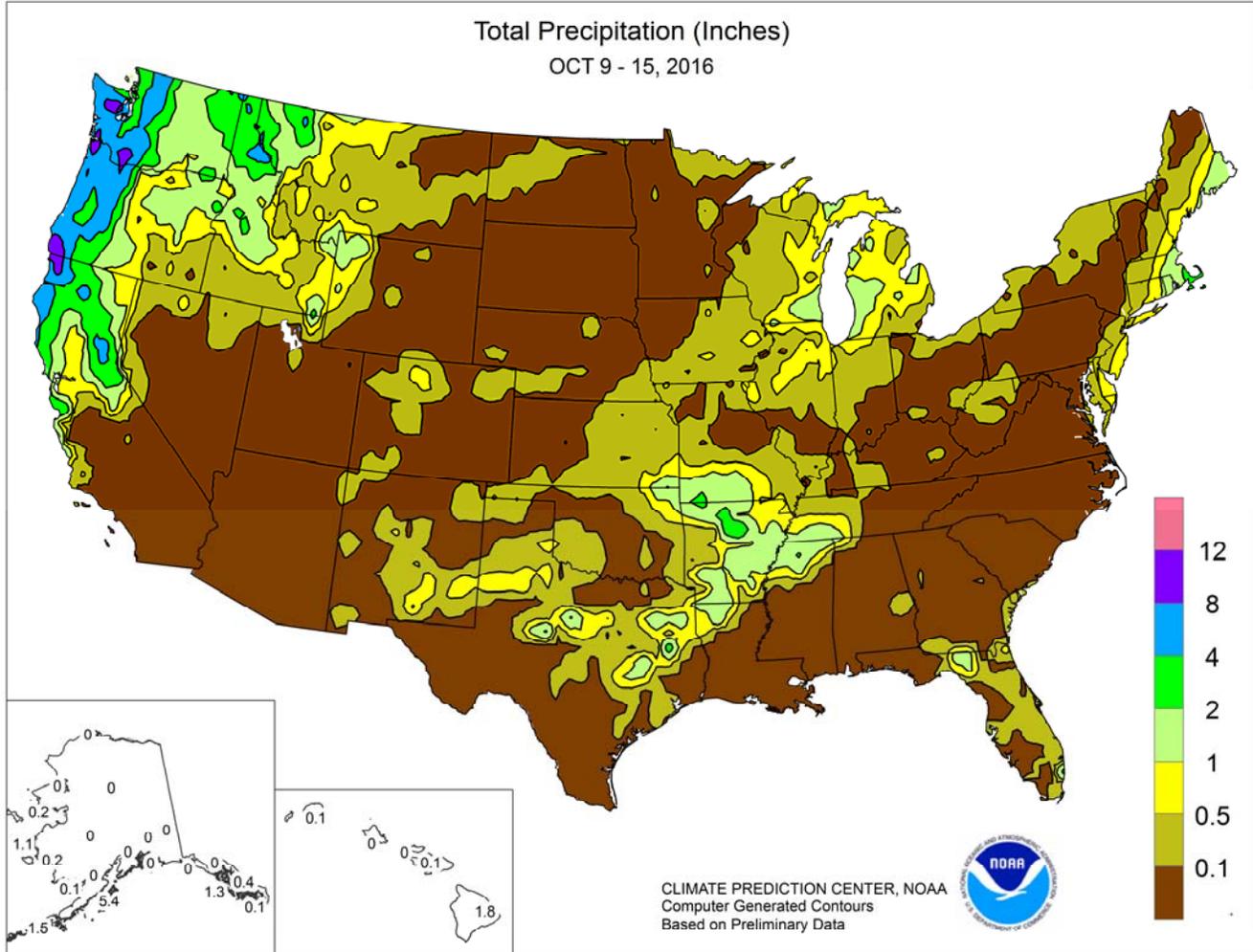


# WEEKLY WEATHER AND CROP BULLETIN



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



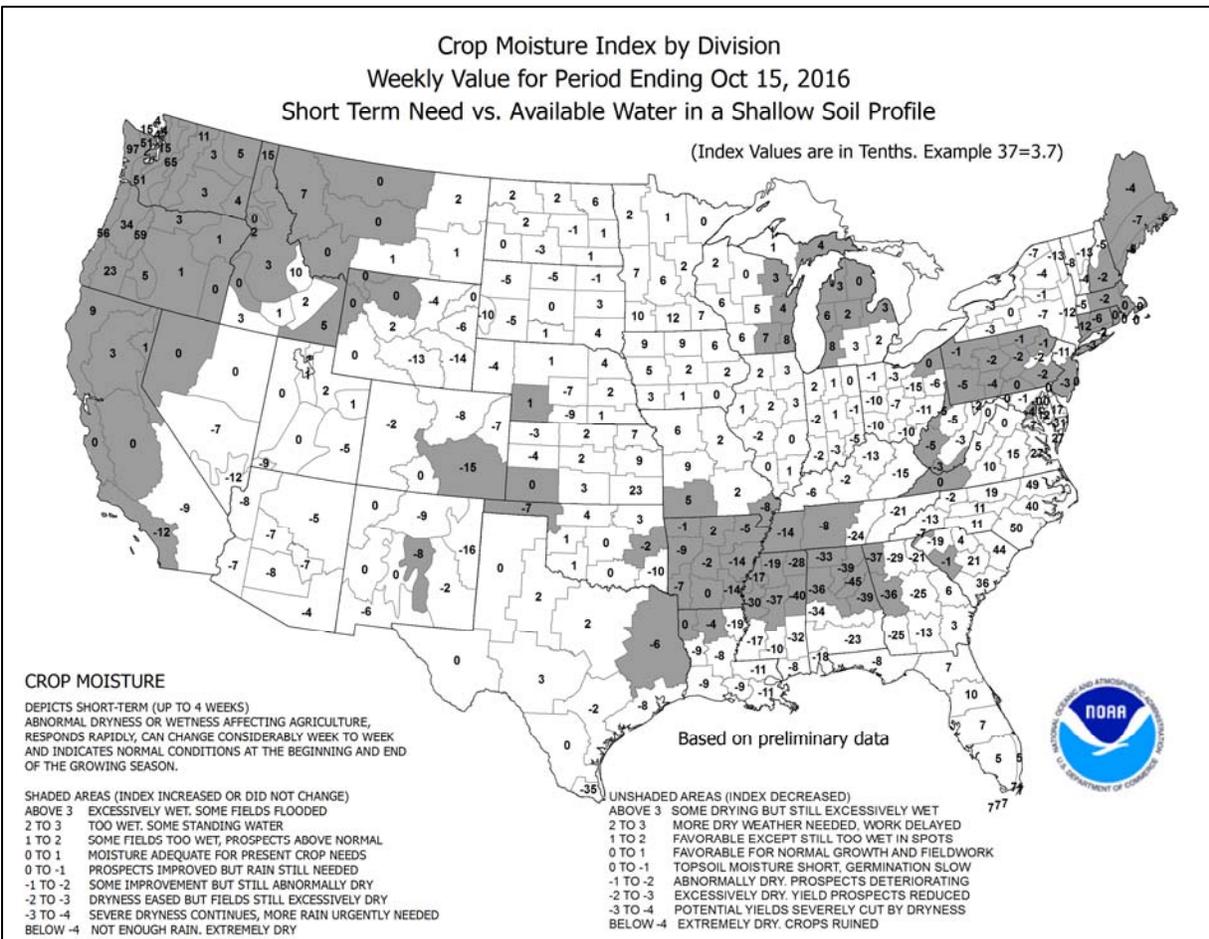
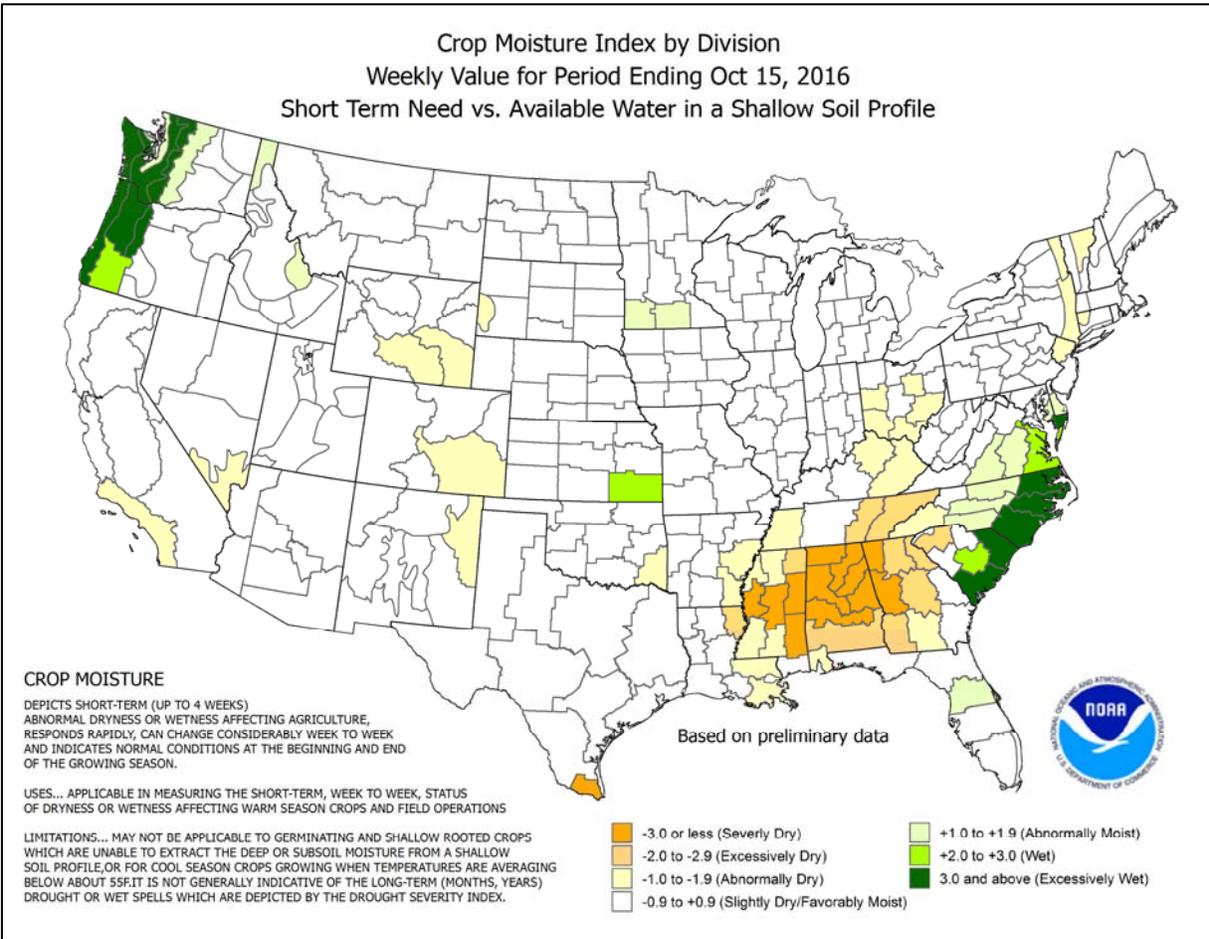
## HIGHLIGHTS October 9 – 15, 2016

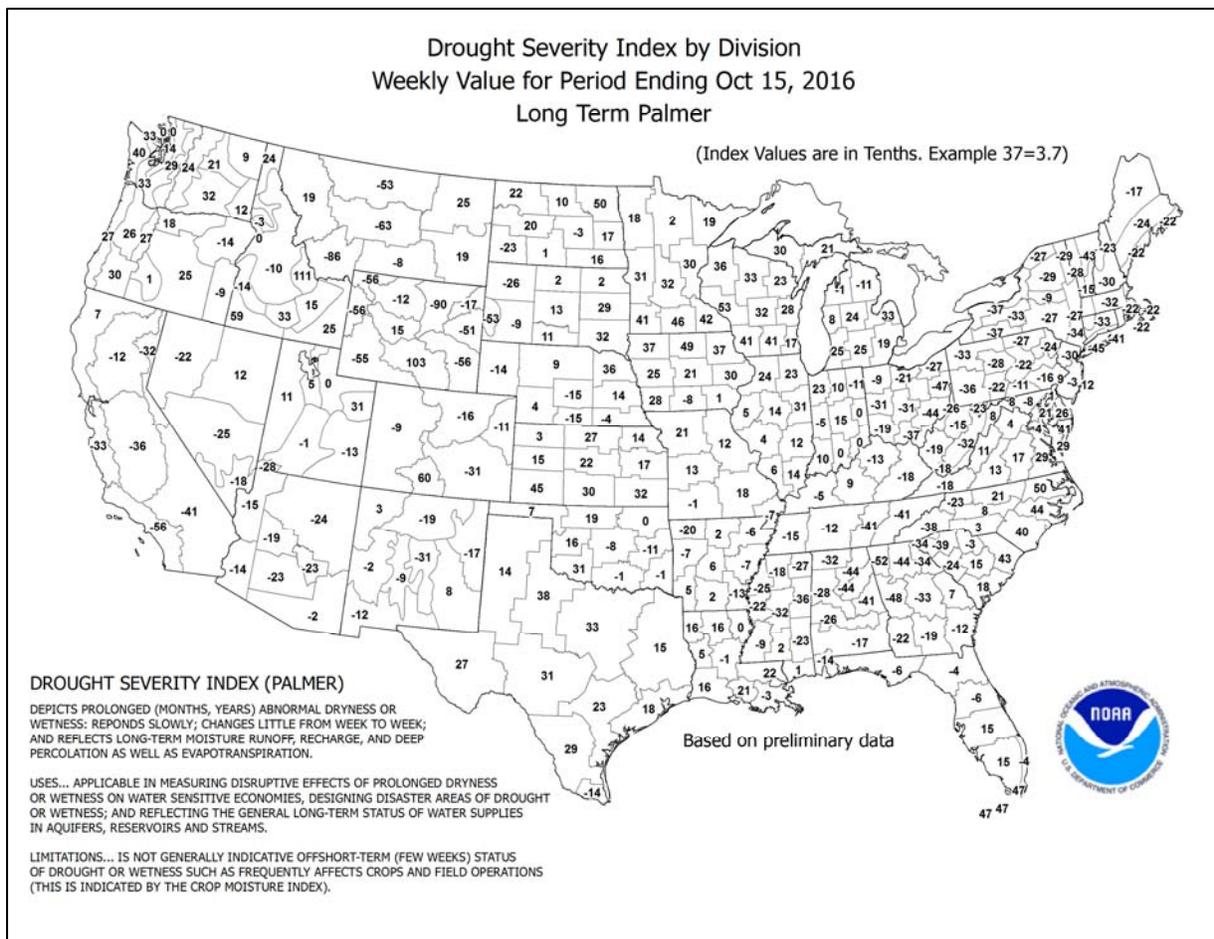
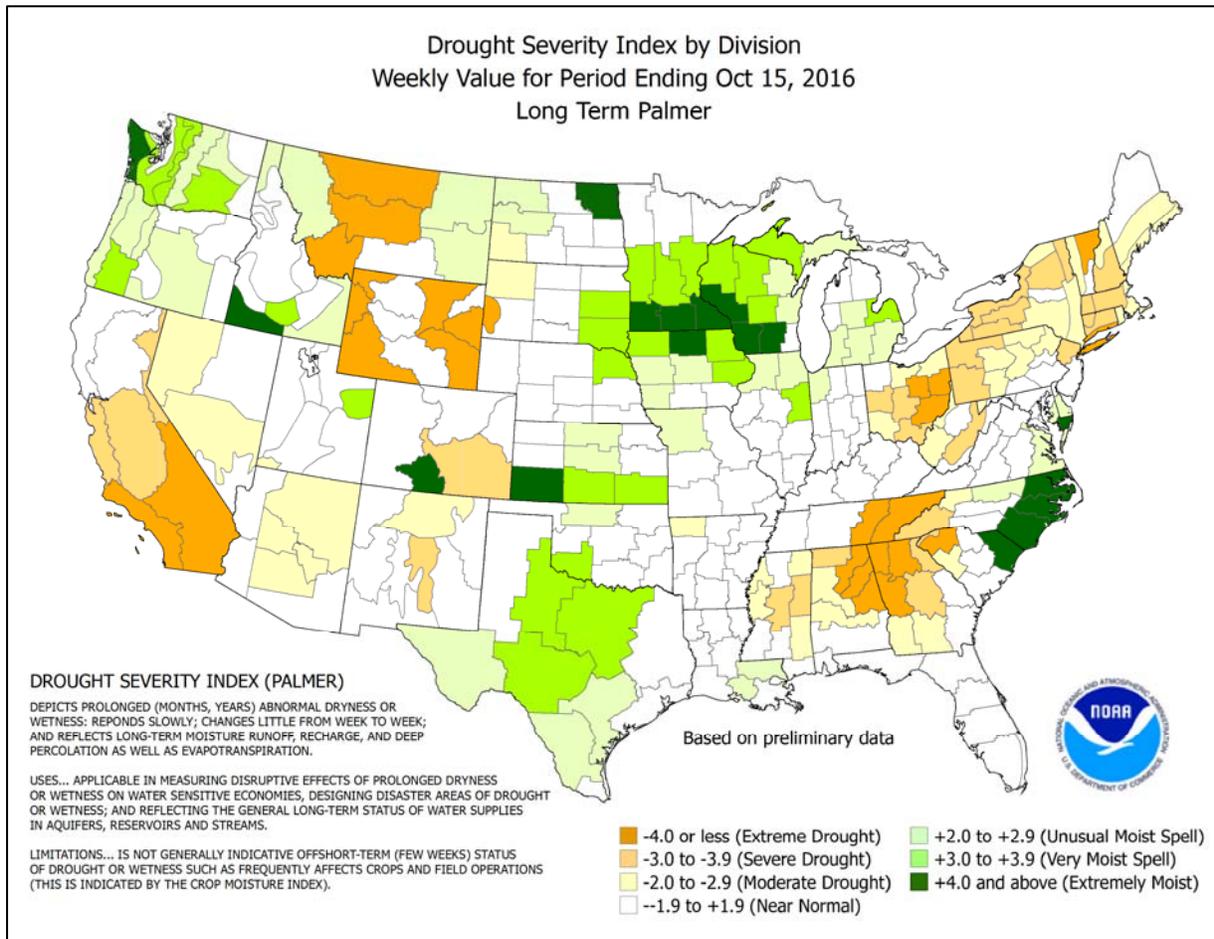
*Highlights provided by USDA/WAOB*

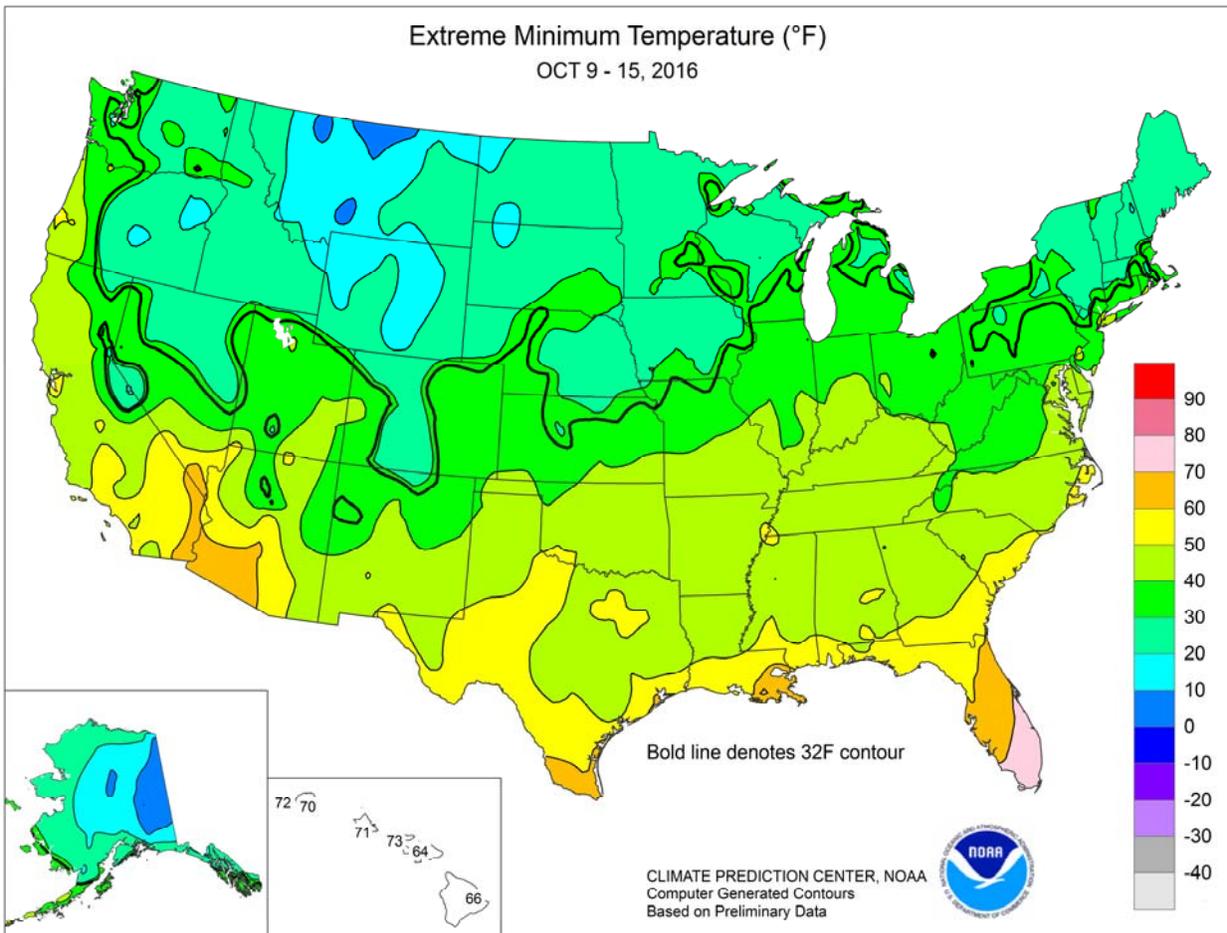
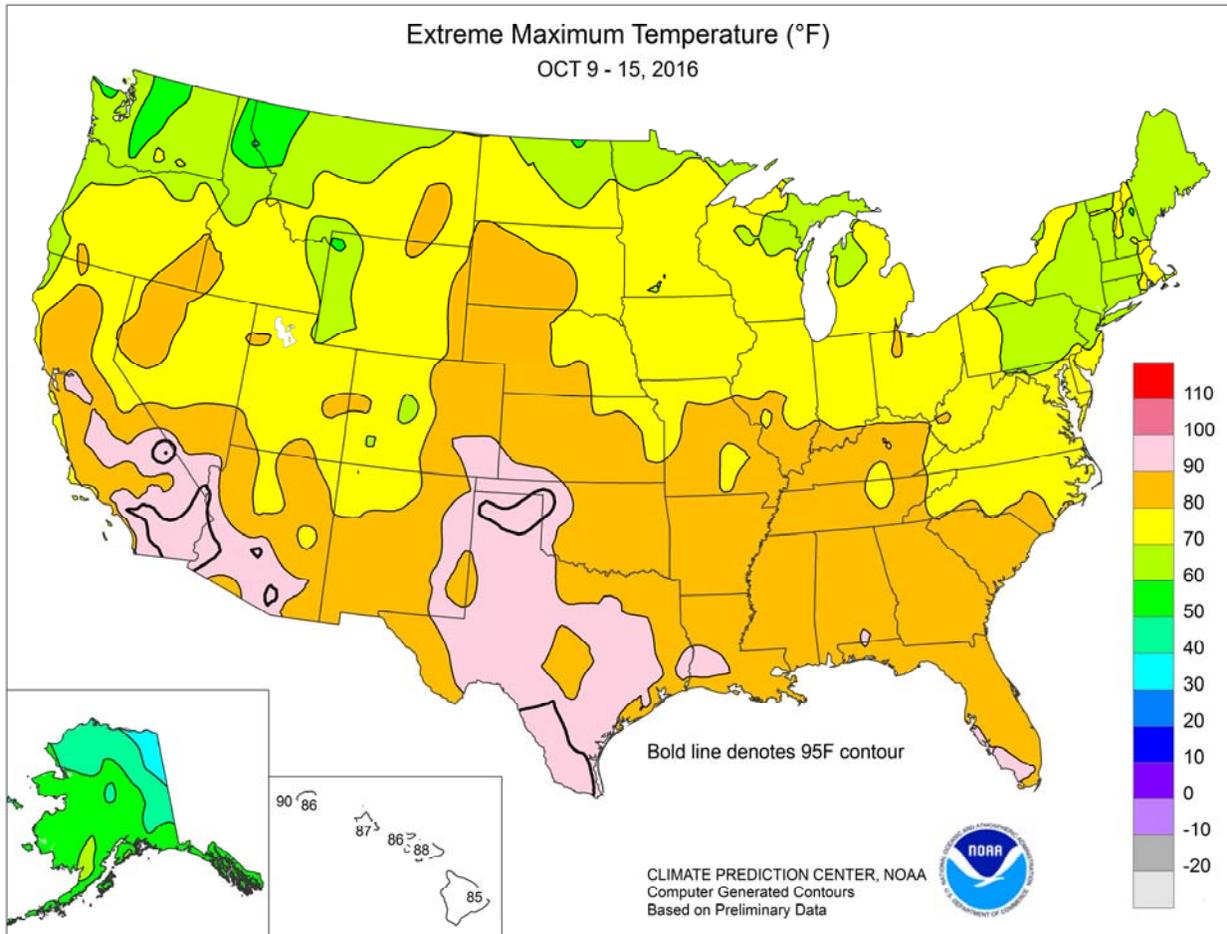
**D**ry weather aided flood-recovery efforts in the southern **Mid-Atlantic coastal plain**, although significant river and lowland flooding persisted in the wake of Hurricane Matthew. In **North Carolina**, high-water marks from Hurricane Fran (September 1999) or Hurricane Floyd (September 1999) were broken along parts of the **Neuse River**, while the worst flooding since September 1945 occurred along the **Cape Fear River**. Elsewhere in **North Carolina**, record flooding also struck the **Lumber River**, while the most severe flooding since 1999 occurred in the

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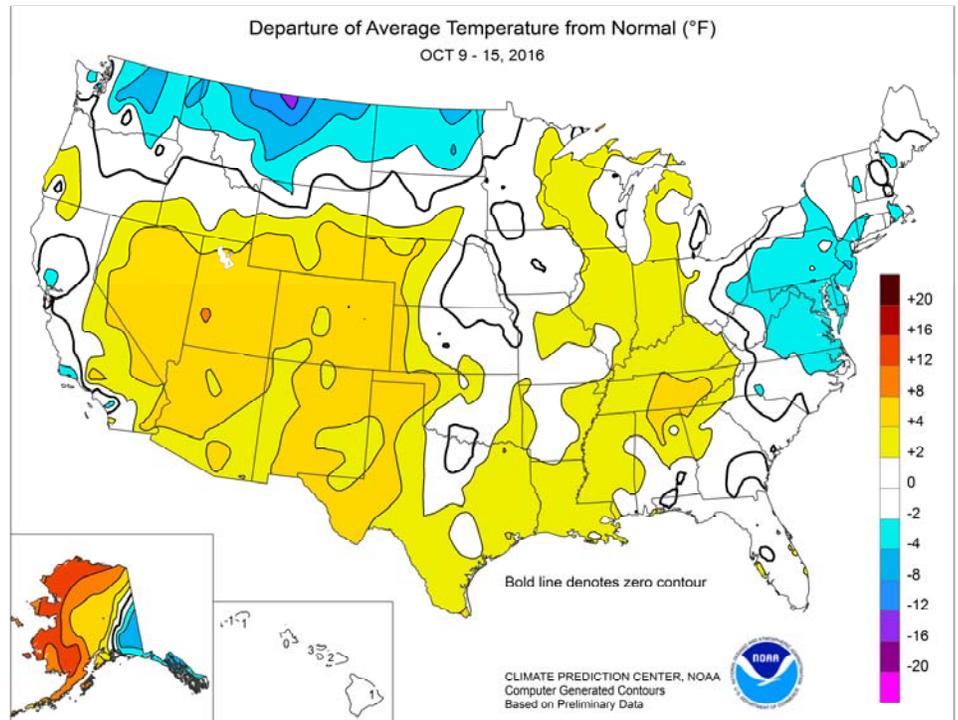


(Continued from front cover)

**Tar River basin.** In the hardest-hit areas, flooding submerged hog and poultry operations, as well as unharvested summer crops such as cotton, peanuts, and soybeans. In stark contrast, intensifying drought across portions of the **interior Southeast** limited winter wheat planting—as producers awaited rain—and maintained poor pasture conditions. Farther west, emerging dryness was a concern with respect to winter wheat emergence on the **central and southern High Plains**. However, mild, often dry weather across the **Plains** and **Midwest** also promoted fieldwork, including summer crop harvesting. A few areas from the **mid-South into the Great Lakes region** received mid-week rainfall totals in excess of an inch. Elsewhere, the season's first barrage of **Pacific** storms arrived in the **Northwest**, drenching coastal areas but providing beneficial moisture for rangeland, pastures, and winter grains. However, only minor flooding occurred due to antecedent warmth and dryness. Significant precipitation spread as far south as **northern California** and eastward into the **northern Rockies**. Generally cool conditions prevailed across the **nation's northern tier** and the **Northeastern and Mid-Atlantic States**. Temperatures averaged at least 5 to 10°F below normal (and briefly dipped below 10°F) in **northern Montana**, where snow helped to insulate emerged winter wheat. Freezes ended the growing season in much of the **north-central U.S.**, where impacts were minimized by advanced summer crop maturity and the normalcy of an early-October freeze. Meanwhile, the week's warmest weather—relative to normal—occurred in the **Great Basin** and **Four Corners States**, where temperatures averaged at least 5°F above normal in many locations.

