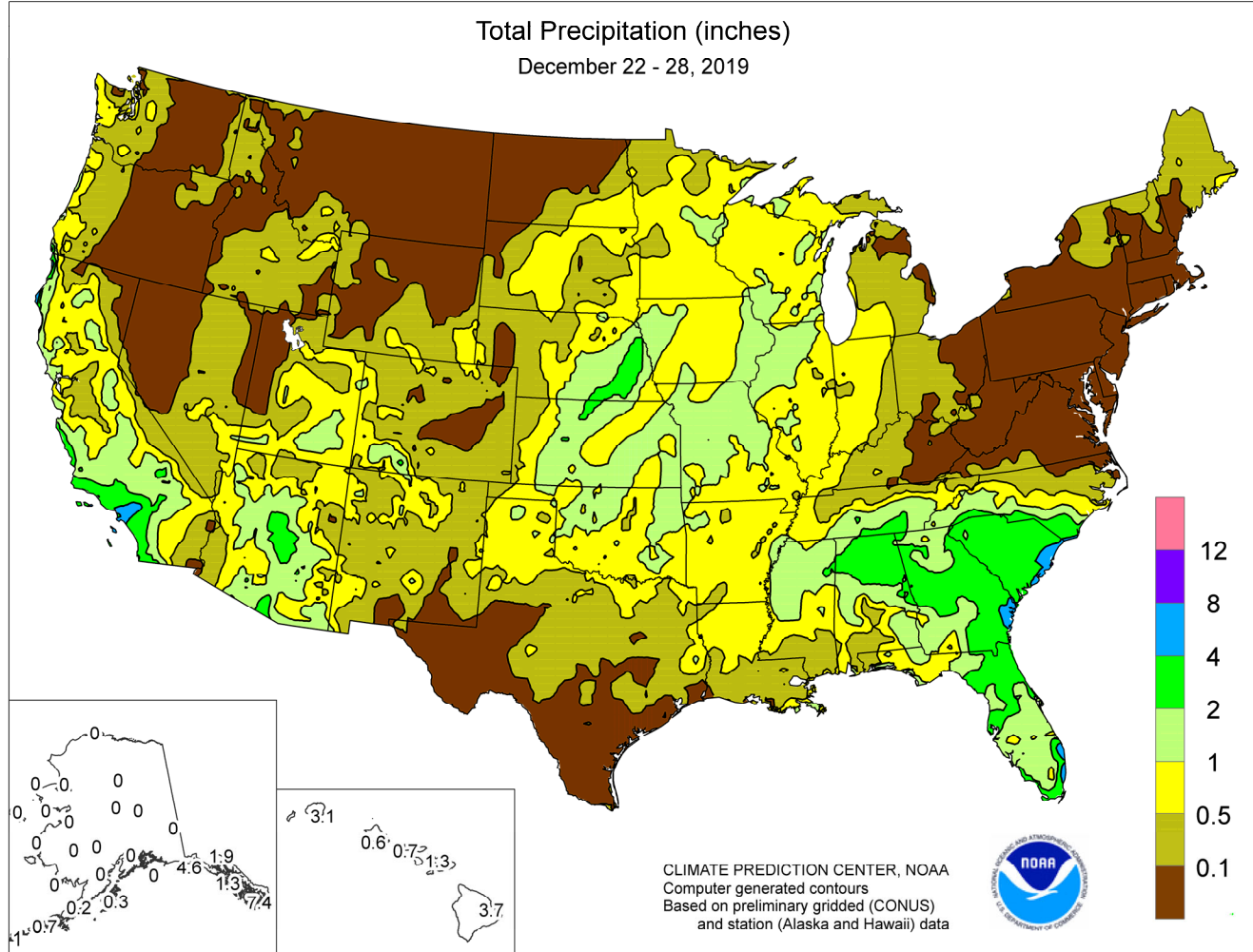


WEEKLY WEATHER AND CROP BULLETIN

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

December 22 – 28, 2019

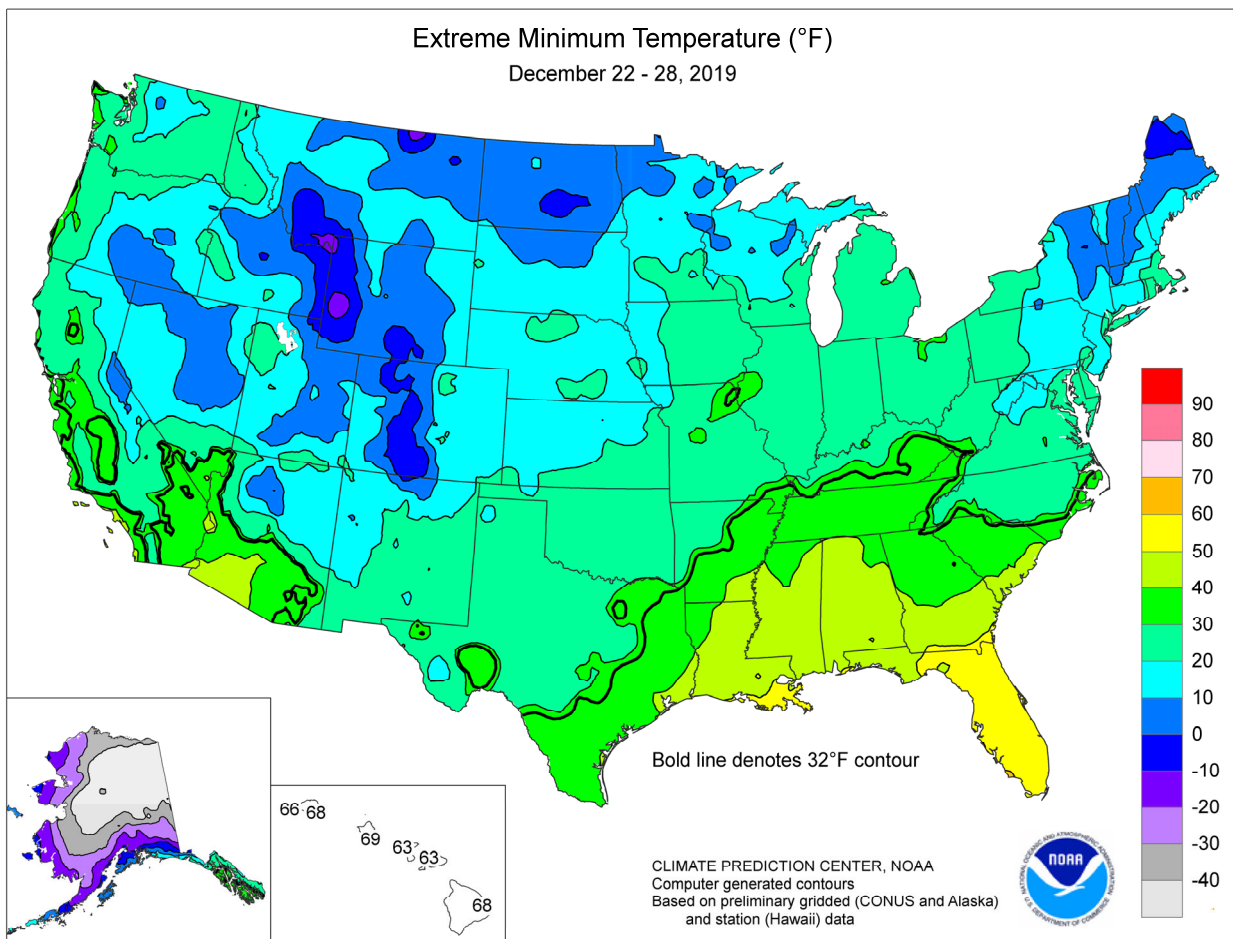
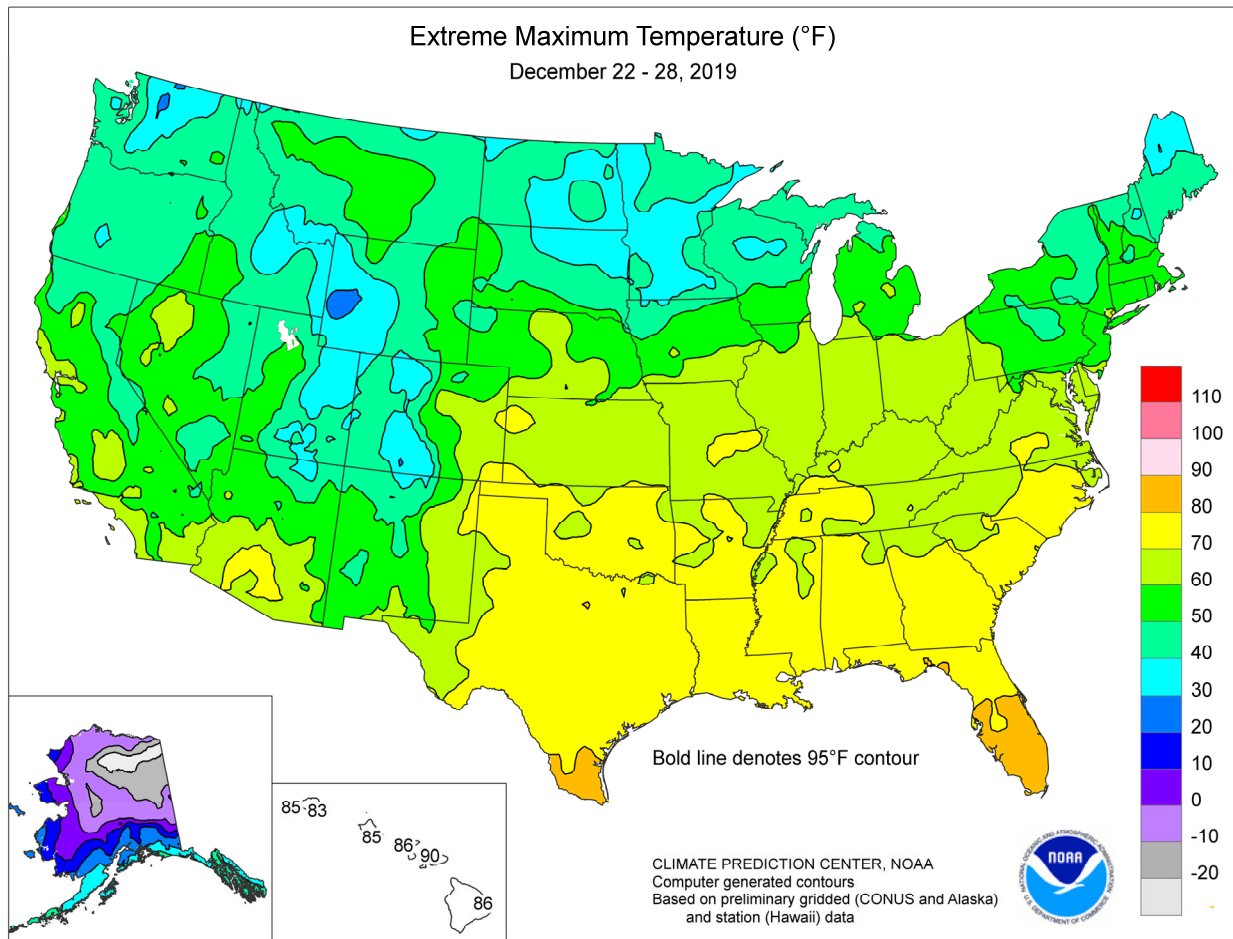
Highlights provided by USDA/WAOB

