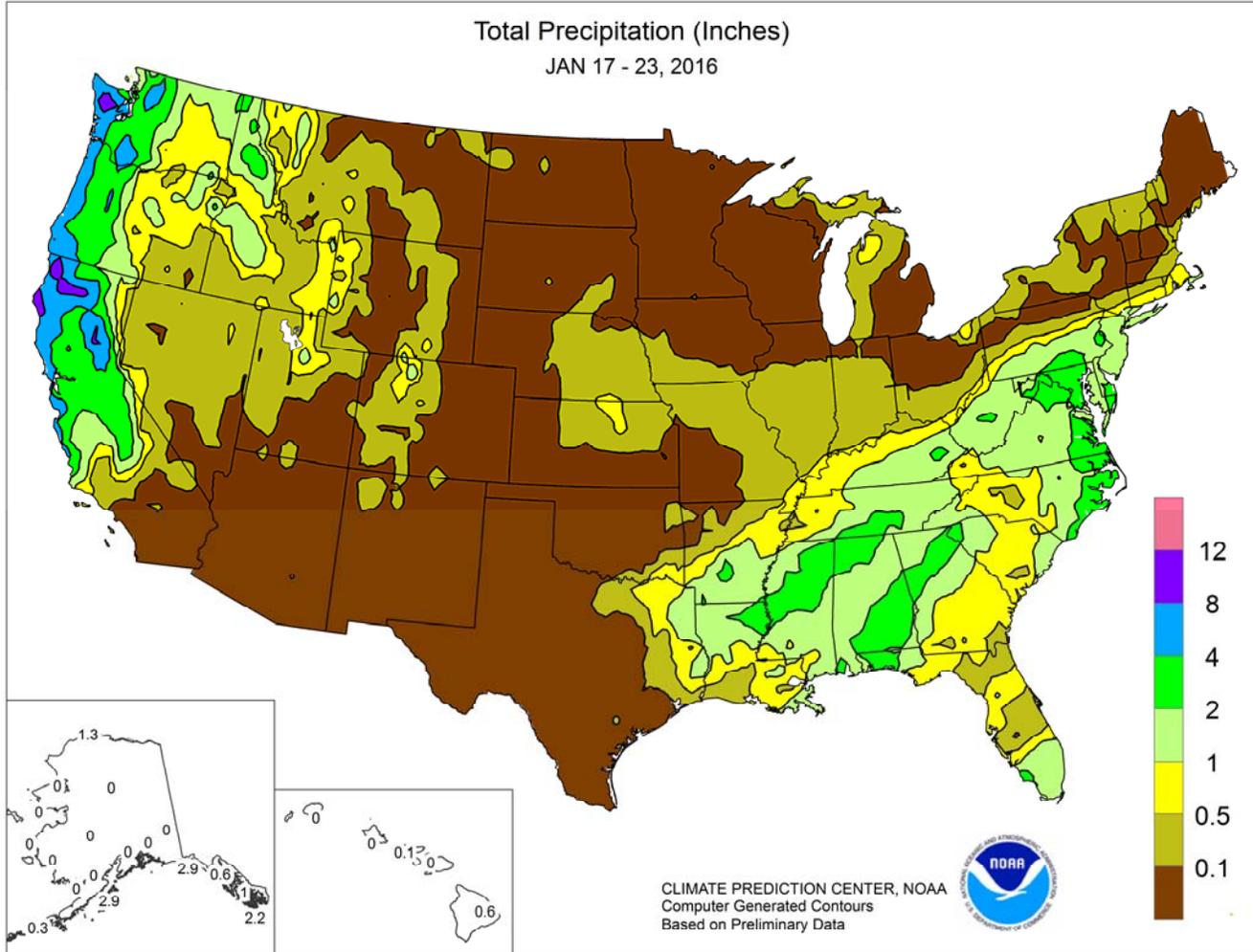


WEEKLY WEATHER AND CROP BULLETIN



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

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



HIGHLIGHTS

January 17 – 23, 2016

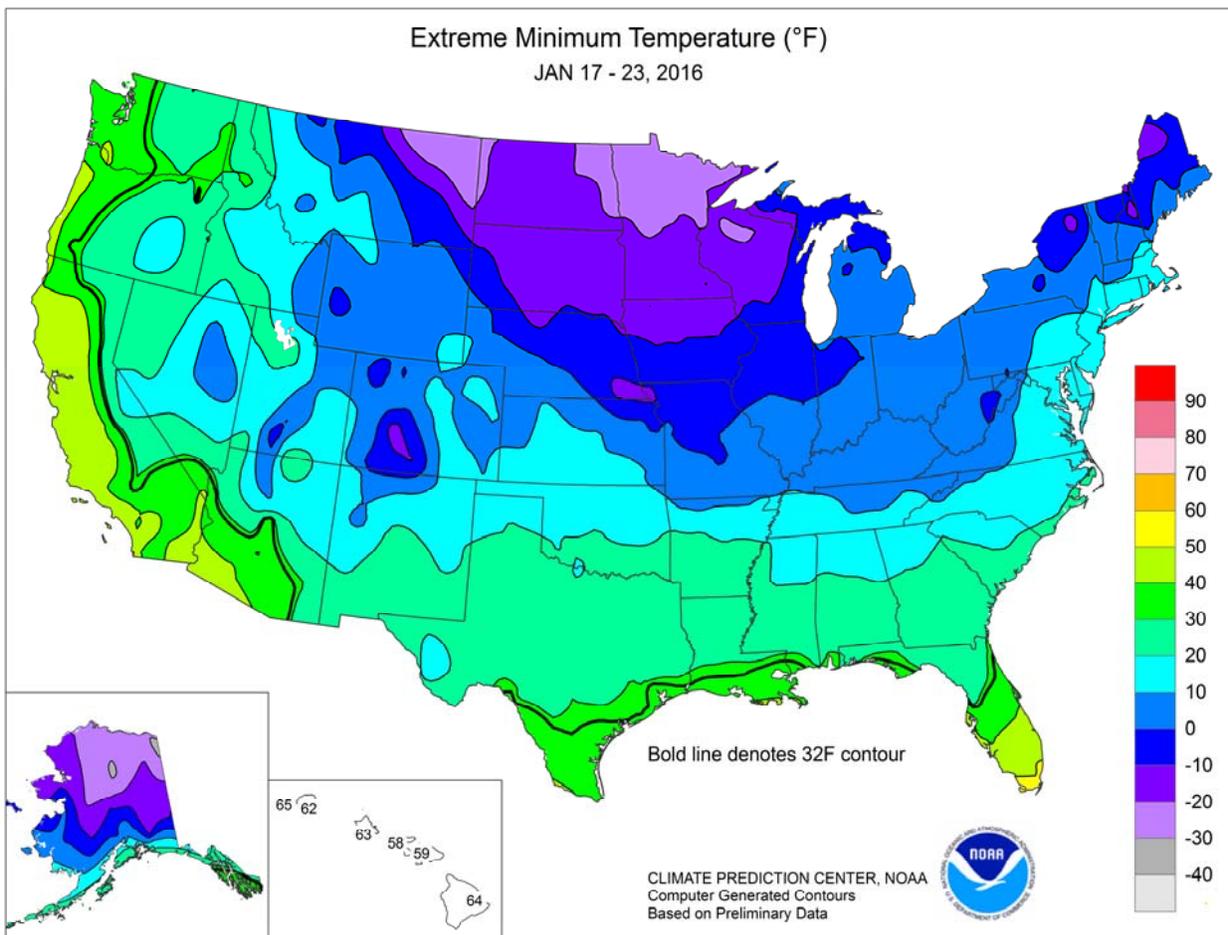
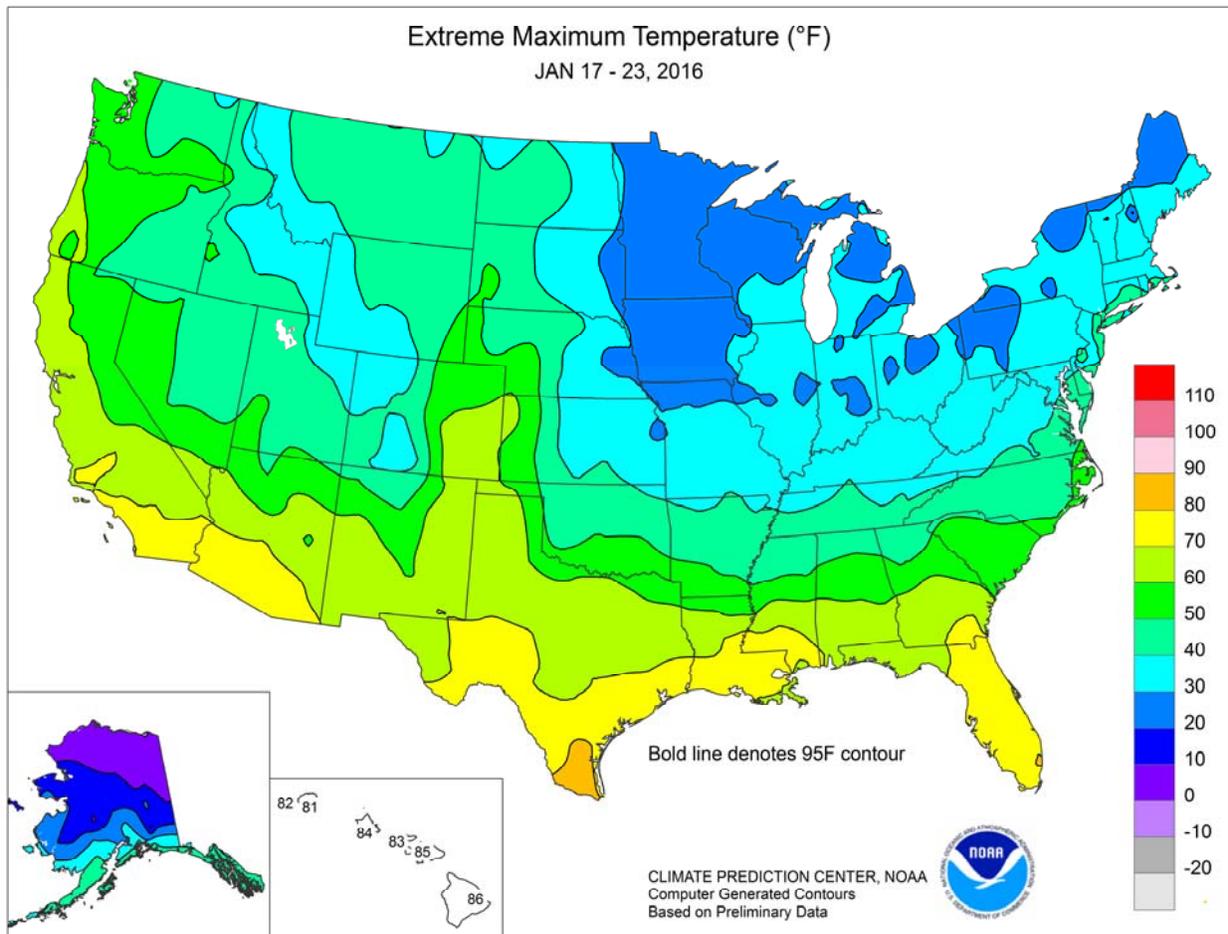
Highlights provided by USDA/WAOB

For much of the week, significant precipitation fell across the **Northwest** and the **Pacific Coast States** as far south as **central California**. By week's end, the average water content of the high-elevation **Sierra Nevada** snowpack climbed to 18 inches, nearly 120 percent of normal for the date and 65 percent of the typical April 1 accumulation. Toward week's end, however, the focus for significant weather shifted into the **South** and **East**. On January 22-23, a "nor'easter" produced record-setting snowfall and blizzard conditions in parts of the **Mid-Atlantic States**,

(Continued on page 3)

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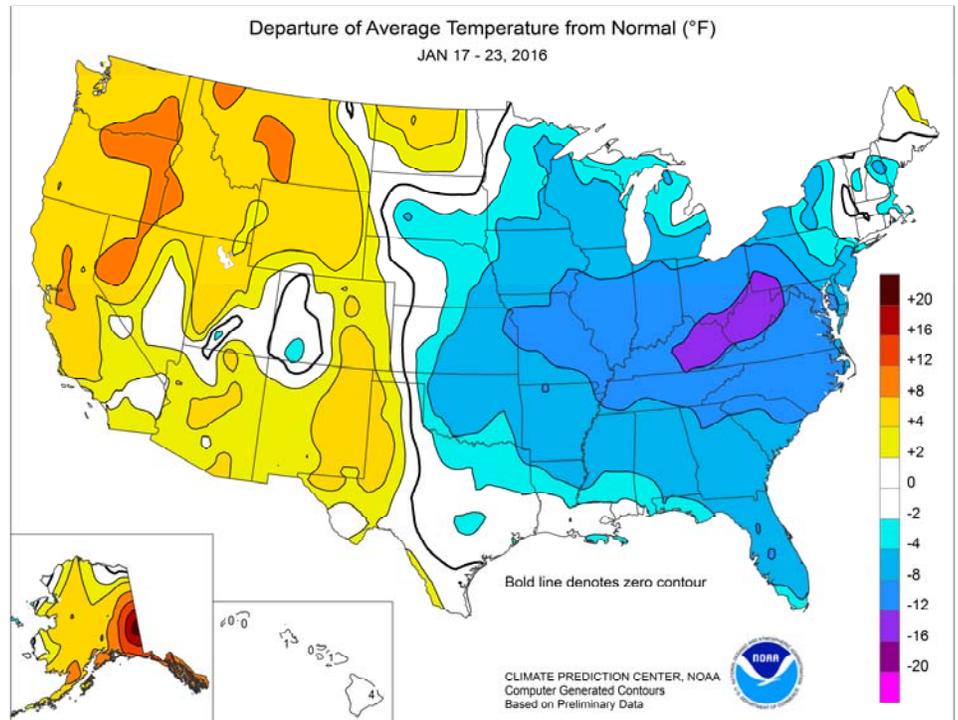
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(Continued from front cover)

along with severe beach erosion along the **northern Mid-Atlantic coast**. Heavy snow also blanketed portions of the **central Appalachians** and the **interior Southeast**. Earlier in the week, a much lighter snowfall had occurred across the **Northeast**, while locally severe thunderstorms had swept across **Florida**. Precipitation was mostly scattered and light in other regions, including the **Plains** and **Midwest**, while little or no precipitation fell in the **Southwest**. The late-week coastal storm capped a period of cold weather in the **eastern U.S.** In fact, weekly temperatures averaged at least 10°F below normal in a broad area centered across the **Ohio Valley** and **Mid-Atlantic States**. In contrast, near- to above-normal temperatures covered much of the **West**.

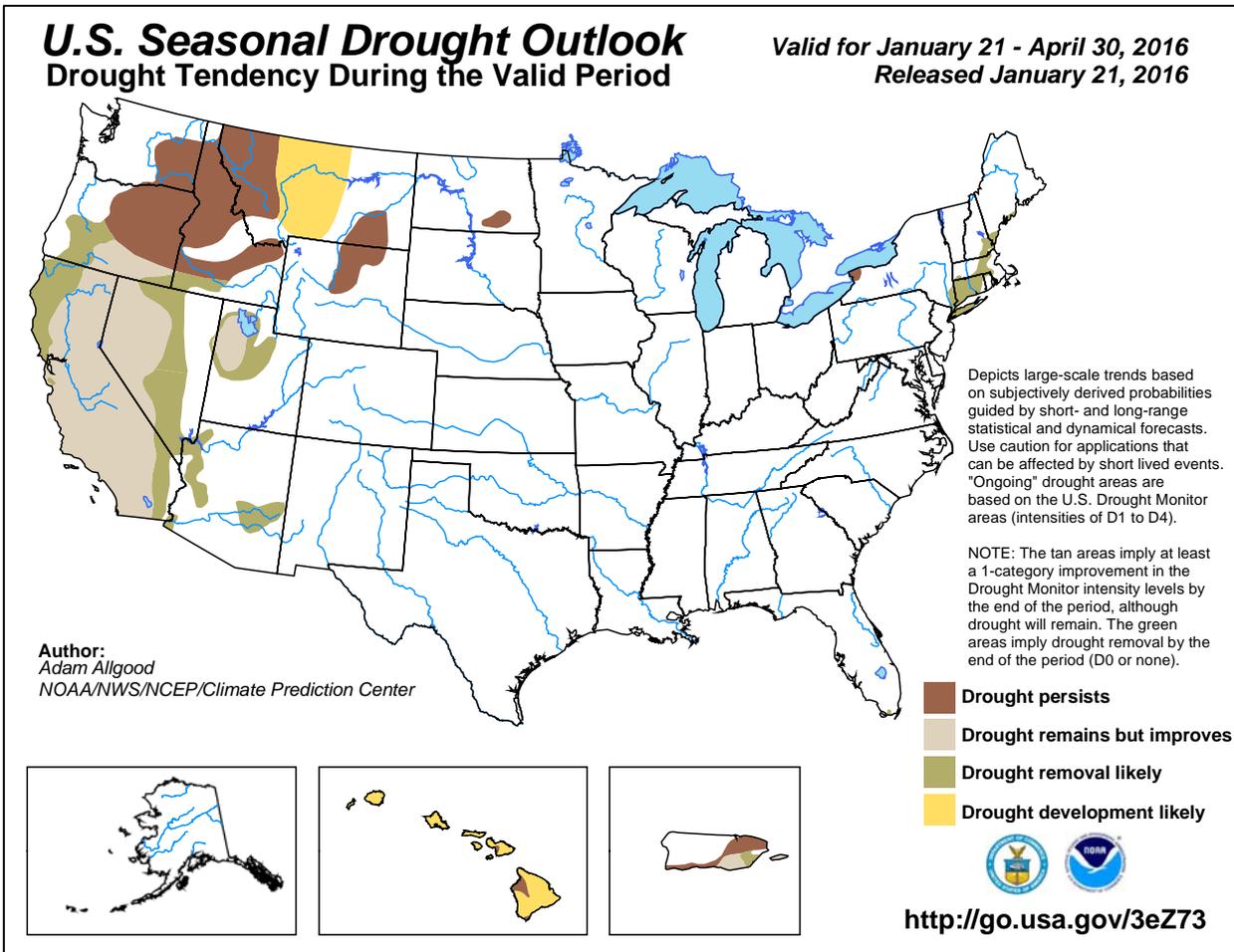
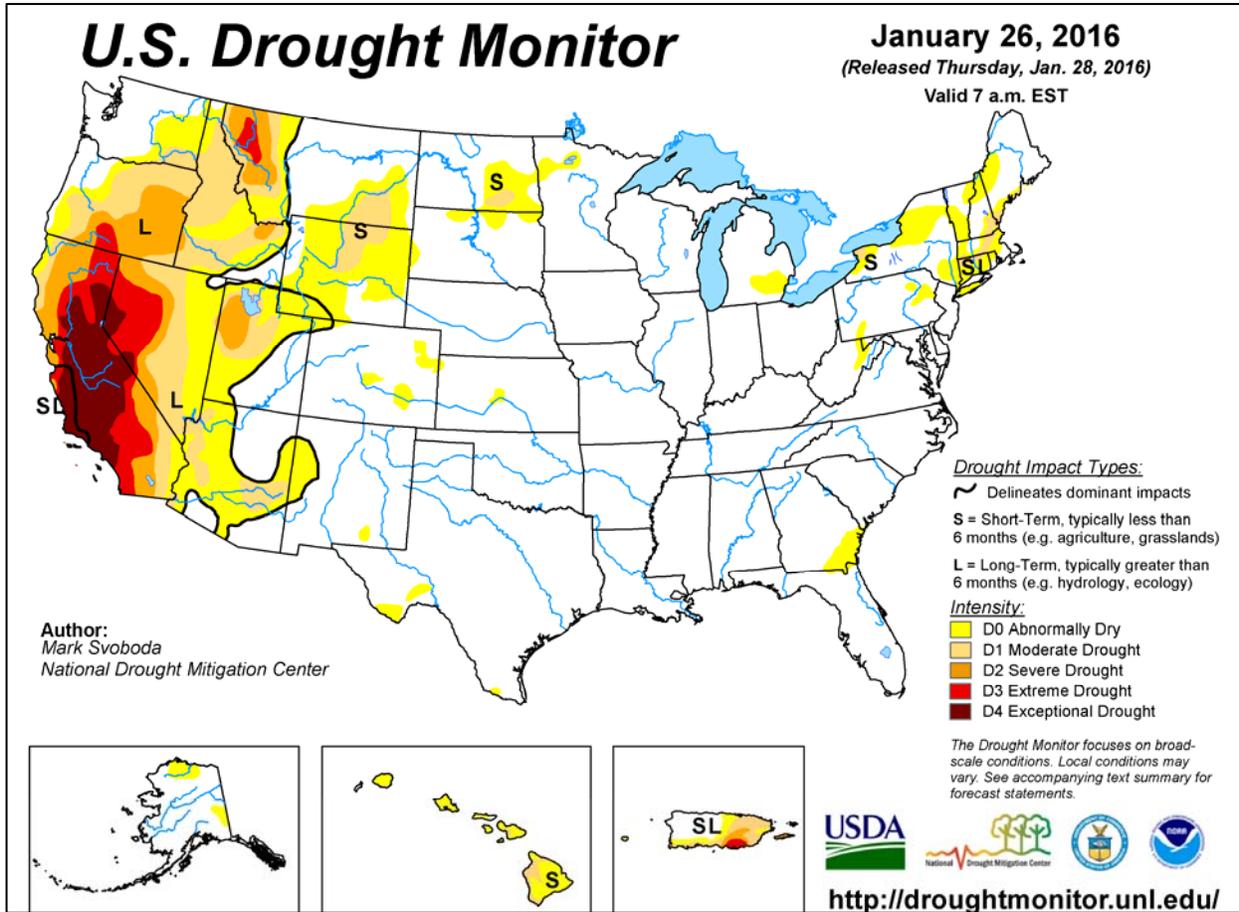
Early in the week, strong thunderstorms ripped across **Florida's peninsula**, where at least three tornadoes were reported during the overnight and morning hours of January 17. A wind gust to 82 mph was clocked at **Naples, FL**. In fact, a large damage path, 2 to 4 miles wide, was reported in **Collier County, FL**, from **Naples** to near **Immokalee**, with winds estimated in the range of 70 to 90 mph. Heavy rain accompanied the storms, with daily-record totals reported on January 17 in **Florida** locations such as **St. Petersburg** (2.32 inches), **Lakeland** (1.53 inches), and **Daytona Beach** (1.45 inches). Farther north, **Atlantic City, NJ**, netted 2.8 inches of snow, a record for January 17. Meanwhile, periods of stormy weather continued in **northern and central California** and the **Northwest**. **Redding, CA**, collected a daily-record rainfall (1.28 inches) on January 17. Through January 23, **Redding's** month-to-date rainfall of 10.58 inches was 234 percent of normal. Similarly in **Modesto, CA**, a daily-record total of 1.28 inches on January 18 helped to boost the January 1-23 rainfall to 4.65 inches (243 percent of normal). **Yakima, WA**, measured a daily-record sum of 0.50 inch on January 19, and through the 23rd reported a month-to-date total of 2.04 inches (229 percent of normal). By mid-week, snow moved into parts of the **central Plains, Ohio Valley**, and **mid-South**. Daily-record snowfall amounts for January 20 reached 3.7 inches in **Louisville, KY**, and 3.3 inches in **Evansville, IN**. On January 21, very heavy precipitation soaked the **Pacific Northwest**, resulting in daily-record amounts in locations such as **Hoquiam, WA** (3.97 inches), and **Astoria, OR** (3.52 inches). A day later, unusually heavy snow developed across the **interior Southeast**. In **Kentucky**, record-setting snowfall totals for January 22 reached 15.7 inches in **Jackson** and 12.2 inches in **Bowling Green**. For **Bowling Green**, it was the snowiest January day on record, topping the 10-inch total of January 6, 1910. It was also **Bowling Green's** third-snowiest day, behind 18.0 inches on March 9, 1960, and 13.0 inches on February 12, 1910. Elsewhere on the 22nd, daily-record snowfall amounts included 13.4 inches in **Asheville, NC**; 8.0 inches in **Nashville, TN**; 6.9 inches in **North Little Rock, AR**; and 5.1 inches in **Evansville, IN**. In the **Mid-Atlantic region**, January 23 became the snowiest calendar day on record in locations such as **Allentown, PA** (30.2 inches; previously, 24.0 inches on February 11, 1983), and **New York's Central Park** (26.6 inches; previously, 24.1 inches on February 12, 2006). On January 22-23 in **Pennsylvania**, two-day snowfall records were demolished in **Allentown** (31.9 inches; previously 25.6 inches on January 7-8, 1996) and **Harrisburg** (30.2 inches; previously, 25.0 inches on February 12-13, 1983). With a 29.2-inch total, **Baltimore, MD**, also set a 2-day



snowfall record (previously, 26.3 inches on January 27-28, 1922). **Baltimore** also set a storm-total snowfall record, topping the 26.8 inches that fell from February 16-18, 2003. Along the **Mid-Atlantic coast**, tide records were established on January 23 in **Cape May, NJ**, and **Lewes, DE**; in both locations the water level was just under an inch higher than the high-water marks set during Superstorm Sandy in October 2012 and the Great Atlantic Storm of March 1962, respectively. Northeasterly wind gusts that on January 23 were clocked to 70 mph at **Wallops Island, VA**, and 68 mph in **Tuckerton, NJ**, helped to drive the water ashore.

