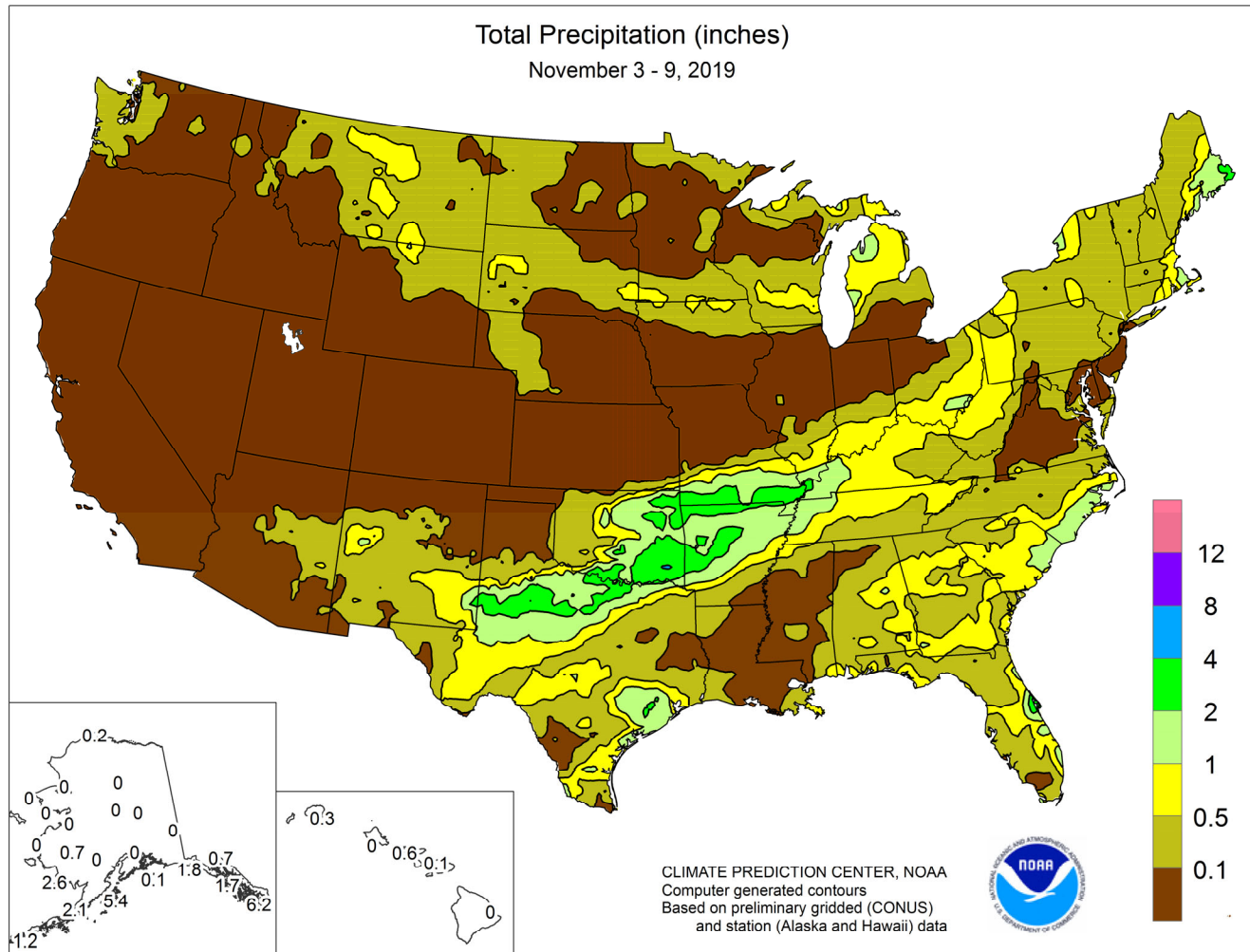# WEEKLY WEATHER AND CROP BULLETIN

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

Total Precipitation (inches)
November 3 - 9, 2019

CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS)
and station (Alaska and Hawaii) data

HIGHLIGHTS
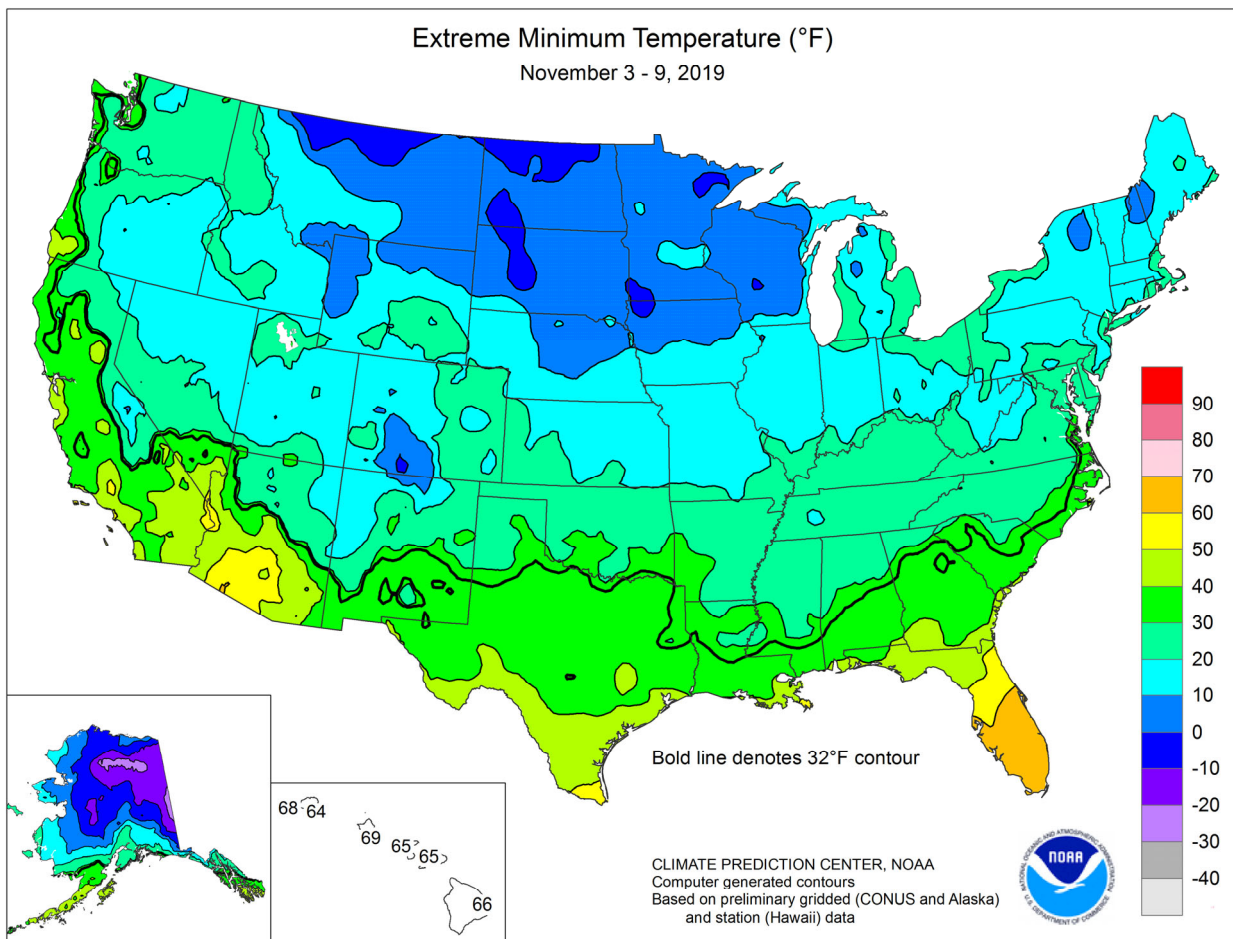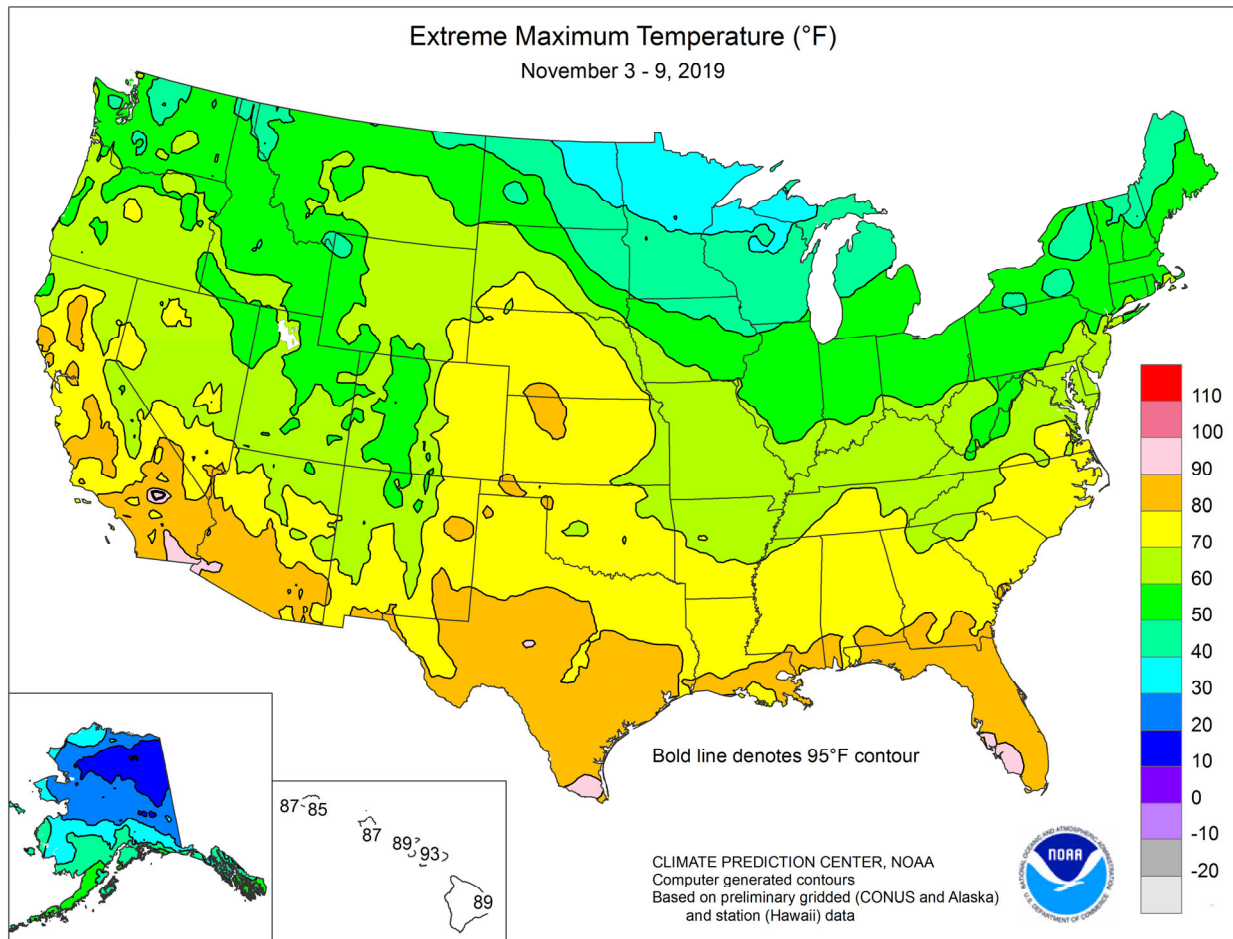## November 3-9, 2019
Highlights provided by USDA/WAOB

In advance of a late-week surge of cold air, rain (locally 1 to 2 inches or more) slowed or halted fieldwork from the **southern Plains into the Ohio Valley**. Periods of rain also affected the **Southeast** and the **western Gulf Coast region**. Meanwhile, snow fell across the **North**, mainly from the **northern Plains into the Great Lakes region**. The most significant accumulations occurred at mid-week, when 2- to 6-inch totals were common across the **northern Corn Belt**. Precipitation also fell in the **Northeast**, although heavy rain was generally confined to

(Continued on page 3)

Extreme Maximum Temperature (°F)
November 3 - 9, 2019

Bold line denotes 95°F contour

87 85

87   89   93

89

CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data

Extreme Minimum Temperature (°F)
November 3 - 9, 2019

Bold line denotes 32°F contour

68 64

69   65   65

66

CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data

(Continued from front cover)

coastal New England. Dry weather favored harvest activities in other parts of the country, including most of the **West**. The wet season has been slow to develop in **California**, the **Great Basin**, and the **Intermountain West**. Elsewhere, cold conditions greatly eased across the **West**. However, chilly weather lingered **east of the Rockies**, except in **southern Florida**, where weekly temperatures averaged as much as 5°F above normal. Above-normal temperatures also covered much of **California**, the **Great Basin**, and the **Desert Southwest**. In contrast, temperatures averaged at least 10°F below normal across portions of the **northern Plains** and **upper Midwest**—and were more than 5°F below in a broader area covering the **Mississippi Valley**, **Corn Belt**, and **Northeast**.

Departure of Average Temperature from Normal (°F)
November 3 - 9, 2019

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
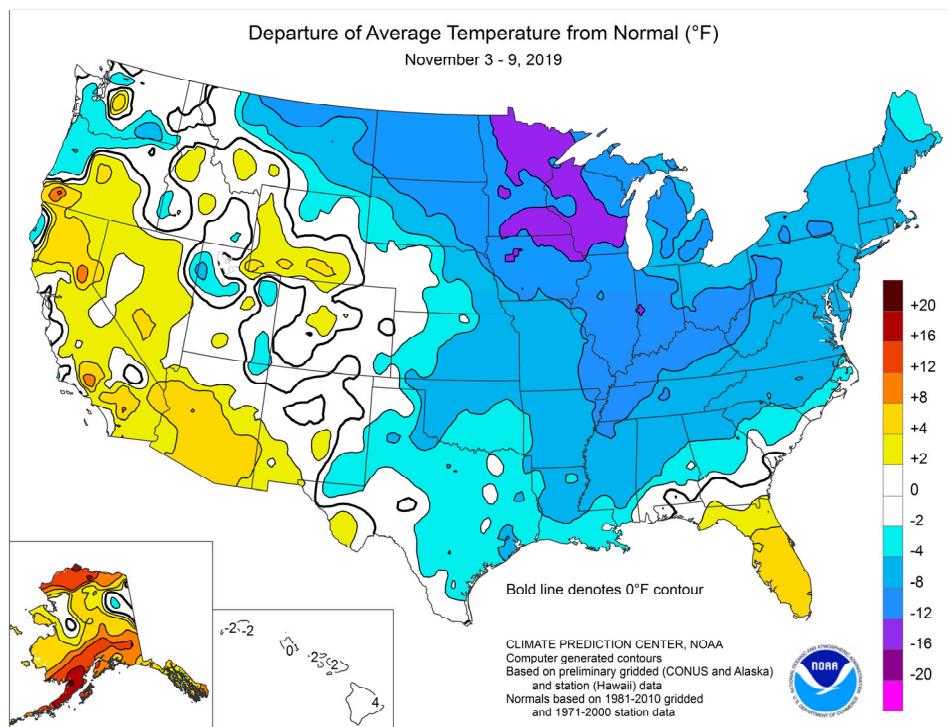
Cool weather lingered early in the week across the **West**, where **Oakland (Airport), CA**, noted a daily-record low of 40°F on November 4. Meanwhile, warmth returned across the **Deep South**, while chilly conditions lingered in the **North**. In **Texas**, **San Angelo** posted a daily-record high of 91°F on November 4. On the 5th, **Fort Myers, FL**, also notched a high of 91°F, setting a record for the date. In fact, **Fort Myers** attained a high of 91°F each day from November 5-8. Meanwhile, warm weather developed across the **Far West**, where **Ukiah, CA**, registered consecutive daily-record highs (85°F both days) on November 5-6. By November 8, **Western** daily-record highs included 83°F in **Red Bluff, CA**; 72°F in **Winnemucca, NV**; and 67°F in **Eugene, OR**. During the mid- to late-week period, cold air skirted the **North** before settling into the East. In **Montana**, record-setting lows for November 6 included -11°F in **Simpson** and -9°F in **Cut Bank**. **Simpson** also reported a record on November 7, with a low of -12°F. On November 8, **Rochester, MN**, noted a low of 0°F—a record for the date and the fourth-earliest observance in that location of a low of 0°F or below. In **Michigan**, daily-record lows for November 8 plunged to 2°F in **Gaylord** and 5°F in **Pellston**. The week ended on November 8-9 with consecutive daily-record lows in locations such as **Mount Pocono, PA** (16 and 11°F, respectively), and **Trenton, NJ** (26 and 19°F, respectively). Other record-setting lows for November 9 included 15°F in **Worcester, MA**, and 17°F in **Bangor, ME**. Farther west, however, a brief surge of warmth in advance of a strong cold front led to daily-record highs for November 9 in **McCook, NE** (82°F); **Concordia, KS** (78°F); and **Denver, CO** (77°F).

Rain grazed the **coastal Carolinas** on November 5, when daily-record totals included 1.40 inches in **New Bern, NC**, and 0.92 inch in **North Myrtle Beach, SC**. Farther west, mid-week snow blanketed portions of the **Great Lakes States**. Record-setting snowfall totals for November 6 reached 6.2 inches in **Muskegon, MI**; 4.5 inches in **La Crosse, WI**; and 4.1 inches in **Rochester, MN**. Meanwhile, rain developed across the **south-central U.S.** In **Texas**, daily-record totals for November 7 included 1.76 inches in **Abilene** and 0.71 inch in **San Angelo**. On November 6-7, **Midland, TX**, received exactly an inch of rain. Two-day (November 6-7) rainfall topped 2 inches in locations such as **Harrison, AR** (3.46 inches); **Tulsa, OK** (2.75 inches); and **West Plains, MO** (2.14 inches). In contrast, a record-setting streak without measurable precipitation in **Saint George, UT**, reached 145 days (June 18 – November 9) and counting.

Mid-week snow cloaked parts of the **Alaskan mainland**, while widespread precipitation fell across the state's southern tier. **Kodiak** received rainfall totaling 5.63 inches (279 percent of normal) during the first 9 days of the month. Similarly, **Ketchikan** netted 7.13 inches (135 percent of normal) from November 1-9. **Fairbanks** observed a significant snowfall on November 6-7, totaling 8.0 inches—with a liquid equivalency of 0.79 inch. Meanwhile, weekly temperatures averaged at least 10°F above normal in much of **northern and southern Alaska**. **King Salmon** reported a record-setting high each day from November 5-10, with temperatures reaching 53, 51, 53, 52, 51, and 51°F. **Cold Bay** notched consecutive daily-record highs of 52°F on November 5-6. Farther south, **Hawaiian** warmth was accompanied by mostly dry weather. On the **Big Island**, **Hilo** reported several daily-record highs, including a reading of 89°F on November 9. **Hilo** was also unusually dry, with November 1-9 rainfall totaling 0.04 inch (less than 1 percent of normal). At the state's other major airport observation sites, month-to-date rainfall through the 9th ranged from 0.11 inch (21 percent of normal) in **Kahului, Maui**, to 0.34 inch (25 percent) in **Lihue, Kauai**.