The week began with an impressive storm system soaking the **Southeast** and ended with another major storm crossing **southern California**, the **Southwest**, and the **central Plains**. In contrast, mild, mostly dry weather prevailed in the **Northeast**, the **southern half of Texas**, and the **northern High Plains**. In fact, marked warming occurred from the **Plains eastward**, with weekly temperatures averaging 10 to 20°F above normal in most areas between the **Rockies** and **Appalachians**. However, readings averaged up to 5°F below normal in **southern**

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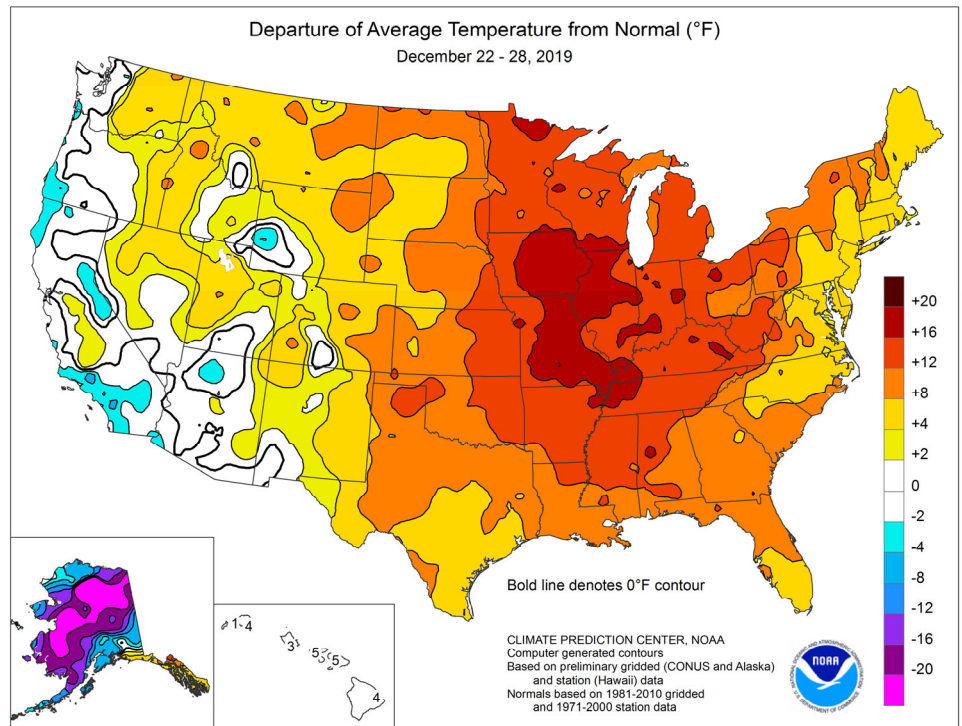
(Continued on page 3)



(Continued from front cover)

California. Despite several days of open **Midwestern** weather, any opportunities for fieldwork ended with the arrival of the late-week storm, which produced widespread rain and snow. In addition, an extensive snow cover remained in place—as it has for the entire month—in **Minnesota**, the **Dakotas**, and the **northern half of Wisconsin**. Across the **central and southern Plains**, the late-December storm provided local relief in areas experiencing drought. However, some drought-affected areas in the **southern half of Texas** received little or no rain. Significant precipitation also bypassed the **Northwest**, where snowpack ranged from 25 to 75 percent of the late-December average in most river basins across **Washington**, **Oregon**, and **Idaho**. Elsewhere, substantial rain and high-elevation snow swept across the **southern California** and the **Southwest**, especially during the second half of the week.

As the week began, record-setting rains fell along the **southern Atlantic Coast**. The 22nd was the wettest December and winter day on record at **St. Simons Island, GA**, where 4.01 inches fell. Previous records had been 3.27 inches on December 15, 1997, and 3.92 inches on February 18, 1981, respectively. **Key West, FL**, received 5.48 inches of rain on the 22nd, representing the second-wettest December day in that location behind 6.66 inches on December 8, 1986. Drenching rainfall continued into December 23, when **Fort Lauderdale, FL**, experienced its wettest December day (7.13 inches; previously, 6.62 inches on December 17, 2009). Daily-record amounts for December 23 included 2.76 inches in **Greenville-Spartanburg, SC**; 2.60 inches in **Miami, FL**; and 2.11 inches in **Savannah, GA**. **Savannah** collected 4.71 inches from December 22-24. In **South Carolina**, downtown **Charleston** received exactly 6 inches of rain and (on December 23) clocked a peak wind gust to 48 mph. Meanwhile, locally heavy showers developed across **southern California**, where **Long Beach** measured a daily-record total (1.28 inches) for December 23. Snow fell farther inland, where snowfall in **Utah** totaled 6.1 inches in **Hanksville** and 5.2 inches in **Panguitch** in a 48-hour period from December 23-25. From December 24-26, heavy snow also fell in **western Montana**. With a 13-inch depth on the 26th, the airport in **Dillon, MT**, reported its deepest snow since February 15, 1949. Starting on Christmas Day, a larger area of stormy weather arrived in **southern California** and the **Southwest**. **Long Beach** again received more than an inch of rain on December 25 and 26, boosting its 4-day total to 3.45 inches. Elsewhere in **southern California**, daily-record totals for December 26 included 1.76 inches in **Barstow-Daggett**; 1.65 inches in **Ontario**; 1.57 inches in **Lancaster**; and 1.45 inches in **Fullerton**. It was **Barstow-Daggett's** third wettest day on record, behind 2.28 inches on September 10, 1978, and 2.06 inches on August 7, 1958. **San Diego, CA**, reported winds to 45 mph on December 26—the highest gust in that location since February 14. Farther east, **Flagstaff, AZ**, reported measurable snow on 6 consecutive days from December 23-28, totaling 19.9 inches. At week's end, heavy precipitation erupted across the **nation's mid-section**. The 28th was the wettest December day on record in **Sioux City, IA** (1.38 inches; previously, 1.14 inches on December 9, 1899), and the second-wettest December day in **Lincoln, NE** (2.12 inches; behind only 2.13 inches on December 15, 1984). Daily-record amounts for December 28 reached 1.84 inches in **Topeka, KS**; 1.76 inches in **Omaha, NE**; and



1.50 inches in **Kansas City, MO**. **Ulysses, KS**, received storm-total precipitation of 1.09 inches, nearly twice the 0.55 inch that fell from September 1 – December 26. In **South Dakota**, a multi-day (December 28-30) snow event dumped 15.0 inches in **Mitchell**, 10.1 inches in **Aberdeen**, and 10.0 inches in **Watertown**. Elsewhere, 3-day snowfall reached 12.3 inches in **Fargo, ND**, and 8.8 inches in **International Falls, MN**.

Prior to the stormy weather, warmth dominated the **Plains** and **Midwest**. December 22 featured daily-record highs in locations such as **Goodland, KS** (71°F), and **Oshkosh, WI** (50°F). From December 24-26, **Rockford, IL**, tallied a trio of daily-record highs (55, 59, and 56°F). It was the warmest Christmas Day on record in several **Midwestern** communities, including **Quincy, IL** (66°F); **St. Joseph, MO** (65°F); and **Burlington, IA** (63°F). During a final day of record-setting Midwestern warmth on December 26, highs rose to 65°F in **Lincoln, IL**; 64°F in **Youngstown, OH**; and 63°F in **South Bend, IN**. At week's end, warmth made another push across the **South**, where record-setting highs for December 28 included 79°F in **Lake Charles, LA**, and 70°F in **Paducah, KY**.

Bitterly cold air engulfed the **Alaskan mainland**, but mild, wet weather lingered across the southeastern part of the state. Weekly temperatures averaged as much as 30°F below normal in a few interior locations. **Bettles**, with a low of -60°F on December 27, tied a monthly record originally set on December 15, 1946. **Bettles** dropped to -50°F or below on 4 consecutive days, starting December 25. An unofficial low temperature of -65°F was reported on December 28 near **Manley Hot Springs**. Meanwhile, weekly snowfall totaled 8.6 inches in **Anchorage**, aided by a daily-record sum of 5.0 inches on December 24. In **southeastern Alaska**, weekly precipitation totaled 7.23 inches in **Ketchikan** and 4.66 inches in **Yakutat**. Farther south, **Hawaii** experienced warm weather and occasional showers. On December 24, **Kahului, Maui**, achieved a high of 90°F—tying a monthly record most recently achieved on December 6, 1995. The following day, on the 25th, **Kahului** netted 1.31 inches of rain. On the **Big Island, Hilo's** weekly rainfall of 3.56 inches boosted its December 1-28 total to 10.77 inches (101 percent of normal).

