50 and 51°F) and Yakutat (52 and 50°F). About a week later, additional daily-record highs were noted in Sitka (54°F on November 25) and Yakutat (50°F on November 26). Meanwhile, some of the heaviest precipitation fell in south-central Alaska, where Kodiak's monthly precipitation totaled 13.59 inches (198 percent of normal). Prior to mid-month, significant precipitation reached as far north as Fairbanks, where snowfall on November 13-14 totaled 7.8 inches. At month's end, a major earthquake struck south-central Alaska, near Anchorage, on November 30. Meanwhile, a winter storm resulted in rising temperatures and heavy precipitation (rain, freezing rain, and snow) across portions of the Alaskan mainland. On November 30 – December 1, McGrath received precipitation totaling 1.18 inches and 6.7 inches of snow. In Bettles, snowfall on December 1 totaled 11.1 inches.

Dry conditions developed during November in many of Hawaii's leeward locations, while widespread showers affected windward slopes. Meanwhile, periods of warmth resulted in several daily-record highs. For example, Lihue, Kauai, tallied a trio of daily records (86, 85, and 85°F) from November 4-6. Later, Kahului, Maui, closed the month with a daily-record high of 89°F on November 30. At the state's major airport observation sites, November rainfall ranged from 0.34 inch (14 percent of normal) in Honolulu, Oahu, to 11.45 inches (74 percent) in Hilo, on the Big Island. In Lihue, where monthly rainfall totaled 3.73 inches (84 percent of normal), rainfall from November 28-30 totaled exactly an inch.

Fieldwork

Fieldwork summary provided by USDA/NASS

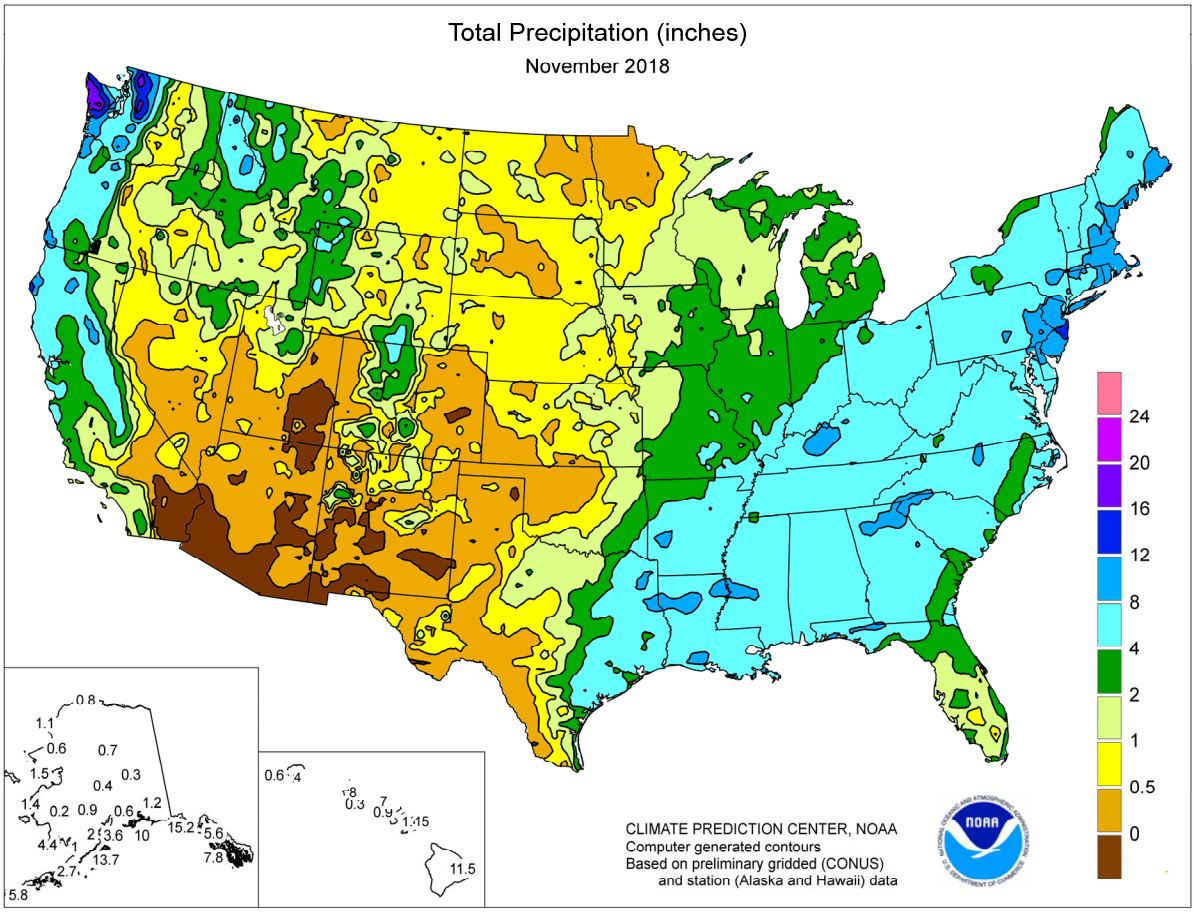
Monthly temperatures were generally below normal across the Great Lakes, Great Plains, Midwest, Mississippi Valley, and New England, all of which averaged more than 4°F below normal. Conversely, warmer-than-normal conditions prevailed in parts of the Pacific Northwest, California, and Florida, with temperatures averaging more than 2°F above normal in some areas. Precipitation was above normal across the eastern U.S., with parts of the Mid-Atlantic, New England, and Southeast receiving more than 6 inches of rain. In contrast, much of the southern Great Plains and the Southwest remained dry, receiving less than an inch of rain.

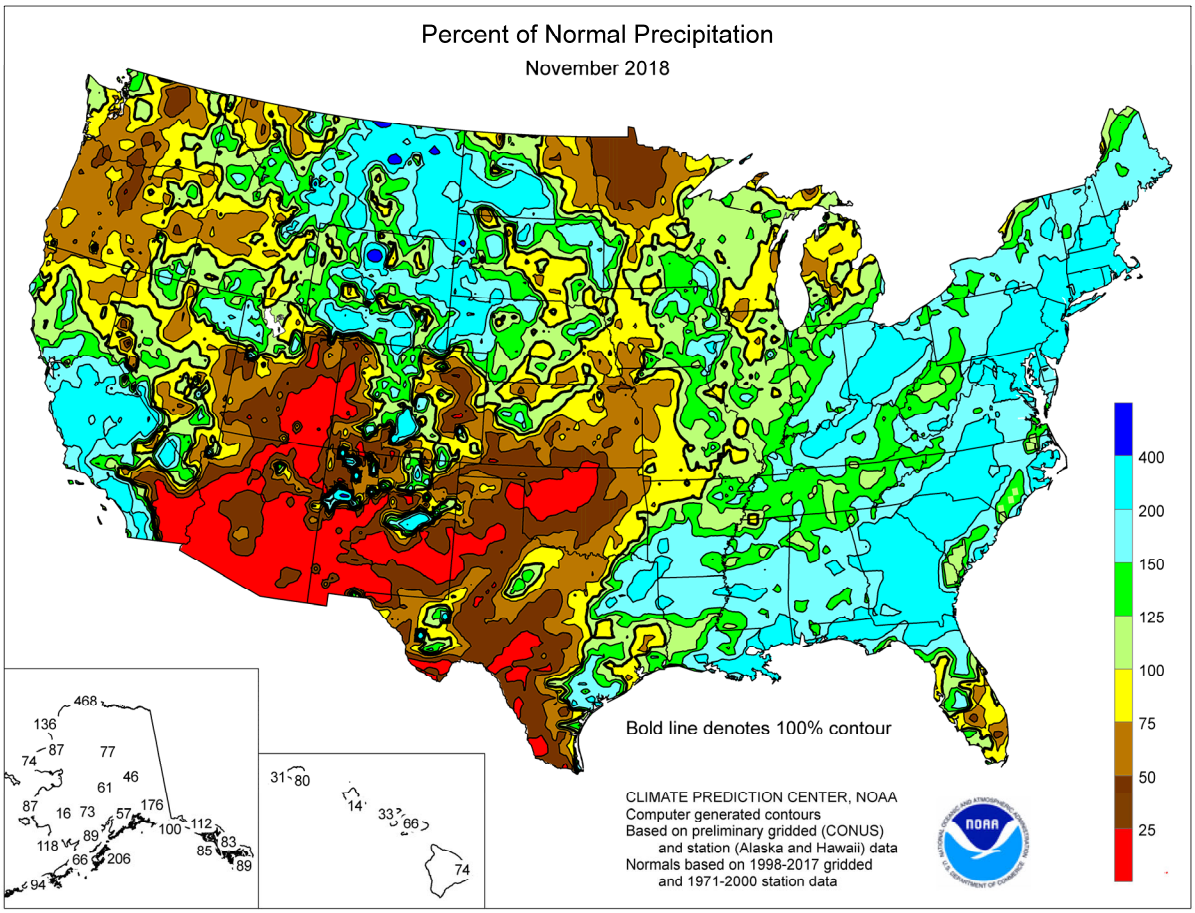
By November 4, seventy-six percent of the nation's corn acreage was harvested, 8 percentage points ahead of last year but 1 point behind the 5-year average. Nationally, corn was 84 percent harvested by November 11, three percentage points ahead of last year but 3 points behind average. By November 25, the corn harvest was 94 percent complete, equal to last year but 2 percentage points behind the 5-year average.