National Weather Data for Selected Cities
Weather Data for the Week Ending November 9, 2019
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 SEP 1	PCT. NORMAL SINCE SEP 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	65	39	75	29	52	-4	0.34	-0.60	0.34	8.74	103	45.25	98	90	42	0	2	1	0
HUNTSVILLE	63	35	75	25	49	-6	0.06	-0.95	0.06	6.04	66	51.26	107	88	45	0	3	1	0
MOBILE	74	48	81	38	61	-1	0.62	-0.43	0.62	13.32	126	58.19	101	89	58	0	0	1	1
MONTGOMERY	71	44	80	36	58	-1	0.59	-0.18	0.59	6.25	81	40.21	87	87	44	0	0	1	1
AK ANCHORAGE	41	36	48	31	39	14	0.14	-0.15	0.09	6.15	115	12.07	84	84	68	0	1	3	0
BARROW	29	16	34	-1	22	18	0.23	0.20	0.09	2.60	230	10.98	280	88	66	0	7	3	0
FAIRBANKS	20	5	28	-11	13	5	0.00	-0.17	0.00	2.74	122	14.20	156	84	77	0	7	0	0
JUNEAU	42	35	45	29	39	3	2.21	0.78	0.81	17.68	100	45.86	93	91	86	0	2	5	2
KODIAK	49	47	50	45	48	12	5.35	3.76	1.74	21.51	118	56.89	90	94	90	0	0	7	4
NOME	31	20	35	12	26	5	0.02	-0.28	0.02	8.81	197	26.02	177	77	63	0	7	1	0
AZ FLAGSTAFF	61	24	66	20	42	2	0.24	-0.17	0.24	1.24	27	17.55	89	73	24	0	7	1	0
PHOENIX	87	61	89	57	74	8	0.00	-0.15	0.00	0.25	14	3.68	54	37	22	0	0	0	0
PRESCOTT	71	36	74	34	53	5	0.26	0.00	0.26	2.44	66	12.67	75	62	17	0	1	1	0
TUCSON	84	57	87	52	70	7	0.09	-0.07	0.09	2.57	89	10.25	96	47	29	0	0	1	0
AR FORT SMITH	64	40	71	31	52	-3	1.66	0.60	1.33	13.35	150	63.42	171	98	56	0	2	2	1
LITTLE ROCK	61	37	68	29	49	-7	1.26	0.04	1.00	9.65	101	56.90	135	95	50	0	2	2	1
CA BAKERSFIELD	80	48	81	44	64	5	0.00	-0.11	0.00	0.02	3	6.52	124	43	25	0	0	0	0
FRESNO	79	47	81	44	63	6	0.00	-0.23	0.00	0.00	0	9.52	105	62	37	0	0	0	0
LOS ANGELES	75	56	90	52	66	2	0.00	-0.18	0.00	0.00	0	12.86	123	85	49	1	0	0	0
REDDING	82	39	89	37	61	6	0.00	-0.86	0.00	0.39	10	32.48	125	69	39	0	0	0	0
SACRAMENTO	78	42	80	39	60	3	0.00	-0.42	0.00	0.12	7	19.48	141	90	23	0	0	0	0
SAN DIEGO	75	54	85	48	64	0	0.00	-0.21	0.00	0.11	12	8.54	99	95	55	0	0	0	0
SAN FRANCISCO	65	49	74	47	57	0	0.00	-0.49	0.00	0.06	3	18.48	121	87	76	0	0	0	0
STOCKTON	79	41	80	38	60	3	0.00	-0.36	0.00	0.23	14	12.70	119	75	48	0	0	0	0
CO ALAMOSA	58	8	62	1	33	-1	0.00	-0.11	0.00	0.80	47	7.04	107	70	25	0	7	0	0
CO SPRINGS	57	27	71	24	42	1	0.00	-0.17	0.00	1.15	50	10.92	66	78	30	0	7	0	0
DENVER INTL	60	28	77	23	44	2	0.00	-0.17	0.00	1.33	63	13.92	108	84	40	0	6	0	0
GRAND JUNCTION	62	25	64	16	44	1	0.00	-0.19	0.00	0.28	13	7.15	89	47	25	0	7	0	0
PUEBLO	61	26	75	22	44	1	0.00	-0.16	0.00	1.65	98	12.39	107	89	50	0	7	0	0
CT BRIDGEPORT	53	34	61	22	44	-5	0.06	-0.79	0.06	7.08	86	42.76	112	72	42	0	2	1	0
HARTFORD	52	30	58	20	41	-5	0.27	-0.68	0.27	9.25	100	42.72	108	75	37	0	6	1	0
DC WASHINGTON	56	39	64	30	48	-4	0.06	-0.63	0.06	7.00	89	37.77	111	80	41	0	1	1	0
DE WILMINGTON	55	33	63	24	44	-5	0.08	-0.59	0.08	6.04	76	42.95	116	84	35	0	4	1	0
FL DAYTONA BEACH	79	66	84	57	73	3	0.81	0.04	0.31	18.88	156	54.70	123	96	71	0	0	4	0
JACKSONVILLE	76	58	84	46	67	3	0.31	-0.21	0.31	5.98	48	38.11	79	91	65	0	0	1	0
KEY WEST	86	78	88	75	82	4	0.30	-0.45	0.21	8.32	77	27.16	77	85	67	0	0	4	0
MIAMI	87	75	89	70	81	5	0.35	-0.67	0.23	7.56	48	59.48	110	82	59	0	0	4	0
ORLANDO	85	68	89	61	76	5	0.69	0.21	0.43	8.75	96	42.62	96	87	58	0	0	3	0
PENSACOLA	75	54	80	45	64	0	0.61	-0.41	0.61	5.31	47	44.93	79	89	62	0	0	1	1
TALLAHASSEE	75	57	82	42	66	3	0.64	-0.20	0.62	4.96	53	35.33	63	85	59	0	0	2	1
TAMPA	84	68	87	60	76	4	0.12	-0.14	0.12	7.75	85	55.06	134	87	59	0	0	1	0
WEST PALM BEACH	84	75	88	69	79	4	1.56	0.25	1.05	9.10	60	53.07	98	84	68	0	0	3	1
GA ATHENS	64	41	72	32	52	-4	0.59	-0.26	0.59	5.82	72	39.63	96	89	51	0	1	1	1
ATLANTA	63	45	71	36	54	-3	0.67	-0.16	0.67	5.02	61	36.59	84	77	52	0	1	1	1
AUGUSTA	70	42	79	34	56	-1	0.35	-0.32	0.22	5.25	69	42.49	107	91	46	0	2	2	0
COLUMBUS	68	47	76	40	58	-2	0.52	-0.22	0.52	6.16	97	37.60	91	86	49	0	1	1	1
MACON	68	43	77	35	56	-2	0.34	-0.29	0.31	5.53	86	32.82	85	94	50	0	2	2	0
SAVANNAH	72	52	78	40	62	0	0.71	0.11	0.52	9.27	103	39.07	87	90	64	0	0	2	1
HI HILO	87	70	89	66	79	4	0.04	-3.35	0.04	22.11	96	79.49	76	79	61	0	0	1	0
HONOLULU	85	73	87	69	79	0	0.16	-0.36	0.16	3.53	98	12.59	91	79	68	0	0	1	0
KAHULUI	88	68	93	65	78	1	0.11	-0.30	0.04	0.54	28	10.27	73	86	73	1	0	3	0
LIHUE	82	68	85	64	75	-2	0.34	-0.73	0.29	9.22	111	26.91	86	92	85	0	0	3	0
ID BOISE	58	31	62	28	44	-1	0.00	-0.25	0.00	1.06	58	13.26	136	66	40	0	6	0	0
LEWISTON	52	31	56	28	42	-2	0.00	-0.26	0.00	1.98	95	11.41	106	80	68	0	6	0	0
POCATELLO	57	19	60	17	38	-2	0.00	-0.24	0.00	2.11	98	11.43	107	81	44	0	7	0	0
IL CHICAGO/O'HARE	44	27	55	16	36	-8	0.01	-0.68	0.01	14.32	209	46.16	146	74	50	0	6	1	0
MOLINE	47	27	60	15	37	-7	0.01	-0.65	0.01	10.20	150	44.99	132	74	51	0	6	1	0
PEORIA	49	28	56	16	38	-7	0.00	-0.65	0.00	12.92	193	48.13	153	78	43	0	5	0	0
ROCKFORD	43	25	52	14	34	-9	0.05	-0.54	0.05	12.81	188	46.74	143	81	54	0	6	1	0
SPRINGFIELD	49	29	58	14	39	-8	0.00	-0.63	0.00	8.80	141	43.90	142	81	40	0	5	0	0
IN EVANSVILLE	52	29	64	22	40	-10	0.97	0.12	0.64	7.32	107	53.32	142	84	53	0	5	3	1
FORT WAYNE	48	27	56	18	37	-8	0.00	-0.65	0.00	5.99	96	35.25	111	82	45	0	6	0	0
INDIANAPOLIS	49	28	58	17	39	-8	0.13	-0.65	0.08	5.10	77	43.13	122	84	42	0	6	4	0
SOUTH BEND	47	28	56	21	37	-8	0.01	-0.74	0.01	10.56	132	41.14	120	73	54	0	6	1	0
IA BURLINGTON	48	28	59	16	38	-8	0.00	-0.61	0.00	10.52	144	42.44	125	76	44	0	6	0	0
CEDAR RAPIDS	43	22	53	10	33	-10	0.03	-0.49	0.03	9.94	162	39.95	132	92	52	0	7	1	0
DES MOINES	46	26	58	15	36	-8	0.01	-0.54	0.01	10.29	159	44.72	140	77	52	0	5	1	0
DUBUQUE	39	23	47	12	31	-11	0.13	-0.45	0.12	17.34	255	48.99	153	83	59	0	7	2	0
SIOUX CITY	44	21	62	11	32	-9	0.01	-0.38	0.01	6.44	131	31.68	130	84	59	0	7	1	0
WATERLOO	41	23	52	10	32	-9	0.21	-0.34	0.13	11.05	180	39.29	128	79	62	0	6	2	0
KS CONCORDIA	58	32	78	20	45	-1	0.00	-0.36	0.00	3.42	71	32.76	123	66	39	0	3	0	0
DODGE CITY	61	29	79	25	45	-3	0.00	-0.27	0.00	1.63	47	21.36	102	75	34	0	6	0	0
GOODLAND	60	25	77	21	43	1	0.00	-0.22	0.00	0.92	37	22.17	118	82	47	0	6	0	0
TOPEKA	58	30	73	18	44	-4	0.00	-0.59	0.00	4.49	60	45.39	139	74	45	0	4	0	0

Based on 1971-2000 normals   *** Not Available

Weather Data for the Week Ending November 9, 2019

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS			
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN. SINCE SEP 1	PCT. NORMAL SINCE SEP 1	TOTAL, IN. SINCE JAN01	PCT. NORMAL SINCE JAN01	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMP. 90 AND ABOVE	TEMP. 32 AND BELOW	PRECIP .01 INCH OR MORE	PRECIP .50 INCH OR MORE
WICHITA	60	30	73	19	45	-5	0.00	-0.46	0.00	4.20	70	39.79	143	75	45	0	4	0	0
KY JACKSON	55	32	63	24	43	-8	0.44	-0.39	0.44	6.45	81	45.92	109	92	42	0	4	1	0
LEXINGTON	54	30	63	23	42	-8	0.66	-0.01	0.64	8.49	127	45.01	115	75	48	0	5	2	1
LOUISVILLE	54	32	64	25	43	-9	0.67	-0.09	0.61	6.33	93	46.11	121	82	40	0	4	3	1
PADUCAH	55	29	65	22	42	-9	1.66	0.77	1.27	8.45	104	64.27	155	86	52	0	5	2	1
LA BATON ROUGE	73	46	81	35	59	-3	0.00	-0.99	0.00	10.34	104	60.36	111	92	47	0	0	0	0
LAKE CHARLES	74	50	81	39	62	-1	0.08	-0.88	0.08	11.30	102	63.54	129	89	48	0	0	1	0
NEW ORLEANS	72	54	82	46	63	-1	0.02	-0.94	0.02	12.72	130	59.48	108	81	56	0	0	1	0
SHREVEPORT	69	44	79	31	56	-4	0.26	-0.81	0.26	8.09	89	40.44	93	88	50	0	1	1	0
ME CARIBOU	40	27	50	17	33	-3	0.18	-0.53	0.11	9.02	126	35.54	111	85	56	0	6	2	0
PORTLAND	47	32	55	19	40	-2	0.66	-0.45	0.36	7.45	81	41.75	109	79	44	0	4	2	0
MD BALTIMORE	57	34	68	24	45	-4	0.10	-0.57	0.10	6.47	81	34.36	95	81	40	0	3	1	0
MA BOSTON	53	38	59	28	45	-3	0.63	-0.30	0.40	7.27	86	41.90	116	69	37	0	2	2	0
WORCESTER	46	29	52	15	37	-6	0.35	-0.72	0.34	10.03	97	45.26	107	85	41	0	5	2	0
MI ALPENA	38	27	47	23	32	-7	0.30	-0.20	0.15	8.99	156	33.31	133	90	64	0	6	5	0
GRAND RAPIDS	41	28	52	21	35	-8	0.14	-0.54	0.10	14.98	189	46.50	146	80	57	0	5	3	0
HOUGHTON LAKE	35	26	43	15	30	-9	0.37	-0.13	0.18	9.41	157	34.18	136	84	72	0	6	4	0
LANSING	42	27	54	19	34	-8	0.03	-0.53	0.02	10.02	155	37.37	136	75	53	0	6	2	0
MUSKEGON	42	33	50	27	37	-6	0.95	0.23	0.50	14.88	206	45.31	162	75	62	0	3	5	1
TRAVERSE CITY	38	29	46	19	33	-9	0.34	-0.29	0.15	10.16	139	36.46	126	85	59	0	5	4	0
MN DULUTH	30	17	37	9	24	-10	0.07	-0.45	0.03	10.27	142	32.14	112	71	55	0	7	5	0
INT'L FALLS	27	13	38	2	20	-12	0.27	-0.09	0.11	11.53	211	32.50	145	88	62	0	7	4	0
MINNEAPOLIS	37	23	45	15	30	-9	0.19	-0.33	0.13	8.37	153	42.26	156	76	57	0	7	3	0
ROCHESTER	34	15	47	0	24	-14	0.54	0.04	0.33	14.68	246	53.89	186	87	63	0	7	4	0
ST. CLOUD	34	17	42	9	25	-10	0.08	-0.38	0.07	11.48	199	40.14	157	87	49	0	7	2	0
MS JACKSON	67	40	78	30	54	-4	0.02	-1.01	0.02	14.70	185	57.33	122	88	43	0	1	1	0
MERIDIAN	69	40	79	31	55	-4	0.68	-0.28	0.68	12.64	156	58.02	117	89	47	0	1	1	1
TUPELO	64	36	75	26	50	-5	0.04	-0.90	0.04	6.91	87	65.27	142	85	45	0	2	1	0
MO COLUMBIA	53	31	63	18	42	-6	0.00	-0.78	0.00	8.12	107	46.36	131	77	42	0	4	0	0
KANSAS CITY	56	32	66	17	44	-4	0.00	-0.53	0.00	7.48	86	50.79	146	74	40	0	2	0	0
SAINT LOUIS	53	34	63	21	43	-7	0.07	-0.71	0.04	5.65	84	48.71	147	72	50	0	3	3	0
SPRINGFIELD	58	33	65	19	46	-5	1.04	0.13	0.79	10.87	115	50.95	132	85	58	0	4	3	1
MT BILLINGS	49	29	68	16	39	0	0.30	0.11	0.15	4.39	153	20.61	152	87	53	0	4	4	0
BUTTE	51	24	62	11	37	4	0.00	-0.14	0.00	2.31	112	12.37	105	81	35	0	7	0	0
CUT BANK	38	17	55	-9	27	-7	0.19	0.11	0.11	2.04	116	12.06	102	89	61	0	6	4	0
GLASGOW	37	18	52	5	28	-6	0.29	0.19	0.12	5.23	287	18.22	172	83	66	0	6	3	0
GREAT FALLS	45	25	62	8	35	-2	0.15	0.00	0.08	5.18	219	18.98	137	82	51	0	6	4	0
HAVRE	36	13	54	-9	25	-10	0.30	0.22	0.14	2.55	145	12.13	114	87	73	0	7	4	0
MISSOULA	48	23	58	17	35	-2	0.01	-0.18	0.01	3.04	141	13.76	115	86	71	0	7	1	0
NE GRAND ISLAND	54	28	77	11	41	-1	0.00	-0.33	0.00	2.73	62	40.81	168	75	56	0	4	0	0
LINCOLN	52	25	74	14	38	-6	0.00	-0.39	0.00	6.71	125	33.24	126	77	52	0	6	0	0
NORFOLK	50	22	69	6	36	-5	0.00	-0.36	0.00	3.53	80	30.15	120	78	53	0	6	0	0
NORTH PLATTE	55	23	77	10	39	-1	0.11	-0.11	0.11	1.49	52	30.15	161	87	49	0	6	1	0
OMAHA	48	27	65	16	37	-7	0.00	-0.44	0.00	11.57	194	38.75	138	80	56	0	6	0	0
SCOTTSBLUFF	54	26	74	19	40	1	0.08	-0.11	0.08	1.95	79	28.99	190	92	65	0	6	1	0
VALENTINE	54	22	75	8	38	-1	0.01	-0.18	0.01	3.87	126	34.38	184	80	49	0	6	1	0
NV ELY	65	19	69	18	42	4	0.00	-0.18	0.00	0.79	36	12.85	142	49	19	0	7	0	0
LAS VEGAS	78	51	80	48	65	5	0.00	-0.06	0.00	0.24	39	4.88	127	21	13	0	0	0	0
RENO	71	31	73	28	51	6	0.00	-0.14	0.00	0.30	29	9.06	152	51	28	0	4	0	0
WINNEMUCCA	69	19	72	14	44	3	0.00	-0.17	0.00	1.16	83	8.57	124	52	23	0	7	0	0
NH CONCORD	47	26	53	14	36	-6	0.33	-0.52	0.33	6.81	88	35.82	111	84	42	0	6	1	0
NJ NEWARK	53	36	61	25	44	-6	0.08	-0.74	0.08	8.97	109	51.68	130	69	41	0	2	1	0
NM ALBUQUERQUE	61	36	71	32	49	0	0.24	0.06	0.24	1.29	56	7.18	84	65	28	0	1	1	0
NY ALBANY	47	28	56	18	38	-5	0.19	-0.58	0.19	10.19	136	40.27	122	79	41	0	6	1	0
BINGHAMTON	40	26	48	15	33	-9	0.52	-0.18	0.35	10.26	137	40.45	122	85	60	0	6	4	0
BUFFALO	44	31	55	24	37	-7	0.37	-0.46	0.24	12.67	157	41.04	121	80	52	0	4	4	0
ROCHESTER	43	29	53	21	36	-8	0.17	-0.44	0.10	7.97	117	29.28	100	79	54	0	6	2	0
SYRACUSE	45	30	53	19	38	-6	0.37	-0.42	0.17	10.74	129	42.69	125	79	47	0	4	3	0
NC ASHEVILLE	58	33	67	25	46	-3	0.12	-0.74	0.12	8.80	110	50.51	123	86	46	0	3	1	0
CHARLOTTE	63	36	71	27	50	-6	0.48	-0.32	0.41	6.67	78	45.79	120	87	38	0	3	2	0
GREENSBORO	60	37	70	27	49	-3	0.18	-0.47	0.17	6.81	81	44.89	118	85	40	0	2	2	0
HATTERAS	80	40	116	1	60	0	0.92	-0.32	0.57	***	***	***	***	83	50	2	2	3	1
RALEIGH	63	37	73	27	50	-4	0.20	-0.46	0.12	4.70	57	37.09	98	87	42	0	2	2	0
WILMINGTON	69	45	78	34	57	-2	1.96	1.35	1.10	13.95	130	40.01	79	91	50	0	0	3	2
ND BISMARCK	38	16	51	6	27	-8	0.09	-0.11	0.05	9.26	294	28.50	179	88	66	0	7	3	0
DICKINSON	37	13	50	0	25	-10	0.07	-0.11	0.07	6.98	218	24.36	156	90	60	0	7	1	0
FARGO	32	17	40	7	25	-9	0.10	-0.23	0.08	8.04	175	31.13	156	87	59	0	7	2	0
GRAND FORKS	29	14	34	4	22	-11	0.08	-0.22	0.05	11.73	290	28.57	155	88	57	0	7	3	0
JAMESTOWN	34	16	44	3	25	-9	0.08	-0.13	0.08	6.81	199	28.07	159	95	59	0	7	1	0
WILLISTON	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	0	0	0	0
OH AKRON-CANTON	47	30	56	23	39	-6	0.34	-0.27	0.18	5.81	86	41.58	125	78	51	0	4	2	0
CINCINNATI	51	29	61	21	40	-9	0.75	-0.03	0.51	4.97	73	49.28	134	79	52	0	5	3	1
CLEVELAND	48	31	59	24	40	-6	0.20	-0.49	0.19	4.76	65	37.09	112	73	45	0	4	2	0
COLUMBUS	48	29	57	21	39	-9	0.47	-0.17	0.28	5.42	90	41.26	124	80	54	0	4	3	0
DAYTON	49	29	58	20	39	-7	0.18	-0.55	0.13	4.18	66	39.41	115	82	45	0	5	2	0
MANSFIELD	47	29	56	21	38	-7	0.09	-0.70	0.07	6.99	98	45.61	123	85	46	0	5	3	0

Based on 1971-2000 normals   *** Not Available

Weather Data for the Week Ending November 9, 2019

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS			
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE SEP 1	PCT. NORMAL SINCE SEP 1	TOTAL, IN., SINCE JAN01	PCT. NORMAL SINCE JAN01	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMP. °F 90 AND ABOVE	TEMP. °F 32 AND BELOW	PRECIP .01 INCH OR MORE	PRECIP .50 INCH OR MORE
	TOLEDO	48	30	59	23	39	-6	0.00	-0.59	0.00	8.08	136	41.58	146	68	44	0	5	0	0
	YOUNGSTOWN	46	29	56	22	38	-6	0.61	0.02	0.30	9.94	140	50.55	154	77	50	0	5	3	0
OK	OKLAHOMA CITY	64	37	70	31	50	-4	0.36	-0.19	0.24	5.90	71	44.03	135	91	48	0	2	2	0
	TULSA	63	38	69	25	50	-4	2.76	1.96	2.32	12.64	128	56.67	151	85	54	0	2	2	1
OR	ASTORIA	55	40	64	34	47	-2	0.28	-1.84	0.28	13.25	122	38.90	80	97	85	0	0	1	0
	BURNS	65	17	68	15	41	4	0.00	-0.21	0.00	1.52	102	12.92	153	76	40	0	7	0	0
	EUGENE	55	33	67	29	44	-3	0.00	-1.61	0.00	6.54	95	29.75	82	94	88	0	4	0	0
	MEDFORD	68	34	71	33	51	3	0.00	-0.55	0.00	2.52	91	17.24	130	83	41	0	0	0	0
	PENDLETON	57	29	63	26	43	-2	0.00	-0.33	0.00	1.57	77	11.31	112	81	56	0	7	0	0
	PORTLAND	58	38	66	35	48	-1	0.16	-0.94	0.16	5.54	94	20.94	77	91	77	0	0	1	0
	SALEM	56	33	61	30	44	-4	0.00	-1.23	0.00	5.50	92	25.22	88	96	87	0	4	0	0
PA	ALLENTOWN	52	30	63	20	41	-5	0.37	-0.43	0.37	9.38	108	55.86	143	78	40	0	4	1	0
	ERIE	47	35	57	29	41	-6	0.49	-0.38	0.16	8.04	82	36.91	102	69	52	0	3	5	0
	MIDDLETOWN	52	33	60	24	43	-5	0.41	-0.31	0.41	10.36	141	43.39	125	83	40	0	2	1	0
	PHILADELPHIA	54	36	63	25	45	-6	0.08	-0.56	0.08	5.18	70	43.11	118	67	38	0	2	1	0
	PITTSBURGH	47	29	55	22	38	-8	0.50	-0.10	0.37	13.05	210	49.80	152	81	44	0	5	2	0
	WILKES-BARRE	49	30	59	19	39	-6	0.41	-0.27	0.41	7.74	100	46.00	141	81	39	0	5	1	0
	WILLIAMSPORT	47	29	54	20	38	-7	0.33	-0.45	0.33	8.53	105	45.29	126	85	53	0	5	1	0
RI	PROVIDENCE	51	31	58	22	41	-6	0.63	-0.36	0.49	7.56	87	41.88	107	83	47	0	4	3	0
SC	CHARLESTON	70	49	76	37	60	-1	0.57	-0.01	0.39	7.80	80	37.69	81	94	55	0	0	2	0
	COLUMBIA	67	41	78	32	54	-4	0.76	0.10	0.67	5.11	67	30.95	72	87	40	0	1	2	1
	FLORENCE	68	42	78	32	55	-3	0.78	0.17	0.46	7.20	97	36.42	92	93	41	0	1	2	0
	GREENVILLE	60	39	67	30	50	-4	0.30	-0.58	0.30	5.46	61	41.76	96	82	44	0	1	1	0
SD	ABERDEEN	37	14	48	1	26	-10	0.06	-0.20	0.04	7.47	198	29.59	152	86	64	0	7	2	0
	HURON	39	18	50	5	28	-10	0.31	0.05	0.13	5.67	152	38.67	194	91	65	0	7	3	0
	RAPID CITY	50	22	69	1	36	-3	0.10	-0.11	0.09	3.94	143	33.55	211	88	45	0	6	2	0
	SIOUX FALLS	41	19	56	2	30	-8	0.36	-0.02	0.20	5.86	117	36.39	156	83	63	0	7	3	0
TN	BRISTOL	57	30	66	23	44	-5	0.68	0.09	0.68	7.96	130	49.49	139	92	40	0	4	1	1
	CHATTANOOGA	62	38	72	29	50	-4	0.25	-0.71	0.25	8.29	95	53.90	117	91	51	0	1	1	0
	KNOXVILLE	58	35	68	26	46	-6	0.61	-0.14	0.61	4.90	74	53.13	131	91	45	0	4	1	1
	MEMPHIS	60	37	68	28	49	-7	0.70	-0.37	0.69	13.85	174	66.08	148	85	47	0	2	2	1
	NASHVILLE	60	33	74	24	47	-6	0.73	-0.12	0.73	7.22	96	55.17	137	85	35	0	3	1	1
TX	ABILENE	71	43	86	35	57	-1	1.77	1.36	1.76	2.96	47	21.94	101	76	59	0	0	2	1
	AMARILLO	63	32	76	27	47	-3	0.02	-0.21	0.02	7.04	191	24.02	128	86	43	0	3	1	0
	AUSTIN	74	47	85	36	60	-4	0.22	-0.52	0.13	3.32	42	28.13	95	86	66	0	0	2	0
	BEAUMONT	73	51	80	39	62	-2	0.53	-0.50	0.53	30.97	256	84.63	165	91	59	0	0	1	1
	BROWNSVILLE	82	63	89	52	73	2	0.00	-0.50	0.00	7.62	78	21.31	84	88	59	0	0	0	0
	CORPUS CHRISTI	76	55	86	45	66	-2	3.18	2.68	2.97	8.76	91	21.78	74	92	64	0	0	2	1
	DEL RIO	76	55	87	45	65	1	0.34	0.07	0.24	1.34	30	14.60	87	79	61	0	0	2	0
	EL PASO	72	47	81	41	59	2	0.42	0.36	0.42	3.31	132	6.05	73	65	36	0	0	1	0
	FORT WORTH	69	47	77	38	58	-1	0.74	0.02	0.71	4.72	63	31.84	104	89	58	0	0	2	1
	GALVESTON	71	59	79	46	65	-4	1.11	0.35	1.09	29.84	292	57.76	153	92	67	0	0	2	1
	HOUSTON	72	51	83	41	61	-3	0.83	-0.19	0.82	21.63	213	50.85	123	90	62	0	0	2	1
	LUBBOCK	68	36	78	32	52	-1	0.59	0.40	0.47	7.67	169	23.28	133	85	61	0	1	2	0
	MIDLAND	71	41	86	36	56	-1	1.00	0.81	0.57	2.05	47	13.44	98	80	58	0	0	2	1
	SAN ANGELO	74	45	91	37	60	2	0.82	0.49	0.71	1.63	27	16.12	84	77	60	1	0	2	1
	SAN ANTONIO	73	52	83	40	62	-2	0.23	-0.51	0.17	5.75	74	21.04	72	87	55	0	0	3	0
	VICTORIA	76	52	86	41	64	-2	0.14	-0.54	0.07	8.33	82	24.20	67	91	66	0	0	3	0
	WACO	71	46	81	34	59	-2	0.04	-0.59	0.04	4.52	61	32.01	111	92	69	0	0	1	0
	WICHITA FALLS	67	40	74	32	54	-3	1.33	0.87	0.82	5.25	76	26.28	101	95	61	0	1	2	2
UT	SALT LAKE CITY	60	32	62	28	46	1	0.00	-0.33	0.00	2.06	62	17.31	121	71	29	0	3	0	0
VT	BURLINGTON	44	32	54	20	38	-3	0.29	-0.43	0.16	13.25	168	39.52	125	76	46	0	4	4	0
VA	LYNCHBURG	58	31	67	21	45	-5	0.00	-0.71	0.00	6.89	84	35.56	94	83	39	0	4	0	0
	NORFOLK	62	43	73	36	53	-2	0.19	-0.53	0.13	7.07	84	42.69	105	86	46	0	0	3	0
	RICHMOND	61	35	70	27	48	-4	0.04	-0.69	0.04	5.13	60	39.16	101	85	38	0	3	1	0
	ROANOKE	57	32	66	23	45	-6	0.02	-0.70	0.02	7.67	97	39.17	105	80	38	0	4	1	0
	WASH/DULLES	55	31	65	21	43	-6	0.13	-0.63	0.13	6.52	80	36.36	100	77	40	0	4	1	0
WA	OLYMPIA	55	31	58	29	43	-2	0.16	-1.47	0.16	8.87	107	26.08	71	99	95	0	6	1	0
	QUILLAYUTE	54	39	63	32	47	1	0.34	-2.85	0.32	22.60	126	59.89	78	99	92	0	1	2	0
	SEATTLE-TACOMA	56	42	58	38	49	1	0.32	-0.88	0.32	7.33	116	24.55	91	89	79	0	0	1	0
	SPOKANE	49	31	54	30	40	1	0.04	-0.38	0.04	3.56	152	12.69	100	79	52	0	6	1	0
	YAKIMA	55	24	61	21	40	-1	0.00	-0.18	0.00	1.10	96	7.88	130	83	60	0	7	0	0
WV	BECKLEY	52	29	60	21	41	-6	0.30	-0.29	0.27	7.24	109	42.86	118	78	47	0	4	2	0
	CHARLESTON	53	30	63	22	42	-7	0.49	-0.26	0.49	6.64	94	40.66	107	91	41	0	4	1	0
	ELKINS	53	25	63	16	39	-5	0.41	-0.29	0.41	6.22	82	44.93	112	84	40	0	6	1	0
	HUNTINGTON	52	29	63	21	41	-8	0.00	-0.71	0.00	5.97	93	42.63	117	94	44	0	6	0	0
WI	EAU CLAIRE	36	20	44	8	28	-10	0.09	-0.38	0.05	10.66	162	41.23	138	79	47	0	7	2	0
	GREEN BAY	35	22	46	9	29	-10	0.24	-0.29	0.15	13.99	235	43.69	167	82	52	0	7	4	0
	LA CROSSE	37	24	48	9	30	-11	0.43	-0.06	0.32	11.38	184	41.84	141	81	51	0	6	4	0
	MADISON	36	23	47	8	30	-11	0.55	0.02	0.32	13.29	224	44.78	151	85	59	0	6	4	0
	MILWAUKEE	40	28	50	15	34	-9	0.46	-0.14	0.29	14.03	214	42.96	140	76	56	0	6	3	0
WY	CASPER	51	26	64	21	39	2	0.02	-0.17	0.01	2.70	113	17.59	148	83	55	0	7	2	0
	CHEYENNE	54	28	70	19	41	4	0.00	-0.14	0.00	1.10	47	21.23	146	60	44	0	6	0	0
	LANDER	53	25	66	18	39	3	0.00	-0.25	0.00	2.39	84	17.96	148	85	35	0	7	0	0
	SHERIDAN	48	23	70	2	36	0	0.43	0.21	0.22	5.80	188	22.02	163	82	67	0	4	3	0