National Weather Data for Selected Cities

Weather Data for the Week Ending December 28, 2019

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	90 AND ABOVE	32 AND BELOW	PRECIP			
																			.01 INCH OR MORE	.50 INCH OR MORE		
AL	BIRMINGHAM	64	49	74	43	56	12	2.00	1.01	1.93	4.56	116	52.02	97	91	65	0	0	2	1		
	HUNTSVILLE	64	48	71	42	56	15	3.47	2.25	2.74	5.88	117	61.92	109	90	67	0	0	2	2		
	MOBILE	67	53	74	46	60	9	1.43	0.45	1.08	5.69	135	64.53	98	96	78	0	0	3	1		
	MONTGOMERY	67	50	75	45	59	11	2.20	1.16	2.05	5.45	120	47.21	87	91	69	0	0	4	1		
AK	ANCHORAGE	21	10	26	2	16	-1	0.33	0.11	0.19	0.81	88	14.41	90	71	62	0	7	4	0		
	BARROW	-8	-22	-4	-32	-15	-3	0.00	0.00	0.00	0.07	700	11.57	287	80	70	0	7	0	0		
	FAIRBANKS	-14	-29	-8	-40	-21	-14	0.00	-0.17	0.00	0.01	2	14.26	140	72	68	0	7	0	0		
	JUNEAU	40	35	42	32	38	10	2.80	1.57	1.07	5.35	111	58.19	101	88	84	0	1	7	2		
AZ	KODIAK	32	17	37	10	25	-5	0.28	-1.52	0.23	9.76	146	72.75	98	76	68	0	7	4	0		
	NOME	2	-12	13	-19	-5	-12	0.00	-0.19	0.00	0.37	42	26.68	162	69	58	0	7	0	0		
	FLAGSTAFF	35	18	50	3	26	-4	1.82	1.42	0.94	3.14	199	27.13	120	94	66	0	7	6	1		
	PHOENIX	60	48	72	42	54	1	0.58	0.38	0.22	0.70	93	5.94	73	70	59	0	0	5	0		
AR	PRESCOTT	44	30	58	22	37	0	1.01	0.73	0.89	1.46	133	16.29	86	91	51	0	5	6	1		
	TUCSON	60	43	71	37	52	1	0.67	0.42	0.33	1.20	141	13.72	114	68	47	0	0	3	0		
	FORT SMITH	66	41	73	27	53	14	0.70	0.07	0.69	0.87	27	67.03	153	100	64	0	2	2	1		
	LITTLE ROCK	66	42	70	34	54	12	0.47	-0.46	0.47	1.24	28	61.08	121	97	62	0	0	1	0		
CA	BAKERSFIELD	57	44	74	35	51	5	0.99	0.81	0.65	1.52	253	9.11	144	86	62	0	0	4	1		
	FRESNO	54	43	60	37	49	5	0.39	0.07	0.18	2.34	215	12.41	113	91	73	0	0	4	0		
	LOS ANGELES	61	48	67	43	54	-3	3.34	2.91	1.59	4.42	301	18.71	146	71	55	0	0	4	2		
	REDDING	54	37	66	30	46	1	0.68	-0.43	0.35	7.58	190	42.04	128	81	66	0	1	3	0		
CO	SACRAMENTO	55	36	58	31	46	1	0.67	0.11	0.61	4.22	203	24.23	138	95	53	0	2	2	1		
	SAN DIEGO	63	50	66	44	57	0	2.65	2.33	1.28	4.05	389	15.32	146	82	57	0	0	3	2		
	SAN FRANCISCO	57	43	59	39	50	1	0.68	0.00	0.64	3.26	134	23.03	117	84	68	0	0	2	1		
	STOCKTON	57	38	61	32	48	4	0.08	-0.33	0.05	3.33	216	16.90	125	87	73	0	2	2	0		
CT	ALAMOSA	31	-1	36	-8	15	0	0.31	0.25	0.20	0.51	213	7.99	112	85	73	0	7	3	0		
	CO SPRINGS	48	27	62	20	38	10	0.01	-0.08	0.01	0.32	107	12.13	70	67	30	0	5	1	0		
	DENVER INTL	48	26	67	17	37	8	0.09	0.03	0.09	0.21	91	15.41	114	70	36	0	4	1	0		
	GRAND JUNCTION	38	23	43	18	31	4	0.30	0.19	0.17	0.55	138	8.57	97	84	64	0	7	5	0		
DC	PUEBLO	50	26	60	19	38	9	0.04	-0.04	0.04	0.30	100	13.19	107	83	65	0	7	1	0		
	BRIDGEPORT	47	32	51	25	39	6	0.00	-0.78	0.00	5.91	194	49.68	114	82	60	0	6	0	0		
	HARTFORD	45	25	54	15	35	6	0.00	-0.79	0.00	5.25	165	49.75	109	80	57	0	6	0	0		
	WASHINGTON	54	32	67	27	43	5	0.00	-0.69	0.00	2.42	90	41.52	107	95	55	0	4	0	0		
DE	WILMINGTON	52	28	60	20	40	6	0.00	-0.75	0.00	3.77	125	47.83	113	90	51	0	5	0	0		
	FL	72	62	77	55	67	7	2.34	1.73	1.43	3.31	140	58.95	120	100	80	0	0	4	2		
	JACKSONVILLE	72	58	78	53	65	11	0.60	-0.01	0.31	2.30	101	43.78	84	94	67	0	0	3	0		
	KEY WEST	78	70	81	66	74	3	5.56	5.07	5.22	7.71	417	35.39	92	92	70	0	0	4	1		
GA	MIAMI	79	68	83	61	74	5	3.77	3.33	2.28	5.62	282	66.34	114	86	64	0	0	6	2		
	ORLANDO	76	63	80	56	70	8	1.91	1.41	0.98	4.54	220	47.64	99	90	74	0	0	4	1		
	PENSACOLA	68	56	74	50	62	9	1.12	0.23	1.11	7.06	204	52.46	82	99	80	0	0	2	1		
	TALLAHASSEE	72	56	80	51	64	11	1.61	0.65	1.53	3.42	97	39.01	62	90	70	0	0	2	1		
HI	TAMPA	75	63	81	55	69	7	2.54	2.04	1.14	3.72	181	59.98	135	89	64	0	0	3	2		
	WEST PALM BEACH	79	68	83	58	74	7	5.54	4.96	1.99	9.28	316	63.26	103	89	66	0	0	5	3		
	ATHENS	63	43	71	34	53	10	1.74	0.89	0.91	5.42	168	46.59	98	90	64	0	0	3	2		
	ATLANTA	63	48	71	42	55	11	1.97	1.14	1.67	4.93	146	44.52	89	82	63	0	0	3	1		
ID	AUGUSTA	65	45	73	35	55	9	2.75	1.97	1.53	7.65	291	52.41	119	89	66	0	0	4	2		
	COLUMBUS	67	51	75	44	59	11	3.12	2.15	2.89	8.00	204	48.91	102	91	60	0	0	3	1		
	MACON	66	45	73	38	55	9	2.98	2.07	2.49	8.35	244	44.18	99	93	64	0	0	4	1		
	SAVANNAH	71	53	78	46	62	12	4.71	4.01	2.66	6.48	277	52.02	106	97	70	0	0	3	2		
IL	HILO	82	70	86	68	76	4	3.66	1.66	2.47	10.77	108	99.97	79	85	77	0	0	7	2		
	HONOLULU	83	72	85	69	77	3	0.56	-0.10	0.44	1.74	70	16.71	93	77	70	0	0	2	0		
	KAHULUI	85	70	90	63	78	5	1.32	0.58	1.31	2.21	85	12.59	69	83	73	1	0	2	1		
	LIHUE	81	73	83	68	77	4	3.14	2.07	2.92	6.12	144	37.47	96	88	79	0	0	5	1		
IN	BOISE	42	31	61	24	36	7	0.19	-0.09	0.16	1.15	96	14.50	121	84	67	0	5	3	0		
	LEWISTON	41	32	48	29	36	3	0.34	0.12	0.33	1.08	119	13.10	104	85	75	0	5	2	0		
	POCATELLO	34	23	46	17	28	4	0.05	-0.18	0.04	0.90	98	12.46	100	84	75	0	7	2	0		
	CHICAGO/O'HARE	52	32	61	27	42	17	0.26	-0.22	0.26	0.43	19	48.46	134	89	69	0	3	1	0		
IA	MOLINE	55	32	62	24	43	19	1.27	0.82	1.27	1.51	75	48.99	129	83	65	0	4	1	1		
	PEORIA	56	33	63	29	45	19	1.05	0.60	1.05	1.42	63	51.42	143	87	62	0	3	1	1		
	ROCKFORD	52	30	59	25	41	19	0.65	0.26	0.65	0.91	48	50.46	138	91	72	0	5	1	1		
	SPRINGFIELD	57	35	64	29	46	18	0.03	-0.48	0.03	0.37	16	46.39	131	90	62	0	2	1	0		
KS	EVANSVILLE	62	37	68	27	50	17	0.09	-0.61	0.09	1.19	36	59.50	135	89	63	0	4	1	0		
	FORT WAYNE	52	31	63	25	41	14	0.09	-0.48	0.09	1.29	51	38.20	105	94	73	0	5	1	0		
	INDIANAPOLIS	57	34	65	25	45	16	0.07	-0.54	0.07	1.75	63	47.44	117	96	68	0	3	1	0		
	SOUTH BEND	53	32	63	27	43	16	0.01	-0.62	0.01	0.63	22	44.54	113	86	67	0	6	1	0		
LA	BURLINGTON	55	34	63	31	45	19	0.82	0.42	0.82	0.95	48	44.54									

Weather Data for the Week Ending December 28, 2019

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION								RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS				
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN., SINCE DEC 1	PCT. NORMAL SINCE DEC 1	TOTAL IN., SINCE JAN01	PCT. NORMAL SINCE JAN01	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	PRECIP			
																			.01 INCH OR MORE	.50 INCH OR MORE		
KY	WICHITA	58	33	68	27	45	13	1.56	1.28	1.37	1.78	148	42.22	140	86	68	0	4	2	1		
	JACKSON	62	44	69	38	53	17	0.00	-0.89	0.00	4.08	104	55.39	113	81	49	0	0	0	0		
	LEXINGTON	62	41	69	30	52	18	0.03	-0.85	0.03	4.12	114	54.23	119	75	51	0	2	1	0		
	LOUISVILLE	63	41	69	32	52	17	0.01	-0.77	0.01	2.06	61	53.15	120	83	50	0	1	1	0		
LA	PADUCAH	66	39	70	29	53	18	0.34	-0.53	0.34	1.09	27	69.27	142	88	63	0	2	1	0		
	BATON ROUGE	68	56	77	50	62	11	0.21	-0.98	0.09	2.58	55	64.66	104	95	71	0	0	5	0		
	LAKE CHARLES	73	53	79	45	63	11	0.00	-1.03	0.00	0.68	17	65.75	116	89	57	0	0	0	0		
	NEW ORLEANS	69	58	79	53	63	9	0.18	-0.88	0.09	2.86	62	62.60	98	90	76	0	0	3	0		
ME	SHREVEPORT	69	45	73	36	57	10	0.13	-0.86	0.12	1.46	36	42.49	84	93	60	0	0	2	0		
	CARIBOU	30	13	37	4	21	7	0.35	-0.37	0.22	2.54	90	41.48	112	84	65	0	7	3	0		
MD	PORTLAND	42	24	49	21	33	8	0.03	-0.89	0.03	5.81	152	49.75	110	76	44	0	7	1	0		
	BALTIMORE	55	29	65	20	42	7	0.00	-0.75	0.00	2.74	93	38.11	92	89	53	0	5	0	0		
MA	BOSTON	48	34	57	30	41	8	0.01	-0.82	0.01	4.19	125	48.82	116	69	49	0	2	1	0		
	WORCESTER	42	28	51	23	35	8	0.00	-0.85	0.00	5.26	156	52.97	109	80	54	0	7	0	0		
MI	ALPENA	42	30	51	21	36	14	0.00	-0.39	0.00	1.47	93	37.36	133	89	71	0	3	0	0		
	GRAND RAPIDS	49	32	61	28	41	15	0.00	-0.52	0.00	1.48	59	50.13	136	88	67	0	5	0	0		
	HOUGHTON LAKE	42	28	52	24	35	13	0.00	-0.36	0.00	1.25	81	37.86	134	92	79	0	6	0	0		
	LANSING	50	31	59	25	41	16	0.00	-0.41	0.00	1.41	70	40.46	129	87	74	0	6	0	0		
MN	MUSKEGON	45	31	54	26	38	11	0.02	-0.52	0.02	1.11	46	48.70	149	86	78	0	5	1	0		
	TRAVERSE CITY	46	31	57	25	39	15	0.00	-0.59	0.00	1.50	64	41.59	125	86	63	0	3	0	0		
	DULUTH	33	24	39	19	29	18	0.69	0.55	0.62	3.15	366	37.56	121	92	82	0	7	3	1		
	INT'L FALLS	33	17	47	11	25	19	0.23	0.12	0.23	0.57	93	33.93	142	90	72	0	7	1	0		
MS	MINNEAPOLIS	35	26	42	22	31	15	0.62	0.43	0.62	1.01	112	46.32	158	93	81	0	7	1	1		
	ROCHESTER	35	25	39	19	30	15	0.55	0.38	0.52	0.89	96	57.16	183	90	83	0	7	2	1		
	ST. CLOUD	33	20	36	14	27	15	0.63	0.49	0.60	1.03	169	43.58	161	98	78	0	7	2	1		
	JACKSON	66	51	72	43	59	13	1.66	0.47	1.49	4.91	103	63.84	115	92	71	0	0	4	1		
MO	MERIDIAN	67	52	74	45	60	13	0.83	-0.34	0.76	3.72	78	62.83	108	90	78	0	0	4	1		
	TUPELO	66	49	71	42	57	15	2.10	0.75	1.80	5.28	96	76.26	138	90	71	0	0	4	1		
	COLUMBIA	59	37	69	31	48	18	0.91	0.46	0.91	1.57	67	50.05	125	86	57	0	2	1	1		
	KANSAS CITY	57	36	66	25	47	18	1.50	1.19	1.50	1.73	114	54.05	143	89	56	0	4	1	1		
MT	SAINT LOUIS	62	36	70	26	49	17	0.44	-0.10	0.44	1.12	42	54.30	141	85	61	0	2	1	0		
	SPRINGFIELD	62	37	69	24	50	16	1.09	0.53	1.07	1.31	43	54.42	121	93	70	0	2	2	1		
	BILLINGS	42	25	55	20	33	8	0.00	-0.15	0.00	0.14	26	22.20	152	81	47	0	7	0	0		
	BUTTE	28	6	41	-11	17	0	0.10	-0.01	0.09	0.10	23	12.66	100	88	63	0	7	2	0		
NE	CUT BANK	35	16	48	5	25	5	0.03	-0.03	0.03	0.07	32	12.75	103	88	53	0	7	1	0		
	GLASGOW	30	15	45	5	22	8	0.01	-0.07	0.01	0.35	130	19.78	178	85	77	0	7	1	0		
	GREAT FALLS	38	19	54	14	29	6	0.01	-0.15	0.01	0.17	33	18.64	126	83	46	0	7	1	0		
	HAVRE	34	18	46	10	26	9	0.01	-0.10	0.01	0.34	85	13.92	123	90	77	0	7	1	0		
NV	MISSOULA	34	21	49	11	28	6	0.02	-0.23	0.01	0.51	52	15.11	111	92	82	0	7	2	0		
	GRAND ISLAND	43	26	65	20	35	11	1.34	1.23	0.99	1.42	237	43.85	170	82	68	0	7	2	1		
	LINCOLN	49	26	58	16	38	13	2.45	2.31	2.13	2.57	338	36.59	129	85	69	0	6	2	1		
	NORFOLK	42	26	54	17	34	12	0.74	0.64	0.62	0.87	147	32.74	123	87	73	0	5	2	1		
OH	NORTH PLATTE	45	21	56	17	33	9	0.44	0.36	0.25	0.74	218	31.49	161	93	57	0	7	2	0		
	OMAHA	47	29	54	21	38	14	1.77	1.62	1.77	1.90	224	41.53	138	92	74	0	6	1	1		
	SCOTTSBLUFF	44	25	53	20	34	9	0.20	0.09	0.17	0.34	71	31.11	191	92	72	0	7	3	0		
	VALENTINE	43	24	61	19	34	12	0.36	0.30	0.23	0.67	239	36.32	187	84	68	0	7	2	0		
TX	ELY	36	16	48	4	26	1	0.13	0.02	0.08	0.52	141	14.35	146	73	61	0	6	3	0		
	LAS VEGAS	52	42	55	40	47	1	0.52	0.44	0.30	0.93	310	6.87	156	73	51	0	0	3	0		
	RENO	43	27	54	20	35	2	0.04	-0.15	0.04	1.67	217	11.13	151	76	65	0	7	1	0		
	WINNEMUCCA	43	22	64	8	33	4	0.12	-0.05	0.08	1.30	197	10.24	125	78	66	0	7	2	0		
WY	CONCORD	41	18	51	7	30	6	0.02	-0.61	0.02	3.84	145	42.66	114	87	57	0	7	1	0		
	NEWARK	51	32	57	22	42	8	0.00	-0.78	0.00	5.46	172	58.53	128	84	54	0	5	0	0		
	ALBUQUERQUE	46	29	51	23	37	2	0.20	0.09	0.17	0.30	81	9.23	99	84	41	0	6	2	0		
	ALBANY	43	24	50	10	33	7	0.01	-0.54	0.01	3.14	130	45.53	120	78	55	0	6	1	0		
AZ	BINGHAMTON	42	27	48	19	35	10	0.03	-0.59	0.03	3.12	112	44.70	116	83	62	0	5	1	0		
	BUFFALO	48	33	57	28	40	12	0.04	-0.76	0.04	3.86	112	46.14	115	86	63	0	4	1	0		
	ROCHESTER	48	30	54	24	39	12	0.00	-0.57	0.00	2.41	98	33.26	99	83	66	0	5	0	0		
	SYRACUSE	47	25	55	14	36	10	0.00	-0.61	0.00	2.94	102	46.50	117	85	53	0	6	0	0		
GA	ASHEVILLE	60	35	67	30	47	10	1.06	0.32	0.55	3.89	130	56.86	122	90	62	0	3	3	2		
	CHARLOTTE	61	37	69	29	49	6	1.34	0.60	0.92	5.05	184	53.76	125	89	55	0	2	3	1		
	GREENSBORO	60	36	68	28	48	9	0.26	-0.42	0.23	3.64	136	51.68	121	89	51	0	2	2	0		
	HATTERAS	63	50	71	45	57	9	0.01	-1.07	0.01	5.92	157	61.68	108	93	69	0	0	1	0		
NC	RALEIGH	61	38	71	26	49	8	0.30	-0.40	0.22	3.27	125	43.41	102	91	73	0	2	2	0		
	WILMINGTON	68	45	75	35	57	10	1.50	0.65	1.41	3.59	108	46.26	82	96	58	0	0	2	1		
	BISMARCK	26	12	36	-1	19	6	0.09	0.01	0.09	0.46	131	30.66	183	91	85	0	7	1	0		
	DICKINSON	30	16	44	9	23	7	0.00	-0.06	0.00	0.00	0	25.37	156	90	75	0	7	0	0		
SD	FARGO	29	16	36	10	22	12	0.58	0.46	0.43	1.00	217	34.00	161	92	84	0	7	3	0		
	GRAND FORKS	24	8	32	1	16	7	0.														