Matthew's final direct impacts occurred in **coastal New England**, where a wind gust to 58 mph was reported in **Nantucket, MA**, on October 9. Elsewhere in **Massachusetts** on the 9th, **Boston's** rainfall of 1.84 inches marked its greatest daily total since September 30, 2015, when 2.46 inches fell. Farther south, however, historic flooding persisted through the week. In **North Carolina**, one of the four highest crests on record occurred along the **Tar River** between October 10 and 14 from **Rocky Mount to Greenville**. Along much of the **Cape Fear River**, including **Fayetteville, NC**, crests that occurred from October 9-13 were among the five highest on record—and the highest in more than 70 years. Near **Conway, SC**, the **Waccamaw River** crested nearly 7 feet above flood stage on October 18, edging a September 1928 high-water mark. Similarly, records from September 1928 were eclipsed in locations such as the **Lumber River in Lumberton, NC**, and the **Little Pee Dee River near Galivants Ferry, SC**. And, along the **Neuse River**, all-time crest records were set between October 10 and 14 in **North Carolina** locations such as **Smithfield, Goldsboro, and Kinston**. **Kinston's** crest on October 14 was 14.31 feet above flood stage, topping the September 1999 record by 0.6 foot.

Meanwhile, the focus for heavy precipitation shifted to the **Northwest**. On October 9, daily-record totals included 1.69 inches in **Troutdale, OR**, and 0.57 inch in **Yakima, WA**. On the 10th, daily records for both precipitation and snowfall were broken in **Montana** locations such as **Choteau** (0.62 inch and 6.0 inches) and **Havre** (0.72 inch and 5.0 inches). More widespread precipitation later arrived in the **Northwest**, starting on October 13. Record-setting rainfall totals for the 13th climbed to 5.19 inches in **Crescent City, CA**; 3.52 inches in **North Bend, OR**; and 2.50 inches in **Hoquiam, WA**. **Troutdale** collected another daily record, with 1.83 inches falling on October 13. **Olympia, WA**, noted consecutive daily record totals (1.61 and 2.01 inches, respectively) on October 13-14. By week's end,



precipitation spread southward into **northern California**, where **Mt. Shasta City** reported a daily-record sum (1.85 inches on October 15). High winds accompanied and trailed some of the **Northwestern** storminess, with **Cut Bank, MT**, clocking a daily-record wind gust to 65 mph on October 14.

**Montana** and environs also contended with the first significant cold outbreak of the season. On October 12-13, **Dunkirk, MT**, posted consecutive daily-record lows of 3 and 4°F, respectively. **Cut Bank, MT**, reported a low of 5°F on October 12—not a daily record—along with a 5-inch snow cover. Similarly, **Havre, MT**, registered an October 12 low of 8°F with a 4-inch snow cover. In contrast, an early-week burst of warmth across the **southern Plains** preceded a more expansive late-season heat wave. In **northern Texas**, record-setting highs for October 11 reached 95°F in **Borger** and 93°F in **Amarillo**. Later, the week closed on October 14-15 with consecutive daily-record highs in **Pueblo, CO** (90 and 89°F). Other daily-record highs for October 15 soared to 96°F in **Borger** and 95°F in **Amarillo**. **Borger** would later set a monthly standard with a high of 101°F on October 16, edging the record of 100°F set on October 3, 2000.

Generally dry weather prevailed in **Alaska**, except for some precipitation across the southern and western fringes of the state. October records for days without measurable precipitation were broken in **Juneau** (October 1-14; previously, 12 days from October 19-30, 2012) and **Yakutat** (October 1-15; previously, 11 days from October 13-23, 1951, and October 19-29, 2012). However, **Juneau's** dry spell eased on October 15-16, with 1.39 inches of precipitation and 5.7 inches of snow. **Yakutat's** October 1-15 normal rainfall is 11.85 inches. An exception to the dry pattern was **Kodiak**, where weekly rainfall totaled 5.33 inches—aided by a daily-record total of 2.76 inches on October 11. Meanwhile, late-season warmth covered **northern and western Alaska**, while cool conditions prevailed across southeastern areas. In **Juneau**, a daily-record low of 24°F occurred on October 13. In contrast, **Barrow's** high of 44°F on October 10 eclipsed a monthly record of 43°F that had been set on October 3, 1954. Farther south, most of **Hawaii** experienced warm, dry weather. **Lihue, Kauai**, posted a daily record-tying high of 86°F on October 12. Through October 15, **Hawaiian** rainfall totaled less than one-quarter inch in locations such as **Honolulu, Oahu** (0.02 inch, or 3 percent of normal); **Kahului, Maui** (0.11 inch, or 24 percent); and **Lihue** (0.23 inch, or 14 percent).

National Weather Data for Selected Cities

Weather Data for the Week Ending October 15, 2016

Data Provided by Climate Prediction Center

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 JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMP. °F		PRECIP		
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE	
AL BIRMINGHAM	83	55	87	49	69	4	0.00	-0.67	0.00	0.68	12	35.85	83	73	26	0	0	0	0	
HUNTSVILLE	83	53	86	47	68	5	0.00	-0.74	0.00	0.47	8	32.96	73	74	32	0	0	0	0	
MOBILE	85	57	87	55	71	2	0.00	-0.65	0.00	5.24	69	52.22	96	87	43	0	0	0	0	
AK MONTGOMERY	86	53	90	50	69	2	0.00	-0.55	0.00	2.24	40	35.42	80	74	26	1	0	0	0	
ANCHORAGE	47	30	51	27	38	1	0.00	-0.50	0.00	2.47	62	14.26	110	83	69	0	6	0	0	
BARROW	36	31	44	30	34	16	0.00	-0.08	0.00	0.77	87	4.44	121	87	75	0	6	0	0	
FAIRBANKS	47	22	55	15	35	7	0.00	-0.19	0.00	2.08	136	13.77	164	79	66	0	7	0	0	
JUNEAU	48	27	54	24	38	-6	0.16	-1.82	0.16	11.80	100	48.12	111	90	75	0	6	1	0	
KODIAK	53	46	55	36	50	9	5.35	3.39	3.40	11.80	97	63.79	112	98	94	0	0	5	3	
NOME	49	37	59	26	43	12	0.21	-0.14	0.13	2.77	83	13.04	97	77	57	0	3	2	0	
AZ FLAGSTAFF	69	34	71	31	52	3	0.26	-0.15	0.26	1.90	63	19.09	105	86	24	0	2	1	0	
PHOENIX	95	69	97	67	82	5	0.00	-0.17	0.00	0.52	47	4.57	74	34	20	7	0	0	0	
PRESCOTT	78	46	80	43	62	5	0.00	-0.28	0.00	2.91	107	13.67	85	69	19	0	0	0	0	
TUCSON	94	62	96	58	78	5	0.00	-0.29	0.00	1.70	82	10.30	104	41	19	7	0	0	0	
AR FORT SMITH	80	56	88	46	68	3	0.12	-0.71	0.08	2.14	40	28.79	86	88	45	0	0	2	0	
LITTLE ROCK	76	55	83	47	66	1	1.61	0.74	1.08	2.92	53	48.87	128	95	60	0	0	2	2	
CA BAKERSFIELD	85	58	92	56	71	2	0.00	-0.04	0.00	0.00	0	4.10	84	53	35	2	0	0	0	
FRESNO	83	56	92	53	70	3	0.00	-0.11	0.00	0.00	0	9.08	109	66	43	1	0	0	0	
LOS ANGELES	72	61	82	58	67	-1	0.00	-0.04	0.00	0.01	3	6.01	60	84	60	0	0	0	0	
REDDING	76	54	87	47	65	0	2.74	2.38	2.55	3.12	281	33.75	145	75	52	0	0	2	1	
SACRAMENTO	77	54	89	50	66	0	0.82	0.70	0.65	0.84	145	13.59	108	85	39	0	0	2	1	
SAN DIEGO	76	64	86	62	70	2	0.00	-0.05	0.00	0.32	110	5.33	66	77	53	0	0	0	0	
SAN FRANCISCO	70	55	80	52	63	1	0.39	0.25	0.39	0.39	93	12.83	92	87	69	0	0	1	0	
STOCKTON	80	52	92	48	66	0	0.49	0.37	0.48	0.57	104	12.69	132	79	52	1	0	2	0	
CO ALAMOSA	70	29	78	21	50	5	0.00	-0.14	0.00	0.30	25	7.65	126	77	32	0	4	0	0	
CO SPRINGS	76	44	86	37	60	9	0.00	-0.17	0.00	0.16	10	14.82	93	59	16	0	0	0	0	
DENVER INTL	76	45	85	34	60	8	0.04	-0.15	0.03	0.54	37	11.27	92	63	23	0	0	2	0	
GRAND JUNCTION	77	47	82	42	62	7	0.03	-0.19	0.02	0.77	56	7.02	97	52	27	0	0	2	0	
PUEBLO	80	41	90	35	61	6	0.00	-0.11	0.00	0.05	5	10.37	94	56	28	1	0	0	0	
CT BRIDGEPORT	66	47	70	42	57	1	0.63	-0.03	0.63	3.91	76	28.67	82	81	56	0	0	1	1	
HARTFORD	64	38	70	32	51	-2	0.39	-0.46	0.39	2.86	48	25.20	69	89	47	0	1	1	0	
DC WASHINGTON	69	50	73	46	60	-1	0.09	-0.64	0.09	3.08	57	28.02	88	87	45	0	0	1	0	
DE WILMINGTON	67	43	71	39	55	-2	1.00	0.30	1.00	6.12	109	35.57	102	91	42	0	0	1	1	
FL DAYTONA BEACH	82	71	84	68	77	2	0.10	-0.97	0.10	13.68	151	41.31	99	87	59	0	0	1	0	
JACKSONVILLE	81	62	83	58	71	0	0.87	-0.11	0.87	13.61	132	35.95	78	93	60	0	0	1	1	
KEY WEST	87	78	90	76	83	2	0.06	-0.96	0.05	8.77	114	34.11	106	84	64	1	0	2	0	
MIAMI	88	76	90	75	82	3	2.62	1.15	2.46	10.21	88	57.21	114	78	53	1	0	3	1	
ORLANDO	85	69	88	65	77	1	0.13	-0.52	0.05	10.01	135	51.69	121	87	55	0	0	3	0	
PENSACOLA	82	65	87	63	74	3	0.00	-0.90	0.00	3.36	43	54.14	101	77	43	0	0	0	0	
TALLAHASSEE	86	59	89	53	73	2	0.12	-0.57	0.12	7.83	119	55.13	103	84	41	0	0	1	0	
TAMPA	87	70	90	67	79	2	0.20	-0.39	0.20	5.71	70	52.14	130	87	50	1	0	1	0	
GA WEST PALM BEACH	85	77	87	76	81	2	0.25	-0.95	0.25	11.18	103	45.36	91	73	58	0	0	1	0	
ATHENS	79	50	85	45	65	2	0.02	-0.72	0.02	1.25	24	32.21	84	93	40	0	0	1	0	
ATLANTA	79	55	83	50	67	3	0.00	-0.66	0.00	3.56	63	32.68	80	79	37	0	0	0	0	
AUGUSTA	80	52	85	46	66	1	0.00	-0.72	0.00	6.67	130	33.24	90	89	44	0	0	0	0	
COLUMBUS	83	56	86	50	70	3	0.00	-0.46	0.00	0.75	18	28.67	74	72	28	0	0	0	0	
MACON	82	49	88	43	66	1	0.00	-0.50	0.00	2.38	54	26.59	73	92	34	0	0	0	0	
SAVANNAH	80	58	84	54	69	0	0.09	-0.61	0.09	16.58	248	50.95	119	87	46	0	0	1	0	
HI HILO	84	70	85	66	77	1	1.81	-0.01	0.99	22.70	175	90.83	96	87	76	0	0	5	1	
HONOLULU	86	75	87	71	81	0	0.00	-0.47	0.00	2.93	178	11.46	96	69	62	0	0	0	0	
KAHULUI	88	72	88	64	80	2	0.05	-0.12	0.04	1.37	199	11.18	87	78	69	0	0	2	0	
LIHUE	85	75	86	70	80	1	0.11	-0.80	0.10	0.88	19	11.61	42	80	71	0	0	2	0	
ID BOISE	69	48	80	37	59	4	0.13	-0.01	0.07	0.34	32	5.31	59	59	36	0	0	2	0	
LEWISTON	60	45	67	33	52	-2	0.45	0.26	0.23	1.39	118	11.02	112	83	68	0	0	5	0	
POCATELLO	67	38	75	25	53	3	0.28	0.09	0.20	3.09	238	10.34	106	76	40	0	3	2	0	
IL CHICAGO/O'HARE	67	46	73	38	56	2	0.14	-0.42	0.14	3.12	70	30.09	103	88	58	0	0	1	0	
MOLINE	71	45	78	34	58	3	0.03	-0.57	0.03	2.75	62	32.17	102	85	54	0	0	1	0	
PEORIA	71	47	77	38	59	3	0.33	-0.28	0.33	6.97	156	31.98	109	96	51	0	0	1	0	
ROCKFORD	69	44	77	35	57	4	0.05	-0.51	0.04	3.24	69	29.66	97	85	55	0	0	2	0	
SPRINGFIELD	74	49	81	42	62	4	0.07	-0.48	0.07	2.96	73	38.81	135	89	41	0	0	1	0	
IN EVANSVILLE	74	49	81	43	62	3	0.00	-0.55	0.00	4.35	104	42.81	122	89	53	0	0	0	0	
FORT WAYNE	69	44	79	38	56	2	0.23	-0.33	0.23	6.30	158	30.11	103	88	44	0	0	1	0	
INDIANAPOLIS	71	49	77	46	60	3	0.09	-0.47	0.08	4.80	118	39.81	122	86	49	0	0	2	0	
SOUTH BEND	67	45	72	38	56	2	0.69	-0.03	0.69	5.44	101	39.85	126	90	58	0	0	1	1	
IA BURLINGTON	70	46	79	34	58	1	0.28	-0.38	0.28	5.09	100	29.33	93	96	54	0	0	1	0	
CEDAR RAPIDS	68	42	76	29	55	1	1.09	0.62	0.75	8.22	189	38.61	135	99	58	0	1	2	1	
DES MOINES	68	47	78	33	58	3	0.65	0.07	0.57	6.33	144	31.66	106							

Weather Data for the Week Ending October 15, 2016

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		PRECIP	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
KY WICHITA	74	52	84	41	63	2	0.49	-0.07	0.47	12.25	290	48.59	187	85	62	0	0	2	0
KY JACKSON	72	50	82	46	61	2	0.17	-0.51	0.17	1.51	29	42.50	108	85	43	0	0	1	0
KY LEXINGTON	74	50	81	45	62	4	0.00	-0.59	0.00	1.81	41	36.82	99	76	45	0	0	0	0
KY LOUISVILLE	75	53	82	48	64	4	0.00	-0.58	0.00	2.28	53	35.95	101	79	41	0	0	0	0
LA PADUCAH	76	51	84	41	63	3	0.10	-0.65	0.09	0.93	18	44.59	116	90	46	0	0	2	0
LA BATON ROUGE	87	60	89	53	74	4	0.00	-0.81	0.00	2.49	38	76.71	150	94	39	0	0	0	0
LA LAKE CHARLES	86	63	88	54	75	4	0.00	-0.87	0.00	3.57	45	60.48	131	93	48	0	0	0	0
LA NEW ORLEANS	88	69	90	67	78	6	0.00	-0.61	0.00	4.63	66	60.04	115	77	50	2	0	0	0
LA SHREVEPORT	84	60	89	51	72	3	0.81	-0.16	0.67	0.97	19	51.34	130	89	51	0	0	2	1
ME CARIBOU	57	35	65	27	46	2	0.07	-0.57	0.04	2.62	56	33.72	114	86	47	0	3	2	0
ME PORTLAND	60	37	64	30	49	0	0.83	-0.11	0.81	2.04	38	25.57	74	89	50	0	1	2	1
MD BALTIMORE	67	43	71	38	55	-2	0.01	-0.71	0.01	4.96	88	36.05	106	89	47	0	0	1	0
MA BOSTON	62	46	72	42	54	-2	1.84	1.03	1.84	3.89	75	24.16	74	85	54	0	0	1	1
MA WORCESTER	60	42	65	38	51	0	0.69	-0.33	0.69	4.38	68	27.77	72	87	45	0	0	1	1
MI ALPENA	63	37	75	30	50	3	0.26	-0.26	0.25	4.65	118	25.34	109	89	51	0	2	2	0
MI GRAND RAPIDS	66	42	72	36	54	2	0.26	-0.35	0.26	5.76	101	37.51	126	88	54	0	0	1	0
MI HOUGHTON LAKE	60	37	69	29	49	1	0.21	-0.29	0.20	4.27	102	27.88	119	89	63	0	3	2	0
MI LANSING	65	42	73	34	54	3	0.44	-0.05	0.44	4.66	101	28.13	110	85	54	0	0	1	0
MI MUSKOGON	65	43	70	37	54	3	0.28	-0.30	0.28	6.79	141	31.94	125	90	64	0	0	1	0
MI TRAVERSE CITY	63	45	70	36	54	3	0.27	-0.39	0.14	4.54	90	24.01	90	88	52	0	0	3	0
MN DULUTH	59	40	74	30	49	3	0.03	-0.52	0.03	4.23	78	28.15	105	84	62	0	1	1	0
MN INT'L FALLS	57	35	69	28	46	2	0.58	0.13	0.58	4.22	103	24.76	118	87	55	0	3	1	1
MN MINNEAPOLIS	63	44	74	36	53	2	0.01	-0.43	0.01	7.29	201	33.60	133	78	58	0	0	1	0
MN ROCHESTER	63	42	75	29	53	4	0.14	-0.33	0.12	9.76	233	38.03	140	90	62	0	1	2	0
MN ST. CLOUD	60	38	71	28	49	1	0.03	-0.47	0.02	4.68	117	29.51	124	94	56	0	2	2	0
MS JACKSON	87	56	88	50	72	6	0.00	-0.69	0.00	0.33	7	53.52	123	83	32	0	0	0	0
MS MERIDIAN	87	52	90	47	70	4	0.00	-0.68	0.00	0.57	11	37.91	81	84	31	1	0	0	0
MS TUPELO	82	54	86	48	68	4	0.41	-0.31	0.41	0.84	17	36.68	85	81	42	0	0	1	0
MO COLUMBIA	73	49	82	37	61	3	0.01	-0.68	0.01	7.83	159	36.18	111	90	54	0	0	1	0
MO KANSAS CITY	70	49	76	35	59	0	0.11	-0.70	0.07	7.42	113	46.85	144	85	57	0	0	3	0
MO SAINT LOUIS	75	53	82	49	64	4	0.06	-0.52	0.06	5.00	118	33.47	109	76	48	0	0	1	0
MO SPRINGFIELD	73	52	83	46	62	2	1.77	1.03	0.96	6.49	99	32.11	90	82	59	0	0	2	2
MT BILLINGS	61	38	77	23	49	-1	0.30	0.00	0.28	4.61	231	12.36	97	80	44	0	4	1	0
MT BUTTE	56	27	68	15	42	-1	0.34	0.17	0.27	2.48	169	8.54	76	90	37	0	6	3	0
MT CUT BANK	46	25	62	5	36	-9	0.40	0.31	0.35	1.70	121	9.96	86	88	57	0	5	3	0
MT GLASGOW	56	33	71	22	44	-4	0.04	-0.13	0.04	3.63	269	19.36	191	80	60	0	3	1	0
MT GREAT FALLS	55	31	69	17	43	-5	0.16	-0.04	0.12	3.49	208	12.79	97	80	43	0	3	2	0
MT HAVRE	44	23	64	8	34	-13	0.96	0.82	0.80	4.43	326	17.92	176	92	79	0	5	3	1
MT MISSOULA	54	34	60	21	44	-2	0.38	0.21	0.14	2.12	145	10.34	92	93	83	0	3	5	0
NE GRAND ISLAND	66	41	81	29	53	-1	0.02	-0.30	0.02	2.65	83	22.05	96	88	66	0	2	1	0
NE LINCOLN	68	43	77	28	56	0	0.09	-0.35	0.08	4.96	126	27.35	109	91	58	0	1	2	0
NE NORFOLK	65	39	77	24	52	-2	0.00	-0.37	0.00	4.37	141	29.24	123	84	57	0	2	0	0
NE NORTH PLATTE	72	38	83	31	55	3	0.06	-0.22	0.05	2.40	126	21.56	121	92	39	0	2	2	0
NE OMAHA	66	45	75	32	56	0	0.27	-0.23	0.24	5.89	136	32.21	122	83	62	0	1	2	0
NE SCOTTSBLUFF	75	36	85	26	56	6	0.03	-0.19	0.03	1.47	85	14.78	102	80	42	0	2	1	0
NE VALENTINE	72	42	89	33	57	6	0.00	-0.29	0.00	3.86	171	26.39	147	79	46	0	0	0	0
NV ELY	72	37	74	24	54	7	0.00	-0.22	0.00	0.70	50	9.56	115	41	20	0	3	0	0
NV LAS VEGAS	90	69	93	64	80	9	0.00	-0.03	0.00	0.00	0	3.71	102	20	14	4	0	0	0
NV RENO	75	47	83	41	61	7	0.46	0.40	0.45	0.68	113	5.93	107	55	28	0	0	2	0
NV WINNEMUCCA	75	37	81	26	56	5	0.04	-0.09	0.03	0.28	35	4.86	77	48	21	0	3	2	0
NH CONCORD	63	35	71	26	49	0	0.76	0.02	0.73	3.95	84	22.16	76	90	42	0	4	2	1
NJ NEWARK	66	47	68	42	56	-2	0.48	-0.19	0.47	2.83	51	27.44	74	78	51	0	0	2	0
NM ALBUQUERQUE	78	50	85	48	64	4	0.35	0.13	0.35	1.78	116	5.14	66	71	28	0	0	1	0
NY ALBANY	62	39	67	28	50	-1	0.02	-0.67	0.02	2.29	48	25.73	85	85	42	0	1	1	0
NY BINGHAMTON	58	36	64	30	47	-3	0.08	-0.59	0.08	1.59	31	25.54	83	91	53	0	2	1	0
NY BUFFALO	64	41	74	38	53	1	0.15	-0.52	0.10	4.37	82	22.89	74	83	45	0	0	2	0
NY ROCHESTER	65	39	76	34	52	0	0.11	-0.46	0.11	2.98	63	20.62	76	90	48	0	0	1	0
NY SYRACUSE	61	38	71	34	50	-2	0.13	-0.57	0.13	4.63	81	28.04	89	91	48	0	0	1	0
NC ASHEVILLE	72	46	76	37	59	2	0.00	-0.66	0.00	1.09	21	29.54	78	84	36	0	0	0	0
NC CHARLOTTE	74	47	80	43	61	-2	0.00	-0.81	0.00	8.22	147	29.76	85	87	39	0	0	0	0
NC GREENSBORO	71	48	79	43	60	0	0.00	-0.76	0.00	6.13	101	36.92	104	88	43	0	0	0	0
NC HATTERAS	72	61	77	59	67	0	0.32	-0.84	0.32	13.88	170	66.14	146	88	64	0	0	1	0
NC RALEIGH	72	49	79	43	60	-2	0.08	-0.64	0.08	11.57	195	48.30	136	94	47	0	0	1	0
NC WILMINGTON	75	54	80	48	65	-1	0.00	-0.76	0.00	22.54	258	64.32	132	93	47	0	0	0	0
ND BISMARCK	60	31	73	21	46	-2	0.01	-0.29	0.01	1.41	62	19.95	132	85	54	0	4	1	0
ND DICKINSON	58	32	75	21	45	-3	0.00	-0.32	0.00	4.33	187	16.27	110	88	40	0	3	0	0
ND FARGO	61	37	75	29	49	1	0.04	-0.40	0.04	3.49	110	18.95	102	81	47	0	3	1	0
ND GRAND FORKS	56	33	69	26	45	-2	0.02	-0.37	0.02	5.04	181	24.06	140	89	50	0	3	1	0
ND JAMESTOWN	56	31	68	24	44	-4	0.00	-0.33	0.00	4.34	176	23.17	139	91	50	0	3	0	0
ND WILLISTON	57	33	76	19	45	-1	0.05	-0.15	0.05	3.96	218	15.71	125	81	58	0	3	1	0
OH AKRON-CANTON	66	41	75	36	53	0	0.06	-0.50	0.05	6.64	141	30.24	97	86	54	0	0	2	0
OH CINCINNATI	72	48	78	45	60	2	0.04	-0.57	0.04	2.57	63	35.65	104	85	55	0	0	1	0
OH CLEVELAND	68	44	78	37	56	2	0.16	-0.43	0.15	5.88	115	29.24	95	77	42	0	0	2	0
OH COLUMBUS	68	44	77	41	56	-1	0.01	-0.46	0.01	4.68	118	32.94	106	91	53	0	0	1	0
OH DAYTON	69	45	77	42	57	2	0.02	-0.54	0.01	3.56	93	31.08	98	88	45	0	0	2	0
OH MANSFIELD	67	40	77	35	54	1	0.10	-0.43	0.09	3.95	86	27.57	79	91	43	0	0	2	0

