

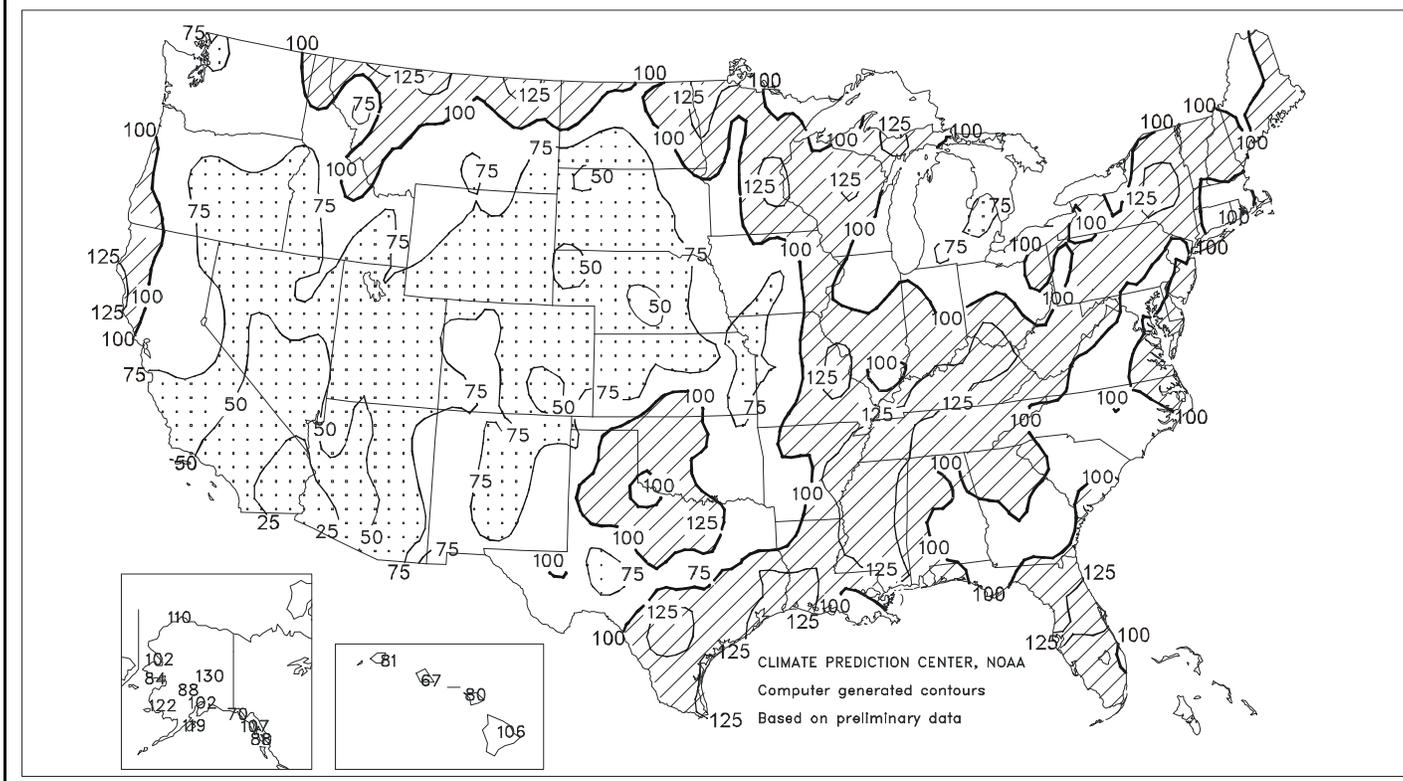
WEEKLY WEATHER AND CROP BULLETIN

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

Percent Of Normal Precipitation

JAN - DEC 2002



HIGHLIGHTS

January 5 - 11, 2003

Highlights provided by USDA/WAOB

Storminess subsided for several days in the **West Coast States**, although locally heavy showers returned to **northern California** after midweek. Meanwhile, beneficial showers developed across the **Southwest**, but unfavorably dry conditions persisted elsewhere from the **Rockies westward**. Early-week warmth in the **West** gradually spread across the **Plains** and **upper Midwest**, where dozens of daily-record highs on January 7-8 boosted weekly temperatures 4 to 18°F above normal. The warmth and dryness promoted off-season fieldwork but maintained concerns about the **northern and central High Plains'** winter wheat due to soil moisture
(Continued on page 7)

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Water Supply Forecast for the Western United States

SNOTEL – River Basin Snow Water Content

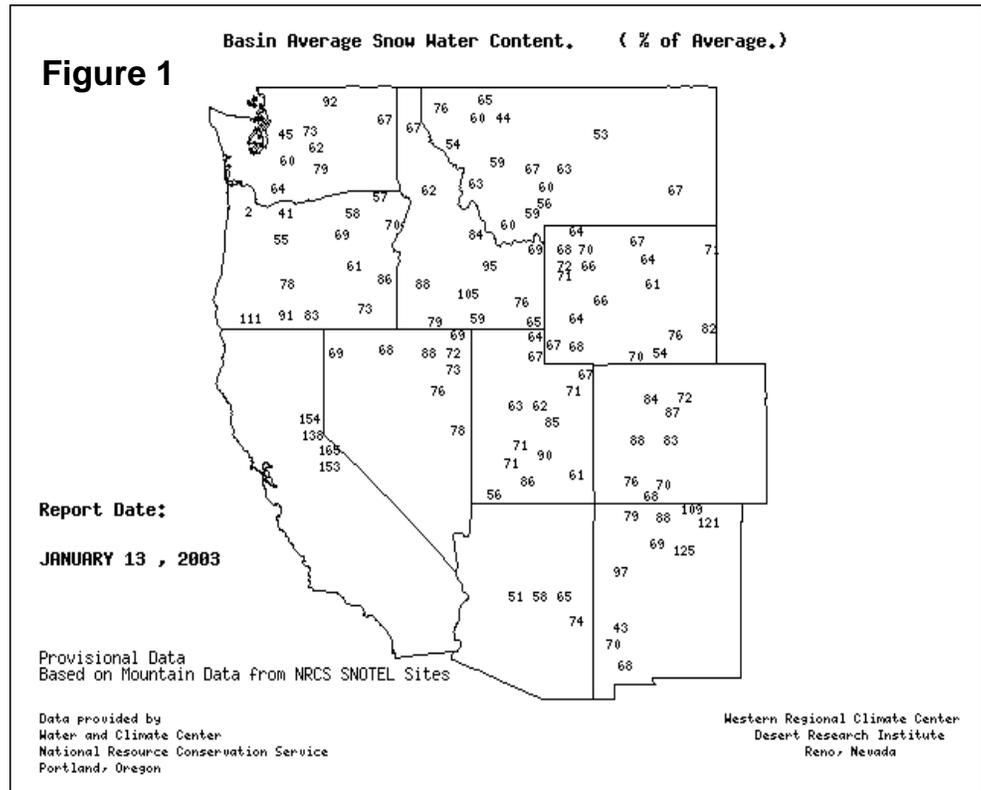
Highlights

As of January 1, 2003, nearly every western state is forecast to receive below-average spring runoff from a meager January snowpack. The only exceptions are in California and western New Mexico, which are forecast to receive near- to above-average spring streamflows. Below-average water supply forecasts come on the heels last year's record-low, or near-record-low, runoff in the Southwest, Intermountain West and southern Rockies. In many of these areas, this year's snowpack is resting on very dry soils, which generally translates into reduced snowmelt runoff. Additionally, the reservoir storage for all western states is running well below January averages.

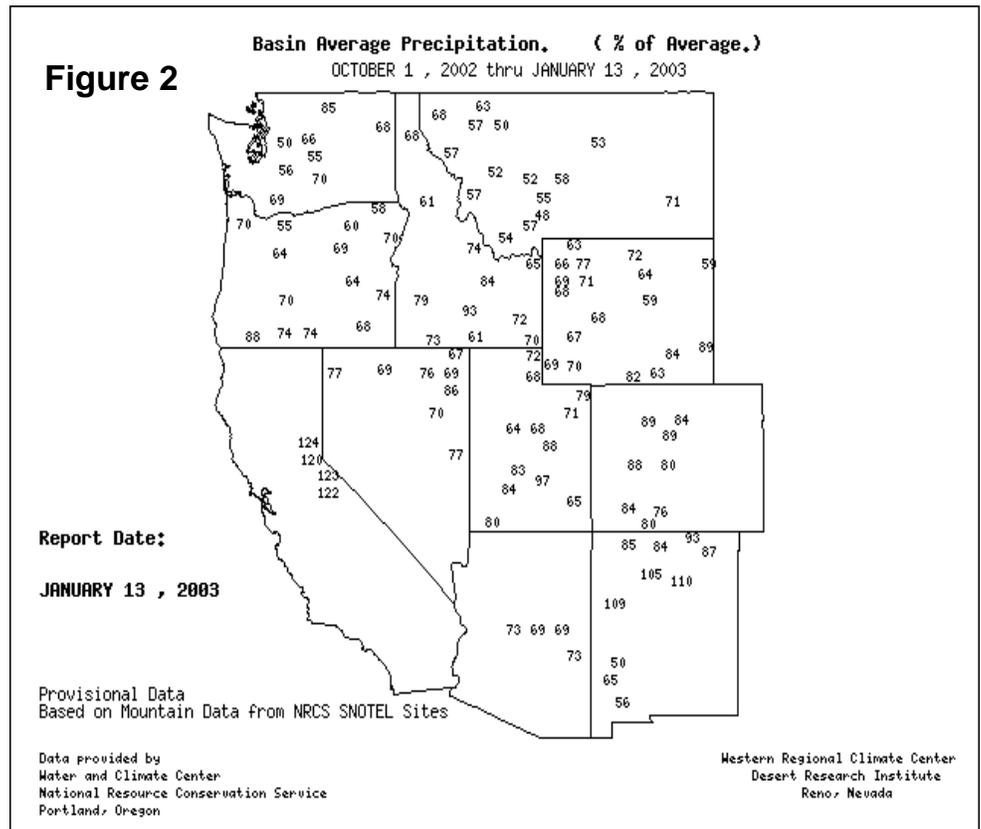
Snowpack and Precipitation

The January 13, 2003, snowpack map (fig. 1) clearly reflects the below-average snowpacks that are a concern at this time. Below-average snowpacks (70 to 89 percent of normal) dominate the Pacific Northwest, northern Rockies, Intermountain West, and Southwest. Several basins in western Montana, northern Idaho, central Wyoming, Utah, Nevada, northern Arizona, and western Oregon report significantly below- or well-below-average snowpacks (less than 70 percent). The only States reporting above- to significantly above-average snowpacks (110 to 150 percent or higher) are basins in California, southwestern Oregon, and northeastern New Mexico.

Season-to-date precipitation (October 1, 2002 - January 13, 2003) reflects a similar pattern (fig. 2). Montana, eastern Wyoming, southeastern Colorado, northern Utah, central Nevada, and central Arizona report below- to well-below-average precipitation (50 to 89 percent). The Pacific Northwest and Intermountain States also report



SNOTEL – River Basin Precipitation



below-average seasonal precipitation. Significantly below average precipitation (less than 50 percent) is shown in eastern Montana and southern Arizona. In contrast to the dearth of precipitation throughout most of the West, southwestern Oregon and central and northern California report above- to significantly above-normal seasonal precipitation (110 to 150 percent or more). Alaska's seasonal precipitation varies dramatically due to the warm rain events during autumn. Southern coastal areas in Alaska are well above average while the interior is significantly below average.

Spring and Summer Streamflow Forecasts

The January 1, 2003, water supply forecast (fig. 3) paints a picture of below- to much-below-average streamflow (50 to 89 percent of normal) over most of the West. Only basins in the Lake Tahoe area of California and Nevada and northwestern California are forecast to experience above-average (110 to 129 percent of normal) spring streamflow. The Zuni/Bluewater basins in New Mexico are forecast to receive near- to slightly above-average spring runoff.

These low water supply forecasts follow last year's extremely low runoff for many Southwestern and Rocky Mountain basins.

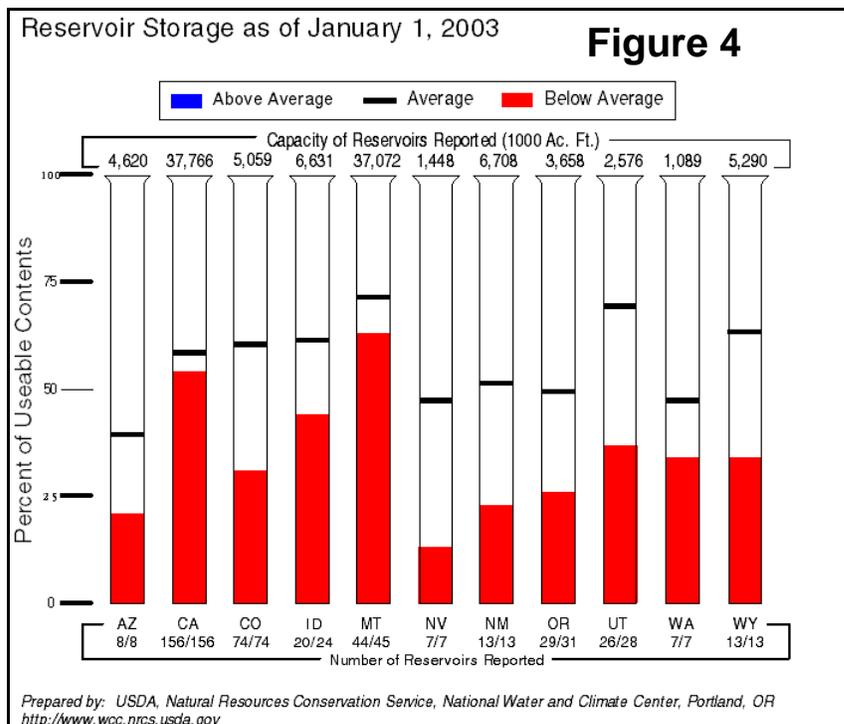
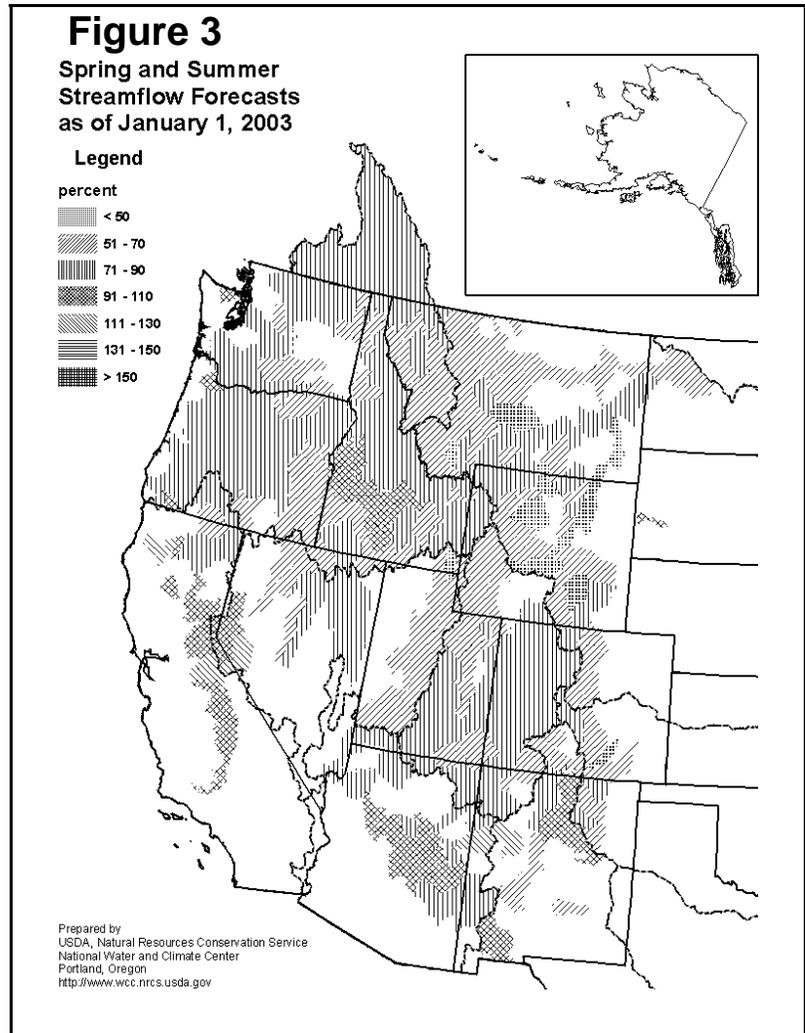
Reservoir Storage

As of January 1, 2003, total reservoir storage is below seasonal averages in all Western States (fig. 4). This reflects the carryover dryness from last year's drought in the Rockies and continuing drought from this water year's seasonal precipitation deficits across most of the West.