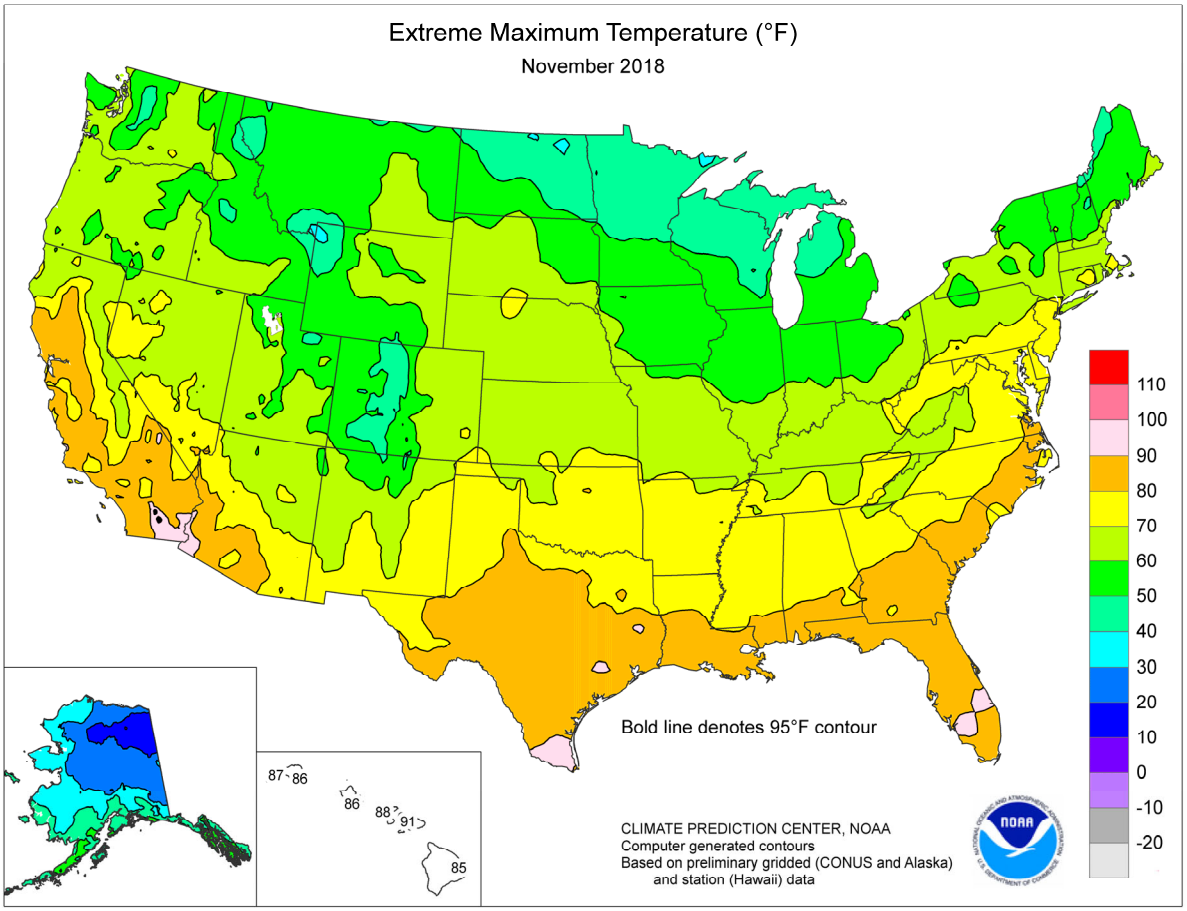
Eighty-three percent of the nation's soybean acreage was harvested by November 4, six percentage points behind both last year and the 5-year average. The nation's soybean harvest was 88 percent complete by November 11, five percentage points behind both last year and the average. The soybean harvest was 94 percent complete by November 25, five percentage points behind last year and 4 points behind average.

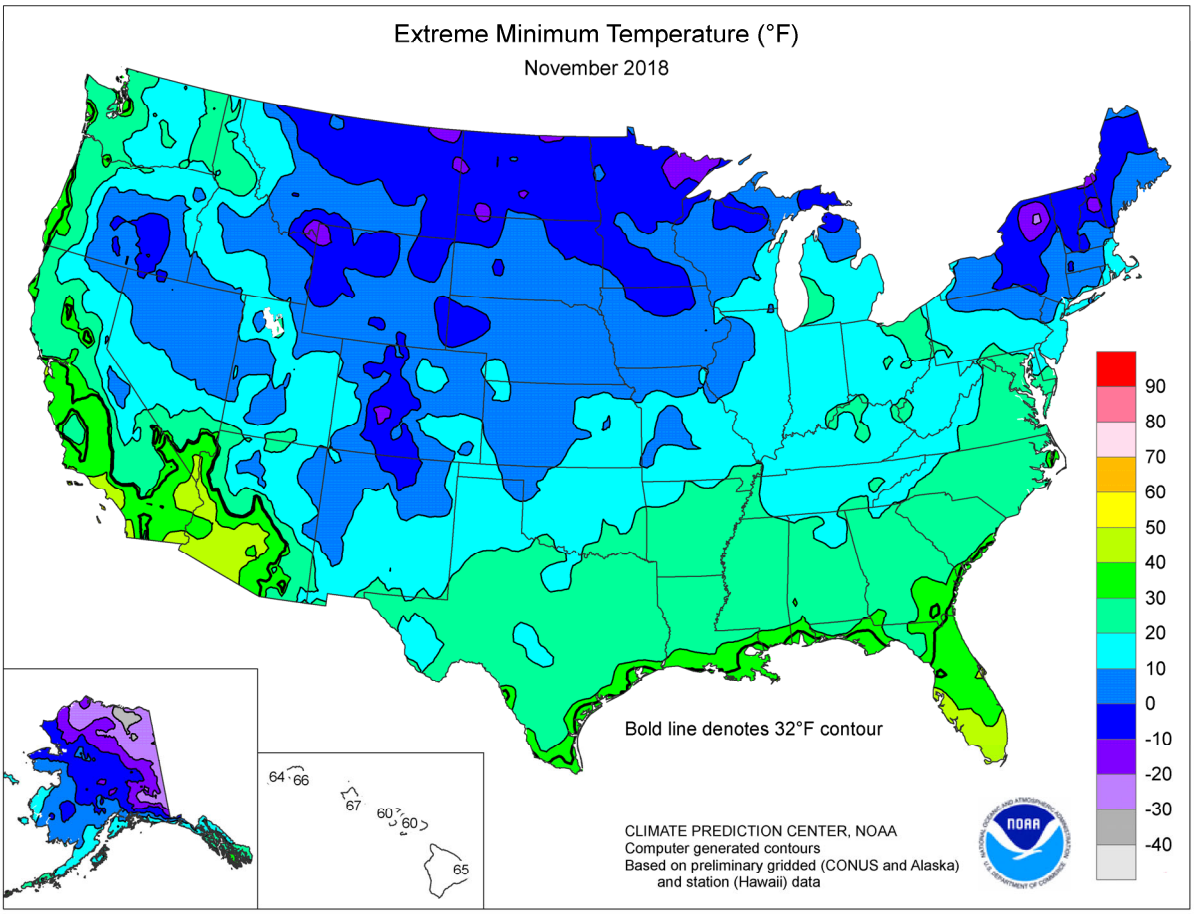
By November 4, producers had sown 84 percent of the nation's 2019 winter wheat acreage, 6 percentage points behind both last year and the 5-year average. Nationally, emergence was 70 percent complete by November 4, four percentage points behind last year and 7 points behind average. By November 11, producers had sown 89 percent of the nation's winter wheat, 5 percentage points behind both last year and the average. Nationally, emergence was 77 percent complete by November 11, six percentage points behind both last year and the average. By November 25, producers had sown 95 percent of the nation's winter wheat, 4 percentage points behind both last year and the average. By November 25, emergence was 86 percent complete, 5 percentage points behind last year and 6 points behind average. Overall, 55 percent of the winter wheat was rated in good to excellent condition by November 25, five percentage points above the same time last year.

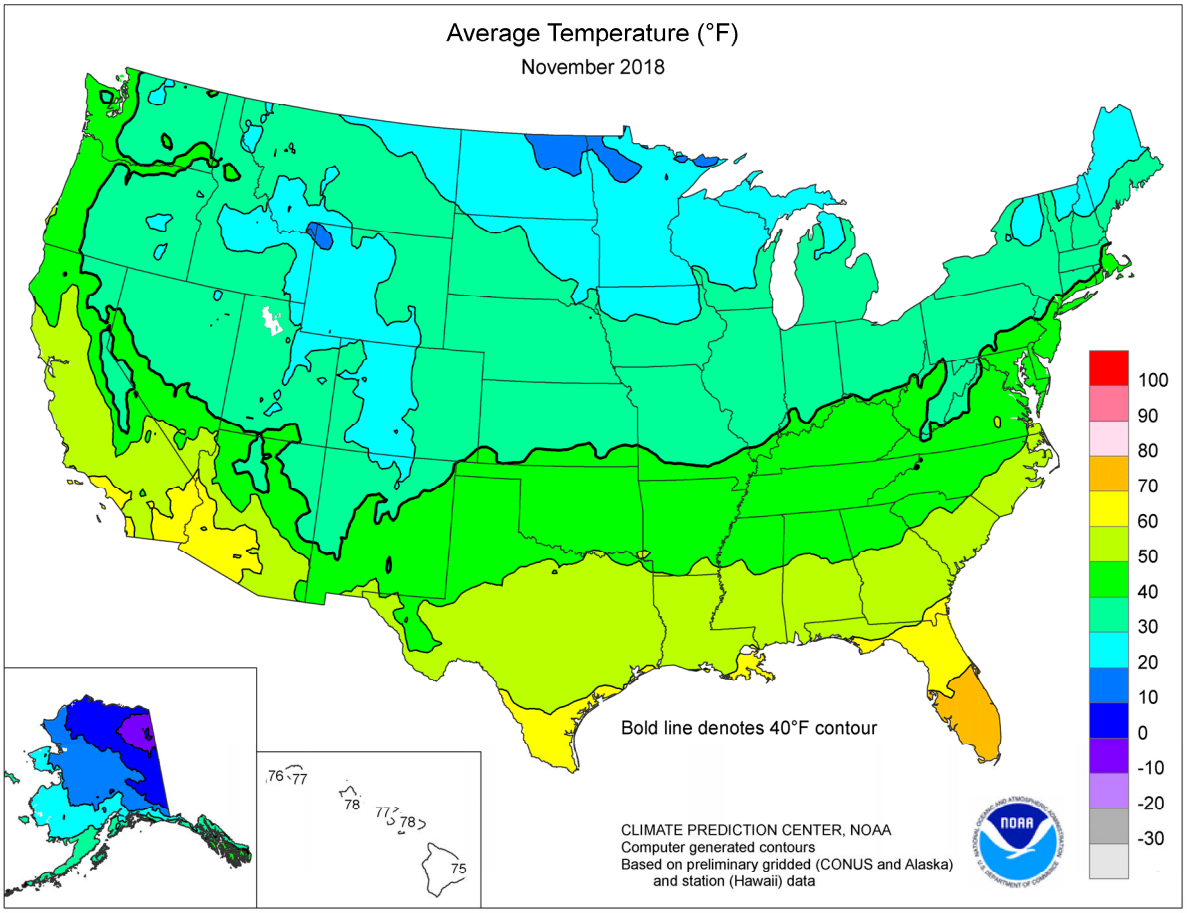
(Continued on back cover)