Based on 1971-20

Weather Data for the Week Ending October 15, 2016

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	90 AND ABOVE	32 AND BELOW	TEMP. °F		PRECIP	
																		01 INCH OR MORE	50 INCH OR MORE		
OK TOLEDO	67	39	79	34	53	-1	0.13	-0.37	0.13	4.27	109	27.58	104	100	50	0	0	1	0		
OK YOUNGSTOWN	65	38	74	32	52	0	0.23	-0.32	0.23	4.44	85	32.94	107	91	55	0	1	1	0		
OK OKLAHOMA CITY	75	55	84	50	65	1	0.03	-0.86	0.03	5.08	85	24.99	83	83	51	0	0	1	0		
OR TULSA	75	55	85	49	65	0	0.44	-0.50	0.19	4.40	64	25.09	73	90	62	0	0	4	0		
OR ASTORIA	64	48	68	40	56	2	6.90	5.89	3.37	11.97	264	52.82	124	87	74	0	0	5	4		
OR BURNS	62	33	77	22	47	1	0.49	0.35	0.24	0.75	97	5.14	67	83	58	0	3	4	0		
OR EUGENE	64	49	77	39	57	3	2.64	2.14	1.38	4.54	185	25.50	80	89	76	0	0	4	3		
OR MEDFORD	72	50	83	44	61	4	2.26	2.05	0.96	2.63	221	12.63	109	90	50	0	0	3	2		
OR PENDLETON	62	42	67	29	52	-2	0.86	0.69	0.38	1.75	182	9.14	102	83	59	0	2	4	0		
OR PORTLAND	64	48	66	41	56	0	3.84	3.32	1.97	6.78	255	28.69	120	92	74	0	0	4	3		
OR SALEM	64	47	68	38	56	2	4.55	4.03	2.01	7.80	324	29.95	119	90	77	0	0	6	3		
PA ALLENTOWN	66	39	69	33	53	0	0.05	-0.68	0.05	3.73	62	31.04	85	83	43	0	0	1	0		
PA ERIE	66	45	76	41	56	1	0.29	-0.59	0.28	6.82	102	34.88	105	77	51	0	0	2	0		
PA MIDDLETOWN	66	43	69	39	55	-1	0.01	-0.63	0.01	5.00	101	35.77	111	94	45	0	0	1	0		
PA PHILADELPHIA	67	48	72	44	58	-1	0.87	0.26	0.87	4.69	88	30.14	88	80	44	0	0	1	1		
PA PITTSBURGH	66	39	75	33	52	-2	0.00	-0.48	0.00	3.67	85	26.80	87	98	49	0	0	0	0		
PA WILKES-BARRE	63	39	67	34	51	-2	0.08	-0.60	0.08	3.75	69	25.42	84	89	46	0	0	1	0		
PA WILLIAMSPORT	65	40	68	35	52	-1	0.02	-0.68	0.02	5.26	95	29.28	88	94	51	0	0	1	0		
RI PROVIDENCE	64	42	73	37	53	-1	1.54	0.78	1.54	4.93	93	30.77	86	84	50	0	0	1	1		
SC BEAUFORT	78	58	82	55	68	-1	0.00	-0.67	0.00	9.84	144	37.10	87	92	46	0	0	0	0		
SC CHARLESTON	78	59	82	54	68	0	0.00	-0.72	0.00	22.75	295	54.75	124	83	45	0	0	0	0		
SC COLUMBIA	78	54	82	47	66	1	0.00	-0.63	0.00	11.26	211	34.19	84	81	46	0	0	0	0		
SC GREENVILLE	75	51	83	46	63	1	0.00	-0.86	0.00	1.43	24	29.64	73	80	37	0	0	0	0		
SD ABERDEEN	65	35	77	23	50	1	0.00	-0.38	0.00	1.88	71	15.94	87	80	53	0	3	0	0		
SD HURON	65	40	76	31	53	3	0.00	-0.36	0.00	1.99	77	17.94	95	90	47	0	2	0	0		
SD RAPID CITY	68	34	84	23	51	0	0.00	-0.30	0.00	1.00	58	11.97	80	76	35	0	3	0	0		
SD SIOUX FALLS	63	41	74	31	52	1	0.02	-0.41	0.01	10.59	300	28.44	130	89	66	0	2	2	0		
TN BRISTOL	75	43	80	39	59	2	0.00	-0.50	0.00	2.82	67	27.77	82	97	38	0	0	0	0		
TN CHATTANOOGA	80	53	85	45	67	5	0.00	-0.68	0.00	1.63	28	24.97	58	78	32	0	0	0	0		
TN KNOXVILLE	79	52	83	47	65	4	0.00	-0.56	0.00	1.42	33	32.24	84	78	28	0	0	0	0		
TN MEMPHIS	79	59	85	53	69	3	1.16	0.50	1.11	1.85	39	51.65	125	79	47	0	0	2	1		
TN NASHVILLE	77	54	84	47	66	4	0.07	-0.52	0.07	1.94	39	33.54	89	81	38	0	0	1	0		
TX ABILENE	81	58	91	53	70	2	0.32	-0.38	0.32	5.99	136	33.10	167	80	55	1	0	1	0		
TX AMARILLO	80	52	95	44	66	6	0.13	-0.20	0.13	0.95	37	15.83	90	88	37	2	0	1	0		
TX AUSTIN	87	58	91	46	73	1	0.25	-0.66	0.25	3.42	71	48.30	183	86	49	2	0	1	0		
TX BEAUMONT	87	64	90	52	75	3	0.11	-0.95	0.11	4.31	51	61.83	130	93	48	1	0	1	0		
TX BROWNSVILLE	92	70	94	65	81	5	0.00	-0.94	0.00	2.19	29	15.86	69	93	52	6	0	0	0		
TX CORPUS CHRISTI	92	67	95	57	79	4	0.00	-0.98	0.00	3.17	44	28.45	105	89	47	5	0	0	0		
TX DEL RIO	87	64	91	56	75	2	0.00	-0.49	0.00	6.02	192	27.87	179	85	58	1	0	0	0		
TX EL PASO	87	59	90	54	73	6	0.00	-0.20	0.00	2.11	100	7.78	98	67	24	2	0	0	0		
TX FORT WORTH	83	60	91	54	71	2	0.08	-0.88	0.08	2.71	62	31.38	114	82	40	1	0	1	0		
TX GALVESTON	84	74	87	66	79	4	0.04	-0.75	0.04	2.00	26	42.69	122	84	60	0	0	1	0		
TX HOUSTON	87	65	90	53	76	4	0.14	-0.85	0.12	1.85	29	55.42	148	88	52	2	0	2	0		
TX LUBBOCK	78	56	92	47	67	4	1.04	0.62	1.01	2.52	71	12.44	75	92	62	1	0	3	1		
TX MIDLAND	84	60	94	54	72	6	0.00	-0.44	0.00	2.41	72	12.75	100	83	59	3	0	0	0		
TX SAN ANGELO	84	57	93	52	71	4	0.00	-0.63	0.00	6.75	155	32.27	182	86	55	2	0	0	0		
TX SAN ANTONIO	86	63	88	51	74	2	0.00	-0.88	0.00	6.35	131	35.80	136	85	43	0	0	0	0		
TX VICTORIA	89	60	92	45	75	1	0.01	-1.02	0.01	2.56	35	32.14	97	96	48	2	0	1	0		
TX WACO	86	59	94	48	73	3	0.16	-0.71	0.16	0.90	19	32.89	126	91	51	3	0	1	0		
TX WICHITA FALLS	78	55	87	50	67	0	0.38	-0.37	0.38	11.87	246	34.25	143	86	55	0	0	1	0		
UT SALT LAKE CITY	74	50	80	43	62	7	0.00	-0.35	0.00	2.00	96	10.32	79	62	25	0	0	0	0		
VT BURLINGTON	61	40	71	32	50	1	0.13	-0.55	0.13	1.65	31	20.85	71	82	42	0	1	1	0		
VA LYNCHBURG	68	44	76	39	56	-2	0.00	-0.77	0.00	5.11	91	38.82	110	92	46	0	0	0	0		
VA NORFOLK	68	55	76	52	61	-2	1.23	0.45	1.23	18.81	324	61.18	161	91	55	0	0	1	1		
VA RICHMOND	69	48	77	42	58	-2	0.53	-0.29	0.53	15.36	265	48.78	136	94	47	0	0	1	1		
VA ROANOKE	68	46	74	40	57	-1	0.00	-0.70	0.00	9.05	167	42.82	123	89	48	0	0	0	0		
WA WASH/DULLES	69	41	75	36	55	-2	0.00	-0.74	0.00	2.95	54	30.94	92	89	44	0	0	0	0		
WA OLYMPIA	60	43	63	29	52	1	4.81	4.07	1.79	8.09	236	35.73	112	93	81	0	2	5	3		
WA QUILLAYUTE	58	43	62	36	51	0	4.52	2.61	2.10	14.82	190	73.01	110	91	69	0	0	4	4		
WA SEATTLE-TACOMA	61	47	66	43	54	0	3.87	3.30	1.61	6.12	225	29.85	127	84	69	0	0	4	3		
WA SPOKANE	55	40	60	30	47	-2	1.89	1.71	0.78	3.05	275	11.85	103	92	59	0	2	5	1		
WA YAKIMA	61	43	71	29	52	2	1.23	1.15	0.38	1.56	279	7.45	136	78	53	0	1	5	0		
WV BECKLEY	65	44	73	36	55	0	0.01	-0.58	0.01	3.83	84	40.88	119	88	54	0	0	1	0		
WV CHARLESTON	71	46	81	40	59	2	0.10	-0.46	0.10	3.30	70	35.84	101	96	46	0	0	1	0		
WV ELKINS	67	39	75	35	53	1	0.04	-0.58	0.04	6.06	116	37.03	98	95	46	0	0	1	0		
WV HUNTINGTON	72	46	80	40	59	2	0.06	-0.52	0.06	1.91	47	38.08	112	89	42	0	0	1	0		
WI EAU CLAIRE	63	42	73	29	53	3	0.10	-0.39	0.07	8.92	183	35.98	128	91	51	0	1	2	0		
WI GREEN BAY	62	40	73	32	51	1	1.03	0.57	1.02	5.65	136	27.27	112	98	62	0	1	2	1		
WI LA CROSSE	67	47	77	37	57	4	0.23	-0.24	0.12	10.85	243	41.69	149	86	48	0	0	2	0		
WI MADISON	64	43	74	33	54	3	1.93	1.46	1.65	10.83	264	43.20	155	90	60	0	0	2	1		
WI MILWAUKEE	66	47	73	39	56	3	0.08	-0.45	0.07	4.88	109	25.52	89	81	61	0	0	2	1		
WY CASPER	72	36	77	15	54	6	0.00	-0.26	0.00	1.60	103	14.99	136	58	30	0	3	0	0		
WY CHEYENNE	71	39	80	29	55	8	0.00	-0.17	0.00	0.93	51	15.59	111	54	27	0	2	0	0		
WY LANDER	68	37	74	27	53	4	0.00	-0.30	0.00	1.99	110	19.53	176	70	21	0	3	0	0		
WY SHERIDAN	66	32	81	15	49	2	0.09	-0.24	0.09	4.39	208	16.09	128	85	56	0	3	1	0		

Based on 1971-2000 normals

\*\*\* Not Available

# National Agricultural Summary

October 10 – 16, 2016

Weekly National Agricultural Summary provided by USDA/NASS

## HIGHLIGHTS

**Below-average precipitation across most of the U.S. spurred fieldwork, including the fall harvest of row crops. Only the Northwest and parts of the lower Mississippi Valley recorded significant rainfall. Portions of California, Oregon and Washington received more than 6 inches of precipitation during the week. Warm weather was observed across the**

**majority of nation, with almost all areas from California to the Appalachian Mountains recording above average weekly temperatures. However, temperatures were mostly below normal in the Atlantic Coast States and the western half of the nation's northern tier. North-central Montana reported temperatures more than 9°F below normal for the week.**

**Corn:** Ninety-seven percent of the corn was mature by October 16, equal to last year but 3 percentage points ahead of the 5-year average. Maturity advanced to more than 90 percent complete in all estimating states except Colorado and Michigan. Forty-six percent of this year's corn was harvested by week's end, 8 percentage points behind last year and 3 points behind the 5-year average. Harvest progress was 12 percentage points behind normal in Iowa, Minnesota, and North Dakota. Overall, 74 percent of the corn was reported in good to excellent condition, up slightly from last week and 6 percentage points above the same time last year.

**Soybeans:** By week's end, 96 percent of the soybean crop was dropping leaves or beyond, slightly ahead of last year and 2 percentage points ahead of the 5-year average. By October 16, soybean producers had harvested 62 percent of the nation's crop, 11 percentage points behind last year and slightly behind the 5-year average. Double-digit harvest progress occurred in 15 of 18 estimating states during the week. Overall, 74 percent of the soybean crop was reported in good to excellent condition, unchanged from last week but 10 percentage points better than at the same time last year.

**Winter Wheat:** Producers had sown 72 percent of the 2017 winter wheat crop by week's end, slightly behind both last year and the 5-year average. Dry conditions in the eastern Corn Belt helped planting progress advance more than 20 percentage points in Illinois, Indiana, and Ohio. Nationwide, emergence had advanced to 47 percent complete by October 16, three percentage points ahead of last year and 2 points ahead of the 5-year average.

**Cotton:** Eighty-nine percent of the cotton was at or beyond the boll-opening stage by October 16, four percentage points behind last year but slightly ahead of the 5-year average. Nationally, producers had harvested 30 percent of the cotton

by week's end, 2 percentage points ahead of last year and 3 points ahead of the 5-year average. Producers harvested at least one-quarter of their crop during the week in Alabama and California. Overall, 47 percent of the cotton was reported in good to excellent condition, down slightly from last week but slightly above the same time last year.

**Sorghum:** By week's end, 90 percent of this year's sorghum was mature, slightly ahead of last year and 9 percentage points ahead of the 5-year average. Nationwide, sorghum producers had harvested 57 percent of the crop by October 16, slightly behind last year but 8 percentage points ahead of average.

**Rice:** By October 16, ninety-three percent of the rice was harvested, equal to last year but 7 percentage points ahead of the 5-year average. Harvest progress was at or ahead of average in all estimating states.

**Other Crops:** By October 16, fifty-four percent of the nation's peanuts had been dug and combined, 13 percentage points ahead of last year and 7 points ahead of the 5-year average. Overall, 56 percent of the peanut crop was reported in good to excellent condition, down 2 percentage points from last week and 5 points lower than at the same time last year.

Producers had harvested 63 percent of the sugarbeet crop by week's end, 13 percentage points behind last year but equal to the 5-year average. The sugarbeet harvest progressed well during the week, with all estimating states except Michigan advancing more than 20 percentage points.

By week's end, 31 percent of this year's sunflower crop was harvested, 5 percentage points ahead of last year and 6 points ahead of the 5-year average. However, harvest progress was more than 2 weeks behind the 5-year average in Colorado.

## Crop Progress and Condition

### Week Ending October 16, 2016

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

Corn Percent Mature				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
CO	92	82	88	92
IL	100	99	100	98
IN	96	94	97	93
IA	98	94	97	96
KS	100	96	100	98
KY	100	97	99	98
MI	89	79	89	85
MN	98	95	99	94
MO	99	99	100	99
NE	96	92	96	93
NC	100	100	100	100
ND	96	90	94	89
OH	97	84	92	84
PA	94	85	94	91
SD	94	93	98	95
TN	99	99	100	99
TX	89	90	95	93
WI	88	90	96	83
18 Sts	97	93	97	94
These 18 States planted 93% of last year's corn acreage.				

Corn Percent Harvested				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
CO	22	20	31	32
IL	81	62	73	63
IN	59	38	52	44
IA	45	19	33	45
KS	82	62	76	74
KY	85	83	89	78
MI	27	11	16	21
MN	50	14	31	43
MO	87	70	78	76
NE	36	23	34	40
NC	90	92	94	91
ND	31	10	21	33
OH	49	23	36	28
PA	50	31	40	37
SD	34	20	31	41
TN	91	94	97	86
TX	73	76	80	80
WI	24	13	24	27
18 Sts	54	35	46	49
These 18 States harvested 95% of last year's corn acreage.				

Corn Condition by Percent					
	VP	P	F	G	EX
CO	1	3	22	60	14
IL	1	3	13	56	27
IN	3	7	20	54	16
IA	1	3	14	57	25
KS	2	7	26	54	11
KY	2	5	20	57	16
MI	3	8	26	48	15
MN	1	3	10	57	29
MO	2	5	18	54	21
NE	1	5	21	57	16
NC	3	7	25	48	17
ND	1	3	16	61	19
OH	7	14	33	41	5
PA	7	13	34	38	8
SD	4	11	29	46	10
TN	2	8	28	45	17
TX	3	11	31	44	11
WI	1	3	11	42	43
18 Sts	2	5	19	54	20
Prev Wk	2	6	19	53	20
Prev Yr	3	7	22	48	20

Soybeans Percent Dropping Leaves				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
AR	93	92	97	86
IL	96	90	97	95
IN	98	91	96	96
IA	96	92	96	96
KS	89	75	88	89
KY	87	75	84	83
LA	98	97	99	97
MI	99	89	94	98
MN	100	99	100	98
MS	94	93	95	95
MO	80	79	89	85
NE	98	95	99	98
NC	74	62	70	66
ND	100	99	100	100
OH	99	95	99	96
SD	99	98	99	99
TN	92	91	95	86
WI	96	96	99	94
18 Sts	95	91	96	94
These 18 States planted 95% of last year's soybean acreage.				

Soybeans Percent Harvested				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
AR	63	60	75	57
IL	81	39	58	63
IN	75	33	54	54
IA	78	43	62	74
KS	45	15	27	45
KY	47	30	41	36
LA	92	87	93	90
MI	61	14	33	50
MN	95	64	87	86
MS	83	81	87	82
MO	45	23	34	38
NE	73	44	62	74
NC	13	11	15	10
ND	92	74	86	79
OH	79	31	62	48
SD	85	59	78	83
TN	46	44	62	35
WI	65	23	47	59
18 Sts	73	44	62	63
These 18 States harvested 95% of last year's soybean acreage.				

Soybean Condition by Percent					
	VP	P	F	G	EX
AR	9	9	30	41	11
IL	1	3	14	58	24
IN	1	5	17	55	22
IA	1	3	15	56	25
KS	1	4	24	55	16
KY	2	5	19	56	18
LA	4	11	34	46	5
MI	2	6	25	48	19
MN	2	3	12	53	30
MS	2	8	19	44	27
MO	2	4	20	55	19
NE	1	3	19	57	20
NC	10	14	35	35	6
ND	2	4	17	59	18
OH	2	7	28	51	12
SD	2	9	25	50	14
TN	2	4	19	54	21
WI	1	3	11	44	41
18 Sts	2	5	19	53	21
Prev Wk	2	5	19	54	20
Prev Yr	3	8	25	48	16

**Crop Progress and Condition**

**Week Ending October 16, 2016**

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

Cotton Percent Bolls Opening				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
AL	91	92	96	90
AZ	100	95	98	100
AR	97	100	100	98
CA	94	90	97	94
GA	94	94	96	93
KS	65	67	75	77
LA	100	100	100	100
MS	99	99	100	97
MO	97	96	100	89
NC	95	90	93	93
OK	90	79	85	87
SC	95	90	92	87
TN	91	95	99	89
TX	91	70	84	83
VA	98	78	98	96
15 Sts	93	80	89	88
These 15 States planted 99% of last year's cotton acreage.				

Cotton Percent Harvested				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
AL	43	26	51	27
AZ	29	24	28	25
AR	51	47	69	47
CA	28	5	31	27
GA	17	22	34	21
KS	10	6	7	5
LA	79	67	87	81
MS	64	56	69	57
MO	34	34	55	36
NC	13	8	10	17
OK	4	3	15	7
SC	18	15	16	19
TN	20	27	45	29
TX	27	19	22	24
VA	14	0	8	15
15 Sts	28	22	30	27
These 15 States harvested 98% of last year's cotton acreage.				

Cotton Condition by Percent					
	VP	P	F	G	EX
AL	1	4	42	43	10
AZ	6	2	14	51	27
AR	6	4	15	45	30
CA	0	0	30	30	40
GA	4	13	30	43	10
KS	1	3	28	64	4
LA	1	12	36	45	6
MS	0	5	32	44	19
MO	5	14	52	26	3
NC	15	20	34	30	1
OK	0	1	48	47	4
SC	0	6	55	36	3
TN	1	2	18	58	21
TX	4	15	37	36	8
VA	0	4	47	49	0
15 Sts	4	13	36	38	9
Prev Wk	4	12	36	39	9
Prev Yr	4	12	38	38	8

Sorghum Percent Mature				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
AR	100	100	100	100
CO	84	68	81	76
IL	90	80	88	93
KS	91	79	89	75
LA	100	100	100	100
MO	95	89	95	89
NE	94	95	98	92
NM	57	25	46	37
OK	94	86	93	81
SD	89	86	97	90
TX	88	86	90	87
11 Sts	89	82	90	81
These 11 States planted 98% of last year's sorghum acreage.				

Sorghum Percent Harvested				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
AR	99	100	100	96
CO	30	17	29	17
IL	72	40	49	57
KS	48	30	43	30
LA	100	100	100	100
MO	61	54	66	51
NE	30	34	52	30
NM	2	0	0	1
OK	56	47	54	50
SD	36	41	67	47
TX	73	70	73	72
11 Sts	58	48	57	49
These 11 States harvested 98% of last year's sorghum acreage.				

Sunflowers Percent Harvested				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
CO	38	1	12	32
KS	20	10	26	24
ND	26	12	23	23
SD	26	15	41	28
4 Sts	26	13	31	25
These 4 States harvested 84% of last year's sunflower acreage.				

Sugarbeets Percent Harvested				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
ID	40	30	52	40
MI	33	23	27	25
MN	96	40	71	76
ND	97	52	81	79
4 Sts	76	38	63	63
These 4 States harvested 84% of last year's sugarbeet acreage.				

## Crop Progress and Condition

### Week Ending October 16, 2016

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

Peanuts Percent Harvested				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
AL	56	54	71	46
FL	79	68	82	70
GA	34	45	57	45
NC	20	18	24	38
OK	37	11	18	28
SC	22	24	35	45
TX	33	14	25	38
VA	31	26	40	31
<b>8 Sts</b>	<b>41</b>	<b>42</b>	<b>54</b>	<b>47</b>
These 8 States harvested 97% of last year's peanut acreage.				

Peanut Condition by Percent					
	VP	P	F	G	EX
AL	0	1	42	45	12
FL	0	7	32	48	13
GA	5	12	29	39	15
NC	9	16	32	37	6
OK	0	0	10	86	4
SC	3	13	35	48	1
TX	1	6	35	41	17
VA	0	3	25	64	8
<b>8 Sts</b>	<b>3</b>	<b>9</b>	<b>32</b>	<b>43</b>	<b>13</b>
Prev Wk	2	9	31	45	13
Prev Yr	2	9	28	48	13

Rice Percent Harvested				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
AR	95	96	98	90
CA	83	54	72	62
LA	100	100	100	100
MS	96	90	94	93
MO	89	91	95	82
TX	100	100	100	100
<b>6 Sts</b>	<b>93</b>	<b>89</b>	<b>93</b>	<b>86</b>
These 6 States harvested 100% of last year's rice acreage.				

Winter Wheat Percent Planted				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
AR	20	14	28	23
CA	10	8	14	16
CO	92	87	96	94
ID	85	72	83	85
IL	57	20	43	50
IN	65	28	52	51
KS	78	58	73	79
MI	72	40	56	67
MO	47	23	37	35
MT	94	79	84	88
NE	96	95	99	95
NC	8	3	6	9
OH	78	31	61	56
OK	74	65	78	74
OR	57	58	68	65
SD	95	80	96	90
TX	59	48	65	62
WA	81	81	89	88
<b>18 Sts</b>	<b>73</b>	<b>59</b>	<b>72</b>	<b>73</b>
These 18 States planted 90% of last year's winter wheat acreage.				

Winter Wheat Percent Emerged				
	Prev Year	Prev Week	Oct 16 2016	5-Yr Avg
AR	6	7	17	8
CA	1	0	1	4
CO	56	60	72	66
ID	55	49	67	44
IL	27	3	14	18
IN	32	9	17	20
KS	46	29	47	51
MI	42	19	33	32
MO	17	8	17	15
MT	73	51	71	54
NE	79	77	90	73
NC	1	0	0	2
OH	42	5	19	25
OK	44	30	51	47
OR	14	21	26	23
SD	67	45	63	53
TX	31	31	32	36
WA	61	64	68	67
<b>18 Sts</b>	<b>44</b>	<b>34</b>	<b>47</b>	<b>45</b>
These 18 States planted 90% of last year's winter wheat acreage.				

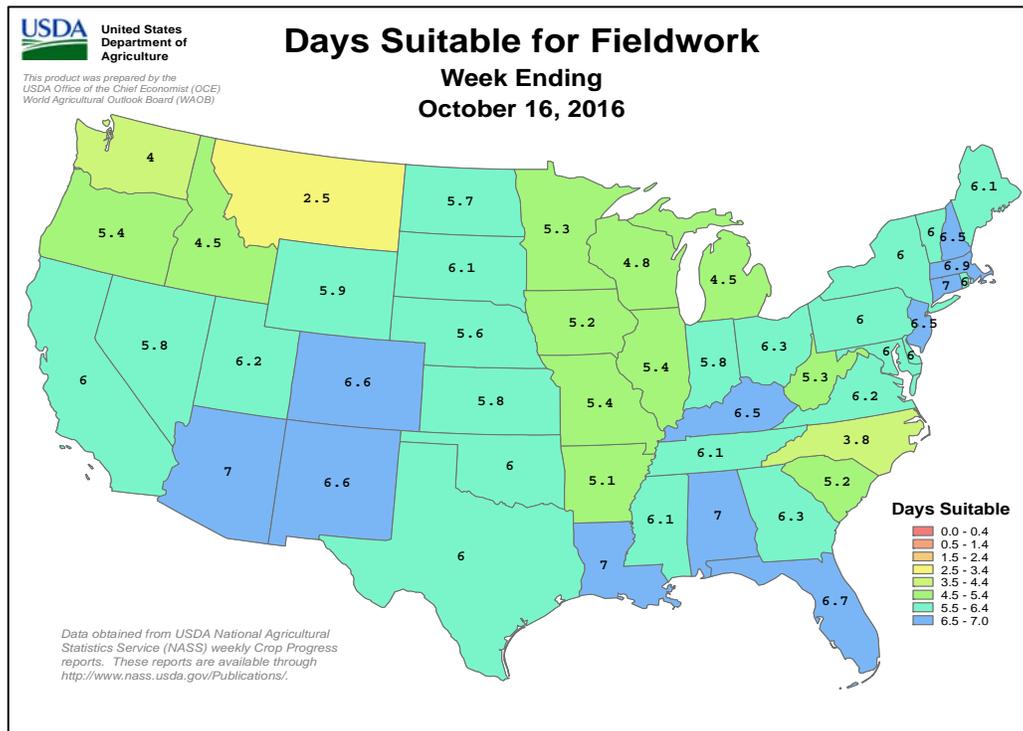
**Crop Progress and Condition**

**Week Ending October 16, 2016**

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

Pasture and Range Condition by Percent						Week Ending Oct 16, 2016					
	VP	P	F	G	EX		VP	P	F	G	EX
AL	22	28	22	28	0	NH	22	31	37	10	0
AZ	10	12	31	37	10	NJ	0	7	43	44	6
AR	3	19	39	36	3	NM	3	20	44	28	5
CA	25	20	30	25	0	NY	4	15	40	34	7
CO	3	8	35	47	7	NC	6	22	40	28	4
CT	0	25	50	25	0	ND	5	12	30	49	4
DE	7	20	32	31	10	OH	10	17	31	37	5
FL	2	6	31	52	9	OK	3	12	37	42	6
GA	23	28	30	17	2	OR	30	20	29	18	3
ID	4	15	37	38	6	PA	10	23	37	26	4
IL	1	4	22	57	16	RI	0	50	50	0	0
IN	3	8	31	51	7	SC	6	32	34	27	1
IA	2	7	29	52	10	SD	9	18	37	34	2
KS	1	4	24	59	12	TN	24	29	30	15	2
KY	6	16	28	46	4	TX	4	9	37	40	10
LA	4	19	42	32	3	UT	3	14	41	37	5
ME	37	13	32	18	0	VT	0	57	43	0	0
MD	2	6	28	58	6	VA	6	25	37	29	3
MA	11	58	31	0	0	WA	6	15	31	43	5
MI	3	9	27	47	14	WV	3	17	43	33	4
MN	1	6	23	54	16	WI	2	5	20	47	26
MS	12	17	36	32	3	WY	13	15	28	40	4
MO	0	3	30	58	9	48 Sts	7	14	33	40	6
MT	13	20	36	27	4						
NE	4	9	28	52	7	Prev Wk	6	13	32	42	7
NV	15	20	35	30	0	Prev Yr	8	17	35	35	5

