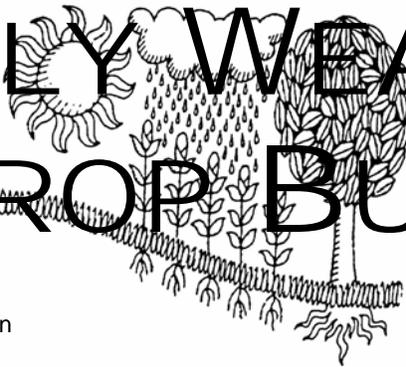
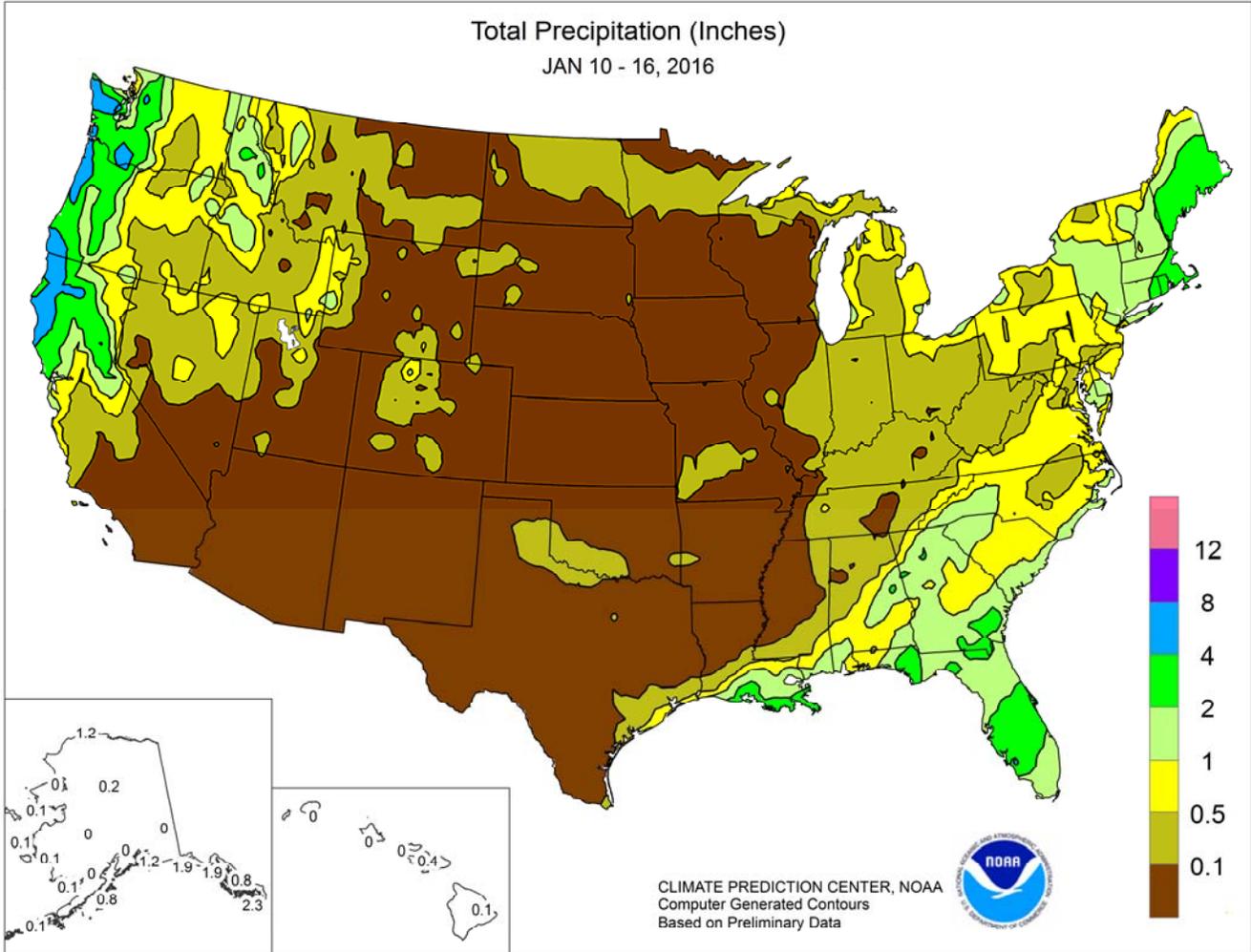


WEEKLY WEATHER AND CROP BULLETIN



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 10 – 16, 2016

Highlights provided by USDA/WAOB

The primary **Pacific** storm track resumed a more northerly position, bringing a return of significant precipitation to **northern California** and the **Northwest**. By January 15, the average water content of the high-elevation **Sierra Nevada** snowpack had climbed to 15 inches, 110 percent of the mid-January normal and just over half of the typical peak (April 1) accumulation. Much of the remainder of the U.S., including the **Southwest** and the majority of the **nation's mid-section**, experienced mostly dry weather. Meanwhile, periods of generally light precipitation—

(Continued on page)

Contents

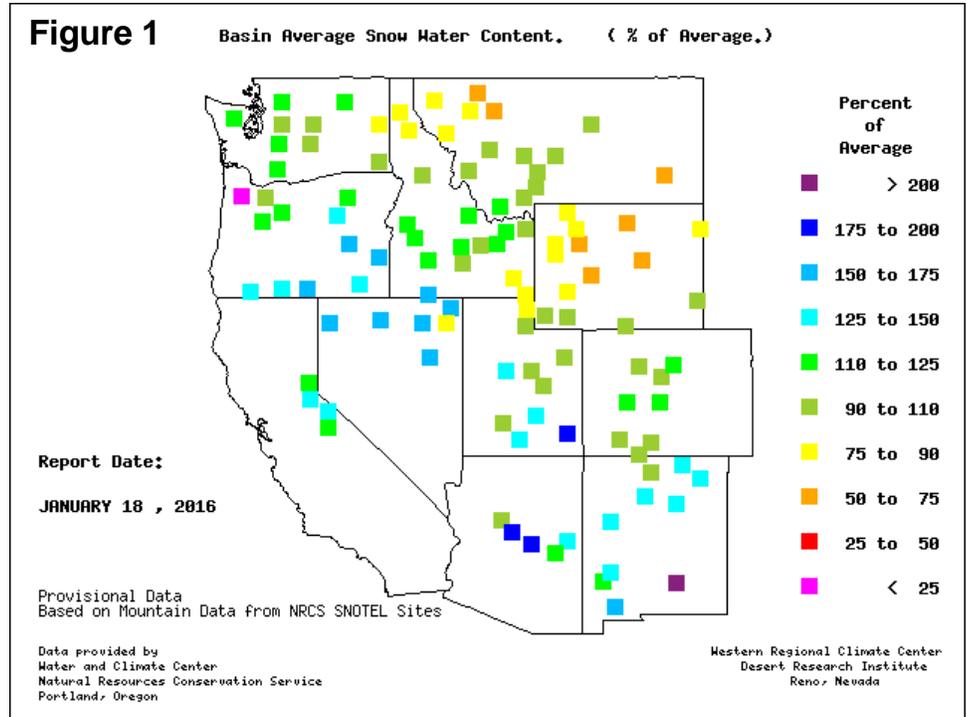
Water Supply Forecast for the Western U.S.	2
Extreme Maximum & Minimum Temperature Maps.....	4
Temperature Departure Map.....	5
January 12 Drought Monitor & Snow Cover Map.....	6
National Weather Data for Selected Cities.....	7
National Agricultural Summary.....	10
California Reservoir and Snowpack Update	11
January 14 ENSO Update	12
International Weather and Crop Summary.....	13
December International Temperature/Precipitation Maps	23
Bulletin Information & January 14 Satellite Image of Pacific Storms	38

Water Supply Forecast for the Western United States

Highlights

With a strong, maturing El Niño in place during the early portion of the 2015-16 Western winter wet season, broad storminess stretched from the Pacific Coast to the Rockies. Following 4 years of drought (2011-12 to 2014-15), California finally experienced fairly typical high-elevation snow accumulations during the first half of its wet season. Farther inland, drier-than-normal conditions in parts of Montana and Wyoming were consistent with El Niño-driven weather patterns. However, unexpectedly heavy precipitation fell in the Pacific Northwest, easing or eradicating drought. In the Southwest, precipitation was not sustained but occasionally heavy, leading to above-average precipitation and snowfall in many river basins.

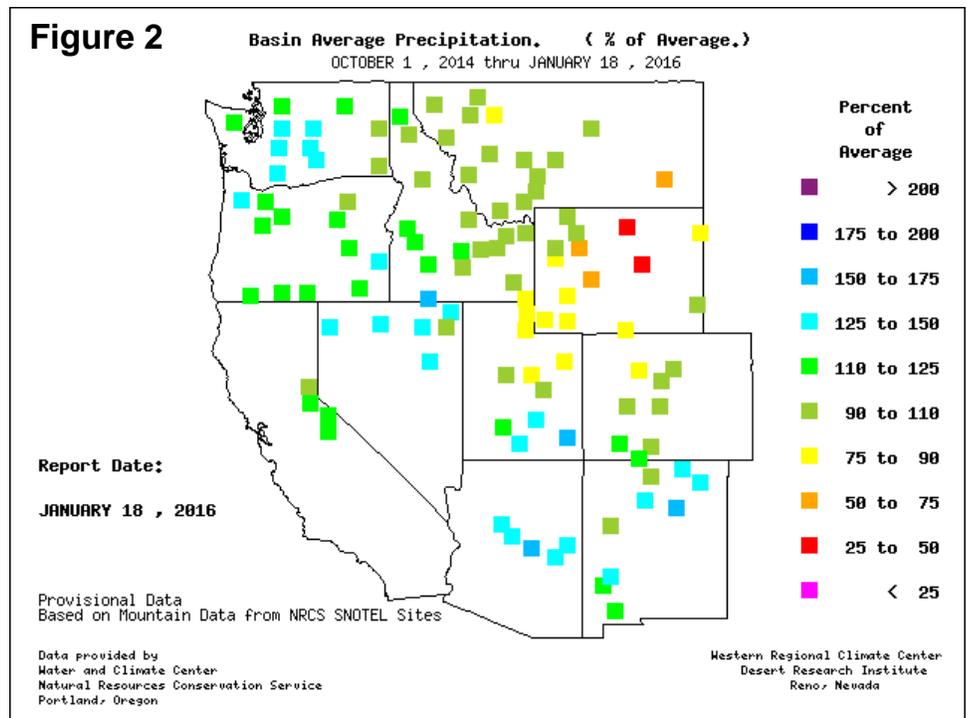
SNOTEL – River Basin Snow Water Content



Snowpack and Precipitation

By January 18, 2016, deficient snowpack was a concern in a few river basins in Montana and Wyoming, and to a lesser degree in northern Idaho (figure 1). In contrast, impressive mountain snowpack became established in parts of southern and eastern Oregon and northern Nevada—more than 150 percent of average in some basins. Elsewhere, snowpack was slightly above average in California but significantly above normal in many basins across the Four Corners States.

SNOTEL – River Basin Precipitation



Season-to-date precipitation (October 1, 2015 – January 18, 2016) was above normal in the

Pacific Northwest, near normal in the northern Rockies, and significantly below normal in a few river basins in eastern Wyoming and southeastern Montana (figure 2). Farther south, California’s season-to-date precipitation was slightly above normal, while many above-normal values were noted across the Great Basin and the Southwest.

Spring and Summer Streamflow Forecasts

By January 1, 2016, projections for spring and summer streamflow were indicating the likelihood of above-normal runoff in the Pacific Northwest and the Southwest (figure 3). Near-normal runoff can be expected in many other areas, including the Sierra Nevada and the northern and central Rockies. Below-normal runoff should occur in a broad arc stretching across central and eastern Montana, parts of Wyoming, and northeastern Utah.

Reservoir Storage

On January 1, 2016, reservoir storage as a percent of average for the date was substantially below average in Arizona, California, Nevada, New Mexico, and Oregon, and slightly below average in Idaho, Utah, and Washington (figure 4). Storage in California’s 154 reservoirs stood at just below 12.0 million acre-feet, 52 percent of the long-term average. Meanwhile, above-average statewide storage was noted in Colorado, Montana, and Wyoming.

For More Information

The National Water and Climate Center homepage provides the latest available snowpack and water supply information. Please visit: <http://www.wcc.nrcs.usda.gov>

Figure 3

Spring and Summer Streamflow Forecasts as of January 1, 2016

Percent of 1981-2010 Average

- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25

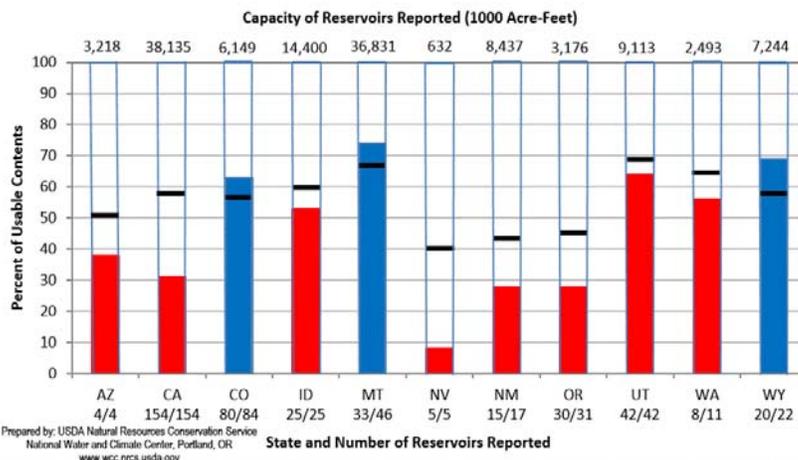
50% exceedance probability forecasts shown. For forecasts at other exceedance probabilities, see individual state reports.

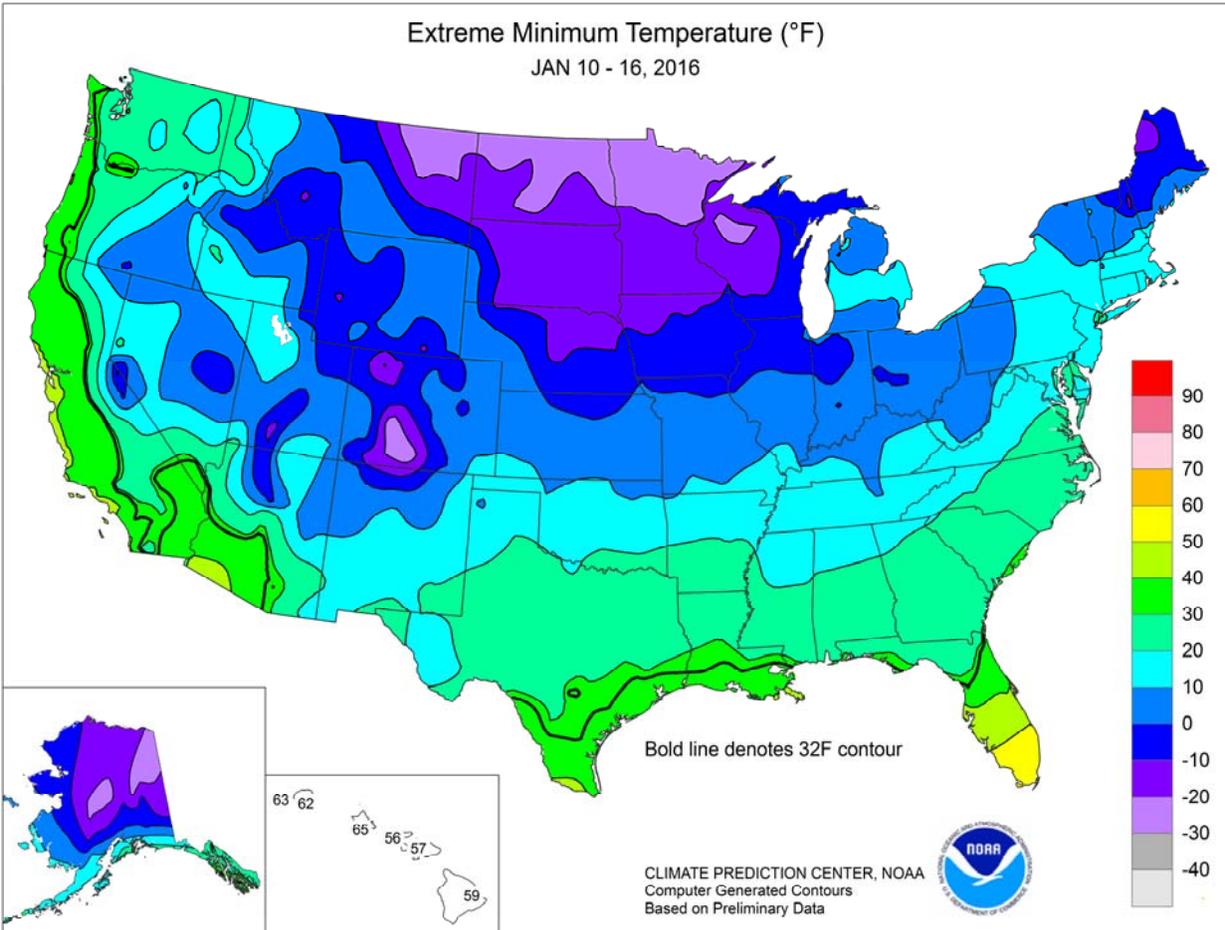
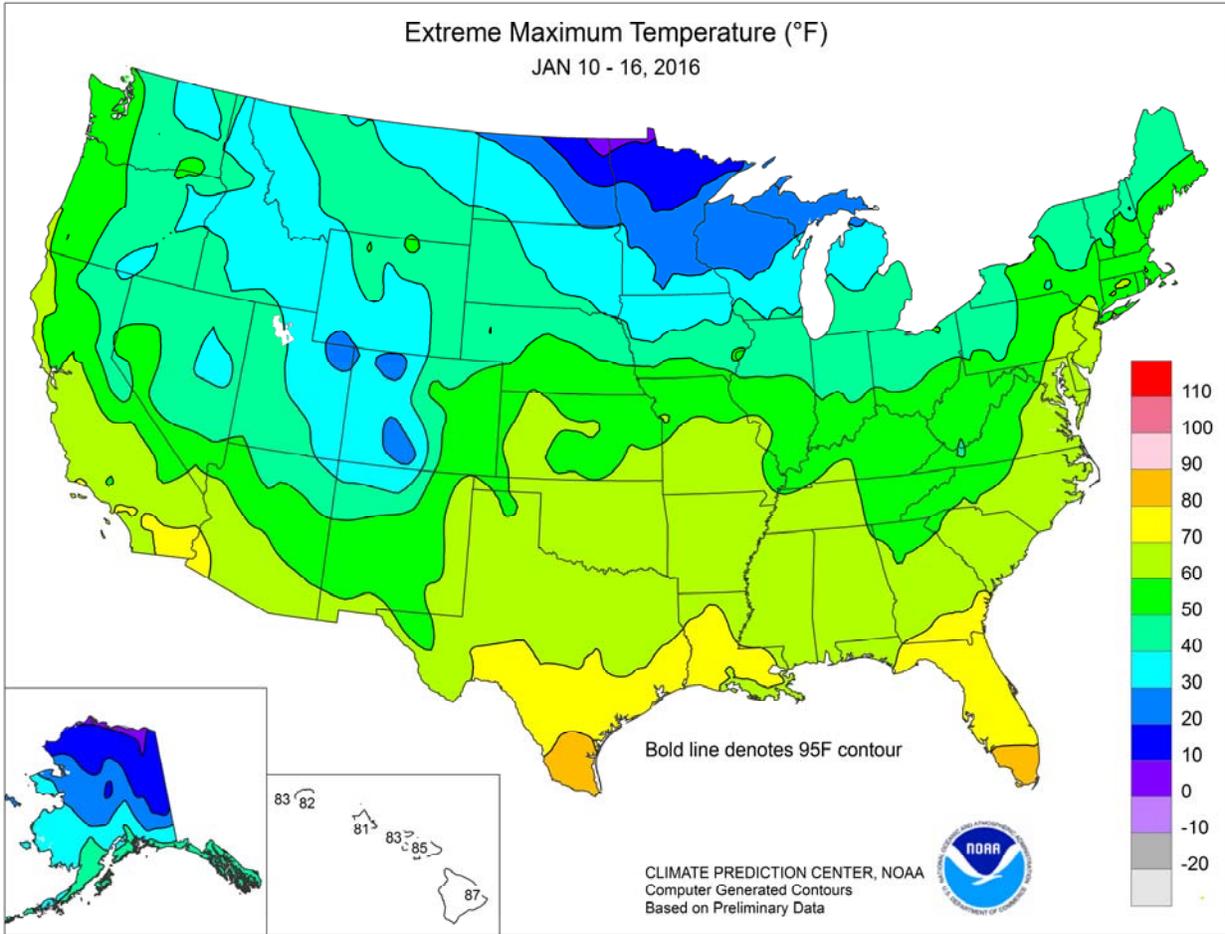
Prepared by:
 USDA Natural Resources Conservation Service
 National Water and Climate Center
 Portland, Oregon
<http://www.wcc.nrcs.usda.gov>
 Created: 7 Jan 2016 14:21

Figure 4

Reservoir Storage as of January 1, 2016

■ Below Average ■ Above Average ■ Average



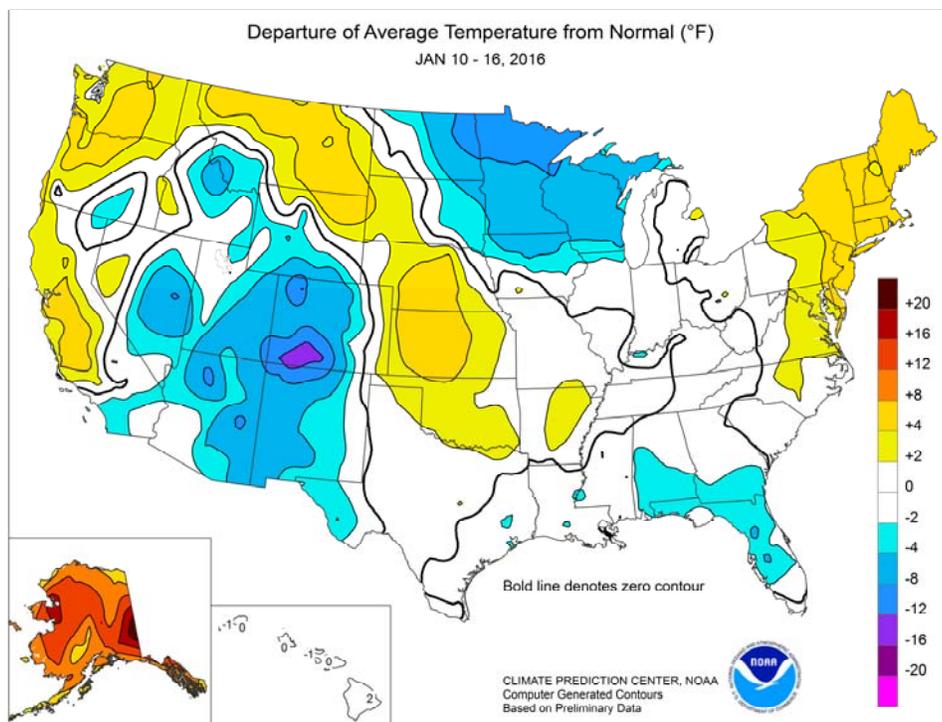


(Continued from front cover)

mostly snow—fell from the **northern Plains into the Midwest**. On the **northern Plains**, a variable, mostly shallow snow cover provided winter wheat with some insulation from sub-zero temperatures. Consistently frigid conditions were limited to the **upper Midwest**, where temperatures ranging from -10 to -25°F were common during the early- to mid-week period and again at week's end. Sub-freezing temperatures pushed deep into the **South** but did not reach winter agricultural regions of **Florida** or **Deep South Texas**. Late in the week, widespread precipitation fell across the **eastern one-third of the U.S.** Some of the heaviest precipitation, locally 1 to 2 inches or more, fell across the **lower Southeast** and in parts of **New England**.