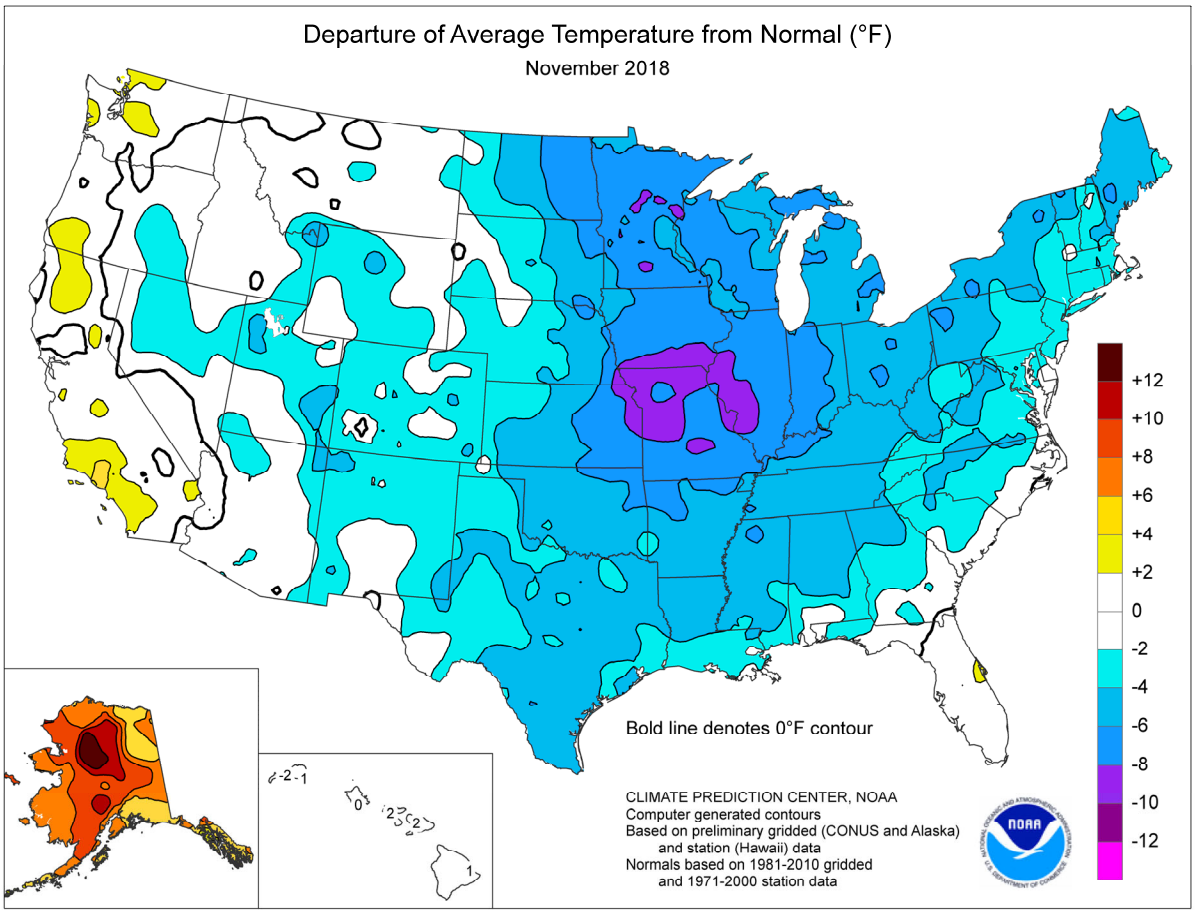

Total Precipitation (inches)
November 2018
24
20
16
12
8
4
2
1
0.5
0
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS)
and station (Alaska and Hawaii) data
NOAA


Percent of Normal Precipitation
November 2018
400
200
150
125
100
75
50
25
Bold line denotes 100% contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS)
and station (Alaska and Hawaii) data
Normals based on 1998-2017 gridded
and 1971-2000 station data
NOAA


Extreme Maximum Temperature (°F)
November 2018
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
87
86
86
88
91
85
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)
November 2018
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
64
66
67
60
60
65
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)
November 2018
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


Departure of Average Temperature from Normal (°F)
November 2018
+12
+10
+8
+6
+4
+2
0
-2
-4
-6
-8
-10
-12
Bold line denotes 0°F contour
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data
Normals based on 1981-2010 gridded
and 1971-2000 station data
NOAA

National Weather Data for Selected Cities

November 2018

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
AL BIRMINGHAM	49	-4	5.64	1.01	LEXINGTON	42	-4	5.82	2.38	COLUMBUS	39	-5	6.10	2.91
HUNTSVILLE	48	-3	6.27	1.05	LONDON-CORBIN	42	-5	5.73	1.83	DAYTON	38	-4	5.69	2.39
MOBILE	57	-2	6.29	0.88	LOUISVILLE	43	-5	5.06	1.26	MANSFIELD	35	-5	5.35	1.59
MONTGOMERY	53	-3	5.63	1.10	PADUCAH	42	-5	4.30	-0.23	TOLEDO	37	-3	4.12	1.34
AK ANCHORAGE	30	8	1.46	0.37	LA BATON ROUGE	57	-2	5.66	0.90	YOUNGSTOWN	37	-4	4.87	1.80
BARROW	8	9	0.69	0.53	LAKE CHARLES	59	-1	4.41	-0.20	OK OKLAHOMA CITY	44	-5	0.55	-1.56
COLD BAY	40	5	4.54	-0.25	NEW ORLEANS	60	-1	7.58	2.49	TULSA	45	-5	1.67	-1.80
FAIRBANKS	12	10	0.68	0.00	SHREVEPORT	52	-4	8.43	3.75	OR ASTORIA	49	2	7.77	-2.73
JUNEAU	38	5	5.59	0.16	ME BANGOR	32	-5	7.00	3.31	BURNS	31	-2	0.78	-0.33
KING SALMON	33	10	1.00	-0.54	CARIBOU	28	-3	5.04	1.92	EUGENE	46	1	3.45	-4.99
KODIAK	39	5	13.59	6.96	PORTLAND	35	-3	10.26	5.54	MEDFORD	47	3	1.39	-1.54
NOME	25	8	1.49	0.21	MD BALTIMORE	44	-2	8.14	5.02	PENDLETON	40	-1	0.72	-0.91
AZ FLAGSTAFF	36	-1	0.76	-1.10	MA BOSTON	43	-2	9.26	5.28	PORTLAND	48	2	2.86	-2.75
PHOENIX	64	2	0.35	-0.38	WORCESTER	36	-4	10.00	5.66	SALEM	47	2	3.86	-2.53
TUCSON	60	1	0.07	-0.60	MI ALPENA	30	-5	2.98	0.90	PA ALLENTOWN	41	-1	9.72	6.02
AR FORT SMITH	46	-5	1.67	-3.13	DETROIT	37	-4	3.63	0.97	ERIE	38	-5	5.17	1.21
LITTLE ROCK	47	-5	4.58	-1.15	FLINT	33	-5	2.76	0.11	MIDDLETOWN	42	-2	8.56	5.04
CA BAKERSFIELD	58	3	0.68	0.09	GRAND RAPIDS	35	-3	3.33	-0.02	PHILADELPHIA	44	-3	9.03	5.87
EUREKA	51	0	4.94	-0.84	HOUGHTON LAKE	30	-5	2.64	0.50	PITTSBURGH	37	-5	4.57	1.55
FRESNO	58	5	1.67	0.57	LANSING	33	-5	2.87	0.21	WILKES-BARRE	38	-4	6.54	3.42
LOS ANGELES	65	3	2.08	0.95	MUSKEGON	35	-4	4.07	0.84	WILLIAMSPORT	38	-3	6.05	2.43
REDDING	55	4	6.50	2.47	TRAVERSE CITY	33	-4	3.83	1.16	PR SAN JUAN	81	1	5.68	-0.49
SACRAMENTO	54	1	2.47	0.28	MN DULUTH	23	-5	2.67	0.55	RI PROVIDENCE	41	-3	10.57	6.17
SAN DIEGO	65	3	0.81	-0.26	INT'L FALLS	21	-3	0.76	-0.60	SC CHARLESTON	58	0	5.46	2.80
SAN FRANCISCO	57	2	3.07	0.58	MINNEAPOLIS	28	-5	1.95	0.01	COLUMBIA	53	-2	6.55	3.67
STOCKTON	55	2	2.25	0.48	ROCHESTER	26	-5	2.01	0.00	FLORENCE	53	-2	4.34	1.75
CO ALAMOSA	28	0	0.16	-0.32	ST. CLOUD	24	-5	1.42	-0.12	GREENVILLE	48	-3	8.31	4.52
CO SPRINGS	37	1	0.30	-0.22	MS JACKSON	51	-4	8.35	3.31	MYRTLE BEACH	57	0	3.65	0.68
DENVER	38	1	0.35	-0.25	MERIDIAN	53	-3	6.93	1.98	SD ABERDEEN	25	-4	1.13	0.38
GRAND JUNCTION	36	-2	0.19	-0.52	TUPELO	49	-2	7.70	2.69	HURON	28	-3	0.85	-0.04
PUEBLO	39	1	0.33	-0.25	MO COLUMBIA	37	-6	4.09	0.62	RAPID CITY	33	0	1.24	0.63
CT BRIDGEPORT	44	-1	7.36	3.71	JOPLIN	41	-6	2.02	-2.04	SIOUX FALLS	30	-1	1.83	0.47
HARTFORD	38	-4	8.25	4.19	KANSAS CITY	35	-8	2.59	0.29	TN BRISTOL	44	-2	5.04	1.96
DC WASHINGTON	46	-3	7.57	4.54	SPRINGFIELD	40	-6	3.06	-1.40	CHATTANOOGA	47	-3	7.35	2.47
DE WILMINGTON	43	-3	8.68	5.49	ST JOSEPH	34	-8	2.42	0.26	JACKSON	45	-5	4.80	-0.27
FL DAYTONA BEACH	68	1	2.82	-0.21	ST LOUIS	39	-6	3.74	0.03	KNOXVILLE	45	-4	5.95	1.97
FT LAUDERDALE	76	2	2.60	-1.97	MT BILLINGS	36	2	0.96	0.21	MEMPHIS	48	-4	4.25	-1.51
FT MYERS	73	1	1.50	-0.21	BUTTE	28	1	1.02	0.42	NASHVILLE	46	-3	5.49	1.04
JACKSONVILLE	63	1	5.21	2.87	GLASGOW	29	1	1.07	0.68	TX ABILENE	52	-2	0.28	-1.02
KEY WEST	80	4	1.21	-1.43	GREAT FALLS	33	1	1.15	0.56	AMARILLO	44	-1	0.40	-0.28
MELBOURNE	71	2	1.16	-1.96	HELENA	33	2	0.82	0.34	AUSTIN	56	-4	2.30	-0.38
MIAMI	76	2	2.77	-0.66	KALISPELL	32	1	1.23	-0.22	BEAUMONT	59	-2	7.12	2.37
ORLANDO	70	1	2.21	-0.11	MILES CITY	32	0	1.39	0.87	BROWNSVILLE	65	-3	1.90	0.15
PENSACOLA	59	-2	6.62	2.16	MISSOULA	32	0	2.57	1.61	COLLEGE STATION	56	-4	4.37	1.19
ST PETERSBURG	71	1	0.81	-1.23	NE GRAND ISLAND	35	-1	3.09	1.68	CORPUS CHRISTI	63	-2	3.20	1.46
TALLAHASSEE	59	-1	5.28	1.42	HASTINGS	35	-2	3.05	1.59	DALLAS/FT WORTH	52	-3	0.86	-1.71
TAMPA	71	2	1.03	-0.59	LINCOLN	33	-5	2.79	1.21	DEL RIO	58	-2	0.06	-0.90
WEST PALM BEACH	74	1	1.79	-3.76	MCCOOK	36	-2	1.74	0.65	EL PASO	54	1	0.01	-0.41
GA ATHENS	49	-4	7.35	3.64	NORFOLK	31	-4	2.24	0.80	GALVESTON	62	-3	2.19	-1.45
ATLANTA	50	-3	7.27	3.17	NORTH PLATTE	34	-1	1.90	1.14	HOUSTON	58	-3	1.76	-2.43
AUGUSTA	54	0	5.98	3.30	OMAHA/EPPLEY	34	-4	1.84	0.02	LUBBOCK	47	-1	0.07	-0.64
COLUMBUS	54	-3	6.17	2.20	SCOTTSBLUFF	35	1	1.79	0.99	MIDLAND	51	-1	0.04	-0.61
MACON	53	-2	5.58	2.36	VALENTINE	35	2	1.17	0.45	SAN ANGELO	52	-2	0.03	-1.07
SAVANNAH	59	0	3.64	1.24	NV ELKO	34	-1	1.07	0.02	SAN ANTONIO	56	-4	1.78	-0.80
HI HILO	75	1	11.45	-4.13	ELY	33	0	0.45	-0.18	VICTORIA	59	-4	2.25	-0.39
HONOLULU	77	-1	0.34	-1.92	LAS VEGAS	57	2	0.23	-0.08	WACO	53	-4	3.19	0.58
KAHULUI	77	1	1.43	-0.74	RENO	44	3	0.92	0.12	WICHITA FALLS	49	-3	0.23	-1.45
LIHUE	77	1	3.73	-0.97	WINNEMUCCA	35	-2	0.70	-0.10	UT SALT LAKE CITY	39	-1	1.05	-0.35
ID BOISE	39	-1	0.80	-0.58	NH CONCORD	33	-5	7.52	3.95	VT BURLINGTON	33	-4	5.48	2.42
LEWISTON	42	2	1.42	0.21	NJ ATLANTIC CITY	46	0	10.59	7.33	VA LYNCHBURG	43	-4	6.65	3.47
POCATELLO	33	-2	0.92	-0.21	NEWARK	44	-2	7.95	4.07	NORFOLK	52	0	4.13	1.15
IL CHICAGO/O'HARE	34	-5	3.24	0.23	NM ALBUQUERQUE	43	-1	0.00	-0.62	RICHMOND	47	-2	5.65	2.59
MOLINE	33	-6	3.03	0.30	NY ALBANY	37	-2	5.59	2.31	ROANOKE	44	-3	4.78	1.57
PEORIA	35	-5	3.16	0.17	BINGHAMTON	33	-5	6.07	2.75	WASH/DULLES	42	-3	7.69	4.38
ROCKFORD	32	-5	2.76	0.13	BUFFALO	35	-5	4.90	0.98	WA OLYMPIA	45	3	5.89	-2.24
SPRINGFIELD	35	-7	3.91	1.04	ROCHESTER	36	-4	4.54	1.70	QUILLAYUTE	47	3	16.35	1.53
IN EVANSVILLE	40	-6	4.14	-0.04	SYRACUSE	34	-6	6.32	2.55	SEATTLE-TACOMA	48	3	5.42	-0.48
FORT WAYNE	37	-4	3.86	0.88	NC ASHEVILLE	45	-1	7.16	3.34	SPOKANE	37	2	1.96	-0.28
INDIANAPOLIS	38	-5	3.54	-0.07	CHARLOTTE	49	-3	5.95	2.59	YAKIMA	38	1	0.42	-0.63
SOUTH BEND	34	-6	3.49	0.10	GREENSBORO	46	-3	6.46	3.50	WV BECKLEY	40	-3	5.83	2.95
IA BURLINGTON	33	-8	3.92	1.20	HATTERAS	59	1	11.27	6.34	CHARLESTON	42	-4	4.91	1.25
CEDAR RAPIDS	31	-6	2.70	0.46	RALEIGH	48	-3	7.10	4.13	ELKINS	39	-2	4.50	1.08
DES MOINES	32	-6	1.98	-0.12	WILMINGTON	56	0	6.12	2.86	HUNTINGTON	42	-4	5.21	1.89
DUBUQUE	30	-6	1.92	-0.57	ND BISMARCK	26	-2	1.41	0.71	WI EAU CLAIRE	27	-5	2.03	0.11
SIOUX CITY	31	-4	1.39	-0.01	DICKINSON	27	-2	1.37	0.78	GREEN BAY	31	-3	1.64	-0.63
WATERLOO	29	-6	2.43	0.33	FARGO	22	-5	0.91	-0.15	LA CROSSE	31	-4	2.72	0.62
KS CONCORDIA	37	-4	3.05	1.60	GRAND FORKS	19	-7	0.98	-0.01	MADISON	31	-4	2.02	-0.29
DODGE CITY	39	-3	0.51	-0.50	JAMESTOWN	22	-5	0.78	0.07	MILWAUKEE	34	-4	2.13	-0.57
GOODLAND	37	0	1.07	0.25	MINOT	24	-3	1.60	0.74	WAUSAU	26	-6	2.20	0.00
HILL CITY	38	-2	0.88	0.14	WILLISTON	27	1	0.94	0.29	WY CASPER	33	1	1.44	0.62
TOPEKA	37	-6	2.63	0.32	OH AKRON-CANTON	37	-4	4.48	1.44	CHEYENNE	34	1	1.14	0.50
WICHITA	41	-3	1.41	-0.41	CINCINNATI	40	-5	6.63	3.17	LANDER	29	-1	0.88	-0.11
KY JACKSON	43	-5	5.11	0.91	CLEVELAND	38	-4	5.47	2.09	SHERIDAN	33	2	1.03	0.23