For More Information

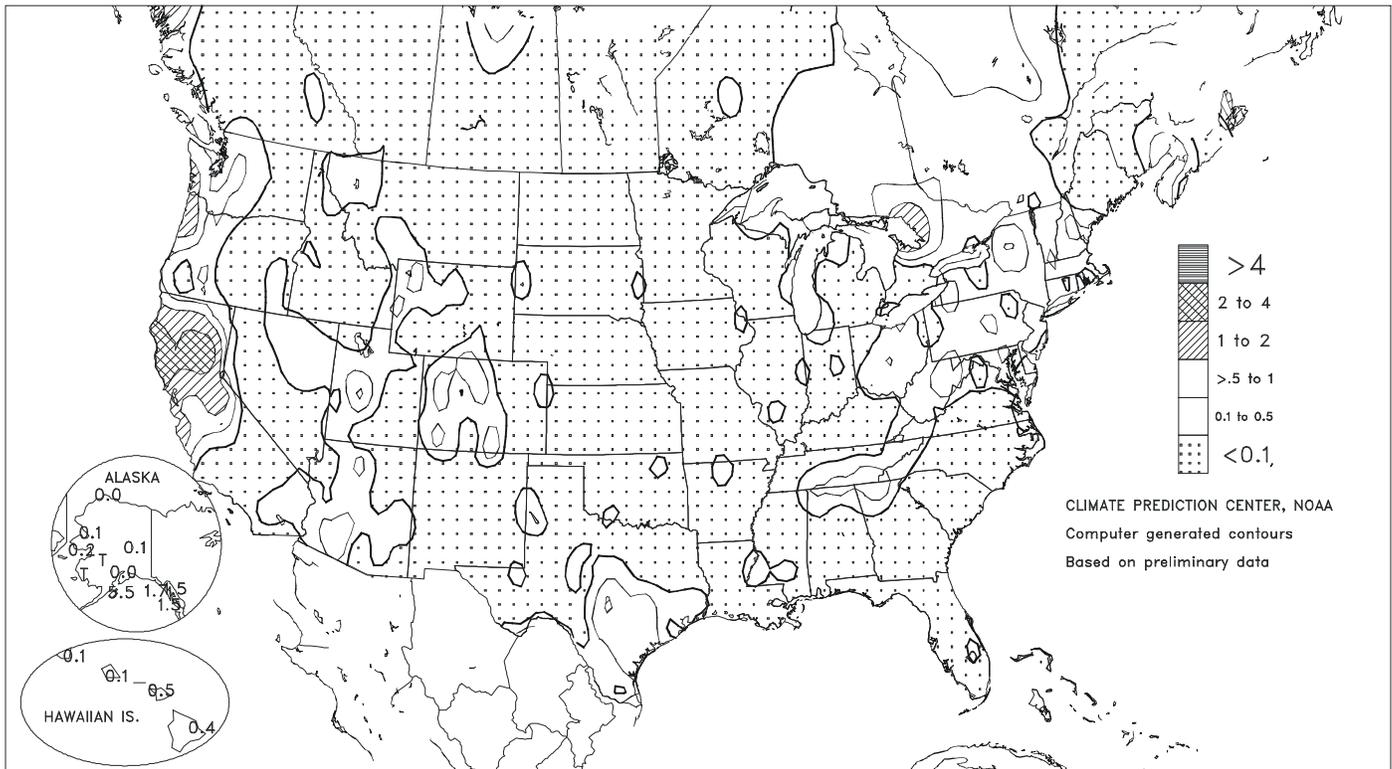
The National Water and Climate Center Homepage provides the latest available snowpack and water supply information. Please visit:

<http://www.wcc.nrcs.usda.gov>



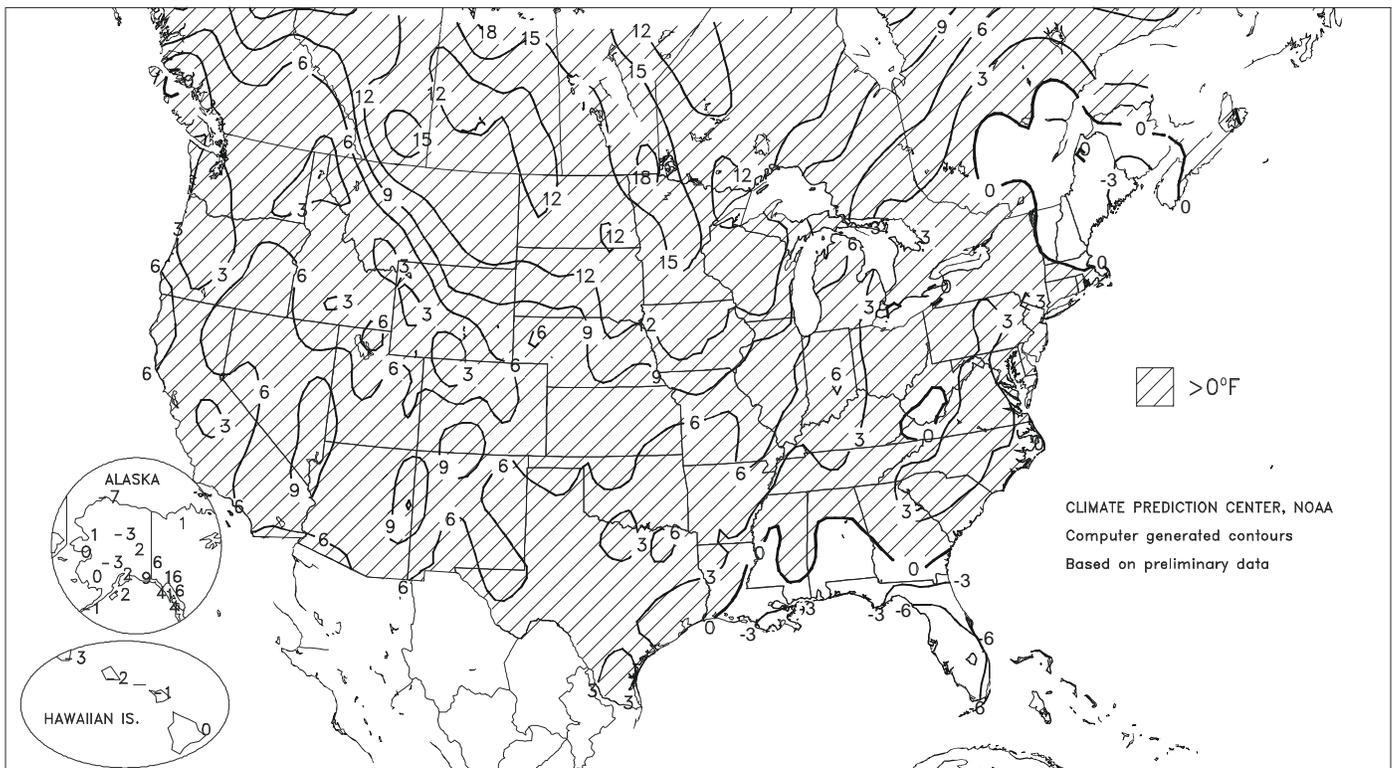
Total Precipitation (Inches)

JAN 5 - 11, 2003



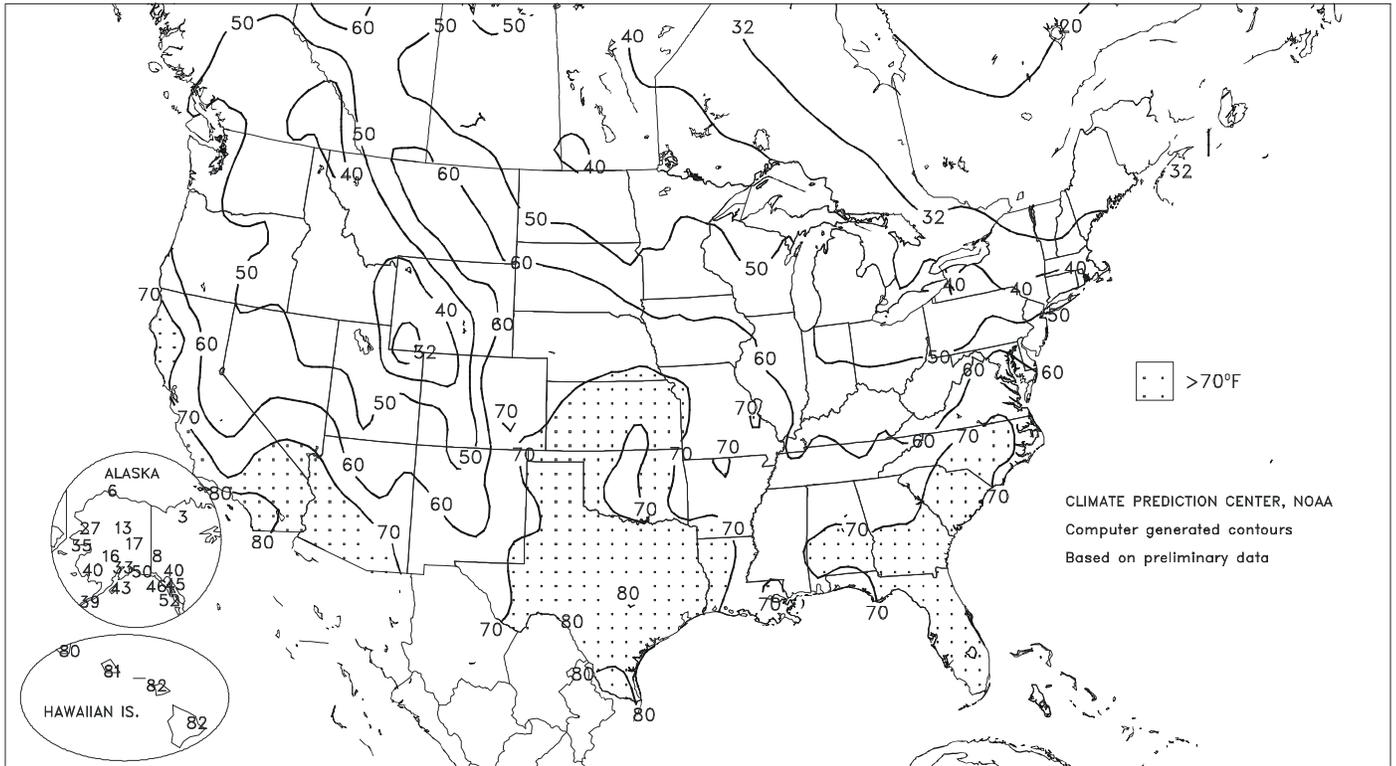
Departure of Average Temperature from Normal (°F)

JAN 5 - 11, 2003



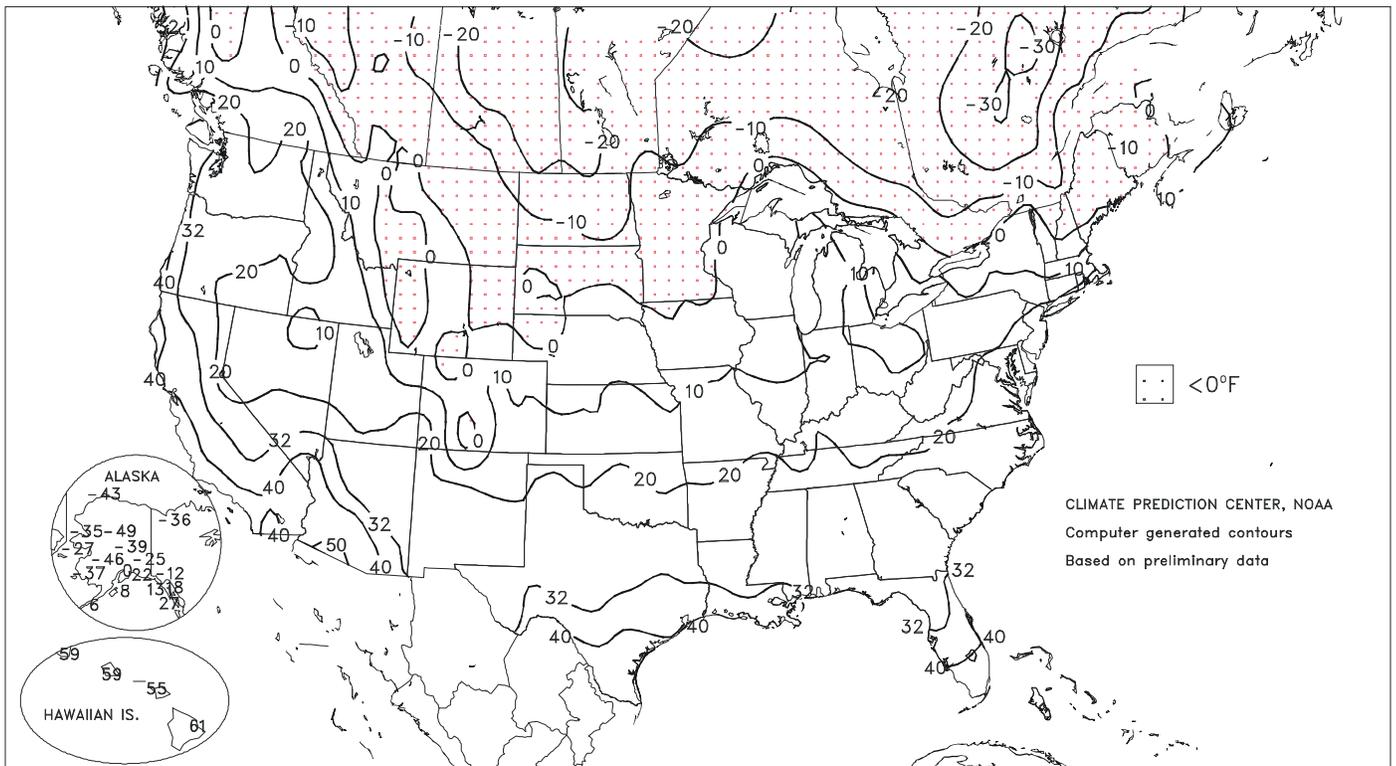
Extreme Maximum Temperature (°F)

JAN 5 - 11, 2003



Extreme Minimum Temperature (°F)

JAN 5 - 11, 2003



Weather Data for Mississippi and the Missouri Bootheel

Weather Data for the Week Ending January 11, 2003

Data provided by the Mississippi State Delta Research and Extension Center (DREC),
the Southern Regional Climate Center (SRCC), and the University of Missouri.

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						4-INCH SOIL TEMP. °F		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			
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
MS BATESVILLE X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MS BELZONI X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MS CLARKSDALE X	50	31	60	26	41	1	0.00	-1.12	0.00	8.92	125	0.90	51	-	-	0	4	0	0
MS CLEVELAND X	53	31	62	26	42	0	0.00	-1.06	0.00	7.86	116	0.94	55	-	-	0	4	0	0
MS GREENVILLE X	57	34	69	27	46	4	0.00	-1.19	0.00	3.56	50	0.00	0	-	-	0	3	0	0
MS GREENWOOD X	53	32	63	23	42	-2	0.00	-1.23	0.00	7.56	103	0.01	1	-	-	0	5	0	0
MS INDIANOLA 1S	53	34	67	26	44	-	0.00	-	0.00	6.38	-	0.01	-	48	43	0	3	0	0
MS INVERNESS 5E	53	35	66	28	44	-	0.00	-	0.00	7.27	-	0.01	-	49	44	0	2	0	0
MS LYON	51	33	64	27	42	-	0.01	-	0.01	8.59	-	0.06	-	48	40	0	4	1	0
MS MACON	56	35	68	28	45	-	0.02	-	0.02	6.19	-	0.09	-	50	43	0	3	1	0
MS MOORHEAD X	52	35	64	27	43	0	0.00	-1.26	0.00	2.65	34	1.11	56	-	-	0	3	0	0
MS ONWARD	55	36	67	28	45	-	0.00	-	0.00	7.00	-	0.04	-	52	46	0	3	0	0
MS PERTHSHIRE	52	34	65	25	43	-	0.00	-	0.00	10.48	-	-	-	49	39	0	4	0	0
MS ROLLING FORK X	58	32	69	26	45	2	0.00	-1.33	0.00	4.09	53	0.40	19	-	-	0	3	0	0
MS SCOTT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MS SIDON	53	37	65	30	45	-	0.00	-	0.00	5.38	-	1.02	-	52	42	0	2	0	0
MS STARKVILLE	54	34	66	26	44	-	0.00	-	0.00	5.44	-	-	-	50	40	0	4	0	0
MS TUNICA X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MS TUNICA 1W	50	32	62	26	41	-	0.01	-	0.01	7.17	-	0.24	-	44	40	0	4	1	0
MS VANCE	50	32	60	27	41	-	0.00	-	0.00	9.95	-	0.02	-	46	43	0	4	0	0
MS VERONA	52	32	64	24	42	-	0.00	-	0.00	6.48	-	0.10	-	49	39	0	4	0	0
MS VICKSBURG X	58	33	65	26	45	-2	0.00	-1.47	0.00	6.66	84	0.31	14	-	-	0	3	0	0
MS YAZOO CITY X	59	31	66	26	45	0	0.00	-1.47	0.00	6.05	71	0.40	17	-	-	0	4	0	0
MS STONEVILLE X	55	32	65	26	44	2	0.00	-1.26	0.00	6.46	87	0.45	23	53	42	0	3	0	0
MO DELTA	46	27	59	18	37	8	0.05	-0.54	0.05	5.84	96	0.15	14	40	34	0	5	1	0
MO STEELE	47	32	58	25	39	8	0.00	-0.84	0.00	7.82	120	0.34	28	43	38	0	4	0	0
MO GLENNONVILLE	47	30	60	23	38	8	0.00	-0.57	0.00	6.41	117	0.17	17	42	36	0	4	0	0
MO PORTAGEVILLE LF	46	31	58	24	38	8	0.00	-0.81	0.00	5.91	95	0.25	22	46	37	0	4	0	0
MO CLARKTON	47	29	59	20	38	8	0.00	-0.57	0.00	6.22	114	0.20	20	42	36	0	4	0	0
MO CARDWELL	47	30	60	23	39	7	0.00	-0.69	0.00	6.87	113	0.27	24	45	39	0	4	0	0
MO CHARLESTON	45	28	58	19	37	7	0.00	-0.49	0.00	6.18	113	0.29	37	42	36	0	4	0	0
MO PORTAGEVILLE DC	46	31	58	22	38	8	0.00	-0.81	0.00	6.12	99	0.22	19	-	-	0	4	0	0

Compiled by USDA/OCE/WAOB's Stoneville Field Office.

X Based on 1971-2000 normals.

- Sufficient data not available.

Weather and Crop Summary: Early-week warmth helped to dry fields, but cooler weather and lower evaporation rates arrived before significant improvement occurred. Some winter tillage took place on sandier soils.

U.S. Crop Production Highlights

The following information was released by USDA's Agricultural Statistics Board on January 10, 2003. Forecasts refer to January 1.

The **all orange** January forecast for the 2002-03 crop is 11.2 million tons, down 1 percent (%) from the previous forecast and 10% below last season's final utilization. Florida's all orange forecast remains unchanged at 197 million boxes (8.87 million tons), 14% lower than the previous season. Abundant rainfall occurred across Florida in December, with some areas receiving excessive amounts. Temperatures were below normal. The early and midseason varieties forecast remains unchanged at 113 million boxes (5.09 million tons) but is 12% below last season. Fruit continued to increase in size. However, droppage is at the second- highest level in the last 10 years. Row count surveys indicate more than 52% of fruit harvested, the faster than each of the previous 10 seasons. Florida's Valencia forecast is unchanged at 84.0 million boxes (3.78 million tons) but is 18% below last season. Fruit size continues to increase

at an above-average rate, while droppage continues at above-average levels.

The all orange forecast for California, 61.0 million boxes (2.29 million tons), is 3% lower than the October 1 forecast but 9% higher than last season. Recent rains slowed harvesting of California Navel oranges but enhanced fruit size. Overall fruit quality is good. The Texas all orange forecast, at 1.68 million boxes (72,000 tons), is up 6% from the October 1 forecast but 3% lower than last season's final utilization. Harvest is underway and fruit quality and size are reported as excellent. Arizona's all orange utilization is forecast at 450,000 boxes (17,000 tons), unchanged from the October 1 forecast but 13% lower than the previous season. If realized, it will be the sixth consecutive season of declining utilization in Arizona.

(Continued from front cover)

shortages and lack of a protective snow cover. Colder air began to overspread the **Plains** and **Midwest** toward week's end, although sub-zero temperatures were confined to the **north-central U.S.** Favorably dry weather prevailed across the **South**, following a sustained period of wetness. However, near- to below-normal temperatures slowed evaporation rates from still-soggy fields. Weekly temperatures averaged as much as 10°F below normal in **Florida**. Farther north, periods of snow continued in the **Northeast**, interrupted by a brief, midweek warm spell.

Early in the week, scattered, light precipitation dotted the **West** and **Northeast**. In the **Black Hills**, the 0.31-inch total in **Lead, SD**, was not unusual, but the precipitation type (rain) was. **Lead's** previous greatest January precipitation event without snow totaled 0.15 inch, on January 3, 1984. Meanwhile in the **Mid-Atlantic region**, January 5 snowfall included 3.0 inches in **Washington, DC**, and 2.8 inches in **Baltimore, MD**. Farther west, the combination of an upper-level disturbance in the **Southwest** and a high-pressure system over the **Intermountain region** resulted in high winds. January 6 gusts in **Arizona** were clocked to 69 mph in **Stanton** and 49 mph in **Safford**. Even higher gusts were noted across **southern California**, where "Santa Ana" winds reportedly reached 100 mph in **Fremont Canyon** and 90 mph in **Ontario**. In addition, early-week snowfall in **Arizona** accumulated to a depth of 10 inches at **Sunset Crater** and 8 inches at the **Grand Canyon (South Rim)**.

