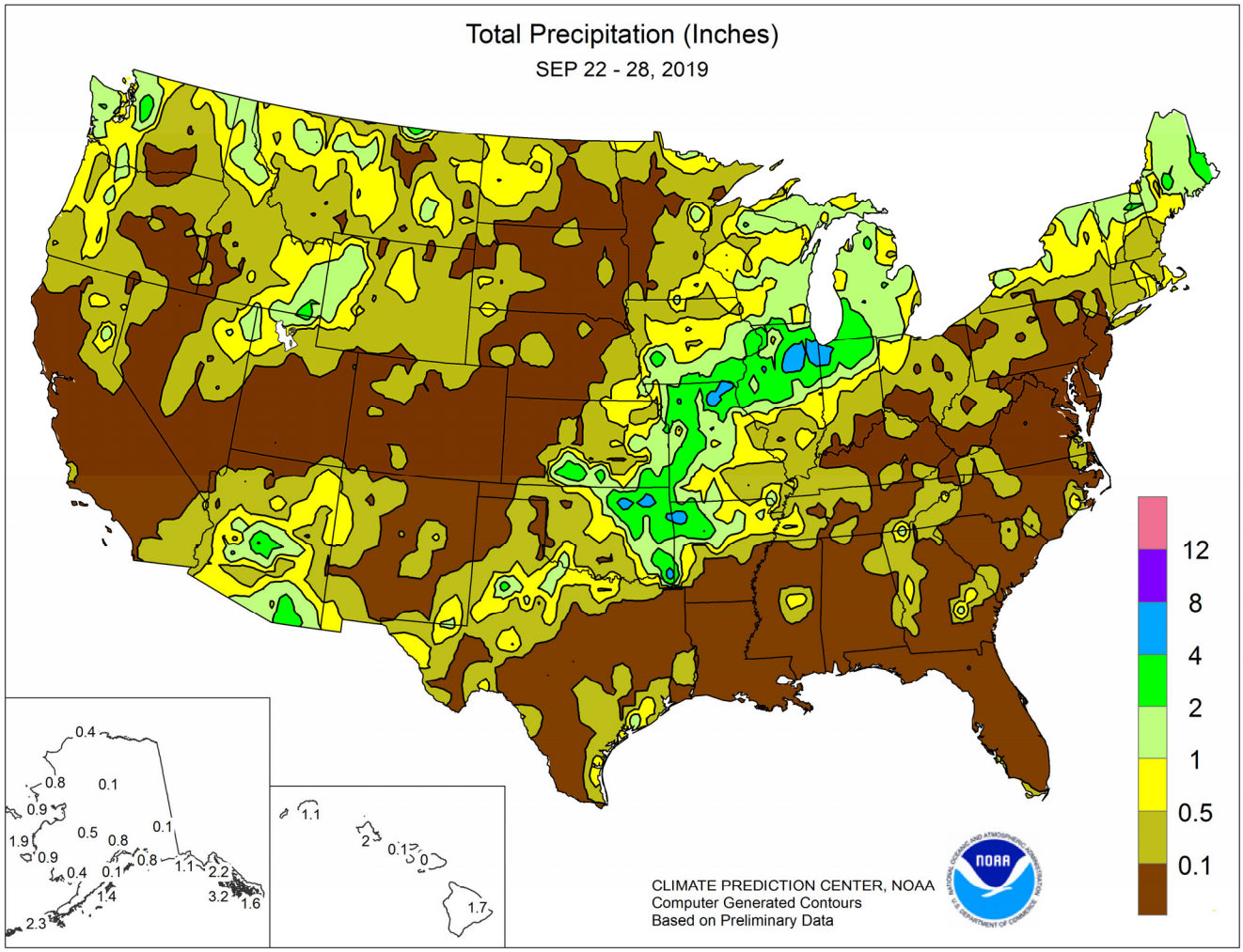
Volume 106, No. 40 http://www.usda.gov/oce/weather October 1, 2019

WEEKLY WEATHER AND CROP BULLETIN

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

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



HIGHLIGHTS
September 22-28, 2019

Highlights provided by USDA/WAOB

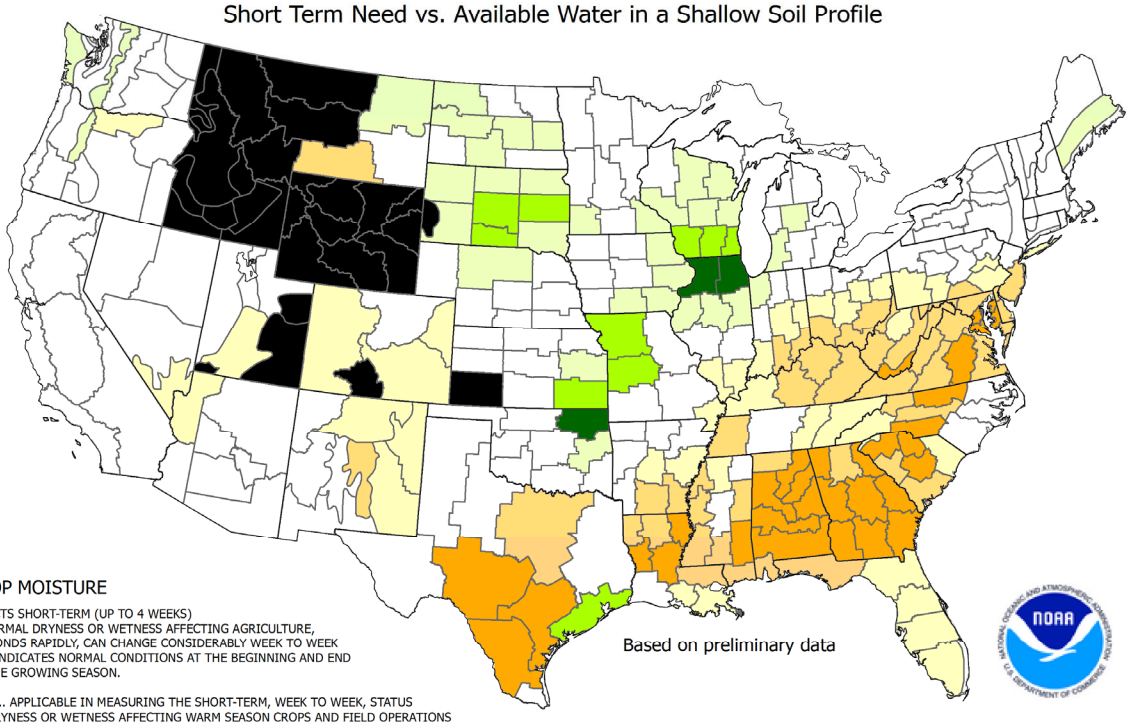
Unrelenting late-season heat and dryness across the **South** promoted crop maturation and harvesting, but resulted in rapid drought intensification; poor pasture conditions; and negligible moisture for fall-sown crops. Effects of the hot dry conditions extended westward across portions of the **southern Plains** and northward into the **Ohio Valley** and **mid-Atlantic**. Weekly temperatures averaged at least 5 to 10°F above normal throughout the **South**, **East**, and **lower Midwest**. Readings occasionally reached or exceeded the 100-degree mark from **Texas to**

(Continued on page 5)

Contents

Crop Moisture Maps 2
Palmer Drought Maps 3
Extreme Maximum & Minimum Temperature Maps 4
Temperature Departure Map 5
September 24 Drought Monitor &
U.S. Monthly Drought Outlook 6
Growing Degree Day Maps 7
National Weather Data for Selected Cities 9
National Agricultural Summary 12
Crop Progress and Condition Tables 13
International Weather and Crop Summary 19
Bulletin Information &
2019 Small Grains Summary 32

Crop Moisture Index by Division
Weekly Value for Period Ending Sep 28, 2019
Short Term Need vs. Available Water in a Shallow Soil Profile



CROP MOISTURE

DEPICTS SHORT-TERM (UP TO 4 WEEKS)
ABNORMAL DRYNESS OR WETNESS AFFECTING AGRICULTURE,
RESPONDS RAPIDLY, CAN CHANGE CONSIDERABLY WEEK TO WEEK
AND INDICATES NORMAL CONDITIONS AT THE BEGINNING AND END
OF THE GROWING SEASON.

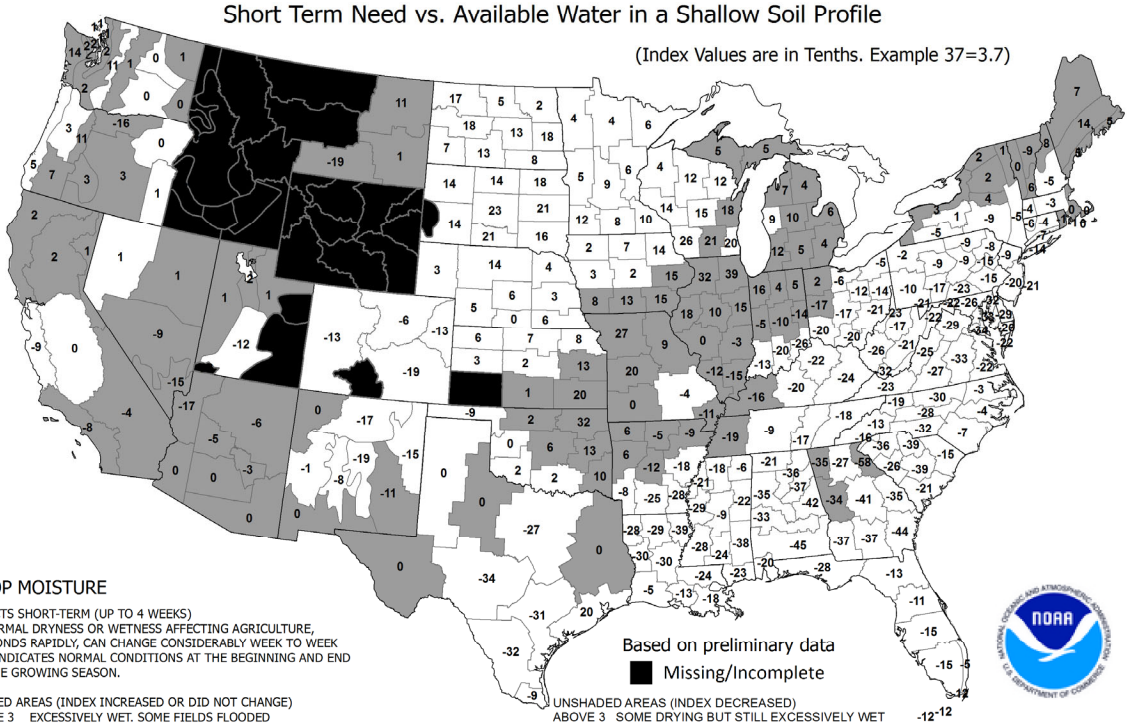
USES... APPLICABLE IN MEASURING THE SHORT-TERM, WEEK TO WEEK, STATUS
OF DRYNESS OR WETNESS AFFECTING WARM SEASON CROPS AND FIELD OPERATIONS

LIMITATIONS... MAY NOT BE APPLICABLE TO GERMINATING AND SHALLOW ROOTED CROPS
WHICH ARE UNABLE TO EXTRACT THE DEEP OR SUBSOIL MOISTURE FROM A SHALLOW
SOIL PROFILE,OR FOR COOL SEASON CROPS GROWING WHEN TEMPERATURES ARE AVERAGING
BELOW ABOUT 55F.IT IS NOT GENERALLY INDICATIVE OF THE LONG-TERM (MONTHS, YEARS)
DROUGHT OR WET SPELLS WHICH ARE DEPICTED BY THE DROUGHT SEVERITY INDEX.

- -3.0 or less (Severly Dry)
- -2.0 to -2.9 (Excessively Dry)
- -1.0 to -1.9 (Abnormally Dry)
- -0.9 to +0.9 (Slightly Dry/Favorably Moist)
- +1.0 to +1.9 (Abnormally Moist)
- +2.0 to +3.0 (Wet)
- 3.0 and above (Excessively Wet)
- Missing/Incomplete

Crop Moisture Index by Division
Weekly Value for Period Ending Sep 28, 2019
Short Term Need vs. Available Water in a Shallow Soil Profile

(Index Values are in Tenths. Example 37=3.7)



CROP MOISTURE

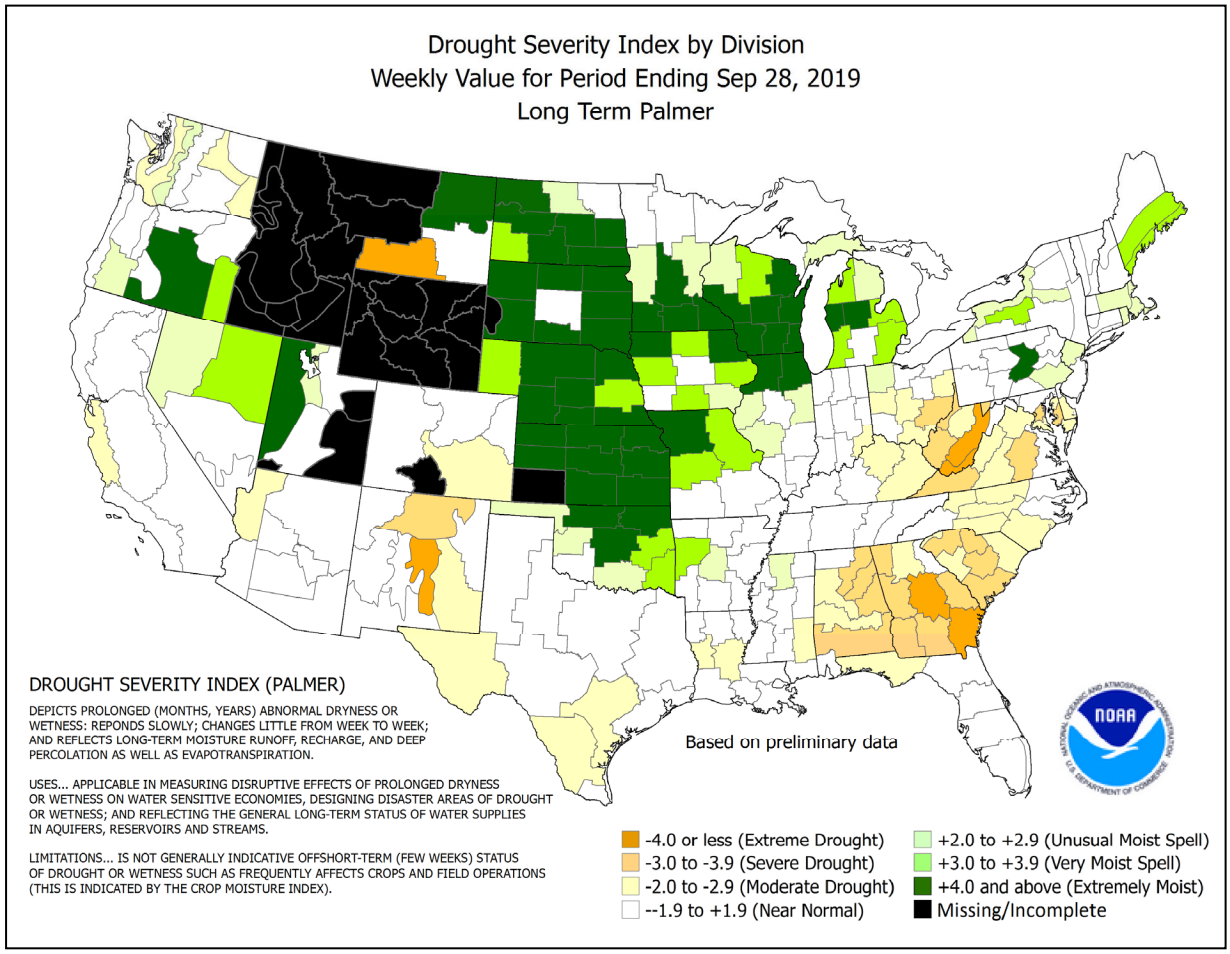
DEPICTS SHORT-TERM (UP TO 4 WEEKS)
ABNORMAL DRYNESS OR WETNESS AFFECTING AGRICULTURE,
RESPONDS RAPIDLY, CAN CHANGE CONSIDERABLY WEEK TO WEEK
AND INDICATES NORMAL CONDITIONS AT THE BEGINNING AND END
OF THE GROWING SEASON.

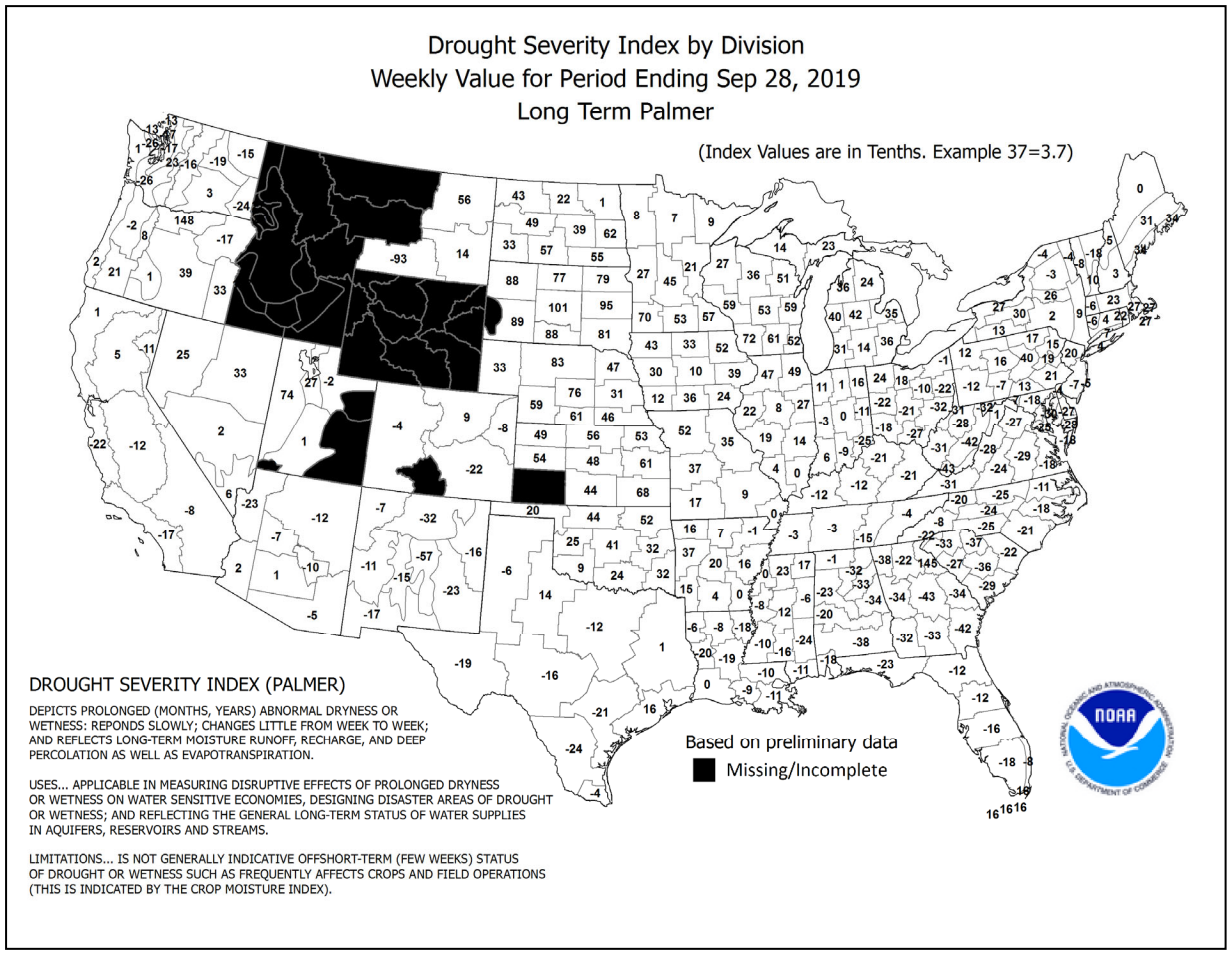
SHADED AREAS (INDEX INCREASED OR DID NOT CHANGE)

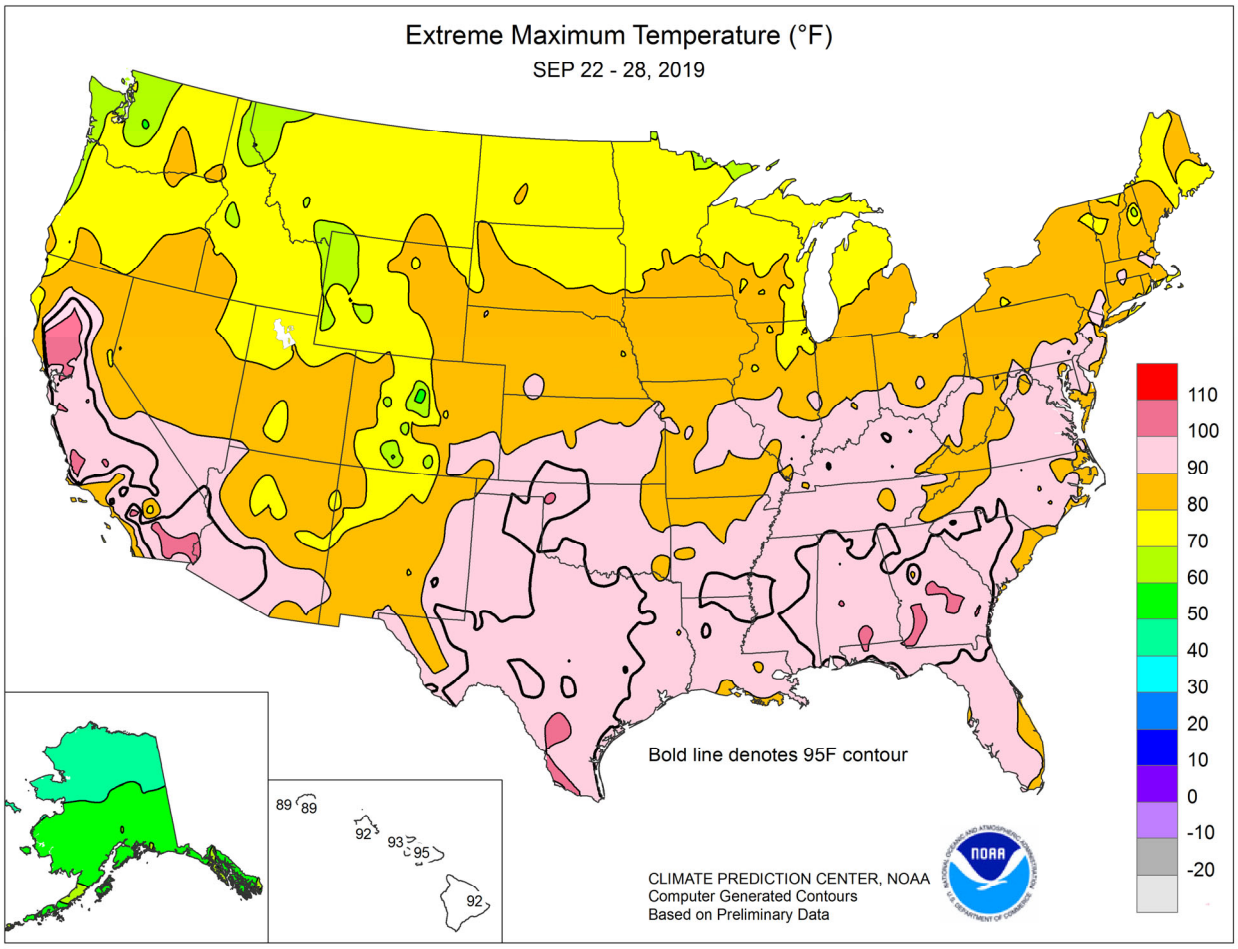
ABOVE 3	EXCESSIVELY WET. SOME FIELDS FLOODED
2 TO 3	TOO WET. SOME STANDING WATER
1 TO 2	SOME FIELDS TOO WET, PROSPECTS ABOVE NORMAL
0 TO 1	MOISTURE ADEQUATE FOR PRESENT CROP NEEDS
0 TO -1	PROSPECTS IMPROVED BUT RAIN STILL NEEDED
-1 TO -2	SOME IMPROVEMENT BUT STILL ABNORMALLY DRY
-2 TO -3	DRYNESS EASED BUT FIELDS STILL EXCESSIVELY DRY
-3 TO -4	SEVERE DRYNESS CONTINUES, MORE RAIN URGENTLY NEEDED
BELOW -4	NOT ENOUGH RAIN. EXTREMELY DRY