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

October Weather and Crop Summary

Weather

Weather summary provided by USDA/WAOB

Highlights: Cold, stormy weather across the northern Plains and upper Midwest slowed early-season harvest efforts and added another layer of complexity to a growing season that featured very late planting and delayed crop development. When the season's first widespread freeze affected much of the Plains and the western half of the Corn Belt in mid-October, only 73 percent of the U.S. corn was fully mature (on October 13) and 85 percent of the soybeans were dropping leaves.

Stormy weather across the north-central U.S. also delayed harvesting of commodities such as sugarbeets, sunflowers, and spring wheat, potentially threatening crop quality. The spring wheat harvest was 90 percent complete on September 29, with progress inching toward completion (96 percent) by October 20. The cold, wet weather also slowed winter wheat planting and emergence in some northern production areas, especially Montana.

Meanwhile, multiple mid- to late-month precipitation events across the South and East—including the remnants of Tropical Storms Nestor and Olga—eased or eradicated short-term drought and provided much-needed moisture for pastures and fall-sown crops. The rain followed an early-October spell of record-setting heat that helped to locally boost Southeastern monthly temperatures more than 5°F above normal.

Elsewhere, cool weather dominated the western and central U.S., while dry conditions covered California, the Great Basin, and the Desert Southwest. Some of the dryness extended eastward across portions of the central and southern High Plains. Monthly temperatures broadly averaged at least 5°F below normal across the northern and central Plains, as well as the northern Rockies and the Northwest. In California, high winds, low humidity levels, and seasonally cured vegetation fueled late-month wildfires, including the 78,000-acre Kincade Fire in Sonoma County.

Historical Perspective: According to preliminary data provided by the National Centers for Environmental Information, the contiguous U.S. experienced its 21st-coldest, eighth-wettest October during the 1895-2019 period of record. The nation's average temperature of 52.3°F was 1.8°F below the 20th century mean, while precipitation averaged 3.14 inches—145 percent of normal. It was the nation's coldest October since 2009. In the last 3 decades, October precipitation was greater only in 2009 (4.29 inches) and 2018 (3.43 inches).

State temperature rankings ranged from the coldest October on record in Idaho to the second warmest in Florida (figure 1). October temperatures ranked among the ten lowest (coldest) values on record in eleven Western and Central States (CO, KS, MT, NE, ND, NV, OR, SD, UT, WA, and WY). In contrast, top-ten values for October warmth were noted in West Virginia

and eight Atlantic Coast States from Florida to New Jersey. Meanwhile, state precipitation ranking ranged from the eighth-driest October in Arizona to the wettest on record in Mississippi (figure 2). California experienced its tenth-driest October, while top-ten rankings for October wetness were observed in Alabama, Arkansas, Illinois, Iowa, Kentucky, Tennessee, and five Northern Tier States from Minnesota to Vermont.

Figure 1 Statewide Average Temperature Ranks
October 2019
Period: 1895–2019
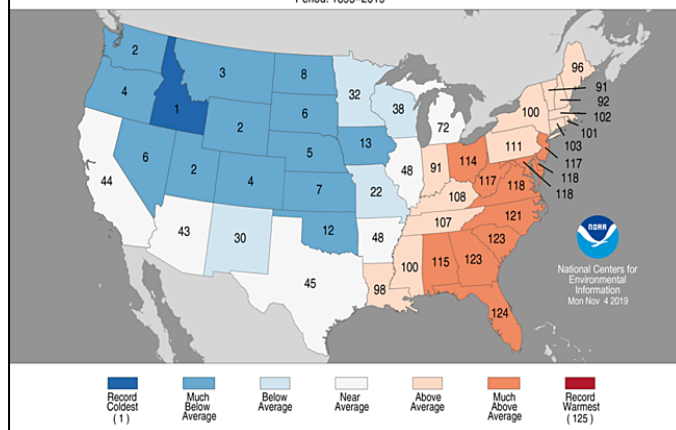
Figure 2 Statewide Precipitation Ranks
October 2019
Period: 1895–2019
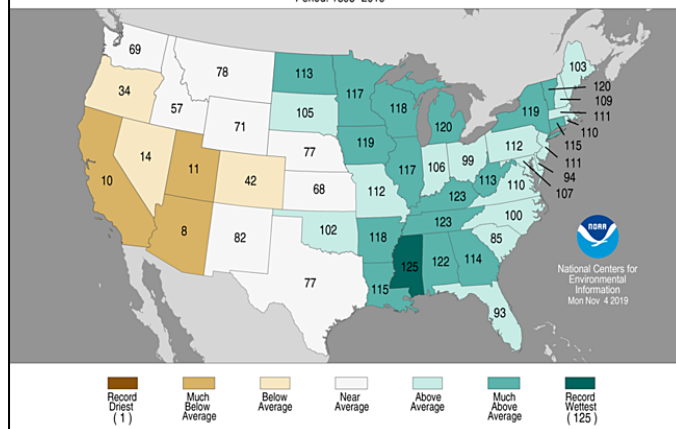
Summary: For the first time on record, October temperatures reached or topped the 100-degree mark in locations such as Huntsville, AL (100°F on October 2 and 3); Birmingham, AL (101°F on October 3); Raleigh-Durham, NC (100°F on October 3); Athens, GA (100°F on October 3); Augusta, GA (100 and 101°F, respectively, on October 3-4); Greenwood, MS (100°F on October 3); and Chattanooga, TN (100°F on October 2 and 3). Like many Southeastern communities, Macon, GA, set multiple October record highs, reaching 102 and 103°F, respectively, on October 3-4. Previously, Macon's highest October reading had been 100°F on October 5, 1954. Montgomery, AL, achieved three triple-digit readings in October—101°F on the 1st and 102°F on the 3rd and 4th. Prior to this year, Montgomery's highest October temperature had been 100°F on October 6, 1954. In the Midwest, October 1 was

Summary: In the wake of late-September snowfall, cold air blanketed northern sections of the Rockies and High Plains. From September 30 – October 2, three consecutive daily-record lows were established in Montana locations such as Cut Bank (6, 1, and 8°F) and Great Falls (12, 9, and 17°F). By October 3, cool air had pushed eastward across the Plains, where Sidney, NE, notched a daily-record low of 24°F. Chilly air settled as far south as southern California; on October 3-4, Bishop collected consecutive daily-record lows (30 and 28°F, respectively). Cold air also edged westward toward the Pacific Coast, where Olympia, WA, posted a daily-record low of 35°F on October 1. Meanwhile, for the first time on record, October temperatures reached or topped the 100-degree mark in Southeastern locations such as Huntsville, AL (100°F on October 2 and 3); Birmingham, AL (101°F on October 3); Raleigh-Durham, NC (100°F on October 3); Athens, GA (100°F on October 3); Augusta, GA (100 and 101°F, respectively, on October 3-4); Greenwood, MS (100°F on October 3); and Chattanooga, TN (100°F on October 2 and 3). Like many Southeastern communities, Macon, GA, set multiple October record highs, reaching 102 and 103°F, respectively, on October 3-4. Previously, Macon's highest October reading had been 100°F on October 5, 1954. Montgomery, AL, achieved three triple-digit readings in October—101°F on the 1st and 102°F on the 3rd and 4th. Prior to this year, Montgomery's highest October temperature had been 100°F on October 6, 1954. In the Midwest, the 1st was the hottest October day on record in Cincinnati, OH (95°F), and Evansville, IN (94°F). Elsewhere on October 1, monthly record highs were established in many West Virginia locations, including Huntington (95°F), Parkersburg (94°F), Beckley (91°F), and Elkins (90°F). Neither Beckley nor Elkins had ever attained a 90-degree reading in October. Farther east, monthly records from October 5, 1941, were broken on the 2nd in mid-Atlantic cities such as Washington, DC (98°F); Wilmington, DE (98°F); and Newark, NJ (96°F). Summer-like heat lingered for several more days across the Deep South. In San Angelo, TX, a record-setting streak of 115 consecutive days (June 14 – October 6) with a high of 90°F or greater finally ended; the previous record of 88 days in a row had been set in 2011. On October 6, prior to the arrival of cooler air, daily-record highs in Texas soared to 100°F in Del Rio and 98°F in San Angelo. Later, another surge of heat into Texas led to consecutive daily-record highs on October 9-10 in locations such as Midland (95°F both days) and Del Rio (96 and 99°F, respectively). Meanwhile, New Orleans, LA, reported highs of 90°F or greater on 9 or the first 10 days in October. Previously, New Orleans' record for 90-degree readings in October had been eight days in 2016. (New Orleans attained a tenth 90-degree reading on October 15, with a high of 91°F.)

In a continuation from last month's weather, downpours struck parts of the Plains and Midwest in early October. Record-setting rainfall totals for October 1 included 3.59 inches in Des Moines, IA; 3.44 inches in Roswell, NM; 2.83 inches in Lincoln, NE; 2.76 inches in Oshkosh, WI; and 2.08 inches in Amarillo, TX. For Roswell, where September 30 – October 4 rainfall totaled 5.36 inches, it was the second-wettest October day on record. During the first 5 days of October, rainfall topped 5 inches in locations such as Dubuque, IA (5.40 inches), and Amarillo, TX (5.38 inches). On the final day of the extended event, record-setting rainfall totals for October 5 included 1.61 inches in Waterloo, IA, and 1.38 inches in Rochester, MN. Rochester, which had already achieved an annual precipitation record on

September 19, saw its year-to-date total through October climb to an astounding 51.08 inches (171 percent of normal). Previously, Rochester's annual standard had been 43.94 inches in 1990. Later, rain turned to wind-driven snow across parts of the north-central U.S., starting on October 8 and continuing for several days. Cold weather accompanying and trailing the slow-moving storm ended the 2019 growing season across large sections of the Plains and Midwest. By October 12, freezes occurred on the Plains as far south as northern Texas. In advance of the winter-like storm, heavy showers swept from the mid-South to the central Appalachians. Record-setting rainfall totals for October 6 topped the 3-inch mark in locations such as Fayetteville, AR (3.95 inches), and Memphis, TN (3.39 inches). The following day in West Virginia, daily-record amounts for October 7 reached 1.90 inches in Huntington and 1.89 inches in Charleston. Florida also experienced local downpours, with Daytona Beach reporting 5.57 inches—a record for the date—on October 9. Daytona Beach also netted 9.37 inches of rain from October 6-10. Farther north, the list of weather stations setting annual precipitation records continued to grow. In Wisconsin, for example, Green Bay's year-to-date precipitation rose to 39.99 inches on October 1—eclipsing the 2018 annual mark of 39.21 inches. Green Bay's total further climbed to 43.10 inches (167 percent of normal) by month's end. On October 8-9, snow fell across the northern High Plains and parts of the Northwest, with event totals reaching 7.7 inches in Great Falls, MT, and 3.6 inches in Spokane, WA. Elsewhere in Montana, Billings received a daily-record snowfall of 5.6 inches on October 9. Farther east, in the Dakotas and western Minnesota, snow generally developed on October 10 and persisted into the 13th. Four-day snowfall totals in North Dakota included 17.1 inches in Bismarck, 7.1 inches in Grand Forks, and 4.5 inches in Fargo. Bismarck, which also noted a 17.1-inch total for the month, experienced a higher October amount only in 1991, when 23.7 inches fell during the last 9 days of the month. On October 11, wind gusts were clocked to 53 mph in Bismarck and 52 mph in Fargo. Snowfall totals of 1 to 3 feet were common across the eastern two-thirds of North Dakota, with some of the highest amounts noted from the community of Harvey northward to the Canadian border. In South Dakota, storm-total (October 10-12) snowfall exceeded 5 inches and wind gusts topped 50 mph in locations such as Mobridge (5.6 inches; peak gust to 57 mph) and Pierre (5.3 inches; peak gust to 53 mph).

Post-storm cold settled across the Northwest, where Olympia, WA, recorded a trio of daily-record lows (26, 26, and 27°F) from October 9-11. Similarly, three consecutive daily-record lows were set from October 10-12 in locations such as Eureka, NV (5, 9, and 12°F), and Pocatello, ID (16, 14, and 17°F). On October 10, temperatures plunged to daily-record levels in Montana locations such as Cut Bank (-3°F) and Great Falls (0°F). Previously, Great Falls' earliest autumn reading of 0°F or below had occurred on October 25, 1919. In Colorado, consecutive daily-record lows were established on October 10-11 in Denver (13 and 9°F) and Colorado Springs (14 and 9°F). On the southern Plains, consecutive daily-record lows on October 11-12 were set in locations such as Oklahoma City, OK (32 and 28°F), and Dalhart, TX (22 and 24°F). For Oklahoma City, the October 11 freeze was the third-earliest initial autumn freeze; the record remains October 8, 2012. On October 12, daily-record lows dipped to 30°F in Vichy-Rolla, MO, and Fayetteville, AR, while Abilene, TX, collected a daily-record low of 33°F. Chilly conditions lingered through mid-October

across much of the country. For example, daily-record lows for October 13 dipped to 23°F in Bishop, CA; McCook, NE; and Goodland, KS. McCook set another daily-record low (24°F) on October l6. Later, Western lows of 38°F set daily records in Half Moon Bay, CA (on October 18), and Desert Rock, NV (on October 19). Farther east, however, several daily-record highs were established, mainly from Texas to Florida. October 14 featured daily-record highs of 92°F in Florida locations such as Fort Myers and Tallahassee, as well as a record-setting high of 95°F in Corpus Christi, TX. Other mid-month records included 97°F (on October 15) in Harlingen, TX, and 93°F (on October 16) in Vero Beach, FL. Following a brief period of cooler weather, heat again surged across parts of Texas in advance of a cold front. Del Rio, TX, collected a pair of daily-record highs (95 and 96°F, respectively) on October 19-20. Elsewhere in Texas, record-setting high for October 19 soared to 97°F in Austin (Bergstrom) and 94°F in Corpus Christi. Similarly, October 20 featured daily-record highs in Texas locations such as Laredo (97°F) and San Angelo (95°F). While heat continued across Florida's peninsula for the remainder of the month, a series of cold fronts soon swept away Texas' warmth. Miami, FL, tallied a trio of daily-record highs (92, 91, and 91°F) from October 20-22. Elsewhere in Florida, Naples (95°F on October 24) tied a monthly record most recently attained on October 4, 2007. Heat also affected parts of California, where downtown Oakland notched consecutive daily-record highs of 85°F on October 21-22. Oakland posted another record, 89°F, on October 24. Sacramento, CA, registered consecutive daily-record highs (89 and 90°F, respectively) on October 23-24. Meanwhile, cold air surged southward across the Plains. Consecutive daily-record lows were established on October 24-25 in Texas locations such as Amarillo (24 and 22°F) and Borger (27 and 25°F). Elsewhere on the 25th, daily-record lows dipped to 20°F in Goodland, KS, and McCook, NE. In the Northwest, temperatures briefly rebounded in advance of another blast of cold air. In Washington, record-setting highs for October 25 rose to 76°F in Pasco and 75°F in Yakima.

During the mid- to late-month period, several surges of moisture spread northward from the Gulf of Mexico. Two of those surges featured moisture associated with short-lived Tropical Storms Nestor and Olga, the remnants of which reached the Gulf Coast on October 19 and 25, respectively. The rain, which was generally well-distributed across the South and East, greatly eased drought that had developed in September and early October. As the dry spell quickly began to wane, record-setting rainfall totals for October 15 reached 4.90 inches in El Dorado, AR, and 4.32 inches in Jackson, MS. Heavy rain also fell on October 15 in parts of the upper Great Lakes region, where Marquette, MI, received a record-setting sum (1.76 inches) for October 15. Later, heavy showers swept into the East. On October 16, daily-record amounts topped the 2-inch mark in Allentown, PA (2.33 inches), and Newark, NJ (2.13 inches).

Tropical Storm Nestor (and its post-tropical remnants) delivered October 19 totals of 3.91 inches in Daytona Beach, FL, and 2.20 inches in Macon, GA; both totals were records for the date. Wind gusts in Florida on the 19th were clocked to 45 mph in Clearwater; 43 mph in Sarasota-Bradenton; and 37 mph in Tampa and Apalachicola. On October 20, Nestor's remnants produced heavy rain in the Atlantic Coast States. In Virginia, record-setting totals for that date reached 4.60 inches at Wallops Island and 2.32 inches in Danville. Concurrently, a slow-

moving storm soaked the north-central U.S. Daily-record totals on the 20th included 1.20 inches in Bismarck, ND, and 1.08 inches in Mobridge, SD. Mobridge reported another daily-record sum (0.93 inch) on October 21. Other record-setting Midwestern amounts for the 21st totaled 1.71 inches in Sisseton, SD; 1.62 inches in Eau Claire, WI; and 1.32 inches in Saint Cloud, MN. Along the storm's trailing cold front, more than two dozen tornadoes were spotted on October 20 from northeastern Texas into the mid-South. In Dallas County, Texas, an EF-3 tornado (winds estimated near 140 mph) carved a path nearly 16 miles in length during a 32-minute rampage that stretched from near Irving to just east of Richardson. As the cold front swept eastward, heavy rain fell from the lower Ohio Valley to the Gulf Coast. Record-setting totals for October 21 were set in locations such as Beaumont-Port Arthur, TX (1.85 inches); Evansville, IN (1.72 inches); and Cape Girardeau, MO (1.34 inches). Interestingly, Evansville (2.26 inches) and Cape Girardeau (3.87 inches) set daily records again on the 26th; for the latter location, it was also the wettest October day on record (previously, 3.16 inches on October 20, 1984).

Tropical Storm Olga's formation and demise occurred within a few hours of each other; the fledgling tropical system succumbed to (and was overrun by) a powerful cold front. Despite losing all tropical characteristics on October 25 before reaching the Gulf Coast, Olga contributed to a heavy-rain event and was partially responsible for high winds. On the western (cold) side of the complex interaction between air from the tropics and the polar region, heavy, early-season snow fell in parts of northern Texas. On October 24, snowfall totals included 6.5 inches in Borger and 5.5 inches in Amarillo. Record-setting rainfall amounts for October 25 totaled 6.48 inches in Tuscaloosa, AL, and 4.77 inches in Meridian, MS. That became Tuscaloosa's wettest day on record, edging 6.44 inches on April 12, 1979. Tuscaloosa's wettest October day had been October 25, 1977, when 5.73 inches fell. The following day, record-breaking totals for the 26th topped 2 inches in locations such as Memphis, TN (3.01 inches); Paducah, KY (2.60 inches); Jonesboro, AR (2.17 inches); and Lincoln, IL (2.15 inches).

The parade of cold fronts marching across the country and helping to draw tropical moisture northward also generated broad areas of high winds. By October 20, gusts were clocked to 74 mph in Buffalo, WY, and 77 mph on southern California's Whitaker Peak. The following day, high winds raked the northern and central Plains and Midwest; peak gusts on October 21 reached 67 mph in North Platte, NE, and 65 mph in Hill City, KS. On the 22nd in Montana, Bozeman Airport experienced a wind gust to 59 mph—a record for October (previously, 58 mph on October 13, 1973). It was also Bozeman's highest wind since April 4, 2016, when a gust to 65 mph was recorded. High winds soon returned in conjunction with the departure of the storm system that absorbed former Tropical Storm Olga. On October 25, a gust to 89 mph was reported in southern California, on Big Black Mountain. Farther east, the Naval Air Station Joint Reserve Base New Orleans logged a gust to 66 mph on the morning of October 26. Periodic high winds continued to plague California for the remainder of the month. Just west of Lake Tahoe, a wind gust to 107 mph was recorded on October 27 near Alpine Meadows, CA. On the same date, a gust to 66 mph was reported in Redding. Later in southern California, a wind gust to 73 mph was reported in Fremont Can-

yon on the morning of October 30. In Sonoma County, CA, the Kincade Fire was ignited on October 23 and within 5 days had charred more than 66,000 acres of vegetation. Numerous smaller fires affected other parts of California. By November 4, the Kincade Fire had scorched nearly 78,000 acres but was 80 percent contained. The fire's final toll included 374 structures, of which 175 were residences. One of the most significant late-October blazes in southern California, the Maria Fire in Ventura County, charred 10,000 acres but was fully contained by early November.