Weather Data for the Week Ending December 28, 2019

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION								RELATIVE HUMIDITY PERCENT		NUMBER OF DAYS			
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN., SINCE 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	
OK	TOLEDO	53	33	63	28	43	16	0.00	-0.53	0.00	0.93	38	43.51	132	84	69	0	4	0	0	
	YOUNGSTOWN	52	32	64	29	42	14	0.00	-0.59	0.00	3.01	111	54.77	145	84	69	0	5	0	0	
	OKLAHOMA CITY	60	35	70	25	48	10	0.67	0.26	0.66	0.67	41	45.37	127	95	54	0	2	2	1	
OR	TULSA	63	38	72	26	50	12	0.90	0.45	0.90	0.96	42	59.67	141	84	66	0	2	1	1	
	ASTORIA	46	34	47	30	40	-2	0.27	-1.95	0.08	9.23	97	50.24	76	96	92	0	2	6	0	
	BURNS	36	16	46	10	26	2	0.06	-0.22	0.04	1.33	121	14.70	142	84	76	0	7	2	0	
PA	EUGENE	47	35	49	31	41	2	0.65	-1.09	0.32	4.79	63	35.77	71	92	86	0	2	5	0	
	MEDFORD	43	31	48	25	37	0	0.05	-0.54	0.04	2.13	80	19.61	108	90	70	0	5	2	0	
	PENDLETON	41	27	46	21	34	1	0.13	-0.17	0.13	0.75	58	12.33	98	88	82	0	7	1	0	
	PORTLAND	45	35	48	27	40	1	0.29	-0.91	0.16	4.02	77	26.32	72	93	83	0	2	4	0	
	SALEM	44	35	48	25	39	-1	0.37	-0.98	0.23	4.47	75	30.41	77	96	90	0	1	5	0	
	ALLENTOWN	50	26	56	16	38	8	0.00	-0.72	0.00	2.65	87	60.06	134	81	55	0	6	0	0	
	ERIE	52	32	61	25	42	11	0.00	-0.76	0.00	3.92	114	43.71	103	80	63	0	3	0	0	
	MIDDLETOWN	49	25	54	19	37	5	0.00	-0.66	0.00	2.97	100	47.78	119	91	54	0	7	0	0	
	PHILADELPHIA	51	31	56	24	41	6	0.00	-0.73	0.00	4.22	145	49.30	118	85	53	0	5	0	0	
	PITTSBURGH	51	30	62	24	41	10	0.02	-0.57	0.02	2.54	98	53.39	142	92	62	0	5	1	0	
RI	WILKES-BARRE	47	28	52	16	37	8	0.01	-0.50	0.01	1.98	85	49.56	133	83	51	0	6	1	0	
	WILLIAMSPORT	44	24	47	16	34	5	0.04	-0.54	0.04	2.31	85	49.08	119	91	63	0	6	1	0	
	PROVIDENCE	48	29	58	23	38	6	0.00	-0.91	0.00	6.43	174	50.30	109	83	55	0	5	0	0	
SC	CHARLESTON	68	50	76	42	59	10	3.83	3.06	2.72	5.88	213	46.55	91	99	65	0	0	3	2	
	COLUMBIA	62	43	71	38	53	8	2.71	1.89	1.94	9.05	318	42.24	88	87	69	0	0	3	2	
	FLORENCE	65	46	74	39	55	9	2.41	1.55	2.16	5.75	196	44.46	101	91	60	0	0	2	1	
SD	GREENVILLE	60	38	67	34	49	7	3.50	2.62	2.73	6.67	198	51.57	104	90	60	0	0	3	2	
	ABERDEEN	29	17	35	10	23	9	0.48	0.40	0.47	0.57	219	31.76	158	90	84	0	7	2	0	
	HURON	33	21	42	11	27	10	0.26	0.19	0.25	0.33	110	40.85	196	97	85	0	7	2	0	
TN	RAPID CITY	39	21	46	13	30	6	0.16	0.08	0.14	0.22	79	36.34	220	85	56	0	7	2	0	
	SIOUX FALLS	37	26	44	16	32	16	0.41	0.33	0.40	0.51	113	37.88	154	87	75	0	6	2	0	
	BRISTOL	62	35	68	31	48	12	0.13	-0.61	0.10	2.76	91	56.16	137	96	50	0	3	2	0	
TX	CHATTANOOGA	63	44	69	39	54	13	2.23	1.19	1.86	4.75	110	63.02	117	95	65	0	0	4	1	
	KNOXVILLE	61	42	70	37	51	12	1.49	0.50	0.84	4.68	117	64.12	134	92	58	0	0	2	2	
	MEMPHIS	66	49	71	40	58	16	0.62	-0.52	0.43	2.64	50	72.27	133	93	66	0	0	3	0	
	NASHVILLE	66	44	73	38	55	16	0.14	-0.81	0.09	2.47	60	62.29	131	83	53	0	0	3	0	
	ABILENE	69	43	74	26	56	12	0.31	0.01	0.31	0.98	90	23.16	98	72	53	0	1	1	0	
	AMARILLO	62	32	73	23	47	11	1.00	0.85	0.95	1.00	217	25.89	132	69	28	0	4	2	1	
	AUSTIN	69	39	73	30	54	3	0.01	-0.53	0.01	0.78	36	29.21	88	89	66	0	3	1	0	
	BEAUMONT	73	50	79	43	61	8	0.00	-1.20	0.00	1.04	23	86.45	146	94	64	0	0	0	0	
	BROWNSVILLE	77	52	82	39	65	5	0.00	-0.22	0.00	0.74	76	22.45	82	90	54	0	0	0	0	
	CORPUS CHRISTI	72	51	76	41	62	5	0.00	-0.39	0.00	4.02	268	26.90	84	97	74	0	0	0	0	
UT	DEL RIO	74	46	78	29	60	9	0.00	-0.14	0.00	0.05	8	15.07	83	71	56	0	1	0	0	
	EL PASO	59	34	63	28	46	2	0.14	-0.03	0.13	0.72	113	8.02	86	76	36	0	1	2	0	
	FORT WORTH	66	43	72	33	55	10	0.63	0.04	0.63	1.18	52	34.53	100	94	56	0	0	1	1	
	GALVESTON	69	55	75	47	62	5	0.00	-0.77	0.00	0.72	23	59.97	138	96	67	0	0	0	0	
	HOUSTON	72	48	78	41	60	7	0.10	-0.70	0.10	0.41	12	51.51	109	91	61	0	0	1	0	
	LUBBOCK	64	34	71	25	49	11	0.65	0.52	0.55	0.65	118	24.41	132	68	38	0	3	2	1	
	MIDLAND	68	39	73	25	53	9	0.01	-0.13	0.01	0.51	94	14.31	97	67	39	0	2	1	0	
	SAN ANGELO	72	37	78	22	54	9	0.32	0.13	0.32	1.31	164	17.77	86	69	49	0	3	1	0	
	SAN ANTONIO	70	46	74	35	58	7	0.00	-0.42	0.00	0.52	30	22.05	67	87	50	0	0	0	0	
	VICTORIA	75	47	80	35	61	7	0.00	-0.55	0.00	0.68	31	25.39	64	93	58	0	0	0	0	
VA	WACO	68	37	72	26	52	5	0.25	-0.34	0.25	0.72	29	33.03	100	95	66	0	3	1	0	
	WICHITA FALLS	66	37	73	25	51	10	0.58	0.21	0.58	0.59	40	27.77	97	89	63	0	1	1	1	
	SALT LAKE CITY	43	31	55	20	37	8	0.42	0.16	0.24	1.59	153	20.07	123	82	53	0	4	3	0	
WV	BURLINGTON	41	24	49	19	33	11	0.08	-0.36	0.08	0.92	46	42.62	119	83	59	0	6	1	0	
	LYNCHBURG	62	32	71	25	47	11	0.00	-0.72	0.00	2.20	78	39.46	92	89	46	0	3	0	0	
	NORFOLK	56	40	63	30	48	6	0.00	-0.71	0.00	2.00	77	46.26	102	91	67	0	1	0	0	
WA	RICHMOND	58	33	67	25	45	6	0.00	-0.72	0.00	3.00	112	43.94	101	95	54	0	4	0	0	
	ROANOKE	60	35	68	29	47	10	0.00	-0.61	0.00	2.67	105	43.10	102	85	54	0	2	0	0	
	WASH/DULLES	55	26	65	19	41	7	0.00	-0.66	0.00	2.34	86	40.19	97	90	52	0	7	0	0	
WI	OLYMPIA	43	33	47	30	38	1	0.31	-1.36	0.14	7.84	109	35.49	71	98	91	0	3	6	0	
	QUILLAYUTE	45	34	47	30	39	-1	0.99	-2.14	0.30	10.14	76	76.39	76	98	91	0	3	7	0	
	SEATTLE-TACOMA	44	37	47	30	40	0	0.49	-0.69	0.32	7.65	149	33.59	92	92	81	0	1	4	0	
WY	SPOKANE	36	30	46	26	33	7	0.05	-0.41	0.03	1.71	84	15.03	91	89	74	0	5	2	0	
	YAKIMA	41	29	47	22	35	7	0.00	-0.30	0.00	0.63	52	8.50	105	88	79	0	6	0	0	
	BECKLEY	59	38	67	30	48	15	0.00	-0.69	0.00	2.96	108	47.82	116	82	47	0	2	0	0	
WY	CHARLESTON	62	34	69	27	48	12	0.00	-0.69	0.00	4.55	151	48.00	110	93	49	0	4	0	0	
	ELKINS	59	26	67	20	42	11	0.01	-0.73	0.01	4.93	160	51.76	113	88	61	0	5	1	0	
	HUNTINGTON	61	36	68	28	49	14	0.00	-0.74	0.00	4.36	144	50.15	120	92	52	0	4	0	0	
WY	EAU CLAIRE	37	23	42	16	30	15	0.40	0.21	0.40	0.80	85	44.50	139	90	68	0	5	1	0	
	GREEN BAY	39																			