From January 16-19, the temperature in **Rochester, MN**, remained below 0°F for more than 68 consecutive hours—the longest such streak in that location in 7 years, when there were 83 sub-zero hours in a row from January 13-16, 2009. **Rochester** also reported a minimum of -21°F on January 18, representing the lowest reading in that city since January 6, 2014, when it was -23°F. Several early-week readings below -30°F were noted in **northern Minnesota**. By January 21, record-setting warmth appeared in the **Pacific Northwest**, where **North Bend, OR**, posted a daily-record high of 70°F. The following day, record-setting highs for January 22 included 60°F in both **Salem, OR**, and **Walla Walla, WA**. By week's end, warmth spread into the **Southwest**, where **Tucson, AZ**, notched a daily-record high (81°F on January 23). Meanwhile, the January 23 maximum temperature of 40°F in **Savannah, GA**, was lower than the highs observed that day in locations such as **Great Falls, MT** (48°F), and **King Salmon, AK** (41°F).

Generally mild, dry weather covered the **Alaskan mainland**, while wet conditions were noted across the state's southern tier. Weekly precipitation, all rain, totaled 3.08 inches in **Yakutat**. Similarly, **Kodiak** netted a weekly total of 3.83 inches, with snowfall limited to 0.1 inch on January 22. Farther south, mostly dry weather—consistent with El Niño—persisted in **Hawaii**. However, a few showers dotted windward locations during the mid- to late-week period. At the state's major airport observation sites, January 1-23 rainfall ranged from a trace (1.82 inches below normal) in **Honolulu, Oahu**, to 1.09 inches (17 percent of normal) in **Hilo**, on the **Big Island**. **Honolulu's** lowest January rainfall in the modern record was 0.18 inch, which occurred in 1986 and 2001.



National Weather Data for Selected Cities

Weather Data for the Week Ending January 23, 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 DEC 1	PCT. NORMAL SINCE DEC 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 OF MORE	.50 INCH OF MORE	
AL BIRMINGHAM	45	29	53	19	37	-5	1.55	0.29	0.98	12.94	158	2.41	65	85	49	0	5	3	2	
HUNTSVILLE	40	27	48	16	33	-6	2.38	1.13	1.16	13.65	146	2.97	78	75	58	0	6	3	2	
MOBILE	59	37	71	29	48	-2	2.53	1.18	2.49	17.44	206	5.06	132	88	60	0	3	3	1	
AK MONTGOMERY	53	33	63	24	43	-3	2.77	1.63	1.52	18.51	224	4.38	134	84	50	0	4	3	2	
ANCHORAGE	28	18	29	15	23	7	0.00	-0.13	0.00	0.39	26	0.16	36	76	63	0	7	0	0	
BARROW	-4	-15	2	-24	-9	5	1.33	1.33	0.81	3.45	2654	3.41	9999	87	78	0	7	5	1	
FAIRBANKS	6	-10	11	-14	-2	8	0.00	-0.11	0.00	0.07	6	0.00	0	79	73	0	7	0	0	
JUNEAU	40	33	42	27	37	12	0.57	-0.48	0.31	5.80	66	3.38	102	95	78	0	3	6	0	
KODIAK	39	33	40	30	36	6	2.95	1.10	1.10	19.19	145	6.91	123	100	98	0	4	7	2	
NOME	16	3	23	-13	9	3	0.00	-0.19	0.00	1.02	64	0.24	41	66	56	0	7	0	0	
AZ FLAGSTAFF	47	18	52	11	32	2	0.01	-0.47	0.01	3.94	122	2.91	209	81	24	0	7	1	0	
PHOENIX	71	45	76	43	58	4	0.00	-0.17	0.00	1.34	90	1.13	198	60	36	0	0	0	0	
PRESCOTT	59	27	64	23	43	6	0.01	-0.34	0.01	1.39	61	1.09	109	79	20	0	7	1	0	
TUCSON	73	39	81	37	56	4	0.00	-0.20	0.00	2.00	117	1.53	225	60	27	0	0	0	0	
AR FORT SMITH	40	27	44	21	34	-4	0.02	-0.50	0.02	11.20	225	0.39	25	77	50	0	7	1	0	
LITTLE ROCK	39	28	50	22	34	-6	1.85	1.05	1.24	11.77	165	3.39	139	87	58	0	7	3	1	
CA BAKERSFIELD	64	46	73	45	55	7	0.32	0.05	0.15	1.60	105	1.02	134	89	73	0	0	3	0	
FRESNO	61	46	63	42	53	7	1.96	1.46	0.76	6.34	232	3.37	242	93	84	0	0	4	2	
LOS ANGELES	65	53	76	50	59	2	0.07	-0.62	0.04	3.89	106	2.81	150	93	71	0	0	2	0	
REDDING	58	49	60	47	53	8	3.05	1.54	1.31	18.79	209	10.58	245	88	81	0	0	6	3	
SACRAMENTO	60	50	64	43	55	9	2.31	1.42	0.85	6.95	142	5.20	212	95	68	0	0	5	2	
SAN DIEGO	68	54	70	52	61	3	0.01	-0.51	0.01	3.91	140	3.03	205	90	72	0	0	1	0	
SAN FRANCISCO	60	52	62	47	56	7	2.60	1.56	1.04	8.97	156	5.60	196	91	81	0	0	5	2	
STOCKTON	61	49	65	43	55	9	2.65	2.02	1.07	6.99	196	4.53	260	94	82	0	0	6	2	
CO ALAMOSA	34	-5	37	-11	15	0	0.02	-2.02	0.02	0.82	167	0.57	356	83	59	0	7	1	0	
CO SPRINGS	50	21	61	15	36	8	0.00	-0.04	0.00	0.45	74	0.20	105	71	21	0	7	0	0	
DENVER INTL	47	23	57	12	35	7	0.01	-0.03	0.01	1.11	227	0.40	222	75	40	0	7	1	0	
GRAND JUNCTION	35	15	37	9	25	-1	0.17	0.04	0.06	1.20	129	0.51	124	95	79	0	7	3	0	
PUEBLO	52	21	63	14	37	8	0.00	-0.06	0.00	0.81	131	0.41	178	77	41	0	7	0	0	
CT BRIDGEPORT	34	23	43	18	29	-1	0.75	-0.09	0.71	7.20	120	2.26	89	69	42	0	7	2	1	
HARTFORD	32	20	38	13	26	0	0.10	-0.77	0.10	6.21	100	1.96	75	62	38	0	7	1	0	
DC WASHINGTON	32	22	38	15	27	-7	1.56	0.84	0.91	7.54	143	2.70	122	74	47	0	7	4	2	
DE WILMINGTON	32	20	39	15	26	-5	1.04	0.27	0.78	7.31	127	2.10	89	78	46	0	7	3	1	
FL DAYTONA BEACH	63	41	71	34	52	-6	2.38	1.66	1.45	4.69	97	4.12	195	89	46	0	0	2	2	
JACKSONVILLE	59	35	71	28	47	-6	1.35	0.50	1.30	2.97	59	2.41	100	90	41	0	3	2	1	
KEY WEST	71	62	79	58	67	-3	1.09	0.60	0.86	7.61	207	3.03	197	85	61	0	0	3	1	
MIAMI	71	55	79	52	63	-5	1.14	0.74	0.99	14.75	438	4.93	414	83	50	0	0	2	1	
ORLANDO	64	44	71	38	54	-7	1.23	0.68	1.16	3.72	95	3.00	186	78	49	0	0	3	1	
PENSACOLA	57	41	67	34	49	-3	0.00	-1.24	0.00	8.33	111	0.00	0	76	54	0	0	0	0	
TALLAHASSEE	59	35	70	26	47	-5	1.86	0.62	1.03	9.00	116	4.23	116	83	45	0	2	3	2	
TAMPA	65	47	71	41	56	-5	1.61	1.11	0.95	4.14	111	3.65	253	79	44	0	0	3	2	
WEST PALM BEACH	70	52	80	47	61	-5	1.79	0.89	1.56	11.71	209	4.37	178	82	47	0	0	2	1	
GA ATHENS	44	27	53	20	35	-7	1.98	0.91	1.44	15.92	234	3.55	115	83	54	0	7	4	1	
ATLANTA	43	29	50	20	36	-6	2.83	1.66	1.81	17.43	245	4.92	150	73	56	0	6	4	2	
AUGUSTA	47	30	54	20	39	-6	0.54	-0.49	0.39	8.30	136	1.38	46	88	55	0	5	4	0	
COLUMBUS	51	32	61	24	41	-6	1.73	0.66	1.22	20.11	265	2.74	86	79	44	0	4	2	2	
MACON	51	30	64	21	41	-4	1.21	0.06	0.79	14.89	206	2.27	69	89	46	0	4	3	1	
SAVANNAH	52	33	61	25	43	-6	1.34	0.43	0.69	6.37	116	3.02	114	79	51	0	3	2	2	
HI HILO	84	65	86	64	75	4	0.60	-1.67	0.27	15.18	89	1.09	17	87	72	0	0	3	0	
HONOLULU	81	66	84	63	74	1	0.00	-0.59	0.00	0.28	6	0.00	0	82	70	0	0	0	0	
KAHULUI	82	62	85	59	72	0	0.02	-0.83	0.02	1.25	22	0.50	20	88	77	0	0	1	0	
LIHUE	79	64	81	62	72	0	0.01	-1.02	0.01	1.52	19	0.10	3	84	75	0	0	1	0	
ID BOISE	47	34	50	25	40	10	0.25	-0.05	0.08	2.26	98	0.55	60	77	69	0	1	5	0	
LEWISTON	48	36	56	30	42	8	0.51	0.26	0.24	2.36	132	0.77	104	86	74	0	1	4	0	
POCATELLO	38	22	41	10	30	5	0.55	0.30	0.32	2.08	112	0.84	111	88	77	0	7	3	0	
IL CHICAGO/O'HARE	21	8	33	-4	15	-7	0.07	-0.29	0.05	5.92	165	1.05	91	79	64	0	7	2	0	
MOLINE	22	6	35	-4	14	-7	0.06	-0.27	0.05	4.48	137	0.29	27	75	60	0	7	2	0	
PEORIA	23	8	35	-3	16	-6	0.20	-0.10	0.17	7.02	206	0.71	71	82	58	0	7	3	0	
ROCKFORD	19	7	32	-5	13	-6	0.02	-0.28	0.02	5.38	179	0.73	78	77	67	0	7	1	0	
SPRINGFIELD	23	8	29	1	16	-9	0.33	0.00	0.29	7.58	207	1.02	91	85	63	0	7	3	0	
IN EVANSVILLE	30	17	35	10	24	-7	0.47	-0.17	0.24	9.61	176	4.41	230	70	57	0	7	3	0	
FORT WAYNE	23	6	33	0	15	-8	0.09	-0.35	0.06	5.72	138	1.57	113	84	63	0	7	2	0	
INDIANAPOLIS	24	10	31	1	17	-9	0.14	-0.41	0.13	6.99	149	1.40	84	77	58	0	7	2	0	
SOUTH BEND	22	5	29	-3	13	-10	0.20	-0.28	0.08	5.40	117	1.28	83	86	68	0	7	4	0	
IA BURLINGTON	21	7	31	-4	14	-9	0.09	-0.19	0.09	4.94	165	0.43	48	91	66	0	7	1	0	
CEDAR RAPIDS	19	5	29	-9	12	-6	0.00	-0.22	0.00	4.24	197	0.17	25	91	67	0	7	0	0	
DES MOINES	20	9	28	-6	15	-5	0.10	-0.12	0.10	6.02	301	0.58	87	79	67	0	7	1	0	

Weather Data for the Week Ending January 23, 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 DEC 1	PCT. NORMAL SINCE DEC 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	
WICHITA	32	22	41	15	27	-3	0.01	-0.15	0.01	2.41	123	0.19	31	78	66	0	7	1	0	
KY JACKSON	25	14	31	6	19	-15	2.68	1.91	1.90	8.31	125	3.67	154	85	60	0	7	4	2	
LEXINGTON	25	13	36	4	19	-13	8.90	8.18	4.01	16.70	263	9.49	411	80	62	0	7	3	3	
LOUISVILLE	28	16	36	7	22	-11	0.42	-0.30	0.30	7.55	128	0.97	44	74	52	0	7	2	0	
PADUCAH	31	17	35	9	24	-9	0.30	-0.46	0.16	9.90	150	2.48	112	85	55	0	7	3	0	
LA BATON ROUGE	61	38	77	31	49	-1	1.28	-0.14	1.28	10.69	114	4.36	107	87	51	0	2	1	1	
LAKE CHARLES	62	39	74	32	50	-1	0.16	-1.13	0.16	5.88	70	2.64	70	90	51	0	1	1	0	
NEW ORLEANS	61	44	73	37	53	1	0.33	-1.02	0.31	9.54	108	3.08	82	76	59	0	0	2	0	
SHREVEPORT	53	33	62	27	43	-3	1.34	0.31	1.32	5.77	76	2.88	95	90	52	0	4	2	1	
ME CARIBOU	20	6	27	-2	13	4	0.04	-0.61	0.02	6.17	117	1.29	62	76	55	0	7	2	0	
ME PORTLAND	26	12	32	1	19	-2	0.11	-0.81	0.11	8.70	124	3.36	120	77	49	0	7	1	0	
MD BALTIMORE	31	18	37	13	25	-7	2.31	1.53	1.78	9.48	165	3.63	153	73	48	0	7	4	1	
MA BOSTON	32	20	38	16	26	-3	0.55	-0.33	0.37	7.52	118	3.24	123	70	41	0	7	3	0	
MA WORCESTER	26	15	32	11	20	-3	0.22	-0.71	0.13	6.73	102	2.08	74	74	41	0	7	3	0	
MI ALPENA	24	7	31	0	16	-1	0.06	-0.33	0.06	6.27	206	2.48	203	84	68	0	7	1	0	
MI GRAND RAPIDS	25	12	34	2	18	-4	0.12	-0.32	0.06	4.64	115	1.31	97	86	65	0	7	3	0	
MI HOUGHTON LAKE	21	10	27	6	16	-1	0.09	-0.27	0.05	4.50	158	0.93	85	83	74	0	7	3	0	
MI LANSING	24	11	29	5	17	-4	0.05	-0.30	0.04	4.02	125	1.30	125	82	68	0	7	2	0	
MI MUSKEGON	24	13	32	2	18	-5	0.32	-0.17	0.15	6.28	151	1.38	91	81	67	0	7	4	0	
MI TRAVERSE CITY	24	13	31	7	18	-3	0.47	-0.22	0.35	6.29	134	1.20	59	85	67	0	7	4	0	
MN DULUTH	17	-3	42	-21	7	-1	0.01	-0.25	0.01	4.23	258	0.53	76	79	65	0	7	1	0	
MN INT'L FALLS	10	-6	24	-26	2	0	0.05	-0.14	0.05	1.32	108	0.25	48	85	66	0	7	1	0	
MN MINNEAPOLIS	14	4	25	-14	9	-4	0.02	-0.20	0.02	2.54	152	0.22	33	80	69	0	7	1	0	
MN ROCHESTER	11	1	23	-21	6	-6	0.07	-0.15	0.04	3.74	229	0.53	87	84	77	0	7	3	0	
MN ST. CLOUD	13	-2	23	-18	5	-3	0.04	-0.13	0.03	1.23	105	0.21	44	87	68	0	7	2	0	
MS JACKSON	53	34	68	25	44	-1	0.99	-0.31	0.71	8.02	87	2.15	56	86	54	0	4	3	1	
MS MERIDIAN	53	32	64	24	42	-4	1.58	0.23	1.33	7.80	84	1.72	43	83	57	0	5	4	1	
MS TUPELO	41	28	48	17	35	-5	2.41	1.29	1.71	10.37	107	3.01	84	79	59	0	5	3	1	
MO COLUMBIA	26	12	34	0	19	-9	0.21	-0.16	0.18	7.94	222	0.90	82	86	63	0	7	2	0	
MO KANSAS CITY	25	13	30	-3	19	-8	0.16	-0.09	0.07	4.00	165	0.76	97	89	70	0	7	3	0	
MO SAINT LOUIS	27	14	36	5	21	-8	0.19	-0.28	0.17	12.54	293	0.80	56	77	60	0	7	3	0	
MO SPRINGFIELD	29	19	33	4	24	-7	0.13	-0.33	0.13	12.37	273	0.94	69	81	67	0	7	1	0	
MT BILLINGS	37	24	46	7	31	7	0.21	0.04	0.14	0.93	77	0.36	67	79	58	0	5	2	0	
MT BUTTE	36	12	40	6	24	6	0.03	-0.08	0.03	0.92	106	0.25	74	90	58	0	7	1	0	
MT CUT BANK	34	16	45	0	25	6	0.00	-0.08	0.00	0.28	47	0.06	23	93	68	0	7	0	0	
MT GLASGOW	21	3	39	-25	12	2	0.09	0.03	0.06	0.94	157	0.23	100	86	76	0	7	2	0	
MT GREAT FALLS	40	22	49	1	31	9	0.17	0.03	0.09	1.68	146	0.61	127	86	59	0	6	3	0	
MT HAVRE	24	7	44	-5	16	2	0.79	0.70	0.79	1.44	173	1.02	319	90	79	0	7	1	1	
MT MISSOULA	35	23	39	18	29	5	0.12	-0.10	0.08	1.77	95	0.39	54	99	89	0	7	3	0	
NE GRAND ISLAND	26	13	32	-6	20	-2	0.19	0.08	0.12	2.19	219	0.31	91	88	79	0	7	3	0	
NE LINCOLN	25	13	30	-9	19	-3	0.08	-0.06	0.08	5.05	377	0.63	131	82	74	0	7	1	0	
NE NORFOLK	23	12	31	-7	17	-3	0.23	0.12	0.23	2.77	280	0.50	147	84	77	0	7	1	0	
NE NORTH PLATTE	34	17	52	4	25	2	0.17	0.09	0.11	0.52	79	0.24	92	87	71	0	7	2	0	
NE OMAHA	22	11	30	-5	16	-6	0.34	0.17	0.34	6.37	449	1.11	222	87	75	0	7	1	0	
NE SCOTTSBLUFF	39	19	55	10	29	5	0.11	0.00	0.08	0.87	97	0.16	47	84	69	0	7	3	0	
NE VALENTINE	29	7	46	-16	18	-3	0.14	0.08	0.05	1.26	247	0.22	122	87	80	0	7	3	0	
NV ELY	38	13	42	3	26	1	0.21	0.04	0.12	2.79	285	1.41	294	79	60	0	7	2	0	
NV LAS VEGAS	58	42	63	36	50	3	0.05	-0.07	0.05	0.32	43	0.31	89	64	46	0	0	1	0	
NV RENO	55	35	58	29	45	11	0.33	0.10	0.16	1.47	95	0.72	109	69	50	0	2	3	0	
NV WINNEMUCCA	45	31	51	25	38	8	0.25	0.08	0.10	2.66	193	0.83	146	85	65	0	5	4	0	
NH CONCORD	27	14	36	9	21	1	0.12	-0.54	0.07	6.14	124	1.36	68	71	40	0	7	2	0	
NJ NEWARK	34	22	42	16	28	-3	1.94	1.02	1.79	8.39	133	3.99	147	69	46	0	7	4	1	
NM ALBUQUERQUE	52	26	56	23	39	3	0.00	-0.09	0.00	1.31	162	0.33	103	69	28	0	6	0	0	
NY ALBANY	29	16	34	12	23	1	0.02	-0.53	0.02	4.91	113	1.24	74	68	43	0	7	1	0	
NY BINGHAMTON	22	12	28	7	17	-5	0.08	-0.49	0.04	4.93	104	1.32	78	85	63	0	7	4	0	
NY BUFFALO	24	12	31	9	18	-6	0.29	-0.40	0.24	4.41	74	1.51	70	83	63	0	7	4	0	
NY ROCHESTER	26	11	35	6	19	-5	0.25	-0.27	0.07	3.86	90	1.13	72	78	64	0	7	6	0	
NY SYRACUSE	25	11	32	1	18	-4	0.30	-0.28	0.13	6.46	133	1.63	93	92	65	0	7	5	0	
NC ASHEVILLE	34	21	47	11	28	-7	1.56	0.63	1.49	12.01	198	3.25	122	74	54	0	7	2	1	
NC CHARLOTTE	41	22	49	14	32	-10	0.88	-0.03	0.82	10.93	187	2.23	83	77	41	0	7	4	1	
NC GREENSBORO	36	21	44	15	28	-10	0.95	0.15	0.86	8.53	157	1.88	80	82	42	0	7	4	1	
NC HATTERAS	48	31	63	24	40	-6	2.10	0.75	1.54	9.48	110	4.52	112	79	53	0	4	3	2	
NC RALEIGH	37	23	44	18	30	-10	1.09	0.15	0.95	7.81	136	1.74	65	73	49	0	7	3	1	
NC WILMINGTON	45	28	51	21	36	-10	2.13	1.08	1.82	9.38	137	3.88	127	85	44	0	7	2	1	
ND BISMARCK	23	3	55	-19	13	3	0.10	0.02	0.08	1.13	161	0.22	85	90	81	0	7	2	0	
ND DICKINSON	23	7	42	-18	15	1	0.01	-0.06	0.01	0.33	62	0.05	26	91	70	0	7	1	0	
ND FARGO	15	-2	31	-23	7	1	0.02	-0.15	0.01	1.27	119	0.62	124	81	70	0	7	2	0	
ND GRAND FORKS	15	-5	38	-23	5	0	0.00	-0.14	0.00	1.33	136	0.28	65	82	70	0	7	0	0	
ND JAMESTOWN	18	5	39	-16	12	4	0.00	-0.14	0.00	0.44	53	0.00	0	87	72	0	7	0	0	
ND WILLISTON	23	1	39	-20	12	4	0.16	0.05	0.16	0.91	103	***	***	88	73	0	7	1	0	
OH AKRON-CANTON	23	10	31	6	16	-9	0.06	-0.49	0.03	4.82	103	1.12	66	75	61	0	7	3	0	
OH CINCINNATI	25	12	30	5	19	-10	0.19	-0.44	0.16	7.21	137	1.12	57	74	64	0	7	4	0	
OH CLEVELAND	23	12	30	5	18	-7	0.10	-0.45	0.08	4.21	88	1.25	75	78	59	0	7	3	0	
OH COLUMBUS	24	11	31	4	17	-11	0.06	-0.49	0.05	5.98	130	1.10	66	69	58	0	7	2	0	
OH DAYTON	23	8	30	2	16	-10	0.13	-0.44	0.13	5.86	121	1.47	84	83	62	0	7	1	0	
OH MANSFIELD	22	6	28	1	14	-10	0.09	-0.49	0.05	5.57	111	1.41	79	90	64	0	7	2	0	

