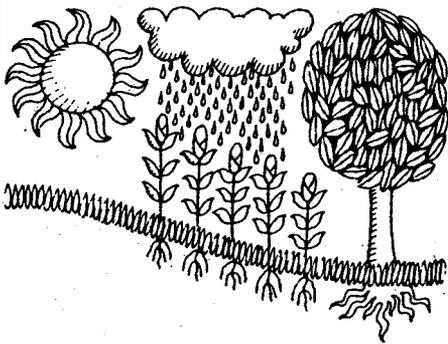


WEEKLY WEATHER AND CROP BULLETIN

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



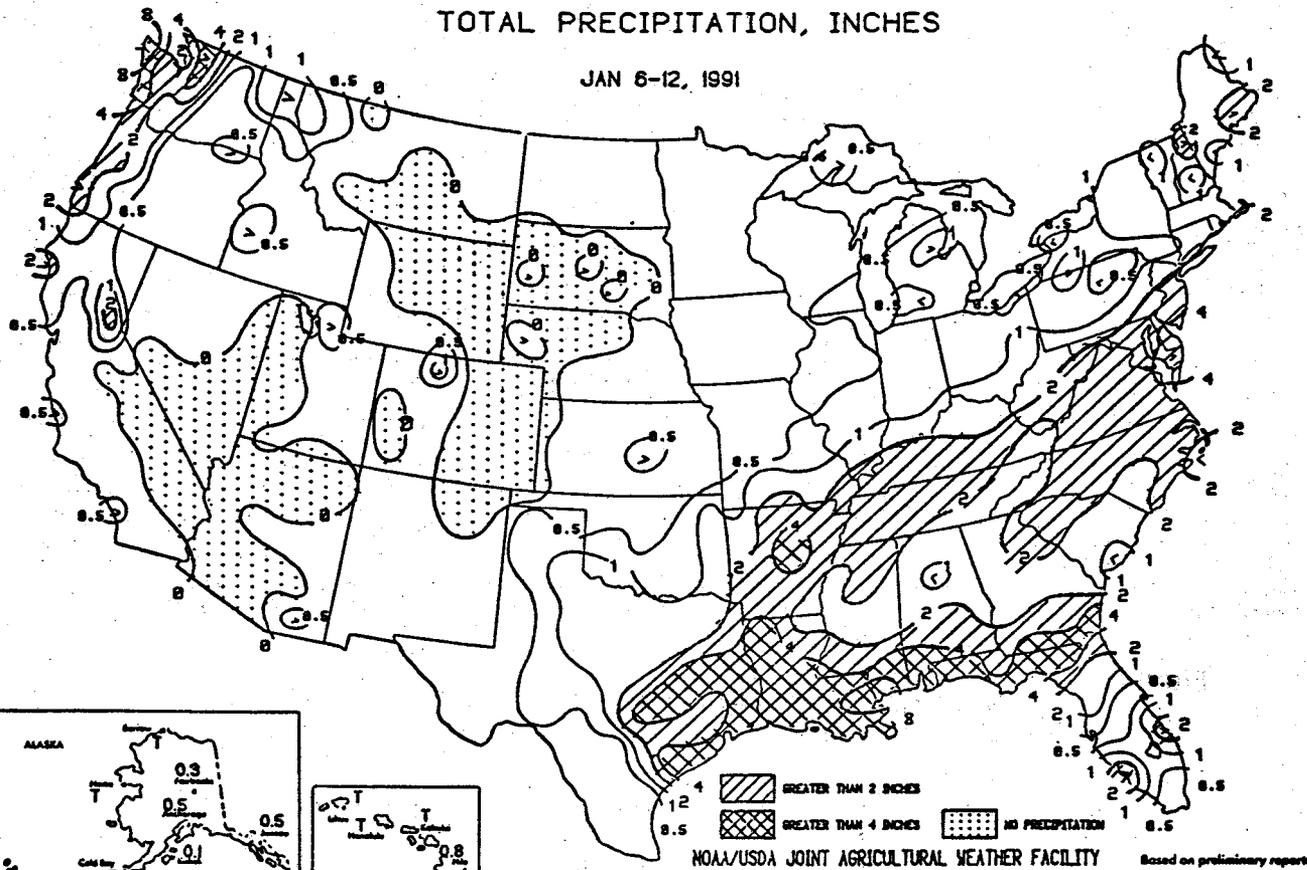
Volume 78, No. 2

Washington, D.C.

January 15, 1991

TOTAL PRECIPITATION, INCHES

JAN 6-12, 1991



HIGHLIGHTS

January 6-12, 1991

Two high pressure systems sliding eastward from the northern Plains to New England provided cold air for a week of wintry precipitation in the East. A steady flow of subtropical air overrunning the entrenched cold triggered rain, ice, and snow. The Northwest saw a return to mild, moist air flow off the Pacific Ocean, while the Southwest experienced a warming trend. Rivers continued to run high in the Ohio Valley, still above flood stage in portions of eastern Illinois, Indiana, Ohio, and Kentucky. Heavy rain during the week sent rivers above flood stage in parts of South Carolina, Georgia, eastern Texas, and Louisiana. Early in the week, a storm lifted northeastward from the Gulf of Mexico, producing heavy rain along the Gulf Coast and Mexico, producing heavy rain along the Gulf Coast and Mexico, producing heavy rain along the Gulf Coast and Mexico.

(Continued to back cover)

ANNUAL WEATHER REVIEW

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1990 WEATHER REVIEW

A mild winter and spring contributed to one of the warmest years on record (fig. 1 and table 1), though wet and stormy weather during the spring and summer resulted in good crop yields in the **Plains** and **Midwest**. Though this was the wettest year nationally since 1983 (fig. 2), long-term drought persisted in the **West** and **northern Plains**. Summer heat and dryness damaged crops in the **Southeast**, which had its warmest year of the century.

Winter (December 1989 - February 1990)

December 1989 was the coldest December ever measured for much of the **eastern third of the country**, and was unusually cold in the **central States** as well. The historic cold wave which enveloped most of the country from December 22 to 24 broke nearly 300 daily temperature records. The freeze extensively damaged fruit and vegetables in **Texas** and **Florida**.

With the new year, however, came a major change in weather patterns, and January 1990 became the warmest January since at least 1895, when records kept by the National Climatic Data Center (NCDC) began. Though temperatures were above normal across more than 90 percent of the country, the **northern Plains** saw the greatest anomalies. In **South Dakota**, **Huron's** mean temperature of 28° F was 17° F above normal, making this the warmest January since at least 1881.

The unusual mildness persisted into February, the 15th warmest on record nationwide, and the third warmest in the **Southeast**.

Spring (March - May)

With March the 10th warmest March since 1895, the first three months of the year became the second warmest such period on record. A notable heat wave affected the **eastern half** of the country during March 12-15, when at least 250 temperature records were equaled or broken, including a summer-like 89° F in **Washington, DC**.

The warmth confused trees and crops. The unseasonable mildness accelerated vegetative development, leaving crops vulnerable to cold weather. As a result, a series of freezes in late March damaged early blooming fruit trees in the **East**. Temperatures dipping to 24° F or less on March 28 damaged fruit crops in the **mid-Atlantic States**, especially in **Virginia's Shenandoah Valley**. Forecast **Virginia** peach production fell by more than 80 percent from a year ago, with apple production expected to drop by 35 percent. **Pennsylvania** cherry output fell by more than 50 percent.

In **California**, low rainfall and snowfall amounts during the November-March rainy season again raised concerns about water supplies, as the 1989-90 precipitation totals were below normal for the fourth consecutive year. For **California's central coast** and **central Sierras**, this was the driest 4-year period on record. Near the end of 1990, water levels in **California's** largest reservoirs were some 40 percent below normal.

Another long-term drought, this one dating back to late 1987, continued to affect **North Dakota** and neighboring States in the **northern Plains**. The winter of 1989-90 worsened the moisture deficits, as **North Dakota** had the driest winter this century. Spring and summer storms relieved topsoil dryness and contributed to reasonable crop yields, but did little to relieve overall dryness. In early November, 1990, "subsoil" moisture was reported short in **North Dakota, South Dakota, Montana, and Nebraska**.

A third area of long-term drought was **southeastern Florida**, where winter rainfall was one-half of normal, worsening a drought that began in September, 1988. Water restrictions were imposed in 32 counties. Periods of heavy rains in April, May, and later in the year did bring relief.

This was a wet and stormy spring across much of the country, with May the outstanding month.

Figure 1
U.S. NATIONAL TEMPERATURE ANNUAL, 1895-1990

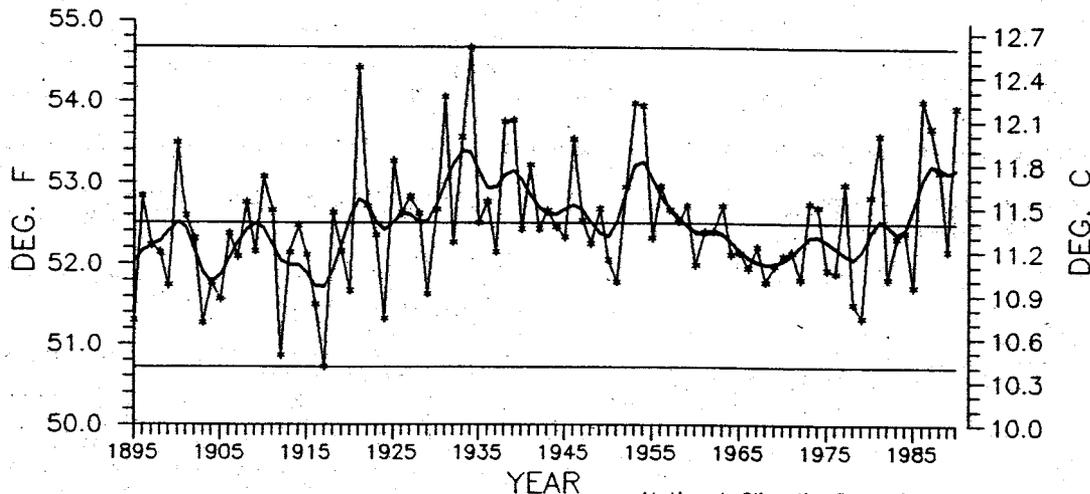


FIG. 1

National Climatic Data Center, NOAA

STRAIGHT HORIZONTAL LINES ARE:
MAXIMUM VALUE (TOP),
LONG-TERM AVERAGE (MIDDLE),
MINIMUM VALUE (BOTTOM)

THE SMOOTH CURVE IS A 9-POINT BINOMIAL FILTER

Nationally, this was the second wettest May in the past 30 years. Severe flooding occurred in much of the area between the **Texas Gulf Coast** and **Lake Michigan** due to bouts of heavy rains from mid-April to mid-May. More than 90 counties in **Texas**, **Arkansas**, and **Louisiana** were declared federal or State disaster areas. Losses from flooding along the **Arkansas**, **Trinity**, and **Red Rivers** exceeded \$1 billion.

High winds, hail, and tornadoes accompanied the numerous outbreaks of thunderstorms this spring. In May alone, preliminary counts showed there were 259 tornadoes. The count for June showed an incredible 412 tornadoes, which brought the year-to-date total to 935, the most for any January-June period. On June 2 alone, over 100 twisters, mostly in **Indiana** and **Illinois**, killed 18 people and injured hundreds.

The unrelenting rains of spring significantly delayed summer crop planting in the **Midwest**, though the moisture eradicated remnants of the 1988 drought still affecting the **western corn belt**. As of May 27, only 26 percent of the U.S. soybean crop had been planted. This compared with an average of 60 percent.