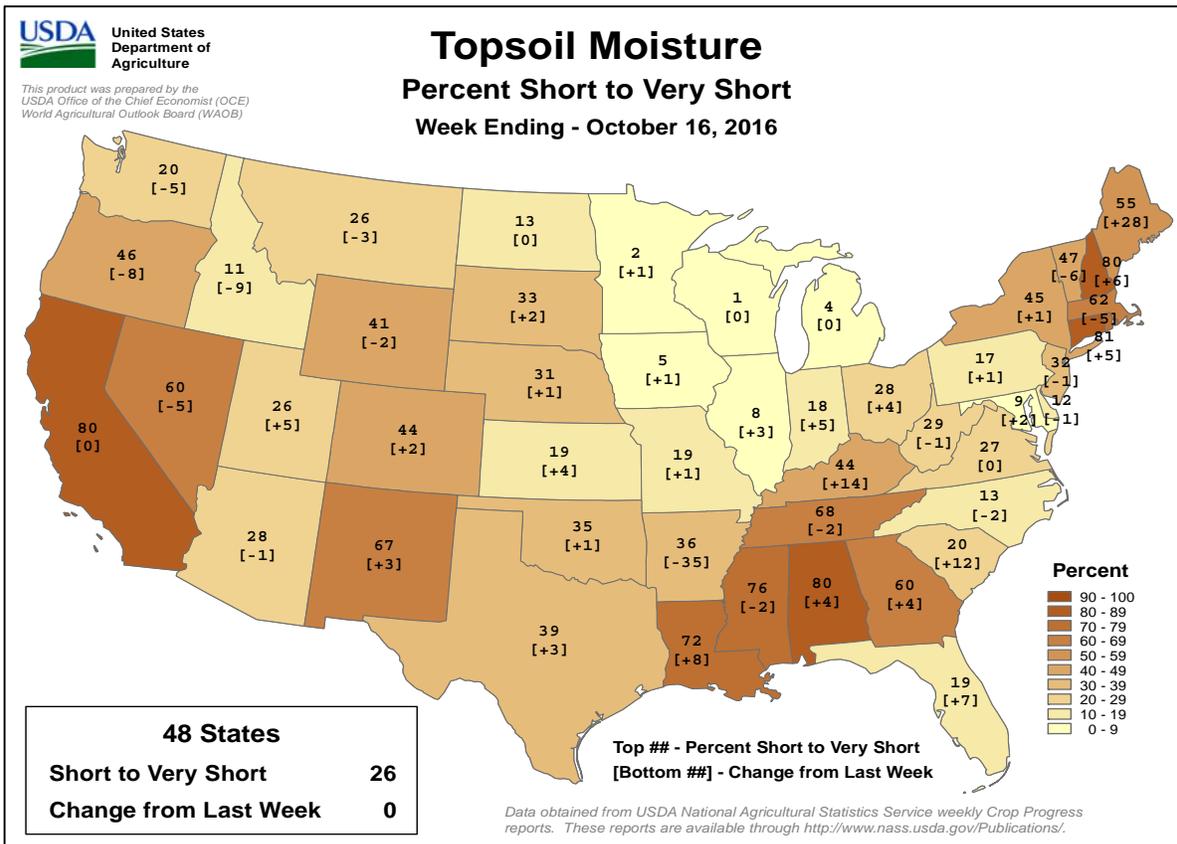
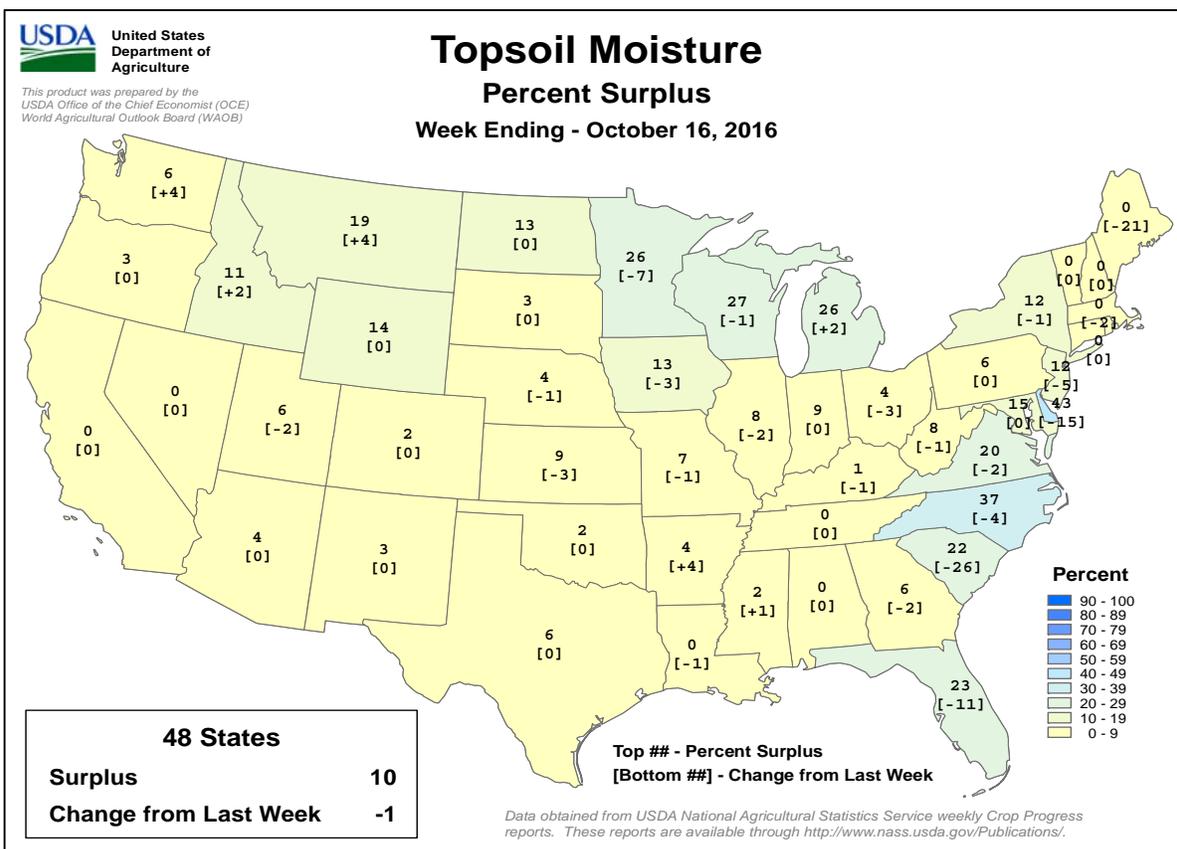
VP - Very Poor; P - Poor;  
 F - Fair;  
 G - Good; EX - Excellent  
 NA - Not Available  
 \* Revised



# Crop Progress and Condition

## Week Ending October 16, 2016

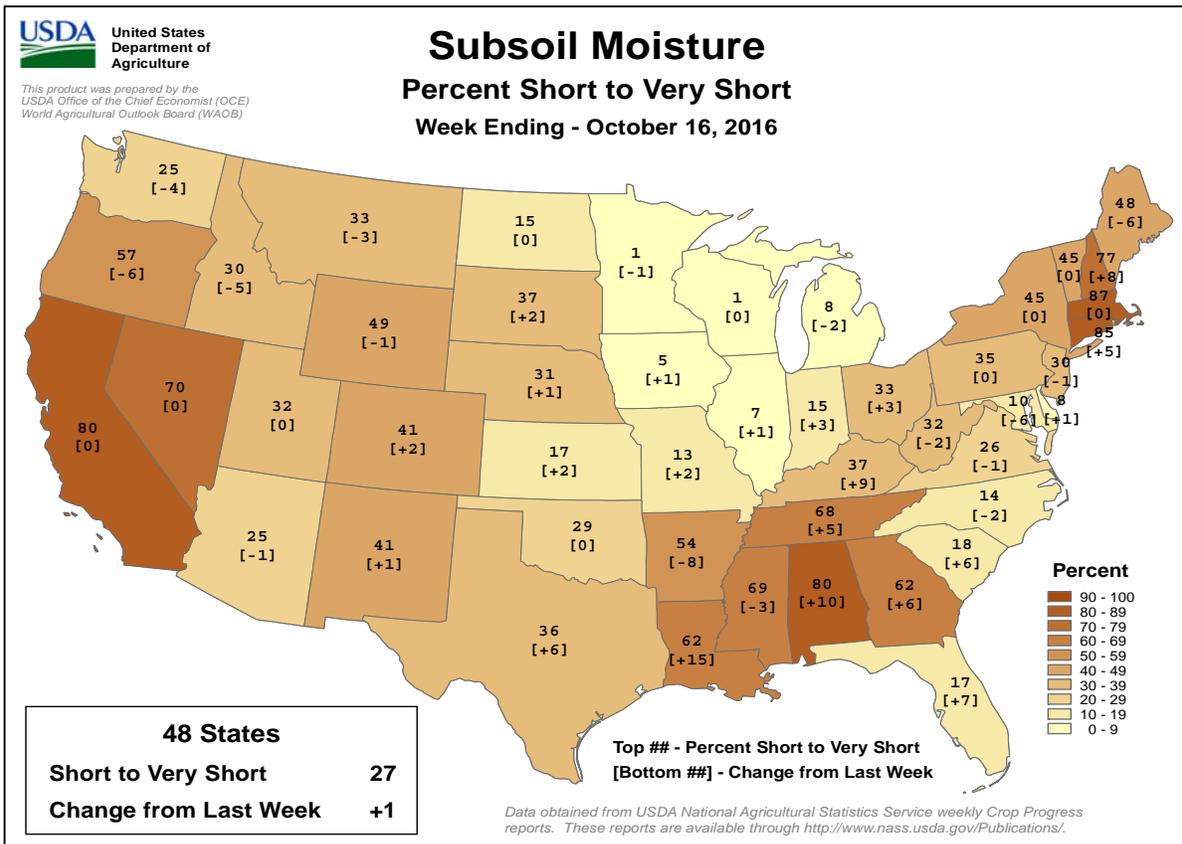
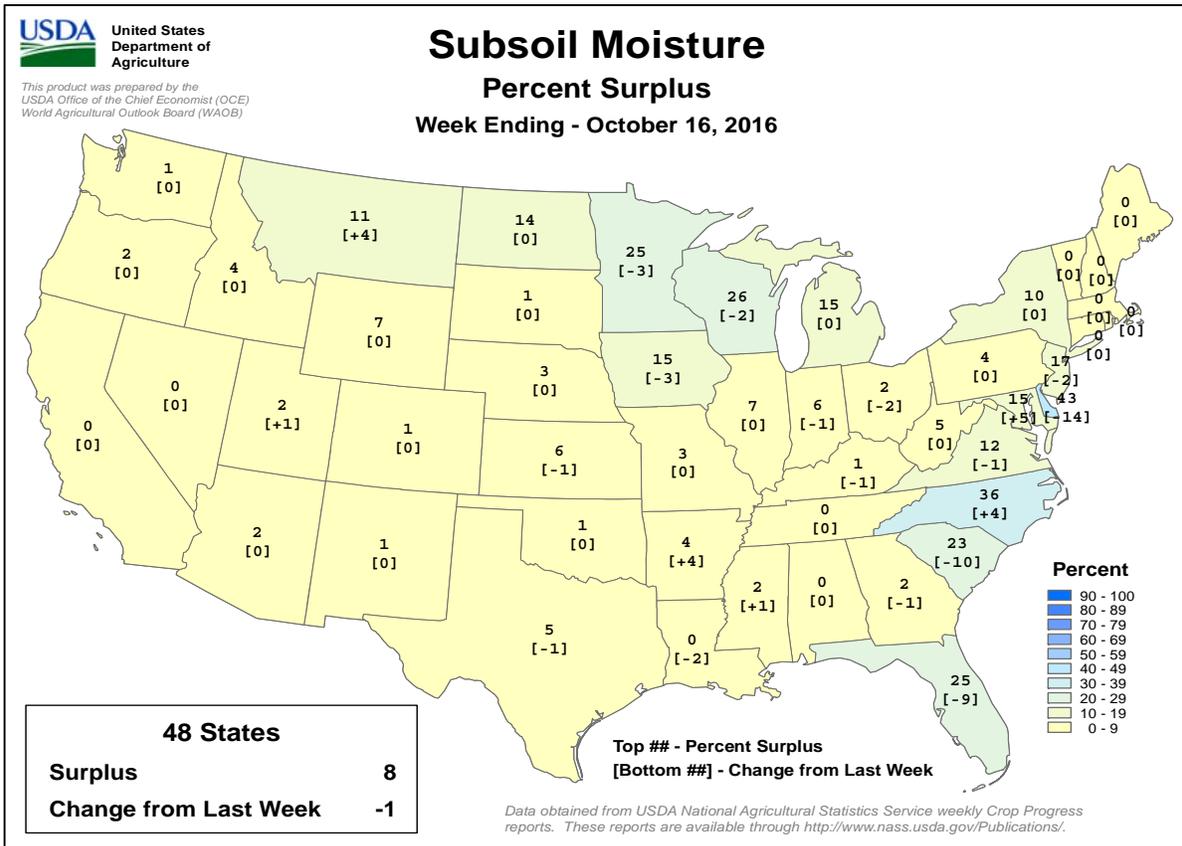
Weekly U.S. Progress and Condition Data provided by USDA/NASS



**Crop Progress and Condition**

**Week Ending October 16, 2016**

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



## October 13 ENSO Update

### EQ. Upper–Ocean Heat Anoms. (deg C) for 180–100W

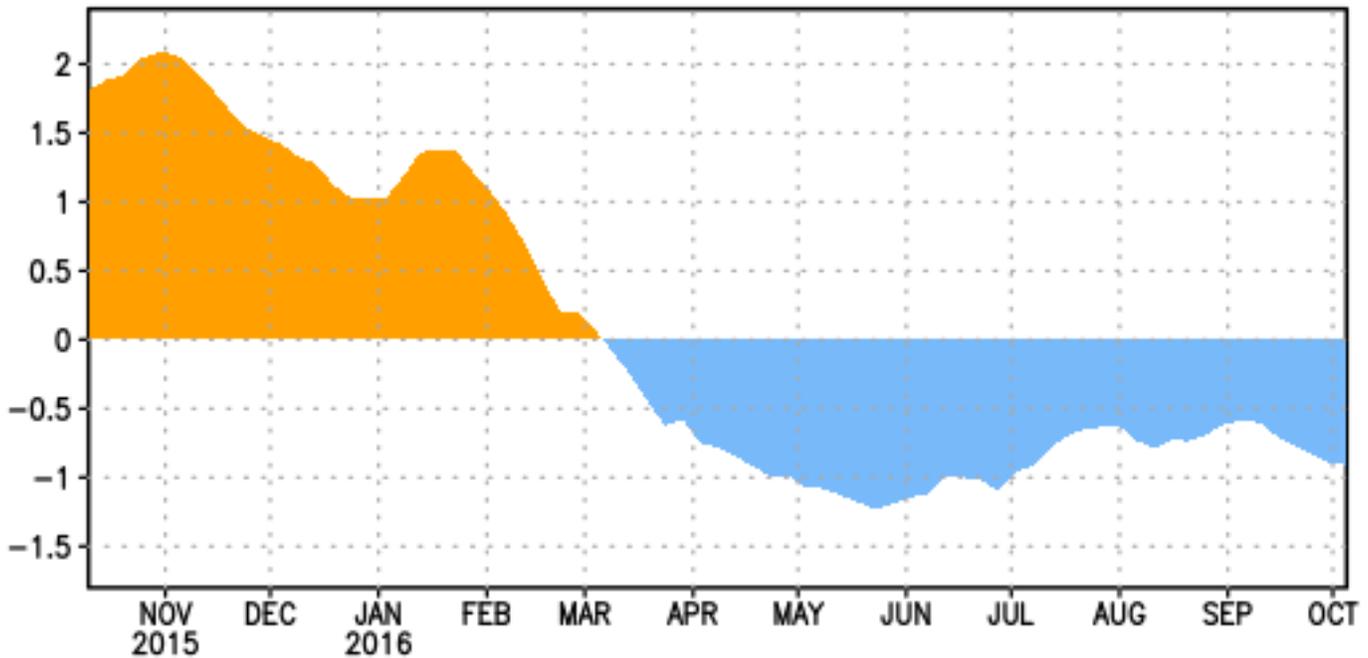


Figure 1: Area-averaged upper-ocean heat content anomaly ( $^{\circ}\text{C}$ ) in the equatorial Pacific ( $5^{\circ}\text{N}$ - $5^{\circ}\text{S}$ ,  $180^{\circ}$ - $100^{\circ}\text{W}$ ). The heat content anomaly is computed as the departure from the 1981-2010 base period pentad means.

## ENSO Alert System Status: **La Niña Watch**

**Synopsis: La Niña is favored to develop (~70% chance) during the Northern Hemisphere fall 2016 and slightly favored to persist (~55% chance) during winter 2016-17.**

ENSO-Neutral conditions were observed during September, with negative sea surface temperatures (SSTs) anomalies expanding across the eastern equatorial Pacific Ocean by early October. All of the Niño regions cooled considerably during late September and early October, with the latest weekly value of Niño-3.4 index at  $-0.9^{\circ}\text{C}$ . Subsurface temperature anomalies also decreased toward the end of the month (Fig. 1), reflecting the strengthening of below-average temperatures at depth in the east-central equatorial Pacific. Atmospheric anomalies across the equatorial Pacific edged toward La Niña during September, with a stronger tendency toward La Niña late in the month. The traditional Southern Oscillation index and the equatorial Southern Oscillation index were positive. The lower-level winds were near average across most of the basin during the month, but enhanced easterlies were becoming more persistent west of the International Date Line. Upper-level winds were anomalously westerly near and just east of the International Date Line. Convection was weakly suppressed over the central tropical Pacific and was more enhanced over Indonesia compared to last month. Overall, the combined ocean and atmosphere system reflects ENSO-Neutral during September, but are more clearly trending toward La Niña conditions.

The multi-model averages favor borderline Neutral-La Niña

conditions (3-month average Niño-3.4 index less than or equal to  $-0.5^{\circ}\text{C}$ ) persisting during the Northern Hemisphere fall and continuing into the winter. Because of the recent cooling in the Niño-3.4 region and signs of renewed atmospheric coupling, the forecaster consensus now favors the formation of a weak La Niña in the near term, becoming less confident that La Niña will persist through the winter. In summary, La Niña is favored to develop (~70% chance) during the Northern Hemisphere fall 2016 and slightly favored to persist (~55% chance) during winter 2016-17 (click [CPC/IRI consensus forecast](#) for the chance of each outcome for each 3-month period).

This discussion is a consolidated effort of the National Oceanic and Atmospheric Administration (NOAA), NOAA's National Weather Service, and their funded institutions. Oceanic and atmospheric conditions are updated weekly on the Climate Prediction Center web site ([El Niño/La Niña Current Conditions and Expert Discussions](#)). Forecasts are also updated monthly in the [Forecast Forum](#) of CPC's Climate Diagnostics Bulletin. Additional perspectives and analysis are also available in an [ENSO blog](#). The next ENSO Diagnostics Discussion is scheduled for **10 November 2016**. To receive an e-mail notification when the monthly ENSO Diagnostic Discussions are released, please send an e-mail message to: [ncep.list.ens0-update@noaa.gov](mailto:ncep.list.ens0-update@noaa.gov).

# International Weather and Crop Summary

October 9-15, 2016

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

## HIGHLIGHTS

**EUROPE:** Cool, unsettled weather prevailed over much of Europe, improving soil moisture in the west while maintaining adequate to abundant moisture supplies in eastern portions of the continent.

**WESTERN FSU:** Additional moderate to heavy rain alleviated lingering drought, while showers sustained good to excellent conditions for wheat establishment over Russia and eastern Ukraine.

**MIDDLE EAST:** Dry weather maintained a rapid pace of summer crop harvesting and winter grain planting.

**NORTHWESTERN AFRICA:** Widespread, locally heavy showers provided soil moisture for early winter grain sowing.

**SOUTH ASIA:** The withdrawal of the monsoon accelerated in India, ushering in beneficially drier weather for maturing summer (kharif) crops.

**EASTERN ASIA:** Dry, cool weather aided maturation and harvesting of summer crops in northeastern and southern China, while showers maintained good soil moisture for winter crop germination on the North China Plain and Yangtze Valley.

**SOUTHEAST ASIA:** Typhoon Sarika cut across the northern Philippines, bringing unfavorably wet weather and flooding to mature corn and rice.

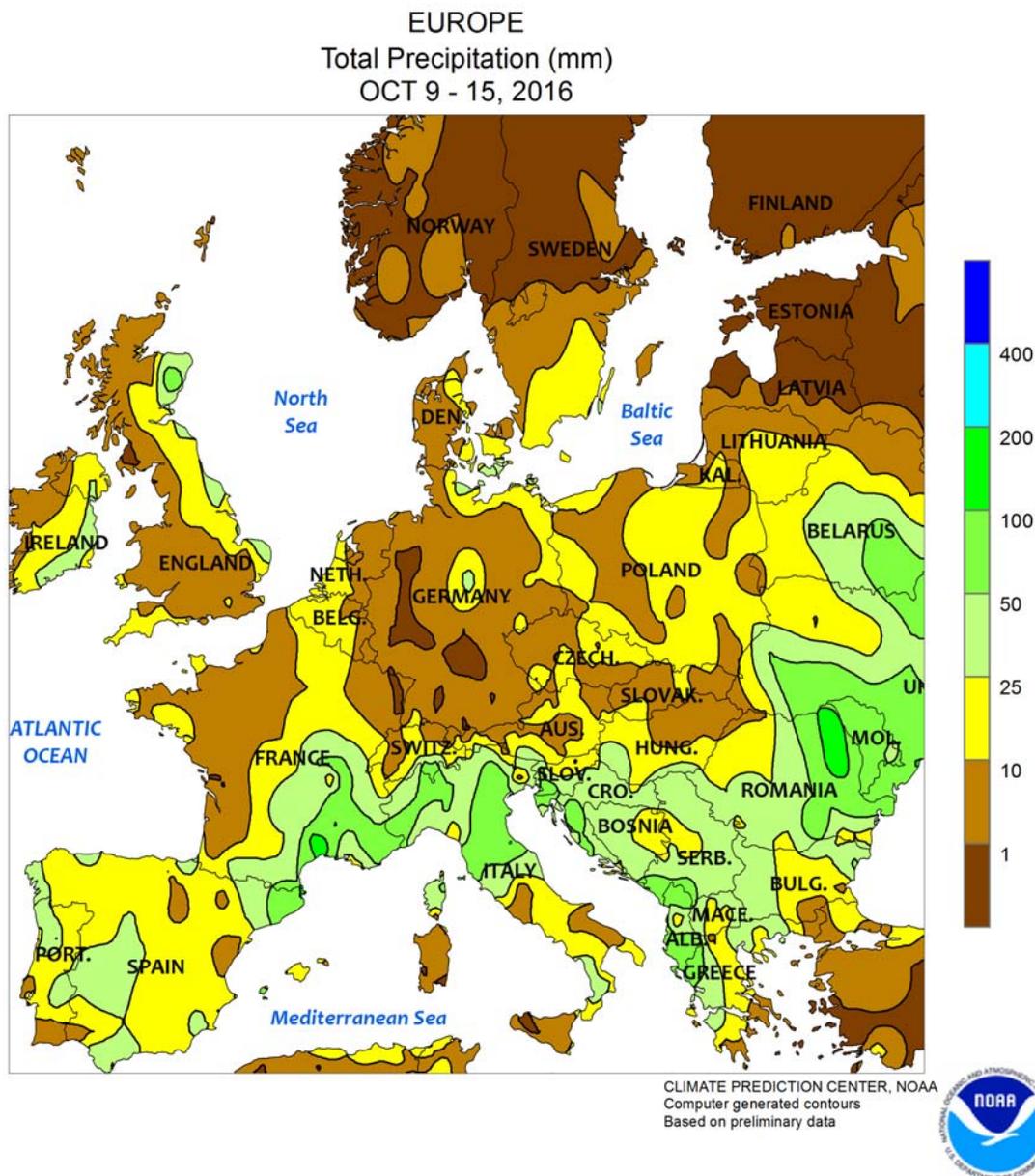
**AUSTRALIA:** Drier weather overspread most of the wheat belt, benefiting immature winter crops and helping summer crop sowing.

**ARGENTINA:** Rain benefited emerging summer grains and oilseeds.

**BRAZIL:** Beneficial rain continued in the south, but drier conditions prevailed in key central production areas.

**MEXICO:** Seasonably drier conditions favored maturing summer crops.



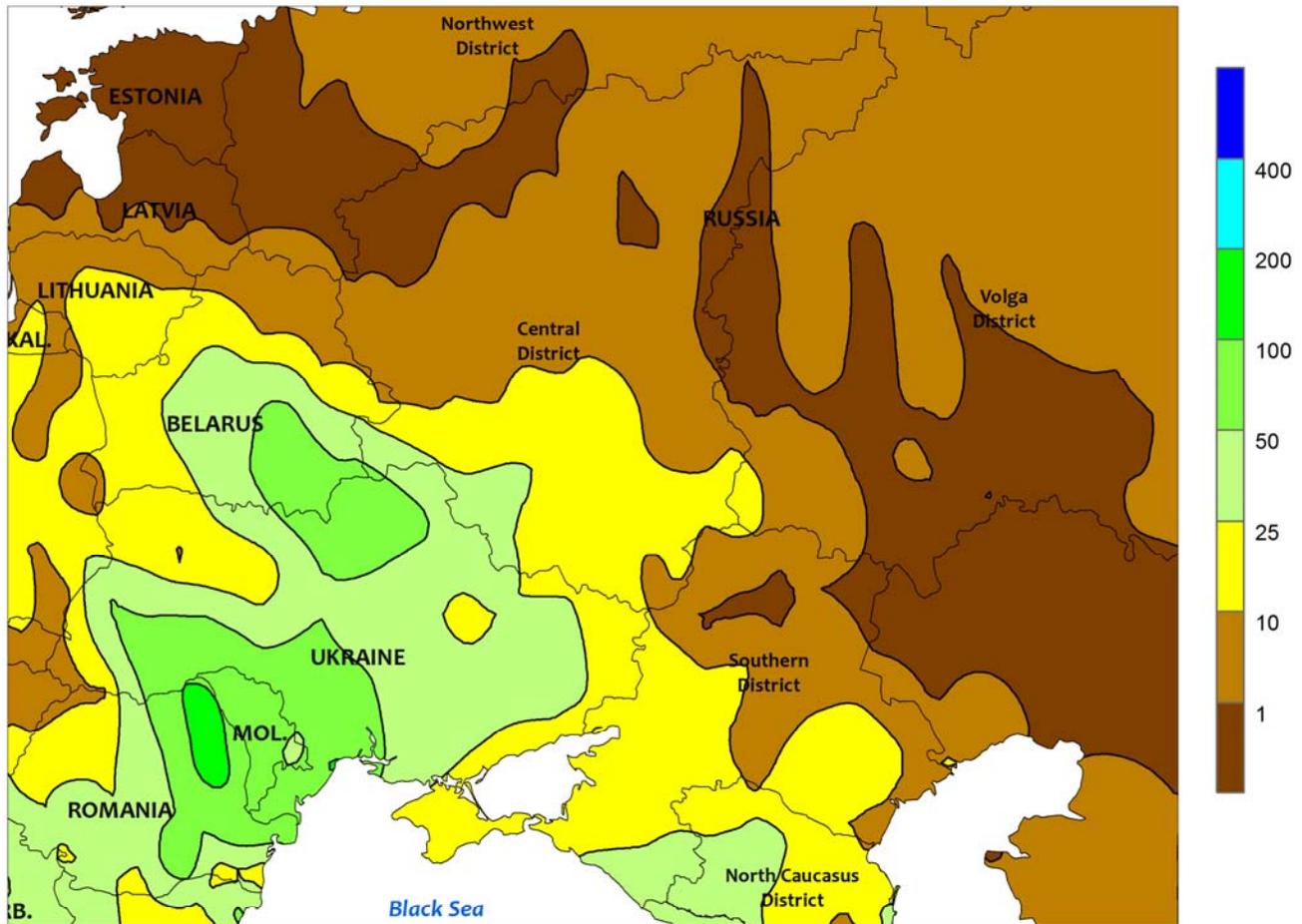


**EUROPE**

Cool, unsettled weather prevailed over much of Europe, improving soil moisture in western growing areas while maintaining adequate to abundant moisture reserves in eastern portions of the continent. In Spain and Portugal, the cool-season's first widespread rainfall (10-50 mm) conditioned soils for upcoming winter grain planting. Meanwhile, light to moderate showers (1-20 mm) over France, Germany, and southeastern England improved topsoil moisture, though longer-term deficits remain; 90-day rainfall has totaled 25 to 70 percent of normal in many of these same locales, locally less in central France. In Poland and the southern Baltic

States, 10 to 22 mm of rain sustained favorable conditions for winter wheat and rapeseed establishment. Farther south, moderate to heavy rain (10-80 mm, locally more) maintained adequate to abundant moisture supplies for winter crop development in the Balkans. In Italy, widespread showers and thunderstorms (10-75 mm) boosted moisture supplies for early winter grain planting, though the wet weather slowed corn and sunflower harvesting. Temperatures for the week averaged 2 to 5°C below normal over most of Europe, though readings were not low enough to end to the growing season for winter crops.

WESTERN FSU  
Total Precipitation (mm)  
OCT 9 - 15, 2016



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

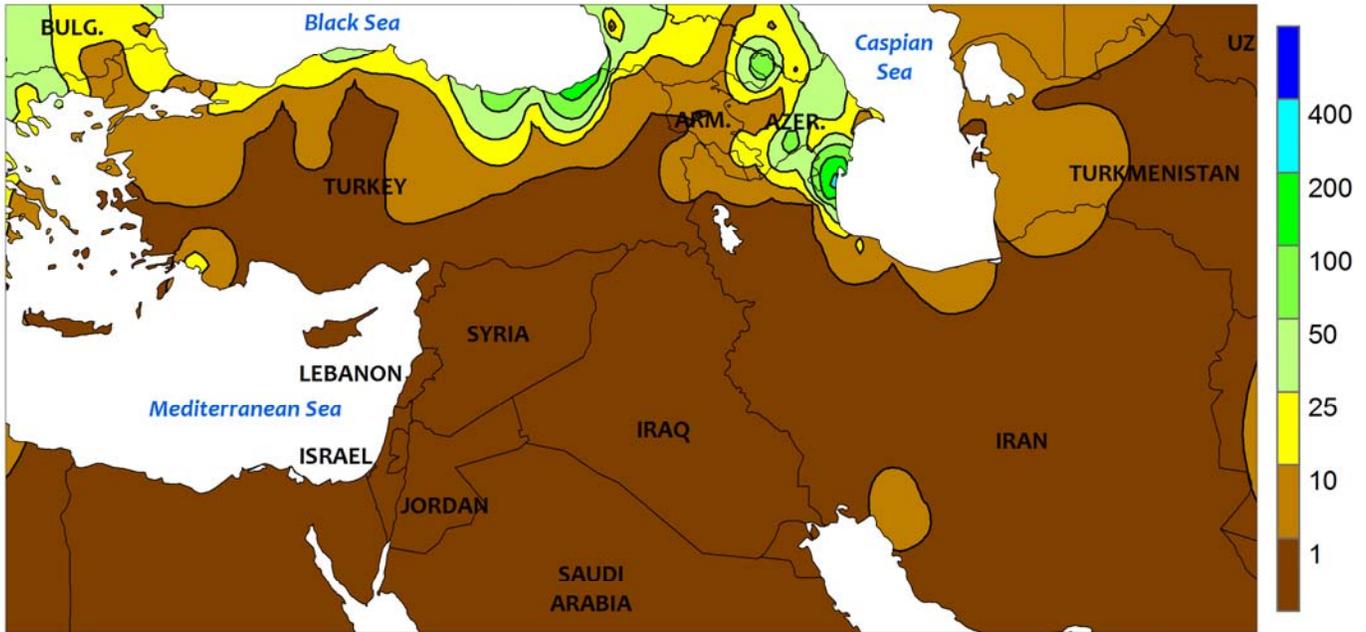


**WESTERN FSU**

Additional heavy rain in the west contrasted with dry weather in eastern wheat areas. A slow-moving storm system produced moderate to heavy rainfall (10-90 mm) over the western half of the region, alleviating short-term drought over central and western Ukraine but saturating or flooding low-lying fields. Showers from this system (10-40 mm) also spread into southern

Russia, maintaining good to excellent conditions for winter wheat establishment. Meanwhile, sunny skies promoted winter wheat development across west-central Russia. The season's first freeze (-7 to -1°C) was reported from Belarus and northern Ukraine into central Russia, while readings remained above freezing in primary winter wheat areas located across the south.