Based on 1971-2000 normals

*** Not Available

International Weather and Crop Summary

December 2-8, 2018

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

HIGHLIGHTS

EUROPE: Rain eased drought in northern and northeastern crop areas, though the moisture came too late to aid winter crop establishment.

MIDDLE EAST: Moderate to heavy rain continued, alleviating dryness concerns in central Turkey while sustaining abundant to locally excessive moisture supplies for winter grains elsewhere.

NORTHWESTERN AFRICA: Sunny skies favored winter grain planting and establishment after a very wet autumn.

EASTERN ASIA: Colder weather returned to eastern China, easing wheat into dormancy, as showers to the south boosted moisture reserves for rapeseed and sugarcane.

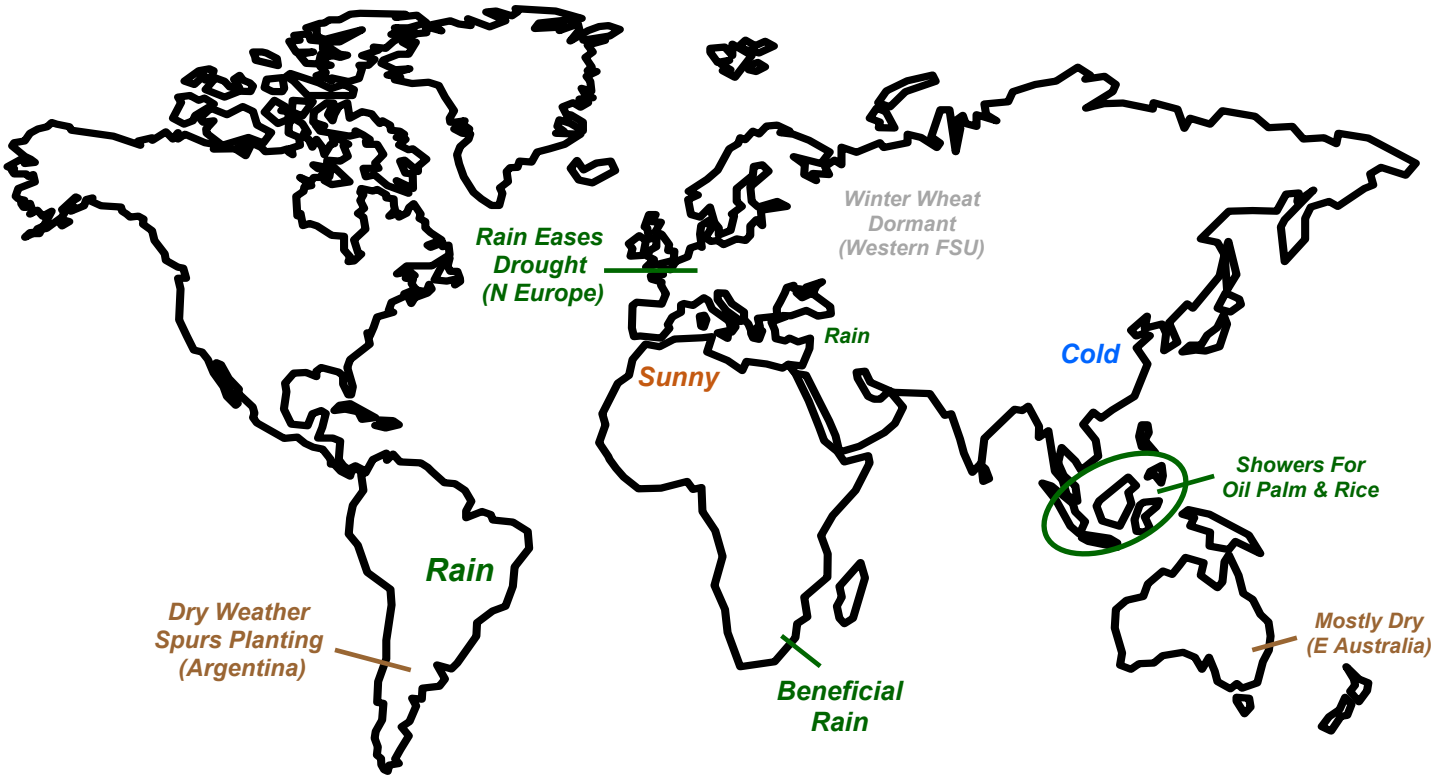
SOUTHEAST ASIA: Widespread showers maintained or improved soil moisture for rice in Indonesia and parts of the Philippines.

AUSTRALIA: Mostly dry weather reduced moisture supplies for summer crops but promoted uninterrupted winter crop harvesting.

SOUTH AFRICA: Showers helped to condition fields for planting in more westerly sections of the corn belt.