International Weather and Crop Summary

December 22-28, 2019

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

HIGHLIGHTS

EUROPE: Stormy weather early in the period maintained abundant moisture supplies for winter crops across much of the continent.

MIDDLE EAST: Rain alleviated drought concerns in central Turkey, while heavy rain along the eastern Mediterranean Coast into northern Iraq caused flooding but was overall beneficial for winter grains.

NORTHWESTERN AFRICA: Sunny skies promoted winter grain development following a wet autumn.

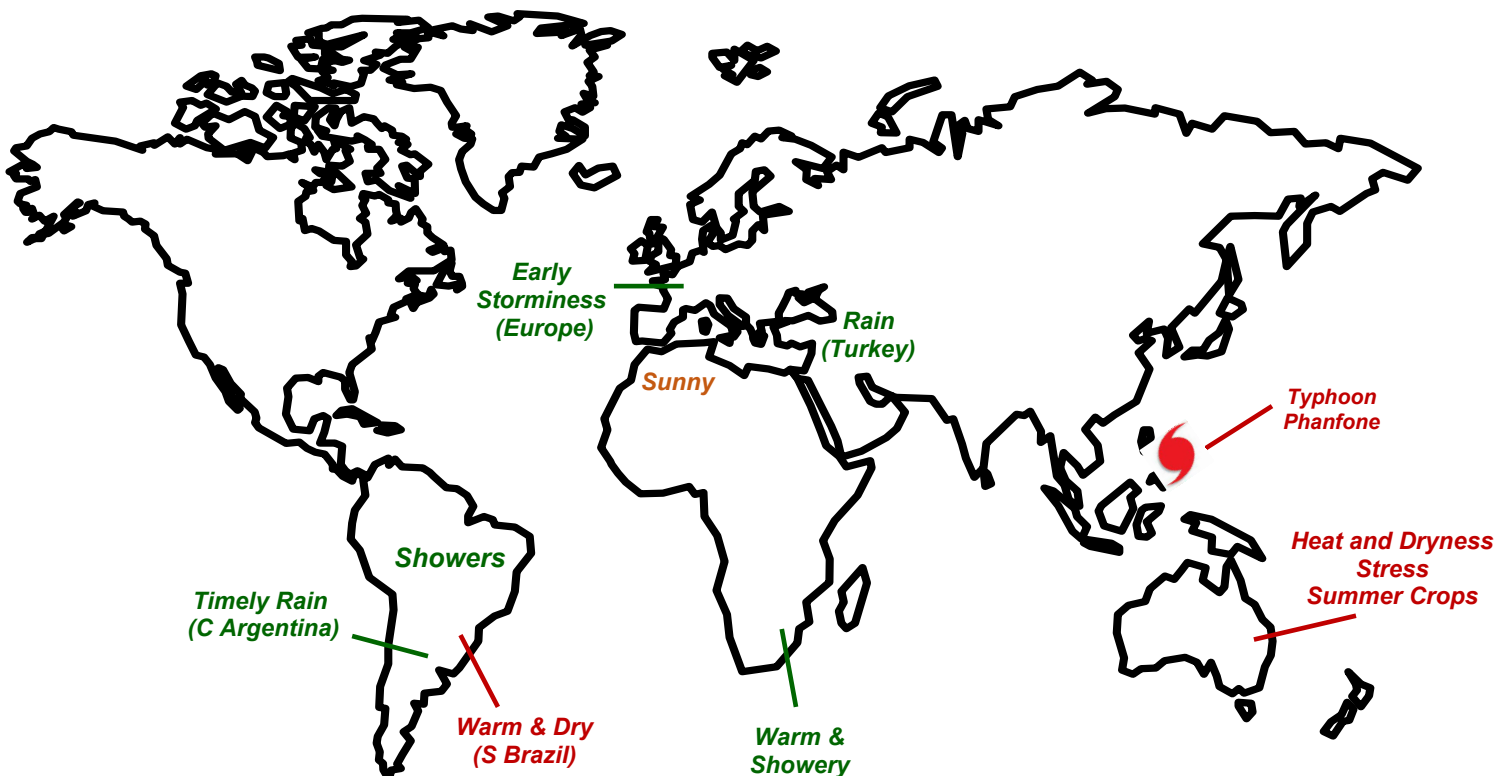
SOUTHEAST ASIA: Typhoon Phanfone crossed the central Philippines, producing heavy rainfall and high winds that caused localized damage to rice and corn.

AUSTRALIA: Hot, dry weather continued to stress summer crops in the east.

SOUTH AFRICA: Warm, showery weather benefited emerging to vegetative summer crops across the corn belt.

ARGENTINA: Showers improved moisture for corn and soybean planting in southern production areas but warmer, drier weather prevailed elsewhere.

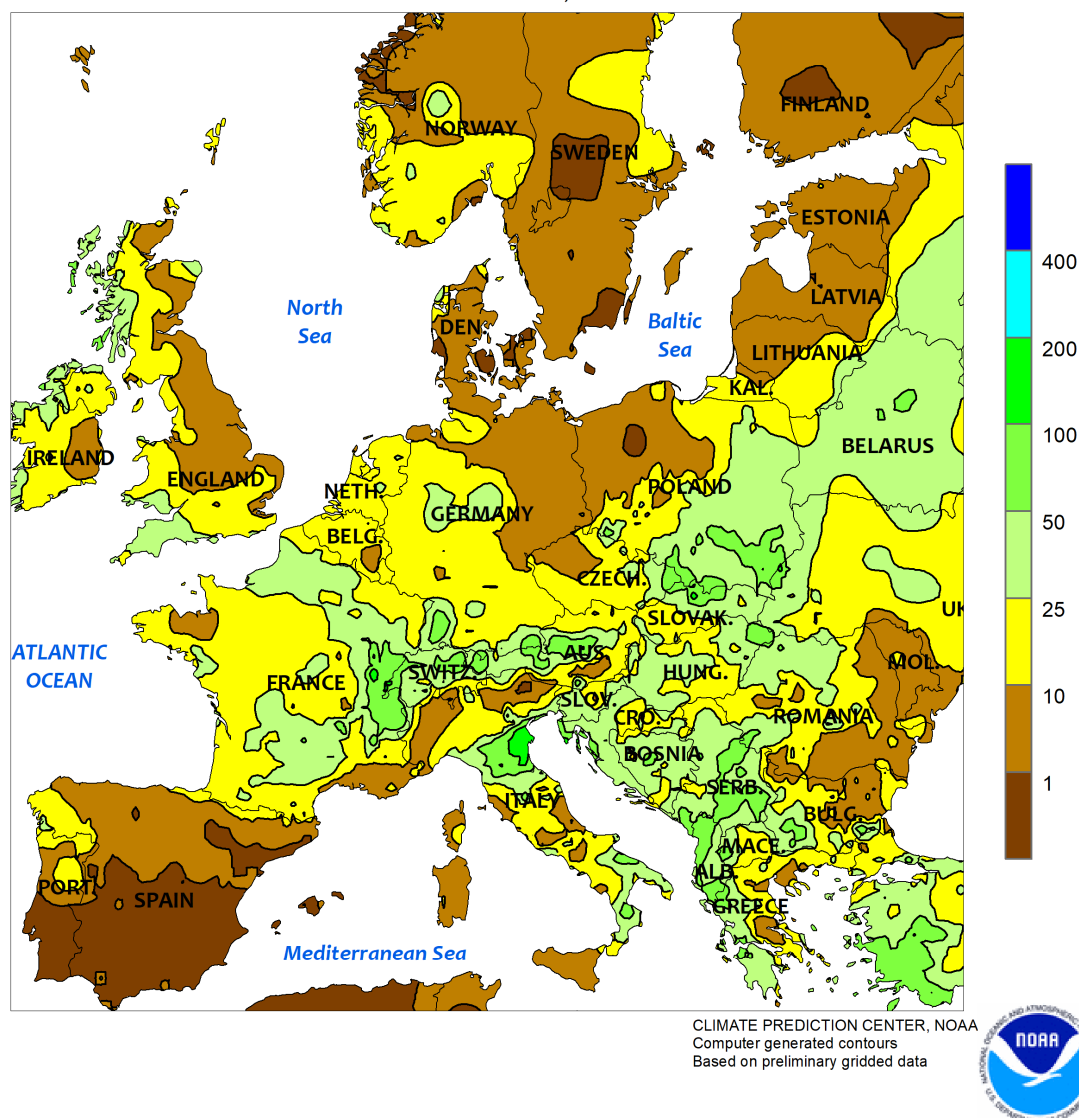
BRAZIL: Seasonal showers benefited most soybeans and second-crop corn, though a few pockets of dryness returned to the south.