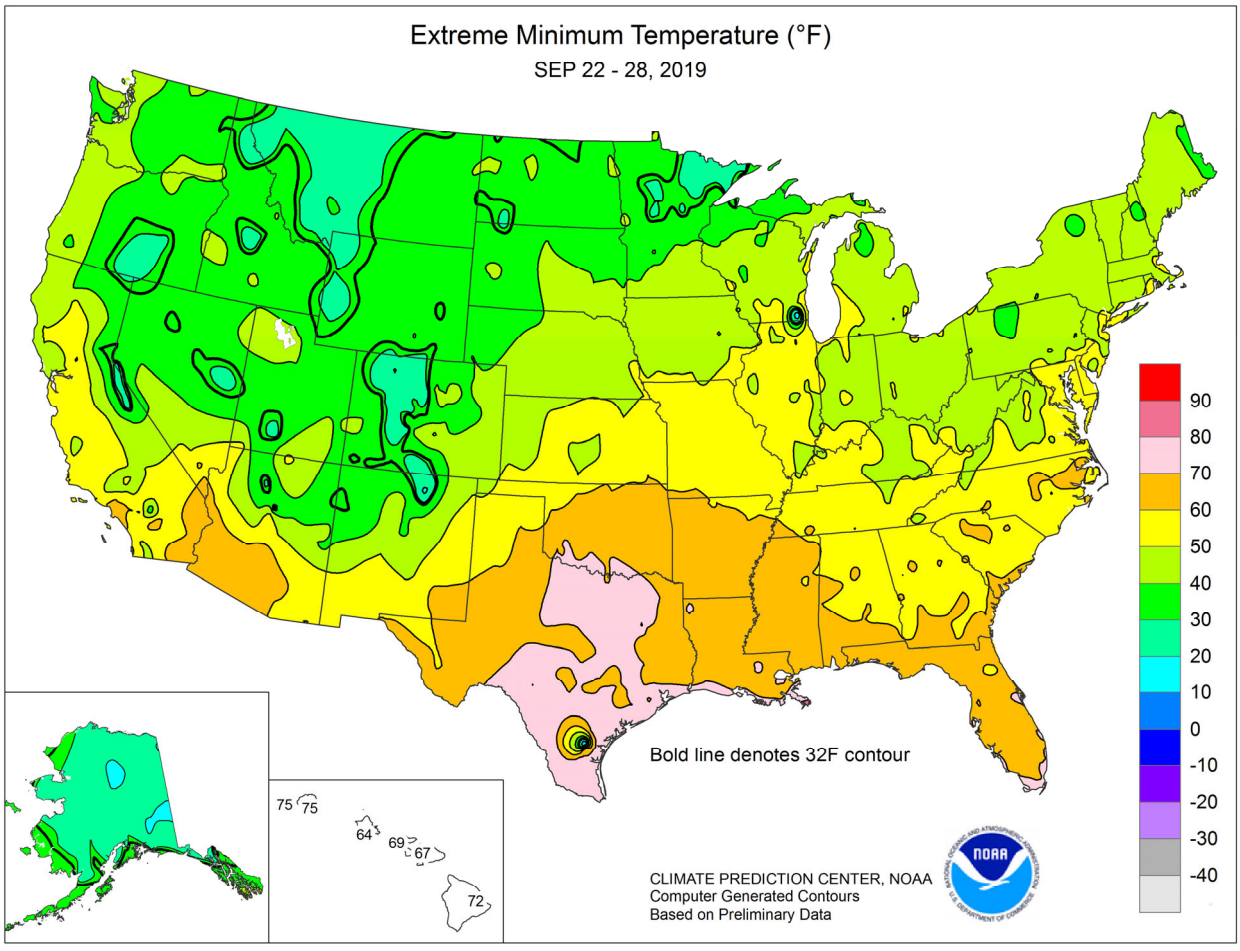
UNSHADED AREAS (INDEX DECREASED)

ABOVE 3	SOME DRYING BUT STILL EXCESSIVELY WET
2 TO 3	MORE DRY WEATHER NEEDED, WORK DELAYED
1 TO 2	FAVORABLE EXCEPT STILL TOO WET IN SPOTS
0 TO 1	FAVORABLE FOR NORMAL GROWTH AND FIELDWORK
0 TO -1	TOPSOIL MOISTURE SHORT, GERMINATION SLOW
-1 TO -2	ABNORMALLY DRY. PROSPECTS DETERIORATING
-2 TO -3	EXCESSIVELY DRY. YIELD PROSPECTS REDUCED
-3 TO -4	POTENTIAL YIELDS SEVERELY CUT BY DRYNESS
BELOW -4	EXTREMELY DRY. CROPS RUINED


Drought Severity Index by Division
Weekly Value for Period Ending Sep 28, 2019
Long Term Palmer
DROUGHT SEVERITY INDEX (PALMER)
DEPICTS PROLONGED (MONTHS, YEARS) ABNORMAL DRYNESS OR WETNESS: REPONDS SLOWLY; CHANGES LITTLE FROM WEEK TO WEEK; AND REFLECTS LONG-TERM MOISTURE RUNOFF, RECHARGE, AND DEEP PERCOLATION AS WELL AS EVAPOTRANSPIRATION.
USES... APPLICABLE IN MEASURING DISRUPTIVE EFFECTS OF PROLONGED DRYNESS OR WETNESS ON WATER SENSITIVE ECONOMIES, DESIGNING DISASTER AREAS OF DROUGHT OR WETNESS; AND REFLECTING THE GENERAL LONG-TERM STATUS OF WATER SUPPLIES IN AQUIFERS, RESERVOIRS AND STREAMS.
LIMITATIONS... IS NOT GENERALLY INDICATIVE OFFSHORT-TERM (FEW WEEKS) STATUS OF DROUGHT OR WETNESS SUCH AS FREQUENTLY AFFECTS CROPS AND FIELD OPERATIONS (THIS IS INDICATED BY THE CROP MOISTURE INDEX).
Based on preliminary data
-4.0 or less (Extreme Drought)
-3.0 to -3.9 (Severe Drought)
-2.0 to -2.9 (Moderate Drought)
--1.9 to +1.9 (Near Normal)
+2.0 to +2.9 (Unusual Moist Spell)
+3.0 to +3.9 (Very Moist Spell)
+4.0 and above (Extremely Moist)
Missing/Incomplete

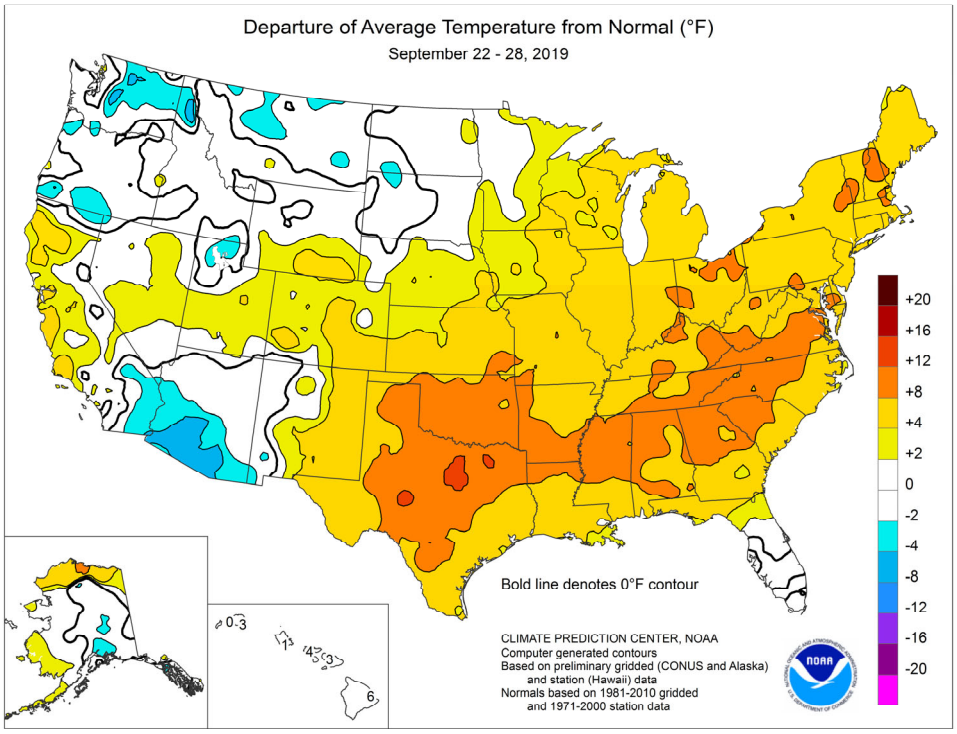

Drought Severity Index by Division
Weekly Value for Period Ending Sep 28, 2019
Long Term Palmer
(Index Values are in Tenths. Example 37=3.7)
DROUGHT SEVERITY INDEX (PALMER)
DEPICTS PROLONGED (MONTHS, YEARS) ABNORMAL DRYNESS OR WETNESS: REPONDS SLOWLY; CHANGES LITTLE FROM WEEK TO WEEK; AND REFLECTS LONG-TERM MOISTURE RUNOFF, RECHARGE, AND DEEP PERCOLATION AS WELL AS EVAPOTRANSPIRATION.
USES... APPLICABLE IN MEASURING DISRUPTIVE EFFECTS OF PROLONGED DRYNESS OR WETNESS ON WATER SENSITIVE ECONOMIES, DESIGNING DISASTER AREAS OF DROUGHT OR WETNESS; AND REFLECTING THE GENERAL LONG-TERM STATUS OF WATER SUPPLIES IN AQUIFERS, RESERVOIRS AND STREAMS.
LIMITATIONS... IS NOT GENERALLY INDICATIVE OFFSHORT-TERM (FEW WEEKS) STATUS OF DROUGHT OR WETNESS SUCH AS FREQUENTLY AFFECTS CROPS AND FIELD OPERATIONS (THIS IS INDICATED BY THE CROP MOISTURE INDEX).
Based on preliminary data
Missing/Incomplete


Extreme Maximum Temperature (°F)
SEP 22 - 28, 2019
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
Bold line denotes 95F contour
89
89
92
93
95
92
CLIMATE PREDICTION CENTER, NOAA
Computer Generated Contours
Based on Preliminary Data


Extreme Minimum Temperature (°F)
SEP 22 - 28, 2019
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
Bold line denotes 32F contour
75
75
64
69
67
72
CLIMATE PREDICTION CENTER, NOAA
Computer Generated Contours
Based on Preliminary Data

(Continued from front cover)

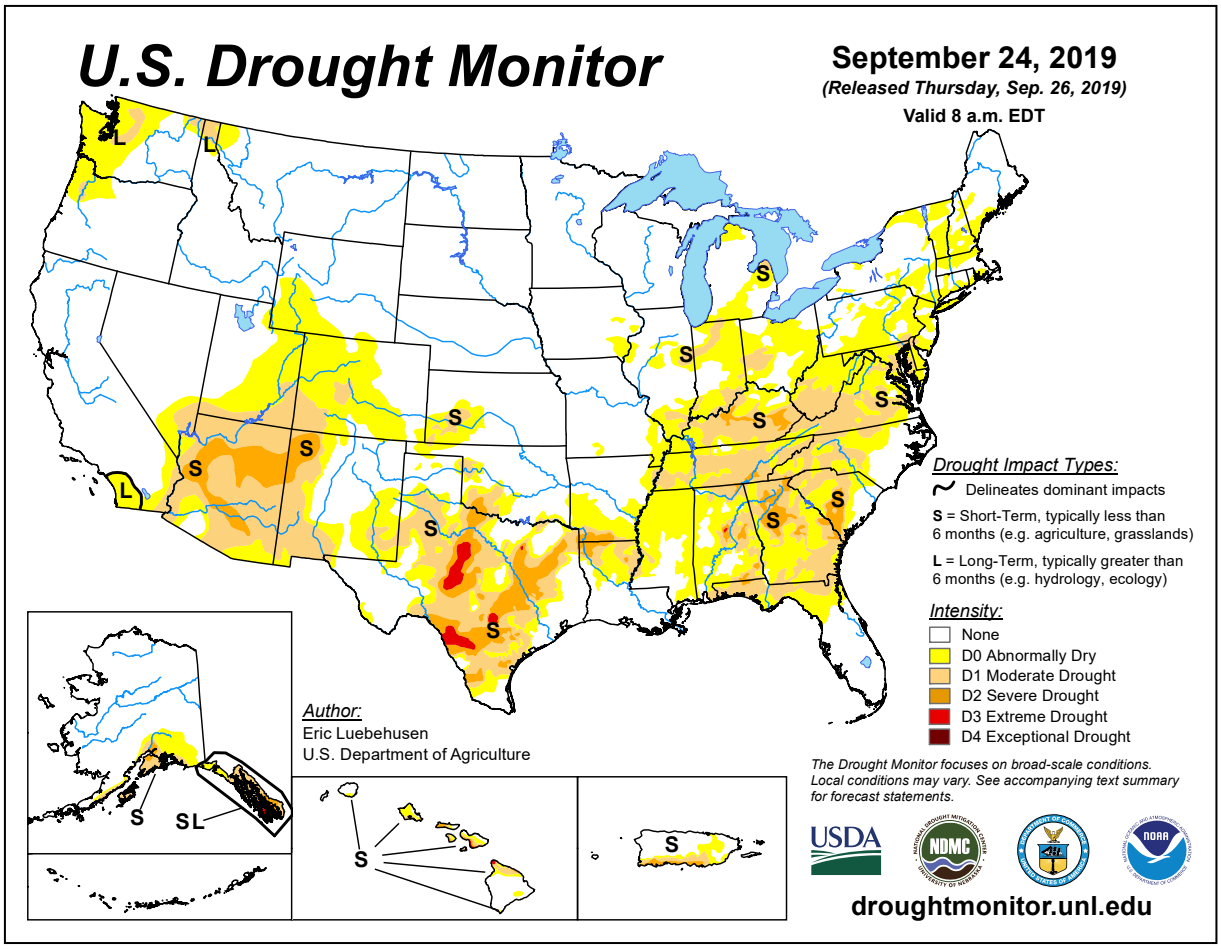
Georgia. Meanwhile, heavy rain (locally 2 to 4 inches or more) fell from **eastern sections of Kansas and Oklahoma into the Great Lakes region and northern New England**. Heavy showers also affected parts of the **Southwest**, particularly **southern Arizona**, following subpar monsoon rainfall. Late in the week, cooler air overspread the **northern Plains** and the **Northwest**, accompanied by increasingly stormy weather. By September 27-28, wind-driven snow developed across **northern sections of the Rockies and High Plains**, stressing livestock and further delaying final small grain harvest efforts. Snow blanketed several other areas of the **Northwest**, while rain showers occurred as far south as **northern California** and the **Great Basin**.

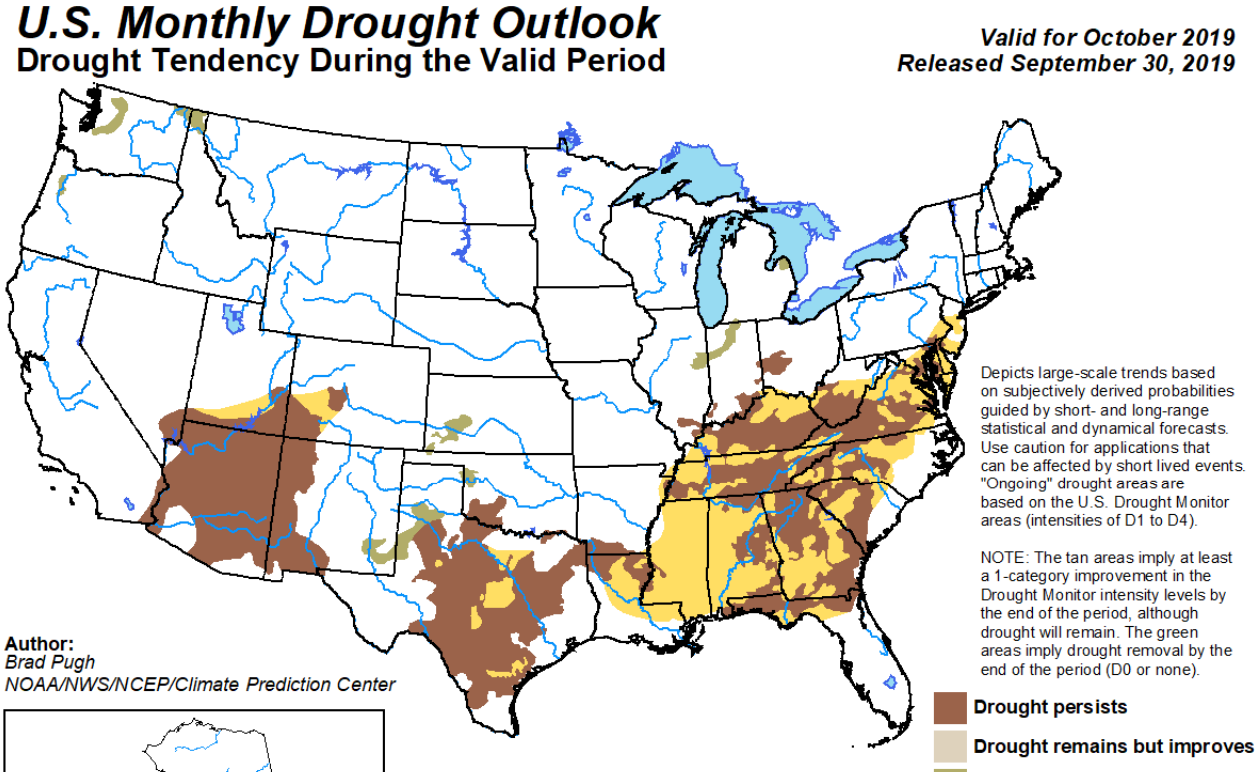


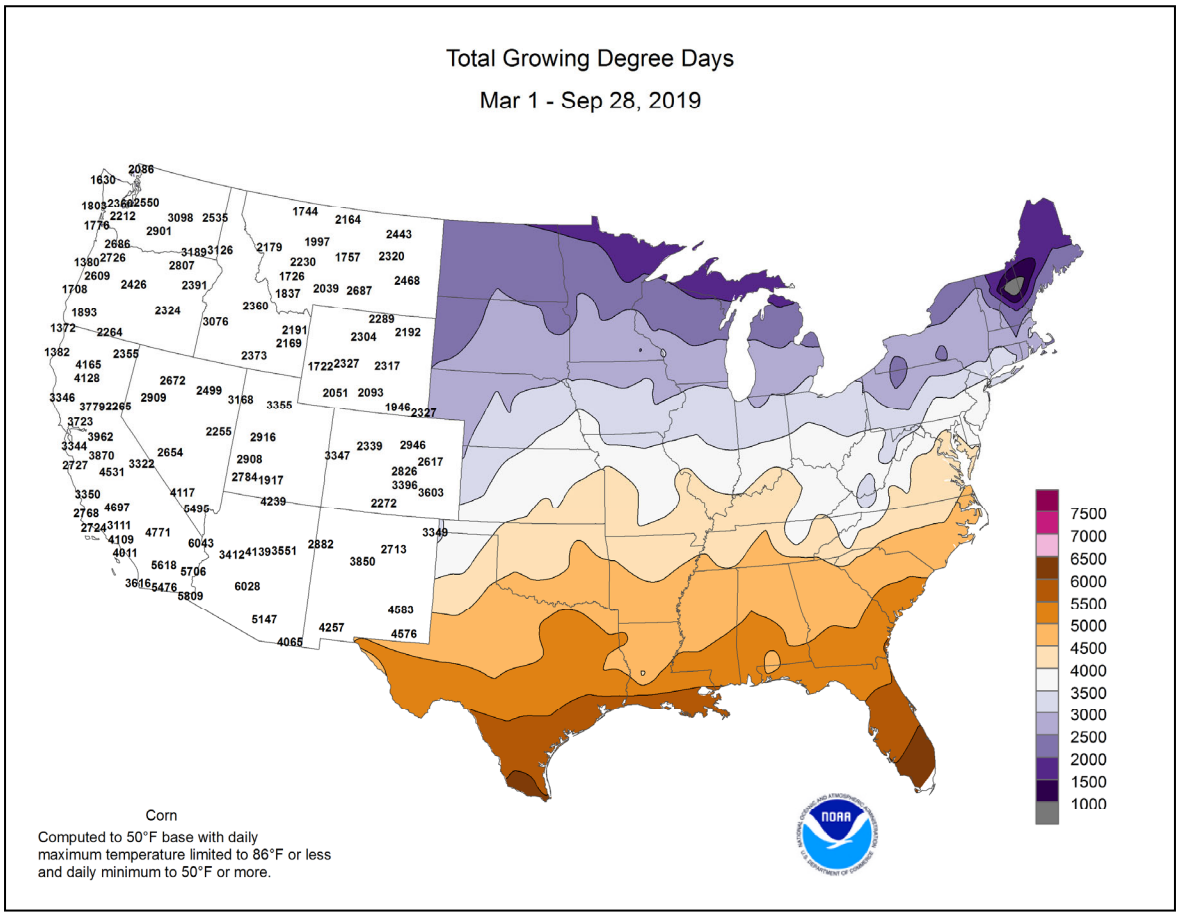
Numerous **Southeastern** daily-record highs were established, especially during the mid- to late-week period. From September 24-26, **Jacksonville, FL** (94, 96, and 97°F) registered three consecutive daily-record highs. **Macon, GA**, closed September with seven consecutive daily-record highs (98, 99, 102, 102, 98, 97, and 100°F), starting on the 25th. **Macon** also experienced 22 September days with a high of 95°F or greater, breaking a 1925 record by a single day. **Montgomery, AL**, which noted a daily-record high of 100°F on the 26th, set a September record with 24 days of 95-degree heat. **Montgomery's** monthly total of 7 triple-digit days was second only to September 1925, when there were 10 days of 100-degree heat. In **North Carolina**, highs soared to daily-record levels on September 26 in **Charlotte** (95°F) and **Raleigh-Durham** (94°F). Elsewhere in the **Southeast**, three consecutive daily-record highs were set from September 25-27 in **Florida** locations such as **Pensacola** (96°F each day) and **Apalachicola** (94, 95, and 92°F). Around mid-week, heat briefly affected **northern and central California** in advance of a cold front. On September 24-25, the **San Francisco** airport registered consecutive daily-record highs (94 and 96°F, respectively). On the 25th, daily-record highs in **California** soared to 100°F in **Sacramento** and 99°F in **San Jose**. Late in the week, heat continued across the **South** and spread into the **lower Midwest**. **Cincinnati, OH**, posted consecutive daily-record highs (91 and 93°F, respectively) on September 27-28.