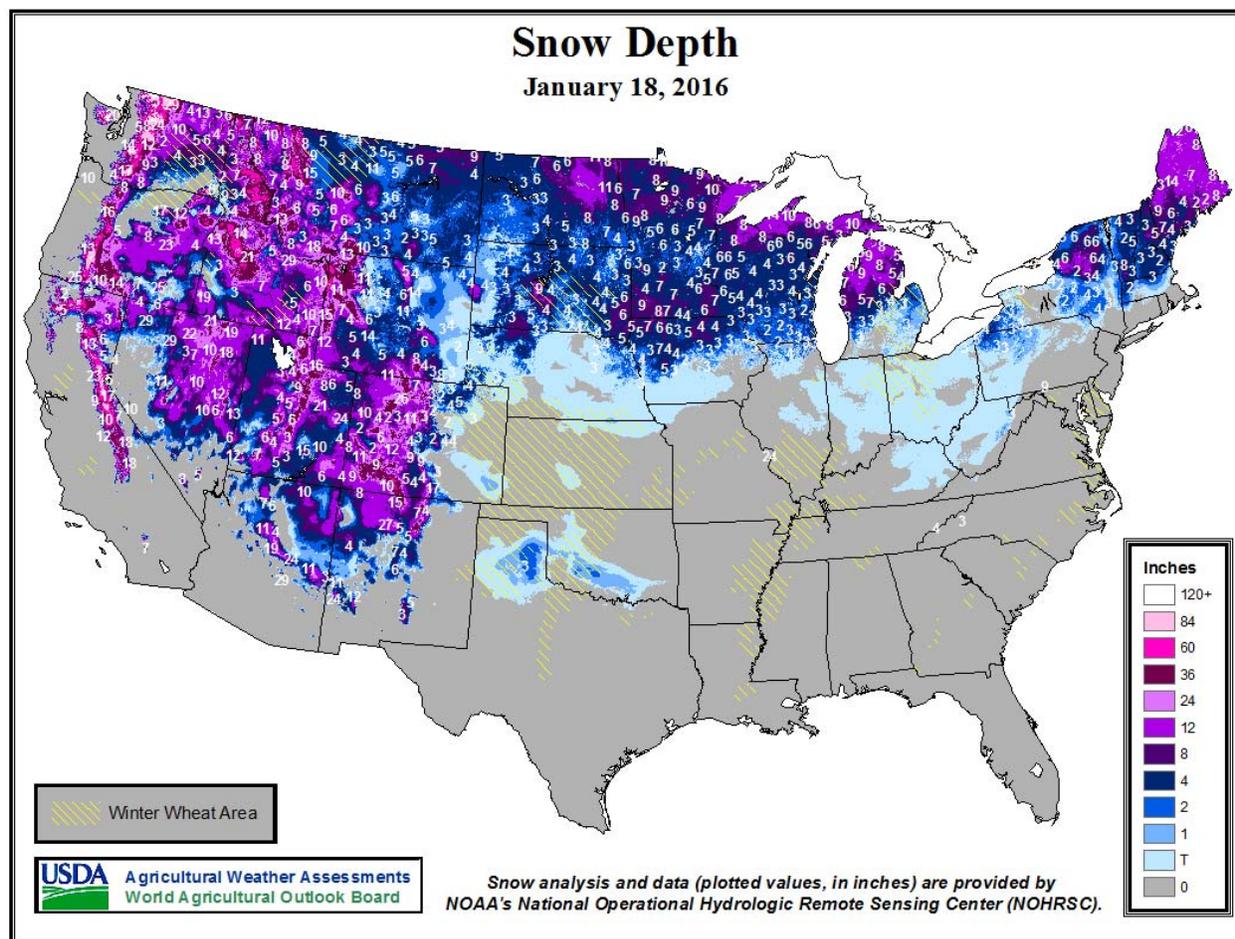
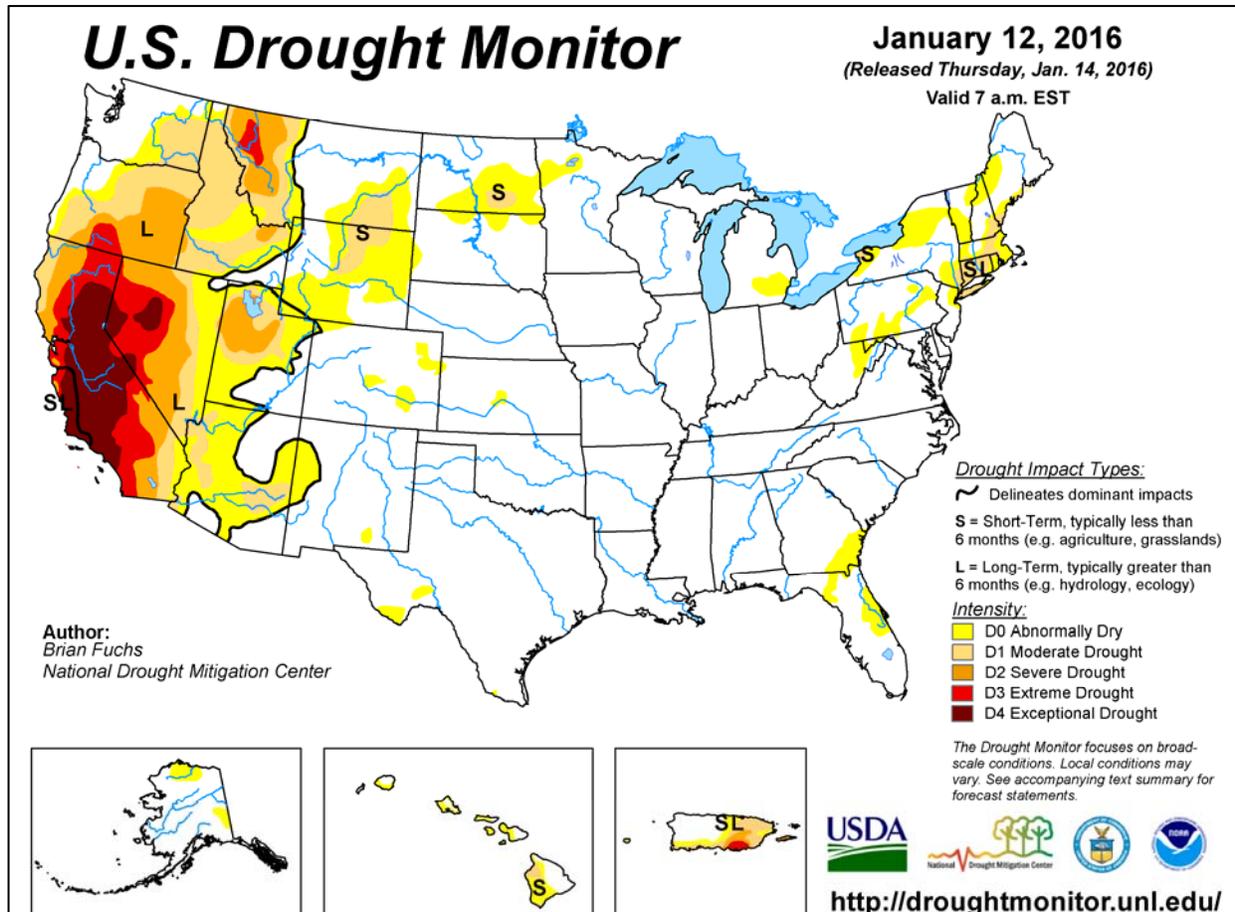
Early in the week, warmth briefly lingered in the **East**, while the coldest air of the season arrived in the **upper Midwest**. Daily-record highs for January 10 were set in numerous **Northeastern** locations, including **Wilmington, DE** (66°F); **Newark, NJ** (65°F); **Providence, RI** (59°F); and **Portland, ME** (52°F). On January 11 in **Rochester, MN**, the temperature dipped to -20°F—the lowest reading in that location since January 6, 2014, when it was -23°F. It was also only the eighth observance of a low of -20°F or below in **Rochester** since the beginning of the 21st century. Cold weather also prevailed across the **Four Corners States**, where **Randolph, UT**, posted a daily-record low of -19°F on January 12. Later, warmth expanded across the **South** in advance of a cold front. In **Texas**, daily-record highs for January 15 reached 83°F in **Brownsville** and 80°F in **Corpus Christi**. Farther north, bitterly cold weather returned to the **northern Plains** and **upper Midwest**. By late January 16, the temperature in **Glasgow, MT**, dipped to -22°F.

Heavy rain accompanied the early-week warmth in the **East**. For example, daily-record precipitation totals for January 10 included 2.42 inches in **Mt. Pocono, PA**; 1.80 inches in **New York City**; and 1.77 inches in **Newark, NJ**. Windy, colder conditions trailed the rain, with **Syracuse, NY**, clocking a January 10 peak gust to 55 mph. Meanwhile, **Columbus, OH**, received 1.0 inch of snow on January 10, marking its latest observance of the season's first measurable amount (previously, 0.1 inch on January 2, 1929). Snow squalls lingered downwind of



the **Great Lakes**, resulting in a daily-record total (5.4 inches on January 12) in **South Bend, IN**. The following day in **New York**, record-setting snowfall totals for January 13 included 13.7 inches in **Syracuse** and 7.4 inches in **Buffalo**. Farther west, heavy precipitation in the **Pacific Northwest** led to a daily-record amount (2.36 inches on January 12) in **Quillayute, WA**. During the second half of the week, patches of light snow affected the **nation's mid-section**. Daily-record snowfall totals reached 3.3 inches (on January 14) in **Fargo, ND**, and 1.8 inches (on January 16) in **Wichita Falls, TX**. Late in the week, heavy rain overspread parts of the **South** and **East**. **New Iberia, LA**, netted a daily-record rainfall (2.57 inches) on January 14. A day later, record-setting rainfall totals for January 15 in **Florida** reached 2.59 inches in **Ft. Myers** and 2.21 inches in **Melbourne**. **Boston, MA**, ended the week with a daily-record precipitation total of 1.22 inches (and a trace of snow) on January 16.

Alaskan temperatures were slightly lower than the previous week, but still averaged at least 10 to 20°F above normal at some interior locations. In **southeastern Alaska**, **Annette Island** logged a daily-record high of 52°F on January 10. **Alaskan** precipitation was mostly light, except for some higher totals in the southeastern part of the state. Weekly rainfall totaled 2.29 inches on **Annette Island**, nearly half of which fell on January 13. Meanwhile, consistent with a strong, mature El Niño, mostly dry weather prevailed in **Hawaii**. At the state's major airport observation sites, precipitation during the first half of the month (January 1-16) ranged from a trace in **Honolulu, Oahu**, to 0.49 inch (11 percent of normal) in **Hilo**, on the **Big Island**.



National Weather Data for Selected Cities

Weather Data for the Week Ending January 16, 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	53	30	62	20	42	0	0.34	-0.92	0.34	11.39	165	0.86	35	91	40	0	4	1	0	
HUNTSVILLE	50	29	61	18	39	0	0.16	-1.11	0.16	11.27	139	0.59	23	75	53	0	5	1	0	
MOBILE	61	35	68	27	48	-2	2.24	0.95	1.90	14.91	209	2.53	102	95	57	0	3	2	1	
AK MONTGOMERY	57	32	63	25	44	-2	1.50	0.41	1.50	15.74	221	1.61	75	87	44	0	5	1	1	
ANCHORAGE	30	22	38	10	26	10	0.15	0.01	0.11	0.39	28	0.16	50	90	78	0	7	2	0	
BARROW	2	-9	8	-11	-4	9	1.17	1.17	0.73	2.12	1631	2.08	9999	89	80	0	7	7	1	
FAIRBANKS	9	-8	22	-20	0	10	0.00	-0.12	0.00	0.07	7	0.00	0	86	80	0	7	0	0	
JUNEAU	39	33	43	29	36	10	1.86	0.76	1.07	5.23	68	2.81	123	97	86	0	2	5	1	
KODIAK	39	31	41	18	35	5	0.80	-1.09	0.60	16.24	142	3.96	104	90	78	0	3	4	1	
NOME	26	11	36	0	18	12	0.07	-0.12	0.07	1.02	72	0.24	60	85	73	0	7	1	0	
AZ FLAGSTAFF	40	6	51	-3	23	-6	0.21	-0.25	0.21	3.93	144	2.90	322	93	36	0	7	1	0	
PHOENIX	62	41	66	38	52	-1	0.00	-0.19	0.00	1.34	101	1.13	276	73	45	0	0	0	0	
PRESCOTT	50	22	58	19	36	-1	0.00	-0.33	0.00	1.38	72	1.08	166	87	31	0	7	0	0	
TUCSON	62	34	69	31	48	-3	0.00	-0.22	0.00	2.00	132	1.53	319	74	42	0	2	0	0	
AR FORT SMITH	51	26	65	17	39	2	0.00	-0.52	0.00	11.18	251	0.37	35	80	41	0	6	0	0	
LITTLE ROCK	54	30	67	23	42	2	0.02	-0.78	0.02	9.92	156	1.54	94	85	37	0	4	1	0	
CA BAKERSFIELD	62	43	65	39	53	6	0.01	-0.24	0.01	1.28	102	0.70	143	84	70	0	0	1	0	
FRESNO	59	42	63	38	51	6	0.14	-0.32	0.06	4.38	196	1.41	158	90	79	0	0	5	0	
LOS ANGELES	63	49	67	44	56	-1	0.01	-0.61	0.01	3.82	128	2.74	230	87	61	0	0	1	0	
REDDING	54	40	60	36	47	2	2.82	1.37	1.29	15.74	211	7.53	269	87	82	0	0	5	3	
SACRAMENTO	58	42	60	37	50	5	0.83	0.01	0.27	4.64	116	2.89	185	96	64	0	0	5	0	
SAN DIEGO	64	50	69	45	57	0	0.04	-0.46	0.04	3.90	173	3.02	318	78	61	0	0	1	0	
SAN FRANCISCO	57	49	61	44	53	4	0.76	-0.20	0.33	6.37	135	3.00	165	88	75	0	0	4	0	
STOCKTON	59	42	64	36	50	5	0.44	-0.14	0.26	4.34	148	1.88	169	96	84	0	0	4	0	
CO ALAMOSA	21	-18	26	-26	1	-13	0.00	-0.06	0.00	0.80	178	0.55	458	82	72	0	7	0	0	
CO SPRINGS	41	17	48	6	29	1	0.02	-0.04	0.02	0.45	79	0.20	133	67	23	0	7	1	0	
DENVER INTL	41	17	51	5	29	1	0.01	-0.05	0.01	1.10	239	0.39	260	70	38	0	7	1	0	
GRAND JUNCTION	30	11	34	6	21	-4	0.03	-0.11	0.03	1.03	127	0.34	117	90	72	0	7	1	0	
PUEBLO	42	12	51	2	27	-2	0.00	-0.08	0.00	0.81	142	0.41	228	74	51	0	7	0	0	
CT BRIDGEPORT	44	29	60	22	37	7	1.51	0.66	1.23	6.45	125	1.51	89	70	55	0	5	3	1	
HARTFORD	41	23	59	15	32	6	1.86	0.98	1.46	6.11	114	1.86	107	76	50	0	5	3	1	
DC WASHINGTON	48	30	62	21	39	4	0.72	-0.02	0.39	5.98	131	1.14	76	73	39	0	4	2	0	
DE WILMINGTON	47	26	66	20	37	5	1.06	0.26	0.68	6.27	125	1.06	66	81	42	0	5	3	1	
FL DAYTONA BEACH	67	46	77	37	56	-2	0.94	0.24	0.94	2.31	56	1.74	125	91	48	0	0	1	1	
JACKSONVILLE	63	36	74	27	50	-3	0.36	-0.45	0.36	1.62	39	1.06	68	94	42	0	4	1	0	
KEY WEST	74	66	81	63	70	0	1.12	0.61	0.37	6.52	205	1.94	187	95	75	0	0	7	0	
MIAMI	74	62	83	58	68	0	2.19	1.80	1.48	13.61	458	3.79	480	92	62	0	0	6	1	
ORLANDO	69	48	78	41	58	-3	1.08	0.54	1.00	2.49	74	1.77	167	84	52	0	0	2	1	
PENSACOLA	59	42	68	34	51	-1	0.00	-1.20	0.00	8.33	133	0.00	0	86	46	0	0	0	0	
TALLAHASSEE	65	37	75	27	51	0	0.94	-0.29	0.94	7.14	110	2.37	99	88	43	0	3	1	1	
TAMPA	68	52	75	44	60	-1	0.66	0.19	0.55	2.53	78	2.04	215	84	46	0	0	3	1	
WEST PALM BEACH	74	58	79	54	66	0	1.48	0.65	0.80	9.92	211	2.58	165	86	66	0	0	5	1	
GA ATHENS	54	29	62	23	42	0	1.13	0.09	1.10	13.94	243	1.57	78	83	47	0	5	2	1	
ATLANTA	53	32	60	23	42	0	1.51	0.41	1.45	14.60	246	2.09	99	74	49	0	5	2	1	
AUGUSTA	58	30	64	23	44	0	0.70	-0.30	0.68	7.76	153	0.84	43	91	43	0	4	2	1	
COLUMBUS	57	34	65	26	45	-1	0.67	-0.40	0.67	18.38	282	1.01	48	89	35	0	4	1	1	
MACON	58	32	66	23	45	0	0.79	-0.32	0.79	13.68	225	1.06	49	91	38	0	4	1	1	
SAVANNAH	61	36	70	27	48	-1	1.13	0.23	1.13	5.03	110	1.68	96	87	44	0	3	1	1	
HI HILO	85	62	87	59	73	2	0.05	-2.12	0.05	14.58	99	0.49	12	83	66	0	0	1	0	
HONOLULU	81	66	81	65	73	0	0.00	-0.61	0.00	0.28	7	0.00	0	86	74	0	0	0	0	
KAHULUI	83	60	85	57	72	0	0.43	-0.42	0.43	1.23	26	0.48	28	91	81	0	0	1	0	
LIHUE	80	63	82	62	72	0	0.00	-1.07	0.00	1.51	22	0.09	4	85	77	0	0	0	0	
ID BOISE	38	26	43	22	32	3	0.26	-0.04	0.16	2.01	101	0.30	48	86	77	0	7	3	0	
LEWISTON	41	30	47	21	36	3	0.25	0.00	0.12	1.85	120	0.26	53	87	74	0	5	4	0	
POCATELLO	32	18	36	12	25	1	0.20	-0.05	0.14	1.53	95	0.29	57	91	81	0	7	3	0	
IL CHICAGO/O'HARE	30	9	44	-2	20	-2	0.45	0.06	0.43	5.85	181	0.98	123	79	70	0	7	3	0	
MOLINE	31	11	50	1	21	0	0.01	-0.34	0.01	4.42	150	0.23	31	74	63	0	7	1	0	
PEORIA	32	10	48	0	21	-1	0.02	-0.31	0.02	6.82	220	0.51	73	81	62	0	7	1	0	
ROCKFORD	27	7	40	-3	17	-2	0.06	-0.24	0.06	5.36	199	0.71	113	79	70	0	7	1	0	
SPRINGFIELD	36	15	55	2	25	0	0.10	-0.27	0.10	7.25	218	0.69	87	83	61	0	7	1	0	
IN EVANSVILLE	42	20	60	8	31	0	2.57	1.94	2.38	9.14	190	3.94	308	75	58	0	6	2	1	
FORT WAYNE	34	14	45	1	24	0	0.62	0.17	0.29	5.63	151	1.48	156	88	71	0	7	5	0	
INDIANAPOLIS	36	14	50	1	25	-1	0.43	-0.12	0.25	6.85	165	1.26	113	87	67	0	7	4	0	
SOUTH BEND	32	12	43	-2	22	-1	0.29	-0.21	0.11	5.20	125	1.08	102	88	73	0	7	5	0	
IA BURLINGTON	32	11	49	-1	21	-2	0.01	-0.28	0.01	4.85	179	0.34	56	88	64	0	7	1	0	
CEDAR RAPIDS	26	7	44	-6	16	-2	0.00	-0.22	0.00	4.24	220	0.17	38	91	71	0	7	0	0	
DES MOINES	30	10	48	-4	20	0	0.04	-0.18	0.02	5.92	333	0.48	107	74	61	0	7	2	0	
DUBUQUE	23	5	40	-4	14	-3	0.01	-0.27	0.01	4.43	197	0.24	43	83	70	0	7	1	0	
SIoux CITY	28	5	41	-11	16	-2	0.01	-0.13	0.01	3.34	352	0.48	166	78	67	0	7	1	0	
WATERLOO	22	2	41	-8	12	-4	0.02	-0.15	0.01	6.46	446	0.54	159	82	70	0	7	2	0	
KS CONCORDIA	41	19	57	-3	30	4	0.00	-0.17	0.00	3.06	255	0.42	124	77	60	0	7	0	0	
DODGE CITY	48	21	60	8	35	5	0.03	-0.11	0.03	2.71	251	0.28	90	83	36	0	7	1	0	
GOODLAND	49	14	59	6	32	5	0.00	-0.11	0.00	0.18	29	0.02	9	75	39	0	7	0	0	
TOPEKA	41	19	58	3	30	3	0.00	-0.20	0.00	3.43	184	0.72	164	73	56	0	7	0	0	

Based on 1971-2000 normals

*** Not Available

Weather Data for the Week Ending January 16, 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	46	21	56	7	33	3	0.00	-0.20	0.00	2.40	133	0.18	40	83	55	0	7	0	0	
KY JACKSON	44	23	59	12	34	0	0.31	-0.48	0.15	5.63	96	0.99	61	83	45	0	5	4	0	
LEXINGTON	43	20	57	9	32	0	0.12	-0.64	0.11	7.80	139	0.59	37	82	56	0	6	2	0	
LOUISVILLE	44	21	60	12	33	0	0.22	-0.52	0.08	7.13	137	0.55	37	80	48	0	6	3	0	
PADUCAH	44	23	60	10	33	1	0.05	-0.67	0.05	9.60	164	2.18	148	81	51	0	5	1	0	
LA BATON ROUGE	62	37	73	30	49	-1	1.15	-0.22	0.87	9.41	119	3.08	115	90	40	0	3	2	1	
LAKE CHARLES	60	37	74	32	49	-2	0.30	-0.98	0.23	5.72	81	2.48	99	92	55	0	1	2	0	
NEW ORLEANS	62	44	75	35	53	1	1.41	0.17	1.08	9.21	124	2.75	116	77	55	0	0	3	1	
SHREVEPORT	58	34	71	28	46	0	0.03	-0.98	0.03	4.43	67	1.54	76	87	39	0	4	1	0	
ME CARIBOU	25	8	44	-5	17	7	1.14	0.45	0.56	6.13	133	1.25	88	85	58	0	7	5	1	
PORTLAND	36	20	52	10	28	6	3.17	2.23	2.04	8.59	140	3.25	172	86	58	0	6	4	3	
MD BALTIMORE	47	25	63	19	36	4	1.01	0.21	0.74	7.17	145	1.32	82	77	46	0	6	3	1	
MA BOSTON	42	27	58	21	34	5	2.68	1.80	1.38	6.97	127	2.69	155	81	48	0	5	3	2	
WORCESTER	36	21	56	14	28	4	1.81	0.87	1.07	6.51	115	1.86	99	89	54	0	6	4	2	
MI ALPENA	26	13	36	7	19	1	2.00	1.59	0.81	6.21	233	2.42	292	88	66	0	7	5	1	
GRAND RAPIDS	29	16	41	13	23	0	0.49	0.05	0.15	4.52	125	1.19	131	89	71	0	7	5	0	
HOUGHTON LAKE	24	13	35	8	18	0	0.32	-0.04	0.13	4.41	178	0.84	115	84	73	0	7	6	0	
LANSING	29	16	42	10	23	1	0.49	0.16	0.18	3.97	139	1.25	181	85	68	0	7	5	0	
MUSKOGON	30	17	42	13	24	0	0.39	-0.11	0.17	5.96	163	1.06	104	76	68	0	7	6	0	
TRaverse CITY	26	15	40	11	20	-1	0.17	-0.50	0.08	5.82	146	0.73	55	86	67	0	7	5	0	
MN DULUTH	8	-9	23	-21	0	-8	0.31	0.08	0.19	4.22	308	0.52	121	78	71	0	7	4	0	
INT'L FALLS	1	-16	12	-24	-8	-10	0.10	-0.07	0.05	1.27	123	0.20	61	84	68	0	7	2	0	
MINNEAPOLIS	13	-2	26	-10	6	-7	0.03	-0.19	0.02	2.52	175	0.20	45	79	69	0	7	2	0	
ROCHESTER	14	-7	31	-20	4	-7	0.02	-0.17	0.02	3.67	260	0.46	118	84	77	0	7	1	0	
ST. CLOUD	11	-8	23	-18	2	-6	0.04	-0.13	0.03	1.19	118	0.17	53	84	64	0	7	2	0	
MS JACKSON	58	32	67	25	45	0	0.02	-1.26	0.01	7.03	89	1.16	45	85	41	0	5	2	0	
MERIDIAN	58	29	66	23	43	-3	0.03	-1.30	0.03	6.22	79	0.14	5	91	53	0	5	1	0	
TUPELO	52	29	62	17	40	0	0.20	-0.99	0.20	7.96	93	0.60	24	82	53	0	5	1	0	
MO COLUMBIA	40	16	61	3	28	0	0.00	-0.36	0.00	7.73	241	0.69	93	80	56	0	7	0	0	
KANSAS CITY	40	18	60	2	29	2	0.00	-0.25	0.00	3.84	177	0.60	113	80	54	0	6	0	0	
SAINT LOUIS	43	21	66	7	32	3	0.09	-0.38	0.09	12.35	324	0.61	64	68	56	0	7	1	0	
SPRINGFIELD	44	21	64	10	33	2	0.12	-0.32	0.12	12.24	301	0.81	90	76	57	0	6	1	0	
MT BILLINGS	36	20	44	7	28	4	0.06	-0.13	0.06	0.72	69	0.15	41	74	55	0	7	1	0	
BUTTE	27	2	35	-13	14	-3	0.09	-0.02	0.09	0.89	117	0.22	96	87	61	0	7	1	0	
CUT BANK	30	17	43	8	24	5	0.06	-0.02	0.05	0.28	55	0.06	33	90	73	0	7	1	0	
GLASGOW	25	5	37	-22	15	5	0.05	-0.03	0.05	0.85	155	0.14	78	83	79	0	7	1	0	
GREAT FALLS	33	20	42	8	26	5	0.30	0.14	0.22	1.51	150	0.44	129	83	64	0	6	2	0	
HAVRE	30	8	42	-8	19	5	0.11	0.00	0.06	0.65	88	0.23	100	88	76	0	7	3	0	
MISSOULA	29	16	37	6	22	-1	0.27	0.03	0.16	1.65	100	0.27	54	94	86	0	7	3	0	
NE GRAND ISLAND	37	17	54	-6	27	5	0.03	-0.08	0.03	2.00	225	0.12	52	76	66	0	7	1	0	
LINCOLN	38	13	53	-3	26	4	0.04	-0.13	0.04	4.97	414	0.55	162	81	61	0	7	1	0	
NORFOLK	32	9	46	-12	21	1	0.01	-0.10	0.01	2.54	289	0.27	117	81	65	0	7	1	0	
NORTH PLATTE	45	12	56	-2	28	5	0.03	-0.05	0.02	0.35	60	0.07	39	85	39	0	7	2	0	
OMAHA	34	11	49	-6	22	1	0.03	-0.14	0.02	6.03	479	0.77	226	82	66	0	7	2	0	
SCOTTSBLUFF	39	15	47	6	27	3	0.01	-0.10	0.01	0.76	96	0.05	22	81	53	0	7	1	0	
VALENTINE	34	13	43	-11	23	3	0.07	0.01	0.03	1.12	249	0.08	62	82	69	0	7	4	0	
NV ELY	30	1	38	-8	16	-9	0.23	0.06	0.21	2.58	315	1.20	375	83	70	0	7	2	0	
LAS VEGAS	54	37	60	34	46	0	0.00	-0.11	0.00	0.27	43	0.26	113	56	43	0	0	0	0	
RENO	46	29	57	23	38	5	0.15	-0.07	0.12	1.14	87	0.39	91	79	61	0	6	3	0	
WINNEMUCCA	38	23	45	13	30	1	0.43	0.24	0.16	2.41	199	0.58	145	91	73	0	7	5	0	
NH CONCORD	36	18	54	9	27	7	1.20	0.54	0.78	6.02	140	1.24	93	84	50	0	6	3	1	
NJ NEWARK	46	28	65	22	37	6	2.04	1.12	1.77	6.45	120	2.05	114	67	51	0	5	3	1	
NM ALBUQUERQUE	44	22	54	20	33	-2	0.00	-0.11	0.00	1.31	182	0.33	143	74	36	0	7	0	0	
NY ALBANY	37	21	55	12	29	7	1.18	0.63	0.87	4.89	129	1.22	110	79	47	0	6	4	1	
BINGHAMTON	33	18	49	11	25	3	1.23	0.68	0.74	4.85	117	1.24	111	83	69	0	7	5	1	
BUFFALO	34	19	50	13	27	2	0.87	0.15	0.43	4.12	78	1.22	83	81	56	0	7	6	0	
ROCHESTER	36	20	51	16	28	4	0.71	0.19	0.48	3.61	95	0.88	83	80	60	0	7	5	0	
SYRACUSE	34	20	54	13	27	4	1.06	0.48	0.60	6.16	144	1.33	114	91	58	0	7	5	1	
NC ASHEVILLE	46	23	58	17	35	-1	1.27	0.38	1.21	10.45	204	1.69	97	80	44	0	7	2	1	
CHARLOTTE	53	30	60	22	42	1	1.04	0.14	0.93	10.05	203	1.35	76	72	33	0	5	2	1	
GREENSBORO	51	29	59	24	40	3	0.58	-0.21	0.54	7.58	164	0.93	60	76	36	0	5	2	1	
HATTERAS	59	38	68	30	49	3	1.69	0.32	0.90	7.38	102	2.42	90	83	43	0	2	2	2	
RALEIGH	54	32	63	27	43	4	0.42	-0.48	0.37	6.72	140	0.65	37	71	43	0	4	2	0	
WILMINGTON	59	35	67	28	47	1	1.10	0.08	1.10	7.25	125	1.75	88	90	38	0	4	1	1	
ND BISMARCK	20	-4	37	-23	8	-2	0.12	0.04	0.09	1.03	166	0.12	67	84	76	0	7	2	0	
DICKINSON	24	3	37	-19	13	-1	0.04	-0.02	0.04	0.32	70	0.04	33	91	70	0	7	1	0	
FARGO	7	-11	24	-22	-2	-8	0.20	0.03	0.18	1.25	137	0.60	176	80	69	0	7	2	0	
GRAND FORKS	3	-13	15	-23	-5	-10	0.28	0.14	0.21	1.33	158	0.28	97	78	65	0	7	3	0	
JAMESTOWN	10	-7	25	-16	2	-6	0.00	-0.13	0.00	0.44	63	0.00	0	85	71	0	7	0	0	
WILLISTON	22	-2	35	-20	10	3	0.15	0.04	0.10	0.75	97	***	***	84	77	0	7	2	0	
OH AKRON-CANTON	36	18	48	1	27	2	0.73	0.18	0.45	4.76	116	1.06	93	79	68	0	6	4	0	
CINCINNATI	40	17	54	6	29	-1	0.28	-0.38	0.14	7.02	152	0.93	69	86	60	0	7	3	0	
CLEVELAND	35	19	48	8	27	1	0.82	0.27	0.50	4.11	96	1.15	103	80	59	0	6	4	1	
COLUMBUS	38	17	48	2	28	0	0.69	0.14	0.47	5.92	146	1.04	93	79	62	0	6	3	0	
DAYTON	36	14	47	0	25	-1	0.88	0.30	0.57	5.73	134	1.34	113	92	68	0	7	5	1	
MANSFIELD	36	16	47	0	26	2	1.07	0.49	0.78	5.48	123	1.32	110	92	62	0	6	6	1	