Several **California** locations opened the week with a pair of daily-record highs, including **Chula Vista** (77 and 78°F). On January 6, highs soared to daily-record levels in locations such as **Yorba Linda, CA** (85°F), and **Astoria, OR** (63°F). Warmth overspread the **Plains** and **Midwest** on January 7-8, boosting the national tally of daily-

record highs to nearly 200 for the week. On January 8, **Des Moines, IA** (67°F), posted a new record high for the month (previously, 65°F on January 26, 2002, and two earlier dates), while **Topeka, KS** (74°F) tied their monthly record established on January 2, 1939. **Omaha, NE** (68°F on January 8), missed their monthly record by 1°F, while **International Falls, MN** (46°F on January 7), experienced their warmest January day since January 24, 1981. By January 9, record warmth briefly visited **North Carolina**, where records included 70°F in **Greensboro** and 67°F in **Asheville**. A day earlier in **Florida**, however, uncharacteristically cold weather had resulted in low temperatures of 25°F in **Ocala** and 32°F in **Lakeland** and **Orlando**.

A short-lived spell of bitterly cold weather ended across **Alaska**, replaced by a return to the mild weather pattern that has persisted for most of the cold season. Significant precipitation was confined to **Alaska's southern tier**, where January 1-11 totals reached 6.90 inches (232 percent of normal) in **Kodiak** and 7.19 inches (200 percent) on **Annette Island**. Nearly one-third of **Annette Island's** rain, 2.09 inches, fell on January 5. Farther north, temperatures climbed across the **Alaskan mainland**, rebounding in **Bethel** from a daily-record low of -37°F on January 7 to a daily-record high of 40°F on January 9. Meanwhile in **Hawaii**, locally heavy showers developed on January 10-11 from **Kauai to Maui**. Some of the highest 24-hour totals included 2.59 inches in **Kokee, Kauai**; 2.72 inches in **Kahakuloa, Maui**; and 2.79 inches at **Oahu's Wilson Tunnel**. Although dry weather returned to most of **Hawaii** during the ensuing 24-hour period, a few **Big Island** locations reported heavy rain. January 11-12 totals reached 2.75 inches in **Honokaa** and 3.01 inches in **Laupahoehoe**.

December Precipitation Records

Wettest December (Inches) on Record			
<u>Location</u>	<u>Total</u>	<u>Normal</u>	<u>Previous Record/Year</u>
Guam Int'l Airport	25.73	5.37	23.48 in 1997
Eureka, CA	23.31	6.35	21.26 in 1996
St. Petersburg, FL	17.40	2.60	14.62 in 1997
Melbourne, FL	10.28	2.31	7.89 in 1940
Driest December (Inches) on Record			
<u>Location</u>	<u>Total</u>	<u>Normal</u>	<u>Previous Record/Year</u>
Goodland, KS	0.00	0.39	trace in 1906, 1949, 1980, & 1981
Worland, WY	trace	0.25	trace in 1969
N. Platte, NE	trace	0.40	trace in 1894, 1905, & 1988
Omaha, NE	trace	0.92	trace in 1943
Des Moines, IA	trace	1.33	0.09 in 1903
Lees Summit, MO	trace	1.86	0.01 in 1976
Chillicothe, MO	0.01	1.76	0.16 in 1955 & 1976
Ottumwa, IA	0.02	1.32	0.07 in 1976
Kansas City, MO	0.03	1.64	0.03 in 1996
Honolulu, HI	0.04	2.85	0.06 in 1976
Bozeman, MT	0.07	0.57	0.09 in 1980
Driest Month (Inches) on Record			
<u>Location</u>	<u>Total</u>	<u>Previous Record/Month</u>	
Goodland, KS	0.00	0.00 in Oct. 1910, Mar. 1911, Jan. 1933, & Jan. 1986	
Des Moines, IA	trace	0.03 in Oct. 1952 & Nov. 1969	

National Weather Data for Selected Cities

Weather Data for the Week Ending January 11, 2003

Data Provided by Climate Prediction Center (301-763-8000, Ext. 7503)

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	0.1 INCH OR MORE	5.0 INCH OR MORE	
AL BIRMINGHAM	54	38	64	24	46	3	0.85	-0.28	0.65	7.43	145	0.20	30	94	60	0	3	3	1	
AL HUNTSVILLE	53	37	64	25	45	5	0.62	-0.63	0.42	6.34	100	0.20	28	90	74	0	3	3	0	
MOBILE	62	39	69	26	51	1	4.12	3.01	4.10	8.99	169	0.02	3	93	64	0	2	2	1	
AL MONTGOMERY	58	37	67	26	48	1	1.11	0.08	0.84	5.44	98	0.27	46	99	67	0	3	2	1	
AK ANCHORAGE	20	9	30	2	14	-2	0.00	-0.18	0.00	0.85	74	0.00	0	88	75	0	7	0	0	
BARROW	-11	-23	1	-34	-17	-4	0.06	0.06	0.04	0.08	67	0.06	600	81	76	0	7	3	0	
FAIRBANKS	-7	-25	27	-33	-16	-7	0.09	-0.05	0.08	0.50	61	0.09	113	76	71	0	7	2	0	
AK JUNEAU	38	29	47	20	33	6	1.53	0.34	0.94	7.06	116	1.20	179	96	84	0	5	5	1	
KODIAK	34	21	41	6	28	-2	1.44	-0.43	0.81	7.45	86	1.41	132	81	71	0	6	5	1	
NOME	-1	-12	2	-16	-6	-12	0.07	-0.12	0.07	1.04	93	0.07	64	72	66	0	7	1	0	
AZ FLAGSTAFF	44	16	56	7	30	1	0.08	-0.34	0.08	0.69	33	0.00	0	82	30	0	7	1	0	
PHOENIX	70	44	80	39	57	4	0.00	-0.21	0.00	0.16	15	0.00	0	55	33	0	0	0	0	
TUCSON	67	36	77	33	52	1	0.03	-0.22	0.03	0.64	55	0.00	0	69	35	0	0	1	0	
YUMA	71	45	80	38	58	1	0.00	-0.11	0.00	0.04	8	0.00	0	45	34	0	0	0	0	
AR FORT SMITH	57	34	69	27	46	8	1.47	0.92	1.19	5.49	148	0.27	87	92	52	0	5	4	1	
CA LITTLE ROCK	55	35	65	25	45	5	1.51	0.67	0.98	8.24	159	0.07	15	97	60	0	4	4	1	
CA BAKERSFIELD	59	39	66	36	49	3	0.03	-0.18	0.02	1.40	157	0.00	0	93	79	0	0	2	0	
FRESNO	56	39	58	35	48	4	0.25	-0.14	0.11	2.46	157	0.02	9	94	82	0	0	5	0	
LOS ANGELES	69	49	79	44	59	2	0.02	-0.50	0.02	1.81	86	0.00	0	73	51	0	0	1	0	
REDDING	53	43	61	39	48	3	2.16	0.88	1.35	14.83	274	0.08	11	93	83	0	0	5	2	
SACRAMENTO	57	42	60	36	49	4	0.72	0.04	0.35	6.29	221	0.00	0	97	66	0	0	3	0	
SAN DIEGO	69	49	82	47	59	2	0.24	-0.17	0.24	1.98	128	0.00	0	78	55	0	0	1	0	
SAN FRANCISCO	55	46	59	42	51	3	0.79	-0.02	0.55	10.75	320	0.00	0	93	83	0	0	3	1	
STOCKTON	57	40	62	34	48	4	0.81	0.32	0.38	5.04	239	0.01	3	99	93	0	0	4	0	
CO ALAMOSA	43	4	50	0	24	10	0.00	-0.06	0.00	0.24	67	0.00	0	82	55	0	7	0	0	
CO SPRINGS	49	23	59	18	36	8	0.00	-0.08	0.00	0.08	17	0.00	0	74	30	0	7	0	0	
DENVER INTL	53	26	61	19	39	11	0.03	-0.04	0.03	0.08	22	0.03	60	63	31	0	6	1	0	
GRAND JUNCTION	38	19	44	18	29	3	0.05	-0.08	0.05	0.17	28	0.00	0	90	73	0	7	1	0	
PUEBLO	55	21	68	13	38	9	0.00	-0.08	0.00	0.29	66	0.00	0	74	41	0	7	0	0	
CT BRIDGEPORT	39	31	45	26	35	4	1.63	0.81	1.05	5.70	145	1.51	321	84	71	0	5	6	1	
HARTFORD	35	26	41	19	31	4	1.90	1.07	1.10	5.54	136	1.76	367	91	71	0	6	6	1	
DC WASHINGTON	48	34	61	29	41	5	1.98	1.25	1.52	6.43	185	1.98	471	93	68	0	3	3	1	
DE WILMINGTON	45	34	52	28	40	8	1.19	0.41	0.87	5.39	140	1.19	264	92	62	0	2	3	1	
FL DAYTONA BEACH	69	45	77	37	57	-2	2.07	1.41	1.80	9.88	320	0.27	71	97	48	0	0	2	1	
JACKSONVILLE	66	41	75	33	54	1	1.10	0.40	1.09	5.41	177	0.01	2	94	51	0	0	2	1	
KEY WEST	74	64	80	50	69	-2	0.38	-0.13	0.30	4.45	182	0.38	127	90	67	0	0	3	0	
MIAMI	76	60	84	49	68	0	0.36	-0.04	0.19	3.75	156	0.36	164	93	68	0	0	2	0	
ORLANDO	70	46	80	36	58	-3	4.06	3.56	3.50	11.95	460	0.56	193	93	53	0	0	2	2	
PENSACOLA	62	40	70	28	51	-1	1.17	0.12	1.17	4.90	107	0.00	0	87	57	0	1	1	1	
TALLAHASSEE	63	40	69	26	51	-1	0.21	-0.90	0.16	6.67	140	0.05	8	89	56	0	3	2	0	
TAMPA	68	50	77	40	59	-3	2.72	2.25	2.68	14.17	551	0.04	15	96	62	0	0	2	1	
GA WEST PALM	75	56	83	43	65	-2	0.26	-0.41	0.13	2.85	81	0.26	67	89	64	0	0	3	0	
ATHENS	58	38	66	29	48	6	0.70	-0.24	0.57	5.57	131	0.13	24	87	62	0	2	3	1	
ATLANTA	56	39	63	28	47	4	0.55	-0.40	0.26	5.52	126	0.29	52	83	60	0	2	3	0	
AUGUSTA	61	34	69	24	47	2	0.39	-0.51	0.29	4.36	119	0.10	19	96	58	0	3	3	0	
COLUMBUS	59	39	65	29	49	2	0.66	-0.36	0.64	4.54	91	0.02	3	94	50	0	2	2	1	
MACON	60	37	66	27	49	3	0.99	-0.01	0.85	5.53	123	0.14	24	90	52	0	4	3	1	
SAVANNAH	63	40	71	30	52	3	0.32	-0.49	0.32	3.88	118	0.00	0	95	60	0	2	1	0	
HI HILO	81	64	82	61	72	0	0.18	-1.80	0.12	10.48	90	0.00	0	80	67	0	0	2	0	
HONOLULU	82	68	84	64	75	1	0.02	-0.63	0.02	0.04	1	0.00	0	80	70	0	0	1	0	
KAHULUI	83	62	85	57	72	0	0.00	-0.81	0.00	0.55	15	0.00	0	83	76	0	0	0	0	
LIHUE	81	67	83	62	74	2	0.00	-1.09	0.00	1.08	20	0.00	0	87	78	0	0	0	0	
ID BOISE	46	34	51	29	40	11	1.28	0.99	0.85	2.03	131	0.00	0	89	66	0	3	3	1	
LEWISTON	47	35	53	28	41	8	0.28	0.06	0.10	0.93	79	0.25	192	87	72	0	3	5	0	
POCATELLO	41	28	51	21	34	10	0.10	-0.15	0.08	0.44	35	0.01	7	84	73	0	6	3	0	
IL CHICAGO/O'HARE	39	25	60	15	32	9	0.04	-0.38	0.02	1.96	73	0.03	13	84	67	0	6	3	0	
MOLINE	41	23	61	19	32	10	0.06	-0.34	0.06	0.75	31	0.06	27	80	57	0	6	1	0	
PEORIA	41	27	64	19	34	11	0.07	-0.31	0.05	2.28	87	0.07	33	93	71	0	6	2	0	
ROCKFORD	38	22	58	16	30	10	0.09	-0.24	0.09	0.87	39	0.09	47	82	65	0	7	1	0	
SPRINGFIELD	41	25	63	13	33	7	0.09	-0.35	0.08	1.79	64	0.09	38	83	66	0	6	2	0	
IN EVANSVILLE	46	33	58	21	40	8	2.23	1.59	1.33	6.31	162	0.66	183	93	82	0	3	4	2	
FORT WAYNE	36	23	54	14	30	5	0.50	-0.01	0.32	1.79	59	0.18	64	93	76	0	7	3	0	
INDIANAPOLIS	41	27	57	14	34	7	1.32	0.75	0.63	3.40	101	0.38	119	99	83	0	5	5	1	
SOUTH BEND	36	23	55	16	30	5	0.18	-0.38	0.14	1.98	58	0.18	58	87	74	0	6	2	0	
IA BURLINGTON	41	24	62	16	33	9	0.05	-0.28	0.03	0.84	37	0.05	26	88	57	0	6	2	0	
CEDAR RAPIDS	39	20	54	10	29	10	0.02	-0.20	0.02	0.29	18	0.02	15	87	54	0	7	1	0	
DES MOINES	42	22	53	11	32	11	0.01	-0.21	0.01	0.01	1	0.01	8	81	59	0	7	1	0	
DUBUQUE	36	22	53	15	29	11	0.07	-0.21	0.07	0.80	43	0.07	44	84	64	0	7	1	0	
SIoux CITY	41	18	46	9	30	11	0.06	-0.07	0.05	0.19	26	0.06	75	82	59	0	7	2	0	
WATERLOO	38	17	48	7	28	11	0.00	-0.17	0.00	0.32	27	0.00	0	85	61	0	7	0	0	
KS CONCORDIA	48	25	58	17	37	10	0.00	-0.17	0.00	0.11	12	0.00	0	74	55	0	7	0	0	
DODGE CITY	50	25	61	21	38	8	0.01	-0.16	0.01	0.62	72	0.01	11	82	43	0	7	1	0	
GOODLAND	48	23	58	14	35	7	0.17	0.07	0.09	0.17	37	0.17	283	70	48	0	7	2	0	
TOPEKA	51	23	63	15	37	9	0.00	-0.23	0.00	0.05	3	0.00	0	74	50	0	6	0	0	