EUROPE

Total Precipitation (mm)

December 22 - 28, 2019

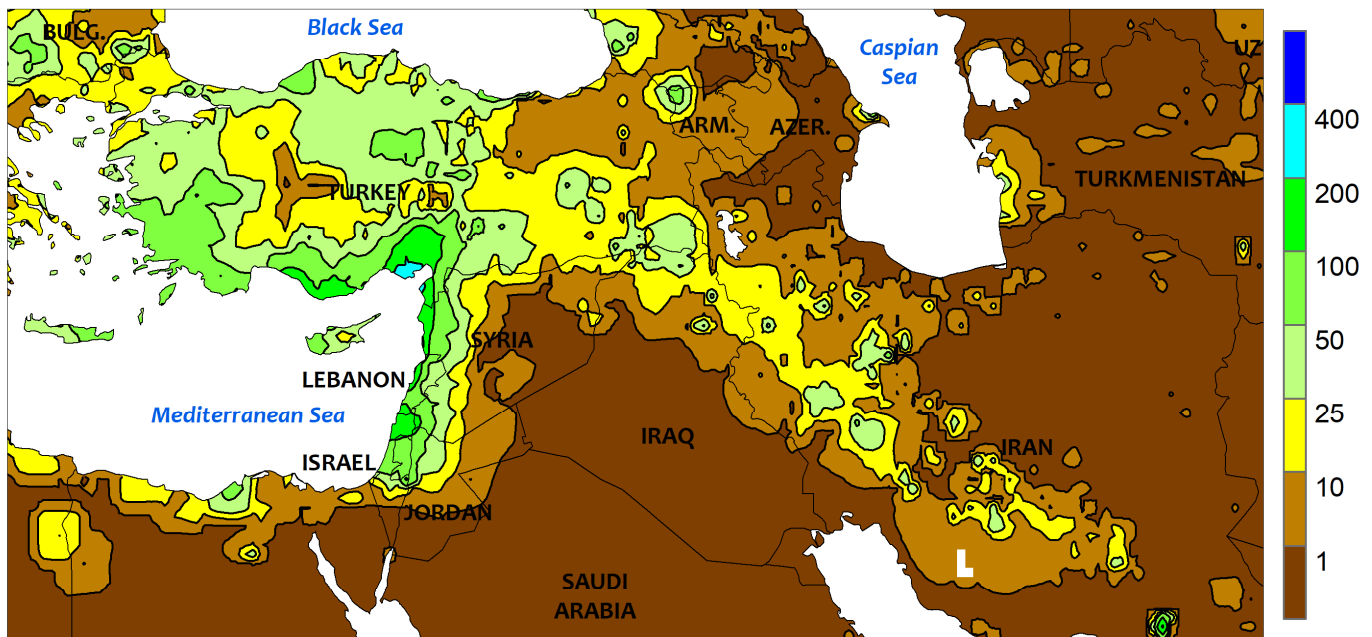


EUROPE

Lingering storminess early in the period maintained adequate to abundant moisture reserves for winter crops. A storm system produced widespread moderate to heavy rainfall early in the week, with amounts totaling 5 to 50 mm (locally more) across much of the continent save for southern Spain (no rainfall) and some croplands in northeastern and southeastern Europe (less than 5 mm). Autumn rainfall totaled near to above normal over most growing areas, with some locales in western Europe receiving more than 200 percent of normal.

Consequently, moisture reserves for dormant (north) to semi-dormant (west) winter crops remained favorable, though a few pockets of dryness were noted in central Poland, northern Serbia, and the lower Danube River Valley. A persistent influx of mild, maritime air from the Atlantic Ocean resulted in another week with temperatures 2 to 5°C above normal continent-wide, up to 8°C above normal in the Balkans. The anomalous warmth reduced winter crop cold hardiness and kept growing areas devoid of a protective snow cover.

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



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



MIDDLE EAST

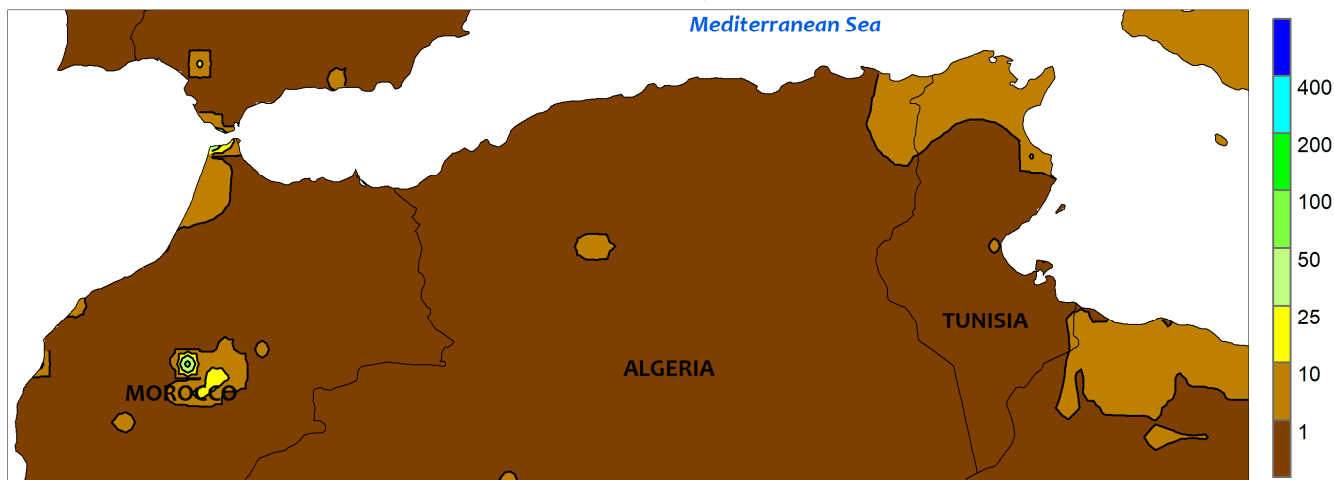
Heavy rain was reported across western and central growing areas, while sunny skies prevailed in the east. Another in a series of slow-moving Mediterranean storms produced moderate to heavy rain (10-100 mm, locally up to 200 mm) from the eastern Mediterranean Coast into northern Iraq, boosting moisture supplies for vegetative winter grains but likely causing lowland flooding. Rain and mountain snow from this system spread into northwestern Iran (10-60 mm liquid equivalent), maintaining favorable moisture reserves for dormant wheat and barley. Unlike previous storms which mostly bypassed Turkey, this system produced more

than 25 mm across vast stretches of central Turkey's Anatolian Plateau, improving moisture conditions for dormant winter grains following autumn drought. Furthermore, after this storm departed another dropped into its place, and was bringing more moderate to heavy rain to Turkey after the monitoring period ended. Temperatures averaged 2 to 6°C above normal across the entire region (up to 8°C above normal in the far north), reducing cold hardness of dormant winter grains in the climatologically colder northern growing areas and keeping crop areas devoid of a protective snow cover.

NORTHWESTERN AFRICA

Total Precipitation (mm)

December 22 - 28, 2019



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

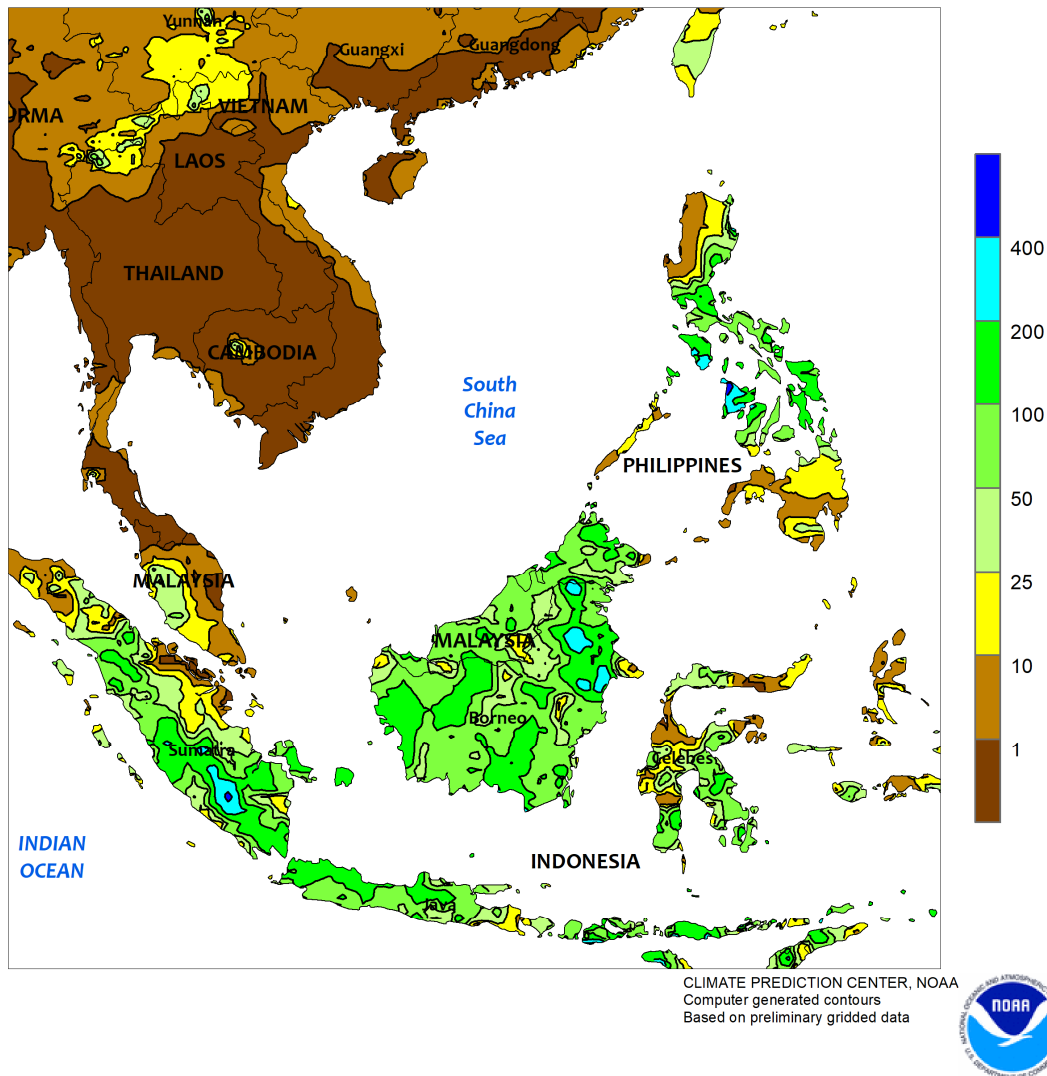


NORTHWESTERN AFRICA

After recent rain, sunny skies were favorable for the development of vegetative winter grains across the region. Lingering showers (2-7 mm) were confined to eastern-most growing areas as a Mediterranean storm system drifted eastward. Otherwise, dry, sunny, mild weather (up to 5°C above normal) favored wheat and

barley establishment after a wet autumn. Despite the wet start to the cool rainy season, localized drought in southwestern Morocco limited winter crop emergence and establishment. However, Morocco's primary croplands (western and northern portions of the country) have fared better.