Based on 1971-2000 normals

*** Not Available

Weather Data for the Week Ending January 16, 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	0.1 INCH OR MORE	50 INCH OR MORE	
OK TOLEDO	33	16	44	7	25	1	1.09	0.68	0.56	4.36	124	1.38	159	83	67	0	6	5	1	
OK YOUNGSTOWN	35	18	48	6	27	2	0.74	0.22	0.37	5.32	132	1.13	106	83	69	0	6	6	0	
OK OKLAHOMA CITY	53	26	65	16	39	3	0.00	-0.30	0.00	3.12	122	0.05	8	85	36	0	6	0	0	
OR TULSA	49	25	65	10	37	1	0.00	-0.36	0.00	9.22	290	0.62	83	76	54	0	5	0	0	
OR ASTORIA	54	41	56	37	47	5	3.39	1.23	1.28	24.58	167	4.05	94	94	83	0	0	6	3	
OR BURNS	31	12	40	4	22	-2	0.29	0.04	0.22	3.93	214	0.55	102	84	81	0	7	3	0	
OR EUGENE	50	38	54	34	44	5	1.68	-0.03	0.53	15.69	134	2.08	61	93	86	0	0	6	2	
OR MEDFORD	52	35	62	32	44	6	1.16	0.61	0.48	9.05	226	1.32	119	93	64	0	1	5	0	
OR PENDLETON	44	30	51	20	37	4	0.43	0.13	0.26	2.77	132	0.49	79	86	76	0	5	3	0	
OR PORTLAND	47	38	52	29	43	4	2.81	1.68	0.87	18.57	232	3.33	146	93	82	0	1	6	3	
OR SALEM	49	38	55	28	44	4	2.44	1.15	0.95	18.24	202	3.00	116	91	85	0	2	6	2	
PA ALLENTOWN	43	23	63	16	33	6	1.40	0.60	1.06	5.60	113	1.41	89	75	50	0	5	4	1	
PA ERIE	37	21	50	12	29	2	1.12	0.55	0.37	5.66	115	1.77	148	79	63	0	6	7	0	
PA MIDDLETOWN	43	25	58	19	34	5	1.48	0.87	1.11	6.14	138	1.85	152	83	44	0	6	4	1	
PA PHILADELPHIA	48	29	65	21	39	7	0.99	0.19	0.63	6.13	125	0.99	62	64	44	0	5	3	1	
PA PITTSBURGH	36	19	49	3	28	0	0.62	0.01	0.44	4.06	100	1.02	85	83	54	0	6	4	0	
PA WILKES-BARRE	37	21	59	14	29	3	1.59	1.05	1.25	4.15	115	1.60	151	81	53	0	6	5	1	
PA WILLIAMSPORT	37	22	55	16	29	3	2.02	1.41	1.75	5.42	131	2.06	172	80	62	0	6	5	1	
RI PROVIDENCE	43	26	59	18	34	5	2.46	1.47	1.41	7.26	119	2.46	126	76	51	0	5	3	2	
SC BEAUFORT	61	36	69	27	49	1	1.05	0.12	1.05	3.99	81	1.10	60	92	37	0	3	1	1	
SC CHARLESTON	62	37	68	30	49	1	1.24	0.30	1.24	4.94	97	1.80	98	88	38	0	3	1	1	
SC COLUMBIA	58	32	65	26	45	1	0.73	-0.32	0.72	7.45	137	1.00	49	81	39	0	4	2	1	
SC GREENVILLE	53	30	61	24	42	1	1.56	0.57	1.45	12.03	206	1.95	99	77	39	0	5	2	1	
SD ABERDEEN	17	-4	32	-18	7	-3	0.05	-0.06	0.02	0.73	120	0.09	39	78	69	0	7	3	0	
SD HURON	21	-4	36	-18	9	-5	0.04	-0.07	0.03	1.34	227	0.06	30	86	70	0	7	2	0	
SD RAPID CITY	37	14	43	-4	26	4	0.09	0.01	0.05	0.72	124	0.09	50	86	62	0	7	3	0	
SD SIOUX FALLS	21	-3	37	-15	9	-5	0.00	-0.11	0.00	1.62	219	0.31	141	82	72	0	7	0	0	
TN BRISTOL	43	22	55	15	33	-1	0.77	0.00	0.45	6.43	130	1.16	75	90	50	0	6	3	0	
TN CHATTANOOGA	50	27	59	18	38	-1	0.28	-0.93	0.28	11.30	157	0.89	38	79	57	0	5	1	0	
TN KNOXVILLE	46	25	57	15	36	-1	0.24	-0.81	0.15	8.36	127	0.52	25	78	49	0	6	2	0	
TN MEMPHIS	52	30	65	18	41	2	0.05	-0.88	0.05	6.24	82	1.47	77	78	45	0	4	1	0	
TN NASHVILLE	48	26	62	13	37	1	0.45	-0.45	0.37	5.59	88	0.67	37	73	39	0	4	2	0	
TX ABILENE	57	32	67	22	45	2	0.00	-0.21	0.00	2.24	129	0.04	9	78	51	0	4	0	0	
TX AMARILLO	50	23	63	18	37	2	0.13	-0.01	0.13	1.51	164	0.23	74	81	41	0	7	1	0	
TX AUSTIN	63	34	71	29	48	-2	0.01	-0.42	0.01	3.18	95	0.89	97	80	51	0	4	1	0	
TX BEAUMONT	62	40	76	33	51	-1	0.32	-1.02	0.32	6.67	84	2.53	95	93	48	0	0	1	0	
TX BROWNSVILLE	69	48	83	39	59	0	0.17	-0.09	0.12	1.97	122	1.81	355	96	74	0	0	4	0	
TX CORPUS CHRISTI	67	44	80	36	55	-1	0.02	-0.31	0.02	2.97	121	2.08	297	89	60	0	0	1	0	
TX DEL RIO	66	36	76	31	51	0	0.00	-0.08	0.00	0.91	96	0.57	285	82	49	0	2	0	0	
TX EL PASO	55	30	63	24	43	-1	0.00	-0.09	0.00	1.54	156	0.46	209	73	28	0	4	0	0	
TX FORT WORTH	58	35	68	28	47	3	0.01	-0.42	0.01	4.71	134	0.88	93	75	40	0	3	1	0	
TX GALVESTON	60	46	72	40	53	-3	0.82	-0.11	0.60	5.09	95	1.60	88	93	62	0	0	2	1	
TX HOUSTON	62	39	72	32	50	-1	0.17	-0.66	0.17	7.15	133	1.94	116	92	57	0	1	1	0	
TX LUBBOCK	52	23	67	21	38	0	0.01	-0.07	0.01	1.87	217	0.30	158	84	55	0	7	1	0	
TX MIDLAND	59	29	67	24	44	1	0.00	-0.11	0.00	1.33	151	0.09	39	80	41	0	6	0	0	
TX SAN ANGELO	61	31	70	21	46	2	0.00	-0.15	0.00	2.26	178	0.00	0	76	46	0	5	0	0	
TX SAN ANTONIO	65	39	74	33	52	2	0.00	-0.36	0.00	2.60	96	1.12	149	85	40	0	0	0	0	
TX VICTORIA	63	39	74	32	51	-2	0.29	-0.26	0.29	4.68	131	3.08	277	97	68	0	1	1	0	
TX WACO	59	33	70	28	46	0	0.00	-0.41	0.00	3.84	105	0.22	25	83	51	0	4	0	0	
UT WICHITA FALLS	55	30	67	19	43	3	0.30	0.06	0.30	3.03	136	0.41	76	82	51	0	5	1	0	
UT SALT LAKE CITY	35	23	39	18	29	0	0.09	-0.21	0.07	2.60	142	0.37	62	85	64	0	7	3	0	
VT BURLINGTON	34	19	53	12	27	9	0.70	0.20	0.50	5.19	162	0.75	77	77	52	0	6	3	1	
VA LYNCHBURG	48	23	57	18	35	1	0.86	0.06	0.71	6.38	133	1.42	90	83	43	0	7	2	1	
VA NORFOLK	55	33	69	24	44	4	1.15	0.26	1.09	4.58	96	1.21	70	71	31	0	4	3	1	
VA RICHMOND	52	29	65	22	40	4	0.76	-0.07	0.62	7.24	152	1.30	79	76	41	0	5	2	1	
VA ROANOKE	46	26	57	18	36	1	0.58	-0.12	0.47	5.92	139	1.37	99	71	44	0	6	2	0	
VA WASH/DULLES	47	25	59	18	36	4	1.38	0.69	0.85	5.57	125	1.81	130	77	51	0	6	3	2	
WA OLYMPIA	48	33	52	26	40	2	1.82	0.15	0.82	16.68	149	2.18	65	95	90	0	4	6	2	
WA QUILLAYUTE	51	38	53	32	44	4	4.25	1.22	2.00	23.87	116	4.63	76	92	86	0	2	6	4	
WA SEATTLE-TACOMA	50	38	54	33	44	4	1.87	0.73	0.76	13.36	169	2.15	94	83	72	0	0	5	2	
WA SPOKANE	34	26	39	18	30	3	0.79	0.38	0.32	5.34	173	0.90	108	97	86	0	7	5	0	
WA YAKIMA	39	30	43	17	35	7	0.49	0.23	0.25	4.41	228	0.94	171	85	79	0	3	4	0	
WV BECKLEY	39	19	50	6	29	-1	0.45	-0.27	0.19	4.38	97	0.83	58	72	54	0	7	4	0	
WV CHARLESTON	43	21	57	10	32	-1	0.22	-0.50	0.16	6.02	127	0.43	30	82	50	0	7	4	0	
WV ELKINS	41	17	50	7	29	0	0.43	-0.34	0.15	5.44	109	0.75	49	83	50	0	7	4	0	
WV HUNTINGTON	43	20	57	10	32	0	0.35	-0.37	0.16	7.12	148	0.71	49	82	50	0	7	4	0	
WI EAU CLAIRE	13	-4	27	-19	5	-6	0.01	-0.21	0.01	4.15	284	0.31	72	83	63	0	7	1	0	
WI GREEN BAY	21	2	34	-6	11	-4	0.10	-0.16	0.06	6.45	334	0.74	142	87	67	0	7	4	0	
WI LA CROSSE	19	0	33	-10	10	-6	0.02	-0.22	0.02	5.47	320	0.55	115	81	63	0	7	1	0	
WI MADISON	22	4	35	-7	13	-4	0.04	-0.21	0.04	3.89	178	0.56	108	81	65	0	7	1	0	
WI MILWAUKEE	25	7	39	-3	16	-5	0.09	-0.30	0.07	4.18	139	0.36	46	79	66	0	7	2	0	
WY CASPER	28	16	36	5	22	0	0.07	-0.04	0.07	1.42	167	0.37	161	71	52	0	7	1	0	
WY CHEYENNE	35	17	45	0	26	0	0.02	-0.06	0.01	1.15	180	0.30	167	58	37	0	7	2	0	
WY LANDER	27	3	41	-11	15	-5	0.00	-0.11	0.00	0.84	100	0.36	157	78	46	0	7	0	0	
WY SHERIDAN	40	16	53	4	28	7	0.09	-0.08	0.09	0.44	43	0.10	29	70	54	0	7	1	0	

Based on 1971-2000 normals

*** Not Available

National Agricultural Summary

January 11 – 17, 2016

Weekly National Agricultural Summary provided by USDA/NASS

HIGHLIGHTS

Precipitation was light across the nation, with most locations recording less than one-half inch. Exceptions included the Northwest, southern Florida, and Maine; some locations

received more than 3 inches of precipitation. Most of the upper Midwest and Four Corners region reported weekly temperatures more than 6°F below normal.

Arizona: Alfalfa continued to be rated mostly good to excellent, depending on location. Harvesting occurred on almost two-thirds of the state's alfalfa acreage. Rangeland conditions varied widely, depending on location, but were rated mostly good to fair. Central Arizona growers 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 throughout the state, but more will be needed for good forage growth this spring. Thirty-one of the 50 weather stations reported no precipitation during the week, with Flagstaff reporting the most with 0.21 inch. The highest temperature during the week was 73°F at Paloma. The lowest temperature was -9°F at the Grand Canyon.

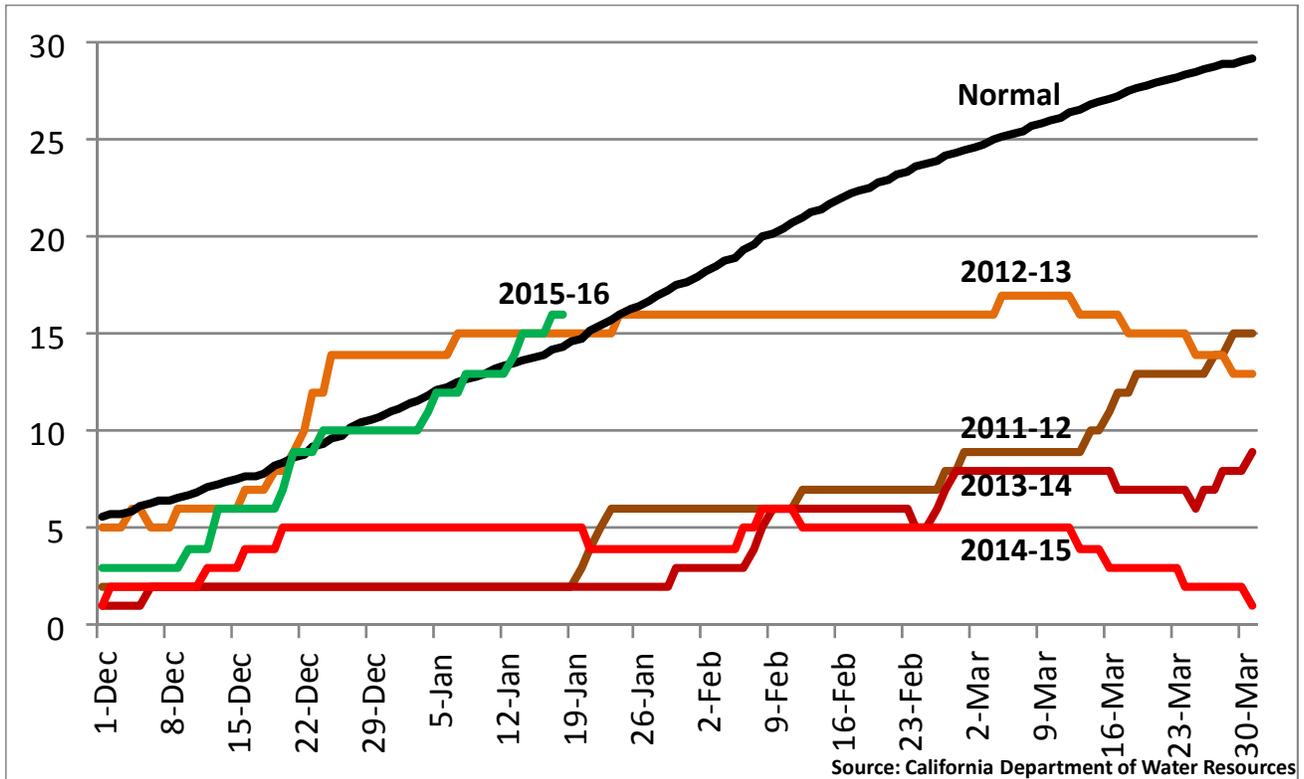
California: The weather started off cool but warmed up. Locations across the northern half of the state received precipitation every day, while most of the southern half did not receive any. In Tulare County, winter grains and field crops benefited from sunshine when fog burned off. Overall growth of grain and field crops continued to do well. In Colusa County, wheat fields were in good shape, with few reports of flooding. In Fresno County, due to above average rainfall, there were good growing conditions for dry beans and irrigated grain crops. Alfalfa hay was dormant. Postharvest pruning and orchard replanting continued in deciduous tree fruit orchards. Pruning was in its latter stage for all fruit and grapes, but wet conditions slowed fieldwork. Muddy groves were impeding the applications of needed fungicidal treatments. In San Joaquin County, spraying was conducted with ATVs connected to small spray rigs. Pruning towers were light enough to be able to access the orchards that have partially dried. 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. In Tulare County, exports of citrus fruit continued to pick up. Strawberry fields were reported to show ideal growth. Blueberry bushes were still being planted. 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. Almond shelling was ongoing. Almonds, pistachios, and shelled and in-shell walnuts were exported. The rainy weather made the vegetable harvest difficult and interfered with preparations for spring plantings. Fieldwork was halted due to wet conditions. In Fresno County, lettuce and green-leaf vegetables were harvested. In Tulare County, some winter vegetables were well established. In Fresno County, kale and onions for seed were sprayed for powdery mildew. Tomato beds were prepared. In Tulare County, recent rains continued to benefit the lower-elevation pasture

growth, reducing the need for supplemental feed. Sheep continued to graze in alfalfa fields.

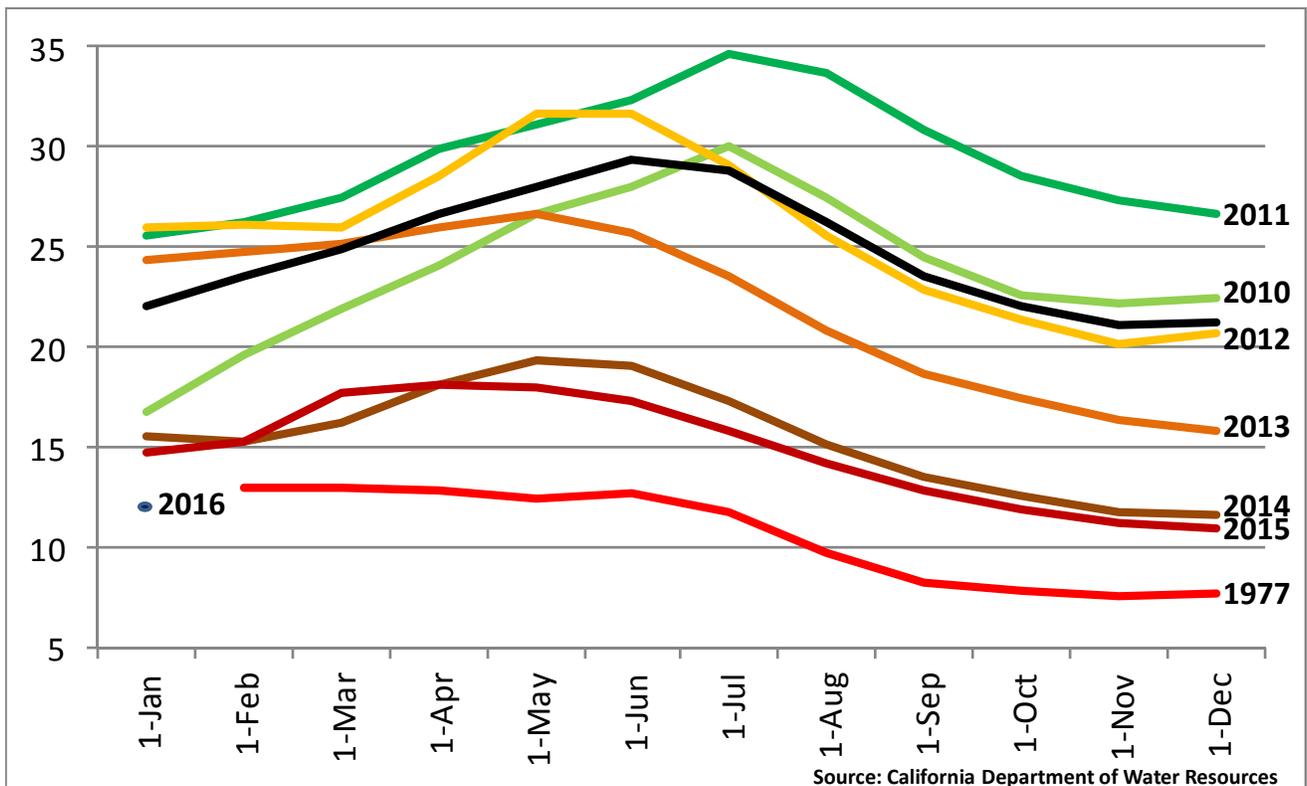
Florida: There was an average of 5.4 days suitable for fieldwork, up slightly from the previous week. Sugarcane harvest activities continued in Glades and Palm Beach Counties. In Putnam County, potatoes, leafy greens, and cabbage were being planted, and leafy greens and cabbage were harvested. In Charlotte, Collier, Glades, Hendry, and Lee Counties, high winds battered crops and caused lodging and damage to some vegetables. Vegetables marketed were cucumbers, eggplant, herbs, kale, peppers, squash, tomatoes, and specialty items. Some recently planted crops in St. Lucie were washed out by heavy rains. Crops being planted in Miami-Dade County were green and pole beans, yellow squash, zucchini, tomatoes, peppers, eggplant, sweet corn, boniato, malanga, herbs, strawberries, avocado, and other tropical fruits. Temperatures were below normal for most of the citrus region, as heavy storms moved across the peninsula. Rainfall amounts were highest in South Florida, while high winds impacted western Florida. More than 1.5 inches of rain was recorded in all citrus-producing counties, delaying the harvest of fresh fruit. The majority of the counties experienced high temperatures in the mid-70s. All processing plants were open and running at full capacity. Packinghouses were accepting midseason oranges, grapefruit, tangelos, honey tangerines; one packinghouse was accepting Valencias. Scattered bloom was reported in many citrus areas. Growers were hedging and topping citrus trees after fruit harvesting is completed. Limited mowing, mostly before harvest, was being done on an as-needed basis. Pasture condition in the southeast was mostly poor due to standing water from recent heavy rains. Ryegrass forage in several northern and panhandle counties was in poor condition due to weather-caused disease problems. The condition of cattle in the panhandle was holding through calving.