Based on 1971-2000 normals

*** Not Available

Weather Data for the Week Ending January 23, 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 DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL IN., SINCE JAN 01	PCT. NORMAL SINCE JAN 01	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMP. °F		PRECIP		
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE	
OK TOLEDO	24	9	32	3	17	-7	0.03	-0.38	0.02	4.39	112	1.41	109	83	61	0	7	2	0	
OK YOUNGSTOWN	22	7	30	5	15	-10	0.14	-0.38	0.05	5.46	120	1.27	80	80	68	0	7	4	0	
OK OKLAHOMA CITY	40	25	50	20	32	-4	0.00	-0.26	0.00	3.12	111	0.05	5	89	64	0	7	0	0	
OR TULSA	36	24	43	18	30	-6	0.03	-0.30	0.03	9.25	264	0.65	60	83	66	0	7	1	0	
OR ASTORIA	53	43	59	37	48	6	6.62	4.44	3.51	31.20	185	10.67	164	95	85	0	0	7	5	
OR BURNS	38	23	40	11	30	5	0.62	0.37	0.40	4.55	218	1.17	148	87	75	0	7	4	0	
OR EUGENE	52	43	59	36	48	8	3.57	1.84	1.26	19.26	144	5.65	110	90	81	0	0	7	2	
OR MEDFORD	53	38	65	31	46	7	1.99	1.44	1.14	11.04	242	3.31	198	93	66	0	1	5	1	
OR PENDLETON	52	36	59	31	44	10	0.64	0.31	0.39	3.41	141	1.13	120	88	58	0	1	5	0	
OR PORTLAND	51	43	59	40	47	7	2.67	1.54	0.68	21.24	233	6.00	176	94	82	0	0	7	2	
OR SALEM	53	42	60	38	47	7	3.15	1.84	0.90	21.39	207	6.15	158	89	84	0	0	7	2	
PA ALLENTOWN	32	18	39	13	25	-2	1.20	0.40	1.13	6.80	118	2.61	110	68	44	0	7	3	1	
PA ERIE	24	15	30	11	20	-7	0.79	0.26	0.31	6.45	118	2.56	147	75	64	0	7	5	0	
PA MIDDLETOWN	30	20	37	14	25	-3	3.03	2.40	2.73	9.17	180	4.88	264	78	45	0	7	2	1	
PA PHILADELPHIA	33	22	42	16	28	-4	0.22	-0.58	0.18	6.35	111	1.21	51	66	43	0	7	2	0	
PA PITTSBURGH	22	8	30	4	15	-12	0.34	-0.27	0.23	4.40	94	1.36	75	79	60	0	7	4	0	
PA WILKES-BARRE	29	16	34	10	23	-3	0.19	-0.36	0.19	4.34	104	1.79	111	77	48	0	7	1	0	
PA WILLIAMSPORT	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
RI PROVIDENCE	33	21	41	18	27	-2	0.56	-0.43	0.42	7.82	110	3.02	102	66	49	0	7	3	0	
SC BEAUFORT	50	34	57	27	42	-6	0.92	-0.02	0.51	4.91	84	2.02	73	90	52	0	2	2	1	
SC CHARLESTON	50	32	57	23	41	-7	1.47	0.54	1.02	6.41	107	3.27	118	82	45	0	2	2	1	
SC COLUMBIA	47	29	53	20	38	-6	0.80	-0.27	0.67	8.25	127	1.80	58	76	48	0	5	3	1	
SC GREENVILLE	41	25	51	16	33	-8	1.55	0.56	1.43	13.58	199	3.50	118	87	48	0	7	4	1	
SD ABERDEEN	20	6	33	-20	13	2	0.02	-0.07	0.02	0.75	106	0.11	33	79	72	0	7	1	0	
SD HURON	19	4	32	-18	11	-3	0.14	0.03	0.09	1.48	211	0.20	65	90	77	0	7	2	0	
SD RAPID CITY	31	13	54	-10	22	0	0.00	-0.06	0.00	0.72	114	0.09	39	90	72	0	7	0	0	
SD SIOUX FALLS	17	5	27	-16	11	-3	0.10	-0.01	0.08	1.72	202	0.41	124	85	79	0	7	2	0	
TN BRISTOL	31	19	38	9	25	-9	1.29	0.49	0.82	7.72	135	2.45	105	88	56	0	7	3	1	
TN CHATTANOOGA	36	26	43	16	31	-8	1.95	0.71	1.28	13.25	157	2.84	79	78	61	0	6	3	2	
TN KNOXVILLE	33	22	40	13	28	-9	1.33	0.30	0.88	9.69	127	1.85	59	82	59	0	7	4	1	
TN MEMPHIS	38	27	45	20	33	-7	0.76	-0.16	0.30	7.00	82	2.23	79	78	58	0	5	3	0	
TN NASHVILLE	33	21	42	12	27	-10	1.42	0.54	0.96	7.01	97	2.09	77	79	55	0	7	3	1	
TX ABILENE	57	29	68	24	43	0	0.00	-0.19	0.00	2.24	116	0.04	6	85	54	0	5	0	0	
TX AMARILLO	55	23	70	20	39	3	0.00	-0.12	0.00	1.51	144	0.23	52	87	41	0	7	0	0	
TX AUSTIN	60	32	70	25	46	-4	0.01	-0.38	0.01	3.19	85	0.90	69	84	53	0	4	1	0	
TX BEAUMONT	64	39	78	31	52	0	0.49	-0.81	0.47	7.16	78	3.02	76	96	49	0	1	2	0	
TX BROWNSVILLE	72	48	80	39	60	1	0.00	-0.31	0.00	1.97	102	1.81	221	94	57	0	0	0	0	
TX CORPUS CHRISTI	69	45	79	38	57	1	0.00	-0.33	0.00	2.97	106	2.08	200	85	60	0	0	0	0	
TX DEL RIO	65	39	70	34	52	1	0.00	-0.11	0.00	0.91	86	0.57	184	81	51	0	0	0	0	
TX EL PASO	63	34	68	26	49	4	0.00	-0.08	0.00	1.54	144	0.46	153	53	19	0	3	0	0	
TX FORT WORTH	53	32	66	27	42	-2	0.19	-0.18	0.19	4.90	126	1.07	81	82	49	0	4	1	0	
TX GALVESTON	59	46	72	40	53	-3	0.04	-0.90	0.03	5.13	82	1.64	60	88	60	0	0	2	0	
TX HOUSTON	62	39	74	33	50	-2	0.00	-0.83	0.00	7.15	116	1.94	78	88	53	0	0	0	0	
TX LUBBOCK	59	28	66	23	43	5	0.00	-0.08	0.00	1.87	197	0.30	107	87	50	0	7	0	0	
TX MIDLAND	62	32	71	27	47	4	0.00	-0.11	0.00	1.33	134	0.09	26	79	43	0	4	0	0	
TX SAN ANGELO	62	28	71	25	45	0	0.00	-0.17	0.00	2.26	158	0.00	0	87	48	0	7	0	0	
TX SAN ANTONIO	62	38	69	30	50	0	0.00	-0.36	0.00	2.60	85	1.12	101	89	44	0	1	0	0	
TX VICTORIA	65	39	75	31	52	-1	0.00	-0.54	0.00	4.68	114	3.08	187	98	62	0	1	0	0	
TX WACO	55	32	67	24	44	-2	0.07	-0.32	0.07	3.91	97	0.29	23	86	61	0	3	1	0	
UT WICHITA FALLS	48	24	58	19	36	-4	0.02	-0.20	0.02	3.05	125	0.43	57	89	65	0	7	1	0	
UT SALT LAKE CITY	42	29	45	26	36	7	0.76	0.46	0.34	3.36	158	1.13	126	90	56	0	6	4	0	
VT BURLINGTON	24	10	32	3	17	-1	0.31	-0.19	0.16	5.50	149	1.06	72	77	49	0	7	3	0	
VA LYNCHBURG	32	17	39	9	25	-9	1.34	0.54	1.08	7.72	138	2.76	116	81	45	0	7	4	1	
VA NORFOLK	40	27	48	19	33	-7	3.38	2.47	1.76	7.96	140	4.59	174	75	48	0	7	3	2	
VA RICHMOND	32	21	40	13	27	-9	1.99	1.19	1.15	9.23	166	3.29	135	73	49	0	7	3	2	
VA ROANOKE	32	19	41	12	25	-11	1.62	0.88	1.38	7.54	151	2.99	141	68	49	0	7	3	1	
WA WASH/DULLES	30	18	37	13	24	-8	2.26	1.57	1.58	7.83	152	4.07	197	70	49	0	7	3	2	
WA OLYMPIA	50	39	55	37	45	7	4.09	2.38	2.02	20.77	161	6.27	124	95	89	0	0	7	2	
WA QUILLAYUTE	52	43	54	37	47	6	5.21	2.14	2.16	29.08	123	9.84	108	94	88	0	0	7	2	
WA SEATTLE-TACOMA	50	43	55	40	47	6	3.33	2.17	1.27	16.69	184	5.48	159	90	76	0	0	7	2	
WA SPOKANE	40	32	47	30	36	9	1.17	0.78	0.39	6.51	188	2.07	170	98	87	0	5	7	0	
WA YAKIMA	40	33	46	31	37	8	1.12	0.87	0.51	5.53	254	2.06	258	87	84	0	2	6	1	
WV BECKLEY	24	10	30	2	17	-13	1.27	0.55	0.92	5.65	108	2.10	98	77	66	0	7	4	1	
WV CHARLESTON	24	13	33	6	19	-14	1.95	1.22	1.63	7.97	146	2.38	111	86	62	0	7	4	1	
WV ELKINS	21	3	30	-5	12	-16	1.50	0.73	0.84	6.94	121	2.25	98	82	62	0	7	5	1	
WV HUNTINGTON	24	13	34	8	19	-13	4.78	4.07	3.51	11.90	215	5.49	254	84	58	0	7	3	2	
WI EAU CLAIRE	13	-1	26	-16	6	-5	0.00	-0.24	0.00	4.15	244	0.31	46	81	60	0	7	0	0	
WI GREEN BAY	17	4	29	-8	11	-4	0.00	-0.28	0.00	6.45	293	0.74	94	79	62	0	7	0	0	
WI LA CROSSE	16	4	29	-11	10	-6	0.00	-0.27	0.00	5.47	276	0.55	73	79	58	0	7	0	0	
WI MADISON	17	6	31	-9	11	-6	0.00	-0.27	0.00	3.89	159	0.56	71	75	64	0	7	0	0	
WI MILWAUKEE	19	10	31	-5	14	-6	0.01	-0.40	0.01	4.19	123	0.37	31	72	62	0	7	1	0	
WY CASPER	38	23	42	9	30	8	0.05	-0.06	0.05	1.47	153	0.42	124	77	55	0	7	1	0	
WY CHEYENNE	43	23	55	18	33	7	0.11	0.03	0.09	1.26	175	0.41	158	72	51	0	7	2	0	
WY LANDER	37	14	42	8	26	6	0.00	-0.11	0.00	0.84	88	0.36	106	82	51	0	7	0	0	
WY SHERIDAN	38	13	50	0	26	5	0.28	0.11	0.25	0.72	61	0.38	75	83	69	0	7	2	0	

Based on 1971-2000 normals

*** Not Available

2015 U.S. Weather Review

Annual “Weather Review” provided by USDA/WAOB; rankings provided by National Centers for Environmental Information

A strengthening El Niño arrived early enough to influence late-spring weather patterns—especially in the south-central United States—then altered the Atlantic and Pacific hurricane seasons. Specifically, El Niño suppressed Atlantic tropical activity, but enhanced the eastern Pacific hurricane season. Often during the summer, remnant Pacific tropical moisture became embedded in the Southwestern monsoon circulation, contributing to rare warm-season rainfall events in southern California and a robust summer wet season in much of the Great Basin and the Southwest. However, hot, dry weather plagued the Northwestern growing season, causing additional challenges for producers in the wake of sub-par snow accumulations.

Record-setting, late-spring rainfall in the south-central United States put an end to a drought that had begun in late 2010. During the late summer and early autumn, however, hot, dry weather brought a return of short-term drought across parts of the South. The Southern drought intensity peaked in October, only to be washed away by another round of heavy rain. Additional heavy rain fell across the South toward year’s end, leading to record-high annual precipitation totals in parts of the western Gulf Coast region.

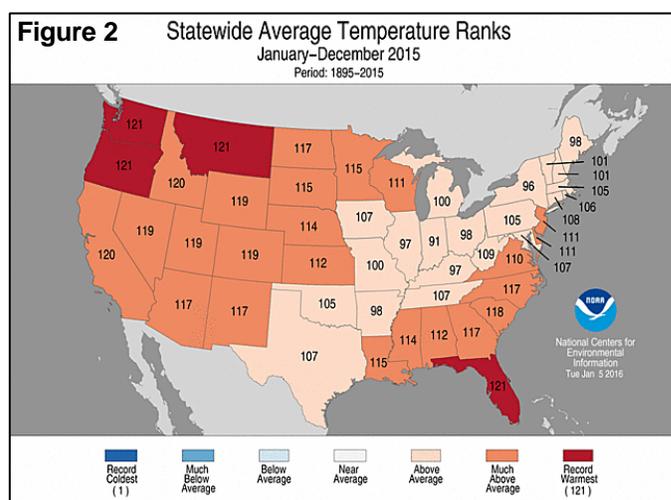
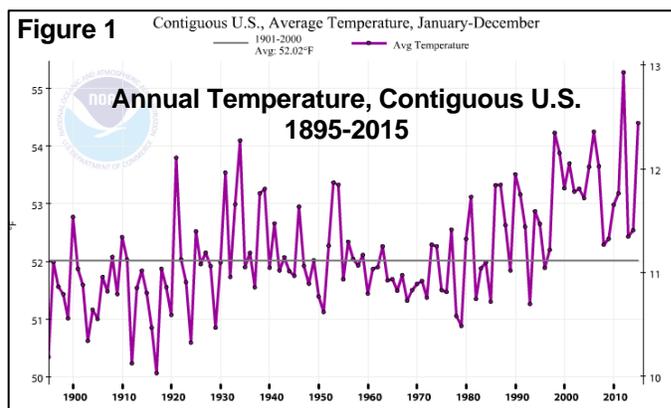
Farther north, timely spring and summer rainfall and moderate summer temperatures led to a nearly ideal growing season across the upper Midwest. The lower Midwest also experienced a lack of heat stress in 2015, but had a much more unfavorable rainfall distribution. Specifically, torrential late-spring and early-summer downpours in the lower Midwest led to flooding and planting delays, following by a late-summer turn toward dryness that stressed poorly rooted corn and soybeans.

Meanwhile, the odd interaction between Atlantic Hurricane Joaquin, which remained offshore, and a non-tropical storm resulted in historic, early-October rainfall in South Carolina and environs. Additional heavy rain plagued parts of the Southeast for the remainder of the year, hindering summer crop harvesting and winter wheat planting.

In contrast, California completed a fourth consecutive year of drought as the 2014-15 wet season drew to a close, leading to another summer of water restrictions and fallowed acreage. In late 2015, the primary storm track often remained north of California, bringing substantial drought relief to the Northwest. Nevertheless, meaningful precipitation fell as far south as the Sierra Nevada, boosting snowpack to near-normal levels by year’s end.

Elsewhere, the Plains’ 2015 winter wheat crop experienced periods of unfavorable weather, including winter cold without much snow cover, leading to declines in crop condition. Later, spring wetness hampered wheat harvest efforts across the southern Plains. Summer growing conditions were mostly favorable across the Plains, but pockets of dryness caused some autumn emergence and establishment issues from Kansas southward for the 2016 winter wheat crop.

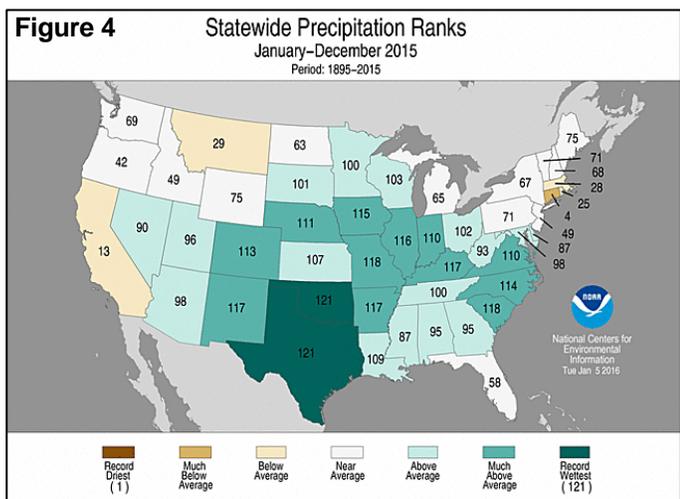
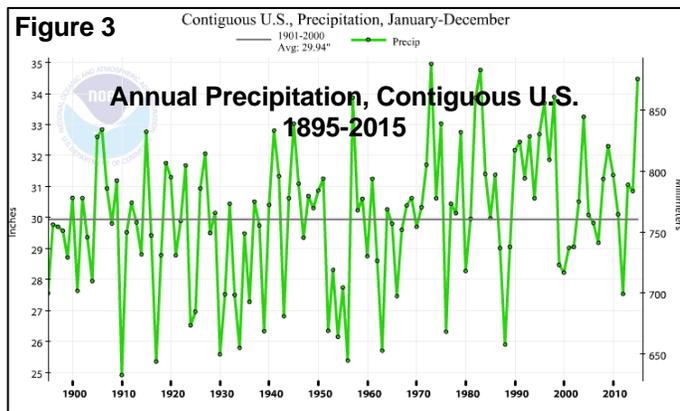
During 2015, drought coverage in the contiguous United States peaked at 38%, according to the U.S. Drought Monitor, on May 5, with a secondary peak of 35% on October 20. By the end of 2015, however, drought coverage had dropped to 19%, the lowest since



December 2010. Most of the remaining drought was confined to the Far West. In stark contrast, a late-December deluge led to record flooding in parts of the middle Mississippi Valley, especially in parts of Missouri and Illinois.

According to the National Centers for Environmental Information, 2015 was the second-warmest, third-wettest year during the period of record that began in 1895. All four of the nation’s warmest years have occurred in the last two decades (figure 1), with 2015 (54.4°F; 2.4°F above the 20th century mean) ranked behind 2012 (55.3°F), but just ahead of 2006 (54.3°F) and 1998 (54.2°F). However, top-ten rankings for annual warmth were noted in all eleven Western States, along with twelve other states—mainly across the Plains and Southeast. It was the warmest year on record in Florida, Montana, Oregon, and Washington (figure 2).

Despite ongoing drought in much of the Far West, the U.S. annual average precipitation totaled 34.47 inches, 115% of normal (figure 3). All of the other years on the nation’s top-five list for annual wetness occurred during moderate to strong El Niño events—either during the year of onset or the following year. With the new addition to the list, the top five contains: 1) 1973, with 34.96 inches; 2) 1983, with 34.76 inches; 3) 2015; 4) 1998, with 33.89 inches; and 5) 1957, with 33.87 inches. Not surprisingly, it was the wettest year on record in Oklahoma and Texas (figure 4), given the deluge events of May and October-December. Top-ten rankings for annual



wetness were noted in Arkansas, Colorado, Illinois, Iowa, Kentucky, Missouri, New Mexico, and the Carolinas. In contrast, consistently dry weather along the northern Atlantic Coast led to the fourth-driest year in Massachusetts. And in California, it was still the 13th-driest year on record, despite promising, late-year precipitation.

Winter (December 2014 – February 2015)

The warmest winter on record covered Washington and four other Western States (Arizona, California, Nevada, and Utah). In California, the previous warmest winter had occurred just last year, in 2013-14. In addition, it was the second-warmest winter on record in Idaho and Oregon. In contrast, colder-than-normal weather dominated the eastern half of the United States, despite a mild December. Conditions turned especially harsh in late winter, when the second-coldest February on record occurred in nine states from Ohio to New England. The Eastern cold wave peaked on February 20, when freezes were noted as far south as interior southern Florida.

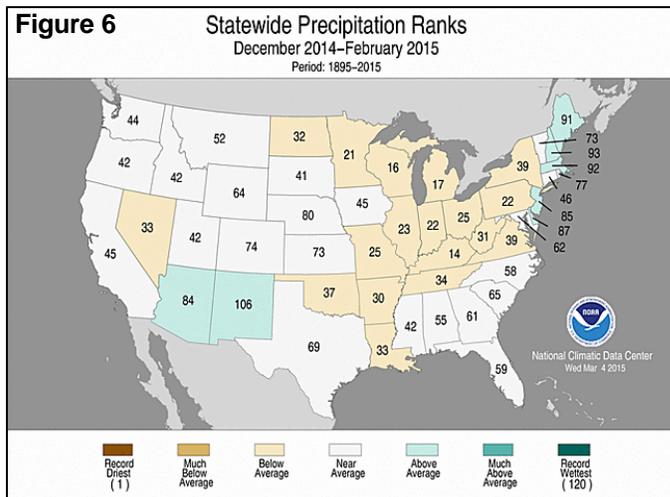
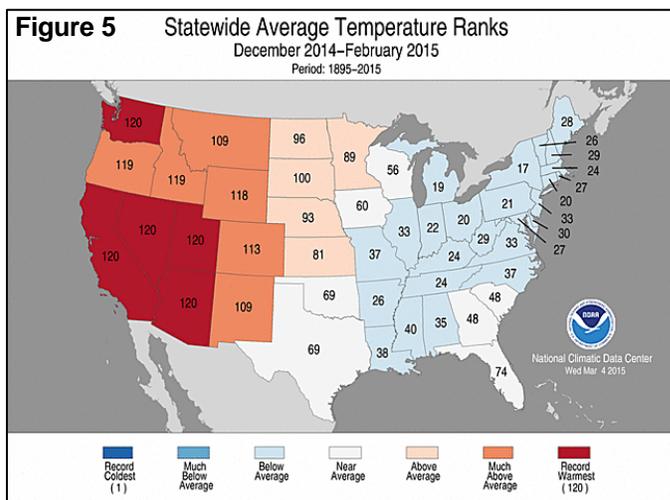
Between the Western warmth and the Eastern chill, the Plains were subjected to frequent and rapid temperature changes. The winter temperatures extremes, some of which occurred without the benefit of a protective snow cover, caused general declines in crop condition for winter wheat. Outside of the hard red winter wheat belt, parts of the upper Midwest experienced a “snow drought,” with less precipitation than normal falling during the winter months.

Only two small areas, the northern Atlantic region and the Southwest, reported wetter-than-normal winter weather. In parts of the Northeast, extremely heavy snow fell from late January to mid-

February. Elsewhere, most of California’s wet weather was compressed into two brief periods—the first 3 weeks of December and several days in early February.

Winter featured regionally contrasting temperatures and mostly drier-than-normal conditions. The nation’s winter average temperature of 34.3°F was 2.1°F above the 20th century mean, while the average precipitation of 6.12 inches was 90% of normal—the 19th-warmest, 27th-driest winter since 1895-96.

State temperature rankings were impressive in the West, with the aforementioned record-setting warmth. In contrast, top-twenty rankings for winter coldness were observed in Connecticut, Michigan, New York, and Ohio (figure 5). Meanwhile, state precipitation rankings ranged from top-twenty winter dryness in Kentucky, Michigan, and Wisconsin to the 15th-wettest winter in New Mexico (figure 6).