Summer (June - August)

Heavy rains also flooded the **Midwest** in June, with the deadliest occurrence on the night of June 14 at **Shadyside, OH**, when 3-5 inches of rain in a 3-hour period resulted in 26 deaths.

TABLE 1. TOP TEN YEARS WITH LARGE PARTS OF THE CONTIGUOUS U.S. EXPERIENCING WARMER THAN NORMAL ANNUAL TEMPERATURES.

YEAR	% AREA
1990	98.8826
1986	96.8537
1900	95.6946
1934	94.4312
1921	93.1858
1953	92.6219
1939	90.2976
1977	86.3666
1931	85.9921
1954	85.2692

Abundant rains, often accompanied by severe weather, continued to affect heartland areas into August. Nevertheless, farmers eventually got their crops in the ground. Since the fear of an early frost never materialized, and with plenty of growing moisture in the ground, most midwestern farmers realized good crop yields, with national corn yields (118.5 bu/ac) close to a record.

There were several outstanding heat waves in 1990, but the most notable gripped the **southern Plains** and **Southwest** during June, setting a number of all-time records. On June 24, **Lubbock, TX**, reached 110° F, the warmest ever recorded. The next day, 16 cities set daily maximum temperature marks, with **Phoenix, AZ**, setting its all-time high of 120° F. That record stood for one day, as the reading on June 26 hit 122° F.

Heat and dryness promoted numerous outbreaks of fires in late June. Six fire fighters lost their lives battling a 28,000 acre wildfire in **Arizona's Tonto National Forest**. In **Santa Barbara, CA**, a fire destroyed 500 buildings as it scorched over 4000 acres. Additionally, **Alaska** suffered its third worst fire season, with over 3 million acres charred, as warm, dry weather persisted during June-August.

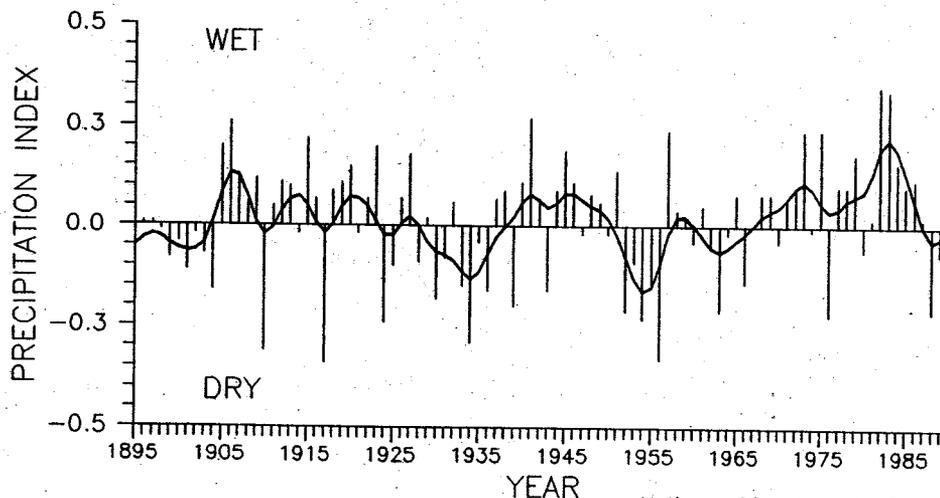
Though most of the **South**, particularly the **lower Mississippi Valley**, was persistently wet through the first half of the year, hot and dry summer days brought drought to much of the region by the end of August. The dryness, which covered **coastal Georgia** and **South Carolina** in the spring, spread westward through **Alabama** to **Mississippi** by late August. With the **Southeast** having its seventh driest summer since 1895, crops and pastures shriveled. Peanut, corn, and soybean production fell sharply.

Autumn (September - November)

Several storm systems, including the remnants of tropical storms **Marco** and **Klaus**, deluged the **eastern United States** in October, leaving the drought little more than a memory. Totals of 8 to 20 inches drenched the ground from **Pennsylvania** southward through **eastern Georgia**.

There were 14 named tropical storms and hurricanes this year in the **North Atlantic**, but only one (**Marco**) came ashore with winds of tropical storm

Figure 2 U.S. NATIONAL MEAN PRECIPITATION INDEX ANNUAL, 1895-1990



strength. In terms of number of storms, this was the most active season since 1969.

On the west coast, frequent frontal incursions dropped enough rain and snow to produce two major bouts of flooding in western Washington State during November. By the end of Thanksgiving weekend, every county west of the Cascade divide reported flood problems, with 3000 people evacuated from their homes. Unfortunately, the rain did not fall farther south where it was needed. Both October and November rainfall was unusually light in southern California, raising fears the drought there could extend into a fifth year.

December 1990

A frigid arctic air mass drove southward from western Canada on December 18. Biting cold dominated central and western portions of the United States until the end of the year. Record cold in southern California from December 21 to 25 severely damaged citrus and vegetable crops. Persistent rains along the eastern boundary of the cold air led to widespread flooding in the Tennessee and Ohio Valleys, where a number of cities reported their wettest December ever. Florida basked in record warmth much of the month.

Summary

The year will go down in the record books as unusually wet in the Midwest, Northeast, and lower

Mississippi Valley, and dry in the West (figs. 3 and 4). Dayton and Cleveland had their wettest year ever, with over 50 inches of rain. Regionally (fig. 5), the Central region had its wettest year since at least 1895, when NCDC statistics begin (table 2). Three States--Illinois, Indiana, and Ohio--had the wettest year on record (table 3). The Northeast measured its third wettest year. The annual total in Pittsfield, MA, of 68.08 inches beat the old record by 15 inches. The West had its 10th driest year. Florida endured its fourth driest.

The annual temperature departure map (fig. 6) shows that only a tiny part of the Northwest had below normal temperatures. Since records began, this is the first time that more than 98 percent of the country has been above normal (table 1). Six states along the eastern seaboard (table 4) had their warmest year ever.

Preliminary data indicate 1115 tornadoes raked across the countryside this year, a new record (fig. 7). This compares with a mean of 757. However, the year 1973 is a close second at 1102 tornadoes and may nudge 1990 from first place when final data are received.

Douglas Le Comte
Managing Editor

Figure 3

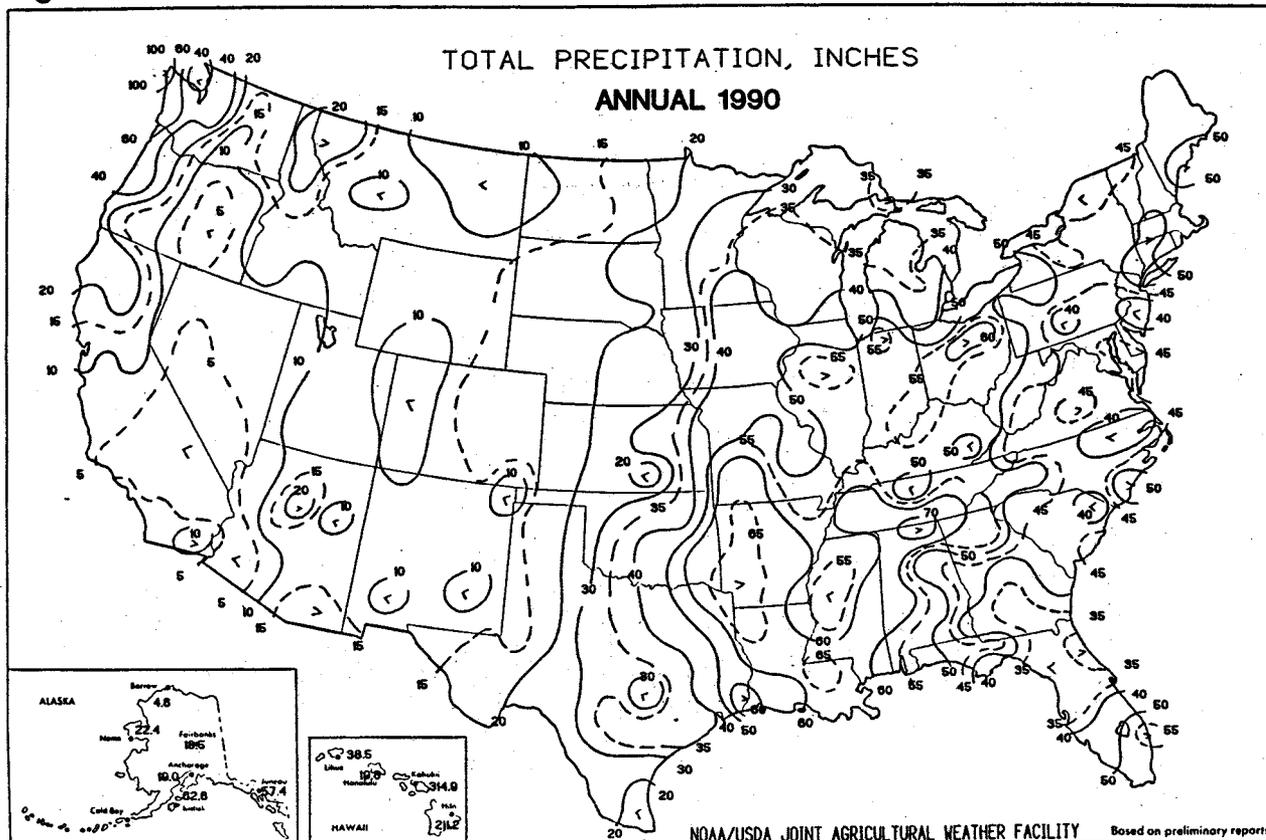
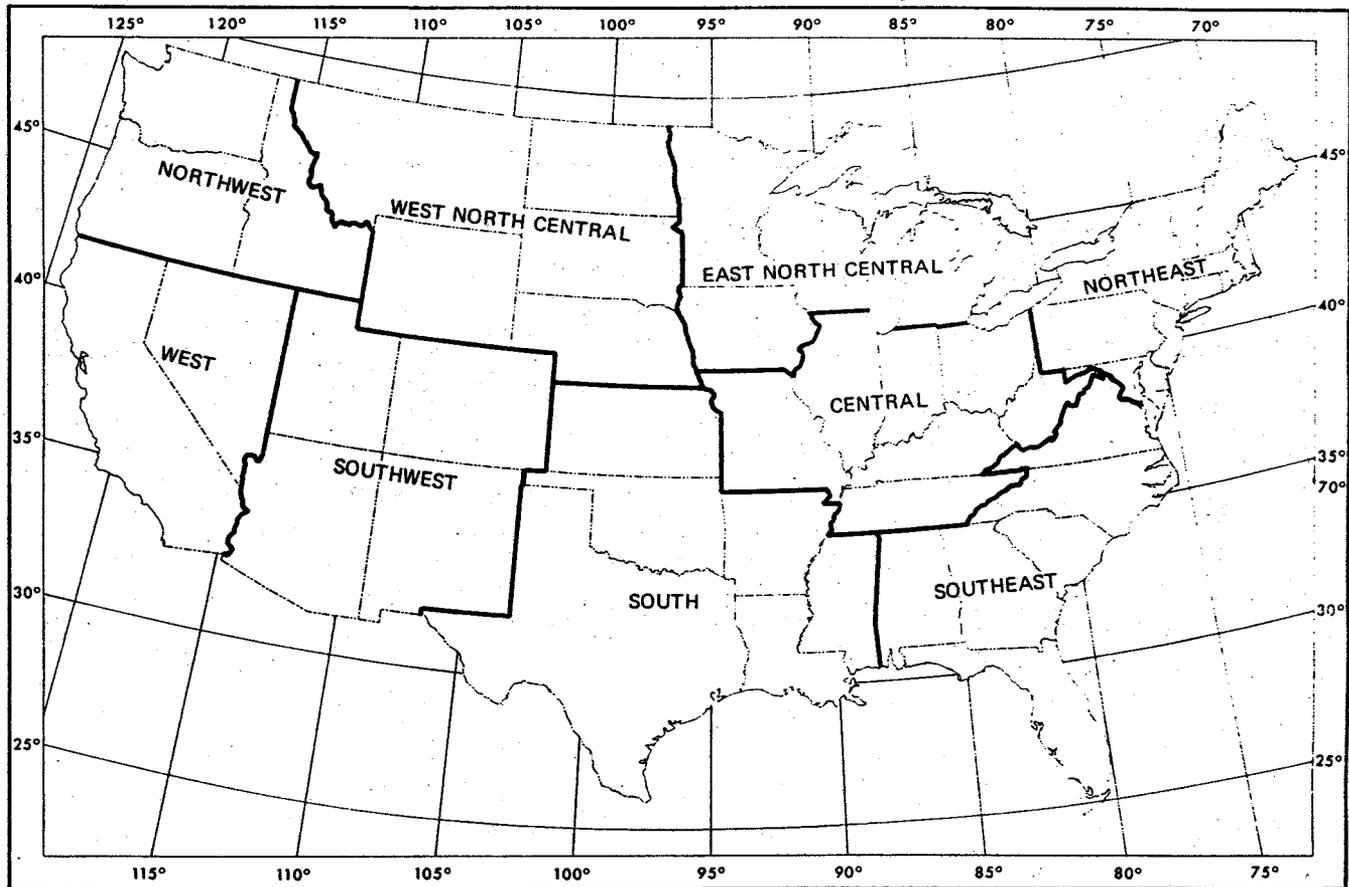