Texas: A few scattered showers were experienced across the western part of the state. Areas along the Upper Coast received at least one-half inch, while the rest of the state received precipitation ranging from none to around one-quarter of an inch. Winter wheat harvest was progressing throughout the state. In parts of the High Plains, wheat was primarily dormant. In parts of the Blacklands, wheat and oats experienced damage due to wet field conditions. Wheat and oats in the Upper Coast, the Edwards Plateau, and South Texas were experiencing good progress. Cotton harvest was at 95 percent complete, 3 percentage points behind normal. Corn producers in the Blacklands began field preparations by applying fertilizer. Vegetable harvest was active in the Lower Valley, while onion producers began field preparations in parts of North East Texas. Livestock were being maintained primarily with supplemental feed and were reported in good condition. The winter grazing outlook was good, as temperatures began to warm and wheat pasture continued to develop and improve. Tick fever has caused problems for livestock in South Texas, while feral hog activity was occurring in parts of the Blacklands and North East Texas.

Daily Sierra Nevada Snowpack (Inches) vs. Normal



California Reservoir Storage, Million Acre-Feet, 1977 and 2010-16



Note: One acre-foot is equal to 325,851 gallons, or the amount of water it takes to cover one acre to a depth of one foot.

January 14 ENSO Update

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

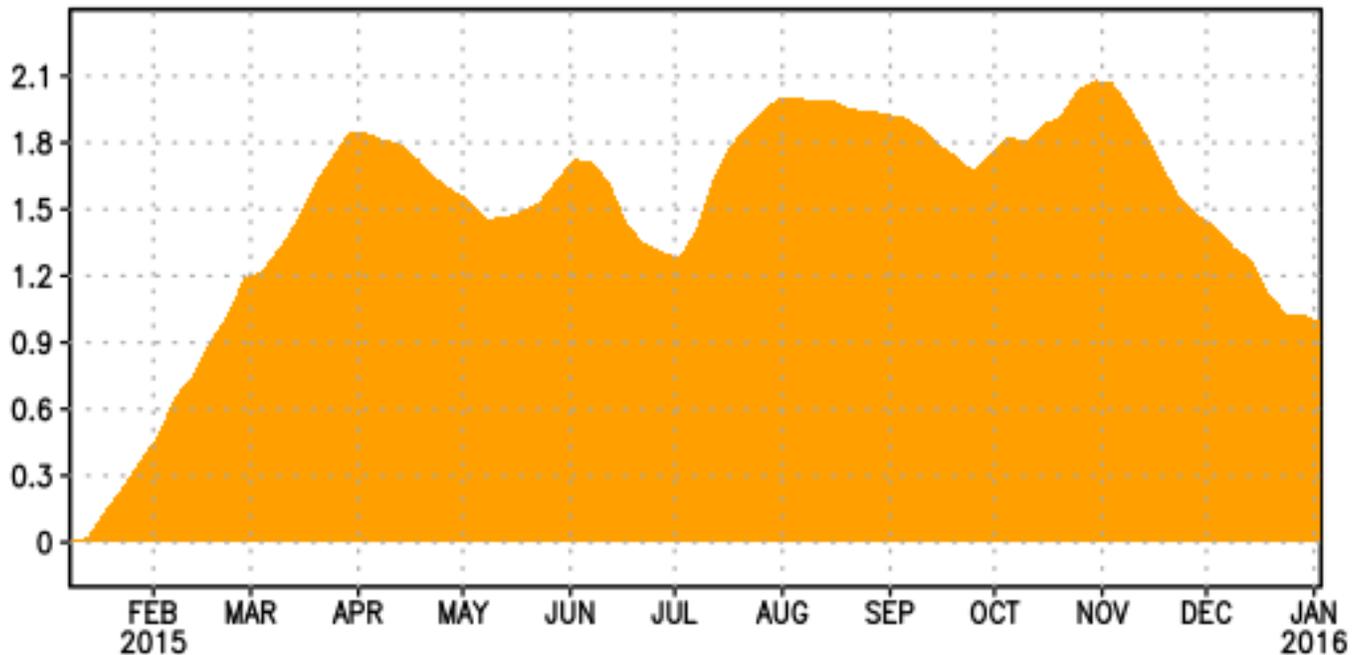


Figure 1: Area-averaged upper-ocean heat content anomaly (°C) in the equatorial Pacific (5°N-5°S, 180°-100°W). The heat content anomaly is computed as the departure from the 1981-2010 base period pentad means.

ENSO Alert System Status: **El Niño Advisory**

Synopsis: A strong El Niño is expected to gradually weaken through spring 2016, and to transition to ENSO-neutral during late spring or early summer.

A strong El Niño continued during December, with well above-average sea surface temperatures (SSTs) across the central and eastern equatorial Pacific Ocean. All weekly Niño indices decreased slightly from the previous month. The subsurface temperatures in the central and eastern Pacific, while still well above average, weakened (Fig. 1) due to an upwelling equatorial oceanic Kelvin wave. Significant low-level westerly wind anomalies and upper-level easterly wind anomalies continued over much of the tropical Pacific. During the last week, another westerly wind burst occurred in the east-central Pacific. The traditional and equatorial Southern Oscillation Index (SOI) values remained strongly negative. Also, convection remained strong over the central and east-central tropical Pacific, and suppressed over Indonesia. Collectively, these atmospheric and oceanic anomalies reflect the continuation of a strong El Niño episode.

Most models indicate that a strong El Niño will weaken with a transition to ENSO-neutral during the late spring or early summer. The forecasters are in agreement with the model consensus, though the exact timing of the transition is difficult to predict. A strong El Niño is expected to gradually weaken through spring 2016, and to transition to ENSO-neutral during late spring or early summer (click [CPC/IRI consensus forecast](#) for the chance of each outcome for each 3-month period).

El Niño has already produced significant global impacts and is expected to affect temperature and precipitation patterns across the United States during the upcoming months (the [3-month seasonal outlook](#) will be updated on Thursday January 21st). The seasonal outlooks for January – March indicate an increased likelihood of above-median precipitation across the southern tier of the United States, and below-median precipitation over the northern tier of the United States. Above-average temperatures are favored in the West and northern half of the country with below-average temperatures favored in the southern Plains and along the Gulf Coast.

This discussion is a consolidated effort of the National Oceanic and Atmospheric Administration (NOAA), NOAA's National Weather Service, and their funded institutions. Oceanic and atmospheric conditions are updated weekly on the Climate Prediction Center web site ([El Niño/La Niña Current Conditions and Expert Discussions](#)). Forecasts are also updated monthly in the [Forecast Forum](#) of CPC's Climate Diagnostics Bulletin. Additional perspectives and analysis are also available in an [ENSO blog](#). The next ENSO Diagnostics Discussion is scheduled for **11 February 2016**. To receive an e-mail notification when the monthly ENSO Diagnostic Discussions are released, please send an e-mail message to: ncep.list.ensupdate@noaa.gov.

International Weather and Crop Summary

January 10-16, 2016

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

HIGHLIGHTS

EUROPE: Rain continued to ease drought on the Iberian Peninsula, while mild and unsettled weather over central and eastern Europe gave way to late-week snow.

WESTERN FSU: Unsettled weather continued, with snow in central and northern wheat areas contrasting with rain in the south.

MIDDLE EAST: Rain and snow further alleviated short-term dryness in Turkey, while light showers sustained adequate to abundant moisture supplies for winter grains from Syria into Iran.

NORTHWESTERN AFRICA: Severe drought continued in Morocco, while much-needed rain provided some drought relief to Algeria.

SOUTHEAST ASIA: Continued inconsistent showers in eastern and central portions of Java, Indonesia, reduced soil moisture for rain-fed rice.

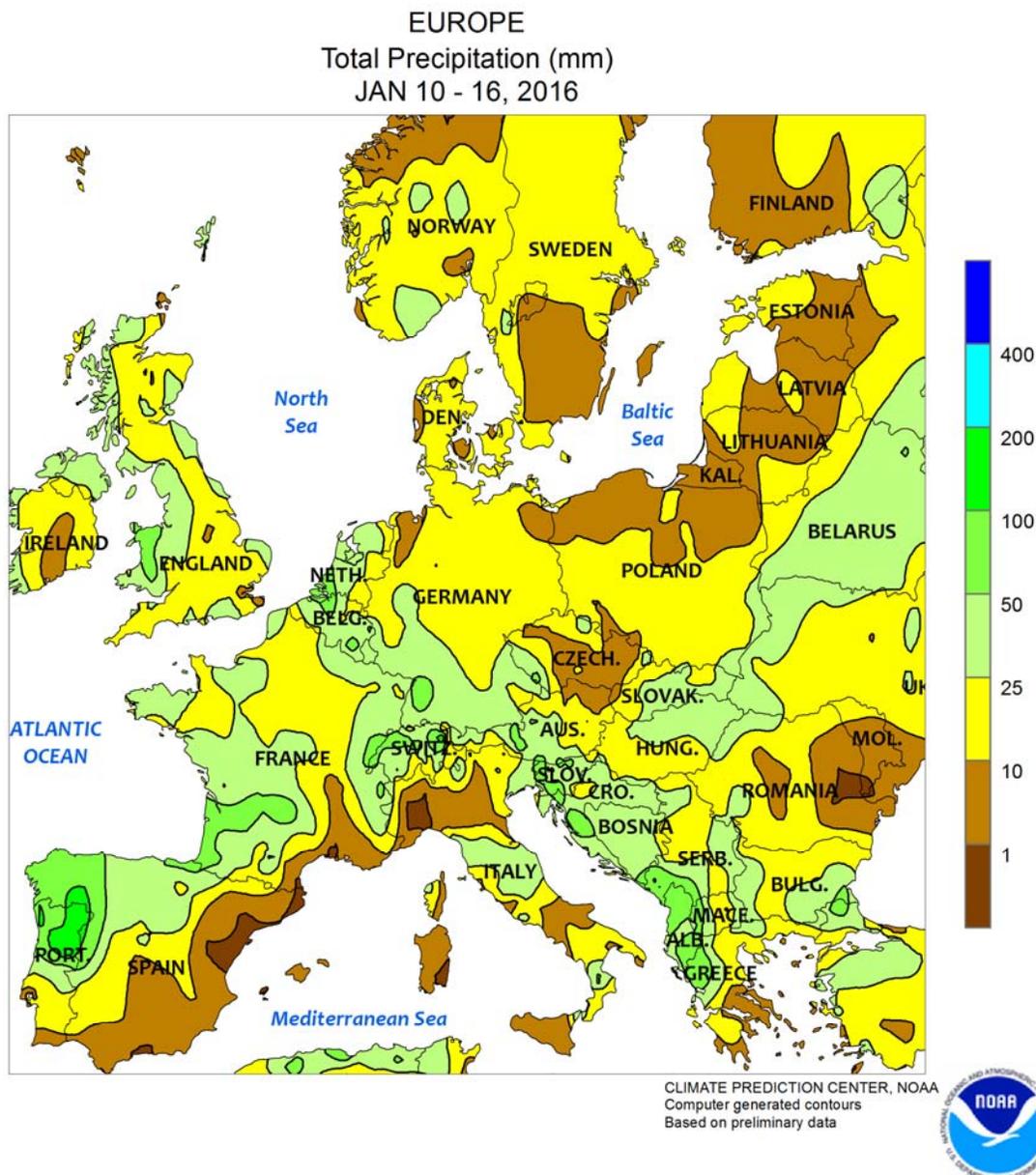
AUSTRALIA: Recent rainfall provided a buffer against increasing heat and dryness in the east.

SOUTH AFRICA: Much-needed rain helped to stabilize corn and other rain-fed summer crops recently stressed by heat and dryness.

ARGENTINA: Beneficial rain fell in key western soybean and corn areas.

BRAZIL: Seasonal rain continued in soybean and cotton areas of central Brazil.



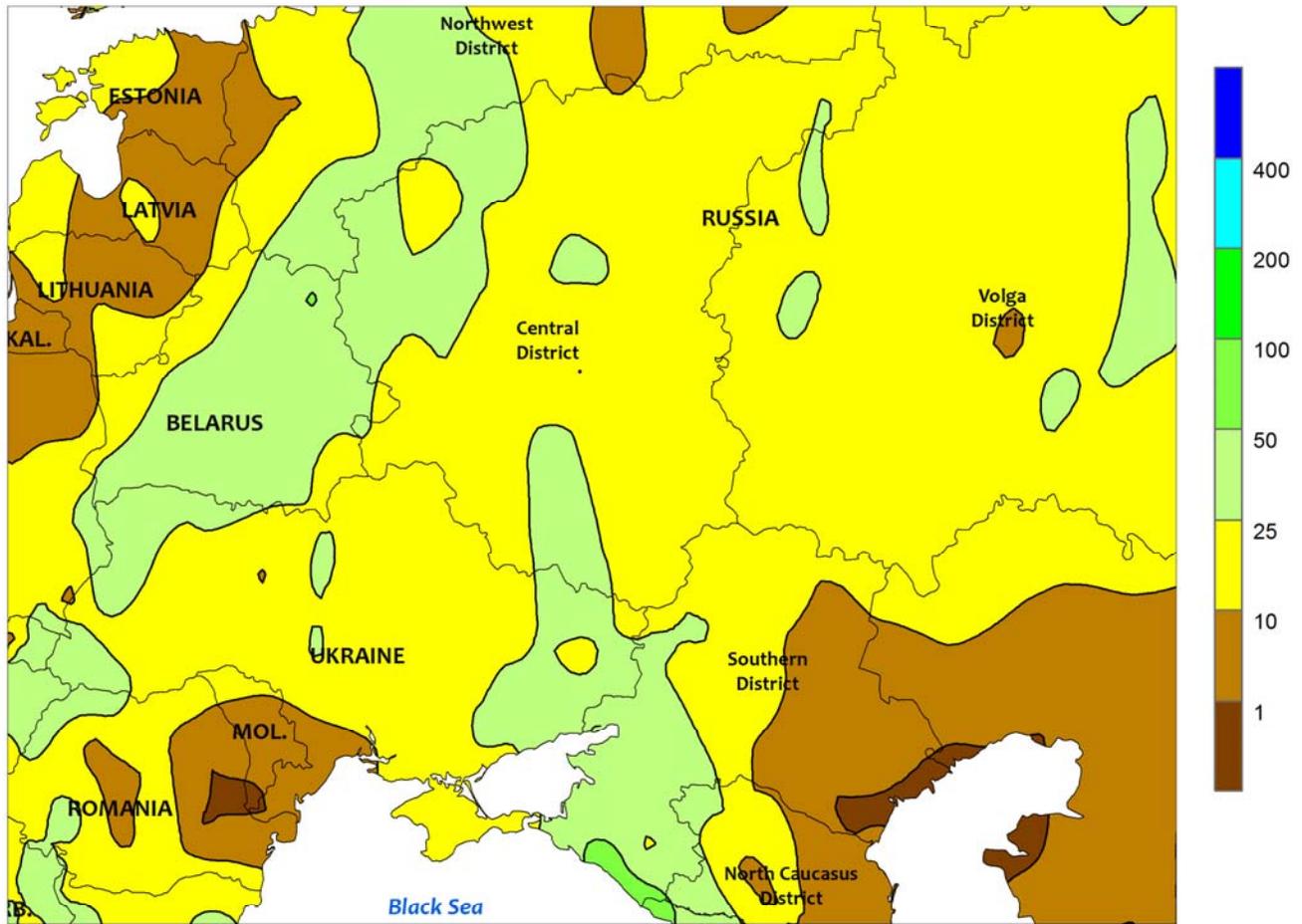


EUROPE

Rain continued to ease drought on the Iberian Peninsula, while mild but unsettled weather over central and eastern Europe gave way to late-week snow. For the third consecutive week, moderate to heavy rain (10-100 mm, locally more) eradicated short-term drought across northern and central portions of the Iberian Peninsula. However, some dryness concerns lingered in southern Spain; in Andalucía (along the southern coast), precipitation since November 1 has totaled 52 percent of normal. Farther east, despite widespread rain in Italy, amounts were light (less than 10 mm) in the Po River Valley of northern Italy,

pushing deficits since the beginning of November above 120 mm. In contrast, rain and snow (10-90 mm liquid equivalent) continued from central and southern Italy into the Balkans, sustaining favorable soil moisture reserves for spring growth. Much of central and northern Europe experienced early-week rain followed by snow at week's end, with total precipitation (liquid equivalent) for the week averaging 10 to 60 mm (locally more). A shallow to moderate snowpack (2-20 cm) returned by the end of the period from Germany into Poland and the Baltic States, as well as the southern Balkans.

WESTERN FSU
Total Precipitation (mm)
JAN 10 - 16, 2016



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

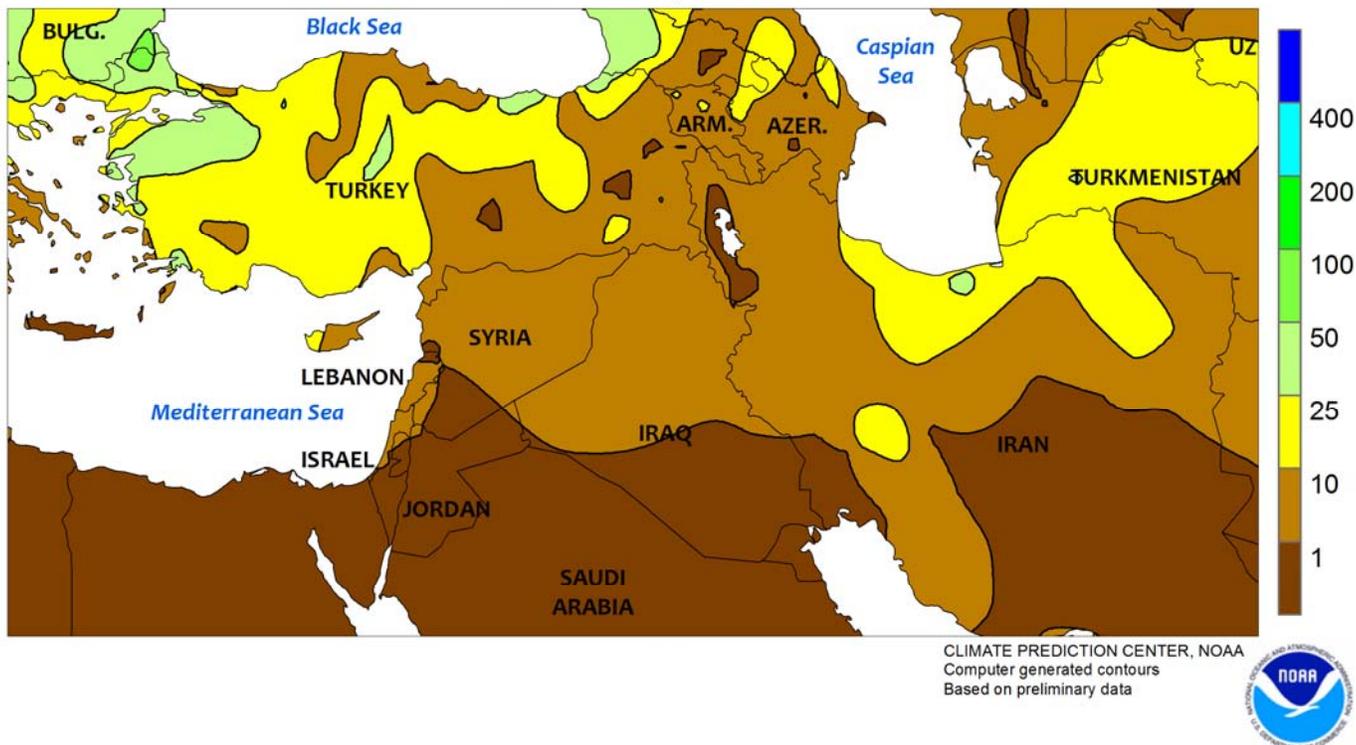


WESTERN FSU

Wet weather continued, with rain in southern crop areas contrasting with additional snow in central and northern portions of the region. Precipitation (liquid equivalent) during the period totaled 15 to 50 mm, sustaining adequate to abundant moisture reserves for spring growth. There were no concerns of winterkill due to a moderation in temperatures, with most winter wheat

areas reporting nighttime lows above -20°C. In areas where bitter cold was reported (Central and Volga Districts) a moderate to deep snowpack (10-60 cm) remained in place. However, snow cover has melted from southern Ukraine into the North Caucasus District in southern Russia, leaving southern crop areas exposed to potential incursions of bitter cold.

MIDDLE EAST
Total Precipitation (mm)
JAN 10 - 16, 2016



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

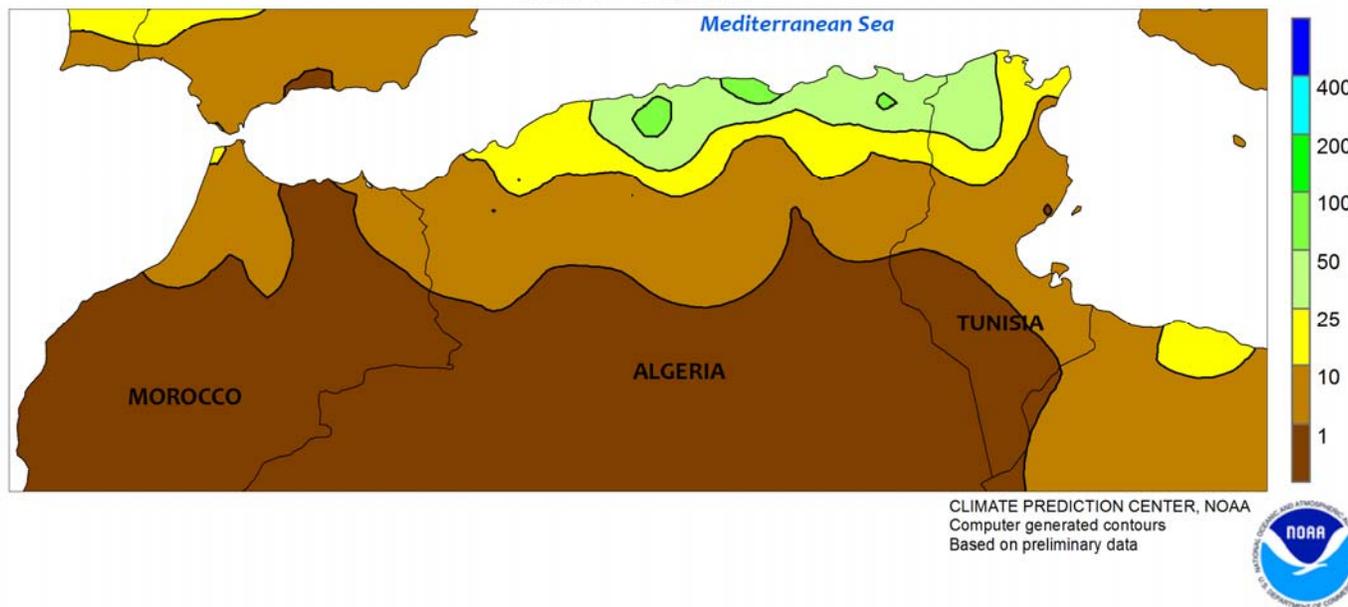


MIDDLE EAST

Rain and snow along with above-normal temperatures lingered across much of the region. In Turkey, additional rain and high-elevation snow (10-50 mm liquid equivalent) continued to ease short-term dryness and improve soil moisture reserves for spring growth. Light to moderate

showers (2-20 mm) fell from the eastern Mediterranean Coast into Iraq and Iran, maintaining adequate to abundant soil moisture for vegetative winter grains. Temperatures for the week averaged up to 8°C above normal, minimizing the risk for winterkill.