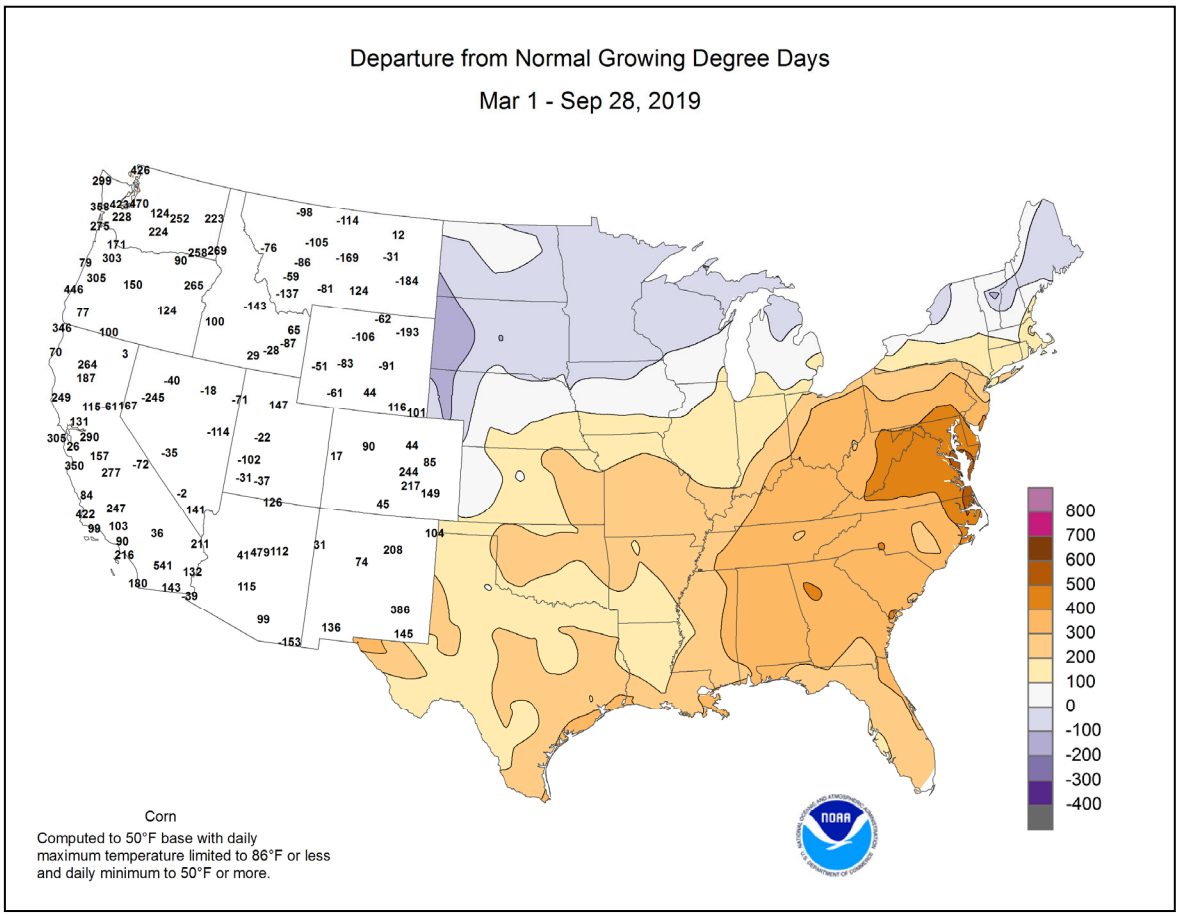
Early-week showers soaked portions of the **Great Lakes region**. In **Michigan**, record-setting rainfall totals for September 22 included 2.04 inches in **Traverse City** and 1.93 inches in **Gaylord**. Meanwhile, out-of-season showers arrived in the **Southwest**, starting on September 23, when daily-record amounts reached 0.53 inch in **Yuma, AZ**, and 0.24 inch in **Las Vegas, NV**. The following day in **Arizona**, record-setting amounts for September 24 included 2.27 inches in **Nogales** and 1.52 inches in **Douglas**. Farther east, torrential rainfall shifted into portions of the **eastern Plains** and **mid-South**, where **Fayetteville, AR**, netted a daily-record sum (4.57 inches) for September 24. In stark contrast, the streak without measurable rain in **Lexington, KY**, stretched to 34 days (August 28 – September 30) and counting—the second-longest dry spell on record in that location behind 37 days from August 22 – September 27, 1908. Records for September dryness were set in numerous **Southeastern** locations, including **Lexington** (a trace; previously, 0.24 inch in 1959); **Knoxville, TN** (0.03 inch; previously, 0.19 inch in 2014); and **Montgomery, AL** (0.05 inch; previously, 0.12 inch in 1923). Meanwhile, **Augusta, GA**, followed its wettest August on record (12.92 inches) with September rainfall totaling just 0.77 inch. In contrast, heavy **Midwestern** rainfall led to daily-record rainfall totals for September 27 in **Illinois** locations such as **Peoria** (3.14 inches), **Rockford** (2.92 inches), and **Chicago** (2.28 inches). Toward week's end, a winter-like storm unfolding across the **northern High Plains** delivered heavy snow. On September 28-29, **Great Falls, MT**, received 19.3 inches of snow—a monthly record. Previously, the snowiest September in **Great Falls** occurred in 1934, with a 13.2-inch total. During the same 2-day period, **Spokane, WA**, received 3.3 inches, also a September record (previously, 1.4 inches in 1926). **Missoula, MT**, set a September snowfall record with 1.7 inches (previously, 1.5 inches in September 1934. Stormy weather extended southward into **Utah**, where **Trenton** (2.55 inches on September 29) experienced its wettest day on record (previously, 2.40 inches on August 18, 1977).

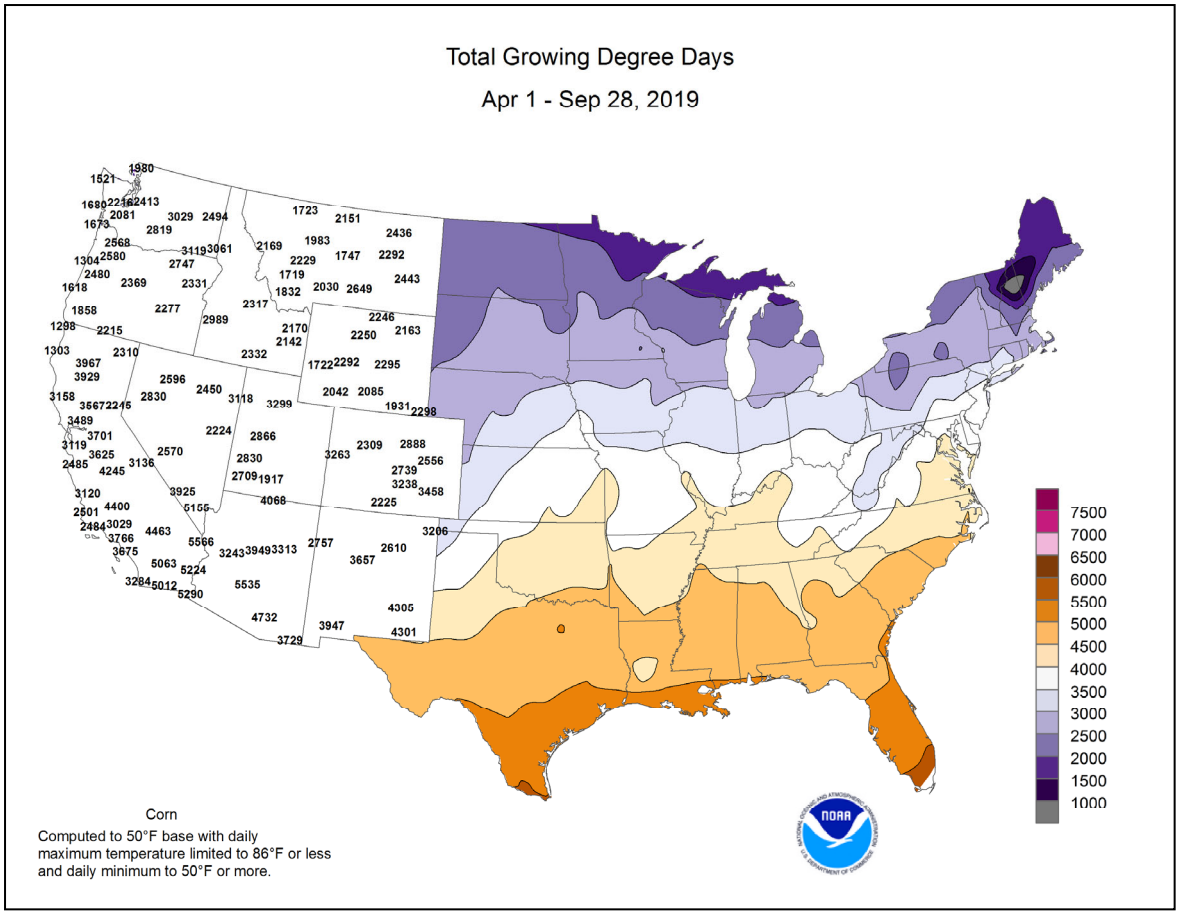
Mild, showery weather prevailed across much of **northern and western Alaska**, while cool conditions covered some interior and southern locations. For September as a whole, **Alaskan** temperatures generally ranged from 2 to 8°F above normal, while near- or above-normal precipitation fell in most locations. Monthly precipitation topped 4 inches and was more than 150 percent of normal in **Nome** and **Bethel**. King Salmon received 6.05 inches, which was 190 percent of the September normal. Drier-than-normal weather persisted, however, in parts of **south-central and southeastern Alaska**, where monthly rainfall was 60 to 70 percent of normal in **Yakutat** (13.96 inches), **Ketchikan** (8.39 inches), and **Kodiak** (5.09 inches). Farther south, remarkable heat persisted in **Hawaii**, despite scattered to widespread showers. **Kahului, Maui**, opened the week with a trio of daily-record highs (94, 94, and 95°F) from September 22-24. On the **Big Island**, **Hilo** posted a daily-record high of 90°F on September 22—and topped that mark with a daily-record high of 92°F on the 27th. September 25 was a particularly wet day in **Honolulu, Oahu**, where 1.11 inches fell. It was **Honolulu's** first day with at least an inch of rain since June 26. At the state's major airport observation sites, September rainfall ranged from 0.21 inch (55 percent of normal) at **Kahului** to 8.16 inches (82 percent) in **Hilo**. However, **Honolulu's** monthly total of 2.13 inches was 304 percent of normal.

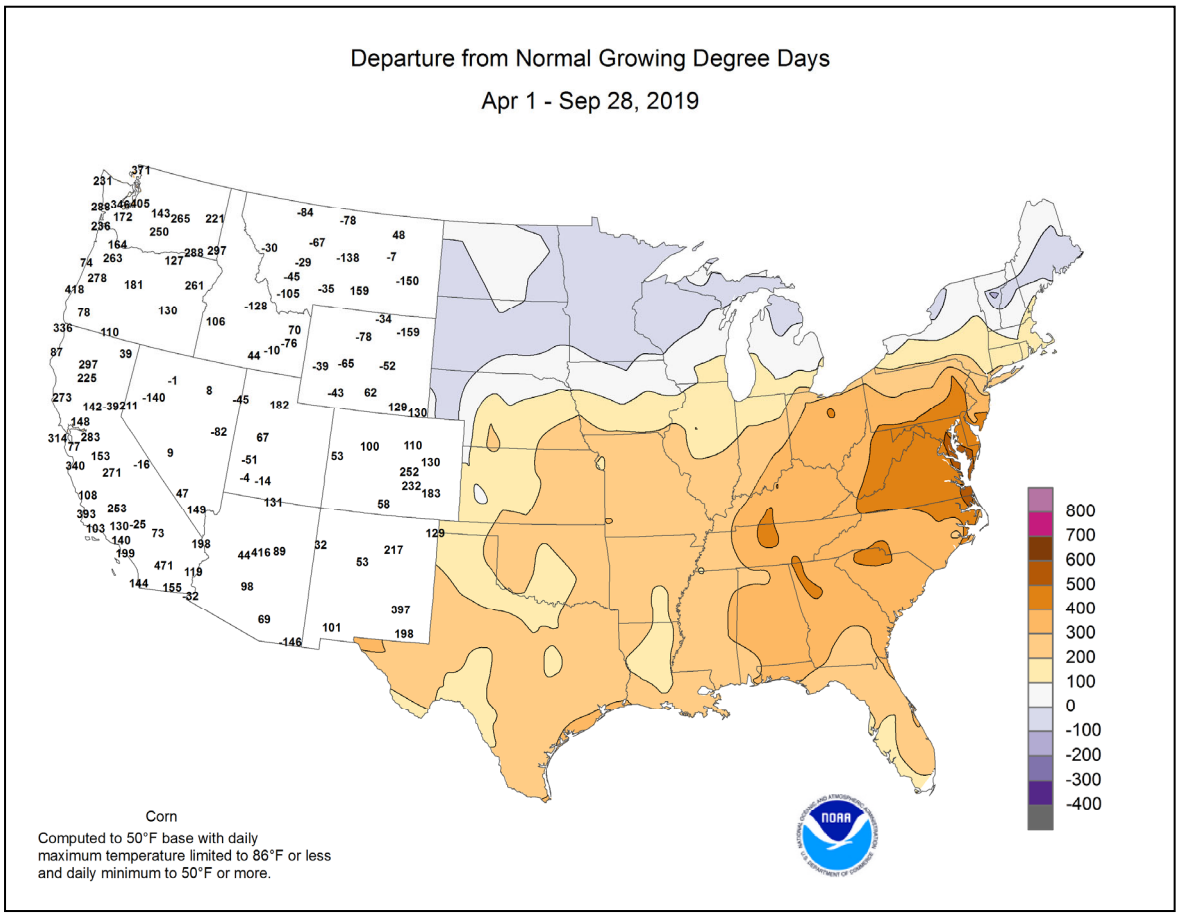

U.S. Drought Monitor
September 24, 2019
(Released Thursday, Sep. 26, 2019)
Valid 8 a.m. EDT
Drought Impact Types:
Delineates dominant impacts
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)
Intensity:
None
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought
Author:
Eric Luebehusen
U.S. Department of Agriculture
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
USDA
NDMC
NOAA
droughtmonitor.unl.edu


U.S. Monthly Drought Outlook
Drought Tendency During the Valid Period
Valid for October 2019
Released September 30, 2019
Author:
Brad Pugh
NOAA/NWS/NCEP/Climate Prediction Center
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).
Drought persists
Drought remains but improves
Drought removal likely
Drought development likely
http://go.usa.gov/3eZGd


Total Growing Degree Days
Mar 1 - Sep 28, 2019
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
Corn
Computed to 50°F base with daily maximum temperature limited to 86°F or less and daily minimum to 50°F or more.


Departure from Normal Growing Degree Days
Mar 1 - Sep 28, 2019
800
700
600
500
400
300
200
100
0
-100
-200
-300
-400
Corn
Computed to 50°F base with daily maximum temperature limited to 86°F or less and daily minimum to 50°F or more.


Total Growing Degree Days
Apr 1 - Sep 28, 2019
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
NOAA
Corn
Computed to 50°F base with daily maximum temperature limited to 86°F or less and daily minimum to 50°F or more.


Departure from Normal Growing Degree Days
Apr 1 - Sep 28, 2019
800
700
600
500
400
300
200
100
0
-100
-200
-300
-400
NOAA
Corn
Computed to 50°F base with daily maximum temperature limited to 86°F or less and daily minimum to 50°F or more.

National Weather Data for Selected Cities

Weather Data for the Week Ending September 28, 2019

Data Provided by Climate Prediction Center

STATES AND STATIONS		TEMPERATURE ˚F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS TEMP. ˚F		NUMBER OF DAYS PRECIP	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE 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	94	67	97	62	81	10	0.00	-0.94	0.00	0.56	15	37.06	90	82	34	7	0	0	0
	HUNTSVILLE	93	65	96	58	79	9	0.00	-1.00	0.00	0.27	7	45.49	106	92	39	7	0	0	0
	MOBILE	93	70	95	67	81	6	0.00	-1.25	0.00	1.57	27	46.43	88	94	53	7	0	0	0
	MONTGOMERY	97	68	100	61	82	8	0.00	-0.95	0.00	0.05	1	34.01	80	87	36	7	0	0	0
AK	ANCHORAGE	52	36	58	32	44	-1	0.21	-0.41	0.20	3.22	120	9.15	79	90	73	0	2	2	0
	BARROW	40	33	45	28	36	8	0.38	0.25	0.23	0.76	123	9.14	268	95	80	0	3	4	0
	FAIRBANKS	48	30	55	27	39	-2	0.03	-0.19	0.03	0.68	65	12.14	153	87	73	0	7	1	0
	JUNEAU	53	41	58	31	47	-1	2.25	0.34	1.06	6.23	92	34.41	90	96	91	0	2	5	2
	KODIAK	55	43	58	33	49	2	1.43	-0.57	1.01	3.95	56	39.33	76	77	71	0	0	3	1
	NOME	45	35	47	25	40	0	0.89	0.39	0.38	3.25	135	20.46	163	95	91	0	4	5	0
AZ	FLAGSTAFF	67	41	72	28	54	-2	0.84	0.38	0.70	0.95	48	17.25	101	90	42	0	1	2	1
	PHOENIX	91	71	98	68	81	-3	0.23	0.06	0.17	0.25	40	3.68	64	68	49	3	0	3	0
	PRESCOTT	74	51	81	45	63	-1	0.79	0.38	0.56	2.18	111	12.41	81	85	38	0	0	2	1
	TUCSON	86	65	94	62	75	-4	1.71	1.41	0.66	2.47	189	10.14	111	85	59	2	0	6	1
AR	FORT SMITH	86	70	92	68	78	7	1.59	0.72	0.92	2.27	70	52.34	167	99	70	2	0	3	2
	LITTLE ROCK	86	69	91	65	78	6	0.02	-0.85	0.01	1.36	40	48.61	135	93	56	1	0	2	0
CA	BAKERSFIELD	91	65	101	60	78	3	0.00	-0.03	0.00	0.02	18	6.52	136	53	37	4	0	0	0
	FRESNO	90	64	98	59	77	4	0.00	-0.06	0.00	0.00	0	9.52	118	60	41	4	0	0	0
	LOS ANGELES	79	67	89	66	73	3	0.00	-0.04	0.00	0.00	0	12.86	131	81	61	0	0	0	0
	REDDING	89	68	100	55	78	6	0.00	-0.12	0.00	0.24	73	32.33	144	55	33	3	0	0	0
	SACRAMENTO	88	59	100	54	73	2	0.00	-0.08	0.00	0.12	40	19.48	158	80	30	3	0	0	0
	SAN DIEGO	76	66	79	61	71	0	0.10	0.07	0.10	0.11	85	8.53	108	90	71	0	0	1	0
	SAN FRANCISCO	80	60	96	55	70	6	0.00	-0.03	0.00	0.04	36	18.46	136	74	57	2	0	0	0
	STOCKTON	90	60	99	55	75	3	0.00	-0.08	0.00	0.23	96	12.71	136	75	40	5	0	0	0
CO	ALAMOSA	75	33	79	26	54	2	0.00	-0.17	0.00	0.73	91	6.97	123	78	24	0	3	0	0
	CO SPRINGS	78	50	85	43	64	7	0.01	-0.15	0.01	0.32	26	10.09	65	68	21	0	0	1	0
	DENVER INTL	81	46	89	40	64	5	0.00	-0.22	0.00	0.41	45	12.99	111	70	18	0	0	0	0
	GRAND JUNCTION	81	49	86	39	65	2	0.02	-0.20	0.02	0.26	33	7.12	107	45	25	0	0	1	0
	PUEBLO	84	52	90	45	68	6	0.00	-0.11	0.00	0.51	62	11.25	105	56	31	1	0	0	0
CT	BRIDGEPORT	79	59	84	54	69	6	0.13	-0.67	0.12	0.93	28	36.61	110	87	58	0	0	2	0
	HARTFORD	81	52	92	47	67	7	0.08	-0.85	0.07	1.93	51	35.40	103	88	43	1	0	2	0
DC	WASHINGTON	88	66	94	61	77	9	0.00	-0.88	0.00	0.11	3	30.88	104	80	40	3	0	0	0
DE	WILMINGTON	86	59	93	53	72	7	0.19	-0.75	0.19	0.48	13	37.39	114	95	42	1	0	1	0
FL	DAYTONA BEACH	88	71	91	68	79	0	0.09	-1.35	0.09	4.03	65	39.85	103	92	52	2	0	1	0
	JACKSONVILLE	92	68	97	64	80	4	0.00	-1.72	0.00	2.35	31	34.48	80	90	46	4	0	0	0
	KEY WEST	87	78	88	76	83	0	1.67	0.50	1.61	4.05	79	22.90	78	82	63	0	0	2	1
	MIAMI	89	77	91	73	83	1	0.00	-1.77	0.00	3.24	40	55.16	119	70	50	2	0	0	0
	ORLANDO	91	70	94	67	80	0	0.00	-1.19	0.00	1.87	34	35.74	88	87	45	5	0	0	0
	PENSACOLA	93	74	96	70	84	7	0.00	-1.22	0.00	0.00	0	39.62	77	91	52	6	0	0	0
	TALLAHASSEE	95	71	98	66	83	6	0.00	-1.00	0.00	0.00	0	30.37	59	95	47	7	0	0	0
	TAMPA	92	73	94	70	82	1	0.00	-1.30	0.00	1.43	22	48.74	127	83	43	7	0	0	0
	WEST PALM BEACH	87	76	89	69	82	1	0.01	-1.74	0.01	1.36	18	45.32	97	74	55	0	0	1	0
GA	ATHENS	92	64	97	57	78	8	0.00	-0.80	0.00	1.40	43	35.21	96	86	42	5	0	0	0
	ATLANTA	93	69	97	64	81	10	0.55	-0.39	0.55	0.76	20	32.33	83	71	40	6	0	1	1
	AUGUSTA	96	63	99	55	80	9	0.00	-0.76	0.00	0.51	15	37.75	107	94	41	7	0	0	0
	COLUMBUS	96	68	100	62	82	8	0.87	0.22	0.87	1.29	45	32.73	87	82	32	7	0	1	1
	MACON	98	64	102	55	81	9	0.00	-0.69	0.00	0.02	1	27.32	77	90	29	7	0	0	0
	SAVANNAH	94	70	98	62	82	7	0.00	-0.97	0.00	1.27	25	31.07	75	93	48	6	0	0	0
HI	HILO	89	75	92	72	82	6	1.73	-0.23	1.24	7.20	83	64.58	72	79	68	3	0	3	1
	HONOLULU	88	75	92	64	82	1	2.02	1.79	1.11	2.16	415	11.22	104	83	70	4	0	3	2
	KAHULUI	93	72	95	67	82	3	0.00	-0.08	0.00	0.18	55	9.91	80	77	66	7	0	0	0
	LIHUE	87	78	89	75	82	3	1.09	0.38	0.52	3.14	136	20.83	82	91	82	0	0	6	1
ID	BOISE	72	49	80	45	61	0	0.01	-0.16	0.01	0.78	124	12.99	152	74	45	0	0	1	0
	LEWISTON	72	51	84	43	62	1	0.32	0.15	0.22	0.88	133	10.31	110	76	49	0	0	3	0
	POCATELLO	70	43	76	35	57	1	0.46	0.27	0.41	1.47	199	10.79	117	74	45	0	0	2	0
IL	CHICAGO/O'HARE	74	59	79	53	66	5	3.94	3.32	2.28	7.04	221	38.88	139	85	59	0	0	3	2
	MOLINE	76	59	83	54	67	5	2.26	1.63	0.98	6.87	227	41.67	138	86	57	0	0	4	2
	PEORIA	78	60	81	54	69	6	4.22	3.51	3.13	7.22	252	42.44	154	91	54	0	0	4	2
	ROCKFORD	74	58	81	52	66	6	0.76	0.06	0.47	8.74	263	42.67	146	91	60	0	0	3	0
	SPRINGFIELD	82	59	91	53	70	5	1.32	0.71	0.83	3.61	137	38.70	142	94	47	1	0	4	1
IN	EVANSVILLE	87	58	93	52	73	6	0.07	-0.58	0.04	0.08	3	46.08	137	86	41	3	0	2	0
	FORT WAYNE	78	55	86	47	66	4	1.73	1.15	1.11	2.25	85	31.51	112	92	48	0	0	3	1
	INDIANAPOLIS	82	59	90	52	71	7	0.41	-0.20	0.25	0.42	15	38.46	123	87	39	1	0	2	0
	SOUTH BEND	75	58	84	52	67	6	3.67	2.85	3.01	5.78	162	36.36	122	83	56	0	0	3	1
IA	BURLINGTON	76	59	82	53	67	3	4.26	3.46	2.13	7.04	210	38.97	130	90	54	0	0	3	3
	CEDAR RAPIDS	73	54	83	46	63	2	3.23	2.59	1.24	6.36	201	36.37	133	99	56	0	0	5	2
	DES MOINES	76	55	85	49	65	3	1.07	0.44	0.93	4.33	143	38.75	136	91	62	0	0	4	1
	DUBUQUE	71	54	81	47	62	3	1.57	0.87	1.35	12.34	359	43.99	153	98	66	0	0	3	1
	SIOUX CITY	73	49	84	43	61	1	0.11	-0.41	0.09	3.97	176	29.21	134	92	63	0	0	2	0
	WATERLOO	75	55	86	48	65	5	1.07	0.48	0.45	4.99	178	33.23	122	88	59	0	0	4	0
KS	CONCORDIA	81	59	89	54	70	5	0.63	0.09	0.47	2.08	89	31.42	130	89	52	0	0	3	0
	DODGE CITY	84	61	95	53	72	5	0.10	-0.24	0.10	0.20	13	19.93	105	89	45	1	0	1	0
	GOODLAND	76	49	88	46	63	2	0.29	0.07	0.29	***	***	21.90	127	87	51	0	0	1	0
	TOPEKA	81	59	93	52	70	4	1.27	0.46	0.70	2.51	72	43.40	151	90	58	1	0	3	2