MIDDLE EAST  
Total Precipitation (mm)  
OCT 9 - 15, 2016



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

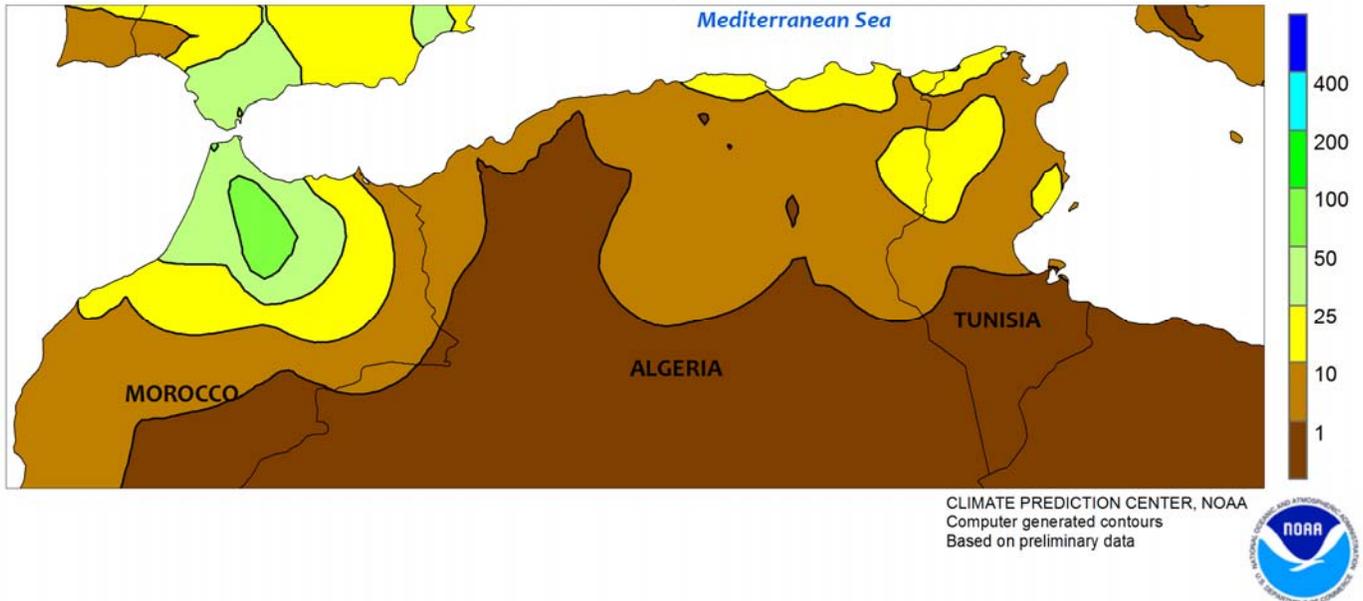


MIDDLE EAST

A third consecutive week of dry weather favored fieldwork across northern growing areas. In particular, sunny skies and above-normal temperatures (1-4°C above normal) in Turkey and Iran accelerated cotton harvesting

as well as winter grain planting. Soil moisture remained overall favorable for wheat and barley establishment following locally heavy rainfall toward the end of September.

NORTHWESTERN AFRICA  
Total Precipitation (mm)  
OCT 9 - 15, 2016

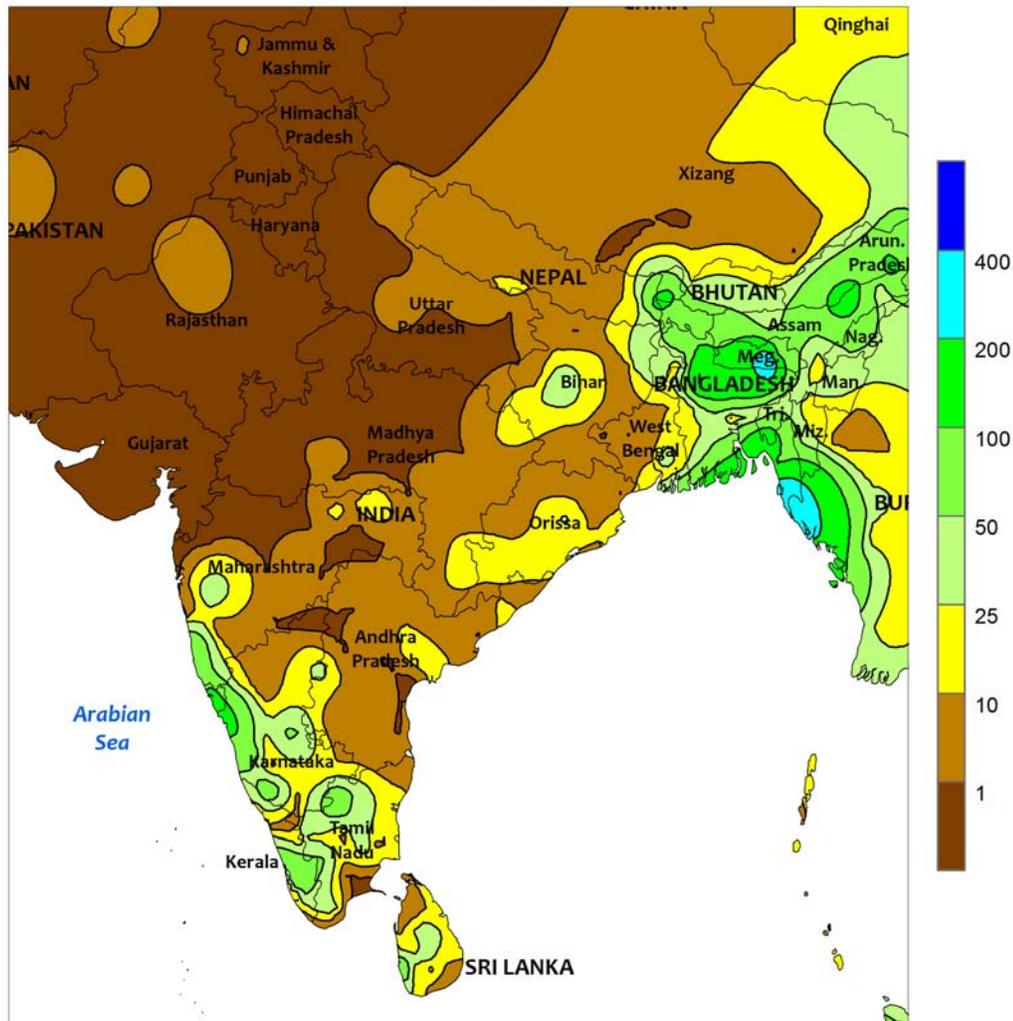


**NORTHWESTERN AFRICA**

Early cool-season rain expanded across the region, providing soil moisture for winter grain planting. Rain was heaviest (20-80 mm) in northern Morocco, a key wheat area which suffered extreme drought last growing season. Lighter showers (2-20 mm) were reported in Algeria, which also suffered from moderate to severe drought last year.

Although the median planting date for wheat is in the latter half of November in these areas, the early-season rainfall conditioned soils and may have encouraged initial planting efforts. Widespread showers (3-30 mm) continued in Tunisia, where producers typically sow wheat and barley during the first half of November.

SOUTH ASIA  
Total Precipitation (mm)  
OCT 9 - 15, 2016



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

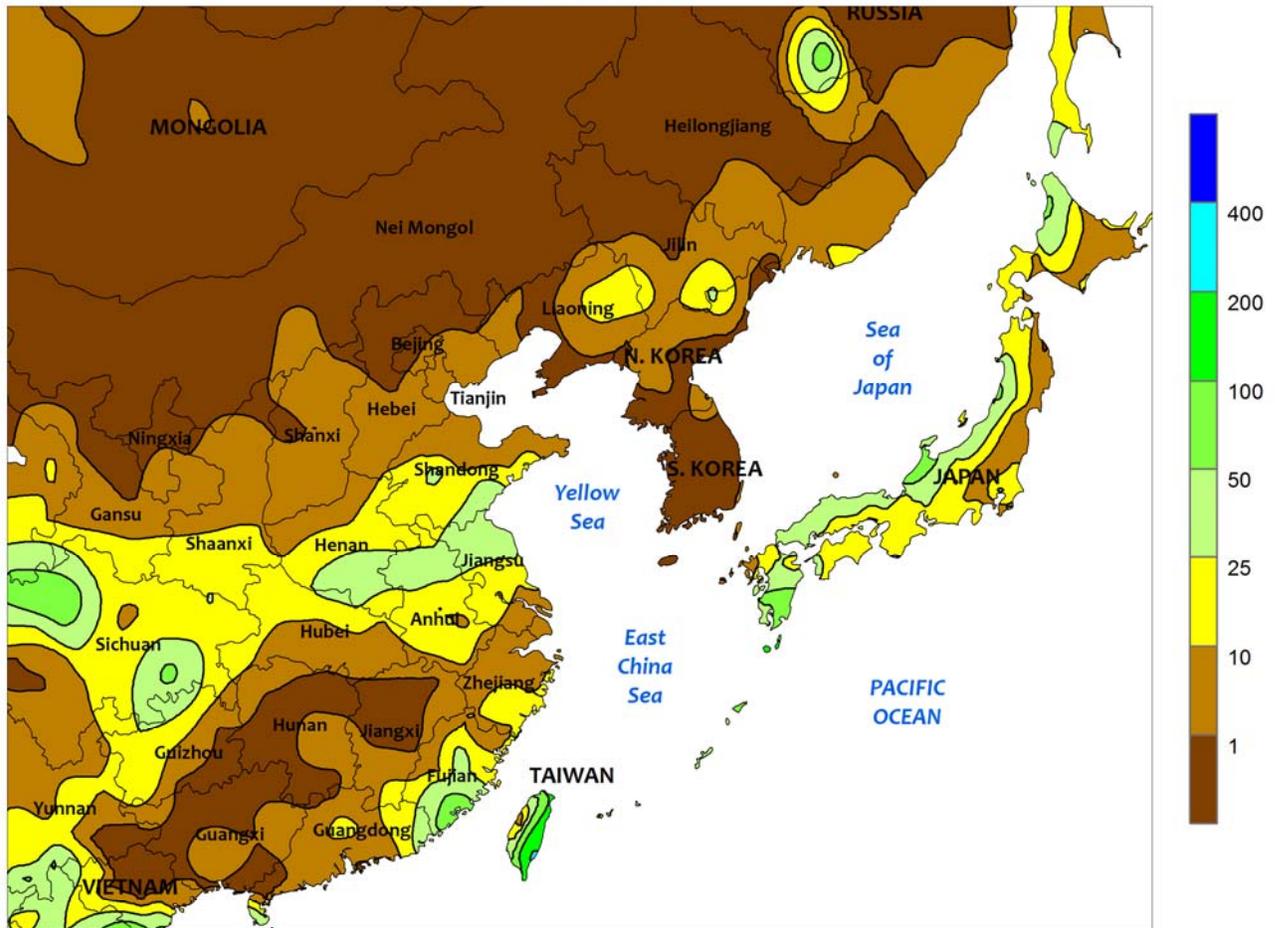


**SOUTH ASIA**

The pace of the withdrawing monsoon quickened in India. After summer rainfall lingered two or more weeks longer than usual in many parts of northern India, most of the country was rain-free over the last week. Rainfall was light (less than 10 mm) and scattered in eastern and southern sections, with the

heaviest showers (over 50 mm) located in the seasonably wetter areas along the southwestern coast and far eastern states. The onset of drier conditions aided summer (kharif) crop maturation and harvesting as well as aiding fieldwork in preparation for winter (rabi) crop planting.

EASTERN ASIA  
 Total Precipitation (mm)  
 OCT 9 - 15, 2016



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

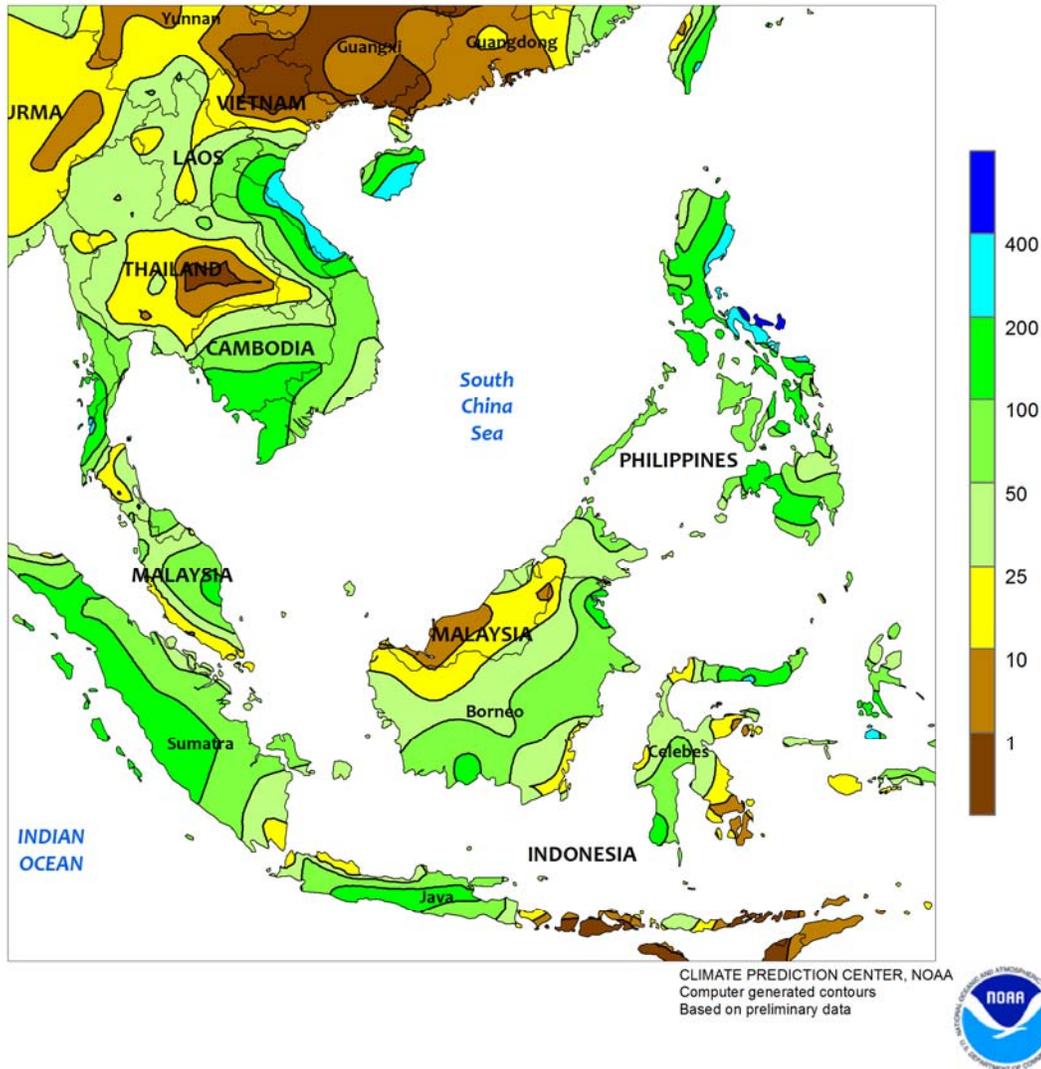


**EASTERN ASIA**

Mostly dry weather in China aided summer crop harvesting and was particularly favorable in the northeast. After several weeks of late-season rainfall (150 mm or more over the last 45 days) in northeastern China, the drier weather eased excessive wetness for mature corn and soybeans. In addition, colder-than-usual weather (up to 3°C below normal) also aided drydown of maturing crops. In southern China, mostly dry

weather benefited late-season rice harvesting as well as winter rapeseed planting in southern sections of the Yangtze Valley. Meanwhile, a narrow band of showers extended along northern sections of the Yangtze and onto the North China Plain. Rainfall amounts between 20 and 50 mm slowed fieldwork but maintained favorable soil moisture for winter crop germination and establishment.

SOUTHEAST ASIA  
Total Precipitation (mm)  
OCT 9 - 15, 2016

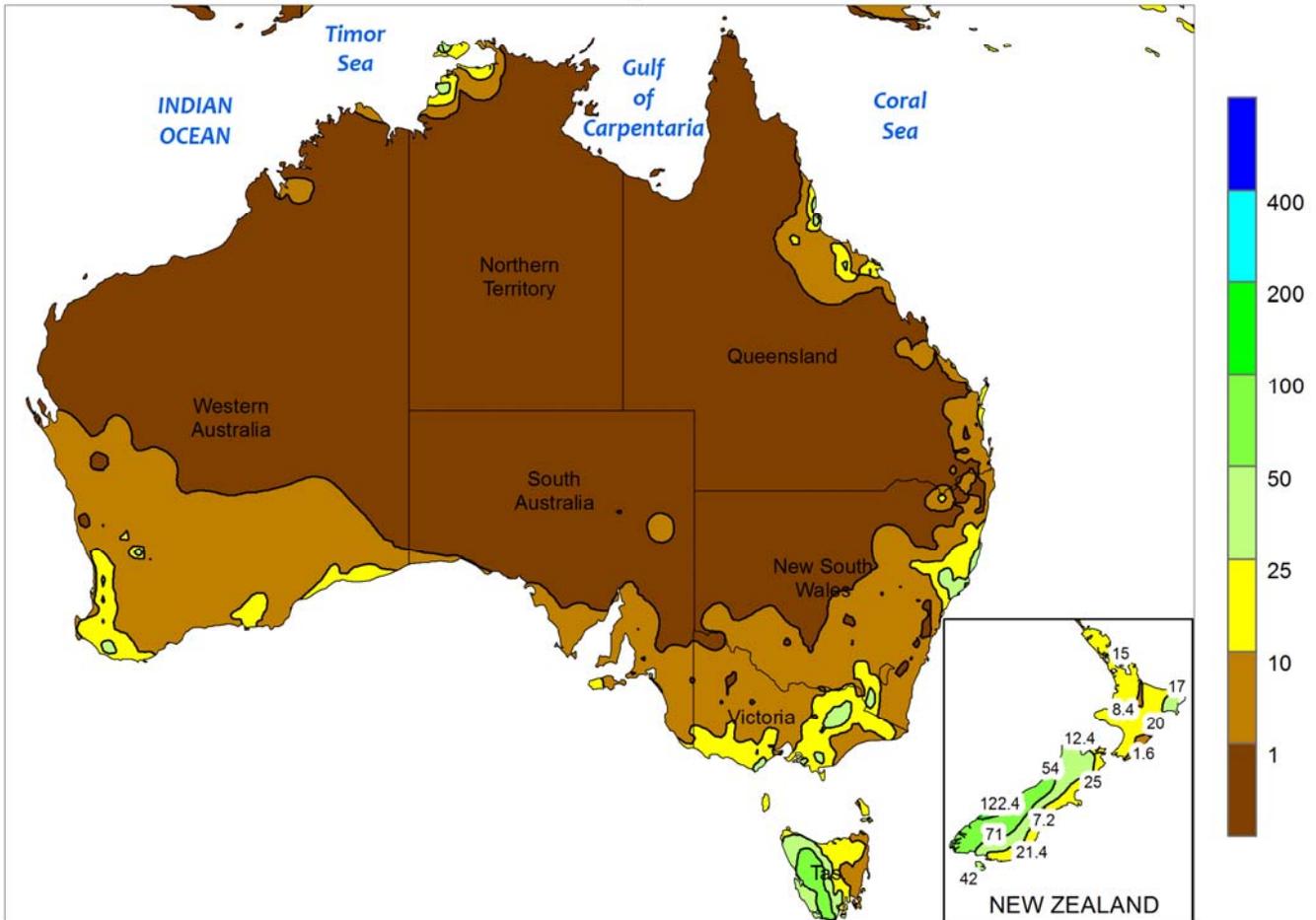


**SOUTHEAST ASIA**

Typhoon Sarika crossed the northern Philippines late in the period and brought flooding rainfall to eastern Luzon. Rainfall totals exceeded 200 mm (locally approaching 600 mm) in eastern districts of Luzon, where corn was mature and ready for harvest. Rice areas in western Luzon received less rainfall (generally below 100 mm) but the wet weather was also unwelcome for harvesting. Meanwhile, Sarika’s outer rainfall bands enhanced monsoon showers across Indochina, producing 300 to over 400

mm in minor rice areas of north-central Vietnam. Meanwhile in Thailand, a turn to more easterly winds brought seasonably drier weather to ripening rice in the Northeast Region, with continued light to moderate showers (10-50 mm) boosting irrigation supplies in central and northern areas. Farther south, widespread, unseasonably heavy showers (over 50 mm) continued in Malaysia and Indonesia, slowing oil palm harvesting but bringing 6-month rainfall totals near to normal.

AUSTRALIA  
Total Precipitation (mm)  
OCT 9 - 15, 2016



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

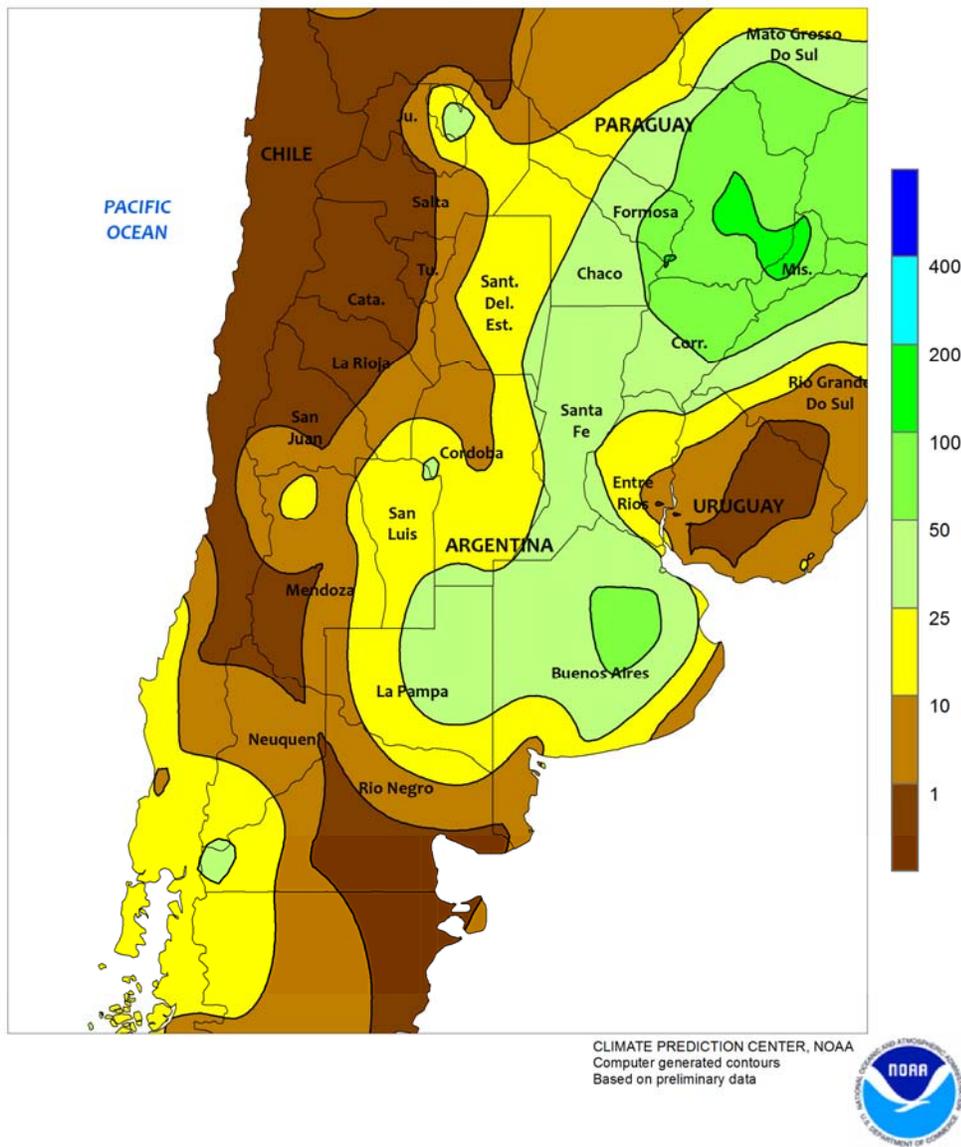


**AUSTRALIA**

In Western Australia, mostly dry weather maintained good to excellent yield prospects for immature wheat, barley, and canola. In the wake of persistent heavy rains, scattered, generally light showers (2-10 mm) fell across much of southeastern Australia, benefiting filling wheat and other immature winter crops. The drier weather helped ease local flooding too, but a pocket of heavier rain (10-30 mm) in eastern Victoria and extreme southern New South Wales allowed flood waters to only slowly recede in these areas.

Farther north, dry weather in northern New South Wales and southern Queensland favored filling to maturing winter wheat and aided summer crop planting. The combination of mostly sunny skies and abundant moisture supplies promoted summer crop germination and emergence as well. Temperatures averaged near to below normal (up to 2°C below normal) in southern and eastern Australia and near to slightly above normal (up to 1°C above normal) in Western Australia.

ARGENTINA  
Total Precipitation (mm)  
OCT 9 - 15, 2016

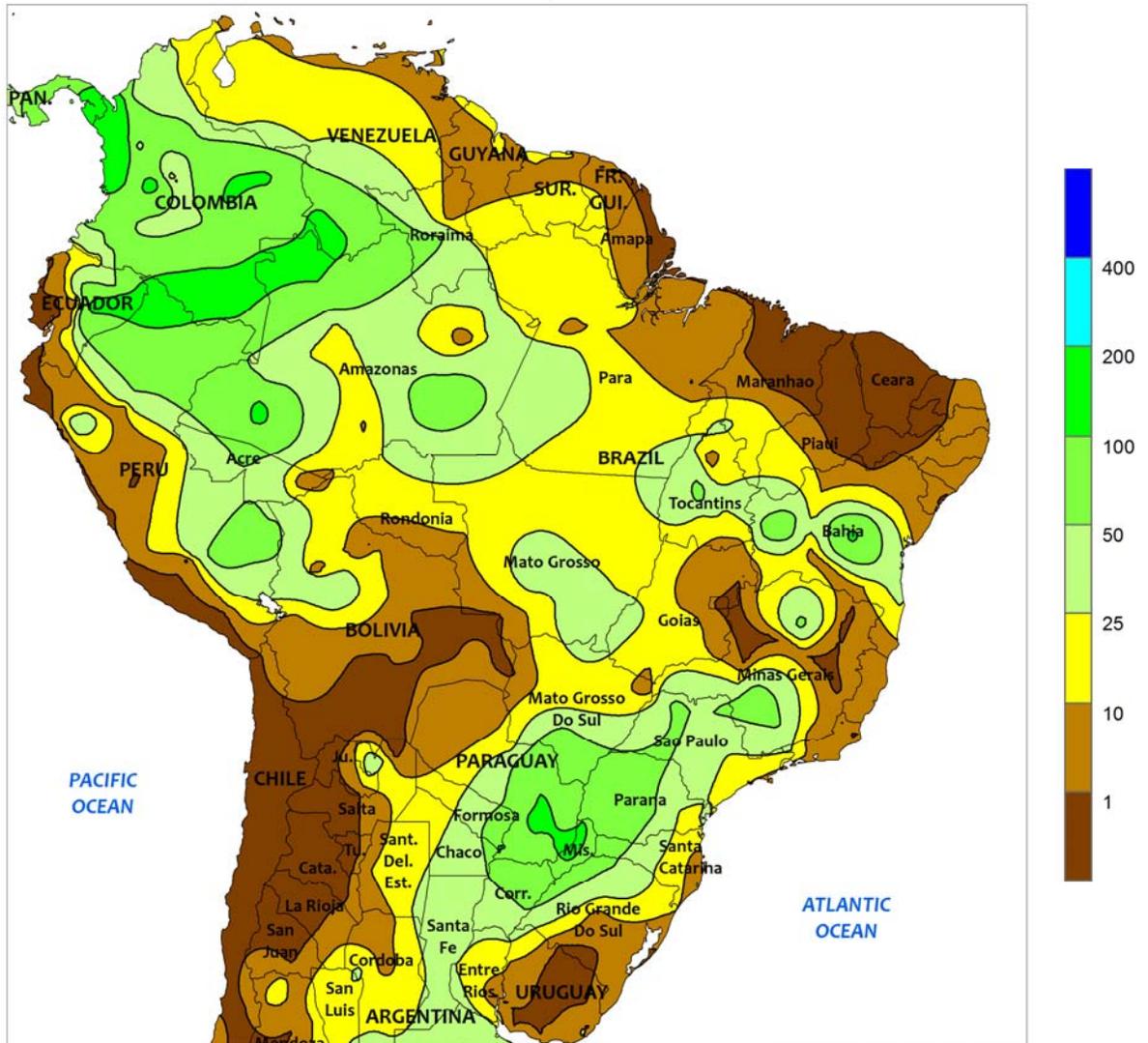


**ARGENTINA**

Widespread, locally heavy showers benefited emerging summer grains and oilseeds. Rainfall totaled more than 25 mm (over 50mm locally) over large sections of La Pampa and Buenos Aires, extending northeastward through eastern Chaco and Formosa and Corrientes. Other locations received lighter amounts, including western farming areas (Cordoba to Salta and western Chaco and Formosa) where moisture was limited for uniform germination of summer crops. Weekly

temperatures averaged 1°C or more above normal in most areas, with daytime highs reaching the middle 20s (degrees C) in central Argentina and the middle and upper 30s in the far north. No freezes were recorded in major agricultural areas. According to the government of Argentina, sunflowers were 37 percent planted as of October 13, 15 points ahead of last year's pace. Corn planting was also underway and soybean planting had reportedly begun in Cordoba.