The western and central U.S., already slipping into a winter-like pattern, saw a December-like cold outbreak in late October. Daily-record lows for October 27 fell to -4°F in Casper, WY; 10°F in Pocatello, ID; and 11°F in Rapid City, SD. However, those three locations went on to achieve monthly record lows during a subsequent blast of even colder air. Casper noted -9°F on the 29th and 30th (previously, -3°F on October 30, 1971); Pocatello recorded -6°F on the 30th (previously, 7°F on October 31, 2003); and Rapid City registered -2°F on the 30th, tying a record first set on October 31, 1991. Among dozens of other monthly record lows set during the final days of October were readings of -20°F (on October 30) in Rawlins, WY; -14°F (on October 29 and 30) in Bozeman, MT; 2°F (on October 31) in Tribune, KS; 4°F (on October 31) in North Platte, NE; 6°F (on October 31) in Grand Junction, CO; 14°F (on October 30) in Salt Lake City, UT; and 23°F (on October 30) in Midland, TX. Prior to this year, Grand Junction's lowest October reading had been 16°F on October 29, 1917. Tribune tied a monthly record that had been originally set on October 23, 1917. Elsewhere in Kansas, Dodge City (10°F on October 31) tied a monthly record first set on October 27, 1878.

With a high of 91°F on October 31, Jacksonville, FL, observed its latest-ever reading of 90°F or greater (previously, 90°F on October 27, 2010). Fort Myers, FL, achieved temperatures of 90°F or higher on each of the last 5 days of the month, with the temperature peaking at 94°F—a record for the date—on October 29. Similarly, Orlando, FL, reached or exceeded the 90-degree mark each day from October 26-31, with the temperature topping out at 92°F on the 28th and 29th. Warmth briefly expanded into the East, where record-setting highs on October 31 rose to 86°F in Norfolk, VA; 75°F in Albany, NY; and 71°F in Burlington, VT. However, it was also the wettest October 31 on record in Burlington (3.30 inches), as well as other Eastern locations such as Harrisburg, PA (2.63 inches), and Syracuse, NY (1.95 inches). For Burlington, it was the wettest October day since October 6, 1932, when 4.19 inches fell. Farther south, record-breaking rainfall amounts for October 30 reached 3.28 inches in Jackson, MS, and 2.83 inches in Birmingham, AL. High winds accompanied the Eastern warmth and rain. Very early on November 1, shortly after midnight, wind gusts reached 70 mph at the Blue Hill Observatory in Milton, MA, and 62 mph at Niagara Falls, NY. Farther west, October ended not only on a cold note, but a snowy one as well. In Colorado, record-setting snowfall amounts for October 28 included 5.5 inches in Colorado Springs and 3.8 inches in Pueblo. On the same date, 1.2 inches of snow fell in Green Bay, WI, and Des Moines, IA. Madison, WI, received 8.1 inches of snow during the last 4 days of the month, ensuring its snowiest October on record (previously, 5.2 inches in 1917). Four inches of Madison's snow fell on the 31st. Peoria, IL, also reported its snowiest October, with 3.9

inches of the 4.2-inch monthly total occurring on the 31st. Elsewhere in Illinois, Chicago received 4.6 inches of snow on October 30-31. Daily-record amounts for October 31 included 5.4 inches in Milwaukee, WI; 4.4 inches in Houghton Lake, MI; 2.0 inches in Lincoln, IL; and 1.9 inches in Green Bay, WI. With a boost from the late-month storminess, October precipitation records were established in Southern and Midwestern locations such as Jackson, MS (14.66 inches; previously, 10.58 inches in 1918); Memphis, TN (12.95 inches; previously, 10.56 inches in 2009); and Des Moines, IA (7.41 inches; previously, 7.29 inches in 1941).

Mild, wet weather dominated Alaska during October, although an early-month cold spell led to record-setting lows for October 8 in Juneau (23°F) and Ketchikan (31°F). Later, drought-easing precipitation arrived in parts of southeastern Alaska, where Ketchikan's monthly total climbed to 19.96 inches (104 percent of normal). Ketchikan's wettest day during the month was October 15, when 5.60 inches fell. Across the Alaskan mainland, October precipitation was at least twice normal in locations such as Bettles (2.49 inches, or 239 percent of normal); Delta Junction (1.65 inches, or 206 percent); and Fairbanks (1.68 inches, or 202 percent). With a 4.42-inch monthly total that was 275 percent of normal, Nome experienced a fourth consecutive month with at least 4 inches of precipitation. Amid the wetness, mild weather continued. In McGrath, for example, there were three consecutive daily-record highs (53, 50, and 45°F) from October 27-29.

Another month of warmth in Hawaii boosted temperatures 2 to 4°F above normal in many locations. With 21 days of 90-degree heat in October, Kahului, Maui, extended its annual record to an astounding 152 days. Previously, Kahului's greatest number of 90-degree readings in a year was 94 days in 1968. On the Big Island, Hilo's monthly average temperature of 79.6°F was 4.0°F above normal and broke the October 2015 record of 78.6°F. With an average temperature of 80.8°F (2.6°F above normal), Kahului also experienced its warmest October on record (previously, 80.6°F in 2018). One of Kahului's most impressive hot spells occurred from October 8-11, when daily-record highs soared to 92, 93, 95, and 94°F, respectively. Meanwhile, Hawaii's heaviest rain occurred during the first half of the month. Hilo netted a daily-record rainfall (3.98 inches) on October 10, followed the next day in Lihue, Kauai, by a daily-record sum of 1.76 inches. At the state's major airport observation sites, October rainfall ranged from 0.21 inch (18 percent of normal) in Kahului, Maui, to 13.80 inches (141 percent) in Hilo. Lihue also reported above-normal October rainfall, with a monthly sum of 5.43 inches (142 percent of normal). In contrast, Kahului reported no measurable rain after October 3.

Fieldwork
Fieldwork summary provided by USDA/NASS

October was cooler than average for the Great Plains, Rocky Mountains, and West, with temperatures averaging 6°F or more below normal in many locations. However, temperatures averaged at least 6°F above normal in parts of the Southeast. During October, much of the West remained extremely dry. In contrast, parts of the lower Mississippi Valley, eastern Oklahoma, and western Washington received rainfall totaling 10 inches or more.

By October 6, ninety-three percent of this year's corn was denting, 7 percentage points behind last year and 6 points behind the 5-year average. Fifty-eight percent of the corn had matured by October 6, thirty-four percentage points behind last year and 27 points behind average. Fifteen percent of the corn was harvested by October 6, eighteen percentage points behind last year and 12 points behind average. By October 13, ninety-six percent of this year's corn was denting, 4 percentage points behind both last year and the average. Eighty-six percent of the corn had matured by October 20, thirteen percentage points behind last year and 11 points behind average. Thirty percent of the corn was harvested by October 20, eighteen percentage points behind last year and 17 points behind average. Ninety-six percent of the corn had matured by November 3, four percentage points behind both last year and the average. Fifty-two percent of the acreage was harvested by November 3, twenty-two percentage points behind last year and 23 points behind average. Overall, 58 percent of the nation's corn was rated in good to excellent condition on November 3, ten percentage points below the same time last year.

Seventy-two percent of the nation's soybeans were dropping leaves by October 6, eighteen percentage points behind last year and 15 points behind the 5-year average. By October 6, harvest was 14 percent complete, 17 percentage points behind last year and 20 points behind average. Ninety-four percent of the soybeans were dropping leaves by October 20, four percentage points behind last year and 3 points behind average. Harvest was 46 percent complete by October 20, five percentage points behind last year and 18 points behind average. Overall, 54 percent of the soybeans were rated in good to excellent condition on October 20, twelve percentage points below the same time in 2018. Ninety-seven percent of the soybeans were dropping leaves by October 27, three percentage points behind last year and 2 points behind average. By November 3, harvest was 75 percent complete, 6 percentage points behind last year and 12 points behind average.

Fifty-two percent of the nation's intended 2020 winter wheat acreage was sown by October 6, three percentage points behind last year and 1 point behind the 5-year average. By October 6, twenty-six percent of the winter wheat acreage was emerged, 2 percentage points behind last year but equal to the average. Nationwide, producers had sown 77 percent of the winter wheat by October 20, six percentage points ahead of last year and 2 points ahead of average. By October 20, fifty-three percent of the winter wheat had emerged, 1 percentage point ahead of last year but equal to the average. Eighty-nine percent of the winter wheat was sown by November 3, six percentage points ahead of last year and 1 point ahead of average. By November 3, seventy-one percent of the winter wheat had emerged, 2 percentage points ahead of last year but 3 points behind average. Overall, 57 percent of the winter wheat was reported in good to excellent condition on November 3, six percentage points above the same time in 2018.

By October 6, eighty-three percent of the nation's cotton acreage had open bolls, 7 percentage points ahead of last year and 8 points ahead of the 5-year average. Twenty-five percent of the cotton was harvested by October 6, one percentage point ahead of last year and 5 points ahead of average. By October 20, ninety-three percent of the cotton had open bolls, 5 percentage points ahead of last year and 4 points ahead of average. Forty percent of the cotton was harvested by October 20, two percentage points ahead of last year and 5 points ahead of average. By October 27, ninety-five percent of the cotton had open bolls, 4 percentage points ahead of last year and 2 points ahead of average. Overall, 40 percent of the cotton was rated in good to excellent condition on October 27, five percentage points above the same time in 2018. By November 3, fifty-three percent of the cotton was harvested, 5 percentage points ahead of last year and 2 points ahead of average.

By October 6, sixty-five percent of the sorghum was mature, 6 percentage points behind last year and 8 points behind the 5-year average. Thirty-three percent of the sorghum was harvested by October 6, five percentage points behind last year and 7 points behind average. By October 20, ninety-two percent of the sorghum was mature, 4 percentage points ahead of last year and 3 points ahead of average. Forty-nine percent of the sorghum was harvested by October 20, four percentage points ahead of last year but 4 points behind average. On October 20, sixty-four percent of the sorghum was rated in good to excellent condition, 11 percentage points above the same time last year. Ninety-six percent of the sorghum was mature by October 27, three percentage points ahead of last year and 2 points ahead of average. By November 3, seventy-eight percent of the sorghum was harvested, 16 percentage points ahead of last year and 6 points ahead of average.
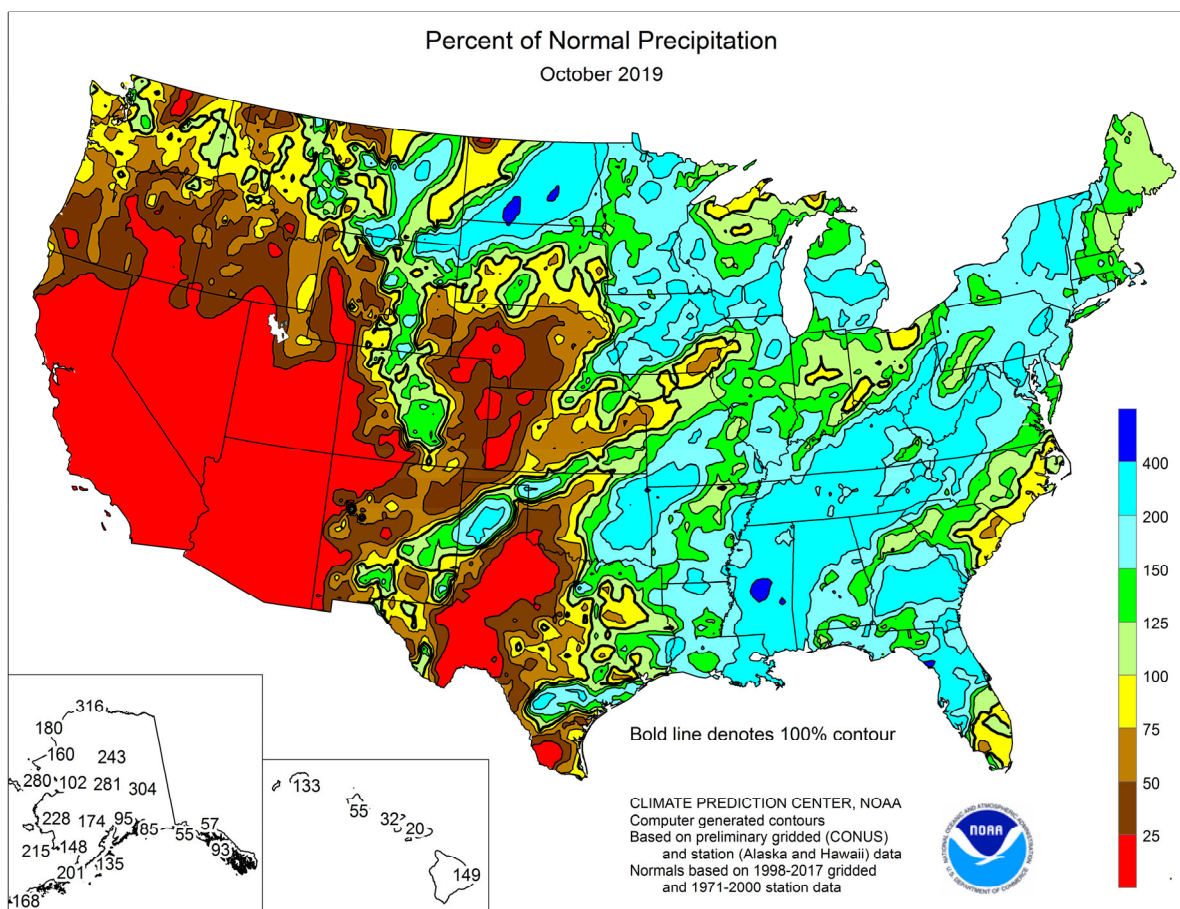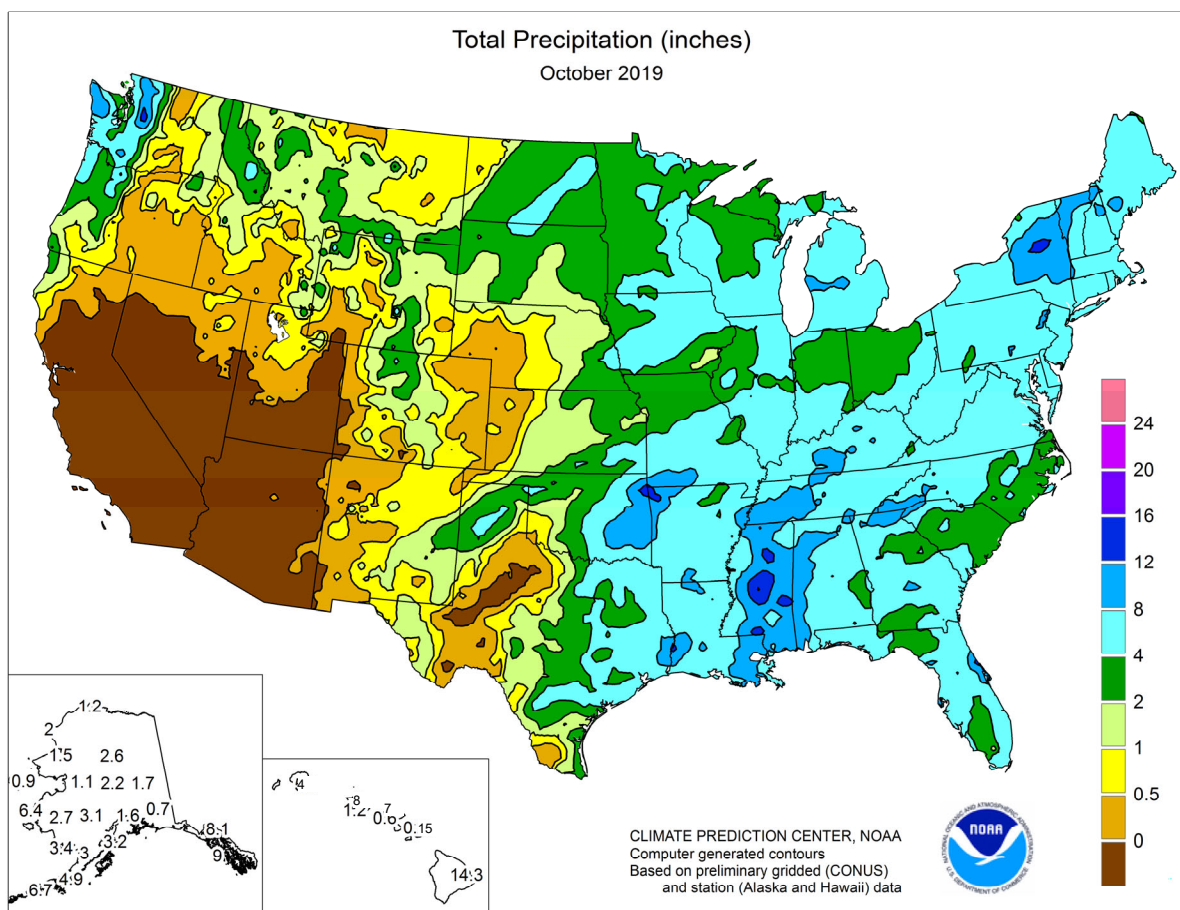
Nationally, 76 percent of the rice was harvested by October 6, two percentage points behind last year and 4 points behind average. By October 20, ninety-three percent of the rice was harvested, 3 percentage points ahead of 2018 but 1 point behind average. Rice was 97 percent harvested by the 27th, 2 percentage points ahead of 2018 but 1 point behind average.
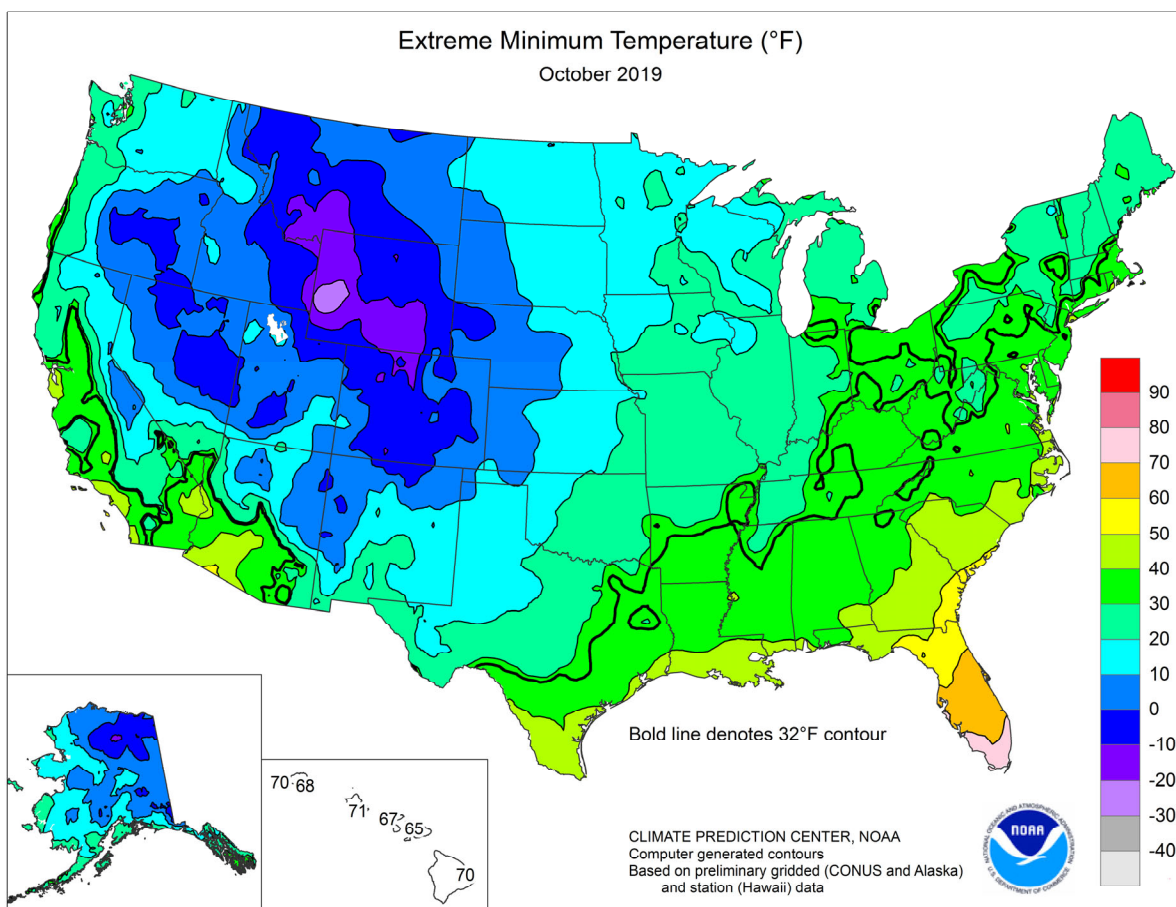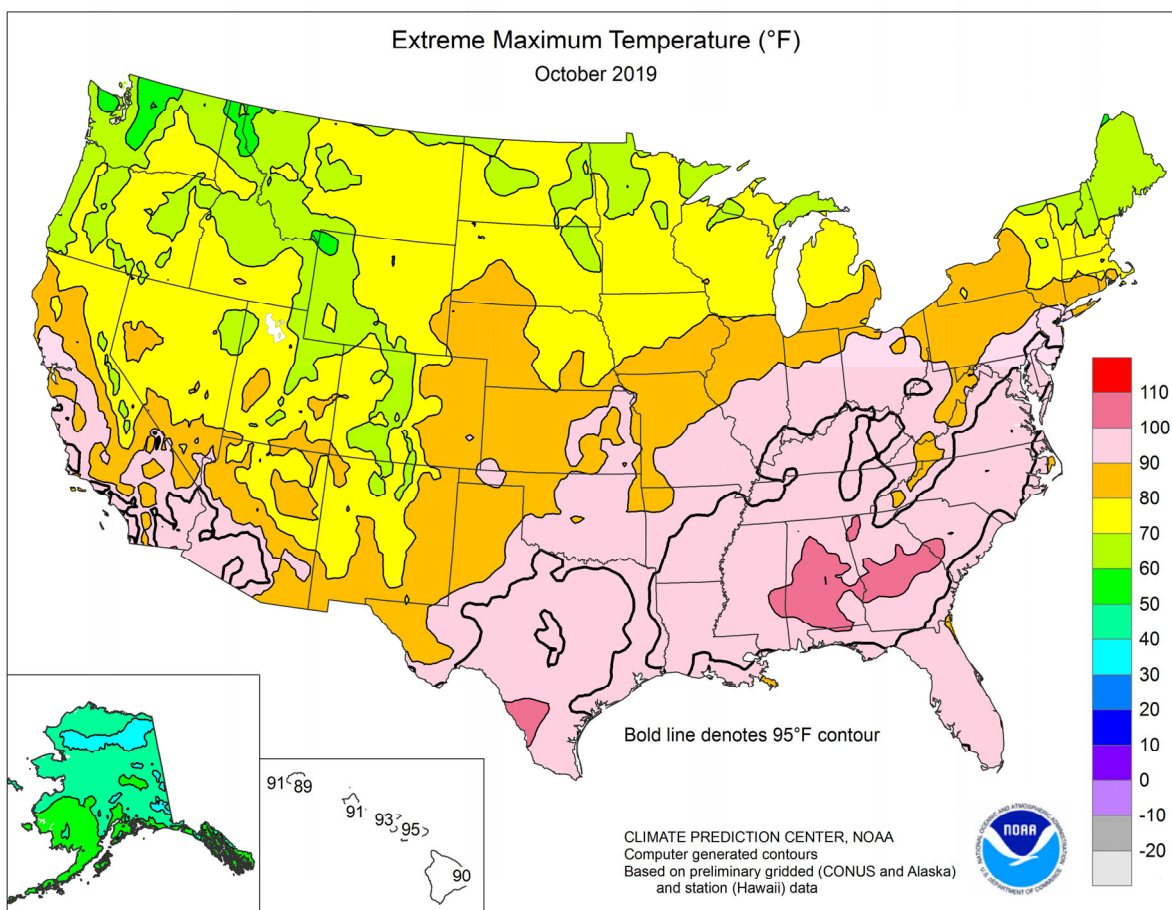
By October 6, ninety-one percent of the spring wheat was harvested, 9 percentage points behind 2018 and 8 points behind average. Ninety-six percent of the crop was harvested by October 20, four points behind both last year and the average.
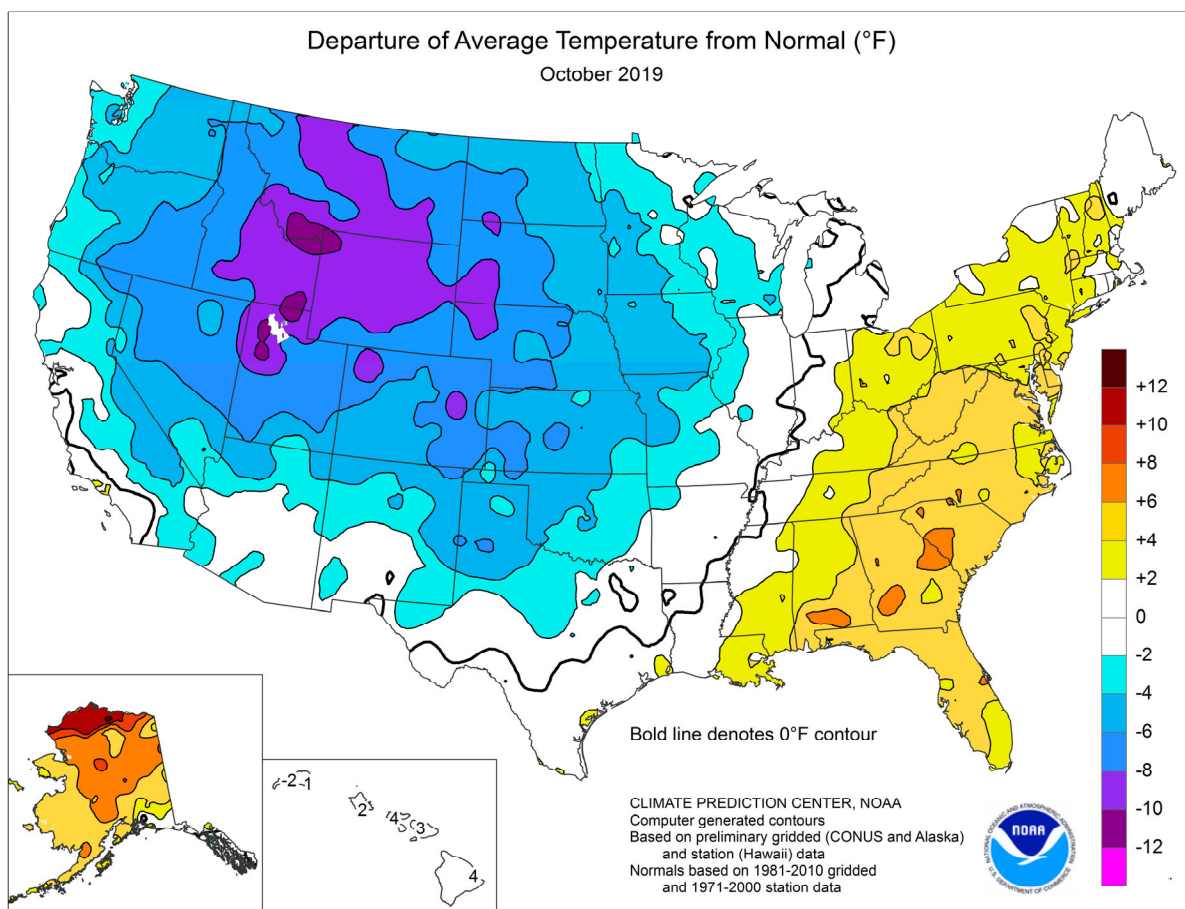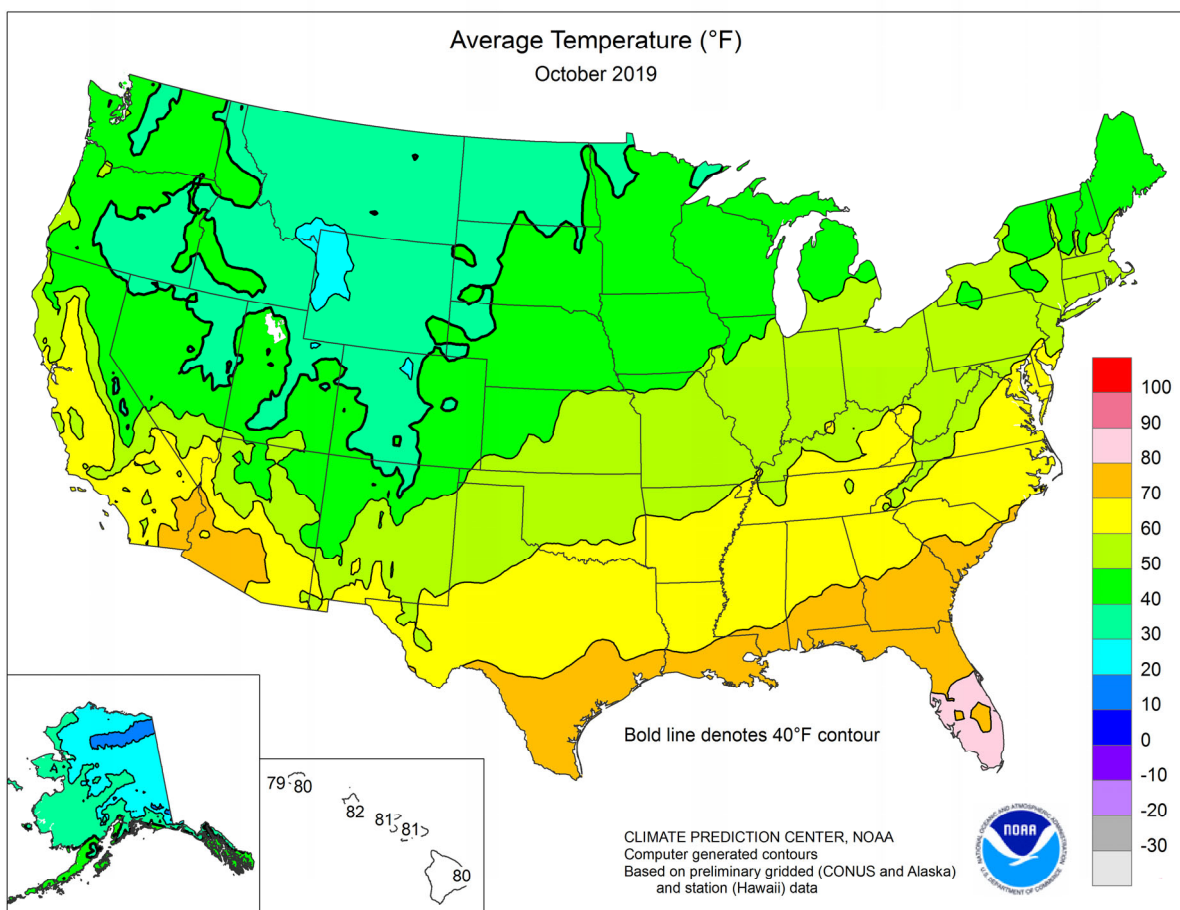
By October 6, forty-one percent of the nation's peanut acreage was harvested, 10 percentage points ahead of last year and 11 points ahead of the 5-year average. Overall, 54 percent of the peanuts were rated in good to excellent condition on October 13, four percentage points below the same time last year. Sixty-seven percent of the peanut acreage was harvested by October 20, thirteen percentage points ahead of last year and 12 points ahead of average. By November 3, eighty-four percent of the peanuts were harvested, 10 percentage points ahead of last year and 6 points ahead of average.