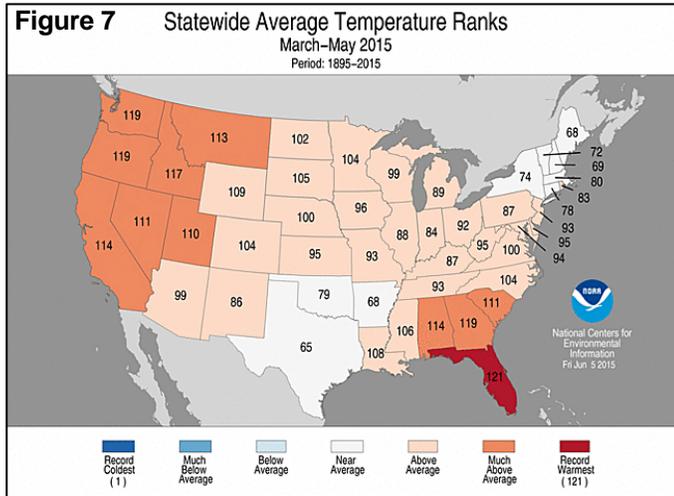


Spring (March-May)

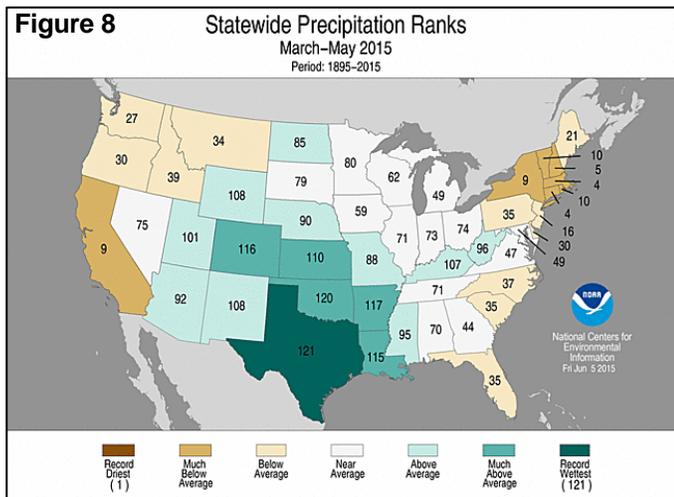
The sudden spring intensification of El Niño contributed to an unexpected deluge in the south-central United States. The heavy rain eradicated the southern Plains’ 4½-year drought but led to widespread May flooding across the southeastern Plains, mid-South, and western Gulf Coast region. Significant, late-spring precipitation also fell across the northern Plains and upper Midwest, helping to boost soil moisture in the wake of a drier-than-normal winter.

In contrast, California's warmer- and drier-than-normal spring ensured a fourth consecutive year of drought and prematurely melted an already record-low snowpack. Problems with anemic snowpack extended through the Pacific Coast States and into the Great Basin and northern Rockies. However, late-spring precipitation was heavy enough to reduce or eliminate drought coverage in the central and southern Rockies and environs.

Atlantic and Pacific basins. For example, hostile upper-level winds contributed to the late-August demise of Hurricane Danny and Tropical Storm Erika, shredding the storms before they could threaten the U.S. mainland. Meanwhile, the unusually warm central Pacific Ocean was rife with tropical activity in August, as five hurricanes churned all around Hawaii without a direct strike.

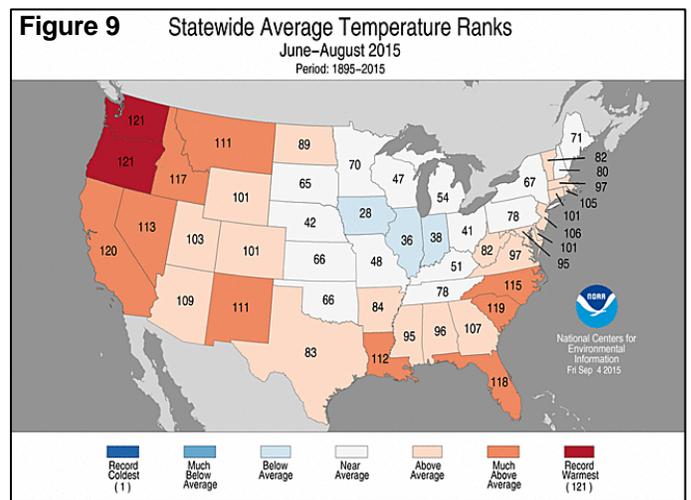


Hot summer weather across the West and South contrasted with moderate temperatures in the Midwest. The pleasant Midwestern weather allowed corn and soybeans to advance into, and through, the reproductive and filling stages of development with negligible heat stress. However, the Midwestern summer rainfall distribution was not ideal, with parts of the southern and eastern Corn Belt plagued by excessive moisture into July. Some of the previously waterlogged areas experienced a rapid August drying trend, leading to further crop stress. Meanwhile, heat and drought development led to an increase in stress on some pastures and row crops across the South. In the western Gulf Coast region, river basins that were enduring the worst flooding in at least 25 years as summer began were suddenly hit with an extended period of hot, dry weather.

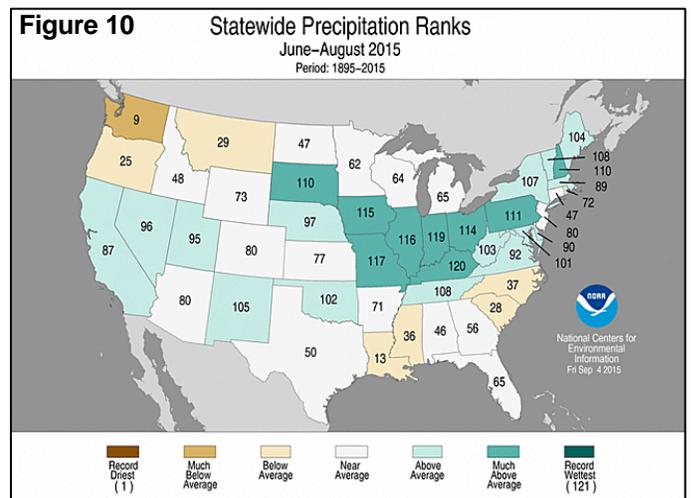


Elsewhere, the Northwest—especially Washington—bore the brunt of worsening drought that adversely affected both winter wheat and spring-sown small grains. Conversely, parts of southern California received unusually heavy rain, especially during July, but not enough to dent the 4-year drought. Monsoon-related rain showers frequented the Southwest, providing limited drought relief and causing sporadic flash flooding.

Spring featured the 11th-warmest, 11th-wettest March–May period during the last 121 years. The nation's average temperature of 53.2°F was 2.2°F above the 20th century mean, while the average precipitation of 9.33 inches was 118% of the long-term mean. It was the nation's wettest spring since 2011. The only wetter March–May periods in the last three decades were 1991, 1995, and 2011.



All 48 states reported spring temperatures in the warm half of the historical distribution. State temperature rankings ranged from the 57th-warmest spring in Texas to the warmest on record in Florida (figure 7). Meanwhile, general spring dryness in the eastern and western United States contrasted with wet conditions in between. It was the ninth-driest spring in California and New York, and among the ten driest in all of New England except Maine (figure 8). Elsewhere, Texas endured its wettest spring, while it was the second-wettest spring in Oklahoma behind 1957.



Summer (June–August)

A strengthening El Niño likely had only a passing influence on U.S. summer weather patterns, but had a profound effect on the tropical

Summer featured an average temperature of 72.7°F, 1.3°F above the 20th century mean, while precipitation averaged 9.14 inches (110% of normal). It was the 12th-hottest, 16th-wettest summer during the 1895-2015 period of record. It was also the hottest summer since 2012. Meanwhile, the average U.S. summer rainfall topped 9 inches for the third consecutive year, following the historic drought of 2012 when precipitation averaged just 7.22 inches.

State temperature rankings ranged from the 28th-coolest June-August period in Iowa to the hottest summer on record in Oregon and Washington (figure 9). Meanwhile, state rainfall rankings ranged from the ninth-driest June-August period in Washington to the second-wettest summer in Kentucky (figure 10). Five Midwestern States, from Iowa and Missouri to Ohio, experienced one of their ten wettest summers.

Autumn (September-November)

Consistent warmth in part related to a strong El Niño led to the nation’s warmest autumn on record. Even some November cooling in the western United States failed to prevent the former record—set in the fall of 1963—from being broken. Autumn’s most impressive heat wave occurred in mid-October, shortly before a significant pattern change brought record-setting rainfall and widespread flooding to parts of the South.

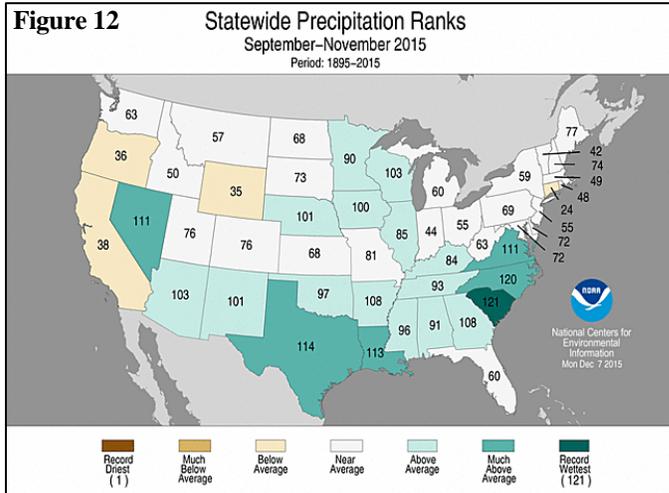
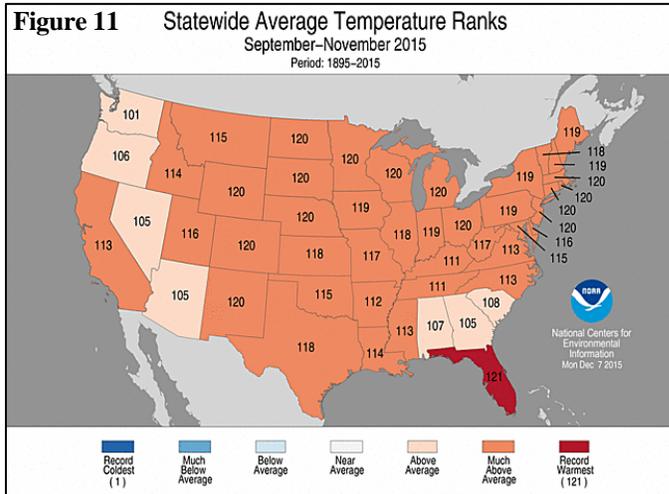
The late-October deluge in the south-central United States, in part fueled by the remnants of Pacific Hurricane Patricia, was only one of several impressive periods of precipitation. Earlier, moisture indirectly associated with Atlantic Hurricane Joaquin had brought catastrophic, early-October flooding to parts of South Carolina, setting the stage for a very difficult harvest (and winter wheat planting) season for some Southeastern producers.

Farther north, most Midwestern producers were able to complete corn and soybean harvesting before field conditions began to deteriorate during the second half of autumn. Ultimately, parts of the central and western Corn Belt turned wet, with significant snow twice accumulating across portions of the north-central United States during the second half of November.

Elsewhere, the early part of the Western wet season had some unexpected results, considering the strong El Niño. The Pacific Northwest received unusually heavy precipitation, with some beneficial rain and snow spreading across the interior Northwest and southward into central California. Early-season storminess also helped to build snowpack in the Great Basin and Intermountain West, but few meaningful storms reached southern California.

The contiguous United States experienced its warmest, 15th-wettest autumn during the 1895-2015 period of record. The nation’s autumn average temperature of 56.8°F was 3.3°F above the 20th century mean, while the average precipitation of 8.32 inches was 121% of normal. It was the nation’s wettest September-November period since 2004.

Florida reported its warmest September-October period on record, and it was the second-warmest autumn in fourteen other states (figure 11). The “coolest” state was Washington, which had its 21st warmest autumn in the last 121 years. Meanwhile, statewide precipitation rankings ranged from the 24th-driest autumn in Massachusetts to the wettest autumn on record in South Carolina (figure 12). In addition, top-ten values for autumn wetness occurred in Louisiana, North Carolina, and Texas.



December

An historic December featured record-setting U.S. warmth and wetness—a never-before-seen combination that led to drought eradication in the Pacific Northwest, rare winter flooding in the mid-Mississippi Valley, deadly tornadoes in the South, occasional heavy snow in the North and West, and spring-like warmth in the East and Midwest. Meaningful precipitation fell as far south as the Sierra Nevada, California’s key watershed region, but little moisture reached southern California or the Desert Southwest.

Farther east, an already wet pattern across the nation’s mid-section culminated in a late-month deluge that drove the Mississippi River to record-high levels from Cape Girardeau, MO, to Thebes, IL. Record-breaking crests were also noted along several Mississippi River tributaries, especially in Missouri. The wetness in the mid-South and lower Midwest increased concerns about soft red winter wheat due to standing water and lowland flooding. Excessively wet conditions also continued to plague parts of the Southeast.

Given the wetness and record-setting warmth, the Southeastern landscape resembled spring more than December, as winter grains and cool-season pastures continued to develop. Farther west, however, a late-month blizzard on the southern High Plains caused substantial livestock mortality due to bitter cold and wind-driven snow. Occasional snow also blanketed other areas of the nation’s mid-section, including the upper Midwest, providing winter grains with some moisture and insulation.

National Weather Data for Selected Cities

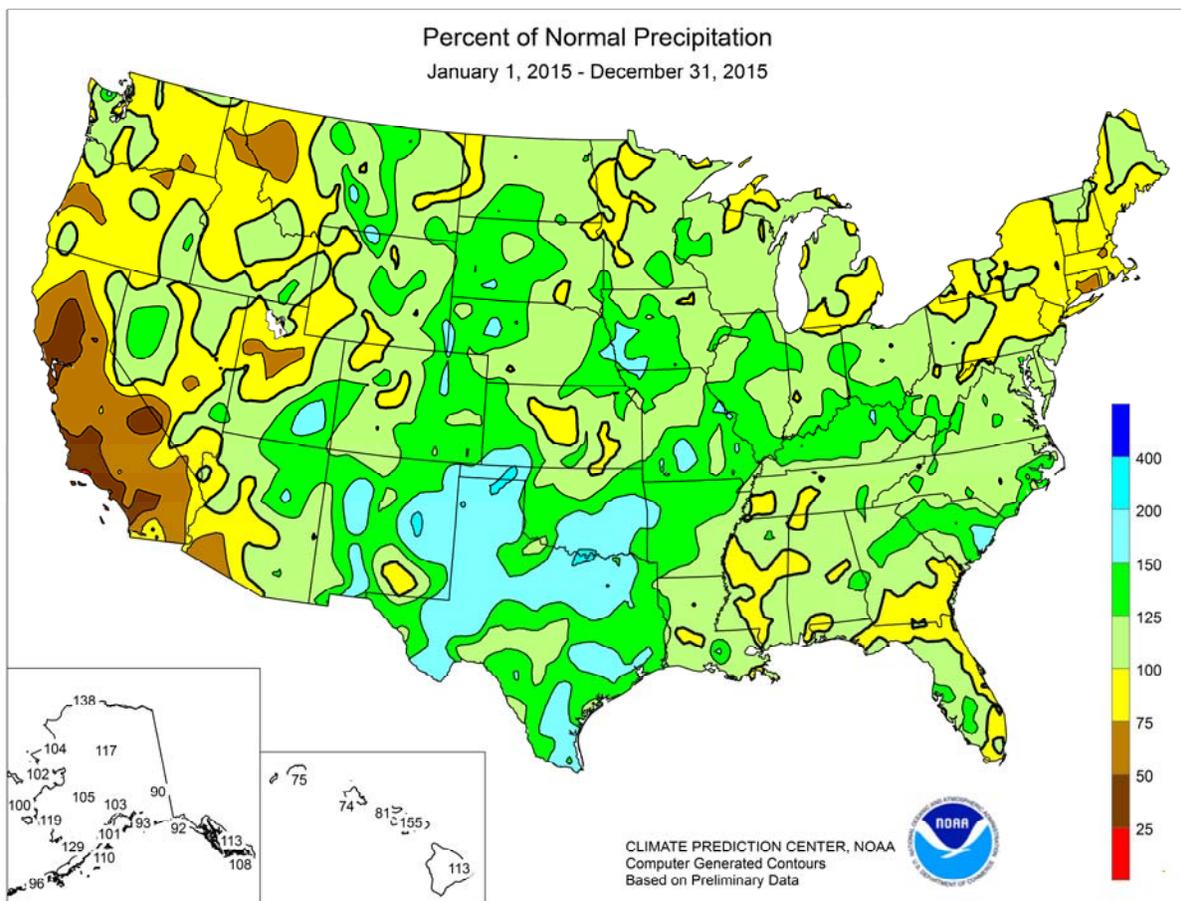
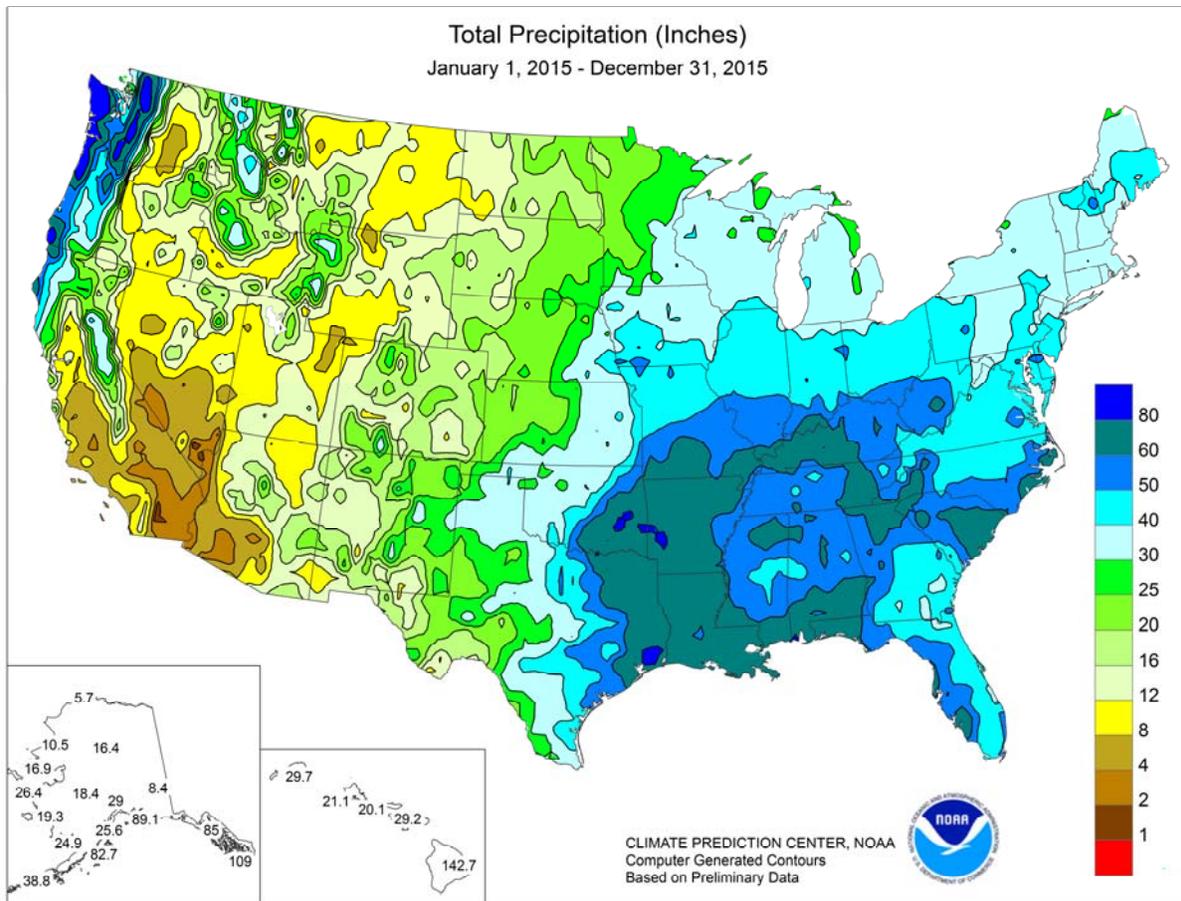
2015

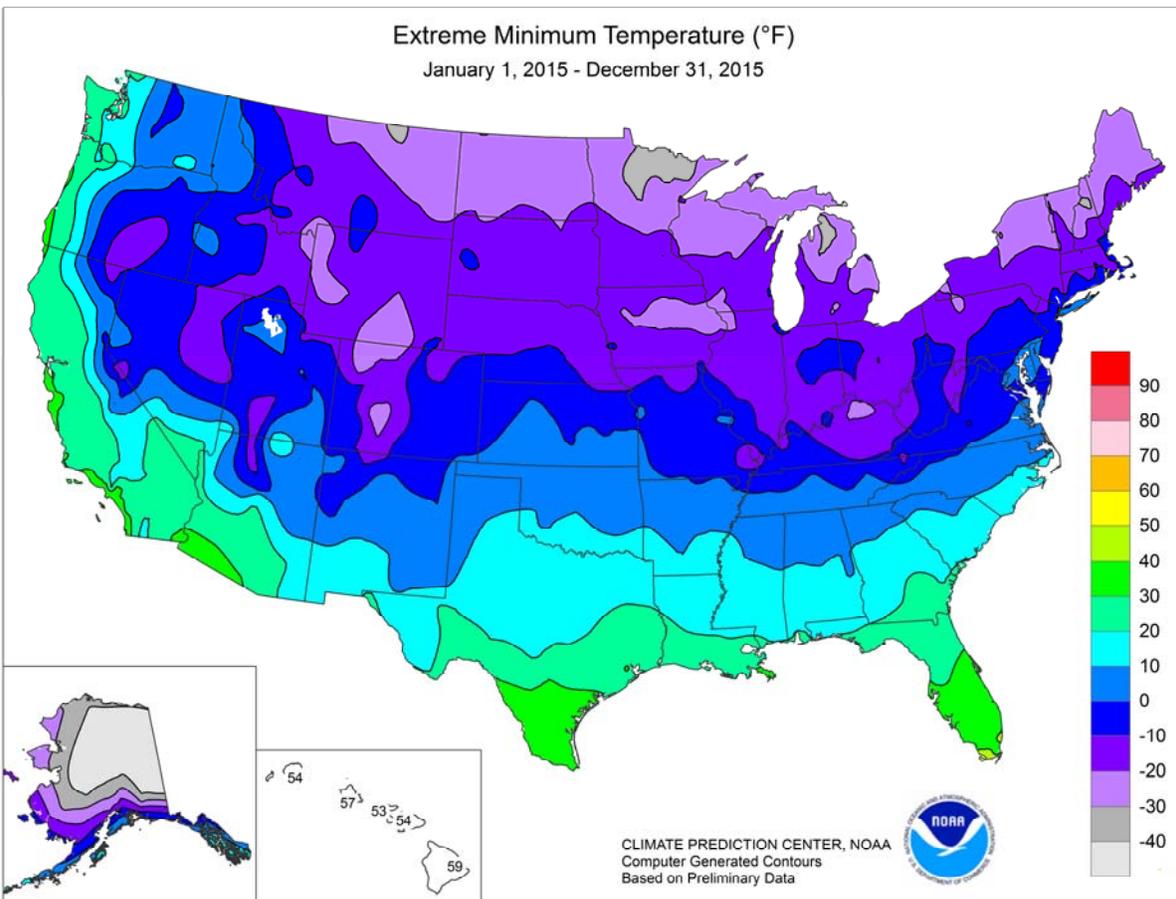
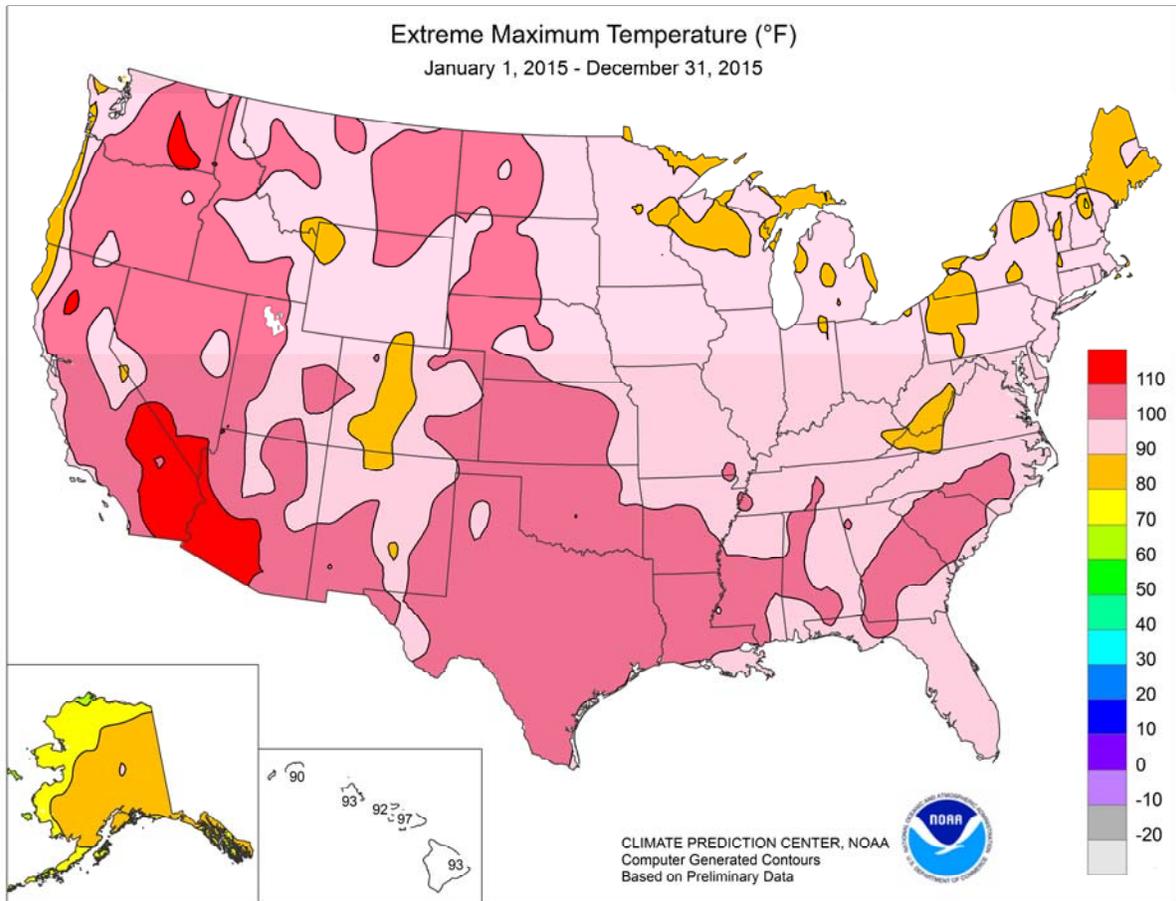
Data Provided by Climate Prediction Center