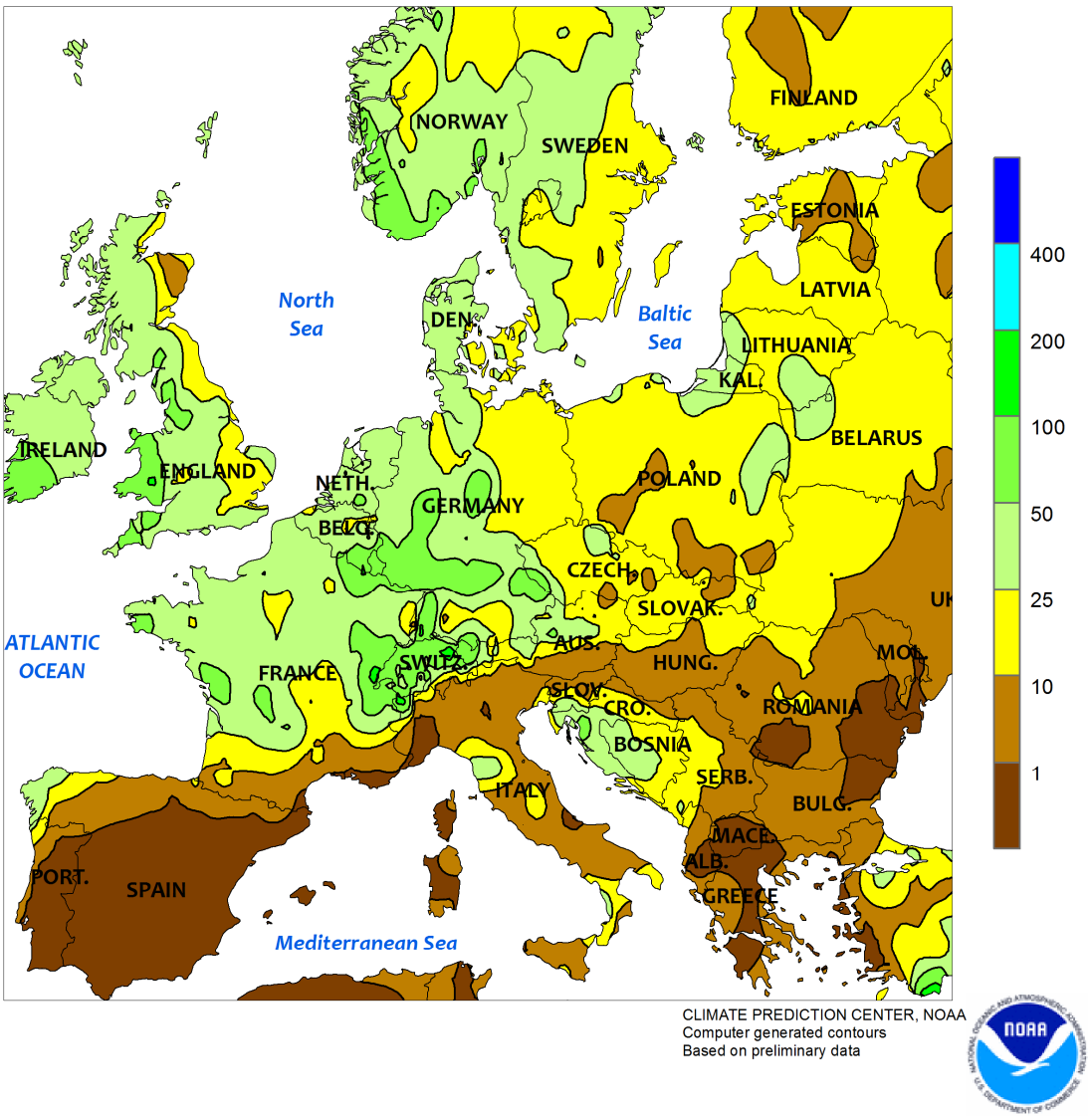
ARGENTINA: A second week of dryness spurred corn and soybean planting in central Argentina.

BRAZIL: Heavy rain maintained overall favorable prospects for soybeans and cotton in Brazil's northern production areas.



For additional information contact: mbrusberg@oce.usda.gov

EUROPE
Total Precipitation (mm)
DEC 2 - 8, 2018

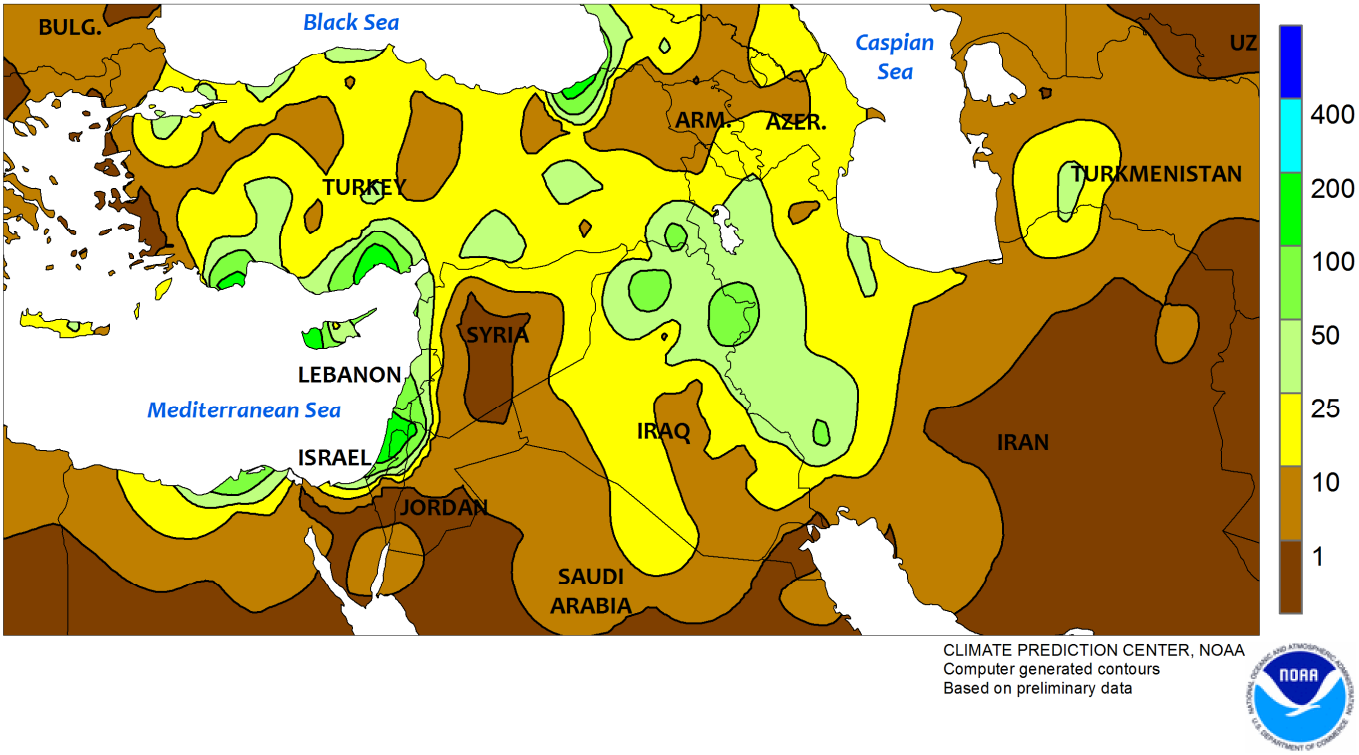


EUROPE

Wet weather expanded over central and northern Europe, while drier conditions prevailed across many southern growing areas. A slow-moving storm system produced 25 to 100 mm of rain and snow (liquid equivalent) over central and northern Europe, with somewhat lighter precipitation (10-35 mm) observed in northeastern portions of the continent. The rainfall alleviated any lingering long-term moisture deficits in northern France and southeastern England. More importantly, the rain and wet snow eased drought in Germany, Poland, Scandinavia, and the Low Countries, although long-term moisture deficits persisted in northeastern Germany and northwestern Poland. The moisture improvements in Europe's autumn drought areas (Germany and environs, as well as the upper Danube River Valley) likely arrived too late in the season to improve establishment prospects for now-dormant winter crops, and some producers will likely have to replant in the spring. In contrast, drier weather enabled fieldwork and winter grain development across the southern third of the continent, though moderate to heavy showers (10-40 mm) were reported in parts of Italy and the western Balkans. Temperatures averaged 2 to 7°C above normal over Europe, save for lingering chilly conditions (up to 6°C below normal) in the lower Danube River Valley.

For additional information contact: mbrusberg@oce.usda.gov

MIDDLE EAST
Total Precipitation (mm)
DEC 2 - 8, 2018



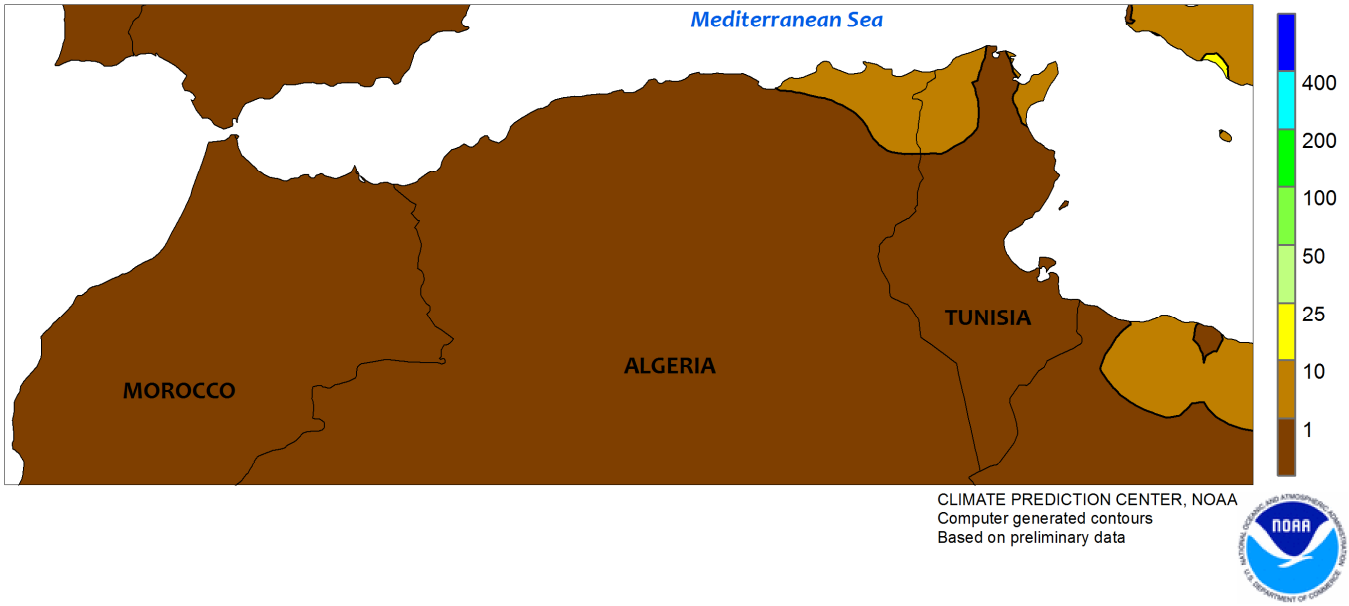
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

MIDDLE EAST

Wet weather slowed fieldwork but maintained or improved moisture supplies for winter grains. A slow-moving storm system produced rain and mountain snow (10-100 mm liquid equivalent, locally more) from Turkey into western and northern Iran. The precipitation was especially welcomed on the Anatolian Plateau in central Turkey, where autumn drought limited moisture for winter grain establishment. Recent rain in this key wheat and barley region has improved prospects for crop establishment prior to dormancy (typically by mid-December). Otherwise, many Middle Eastern winter grain areas are in need of drier weather to complete sowing efforts and other seasonal fieldwork, especially in central portions of the region. Temperatures up to 4°C above normal in Turkey extended the window for wheat and barley establishment in previously-dry central growing areas. Elsewhere, near- to above-normal temperatures facilitated crop growth in locales where producers have been able to sow winter grains.