Sugarbeet producers had harvested 19 percent of the nation's acreage by October 6, eighteen percentage points behind last year and 21 points behind average. By October 20, producers had harvested 42 percent of the crop, 20 percentage points behind last year and 31 points behind average. Harvest was 70 percent complete by November 3, twenty percentage points behind last year and 21 points behind average.

By October 6, one percent of this year's sunflower acreage was harvested, 4 percentage points behind both last year and the 5-year average. Nine percent of the crop was harvested by October 20, nine percentage points behind last year and 18 points behind average. By November 3, thirty-one percent of this year's sunflower crop was harvested, 18 percentage points behind last year and 31 points behind average.

Total Precipitation (inches)
October 2019

CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS)
and station (Alaska and Hawaii) data

Percent of Normal Precipitation
October 2019

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

Extreme Maximum Temperature (°F)
October 2019

Bold line denotes 95°F contour

CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data

91 89
91 93 95
90

Extreme Minimum Temperature (°F)
October 2019

Bold line denotes 32°F contour

CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data

70 68
71 67 65
70

Average Temperature (°F)
October 2019

Bold line denotes 40°F contour

79 80
82 81 81
80

CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded (CONUS and Alaska)
and station (Hawaii) data

100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30

Departure of Average Temperature from Normal (°F)
October 2019

Bold line denotes 0°F contour

-2 -1
2
4 3
4

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

+12
+10
+8
+6
+4
+2
0
-2
-4
-6
-8
-10
-12

National Weather Data for Selected Cities
October 2019
Data Provided by Climate Prediction Center

STATES AND STATIONS	TEMP, °F AVERAGE	TEMP, °F DEPARTURE	PRECIP. TOTAL	PRECIP. DEPARTURE	STATES AND STATIONS	TEMP, °F AVERAGE	TEMP, °F DEPARTURE	PRECIP. TOTAL	PRECIP. DEPARTURE	STATES AND STATIONS	TEMP, °F AVERAGE	TEMP, °F DEPARTURE	PRECIP. TOTAL	PRECIP. DEPARTURE
AL BIRMINGHAM	67	4	7.85	4.62	LEXINGTON	61	4	7.83	5.13	COLUMBUS	58	3	4.05	1.74
HUNTSVILLE	65	4	5.77	2.23	LONDON-CORBIN	60	4	7.81	5.01	DAYTON	58	5	3.29	0.57
MOBILE	73	5	11.13	7.88	LOUISVILLE	62	4	5.62	2.83	MANSFIELD	56	5	3.32	0.64
MONTGOMERY	71	6	5.60	3.02	PADUCAH	59	1	6.47	3.02	TOLEDO	56	4	4.27	1.92
AK ANCHORAGE	42	8	1.85	-0.23	LA BATON ROUGE	71	3	7.81	4.00	YOUNGSTOWN	55	4	4.79	2.33
BARROW	29	14	1.25	0.86	LAKE CHARLES	72	3	7.38	3.44	OK OKLAHOMA CITY	57	-5	3.29	-0.35
COLD BAY	45	5	7.20	2.66	NEW ORLEANS	75	5	12.46	9.41	TULSA	58	-5	5.89	1.84
FAIRBANKS	32	8	1.68	0.76	SHREVEPORT	66	-1	6.49	2.04	OR ASTORIA	50	-3	6.96	1.35
JUNEAU	41	-1	8.05	-0.25	ME BANGOR	49	1	5.80	2.32	BURNS	38	-6	0.39	-0.33
KING SALMON	40	7	2.98	0.89	CARIBOU	46	3	3.76	0.77	EUGENE	49	-4	1.25	-2.10
KODIAK	44	4	10.63	2.27	PORTLAND	52	4	6.23	1.83	MEDFORD	52	-3	0.65	-0.66
NOME	33	4	4.42	2.84	MD BALTIMORE	62	7	6.21	3.05	PENDLETON	47	-5	0.46	-0.53
AZ FLAGSTAFF	45	-2	0.05	-1.88	MA BOSTON	57	3	4.44	0.65	PORTLAND	51	-3	1.51	-1.37
PHOENIX	76	1	0.00	-0.79	WORCESTER	51	1	7.69	3.02	SALEM	49	-4	2.52	-0.51
TUCSON	71	0	0.01	-1.20	MI ALPENA	46	0	5.42	3.09	PA ALLENTOWN	58	6	7.96	4.63
AR FORT SMITH	62	-1	9.41	5.47	DETROIT	54	2	4.41	2.18	ERIE	57	4	4.86	0.94
LITTLE ROCK	62	-1	7.02	2.77	FLINT	51	2	6.33	3.99	MIDDLETOWN	59	4	8.47	5.54
CA BAKERSFIELD	65	-2	0.00	-0.30	GRAND RAPIDS	50	0	7.13	4.33	PHILADELPHIA	61	4	4.87	2.12
EUREKA	53	-2	1.51	-0.85	HOUGHTON LAKE	45	-1	4.94	2.68	PITTSBURGH	56	3	7.19	4.94
FRESNO	65	0	0.00	-0.65	LANSING	50	1	7.23	4.94	WILKES-BARRE	56	5	6.36	3.34
LOS ANGELES	70	3	0.00	-0.36	MUSKEGON	50	0	7.84	5.04	WILLIAMSPORT	55	4	6.67	3.48
REDDING	63	0	0.09	-2.09	TRAVERSE CITY	49	0	5.79	2.85	PR SAN JUAN	83	1	2.82	-2.24
SACRAMENTO	63	-1	0.00	-0.89	MN DULUTH	44	0	4.42	1.96	RI PROVIDENCE	56	3	5.65	1.96
SAN DIEGO	68	0	0.00	-0.44	INT'L FALLS	42	0	4.90	2.92	SC CHARLESTON	72	6	3.40	0.31
SAN FRANCISCO	64	3	0.00	-1.04	MINNEAPOLIS	46	-3	5.05	2.94	COLUMBIA	70	6	2.35	-0.54
STOCKTON	64	-1	0.00	-0.82	ROCHESTER	44	-3	5.71	3.51	FLORENCE	70	6	2.74	-0.20
CO ALAMOSA	38	-5	0.07	-0.60	ST. CLOUD	43	-2	4.84	2.60	GREENVILLE	66	6	4.98	1.10
CO SPRINGS	43	-6	0.82	-0.04	MS JACKSON	67	3	14.66	11.24	MYRTLE BEACH	70	5	4.87	1.64
DENVER	44	-6	0.91	0.04	MERIDIAN	69	4	11.67	8.39	SD ABERDEEN	40	-7	3.16	1.53
GRAND JUNCTION	46	-7	0.02	-0.98	TUPELO	65	3	6.84	3.46	HURON	42	-6	3.08	1.49
PUEBLO	46	-6	1.15	0.51	MO COLUMBIA	53	-3	5.60	2.42	RAPID CITY	38	-10	2.73	1.36
CT BRIDGEPORT	58	3	6.07	2.53	JOPLIN	55	-5	5.19	1.25	SIOUX FALLS	45	-3	2.81	0.88
HARTFORD	55	3	6.94	3.00	KANSAS CITY	51	-6	2.29	-1.04	TN BRISTOL	62	7	6.60	4.30
DC WASHINGTON	64	5	6.66	3.44	SPRINGFIELD	55	-3	8.18	4.71	CHATTANOOGA	66	6	7.47	4.21
DE WILMINGTON	61	5	5.49	2.41	ST JOSEPH	51	-6	3.29	0.01	JACKSON	61	0	8.96	5.64
FL DAYTONA BEACH	79	5	13.82	9.34	ST LOUIS	57	-1	4.83	2.07	KNOXVILLE	64	5	4.96	2.31
FT LAUDERDALE	82	3	3.31	-3.13	MT BILLINGS	40	-8	1.64	0.38	MEMPHIS	64	0	12.95	9.64
FT MYERS	83	5	4.98	2.39	BUTTE	33	-8	0.34	-0.45	NASHVILLE	64	4	6.46	3.59
JACKSONVILLE	75	6	3.30	-0.56	GLASGOW	40	-5	1.12	0.41	TX ABILENE	64	-2	0.35	-2.55
KEY WEST	83	3	3.69	-0.65	GREAT FALLS	37	-9	1.25	0.32	AMARILLO	53	-5	5.92	4.42
MELBOURNE	81	6	6.31	1.55	HELENA	38	-7	1.10	0.44	AUSTIN	70	-1	2.53	-1.44
MIAMI	83	4	3.93	-2.26	KALISPELL	37	-5	0.92	-0.04	BEAUMONT	73	3	7.25	2.58
ORLANDO	81	6	6.07	3.34	MILES CITY	39	-9	0.57	-0.56	BROWNSVILLE	77	2	3.38	-0.40
PENSACOLA	75	6	4.69	0.56	MISSOULA	38	-6	0.63	-0.20	COLLEGE STATION	71	0	3.06	-1.16
ST PETERSBURG	82	6	7.81	5.17	NE GRAND ISLAND	47	-5	1.55	0.04	CORPUS CHRISTI	76	2	1.39	-2.55
TALLAHASSEE	75	6	4.35	1.10	HASTINGS	47	-6	1.55	-0.12	DALLAS/FT WORTH	65	-2	4.42	0.31
TAMPA	81	5	6.94	4.65	LINCOLN	49	-4	4.69	2.75	DEL RIO	73	2	1.06	-0.94
WEST PALM BEACH	82	4	5.40	-0.06	MCCOOK	46	-7	0.58	-0.70	EL PASO	66	1	1.34	0.53
GA ATHENS	67	5	3.81	0.34	NORFOLK	46	-5	1.93	0.21	GALVESTON	75	1	10.66	7.17
ATLANTA	68	5	3.59	0.48	NORTH PLATTE	43	-7	0.52	-0.72	HOUSTON	72	2	5.80	1.30
AUGUSTA	71	8	4.12	0.92	OMAHA/EPPLEY	49	-4	5.63	3.42	LUBBOCK	57	-4	1.11	-0.59
COLUMBUS	72	6	4.34	2.01	SCOTTSBLUFF	42	-6	1.58	0.57	MIDLAND	64	0	0.01	-1.76
MACON	71	7	5.59	3.22	VALENTINE	42	-6	1.16	-0.06	SAN ANGELO	65	0	0.52	-2.05
SAVANNAH	74	7	7.28	4.16	NV ELKO	41	-6	0.13	-0.58	SAN ANTONIO	71	0	4.02	0.16
HI HILO	80	4	13.80	4.16	ELY	39	-6	0.00	-1.00	VICTORIA	73	1	4.50	0.24
HONOLULU	82	2	1.15	-1.03	LAS VEGAS	67	-2	0.00	-0.24	WACO	67	-2	4.30	0.63
KAHULUI	81	3	0.21	-0.84	RENO	51	-1	0.00	-0.42	WICHITA FALLS	61	-4	1.01	-2.10
LIHUE	80	2	5.43	1.18	WINNEMUCCA	42	-7	0.11	-0.55	UT SALT LAKE CITY	46	-7	0.49	-1.08
ID BOISE	46	-7	0.29	-0.47	NH CONCORD	50	2	5.27	1.81	VT BURLINGTON	52	4	8.50	5.38
LEWISTON	47	-5	0.91	-0.05	NJ ATLANTIC CITY	61	6	5.53	2.67	VA LYNCHBURG	61	5	6.73	3.34
POCATELLO	38	-10	0.37	-0.60	NEWARK	60	4	7.26	4.10	NORFOLK	67	6	3.73	0.26
IL CHICAGO/O'HARE	51	-1	6.76	4.05	NM ALBUQUERQUE	55	-2	0.58	-0.42	RICHMOND	64	6	4.66	1.06
MOLINE	51	-2	3.03	0.23	NY ALBANY	53	4	7.48	4.27	ROANOKE	62	5	6.33	3.18
PEORIA	52	-1	5.30	2.54	BINGHAMTON	51	3	7.85	4.83	WASH/DULLES	60	5	5.97	2.60
ROCKFORD	50	-1	4.63	2.06	BUFFALO	52	1	5.83	2.64	WA OLYMPIA	47	-3	5.26	1.07
SPRINGFIELD	53	-3	4.66	2.04	ROCHESTER	53	3	4.84	2.24	QUILLAYUTE	48	-2	12.81	3.00
IN EVANSVILLE	58	1	6.26	3.48	SYRACUSE	53	3	6.88	3.68	SEATTLE-TACOMA	51	-2	3.67	0.48
FORT WAYNE	54	2	3.69	1.06	NC ASHEVILLE	61	6	7.78	4.61	SPOKANE	42	-5	1.53	0.47
INDIANAPOLIS	56	1	4.48	1.72	CHARLOTTE	67	5	6.00	2.34	YAKIMA	45	-4	0.51	-0.02
SOUTH BEND	53	1	5.15	1.88	GREENSBORO	64	6	6.06	2.79	WV BECKLEY	58	5	6.84	4.20
IA BURLINGTON	51	-4	2.27	-0.64	HATTERAS	68	2	5.48	0.17	CHARLESTON	61	6	5.90	3.23
CEDAR RAPIDS	46	-6	3.34	1.13	RALEIGH	66	6	3.36	0.18	ELKINS	57	6	6.33	3.47
DES MOINES	48	-5	7.41	4.79	WILMINGTON	71	6	3.66	0.45	HUNTINGTON	61	5	6.02	3.29
DUBUQUE	47	-3	6.89	4.39	ND BISMARCK	39	-6	4.36	3.08	WI EAU CLAIRE	46	-1	5.13	2.89
SIOUX CITY	45	-6	2.40	0.41	DICKINSON	37	-8	2.27	0.93	GREEN BAY	47	0	4.82	2.65
WATERLOO	47	-3	5.73	3.24	FARGO	42	-3	4.78	2.81	LA CROSSE	49	-2	4.85	2.69
KS CONCORDIA	51	-5	1.94	0.10	GRAND FORKS	40	-4	5.09	3.39	MADISON	47	-2	6.25	4.07
DODGE CITY	51	-6	1.43	-0.02	JAMESTOWN	38	-7	4.06	2.66	MILWAUKEE	50	-1	6.48	3.99
GOODLAND	46	-6	0.36	-0.69	MINOT	39	-6	2.98	1.66	WAUSAU	44	-3	4.16	1.53
HILL CITY	49	-6	0.58	-0.87	WILLISTON	38	-6	0.85	-0.02	WY CASPER	37	-9	1.63	0.49
TOPEKA	52	-5	1.98	-1.01	OH AKRON-CANTON	58	6	4.76	2.23	CHEYENNE	40	-5	1.07	0.32
WICHITA	54	-5	3.22	0.77	CINCINNATI	59	3	3.61	0.65	LANDER	37	-9	1.27	-0.10
KY JACKSON	62	4	6.01	2.83	CLEVELAND	58	6	3.82	1.09	SHERIDAN	37	-8	1.47	0.06

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

National Agricultural Summary

November 4-10, 2019

Weekly National Agricultural Summary provided by USDA/NASS

HIGHLIGHTS

The majority of the nation received little precipitation during the week ending November 10. However, parts of Arkansas, Georgia, the northern Mississippi Delta, southern Missouri, and the southern Plains received precipitation totaling 3 inches or more. Weekly temperatures were more than 4°F below normal across most of the eastern half of the country. Parts of the Great Lakes region were more than 12°F below normal. In contrast, temperatures were 4°F or more above normal in parts of California, Arizona, Florida, and select areas of the Rockies.

Corn: Sixty-six percent of the 2019 acreage was harvested by week's end, 17 percentage points behind last year and 19 points behind the 5-year average pace. Harvest progress was behind the average pace by 13 percentage points or more in ten of the 18 estimating states.

Soybean: Soybean harvest across the nation was 85 percent complete, 2 percentage points behind last year and 7 points behind the 5-year average. Harvest progress advanced 17 percentage points or more for the week in Michigan, Missouri, and North Dakota.

Winter wheat: Nationwide, producers had sown 92 percent of the intended 2020 winter wheat acreage by November 10, four percentage points ahead of last year but unchanged from the 5-year average. Winter wheat planting was complete or nearing completion in 12 of the 18 estimating states. Nationwide, 78 percent of the winter wheat acreage had emerged by November 10, two percentage points ahead of last year but 3 points behind average. Emergence was at or behind the 5-year average in 11 of the 18 estimating states. Overall, 54 percent of the 2020 winter wheat acreage was reported in good to excellent condition, 3 percentage points below the previous week but equal to the same time last year.

Cotton: By November 10, sixty-two percent of the nation's cotton acreage was harvested, 9 percentage points ahead of last year and 3 points ahead of the 5-year average. Harvest progress advanced 11 percentage points or more for the week in Missouri, North Carolina, Oklahoma, and Virginia.

Sorghum: Eighty-eight percent of the 2019 sorghum acreage was harvested by November 10, sixteen percentage points ahead of last year and 8 points ahead of the 5-year average. Harvest progress was complete in Texas and was nearing completion in Colorado, where 90 percent of the sorghum acreage was harvested.

Other Crops: Eighty-nine percent of the nation's peanut acreage was harvested by November 10, nine percentage points ahead of last year and 4 points ahead of the 5-year average. Harvest was complete or nearing completion in all estimating states except North Carolina, Oklahoma, and Texas.