BRAZIL  
Total Precipitation (mm)  
OCT 9 - 15, 2016



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

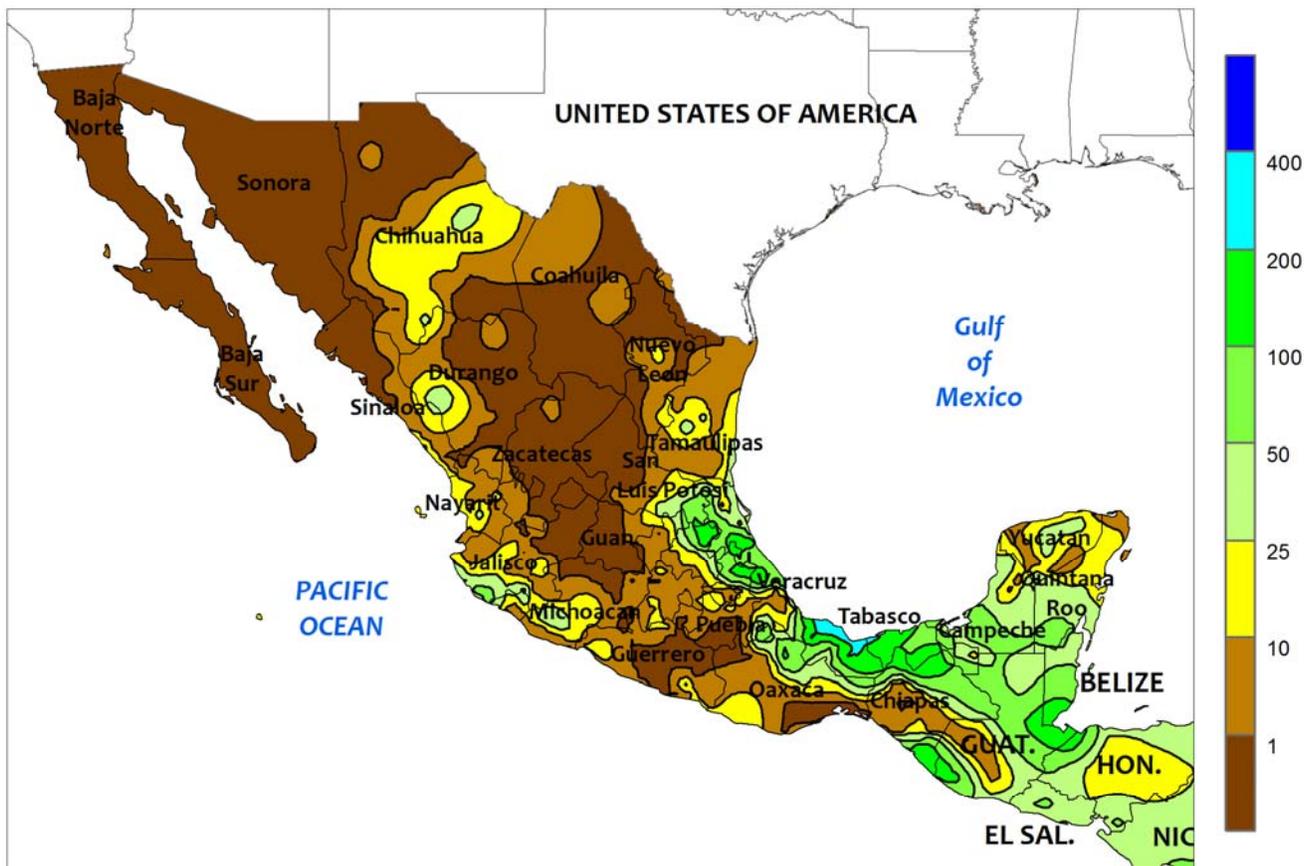


**BRAZIL**

Locally heavy showers increased moisture for germination and establishment of summer crops in southern production areas. Rainfall totaling 25 to 100 mm stretched from southern Minas Gerais to northern Rio Grande do Sul, reaching as far west as eastern Paraguay, with other major farming areas receiving at least 10 mm. According to the government of Parana, first-crop corn and soybean planting reached 82 and 37 percent complete, respectively, as of October 10; in addition, wheat was 64 percent planted. Similarly, wheat was reportedly 80

percent filling to mature in Rio Grande do Sul as of October 13; corn planting had reportedly reached 60 percent. Farther north, light to moderate rain (10-25 mm, locally higher) fell from Mato Grosso eastward through Bahia, keeping topsoils moist for planting soybeans, first-crop corn, and cotton. However, above-normal temperatures (1-3°C above normal, with daytime highs in excess of 35°C) maintained high losses through evaporative, losses and additional moisture is needed to ensure timely planting of first-crop corn and cotton.

MEXICO  
Total Precipitation (mm)  
OCT 9 - 15, 2016



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

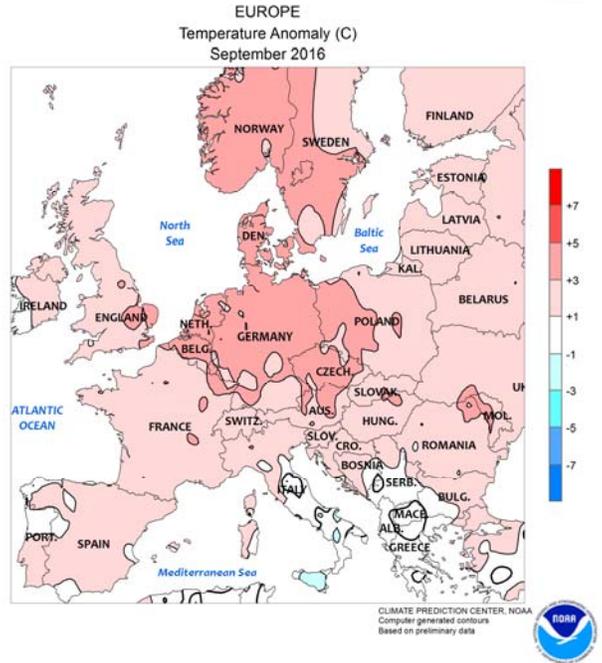
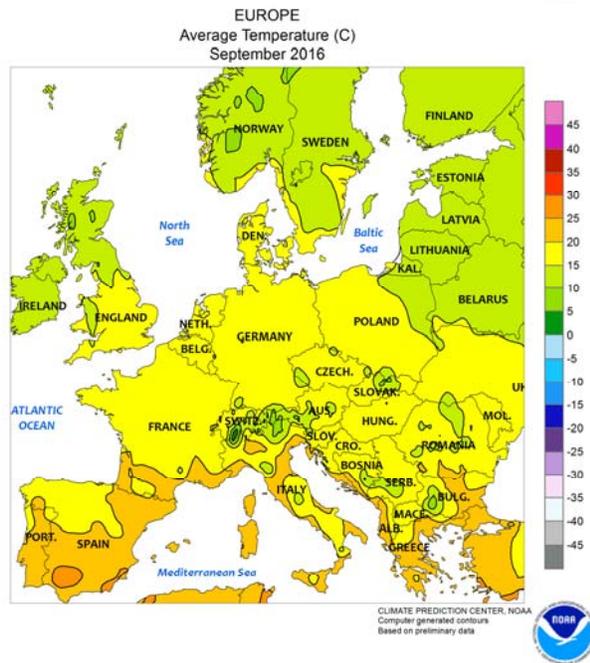
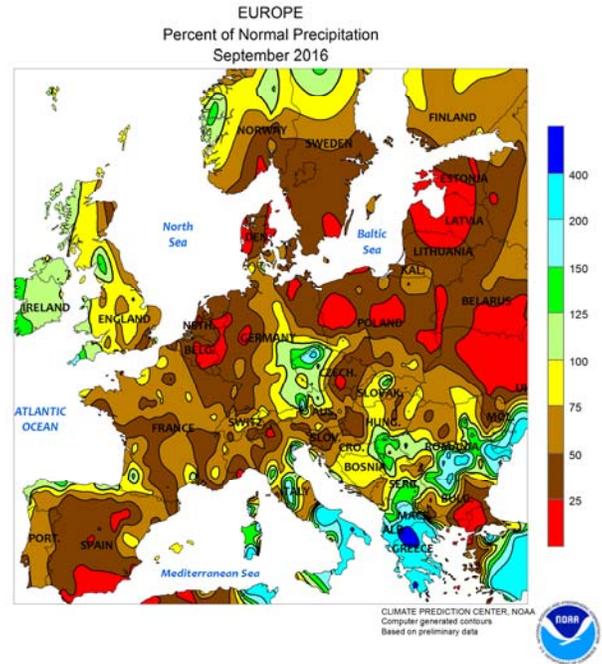
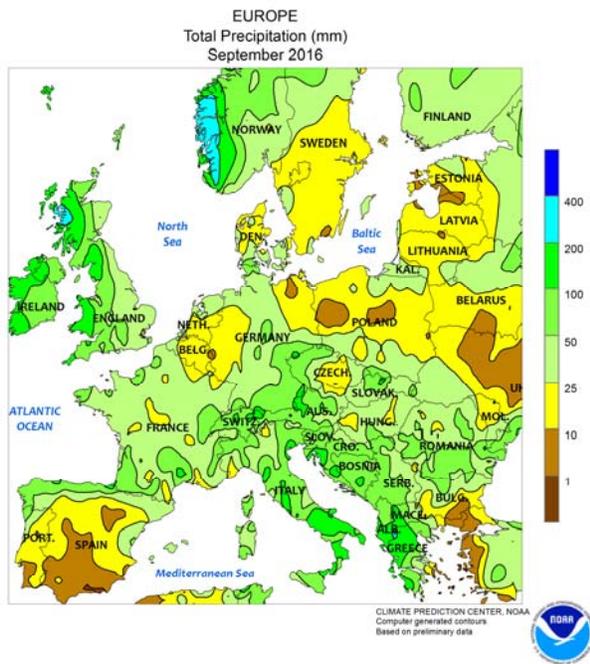


**MEXICO**

Seasonably drier conditions dominated much of the region. In southern Mexico, little to no rain fell across the southern plateau, where corn and other rain-fed summer crops were mostly in filling stages of development. Mostly dry weather also dominated northern Mexico as the monsoon continued to weaken; unseasonable warmth

(daytime highs approaching 40°C) maintained high moisture requirements of crops and livestock. In contrast, heavy showers (25-50 mm, locally exceeding 100 mm) provided a late-season boost in moisture for crops in the southern Gulf region (notably Veracruz and Tabasco) and the Yucatan Peninsula.

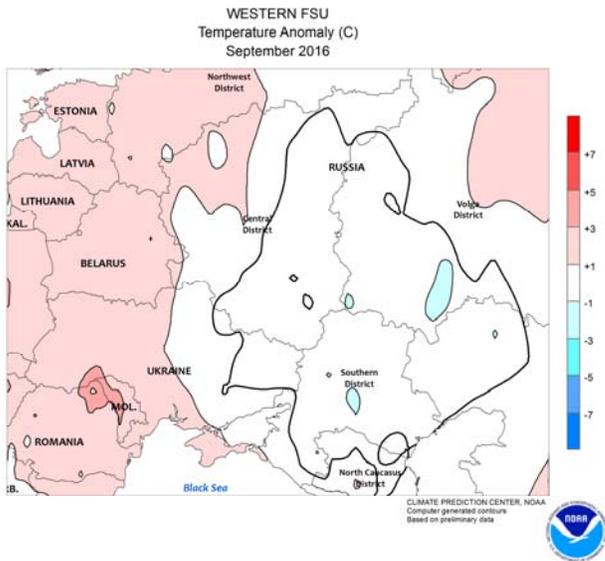
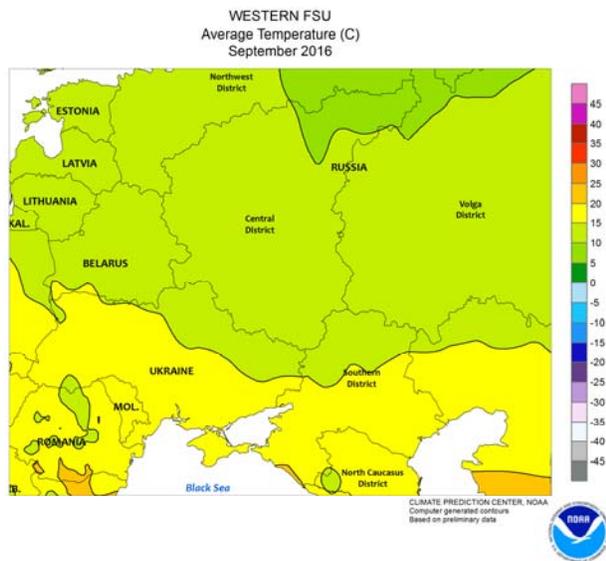
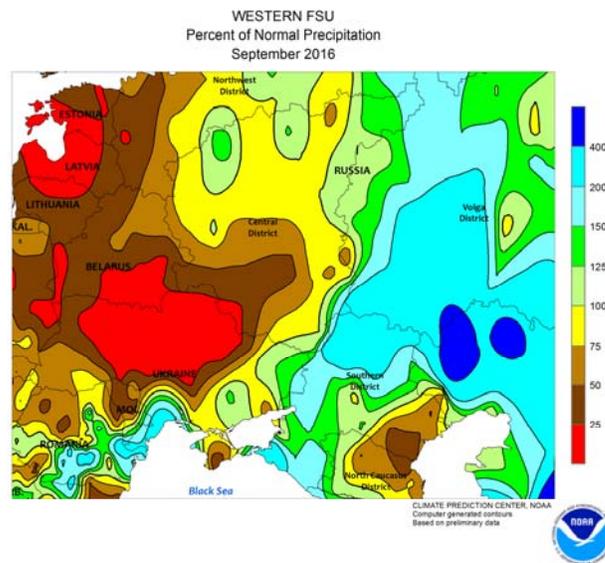
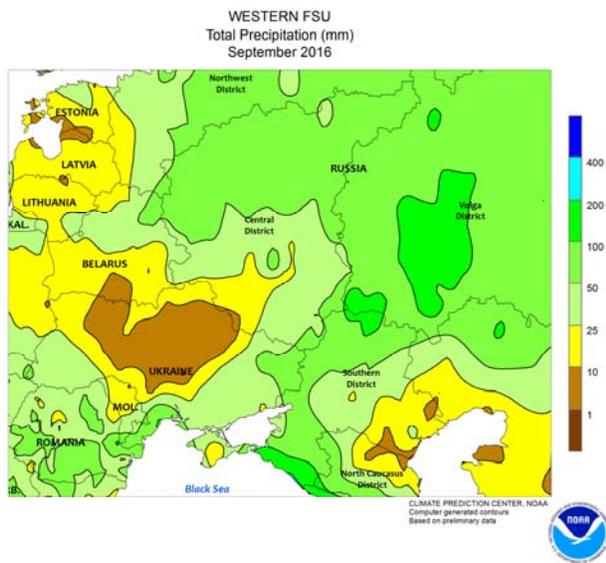
# September International Temperature and Precipitation Maps



## EUROPE

In September, drier-than-normal weather reduced soil moisture for winter crop planting and establishment across much of western and northern Europe. Rainfall totaled less than 50 percent of normal over many of the continent's primary wheat and rapeseed areas, and locally less than 25 percent of normal from northeastern France into north-central Poland and the Baltic States. On the other hand,

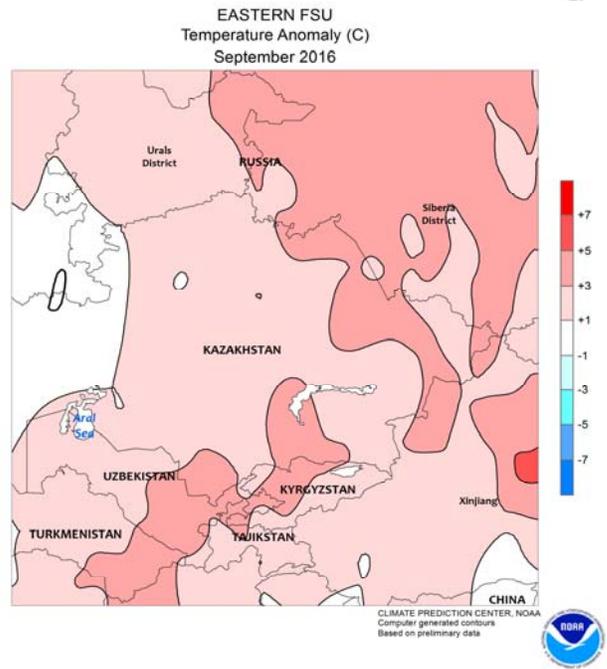
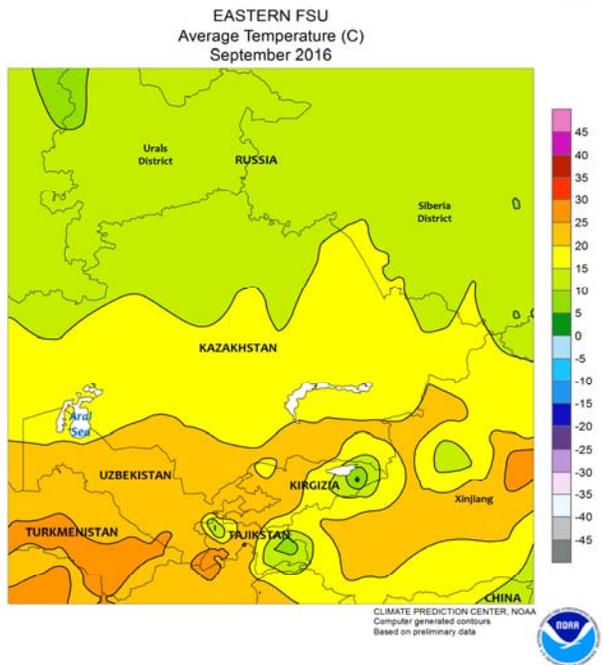
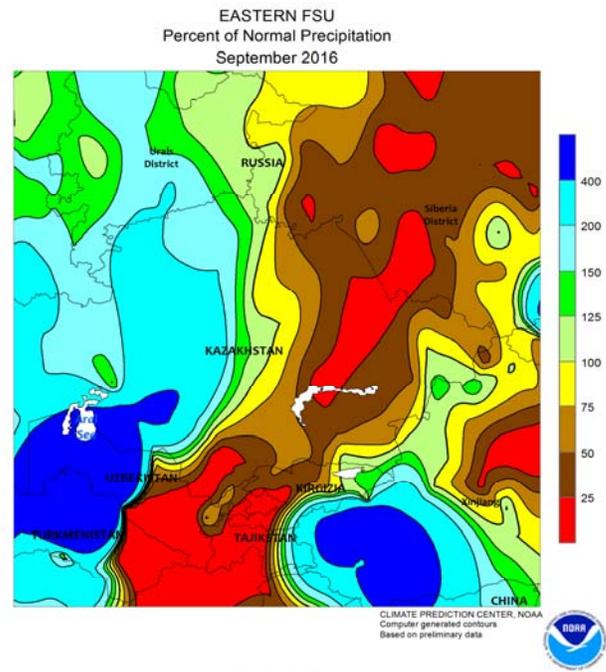
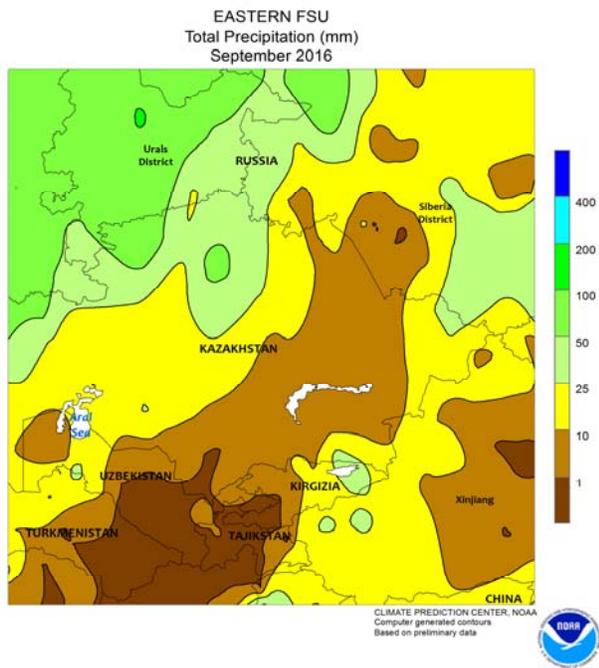
small grain and summer crop harvesting proceeded without interruption in these same growing areas. Near- to above-normal rainfall in southeastern Europe (locally more than 200 percent of normal) improved moisture supplies for winter wheat and rapeseed emergence, but the rain was too late to aid drought-afflicted summer crops in the lower Danube River Valley.



**WESTERN FSU**

Intensifying late-summer drought in the west contrasted with favorable conditions for winter wheat in southern and eastern growing regions. Drought was prevalent from north-central Ukraine into southeastern Belarus, where monthly rainfall was a

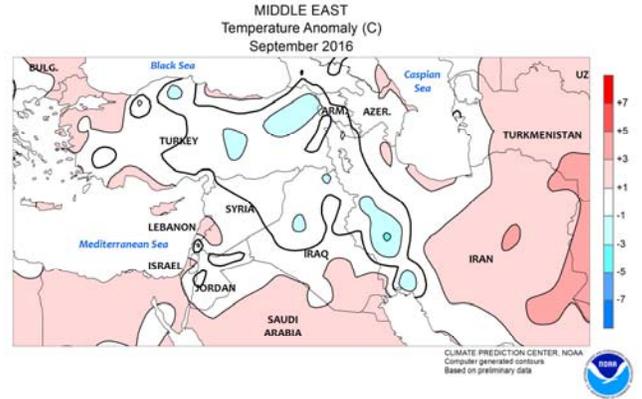
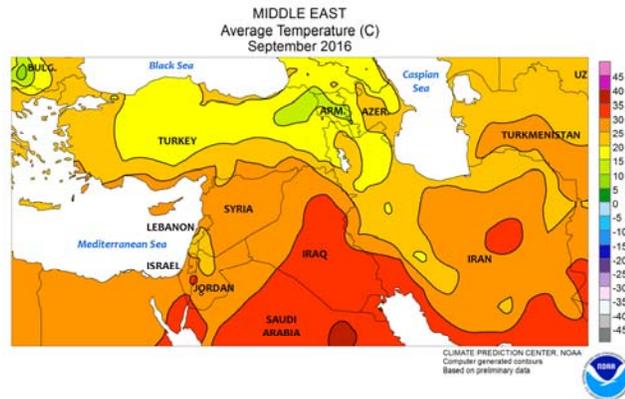
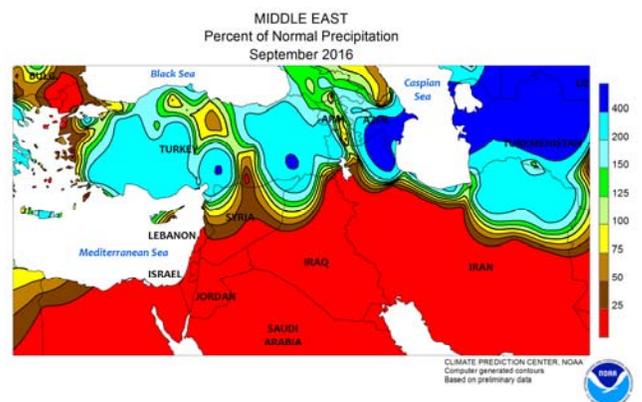
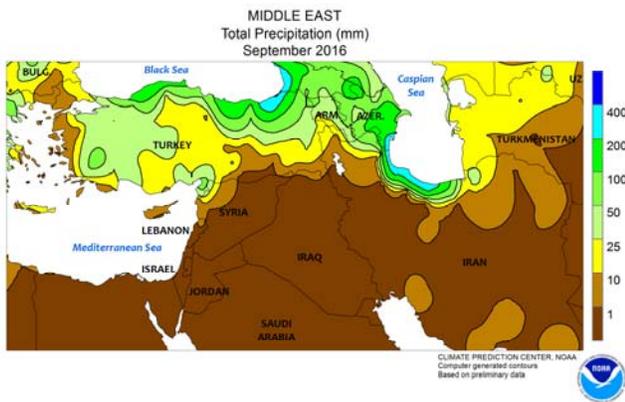
meager 2 to 10 mm (2-20 percent of normal). In contrast, timely rain maintained favorable moisture supplies for winter wheat planting and establishment in Russia and eastern Ukraine, which represent the region’s major winter wheat production areas.



**EASTERN FSU**

Conditions were overall favorable for spring wheat harvesting in Kazakhstan and central Russia during September, though showers slowed fieldwork in western growing areas. Rain was heaviest (50 mm or more) in Russia's Urals and Volga Districts, although these areas typically harvest spring wheat in late August. Conversely, dry weather in the Siberia District

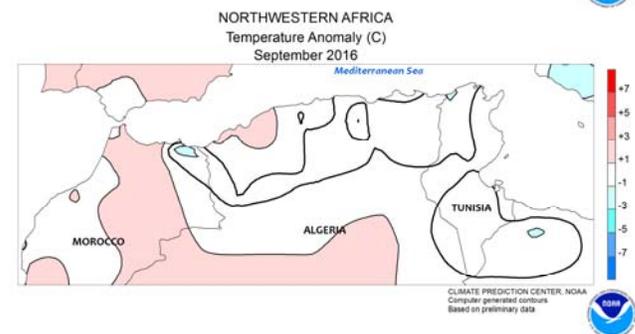
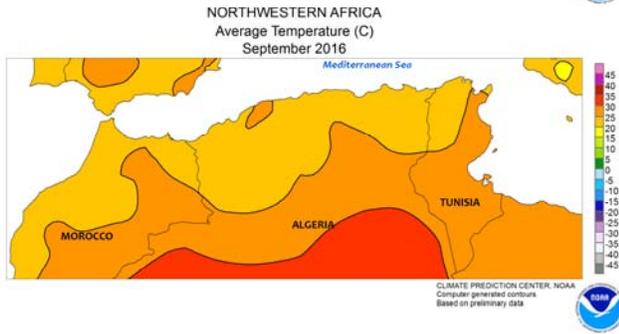
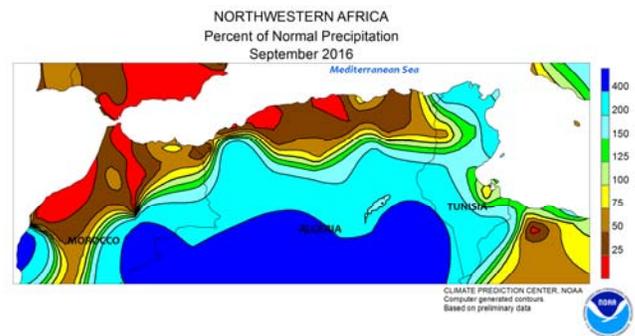
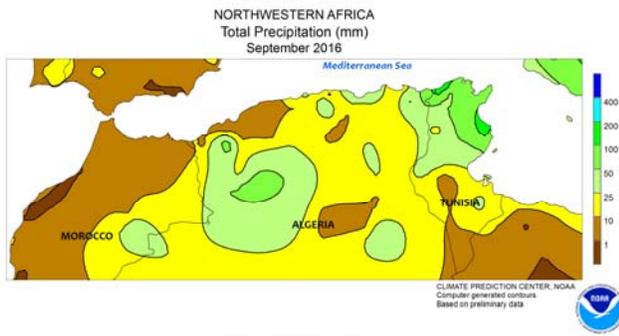
promoted spring wheat drydown and harvesting. In Kazakhstan, rain slowed harvest activities in northwestern portions of the country, though here, too, harvest was able to proceed without significant delay. Farther south, seasonable dryness favored cotton maturation and early harvesting in Uzbekistan.