For additional information contact: mbrusberg@oce.usda.gov

NORTHWESTERN AFRICA
Total Precipitation (mm)
DEC 2 - 8, 2018

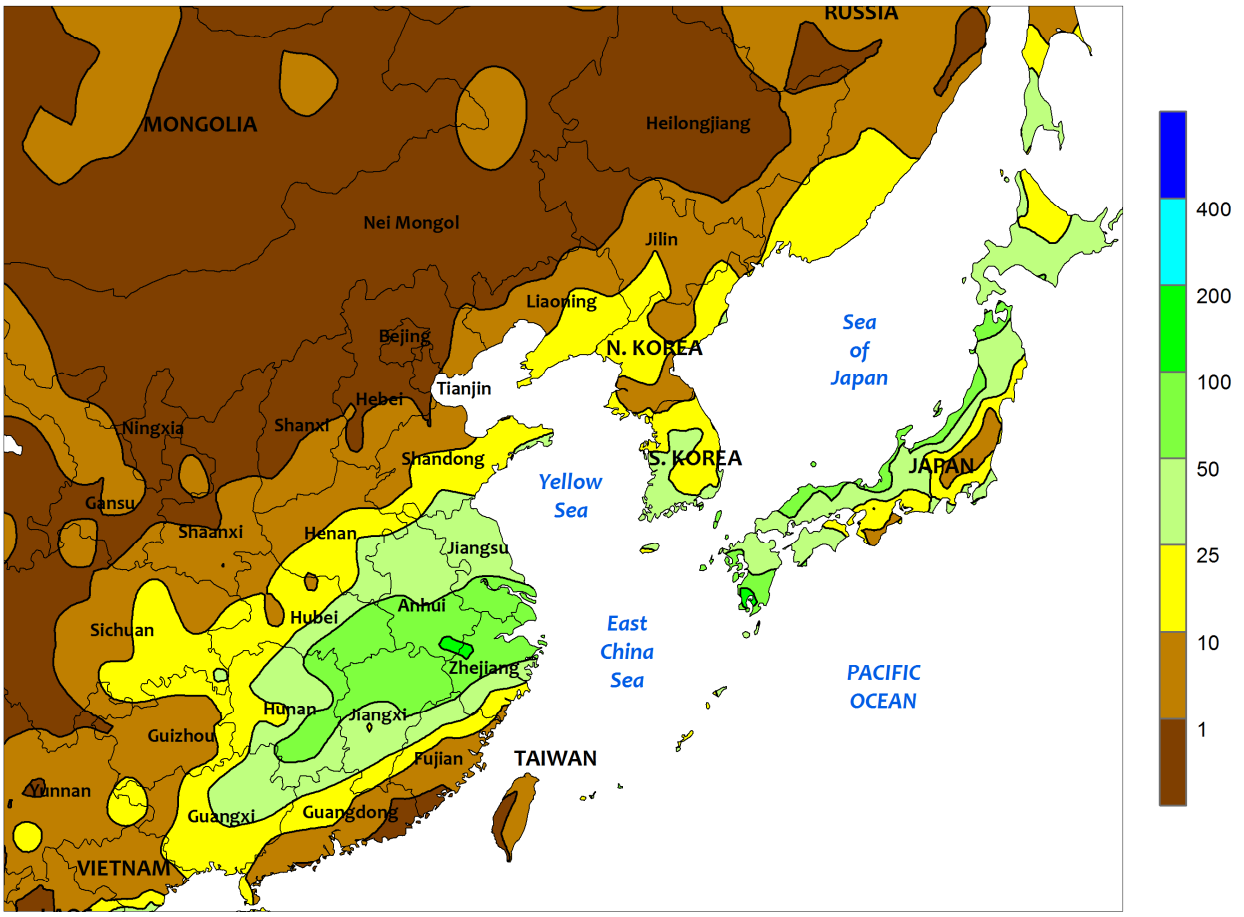


NORTHWESTERN AFRICA

Outside of a few lingering showers in the east, sunny skies provided a welcomed opportunity for winter grain planting and establishment. In particular, dry weather allowed producers to accelerate wheat and barley sowing efforts delayed by a wet autumn in Morocco and parts of Algeria. Likewise, mostly dry weather in the northeastern quarter of the region favored late winter grain planting and other seasonal fieldwork, though a few light showers (1-7 mm) were noted.

For additional information contact: mbrusberg@oce.usda.gov

EASTERN ASIA
Total Precipitation (mm)
DEC 2 - 8, 2018



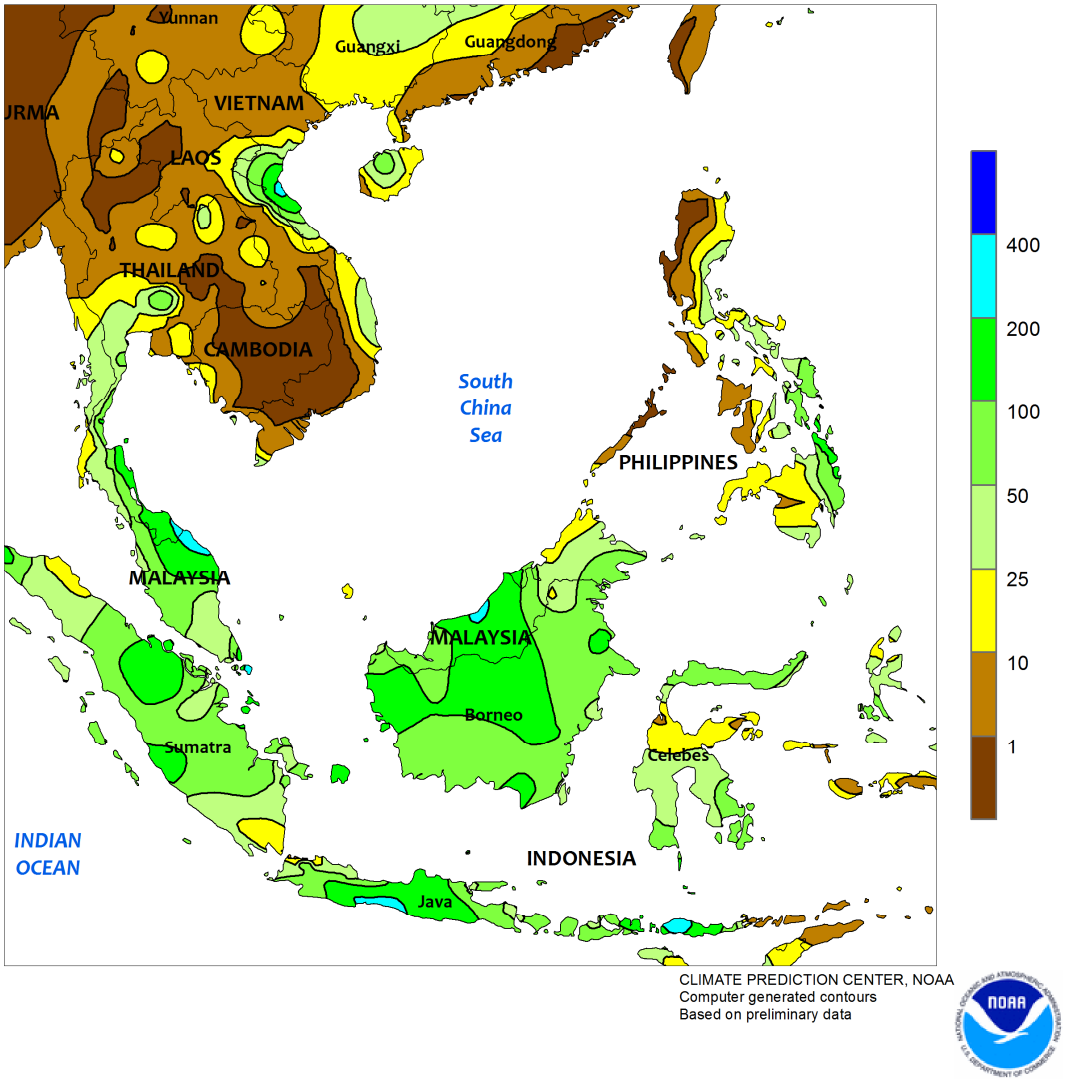
EASTERN ASIA

Colder weather returned to eastern China, with minimum temperatures below 0°C extending into the eastern Yangtze Valley. In addition, average temperatures on the North China Plain fell below 5°C, easing wheat into dormancy. Meanwhile, early-week showers (south) and light snow (north) extended from the North China Plain to the southernmost provinces. The rainfall added to soil moisture reserves for winter crop green-up in the early spring, while also boosting soil moisture for vegetative sugarcane and vegetables in the south.

This is the final weekly summary of the season; coverage will resume in Spring 2019.