Based on 1971-2000 normals

*** Not Available

Weather Data for the Week Ending January 11, 2003

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 OR MORE	.50 INCH OR MORE
KY WICHITA	50	28	62	20	39	9	0.00	-0.25	0.00	1.22	82	0.00	0	86	56	0	6	0	0
KY JACKSON	50	36	64	25	43	8	0.95	0.12	0.68	5.14	108	0.85	181	88	62	0	2	4	1
KY LEXINGTON	47	34	58	22	40	7	1.03	0.20	0.52	4.52	100	0.44	94	87	76	0	3	5	1
KY LOUISVILLE	48	36	59	25	42	8	2.73	1.99	1.22	7.34	178	0.73	170	93	72	0	2	4	3
LA PADUCAH	48	35	62	23	41	8	2.50	1.74	1.44	7.45	155	0.38	88	97	71	0	4	4	2
LA BATON ROUGE	63	40	74	29	52	2	1.17	-0.09	1.17	7.15	119	0.00	0	93	55	0	2	1	1
LA LAKE CHARLES	64	41	73	33	53	2	0.50	-0.66	0.37	9.50	180	0.02	3	95	57	0	0	5	0
LA NEW ORLEANS	64	43	73	33	53	0	1.75	0.66	1.75	4.82	85	0.00	0	87	62	0	0	1	1
ME SHREVEPORT	61	38	70	29	49	3	2.10	1.11	1.66	8.36	163	0.00	0	89	55	0	1	2	1
ME CARIBOU	23	3	33	-4	13	2	0.39	-0.33	0.31	3.01	84	0.08	20	90	68	0	7	3	0
ME PORTLAND	31	20	39	13	26	3	0.41	-0.53	0.16	4.81	101	0.30	56	85	57	0	7	4	0
MD BALTIMORE	45	32	57	25	38	5	2.09	1.31	1.68	7.05	186	2.09	464	96	74	0	4	3	1
MA BOSTON	39	28	44	23	33	2	1.49	0.65	0.60	6.76	160	1.46	298	94	67	0	6	5	1
MA WORCESTER	32	22	40	18	27	2	1.47	0.57	0.77	5.90	137	1.39	267	96	71	0	7	6	1
MI ALPENA	33	22	44	18	28	8	0.00	-0.41	0.00	0.52	25	0.00	0	88	66	0	7	0	0
MI GRAND RAPIDS	36	24	53	21	30	6	0.09	-0.37	0.09	1.97	67	0.00	0	87	66	0	7	1	0
MI HOUGHTON LAKE	32	20	45	15	26	6	0.07	-0.29	0.07	0.41	21	0.00	0	88	78	0	7	1	0
MI LANSING	36	23	52	18	29	6	0.12	-0.24	0.09	0.88	37	0.09	45	89	76	0	7	2	0
MI MUSKOGON	36	25	51	21	31	6	0.00	-0.52	0.00	0.85	29	0.00	0	86	69	0	7	0	0
MI TRAVERSE CITY	34	24	45	19	29	6	0.00	-0.64	0.00	0.26	9	0.00	0	87	65	0	7	0	0
MN DULUTH	27	11	35	4	19	10	0.00	-0.17	0.00	0.81	78	0.00	0	86	70	0	7	0	0
MN INT'L FALLS	25	6	35	-5	15	12	0.00	-0.14	0.00	0.26	33	0.00	0	87	64	0	7	0	0
MN MINNEAPOLIS	32	18	42	12	25	11	0.00	-0.20	0.00	0.21	19	0.00	0	83	65	0	7	0	0
MN ROCHESTER	32	18	41	10	25	12	0.00	-0.17	0.00	0.56	50	0.00	0	85	69	0	7	0	0
MN ST. CLOUD	30	14	37	6	22	13	0.00	-0.14	0.00	0.22	29	0.00	0	91	61	0	7	0	0
MS JACKSON	57	37	71	25	47	2	1.57	0.34	1.53	6.34	105	0.04	6	93	66	0	3	3	1
MS MERIDIAN	57	37	70	24	47	1	1.82	0.58	1.80	7.93	132	0.01	1	96	71	0	3	3	1
MS TUPELO	55	37	67	22	46	5	1.09	-0.20	1.01	7.20	105	0.08	11	96	75	0	3	3	1
MO COLUMBIA	43	26	67	11	35	7	0.49	0.11	0.27	2.58	96	0.49	233	88	63	0	5	3	0
MO KANSAS CITY	50	26	61	17	38	10	0.00	-0.28	0.00	0.03	2	0.00	0	78	47	0	6	0	0
MO SAINT LOUIS	45	30	69	20	37	7	0.75	0.27	0.43	2.62	84	0.60	222	86	65	0	5	4	0
MO SPRINGFIELD	47	29	66	15	38	6	0.28	-0.18	0.19	2.98	87	0.09	35	80	63	0	5	3	0
MT BILLINGS	48	30	56	23	39	15	0.00	-0.17	0.00	0.25	33	0.00	0	58	29	0	5	0	0
MT BUTTE	38	16	43	3	27	10	0.01	-0.10	0.01	0.15	25	0.00	0	83	53	0	7	1	0
MT GLASGOW	36	18	45	9	27	16	0.01	-0.07	0.01	0.06	14	0.01	20	85	73	0	7	1	0
MT GREAT FALLS	45	27	51	20	36	14	0.00	-0.17	0.00	0.37	49	0.00	0	72	40	0	6	0	0
MT HAVRE	39	17	52	7	28	13	0.04	-0.07	0.02	0.10	18	0.02	33	84	67	0	7	3	0
MT KALISPELL	36	19	43	7	28	7	0.50	0.17	0.19	1.35	73	0.11	58	94	84	0	7	5	0
MT MISSOULA	38	27	44	24	33	11	0.10	-0.15	0.06	0.70	54	0.07	50	90	79	0	7	4	0
NE GRAND ISLAND	46	22	56	17	34	11	0.00	-0.11	0.00	0.02	3	0.00	0	77	50	0	7	0	0
NE LINCOLN	46	21	53	12	34	11	0.01	-0.15	0.01	0.02	2	0.01	11	79	48	0	7	1	0
NE NORFOLK	44	23	51	12	34	13	0.03	-0.08	0.02	0.08	11	0.03	50	78	56	0	7	2	0
NE NORTH PLATTE	49	16	63	10	32	9	0.00	-0.08	0.00	0.00	0	0.00	0	92	39	0	7	0	0
NE OMAHA	43	21	49	13	32	10	0.01	-0.14	0.01	0.01	1	0.01	11	82	53	0	7	1	0
NE SCOTTSBLUFF	51	20	60	13	35	11	0.00	-0.11	0.00	0.00	0	0.00	0	70	37	0	7	0	0
NE VALENTINE	51	20	61	10	35	14	0.00	-0.06	0.00	0.04	11	0.00	0	79	55	0	7	0	0
NV ELY	44	16	58	4	30	5	0.03	-0.11	0.02	0.14	24	0.00	0	84	59	0	7	2	0
NV LAS VEGAS	60	39	65	36	49	3	0.00	-0.10	0.00	0.07	15	0.00	0	47	36	0	0	0	0
NV RENO	50	29	63	23	40	8	0.37	0.18	0.31	2.20	222	0.00	0	85	64	0	6	3	0
NH WINNEMUCCA	48	28	62	21	38	9	0.10	-0.09	0.08	0.39	42	0.00	0	84	65	0	7	2	0
NH CONCORD	31	17	37	10	24	3	0.17	-0.48	0.08	3.64	109	0.07	19	96	66	0	7	3	0
NJ NEWARK	43	32	53	28	37	5	2.68	1.83	1.81	6.38	157	2.68	547	87	69	0	5	4	2
NM ALBUQUERQUE	50	27	58	23	38	3	0.00	-0.11	0.00	0.36	65	0.00	0	64	31	0	7	0	0
NY ALBANY	34	22	42	14	28	4	1.26	0.71	0.69	5.15	173	1.18	381	91	72	0	6	6	1
NY BINGHAMTON	34	25	46	19	29	6	2.19	1.62	1.09	4.74	141	2.00	625	93	76	0	6	7	2
NY BUFFALO	35	25	49	18	30	4	0.80	0.04	0.24	4.89	116	0.53	123	94	76	0	7	6	0
NY ROCHESTER	34	24	48	19	29	3	0.73	0.20	0.37	4.42	146	0.65	217	92	80	0	6	6	0
NY SYRACUSE	36	25	49	19	30	6	1.07	0.49	0.42	3.62	105	0.78	236	88	71	0	6	7	0
NC ASHEVILLE	54	31	62	25	42	6	0.71	-0.10	0.25	6.86	178	0.46	98	96	64	0	5	4	0
NC CHARLOTTE	57	36	66	28	47	5	0.51	-0.32	0.22	5.45	149	0.49	102	90	53	0	2	4	0
NC GREENSBORO	56	37	66	28	47	9	1.40	0.66	0.70	5.53	158	1.10	256	87	54	0	3	4	1
NC HATTERAS	59	47	67	39	53	6	1.10	-0.16	1.06	3.44	65	1.10	151	90	67	0	0	2	1
NC RALEIGH	57	37	67	26	47	7	0.76	-0.04	0.42	5.74	164	0.70	149	91	64	0	2	4	0
NC WILMINGTON	63	41	70	29	52	6	0.90	-0.04	0.83	3.43	79	0.90	167	10	60	0	2	2	1
ND BISMARCK	34	12	46	0	23	12	0.03	-0.05	0.03	0.35	71	0.03	60	86	78	0	7	1	0
ND DICKINSON	34	17	42	5	25	10	0.01	-0.05	0.01	0.36	97	0.01	33	92	69	0	7	1	0
ND FARGO	29	14	38	-9	21	13	0.00	-0.15	0.00	0.83	126	0.00	0	88	75	0	7	0	0
ND GRAND FORKS	26	11	35	-8	19	13	0.00	-0.13	0.00	0.32	51	0.00	0	91	77	0	7	0	0
ND JAMESTOWN	27	9	38	-5	18	8	0.07	-0.04	0.06	0.31	62	0.07	117	98	81	0	7	2	0
ND WILLISTON	31	8	40	-5	20	11	0.09	-0.02	0.05	0.66	105	0.04	67	97	83	0	7	3	0
OH AKRON-CANTON	36	26	51	22	31	4	1.36	0.78	0.49	3.51	106	0.60	182	98	92	0	6	6	0
OH CINCINNATI	43	30	55	20	37	6	2.17	1.48	0.76	5.80	158	0.90	231	93	81	0	5	4	3
OH CLEVELAND	37	28	51	24	33	6	1.11	0.54	0.37	4.09	118	0.38	119	99	84	0	7	6	0
OH COLUMBUS	40	31	53	24	35	5	1.22	0.65	0.54	3.42	105	0.65	203	93	79	0	5	6	1
OH DAYTON	38	27	53	20	33	6	1.45	0.84	0.57	3.69	108	0.48	137	92	75	0	5	4	1
OH MANSFIELD	35	26	51	21	31	5	1.00	0.39	0.42	3.02	84	0.28	80	99	76	0	7	4	0

Weather Data for the Week Ending January 11, 2003

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 OR MORE	.50 INCH OR MORE
OK	38	25	55	17	32	7	0.42	-0.04	0.22	2.77	96	0.10	38	88	73	0	7	4	0
	36	27	52	23	31	5	1.06	0.52	0.28	3.44	105	0.53	171	98	90	0	7	6	0
	55	31	61	22	43	6	0.00	-0.37	0.00	1.84	88	0.00	0	87	47	0	5	0	0
	56	33	65	24	44	8	0.19	-0.20	0.12	2.87	108	0.12	55	87	57	0	4	2	0
OR	53	43	57	34	48	6	4.19	2.03	1.11	15.72	135	2.95	240	94	84	0	0	7	4
	40	25	46	11	33	9	0.73	0.45	0.61	1.98	136	0.01	6	91	81	0	7	4	1
	53	43	57	36	48	9	4.26	2.58	1.95	13.52	146	1.47	153	94	76	0	0	7	4
	49	39	58	35	44	6	1.22	0.67	0.69	7.42	231	0.22	71	98	78	0	0	7	1
	52	38	61	32	45	12	1.16	0.86	0.44	2.92	177	0.69	406	85	64	0	2	6	0
	50	41	59	34	46	7	3.45	2.30	1.43	9.55	150	1.55	235	93	86	0	0	7	3
	53	43	58	34	48	9	3.60	2.30	1.58	12.79	178	1.59	215	89	78	0	0	7	3
PA	38	27	42	21	33	5	1.07	0.31	0.65	6.01	157	1.06	241	91	77	0	5	4	1
	37	26	51	22	32	3	1.14	0.48	0.44	4.34	106	0.36	97	95	85	0	6	6	0
	38	29	42	21	33	3	1.90	1.29	1.35	6.48	181	1.88	537	98	79	0	5	4	1
	44	33	50	28	39	5	1.34	0.56	1.11	5.39	144	1.34	305	88	69	0	2	3	1
	41	29	56	24	35	6	1.68	1.10	1.22	4.02	126	1.45	439	98	81	0	5	5	1
	38	28	49	23	33	5	1.33	0.83	0.76	4.78	168	1.31	452	91	71	0	5	4	2
	37	28	43	19	33	6	1.66	1.08	1.02	4.97	152	1.61	488	10	81	0	5	6	2
RI	42	29	53	26	35	5	1.88	0.93	0.75	6.96	148	1.81	329	86	64	0	6	5	2
SC	62	42	69	33	52	3	0.26	-0.59	0.21	-9.99	-999	0.05	10	95	55	0	0	2	0
	63	41	71	31	52	4	1.14	0.28	0.98	4.39	117	0.16	32	93	56	0	1	3	1
	60	38	69	29	49	4	0.06	-0.88	0.02	4.20	107	0.04	7	88	56	0	2	4	0
	58	37	67	29	47	6	0.74	-0.21	0.29	6.93	157	0.46	84	95	57	0	3	3	0
SD	35	21	42	6	28	16	0.02	-0.08	0.02	0.32	73	0.02	33	90	76	0	7	1	0
	40	25	47	12	32	17	0.04	-0.04	0.04	0.42	95	0.04	80	92	62	0	6	1	0
	51	19	61	11	35	12	0.00	-0.08	0.00	0.04	9	0.00	0	77	33	0	7	0	0
	37	18	45	10	27	13	0.07	-0.01	0.07	0.22	39	0.07	140	88	62	0	7	1	0
TN	53	33	64	25	43	9	0.69	-0.05	0.41	5.06	132	0.68	158	96	59	0	5	4	0
	56	37	62	26	47	7	0.53	-0.58	0.28	7.19	132	0.45	69	89	59	0	3	3	0
	54	37	60	30	45	7	0.78	-0.24	0.37	6.03	119	0.68	117	92	60	0	3	4	0
	55	40	65	29	47	7	0.98	-0.02	0.61	9.74	156	0.08	14	83	65	0	2	4	1
	52	36	61	22	44	7	0.80	-0.12	0.39	6.22	123	0.41	79	92	70	0	3	3	0
TX	63	37	69	31	50	7	0.01	-0.25	0.01	1.33	94	0.00	0	73	46	0	2	1	0
	53	28	64	20	40	5	0.00	-0.17	0.00	1.10	157	0.00	0	80	38	0	5	0	0
	67	34	76	27	51	1	0.61	0.11	0.59	4.52	166	0.00	0	77	49	0	4	2	1
	65	43	74	35	54	2	0.59	-0.70	0.53	8.21	137	0.00	0	95	55	0	0	2	1
	74	49	79	37	62	3	0.07	-0.15	0.01	1.26	102	0.02	15	90	60	0	0	3	0
	70	46	75	37	58	2	0.49	0.12	0.49	3.19	164	0.00	0	86	62	0	0	1	0
	69	41	77	30	55	4	0.00	-0.11	0.00	0.31	38	0.00	0	75	47	0	1	0	0
	56	29	63	25	43	-1	0.00	-0.13	0.00	1.65	196	0.00	0	73	32	0	5	0	0
	63	37	69	30	50	6	1.10	0.57	1.09	4.13	144	0.00	0	87	44	0	2	2	1
	65	49	71	42	57	1	0.39	-0.46	0.38	3.64	91	0.00	0	93	59	0	0	2	0
	66	43	73	35	54	2	0.70	-0.12	0.67	5.65	136	0.00	0	94	58	0	0	3	1
	59	27	67	22	43	5	0.00	-0.11	0.00	1.57	215	0.00	0	82	34	0	6	0	0
	60	31	65	26	46	3	0.00	-0.12	0.00	1.05	148	0.00	0	72	41	0	4	0	0
	63	35	68	28	49	4	0.00	-0.17	0.00	1.37	133	0.00	0	75	38	0	3	0	0
	69	40	75	33	54	4	0.16	-0.23	0.13	2.53	116	0.00	0	86	44	0	0	2	0
	70	42	78	35	56	3	0.19	-0.36	0.18	2.62	94	0.00	0	89	50	0	0	2	0
	65	38	71	29	51	5	0.33	-0.17	0.33	7.63	251	0.00	0	91	59	0	1	1	0
	61	32	69	25	47	7	0.01	-0.30	0.01	1.88	102	0.00	0	79	51	0	4	1	0
UT	45	29	50	25	37	8	0.23	-0.05	0.23	0.48	35	0.00	0	91	55	0	6	1	0
VT	31	18	43	10	25	5	0.98	0.52	0.67	1.96	79	0.68	252	90	65	0	7	3	1
VA	53	32	64	21	43	8	1.02	0.26	0.67	5.07	138	1.02	232	90	63	0	5	3	1
	55	39	66	31	47	6	0.36	-0.44	0.34	4.52	129	0.36	77	96	66	0	3	2	0
	54	35	67	26	45	8	1.23	0.44	0.91	4.55	127	1.10	239	98	70	0	3	3	1
	53	34	66	25	43	7	1.07	0.42	0.62	4.94	152	1.05	276	88	66	0	4	4	1
	46	31	58	23	39	7	2.12	1.45	1.73	5.73	166	2.12	544	91	60	0	4	3	1
WA	51	39	56	30	45	8	3.07	1.43	1.13	9.90	112	2.51	267	96	83	0	1	7	3
	50	40	55	29	45	5	6.81	3.77	2.49	20.25	125	5.52	319	95	88	0	2	7	4
	49	41	56	35	45	5	2.76	1.63	0.94	8.30	132	2.32	357	92	75	0	0	7	3
	39	29	46	21	34	8	1.68	1.25	0.43	4.14	166	0.87	363	96	83	0	4	7	0
	45	32	52	29	38	10	1.11	0.83	0.39	4.00	260	0.51	319	95	80	0	4	7	0
WV	48	30	63	19	39	8	0.94	0.24	0.43	3.95	113	0.91	228	78	67	0	4	4	0
	50	34	69	27	42	8	0.80	0.11	0.34	3.74	101	0.80	205	95	64	0	3	3	0
	46	28	65	20	37	7	1.09	0.35	0.48	3.54	91	1.08	251	97	66	0	5	4	0
	49	34	67	28	42	9	0.88	0.16	0.67	3.89	103	0.79	193	96	67	0	3	5	1
WI	32	15	41	4	23	10	0.02	-0.17	0.02	0.67	59	0.02	18	90	52	0	7	1	0
	33	19	47	11	26	9	0.00	-0.25	0.00	0.73	47	0.00	0	88	62	0	7	0	0
	35	18	48	8	27	10	0.01	-0.20	0.01	0.37	27	0.01	8	89	51	0	7	1	0
	36	19	53	10	28	10	0.02	-0.25	0.02	0.69	38	0.02	13	79	62	0	7	1	0
	38	24	56	15	31	9	0.02	-0.38	0.02	0.77	32	0.02	9	81	67	0	6	1	0
WY	43	23	49	14	33	11	0.00	-0.11	0.00	0.19	28	0.00	0	71	48	0	7	0	0
	47	28	55	22	37	11	0.00	-0.08	0.00	0.11	22	0.00	0	52	35	0	6	0	0
	42	20	52	13	31	11	0.00	-0.11	0.00	0.18	27	0.00	0	69	57	0	7	0	0
	51	20	61	16	36	15	0.00	-0.17	0.00	0.18	23	0.00	0	72	47	0	7	0	0

Based on 1971-2000 normals

*** Not Available

NOTE: These data are preliminary and subject to change. In the past, precipitation totals from a number of stations have been incomplete.

National Agricultural Summary

January 6 - 12, 2003

Weekly National Agricultural Summary provided by USDA/NASS

HIGHLIGHTS

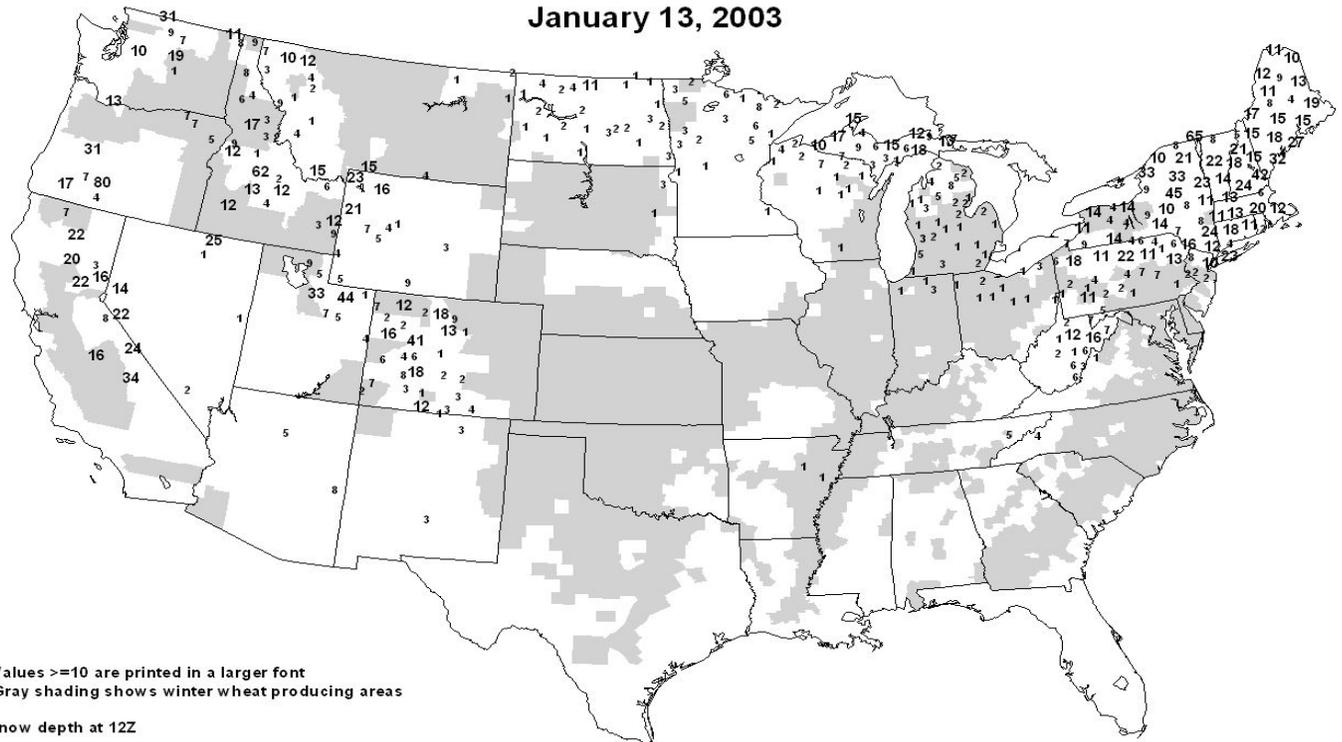
Unseasonably warm weather prevailed across most of the Nation during the week. Many locations in the upper Mississippi Valley and northern Great Plains experienced record and near-record daily highs. Winter wheat fields on the northern High Plains benefited from the mild weather, but remained exposed to potentially damaging winds and cold weather. In the southern Great Plains, above normal temperatures promoted vigorous growth of winter grains and forages until a late-week cold front delivered freezing temperatures as far south as central Texas. Temperatures averaged near normal along the eastern Gulf Coast,

with below-freezing overnight lows reaching Florida's citrus region. Some young citrus trees suffered minor bloom injury, but there was no significant leaf burn or wood damage. Also, maturing fruit experienced very little damage. Most of the Nation also experienced dry weather during the week. The persistent stormy weather pattern abated in the Pacific Northwest and favorably dry weather returned to the Southeast. Precipitation hampered some field and orchard work in northern California, but delays were mostly brief. Winter tillage and other field work resumed in parts of the southern Great Plains, lower Mississippi Valley, and Southeast.