MIDDLE EAST

In Turkey and Iran, late-month showers boosted irrigation reserves and increased soil moisture for winter grain establishment. The rain, which tallied locally more than 50 mm, was 2 to 4 times the monthly normal, though September marks the

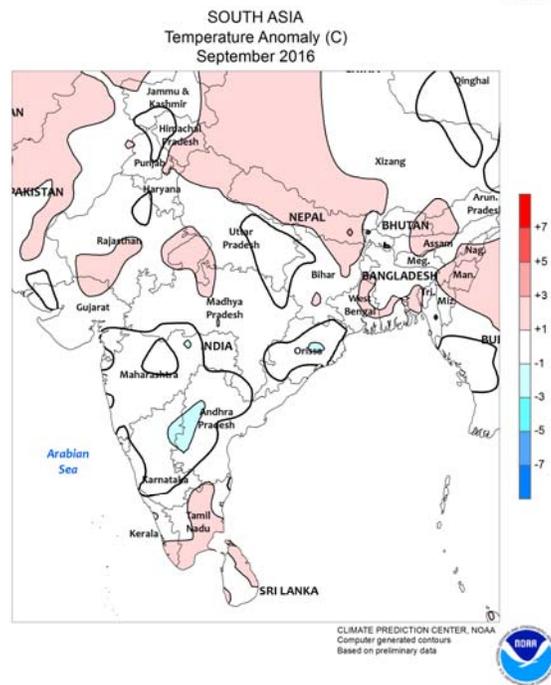
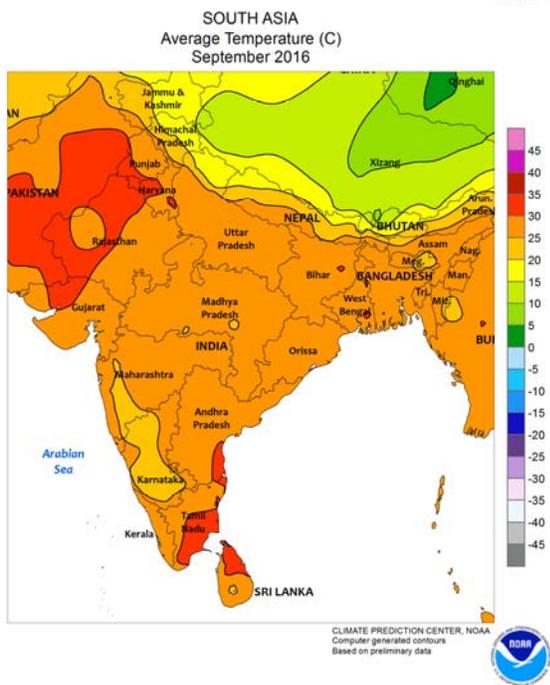
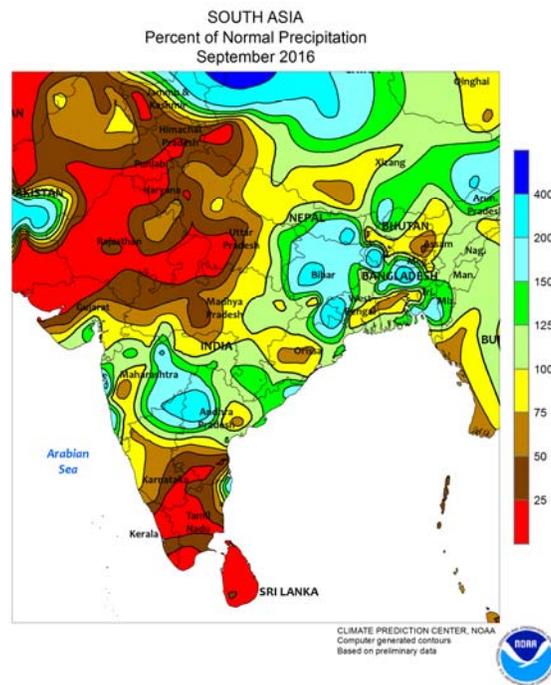
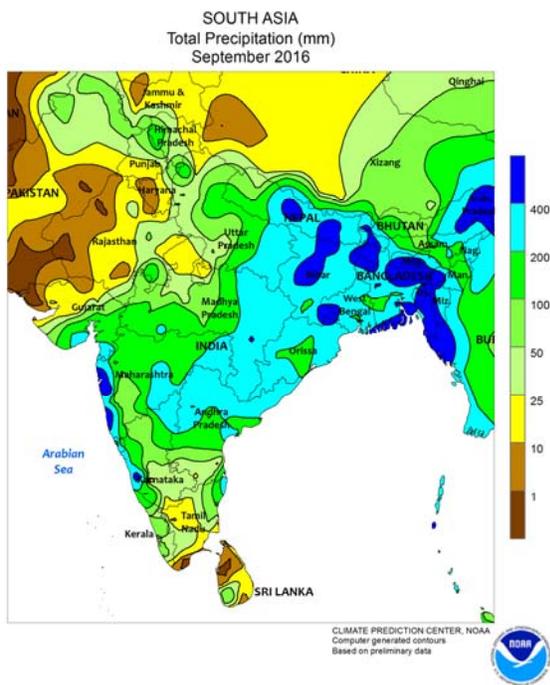
beginning of the region’s cold-season rainy period. However, the brief period of wet weather did not significantly slow summer crop harvesting. Warmth and dryness elsewhere in the Middle East favored drydown and harvesting of summer crops.



**NORTHWESTERN AFRICA**

Seasonably dry, warm weather prevailed over most major growing areas during September. Agricultural activity begins during September across northern Africa with early winter wheat sowing in Algeria and Tunisia. However, the mean planting date for wheat and barley is in November. Despite

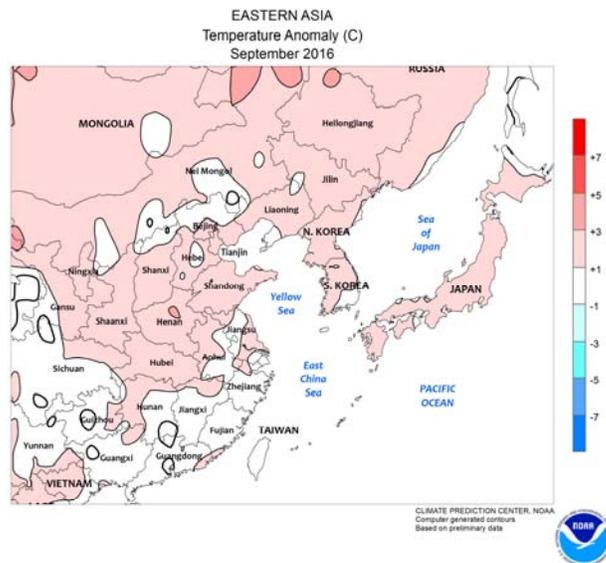
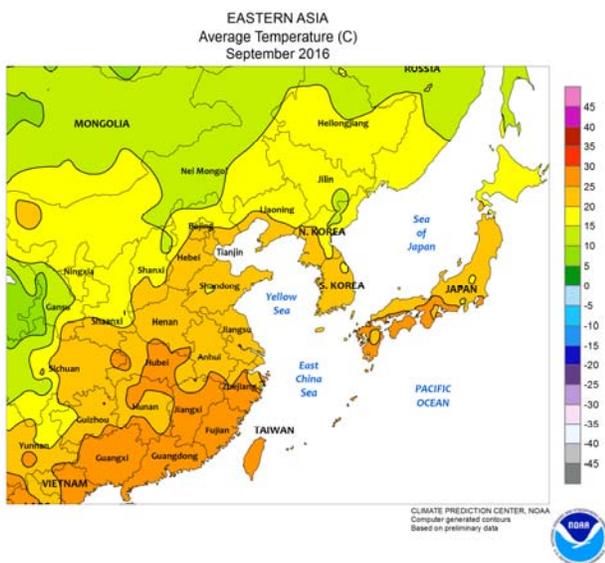
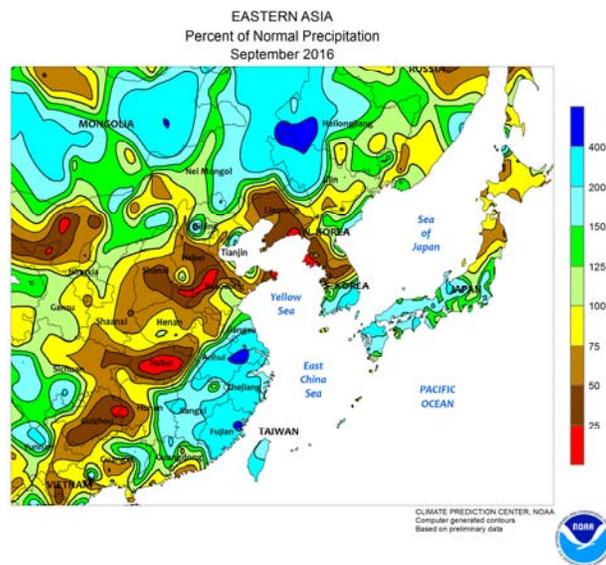
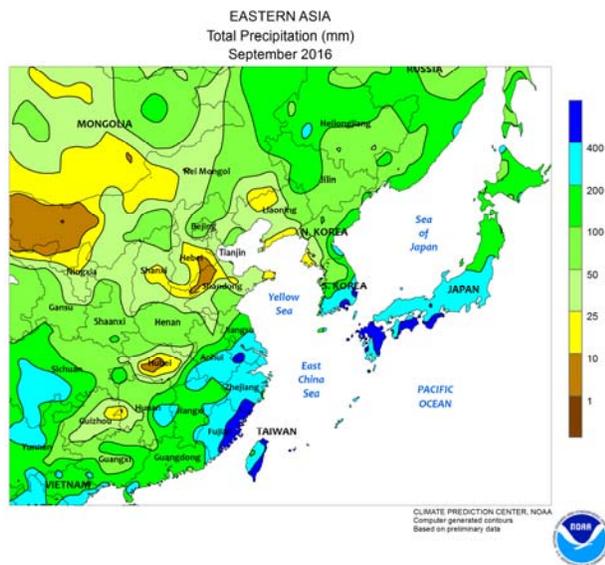
the mostly dry weather in the region's primary winter grain areas (north of the Atlas Mountains), unseasonable showers — both in timing and intensity — were observed over northern Tunisia and northeastern Algeria; monthly rainfall totaled 25 to 150 mm (locally more than 300 percent of normal).



**SOUTH ASIA**

During September, the monsoon began withdrawing slowly from northwestern India and by month's end the withdrawal was nearly two weeks later than normal in some northern areas (as reported by the Indian Meteorological Department). Despite the slow pace of the withdrawal, rainfall was mostly below normal in Punjab, Haryana, and Rajasthan, aiding rice and cotton harvesting. In addition, rainfall was lighter than normal for soybeans in Madhya Pradesh, plagued by excessive wetness throughout much of the growing season. In contrast, heavy showers (over 150 mm) in Maharashtra and parts of Gujarat maintained unfavorably wet conditions

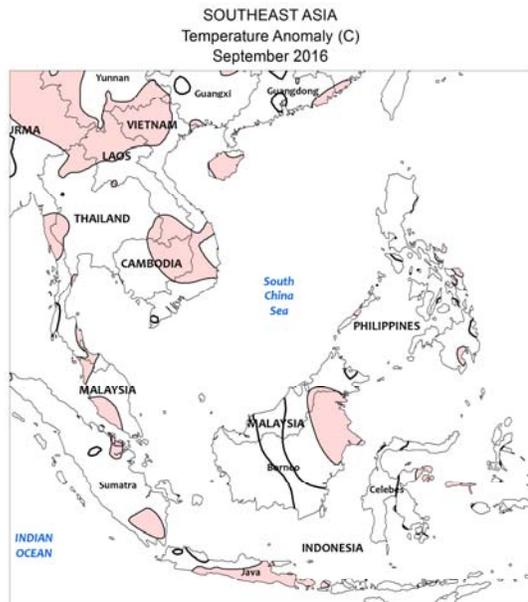
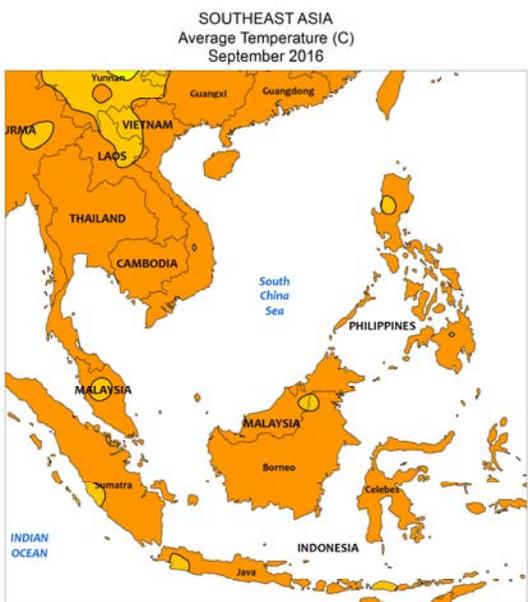
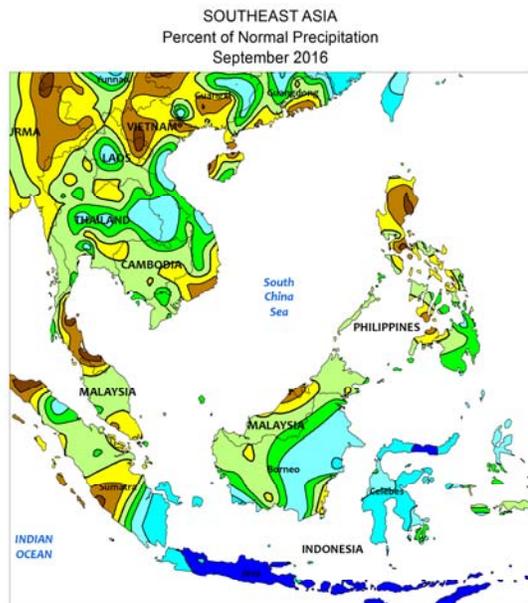
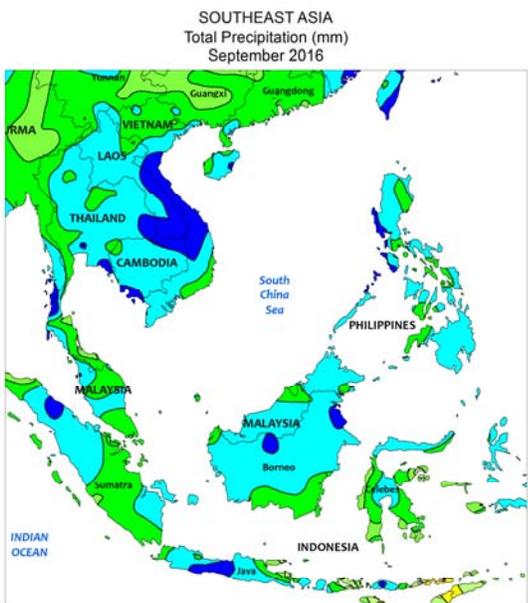
for soybeans and other oilseeds but kept cotton, that can be harvested into December, well watered. Above-normal rainfall also occurred in some eastern rice areas, hampering grain ripening. Overall, rainfall during the monsoon season (June-September) in India was reportedly about 3 percent below normal for the country as a whole. In other parts of the region, seasonably dry weather aided cotton and rice harvesting in Pakistan as well as summer (yala) rice harvesting in Sri Lanka. Meanwhile, seasonably wet weather maintained favorable soil moisture and water supplies for summer (aman) rice in Bangladesh.



**EASTERN ASIA**

In September, four typhoons, occurring at various times greater than 600 mm) and excessive wetness to mature rice and other summer crops in Taiwan and southeastern China as well as southeastern South Korea and much of Japan. Unfavorably wet weather also occurred for maturing corn and soybeans in northeastern China. Rainfall was over 200 percent of normal in western Heilongjiang and Jilin as well as neighboring portions of Inner Mongolia. Additionally, a seasonable late-

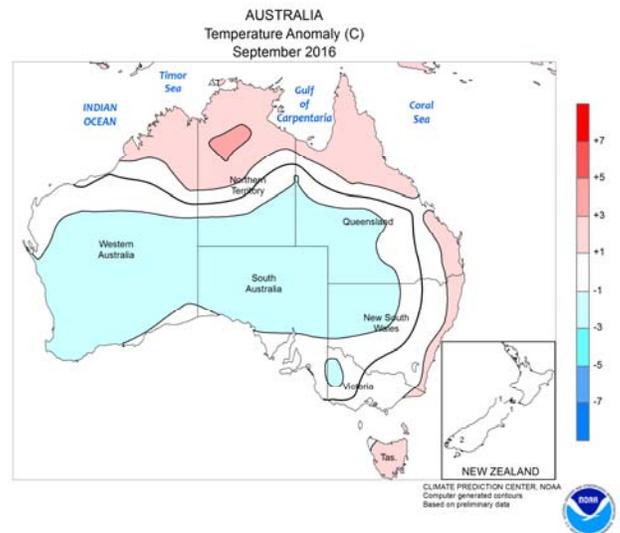
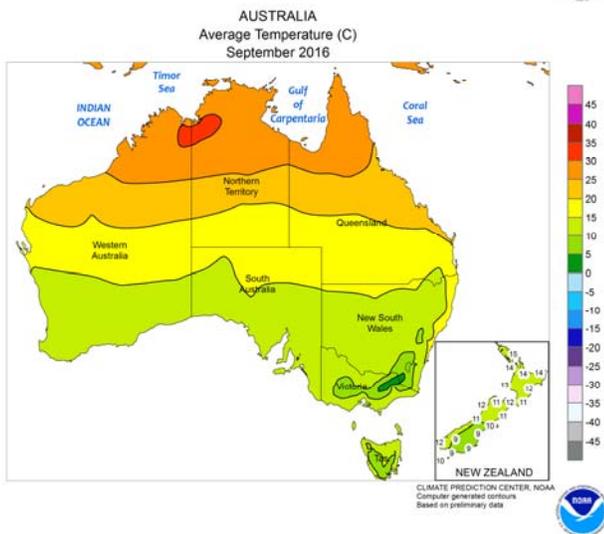
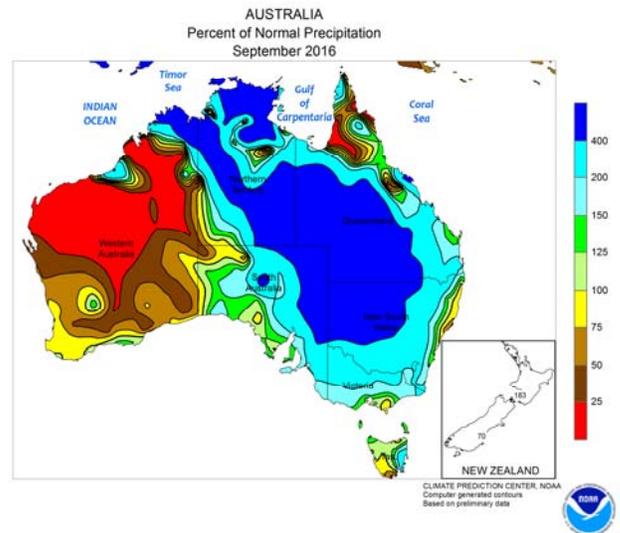
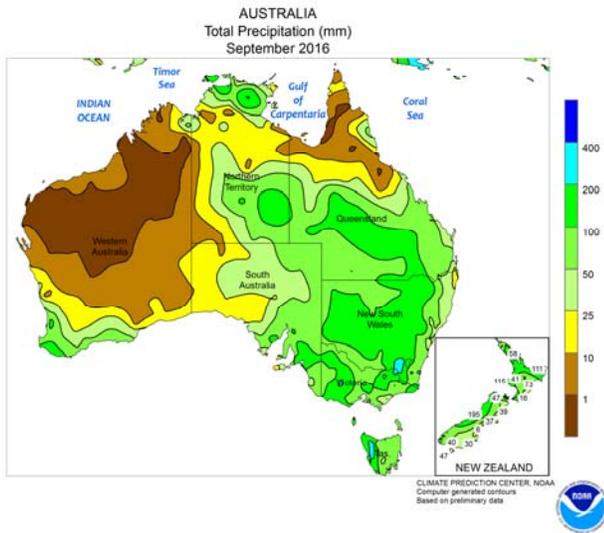
September frost overspread parts of the northeast, aiding grain drying but limiting yield potential for any corn still in the dough stage. In contrast, beneficially dry weather prevailed across the North China Plain and through much of the Yangtze Valley, benefiting cotton, rice, and other summer crop harvesting. Favorably dry weather was also reported in North Korea and western South Korea, aiding rice maturation and harvesting.



**SOUTHEAST ASIA**

Heavy showers prevailed throughout much of the region during September, with most areas receiving near- to above-normal rainfall for the month. In Thailand, September is the wettest month of the year and monthly totals for this year averaged 250 mm (3 percent above the long-term average) in major rice producing areas. The rainfall aided reproductive rice as well as increasing stored water to levels not seen in the last two years. Above-normal rainfall was also prevalent in the remainder of Indochina, aiding rice including winter rice in Vietnam. Meanwhile in the Philippines, monsoon showers were enhanced by tropical cyclones passing to the north. Most rice and corn areas from western Luzon to Mindanao received

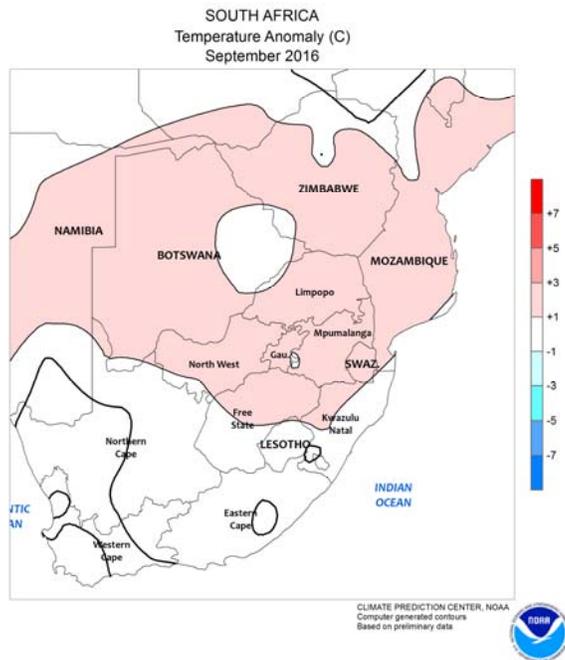
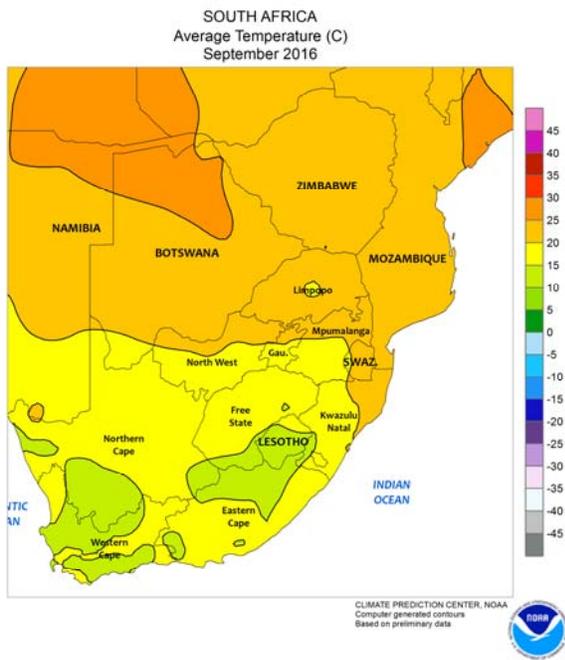
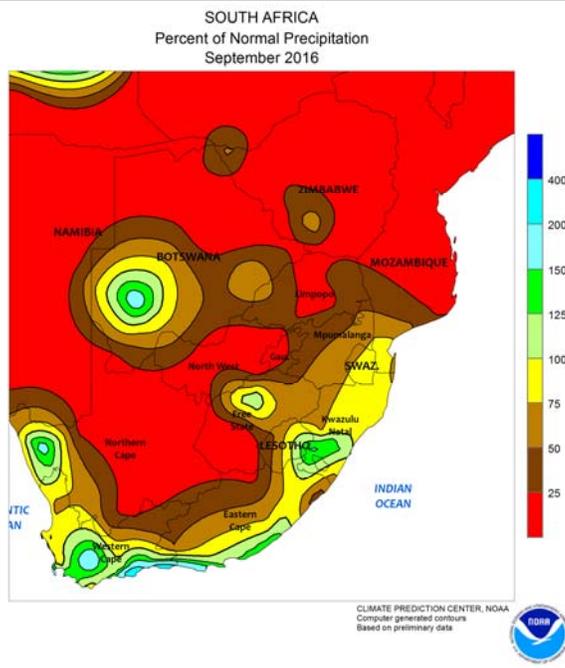
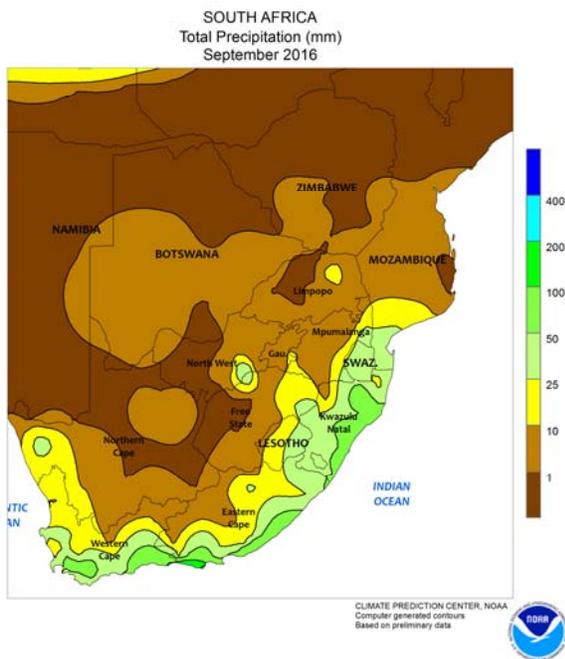
near- to above-normal rainfall. However, key corn-producing districts in eastern Luzon were much drier than normal and yield prospects declined as a result. In southern portions of the region, seasonable showers (over 150 mm, locally over 250 mm) continued to improve long-term soil moisture for oil palm in Malaysia and Indonesia but likely slowed harvesting during the main harvest period. In Java, Indonesia, continued unusually heavy rainfall (over 200 mm) made for unfavorably wet conditions for mature second-season rice and corn but significantly increased irrigation reserves. Typically, Java averages less than 50 mm for the month making this month the second wettest September in the last 30 years.