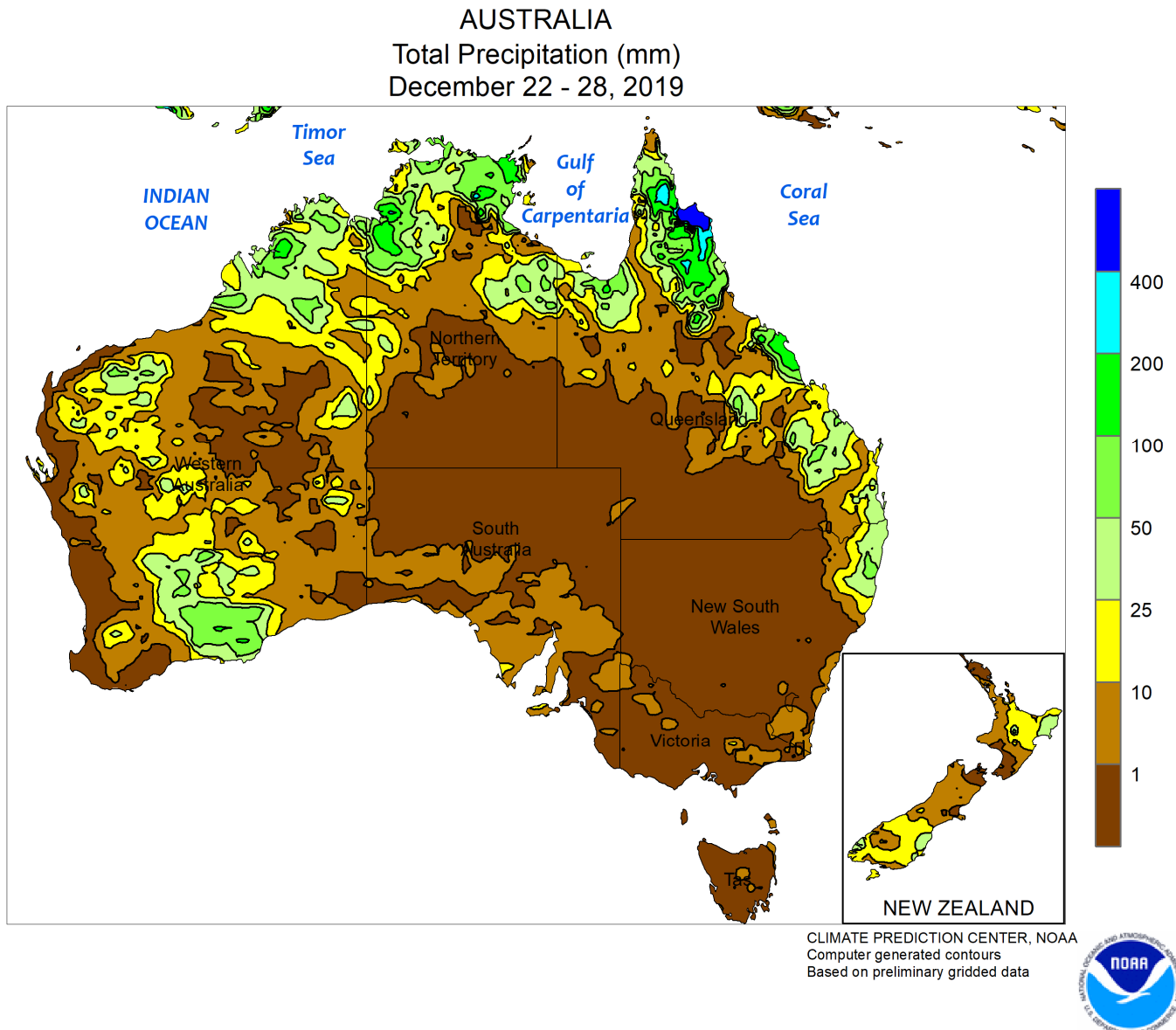
SOUTHEAST ASIA
Total Precipitation (mm)
December 22 - 28, 2019



SOUTHEAST ASIA

A late-season typhoon (Phanfone) crossed the central Philippines around mid-week. The storm produced heavy showers (over 100 mm) and brought high winds (95 knots) from eastern Luzon to northeastern Mindanao, likely causing localized damage to rice and corn, particularly in key northern growing areas.

Elsewhere, seasonal rainfall (50-100 mm or more) continued across much of Java, Indonesia, increasing moisture supplies for rice after a slow start to the wet season. However, the wet season remained slow to develop in eastern growing areas, with rainfall over the last 60 days about 30 percent of normal.

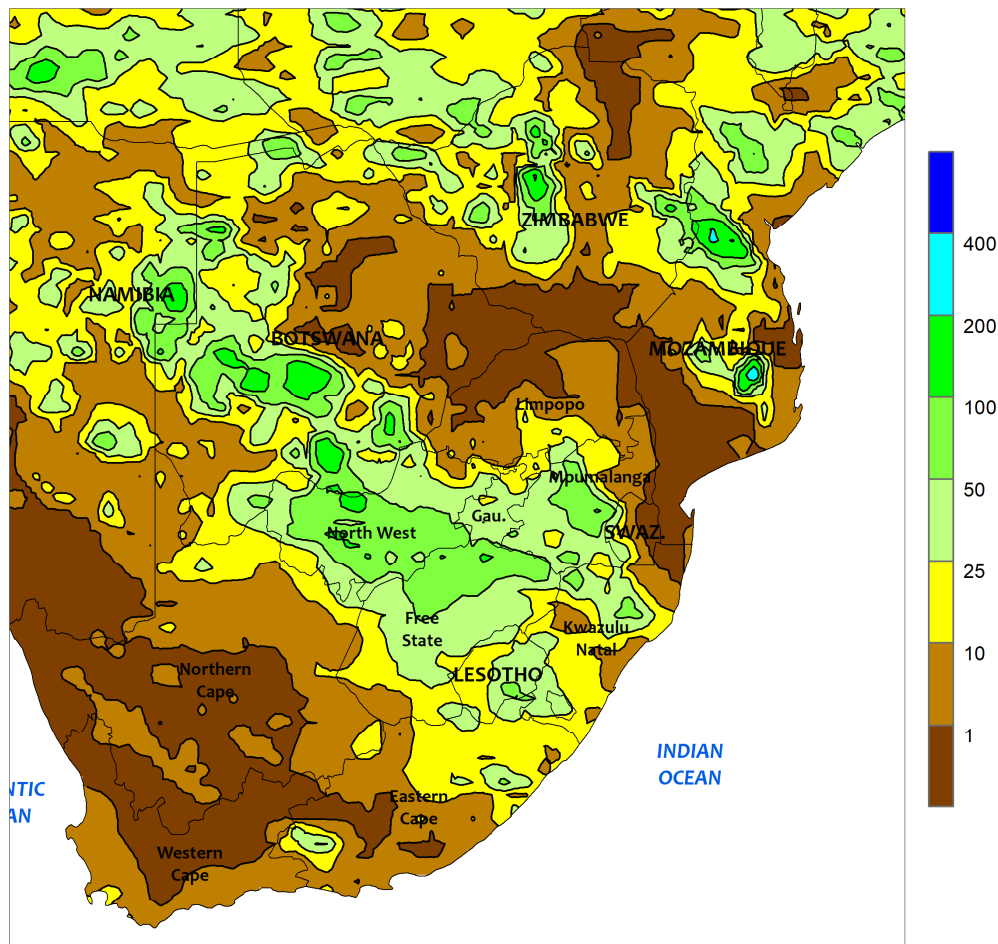


AUSTRALIA

Mostly dry weather persisted in drought-plagued southern Queensland and northern New South Wales, maintaining poor early season yield prospects for cotton, sorghum, and other summer crops. Showers (10-25 mm or more) were generally confined to eastern-most croplands along the border. Additionally, temperatures remained in the upper

30s to lower 40s (degrees C), speeding summer crop development and increasing evaporative losses. Elsewhere, dry weather in southern Australia promoted final winter crop harvesting, while passing showers (10-25 mm) in portions of the west may have temporarily interrupted local fieldwork.

SOUTH AFRICA
Total Precipitation (mm)
December 22 - 28, 2019



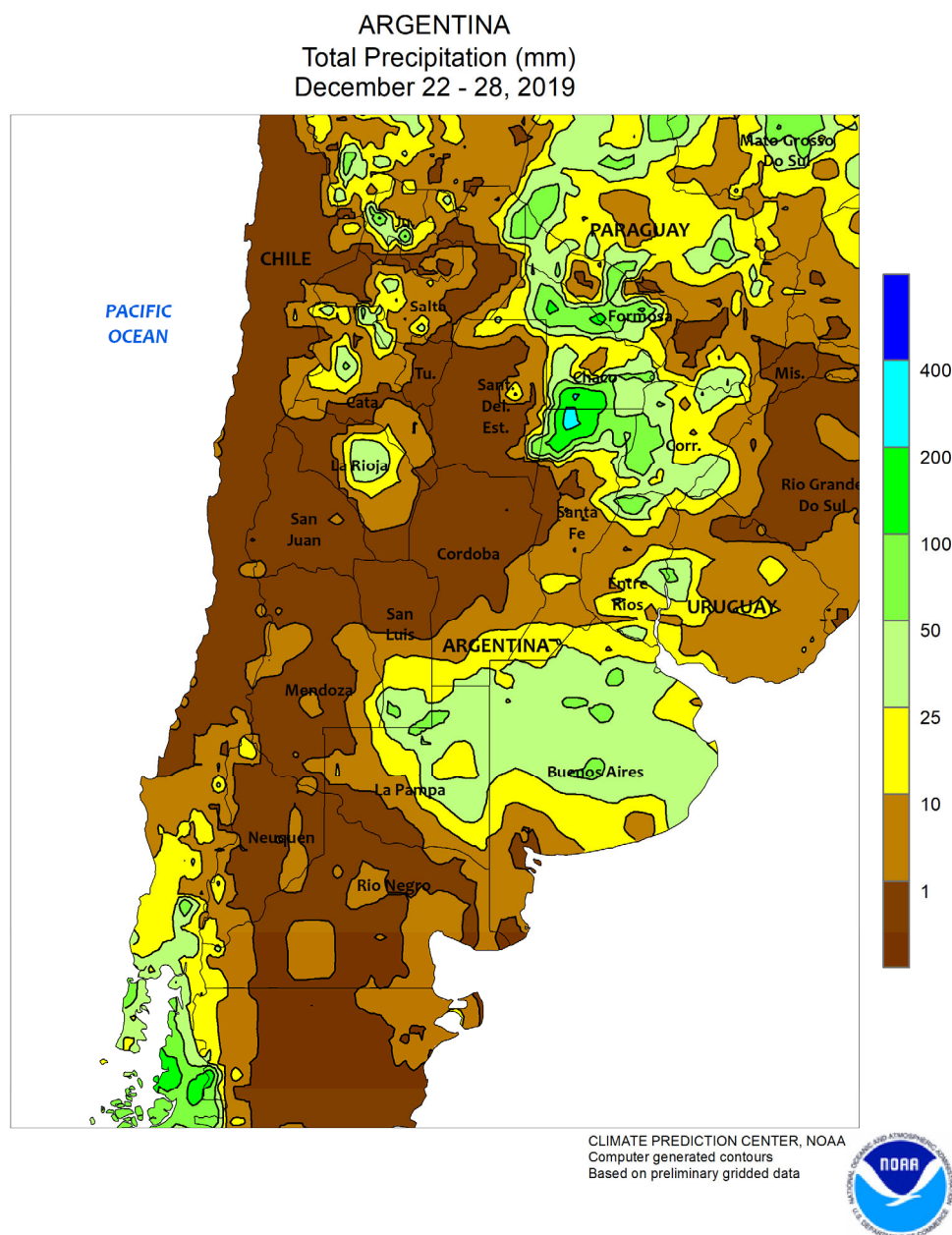
CLIMATE PREDICTION CENTER, NOAA
Computer generated contours
Based on preliminary gridded data



SOUTH AFRICA

Showers returned to much of the corn belt, providing a timely boost in moisture for germination and establishment of traditionally later-planted summer crops. Rainfall totaled 10 to 50 mm from Mpumalanga westward through North West and Free State, with higher amounts (greater than 50 mm) concentrated over commercial white corn areas at the western edges of the corn belt. Unseasonable warmth fostered rapid rates of summer crop development, with daytime highs ranging from the lower 30s (degrees C) in southern production areas to the upper 30s and lower 40s in the drier locations in and bordering Limpopo. Hot weather

(highs reaching the lower 40s) was also recorded in sugarcane areas of eastern Mpumalanga and northern KwaZulu-Natal, increasing irrigation demands of sugarcane; light showers (generally below 25 mm) were of limited benefit to rain-fed sugarcane in southern KwaZulu-Natal, given the accompanying summer warmth (highs reaching the middle 30s farther inland). Meanwhile, warm, sunny weather prompted rapid development of irrigated corn and cotton in the Orange River Valley, while conditions remained favorable for flowering tree and vine crops in Western Cape.