NORTHWESTERN AFRICA
 Total Precipitation (mm)
 JAN 10 - 16, 2016

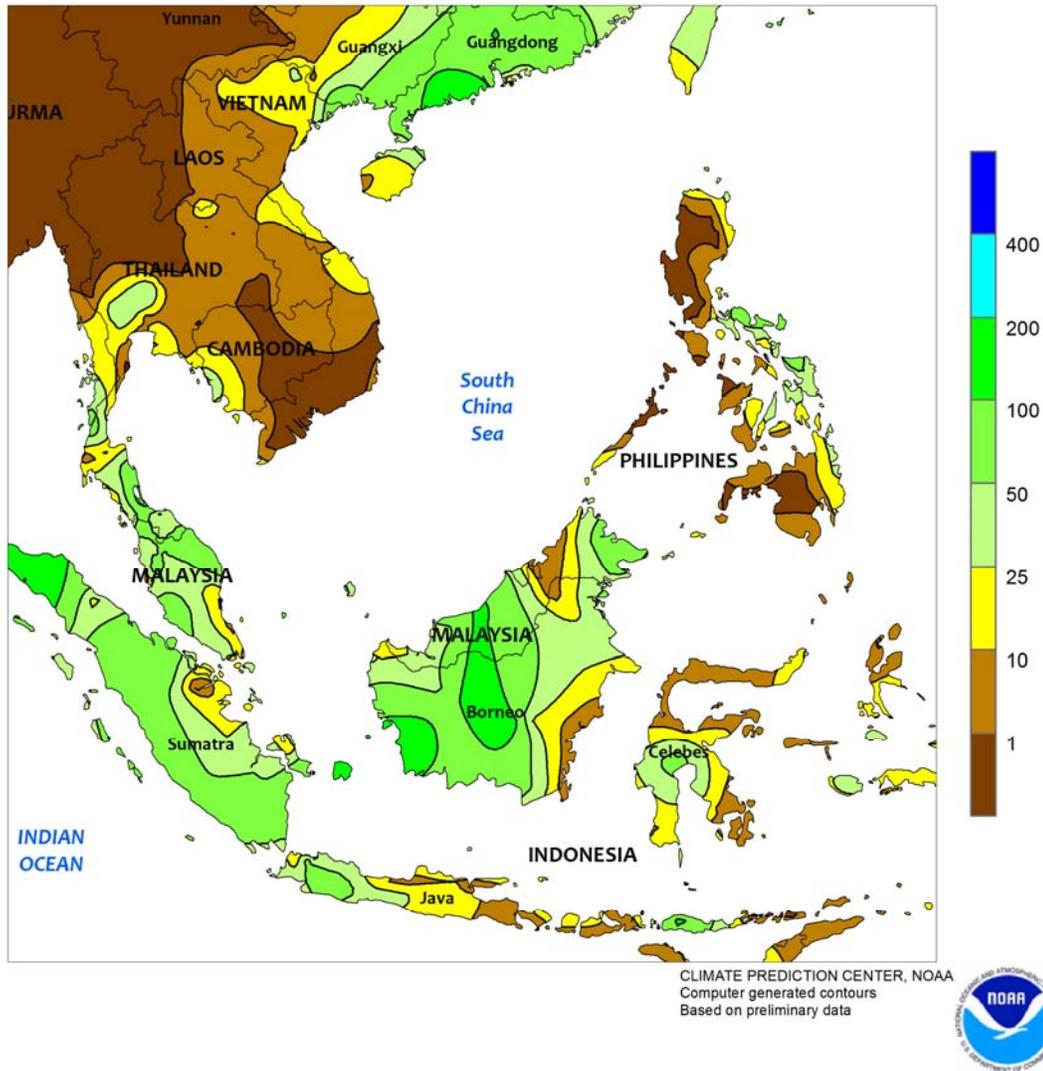


NORTHWESTERN AFRICA

Severe drought continued to adversely impact winter grains across the west, while rain improved winter crop prospects in central and eastern growing areas. Morocco remained warm and mostly dry, with rain (5-40 mm) generally confined to the immediate coastal areas in the north. Morocco's regional

average precipitation since November 1 stood at a meager 22 percent of average in the north and 18 percent in the country's southern crop areas. In contrast, above-normal rainfall (10-70 mm, locally more) eased drought in Algeria and maintained favorable prospects for vegetative winter grains in Tunisia.

SOUTHEAST ASIA
Total Precipitation (mm)
JAN 10 - 16, 2016

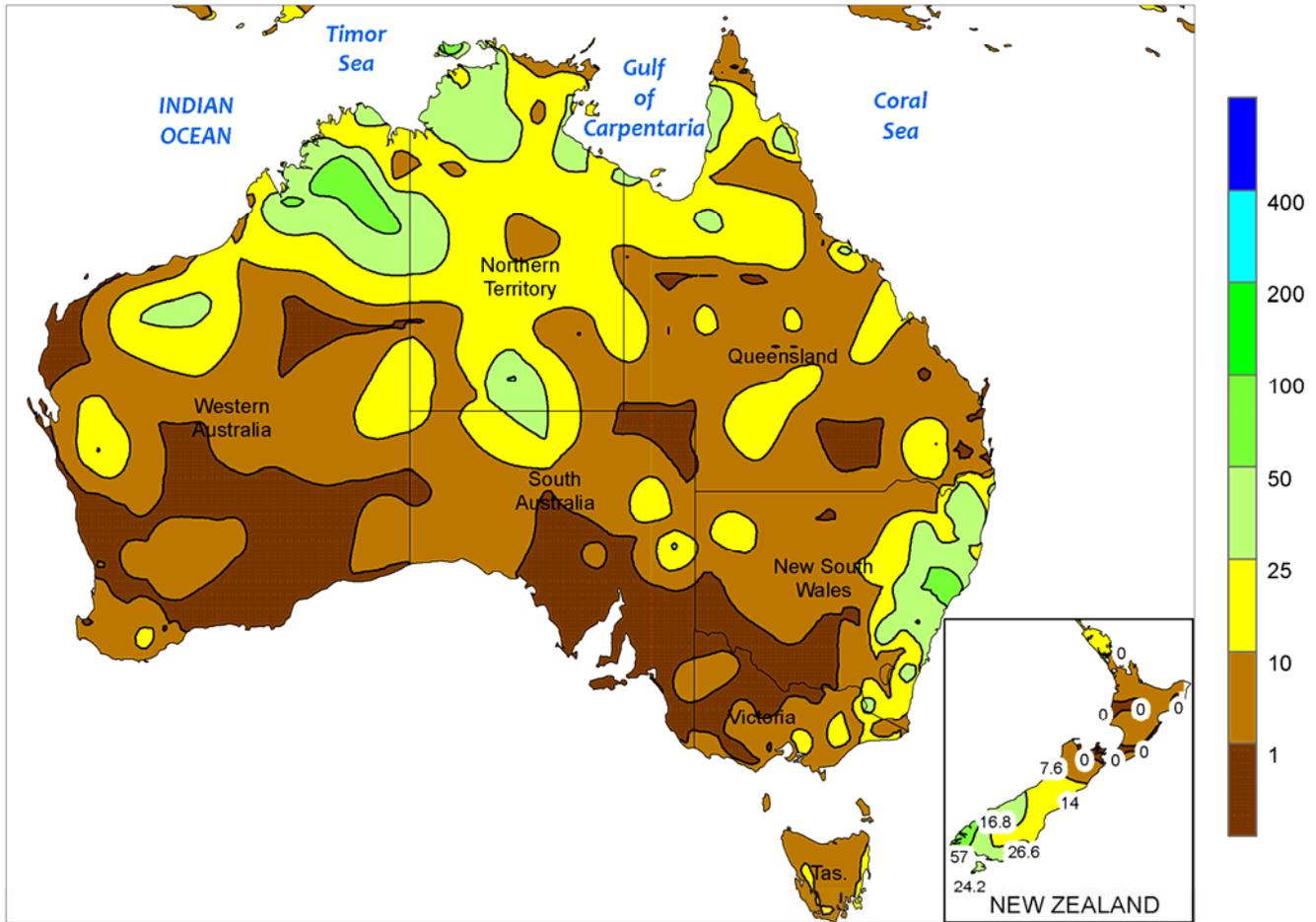


SOUTHEAST ASIA

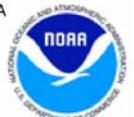
Rainfall remained generally seasonable in western Java, Indonesia, with seasonal totals (700 mm) on par with the long-term average. However, unseasonably light showers occurred elsewhere in Java, where seasonal rainfall totals have been between 50 and 75 percent of normal. Irrigated rice remained well watered with adequate water supplies, but prospects for the smaller rain-fed portion of the crop are likely declining. In contrast, widespread showers (50-100 mm) in oil palm areas of Indonesia and Malaysia maintained or increased soil moisture for trees. Moisture conditions have been generally favorable for oil palm since the start of the new cropping cycle (beginning November 1), but lingering rainfall deficits continued in

parts of Malaysia. Meanwhile in the Philippines, showers were unseasonably light, with only isolated amounts greater than 50 mm. Most of the northern Philippines have experienced near- to above-normal rainfall for the winter crop season, mainly based on late-season tropical cyclone activity in December. The remainder of the Philippines, though, continued to run a seasonal rainfall deficit of 100 mm or more. To the west in Indochina, localized showers (25-50 mm) in dry-season rice areas of Thailand provided beneficial moisture to a crop coping with reduced irrigation supplies. In southern Vietnam, warm, sunny weather promoted winter-spring rice development.

AUSTRALIA
Total Precipitation (mm)
JAN 10 - 16, 2016



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

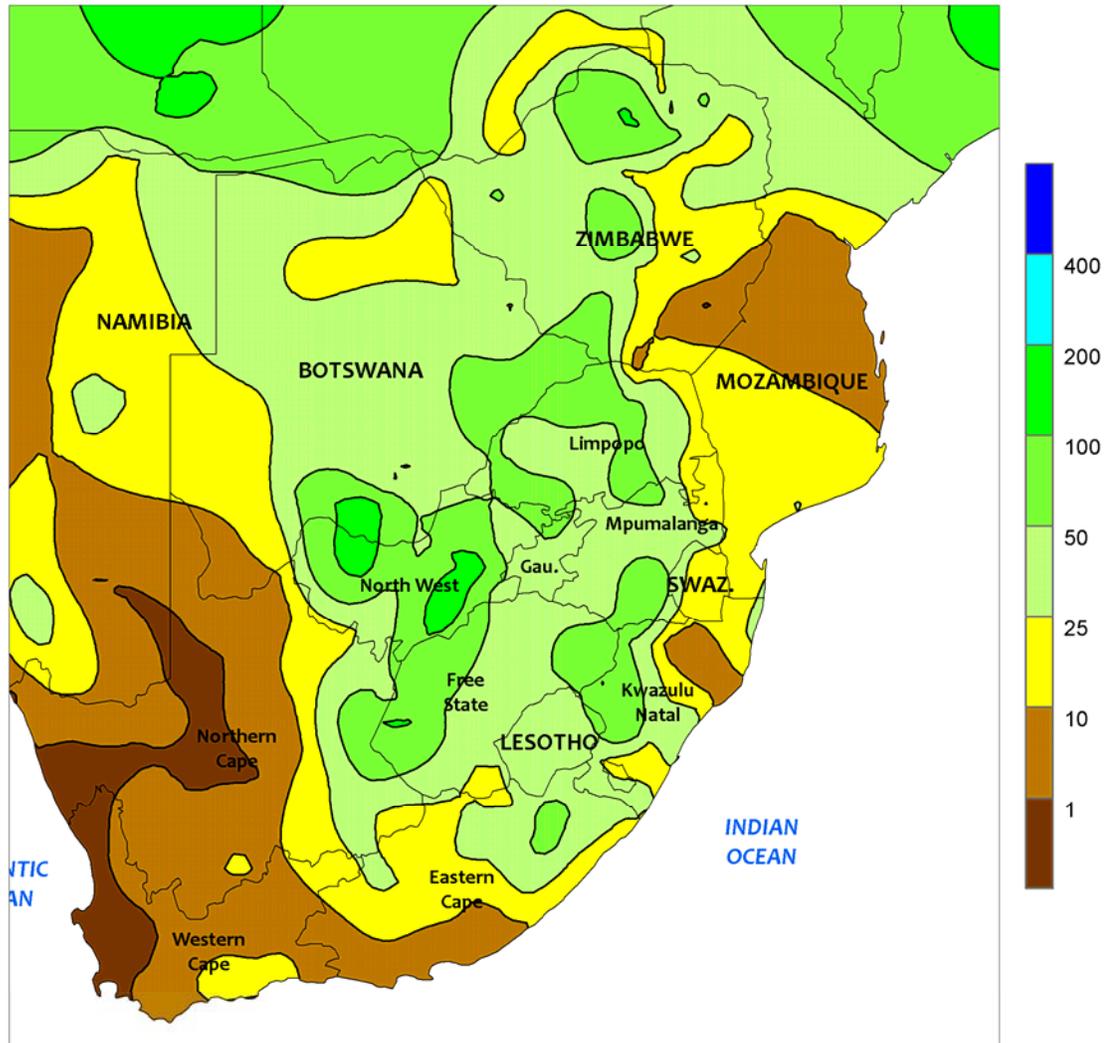


AUSTRALIA

In the wake of last week's soaking rains, dry, increasingly hot weather overspread southern Queensland and northern New South Wales through midweek. Daily maximum temperatures were in the middle to upper 30s degrees C, with isolated locations in the lower 40s. The heat accelerated summer crop development, but adequate to abundant topsoil moisture helped

offset evaporative losses, minimizing the stress on cotton and sorghum. A cold front brought relief to the region late in the week, with scattered showers (5-25 mm) and unseasonably cool weather benefiting summer crops. By Saturday, maximum temperatures were generally in the 20s degrees C, with a few locations topping out in the lower 30s.

SOUTH AFRICA
Total Precipitation (mm)
JAN 10 - 16, 2016



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

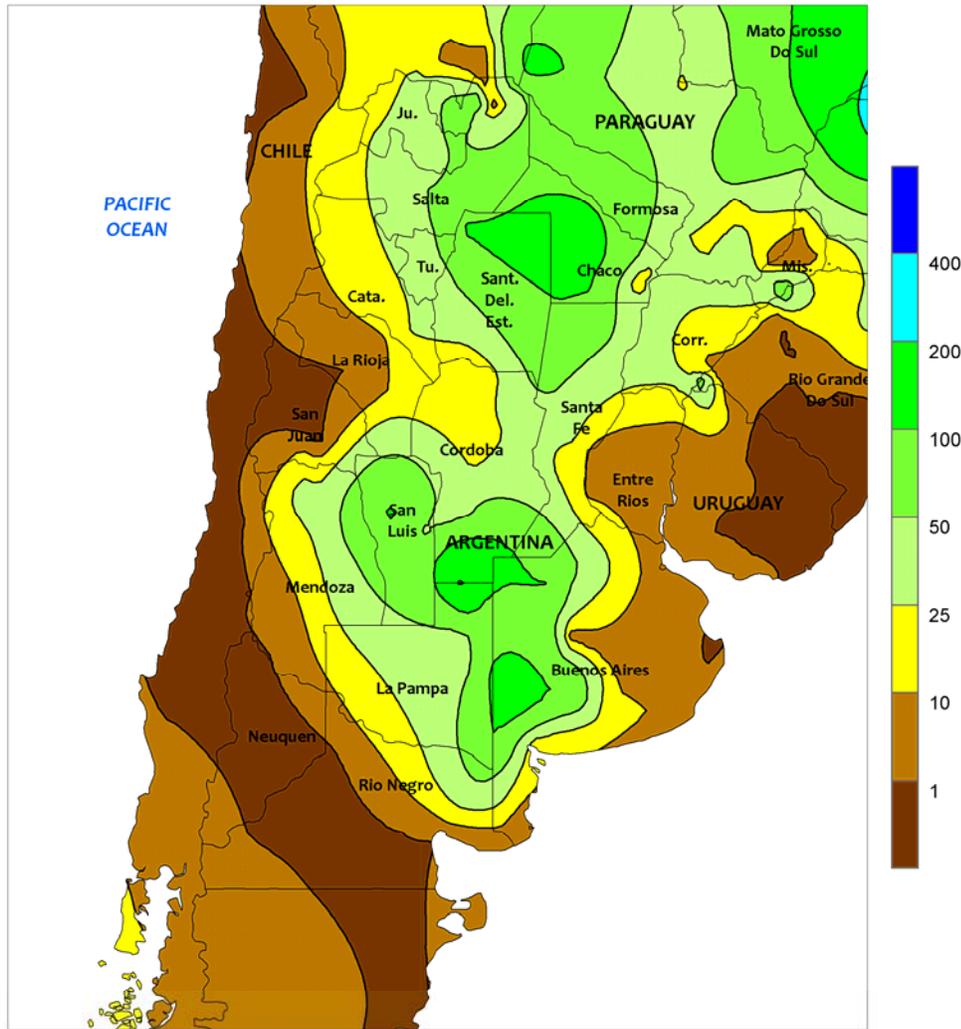


SOUTH AFRICA

Widespread, locally heavy rain brought needed relief from heat and dryness to corn and other rain-fed summer crops. Rainfall totaled 15 to 50 mm — locally higher — from Free State and North West north and eastward through Limpopo, Mpumalanga, and northwestern KwaZulu-Natal. While providing timely moisture for emerging to reproductive corn, the rain helped to keep temperatures down to more seasonable levels. As rain developed, daytime highs reached the upper 20s and lower 30s (degrees C) in eastern sections of the corn belt (in and around

Mpumalanga) and the lower and middle 30s farther west; temperatures were generally lower (highs in the lower and middle 20s) following several days of rain. Elsewhere, rain (10-25 mm or more) also intensified in rain-fed sugarcane areas of southern KwaZulu-Natal. In the Cape Provinces, showers (5-40 mm) increased irrigation reserves in eastern sections of Eastern and Northern Cape Provinces. Warm, mostly dry weather dominated most farming areas of Western Cape, promoting rapid development of irrigated tree and vine crops.

ARGENTINA
Total Precipitation (mm)
JAN 10 - 16, 2016



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

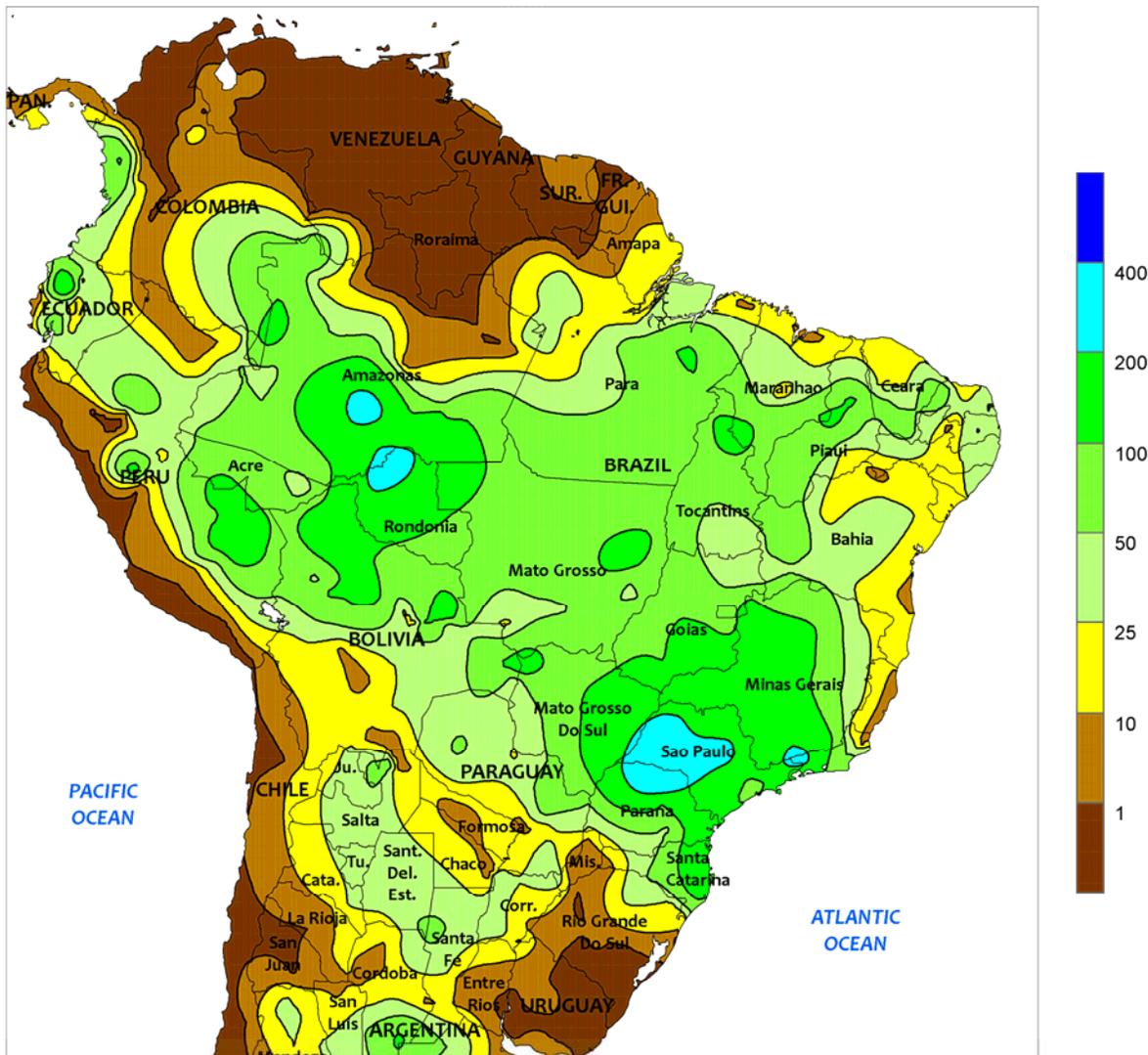


ARGENTINA

Rainy weather continued in western production areas of central and northern Argentina, increasing moisture for corn and soybeans. The heaviest rain (greater than 50 mm) was concentrated over southern Cordoba and nearby locations in La Pampa and Buenos Aires, with much of the remainder of central Argentina recording at least 10 mm. The exception was eastern Buenos Aires and Entre Rios, where little to no rain fell. Weekly temperatures averaged near to slightly above normal, with daytime highs reaching the middle 30s (degrees C) on several days in traditionally warmer southwestern production areas (notably La Pampa). Beneficial rain (10-50

mm) continued across northern Argentina, although amounts were generally below those recorded last week. However, weekly temperatures averaged 1 to 2°C above normal, maintaining high evaporative losses; daytime highs reached 40°C in the northwest (Santiago del Estero to northern Salta and western Formosa) before the onset of the rain, making the moisture particularly timely. According to the Government of Argentina, soybeans and corn were 93 and 85 percent planted, respectively, as of January 14. In addition, wheat was 94 percent harvested, with the final remaining acreage in Buenos Aires and La Pampa.

BRAZIL
Total Precipitation (mm)
JAN 10 - 16, 2016



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

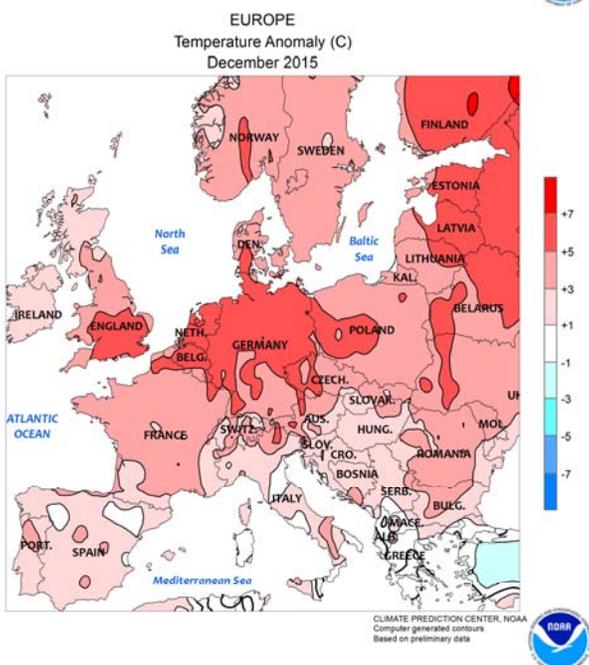
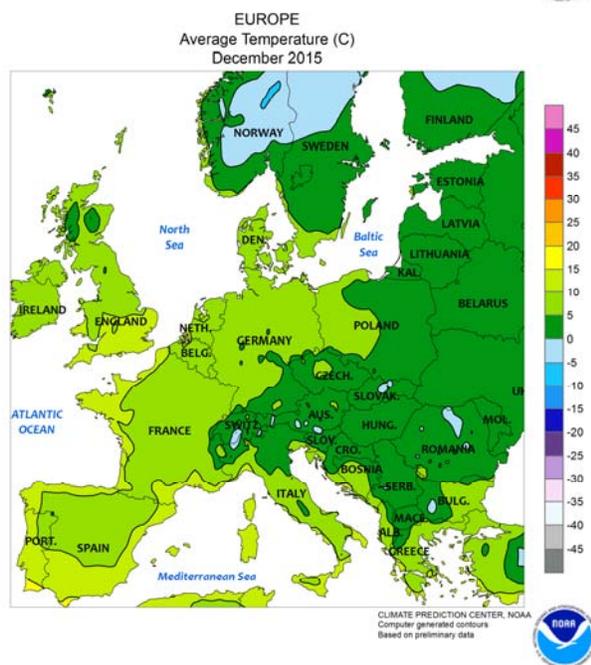
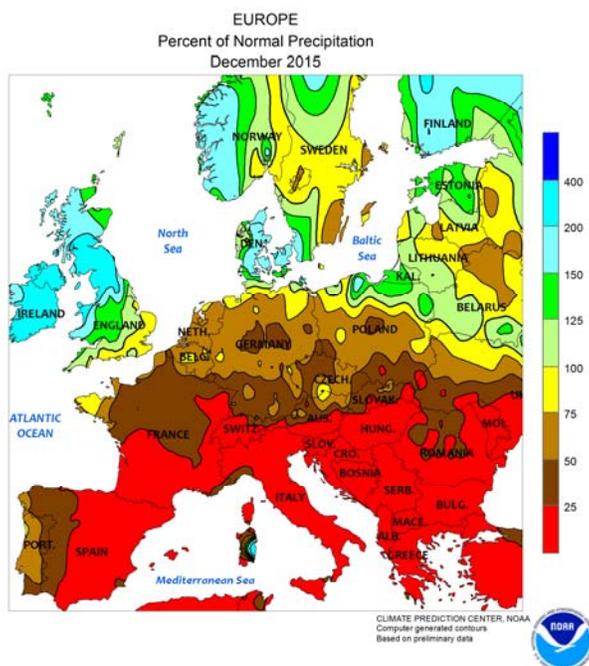
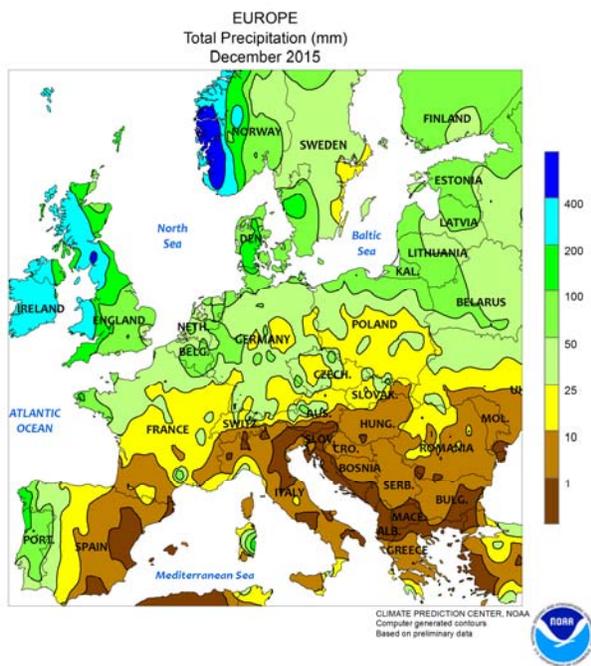


BRAZIL

Beneficial rain continued throughout key soybean and cotton areas of central Brazil, helping the region recover from earlier periods of unseasonable warmth and dryness. Rainfall totaled 25 to locally more than 100 mm from the Center-West Region (Mato Grosso, Goias, and Mato Grosso do Sul) to the northeastern interior (Tocantins, western Bahia, and farming areas of southwestern Maranhao and Piaui). Weekly average temperatures were near to slightly above normal in the aforementioned areas with highs reaching the middle 30s (degrees C). Meanwhile, heavier rain (100-200 mm, locally exceeding 300 mm) likely caused localized flooding in southeastern sugarcane and coffee areas (notably Sao Paulo and Minas Gerais). However,

rainfall continued to be light (less than 25 mm) in Espirito Santo and along the coast of Bahia, with somewhat higher amounts (greater than 25 mm) in Brazil's northeastern tip. In southern Brazil, rainfall ranged from more than 200 mm in northern Parana gradually to virtually no rain in southern Rio Grande do Sul. After extended periods of heavy rain, the dryness in the far south was welcome, though Parana remains very wet for the season, recording on average more than double the normal amount of rainfall since the beginning of November. Temperatures averaged near to above normal in Brazil's southern agricultural areas, with highest recorded temperatures generally ranging from the upper 20s to lower 30s (degrees C).