By November 10, sugarbeet producers had harvested 96 percent of the nation's acreage, 1 percentage point ahead of last year but unchanged from the 5-year average. Sugarbeet harvest progress was at or nearing completion in all estimating states, except Michigan.

By November 10, forty-four percent of this year's sunflower crop was harvested, 16 percentage points behind last year and 31 points behind the 5-year average. Sunflower harvest progress in Kansas and South Dakota had double-digit advances from the previous week. Harvest progress was behind the average pace in North Dakota and South Dakota by 46 and 28 percentage points, respectively.

Crop Progress and Condition
Week Ending November 10, 2019
Weekly U.S. Progress and Condition Data provided by USDA/NASS

Corn Percent Harvested

	Prev Year	Prev Week	Nov 10 2019	5-Yr Avg
CO	75	66	83	76
IL	96	58	71	93
IN	87	57	72	85
IA	81	43	64	86
KS	88	83	90	94
KY	94	95	96	95
MI	66	25	33	64
MN	86	44	63	87
MO	94	71	79	94
NE	75	60	74	83
NC	99	99	100	99
ND	60	10	15	76
OH	77	49	65	79
PA	68	58	65	73
SD	69	27	39	82
TN	98	99	100	99
TX	93	88	92	93
WI	68	21	30	65
18 Sts	83	52	66	85

These 18 States harvested 94%
 of last year's corn acreage.

Soybeans Percent Harvested

	Prev Year	Prev Week	Nov 10 2019	5-Yr Avg
AR	77	82	88	91
IL	94	77	87	95
IN	90	79	88	91
IA	93	80	91	96
KS	72	70	83	86
KY	71	77	83	76
LA	96	99	100	99
MI	78	57	74	86
MN	97	80	91	99
MS	94	93	95	96
MO	69	54	72	82
NE	93	94	96	97
NC	51	45	54	50
ND	90	56	74	98
OH	85	78	86	92
SD	95	82	91	98
TN	71	75	80	79
WI	84	62	71	92
18 Sts	87	75	85	92

These 18 States harvested 96%
 of last year's soybean acreage.

Peanuts Percent Harvested

	Prev Year	Prev Week	Nov 10 2019	5-Yr Avg
AL	81	90	94	87
FL	93	97	99	96
GA	85	89	93	87
NC	84	79	86	82
OK	63	67	77	77
SC	61	87	94	77
TX	56	50	60	71
VA	95	99	100	94
8 Sts	80	84	89	85

These 8 States harvested 96%
 of last year's peanut acreage.

Sorghum Percent Harvested

	Prev Year	Prev Week	Nov 10 2019	5-Yr Avg
CO	54	80	90	71
KS	60	69	84	75
NE	83	54	74	86
OK	74	69	82	80
SD	73	47	64	86
TX	88	100	100	86
6 Sts	72	78	88	80

These 6 States harvested 98%
of last year's sorghum acreage.

Cotton Percent Harvested

	Prev Year	Prev Week	Nov 10 2019	5-Yr Avg
AL	69	71	79	72
AZ	44	40	47	50
AR	93	84	91	94
CA	58	45	50	75
GA	60	67	74	65
KS	17	18	26	26
LA	92	90	96	97
MS	88	77	84	92
MO	93	60	71	87
NC	73	58	73	67
OK	31	33	50	44
SC	48	71	79	61
TN	80	67	73	75
TX	41	42	50	46
VA	76	66	77	72
15 Sts	53	53	62	59

These 15 States harvested 99%
 of last year's cotton acreage.

Sugarbeets Percent Harvested

	Prev Year	Prev Week	Nov 10 2019	5-Yr Avg
ID	91	88	95	92
MI	85	55	80	84
MN	100	70	100	99
ND	99	67	99	100
4 Sts	95	70	96	96

These 4 States harvested 84%
of last year's sugarbeet acreage.

Sunflowers Percent Harvested

	Prev Year	Prev Week	Nov 10 2019	5-Yr Avg
CO	54	78	84	73
KS	61	63	81	68
ND	67	25	31	77
SD	54	28	47	75
4 Sts	60	31	44	75

These 4 States harvested 86%
of last year's sunflower acreage.

Crop Progress and Condition
Week Ending November 10, 2019

Weekly U.S. Progress and Condition Data provided by USDA/NASS

Winter Wheat Percent Planted

	Prev Year	Prev Week	Nov 10 2019	5-Yr Avg
AR	64	78	84	77
CA	39	30	40	51
CO	100	99	100	100
ID	100	99	100	99
IL	89	83	93	92
IN	91	86	93	93
KS	89	94	96	96
MI	92	86	88	96
MO	71	55	74	79
MT	99	91	93	99
NE	100	100	100	100
NC	43	32	46	51
OH	94	96	100	96
OK	84	93	95	92
OR	97	96	97	97
SD	100	100	100	100
TX	79	78	82	84
WA	99	96	98	98
18 Sts	88	89	92	92

These 18 States planted 90% of last year's winter wheat acreage.

Winter Wheat Percent Emerged

	Prev Year	Prev Week	Nov 10 2019	5-Yr Avg
AR	43	61	70	60
CA	18	13	20	27
CO	94	85	88	96
ID	90	77	92	90
IL	73	60	75	75
IN	78	66	76	79
KS	76	72	79	84
MI	70	66	75	83
MO	53	33	51	57
MT	88	64	68	92
NE	96	97	100	97
NC	31	16	30	34
OH	77	86	94	84
OK	74	83	86	85
OR	58	65	76	66
SD	91	91	95	94
TX	66	57	69	70
WA	84	78	82	85
18 Sts	76	71	78	81

These 18 States planted 90% of last year's winter wheat acreage.

Winter Wheat Condition by Percent

	VP	P	F	G	EX
AR	3	5	41	44	7
CA	0	0	15	70	15
CO	1	7	21	50	21
ID	0	1	37	51	11
IL	6	15	36	40	3
IN	3	10	40	39	8
KS	4	11	34	42	9
MI	6	13	29	40	12
MO	1	5	51	41	2
MT	0	15	30	35	20
NE	2	8	27	50	13
NC	1	3	11	67	18
OH	2	9	42	38	9
OK	3	7	33	53	4
OR	4	10	25	44	17
SD	2	4	23	54	17
TX	6	17	41	21	15
WA	1	2	31	56	10
18 Sts	3	10	33	43	11
Prev Wk	4	9	30	45	12
Prev Yr	3	9	34	45	9

VP - Very Poor;   P - Poor;   F - Fair;   G - Good;   EX - Excellent

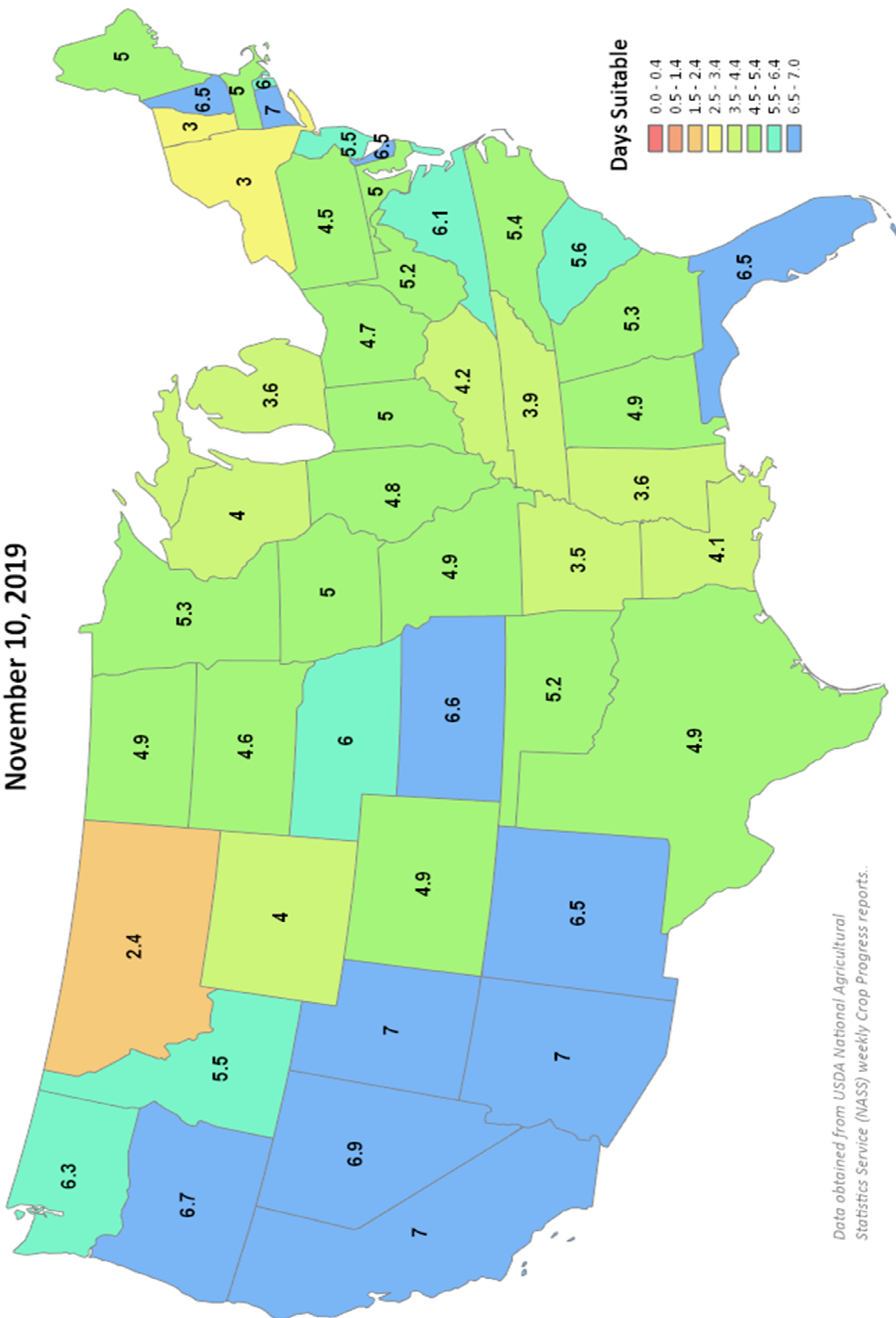NA - Not Available;   *Revised

Crop Progress and Condition
Week Ending November 10, 2019
Weekly U.S. Progress and Condition Data provided by USDA/NASS

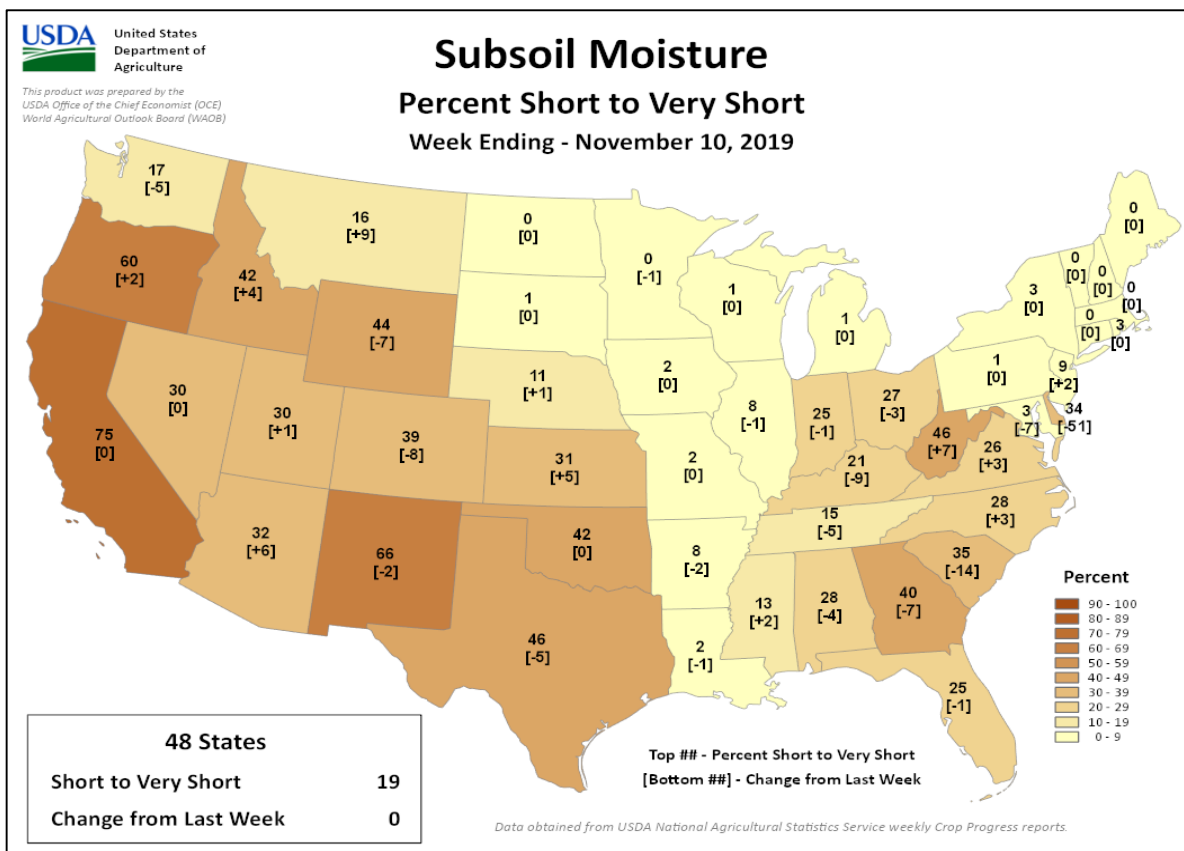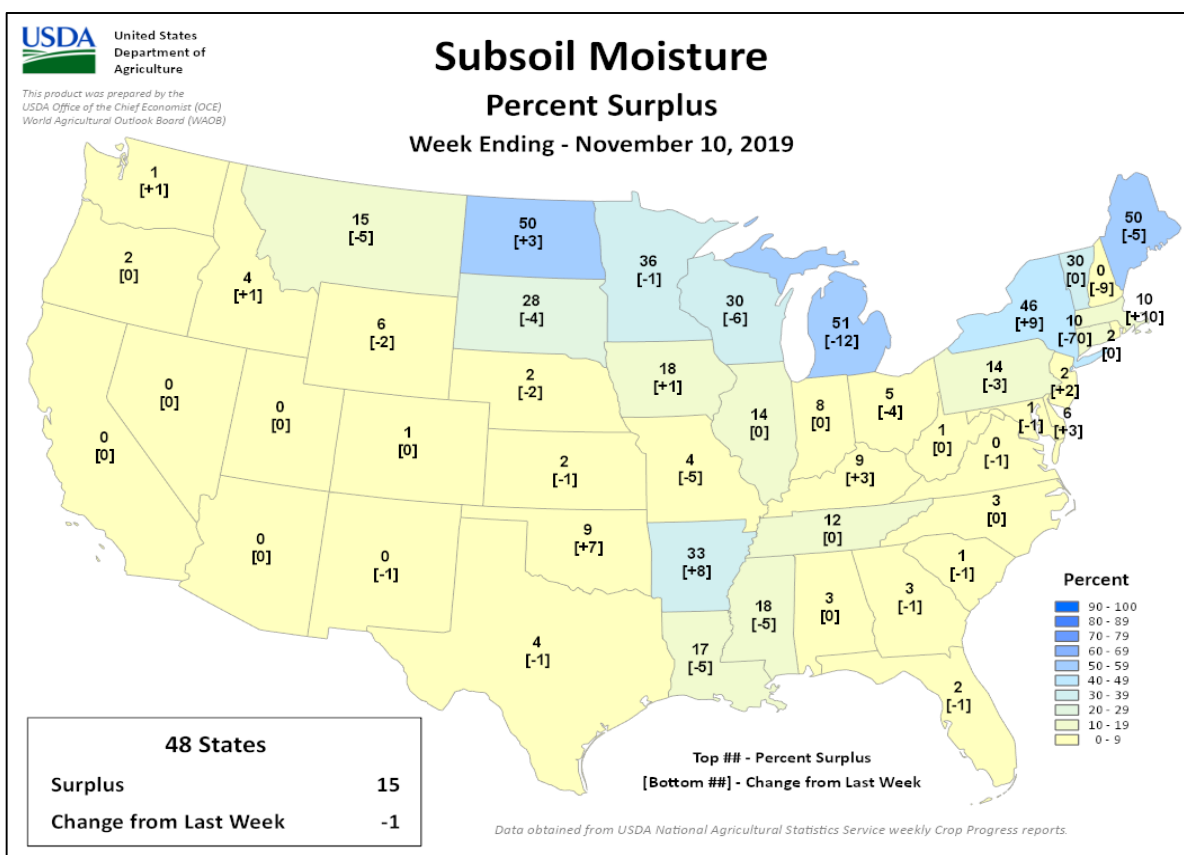

Days Suitable for Fieldwork
Week Ending
November 10, 2019

Crop Progress and Condition
Week Ending November 10, 2019
Weekly U.S. Progress and Condition Data provided by USDA/NASS

USDA United States Department of Agriculture

This product was prepared by the USDA Office of the Chief Economist (OCE) World Agricultural Outlook Board (WAOB)

Subsoil Moisture
Percent Surplus
Week Ending - November 10, 2019

48 States

| Surplus | 15 |
| Change from Last Week | -1 |

Top ## - Percent Surplus
[Bottom ##] - Change from Last Week

Percent
90 - 100
80 - 89
70 - 79
60 - 69
50 - 59
40 - 49
30 - 39
20 - 29
10 - 19
0 - 9

Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.

USDA United States Department of Agriculture

This product was prepared by the USDA Office of the Chief Economist (OCE) World Agricultural Outlook Board (WAOB)

Subsoil Moisture
Percent Short to Very Short
Week Ending - November 10, 2019

48 States

| Short to Very Short | 19 |
| Change from Last Week | 0 |

Top ## - Percent Short to Very Short
[Bottom ##] - Change from Last Week

Percent
90 - 100
80 - 89
70 - 79
60 - 69
50 - 59
40 - 49
30 - 39
20 - 29
10 - 19
0 - 9

Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.

Crop Progress and Condition
Week Ending November 10, 2019
Weekly U.S. Progress and Condition Data provided by USDA/NASS

Topsoil Moisture
Percent Surplus
Week Ending - November 10, 2019

USDA United States Department of Agriculture

This product was prepared by the USDA Office of the Chief Economist (OCE) World Agricultural Outlook Board (WAOB)

48 States

Surplus	18
Change from Last Week	-3

Top ## - Percent Surplus
[Bottom ##] - Change from Last Week

Percent
90 - 100
80 - 89
70 - 79
60 - 69
50 - 59
40 - 49
30 - 39
20 - 29
10 - 19
0 - 9

Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.

Topsoil Moisture
Percent Short to Very Short
Week Ending - November 10, 2019

USDA United States Department of Agriculture

This product was prepared by the USDA Office of the Chief Economist (OCE) World Agricultural Outlook Board (WAOB)

48 States

Short to Very Short	16
Change from Last Week	0

Top ## - Percent Short to Very Short
[Bottom ##] - Change from Last Week

Percent
90 - 100
80 - 89
70 - 79
60 - 69
50 - 59
40 - 49
30 - 39
20 - 29
10 - 19
0 - 9

Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.

International Weather and Crop Summary

November 3-9, 2019
International Weather and Crop Highlights and Summaries provided by USDA/WAOB

HIGHLIGHTS

EUROPE: Wet weather continued over much of the continent, though localized dryness lingered in parts of southern Europe.

WESTERN FSU: Very warm weather returned, keeping winter wheat vegetative to semi-dormant in the south and reducing crop cold hardiness in the north.

MIDDLE EAST: Sunny skies promoted winter grain planting and emergence, though dryness concerns increased in central Turkey.

NORTHWESTERN AFRICA: Showers maintained a favorable start to the growing season in the east, while dry weather left soils devoid of moisture for winter grain establishment in Morocco.

SOUTH ASIA: Mostly dry weather in India supported seasonal fieldwork, while a tropical cyclone approached Bangladesh.

EASTERN ASIA: Mild weather in eastern China supported wheat and rapeseed development.

SOUTHEAST ASIA: A tropical cyclone brought heavy showers to northern sections of the region, while unseasonably dry weather continued in southern Indonesia.

AUSTRALIA: Rain brought some drought relief to the east, but much more rain is needed to end severe, long-term drought.

SOUTH AFRICA: Light showers promoted summer crop planting in eastern sections of the corn belt.

ARGENTINA: Beneficial rain increased moisture for emerging summer crops as well as winter grain development, but moisture remained limited in some southwestern farming areas.

BRAZIL: Widespread showers improved prospects for soybeans and first-crop corn.