Figure 5 U.S. REGIONS



National Climatic Data Center

TABLE 2. TEMPERATURE AND PRECIPITATION RANKINGS FOR JAN-DEC 1990, BASED ON THE PERIOD 1895-1990. 1 = DRIEST/COLDEST, 96 = WETTEST/HOTTEST.

REGION	PRECIPITATION	TEMPERATURE
NORTHEAST	94	93
EAST NORTH CENTRAL	88	91
CENTRAL	96	89
SOUTHEAST	33	96
WEST NORTH CENTRAL	21	88
SOUTH	83	82
SOUTHWEST	65	78
NORTHWEST	57	83
WEST	10	71
NATIONAL	85	90

TABLE 3. PRECIPITATION RANKINGS FOR JAN-DEC 1990, BASED ON THE PERIOD 1895 TO 1990. 1 = DRIEST, 96 = WETTEST.

STATE	RANK	STATE	RANK	STATE	RANK	STATE	RANK
AL	64	IA	88	NE	38	RI	76
AZ	58	KS	61	NV	38	SC	48
AR	92	KY	90	NH	90	SD	52
CA	6	LA	65	NJ	69	TN	84
CO	74	ME	86	NM	73	TX	73
CT	89	MD	75	NY	94	UT	38
DE	64	MA	86	NC	43	VT	94
FL	4	MI	93	ND	19	VA	63
GA	19	MN	57	OH	96	WA	80
ID	58	MS	70	OK	89	WV	83
IL	96	MO	89	OR	27	WI	89
IN	96	MT	19	PA	95	WY	26

Figure 6

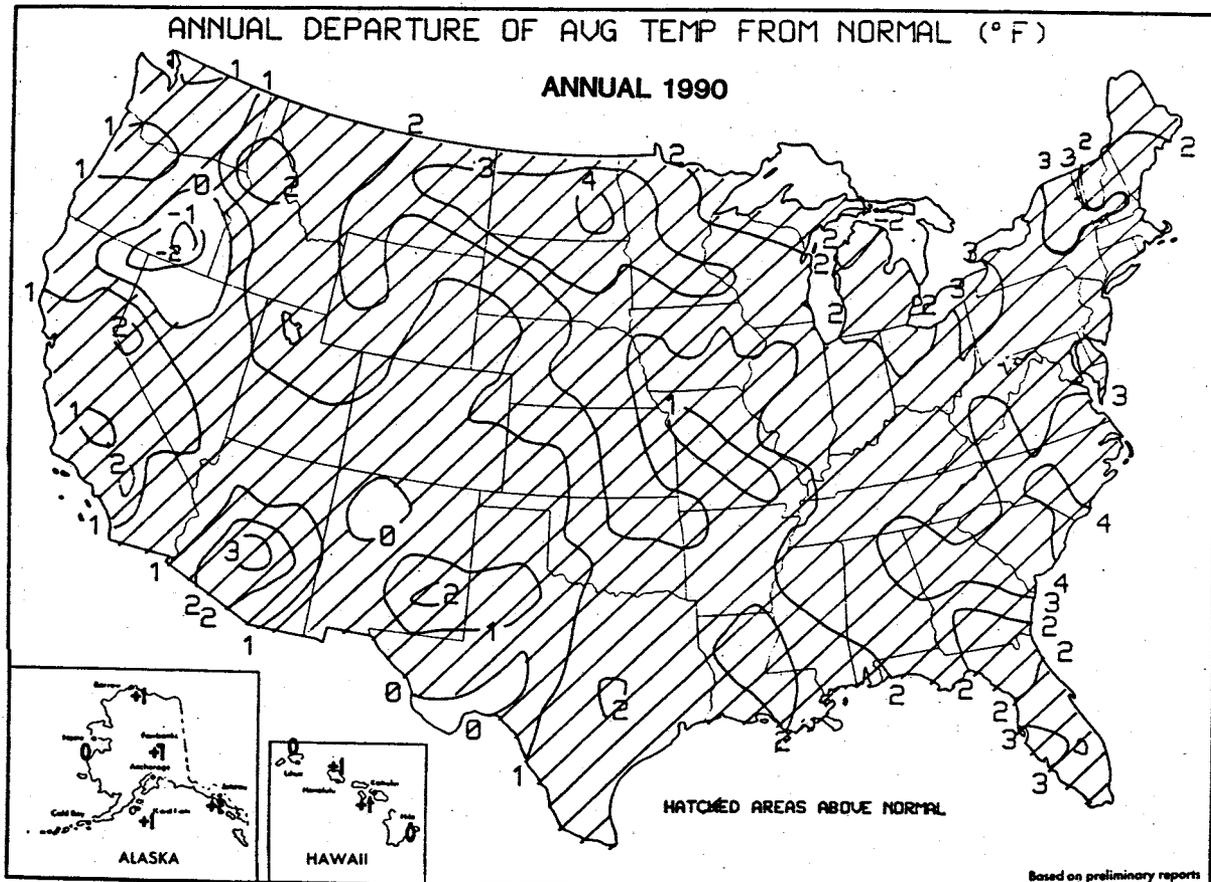
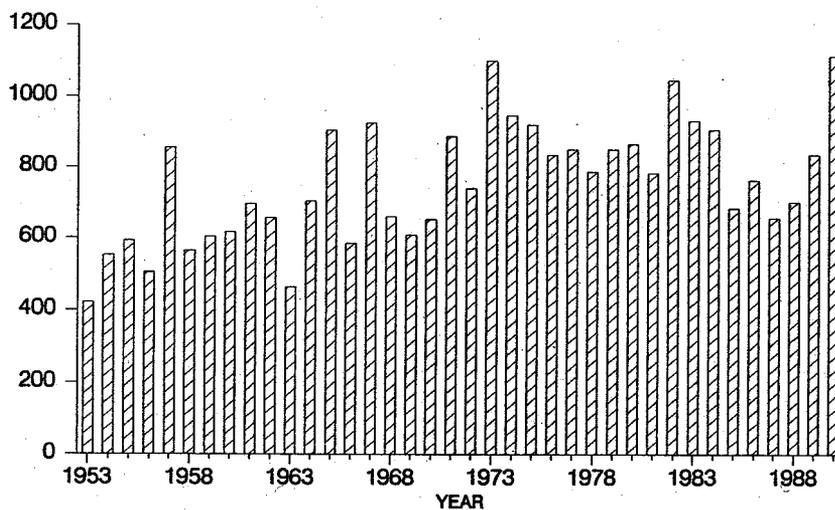


TABLE 4. TEMPERATURE RANKINGS FOR JAN-DEC 1990, BASED ON THE PERIOD 1895 TO 1990. 1 = COLDEST, 96 = WARMEST.

STATE	RANK	STATE	RANK	STATE	RANK	STATE	RANK
AL	88	IA	85	NE	81	RI	95
AZ	76	KS	83	NV	67	SC	95
AR	82	KY	94	NH	95	SD	87
CA	72	LA	91	NJ	96	TN	87
CO	69	ME	83	NM	70	TX	72
CT	95	MD	96	NY	93	UT	84
DE	96	MA	94	NC	96	VT	93
FL	96	MI	82	ND	92	VA	96
GA	93	MN	91	OH	91	WA	81
ID	84	MS	87	OK	85	WV	94
IL	83	MO	85	OR	82	WI	91
IN	82	MT	87	PA	93	WY	81

Figure 7 TOTAL NUMBER OF TORNAOES, U.S.

ANNUAL TOTAL, 1953-1990



National Climatic Data Center, NOAA

CLIMATE WARMING IN THE UNITED STATES?

The latest temperature statistics for the United States suggest that this country may be seeing some signs of the warming trend observed in many other parts of the world. Preliminary data from the National Climatic Data Center (NCDC) reveal that the national average temperature of 53.9° F in 1990 made this the seventh warmest year since these records began in 1895 (see fig. 1, page 2). For the first time in NCDC records, temperatures over more than 98 percent of the country averaged above normal. In addition, the average temperature for the past 5 years was comparable to the previous warmest 5-year period, which occurred in the 1930's.

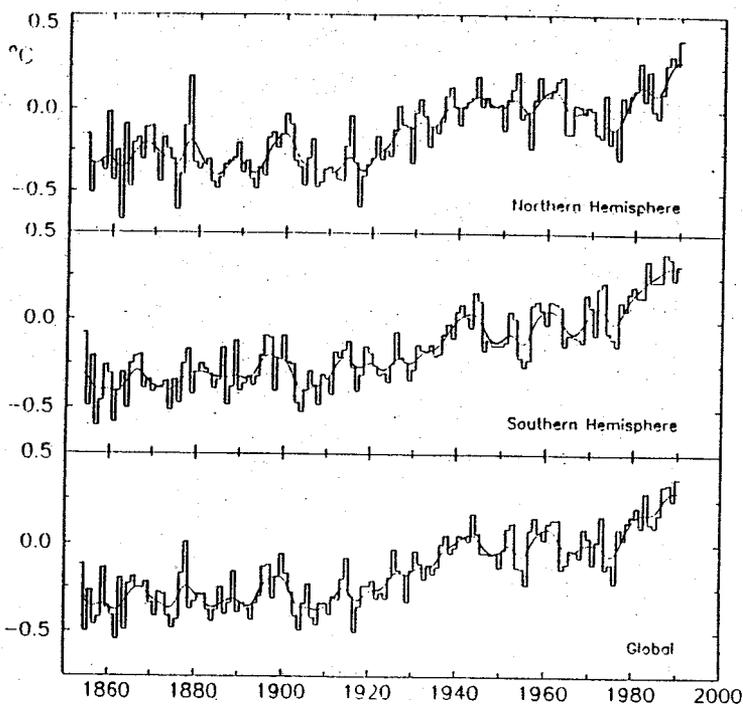
Many cities along the eastern seaboard reported the warmest year on record in 1990, including Miami, Atlanta, Raleigh, Norfolk, Washington (where records go back to 1872), Baltimore (where records date back to 1870), Atlantic City, and Hartford. Regionally, the Southeast had the warmest year on record, while the Northeast had its fourth warmest.