For additional information contact: mbrusberg@oce.usda.gov

SOUTHEAST ASIA
Total Precipitation (mm)
DEC 2 - 8, 2018

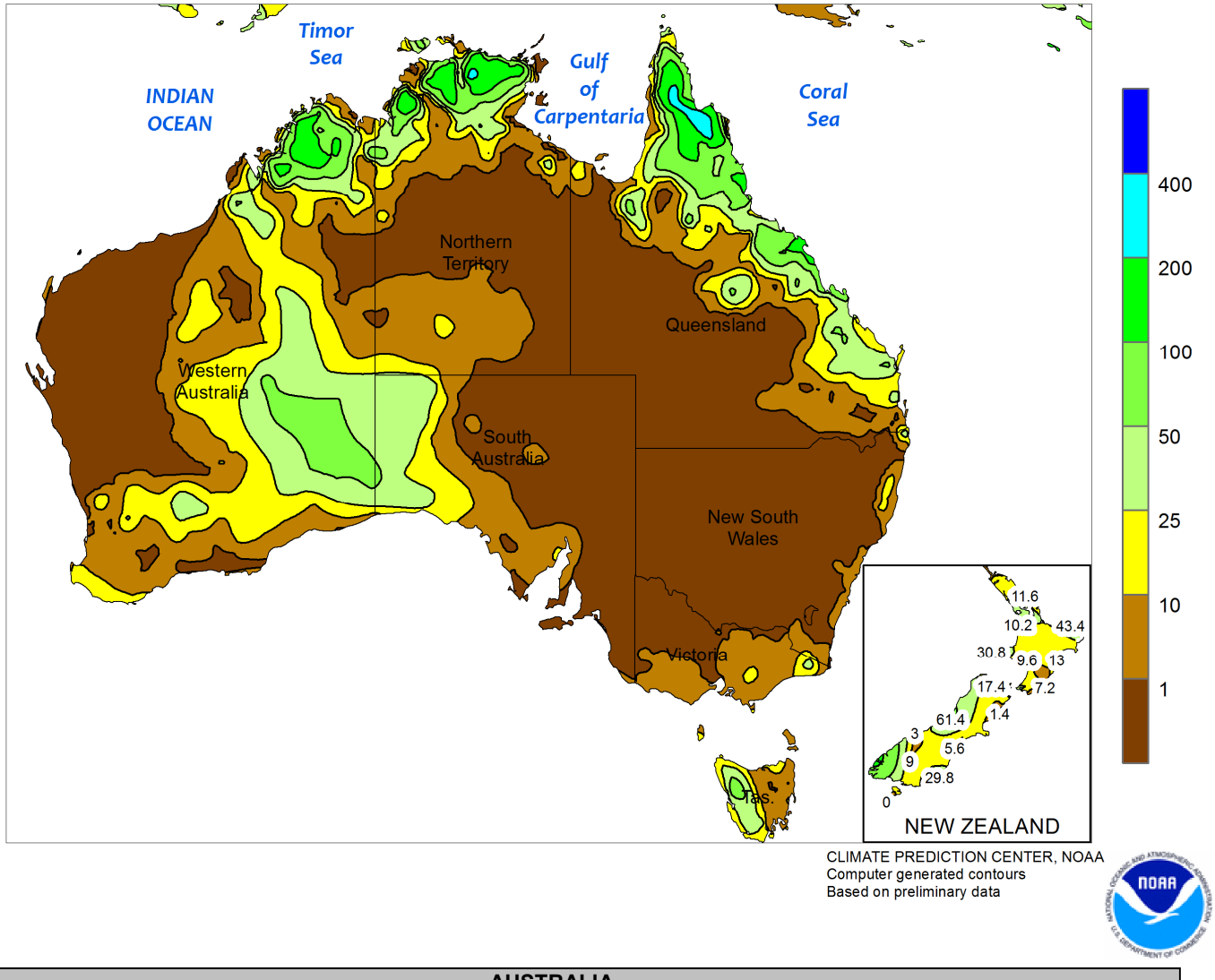


SOUTHEAST ASIA

Seasonably wet weather prevailed across Malaysia and Indonesia, benefiting oil palm and rice. Rainfall totals ranged between 25 and 100 mm (locally more), improving short-term moisture conditions, particularly in Java, Indonesia, where seasonal showers had been slow to develop. However, longer-term (three months) moisture conditions in central portions of Java remained nearly 50 percent below average. Meanwhile, showers (20-50 mm or more) in the eastern Philippines aided rice and corn, but more rainfall would be welcomed in the northeast (totals since October 1 were below 50 percent of the long-term average). Elsewhere, brief periods of light showers (less than 25 mm) added to irrigation supplies for dry-season rice across Indochina.

For additional information contact: mbrusberg@oce.usda.gov

AUSTRALIA
Total Precipitation (mm)
DEC 2 - 8, 2018



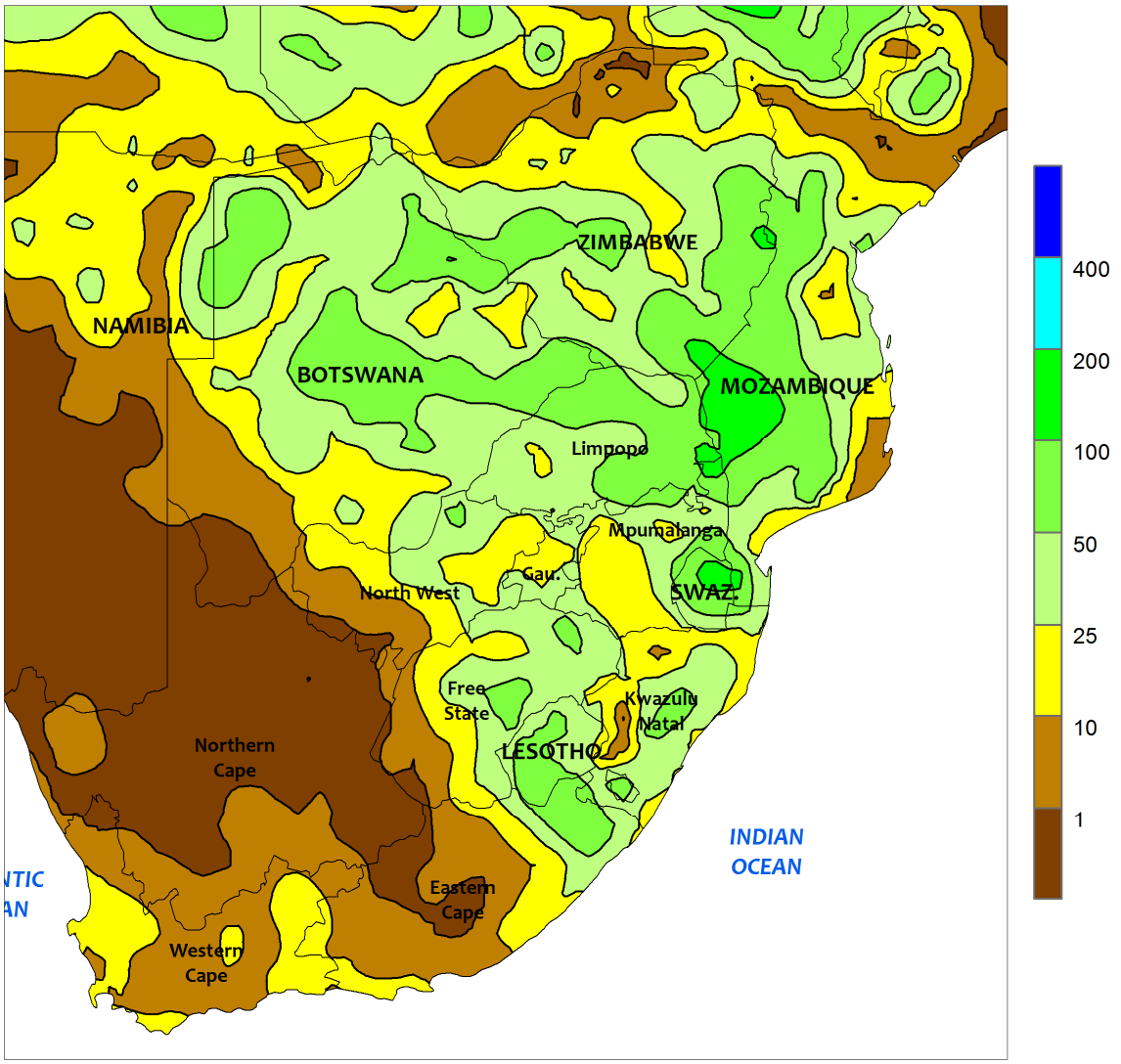
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

AUSTRALIA

In eastern Australia, soaking rain (15-50 mm, locally near 100 mm) along coastal Queensland benefited sugarcane development but likely slowed local harvesting. In contrast, mostly dry weather in interior Queensland and northern New South Wales favored fieldwork but reduced topsoil moisture for sorghum while increasing irrigation requirements for cotton. Elsewhere in the wheat belt, mostly dry weather in southeastern and western Australia promoted uninterrupted wheat, barley, and canola harvesting. Temperatures averaged near normal in Western Australia, 2 to 4°C above normal in southeastern Australia, and about 1°C above normal in the Queensland and New South Wales border region.