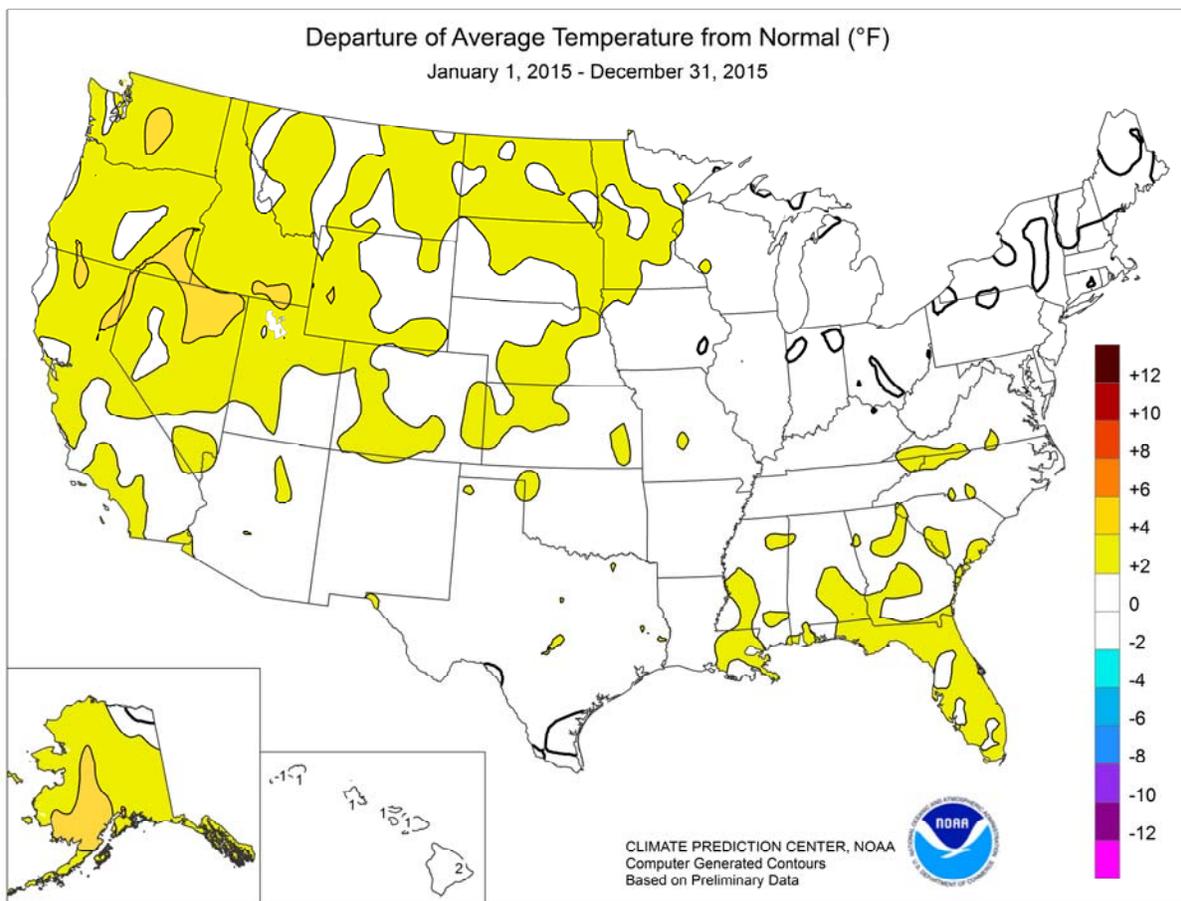
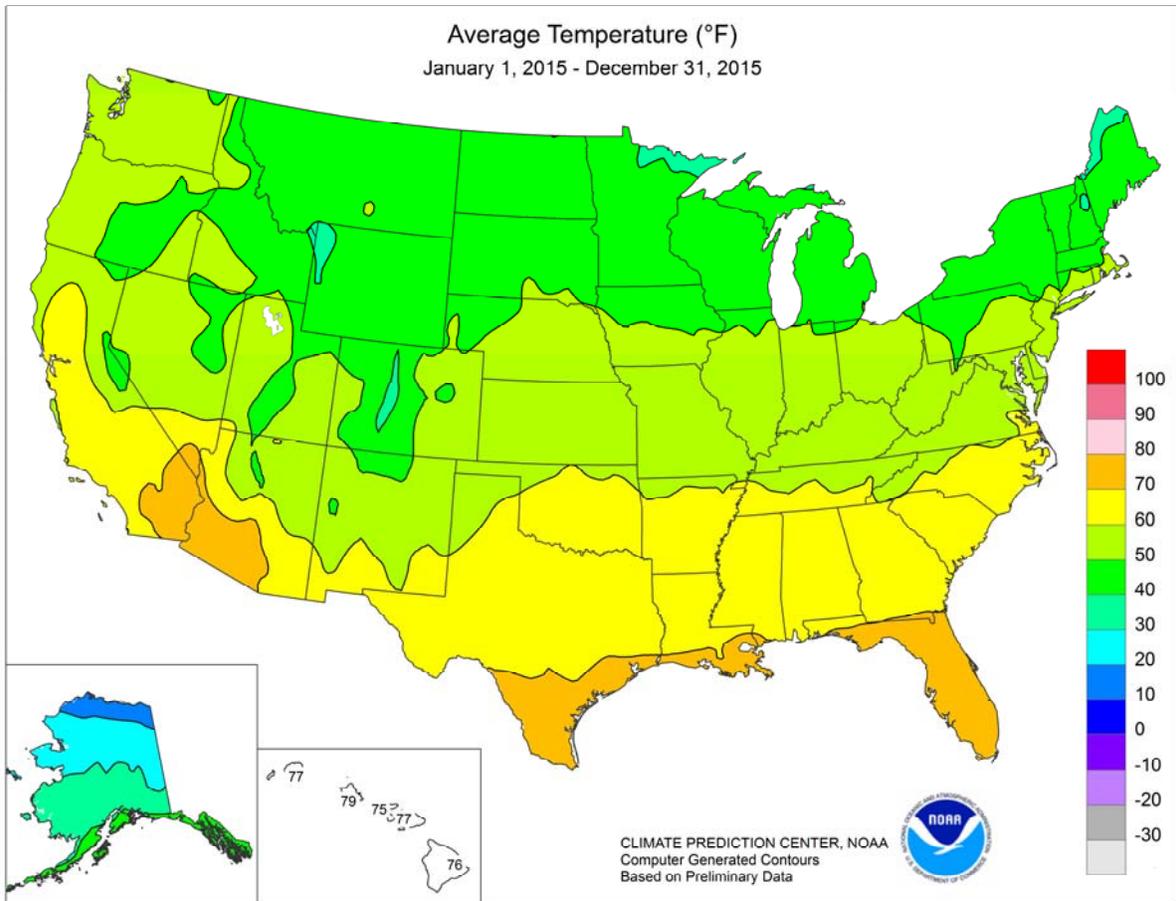
STATES AND STATIONS	TEMP., °F		PRECIP.		STATES AND STATIONS	TEMP., °F		PRECIP.		STATES AND STATIONS	TEMP., °F		PRECIP.	
	AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE
AL BIRMINGHAM	65	3	60.92	6.94	LEXINGTON	56	1	59.88	13.98	COLUMBUS	53	0	44.98	6.48
HUNTSVILLE	64	3	64.56	7.05	LONDON-CORBIN	58	2	54.99	7.58	DAYTON	53	1	41.11	1.53
MOBILE	69	2	81.37	15.08	LOUISVILLE	59	2	62.50	17.97	MANSFIELD	51	2	41.52	-1.71
MONTGOMERY	68	3	56.67	1.90	PADUCAH	59	2	59.16	9.92	TOLEDO	49	-1	36.52	3.31
AK ANCHORAGE	40	4	18.91	2.85	LA BATON ROUGE	70	3	77.59	14.52	YOUNGSTOWN	50	1	44.45	6.43
BARROW	15	4	5.73	1.58	LAKE CHARLES	70	2	64.83	7.65	OK OKLAHOMA CITY	62	2	55.04	19.19
COLD BAY	41	3	38.85	-1.43	NEW ORLEANS	72	3	71.36	7.20	TULSA	62	1	61.99	19.57
FAIRBANKS	31	4	14.38	4.05	SHREVEPORT	68	2	65.24	13.94	OR ASTORIA	54	3	73.78	6.65
JUNEAU	45	3	84.96	26.63	ME BANGOR	44	-1	35.53	-4.04	BURNS	48	4	10.23	-0.34
KING SALMON	40	5	24.95	5.54	CARIBOU	40	1	36.18	-1.25	EUGENE	56	4	32.26	-18.65
KODIAK	44	3	82.70	7.35	PORTLAND	47	1	43.81	-2.02	MEDFORD	59	5	17.47	-0.90
NOME	38	3	16.92	0.36	MD BALTIMORE	56	1	51.16	9.22	PENDLETON	55	3	10.08	-2.68
AZ FLAGSTAFF	48	2	27.24	4.33	MA BOSTON	52	0	34.81	-7.72	PORTLAND	57	3	40.37	3.30
PHOENIX	77	4	7.14	-1.15	WORCESTER	49	2	40.33	-8.72	SALEM	57	4	40.65	0.65
TUCSON	71	2	13.41	1.24	MI ALPENA	44	1	24.07	-4.33	PA ALLENTOWN	53	2	40.48	-4.69
AR FORT SMITH	63	2	73.94	30.07	DETROIT	51	1	30.30	-2.60	ERIE	50	0	37.36	-5.41
LITTLE ROCK	64	2	62.22	11.29	FLINT	50	3	29.30	-2.31	MIDDLETOWN	54	1	42.04	1.54
CA BAKERSFIELD	68	3	3.99	-2.49	GRAND RAPIDS	49	1	33.11	-4.01	PHILADELPHIA	58	3	47.01	4.97
EUREKA	53	0	33.83	-4.27	HOUGHTON LAKE	44	1	28.14	-0.30	PITTSBURGH	53	2	40.59	2.74
FRESNO	67	4	8.98	-2.25	LANSING	48	1	34.53	3.00	WILKES-BARRE	51	1	31.20	-6.35
LOS ANGELES	65	2	5.96	-7.19	MUSKEGON	49	2	36.38	3.51	WILLIAMSPORT	52	2	40.53	-1.06
REDDING	66	4	17.23	-16.29	TRaverse CITY	47	1	31.81	-1.66	PR SAN JUAN	82	2	41.36	-9.40
SACRAMENTO	64	3	8.53	-9.40	MN DULUTH	43	4	32.31	1.31	RI PROVIDENCE	52	1	40.80	-5.66
SAN DIEGO	67	3	9.89	-0.88	INTL FALLS	39	1	24.93	0.99	SC CHARLESTON	68	3	74.89	23.36
SAN FRANCISCO	60	3	8.44	-11.66	MINNEAPOLIS	48	3	36.14	6.73	COLUMBIA	66	2	63.58	15.31
STOCKTON	64	2	7.49	-6.35	ROCHESTER	46	2	35.61	4.20	FLORENCE	66	2	55.14	10.38
CO ALAMOSA	45	4	9.44	2.19	ST. CLOUD	45	3	33.12	5.99	GREENVILLE	63	3	62.80	12.58
CO SPRINGS	51	3	25.26	7.87	MS JACKSON	67	3	59.26	3.32	MYRTLE BEACH	67	3	67.49	21.78
DENVER	52	3	18.30	4.68	MERIDIAN	65	0	59.21	0.56	SD ABERDEEN	46	2	21.20	0.98
GRAND JUNCTION	53	1	13.22	4.24	TUPELO	63	2	70.75	14.89	HURON	48	3	25.60	4.71
PUEBLO	55	3	16.67	4.28	MO COLUMBIA	57	3	50.14	9.86	RAPID CITY	49	2	25.24	8.61
CT BRIDGEPORT	53	1	35.04	-9.11	JOPLIN	59	1	58.68	12.61	SIoux FALLS	48	3	32.97	8.28
HARTFORD	51	1	39.22	-6.94	KANSAS CITY	56	2	46.59	8.60	TN BRISTOL	58	3	44.58	3.26
DC WASHINGTON	60	2	45.02	5.67	SPRINGFIELD	58	2	59.76	14.79	CHATTANOOGA	63	3	66.78	12.26
DE WILMINGTON	56	2	48.73	5.92	ST JOSEPH	55	1	40.36	5.12	JACKSON	61	1	49.93	-4.85
FL DAYTONA BEACH	74	3	43.92	-5.37	ST LOUIS	59	3	61.27	22.52	KNOXVILLE	60	2	51.66	3.44
FT LAUDERDALE	79	3	47.94	-16.26	MT BILLINGS	51	4	12.95	-1.81	MEMPHIS	64	2	52.65	-2.00
FT MYERS	77	2	60.89	6.70	BUTTE	42	2	11.90	-0.88	NASHVILLE	61	2	50.80	2.69
JACKSONVILLE	70	2	44.53	-7.81	GLASGOW	46	3	13.05	1.82	TX ABILENE	65	1	40.39	16.62
KEY WEST	80	2	36.23	-2.71	GREAT FALLS	47	3	15.70	0.81	AMARILLO	59	2	35.13	15.41
MELBOURNE	75	3	53.19	4.90	HELENA	48	4	9.97	-1.35	AUSTIN	68	-1	61.03	27.38
MIAMI	79	2	62.06	3.53	KALISPELL	46	3	11.63	-5.58	BEAUMONT	71	2	74.11	14.22
ORLANDO	75	2	54.08	5.73	MILES CITY	49	3	8.90	-4.59	BROWNSVILLE	75	2	47.27	19.72
PENSACOLA	70	2	75.67	11.39	MISSOULA	47	2	10.06	-3.76	COLLEGE STATION	69	0	58.30	18.63
ST PETERSBURG	76	2	47.12	-2.46	NE GRAND ISLAND	53	3	25.99	0.10	CORPUS CHRISTI	72	0	45.02	12.77
TALLAHASSEE	72	4	53.93	-9.27	HASTINGS	53	2	29.91	1.97	DALLAS/FT WORTH	67	1	62.58	27.85
TAMPA	76	3	63.48	18.72	LINCOLN	53	2	41.17	12.80	DEL RIO	71	1	27.82	9.59
WEST PALM BEACH	78	3	50.61	-10.78	MCCOOK	54	3	21.67	0.05	EL PASO	67	2	12.09	2.66
GA ATHENS	64	2	65.17	17.35	NORFOLK	51	2	27.85	1.19	GALVESTON	72	1	61.54	17.70
ATLANTA	64	2	68.39	18.20	NORTH PLATTE	51	2	20.84	1.18	HOUSTON	70	1	70.04	22.20
AUGUSTA	65	2	47.37	2.78	OMAHA/EPPLEY	53	2	44.70	1.48	LUBBOCK	61	1	29.46	10.78
COLUMBUS	67	2	63.17	14.60	SCOTTSBLUFF	51	3	23.64	7.31	MIDLAND	65	1	22.65	7.85
MACON	66	2	50.20	5.21	VALENTINE	49	2	27.09	7.57	SAN ANGELO	67	2	26.80	5.90
SAVANNAH	69	3	47.59	-1.99	NV ELKO	50	4	11.72	2.13	SAN ANTONIO	71	2	44.20	11.28
HI HILO	76	2	142.74	16.47	ELY	48	3	10.02	0.05	VICTORIA	71	1	53.69	13.59
HONOLULU	79	2	21.12	2.84	LAS VEGAS	72	4	4.49	0.00	WACO	67	0	53.74	20.40
KAHULUI	77	1	29.17	10.37	RENO	57	6	8.50	1.02	WICHITA FALLS	64	1	47.37	18.56
LIHUE	77	1	29.71	-9.85	WINNEMUCCA	51	2	10.76	2.43	UT SALT LAKE CITY	56	4	16.14	-0.36
ID BOISE	55	3	10.96	-1.24	NH CONCORD	47	1	38.32	0.72	VT BURLINGTON	47	2	38.45	2.40
LEWISTON	56	3	10.05	-2.67	NJ ATLANTIC CITY	55	1	48.26	7.67	VA LYNCHBURG	57	2	45.29	1.98
POCATELLO	50	3	11.61	-0.98	NEWARK	56	1	39.06	-7.20	NORFOLK	62	2	49.64	3.90
IL CHICAGO/O'HARE	50	1	39.85	3.57	NM ALBUQUERQUE	59	2	11.48	2.02	RICHMOND	60	2	49.22	5.32
MOLINE	51	1	44.54	6.50	NY ALBANY	49	1	38.65	0.59	ROANOKE	58	2	54.53	12.05
PEORIA	55	4	49.98	13.96	BINGHAMTON	47	1	42.71	4.06	WASH/DULLES	56	2	39.39	-2.42
ROCKFORD	50	2	40.05	3.44	BUFFALO	49	1	37.05	-3.49	WA OLYMPIA	53	3	57.52	6.73
SPRINGFIELD	55	2	44.11	8.55	ROCHESTER	49	1	36.69	2.73	QUILLAYUTE	52	3	96.83	-4.89
IN EVANSVILLE	58	2	51.93	7.66	SYRACUSE	48	0	42.06	2.02	SEATTLE-TACOMA	56	4	44.83	7.77
FORT WAYNE	51	1	46.39	9.84	NC ASHEVILLE	58	3	54.34	7.30	SPOKANE	52	5	14.09	-2.58
INDIANAPOLIS	54	1	48.14	7.20	CHARLOTTE	62	1	49.99	6.47	YAKIMA	55	6	8.96	0.70
SOUTH BEND	50	0	36.31	-3.39	GREENSBORO	61	3	48.48	5.35	WV BECKLEY	54	2	48.13	6.51
IA BURLINGTON	53	1	42.24	4.30	HATTERAS	64	1	69.54	11.79	CHARLESTON	57	2	48.54	4.50
CEDAR RAPIDS	49	0	42.16	8.75	RALEIGH	62	2	57.11	14.06	ELKINS	52	2	48.15	2.06
DES MOINES	53	3	44.62	9.90	WILMINGTON	65	1	72.35	15.28	HUNTINGTON	56	1	49.31	7.00
DUBUQUE	48	1	39.20	3.69	ND BISMARCK	46	4	17.74	0.90	WI EAU CLAIRE	46	2	42.43	10.31
SIoux CITY	51	3	35.14	9.15	DICKINSON	45	2	11.75	-4.60	GREEN BAY	47	2	32.90	3.71
WATERLOO	49	2	38.97	5.83	FARGO	46	4	21.34	0.15	LA CROSSE	50	3	34.48	2.12
KS CONCORDIA	56	2	29.32	0.89	GRAND FORKS	43	3	21.30	1.70	MADISON	48	2	39.79	6.84
DODGE CITY	57	2	28.31	5.96	JAMESTOWN	44	2	22.69	4.20	MILWAUKEE	49	1	32.85	-1.96
GOODLAND	54	3	20.52	0.76	MINOT	44	2	15.56	-2.88	WAUSAU	45	1	37.28	3.92
HILL CITY	56	3	21.69	-1.20	WILLISTON	45	4	12.06	-2.10	WY CASPER	47	2	13.28	0.25
TOPEKA	57	3	49.39	13.75	OH AKRON-CANTON	52	2	41.21	2.74	CHEYENNE	48	3	17.82	2.37
WICHITA	59	3	41.91	11.53	CINCINNATI	55	1	48.91	6.30	LANDER	47	2	15.15	1.73
KY JACKSON	58	2	57.30	7.91	CLEVELAND	51	1	40.78	2.08	SHERIDAN	47	2	16.01	1.29

Based on 1971-2000 normals

*** Not Available







2015 U.S. Fieldwork Highlights

Highlights, released on January 12, 2016, were provided by USDA/NASS.

April: Temperatures were generally above normal across most of the nation in April. Major exceptions were in the Pacific Northwest, southern Rocky Mountains, and New England, where April average temperatures were below normal. Monthly precipitation was generally within 3 inches of normal, with exceptions in the southern Great Plains, the Mississippi Delta, and Kentucky. By April 12, two percent of the nation's corn was planted, slightly behind last year and 3 percentage points behind the 5-year average—with planting progress at or behind the 5-year average in all estimating states except Kansas. Producers had planted 55 percent of this year's corn by May 3, twenty-seven percentage points ahead of last year and 17 points ahead of the 5-year average. Thirty-six percent of the corn was planted during the final week of the month, tied for the third-highest national weekly planting progress on record behind the weeks ending May 19, 2013, and May 10, 1992. By April 5, producers had planted 2 percent of this year's cotton, 4 percentage points behind both last year and the 5-year average. Nationally, cotton producers had planted 17 percent of the cotton crop by May 3, slightly ahead of last year but 5 percentage points behind the 5-year average.

May: Above-average temperatures across the eastern U.S. during May allowed producers to catch up on spring fieldwork delays caused by cool, wet weather earlier in the spring. With the exception of the Pacific Northwest, most locations in the western U.S. recorded below-average temperatures, slowing planting and crop progress in the Great Plains and Rocky Mountains. Heading of winter wheat advanced to 84 percent complete by May 31, six percentage points ahead of last year and 7 points ahead of the 5-year average. Warm weather in the soft white wheat growing region during the last week of the month promoted wheat development, with heading 33 percentage points ahead of the 5-year average in both Idaho and Oregon. Nationally, 83 percent of the rice crop was seeded by May 10, eleven percentage points ahead of both last year and the 5-year average. Rice planting advanced 37 percentage points in California and 36 points in Missouri during the first week of May. Ninety percent of the rice was emerged by May 31, two percentage points ahead of last year and 3 points ahead of the 5-year average. Arkansas rice producers reported the loss of some acreage to flooding during the month but were able to apply pre-flood fertilizers and herbicides where possible. Planting of the 2015 corn crop was 95 percent complete by May 31, slightly ahead of both last year and the 5-year average. By the end of May, at least 90 percent of the corn had emerged in Illinois, Iowa, Minnesota, North Carolina, and Tennessee. Soybean planting advanced to 13 percent complete by May 3, eight percentage points ahead of last year and 4 points ahead of the 5-year average. By May 31, seventy-one percent of the nation's soybeans were planted, 4 percentage points behind last year but slightly ahead of the 5-year average. By the end of the month, wet conditions slowed the soybean planting pace in the central U.S., with planting progress 42 percentage points behind the 5-year average in Kansas and 34 points behind in Missouri.