Globally, preliminary data from several sources indicate 1990 was either the warmest year ever measured (fig. 1) or one of the warmest, continuing the marked upward trend that began in the 1970's. Northern Hemisphere temperatures, paced by especially widespread warmth in March, easily surpassed previous record years. Southern Hemisphere readings were not records but were well above long-term means.

Before conclusions are drawn about climate change and global warming, some cautionary notes are in order. The accuracy of long temperature time series, especially for large areas that include the oceans, remains a subject of debate. The extent of the warming caused by "greenhouse gases," urban effects, or other factors also is not clear. Additionally, the U.S. temperature record shows another runup in temperatures in the 1920's and early 1930's prior to the rapid escalation of greenhouse gas concentrations in the atmosphere. One wonders if anyone can be certain that temperatures in coming years will not begin to decrease as they did for more than 30 years after 1934, the country's warmest year.

Nevertheless, an argument against global greenhouse warming has been its lack of confirmation in the continental United States which, because of a dense network of stations, should have one of the most accurate time series of temperatures. Now, with unusually warm years in 1986, 1987, 1988, and 1990, even skeptical observers can see signs of an erratic trend toward higher temperatures since the late 1970's.

Figure 1 Annual Mean Temperatures

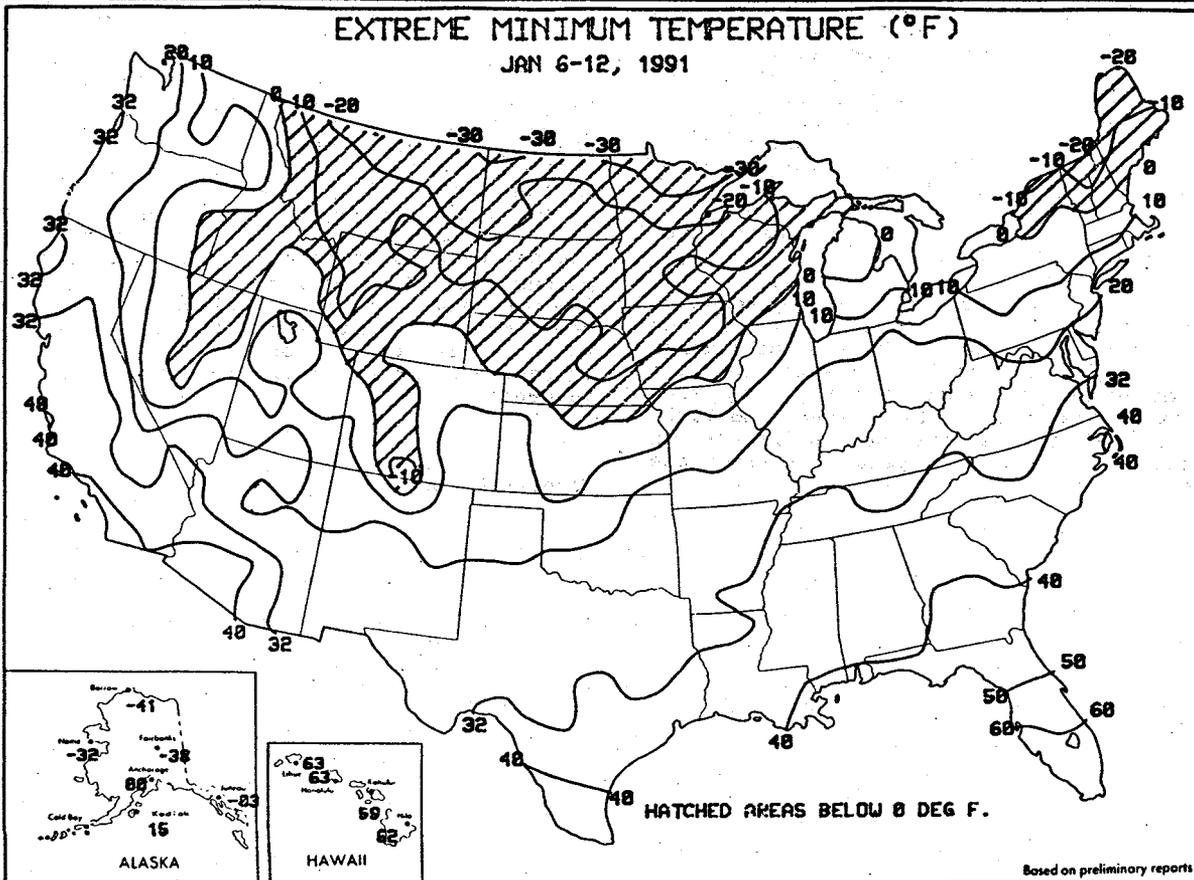
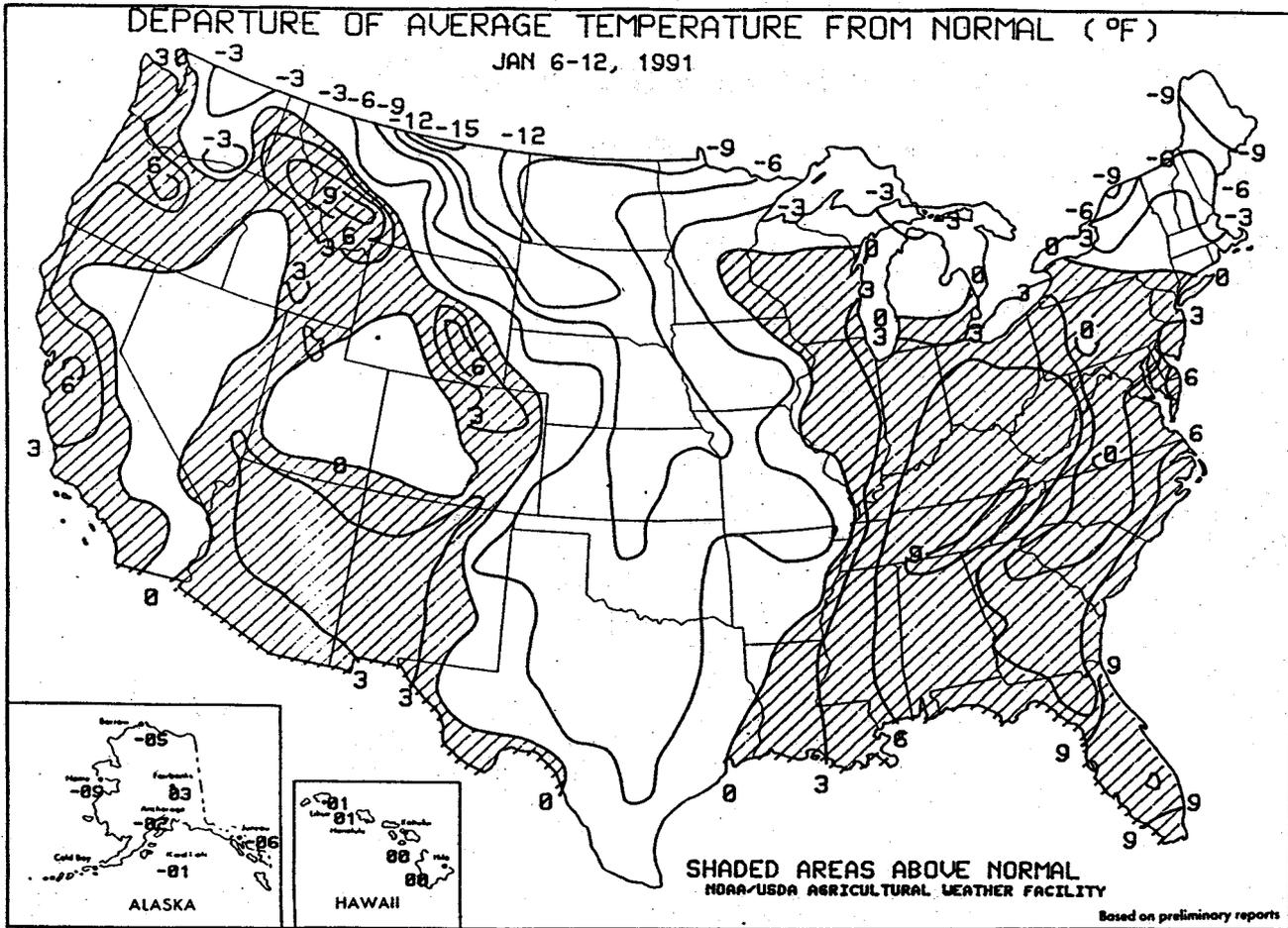