Snow Depth

(Inches)

January 13, 2003



Values ≥ 10 are printed in a larger font
 Gray shading shows winter wheat producing areas

Snow depth at 12Z

The NWS cooperative network is the principal source of the snow depth reports

NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY

2002 United States Weather Review

Annual Weather Review provided by Douglas LeComte, CPC/NCEP/NWS/NOAA; Annual national rankings and time series provided by NCDC

Highlights

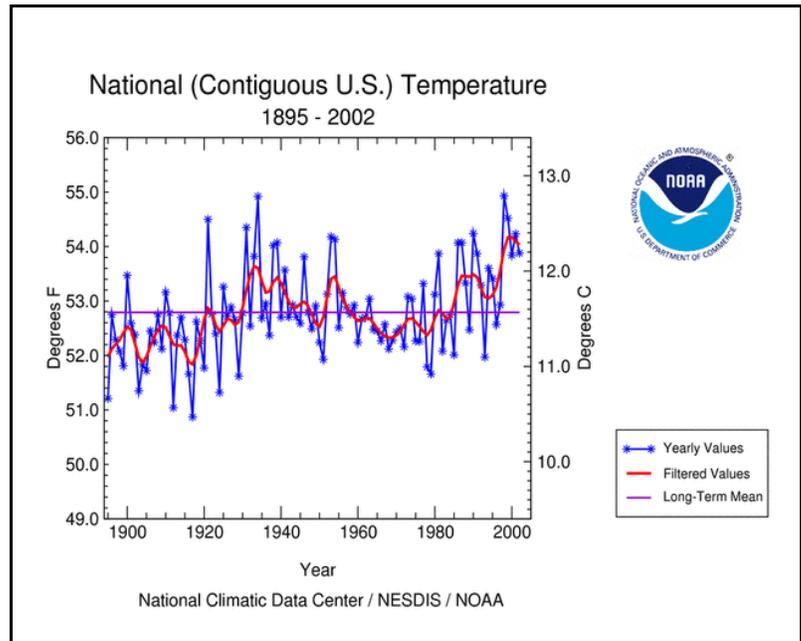
According to the National Climatic Data Center (NCDC), most of the country was abnormally warm once again in 2002, resulting in this being one of the warmest 15 years since records began in 1895. Below-average precipitation led to persistent or worsening drought for much of the nation, although a series of storms ended drought across the East Coast by year's end, and wet conditions prevailed from the lower Mississippi Valley into the Tennessee and Ohio River Valleys for much of the year. Major flooding hit south-central Texas this summer. Drought affected farm areas in the High Plains this spring and summer, but several timely frontal passages in July and August prevented drought from becoming widespread over the Corn Belt. Six states—Wyoming, Nebraska, Colorado, Utah, Nevada, and Arizona—recorded one of the driest 7 years on record, with Colorado recording its driest year ever.

Winter (December 2001-February 2002)

Winter 2001-2002 was generally mild and tranquil, with less than normal snowfall, although there were some notable exceptions. A series of early winter storms crossed the Northwest from Washington and Oregon into Idaho and northern California, ending drought across most of the region. In contrast, precipitation was scarce across the plains of Montana and southward through Wyoming and Colorado. Extraordinarily dry weather covered the Southwest from southern California through Arizona and New Mexico. Cumulative precipitation from the Southwest through the Rockies into the High Plains totaled less than 50% of normal. Nationally, this was the ninth mildest winter (December-February) on record, as nearly the entire country east of the Continental Divide experienced above-normal warmth. Temperatures for the 3-month period averaged 5 to 10 degrees F above normal over the Midwest and Northeast. Ten states in the northeastern quadrant of the country measured their mildest winter on record.

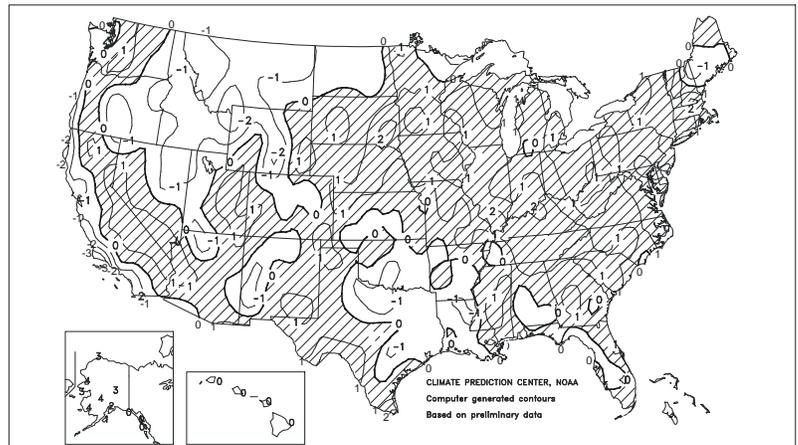
For the central and eastern parts of the country, the pattern featured mild weather with little snow, the main exception being parts of the Great Lakes region, which saw heavy lake-effect snows. A marked dearth of winter storms led to near-record dryness from Maine to Georgia, resulting in unseasonably low groundwater, lake, and stream levels. Precipitation from the mid-Atlantic region to the Gulf Coast totaled less than 75% of normal, with several areas recording under 50% of normal. New Jersey and Maryland measured their driest winter of record.

Despite a major snowstorm during the first few days of January that swept across the Southeast, most locations east of the Continental Divide registered meager snowfall amounts this season. The New York City-Washington urban corridor saw only 3 to 5 inches of snow for the entire snow season. New York City's 3.5 inches was its second lowest snowfall total on record.



Departure of Average Temperature from Normal (°F)

JAN - DEC 2002



The most damaging and expensive storm of the winter season spread rain, ice, and snow from New Mexico to Maine from January 30 to February 1. A thick layer of ice toppled trees and power lines and left hundreds of thousands of customers without power in Missouri, Kansas, and Oklahoma. The storm did, however, bring much-needed moisture to the Plains' wheat crop. The cold air associated with the storm left the northern High Plains' winter wheat crop exposed to temperatures as low as -20F.

Spring (March-May)

Wintry weather finally took hold over most of the nation during March, and an active storm pattern brought normal precipitation to many areas along the East Coast for the first time since August or September. This was the second coldest March in the past 20 years nationally. Monthly temperatures averaged 10 to 20 degrees F below normal across the northern Plains. Following March, extremes of temperature alternated during the rest of the spring, but Montana still

ended up with its fourth coldest spring since 1895. Record heat enveloped the country during the middle of April, sending mercury readings into the 90s across the Midwest and Northeast. Some 300 daily record high temperature records were set during April 14-20.

Only a few weeks later, a dramatic change in circulation brought polar air southward from Canada, resulting in frigid air covering a large expanse of the nation and nearly 500 low temperature records during May 17-25. A number of locations from the Tennessee Valley into the mid-Atlantic region registered their latest freezes on record during this cold snap. The seesaw continued as days later, a ridge of high pressure building up over the Southwest brought extreme heat to the West and Plains. Temperatures soaring into the 90s and 100s during May 30 to June 1 broke some 250 daily records and three dozen May monthly records.

Tornado alley was relatively quiet this spring, due to abnormally dry weather in the central parts of the country. But there were a number of outbreaks of severe weather from late spring into summer. About 50 tornadic thunderstorms hit central and eastern parts of the country during the last 10 days of April. One of the strongest East Coast tornadoes on record, an F4, struck La Plata, Maryland on the 28th. The tornado was part of a storm system that brought heavy precipitation to many areas, including up to 20 inches of snow in Wisconsin.

Abnormally high pressure aloft kept southern Alaska unusually dry this spring, with the greatest deficits in the Panhandle. Although Anchorage recorded its all-time record 24-hour snowfall (26.7 inches) on March 16-17, most of the rest of the state saw dry conditions this month, especially across the south. Juneau saw its second driest April, with 0.47 inches (15% of normal) of precipitation. Spring precipitation totaled less than 50% of normal across the Panhandle.

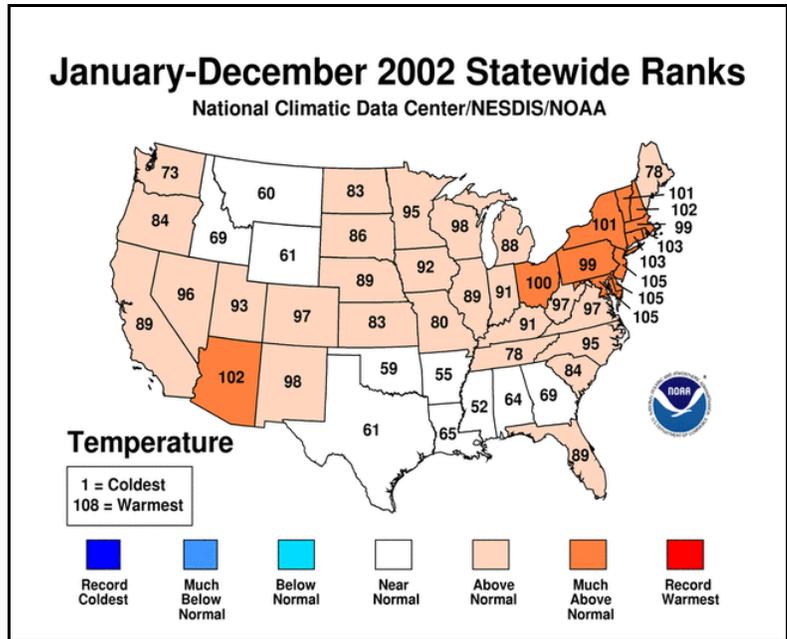
Drought intensified over the Southwest, Rockies, and High Plains, as 3-month precipitation totaled under 50% of normal across much of this region. Less than 25% of normal precipitation fell over the plains of Colorado, New Mexico, Arizona, southern California, and southern and eastern Utah. Colorado recorded its driest spring on record, and Arizona measured its second driest. The 12-month period ending in May was the driest ever for both states.

In contrast, the Midwest saw above-normal wetness, with spring precipitation 150% of normal across much of the Ohio Valley. Indiana saw its third wettest spring on record. Repeated rounds of heavy rain led to persistent lowland flooding from the southeastern Plains to the Ohio Valley during May, when more than a foot of rain fell on parts of Indiana, Illinois, and Missouri. Heavy rains led to significant fieldwork delays in the Corn Belt.

Summer (June-August)

Heat and dryness contributed to huge wildfires in Colorado and Arizona from late spring into early summer and an active fire season throughout the West this year. Five western states—Nevada, Utah, Arizona, California, and Colorado—measured one of the five driest summers since 1895. This was the driest first half of a year (January-June) on record in Arizona, Utah, and Colorado.

By the end of June, wildfires had burned 2.8 million acres across the



country, with most of the acreage in the parched West. Record large fires burned in Arizona, Colorado, and Oregon this spring and summer. Nationally, fires burned 7.1 million acres by year's end, nearly double the 10-year average. This was the second worst fire year in the past 14 years.

Summer rainfall totaled less than one-half of normal from western South Dakota to eastern Kansas and over large parts of Colorado and the other western states. But heavy rain and snow relieved drought in northern Montana in June, resulting in summer rainfall more than twice normal.

In late June, drought indices showed some 50% of the contiguous United States in drought, with severe drought covering nearly 40% of the country. Over one-quarter of the nation endured extreme drought, primarily the Southwest and the southeastern Piedmont areas. In addition, abnormal dryness covered about one-half of Alaska and lingered over parts of Hawaii. The last time severe drought covered a larger area occurred during the mid-1950s mini-dust bowl era.

One area with a quickly disappearing drought this year was south-central Texas, as an upper-level low pressure system delivered torrential rains from the end of June into the first week of July. Over a foot of rain brought devastating floods to the San Antonio region, with thousands of people displaced from their homes. San Antonio measured 16.16 inches of rain from June 30 to July 6, and the city's monthly total of 16.92 inches (833% of normal) was by far its wettest July total ever.

Strong thunderstorms also brought widespread flooding to North Dakota and western Minnesota in June, resulting in considerable crop and property damage.

A series of heat waves affected the country at various times this summer. Much of the nation sweltered from June 29 to July 4 as the Bermuda High pumped tropical air northward. Bismark, North Dakota set an all-time high mark with 111 degrees F on June 29. On Independence Day, temperatures neared triple digit levels in the mid-Atlantic region. Both Baltimore and Richmond registered maximum

readings of 100 degrees F.

Cold fronts brought cooler air to central and eastern parts of the country temporarily after July 4, but the heat continued in the West, with July 10 entering the record books as one of the hottest days in recent history across the interior Pacific states and the western Great Basin. Readings reached 115 degrees F in the Sacramento Valley and exceeded 100 degrees F as far north as Washington. Reno, Nevada's maximum of 108 degrees F on July 10 was its all-time highest, and this record was tied just one day later. During July 7-14, triple-digit heat broke more than 500 daily high temperature records and numerous all-time highs.

In the Plains, extreme heat further aggravated drought conditions in July. During the 15th to 21st, thermometers from South Dakota to Kansas hit the century mark each day. Omaha, Nebraska reached 104 degrees F on the 22nd before a cold front brought temporary relief. Another heat wave covered central and northeastern parts of the country in late July and early August, followed by a return of the heat to the Northeast in mid-August. Washington DC recorded eight consecutive days of 95-degree or higher temperatures from August 12th to 19th, tying a record for the longest stretch of 95-degree readings.

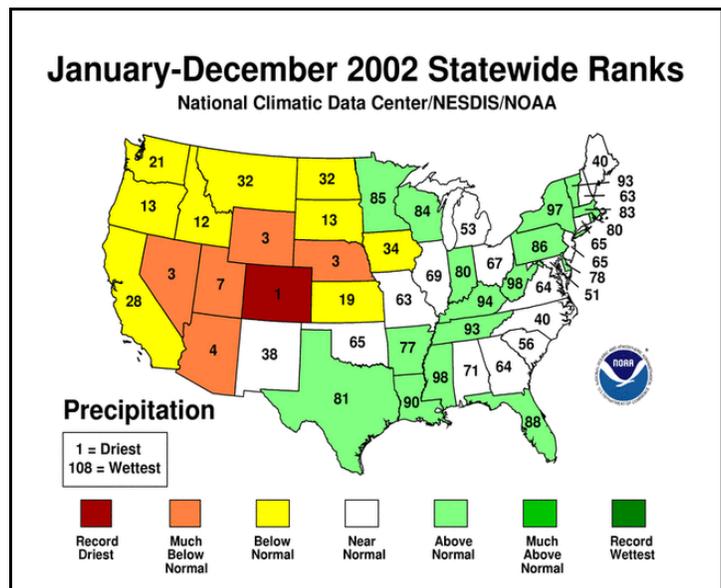
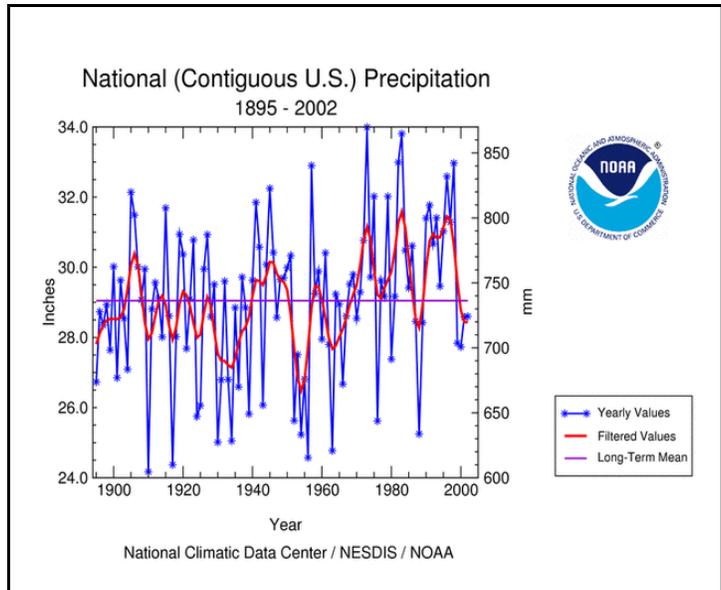
Nationally, this was the third hottest summer (June-August) in over 100 years of record, only exceeded by the summers of 1934 and 1936. The hot weather aggravated drought in many areas, especially the East and the western Plains states, significantly cutting crop yields. Although several bouts of showers eased dryness over most of the Corn Belt, summer rainfall totaled less than 75% of normal over southern parts of Illinois, Indiana, and Michigan, and across much of Ohio. A dry pocket in northwestern Ohio saw less than 50% of normal rainfall. Hot, dry conditions in July severely stressed reproductive to filling crops in the westernmost Corn Belt.

Autumn (September-November)

Twelve named tropical storms formed in the Atlantic basin during 2002, four becoming hurricanes. The two most notable storms took quite similar tracks from the Gulf of Mexico into the central Gulf states. In late September, Isidore slammed into southern Mississippi at tropical storm strength, its remains bringing tropical deluges of 2 to 8 inches as far north as the Ohio Valley. On October 3, Hurricane Lili, the first storm to make landfall at hurricane strength since 1999, hit the central coast of Louisiana, bringing wind gusts to 92 mph and inundating low-lying areas. As with Isidore, tropical rains extended far northward into the Ohio Valley.

October brought a change in the weather pattern to most of the country, as the Bermuda High responsible for much of the summer heat retreated and the westerlies dropped southward, allowing cold Canadian air to penetrate the U.S. October 2002 was nearly opposite to October 2001, with below-normal temperatures and bouts of rain and snow affecting many states. One nor'easter early in the month ended many aspects of the long-term drought across the Eastern Seaboard, lifting water tables and adding substantially to reservoir levels. Tropical Storm Kyle, which had been meandering around the Atlantic for nearly 3 weeks, grazed the South Carolina coast on October 10-11, further eating away at the long-term drought.

October brought an early winter to many parts of the nation, as Canadian high pressure plunged southward. By the last day of the



month, minimum temperatures hit sub-zero levels from Oregon to North Dakota, and dipped to -11 degrees F in Montana.

The stormy weather pattern lasted through year's end, virtually ending the long-term drought over the Eastern Seaboard, but bringing violent weather to some areas.