June: Parts of the central and eastern Corn Belt recorded more than 200 percent of normal June precipitation, causing delays in spring fieldwork and deterioration of crop ratings. Illinois, Indiana, and Ohio recorded the wettest June on record dating back to 1895. In contrast, dry conditions stressed crops in the Pacific Coast States. Monthly average temperatures were generally above normal across the nation, with parts of the Pacific Northwest more than 10°F above normal. By June 28, sixty-eight percent of the corn was reported in good to excellent condition, 7 percentage points below the same time last year. Ninety-four percent of the nation's soybeans were planted by June 28, slightly behind last year and 3 percentage points behind the 5-year average. Missouri continued to lag the rest of the nation in planting progress. By June 28, Missouri producers had planted 62 percent of their intended soybean acreage, 32 percentage points behind the 5-year average. Nationally, 89 percent of the soybeans had emerged by June 28, four percentage points behind last year and 5 points behind the 5-year average. Eight percent of the nation's soybeans were at or beyond the blooming stage by month's end, slightly behind both last year and the 5-year average. Heading of the nation's barley advanced to 62 percent complete by June 28, thirty-three percentage points ahead of last year and 36 points ahead of the 5-year average. Hot, dry June conditions in Montana and Washington dried out soils and lowered barley condition ratings. By June 28, producers had harvested 38 percent of the winter wheat, 4 percentage points behind last year and 8 points behind the 5-year average.

July: A band stretching from the southern Rocky Mountains through the southern Great Plains in Oklahoma and northern Texas, and into the middle Mississippi and Ohio River Valleys, had many locations recording more than 200 percent of the normal July precipitation. In the eastern Corn Belt, additional rainfall on already saturated soils made it difficult to complete summer fieldwork and caused deterioration in crop conditions. Slightly below-average temperatures across most of the northern Great Plains and the Corn Belt kept row-crop progress slightly behind historical levels. In early July, major sorghum heading progress was limited to Arkansas, Louisiana, and Texas, but a small percentage of the crop was heading in the more northern states of Illinois, Missouri, and Oklahoma. Nationally, 29 percent of the sorghum was at or beyond the coloring stage by August 2, five percentage points behind last year and slightly behind the 5-year average. By July 12, fifty-nine percent of the peanuts had advanced to the pegging stage, slightly ahead of last year and 4 percentage points ahead of the 5-year average. Eighty-eight percent of the peanuts were pegging by August 2, two percentage points behind last year but slightly ahead of the 5-year average. By July 5, forty-eight percent of this year's cotton was at or beyond the squaring stage, 3 percentage points behind last year and 7 points behind the 5-year average. Nationally, 10 percent of the cotton was setting bolls by July 5, slightly behind last year and 4 percentage points behind the 5-year average. Ninety-two percent of the nation's cotton was at or beyond the squaring stage by August 2, two percentage points

behind last year and the 5-year average. By August 2, bolls were setting on 57 percent of the cotton, 8 percentage points behind last year and 7 points behind the 5-year average. By August 2, twenty-nine percent of the nation's corn was at or beyond the dough stage, 4 percentage points behind last year and 2 points behind the 5-year average. In eleven of the eighteen major estimating states, the percentage of the crop in the dough stage was behind the 5-year average at month's end.

August: Average monthly temperatures were below normal across the Corn Belt and the northern Great Plains during the month of August, depriving crops of heat units as they were developing towards maturation. Small pockets in Alabama, Florida, Iowa, and Missouri recorded August rainfall totals more than 5 inches above normal. Overall, 70 percent of the spring wheat was reported in good to excellent condition on August 16, unchanged from August 2 but 2 percentage points better than the same time last year. By August 30, eighty-eight percent of the spring wheat was harvested, 52 percentage points ahead of last year and 26 points ahead of the 5-year average. By August 23, eighty-seven percent of the soybeans were at or beyond the pod setting stage, 2 percentage points behind last year and slightly behind the 5-year average. Ninety-three percent of the nation's soybeans were setting pods or beyond by August 30, slightly behind last year and 2 percentage points behind the 5-year average. Nationally, leaf drop advanced to 9 percent complete by August 30, four percentage points ahead of last year and 2 points ahead of the 5-year average.

September: Most of the nation observed above-average September temperatures, facilitating the maturation and harvest of fall-harvested crops in the major agricultural producing regions. The corn harvest began in most southern Corn Belt locations by the middle of the month, with 5 percent of the nation's corn harvested by September 13. This was slightly ahead of last year but 4 percentage points behind the 5-year average. Nationwide, producers had harvested 27 percent of the corn by October 4, eleven percentage points ahead of last year but 5 points behind the 5-year average. Sugarbeet producers had harvested 44 percent of this year's crop by October 4, seven percentage points ahead of last year and 17 points ahead of the 5-year average. Barley producers had harvested 95 percent of this year's crop by September 6, seventeen percentage points ahead of last year and 13 points ahead of the 5-year average. Ninety-seven percent of the spring wheat was harvested by September 13, twenty-five percentage points ahead of last year and 11 points ahead of the 5-year average. By October 4, rice producers had harvested 78 percent of this year's crop, 10 percentage points ahead of last year and 7 points ahead of the 5-year average. Rice producers achieved double-digit advances in harvest progress in Arkansas, Mississippi, and Missouri during the final week of September. Only nine estimating states reported the planting of winter wheat during the first week of September, with major progress limited to Colorado, Idaho, South Dakota, and Washington. By October 4, producers had sown 49 percent of the nation's 2016 winter wheat, 5 percentage points behind last year and 2 points behind the 5-year average. Nationally, 42 percent of the soybeans were harvested by October 4, twenty-three percentage points ahead of last year and 10 percentage points ahead of the 5-year average. Generally dry conditions across the Midwest allowed for the national soybean harvest to advance 21 percentage points during the final week of the month, including an advance of 37 percentage points in North Dakota and 35 points in Minnesota.

October: Above-average temperatures were observed across most of the U.S., including the northern Rocky Mountains which were more than 6°F above normal. Large areas of the country experienced above-normal precipitation, including the Mid-Atlantic States, southern Great Plains, and the southern Rocky Mountains. Monthly rainfall exceeded 12 inches in parts of Texas, Louisiana, North Carolina, and South Carolina. Rain in Texas and Louisiana included remnants of Hurricane Patricia, while the Carolinas experienced a low-pressure system that led to extensive flooding. Producers had seeded 88 percent of the 2016 winter wheat crop by November 1, slightly behind last year and 2 percentage points behind the 5-year average. Overall, 49 percent of the wheat was reported in good to excellent condition on November 1, ten percentage points below the same time last year. Nationally, 85 percent of the corn was harvested by November 1, twenty-three percentage points ahead of last year and 6 points ahead of the 5-year average. Overall, 68 percent of the corn was rated good to excellent on October 18, six percentage points below the same time last year. By November 1, ninety-two percent of the soybeans were harvested, 11 percentage points ahead of last year and 4 points ahead of the 5-year average. Overall, 64 percent of the soybeans were reported in good to excellent condition on October 11, nine percentage points below the same time last year. Nationwide, half of the cotton was harvested by November 1, slightly ahead of last year but 4 percentage points behind the 5-year average. Overall, 47 percent of the cotton was rated in good to excellent condition on November 1, down slightly from the beginning of October and slightly below the same time last year. By November 1, producers had harvested 72 percent of the peanut crop, 5 percentage points behind last year and 7 points behind the 5-year average.

November: Temperatures were above normal in areas east of the Rocky Mountains, with most of the upper Midwest and Florida averaging more than 6°F above normal. Conversely, areas from the Pacific Coast to the Intermountain West experienced temperatures more than 2°F below normal. Precipitation was within 3 inches of normal across most of the nation. Ninety-six percent of the nation's 2016 winter wheat was sown by November 22, three percentage points behind last year and 4 points behind the 5-year average. As of November 29, states across the northern Plains and Great Lakes region generally had better wheat condition ratings—such as Montana at 73 percent good to excellent—than Southern States—like Arkansas at 40 percent. Overall, 55 percent of the winter wheat was reported in good to excellent condition, 3 percentage points below the same time last year. With warmer-than-normal conditions in the Midwest, the nation's corn harvest progress remained ahead of the 5-year average through harvest completion in mid-November. By November 15, ninety-six percent of the nation's corn was harvested, 8 percentage points ahead of last year and 2 points ahead of the 5-year average. By November 8, producers had harvested 95 percent of the soybean crop, 6 percentage points ahead of last year and 2 points ahead of the 5-year average. Peanut producers had harvested 93 percent of the nation's crop by November 29, seven percentage points behind last year and 6 points behind the 5-year average. In all estimating states except South Carolina, the peanut harvest was at least 90 percent complete. Nationally, producers had harvested 80 percent of the cotton by November 29, three percentage points behind last year and 8 points behind the 5-year average. Nationwide, 96 percent of the sugarbeets had been dug by November 8, slightly behind both last year and the 5-year average.

2015 U.S. Crop Production Highlights

Highlights, released on January 12, 2016, were provided by USDA/NASS.

Corn: Corn for grain production in the U.S. is estimated at 13.6 billion bushels, down slightly from the November forecast and down 4 percent from the record 2014 estimate. The average U.S. yield is estimated at 168.4 bushels per acre. This is down 0.9 bushel from the November forecast and 2.6 bushels below the record 2014 average yield of 171.0 bushels per acre, but is the second-highest yield on record. Estimated yields in 2015 are up from the previous year across the northern corn-producing states. Wet conditions hampered yield potential in the eastern Corn Belt States. Record yields are estimated in Arizona, Florida, Idaho, Iowa, Kentucky, Michigan, Minnesota, Nebraska, South Dakota, Virginia, Wisconsin, and Wyoming.

Corn planted area, at 88.0 million acres, is down 3 percent from 2014. Area harvested for grain is estimated at 80.7 million acres, up slightly from the November forecast but down 3 percent from the 2014 estimate. The 2015 corn objective yield data indicate the highest number of ears per acre on record for the combined ten objective yield states (Iowa, Illinois, Indiana, Kansas, Minnesota, Missouri, Nebraska, Ohio, South Dakota, and Wisconsin). Record-high ear counts were recorded in Illinois, Iowa, Nebraska, Ohio, and South Dakota.

Corn silage production is estimated at 127 million tons for 2015, down less than 1 percent from 2014. The U.S. silage yield is estimated at 20.4 tons per acre, up 0.3 ton from 2014. Area harvested for silage is estimated at 6.22 million acres, down 2 percent from a year ago.

Sorghum: Grain production in 2015 is estimated at 597 million bushels, up slightly from the November forecast and up 38 percent from the 2014 total. Planted area for 2015 is estimated at 8.46 million acres, up 19 percent from the previous year. Area harvested for grain, at 7.85 million acres, is up 23 percent from 2014. Average grain yield, at 76.0 bushels per acre, is down 1.7 bushels from the previous forecast but up 8.4 bushels from 2014—and represents a record-high U.S. yield. Record-high yields are estimated in Kansas and South Dakota.

Oats: Production in 2015 is estimated at 89.5 million bushels, up 27 percent from the revised 2014 total of 70.2 million bushels. Yield is estimated at 70.2 bushels per acre, up 2.3 bushels from the previous year, and represents a new U.S. record high. Harvested area, at 1.28 million acres, is 23

percent above the previous year. Record-low acres were harvested in California, Indiana, South Carolina, Oregon, and Utah.

Barley: Production is estimated at 214 million bushels, up 18 percent from the revised 2014 total. Average yield per acre, at 68.9 bushels, is down 3.8 bushels from the previous year. Producers seeded 3.56 million acres in 2015, up 17 percent from last year. Harvested area, at 3.11 million acres, is up 25 percent from 2014.

All wheat: Production totaled 2.05 billion bushels in 2015, up 1 percent from the 2014 total. Area harvested for grain totaled 47.1 million acres, up 2 percent from the previous year. The U.S. yield is estimated at 43.6 bushels per acre, down 0.1 bushel from the previous year. The levels of production and changes from 2014 by type are winter wheat, 1.37 billion bushels, down less than 1 percent; other spring wheat, 599 million bushels, up less than 1 percent; and Durum wheat, 82.5 million bushels, up 53 percent.

Winter wheat: Production for 2015 totaled 1.37 billion bushels, down less than 1 percent from the 2014 total. The U.S. yield, at 42.5 bushels per acre, is down 0.1 bushel from 2014. Area harvested for grain is estimated at 32.3 million acres, down slightly from the previous year. A record-high yield is estimated in Michigan for 2015.

Planted acreage was down from 2014 in most of the major Hard Red Winter (HRW) growing States. Particularly large decreases occurred in Colorado, Kansas, Montana, and North Dakota. Harvested acres were up across the southern HRW region, with large increases in Oklahoma and Texas compared with 2014. Nationally, HRW production totaled 827 million bushels, up 12 percent from 2014.

In the Soft Red Winter (SRW) growing area, planted and harvested acreage decreases from 2014 were experienced throughout most of the region. SRW production totaled 359 million bushels, down 21 percent from 2014.

White winter production totaled 184 million bushels, up slightly from the previous year. Harvested acreage in the Pacific Northwest (Idaho, Oregon, and Washington) was down 3 percent from 2014. Yields were up from last year in Idaho and Washington.

Other spring wheat: Production for 2015 is estimated at 599 million bushels, up less than 1 percent from the 2014 total. Harvested area totaled 12.9 million acres, up 2 percent from 2014. The U.S. yield is estimated at 46.3 bushels per acre, 0.4 bushel below the 2014 average yield. Of the total production, 564 million bushels are Hard Red Spring wheat, up 2 percent from 2014. Record-high yields are estimated in North Dakota and Minnesota.

Durum wheat: Production for 2015 is estimated at 82.5 million bushels, up 53 percent from the 2014 total. Grain area harvested totaled 1.90 million acres, up 41 percent from the previous year. The U.S. yield is estimated at 43.5 bushels per acre, up 3.3 bushels from 2014. Production in North Dakota, the largest durum-producing state, is up 50 percent from 2014. Durum wheat production in Montana for 2015 represents a record high for the state. A record-high yield is estimated in North Dakota.

Rice: Production in 2015 is estimated at 192 million cwt, up less than 1 percent from the previous forecast but down 13 percent from the revised 2014 total. Planted area for 2015 is estimated at 2.61 million acres, down 12 percent from 2014. Area harvested, at 2.58 million acres, is also down 12 percent from the previous crop year. The average yield for all U.S. rice is estimated at 7,470 pounds per acre, up 47 pounds from the previous forecast but 106 pounds below the 2014 U.S. average of 7,576 pounds per acre. A record-high yield is estimated for California.

All hay: Production of all dry hay for 2015 is estimated at 134 million tons, down 6 percent from the October 1 forecast and down 4 percent from the revised 2014 total. Area harvested is estimated at 54.4 million acres, down 4 percent from the October 1 forecast and down 5 percent from 2014. The average yield, at 2.47 tons per acre, is down 0.05 ton from the October 1 forecast but up 0.02 ton from the previous year.

Alfalfa and alfalfa mixtures: Production in 2015 is estimated at 59.0 million tons, down 7 percent from the October 1 forecast and down 4 percent from the revised 2014 total. Harvested area, at 17.8 million acres, is down 3 percent from the October 1 forecast and 3 percent below the previous year. Average yield is estimated at 3.32 tons per acre, 0.13 ton below the October 1 forecast and down 0.02 ton from 2014. Alfalfa production was generally down across the nation in 2015, as a result of lower yields compared with 2014.

However, Vermont set a record-high yield at 3.00 tons per acre, 0.05 ton higher than the previous record set in 1926.

All other hay: Production in 2015 totaled 75.4 million tons, down 5 percent from the October forecast and down 4 percent from the revised 2014 total. Harvested area, at 36.7 million acres, is down 4 percent from the October 1 forecast and down 5 percent from last year. Average yield is estimated at a record-high 2.06 tons per acre, down 0.01 ton from the October 1 forecast but up 0.03 ton from the previous year. Good moisture during the growing season was beneficial. Record-high yields are estimated in Alabama, Illinois, Missouri, Nevada, and Wyoming.

Peanuts: Production is estimated at 6.21 billion pounds, up less than 1 percent from the previous forecast and up 20 percent from 2014. Planted area is estimated at 1.63 million acres, up 20 percent from last year. Harvested area is estimated at 1.57 million acres, down less than 1 percent from last month but up 19 percent from last year. Average yield is estimated at 3,963 pounds per acre, up 41 pounds from the previous forecast and up 40 pounds from 2014. The increase in planted acreage for 2015 was mainly due to relatively low prices of other crops. In Georgia, the largest peanut-producing state, planted acreage is up 31 percent from 2014 and represents the highest peanut acreage estimated since 1991. Condition of the crop was mostly good to excellent during the growing season. Georgia is the only state reporting a record-high production for 2015.

Sunflower: The 2015 sunflower production totaled 2.92 billion pounds, up 32 percent from 2014 and up less than 1 percent from the October forecast. The U.S. average yield per acre increased 156 pounds from last year to a record-high 1,625 pounds. Planted area, at 1.86 million acres, is 19 percent above last year. Area harvested increased 19 percent from last year to 1.80 million acres. The largest planted area occurred in North Dakota, but the state with the largest production was South Dakota, where production—at 1.23 billion pounds—was the highest since 1999. Compared with last year, planted area in South Dakota increased 27 percent and yield increased 179 pounds to a record-high 1,858 pounds per acre. Meanwhile, production in North Dakota increased 26 percent, mostly due to an increase in yield. North Dakota's yield was 217 pounds above last year and was the third highest on record. In addition to South Dakota, record-high yields were also achieved in Kansas and Nebraska.

Soybeans: Production in 2015 totaled a record 3.93 billion bushels, down 1 percent from the November forecast but up slightly from 2014. The average yield per acre is estimated at a record-high 48.0 bushels, 0.3 bushel below the November forecast but 0.5 bushel above last year's yield. Planted area for the nation, at 82.7 million acres, is down less than 1 percent from the 2014 record-high planted acreage. Soybean growers harvested 81.8 million acres, down less than 1 percent from both the November forecast and last year.

Compared with last year, yields were up in most of the Great Plains and the upper Great Lakes regions, with eleven states showing an increase from 2014. Increases from last year of more than 5 bushels per acre occurred in Iowa, Michigan, Minnesota, and Wisconsin. Record-high yields occurred in Georgia, Illinois, Iowa, Michigan, Minnesota, Nebraska, and South Dakota.

The 2015 soybean objective yield survey data indicate that final average pod counts were higher than last year in seven of the eleven objective yield states. Compared with last year, pod counts were up more than 100 pods per 18 square feet in Illinois, Kansas, Minnesota, and Nebraska.

Cotton: Upland cotton production is estimated at 12.5 million 480-pound bales, down less than 1 percent from the December forecast and down 21 percent from last year. The U.S. yield for Upland cotton is estimated at 758 pounds per acre, up 3 pounds from the December forecast but down 68 pounds from 2014. Upland planted area, estimated at 8.42 million acres, is down 22 percent from last year. Harvested area, at 7.92 million acres, is down less than 1 percent from the December forecast and down 13 percent from last year. Record-high Upland yields are estimated in Kansas, Oklahoma, and Tennessee.

American Pima producers planted 158,500 acres, down 18 percent from last year. Harvested area, at 154,900 acres, is down 18 percent from last year. Production is estimated at 435,000 bales (480-pound), down 4 percent from the

September forecast and down 23 percent from last year. The U.S. yield is estimated at 1,348 pounds per acre, down 55 pounds from the September forecast and down 84 pounds from last year.

Sugarbeets: Production for 2015 is estimated at 35.3 million tons, up slightly from the November 1 forecast and up 13 percent from last year's revised production. Growers in the ten major sugarbeet-producing states planted 1.16 million acres, down slightly from last year's revised area. Harvested area, at 1.14 million acres, is down slightly from the previous year. Estimated yield, at 30.8 tons per acre, is unchanged from the November forecast but 3.5 tons above last year.

Sugarcane: Production of sugarcane for sugar and seed in 2015 is estimated at 32.5 million tons, of which 31.0 million tons were utilized for sugar and 1.58 million tons for seed. Total production for sugar and seed is up 1 percent from the December 1 forecast and up 7 percent from 2014. Sugarcane producers harvested 892,700 acres for sugar and seed in 2015, unchanged from the December forecast, but up 3 percent from last year. Yield for sugar and seed is estimated at 36.5 tons per acre, up 0.5 tons from the December forecast but up 4.3 tons from 2014.

Canola: Production in 2015 is estimated at a record 2.88 billion pounds, up 14 percent from 2014 but down 7 percent from the October forecast. The average yield, at 1,677 pounds per acre, is up 63 pounds from the 2014 average yield but down 114 pounds from October. Planted area is estimated at a record-high 1.78 million acres, 4 percent above the previous year's acreage. Harvested area, at 1.71 million acres, is up 10 percent from 2014 and is the second highest on record. Production in North Dakota, the leading canola-producing state, is estimated at a record-high 2.49 billion pounds, up 16 percent from 2014. Compared with last year, planted area in North Dakota is up 18 percent, but the yield is down 20 pounds per acre. North Dakota's crop progress and conditions were very good throughout the growing season.

National Agricultural Summary

January 18 – 24, 2016

Weekly National Agricultural Summary provided by USDA/NASS

HIGHLIGHTS

Temperatures in the western U.S. were above normal, but weekly readings were well below normal in most of the East. A band stretching from the middle Mississippi Valley to the Mid-Atlantic Coast recorded temperatures that were more than 9°F below normal.

Late in the week, a massive storm dropped snow from the Delta to New England, with some areas surpassing 30 inches. A majority of the Pacific Coast received more than 200 percent of the normal weekly precipitation.

Arizona: Alfalfa conditions continued to be rated mostly good to excellent, depending on location. Harvesting occurred on 60 percent of the alfalfa acreage across the state. Rangeland conditions varied widely, depending on location, but were rated mostly good to fair. Central Arizona shipped broccoli, cabbage (green and red), cilantro, kale greens, lemons, and parsley. Western Arizona growers shipped anise, arugula, Bok Choy, broccoli, cabbage (green and red), cauliflower, celery, Chinese cabbage, cilantro, endive, escarole, kale greens, varieties of lettuce (Boston, Iceberg, green leaf, red leaf, and romaine), oranges, parsley, radicchio, and spinach. There was plenty of moisture in the northern part of the state, and range conditions were adequate for this time of year. Only ten of the 50 weather stations reported precipitation during the week, with Pipe Springs reporting the most precipitation at 0.17 inch. The highest temperature was 84°F at Sahuarita. The lowest temperature was 10°F at Springerville and Tec Nos Pos.

California: Temperatures averaged 5 to 9°F above normal, except in the south where readings dipped 2 to 4°F below normal. Early in the week, most locations received rain, except scattered locations in the desert. Snowpack remains well established in the Sierra Nevada, northern coastal ranges, and across the mountains of the northern tier. In Tulare County, winter grains and field crops benefited from more rain. Grain and field crops continued to do well. In Riverside County, potatoes were harvested. In Fresno County, weather was interfering with some wheat fertilizer programs. Postharvest pruning and orchard replanting continued in deciduous tree fruit orchards, weather permitting. In Yuba County, peach and prune orchard pruning was going strong. Dormant applications were made where insects and disease were causing problems. Pomegranates and kiwifruit were picked and shipped. Harvest was ongoing for citrus, including Navel, Cara Cara, mandarin, and blood oranges. The grapefruit, pumelo, lemon, and tangelo harvests continued. Muddy groves were impeding the application of needed fungicidal treatments. In Tulare County, exports of citrus fruit halted because of heavy rain. Blueberry bushes were planted, when weather permitted. Post-harvest cultural maintenance continued when the soil dried out enough to get in the orchards. Almond, walnut, and pistachio orchards were pruned, shredded, and cleaned. Growers applied herbicides and dormant sprays. Almonds, pistachios, and shelled and in-shell walnuts were exported. Rainy weather made vegetable harvest difficult and interfered with preparations for late-winter and spring plantings. Fieldwork was halted due to wet conditions. In Fresno County, water was pumped off onion fields. Soil was sampled for spring carrots. Strawberry fields were reported to show ideal growth. In Tulare County, recent rains continued to benefit lower-elevation pasture growth, reducing the need for supplemental feed. Sheep continued to graze in alfalfa fields. Bees were shipped and placed in

orchards. Rangeland conditions were good, but some dairies were struggling with muddy conditions.