**AUSTRALIA**

During September, above-normal rainfall in southern and eastern Australia maintained abundant to locally excessive soil moisture for reproductive winter grains and oilseeds and significantly increased reservoir levels for irrigated summer crops. The excessive rains caused local flooding and slowed early summer

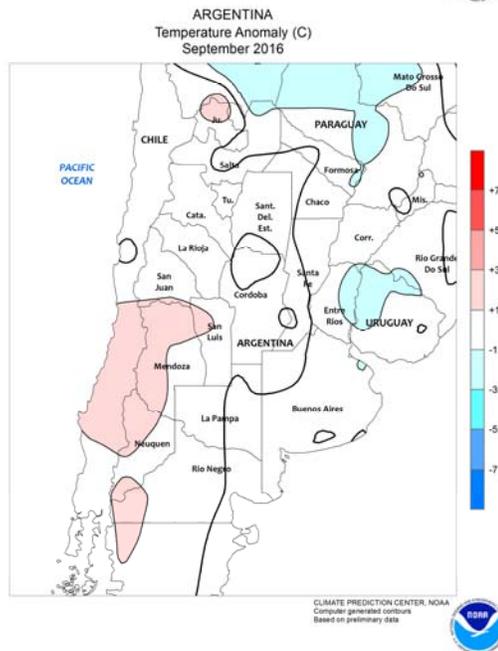
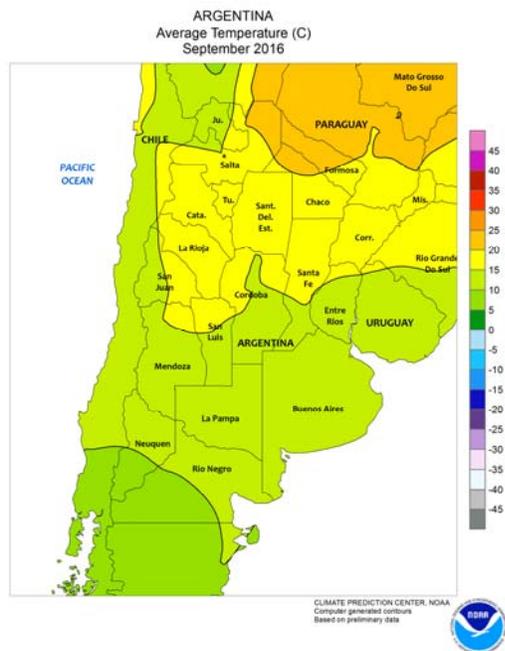
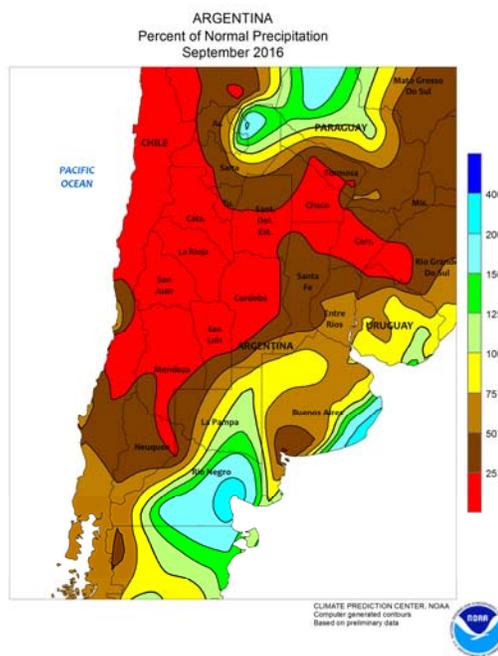
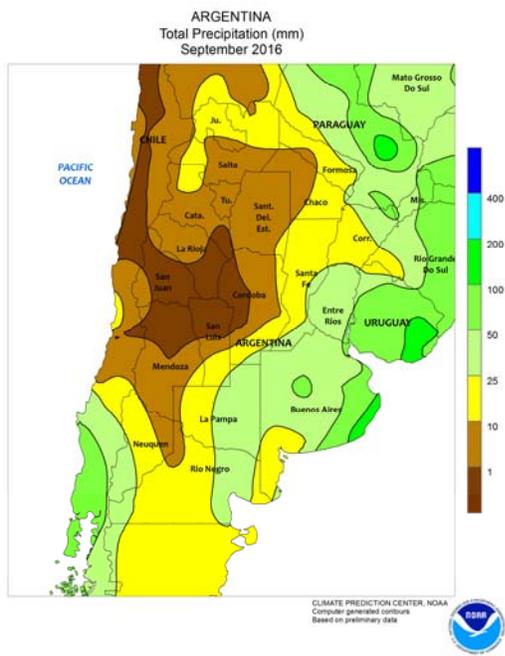
crop planting but sustained overall good to excellent yield prospects for winter crops that were not directly impacted by the flooding. In Western Australia, near-normal rainfall continued to favor wheat, barley, and canola development, but occasional frost may have trimmed local yield prospects somewhat.



**SOUTH AFRICA**

During September, showers swept across the southern coast as drier conditions persisted farther inland. Monthly rainfall totaled 25 to 100 mm from southern sections of Western Cape to KwaZulu-Natal, improving long-term moisture reserves for the upcoming summer season. Some of the heaviest rainfall was recorded in sugarcane areas of KwaZulu-Natal; lighter

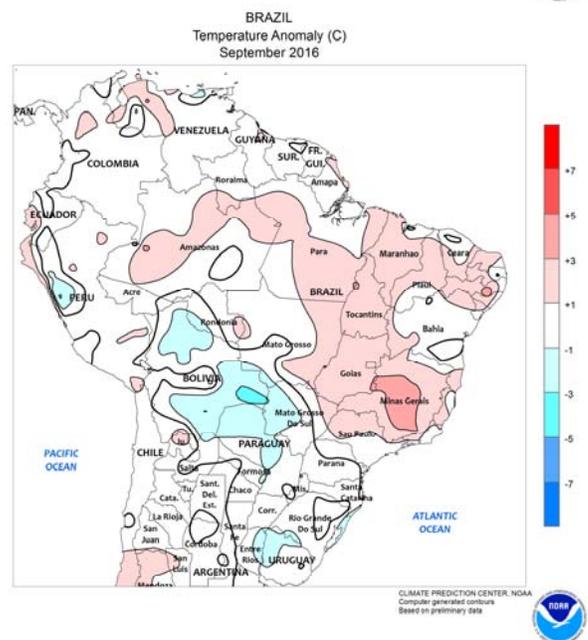
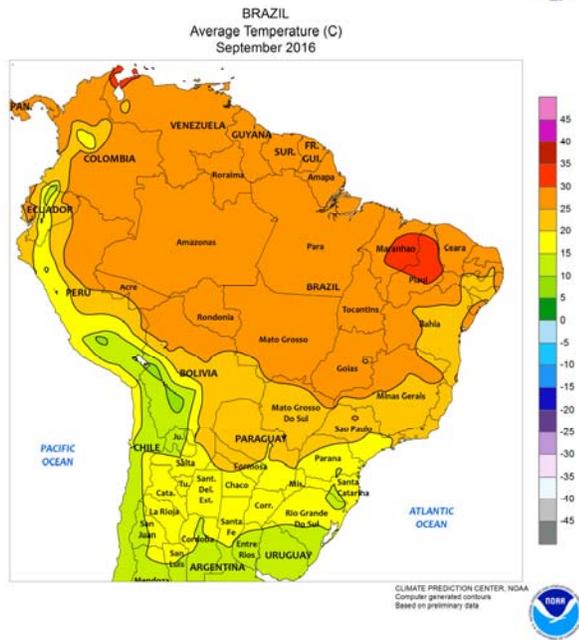
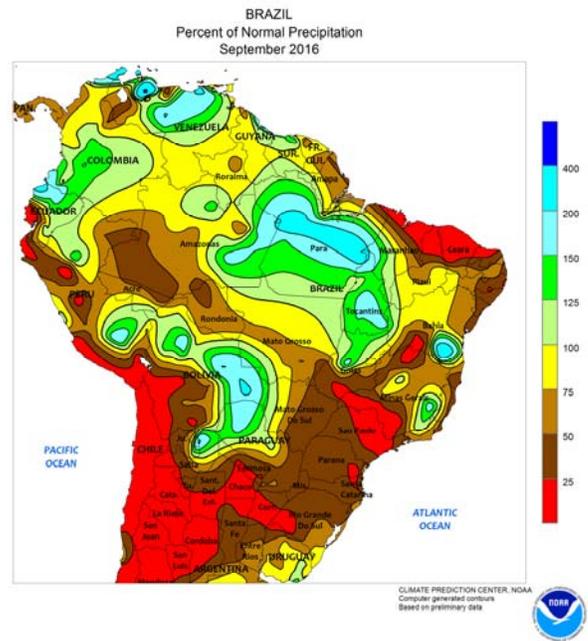
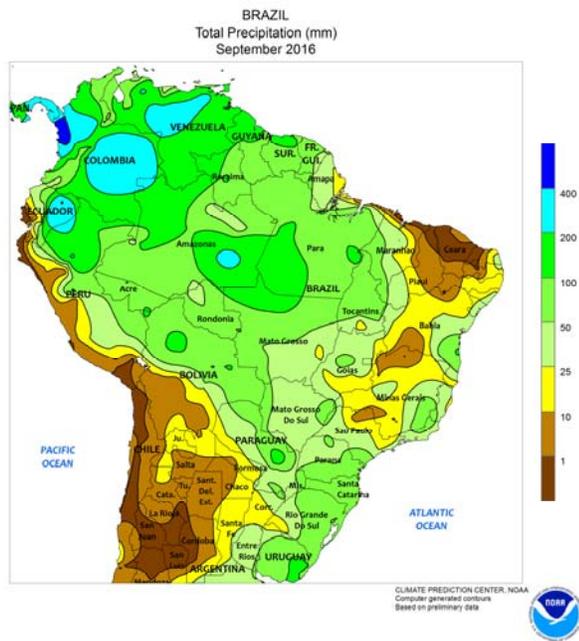
amounts (10-25 mm) extended northward into predominantly irrigated production areas of eastern Mpumalanga, as well as in wheat areas of northwestern Western Cape. Drier conditions prevailed over the corn belt (North West and Free State to Mpumalanga), where moisture would have been welcomed for winter wheat development.



**ARGENTINA**

In September, a general trend of dry weather supported the final stages of summer crop harvesting in central and northern Argentina. However, periods of rain provided timely moisture for winter grain establishment in La Pampa and Buenos Aires, as well as in Entre Rios and neighboring locations in Santa Fe and southern Cordoba. Monthly temperatures averaged within 1°C of normal in nearly all major agricultural areas. Seasonal warming

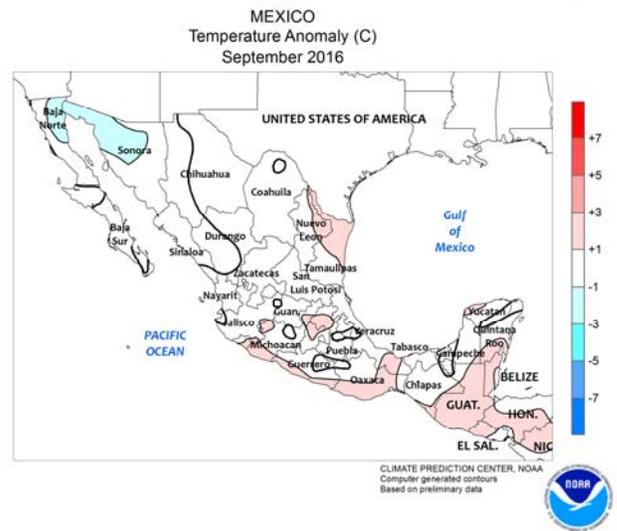
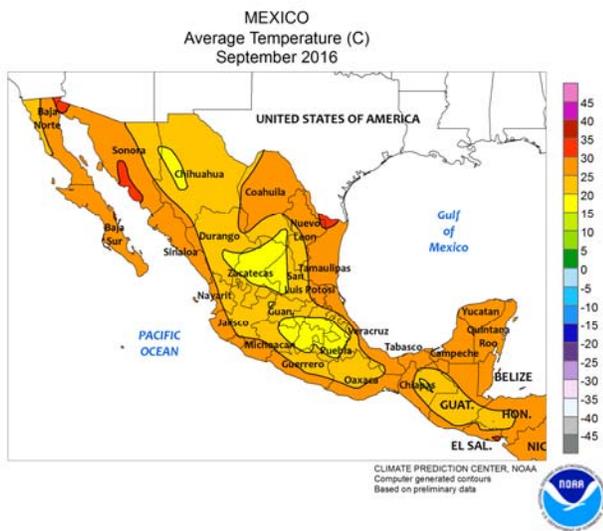
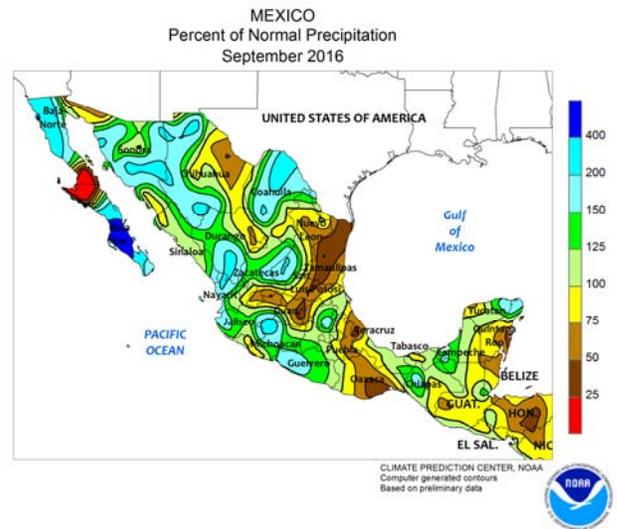
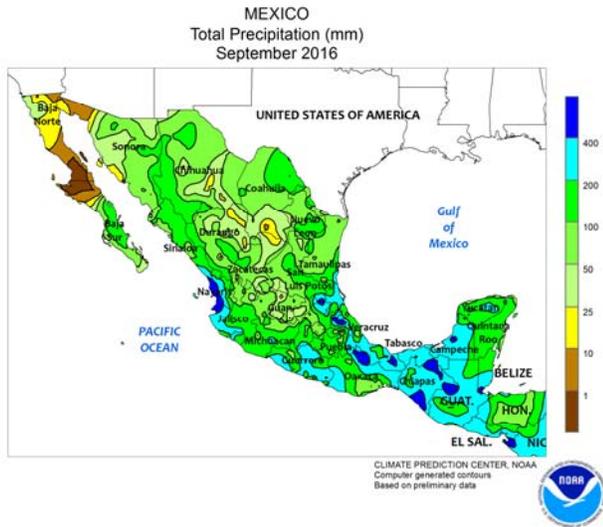
occurred during the month of September, with widespread freezes in the early part of the month — sometimes reaching as far north as Santiago del Estero — giving way to seasonably warmer conditions toward months end. The warmer weather and subsequent reduction in frosty nights favored winter grain growth. In addition, daytime highs in the 30s (degrees C) boosted growth rates of early-planted sunflowers in northern Argentina.



**BRAZIL**

Drier-than-normal weather dominated key farming areas of southern and central Brazil during the month of September. In the south, the dryness aided drydown and harvesting of wheat, bringing relief to crops that had been soaked by heavy rain in August. By month's end, however, moisture had become limited for germination of soybeans and first-crop corn, and rain was needed. Mostly dry weather also favored late harvesting of sugarcane and coffee, though additional rain is needed for those crops as well for development of the 2016/17 crops. Monthly average temperatures were near to slightly below normal from Mato

Grosso do Sul southward through Rio Grande do Sul; nighttime lows occasionally fell below 5°C in spots but no freeze was reported. In the Center-West Region (notably Mato Grosso and Goias), scattered showers developed late in the month, likely encouraging planting of soybeans, corn, and cotton. However, above-normal temperatures (monthly averages of 1-3°C above normal, with daytime highs consistently reaching the upper 30s degrees C) maintained high evaporative losses, necessitating a continuation of beneficial October rain to prevent the need for replanting, as was seen in 2015.

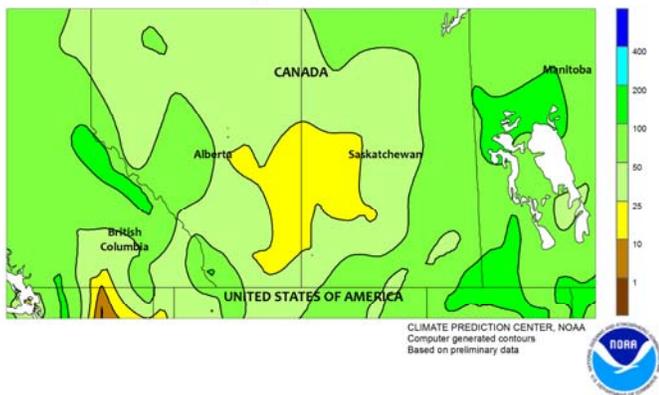


**MEXICO**

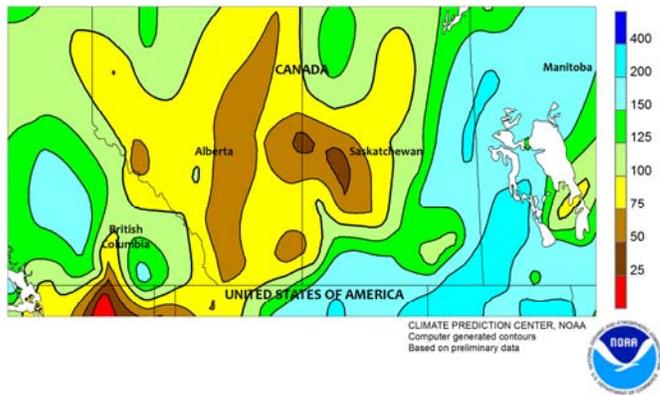
During September, conditions remained overall favorable for production of rain-fed summer crops in key production areas of southern Mexico. Monthly rainfall was near to above normal across the southern plateau (Jalisco to Puebla), sustaining overall favorable prospects of summer corn. Other southern agricultural areas received near-to-above normal rainfall, with monthly accumulations in excess of 200 mm along the southern Pacific Coast and in the southeast from Veracruz to Chiapas and

Campeche. Farther west, frequent, occasionally heavy rain fell from Nayarit northward to Sonora and Chihuahua, further increasing reservoir levels in northwestern watersheds. Several tropical storms contributed to the moisture drawn into the monsoon circulation. Monsoon rainfall gradually diminished as the month progressed, particularly in the northeast, which experienced extended periods of dryness and warmth (daytime highs approaching 40°C).

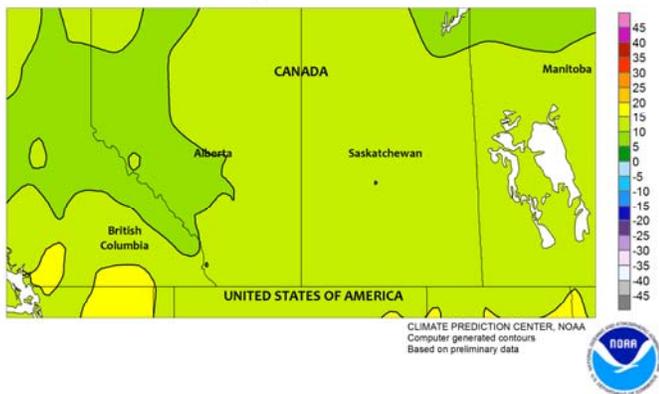
CANADIAN PRAIRIES  
Total Precipitation (mm)  
September 2016



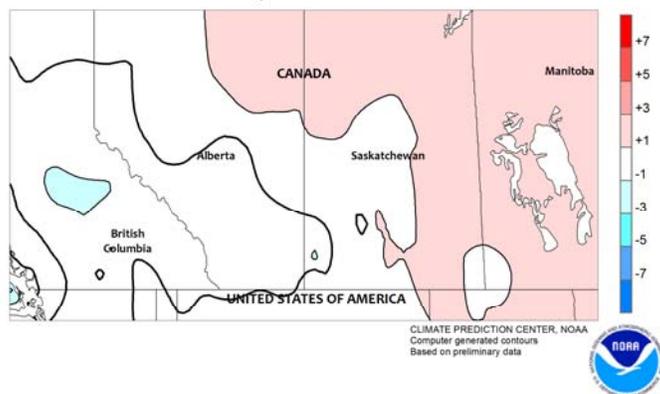
CANADIAN PRAIRIES  
Percent of Normal Precipitation  
September 2016



CANADIAN PRAIRIES  
Average Temperature (C)  
September 2016



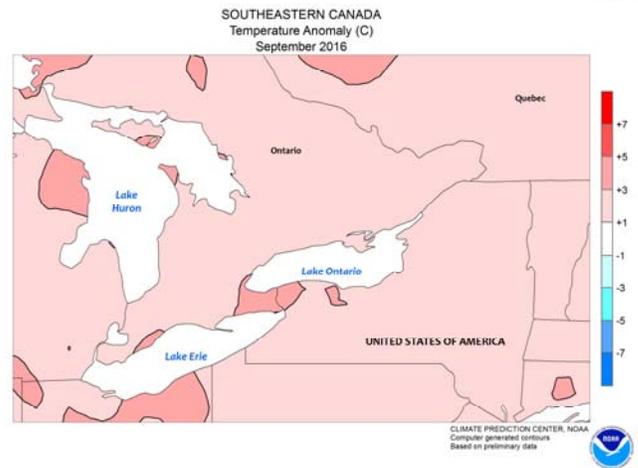
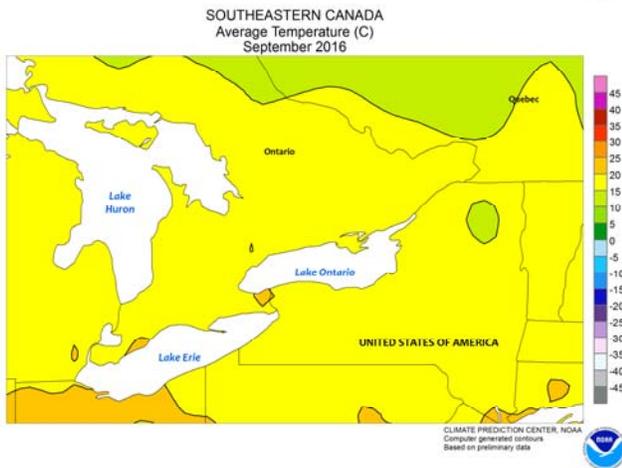
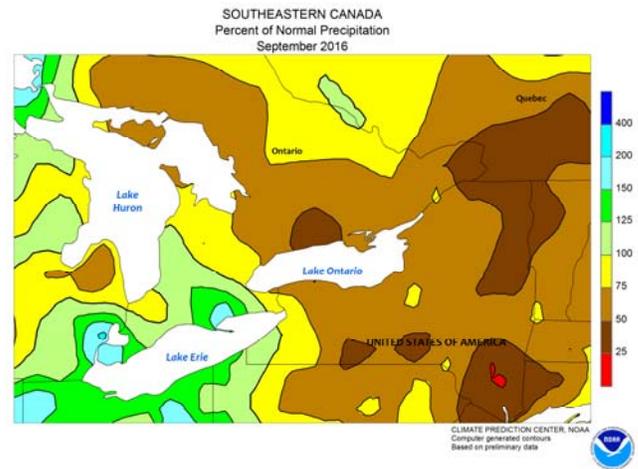
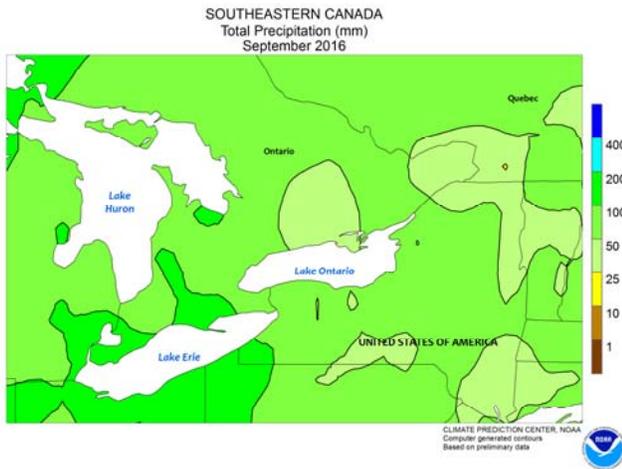
CANADIAN PRAIRIES  
Temperature Anomaly (C)  
September 2016



**CANADIAN PRAIRIES**

In September, periods of heavy rain disrupted spring grain and oilseed harvesting. Some of the heaviest rainfall (one-day totals of 10-25 mm) occurred in the eastern sections of the Prairies when harvesting was in the early stages; similar amounts were more widespread toward the end of the month. As a result, monthly accumulations exceeded 100 mm in agricultural districts of Manitoba and in

Saskatchewan's southern and eastern farming areas. Drier conditions (monthly accumulations of 10-50 mm) were more favorable for fieldwork in Alberta and much of western Saskatchewan. Monthly temperatures averaged near to above normal as seasonal cooling occurred. Most locations recorded the first autumn freeze, which generally came after the average date.



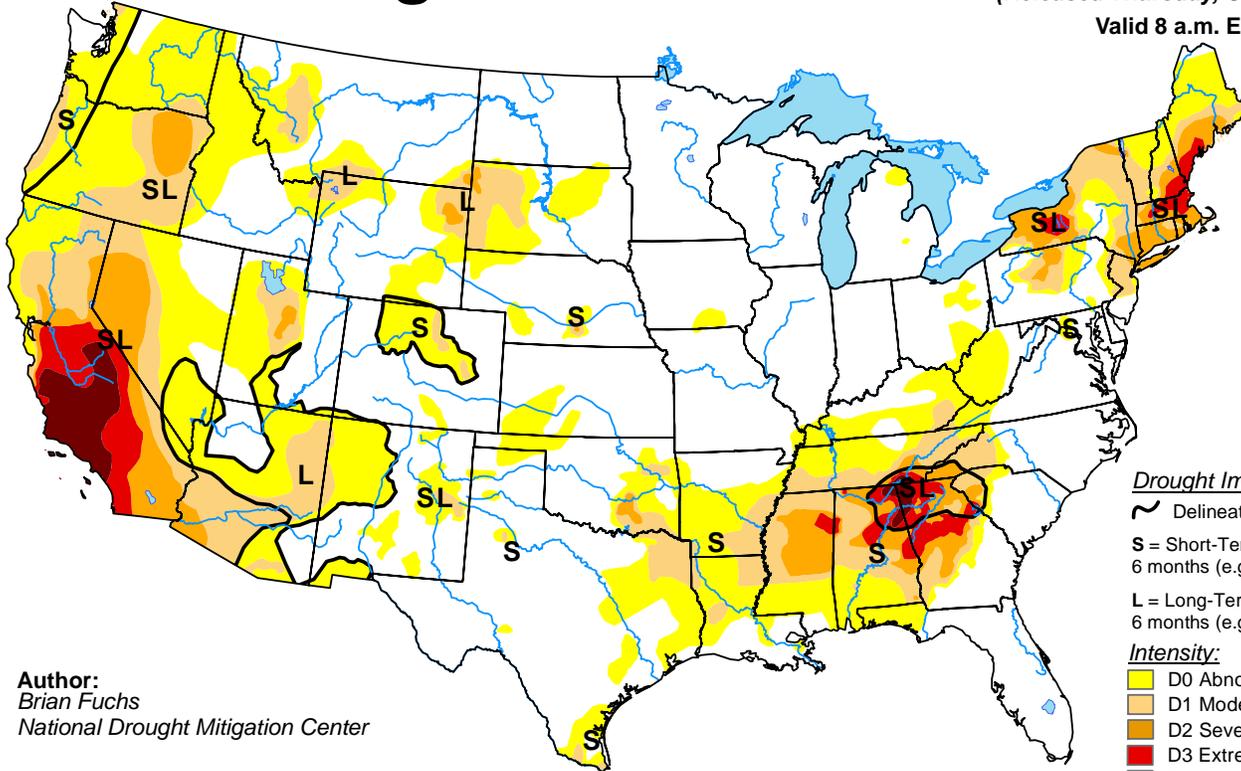
**SOUTHEASTERN CANADA**

In September, extended periods of dryness favored autumn fieldwork, including winter wheat planting and harvesting of corn and soybeans. The dry weather was interspersed with showers, which provided timely moisture for germination of newly-sown wheat. However, monthly accumulations were below normal in most of the region, the exception being Ontario’s southwestern agricultural areas,

which recorded heavy rain at month’s end. September temperatures averaged 1 to 3°C above normal throughout the region with only gradual seasonal cooling. Freezes were generally confined to farming areas of Quebec and outlying production areas in Ontario during the latter part of the month, occurring roughly near the average date of the first autumn freeze.

# U.S. Drought Monitor

October 11, 2016  
 (Released Thursday, Oct. 13, 2016)  
 Valid 8 a.m. EDT

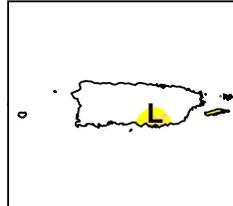
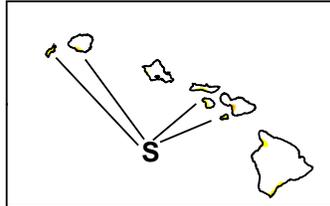
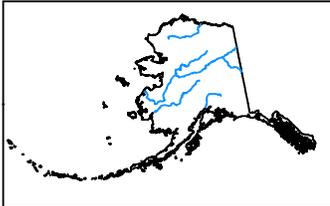


Author:  
 Brian Fuchs  
 National Drought Mitigation Center

**Drought Impact Types:**  
 ~ Delineates dominant impacts  
 S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)  
 L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

**Intensity:**  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

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



<http://droughtmonitor.unl.edu/>

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