Cold air behind an intense cold front sweeping across the central parts of the country clashed with unseasonably mild and humid air in the East on November 10, setting the stage for the year's deadliest outbreak of severe weather. Tornadoes in seven states from Mississippi, Alabama, and Georgia northward to Ohio and Indiana left 36 people dead. From late Sunday on the 10th through Monday the 11th, there were more than 70 tornadoes, 250 damaging wind events, and 160 large hail occurrences from Louisiana across the Tennessee and Ohio Valleys to Pennsylvania and Georgia.

A few days earlier, a huge Pacific storm hit the Pacific states with a barrage of wind, waves, rain, and mountain snows. The first major storm of the season slammed the western states from November 7 to 9, bringing wind gusts of 55 mph to the San Francisco area and 2 to

3 feet of snow to the Sierra Nevada. The 2- to 4-inch rainfall amounts that covered large parts of California, Oregon, and Nevada constituted a big portion of the normal annual rainfall in some of the more arid locations. But the moisture was not entirely unwelcomed, as it put a big dent in the ongoing drought. Downtown Los Angeles recorded 2.31 inches of rain during the storm, more than the city received during the entire year-to-date through November 6 (1.61 inches). Nevertheless, even with the heavy rain, the city's year-to-date total through November 10 of 3.92 inches was just 31 percent of normal. The 12 months ending October were coastal southern California's driest such period since at least 1895.

Nor'easters brought heavy rain, snow, or ice to the Eastern Seaboard on November 5-6 and 16-17, further eating away at any lingering drought. The freezing rain that fell on New England on Saturday the 16th turned into a major ice storm for Connecticut.

Conditions were abnormally dry north and west of the storm track this autumn. Reduced soil moisture and bouts of cool weather hindered winter wheat establishment across the northern and central Plains and the Northwest. Precipitation during the 3-month period totaled under 50% of normal from Michigan into northeast Oklahoma. In Illinois, Peoria recorded only 34% of its normal September-November precipitation, setting a record for the city's driest autumn. Most of Washington and Oregon recorded less than 50% of normal precipitation.

December

One of the most damaging ice storms of the year took place on December 4. Freezing rain fell from southern Virginia to northern Georgia, with the Carolinas bearing the brunt of the ice storm. A layer of ice one-half to one-inch thick toppled trees and power lines, leaving 1.5 million customers without power in North Carolina and

many others in the dark in South Carolina. The same storm spread 5 to 8 inches of snow from Washington DC to New York City on the 5th, resulting in more snow in one day than the I-95 corridor saw during the entire 2001-2002 winter season. A number of Pacific storms pelted the West Coast states with strong winds, heavy rain, and mountain snows during December, the largest bearing down on Washington, Oregon, and California from the 13th to the 16th. This storm dropped 7 inches of rain near San Francisco and brought river flooding to northern California. Winds gusted to 90 mph along the Oregon coast. Winds measured at 82 mph caused major property damage to Reno, Nevada on the 14th. Another Pacific storm a few days later brought street flooding to San Francisco.

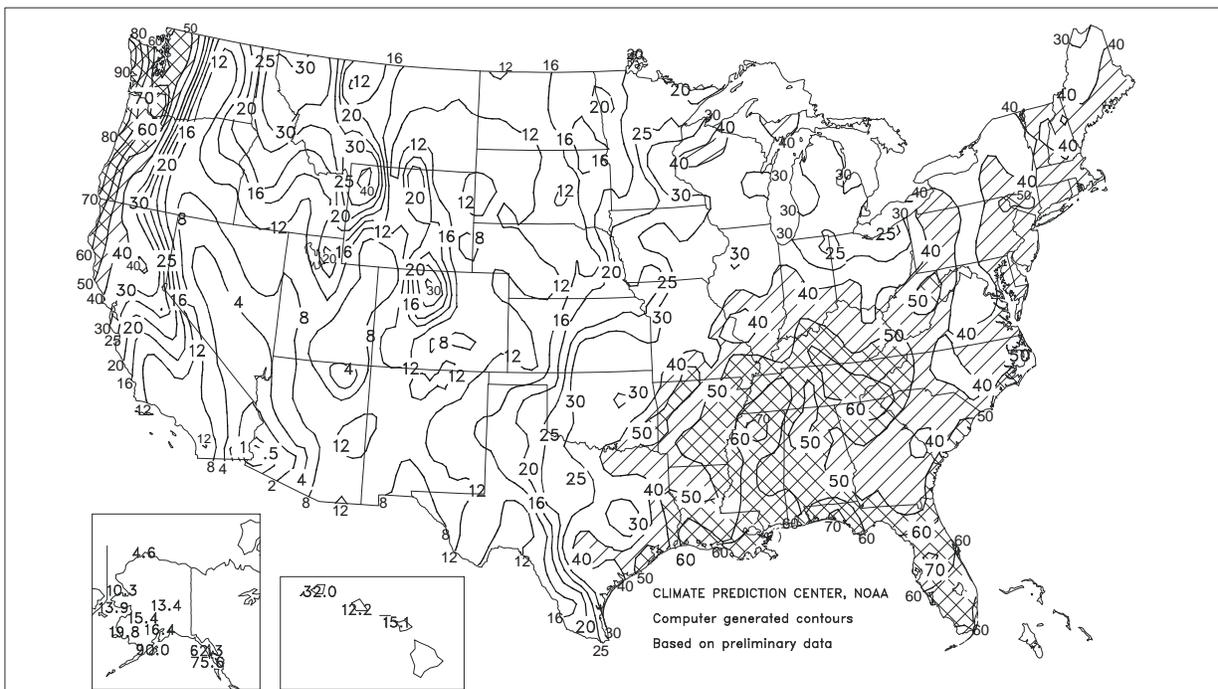
The storm that brought flooding to California on December 19-20 developed into a massive winter storm that brought a large swath of wintry weather from the Plains to the Northeast on December 23-25. The storm left 6 to 12 inches of snow from western Oklahoma and northern Texas to southern Missouri on the 23rd to 24th and triggered severe thunderstorms in eastern Texas and southern Georgia. Coastal development led to an intense nor'easter on Christmas Day, resulting in 1 to 2 feet of snow from Pennsylvania through upstate New York into New England.

Still more storms struck the West Coast the last few days of the year. At Squaw Valley in California, snow depth rose to 122 inches on the last day of the year, and winds gusted on top to 111 mph. For the month, many Tahoe locations accumulated 10 to 15 feet of snow. Along the Pacific coast, rainfall exceeded 2 feet this month from northern California into southwestern Oregon.

Dry weather persisted across the upper Midwest, as precipitation totaled under one-half of normal from Nebraska to the Great Lakes. In Nebraska, Omaha recorded no precipitation for the entire month. In Missouri, Kansas City measured only 0.03 inches, tying the record for the driest December. For the first time ever, Des Moines, Iowa, failed to receive measurable monthly precipitation.

Total Precipitation (Inches)

JAN - DEC 2002



2002 Crop Production Highlights

Highlights provided by USDA/NASS

Corn: Grain production is estimated at 9.01 billion bushels, virtually unchanged from the November forecast but down 5 percent (%) from the 9.51 billion bushels produced in 2001. The average U.S. grain yield is estimated at 130.0 bushels per acre, 2.4 bushels above the November forecast but down 8.2 bushels from 2001. Yields for grain are down from last year in many areas of the U.S. as drought persisted during the growing season, particularly in the central and northern Great Plains and eastern Corn Belt. However, record yields were established in Iowa and Minnesota, as growing conditions were more favorable. Yields are also up in Wisconsin and Michigan with more favorable growing conditions than 2001.

Planted area totaled 79.1 million acres, 4% above last year. Corn planted area is up in all but 14 States. Nine of the 14 States are down from last year and 5 are unchanged. Area harvested for grain, at 69.3 million acres, is up 1% from 2001. Farmers harvested 7.49 million acres for silage, a 22% increase from last year. The number of acres abandoned this year also increased to 2.25 million acres, up significantly from the 796,000 acres abandoned in 2001. Corn silage production is estimated at 105 million tons, 3% above the 2001 level. Silage yield decreased to 14.0 tons per acre, 2.6 tons below last year's yield of 16.6 tons per acre. Silage area increased due to drought in many States causing fewer acres being harvested for grain and more area harvested for silage.

Soybeans: Production totaled 2.73 billion bushels, up 1% from the November 1 forecast but 6% below 2001. The average yield per acre in 2002 is estimated at 37.8 bushels per acre, 0.3 bushel above the November 1 forecast but 1.8 bushels below the 2001 yield.

Planted area for the U.S., at 73.8 million acres, is down slightly from 2001. Farmers harvested 72.2 million acres, down 1% from 2001. The severe drought conditions in the northern and central Great Plains caused farmers to abandon a much larger amount of acreage than normal. Area planted was increased 715,000 acres from the August estimate of 73.0 million acres and area harvested was increased 361,000 acres from the November estimate of 71.8 million acres.

Wheat: All wheat production for 2002 totaled 1.62 billion bushels, 17% below last year, and less than 1% lower than the Small Grains 2002 Summary. This is the lowest production since 1972. Grain area is 45.8 million acres, down 6% from last year and the smallest area harvested since 1970. The U.S. yield is 35.3 bushels per acre, down 4.9 bushels from a year earlier.

The 2002 winter wheat production totaled 1.14 billion bushels, the lowest level since 1970. This is down 16% from the 2001 level. The U.S. yield decreased 5.0 bushels from the previous year to 38.5 bushels per acre. Acreage for grain is estimated at 29.7 million acres, down 5% from 2001. This is the smallest harvested area since 1917. Planted area is 41.7 million acres, up 2% from last year.

Other spring wheat production in 2002 totaled 394 million bushels, 23% below 2001. Harvested area is 13.5 million acres, down 7% from last year. The U.S. yield is 29.3 bushels per acre, 5.9 bushels below last season.

Durum wheat production for 2002 totaled 79.5 million bushels, 5% less than last year. Grain area totals 2.70 million acres, 3% below a year ago. The U.S. yield is estimated at 29.4 bushels per acre, 0.6 bushel per acre below 2001.

Cotton: Upland cotton production is estimated at 16.5 million bales, down 1% from the December 1 forecast and 16% lower than last year's record high production. The U.S. yield for upland cotton is 651 pounds per harvested acre, up 15 pounds from the December 1

forecast but down 43 pounds from last year. This yield increase since the December 1 forecast is due primarily to decreased harvested acres in numerous States. Harvested acreage, at 12.2 million acres, was decreased 4% from last month and is 10% below last year. Upland planted acreage is estimated at 13.7 million acres, down 3% from the August estimate and 11% below last season.

American-Pima production is estimated at 649,000 bales, up 4,000 bales from the December forecast but down 22% from last year's output. The U.S. Pima yield is estimated at 1,286 pounds per harvested acre, up 3 pounds from last month. This is the largest yield on record, surpassing the previous record of 1,254 pounds established last year. Producers planted 243,600 acres of Pima cotton in 2002, down 10% from 2001. The decrease in planted acreage led to an equivalent decrease in harvested acreage, with 242,300 acres of Pima cotton harvested in 2002. Producers outside of California increased their acreage devoted to Pima cotton by 3,600 acres this year. However, this increase is more than offset by the 30,000 acre decrease in California due to uncertainty of water supplies and lower prices.

Sorghum: Grain production is estimated at 370 million bushels, down 3% from the November forecast and down 28% from 2001. Area harvested for grain is estimated at 7.30 million acres, down 15% from 2001. Average grain yield, at 50.7 bushels per acre, is 9.2 bushels below the 2001 average yield.

Oats: Production is estimated at 119 million bushels, unchanged from the Small Grains 2002 Summary, but above last year's record-low 117 million bushels. The estimated yield is 56.8 bushels per acre, 4.6 bushels below 2001. Area for harvest is estimated at 2.10 million acres, up 10% from a year ago.

Barley: Production is estimated at 227 million bushels, unchanged from the Small Grains 2002 Summary, but down 9% from last year's estimate. This year's production is the lowest since 1937. Average yield per acre, at 54.9 bushels, is down 3.3 bushels from 2001. The area harvested for grain is estimated at 4.14 million acres, 4% below a year ago, and is the lowest level since 1898.

Rice: Production totaled 211 million cwt, down 2% from 2001. Area for harvest, at 3.21 million acres, is down 3% from 2001. The average yield for all U.S. rice is estimated at 6,578 pounds per acre, 33 pounds below the November 1 forecast. This all rice yield is the highest on record. The previous record of 6,496 pounds per acre was set last year.

Peanuts: Production totaled 3.32 billion pounds, down 22% from last year's crop and down 5% from the November 1 forecast. Planted area for the U.S., at 1.36 million acres, was down 12% from 2001. Harvested area totaled 1.30 million acres, down 8% from 2001. The U.S. yield per harvested acre averaged 2,561 pounds, down 468 pounds from 2001.

Sunflowers: Production totaled 2.50 billion pounds, 27% below the 2001 production. The estimated yield per acre, at 1,133 pounds, decreased 205 pounds from the previous year. Planted area, at 2.59 million acres, is down 2% from last year. Harvested acres, at 2.21 million, declined 14% from last year.

Sugarbeets: Production is estimated at 27.6 million tons, 2% below the November 1 forecast but 7% above last year's production. Growers in the 12 sugarbeet-producing States harvested 1.36 million acres, slightly above the November estimate and 9% above last year's 1.24 million acres. The yield is estimated at 20.3 tons per acre, 0.4 ton below both the November forecast and the 2001 yield.

Sugarcane: Production of sugarcane for sugar and seed for 2002 is estimated at 35.9 million tons, 4% above last year's 34.6 million

tons. Area harvested and to be harvested for sugar and seed is estimated at 1.03 million acres for the 2002 crop year, down fractionally from last year. Yield is estimated at 35.0 tons per acre, 1.3 tons above 2001.

Fieldwork Highlights

April: A stormy weather pattern delayed fieldwork and planting along a narrow band that extended from northeastern Texas through the southern Corn Belt and into the Northeast. Elsewhere, fieldwork and planting delays were shorter and less frequent in the western Corn Belt, Great Plains, and Southeast. Along the Atlantic Coastal Plain, planting delays were primarily due to moisture shortages. Meanwhile, below-normal temperatures hampered winter wheat development in the Corn Belt and central Great Plains early in the month, but above-normal temperatures stimulated growth after midmonth. On the northern High Plains, temperatures averaged well below-normal and many winter wheat fields were still dormant at the end of the month. In the southern Great Plains, lower Mississippi Valley, and Southeast, unseasonably hot weather promoted winter wheat development, although moisture shortages limited vegetative growth in some areas. Late-month warmth also aided germination and emergence of early-planted row crops in the Corn Belt, Great Plains, lower Mississippi Valley, and Southeast.

May: Planting progress was slow in the southern, central, and eastern Corn Belt during May, as a wet weather pattern persisted across the area. Corn and soybean planting lagged 2 to 4 weeks behind the 5-year average in many areas east of the Mississippi River, but progressed ahead of normal across most of the northern and western Corn Belt and Great Plains, where precipitation was lighter and less frequent. Elsewhere, dry weather supported cotton planting in the Southeast during May, although soils were too dry to germinate seeds in some areas along the Atlantic Coastal Plain. Below-normal temperatures delayed emergence and hindered growth of spring planted crops and winter grains in the northern Great Plains and Corn Belt during most of the month. In the southern Great Plains and Southeast, seasonal and above-normal temperatures quickly ripened winter grains and promoted development of spring crops where adequate soil moisture was available.

June: Hot weather quickly ripened winter wheat fields in the southern Great Plains and promoted rapid emergence and growth of row crops in the central Great Plains and Corn Belt. In the western Corn Belt, row crops developed deep root systems that compensated for below-normal precipitation and late-month heat. Farther east, near-normal precipitation maintained corn and soybean conditions in the middle and upper Mississippi Valley, but late-planted, shallow-rooted crops in the eastern Corn Belt were stressed by sudden heat and moisture shortages. In the southern Great Plains, dry weather aided harvest of mature winter wheat fields, while increasing moisture shortages stunted growth of less advanced fields on the central and northern Great Plains. In the South, heavy rains boosted soil moisture reserves and maintained crop conditions along the western Gulf Coast. Interior areas of the lower Mississippi Valley and most of the Southeast also received beneficial precipitation, but amounts varied. Abnormally dry weather stressed crops on the Atlantic Coastal Plain and delayed planting and hampered emergence and growth on the southern High Plains. In the Southwest, producers irrigated crops to maintain healthy development.

July: Above-normal temperatures promoted rapid phenological crop development across most of the Nation during July, but moisture shortages stunted vegetative growth and stressed reproductive crop development in many areas. Crops in the central Great Plains, Ohio Valley, eastern Corn Belt, Atlantic Coastal Plain, and Pacific Northwest were stressed most by the hot, dry weather. Crop conditions also fell in the western Corn Belt, but many fields remained healthy due to well-developed root systems. Meanwhile, crops along the Gulf Coast and adjacent areas of the interior southern Great Plains, lower Mississippi Valley, and Southeast benefited from

above-normal precipitation. Adequate rainfall also aided crop development through much of the central and upper Mississippi Valley. In Texas, a series of strong storms produced damaging winds, hail, and flooding. Severe storms also damaged crops in the northern Red River Valley. Harvest of winter wheat and spring-sown small grains progressed with few delays in the Corn Belt and Great Plains. Rain periodically interrupted harvest of mature summer crops along the Gulf Coast.

August: Widespread rains boosted vegetative growth and aided grain-filling crops across much of the Corn Belt, especially after midmonth. In the western Corn Belt and adjacent areas of the Great Plains, total precipitation for the month was above normal, but many corn and soybean fields were too mature to significantly benefit from the ground-soaking rains. In the Ohio River Valley and eastern Corn Belt, crop conditions deteriorated, as unfavorably hot, dry weather persisted. The small grain harvest continued on the northern Great Plains and Pacific Northwest, although cool weather slowed ripening and limited the harvest pace, especially on the High Plains. Also, harvest of cotton, rice, and other mature crops remained active along the Gulf Coast most of the month, despite occasional rain delays. Harvest gradually expanded northward into adjacent areas of the southern Great Plains and interior Mississippi Delta. Late-month storms boosted soil moisture supplies in the Atlantic Coastal Plain, but hot, dry weather stressed crops most of the month.

September: Above-normal temperatures promoted rapid maturation of the Nation's crops during September and the fall harvest pace gradually gained momentum. In the Corn Belt, harvest was mostly confined to areas along the Missouri and Ohio River Valleys until after midmonth. On the northern Great Plains, mostly dry weather aided the spring small grain harvest and supported rapid seeding of the winter wheat crop. Dry weather also permitted rapid winter wheat seeding on the central and southern Great Plains most of the month. Rain delayed seeding near midmonth, but provided much-needed moisture for germinating seeds in planted fields. Near the end of the month, Tropical Storm Isidore delivered several inches of precipitation in a broad area bordered by the Mississippi and Ohio Rivers on the west and north, and the Atlantic Coastal Plain to the east. The widespread rain halted harvest progress along the Gulf Coast and through much of the Appalachians, but also eased moisture shortages in the Ohio Valley.

October: Widespread, heavy rain curtailed corn and soybean harvests in the western Corn Belt and winter wheat seeding in the central Great Plains early in the month, but mostly dry weather favored progress during the rest of the month. Along the Gulf Coast and adjacent inland areas of the southern Great Plains, Mississippi Delta, and Southeast, wet weather hampered harvest of cotton, peanut, rice, and sorghum fields most of the month. Periods of light precipitation provided adequate moisture for germinating winter wheat in the eastern Corn Belt and the Great Plains, but cold weather and moisture shortages limited germination and growth in parts of the central and northern Great Plains. Dry weather supported field and orchard work in the Pacific Coast States.