Florida: There was an average of 5.4 days suitable for fieldwork, unchanged from the previous week. High winds caused lodging in some sugarcane fields and disrupted harvest activities in some areas. Heavy rain caused flooding in low-lying fields. Strawberries, greens, and broccoli were harvested in Bradford County. Irish potato fields in Flagler and Putnam Counties were planted, while cabbage and leafy greens fields were harvested. Heavy rain disrupted vegetable planting and harvesting activities. Light volumes of collards, cucumber, eggplant, herbs, kale, lettuce, peppers, squash, and tomatoes came to market. Low volumes led to higher prices for many vegetable crops. Rains in South Florida exacerbated disease problems in vegetables. Last week's temperatures were the lowest of the citrus harvesting season. All processing plants were open and running at full capacity. Packinghouses were accepting small quantities of early and midseason oranges. Grapefruit were harvested mostly for the fresh market, but pack-out rates were low, causing a large percentage to go to the processing plants. Spotty bloom was reported in several citrus-growing counties. Caretakers were hedging and topping trees after harvest. Some growers were fertilizing and spraying their groves. Limited mowing, mostly before harvest, was being done on an as-needed basis. Pastures grew quite slowly in Gadsden and Holmes Counties due to extremely wet conditions and field saturation. Cool-season forages in Washington County showed stress and damage from persistently saturated soils. Prevailing warm conditions into winter reduced the need for supplemental livestock feeding in Marion County. Disease in rye grass fields was reported in Orange and Seminole Counties.

Texas: Much of the rain fell across the eastern half of the state. The Upper Coast and East Texas received up to one-half inch of precipitation, with some isolated areas in North East Texas totaling up to 2 inches. Other areas of the state experienced little or no measurable precipitation. Cold, wet conditions persisted throughout the state. Small grains continued to progress, with some producers in the Blacklands beginning to apply pesticides. Conditions for both wheat and oats were rated good to fair. In parts of the Edwards Plateau, wheat and oat fields were being grazed by livestock. The 2015 cotton harvest was nearing completion, 96 percent complete statewide, 3 percentage points behind normal. Some producers in South East Texas have begun preparations for corn seeding. The South Texas vegetable harvest was active, with some producers in North East Texas preparing for onion and potato planting. Livestock were being maintained with supplemental feed and were reported in good condition. Pastures continued to progress, with conditions in some areas of South Texas declining due to recent frost. Spider mites and aphids have affected some fields in the Blacklands. Feral hog activity was reported in parts of South East Texas.

International Weather and Crop Summary

January 17-23, 2016

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

HIGHLIGHTS

EUROPE: Cold weather prevailed across much of the continent, with a fresh snowfall insulating dormant winter crops in Germany, Poland, and the Balkans.

WESTERN FSU: Snow continued in the north and returned to southern crop areas, adequately insulating dormant winter wheat from potential incursions of bitter cold.

MIDDLE EAST: Rain and mountain snow further eased autumn dryness in Turkey and maintained adequate to abundant moisture supplies for winter grains from Syria into western and southern Iran.

NORTHWESTERN AFRICA: Extreme drought continued in Morocco, while locally heavy showers farther east eased drought in Algeria and maintained favorable winter crop prospects in Tunisia.

SOUTHEAST ASIA: Heavy showers in Java, Indonesia, provided much needed soil moisture to rice in central and eastern growing areas.

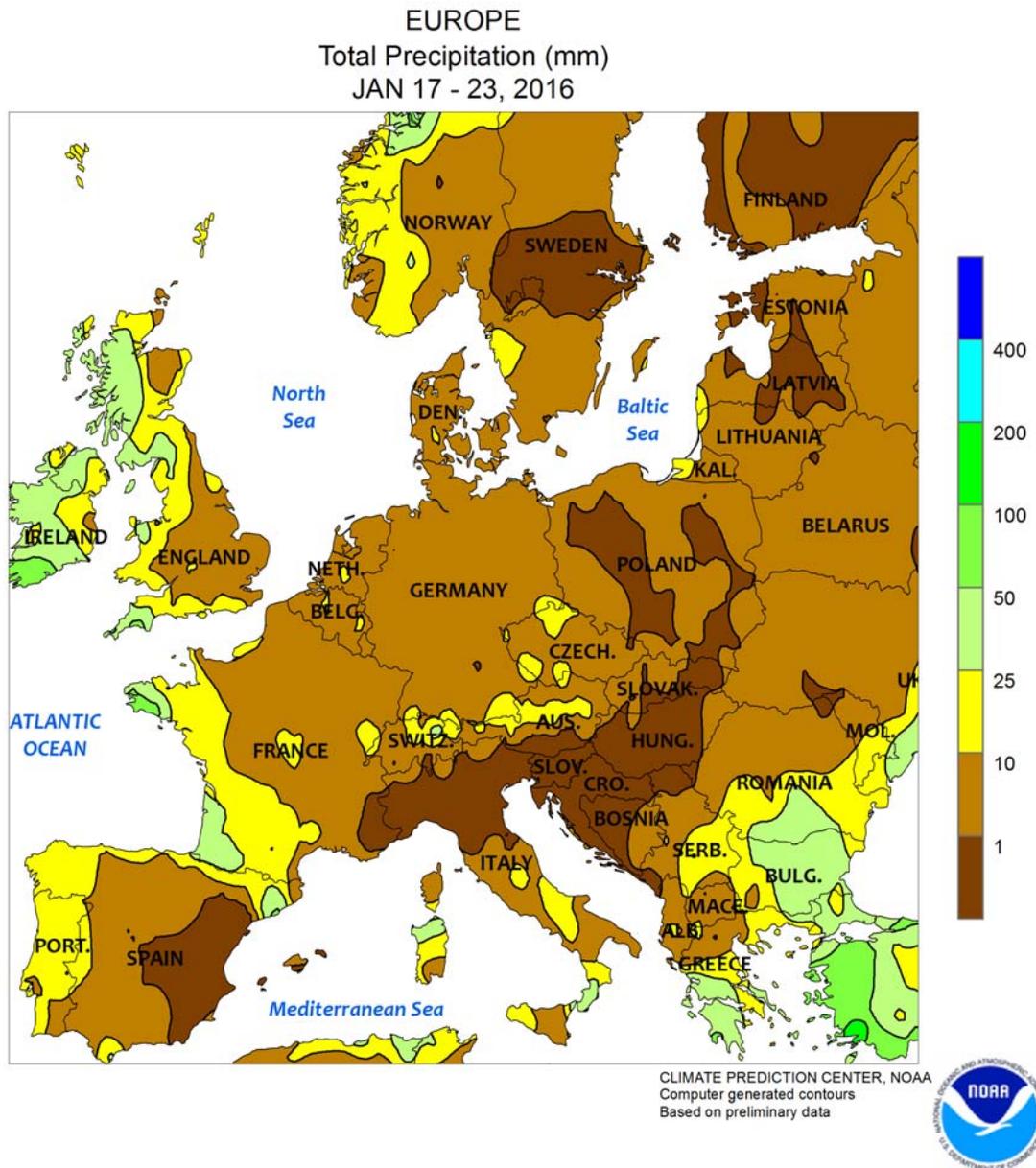
AUSTRALIA: Showers benefited cotton in New South Wales, while dry weather reduced topsoil moisture for sorghum in Queensland.

SOUTH AFRICA: Warm, showery weather continued across the corn belt, although rainfall amounts declined from their recent beneficial levels.

ARGENTINA: Rain benefited second-crop soybeans in southern production areas.

BRAZIL: Seasonal rain benefited soybeans and cotton in northeastern Brazil, but drier weather prevailed elsewhere.



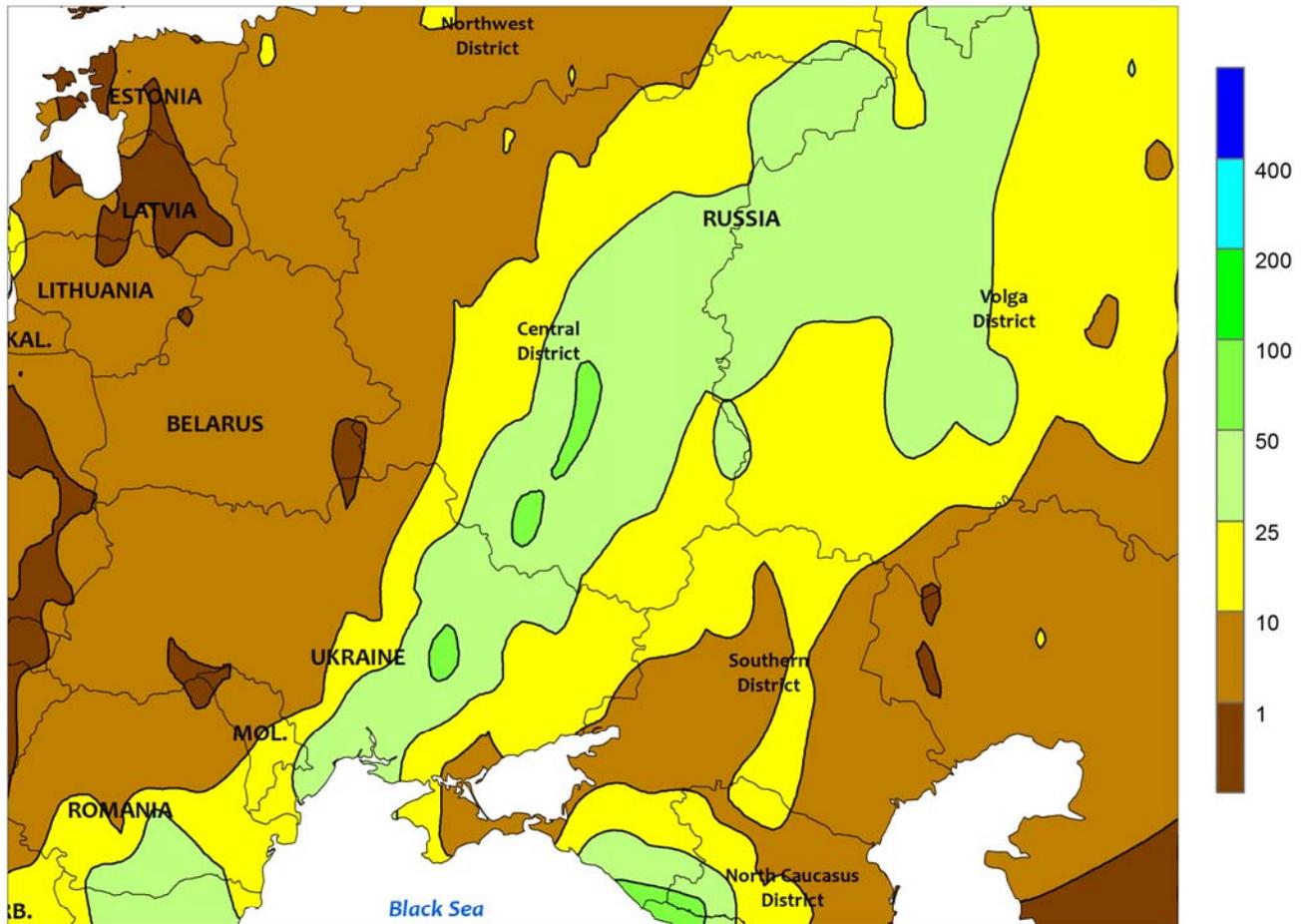


EUROPE

Colder-than-normal conditions settled over the continent, with fresh snowfall providing beneficial insulation for dormant winter crops in central and eastern growing areas. Over southwestern Europe, additional light to moderate rain (3-15 mm) benefited vegetative winter grains in northern portions of Spain and Portugal. In contrast, dry weather returned to southeastern Spain, which has not received as much drought-easing rainfall as areas to the north and west. Short-term drought also persisted in northern Italy's Po Valley, where

rainfall deficits since the beginning of November are well over 120 mm. Farther north, temperatures 3 to 7°C below normal from France eastward across all of central and eastern Europe kept winter grains and oilseeds dormant. In addition, crops from Germany into Poland and the Balkans were protected by a fresh light to moderate snowfall, with snow depths at week's end averaging 2 to 20 cm. Despite the week's cold, snow was deepest where temperatures dropped below -15°C (southern Poland and the lower Danube River Valley).

WESTERN FSU
Total Precipitation (mm)
JAN 17 - 23, 2016



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

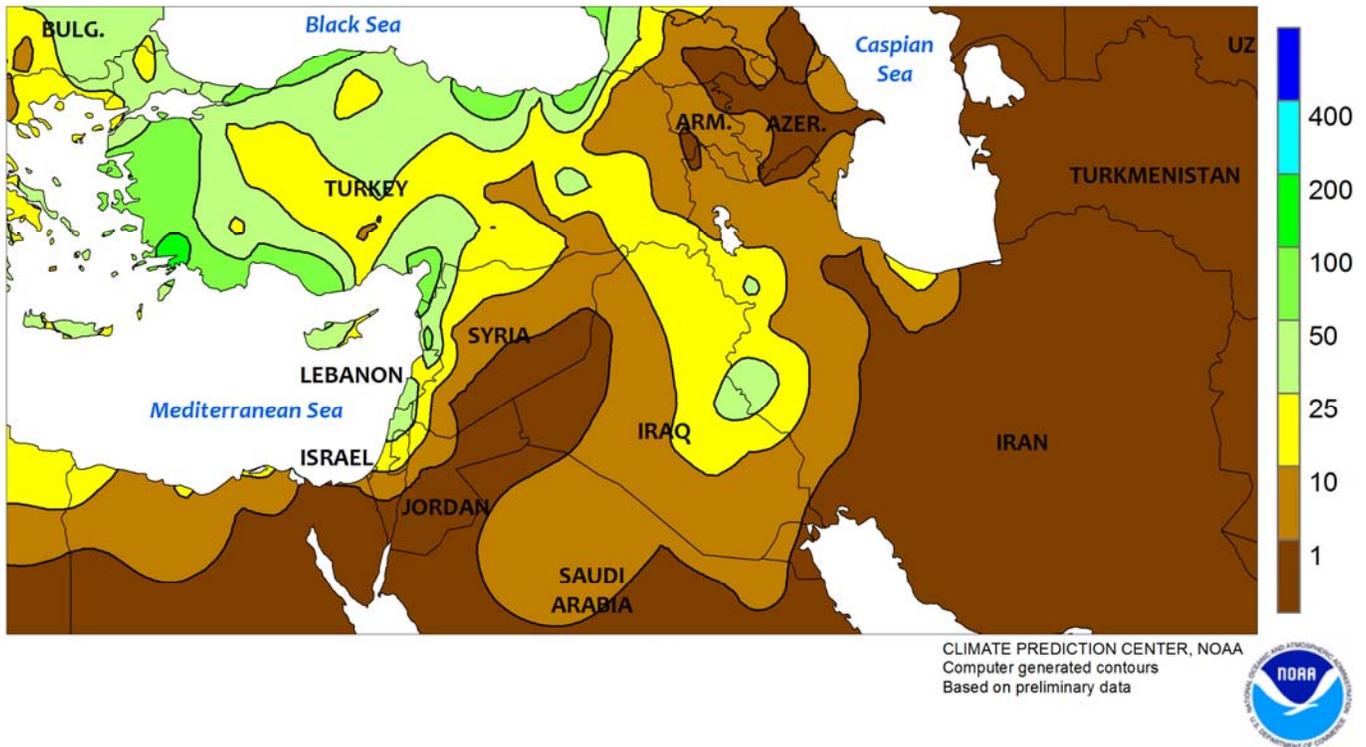


WESTERN FSU

Snow cover expanded over the region, ensuring dormant winter crops remained well insulated. Precipitation totaled 10 to locally more than 50 mm (liquid equivalent) over most of the region, much of which fell as snow. At week's end, a shallow to moderate snow cover (2-10 cm) returned to Russia's Southern District as well as eastern Ukraine. Only

crop areas in southeastern Ukraine and the Crimean Peninsula were devoid of snow. A moderate to deep snowpack (10-50 cm, locally more) remained in place from central Ukraine into central and northern portions of Russia. Consequently, nighttime readings below -20°C in these same locales had no impact on dormant winter wheat.

MIDDLE EAST
 Total Precipitation (mm)
 JAN 17 - 23, 2016



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

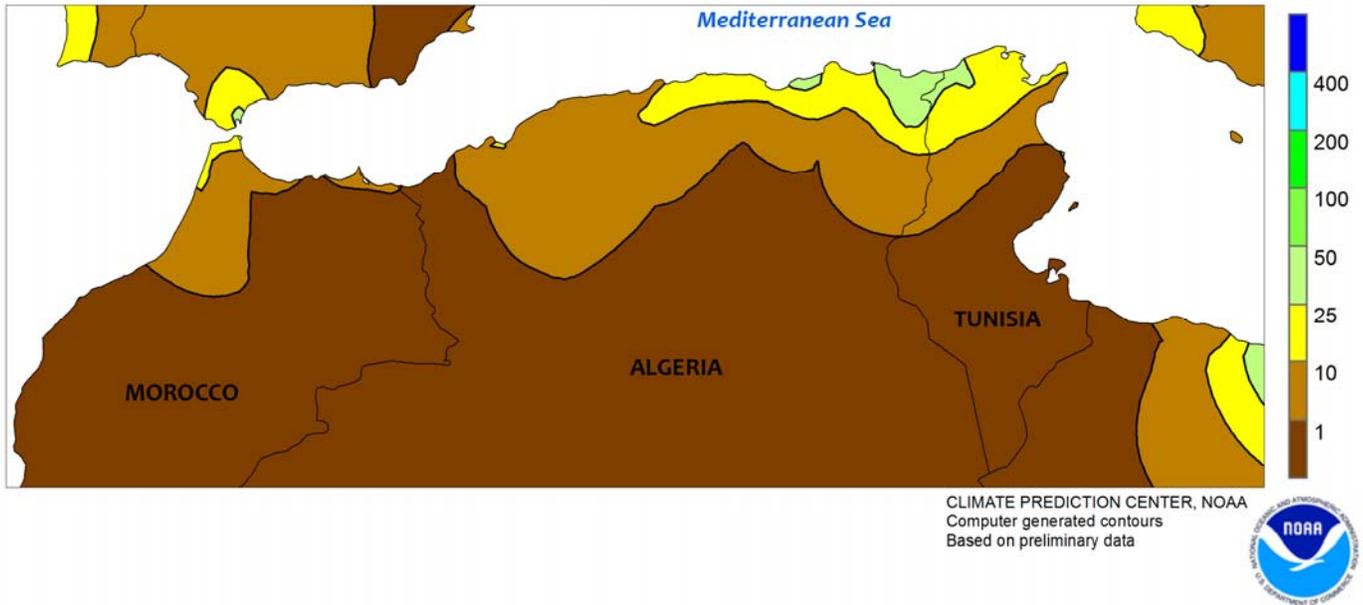


MIDDLE EAST

Rain and high-elevation snow continued from Turkey into western Iran, maintaining favorable moisture reserves for dormant (north) to vegetative (south and east) winter crops. In Turkey, precipitation totaled 10 to locally more than 100 mm (liquid equivalent), further easing precipitation deficits from an abnormally dry autumn on the Anatolian Plateau and improving moisture reserves for spring growth. Moderate to heavy rain and mountain snow (10-40 mm, locally more) from the eastern Mediterranean Coast into Iraq and western Iran sustained abundant moisture reserves

for vegetative winter grains, though crops in northwestern Iran remained dormant. Dry weather settled over southern Iran's irrigated wheat areas, which have experienced an unusually wet winter. Sunny skies also returned to northeastern Iran, promoting winter grain development following recent beneficial rain. Temperatures averaged 2 to 5°C above normal from central Turkey into Iraq, and up to 10°C above normal in Iran; the warmth minimized the risk for winterkill in the typically colder northern crop areas and accelerated winter grain development in the south.

NORTHWESTERN AFRICA
Total Precipitation (mm)
JAN 17 - 23, 2016

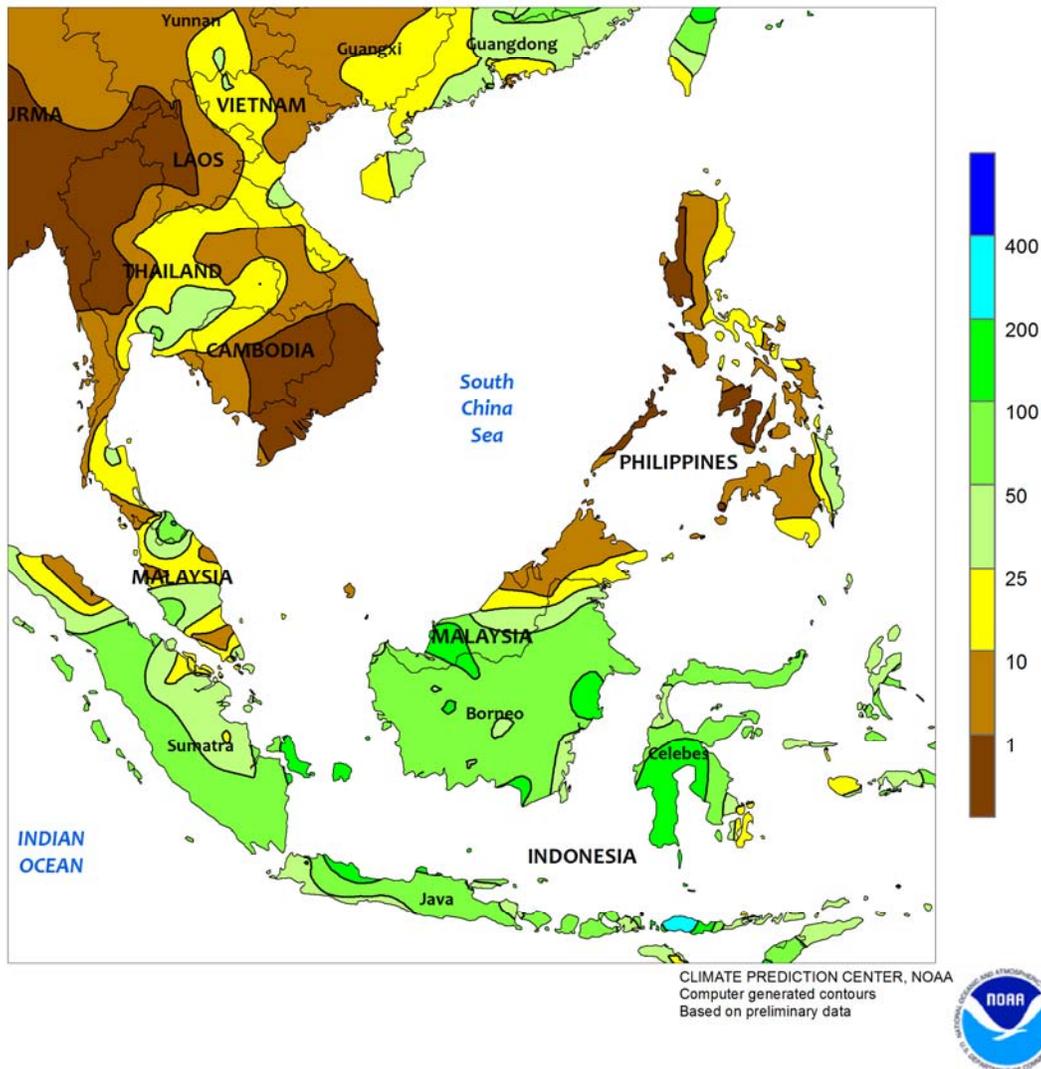


NORTHWESTERN AFRICA

Severe drought remained firmly entrenched over Morocco’s winter grain areas, while rain continued to improve winter crop prospects in central and eastern growing areas. Morocco stayed warm (3-5°C above normal) and dry; what little rain that fell (1-10 mm) was confined to the immediate coastal areas in the north. Morocco’s regional average

precipitation since November 1 was below 20 percent of average in all the country’s primary crop areas. In contrast, a second consecutive week of moderate to heavy rainfall (10-35 mm, locally more) further eased drought in Algeria and maintained favorable prospects for vegetative winter grains in Tunisia.