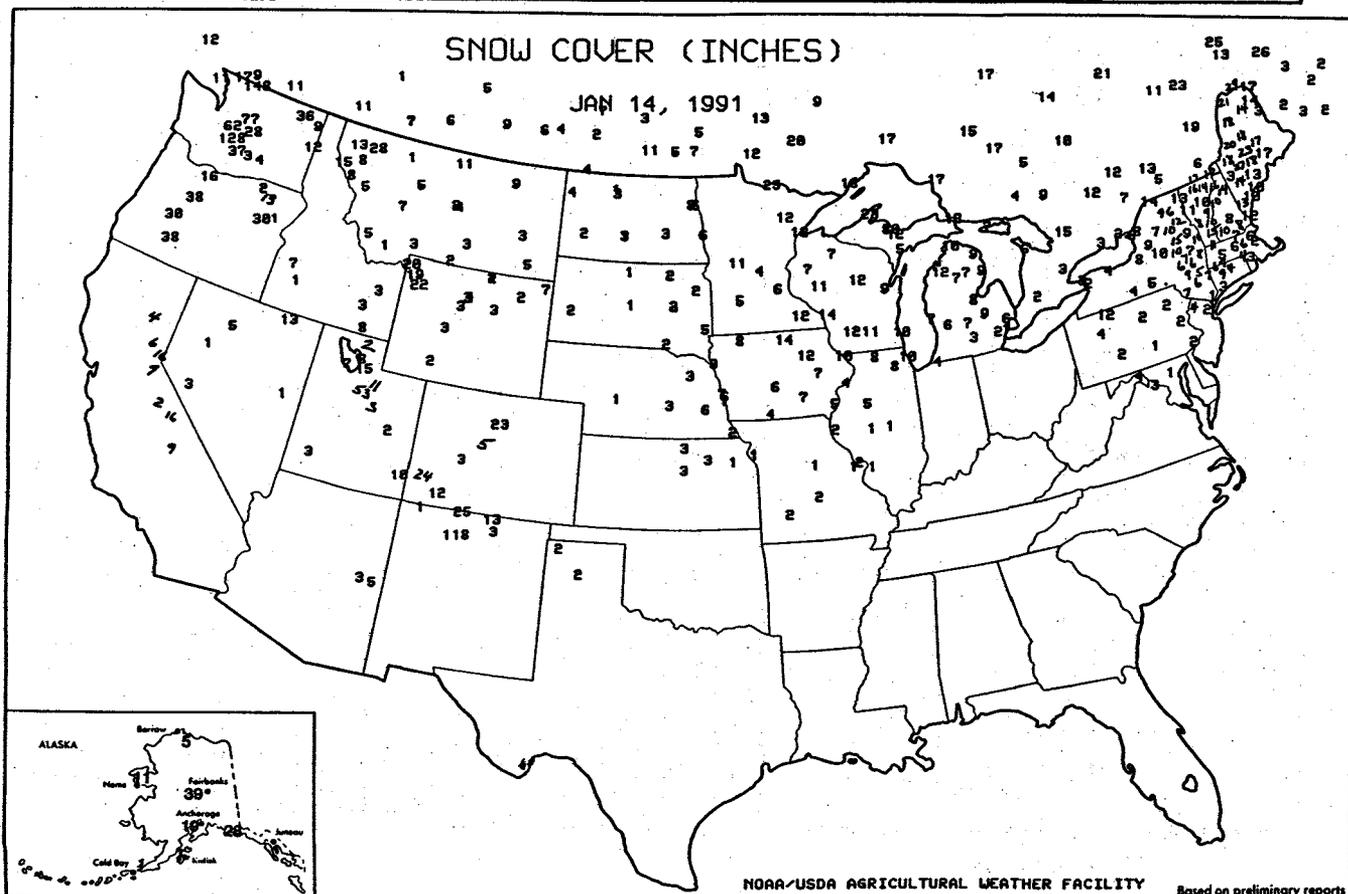
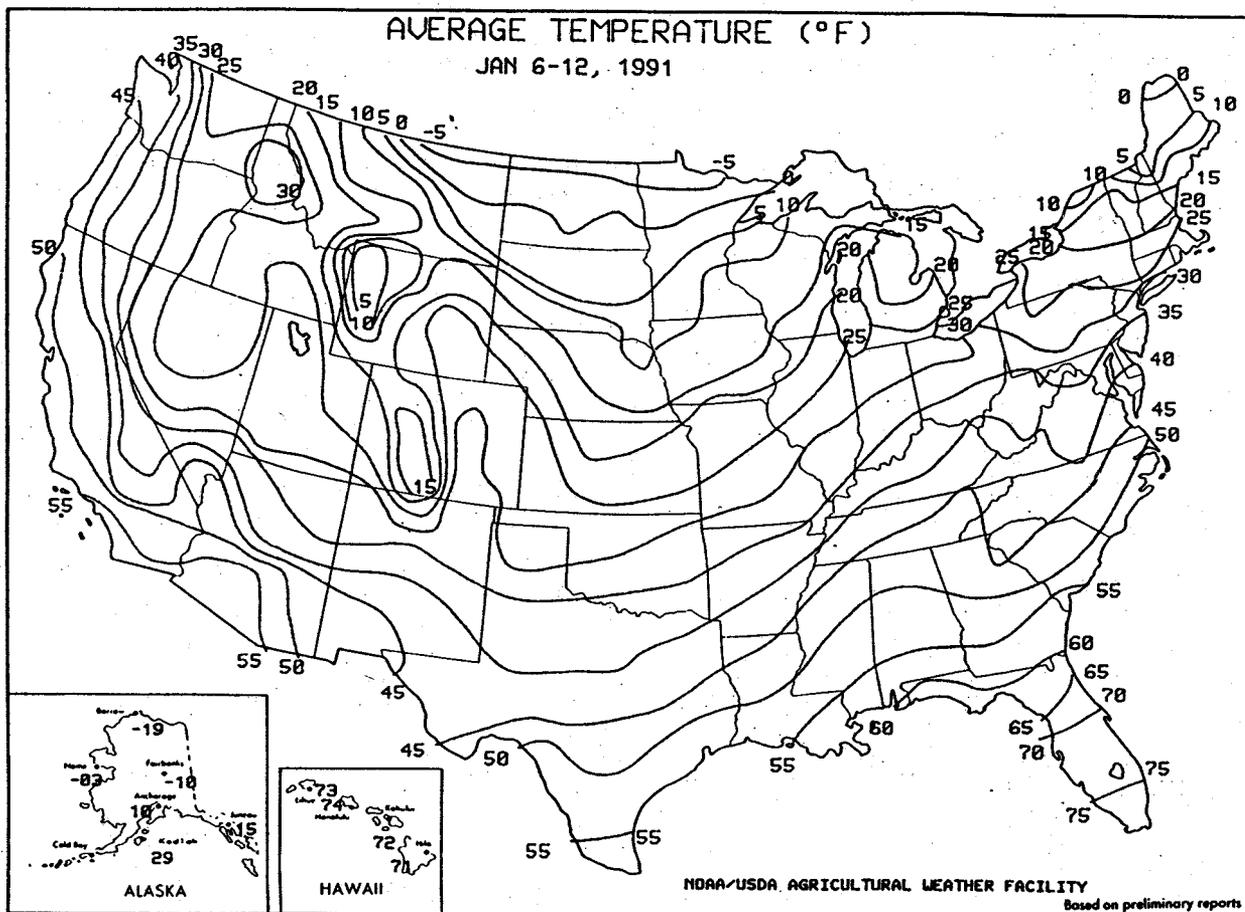
P.D. JONES, CLIMATIC RESEARCH UNIT
UNIVERSITY OF EAST ANGLIA
NORWICH, UK

1990 VALUES BASED ON PRELIMINARY DATA

The record for 1990 also shows possible benefits from a warmer global climate. Thanks, in part, to a mild winter and spring as well as good growing-season rainfall, crop production achieved new records in Canada and India and approached a record in the Soviet Union. Add in good yields in the United States and you have the best year ever for global crop production. Other factors besides weather have contributed to a rising trend in crop production. It is still noteworthy, however, that in this year of record warmth the latest U.S. Department of Agriculture forecast (1990/91) for world grain production of 1.765 billion tons exceeds the previous record set in 1986/87 by 5 percent.

Douglas Le Comte





National Weather Data for Selected Cities

Weather Data for the Week Ending January 12, 1991

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	MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE		.50 INCH OR MORE	
																			TEMP. °F	PRECIP.		
AL BIRMINGHAM	56	46	62	34	51	8	.7	-.5	.6	6.6	95	1.1	55	94	82		0	0	4	1		
MOBILE	65	51	73	39	58	7	6.7	5.7	3.4	12.8	176	7.6	409	97	77		0	0	4	3		
MONTGOMERY	59	48	66	38	54	7	2.5	1.6	1.2	6.2	96	2.9	172	99	81		0	0	4	3		
AK ANCHORAGE	15	4	24	0	10	-2	5.5	.3	.4	2.2	162	.5	148	94	83		0	0	2	0		
BARROW	-12	-26	11	-41	-19	-5	T	T	T	T	T	T	T	83	62		0	0	7	0		
FAIRBANKS	-4	-17	6	-38	-10	-3	5.5	.3	.1	3.2	338	.3	117	82	72		7	7	4	0		
JUNEAU	23	7	35	-3	15	-6	T	T	T	T	T	T	T	93	71		0	0	0	0		
KODIAK	34	24	38	15	29	-1	1.1	-1.3	.9	6.1	99	7.5	36	93	71		0	0	1	1		
NOME	5	-11	23	-32	-3	-9	T	T	T	T	T	T	T	91	72		6	6	1	0		
AZ PHOENIX	64	46	70	42	55	3	T	T	T	T	T	T	T	84	64		0	0	0	0		
PRESCOTT	53	28	65	24	40	5	T	T	T	T	T	T	T	94	51		0	0	0	0		
TUCSON	65	40	69	35	52	1	T	T	T	T	T	T	T	88	44		0	0	0	0		
YUMA	67	47	71	43	57	2	T	T	T	T	T	T	T	97	43		0	0	0	0		
AR FORT SMITH	40	33	45	23	36	-1	1.1	.1	.1	1.4	306	1.4	1000	80	42		0	0	0	0		
LITTLE ROCK	41	35	46	30	38	-2	4.2	3.3	2.8	6.1	171	1.3	168	99	86		0	3	4	1		
CA BAKERSFIELD	56	41	62	37	48	1	.3	.1	.3	.9	90	.6	182	100	79		0	1	4	2		
BUREKA	56	45	61	37	51	3	T	T	T	T	T	T	T	93	70		0	0	6	1		
FRESNO	55	40	60	35	48	3	9	-.7	.5	3.8	43	.9	33	97	71		0	0	0	0		
LOS ANGELES	47	49	67	44	55	-1	.3	-.3	.3	1.4	52	1.4	125	92	62		0	0	1	0		
REDDING	47	36	54	25	42	-4	.8	-.2	.3	1.4	13	.8	24	100	81		0	1	5	0		
SACRAMENTO	54	43	65	39	49	4	.4	-.6	.3	1.8	41	.4	23	97	72		0	0	5	0		
SAN DIEGO	63	50	65	46	57	1	.3	-.2	.3	1.6	60	1.1	131	90	62		0	0	1	0		
SAN FRANCISCO	55	45	59	39	50	2	.2	-.9	.2	2.0	38	.2	12	95	72		0	0	3	0		
CO DENVER	48	16	55	8	32	3	0	-.1	.0	.3	47	.1	32	77	24		0	7	0	0		
GRAND JUNCTION	32	14	35	8	23	-2	T	T	T	T	1.5	181	.5	204	94	68		0	0	0	0	
PUEBLO	43	17	62	13	30	0	T	T	T	T	56	T	0	94	47		0	7	7	0	0	
CT BRIDGEPORT	35	25	45	15	30	0	T	T	T	T	85	.8	59	82	57		0	6	2	0	0	
HARTFORD	30	17	42	8	24	-2	1.5	.6	.5	6.3	113	1.5	101	81	52		0	7	3	2	2	
DC WASHINGTON	42	32	47	22	37	1	2.4	1.7	1.6	7.1	166	2.4	212	95	62		0	3	6	2	0	
FL APALACHICOLA	67	54	72	42	61	8	6.8	6.0	3.5	8.4	173	6.8	497	100	79		0	0	4	3	0	
DAYTONA BEACH	78	59	84	50	69	11	.8	.3	.4	1.1	36	.8	91	99	62		0	0	3	0	0	
JACKSONVILLE	72	53	81	45	62	8	2.9	2.2	2.7	4.8	137	2.9	271	99	69		0	0	5	1	0	
KEY WEST	82	73	83	69	77	7	.4	.0	.2	3.1	130	1.7	277	90	68		0	0	3	0	0	
MIAMI	81	70	83	65	76	8	.3	-.1	.2	1.4	53	.4	45	89	64		0	0	4	0	0	
ORLANDO	79	61	84	53	71	10	1	-.4	.1	.9	33	.1	9	98	59		0	0	2	0	0	
TALLAHASSEE	66	52	72	44	59	8	5.7	4.6	2.7	10.1	159	5.7	314	99	79		0	0	4	2	0	
TAMPA	81	63	85	58	72	13	.7	.2	.4	.9	30	.7	88	98	62		0	0	5	0	0	
WEST PALM BEACH	81	68	82	63	74	9	1.0	.4	.7	3.1	94	1.1	110	93	65		0	0	3	1	1	
GA ATLANTA	51	42	64	35	46	4	1.3	.2	.5	4.4	72	1.3	70	100	87		0	0	5	1	1	
AUGUSTA	56	41	67	38	49	4	1.6	.7	1.1	4.0	85	2.0	133	97	78		0	0	5	1	1	
MACON	58	46	65	40	52	6	1.7	.7	.6	5.7	99	2.1	130	99	86		0	0	6	1	1	
SAVANNAH	64	48	79	40	56	7	1.6	.9	1.5	4.3	108	2.2	183	99	72		0	0	4	1	1	
HI HILO	79	64	82	62	71	0	T	-1.3	.4	30.9	188	.8	21	96	67		0	0	6	0	0	
HONOLULU	81	66	84	63	74	1	T	-.8	T	5.0	101	T	3	83	55		0	0	1	0	0	
KARULUI	82	62	86	59	72	0	T	-.9	T	6.0	140	T	1	92	61		0	0	1	0	0	
LIHUE	77	68	78	63	73	1	T	-1.5	T	3.4	42	T	0	84	67		0	0	0	0	0	
ID BOISE	29	16	43	-5	23	-7	.6	.2	.5	1.5	79	.6	95	94	76		0	6	4	0	0	
LEWISTON	41	32	57	18	36	5	T	-.3	T	.4	24	T	4	65	50		0	3	1	0	0	
POCATELLO	34	13	40	0	24	0	-.1	-.2	.0	1.2	90	-.1	16	91	69		0	7	2	0	0	
IL CHICAGO	29	18	32	13	24	3	.7	.2	.5	2.9	92	.9	125	93	74		0	7	4	1	1	
MOLINE	27	9	32	3	18	-2	-.3	-.1	.1	3.9	151	.9	125	96	75		0	7	3	0	0	
PEORIA	29	18	33	12	24	2	.3	-.1	.2	4.7	174	1.0	147	94	77		0	7	4	0	0	
QUINCY	29	17	33	7	23	0	-.2	-.2	.1	2.0	88	.3	54	95	75		0	7	2	0	0	
ROCKFORD	27	12	31	4	20	1	.4	.0	.3	3.2	128	.8	130	91	73		0	7	5	0	0	
SPRINGFIELD	31	24	33	17	27	3	.5	-.1	.3	5.7	204	.7	105	98	83		0	7	3	0	0	
IN EVANSVILLE	39	32	47	30	35	5	1.5	.8	.9	9.4	203	2.0	167	98	83		0	4	3	1	1	
FORT WAYNE	32	25	34	19	29	5	.5	.0	.5	8.2	249	.7	76	94	77		0	7	3	0	0	
INDIANAPOLIS	35	29	42	28	32	6	.6	-.1	.4	8.3	206	.6	57	97	81		0	6	4	0	0	
SOUTH BEND	31	23	34	14	27	4	.7	-.1	.5	5.9	149	.8	80	91	69		0	7	4	1	1	
IA DES MOINES	22	9	28	-6	15	-3	-.2	-.1	.1	3.0	210	.8	211	89	71		0	7	2	0	0	
SIoux CITY	18	4	22	-13	11	-5	-.1	.0	.1	1.1	111	.3	125	90	70		0	7	2	0	0	
WATERLOO	22	5	27	-17	13	-1	-.1	-.3	.1	2.0	135	.7	221	96	76		0	7	2	0	0	
KS CONCORDIA	23	11	30	-1	17	-8	-.3	-.2	.3	1.0	102	-.5	208	91	72		0	7	1	0	0	
DODGE CITY	31	17	50	5	24	-5	-.5	-.2	.1	2.3	119	.2	116	95	69		0	7	2	0	0	
GOODLAND	36	17	59	14	26	-4	-.1	-.0	.2	.3	33	.2	14	94	65		0	7	0	0	0	
TOPEKA	27	17	30	5	22	-4	-.2	-.0	.2	1.3	80	.3	84	92	74		0	7	2	0	0	
WICHITA	28	19	31	13	24	-6	-.3	.1	.2	1.2	91	.4	129	93	78		0	7	3	0	0	
KY BOWLING GREEN	45	36	55	31	40	6	2.6	1.5	1.7	14.0	220	2.6	141	96	83		0	1	4	1	1	
LEXINGTON	42	34	53	30	38	6	1.4	.6	.8	12.0	220	1.8	126	98	86		0	2	5	1	1	
LOUISVILLE	42	34	53	31	38	6	1.7	.9	1.0	10.9	228	2.1	158	97	80		0	1	6	1	1	
LA ALEXANDRIA	55	44	68	34	50	1	4.1	3.0	2.7	14.8	223	6.5	370	95	80		0	0	4	2	1	
BATON ROUGE	61	47	71	34	54	3	4.2	3.2	3.1	10.2	150	5.4	303	97	78		0	0	5	2	2	
LAKE CHARLES	61	47	72	37	54	4	6.4	5.3	5.0	12.8	185	8.8	465	96	74		0	0	5	2	2	
NEW ORLEANS	62	51	70	40	56	4	7.8	6.7	3.6	19.0	264	9.3	484	95	82		0	0	4	3	3	