Based on 1971-2000 normals

***** Not Available**

Weather Data for the Week Ending September 28, 2019

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 JAN01	PCT. NORMAL SINCE JAN01	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	84	65	94	55	75	7	0.49	-0.18	0.25	0.98	36	36.57	149	86	63	1	0	3	0
KY	JACKSON	86	63	94	53	75	9	0.00	-0.83	0.00	0.00	0	39.46	105	85	38	3	0	0	0
	LEXINGTON	89	59	96	50	74	8	0.00	-0.69	0.00	0.00	0	36.51	103	75	36	3	0	0	0
	LOUISVILLE	89	64	95	57	77	9	0.04	-0.65	0.04	0.04	1	39.82	117	72	29	4	0	1	0
	PADUCAH	86	59	92	49	73	6	0.32	-0.53	0.26	0.32	10	56.13	154	86	56	3	0	2	0
LA	BATON ROUGE	92	69	93	69	81	5	0.00	-1.01	0.00	2.54	55	52.56	107	93	44	7	0	0	0
	LAKE CHARLES	91	73	93	70	82	5	0.00	-1.31	0.00	3.79	68	56.03	128	94	53	7	0	0	0
	NEW ORLEANS	93	74	95	72	83	6	0.00	-1.08	0.00	0.19	3	46.95	92	87	49	7	0	0	0
	SHREVEPORT	93	71	94	68	82	7	0.00	-0.81	0.00	1.34	47	33.69	90	94	51	7	0	0	0
ME	CARIBOU	67	47	81	43	57	6	2.09	1.39	0.97	4.87	158	31.39	112	91	67	0	0	4	2
	PORTLAND	76	53	89	48	65	9	0.26	-0.55	0.25	0.42	14	34.72	108	87	53	0	0	2	0
MD	BALTIMORE	87	61	95	54	74	9	0.01	-0.90	0.01	0.16	4	28.05	88	81	39	2	0	1	0
MA	BOSTON	82	61	92	58	72	10	0.41	-0.38	0.27	2.16	68	36.79	120	78	42	1	0	3	0
	WORCESTER	74	54	85	48	64	6	0.24	-0.76	0.19	2.19	56	37.42	104	95	51	0	0	2	0
MI	ALPENA	68	49	75	43	59	5	1.02	0.43	0.67	3.47	132	27.79	126	93	65	0	0	5	1
	GRAND RAPIDS	72	57	80	50	64	5	4.05	3.13	2.56	6.31	155	37.83	135	88	56	0	0	4	2
	HOUGHTON LAKE	68	51	74	42	59	5	1.09	0.47	0.65	4.78	160	29.55	133	88	66	0	0	5	1
	LANSING	73	55	84	47	64	6	1.54	0.84	0.83	1.98	59	29.33	121	82	53	0	0	3	1
	MUSKEGON	71	59	74	54	65	7	1.82	1.10	1.24	5.44	162	35.87	149	80	62	0	0	2	2
	TRAVERSE CITY	69	55	77	44	62	5	2.46	1.68	2.04	5.88	176	32.17	129	90	57	0	0	5	1
MN	DULUTH	67	47	77	37	57	5	0.11	-0.75	0.09	4.50	114	26.37	104	82	51	0	0	2	0
	INT'L FALLS	62	42	72	29	52	2	1.18	0.54	0.93	5.75	200	26.71	135	93	55	0	1	4	1
	MINNEAPOLIS	71	53	81	45	62	4	0.01	-0.50	0.01	3.43	131	37.32	154	81	53	0	0	1	0
	ROCHESTER	72	50	84	46	61	5	1.01	0.39	0.79	8.12	272	47.34	182	87	54	0	0	5	1
	ST. CLOUD	66	46	75	38	56	1	0.13	-0.43	0.13	6.53	231	35.19	156	94	52	0	0	1	0
MS	JACKSON	93	70	95	69	82	9	0.00	-0.72	0.00	0.25	8	42.88	102	85	41	7	0	0	0
	MERIDIAN	95	68	97	64	82	8	0.00	-0.86	0.00	0.25	8	45.63	102	89	46	7	0	0	0
	TUPELO	94	68	97	64	81	10	0.00	-0.80	0.00	0.01	0	58.37	142	87	42	7	0	0	0
MO	COLUMBIA	81	62	91	57	72	7	1.14	0.39	0.57	2.42	76	40.66	131	88	51	1	0	2	2
	KANSAS CITY	80	58	89	54	69	3	3.91	2.80	2.34	5.50	130	48.81	161	95	65	0	0	3	3
	SAINT LOUIS	82	66	92	59	74	6	0.55	-0.12	0.50	1.70	63	44.76	153	78	52	1	0	3	1
	SPRINGFIELD	82	64	90	58	73	6	1.45	0.38	1.02	1.61	36	41.69	124	93	63	1	0	3	1
MT	BILLINGS	66	47	77	35	56	-1	0.59	0.26	0.51	3.06	266	19.28	162	73	44	0	0	2	1
	BUTTE	61	39	69	26	50	1	0.08	-0.14	0.04	1.87	187	11.93	111	80	35	0	1	2	0
	CUT BANK	60	39	74	25	50	0	0.16	-0.04	0.12	1.19	104	11.20	100	75	38	0	2	3	0
	GLASGOW	63	44	78	38	54	0	0.41	0.21	0.22	3.72	423	16.71	173	83	54	0	0	3	0
	GREAT FALLS	62	40	74	26	51	-2	0.68	0.44	0.59	1.49	131	15.29	121	74	39	0	1	3	1
	HAVRE	65	42	76	30	53	0	0.76	0.55	0.61	1.31	139	10.89	111	87	50	0	1	3	1
	MISSOULA	63	44	75	36	54	1	0.37	0.15	0.28	2.24	226	12.96	120	72	53	0	0	2	0
NE	GRAND ISLAND	77	53	84	46	65	3	0.50	0.02	0.50	1.04	45	39.12	176	87	48	0	0	1	1
	LINCOLN	78	54	86	48	66	3	1.30	0.68	1.15	1.68	61	28.20	118	89	53	0	0	4	1
	NORFOLK	74	50	83	46	62	1	0.11	-0.36	0.10	1.24	59	27.86	123	90	53	0	0	2	0
	NORTH PLATTE	77	47	89	43	62	3	0.16	-0.12	0.13	0.54	46	29.20	171	89	37	0	0	2	0
	OMAHA	77	58	87	50	68	5	1.13	0.43	0.67	5.00	169	32.18	128	89	63	0	0	4	1
	SCOTTSBLUFF	77	44	89	39	60	3	0.18	-0.10	0.12	1.04	97	28.08	203	83	41	0	0	2	0
	VALENTINE	74	46	89	39	60	2	0.01	-0.35	0.01	2.58	179	33.09	194	83	47	0	0	1	0
NV	ELY	76	36	81	26	56	2	0.65	0.43	0.65	0.74	91	12.80	166	64	31	0	2	1	1
	LAS VEGAS	91	69	94	64	80	1	0.24	0.18	0.24	0.24	109	4.88	141	43	24	4	0	1	0
	RENO	80	48	91	35	64	4	0.22	0.14	0.22	0.29	81	9.05	171	57	33	1	0	1	0
	WINNEMUCCA	75	42	86	31	58	1	0.03	-0.06	0.03	0.78	190	8.19	138	67	39	0	1	1	0
NH	CONCORD	79	48	86	41	63	7	0.27	-0.45	0.23	1.02	36	30.04	110	94	44	0	0	2	0
NJ	NEWARK	85	61	93	58	73	8	0.05	-0.85	0.05	1.60	43	44.31	125	79	42	1	0	1	0
NM	ALBUQUERQUE	81	54	84	51	67	0	0.01	-0.19	0.01	0.45	46	6.35	87	66	25	0	0	1	0
NY	ALBANY	78	53	87	46	65	7	0.42	-0.30	0.23	2.22	72	32.29	113	87	50	0	0	3	0
	BINGHAMTON	73	52	83	45	63	7	0.12	-0.68	0.06	1.72	51	31.91	110	90	56	0	0	2	0
	BUFFALO	75	56	85	49	66	7	1.70	0.89	0.92	6.21	171	34.58	118	90	50	0	0	3	2
	ROCHESTER	77	55	88	48	66	7	1.01	0.29	0.53	3.04	93	24.35	95	89	55	0	0	3	1
	SYRACUSE	76	54	87	48	65	6	1.38	0.45	0.97	3.42	89	35.36	119	92	52	0	0	4	1
NC	ASHEVILLE	85	59	86	53	72	9	0.11	-0.66	0.11	0.51	14	42.22	116	90	46	0	0	1	0
	CHARLOTTE	91	64	95	61	78	8	0.00	-0.88	0.00	0.19	5	39.31	119	82	35	5	0	0	0
	GREENSBORO	88	65	92	59	76	9	0.54	-0.47	0.54	0.56	14	38.65	115	90	41	1	0	1	1
	HATTERAS	84	73	85	68	78	5	0.00	-1.04	0.00	***	***	***	***	88	64	0	0	0	0
	RALEIGH	90	66	94	62	78	9	0.00	-0.98	0.00	1.12	28	33.51	100	90	47	4	0	0	0
	WILMINGTON	88	68	92	60	78	5	0.49	-0.95	0.49	8.33	128	34.39	74	93	49	4	0	1	0
ND	BISMARCK	67	43	80	36	55	0	0.11	-0.23	0.08	5.26	355	24.50	171	89	54	0	0	2	0
	DICKINSON	64	40	79	32	53	-1	0.51	0.15	0.43	4.78	332	22.16	159	92	44	0	1	2	0
	FARGO	67	45	76	33	56	1	0.03	-0.44	0.03	3.24	162	26.33	151	92	46	0	0	1	0
	GRAND FORKS	66	45	78	42	56	2	0.13	-0.28	0.09	6.64	363	23.48	145	89	44	0	0	2	0
	JAMESTOWN	65	45	76	34	55	0	0.13	-0.25	0.08	3.34	209	24.60	156	94	47	0	0	3	0
	WILLISTON	64	43	78	41	53	0	0.33	0.03	0.28	7.75	646	20.77	174	84	61	0	0	3	0
OH	AKRON-CANTON	82	57	90	51	70	10	0.30	-0.45	0.27	1.16	36	36.93	124	83	44	1	0	2	0
	CINCINNATI	86	60	93	50	73	8	0.12	-0.46	0.12	0.61	23	44.92	137	75	36	2	0	1	0
	CLEVELAND	82	59	91	48	71	10	0.11	-0.70	0.05	1.24	35	33.57	115	83	38	1	0	3	0
	COLUMBUS	85	56	91	50	71	7	0.08	-0.53	0.04	0.73	26	36.56	122	81	34	1	0	2	0
	DAYTON	85	58	91	52	72	9	0.14	-0.41	0.14	0.15	6	35.38	117	79	34	3	0	1	0
	MANSFIELD	81	56	88	47	69	9	0.26	-0.40	0.25	2.05	62	40.67	122	89	38	0	0	2	0

Based on 1971-2000 normals

***** Not Available**

Weather Data for the Week Ending September 28, 2019

STATES AND STATIONS		TEMPERATURE ˚F						PRECIPITATION							RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS TEMP. ˚F		NUMBER OF DAYS PRECIP	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE SEP 1	PCT. NORMAL SINCE SEP 1	TOTAL, IN., SINCE JAN01	PCT. NORMAL SINCE JAN01	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	81	57	89	47	69	8	1.14	0.56	0.79	3.34	124	36.84	146	78	43	0	0	3	1
	YOUNGSTOWN	78	54	86	45	66	7	0.21	-0.65	0.21	4.51	124	45.12	154	80	49	0	0	1	0
OK	OKLAHOMA CITY	87	70	92	68	79	8	0.80	-0.20	0.57	2.23	63	40.36	145	97	63	2	0	4	1
	TULSA	86	71	91	68	79	8	3.13	1.98	1.47	3.96	92	47.99	150	93	77	2	0	4	2
OR	ASTORIA	64	50	68	41	57	0	0.75	0.10	0.33	6.18	271	31.83	79	94	75	0	0	4	0
	BURNS	71	36	81	29	53	0	0.00	-0.11	0.00	1.01	246	12.42	169	81	41	0	1	0	0
	EUGENE	70	51	77	44	61	1	0.72	0.41	0.48	4.76	342	27.96	91	89	73	0	0	4	0
	MEDFORD	75	50	84	44	63	-1	0.29	0.12	0.20	1.77	268	16.49	148	88	48	0	0	2	0
	PENDLETON	70	49	79	40	59	-2	0.05	-0.09	0.05	1.11	202	10.85	126	74	48	0	0	1	0
	PORTLAND	68	55	75	48	61	-1	0.37	-0.02	0.21	3.52	241	18.92	83	84	69	0	0	3	0
	SALEM	68	50	75	42	59	-1	0.28	-0.05	0.22	2.94	237	22.66	95	89	70	0	0	3	0
PA	ALLENTOWN	83	53	90	48	68	7	0.15	-0.81	0.14	1.33	32	47.81	139	88	45	2	0	2	0
	ERIE	78	61	89	52	69	7	0.19	-0.85	0.15	3.31	75	32.18	104	75	53	0	0	2	0
	MIDDLETOWN	84	58	91	51	71	7	0.04	-0.75	0.02	1.48	46	34.51	113	87	41	2	0	2	0
	PHILADELPHIA	84	62	92	58	73	7	0.41	-0.46	0.24	1.16	32	39.09	120	82	44	1	0	3	0
	PITTSBURGH	79	55	87	47	67	6	0.33	-0.35	0.31	3.99	131	40.74	138	88	41	0	0	2	0
	WILKES-BARRE	78	54	88	48	66	6	0.59	-0.29	0.35	1.15	32	39.41	138	91	51	0	0	2	0
	WILLIAMSPORT	79	53	86	48	66	6	0.24	-0.66	0.14	1.49	40	38.25	121	94	56	0	0	2	0
RI	PROVIDENCE	79	56	85	52	67	6	0.63	-0.17	0.36	1.16	33	35.47	104	96	52	0	0	3	0
SC	CHARLESTON	88	68	91	61	78	4	0.00	-1.20	0.00	3.93	68	33.82	80	94	52	2	0	0	0
	COLUMBIA	94	67	99	58	81	9	0.00	-0.79	0.00	1.64	43	27.49	71	88	39	6	0	0	0
	FLORENCE	91	65	94	59	78	6	0.00	-0.75	0.00	3.67	105	32.89	92	94	43	5	0	0	0
	GREENVILLE	91	66	96	59	79	10	0.00	-0.93	0.00	0.18	5	36.48	95	82	36	6	0	0	0
SD	ABERDEEN	69	43	79	34	56	-1	0.07	-0.32	0.03	4.63	277	26.74	154	89	53	0	0	3	0
	HURON	69	48	77	40	58	0	0.00	-0.41	0.00	3.27	198	36.27	203	89	51	0	0	0	0
	RAPID CITY	68	42	83	38	55	-3	0.64	0.40	0.56	2.51	261	32.12	228	86	47	0	0	3	1
	SIOUX FALLS	71	50	82	42	60	2	0.01	-0.52	0.01	2.78	114	33.31	161	82	56	0	0	1	0
TN	BRISTOL	87	58	91	52	72	8	0.00	-0.70	0.00	0.68	24	42.21	131	95	38	2	0	0	0
	CHATTANOOGA	93	65	96	58	79	9	0.46	-0.52	0.46	0.56	14	46.17	112	88	38	6	0	1	0
	KNOXVILLE	89	63	92	55	76	8	0.03	-0.68	0.03	0.03	1	48.26	131	89	34	3	0	1	0
	MEMPHIS	90	71	95	68	81	8	0.12	-0.64	0.10	0.12	4	52.35	132	84	46	5	0	2	0
	NASHVILLE	90	65	95	57	78	9	0.01	-0.79	0.01	0.02	1	47.97	133	80	40	4	0	1	0
TX	ABILENE	96	74	98	72	85	12	0.81	0.14	0.50	0.83	31	19.81	110	75	46	7	0	2	1
	AMARILLO	88	61	95	58	75	8	0.00	-0.36	0.00	1.10	61	18.08	107	88	34	2	0	0	0
	AUSTIN	97	73	98	70	85	7	0.00	-0.74	0.00	0.18	7	24.99	103	84	43	7	0	0	0
	BEAUMONT	90	73	92	70	82	5	0.30	-1.09	0.28	23.17	408	76.83	171	93	60	6	0	2	0
	BROWNSVILLE	94	77	95	75	86	6	0.35	-0.90	0.26	3.78	78	17.47	85	86	54	7	0	2	0
	CORPUS CHRISTI	94	75	96	71	84	5	0.57	-0.61	0.33	4.15	90	17.17	70	94	63	7	0	4	0
	DEL RIO	98	77	100	76	88	10	0.00	-0.51	0.00	0.01	1	13.27	93	77	51	7	0	0	0
	EL PASO	90	66	93	63	78	5	0.00	-0.34	0.00	1.28	86	4.03	55	67	30	4	0	0	0
	FORT WORTH	95	77	97	74	86	11	0.00	-0.68	0.00	0.00	0	27.13	108	79	44	7	0	0	0
	GALVESTON	89	81	91	79	85	5	0.16	-1.11	0.15	18.00	332	45.92	140	84	64	4	0	2	0
	HOUSTON	90	73	92	71	82	5	0.54	-0.44	0.28	14.95	373	44.17	126	93	60	6	0	2	0
	LUBBOCK	88	67	93	63	77	8	1.33	0.76	1.26	5.93	249	21.54	140	83	50	3	0	2	1
	MIDLAND	92	71	97	68	81	9	0.17	-0.38	0.16	1.03	50	12.43	108	82	49	6	0	2	0
	SAN ANGELO	97	73	100	70	85	12	0.00	-0.69	0.00	0.27	10	14.76	92	74	41	7	0	0	0
	SAN ANTONIO	95	76	96	73	85	7	0.06	-0.66	0.05	1.42	53	16.71	69	88	42	7	0	2	0
	VICTORIA	93	74	95	71	83	5	0.76	-0.45	0.44	3.62	80	19.49	64	93	59	6	0	2	0
	WACO	97	76	98	74	87	11	0.00	-0.78	0.00	0.17	7	27.66	116	86	47	7	0	0	0
	WICHITA FALLS	92	73	96	71	83	10	0.82	0.06	0.46	2.88	100	23.91	109	89	62	6	0	3	0
UT	SALT LAKE CITY	75	53	82	47	64	2	0.02	-0.31	0.01	1.42	126	16.68	138	65	31	0	0	2	0
VT	BURLINGTON	73	55	81	47	64	8	1.49	0.66	0.90	3.73	104	30.01	109	89	56	0	0	4	1
VA	LYNCHBURG	89	59	93	50	74	9	0.00	-0.93	0.00	0.06	2	28.73	87	88	40	3	0	0	0
	NORFOLK	86	68	91	62	77	7	0.00	-0.90	0.00	2.96	78	38.58	107	82	50	2	0	0	0
	RICHMOND	91	64	95	57	77	10	0.03	-0.90	0.03	0.42	11	34.45	102	83	40	4	0	1	0
	ROANOKE	88	62	93	53	75	10	0.51	-0.35	0.51	1.31	37	32.80	99	80	40	4	0	1	1
	WASH/DULLES	86	57	94	49	72	7	0.01	-0.84	0.01	0.34	10	30.18	95	81	41	2	0	1	0
WA	OLYMPIA	65	50	71	42	57	1	0.69	0.21	0.35	3.41	189	20.62	68	92	73	0	0	4	0
	QUILLAYUTE	63	46	66	36	54	-1	1.77	0.66	0.58	9.44	267	46.73	75	99	82	0	0	5	3
	SEATTLE-TACOMA	65	54	69	47	60	1	0.70	0.32	0.22	3.23	226	20.45	92	83	71	0	0	5	0
	SPOKANE	64	45	73	33	55	-1	0.79	0.63	0.70	1.74	264	10.86	99	79	47	0	0	4	1
	YAKIMA	70	43	80	33	57	0	0.01	-0.05	0.01	0.52	168	7.30	140	80	46	0	0	1	0
WV	BECKLEY	82	57	88	48	70	9	0.06	-0.68	0.05	0.10	3	35.71	109	78	46	0	0	2	0
	CHARLESTON	86	57	92	48	71	7	0.45	-0.29	0.22	0.54	17	34.56	101	94	36	3	0	3	0
	ELKINS	81	51	88	44	66	6	0.48	-0.35	0.31	0.48	13	39.19	108	90	49	0	0	2	0
	HUNTINGTON	86	58	93	49	72	8	0.01	-0.59	0.01	0.01	0	36.67	112	92	38	3	0	1	0
WI	EAU CLAIRE	72	50	81	46	61	4	0.86	0.14	0.86	5.92	163	36.49	136	87	44	0	0	1	1
	GREEN BAY	70	54	79	49	62	6	1.53	0.92	0.75	9.20	309	38.90	168	90	57	0	0	4	2
	LA CROSSE	75	56	85	52	65	5	1.49	0.82	1.23	6.04	184	36.50	136	85	44	0	0	4	1
	MADISON	72	56	81	52	64	6	2.20	1.61	1.89	5.89	196	37.38	140	88	59	0	0	3	1
	MILWAUKEE	73	60	81	55	66	6	0.62	-0.04	0.32	5.90	187	34.83	128	82	56	0	0	2	0
WY	CASPER	72	40	82	35	56	1	0.43	0.17	0.34	1.10	136	15.99	156	77	42	0	0	2	0
	CHEYENNE	75	43	86	39	59	5	0.10	-0.19	0.08	0.51	38	20.63	153	66	31	0	0	2	0
	LANDER	70	42	81	34	56	0	0.70	0.40	0.47	1.38	147	16.94	165	79	34	0	0	2	0
	SHERIDAN	69	42	82	36	55	1	0.31	-0.03	0.24	1.89	159	18.11	156	82	50	0	0	4	0

Based on 1971-2000 normals

***** Not Available**

National Agricultural Summary

September 23 – 29, 2019

Weekly National Agricultural Summary provided by USDA/NASS

HIGHLIGHTS

The majority of the nation was dry during the week. However, parts of Arkansas, Arizona, Illinois, Indiana, Missouri, Oklahoma, and Washington received precipitation totaling 4 inches or more. Meanwhile, temperatures were more than 10°F above normal in parts of the Delta, Oklahoma, the Southeast, Texas, and Virginia. In contrast, readings were as much as 5°F below normal in parts of Arizona, southern California, the Pacific Northwest, Rocky Mountains, and the Dakotas.