SOUTHEAST ASIA
Total Precipitation (mm)
JAN 17 - 23, 2016

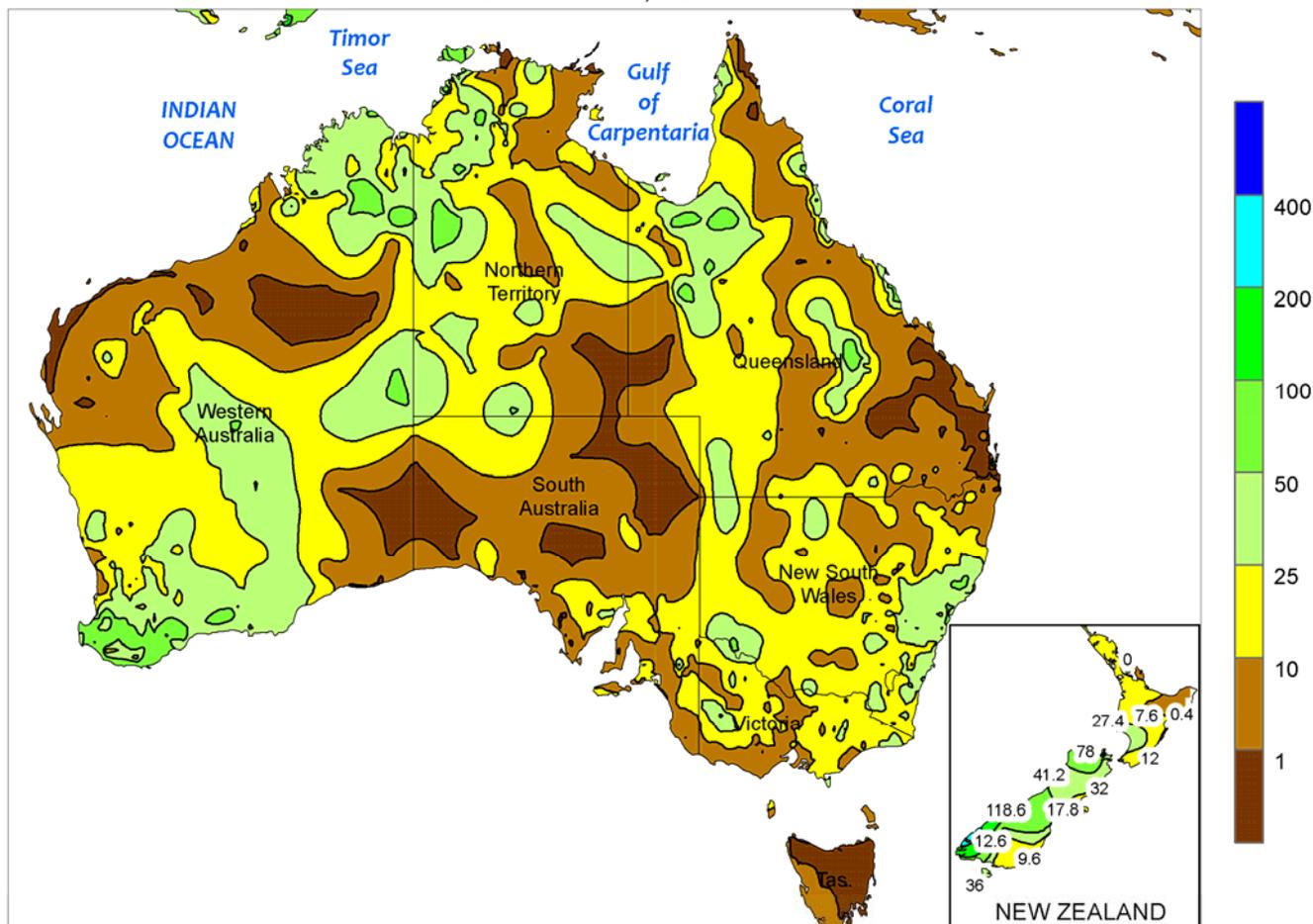


SOUTHEAST ASIA

Seasonally heavy showers covered Java, Indonesia, boosting soil moisture and bolstering water supplies for rice. Over 50 mm of rain was reported throughout the rice growing areas, with some locales totaling over 100 mm. The rain was particularly welcomed in central and eastern portions of Java, where seasonal rainfall has been running below normal. Similarly, heavy rain also occurred in oil palm areas of Indonesia (Sumatra and Kalimantan) and nearby areas of Malaysia, boosting soil moisture for trees. Rainfall amounts tapered off quickly (less than 25 mm) across Peninsular

Malaysia and Sabah Malaysia, however. Meanwhile in the Philippines, showers were unseasonably light (less than 50 mm) in rice and corn areas of the east and south. Most of the seasonal rainfall for the current rice and corn crops was provided by two tropical cyclones, while monsoonal showers have been consistently below normal. In Indochina, unseasonable showers (10-25 mm or more) overspread much of Thailand, Laos, Cambodia, and Vietnam, but failed to extend into key dry-season rice areas of central Thailand and southern Vietnam.

AUSTRALIA
Total Precipitation (mm)
JAN 17 - 23, 2016



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

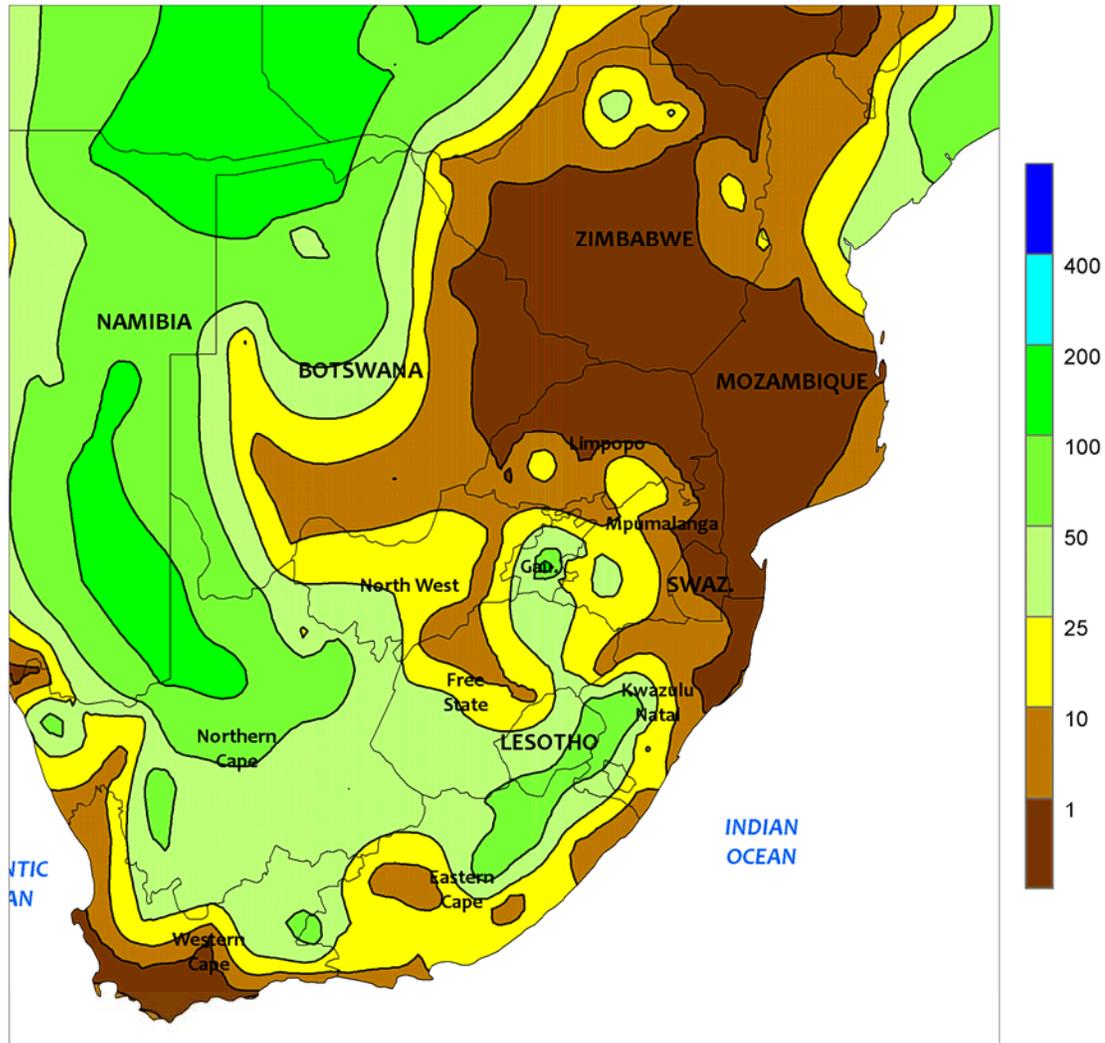


AUSTRALIA

In southern Queensland and New South Wales, dry, increasingly hot weather through midweek slowly but steadily reduced topsoil moisture for summer crops. Widespread showers (5-25 mm) overspread New South Wales late in the week, however, helping to ease irrigation requirements for cotton while increasing topsoil moisture for sorghum. Much of the shower activity remained south of

major summer crop producing areas in Queensland. Widely scattered, generally light showers (1-10 mm, locally more) helped maintain local moisture supplies for summer crops, but more widespread rainfall would be welcome to maintain current crop prospects. Temperatures averaged about 1°C above normal, with daily maximum temperatures mostly in the 30s (degrees C).

SOUTH AFRICA
 Total Precipitation (mm)
 JAN 17 - 23, 2016



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

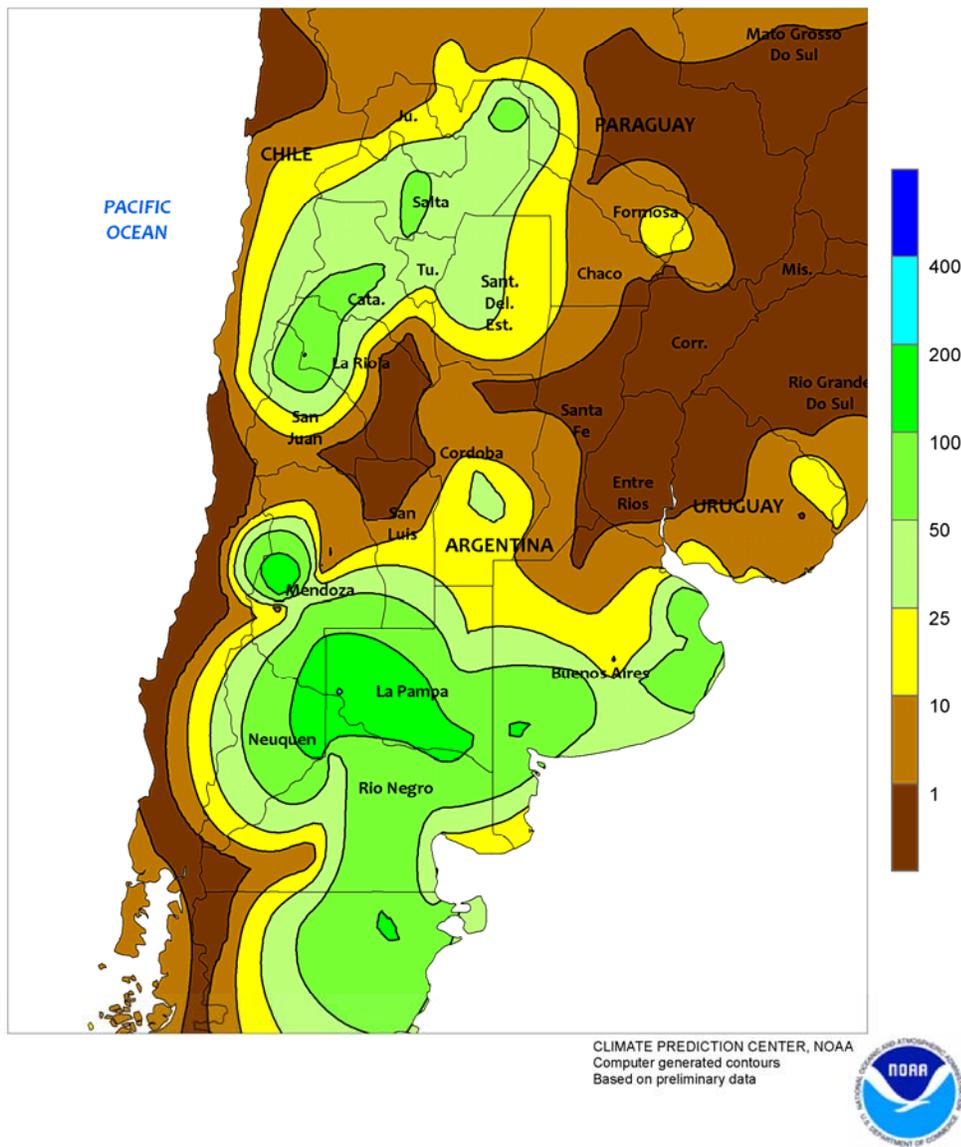


SOUTH AFRICA

Following several weeks of beneficial rainfall, light to moderate showers lingered across the corn belt. However, amounts were considerably lower in the main production areas (North West and Free State to Mpumalanga and Limpopo) as compared to the accumulations of recent weeks, ranging from 5 to 25 mm in most locations. Weekly temperatures averaged near normal, with daytime highs ranging from the upper 20s (degrees C) in eastern production areas to the lower 30s in western and northern production areas, an expected pattern for this time of year. Corn typically advances through reproduction in eastern farming areas during the middle and latter parts of January, although evidence of late planting suggests that corn will reach

the tasseling and silking stages of development in February. Farther west, exceptionally late-planted corn will likely need timely rain through the month of March. Elsewhere, showers (less than 25 mm, most areas) also diminished in rain-fed sugarcane areas of southern KwaZulu-Natal as warm, dry weather (daytime highs reaching the middle 30s) dominated irrigated sugarcane in northern KwaZulu-Natal and eastern Mpumalanga. Elsewhere, unseasonably heavy rain (locally greater than 50 mm) fell in interior farming areas of the Cape Provinces. In Western Cape, above-normal temperatures (daytime highs approaching 40°C) spurred rapid development of irrigated tree and vine crops.

ARGENTINA
Total Precipitation (mm)
JAN 17 - 23, 2016

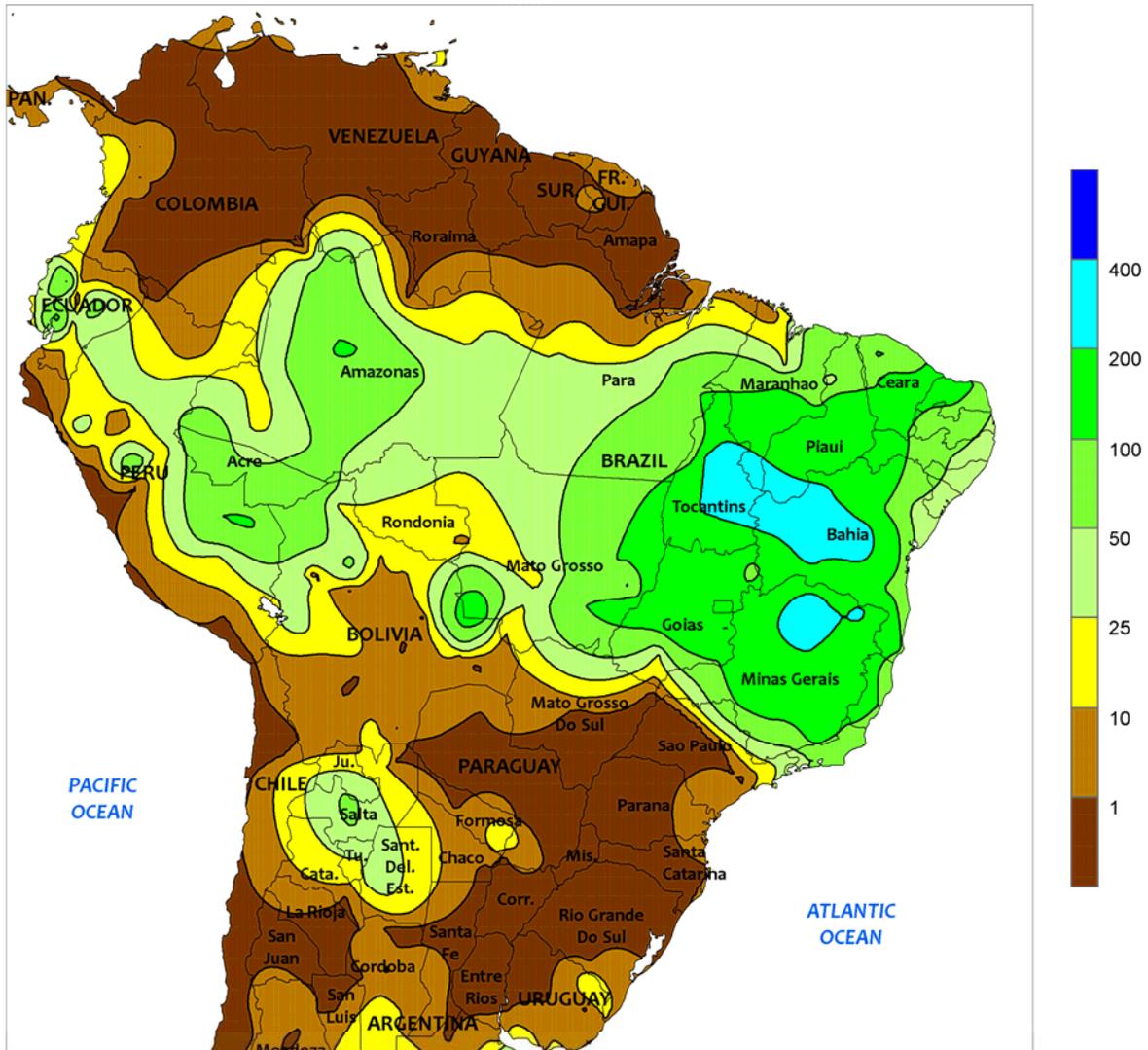


ARGENTINA

Rain benefited newly-sown soybeans in Argentina's southern production areas. Rainfall totaled more than 25 mm across southern Buenos Aires and neighboring locations in La Pampa, with more than 10 mm falling as far north as southern Cordoba. Weekly average temperatures were 1 to 3°C above normal throughout central Argentina regardless of rainfall amount, with daytime highs exceeding 35°C on several days; however, stress on corn and soybeans was mitigated by the overall favorable moisture conditions and the wide planting window, which results in a smaller

percentage of corn and soybeans in reproductive phases of development at any given time. Light to moderate rain (10-50 mm) was also recorded in farming areas of northwestern Argentina (notably Salta and northern Santiago del Estero), but drier conditions prevailed elsewhere. As in central Argentina, weekly average temperatures were generally 1 to 3°C above normal, though pockets of hotter conditions (more than 5°C above normal, with daytime highs reaching 40°C) were centered over northern Cordoba and southern Santiago del Estero.

BRAZIL
Total Precipitation (mm)
JAN 17 - 23, 2016



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



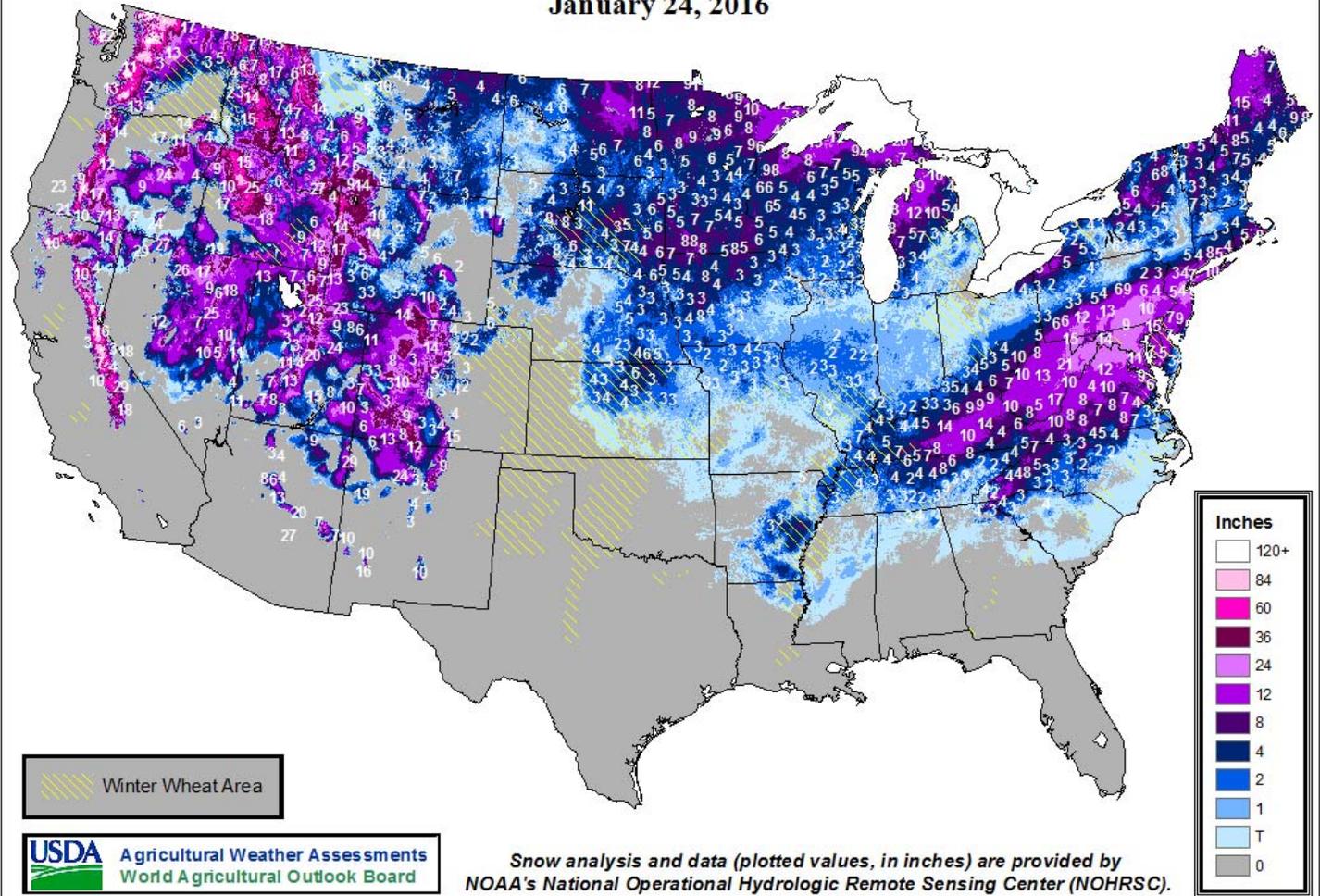
BRAZIL

Widespread, locally heavy rain fell throughout northeastern Brazil as drier conditions developed over previously wet sections of the south. Rainfall totaled more than 100 mm over a large section of the northeastern interior (easternmost Mato Grosso eastward), with amounts exceeding 200 mm in and around Tocantins and western Bahia. The heavy rain stretched southeastward through Minas Gerais to previously dry coffee areas of Espírito Santo. The wet weather helped to keep temperatures down to seasonable levels, with daytime

highs reaching the upper 20s and lower 30s (degrees C). In contrast, virtually no rain fell over a large section of the south (Mato Grosso do Sul and Sao Paulo southward through Rio Grande do Sul), reversing a trend of above-normal rainfall. Weekly temperatures averaging 1 to 3°C above normal accompanied the dryness, with daytime highs reaching the lower and middle 30s. Much of the southern soybean and corn crops typically advance through reproduction at this time of year, but recent weeks of abundant rainfall have reduced the likelihood of stress.

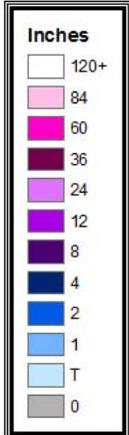
Snow Depth

January 24, 2016



USDA Agricultural Weather Assessments
World Agricultural Outlook Board

Snow analysis and data (plotted values, in inches) are provided by NOAA's National Operational Hydrologic Remote Sensing Center (NOHRSC).



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Correspondence to the meteorologists should be directed to:
Weekly Weather and Crop Bulletin, NOAA/USDA, Joint Agricultural Weather Facility, USDA South Building, Room 4443B, Washington, DC 20250.

Internet URL: <http://www.usda.gov/oce/weather>

E-mail address: brippey@oce.usda.gov

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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

Editorial Advisor.....**Charles Wilbur**

Agricultural Weather Analysts..... **Harlan Shannon
and Eric Luebehusen**

National Agricultural Statistics Service

Agricultural Statistician and State Summaries Editor.....

Scott Matthews (202) 720-7621

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and Randy Schechter**

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