Based on 1951-80 normals

Weather Data for the Week Ending January 12, 1991

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT	NUMBER OF DAYS							
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE	MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	TEMP. °F		PRECIP.	
																			.01 INCH OR MORE	.50 INCH OR MORE		
SHREVEPORT	49	40	60	28	44	-2	4.1	3.2	2.5	8.4	153	4.4	278	98	79	0	0	1	4	3	3	
ME CARIBOU	9	-8	26	-20	1	17	0	-11	1.0	.6	.1	.3	6.2	151	65	79	55	0	7	3	0	
PORTLAND	26	8	38	1	17	0	1.0	.1	.7	9.0	150	1.1	73	82	43	0	0	7	3	1	1	
MD BALTIMORE	41	30	46	20	35	2	2.8	2.1	1.6	7.7	167	2.8	237	95	68	0	0	4	6	2	2	
SALISBURY	50	34	59	28	42	7	4.2	3.4	2.1	8.3	164	4.3	317	97	71	0	0	3	6	3	3	
MA BOSTON	35	17	46	8	25	2	1.5	.6	.9	4.7	78	1.5	96	86	55	0	0	6	4	1	1	
CHATHAM	38	27	46	19	32	1	2.0	1.0	1.1	5.9	88	2.1	120	91	65	0	0	6	3	2	2	
MI ALPENA	24	9	29	-1	17	2	4.4	.0	.3	2.4	90	.6	84	91	65	0	0	6	3	0	0	
DETROIT	32	22	35	16	27	3	5.5	.1	.5	5.1	154	.7	89	90	68	0	0	7	3	0	0	
FLINT	28	15	31	6	21	-1	6.6	.3	.6	3.5	131	1.0	149	90	66	0	0	7	3	1	0	
GRAND RAPIDS	28	16	34	6	22	-1	4.4	-1	.4	3.7	107	.7	84	93	71	0	0	7	2	0	0	
HOOCHTOW LAKE	25	8	30	-12	17	-1	5.5	.2	.3	2.4	96	.9	138	91	67	0	0	7	4	0	0	
LANSING	27	14	31	2	21	0	5.5	.1	.5	3.6	113	.8	110	94	65	0	0	7	4	0	0	
MARQUETTE	20	0	26	-12	10	-2	2.2	-3	.1	2.0	60	.3	33	92	73	0	0	7	4	0	0	
MUSKOGON	30	16	34	6	23	-1	7.7	.2	.6	3.6	102	1.0	104	95	67	0	0	7	3	1	1	
SAULT ST. MARIE	18	3	26	-4	11	-3	3.3	-2	.1	2.9	83	.4	42	90	61	0	0	7	4	0	0	
MN ALEXANDRIA	14	-6	20	-11	4	-2	2.2	.0	.1	.7	65	.2	55	87	65	0	0	7	3	0	0	
DULUTH	8	-6	25	-24	4	-3	2.2	-1	.1	.7	37	.2	38	88	62	0	0	7	3	0	0	
IWT L FALLS	8	-21	22	-36	-6	-7	3.3	.1	.1	1.6	126	.4	103	84	62	0	0	7	4	0	0	
MINNEAPOLIS	19	6	27	-5	12	1	2.2	.0	.1	1.2	105	.2	64	85	61	0	0	7	4	0	0	
ROCHESTER	18	5	25	-8	12	2	3.3	.1	.2	2.2	177	.5	155	90	69	0	0	7	3	0	0	
MS GREENWOOD	53	42	67	37	48	4	2.1	.9	1.1	11.2	149	2.4	115	96	71	0	0	0	4	2	2	
JACKSON	56	45	68	37	51	5	1.7	.5	1.2	8.1	109	2.4	115	99	87	0	0	0	5	1	1	
MERIDIAN	58	47	66	37	52	7	1.6	.4	1.3	5.7	74	2.1	100	99	86	0	0	0	5	1	1	
MO CAPE GIRARDEAU	36	31	39	30	34	1	2.0	1.3	.9	11.5	233	2.4	202	98	87	0	0	5	4	2	2	
COLUMBIA	30	23	33	16	27	-1	2.2	-2	.2	4.2	154	.7	93	91	79	0	0	7	2	0	0	
KANSAS CITY	26	16	29	4	21	-7	2.2	-1	.2	1.5	79	.4	86	94	79	0	0	7	3	0	0	
SAINT LOUIS	33	27	35	22	30	1	7.7	.3	.4	7.3	252	.8	118	94	78	0	0	7	3	0	0	
SPRINGFIELD	32	27	35	22	30	-2	1.2	.8	.9	7.4	230	1.4	201	98	86	0	0	7	4	1	1	
MT BILLINGS	24	5	49	-9	15	-6	2.2	-2	.2	6.6	56	.2	45	74	56	0	0	7	0	0	0	
GLASGOW	5	-12	40	-23	-4	-12	1.1	.1	.1	.7	150	.1	100	83	64	0	0	7	3	0	0	
GREAT FALLS	22	6	49	-15	14	-5	T	T	T	.9	76	.1	32	79	61	0	0	6	1	0	0	
HAVRE	3	-14	40	-35	-5	-17	T	T	T	.4	50	T	17	79	55	0	0	7	1	0	0	
HELENA	24	5	50	-15	15	-3	T	T	T	.5	57	T	11	84	60	0	0	7	1	0	0	
KALISPELL	23	14	41	-10	18	-1	.9	.5	.4	5.5	247	1.1	167	92	79	0	0	7	7	0	0	
MILES CITY	10	-8	39	-21	1	-13	T	T	T	.6	66	.3	142	79	56	0	0	7	1	0	0	
MISSOULA	30	17	46	-4	23	3	1.1	-2	.0	1.2	69	.1	19	94	76	0	0	7	4	0	0	
NE GRAND ISLAND	21	5	28	-10	13	-8	1.1	-1	.1	1.0	120	.3	132	90	72	0	0	7	1	0	0	
LINCOLN	21	6	28	-10	13	-6	2.2	-1	.2	1.3	149	.6	233	87	66	0	0	7	1	0	0	
NORFOLK	17	1	22	-13	9	-9	1.1	-1	.0	.9	108	.4	184	93	71	0	0	7	2	0	0	
NORTH PLATTE	29	10	50	-3	19	-2	1.1	T	T	.3	61	.2	171	96	69	0	0	7	1	0	0	
OMAHA	18	6	25	-8	12	-8	2.2	-1	.2	1.4	138	.7	236	80	62	0	0	7	1	0	0	
SCOTTSBLUFF	35	7	53	-1	21	-3	1.1	.0	.1	5.5	68	.1	53	94	56	0	0	7	1	0	0	
VALENTINE	26	1	46	-11	14	-5	T	T	T	.3	60	T	0	96	69	0	0	7	0	0	0	
NV ELY	43	10	54	7	27	2	T	T	T	.4	38	.1	29	85	46	0	0	7	0	0	0	
LAS VEGAS	57	36	62	33	46	2	0	-1	.0	.2	45	.2	117	88	43	0	0	0	0	0	0	
RENO	37	22	54	17	29	2	-3	T	T	.4	26	T	2	94	73	0	0	7	1	0	0	
WINNEMUCCA	31	16	46	5	24	-6	.3	.1	.2	.9	77	.7	94	95	83	0	0	7	4	0	0	
NH CONCORD	26	9	37	-3	17	-3	.8	.2	.5	5.0	108	.8	70	85	45	0	0	7	3	0	0	
NJ ATLANTIC CITY	45	30	55	22	38	5	3.9	3.1	1.8	7.5	151	3.9	287	98	74	0	0	4	6	2	2	
NM ALBUQUERQUE	45	30	49	24	38	3	4.4	.3	.2	1.1	172	.5	325	83	50	0	0	4	3	0	0	
CLOVIS	43	27	58	23	35	2	4.4	.3	.4	.8	108	.4	226	97	61	0	0	7	1	0	0	
ROSWELL	49	33	57	26	41	2	1.1	.0	.1	.4	86	.1	86	96	52	0	0	3	3	0	0	
NY ALBANY	28	12	36	4	20	-1	1.3	.7	.7	4.8	121	1.3	129	86	55	0	0	7	3	1	1	
BINGHAMTON	29	14	33	2	22	0	.8	.3	.6	6.1	156	.9	83	91	67	0	0	7	5	1	1	
BUFFALO	33	17	37	5	25	1	4.4	.3	.3	9.4	203	.7	57	89	62	0	0	7	4	0	0	
NEW YORK	38	27	44	21	33	1	1.7	1.0	.7	6.6	134	1.7	138	86	57	0	0	6	3	2	2	
ROCHESTER	32	17	38	6	24	0	.5	.0	.4	4.9	139	.7	78	90	64	0	0	7	5	0	0	
STRACUSE	29	12	36	0	20	-3	1.0	.4	.7	6.4	151	1.1	110	88	56	0	0	7	5	1	1	
NC ASHEVILLE	50	36	63	31	43	3	1.9	1.2	1.0	6.6	150	2.1	172	100	88	0	0	1	5	1	1	
CHARLOTTE	46	38	60	34	43	3	3.9	3.1	1.8	7.3	151	4.1	280	100	86	0	0	0	5	2	2	
GREENSBORO	48	34	55	30	40	2	2.9	2.1	1.3	7.2	151	3.0	218	98	86	0	0	1	4	2	2	
HATTERAS	58	47	67	42	53	7	1.9	.8	.8	7.2	115	2.1	112	95	76	0	0	0	4	2	2	
NEW BERN	58	42	68	37	50	6	2.6	1.7	1.0	5.1	97	3.1	203	97	76	0	0	0	4	3	3	
RALEIGH	47	35	58	31	41	2	3.1	2.3	1.7	6.4	144	3.3	247	99	83	0	0	2	5	2	2	
WILMINGTON	60	42	73	36	51	5	2.7	1.9	1.5	5.6	116	3.0	210	98	75	0	0	0	4	2	2	
ND BISMARCK	8	-11	23	-19	-1	-8	T	T	T	.6	82	.1	26	86	66	0	0	7	2	0	0	
FARGO	10	-11	19	-19	-1	-5	.1	-1	.1	.9	105	.1	46	80	62	0	0	7	3	0	0	
GRAND FORKS	8	-15	19	-22	-3	-5	.1	-1	.0	.6	68	.1	39	80	60	0	0	7	3	0	0	
WILLISTON	8	-11	36	-25	-2	-8	.1	.0	.0	.5	71	.1	42	84	64	0	0	7	3	0	0	
OH AKRON-CANTON	37	25	44	18	31	5	.8	.2	.6	7.8	211	1.1	103	97	75	0	0	7	4	1	1	
CINCINNATI	40	32	51	29	36	7	1.3	.6	.7	9.4	224	1.5	120	98	77	0	0	5	5	1	1	
CLEVELAND	37	26	44	19	31	5	.5	-1	.4	9.3	247	.7	65	90	71	0	0	7	4	0	0	
COLUMBUS	38	29	47	24	34	6	.5	-1	.3	7.7	210	.7	67	95	76	0	0	5	3	0	0	