Corn: By September 29, eighty-eight percent of this year's acreage was dented, 12 percentage points behind last year and 10 points behind the 5-year average. All of the estimating states, except Kentucky, North Carolina, Tennessee, and Texas, were behind their average pace in denting progress. Forty-three percent of the 2019 corn acreage had reached maturity by September 29, forty-one percentage points behind last year and 30 points behind average. Eleven percent of the acreage was harvested by week's end, 14 percentage points behind last year and 8 points behind average. Harvest progress advanced 11 percentage points or more during the week in four of the 18 estimating states. Overall, 57 percent of the nation's corn was rated in good to excellent condition, unchanged from the previous week but 12 percentage points below the same time last year.

Soybeans: Fifty-five percent of the nation's soybean acreage was at or beyond the leaf-dropping stage by September 29, twenty-six percentage points behind last year and 21 points behind the 5-year average. Leaf dropping advanced 15 percentage points or more from the previous week in 13 of the 18 estimating states. The U.S. soybean harvest was 7 percent complete, 15 percentage points behind last year and 13 points behind average. Harvest progress advanced 12 percentage points or more during the week in Louisiana and Mississippi. On September 29, fifty-five percent of the nation's soybean acreage was rated in good to excellent condition, 1 percentage point above the previous week but 13 points below the same time last year.

Winter Wheat: Nationwide, producers had sown 39 percent of the intended 2020 winter wheat acreage by September 29, two percentage points behind last year but 1 point ahead of the 5-year average. Winter wheat planting advanced during the week by 20 percentage points or more in Colorado, Montana, Nebraska, Oklahoma, Oregon, and South Dakota. Nationwide, 11 percent of the winter wheat was emerged by September 29, one percentage point behind last year and 2 points behind average. Emergence was at or behind average in 14 of the 18 estimating states.

Cotton: By September 29, seventy-seven percent of the nation's cotton acreage had open bolls, 11 percentage points ahead of last year and 10 points ahead of the 5-year average. Advances of 10 percentage points or more from the previous week occurred in eight of the 15 estimating states. By September 29, sixteen percent of the nation's cotton was harvested, 3 percentage points behind last year but 2 points ahead of average. On September 29, forty percent of the 2019 cotton acreage was rated in good to excellent condition, 1 percentage point above the previous week but 2 points below the same time last year.

Sorghum: Ninety-five percent of nation's sorghum acreage was at or beyond the coloring stage by September 29, two percentage points behind last year but equal to the 5-year average. Coloring was complete or nearing completion in all estimating states. By September 29, fifty-four percent of the sorghum was mature, 6 percentage points behind last year and 9 points behind average. Ninety-one percent of Texas' sorghum had matured by September 29, seven percentage points ahead of last year and 9 points ahead of average. Thirty percent of the 2019 sorghum acreage was harvested by September 29, three percentage points behind last year and 5 points behind average. Eighty-six percent of Texas' sorghum was harvested by September 29, ten percentage points ahead of last year and 16 points ahead of average. On September 29, sixty-five percent of the nation's sorghum was rated in good to excellent condition, unchanged from the previous week but 11 percentage points above the same time last year.

Rice: Nationally, 68 percent of the rice acreage was harvested by September 29, one percentage point behind last year and 3 points behind the 5-year average. Rice harvest was nearing completion in Louisiana and Texas—94 and 97 percent complete, respectively.

Small Grains: Ninety-six percent of the nation's barley was harvested by September 29, four percentage points behind both last year and the 5-year average. The barley harvest was complete or nearing completion in all estimating states.

By September 29, ninety percent of the spring wheat acreage was harvested, 10 percentage points behind last year and 9 points behind the 5-year average. The spring wheat harvest was complete or nearing completion in all estimating states, except Montana and North Dakota.

Other Crops: Twenty-six percent of the nation's peanut acreage was harvested as of September 29, seven percentage points ahead of both last year and the 5-year average. Advances of 11 percentage points or more from the previous week occurred in five of the eight estimating states. On September 29, fifty-five percent of the peanuts were rated in good to excellent condition, 6 percentage points below the previous week and 16 points below the same time last year.

By September 29, sugarbeet producers had harvested 16 percent of the nation's crop, 5 percentage points behind last year and 4 points behind the 5-year average. Sugarbeet harvest advanced 5 percentage points or more during the week in three of the four estimating states.

Crop Progress and Condition

Week Ending September 29, 2019

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

Corn Percent Dented

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
CO	95	77	93	96
IL	100	77	85	99
IN	100	73	84	97
IA	99	82	90	98
KS	100	93	96	98
KY	99	96	99	98
MI	94	53	72	90
MN	99	75	88	98
MO	100	88	96	100
NE	99	91	95	98
NC	100	100	100	100
ND	98	59	75	95
OH	95	58	70	96
PA	91	81	87	92
SD	100	71	84	97
TN	100	98	100	100
TX	100	100	100	97
WI	95	59	67	91
18 Sts	100	79	88	98

These 18 States planted 92% of last year's corn acreage.

Corn Percent Mature

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
CO	56	23	41	51
IL	94	26	40	86
IN	90	26	41	76
IA	86	18	36	74
KS	89	60	73	84
KY	91	82	90	90
MI	61	8	17	53
MN	84	8	22	67
MO	95	54	72	90
NE	82	37	52	72
NC	99	95	98	99
ND	82	5	15	57
OH	67	17	27	62
PA	67	50	62	65
SD	79	12	29	64
TN	96	95	98	96
TX	84	77	79	82
WI	70	8	16	54
18 Sts	84	29	43	73

These 18 States planted 92% of last year's corn acreage.

Corn Percent Harvested

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
CO	10	4	12	7
IL	45	2	4	30
IN	26	3	8	19
IA	10	0	2	6
KS	45	19	28	41
KY	59	44	58	56
MI	9	0	0	5
MN	7	0	0	4
MO	62	15	26	47
NE	16	3	8	11
NC	82	81	87	81
ND	6	0	0	3
OH	10	2	5	10
PA	8	12	23	15
SD	10	0	0	7
TN	63	58	74	69
TX	70	65	72	69
WI	9	0	0	4
18 Sts	25	7	11	19

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

Winter Wheat Percent Planted

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
AR	3	2	10	5
CA	15	5	10	7
CO	64	43	67	64
ID	51	27	43	49
IL	7	1	4	6
IN	16	2	7	12
KS	38	15	30	31
MI	19	10	23	22
MO	7	1	3	7
MT	31	15	40	56
NE	69	51	71	73
NC	1	0	1	1
OH	7	11	26	13
OK	39	21	45	37
OR	30	21	43	26
SD	65	24	59	63
TX	40	23	34	36
WA	68	47	61	65
18 Sts	41	22	39	38

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

Winter Wheat Percent Emerged

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
AR	1	NA	1	0
CA	0	NA	0	0
CO	36	18	39	31
ID	13	3	12	14
IL	0	NA	0	0
IN	1	NA	0	1
KS	15	3	12	11
MI	5	NA	2	3
MO	2	NA	1	1
MT	10	NA	1	12
NE	28	NA	23	38
NC	0	NA	0	0
OH	0	NA	0	1
OK	4	NA	5	7
OR	6	3	19	6
SD	28	4	15	19
TX	4	NA	6	10
WA	33	5	13	38
18 Sts	12	NA	11	13

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

Corn Condition by Percent

	VP	P	F	G	EX
CO	0	3	18	66	13
IL	5	15	33	41	6
IN	9	20	40	28	3
IA	2	7	26	54	11
KS	4	10	34	42	10
KY	3	8	23	46	20
MI	6	14	35	35	10
MN	3	10	34	44	9
MO	5	16	33	41	5
NE	2	5	20	56	17
NC	13	17	29	31	10
ND	1	6	24	60	9
OH	7	22	38	30	3
PA	1	6	22	52	19
SD	2	6	26	47	19
TN	1	2	13	56	28
TX	1	9	38	41	11
WI	2	7	22	49	20
18 Sts	4	10	29	46	11
Prev Wk	3	10	30	46	11
Prev Yr	4	8	19	47	22

Crop Progress and Condition

Week Ending September 29, 2019

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

Soybeans Percent Dropping Leaves

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
AR	69	47	62	72
IL	85	14	41	76
IN	88	26	49	80
IA	86	22	49	77
KS	64	27	44	59
KY	58	41	55	53
LA	93	81	91	92
MI	77	35	56	77
MN	92	36	60	85
MS	86	64	80	84
MO	56	12	26	49
NE	91	55	75	84
NC	53	45	59	46
ND	96	67	86	93
OH	80	27	48	80
SD	91	30	58	89
TN	66	57	71	67
WI	78	24	42	72
18 Sts	81	34	55	76

These 18 States planted 95% of last year's soybean acreage.

Soybeans Percent Harvested

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
AR	20	18	25	35
IL	32	NA	1	22
IN	22	1	6	19
IA	14	0	3	12
KS	6	0	2	7
KY	20	13	19	17
LA	69	56	68	74
MI	10	1	7	10
MN	25	NA	5	24
MS	50	24	46	57
MO	10	NA	1	9
NE	25	NA	6	17
NC	5	13	14	6
ND	29	1	4	26
OH	14	1	6	17
SD	20	NA	1	19
TN	18	18	27	16
WI	12	0	1	8
18 Sts	22	NA	7	20

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

Soybean Condition by Percent

	VP	P	F	G	EX
AR	3	12	28	40	17
IL	5	14	37	38	6
IN	8	20	41	27	4
IA	2	7	28	52	11
KS	3	7	34	48	8
KY	5	14	31	46	4
LA	2	6	26	61	5
MI	3	13	40	36	8
MN	2	8	34	49	7
MS	1	5	26	53	15
MO	4	10	36	44	6
NE	1	4	20	62	13
NC	4	14	32	42	8
ND	2	9	27	56	6
OH	6	21	39	31	3
SD	2	6	31	48	13
TN	2	8	31	49	10
WI	1	6	22	48	23
18 Sts	3	10	32	46	9
Prev Wk	3	10	33	45	9
Prev Yr	3	7	22	49	19

Sorghum Percent Coloring

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
CO	96	87	94	93
KS	96	85	92	95
NE	97	93	98	98
OK	89	87	93	93
SD	88	78	92	92
TX	100	100	100	95
6 Sts	97	90	95	95

These 6 States planted 97% of last year's sorghum acreage.

Sorghum Percent Mature

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
CO	41	29	39	40
KS	47	21	38	49
NE	68	22	38	66
OK	56	38	54	64
SD	35	15	29	45
TX	84	89	91	82
6 Sts	60	42	54	63

These 6 States planted 97% of last year's sorghum acreage.

Sorghum Percent Harvested

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
CO	8	0	3	5
KS	9	2	6	11
NE	15	0	2	11
OK	26	10	18	34
SD	8	2	3	8
TX	76	83	86	70
6 Sts	33	26	30	35

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

Rice Percent Harvested

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
AR	76	61	72	78
CA	18	10	20	23
LA	97	91	94	98
MS	86	64	79	80
MO	57	44	65	60
TX	98	94	97	99
6 Sts	69	58	68	71

These 6 States harvested 100% of last year's rice acreage.

Spring Wheat Percent Harvested

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
ID	100	95	97	100
MN	100	94	97	100
MT	97	80	84	97
ND	100	85	89	98
SD	100	99	100	100
WA	100	91	93	100
6 Sts	100	87	90	99

These 6 States harvested 99% of last year's spring wheat acreage.

Sorghum Condition by Percent

	VP	P	F	G	EX
CO	1	3	23	61	12
KS	3	8	27	51	11
NE	1	2	14	70	13
OK	0	4	29	63	4
SD	1	2	17	71	9
TX	1	5	29	40	25
6 Sts	2	6	27	50	15
Prev Wk	2	6	27	51	14
Prev Yr	6	11	29	44	10

Crop Progress and Condition

Week Ending September 29, 2019

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

Cotton Percent Bolls Opening

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
AL	82	81	88	79
AZ	98	97	99	90
AR	99	91	94	93
CA	23	50	60	67
GA	80	81	87	85
KS	62	27	46	48
LA	99	90	94	98
MS	92	77	88	88
MO	94	58	76	79
NC	84	76	85	80
OK	59	53	69	63
SC	55	83	91	76
TN	95	69	82	80
TX	54	56	71	55
VA	70	74	89	72
15 Sts	66	64	77	67

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

Cotton Percent Harvested

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
AL	5	4	12	8
AZ	22	10	15	17
AR	22	10	22	13
CA	0	0	0	1
GA	5	10	18	8
KS	0	0	0	2
LA	38	19	33	37
MS	23	7	23	18
MO	25	5	6	8
NC	3	2	5	4
OK	3	0	0	1
SC	6	3	12	8
TN	13	6	12	7
TX	25	16	18	19
VA	0	0	10	0
15 Sts	19	11	16	14

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

Cotton Condition by Percent

	VP	P	F	G	EX
AL	1	12	33	48	6
AZ	0	12	39	41	8
AR	0	5	14	42	39
CA	0	0	45	35	20
GA	4	11	31	46	8
KS	3	12	37	40	8
LA	0	0	26	62	12
MS	1	6	39	45	9
MO	7	9	52	32	0
NC	8	22	25	36	9
OK	0	10	60	30	0
SC	1	7	29	58	5
TN	4	7	29	46	14
TX	3	22	45	26	4
VA	0	9	21	69	1
15 Sts	3	17	40	34	6
Prev Wk	3	16	42	32	7
Prev Yr	6	19	33	32	10

Pasture and Range Condition by Percent Week Ending Sep 29, 2019

	VP	P	F	G	EX		VP	P	F	G	EX
AL	15	36	35	14	0	NH	9	7	35	49	0
AZ	9	43	31	17	0	NJ	7	14	19	60	0
AR	3	11	35	42	9	NM	10	25	40	10	15
CA	40	5	10	45	0	NY	5	18	24	31	22
CO	2	6	29	58	5	NC	9	33	38	18	2
CT	0	0	100	0	0	ND	1	4	21	56	18
DE	7	32	35	21	5	OH	7	28	37	27	1
FL	3	11	29	45	12	OK	1	5	33	55	6
GA	15	34	33	17	1	OR	6	23	32	33	6
ID	2	4	29	52	13	PA	2	28	32	33	5
IL	6	17	40	34	3	RI	0	15	55	30	0
IN	18	28	35	17	2	SC	8	36	38	17	1
IA	4	11	40	38	7	SD	1	4	17	51	27
KS	2	6	26	56	10	TN	11	34	40	13	2
KY	24	36	29	11	0	TX	15	34	33	16	2
LA	5	13	39	40	3	UT	2	8	36	49	5
ME	0	40	60	0	0	VT	0	18	56	26	0
MD	6	32	39	21	2	VA	40	34	18	8	0
MA	0	20	40	40	0	WA	7	22	37	32	2
MI	5	18	33	38	6	WV	28	35	27	9	1
MN	3	9	29	52	7	WI	2	7	31	44	16
MS	6	24	44	25	1	WY	2	6	53	38	1
MO	1	6	25	58	10	48 Sts	8	17	30	37	8
MT	0	5	26	43	26						
NE	1	3	14	62	20	Prev Wk	7	17	31	38	7
NV	10	10	20	60	0	Prev Yr	8	15	30	40	7

Barley Percent Harvested

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
ID	100	98	99	100
MN	100	99	100	100
MT	95	85	92	97
ND	100	94	97	99
WA	100	84	88	100
5 Sts	100	92	96	100

These 5 States harvested 83% of last year's barley acreage.

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

NA - Not Available
* Revised

Crop Progress and Condition

Week Ending September 29, 2019

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

Peanuts Percent Harvested

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
AL	16	15	30	19
FL	39	37	46	39
GA	23	14	28	19
NC	7	7	18	9
OK	0	0	0	3
SC	6	10	24	17
TX	4	0	0	7
VA	19	17	41	12
8 Sts	19	14	26	19

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

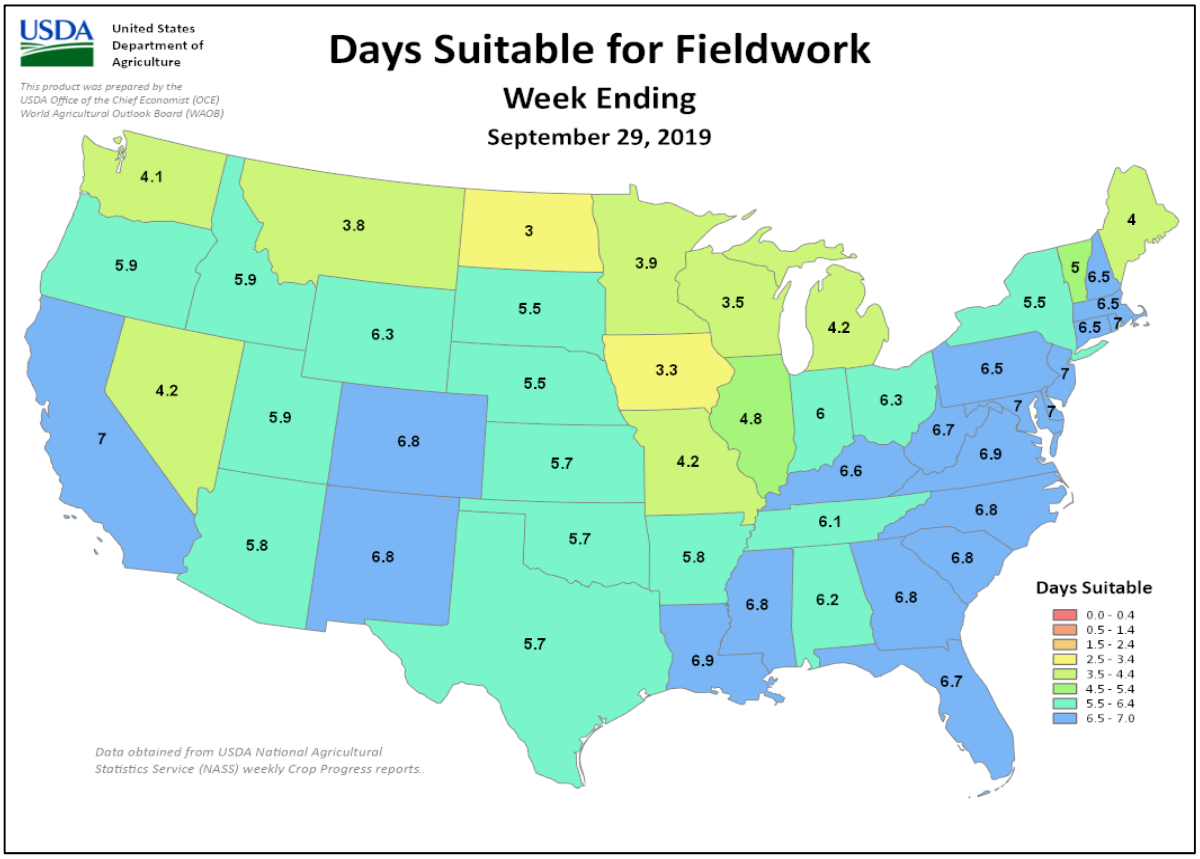
Peanut Condition by Percent

	VP	P	F	G	EX
AL	0	8	42	46	4
FL	5	22	36	37	0
GA	2	13	28	50	7
NC	3	7	29	48	13
OK	0	0	10	83	7
SC	2	3	32	57	6
TX	0	0	44	56	0
VA	0	7	14	77	2
8 Sts	2	10	33	50	5
Prev Wk	1	7	31	54	7
Prev Yr	1	5	23	57	14

Sugarbeets Percent Harvested

	Prev Year	Prev Week	Sep 29 2019	5-Yr Avg
ID	25	10	21	24
MI	30	8	10	21
MN	17	11	16	18
ND	19	13	18	20
4 Sts	21	11	16	20

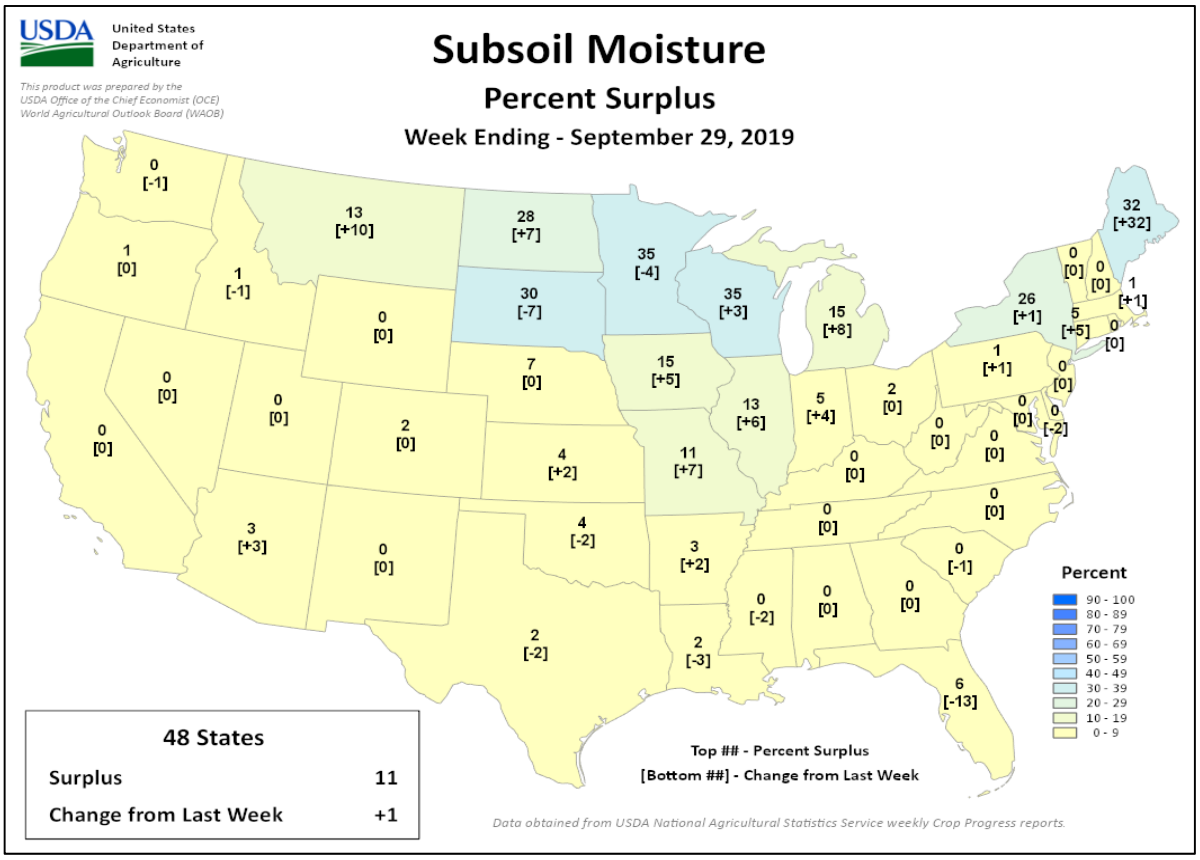
These 4 States harvested 84% of last year's sugarbeet acreage.