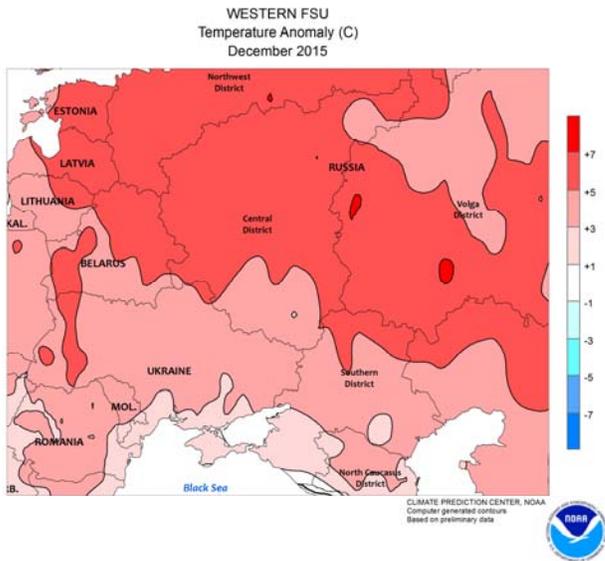
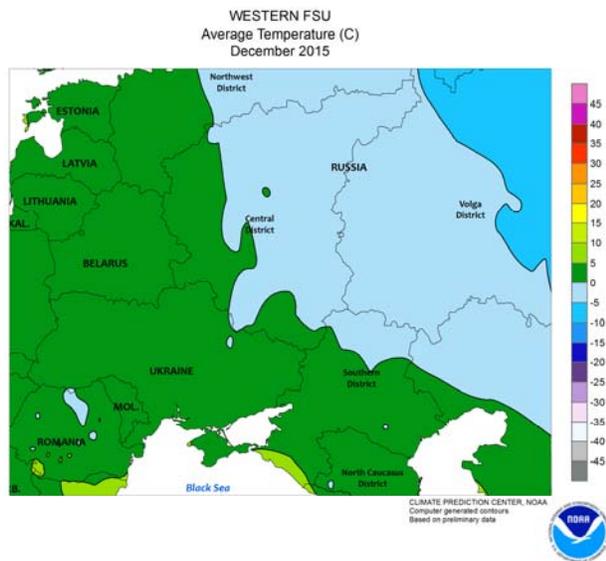
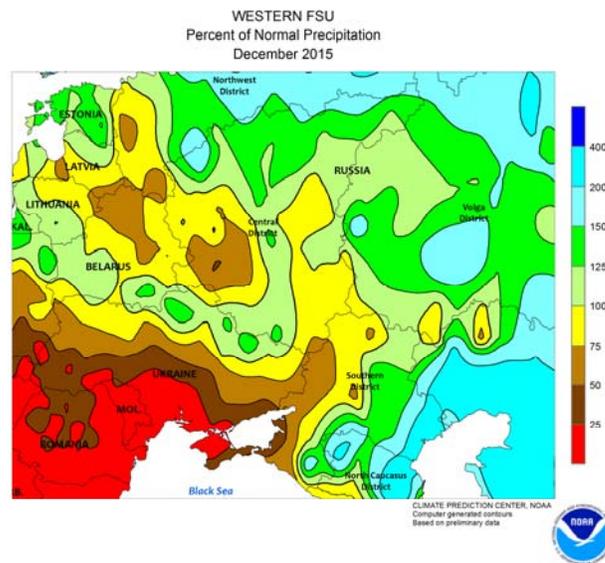
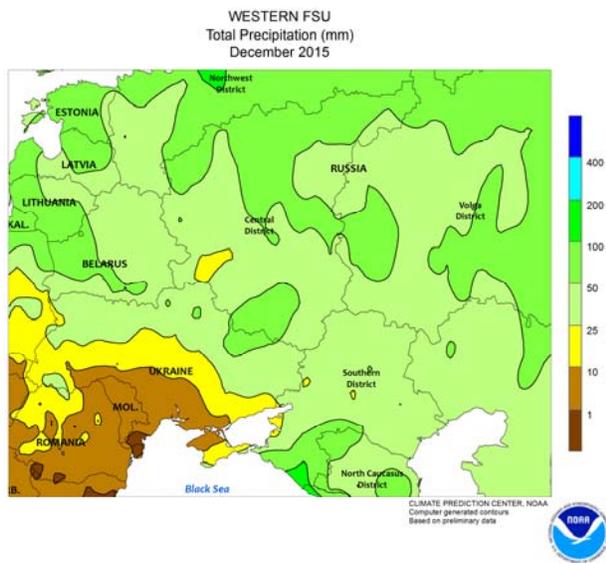
December International Temperature and Precipitation Maps



EUROPE

Much-above-normal temperatures during December maintained mostly favorable conditions for winter crops over central and northern Europe. However, the unseasonable warmth prevented some crops from going dormant in typically colder growing areas of Germany and Poland (5-7°C above normal), and kept the continent devoid of snow cover. Heavy rain (200-400 mm, locally more) caused flooding and damage to infrastructure in the

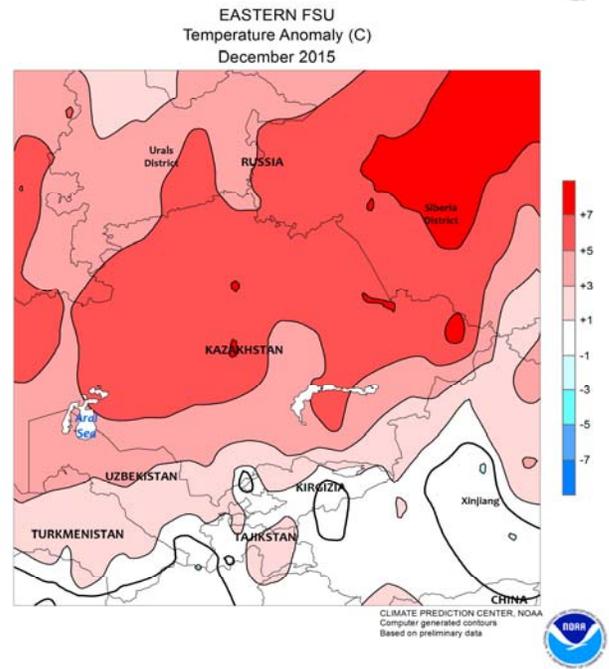
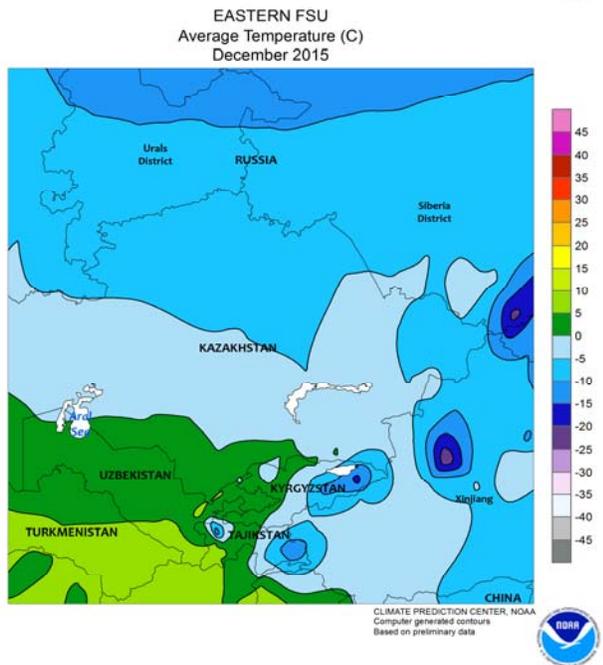
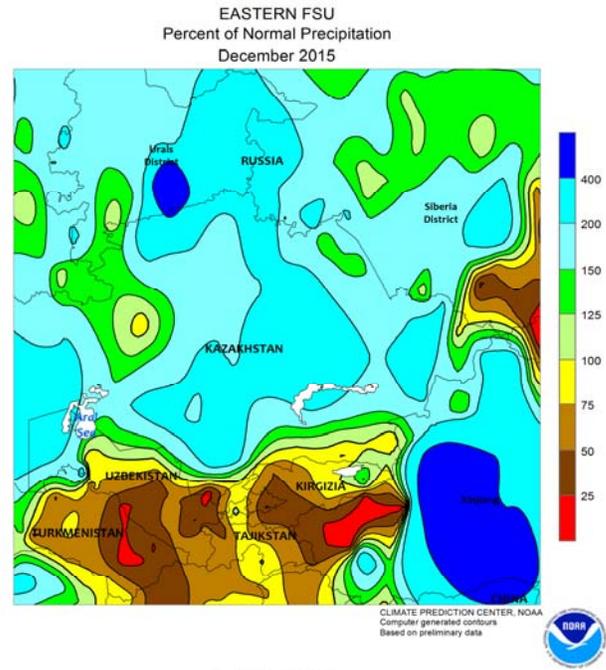
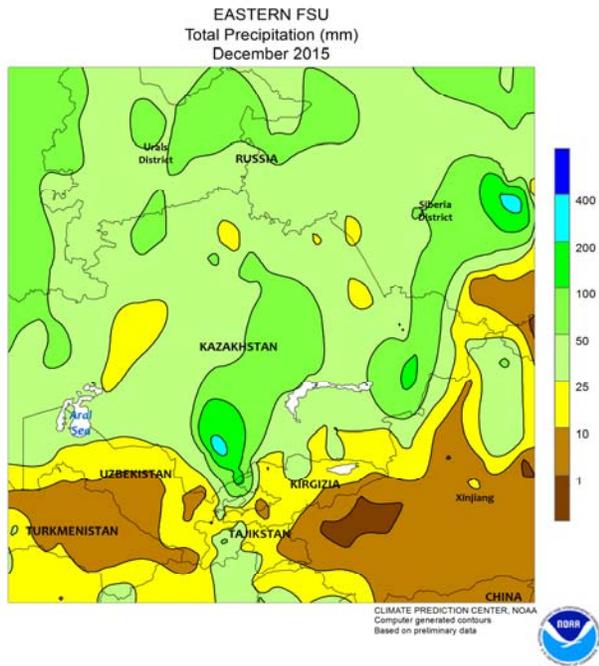
United Kingdom and Ireland. In contrast, dry weather (less than 20 percent of normal, with many stations less than 5 percent) across the Mediterranean region exacerbated short-term drought from Spain into Italy, and reduced soil moisture for dormant winter crops in the Balkans. By early January, colder weather with snow developed over northern Europe, while much-needed rain eased drought in Portugal and Spain.



WESTERN FSU

Above-normal December temperatures kept the region uncharacteristically devoid of snow cover, though timely snow at month's end preceded bitter cold in early January. During December, temperatures averaged 2 to 3°C above normal in the south and up to 7°C above normal in northern portions of the region. Despite the December warmth, winter crops

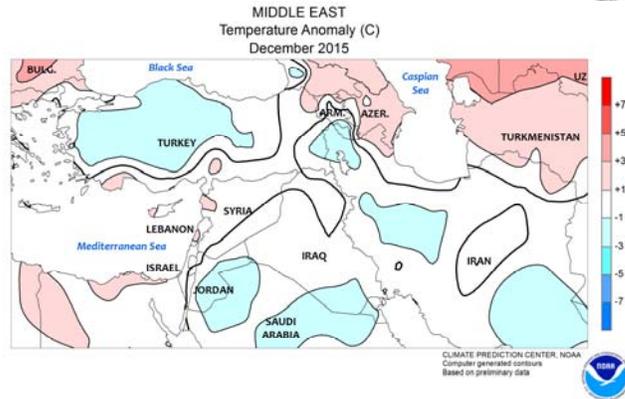
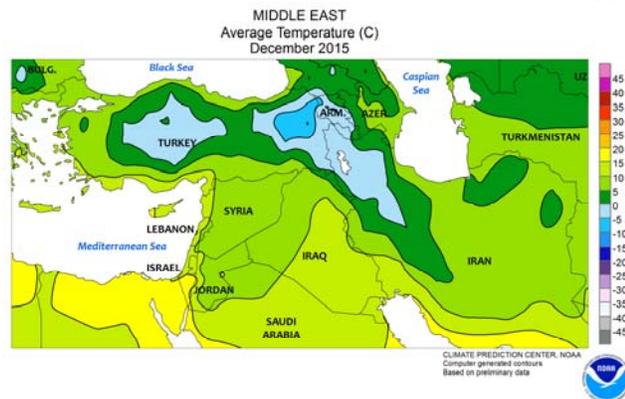
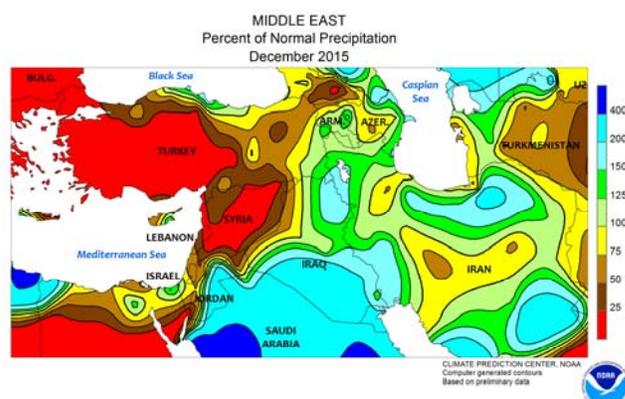
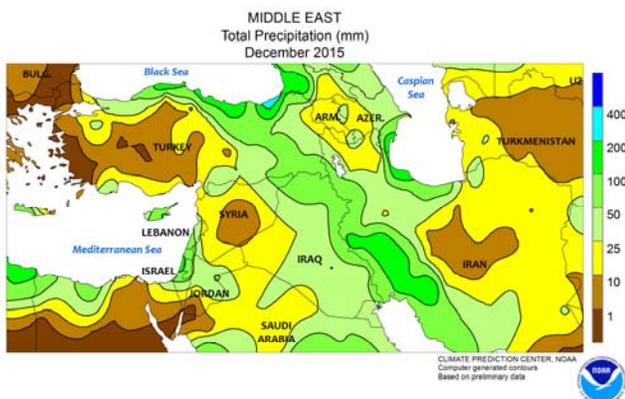
entered dormancy in the south by mid-month and remained dormant in the colder north. Rain and snow (locally more than 140 percent of normal) from northern Ukraine into Russia eased autumn dryness. Drier-than-normal weather was observed near the Black Sea Coast, though dormant winter crops were not impacted by the lack of moisture.



EASTERN FSU

During December, despite temperatures averaging up to 7°C above normal, the region’s primary northern crop areas remained encased in a moderate to deep snowpack. Agricultural activity in the northern spring wheat belt is minimal — if any —

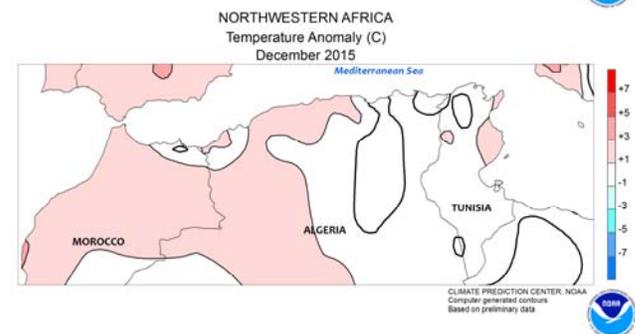
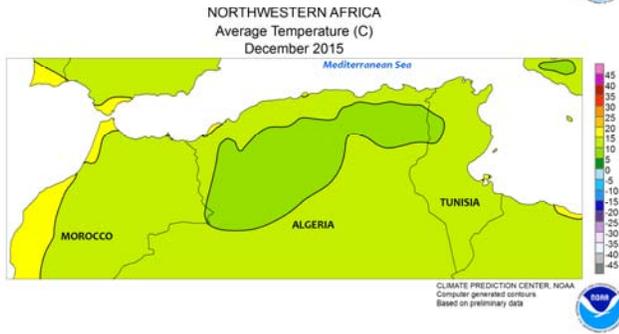
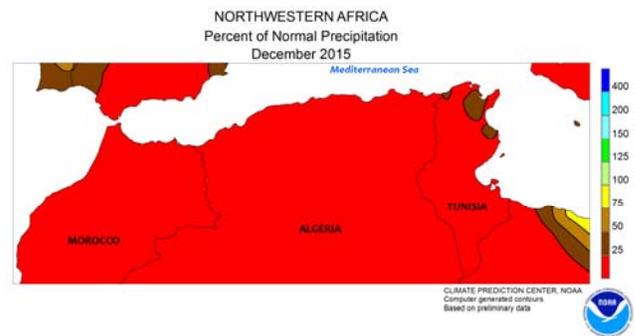
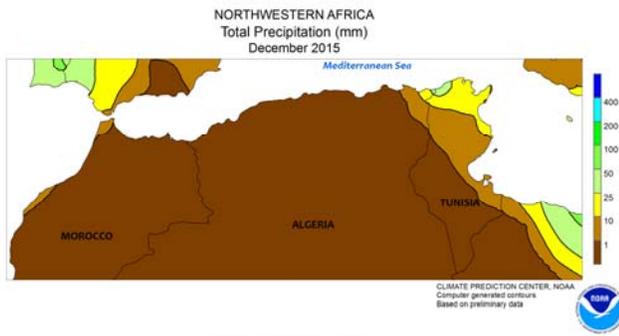
during the winter months. Farther south, moderate to heavy rain and mountain snow (20-130 mm liquid equivalent) in eastern Uzbekistan provided supplemental moisture for vegetative winter wheat, which is heavily irrigated.



MIDDLE EAST

During December, persistent dryness in the eastern Mediterranean region contrasted with abundant rain and mountain snow farther east. Precipitation totaling less than 10 percent of normal in Turkey reduced soil moisture for late

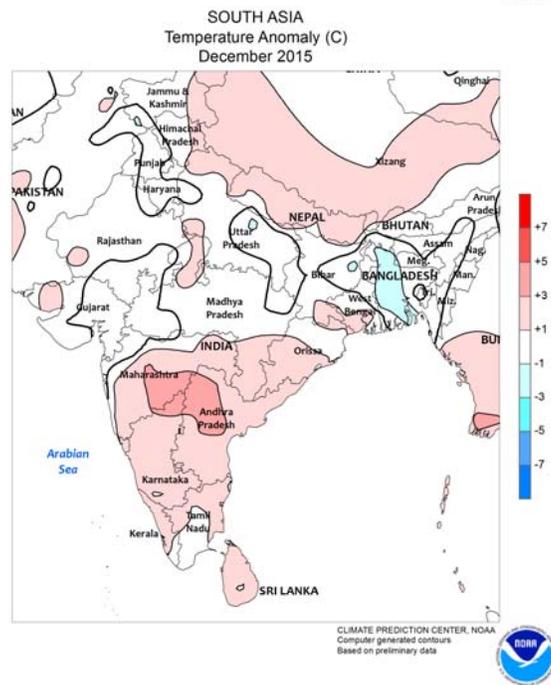
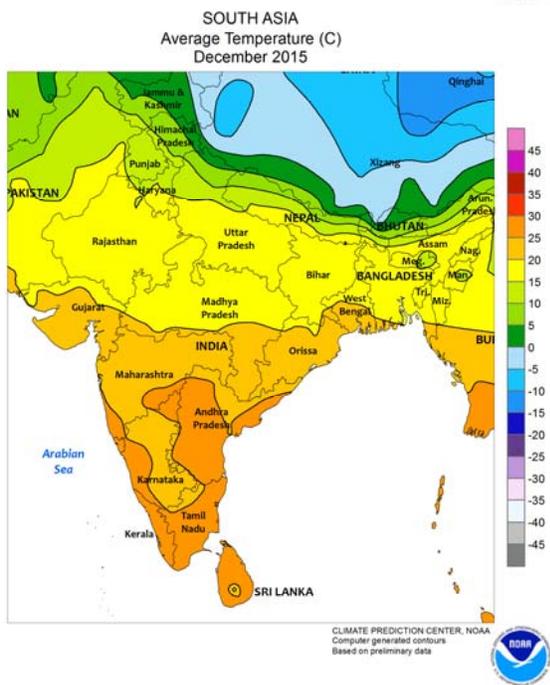
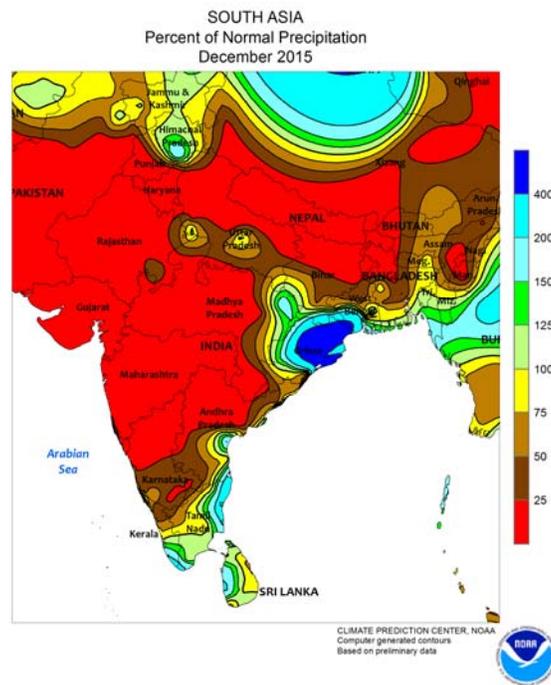
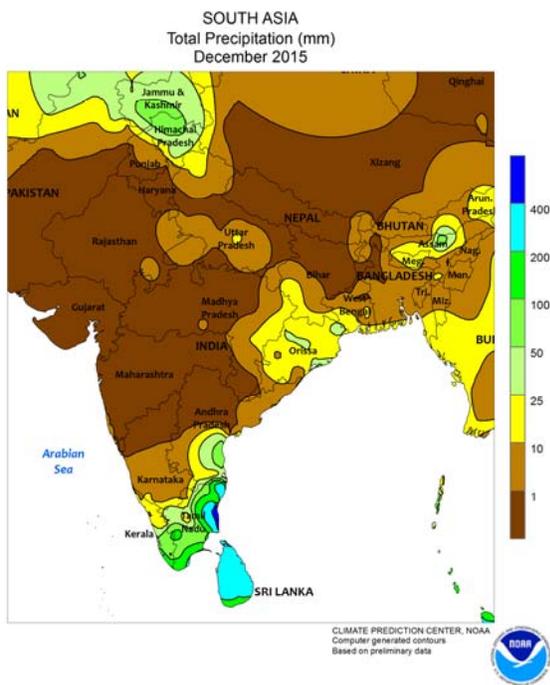
winter grain establishment before crops went dormant by month's end. In contrast, heavy rain (50-150 mm) sustained adequate to abundant soil moisture and irrigation reserves for winter crops in Iraq and western Iran.