Based on 1951-80 normals

Weather Data for the Week Ending January 12, 1991

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT	NUMBER OF DAYS						
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1		PCT. NORMAL SINCE Jan 1	AVERAGE	MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	OR MORE
													.01 INCH							.50 INCH
DAYTON	36	29	48	24	32	5	.8	.2	.5	11.0	315	1.0	96	96	81	0	6	5	1	
TOLEDO	32	25	35	20	29	5	.6	.1	.5	6.4	186	.7	82	95	77	0	7	2	1	
YOUNGSTOWN	35	25	38	17	30	5	.6	.1	.5	7.4	193	.8	77	95	74	0	7	3	0	
OK OKLAHOMA CITY	35	26	44	20	31	5	.3	.1	.2	2.0	128	.5	134	97	79	0	7	4	0	
TULSA	35	28	42	23	31	4	.6	.3	.3	3.7	160	.8	141	96	80	0	6	3	0	
OR ASTORIA	45	41	56	32	45	5	4.9	2.3	1.4	10.1	63	4.9	111	96	82	0	1	7	5	
BURNS	46	19	46	5	27	1	4	.0	.2	5	24	.4	54	95	72	0	6	3	0	
MDFORD	45	33	51	22	39	2	1.3	.4	.4	2.4	49	1.3	89	100	85	0	3	5	0	
PENDLETON	35	21	59	13	28	4	6	.2	.5	1.4	59	.6	79	93	75	0	6	3	1	
PORTLAND	44	33	62	29	39	3	1.5	.0	.4	3.9	44	1.5	59	91	71	0	3	7	0	
SALEM	49	38	60	28	44	5	1.5	.2	.4	4.3	43	1.5	51	95	72	0	4	7	1	
PA ALLENTOWN	35	23	41	15	29	2	1.7	.9	1.2	7.4	146	1.7	127	95	65	0	6	5	1	
ERIE	35	23	37	13	29	2	4	.2	.4	7.5	176	.6	57	89	64	0	7	2	0	
HARRISBURG	37	27	43	16	32	2	1.2	.5	.7	6.9	155	1.2	100	93	64	0	5	4	1	
PHILADELPHIA	40	29	45	20	35	3	2.9	2.2	1.4	6.7	142	2.9	226	100	68	0	5	6	3	
PITTSBURGH	37	28	42	19	32	5	.9	.3	.7	9.7	262	1.2	103	96	75	0	6	6	1	
SCRANTON	33	20	35	9	27	1	.5	.1	.4	4.8	140	.5	51	87	59	0	7	3	0	
RI PROVIDENCE	34	21	45	13	27	1	1.5	.6	.7	7.1	116	1.6	98	89	54	0	6	3	2	
SC CHARLESTON	63	45	80	38	54	4	.9	.2	.8	4.1	93	1.4	109	99	76	0	0	3	1	
COLUMBIA	55	41	70	38	48	3	1.3	.3	.8	3.1	60	1.5	88	96	77	0	0	5	1	
FLORENCE	57	41	73	36	49	4	1.3	.5	.7	4.1	94	1.6	115	94	75	0	0	4	1	
GREENVILLE	49	39	59	35	44	3	2.3	1.3	1.1	5.7	100	2.4	148	99	84	0	0	6	2	
SD ABERDEEN	12	-8	18	-17	2	4	1	.1	.0	4	63	.1	32	83	66	0	7	2	0	
HURON	13	-7	18	-19	3	4	T	.1	.0	5	80	.1	57	88	73	0	7	0	0	
KAPID CITY	22	1	47	-10	11	10	T	.1	T	4	65	T	29	87	64	0	7	1	0	
SIOUX FALLS	15	2	21	-12	9	4	T	.1	T	8	84	.1	68	89	71	0	7	2	0	
TN CHATTANOOGA	52	44	57	34	48	3	1.4	.2	.9	12.1	167	1.7	82	96	82	0	0	6	1	
KNOXVILLE	51	43	56	33	47	9	1.4	.3	.6	10.4	161	1.4	74	99	86	0	0	5	1	
MEMPHIS	48	38	54	33	43	3	2.9	1.8	2.2	13.5	202	2.9	160	98	82	0	0	3	2	
NASHVILLE	48	38	58	31	43	6	2.4	1.3	.8	13.1	205	2.4	132	99	84	0	1	6	3	
TX ABILENE	46	32	60	28	39	3	1.5	1.3	1.3	2.4	190	1.5	414	95	67	0	4	2	1	
AMARILLO	37	22	53	16	29	4	.8	.7	.8	1.0	149	.8	405	96	69	0	7	1	1	
AUSTIN	52	40	62	36	46	3	4.8	4.5	4.4	7.4	283	6.7	1000	93	70	0	0	4	1	
BEAUMONT	59	47	69	37	53	1	5.3	4.4	2.2	11.9	182	8.0	496	97	79	0	0	5	3	
BROWNSVILLE	64	50	71	41	57	3	.2	.1	.1	.2	15	.2	51	97	72	0	0	4	0	
CORPUS CHRISTI	60	47	73	38	53	2	.5	.1	.3	1.7	94	1.3	215	95	71	0	0	4	0	
DEL RIO	60	44	69	35	52	2	.1	.0	.1	.5	62	.2	126	85	43	0	0	4	0	
EL PASO	59	34	63	26	47	3	T	.1	T	4	76	T	21	92	39	0	3	2	0	
FORT WORTH	46	34	54	27	40	4	1.3	.9	.8	3.0	124	1.5	230	95	70	0	4	3	1	
GALVESTON	59	47	69	40	53	0	5.3	4.6	2.7	7.5	156	5.7	460	94	75	0	0	4	4	
HOUSTON	57	44	70	36	51	2	3.4	2.6	1.6	7.5	146	5.7	418	94	71	0	0	5	3	
LUBBOCK	43	29	55	26	36	2	.5	.4	.5	.9	173	.5	336	98	70	0	6	2	0	
MIDLAND	48	32	58	25	40	2	.2	.1	.2	.9	155	.2	150	98	72	0	4	2	0	
SAN ANGELO	50	33	61	26	42	1	.8	.7	.7	1.0	119	.8	342	98	71	0	3	3	1	
SAN ANTONIO	55	39	64	30	47	3	.6	.3	.4	1.7	91	1.5	280	95	69	0	1	5	0	
VICTORIA	57	45	70	37	51	4	4.8	4.4	3.1	6.4	224	5.6	787	95	72	0	0	3	2	
WACO	48	36	57	31	42	4	1.4	1.0	1.0	3.3	131	2.0	316	94	72	0	1	3	1	
WICHITA FALLS	44	31	55	26	37	1	1.7	1.5	1.3	2.8	178	1.8	479	93	67	0	4	3	1	
UT CEDAR CITY	40	16	47	9	28	2	T	.1	T	1.8	198	.7	292	96	61	0	7	0	0	
SALT LAKE CITY	32	19	36	13	26	2	.3	.0	.2	.8	45	.3	50	98	79	0	7	3	0	
VT BURLINGTON	25	6	34	-7	16	2	.8	.4	.4	4.5	141	.9	117	94	59	0	7	6	0	
VA NORFOLK	52	39	63	35	45	5	3.3	2.4	1.5	6.5	142	3.8	270	97	73	0	0	5	3	
RICHMOND	46	34	64	28	40	4	2.9	2.2	1.6	6.5	140	3.0	235	97	80	0	2	4	3	
ROANOKE	49	33	67	29	41	6	2.8	2.2	2.0	6.6	166	2.8	259	95	69	0	3	4	2	
WA QUILLAYUTE	45	40	50	31	43	4	8.1	4.7	1.8	25.2	107	8.4	140	100	92	0	1	7	5	
SEATTLE-TACOMA	45	39	53	30	42	2	3.3	1.9	.9	6.9	79	3.3	134	97	78	0	2	7	3	
SPOKANE	30	24	44	12	27	3	1.5	1.0	.4	3.3	93	1.6	155	96	84	0	5	7	0	
YAKIMA	31	20	53	7	25	2	.3	.0	.2	.6	31	.3	58	95	72	0	7	5	0	
WV BECKLEY	44	33	53	27	38	8	2.4	1.6	1.3	7.7	173	2.4	180	99	83	0	3	7	1	
CHARLESTON	47	36	54	31	41	8	1.4	.6	.5	8.4	182	1.4	101	96	77	0	1	7	0	
HUNTINGTON	46	35	51	32	40	7	1.5	.7	.7	9.6	218	1.5	120	97	81	0	2	7	1	
PARKERSBURG	42	32	48	27	37	5	1.9	1.2	.8	9.1	236	2.0	177	100	84	0	3	6	1	
WI GREEN BAY	24	6	32	-7	15	0	.3	.0	.3	2.6	139	.6	115	95	70	0	7	2	0	
LACROSSE	21	7	29	-11	14	0	.4	.2	.3	3.7	253	.8	197	89	65	0	7	2	0	
MADISON	25	6	32	-7	16	0	.5	.2	.4	4.3	218	.8	179	93	71	0	7	4	0	
MILWAUKEE	30	19	33	11	24	5	.9	.5	.7	3.9	143	1.2	175	91	71	0	7	5	1	
WAUSAU	22	5	30	-10	13	2	.2	.0	.1	2.2	135	.3	64	93	69	0	7	3	0	
WY CASPER	39	18	44	-5	28	6	T	.1	T	.6	93	T	0	77	44	0	7	0	0	
CHEYENNE	42	17	48	11	30	3	T	.1	T	.4	76	T	0	76	32	0	7	0	0	
LANDER	30	8	43	-2	19	0	.0	.1	.0	.4	56	T	0	81	51	0	7	0	0	
SHERIDAN	28	4	50	-4	16	3	T	.2	T	.4	40	T	4	89	59	0	7	0	0	

Based on 1951-80 normals

National Agricultural Summary

January 7-13, 1991

HIGHLIGHTS: California's cold weather damaged some citrus crops, most of which were harvested for processing. Warmer-than-normal weather in the Plains, Northwest, and Corn Belt melted portions of the protective snow cover on the winter wheat crop. Recent flooding in the Ohio Valley may make replanting of small grain and alfalfa fields necessary.