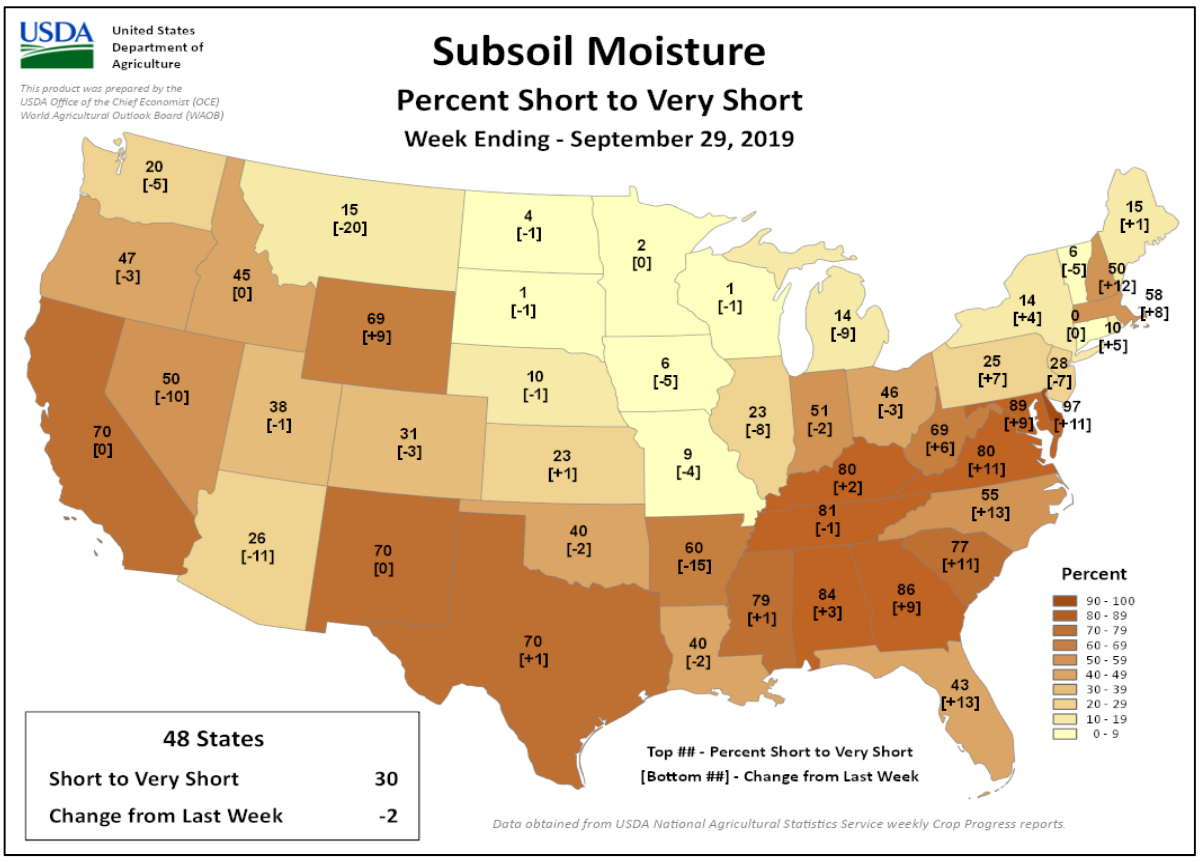


Crop Progress and Condition

Week Ending September 29, 2019

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

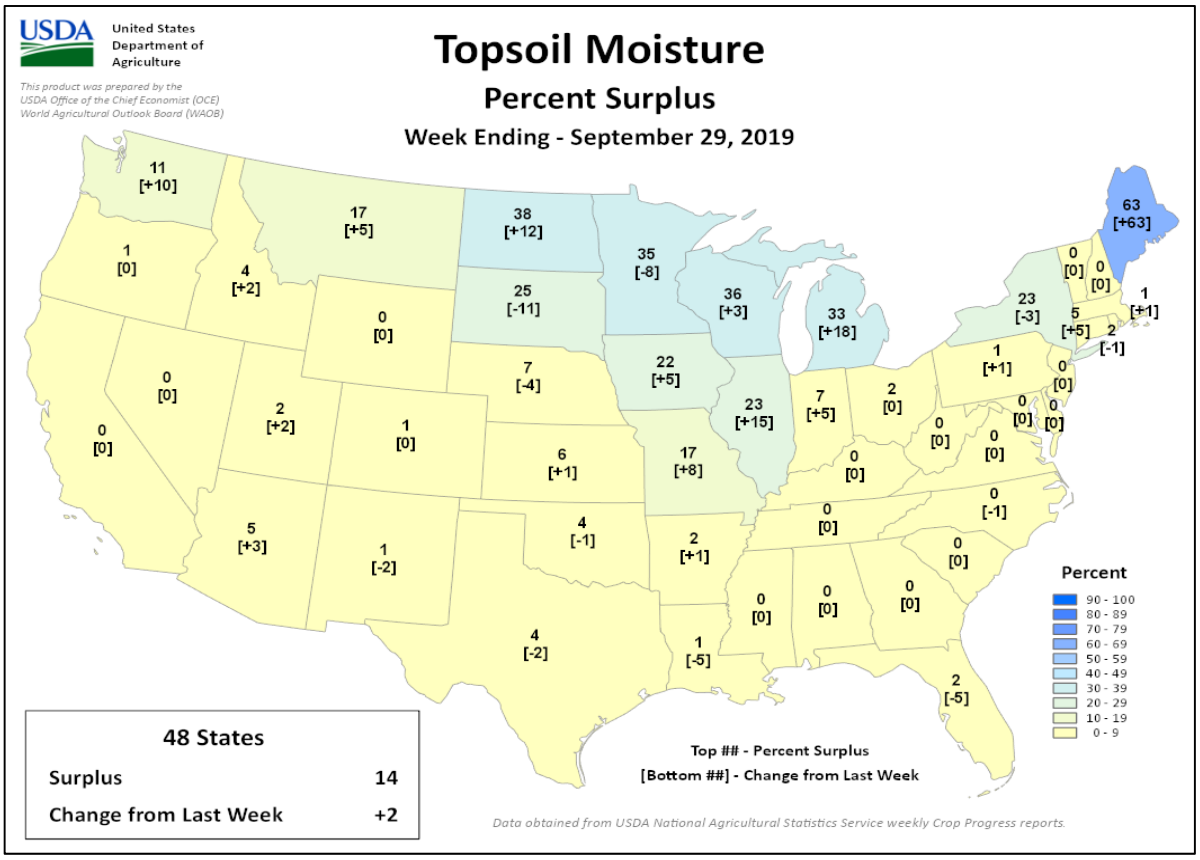


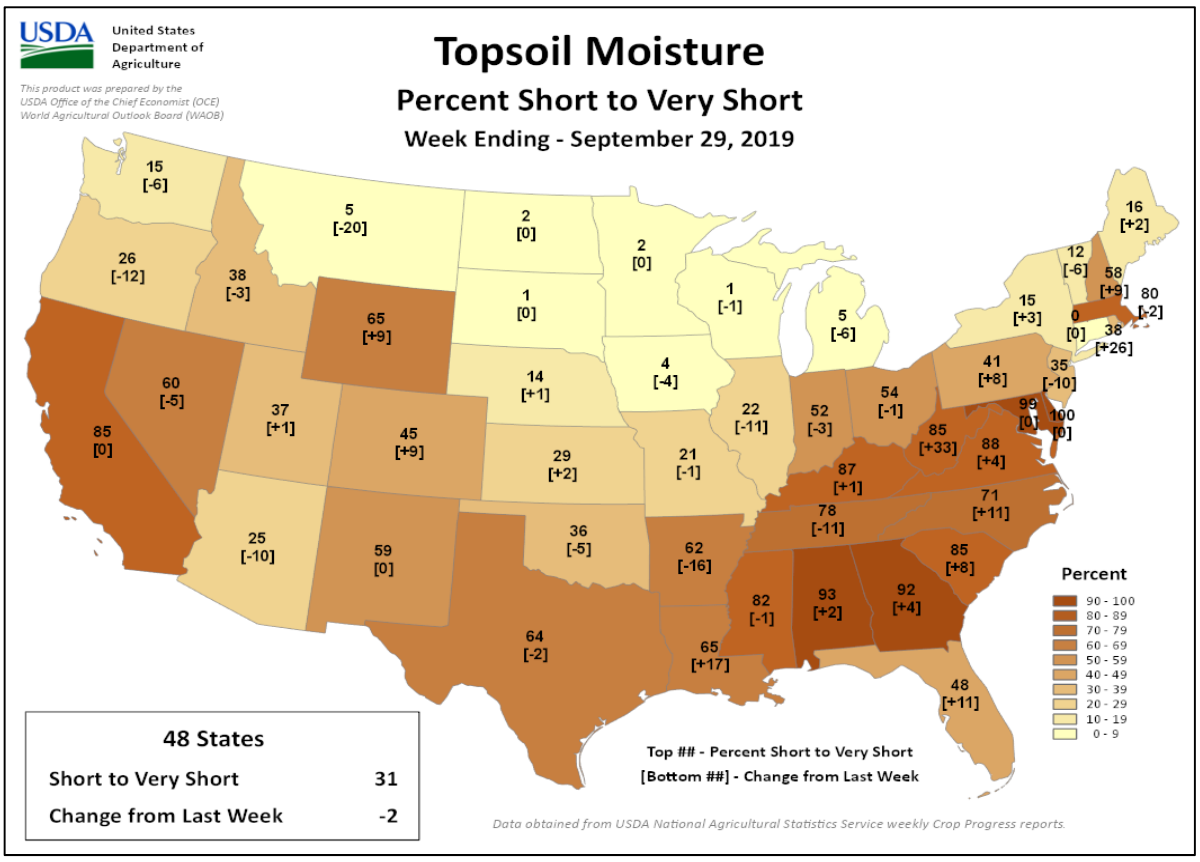


Crop Progress and Condition

Week Ending September 29, 2019

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





International Weather and Crop Summary

September 22-28, 2019

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

HIGHLIGHTS

EUROPE: Much-needed rain eased drought in France and Germany, while localized drought continued in the lower Balkans.

WESTERN FSU: Drought continued to impact winter wheat establishment in Ukraine, while showers favored wheat in southwestern Russia.

MIDDLE EAST: Mostly dry weather favored summer crop harvesting and winter grain sowing in Turkey, despite locally heavy showers.

SOUTH ASIA: Monsoon showers continued across most of India, providing beneficial late-season moisture to kharif crops.

EASTERN ASIA: Dry, mild weather supported maturing summer crops across much of China.

SOUTHEAST ASIA: Drier weather in northern Indochina and the Philippines reduced moisture supplies for rice.

AUSTRALIA: Drier-than-normal weather covered much of the wheat belt.

ARGENTINA: Unseasonable warmth and dryness persisted, as winter grains in many areas face insufficient moisture for normal growth.

BRAZIL: The arrival of seasonal rainfall encouraged soybean planting in key production areas of central Brazil.

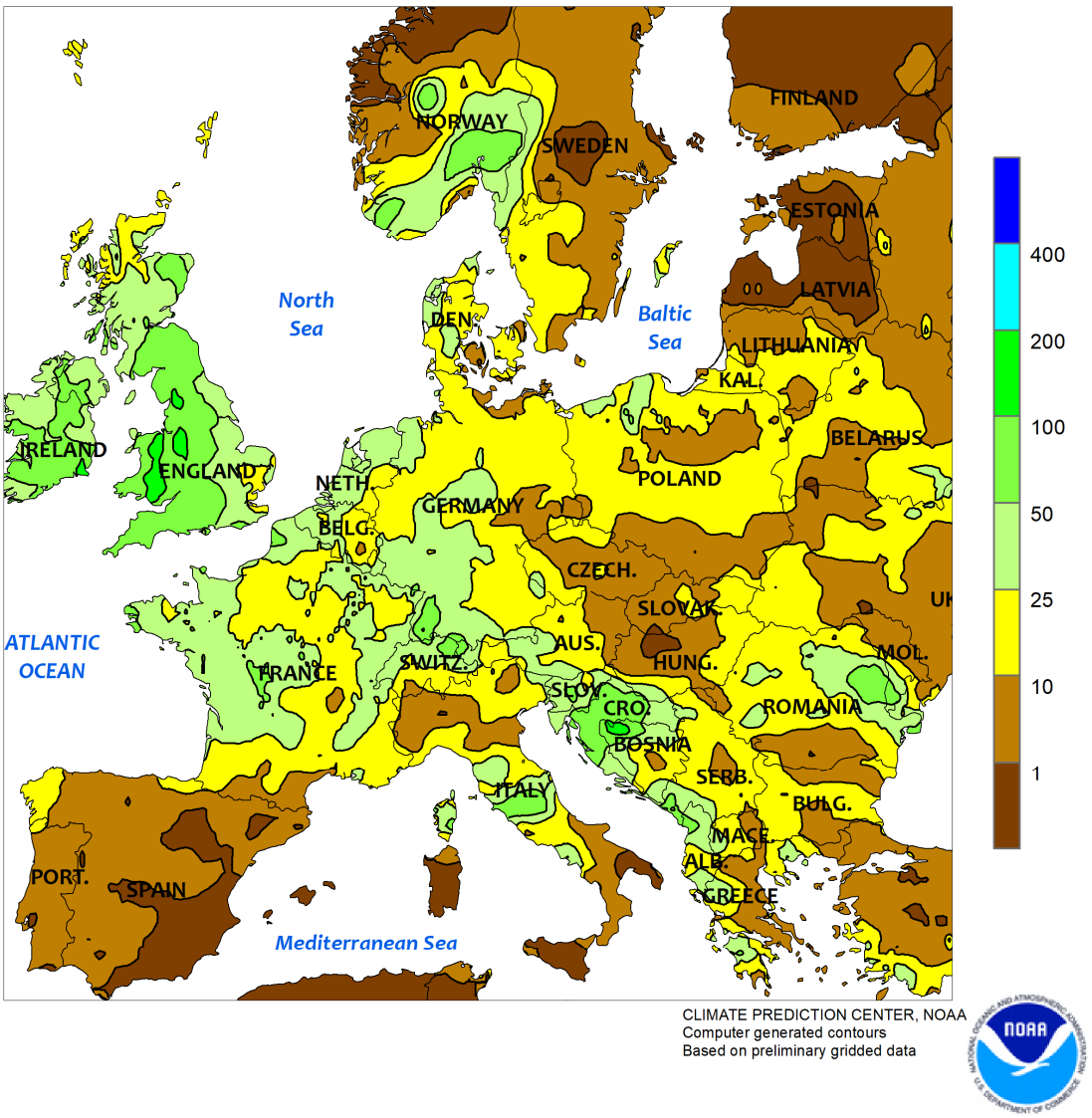
MEXICO: The remnants of Hurricane Lorena contributed to heavy showers in northwestern watersheds.

CANADIAN PRAIRIES: Heavy precipitation halted spring grain and oilseed harvesting across the southern Prairies.

SOUTHEASTERN CANADA: Warm, sunny weather aided late developing corn and soybeans, but moisture remained limited for winter grain establishment in spots.

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

EUROPE
Total Precipitation (mm)
September 22 - 28, 2019

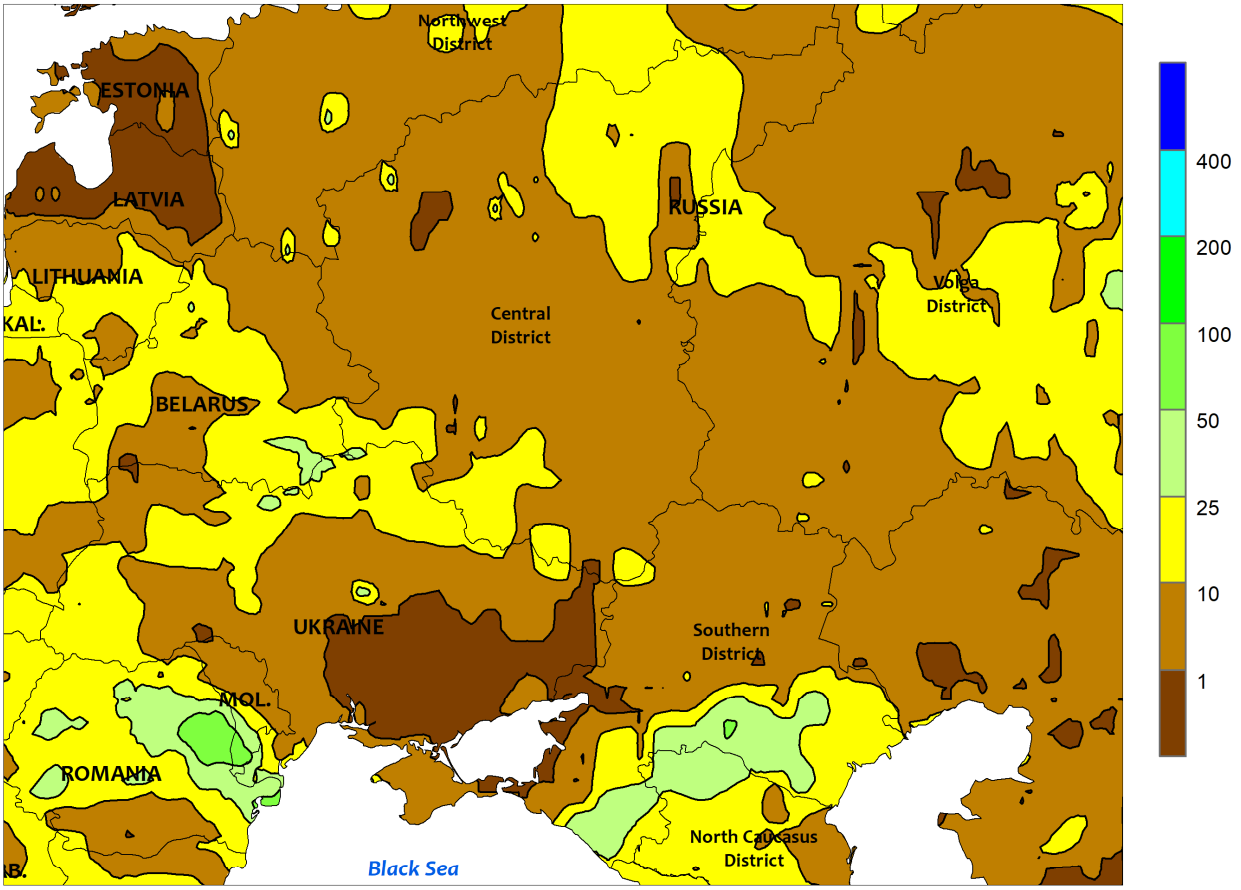


EUROPE

Drought relief over northwestern Europe contrasted with lingering short-term dryness and drought in parts of the Balkans. Moderate to heavy rain (10-50 mm) provided much-needed moisture for winter crop establishment in Germany and France. The rainfall eased the recent severe drought from central France into northwestern Germany, though longer-term deficits lingered (90-day rainfall still less than 50 percent of normal in parts of central and northeastern France). Likewise, heavy rain (25-60 mm, locally more) eradicated short-term dryness in southeastern England, with 30-day precipitation now near normal. Conversely, light showers (6 mm or less) did little to alleviate short-term drought in the southern Balkans for winter crop planting and establishment; even with this past week's rain, 30- and 60-day rainfall has totaled less than 10 and 25 percent of normal, respectively, in southern Romania. Conversely, moderate to heavy showers (10-50 mm) eased dryness concerns from southern and eastern Hungary into western Bulgaria. Likewise, widespread showers (5-40 mm) across northeastern Europe maintained favorable conditions for winter crop planting and establishment. Across the remainder of southern Europe, 10 to 70 mm of rain in Italy boosted moisture reserves for winter wheat, while mostly dry weather in Spain and Portugal (generally 5 mm or less) promoted summer crop harvesting and early winter grain sowing.