November: Row crop harvest continued with only brief rain delays in the Corn Belt but remained slow across most of the South due to persistent rain. Above-normal temperatures stimulated germination and growth of winter wheat on the central and northern Great Plains most of the month, although moisture shortages limited development in many areas. Meanwhile, mild weather and adequate topsoil moisture aided winter wheat development in the Corn Belt and southern Great Plains. In the West, one strong storm delivered much-needed precipitation along the Pacific Coast, but total precipitation for November remained far below-normal in the interior Pacific Northwest. In the Southwest, above-normal temperatures promoted development of fruit and vegetable crops, winter grains, and forages. In the Florida Panhandle, late-month frost and unseasonably cold weather halted growth of forages, but citrus groves in the Peninsula remained in good condition.

TEMPERATURE & PRECIPITATION SUMMARY

Annual 2002

STATES AND STATIONS	TEMP., °F		PRECIP., IN.		STATES AND STATIONS	TEMP., °F		PRECIP., IN.		STATES AND STATIONS	TEMP., °F		PRECIP., IN.	
	AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE
AL BIRMINGHAM	63	1	64.41	10.43	LEXINGTON	56	1	49.35	3.45	DAYTON	53	1	39.18	-0.40
HUNTSVILLE	62	1	50.68	-6.83	LONDON-CORBIN	56	0	48.03	0.62	MANSFIELD	51	2	34.93	-8.30
MOBILE	67	0	72.51	6.22	LOUISVILLE	59	2	52.85	8.32	TOLEDO	52	2	29.32	-3.89
MONTGOMERY	65	0	37.94	-16.83	PADUCAH	59	2	53.89	4.65	YOUNGSTOWN	50	1	40.73	2.71
AK ANCHORAGE	39	3	16.44	0.38	LA BATON ROUGE	68	1	60.00	-3.07	OK OKLAHOMA CITY	59	-1	34.19	-1.66
BARROW	14	3	4.56	0.41	LAKE CHARLES	69	1	85.54	28.36	TULSA	61	0	31.32	-11.10
COLD BAY	41	3	52.95	12.67	NEW ORLEANS	69	0	62.52	-1.64	OR ASTORIA	51	0	56.20	-10.93
FAIRBANKS	31	4	13.37	3.04	SHREVEPORT	66	0	43.06	-8.24	BURNS	44	0	5.95	-4.62
JUNEAU	42	0	62.34	4.01	ME BANGOR	44	-1	40.38	0.81	EUGENE	53	1	37.45	-13.46
KING SALMON	38	3	21.44	2.03	CARIBOU	39	0	37.38	-0.05	MEDFORD	56	2	18.01	-0.38
KODIAK	42	1	90.00	14.65	PORTLAND	47	1	44.23	-1.60	PORTLAND	55	1	31.22	-5.85
NOME	31	4	13.90	-2.66	MD BALTIMORE	56	1	39.31	-2.63	SALEM	53	0	38.07	-1.93
AZ FLAGSTAFF	47	1	12.89	-10.02	MA BOSTON	53	1	41.30	-1.23	PA ALLENTOWN	52	1	41.59	-3.58
PHOENIX	76	3	2.83	-5.46	WORCESTER	49	2	44.97	-4.08	ERIE	51	1	47.87	5.10
TUCSON	70	1	7.85	-4.32	MI ALPENA	44	1	24.85	-3.55	MIDDLETOWN	54	1	40.80	0.30
AR FORT SMITH	61	0	43.72	-0.15	DETROIT	51	1	30.50	-2.40	PHILADELPHIA	57	2	39.31	-2.73
LITTLE ROCK	62	0	47.42	-3.51	FLINT	49	2	20.93	-10.68	PITTSBURGH	52	1	32.33	-5.52
CA BAKERSFIELD	65	0	4.29	-2.19	GRAND RAPIDS	49	1	29.46	-7.66	WILKES-BARRE	51	1	40.25	2.70
EUREKA	50	-3	46.41	8.31	HOUGHTON LAKE	44	1	22.02	-6.42	WILLIAMSPORT	52	2	42.98	1.39
FRESNO	65	2	6.94	-4.29	LANSING	48	1	21.99	-9.54	PR SAN JUAN	81	1	40.85	-9.91
LOS ANGELES	62	-1	5.24	-7.91	MUSKEGON	49	2	26.28	-6.59	RI PROVIDENCE	53	2	42.61	-3.85
REDDING	63	1	28.17	-5.35	TRAVERSE CITY	46	0	28.06	-5.41	SC CHARLESTON	67	2	58.71	7.18
SACRAMENTO	61	0	17.09	-0.84	MN DULUTH	40	1	31.26	0.26	COLUMBIA	65	1	47.18	-1.09
SAN DIEGO	62	-2	4.21	-6.56	INT'L FALLS	38	0	23.28	-0.66	FLORENCE	64	0	36.54	-8.22
SAN FRANCISCO	58	1	19.66	-0.44	MINNEAPOLIS	47	2	38.50	9.09	GREENVILLE	61	1	47.83	-2.39
STOCKTON	61	-1	12.22	-1.62	ROCHESTER	45	1	32.73	1.32	MYRTLE BEACH	64	0	40.51	-5.20
CO ALAMOSA	42	1	4.44	-2.81	ST. CLOUD	43	1	33.34	6.21	SD ABERDEEN	44	0	15.33	-4.89
CO SPRINGS	50	2	7.60	-9.79	MS JACKSON	65	1	68.47	12.53	HURON	47	2	14.57	-6.32
DENVER	50	1	7.20	-6.42	MERIDIAN	65	0	58.88	0.23	RAPID CITY	47	0	10.46	-6.17
GRAND JUNCTION	53	1	7.83	-1.15	TUPELO	62	1	66.16	10.30	SIoux FALLS	47	2	24.06	-0.63
PUEBLO	53	1	3.89	-8.50	MO COLUMBIA	55	1	42.67	2.39	TN BRISTOL	57	2	40.33	-0.99
CT BRIDGEPORT	53	1	43.48	-0.67	JOPLIN	59	1	41.56	-4.51	CHATTANOOGA	62	2	50.78	-3.74
HARTFORD	52	2	41.69	-4.47	KANSAS CITY	56	2	24.82	-13.17	JACKSON	60	0	65.65	10.87
DC WASHINGTON	59	1	34.32	-5.03	SPRINGFIELD	56	0	37.05	-7.92	KNOXVILLE	60	2	58.19	9.97
DE WILMINGTON	56	2	39.50	-3.31	ST LOUIS	55	1	21.86	-13.38	MEMPHIS	63	1	74.83	20.18
FL DAYTONA BEACH	71	0	59.96	10.67	MT BILLINGS	58	2	40.96	2.21	NASHVILLE	60	1	56.70	8.59
FT LAUDERDALE	77	1	65.07	0.87	BUTTE	47	0	9.27	-5.49	TX ABILENE	64	0	27.98	4.21
FT MYERS	75	0	51.78	-2.41	GLASGOW	38	-2	10.88	-1.90	AMARILLO	57	0	18.26	-1.46
JACKSONVILLE	69	1	54.73	2.39	GREAT FALLS	42	-1	12.29	1.06	AUSTIN	67	-2	38.41	4.76
KEY WEST	78	0	41.49	2.55	HELENA	45	1	12.56	1.24	BEAUMONT	69	0	63.78	3.89
MELBOURNE	73	1	51.30	3.01	KALISPELL	43	0	12.45	-4.76	BROWNSVILLE	75	2	28.40	0.85
MIAMI	78	1	63.28	4.75	MILES CITY	46	0	10.39	-3.10	COLLEGE STATION	68	-1	42.95	3.28
ORLANDO	73	0	66.40	18.05	MISSOULA	44	-1	10.27	-3.55	CORPUS CHRISTI	72	0	31.38	-0.87
PENSACOLA	68	0	63.85	-0.43	NE GRAND ISLAND	52	2	17.11	-8.78	DALLAS/FT WORTH	65	-1	44.43	9.70
ST PETERSBURG	74	0	59.81	10.23	HASTINGS	52	1	17.33	-10.61	DEL RIO	71	1	17.78	-0.45
TALLAHASSEE	68	0	56.09	-7.11	LINCOLN	52	1	26.32	-2.05	EL PASO	65	0	7.48	-1.95
TAMPA	74	1	61.11	16.35	MCCOOK	55	4	12.26	-9.36	GALVESTON	71	0	64.24	20.40
WEST PALM BEACH	76	1	60.60	-0.79	NORFOLK	50	1	19.47	-7.19	HOUSTON	69	0	59.79	11.95
GA ATHENS	62	0	46.39	-1.43	NORTH PLATTE	49	0	11.09	-8.57	LUBBOCK	61	1	19.30	0.62
ATLANTA	63	1	47.70	-2.49	OMAHA/EPPLEY	52	1	26.01	-4.21	MIDLAND	64	0	9.35	-5.45
AUGUSTA	64	1	40.87	-3.72	SCOTTSBLUFF	49	1	7.17	-9.16	SAN ANGELO	65	0	14.39	-6.51
COLUMBUS	66	1	44.17	-4.40	VALENTINE	48	1	11.15	-8.37	SAN ANTONIO	69	0	46.28	13.36
MACON	65	1	41.33	-3.66	NV ELKO	46	0	7.50	-2.09	VICTORIA	70	0	39.28	-0.82
SAVANNAH	67	1	46.84	-2.74	ELY	45	0	4.56	-5.41	WACO	67	0	36.93	3.59
HI HILO	74	0	133.90	7.63	LAS VEGAS	69	1	1.44	-3.05	WICHITA FALLS	63	0	28.64	-0.17
HONOLULU	78	1	12.23	-6.05	RENO	54	3	7.10	-0.38	UT SALT LAKE CITY	52	0	10.22	-6.28
KAHULUI	75	-1	15.10	-3.70	WINNEMUCCA	49	0	5.95	-2.38	VT BURLINGTON	47	2	37.04	0.99
LIHUE	76	0	31.94	-7.62	NH CONCORD	47	1	39.75	2.15	VA LYNCHBURG	56	1	37.08	-6.23
ID BOISE	53	1	6.98	-5.22	NJ ATLANTIC CITY	55	1	43.72	-3.13	NORFOLK	62	2	50.90	5.16
LEWISTON	53	0	10.15	-2.57	NEWARK	56	1	43.35	2.91	RICHMOND	59	1	37.81	-6.09
POCATELLO	45	-2	7.31	-5.28	NM ALBUQUERQUE	58	1	6.39	-3.07	ROANOKE	58	2	34.22	-8.26
IL CHICAGO/O'HARE	51	2	34.52	-1.76	NY ALBANY	49	1	40.62	2.56	WASH/DULLES	56	2	38.14	-3.67
MOLINE	52	2	32.91	-5.13	BINGHAMTON	47	1	42.09	3.44	WA OLYMPIA	50	0	41.78	-9.01
PEORIA	53	2	33.86	-2.16	BUFFALO	49	1	39.72	-0.82	QUILLAYUTE	49	0	90.83	-10.89
ROCKFORD	50	2	32.70	-3.91	ROCHESTER	50	2	34.26	0.30	SEATTLE-TACOMA	52	0	32.07	-4.99
SPRINGFIELD	54	1	40.20	4.64	SYRACUSE	50	2	40.21	0.17	SPOKANE	47	0	13.84	-2.83
IN EVANSVILLE	57	1	48.57	4.30	ASHEVILLE	57	2	43.15	-3.89	YAKIMA	50	1	7.86	-0.40
FORT WAYNE	51	1	33.18	-3.37	CHARLOTTE	61	0	40.39	-3.13	WV BECKLEY	52	0	41.15	-0.47
INDIANAPOLIS	54	1	39.73	-1.21	GREENSBORO	59	1	39.35	-3.78	CHARLESTON	56	1	44.76	0.72
SOUTH BEND	51	1	28.65	-11.05	HATTERAS	64	1	54.58	-3.17	ELKINS	51	1	51.18	5.09
IA BURLINGTON	52	0	37.10	-0.84	RALEIGH	61	1	46.68	3.63	HUNTINGTON	56	1	46.34	4.03
CEDAR RAPIDS	49	0	36.59	3.18	WILMINGTON	64	0	46.32	-10.75	WI EAU CLAIRE	46	2	39.58	7.46
DES MOINES	51	1	25.46	-9.26	BISMARCK	43	1	11.17	-5.67	GREEN BAY	46	1	27.98	-1.21
DUBUQUE	48	1	41.60	6.09	DICKINSON	42	-1	11.57	-4.78	LA CROSSE	49	2	30.63	-1.73
SIoux CITY	49	1	25.50	-0.49	FARGO	42	0	23.90	2.71	MADISON	48	2	26.19	-6.76
WATERLOO	49	2	30.98	-2.16	GRAND FORKS	40	0	20.09	0.49	MILLWAUKEE	49	1	26.69	-8.12
KS CONCORDIA	55	1	18.27	-10.16	JAMESTOWN	41	-1	13.88	-4.61	WAUSAU	44	0	37.32	3.96
DODGE CITY	55	0	14.57	-7.78	MINOT	41	-1	12.14	-6.30	CASPER	45	0	6.98	-6.05
GOODLAND	53	2	9.85	-9.91	WILLISTON	40	-1	14.82	0.66	CHEYENNE	46	1	9.88	-5.57
HILL CITY	54	1	11.01	-11.88	OH AKRON-CANTON	51	1	40.70	2.23	LANDER	44	-1	8.09	-5.33
TOPEKA	56	2	27.86	-7.78	CINCINNATI	55	1	45.76	3.15	SHERIDAN	45	0	11.61	-3.11
WICHITA	57	1	33.45	3.07	CLEVELAND	52	2	36.38	-2.32					
KY JACKSON	57	1	52.60	3.21										

Based on 1971-2000 normals.

January 9 ENSO Update

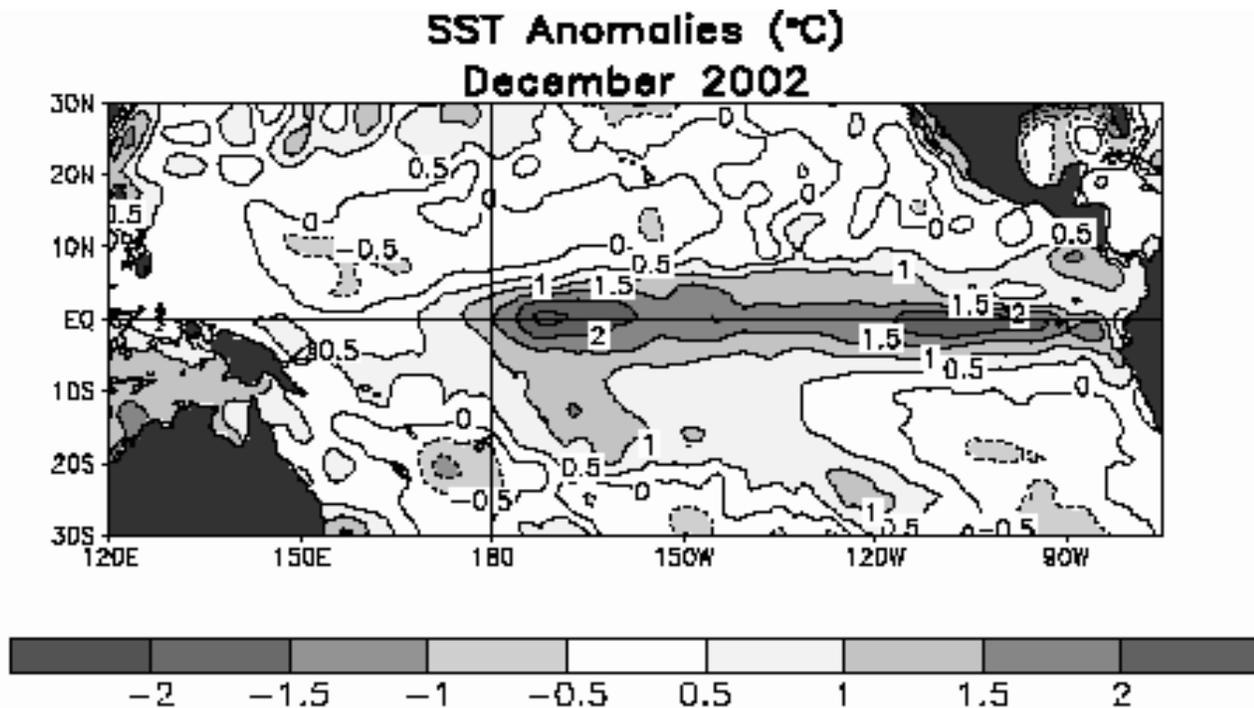


Figure 1. Sea surface temperature (SST) anomalies during December 2002. Departures from average are computed based on the 1971-2000 base period means. Units are °C.

Warm episode (El Niño) conditions dominated the tropical Pacific during December 2002. Equatorial SST anomalies were greater than +1°C throughout most of the Pacific between the date line and the South American coast, and exceeded +2°C at several locations between 175°W and 95°W (Fig. 1). Positive subsurface temperature departures and a deeper-than-average oceanic thermocline prevailed throughout the equatorial Pacific east of 180°W. Negative subsurface temperature departures were observed west of 180°W at a depth of between 100 and 150 meters. This dipole pattern in subsurface temperature anomalies is a typical feature observed during the mature phase of El Niño.

Atmospheric indicators of El Niño include consistently negative values of the Tahiti-Darwin Southern Oscillation Index (SOI) since March 2002, and weaker-than-average low-level easterly winds since May 2002 throughout the equatorial Pacific. Notable climate anomalies during October-December 2002, consistent with the ongoing El Niño, include: drier-than-average conditions over Indonesia, northern and eastern Australia, Central America and northeastern South America and wetter-than-average conditions over the central equatorial Pacific, southeastern South America and the southeastern United States.

Values of atmospheric and oceanic indices, such as the SOI, 850-hPa zonal wind index, Niño 3.4, are all considerably less in magnitude than those observed during the 1997-98 El Niño. Collectively, oceanic and atmospheric indices are indicative of a moderate warm (El Niño) episode.

Most coupled model and statistical model forecasts indicate that El Niño conditions will continue through the northern spring of 2003. Thereafter the forecasts are more uncertain, during a time of the year when all of the techniques have

difficulty in making skillful forecasts. A critical factor governing the duration of the current warm episode is the rate of evolution of the dipole pattern in the subsurface thermal structure along the equatorial Pacific, which is linked to the persistence and eastward extension of the pattern of deep convection into the eastern Pacific and the intensity and persistence of low-level westerly zonal wind anomalies. The Climate Prediction Center will continue to monitor these features over the next few months.

Expected global impacts of the warm episode include: 1) drier-than-average over most of Indonesia, Micronesia and northern/northeastern Australia continuing during the next three months, 2) drier-than-average over southeastern Africa during January-March 2003, 3) drier-than-average over Northeast Brazil and northern South America during January-April 2003, and 4) wetter-than-average conditions over coastal sections of Ecuador and northern Peru during February-April 2003. Over the United States and Canada, during the remainder of the northern winter, expected conditions include: 1) drier-than-average over the Ohio and Tennessee Valleys, the eastern Great Lakes, and the northern U.S. Rockies, 2) wetter-than-average along much of the southern tier of the U.S., and 3) warmer-than-average in the northern tier states, southern and southeastern Alaska, and western and central Canada.