EUROPE
Total Precipitation (mm)
November 3 - 9, 2019

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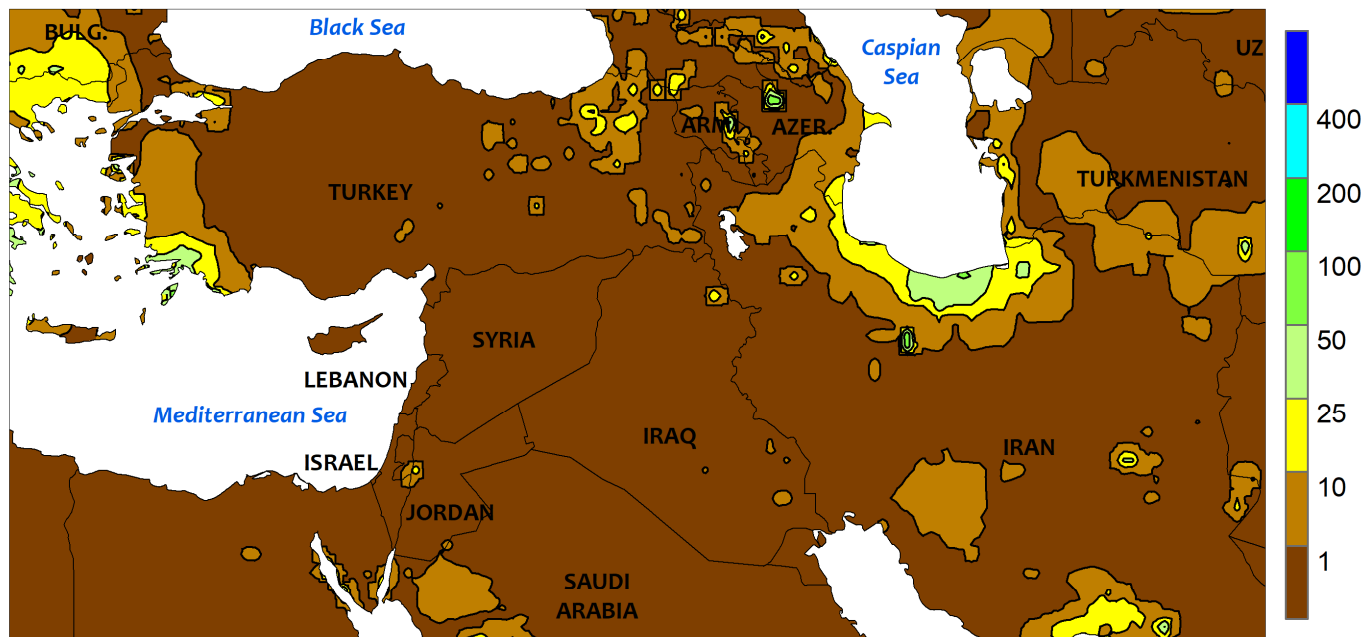Computer generated contours
Based on preliminary gridded data
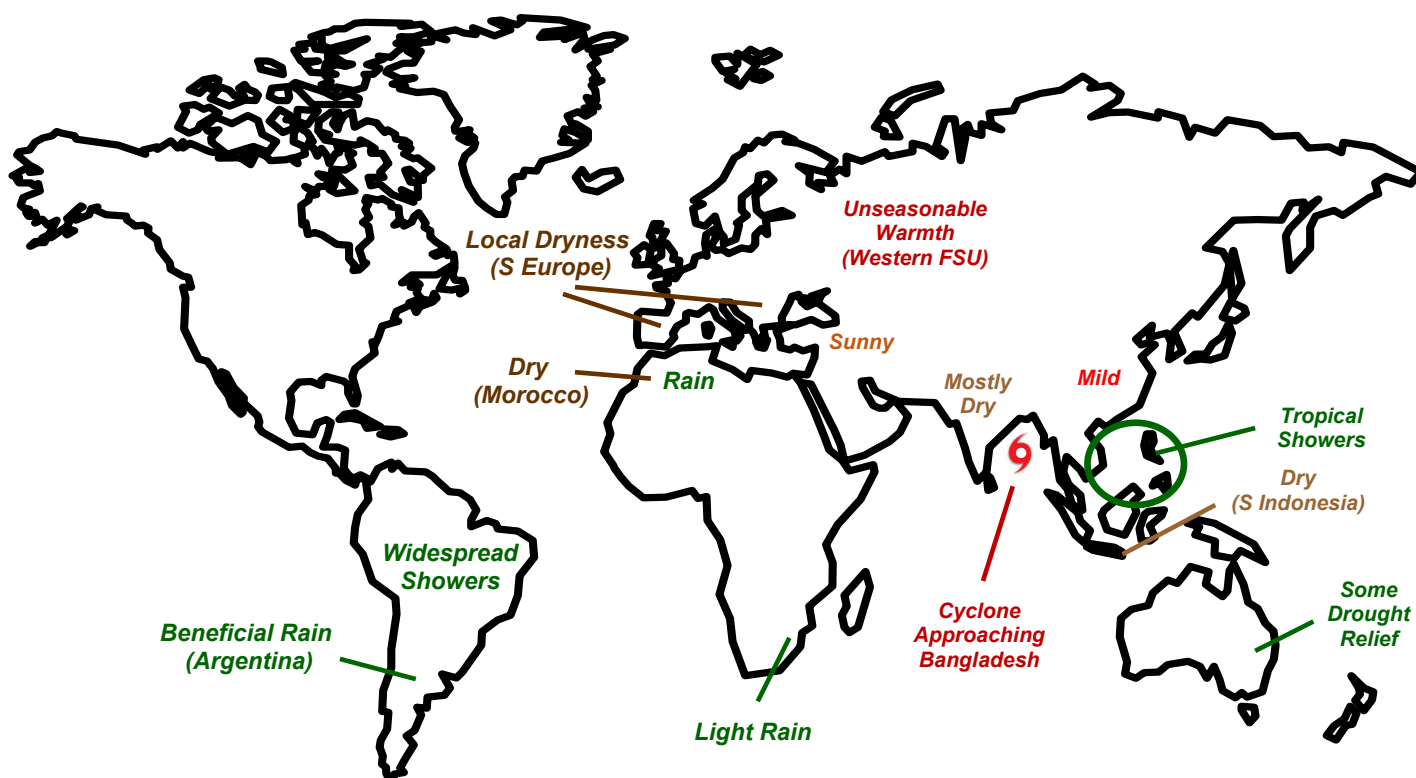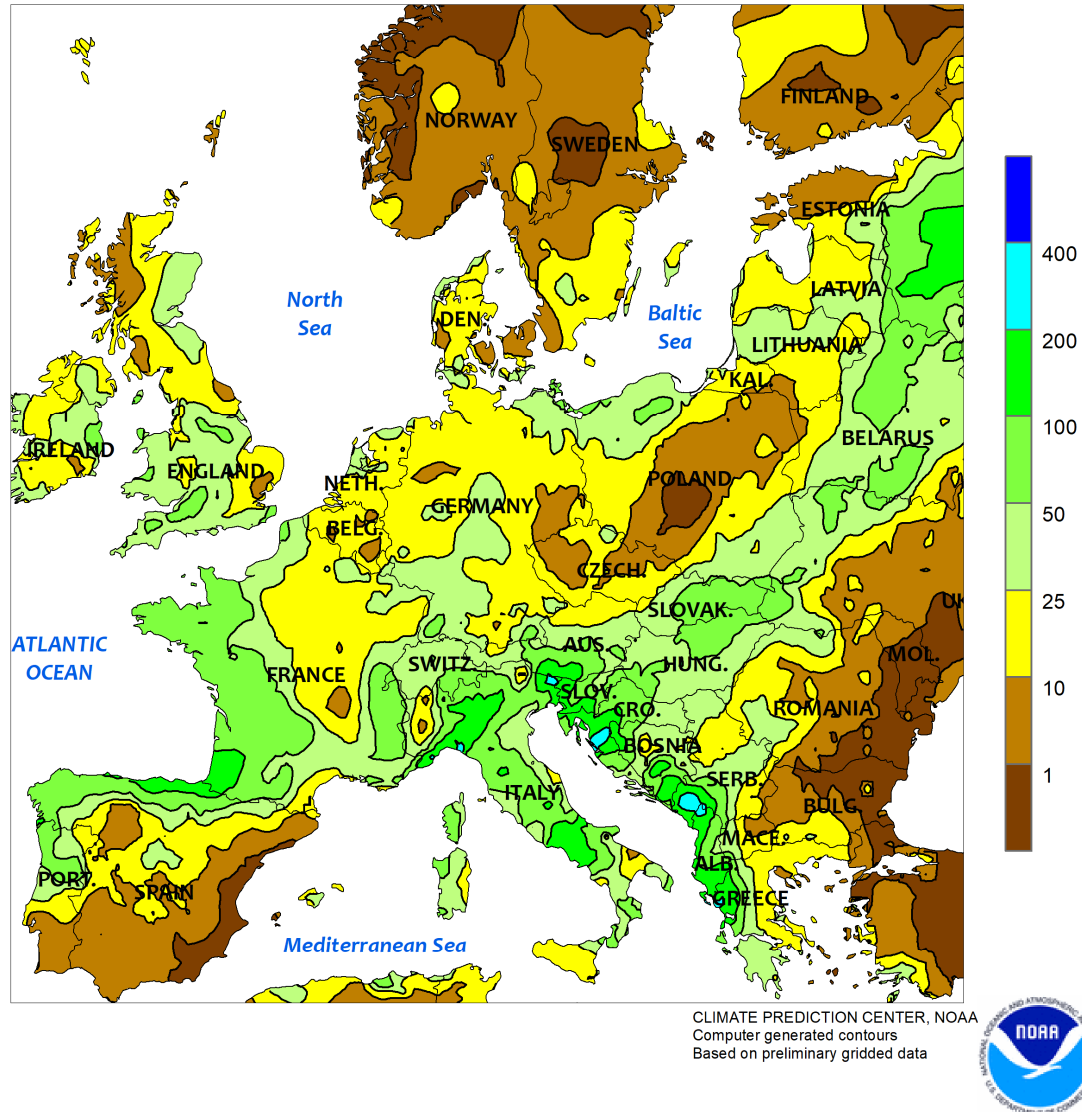
EUROPE

Wet weather expanded eastward across Europe, though localized pockets of dryness and drought lingered in southern growing areas. A series of Atlantic storms continued to produce moderate to heavy rain (10-100 mm, locally more) from England, France, and northern Spain into much of eastern Europe, maintaining adequate to abundant soil moisture for winter crops. However, rain bypassed locales from the Czech Republic into central Poland, where short-term dryness (30-day rainfall less than 50 percent of normal) has reduced topsoil moisture somewhat. More notably, drought persisted across the lower Danube River Valley, where a lack of rainfall over the past 90 days (25-50 percent of normal) limited wheat and rapeseed establishment. Furthermore, a warm, southerly flow across southeastern Europe pushed daytime highs into the middle and upper 20s (degrees C), with temperatures averaging up to 9°C above normal for the week in the Balkans. Warmer-than-normal conditions were also observed across the remainder of eastern Europe (up to 6°C above normal) and from central France into Germany (2-4°C above normal). As a result, winter crops were not yet dormant, though shorter days and lower sun angle were limiting the extent of additional late-season vegetative growth in northern growing areas. Elsewhere, moderate to heavy rain from the northern Iberian Peninsula into Italy boosted moisture supplies for winter grain establishment, while drought remained entrenched over southwestern Spain and southern Portugal.

WESTERN FSU
Total Precipitation (mm)
November 3 - 9, 2019
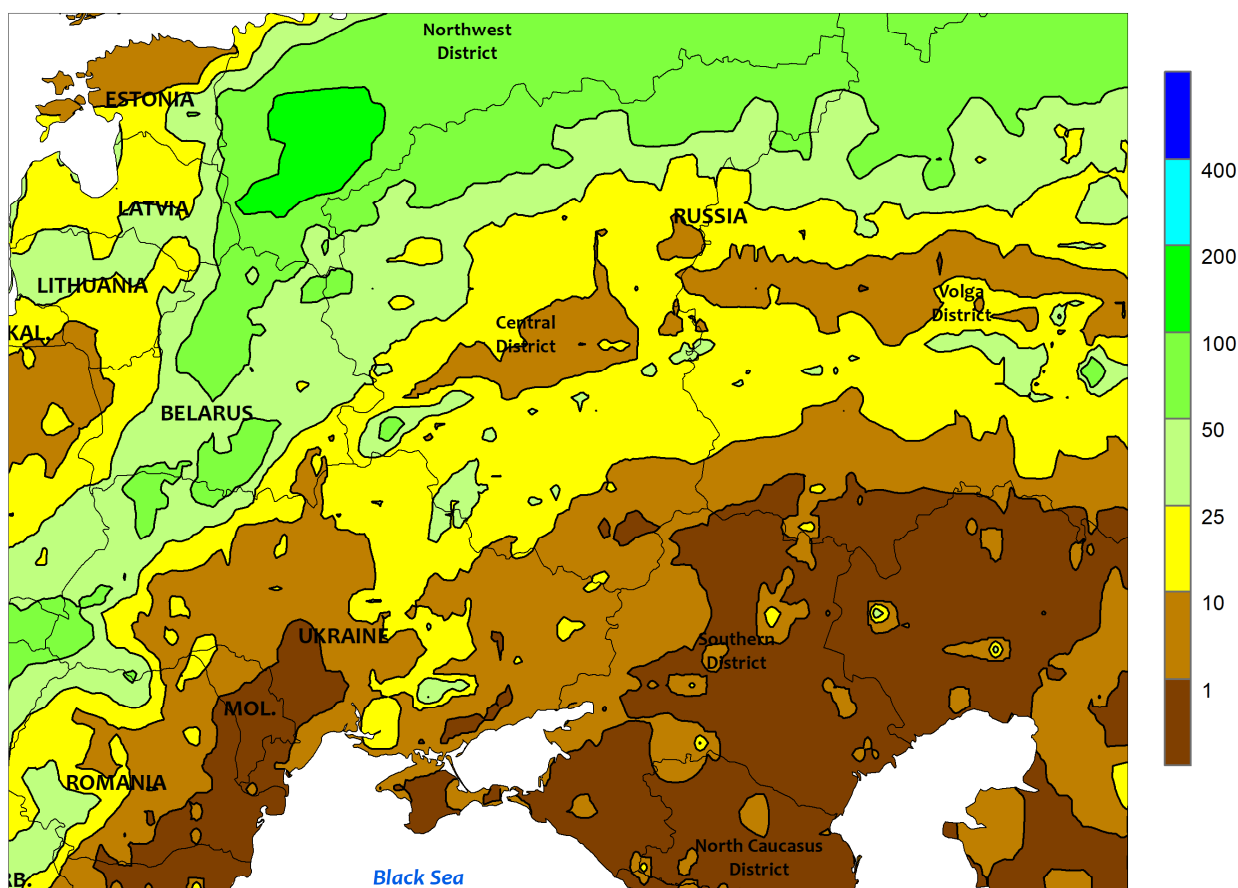
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
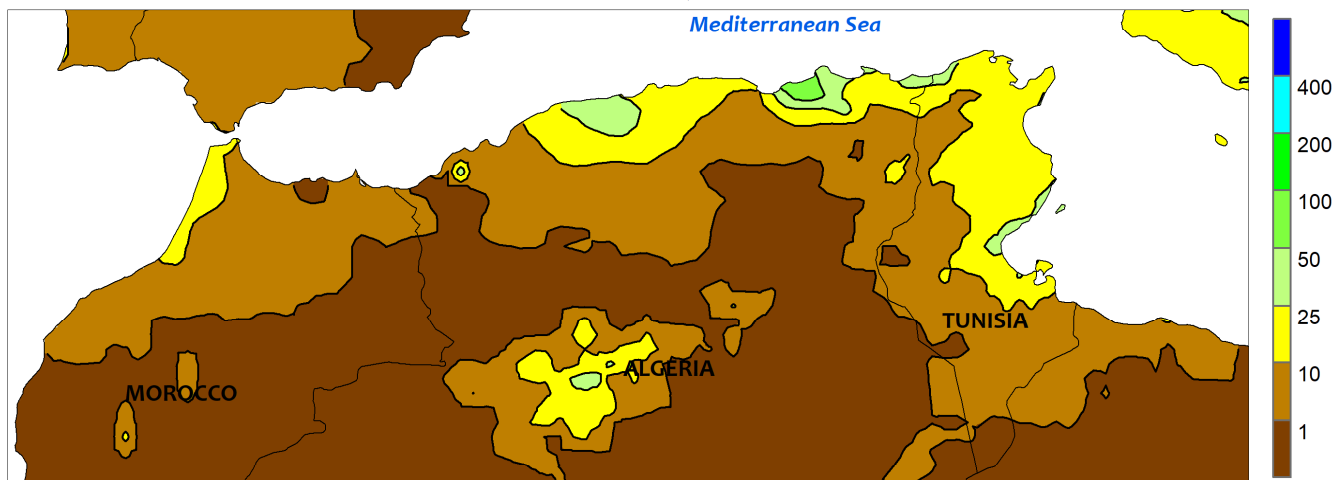Based on preliminary gridded data

WESTERN FSU

After last week's cold snap, very warm weather returned. High pressure responsible for an early month surge of cold weather shifted east, allowing a warm southerly flow to return to the region. Daytime highs spiked into the lower and middle 20s (degrees C) across Moldova and southern portions of Ukraine and Russia, with weekly average temperatures running 5 to 11°C above normal. The unseasonable warmth (this week's daytime highs were more typical of late September) kept winter wheat from going dormant in the south and reduced winter crop cold hardiness in the north. Rain was mostly confined to northern-most growing areas (outside the region's primary winter wheat belt), though some showers (5-20 mm) developed in central and southern Ukraine. Drought remained firmly entrenched across western Ukraine, while acute short-term dryness (30-day rainfall less than 10 percent of normal) renewed drought in west-central Russia. As a result, winter wheat will enter the cold dormancy season in poor shape and subsequently be reliant on timely spring rainfall to prevent significant yield losses.

This will be the last weekly summary for Western FSU. Coverage will resume in March, 2020, to coincide with winter wheat breaking dormancy.

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

MIDDLE EAST
Total Precipitation (mm)
November 3 - 9, 2019

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

MIDDLE EAST

Drought intensified in central Turkey, while sunny skies benefited winter grain development after recent rain farther east. On central Turkey's Anatolian Plateau, a lack of rainfall since the beginning of autumn exacerbated drought and left winter grains poorly established heading into the region's cold season. Short-term dryness was also becoming a concern for wheat and barley establishment in southeastern Turkey and along the eastern Mediterranean Coast. In contrast, croplands in eastern Iraq and western Iran benefited from heavy rain at the end of October, and early winter grain establishment prospects remained favorable in these locales. Above-normal temperatures (2-6°C above normal) across the western third of the region contrasted with cooler-than-normal conditions (up to 3°C below normal) in central and eastern growing areas, though 7-day average temperatures well above 5°C indicated winter wheat and barley were not yet dormant.

NORTHWESTERN AFRICA
Total Precipitation (mm)
November 3 - 9, 2019

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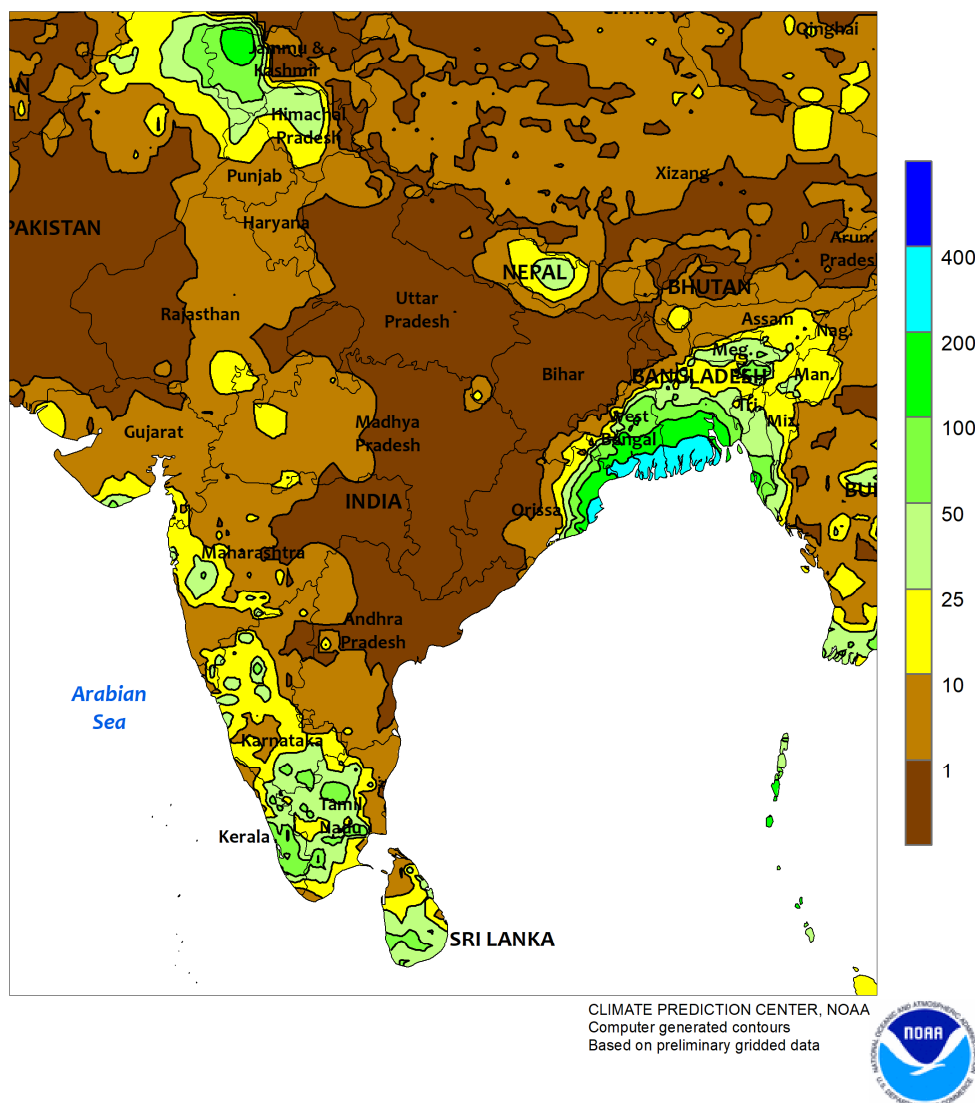Computer generated contours
Based on preliminary gridded data

NORTHWESTERN AFRICA

A favorable start in eastern growing areas contrasted with short-term drought in western portions of the region. Another round of moderate to heavy rainfall (10-50 mm, locally more) from north-central Algeria into northern Tunisia maintained the wet start to the growing season, with 90-day rainfall locally more than 200 percent of normal. Conversely, this autumn has been very dry to-date in Morocco, with the country's southern crop areas reporting little — if any — rain since the beginning of September. Wheat and barley are typically sown in November, though producers can wait until December to plant crops in the case of late-arriving seasonal rainfall.

SOUTH ASIA
Total Precipitation (mm)
November 3 - 9, 2019

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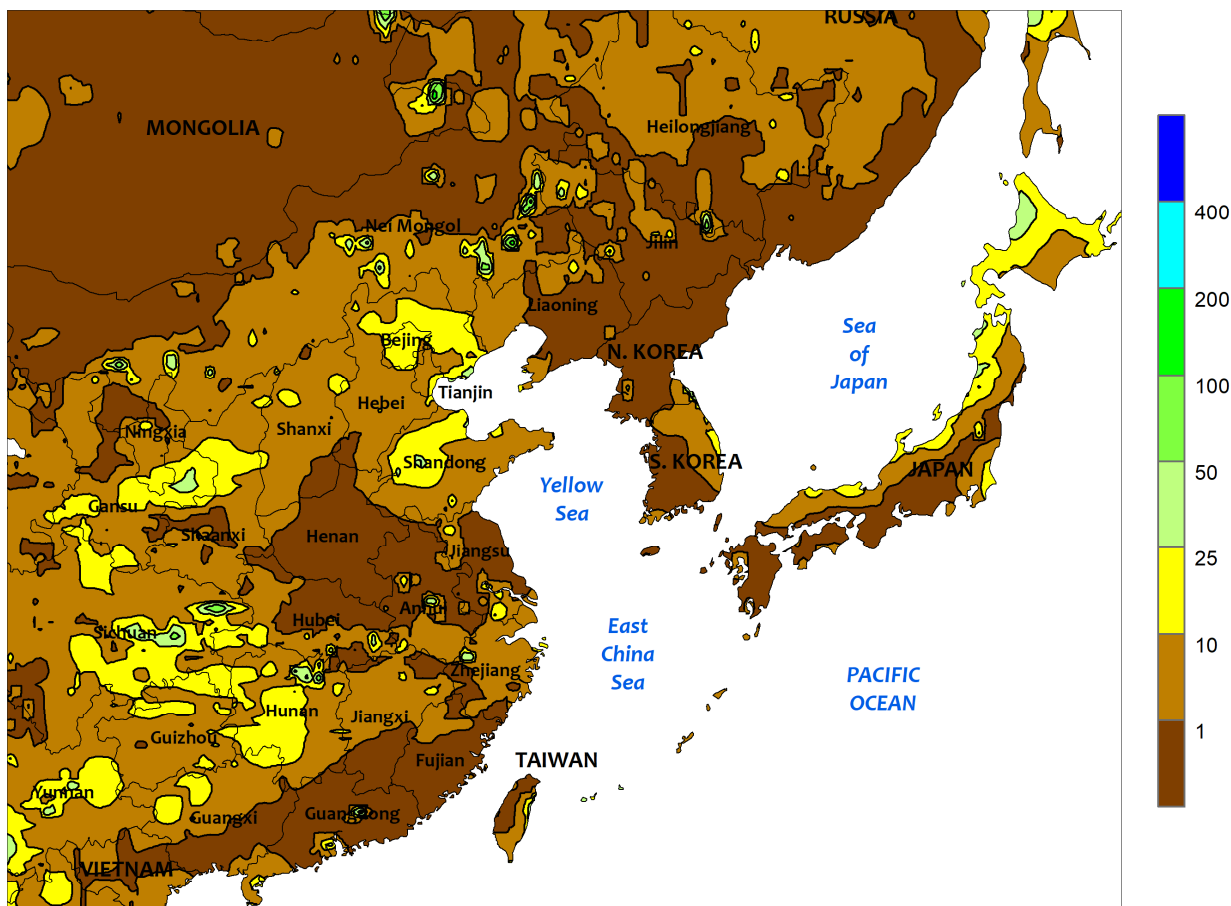Computer generated contours
Based on preliminary gridded data

SOUTH ASIA

Seasonally drier weather prevailed across much of India, with only light (1-25 mm, locally more) scattered showers in the west and south. The dry conditions supported fieldwork while easing excessive wetness in key cotton and soybean areas. Meanwhile, a tropical cyclone (Bulbul) was approaching Bangladesh by week's end. The outer extent of the storm was bringing heavy showers (over 200 mm) to coastal areas of Bangladesh and neighboring sections of India. Thus far, the localized nature of the rainfall limited agricultural impacts, but as the storm draws nearer to landfall, impacts to rice could be more severe.