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

WESTERN FSU
Total Precipitation (mm)
September 22 - 28, 2019



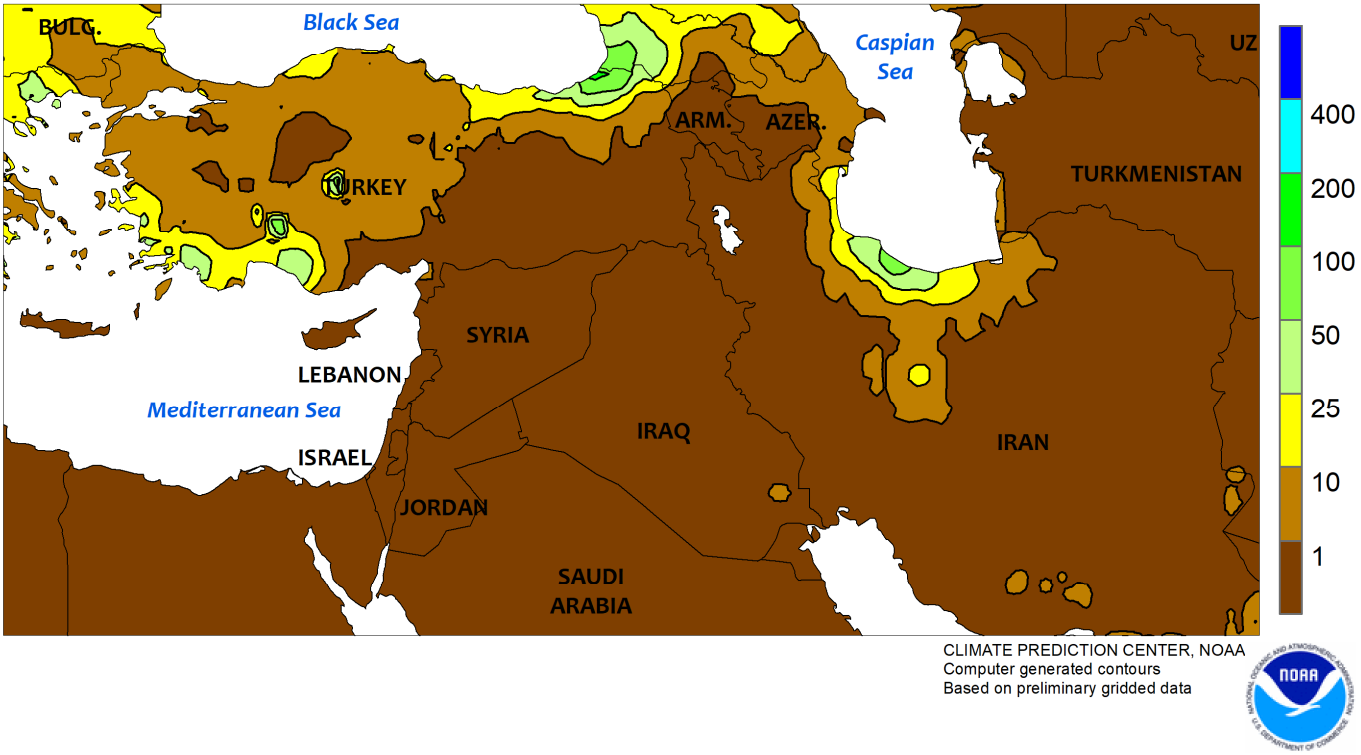
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

WESTERN FSU

Drought intensified across parts of Ukraine, while showers further eased dryness concerns in southwestern Russia. Most of northern and western Ukraine reported 10 to 25 mm of rain during the past week, offering some drought relief but mostly falling outside the country's primary winter wheat areas. Rain continued to bypass the southeastern quadrant of Ukraine (generally 5 mm or less), where short-term moisture deficits have become pronounced (30-day rainfall less than 25 percent of normal) and subsequent winter wheat establishment has been limited. In contrast, moderate to heavy showers (5-55 mm, locally more than 60 mm) in Russia's Southern and North Caucasus Districts eased short-term dryness in these key winter wheat areas. However, northern winter wheat oblasts have been dry and need moisture; over the past 30 days, crop areas from Rostov (central Southern District) northward have received less 50 percent-of-normal rainfall (locally less than 25 percent). These northerly crop areas also reported their first hard freeze of the season (-2 to -5°C), likely ending the opportunity for additional late-season wheat establishment.

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

MIDDLE EAST
Total Precipitation (mm)
September 22 - 28, 2019



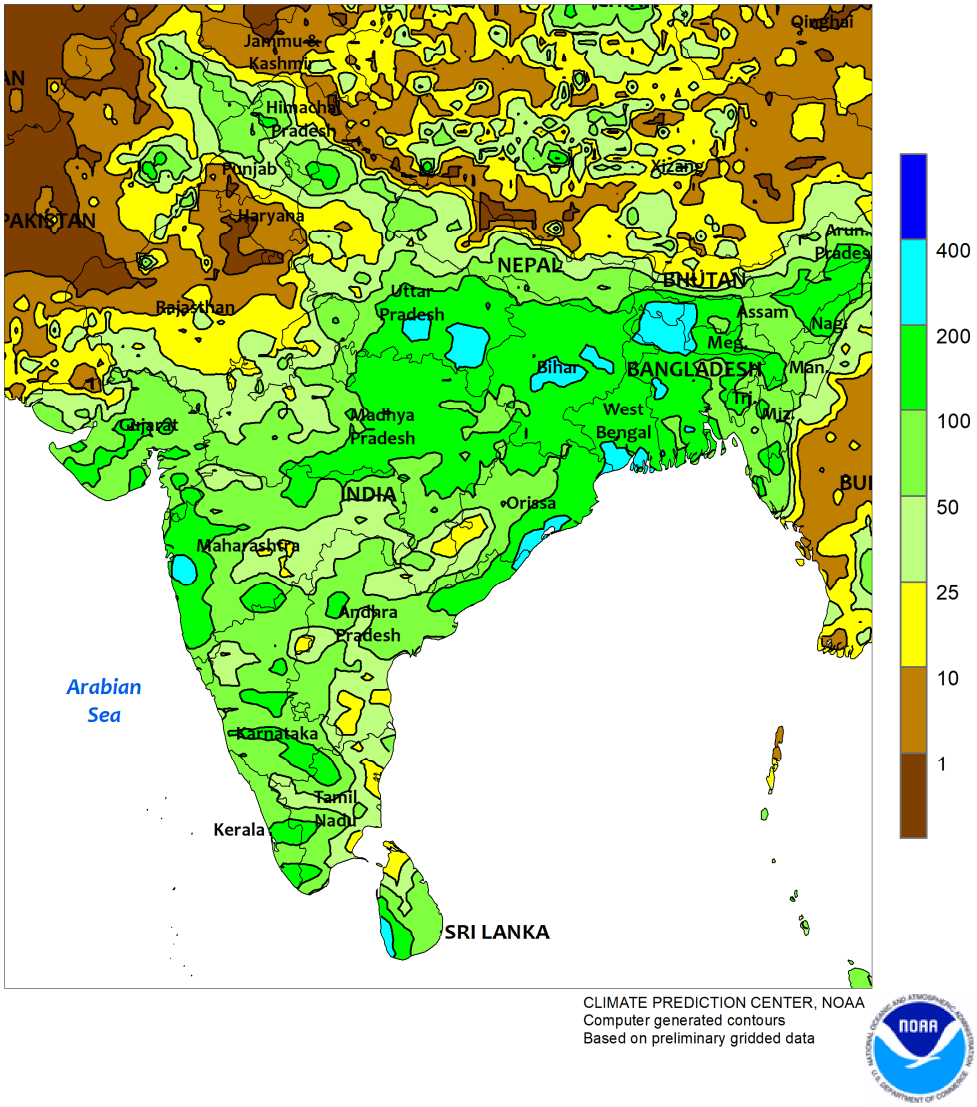
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

MIDDLE EAST

Despite some showers, mostly dry, mild weather in Turkey promoted summer crop drydown and harvesting. Localized moderate to heavy showers (5-95 mm) in southwestern Turkey — heaviest near the coast — caused some summer crop harvest delays. However, most primary corn (southeast), sunflower (northwest), and cotton (southeast and west) areas were dry and producers were able to continue with harvest activities. Likewise, winter grain sowing has likely begun in Turkey (Anatolian Plateau) and northwestern Iran, while producers from Syria into Iraq typically plant in November. Near-normal temperatures in Turkey contrasted with readings up to 5°C above normal from the southeastern Mediterranean Coast into central and southern Iran.

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

SOUTH ASIA
Total Precipitation (mm)
September 22 - 28, 2019

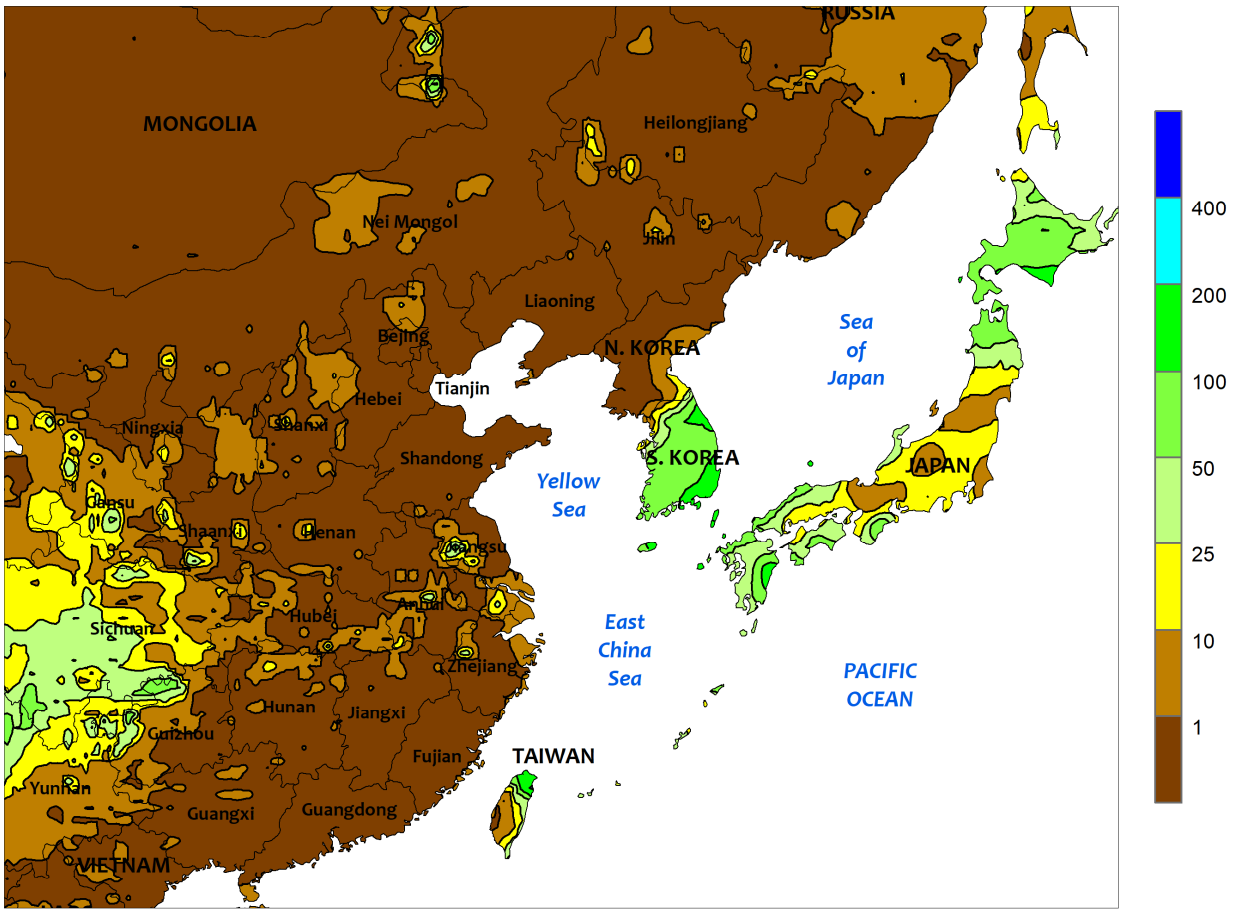


SOUTH ASIA

The monsoon remained active across a large portion of India, producing beneficial late-season showers for kharif crops. Rainfall totals surpassed 50 mm in most areas, with lesser amounts generally confined to the west and small pockets in the south. In fact, the drier weather in the west was beneficial for soybeans saturated by consistent deluges over the course of the season. Overall, moisture conditions have improved dramatically during the latter half of the monsoon season as have crop prospects. Elsewhere, showers (10-50 mm or more) in northern India and Pakistan slowed maturation of early-season rice and cotton, while heavy rainfall (50-200 mm, locally more) in Bangladesh maintained abundant moisture for summer (aman) rice.

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

EASTERN ASIA
Total Precipitation (mm)
September 22 - 28, 2019



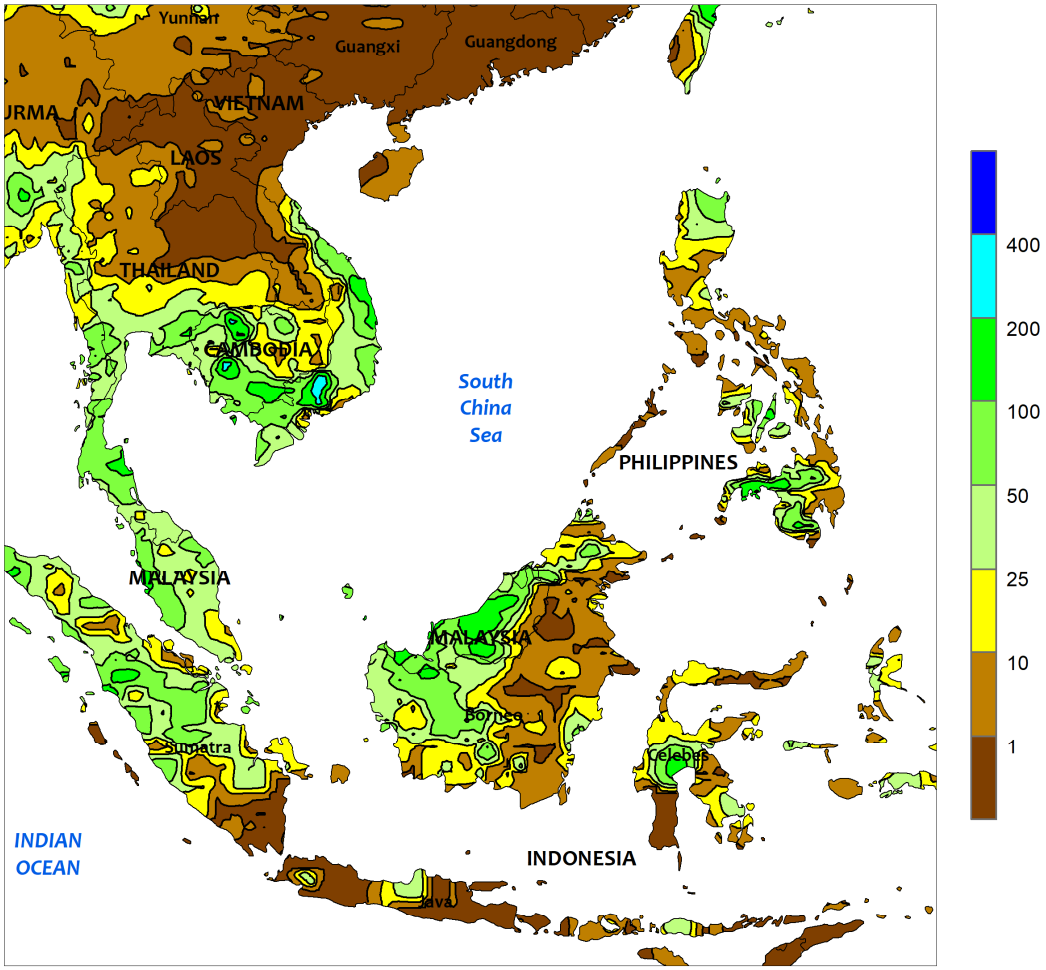
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

EASTERN ASIA

Dry, warmer-than-normal weather dominated much of China, promoting maturation of summer crops. The warm, dry conditions were particularly timely in the northeast, where corn, soybeans, and rice were maturing following record to near-record summer rainfall. In addition, the threat of a season-ending freeze was confined to northern-most growing areas, extending the season for most of the northeast. Farther south, while the weather supported maturing summer crops, it also exacerbated drought conditions in parts of the Yangtze Valley and reduced moisture supplies for reproductive late-crop rice in the southeast. Elsewhere in the region, showers (25-100 mm) from the remnants of Typhoon Tapah continued early in the week across South Korea and southern Japan, but coming too late to benefit rice that is already maturing.

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

SOUTHEAST ASIA
Total Precipitation (mm)
September 22 - 28, 2019

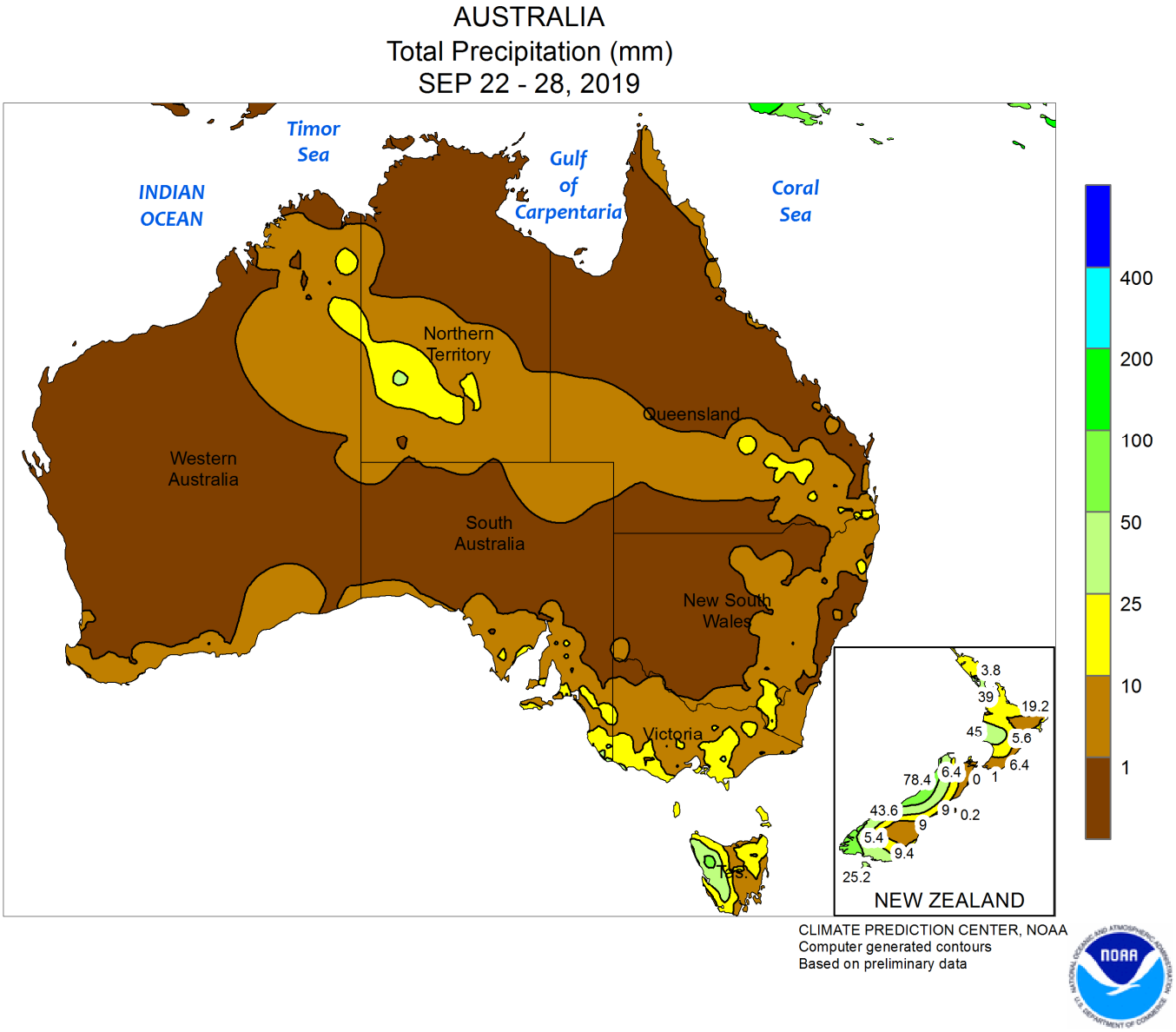


CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

SOUTHEAST ASIA

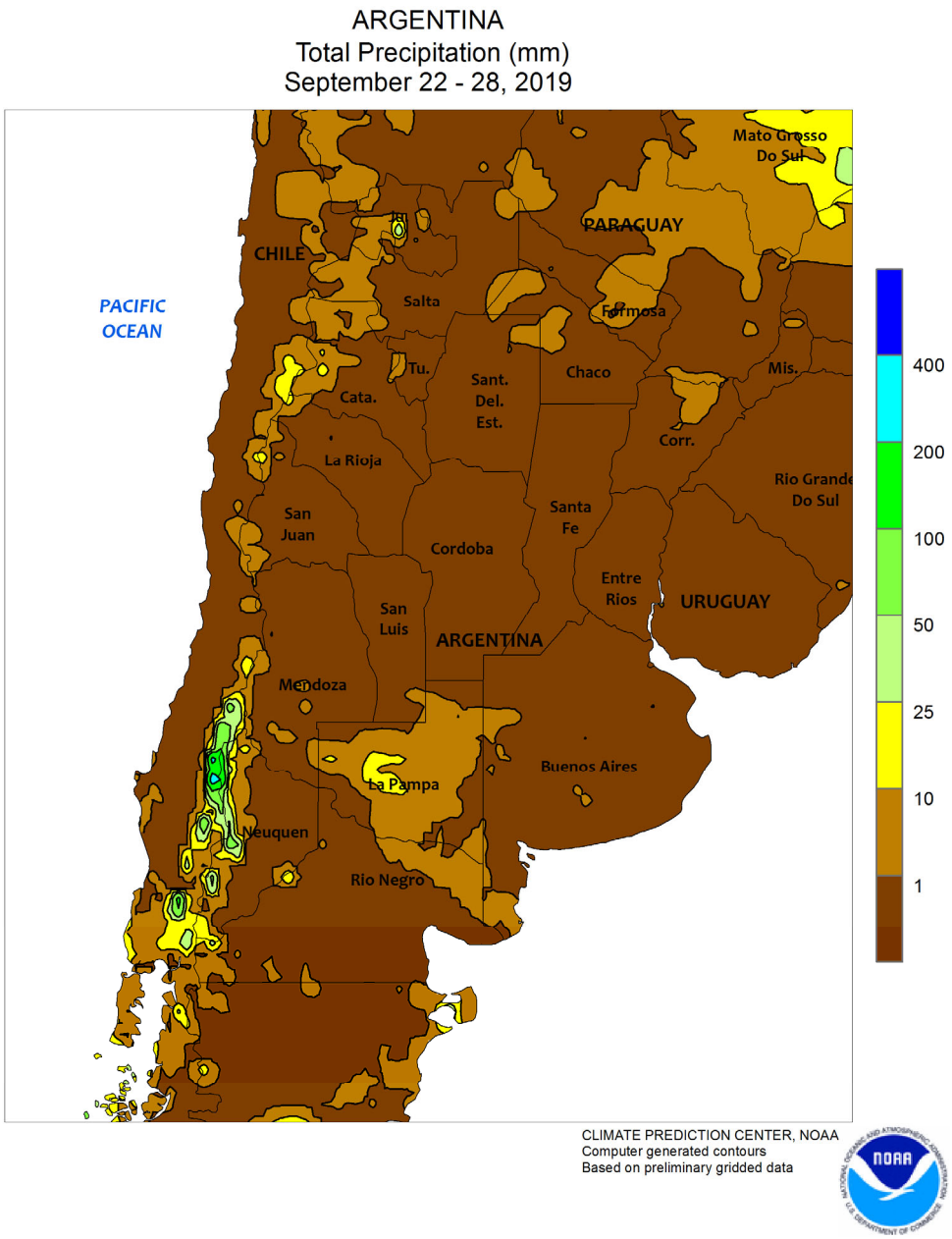
Drier conditions prevailed in the northern half of Indochina, reducing moisture supplies for rice. The dryness was particularly notable in Thailand, where recent rainfall had brought seasonal totals back to normal by a slim margin. More rain would be welcome for the later-sown rice to maintain the improved yield prospects and bolster irrigation supplies ahead of the dry season. Meanwhile, mostly dry weather occurred in the Philippines as well, with only spotty rainfall amounts over 10 mm. Farther south, showers (over 25 mm) boosted soil moisture in most oil palm areas of Malaysia and Indonesia, although eastern-most sections of Malaysia (Sabah) were dry.