NORTHWESTERN AFRICA

In December, intensifying drought from Morocco into central Algeria worsened prospects for winter grain establishment. There was no measureable rain reported during the month across Morocco and much of Algeria, exacerbating drought

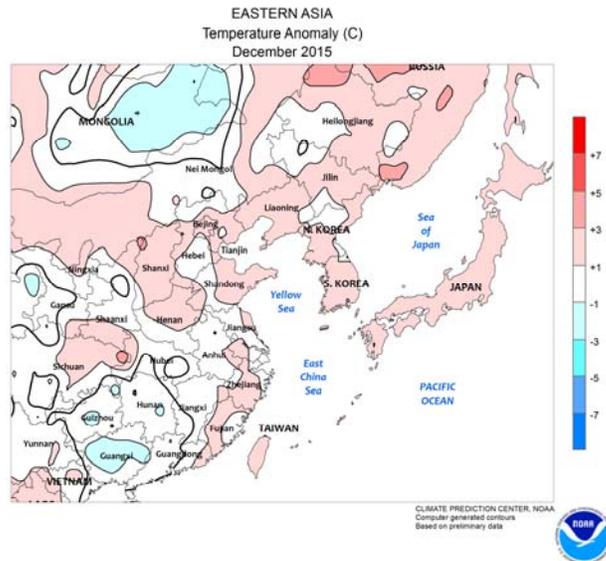
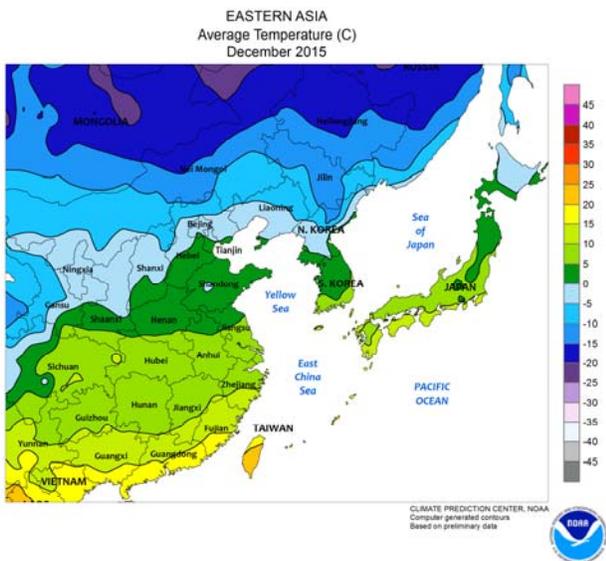
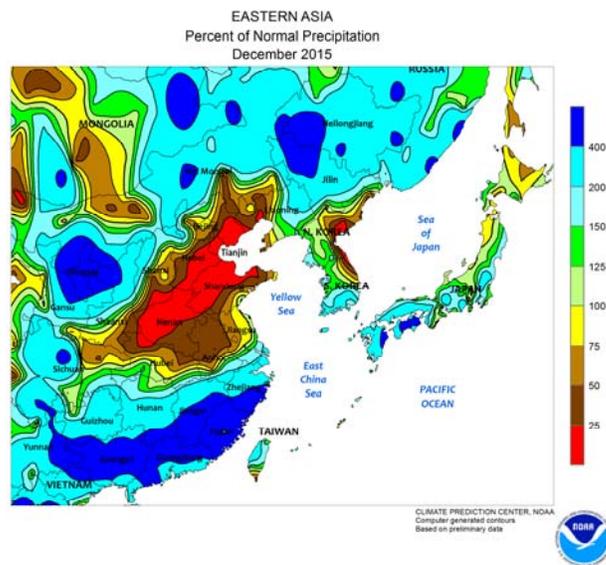
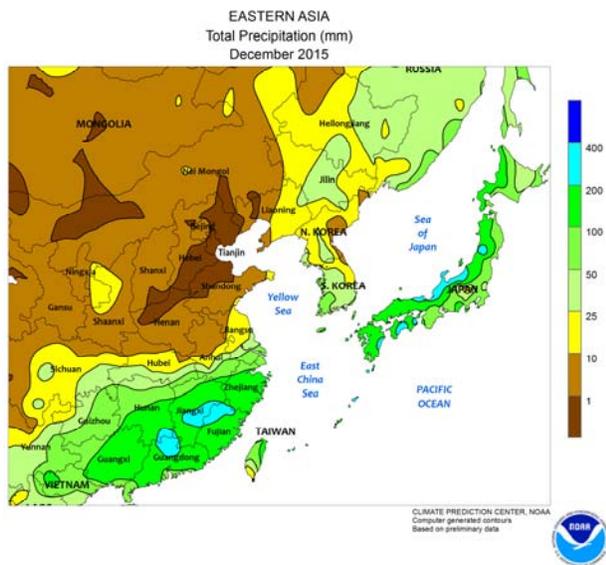
and leaving wheat and barley with little — if any — soil moisture for establishment. Dryness also spread into northeastern Algeria and Tunisia, but wheat and barley in these eastern areas benefited from heavy November rainfall.



SOUTH ASIA

During December, seasonably dry weather prevailed across much of India and Pakistan, with little if any rainfall reported for the month in wheat and rapeseed areas. Rainfall occurred primarily in eastern rice areas of India, where amounts were in excess of 10 mm in Orissa and Andhra Pradesh. Meanwhile, unseasonably heavy showers (upwards of 300 mm) in Tamil Nadu caused isolated flooding and slowed fieldwork.

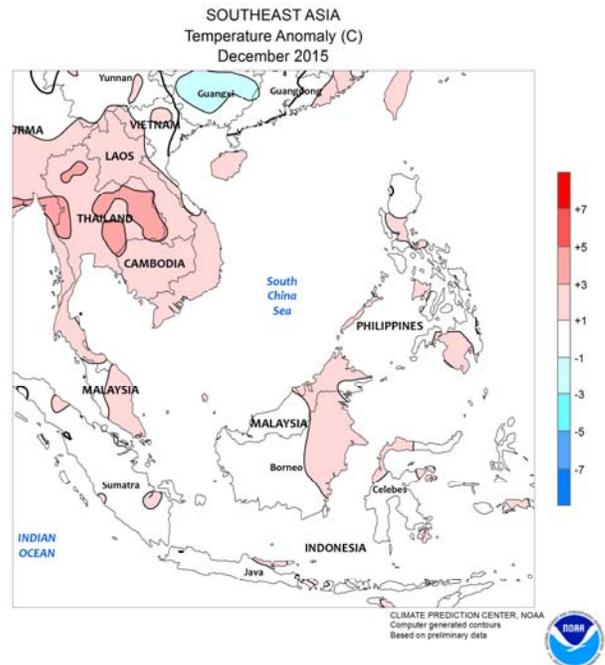
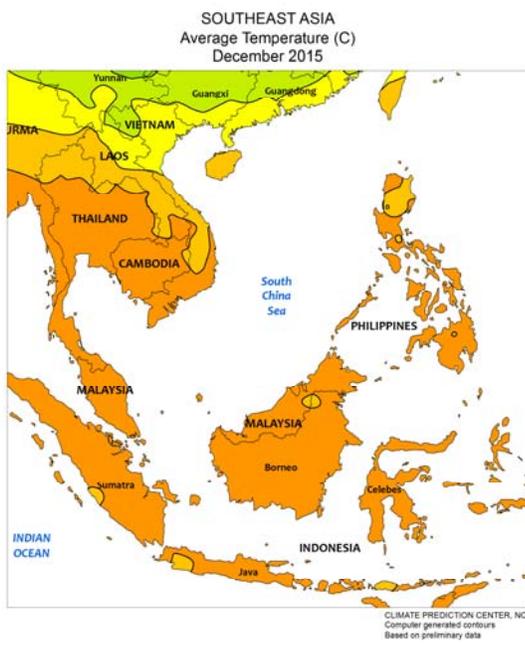
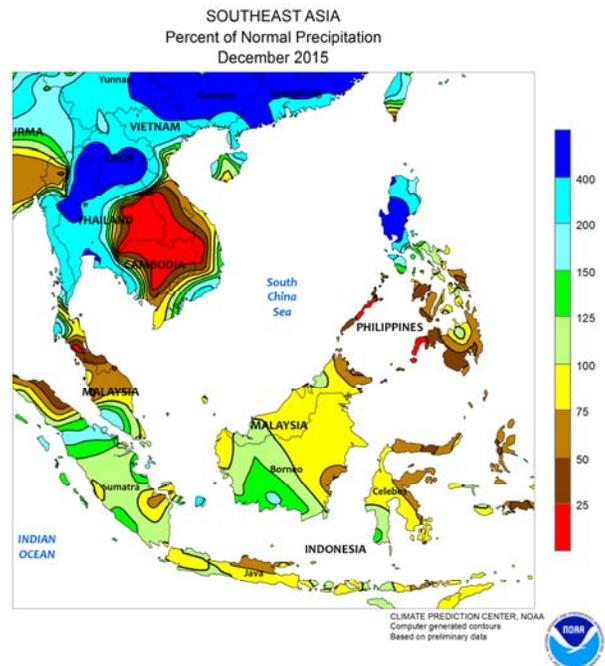
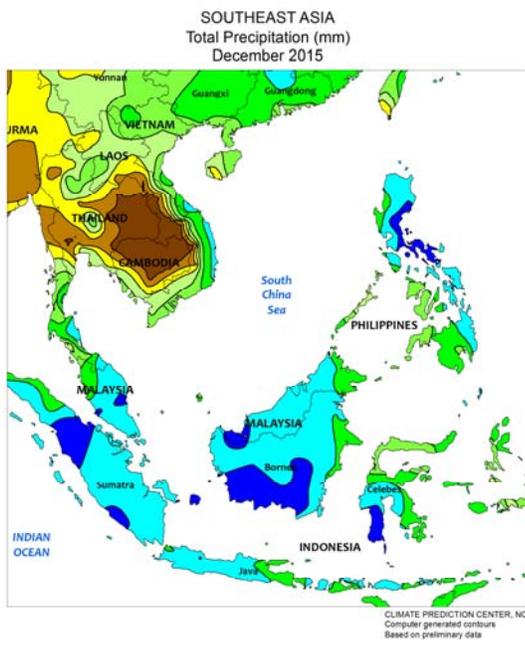
Elsewhere in the region, rainfall was seasonably light (less than 10 mm) in Bangladesh, as irrigation supplies remained adequate for winter-grown rice (boro). In Sri Lanka, heavy showers (over 200 mm) kept winter rice (maha) well watered. Temperatures across much of the region returned to more near-normal levels, benefiting cool season crops (wheat and rapeseed) in northern India and Pakistan.



EASTERN ASIA

Seasonably light rainfall prevailed for wheat and rapeseed during December on the North China Plain and into the Yangtze Valley. Rainfall totals were generally below 10 mm for the month, but above-normal rainfall in the preceding month ensured good soil moisture reserves for crops going into dormancy. Heavier

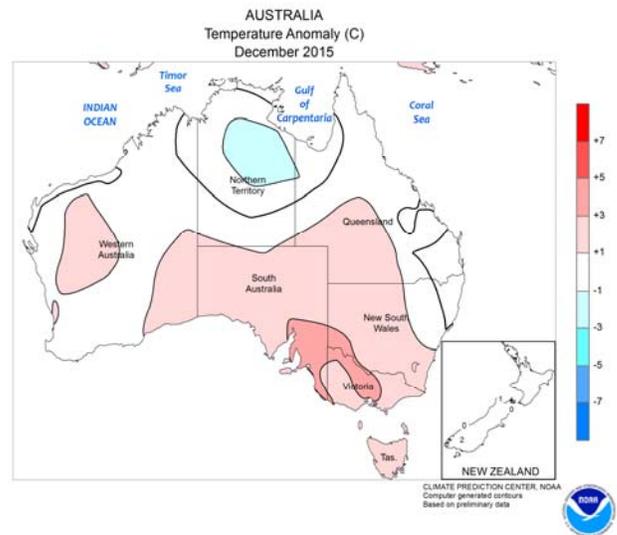
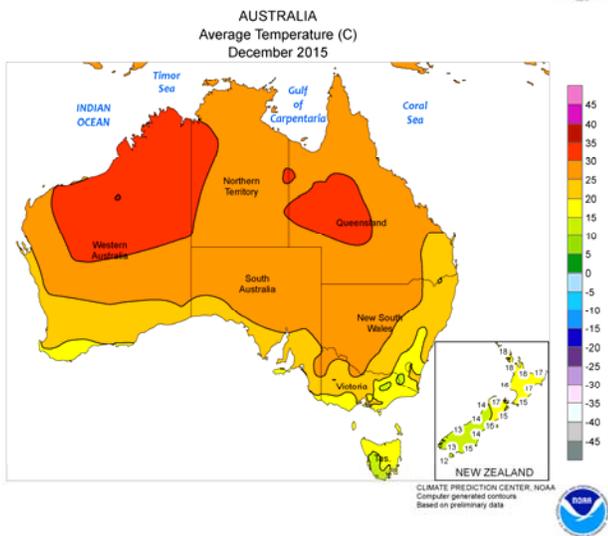
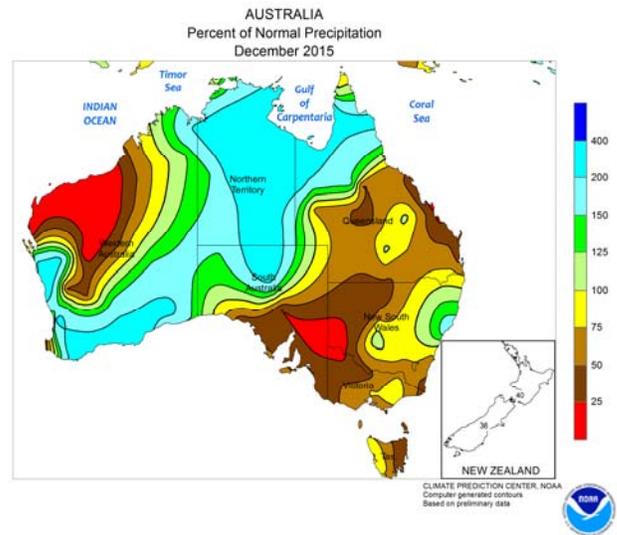
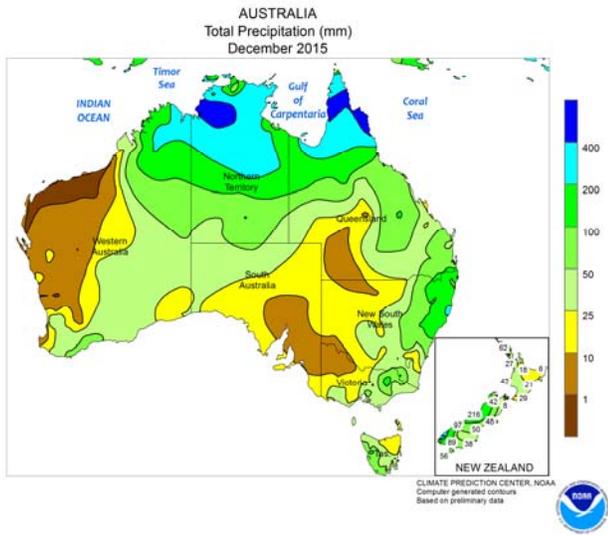
rainfall (50-150 mm) was reported in southern sections of the Yangtze Valley and into many southeastern provinces, benefiting winter-grown vegetables and sugarcane. Temperatures were generally near to above normal in winter crop areas of eastern China, aiding overwintering crops.



SOUTHEAST ASIA

Showers increased across Java, Indonesia, during December, with rainfall amounts in excess of 325 mm in western Java (slightly above normal) and 225 mm in central Java (near normal). The rain improved soil moisture for rice and increased water supplies for irrigation. In eastern Java, however, below-normal rainfall continued into December (roughly 75 percent of the monthly normal), despite also seeing increased shower activity. More consistent rainfall was reported in oil palm areas on Indonesia and Malaysia (pockets of dryness were reported in parts of Malaysia, though), reversing the trend of abnormally dry conditions since May.

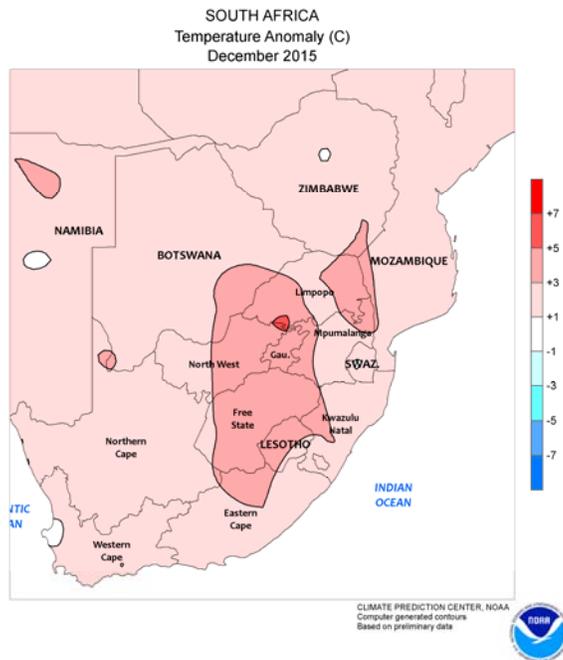
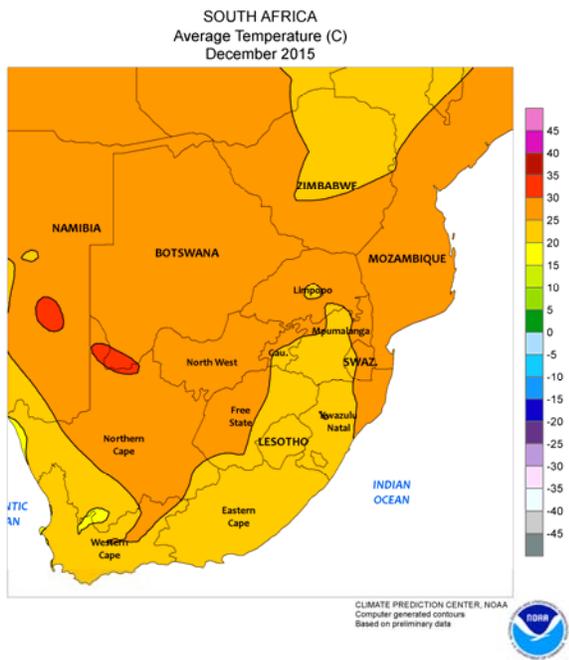
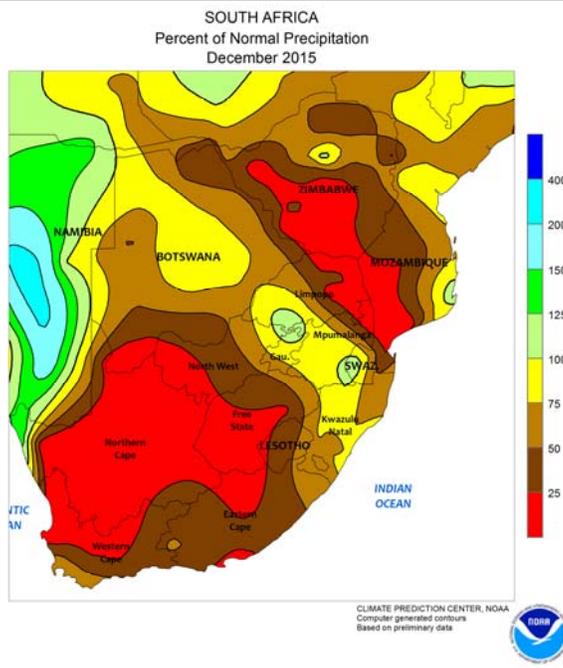
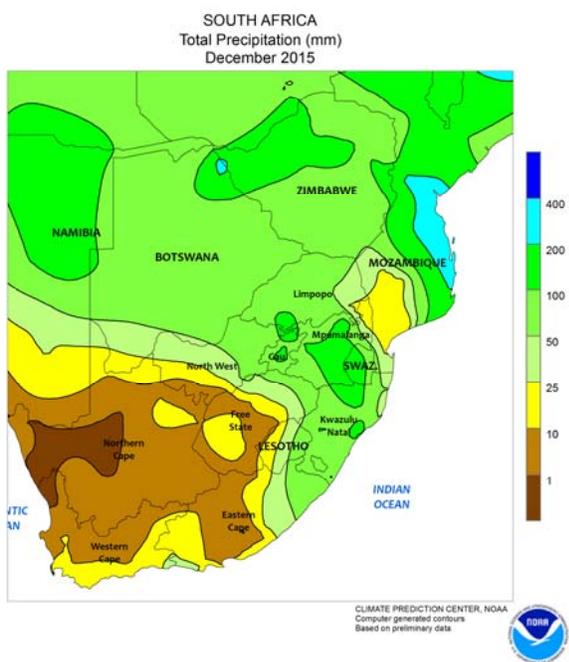
Farther north, Typhoon Melor made landfall in the northeastern Philippines (southern Luzon), with winds in excess of 125 knots and producing over 700 mm of rain. Isolated damage was reported to corn and rice within the path of the storm. Meanwhile, dry-season rice in Thailand and southern Vietnam (winter-spring rice) received 25 mm of unseasonable rainfall, providing beneficial supplemental moisture to the irrigated crop. In addition, temperatures in Thailand were well-above normal for the month (up to 4°C above normal), increasing irrigation demands from already limited water supplies.



AUSTRALIA

During December, near-normal rainfall and seasonably warm weather continued to favor cotton and sorghum development in southern Queensland and northern New South Wales.

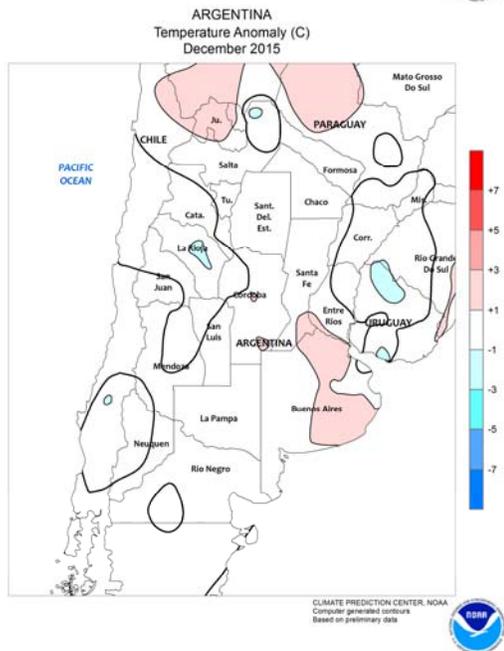
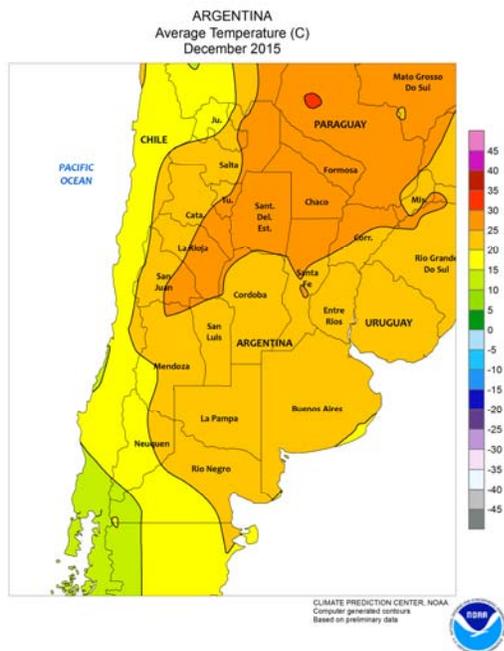
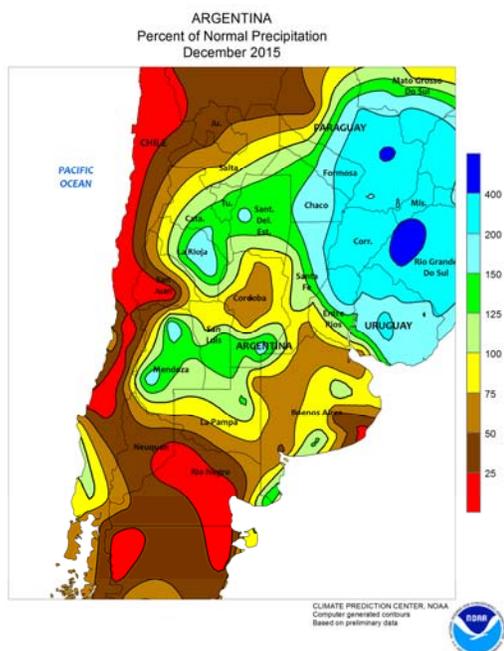
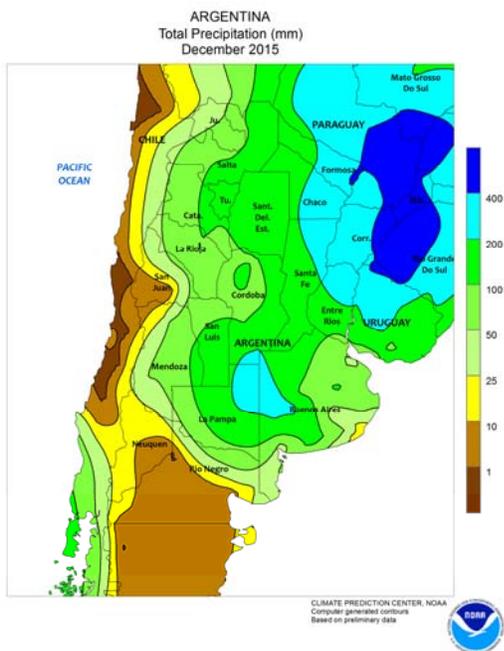
Showers were few and far between in western and southeastern Australia, with long stretches of dry weather allowing winter grain harvesting to approach completion.



SOUTH AFRICA

Drought intensified during the month of December, worsening prospects of corn and other rain-fed summer crops. While occasional showers helped to stabilize the condition of crops in eastern sections of the corn belt, virtually no rain had fallen in some western production areas over the past few months, severely delaying planting.