This discussion is a team effort of NOAA and its funded institutions. Updates of SST, 850-hPa wind, OLR and the equatorial subsurface temperature structure are available on the Climate Prediction Center web page at <http://www.cpc.ncep.noaa.gov> (Weekly Update). Forecasts for the evolution of El Niño/La Niña are updated monthly in CPC's Climate Diagnostics Bulletin Forecast Forum.

International Weather and Crop Summary

January 5 - 11, 2003

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

HIGHLIGHTS

EUROPE: Unseasonably cold weather covered northern and western Europe, stressing winter crops in northern France and England, while stormy weather in southern Europe maintained adequate to abundant moisture supplies for winter grains.

FSU-WESTERN: Moderate to heavy snow preceded a return of bitterly cold weather in major winter wheat producing areas of Ukraine and southern Russia.

MIDDLE EAST: Across Turkey and northern Iran, unseasonably warm weather melted protective snow cover and caused winter grains to lose winter hardiness.

NORTHWESTERN AFRICA: Widespread rain boosted soil moisture for emerging to vegetative winter grains, while cold weather burned back vegetative wheat in Algeria.

SOUTH AFRICA: Widespread rain and unseasonably cool weather overspread the corn belt, benefitting emerging to early reproductive summer crops.

EASTERN ASIA: Moderating temperatures favored overwintering wheat on the North China Plain.

SOUTHEAST ASIA: Cool, wet weather slowed rice development in northern Vietnam.

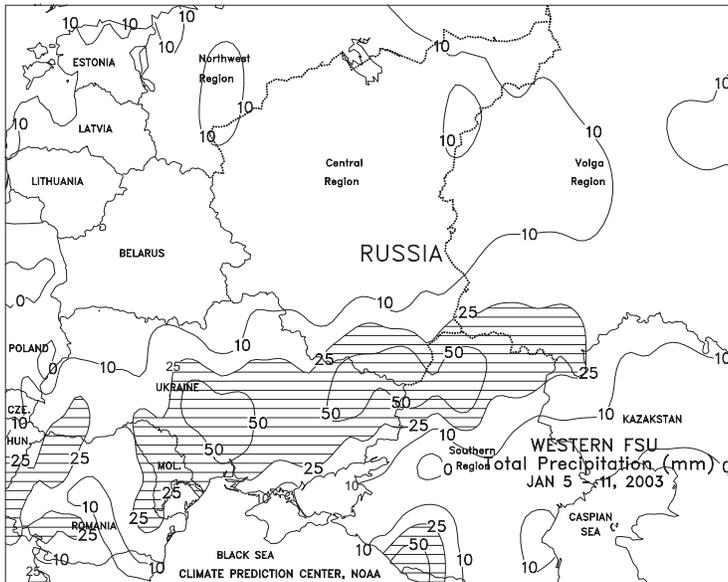
AUSTRALIA: Hot, dry weather encompassed major crop producing areas, stressing summer crops and offering no relief from the severe drought.

SOUTH AMERICA: Scattered showers maintained abundant moisture reserves for summer crops throughout Argentina and Brazil.



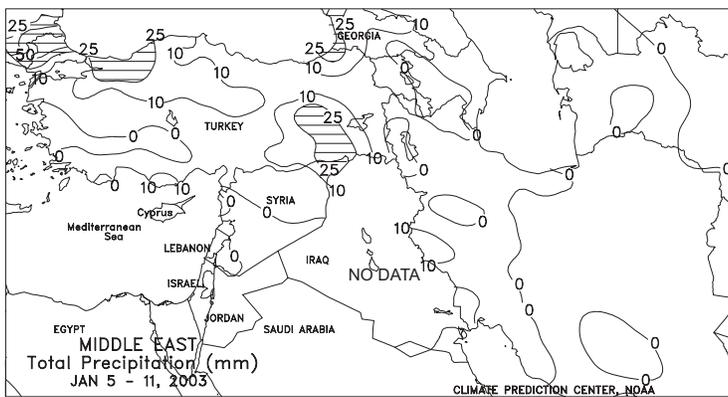
EUROPE

Unseasonably cold weather covered western and northern Europe, while stormy weather brought widespread precipitation to southern Europe. Arctic air from Russia and Poland spread westward early in the week, and eventually pushed into central Spain by week's end. While crops were already dormant from Germany eastward, the abrupt change in temperatures (minimum temperatures from above freezing on January 4 to -5 degrees C or lower from January 5 onwards) burned back and stressed vegetative winter grains in northern France and England. The lowest weekly temperatures ranged from -13 to -8 degrees C in northern France, -19 to -12 degrees C in Germany, and -27 to -18 degrees C in Poland. Light to moderate snow (less than 5 mm of water equivalent precipitation) fell from northern Europe into eastern France and northern Italy, and in portions of England and southern France. Light to moderate snow cover protected winter grains from the bitterly cold weather in Germany and Poland. With the cold weather, winter crops rapidly entered dormancy in most of France, England, and northern Italy. Across southern Europe, a series of low pressure systems produced widespread precipitation from the Iberian Peninsula to the Balkans (snow in the higher elevations of Portugal, Spain, and central Italy), boosting moisture reserves for winter crops. Amounts ranged from 25 to 100 mm in Portugal and northwestern Spain, 5 to 25 mm in most of Spain, and 20 to 50 mm in central and southern Italy. In the Balkans and southeastern Europe, the storms and cold weather produced a mixture of light rain and widespread snow (10-50 mm or more of water equivalent). By week's end, snow cover extended as far south as Bulgaria and extreme northern Greece, with the deepest snow (10-25 cm or more) in the eastern Alps, the northern Balkans, Hungary, and northern Romania. Temperatures averaged 3 to 10 degrees C below normal across most of Europe (10-12 degrees C below normal in Poland) and 1 to 3 degrees C above normal in southern Italy and the southern Balkans.



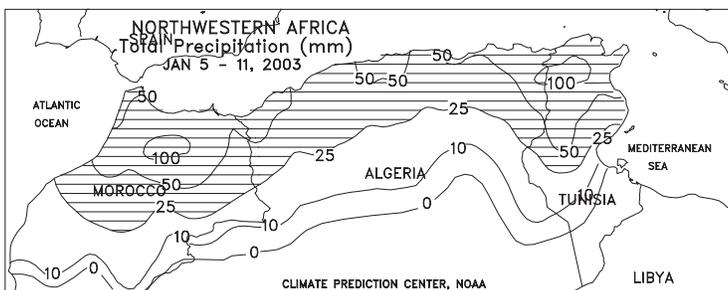
FSU-WESTERN

After a brief period of milder weather, bitterly cold air returned to major winter wheat producing areas. Extreme minimum temperatures ranged from -25 to -15 degrees C as far south as southern Ukraine and the northern tip of the Southern Region in Russia. However, unlike the cold episodes in December, this past week's cold snap was preceded by moderate to heavy snow (10-58 mm of liquid equivalent) that provided a fresh protective snow cover from Moldova eastward across Ukraine into Russia. Farther north, bitterly cold weather remained over winter grain areas from the Baltics and Belarus eastward across northern Russia. On most nights, minimum temperatures ranged from -35 to -25 degrees C. A deep snow cover in these areas provided adequate protection from widespread winterkill. Weekly temperatures averaged 5 to 16 degrees C below normal from the Baltics and Belarus eastward across northern Russia, 2 to 10 degrees C below normal in Ukraine, and near to slightly above normal in the Southern Region in Russia.



MIDDLE EAST

Unseasonably warm weather prevailed across Turkey and northern Iran, melting protective snow cover and causing winter grains to lose winter hardiness. The loss of snow cover and winter hardiness left winter grains vulnerable to potential winterkill from future cold air outbreaks. Temperatures averaged 4 to 9 degrees C above normal, with maximum temperatures reaching 15 degrees C or more. Moderate rain (10-35 mm) boosted moisture supplies across northwestern, north-central, and southeastern Turkey and extreme northeastern Syria, while mostly dry weather prevailed elsewhere across Turkey and northern Iran. Based on reports from southeastern Turkey, light to moderate precipitation (snow in the higher elevations) likely fell across northern Iraq. Scattered showers (10-50 mm) fell across coastal Syria, but dry weather prevailed elsewhere across the Middle East.

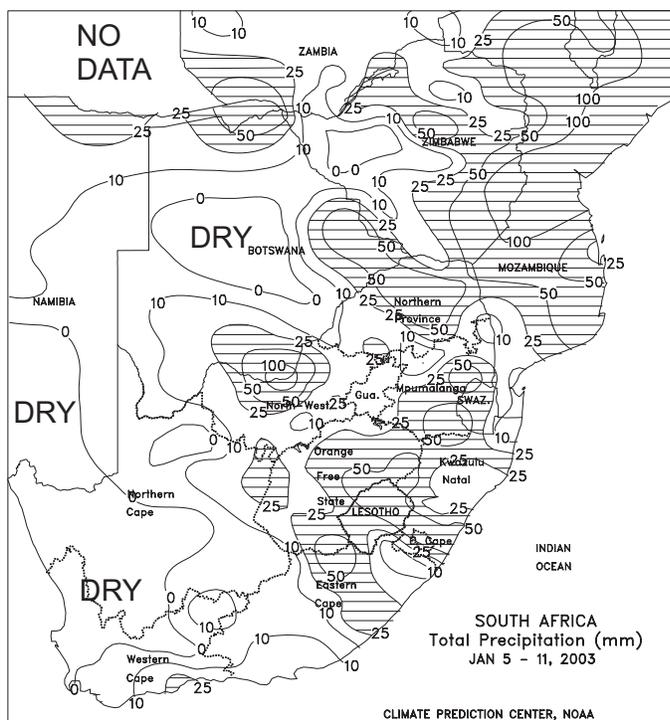


NORTHWESTERN AFRICA

Widespread rain (20-75 mm or more) late in the week covered the major winter grain areas of Morocco, Algeria, and Tunisia, boosting soil moisture for emerging to vegetative winter grains. Only portions of the southwestern coast of Morocco received less than 10 mm. In Algeria, seasonably cool weather and snow in the winter grain areas at higher elevations (minimum temperatures near or at freezing) slowed crop growth and caused minor burn back of tender vegetation. Overall, temperatures averaged near normal across the region.

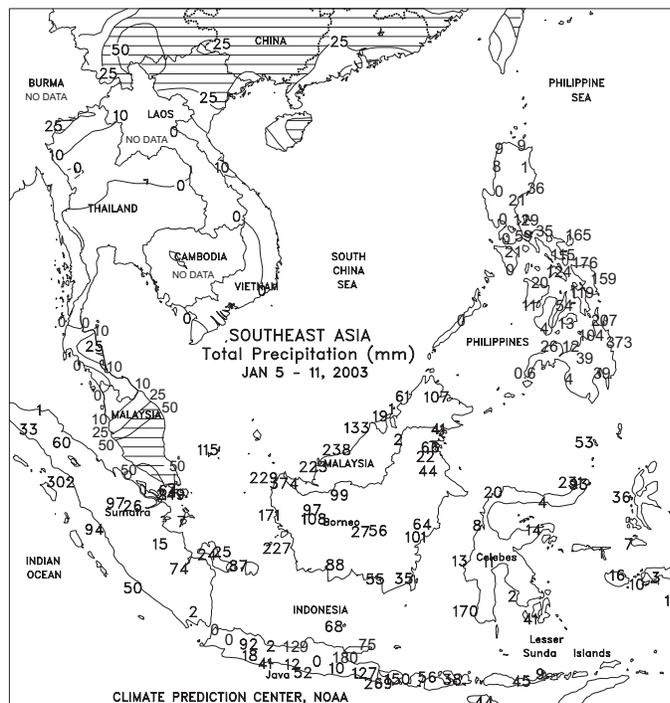
SOUTH AFRICA

Following a week of mostly dry and warm weather, widespread rain (10-50 mm or more) and unseasonably cool weather (temperatures averaging 1-2 degrees C below normal) overspread the corn belt, further improving growing conditions for emerging to early reproductive summer crops. Similarly, in KwaZulu-Natal and Eastern Cape, soaking rains (12-82 mm) favored sugarcane development and non-commercial summer crops. Farther south, light showers (6-20 mm) maintained moisture supplies in Western Cape, where winter wheat harvesting has concluded in most areas. Temperatures in Western Cape were generally seasonal.



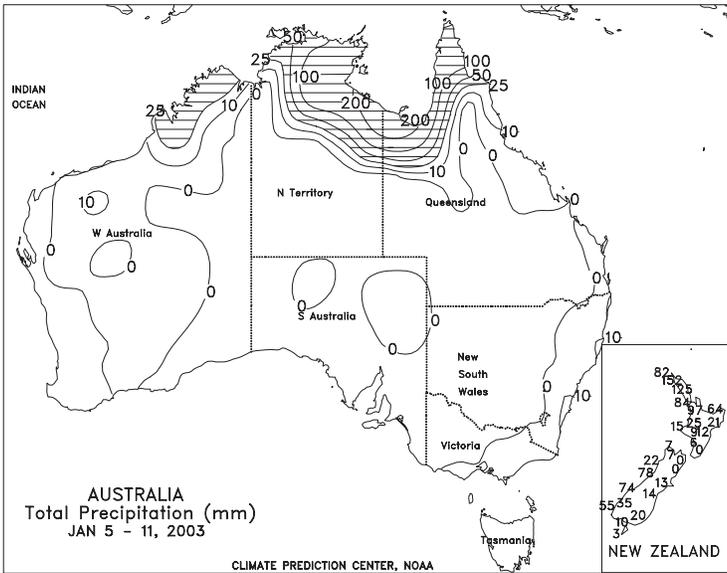
EASTERN ASIA

Cold weather lingered early in the week over the more northerly winter wheat areas of the North China Plain, with low temperatures of -15 degrees C or lower recorded from western Shandong to Shaanxi. However, patchy snow cover continued to offer crops some protection from the bitter cold. Temperatures gradually rose during the week (with highs above 10 degrees C by week's end in the aforementioned areas), favoring overwintering wheat but eroding the protective snow cover. No precipitation fell in the main winter wheat areas. Elsewhere, cold, mostly dry weather also dominated the Korean Peninsula, but light to moderate precipitation (10-25 mm or more) continued in northern Japan. In southern China, early-week precipitation (10-25 mm or more, some falling as snow) increased irrigation reserves south of the Yangtze River. Later in the week, however, temperatures fell below freezing in China's southern interior, possibly causing some damage to sugarcane. Lows in the lower single digits degrees C were recorded as far south as the main sugarcane areas along the southern coast (Yunnan eastward to southern Fujian).



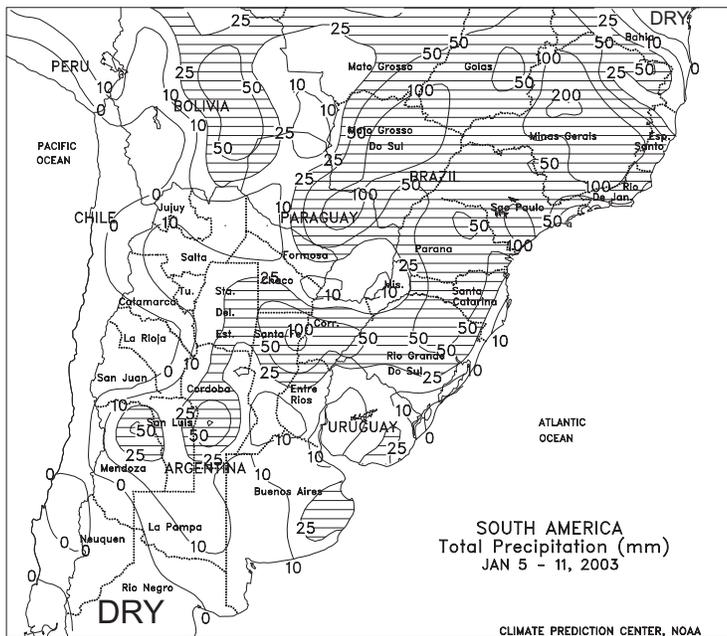
SOUTHEAST ASIA

Showers (10-25 mm) increased moisture supplies for vegetative winter-spring rice in northern Vietnam, but below-normal temperatures (1-5 degrees C below normal) slowed crop development. Seasonably dry weather prevailed throughout the rest of Indochina as irrigation supplies remained adequate for transplanted second-season rice in Thailand. Heavy showers (50-100 mm, or more) fell along the southeastern coast of the Philippines, while the western coast received light precipitation. Showers were heavy (25-100 mm) in Java, Indonesia, especially in eastern areas, while dry weather prevailed in far western areas. Showers (50-100 mm) boosted moisture supplies for oil palm in peninsular Malaysia and Sumatra.



AUSTRALIA

Hot, mostly dry (less than 3 mm) weather in Queensland and northern New South Wales maintained high evaporation rates from drought-stressed cotton and sorghum and further reduced reservoir levels for irrigated summer crops. Near-normal temperatures dominated summer crop areas, with maximum temperatures generally in the middle 30s degrees C. Hot, dry weather also encompassed major winter wheat and barley producing areas stretching from southern New South Wales into Western Australia. Although the dry weather favored fieldwork, significant rainfall is needed to end the severe, long-term drought affecting much of southern Australia. Temperatures in the winter grain belt averaged about 1 to 2 degrees C above normal, with maximum temperatures generally in the upper 30s degrees C. In New Zealand, scattered showers (13-25 mm) maintained moisture supplies in major agricultural areas, while unseasonably warm weather (temperatures averaging 2 degrees C above normal) spurred crop development.



SOUTH AMERICA

In Argentina, somewhat drier, warmer weather aided early summer crop development. Rainfall totaled below 25 mm in most major summer growing areas (southern Santa Fe, northern Buenos Aires, eastern Cordoba, and Entre Rios), with highs reaching the middle 30s degrees C as a result of the drier weather. Drier weather also developed in the northern cotton areas (Chaco and Formosa), with highs in the upper 30s degrees C increasing crop growth rates. However, moderate to heavy showers (25-50 mm or more) continued in growing areas of central and northern Cordoba, northern Santa Fe, and Corrientes, maintaining abundant moisture reserves for summer crop establishment. According to reports from within Argentina, winter wheat harvesting and summer crop planting are virtually complete. In Brazil, rain (25-50 mm or more) returned to Rio Grande do Sul late in the week, ending a brief period of sunny, mostly dry weather that aided summer crop development. Scattered showers (25-50 mm or more) continued throughout the week from Parana northward, maintaining ample moisture levels for vegetative to reproductive summer grains, soybeans, and cotton. The heaviest rainfall (greater than 100 mm) covered broad areas of Mato Grosso do Sul and Minas Gerais. Temperatures reached the middle 30s degrees C in most major growing areas, but excessive heat (highs above 40 degrees C) was confined to western portions of Paraguay. Temperatures averaged about 2 degrees C above normal throughout Brazil's main growing areas, reflecting the pattern of warmer-than-normal weather that has prevailed for the entire growing season.

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