For additional information contact: mbrusberg@oce.usda.gov

SOUTH AFRICA
Total Precipitation (mm)
DEC 2 - 8, 2018

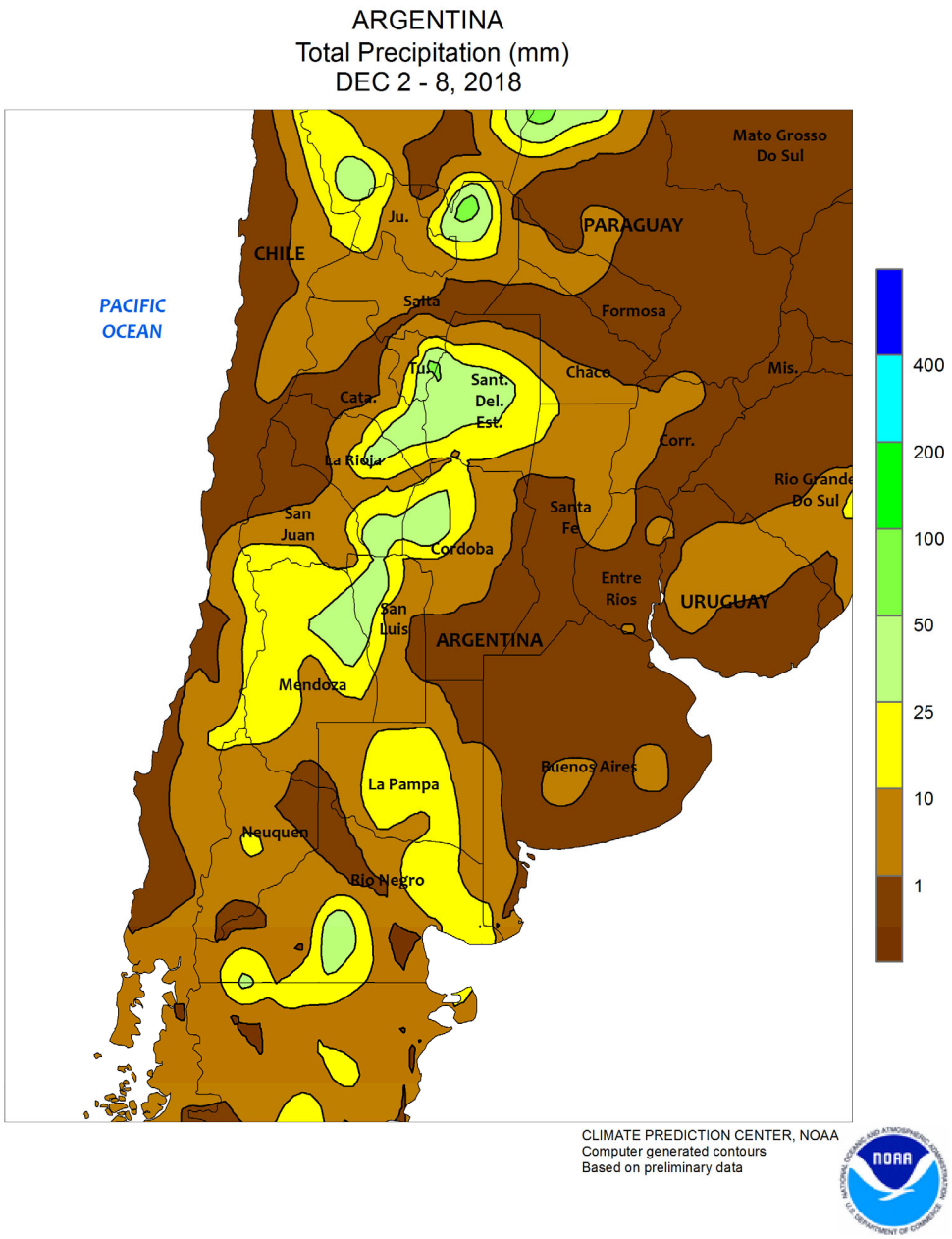


CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary data

SOUTH AFRICA

Scattered showers continued across the corn belt, helping to condition fields in western production areas for planting. Rainfall totaling 5 to 25 mm, locally reaching 50 mm, overspread the region, reaching far western production areas in North West and Free State. Western plantings typically occur in December, making the rainfall especially timely; however, unseasonable warmth (daytime highs reaching middle and upper 30s degrees C on several days) maintained high evaporative losses, and additional rain is needed to more fully recharge levels of topsoil moisture for uniform germination. Elsewhere, moderate showers (10-50 mm) also boosted moisture for sugarcane and other crops in KwaZulu-Natal and neighboring locations in Eastern Cape but hotter (daytime highs reaching 40°C locally), mostly dry weather spurred rapid development of irrigated sugarcane in eastern Mpumalanga. Meanwhile, unseasonable rain (locally greater than 10 mm) fell in tree and vine crop areas of Western Cape, providing an unseasonable boost in moisture but making developing fruit unfavorably damp.

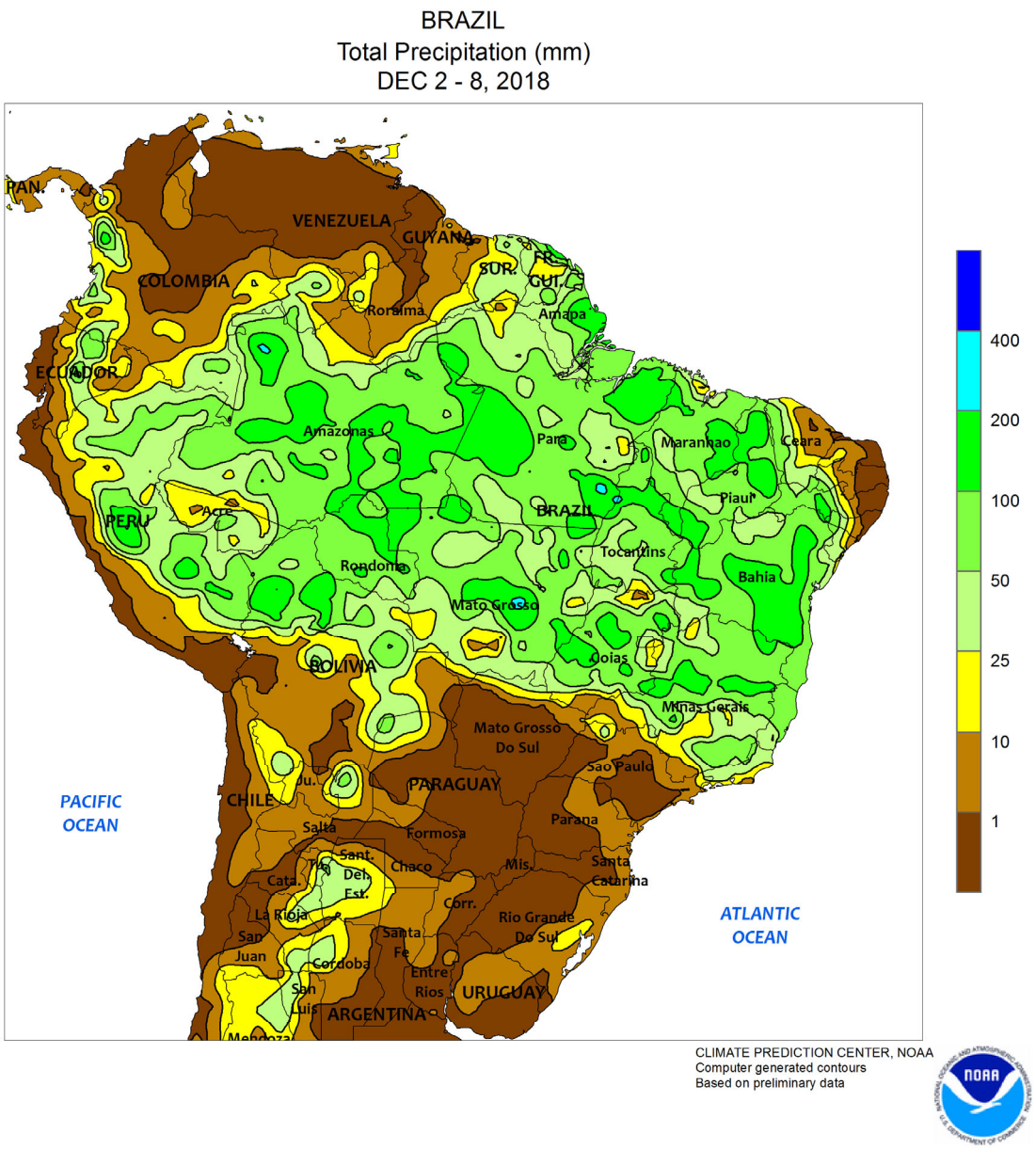
For additional information contact: mbrusberg@oce.usda.gov



ARGENTINA

Drier- and cooler-than-normal weather dominated most major farming areas, aiding later stages of summer crop planting. An exception to the dryness was a large section of the northwest (northern Cordoba to Salta), where amounts locally exceeded 25 mm. It was the second week of dryness in central Argentina (La Pampa, Buenos Aires, and neighboring locations in Cordoba, Santa Fe, and Entre Rios), allowing corn and soybean planting to progress rapidly. Similarly, dry weather in the northeast (notably northern Santa Fe, Cordoba, Formosa, and Corrientes) favored fieldwork that included cotton planting. Weekly temperatures averaged up to 4°C below normal throughout the region, though daytime highs occasionally reached the lower and middle 30s (degrees C) from La Pampa and western Buenos Aires northward. Nighttime lows fell below 5°C in traditionally-cooler locations in southern Buenos Aires but no freeze was reported.

For additional information contact: mbrusberg@oce.usda.gov



BRAZIL

Abundant rainfall maintained overall favorable crop prospects in key soybean and cotton areas. Amounts totaling 50 mm to more than 100 mm spanned a large area stretching from Mato Grosso eastward into Minas Gerais and the northeastern interior. The frequent rain also helped to keep temperatures down to seasonable levels (daytime highs reaching the lower and middle 30s degrees C). In contrast to the beneficial northern rain, dry weather dominated the south, with little to no rain falling from Mato Grosso do Sul and southern Sao Paulo southward. Although moisture supplies are generally favorable in the south for development of soybeans and first-crop corn, a return to a more normal pattern of rainfall will be needed eventually to sustain current favorable yield prospects. According to the government of Parana, first-crop corn and soybeans were both approximately 40 percent in the reproductive to filling states as of December 3.

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U.S. Crop Production Highlights

The following information was released by USDA's Agricultural Statistics Board on December 11, 2018. Forecasts refer to December 1.

Cotton production is forecast at 18.6 million 480-pound bales, up 1 percent from November but down 11 percent from last year. Yield is expected to average 860 pounds per harvested acre, up 8 pounds from last month but down 45 pounds from last year. Upland cotton production is forecast at 17.8 million 480-pound bales, down 12 percent from 2017. Pima cotton production of 771,000 bales was carried forward from an earlier forecast.

The **U.S. all orange** forecast for the 2018-2019 season is 5.53 million tons, unchanged from last month but up 41 percent from the 2017-2018 final utilization.

The Florida all orange forecast, at 77.0 million boxes (3.47 million tons), is unchanged from last month but up 71 percent from last season. Early, midseason, and Navel varieties in Florida are forecast at 32.0 million boxes (1.44 million tons), unchanged from last month but up 69 percent from last season. The Florida Valencia orange forecast, at 45.0 million boxes (2.03 million tons), is unchanged from last month but up 73 percent from last season's final utilization.

California and Texas orange production forecasts were carried forward from the previous month.

(Continued from page 11)

Ninety-four percent of the nation's cotton had bolls opening by November 4, two percentage points behind last year and 3 points behind the 5-year average. The nation's cotton was 49 percent harvested by November 4, four percentage points behind last year and 3 points behind average. Overall, 33 percent of the cotton was rated in good to excellent condition by November 4, two percentage points below the previous week and 22 points below the same time last year. By November 11, ninety-six percent of the nation's cotton had bolls opening, 2 percentage points behind both last year and the average. By November 11, fifty-four percent of the cotton was harvested. This was 9 percentage points behind last year and 7 points behind average. By November 25, seventy percent of the nation's cotton was harvested, 8 percentage points behind last year and 7 points behind average.

By November 4, ninety-seven percent of the nation's sorghum was mature, 1 percentage point behind both last year and the 5-year average. Producers had harvested 64 percent of the sorghum by November 4, six percentage points behind last year and 12 points behind average. By November 11, producers had harvested 73 percent of the sorghum, 8 percentage points behind last year and 11 points behind average. By November 25, producers had harvested 89 percent of the nation's sorghum, 5 percentage points behind both last year and the 5-year average.

By November 4, seventy-five percent of the nation's peanuts were harvested, 6 percentage points behind both last year and the 5-year average. By November 25, ninety-one percent of the peanuts were harvested, six percentage points behind last year and 5 points behind average.

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