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



AUSTRALIA

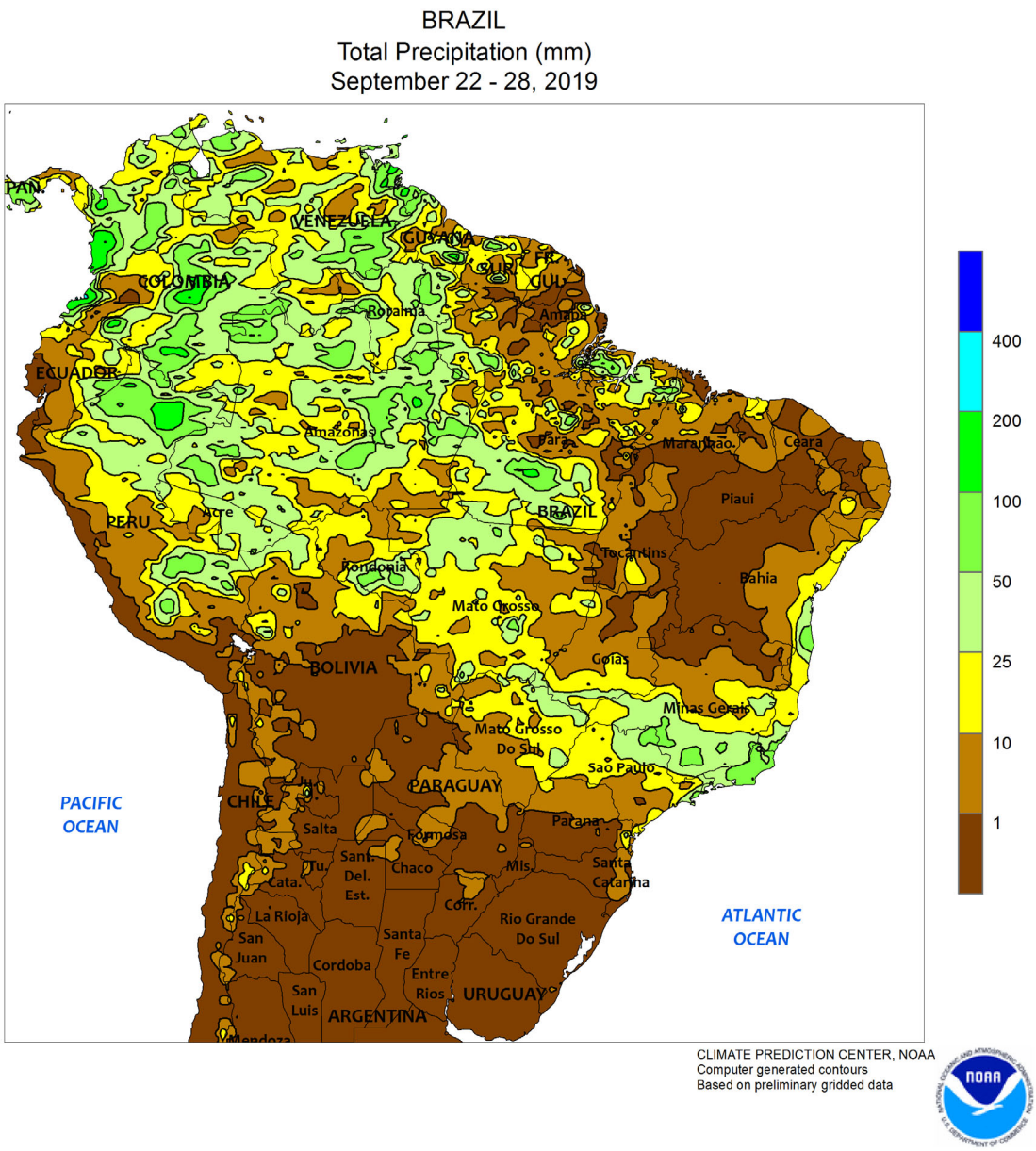
Mostly dry weather continued to cover a large portion of the Western Australia wheat belt, causing a slow but steady decline in the yield prospects of reproductive winter grains and oilseeds. Similarly, scattered, light showers (generally less than 5 mm) in South Australia and Victoria provided little additional water for wheat, barley, and canola, impeding the development of crops advancing through the reproductive stages of development. Aside from some scattered, light, early-week showers, New South Wales remained dry, maintaining very poor winter crop prospects as extreme drought continued to grip the state. Farther north, scattered showers (3-15 mm, locally more) overspread southern Queensland, boosting local moisture supplies. Much more rain is needed, however, to help the region recover from long-term drought and to improve the early season outlook for cotton, sorghum, and other summer crops. In eastern Australia, summer crop planting typically begins in September or October. Temperatures averaged 1 to 2°C above normal in northeastern and western Australia and 1 to 2°C below normal in the southeast.



ARGENTINA

Winter grains were in urgent need of rain as unseasonable warmth and dryness persisted. Nearly all agricultural areas of central and northern Argentina recorded complete dryness (0 mm), with weekly average temperatures ranging from 1 to 2°C above normal in northern and eastern farming areas and 3 to 7°C above normal in western and southwestern locations, including La Pampa, western Buenos Aires, and southern Cordoba. Following a brief period of lingering frost in the country's traditionally cooler southern farming areas, daytime highs reached into the lower 30s (degrees C) on several days as far south as La Pampa. Temperatures reached the middle and upper 30s farther north (including Santiago del Estero, Chaco, and Formosa), fostering a rapid pace of development of winter grains, as well as early planted summer crops such as sunseed and corn. According to the government of Argentina, sunflowers were 37 percent planted as of September 26, similar to last year's pace (38 percent); planting was just beginning in some of the larger southern production areas, including Buenos Aires. In addition, corn was 14 percent planted; this included completion rates of 5 and 11 percent, respectively, in Buenos Aires and Cordoba, where farmers in many parts of the region were likely awaiting rain before sowing.

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

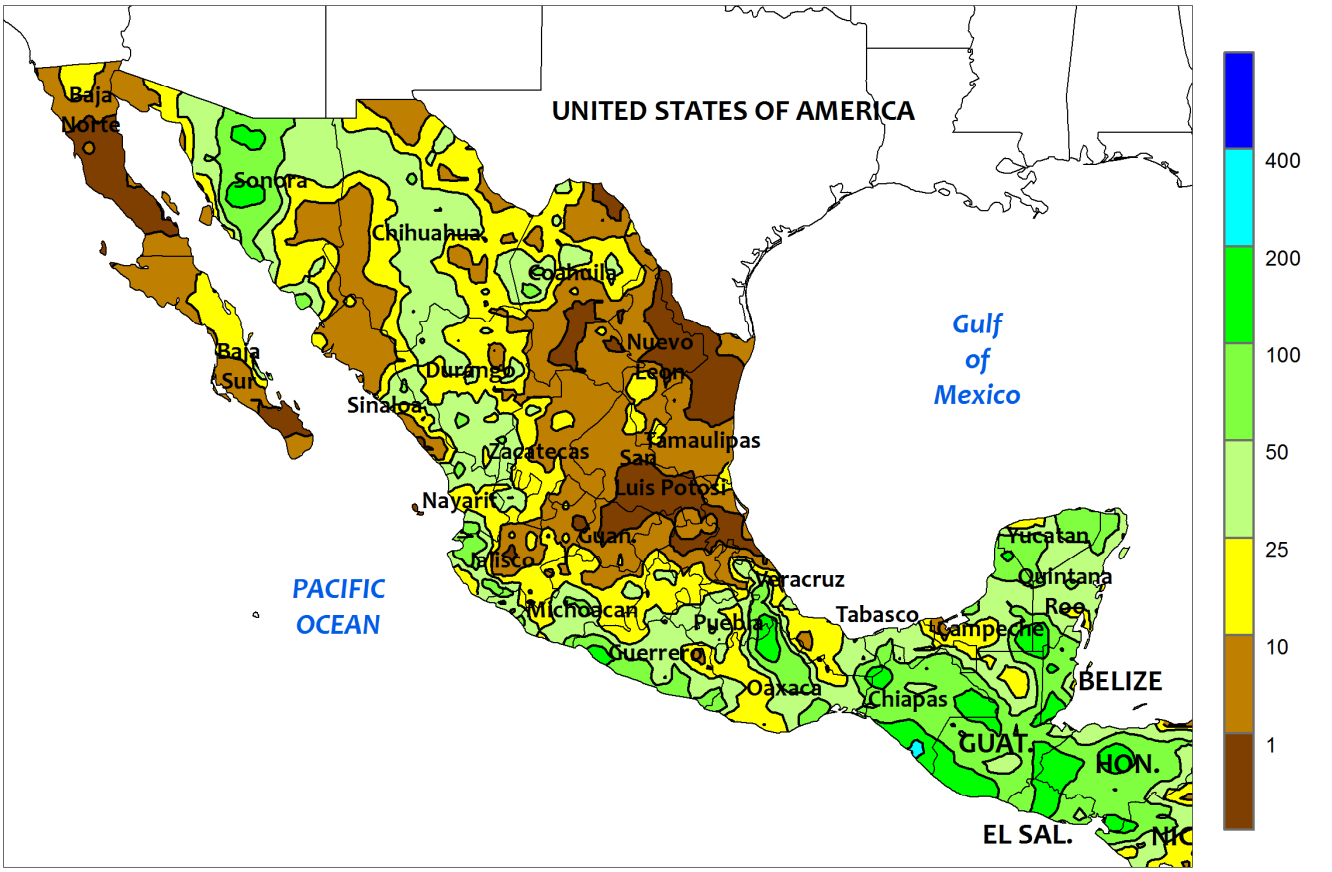


BRAZIL

Seasonal showers helped to condition soils for summer crop planting in key production areas of central Brazil. Rainfall totaled more than 10 mm over large sections of Mato Grosso, Goias, and Mato Grosso do Sul, with higher amounts (25-50 mm or more) concentrated over Sao Paulo and southern Minas Gerais. The moisture was timely for germination of newly sown crops and will encourage additional planting; according to the government of Mato Grosso, soybeans were 4 percent planted as of September 28, slightly ahead of both last year's pace (2 percent) and the 5-year average (3 percent). Although moderate rain (greater than 10 mm) also reached western sections of Tocantins, seasonal rainfall has not become established yet in the bulk of Brazil's northeastern interior (western Bahia and environs). More substantial rainfall is needed regionwide before summer crop planting can begin as seasonably hot weather (daytime highs reaching the upper 30s and lower 40s degrees C) maintained high evaporative losses. Meanwhile, dry, seasonably mild weather (daytime highs reaching the upper 20s and lower 30s, with nighttime lows dropping below 5°C in spots) aided fieldwork in southern Brazil. According to the government of Parana, first-crop corn was 39 percent planted as of September 23 and soybean planting was 3 percent complete; in addition, wheat was 60 percent harvested. In Rio Grande do Sul, wheat was just over 30 percent filling to maturing as of September 26 according to government weekly reporting, while corn was 43 percent planted, on par with the 5-year average paces of both crops.

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

MEXICO
Total Precipitation (mm)
September 22 - 28, 2019



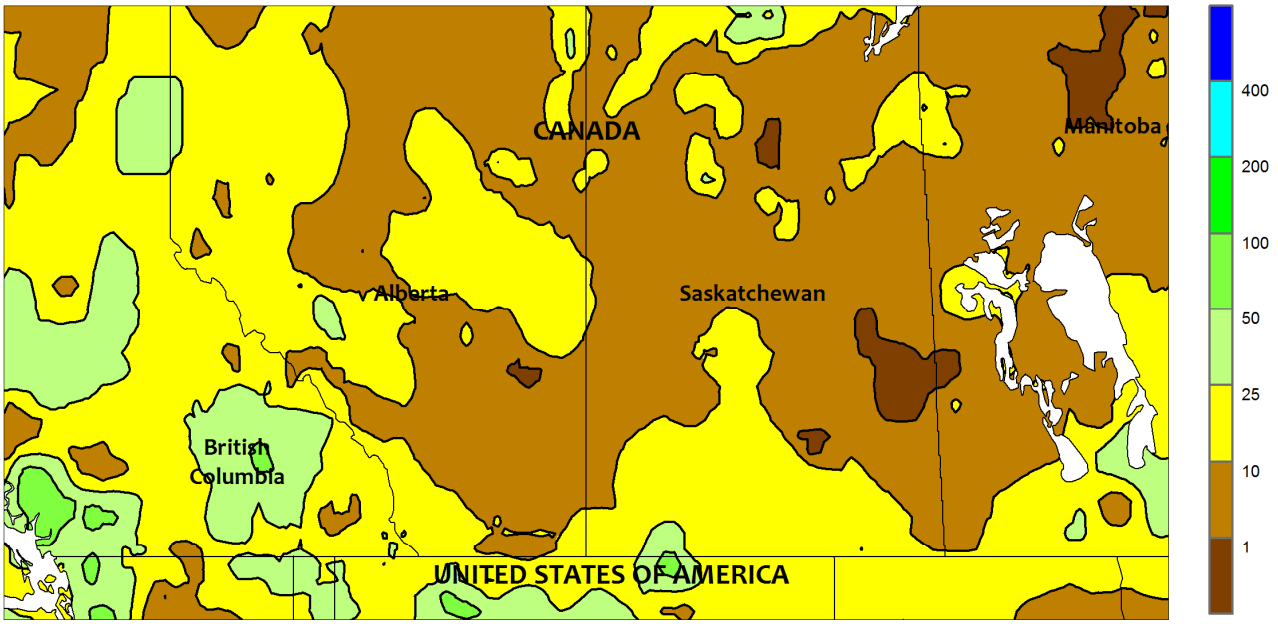
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

MEXICO

Lingering showers gave a late-season boost to reservoirs in the northwest, but chronic warmth and dryness remained a concern farther east. Rainfall totaled 10 to 25 mm or more from Nayarit and western Zacatecas northward, with pockets of heavy rain (greater than 50 mm) in Sonora and Chihuahua. The remnants of Hurricane Lorena contributed to the influx of moisture as the week began, and Tropical Storm Narda was bringing additional rain to the region after the end of the period (additional information will appear in next week's *Weekly Weather and Crop Bulletin*). In contrast to the aforementioned areas, unseasonable warmth and dryness intensified drought in the northeast (notably Nuevo Leon and Tamaulipas southward to San Luis Potosi and northern Veracruz), as little to no rain fell and daytime highs continued to reach in to the upper 30s (degrees C). The dryness extended southward to cover northern portions of the southern plateau (notably eastern Jalisco and Guanajuato) but tropical showers (10-25 mm or more) reached northward into Puebla and southern Veracruz. Heavier showers (25-50 mm, locally higher) developed closer to the southern Pacific Coast (Michoacan to Chiapas) and reached into the Yucatan Peninsula, providing an additional late-season boost to rain-fed summer crops and helping to replenish reservoirs.

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

CANADIAN PRAIRIES
Total Precipitation (mm)
September 22 - 28, 2019



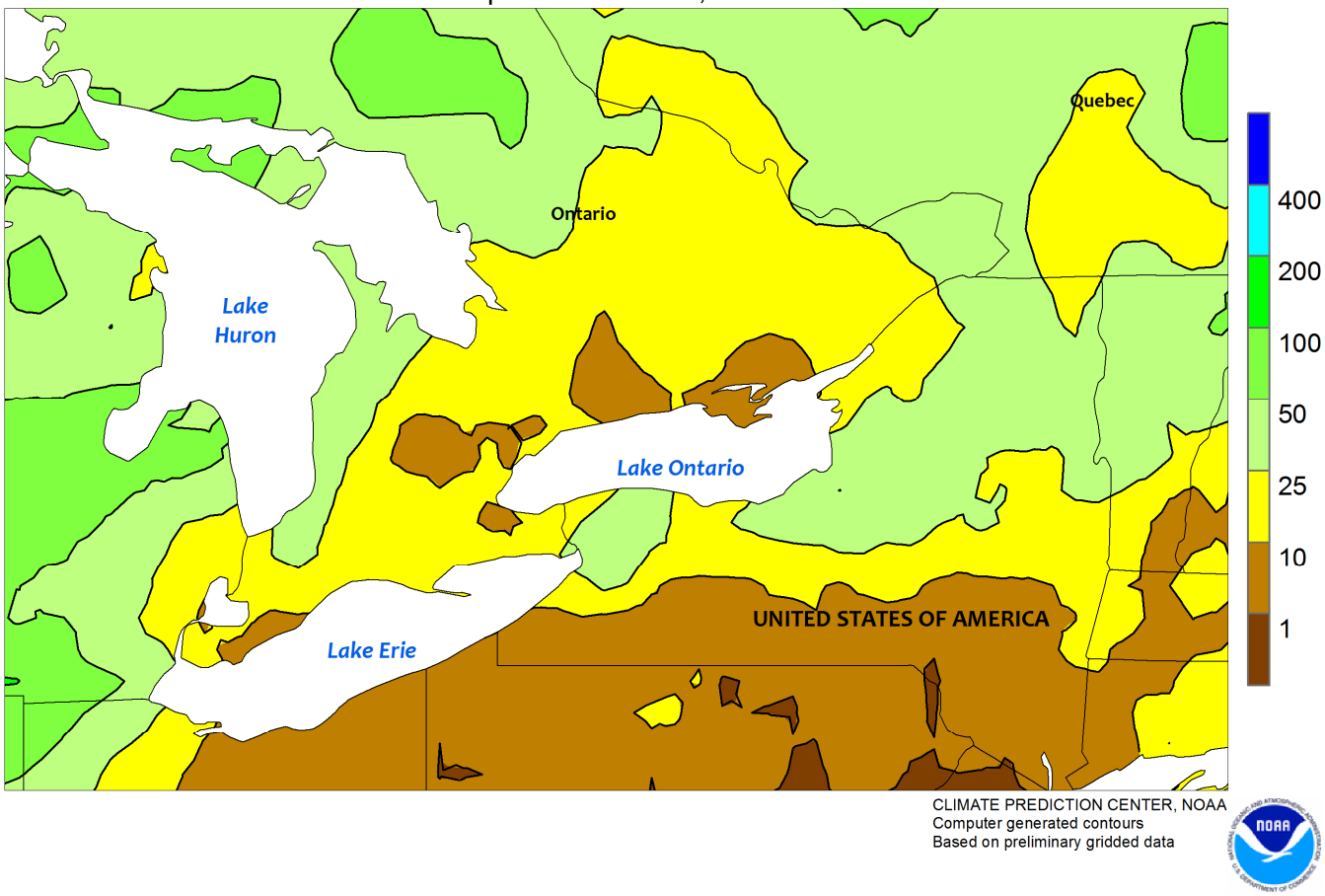
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data

CANADIAN PRAIRIES

Cool, wet weather caused further disruptions in spring crop harvesting. Precipitation totaling more than 10 mm was recorded over large sections of the region; at week's end, snow was falling in the southwestern Prairies with significant accumulations after September 28 (additional information will appear in next week's *Weekly Weather and Crop Bulletin*). With the cold outbreak, many locations recorded a season-ending freeze (temperatures dropping to at least -2°C). Crop harvesting had been lagging the normal pace throughout the region prior to the recent outbreak of unfavorable harvest conditions, and much of the crop will be at a greater risk of possible damage or degradations in quality. According to the government of Alberta, harvesting reached 33 percent complete on September 23, lagging the 5-year average by 12 points. Similarly, harvesting of all crops in Saskatchewan reached 39 percent complete by September 23, well behind the 5-year average (62 percent). In Manitoba — which recorded exceptionally heavy rain last week — spring wheat and canola were reportedly 86 and 58 percent complete, respectively, as of September 24.

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

SOUTHEASTERN CANADA
Total Precipitation (mm)
September 22 - 28, 2019



SOUTHEASTERN CANADA

Showers returned to the region, hampering late harvesting of corn and soybeans but providing needed moisture for winter wheat establishment. The heaviest rainfall (15-40 mm) was recorded in Quebec, as well as in Ontario's western agricultural districts. Lighter rain (5-25 mm) fell elsewhere in Ontario, though previously dry locations north of Lake Ontario received at least 10 mm, providing timely moisture for late germination of crops typically planted during the early part of September. Weekly temperatures averaging 3 to 5°C above normal (daytime highs reaching the upper 20s and lower 30s degrees C) maintained a higher-than-normal pace of development for late-planted corn and soybeans; in addition, while nighttime lows fell below 5°C in many locations, the region continued to escape a season-ending freeze.

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

2019 Small Grains Summary

The following information was released by USDA's Agricultural Statistics Board on September 30, 2019.

All wheat production totaled 1.96 billion bushels in 2019, up 4 percent from the revised 2018 total of 1.89 billion bushels. Area harvested for grain totaled 38.1 million acres, down 4 percent from the previous year. The U.S. yield was estimated at 51.6 bushels per acre, up 4.0 bushels from the previous year. The levels of production and changes from 2018 by type were: winter wheat, 1.30 billion bushels, up 10 percent; other spring wheat, 600 million bushels, down 4 percent; and Durum wheat, 57.7 million bushels, down 26 percent.

Oat production was estimated at 54.2 million bushels, up 1 percent from 2018 for comparable states. Yield was estimated at 64.4 bushels per acre, down 0.9 bushel from the previous year for comparable states. Harvested area, at 842,000 acres, was 2 percent above last year for comparable states.

Barley production was estimated at 171 million bushels, up 12 percent from the revised 2018 total of 154 million bushels. The average yield per acre, at 77.4 bushels, was down 0.1 bushel from the previous year. Producers seeded 2.72 million acres in 2019, up 7 percent from last year. Harvested area, at 2.21 million acres, was up 12 percent from 2018.

Special Note:

When producers were surveyed, there was significant unharvested acreage of barley in Idaho, Maine, Minnesota, Montana, North Dakota, Oregon, South Dakota, and Washington; significant unharvested acreage of oats in Idaho, Maine, Minnesota, Montana, North Dakota, Oregon, and South Dakota; significant unharvested acreage of Durum wheat in Idaho, Montana, and North Dakota; and a large amount of other spring wheat acreage not yet harvested in Idaho, Minnesota, Montana, North Dakota, South Dakota, and Washington. The unharvested area and expected production were included in the totals published in this report.

NASS will re-contact respondents who previously reported acreage not yet harvested in these states. If the newly collected data justifies any changes, NASS will update the September 30 estimates in the November 8 *Crop Production* report. Stocks estimates are also subject to review, since unharvested production is included in the estimate of on-farm stocks.

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

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

The *Weekly Weather and Crop Bulletin* and archives are maintained on the following USDA Internet URL:
http://www.usda.gov/oce/weather/pubs/Weekly/Wwcb/index.htm

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
National Oceanic and Atmospheric Administration
National Weather Service/Climate Prediction Center
Meteorologists..... ***David Miskus, Brad Pugh, Adam Allgood, and Rich Tinker***