EASTERN ASIA
Total Precipitation (mm)
November 3 - 9, 2019

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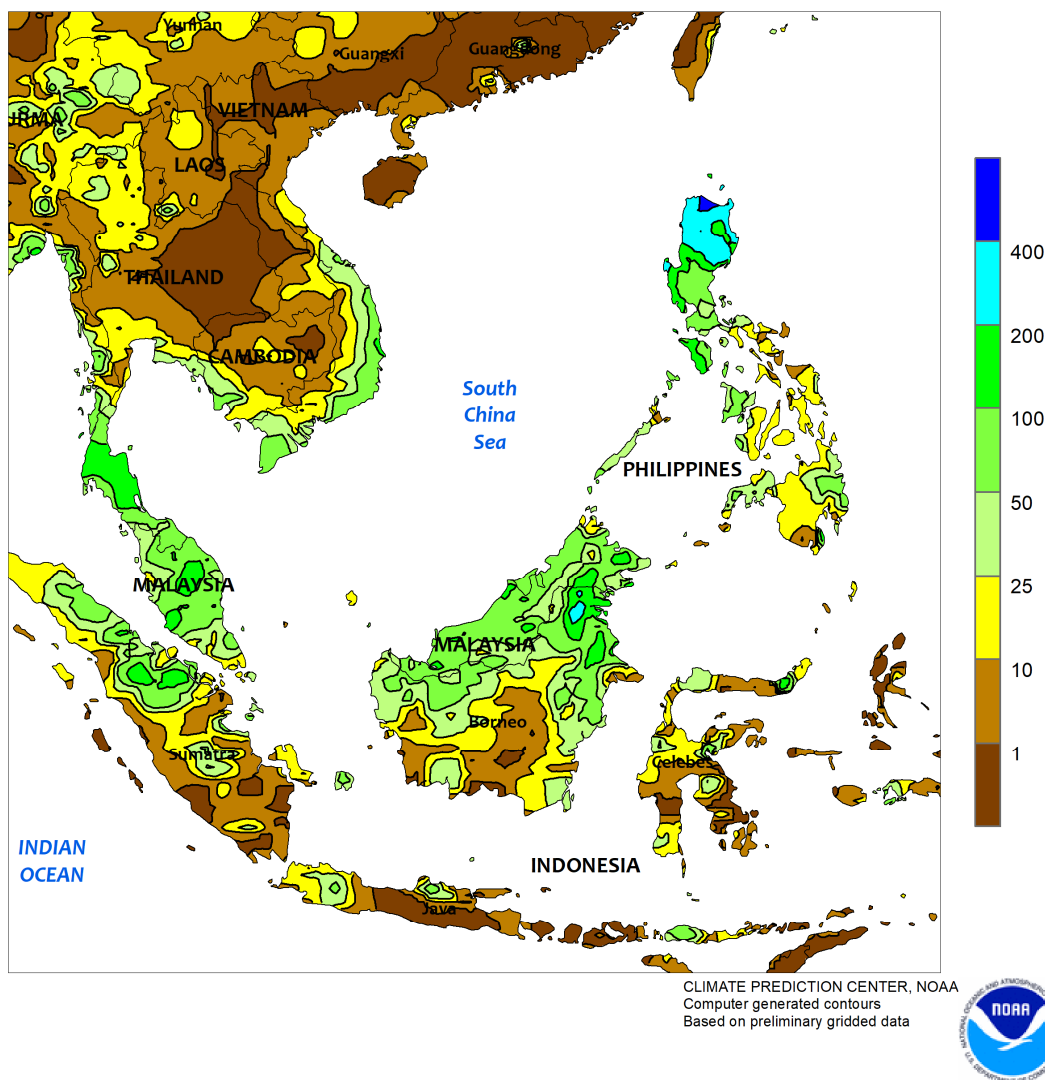Computer generated contours
Based on preliminary gridded data

EASTERN ASIA

Light showers and unseasonably mild weather (temperatures averaging 1-3°C above normal) across eastern China promoted wheat and rapeseed development. Rainfall totals were generally between 1 and 10 mm (locally more) in most areas, maintaining adequate topsoil moisture for crops. However, dry weather on southern sections of the North China Plain and in eastern sections of the Yangtze Valley necessitated supplemental irrigation.

This is the final weekly summary of the growing season; weekly coverage will resume in March 2020 upon winter crops breaking dormancy and commencement of spring sowing.
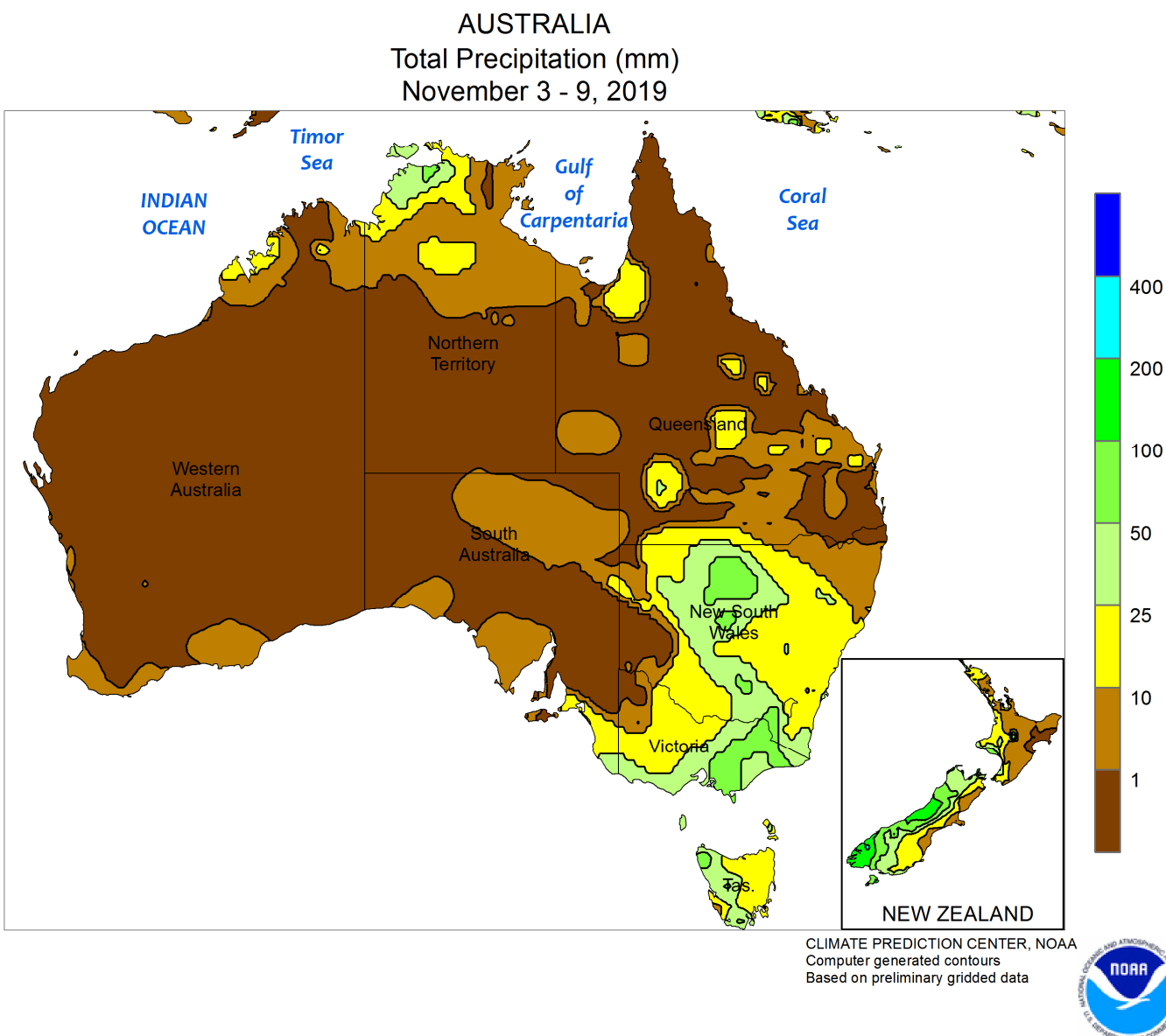
For additional information contact: mbrusberg@oce.usda.gov

SOUTHEAST ASIA
Total Precipitation (mm)
November 3 - 9, 2019

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

SOUTHEAST ASIA

A tropical cyclone (Nakri) developed in the South China Sea early in the week. The outer extent of the storm produced heavy showers (50-100 mm or more) from the northern Philippines to the southern half of Vietnam and parts of Malaysia, delaying seasonal fieldwork. More showers were likely in Vietnam as the storm approached the country toward the end of the period. Meanwhile, unseasonably dry weather continued in southern Indonesia (Java). The wet season typically begins in November, and the delayed onset of any appreciable rainfall has discouraged wet-season rice sowing.

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

AUSTRALIA
Total Precipitation (mm)
November 3 - 9, 2019

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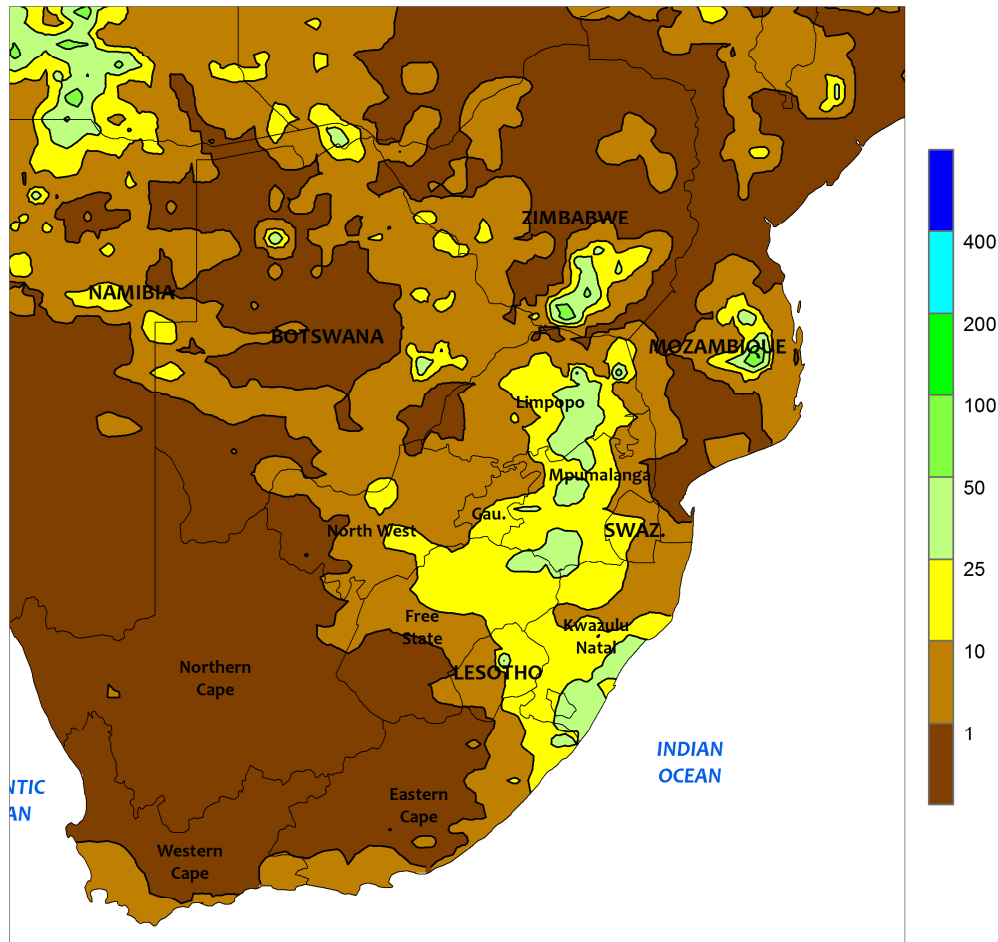Based on preliminary gridded data

AUSTRALIA

Early in the week, soaking rain (10-25 mm, locally more) overspread most of New South Wales and southern Victoria, temporarily interrupting winter crop harvesting. The wet weather brought some drought relief to parts of eastern Australia, but much more rain will be needed to end the severe, long-term drought gripping much of the east. Farther north, isolated showers (1-10 mm) brought little drought relief to southern Queensland and extreme northeastern New South Wales. The mostly dry weather continued to discourage widespread summer crop planting and further hampered germination and emergence of crops that had already been sown. Elsewhere in the wheat belt, dry weather in South Australia and Western Australia favored winter crop maturation and allowed local wheat, barley, and canola harvesting to proceed without delay. Temperatures averaged within 1°C of normal in western and northeastern Australia and 1 to 2°C below normal in southeastern Australia.

SOUTH AFRICA
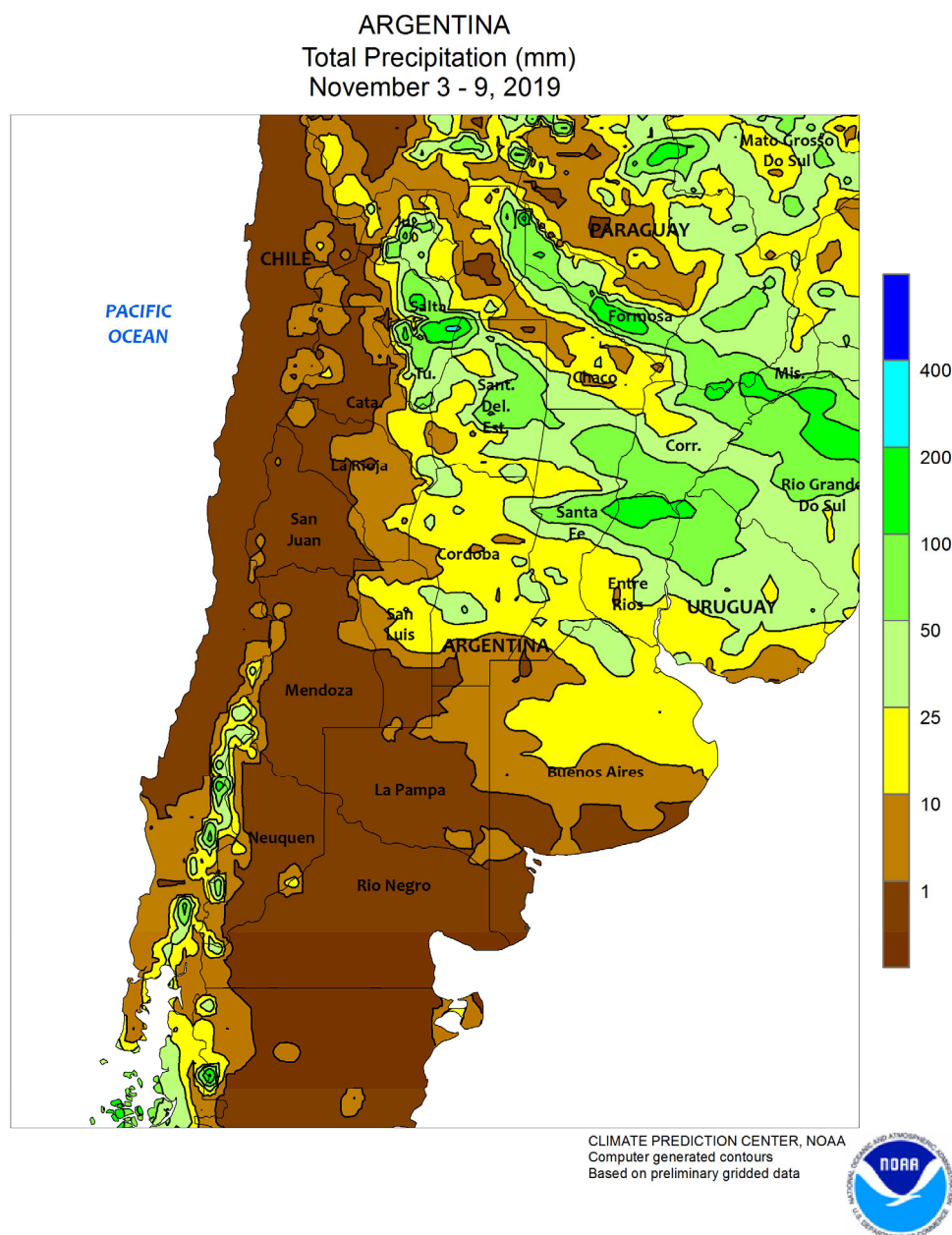Total Precipitation (mm)
November 3 - 9, 2019

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

SOUTH AFRICA

Showers promoted summer crop planting in eastern sections of the corn belt. Rainfall totaling more than 10 mm — with local amounts exceeding 25 mm — was recorded from eastern Free State northward through eastern sections of Limpopo, helping to replenish topsoil moisture following last week's warmth and dryness. Moderate rain (greater than 10 mm) also fell in western white corn production areas (North West and central Free State), giving a boost to pastures but generally coming too early in the season for corn. In addition, weekly temperatures averaged 3°C above normal across the corn belt, with daytime highs reaching the upper 30s (degrees C) at the western and northern edges (North West to northern Limpopo), maintaining high evaporative losses. Elsewhere, light to moderate rain (10-40 mm) benefited rain-fed sugarcane in southern KwaZulu-Natal as sunny, hot weather (daytime highs reaching 40°C) continued in irrigated production areas in northern KwaZulu-Natal and eastern Mpumalanga. Warm, mostly dry weather also promoted growth of tree and vine crops in Western Cape.

ARGENTINA
Total Precipitation (mm)
November 3 - 9, 2019

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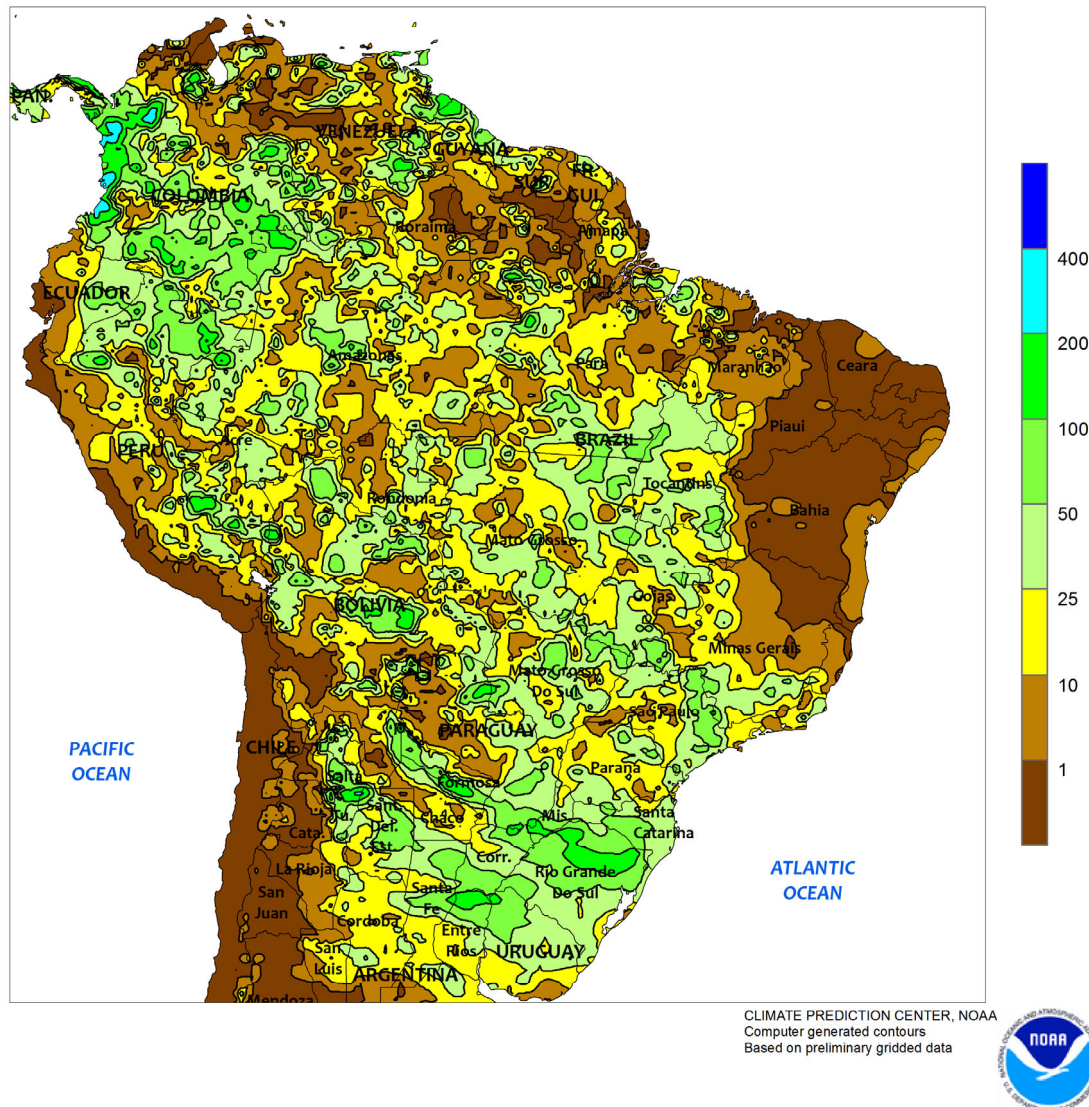Based on preliminary gridded data

ARGENTINA

Moderate to heavy showers swept across northern and eastern farming areas, increasing moisture for winter grain development and providing additional moisture for summer crop germination. Rainfall totaled 10 to 50 mm — locally higher — over a broad area of northeastern Argentina, reaching as far south as northern Buenos Aires. The rain was especially welcome in the northwest (notably Salta and Santiago del Estero), where early season rainfall has been late in arriving; however, above-normal temperatures (daytime highs reaching the upper 30s degrees C on several days) maintained high evaporative losses and a generally rapid pace of crop development. In contrast to the timely northwestern rainfall, dry weather returned to the country's southwestern farming areas (La Pampa and western and southern portions of Buenos Aires) accompanied by unseasonable warmth (daytime highs often reaching the lower and middle 30s). Although last week's rainfall helped to stabilize the condition of vegetative to reproductive winter grains in the southwest, more rain was needed to significantly improve drought conditions. According to the government of Argentina, planting of sunflowers was 66 percent complete as of November 7, lagging last year's pace by 16 points; corn planting was 38 percent complete, lagging last year's pace by 14 points. In contrast, cotton was 36 percent planted, 5 points ahead of last year.

BRAZIL
Total Precipitation (mm)
November 3 - 9, 2019

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

BRAZIL

Widespread showers overspread most of central Brazil and the northeastern interior, providing much-needed moisture for germination and establishment of soybeans and other summer crops. Rainfall totaling 25 to 50 mm or more stretched from Mato Grosso and Mato Grosso do Sul eastward into Tocantins, with lighter rain (10-25 mm) falling at the northern and eastern edge of the soybean belt (Maranhao to western Minas Gerais). Summer warmth (daytime highs reaching the middle and upper 30s degrees C) in the aforementioned areas spurred rapid early crop development but engendered high losses through evaporation. According to the government of Mato Grosso, soybeans were 92 percent planted as of November 8, compared with 96 percent last year and the 5-year average of 83 percent. Elsewhere, moderate to heavy rain (25-50 mm, locally exceeding 100 mm) continued from Rio Grande do Sul northeastward to Minas Gerais, increasing moisture for summer crops, including soybeans, corn, sugarcane, and coffee. According to government reports, Parana's first-crop corn was 99 percent planted as of November 11, with soybean planting advancing to 89 percent complete. Meanwhile, wheat was 95 percent harvested. In Rio Grande do Sul, corn was 79 percent planted as of November 7, slightly ahead of the 5-year average pace (76 percent); soybeans were 18 percent planted versus 19 percent on average. Wheat harvesting was 67 percent complete in Rio Grande do Sul, 7 points behind the 5-year average.

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

U.S. Drought Monitor

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

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
David Simeral
Western Regional Climate Center

droughtmonitor.unl.edu

U.S. DEPARTMENT OF AGRICULTURE
World Agricultural Outlook Board

Managing Editor.. **Brad Rippey** (202) 720-2397
Production Editor.................................... **Brian Morris** (202) 720-3062
International Editor............................. **Mark Brusberg** (202) 720-2012
Agricultural Weather Analysts.................................... **Harlan Shannon and Eric Luebehusen**

National Agricultural Statistics Service
Agricultural Statistician and State Summaries Editor…………………….……
Jannety Mosley (202) 720-7621

U.S. DEPARTMENT OF COMMERCE
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