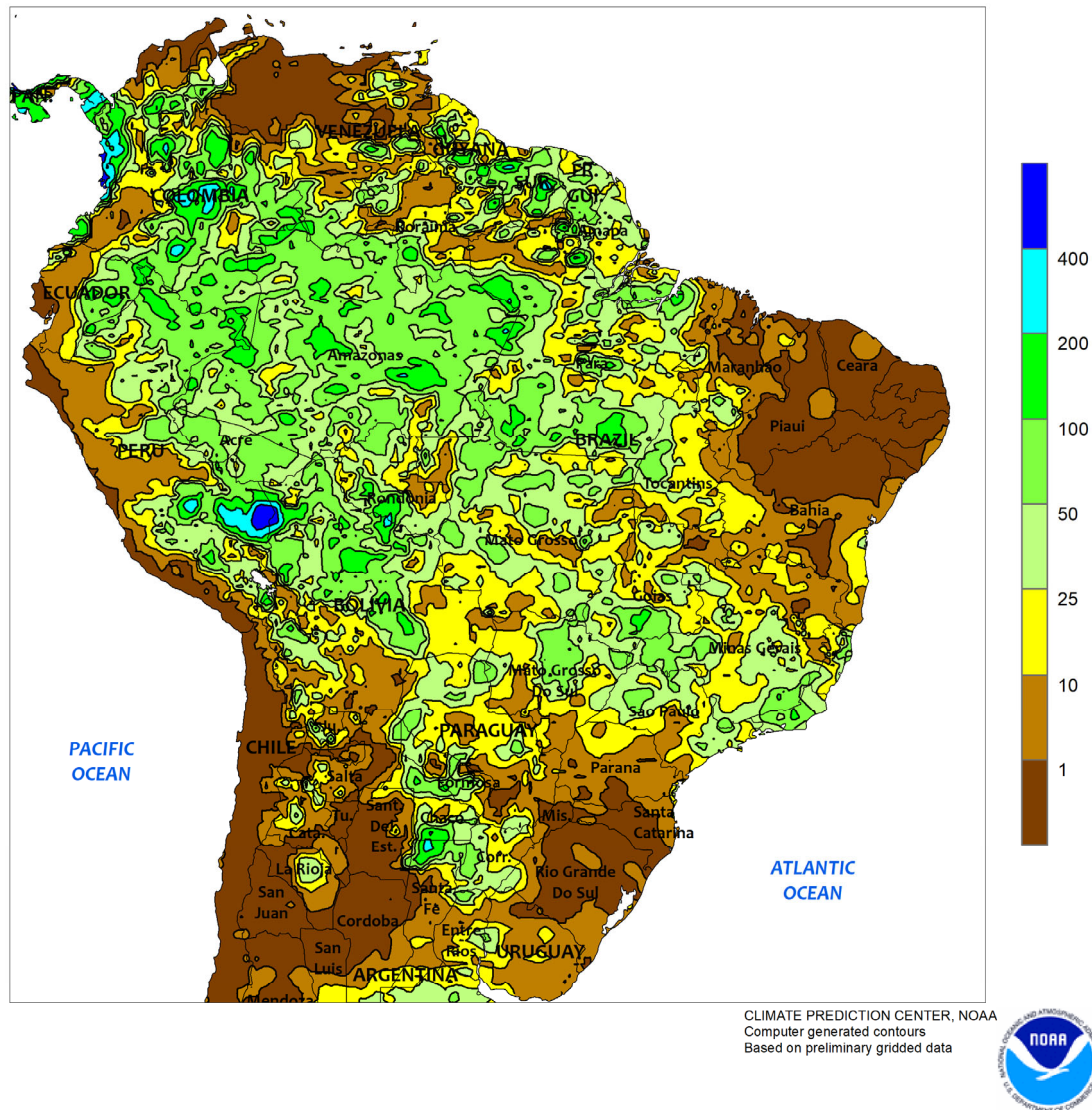


ARGENTINA

Showers provided a timely boost in moisture for summer crop planting in many southern farming areas. Rainfall totaled 10 to 50 mm from northern La Pampa eastward through Buenos Aires, including several locations that had been trending drier than normal since early September. However, drier conditions (rainfall totaling below 10 mm) persisted in southwestern parts of the region and several additional hot days (daytime highs reaching the middle and upper 30s degrees C) maintained high losses through evaporation. Farther north, showers were generally patchy and light, with just a few locations recording more than 25 mm. The relatively drier conditions in the northeastern

cotton belt (northern Santa Fe to eastern Formosa) will aid renewal of the late stages of cotton planting and foster early vegetative growth, following last week's heavy rain. Weekly temperatures averaged near to below normal from northern Buenos Aires to Corrientes and eastern sections of Chaco and Formosa, and up to 4°C above normal in western farming areas, where highs reached the upper 30s and lower 40s on several days. According to the government of Argentina, corn and soybeans were 77 and 80 percent planted, respectively, as of December 26 and cotton was 95 percent planted. Meanwhile, wheat was 82 percent harvested, slightly ahead of last year's pace (77 percent).

BRAZIL
Total Precipitation (mm)
December 22 - 28, 2019



BRAZIL

Beneficial rain maintained overall favorable conditions for immature summer crops in many central and southeastern farming areas, but pockets of dryness returned to the south. Rainfall totaled 25 to more than 50 mm from Mato Grosso and Mato Grosso do Sul eastward through Sao Paulo and Minas Gerais. The moisture maintained overall favorable conditions for reproductive to filling soybeans and first-crop corn, as well as sugarcane, coffee, and other crops. Summer warmth (daytime highs generally in the lower and middle 30s degrees C) maintained high rates of crop growth while maintaining high crop moisture demands. Farther south, however, drier weather returned following last week's beneficial rain, with amounts totaling below 10 mm from southern Parana

southward through Rio Grande do Sul; unseasonable warmth accompanied the dryness, with daytime highs reaching 40°C in spots, and a return to more seasonable rain and temperatures is needed to prevent significant stress on summer crops. According to government reports, Rio Grande do Sul's corn and soybeans were 92 and 94 percent planted, respectively, as of December 26, with 70 percent of corn having reached the reproductive to filling stages of development and soybeans 9 percent flowering. Meanwhile, warmer- and drier-than-normal conditions (rainfall totaling 10-25 mm with daytime highs approaching 40°C) persisted from western Bahia and northeastern Goias northward through Maranhao, further limiting moisture for immature summer crops.

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*w = weekly, m = monthly, s = seasonal (published every March, June, September, and December for the preceding 3 months)

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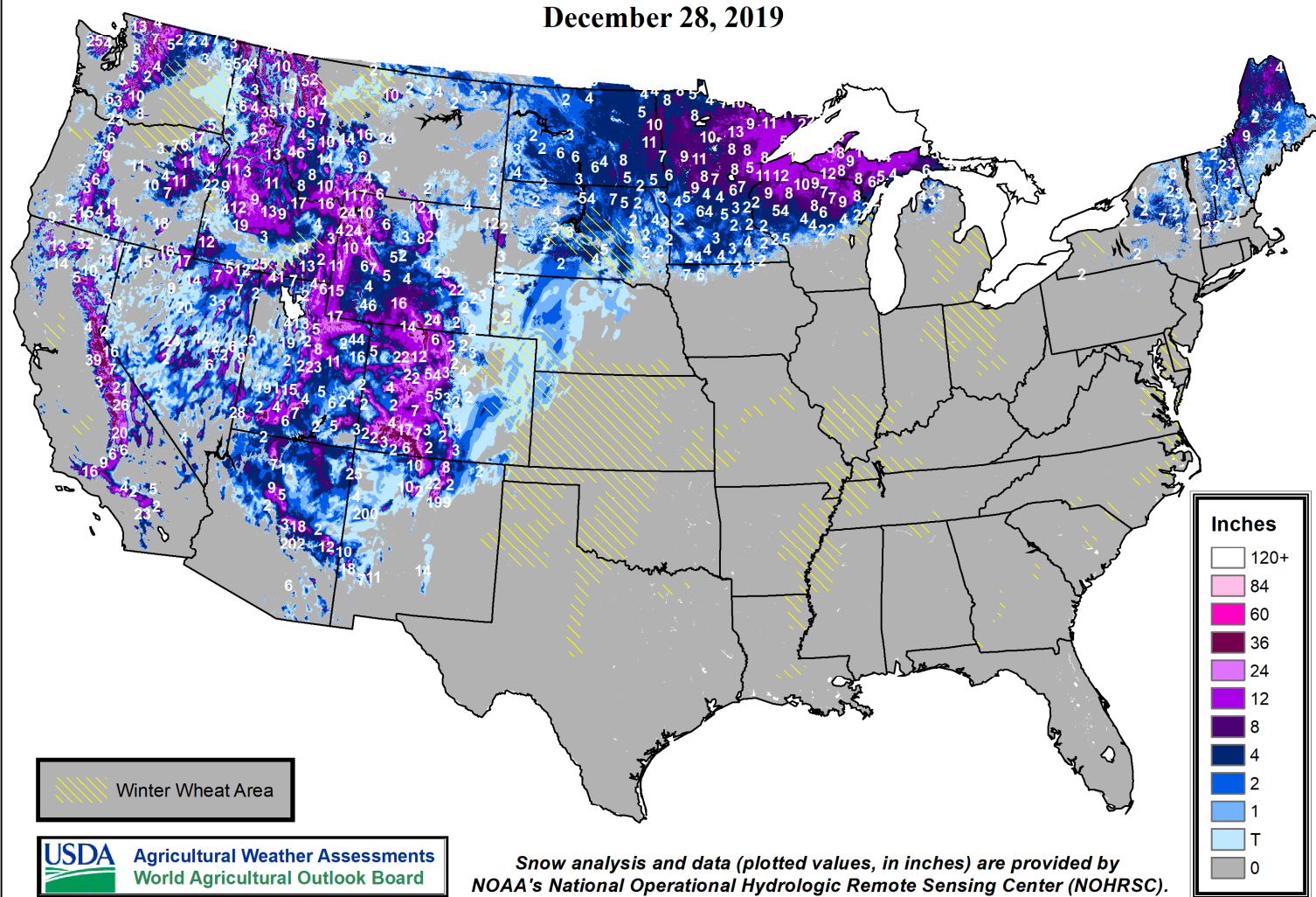
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Snow Depth

December 28, 2019



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.

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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>

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