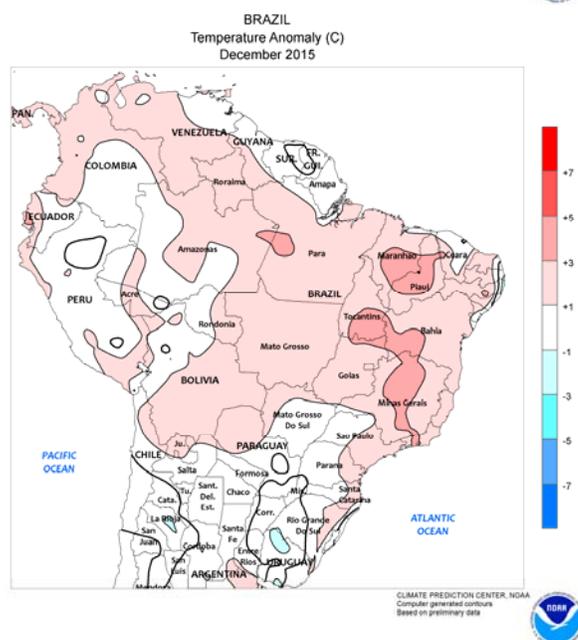
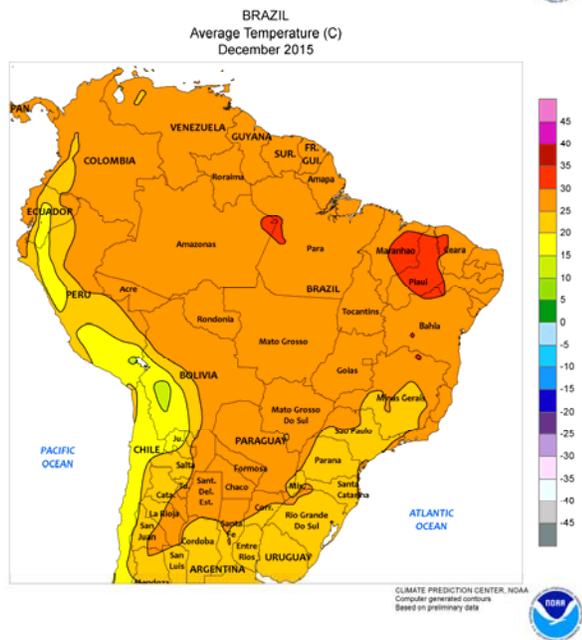
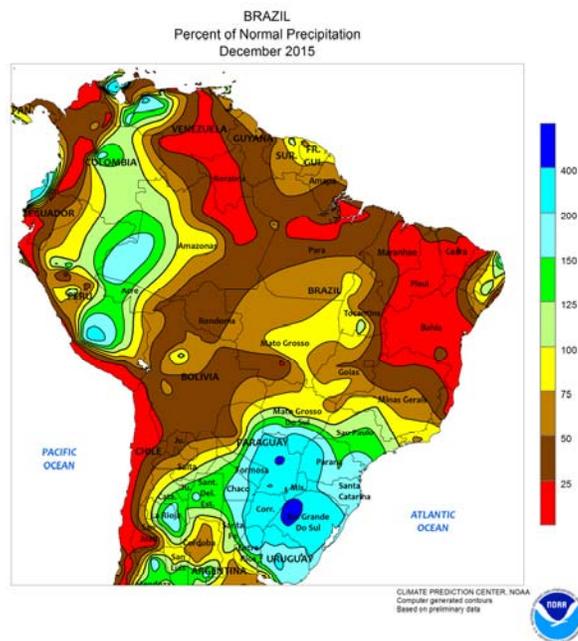
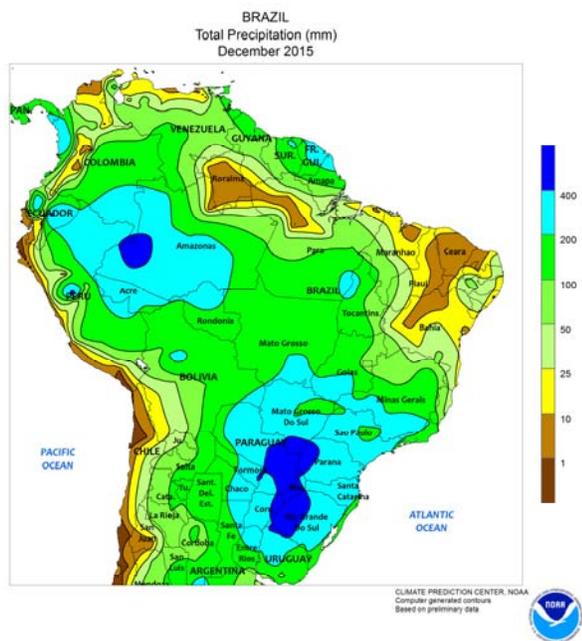
Monthly temperatures averaged as much as 5°C above normal as daytime highs reached 40°C on multiple days in key western production areas (notably western farming areas in North West and Free State). Meanwhile, unseasonable warmth and dryness maintained high moisture requirements of irrigated summer crops in the Cape Provinces.



ARGENTINA

In December, timely rain maintained overall favorable conditions for summer grains, oilseeds, and cotton, despite several outbreaks of unseasonable warmth. Some of the driest weather relative to normal was recorded in southern Buenos Aires, aiding winter grain harvesting but reducing topsoil moisture for germination of soybeans and other secondary summer crops. Near- to below-normal rainfall sustained mostly favorable conditions for crops elsewhere in central Argentina, which had experienced periods of adequate to abundant rain in the preceding months. Monthly temperatures averaged up to 2°C above normal owing to several outbreaks

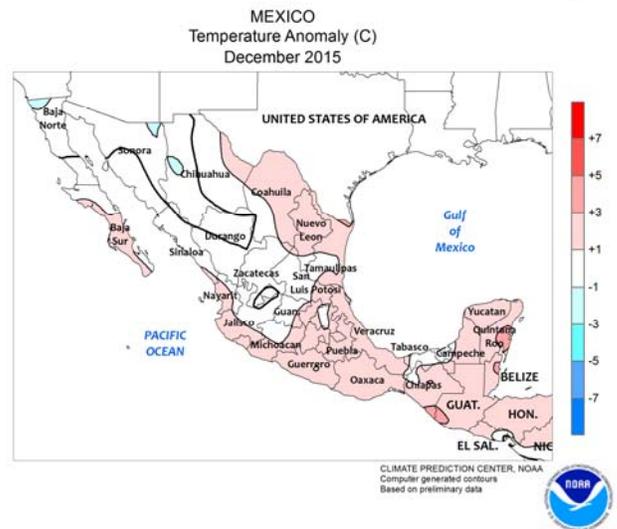
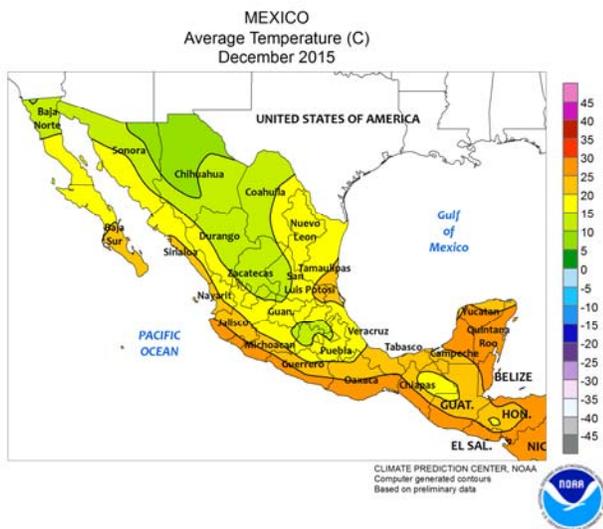
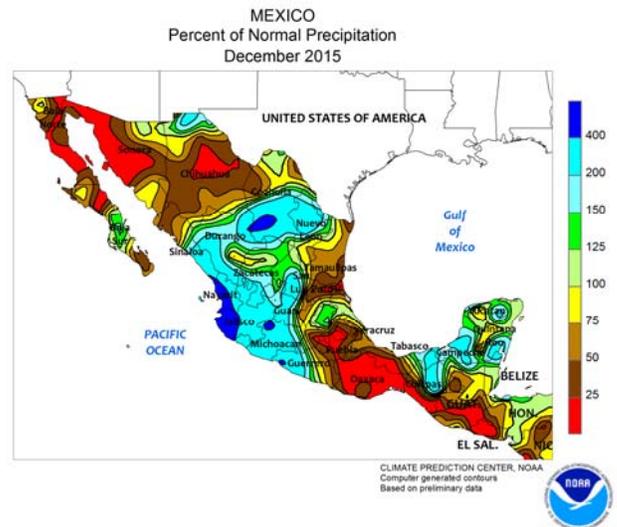
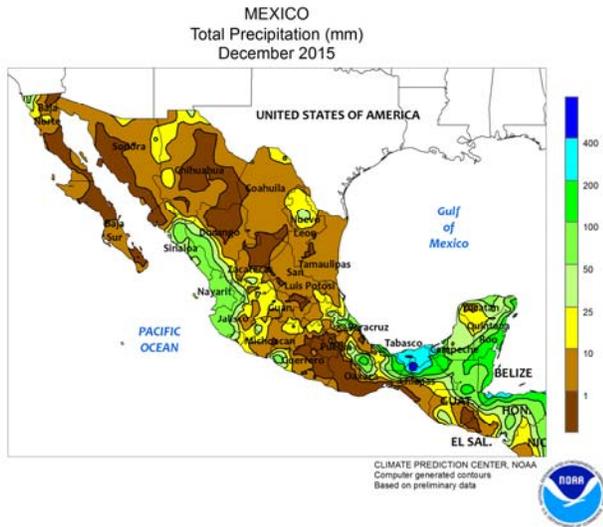
of summer warmth; daytime highs reached the upper 30s in La Pampa and Cordoba, not unusual for this time of year. Showery weather prevailed for much of December across northern farming areas. Unseasonable wetness (monthly rainfall totaling more than 200 mm) delayed summer crop planting in the northeast, including key cotton production areas from northern Santa Fe to eastern Formosa. Monthly average temperatures were near normal, with daytime highs approaching 40°C on several days in the traditionally warmer northwest (notably Santiago del Estero, Salta, and western production areas of Chaco and Formosa).



BRAZIL

During December, sporadic rainfall and unseasonably high temperatures stressed soybeans and cotton in key production areas of central and northeastern Brazil. Rainfall trended below normal throughout the month from Mato Grosso eastward to western farming areas of Maranhao, Piaui, and Bahia; as a result of the dryness, daytime highs approached 40°C in many locations, increasing stress on emerged summer row crops. The drier- and warmer-than-normal conditions extended southeastward into coffee areas of Espirito Santo but

rainier conditions occurred farther south, with monthly accumulations exceeding 200 mm from Goias southward. In fact, more than 400 mm was recorded in western sections of Rio Grande do Sul, as well as the vicinity of western Parana and its border with Paraguay, flooding low-lying farmlands. Weekly temperatures averaged near to above normal in southern Brazil, although daytime highs were generally seasonable, ranging from the upper 20s to the lower and middle 30s (degrees C).

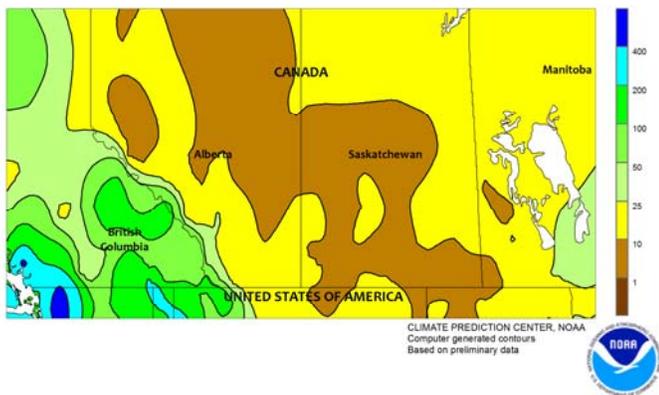


MEXICO

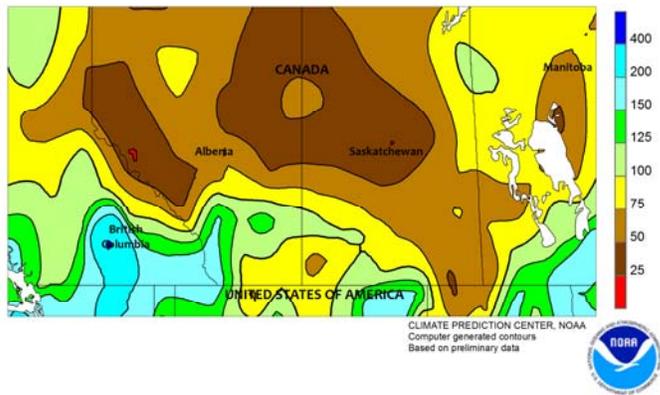
Tropical moisture led to unseasonably late tropical showers in sections of northwestern Mexico through the middle of December. The heaviest rainfall (monthly rainfall totaling more than 50 mm) was concentrated along the western Pacific Coast, giving a late-season boost to reservoirs from central Sinaloa to Jalisco. Heavy rain was also recorded in the

vicinity of Tabasco and northern Chiapas, and in isolated locations in and around Veracruz. Showers were generally scattered and light elsewhere, although moderate amounts of rainfall (monthly accumulations greater than 10 mm) provided moisture for reservoirs and pastures on the southern plateau (eastern Jalisco to Mexico) and across the far north.

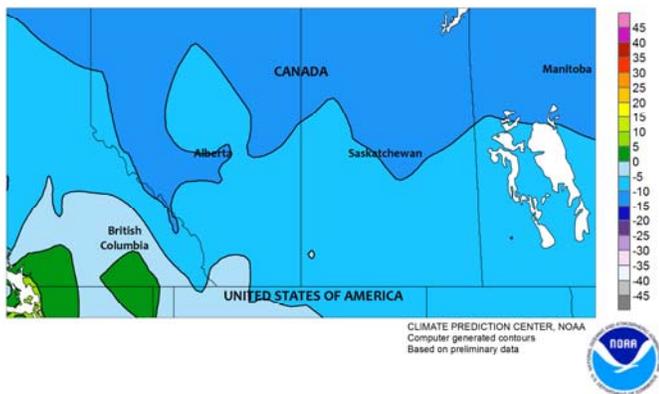
CANADIAN PRAIRIES
Total Precipitation (mm)
December 2015



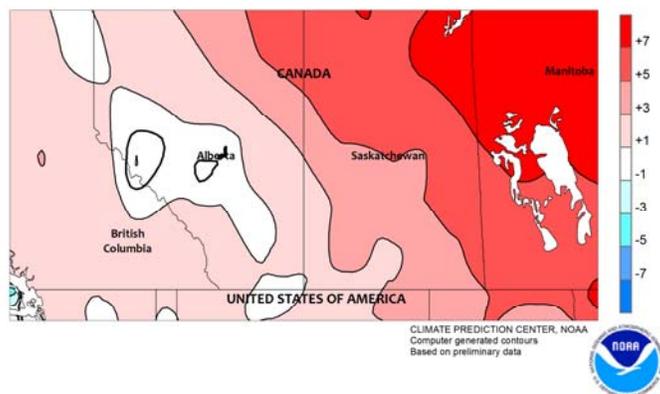
CANADIAN PRAIRIES
Percent of Normal Precipitation
December 2015



CANADIAN PRAIRIES
Average Temperature (C)
December 2015



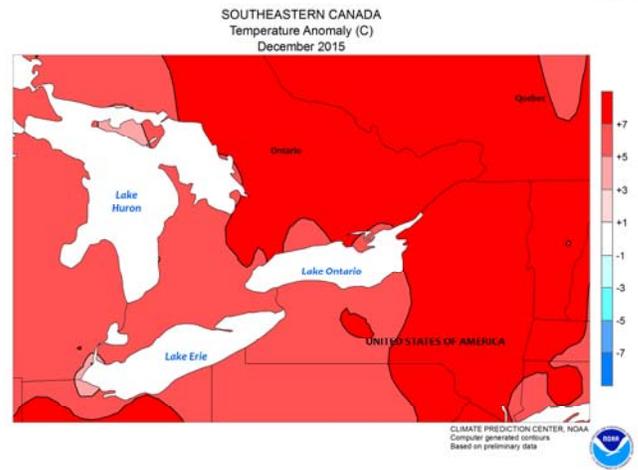
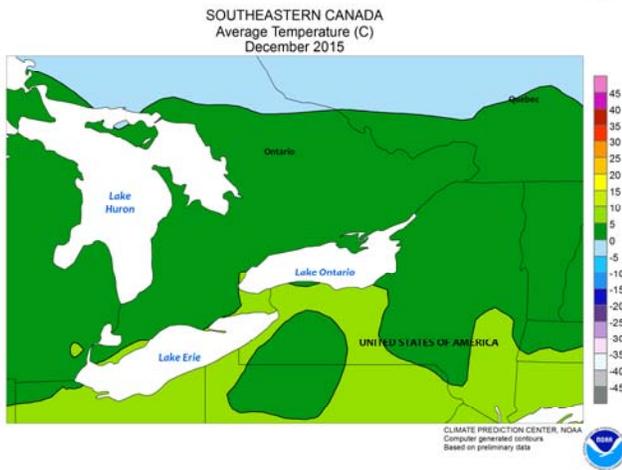
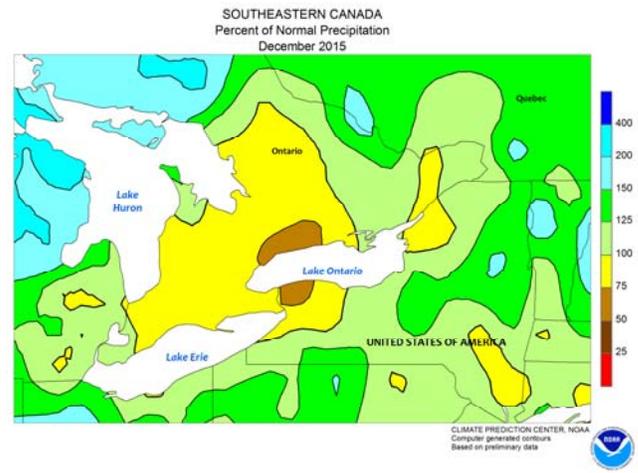
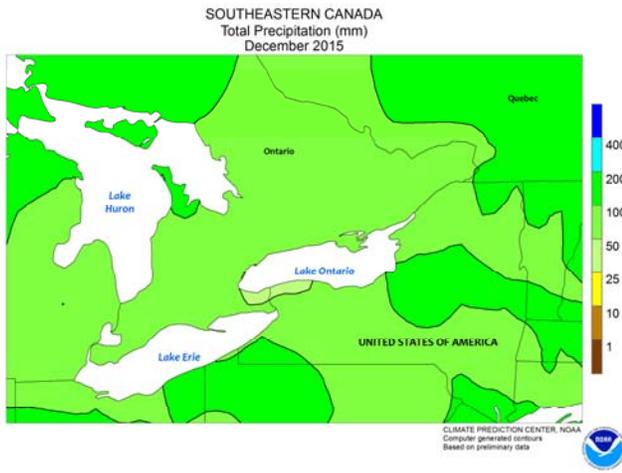
CANADIAN PRAIRIES
Temperature Anomaly (C)
December 2015



CANADIAN PRAIRIES

Warmer-than-normal conditions prevailed during the early part of December, continuing the late-autumn trend of unseasonable warmth that reduced snow cover across southern farming areas. However, an arctic air mass descended upon the region during the middle part of the month and as a result, temperatures fell below -18°C on several nights during the remainder of December. The cold outbreak was preceded by a

light snow cover that offered some protection to overwintering crops in Saskatchewan and Manitoba, but larger sections of southern Alberta were unprotected. Most agricultural districts recorded 5 to 25 mm of precipitation (liquid equivalent) and by month's end, moderate to deep snow pack (10-40 cm) protected most winter wheat and pasture areas from potential damage from the cold.



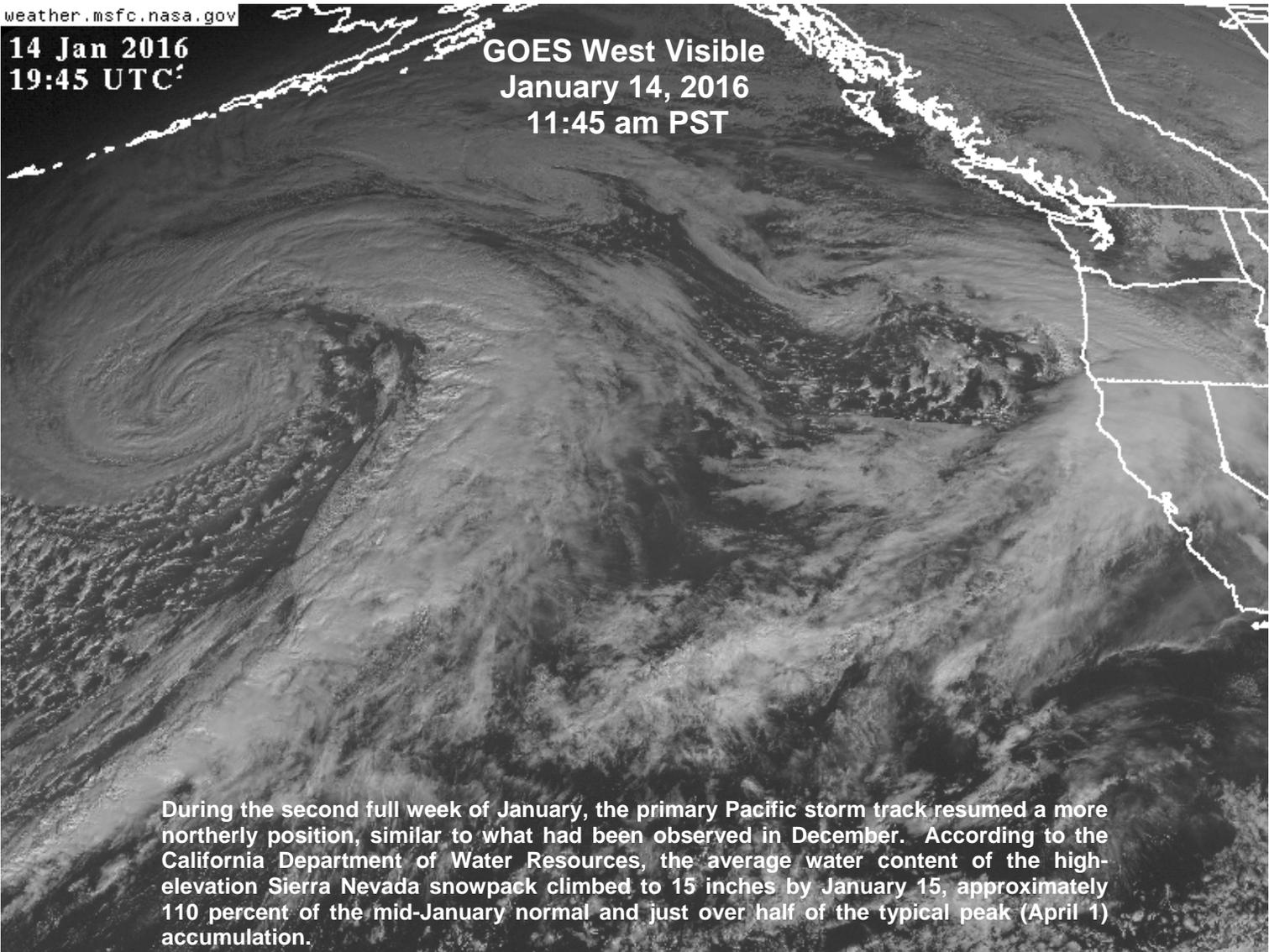
SOUTHEASTERN CANADA

Above-normal temperatures prevailed across the region throughout the month of December, favoring overwintering wheat and pastures. Monthly average temperatures were 5°C or more above normal in the major agricultural districts of Ontario and Quebec, with nighttime lows staying well above the threshold for potential damage to crops on most nights. At month's end, nighttime lows fell as low as -15°C in

outlying production areas of Quebec, but the cold outbreak was accompanied by snow, offering some protection from potential damage. Prior to the late-season snowfall, most agricultural areas had been void of snow owing to the earlier periods of warmth; monthly precipitation totaled more than 50 mm but before the late-season cold spell, most had fallen in the form of rain.

14 Jan 2016
19:45 UTC

GOES West Visible
January 14, 2016
11:45 am PST



During the second full week of January, the primary Pacific storm track resumed a more northerly position, similar to what had been observed in December. According to the California Department of Water Resources, the average water content of the high-elevation Sierra Nevada snowpack climbed to 15 inches by January 15, approximately 110 percent of the mid-January normal and just over half of the typical peak (April 1) accumulation.

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

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

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

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

The *Weekly Weather and Crop Bulletin* and archives are maintained on the following USDA Internet URL:

<http://www.usda.gov/oce/weather/pubs/Weekly/Wwcb/index.htm>

**U.S. DEPARTMENT OF AGRICULTURE
World Agricultural Outlook Board**

Managing Editor.....**Brad Rippey** (202) 720-2397
Production Editor.....**Brian Morris** (202) 720-3062
International Editor.....**Mark Brusberg** (202) 720-2012
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

U.S. DEPARTMENT OF COMMERCE

**National Oceanic and Atmospheric Administration
National Weather Service/Climate Prediction Center**

Meteorologists.....**David Miskus, Brad Pugh, Adam Allgood,
and Randy Schechter**

USDA is an equal opportunity provider and employer. To file a complaint of discrimination, write: USDA, Office of the Assistant Secretary for Civil Rights, Office of Adjudication, 1400 Independence Ave., SW, Washington, DC 20250-9410 or call (866) 632-9992 (Toll-Free Customer Service), (800) 877-8339 (Local or Federal relay), (866) 377-8642 (Relay voice users).