SMALL GRAINS: Small grains in Georgia were fair to good, with planting complete, except in the extreme southwest. The Illinois and Indiana winter wheat crops were mostly good, with moisture supplies adequate to surplus. Newly emerged wheat in California showed some freeze damage, and replanting may be necessary. Some Arkansas wheat was waterlogged, brown, and laying flat in areas with poor drainage. Warm weather at week's end in Kansas and North Dakota melted some of the snow cover on the wheat crop, but the crop remained in good condition. Montana winter wheat damage from recent subzero temperatures will not be assessable until early spring. Texas small grains were showing some recovery from the recent freezing temperatures. Winter wheat in Washington was mostly poor to fair.

OTHER FIELD CROPS: In Florida, tobacco was being planted and beds were maintained. Sugarcane planting and harvest were active. Hawaii sugar and pineapple harvests continued, while the ginger root harvest was in full swing. Tobacco seedbed planting was underway in South Carolina. Wet, cold weather in the Low Plains of Texas delayed completion of the cotton harvest.

FRUIT AND NUTS: California navel oranges were selectively harvested for fresh and processing markets. Harvested lemons went to processors. Navel oranges, desert grapefruit, and date harvests continued in Riverside County. Avocado fruit drop was evident in some areas due to the cold weather. Light rains in Florida benefited the citrus crop, but more was needed as irrigation continued. Wilt

was evident in nonirrigated groves. Early and mid-season orange harvests were active. Arizona citrus harvest continued in the west and central. Apple shipping continued, while the pecan harvest continued in the central and east. Texas pecan harvest progressed slowly due to cold, wet weather. The pecan harvest in Georgia was also delayed by wet conditions.

VEGETABLES: California broccoli and cauliflower supplies were seasonally light, with fair quality. Head lettuce supply was reduced but with good quality. Potato harvest continued in the San Jacinto area. Showers were beneficial to the major vegetable producing areas in Florida. Harvest of winter vegetables gained momentum, and planting of homestead potatoes was complete. Georgia onion transplanting was complete, with the crop in fair to good condition. Arizona mixed vegetable harvest continued in the west and central areas. Fall lettuce harvest was complete in the central areas. In the Texas Rio Grande Valley, most vegetable crops were recovering well from the recent cold weather. Cabbage and other leafy, green vegetable harvests continued. Onion stands continued to progress well. Cabbage harvest continued in the San Antonio Winter Garden area, with fair yields.

PASTURES AND LIVESTOCK: Pasture and livestock were mostly good to fair. Supplemental feed supply for livestock was mostly adequate in all States. Snow cover limited grazing of stalk fields in Iowa. Warmer-than-normal weather in the northern Plains benefited livestock.

USDA CROP PRODUCTION REPORT

Major Freeze-Induced Losses in California

The California all orange forecast, at 25.0 million boxes is 60 percent below December 1 and 65 percent less than last season. A severe freeze in late December is the main reason for this decline. The forecast for Navel oranges is 14.0 million boxes, down 65 percent from December and 68 percent less than last season. Harvest of the Navel crop as of January 1 was approximately 61 percent complete. The California Valencia forecast of 11.0 million boxes is down 52 percent from the December 1 forecast and 59 percent below last season's revised production estimate.

Arizona's all orange forecast, at 1.75 million boxes, is unchanged from the October 1 forecast but up 11 percent from last season. Due to the severe freeze of December 1989, the 1990-91 Texas orange crop is virtually eliminated and forecasts will not be issued this season unless sufficient commercial supplies become available.

U. S. Department of Agriculture
National Agricultural Statistics Service

State Summaries of Weather and Agriculture

These summaries provide brief descriptions of crop and weather conditions important on a national scale. More detailed data are available in Weather and Crop Bulletins published each Monday by NASS State Statistical Offices in cooperation with the National Weather Service.

ALABAMA: Rainfall mostly 1.00 to 2.00 in., over 3.00 in. local areas extreme south. Temperatures 3 to 5° above normal.

Wet conditions continued to limit fieldwork across the State. Wheat mostly good. Primary activities: Cleaning fence lines; equipment maintenance, repair; general care, feeding of livestock, poultry, catfish.

ARIZONA: Low clouds, fog, drizzle 6th; dense fog 7th through 10th; sunny skies 11th, except northeast. Mostly sunny, warmer 12th, except northeast cloudy, cool. Temperatures 2° below normal to 7° above. Rainfall trace to 0.28 in.

Cotton stalk shredding, disking, plow down delayed central, east. Wheat, barley crops good; rains delay final plantings; 95% seeded, 97% 1990; 88% avg.; 83% established, 86% 1990, 67% avg. Alfalfa good; sheepling off moderate. Mixed vegetable, citrus harvest continued west, central. Fall lettuce harvest complete central. Apple shipping continued. Pecan harvest continued central, east.

ARKANSAS: Cold, wet week. Temperatures slightly below normal. Widespread precipitation statewide. Extremes 17°; 58°. Rainfall 0.88 to 3.94 in.

Some wheat brown, laying flat, water logged in low poor drainage areas. No cold weather damage reported. Poultry good. Livestock good, feeding hay.

CALIFORNIA: Weak pacific storms brought light rains. Temperatures near to above normal by end of week as high pressure returned.

Field activity progress slowed, light rains most State. Small grain seeding continued some areas. Soil moisture slightly improved; much more rain needed. Newly emerged alfalfa, oats, wheat showed freeze damage. Some replanting oats, wheat may be necessary. Ground preparation 1991 crops progressed where conditions allowed. General activities included pre irrigation, cultivation, fertilization, herbicide application. Vineyard, orchard cultural practices continued. Deciduous tree dormant spraying proceeded. Navel harvest slowed, some growers did selective picking, isolated groves Central Valley. Limited amount Navels fresh packed. Some fruit shipped for processing. Lemons harvested, fruit going to processing. Navel, desert grapefruit, date harvest continued, Riverside County, avocado fruit drop apparent some areas. Most cold storage apples shipped. Grape, kiwifruit movement in storage, slow. Broccoli, cauliflower seasonally light supply, fair quality. Head lettuce reduced supply, good quality. Potato harvest continued San Jacinto area. Cattle on supplemental feed. Average condition. Range conditions poor to very poor southern two thirds of State poor to good northern third. Sheep continued grazing, crop residues.

COLORADO: Morning fog prevailed over much of the southeast, high valleys during the first half of the week. Gusty chinook winds blew along the eastern foothills maintaining dry, mild weather. A series of upper level disturbances from the Pacific northwest brought periods of light snow to the west, mountains. Snow 6.00 in. or less in the

mountains. Chinook winds again blew mainly along the eastern foothills late in the period resulting in warm days.

FLORIDA: Heavy rains fell across much of north areas late week; 2.00 to 4.00 in. common, local 6.00 to 8.00 in. Big Bend area. Rain totals Peninsula mostly under 1.00 in.; only locally greater amounts. Parts of central interior had less than 0.25 in. of rain for week. Unseasonably warm temperatures continued most of week, 3 to 5° above normal, north; 6 to 9° above normal, Peninsula. Maximum readings into 80s common, except upper 60s to mid 70s Panhandle, Big Bend. Much colder weather moved into State late weekend. By morning of 14th, temperatures had fallen into upper 20s Panhandle, extreme north, upper 30s to mid 40s central, interior south, mostly mid, upper 50s lower southeast coast.

Soil moisture adequate Panhandle, mostly short throughout Peninsula. Light rains over Peninsula helpful, much more rain needed. Tobacco farmers planting, maintaining tobacco beds. Sugarcane planting, harvest continued active. Pastures 15% poor, 70% fair, 10% good, 5% excellent. Cattle fair, Panhandle; fair to good, Peninsula. Few, mostly light rains fell, citrus areas; more needed. Irrigation continued. A little wilt evident, un-irrigated groves. Fruit droppage increased with advanced maturity. Early, mid season orange harvest active. Grapefruit movement increasing, Temple harvest active. Increased shower activity over major vegetable areas generally beneficial. Planting spring crops active. Harvest winter crops gained momentum. Volume leaders: Tomatoes, peppers, cabbage, celery, sweet corn, snap beans, lettuce, squash. Also carrots, escarole, radishes, strawberries. Planting Homestead potatoes complete.

GEORGIA: Clouds, rain, warm temperatures most of week. Weekend colder with first significant sunshine of 1991. Weekly rain totals of 1.00 in., 2.00 in. common. Greatest total 5.14 in. at Camilla. Temperatures 3° above normal most locations. Extremes 16°; 79°.

Soil moisture surplus. Rain, fog, drizzle delayed most field activities. No progress pecan harvest, 5% remaining southwest. Onion transplanting complete, fair to good condition. Small grains fair to good, seeding complete except extreme south west, no progress. Tobacco bed preparation little progress. Land preparation slowed, wet soils. Pruning peach trees. Livestock fair to mostly good, extra effort for care of livestock.

HAWAII: Warm, sunny weather with light beneficial showers continued over islands. Winds were variable 10 to 20 mph. Temperatures high 50s to low 80s. Rainfall none to 2.60 in.

Days suitable for farm work 7.0. Papaya production low. Sugar, pineapple harvest continuous. Cool season crops made good progress. Ginger root harvesting in full swing.

IDAHO: This weeks temperature warmed a bit higher than normal. Precipitation, mostly rain, snow at highest elevations. Above normal amounts over northern areas; near normal amounts in southwest.

Warming temperatures, rain reduced snow pack below five thousand feet, possibility of flooding was concern.

Soil moisture remained short most of State; adequate amounts in north. Activities included feeding livestock, financial planning, shop work, attending meetings. Hay, roughage supplies adequate. Livestock good to excellent. Calving, lambing underway.

ILLINOIS: Temperatures 2 to 6° above normal. Precipitation generally 0.25 to 0.75 in. north, west central; 0.50 to 1.25 in. east central, south. Winter wheat mostly good. Moisture supplies adequate to surplus.

INDIANA: Temperatures 3 to 6° above normal. Lows, low 20s to low 30s, highs low 30s to 40. Precipitation 0.47 to 0.75 in.

Wet conditions limited fieldwork. Other activities: Spreading fertilizer, hauling manure, machinery repair, purchasing supplies, cutting wood, clearing fence rows, attending meetings, record keeping, care of livestock. Livestock mostly good. Wheat fair to good. Ice, ponding in many fields. Rivers, streams continued to fall from record levels.

IOWA: Temperatures 2 below to 4° above normal. Extremes -3°; 42°. Precipitation 0.07 to 0.54 in.; average 0.23 in.

State snowcover of 8.00 in. is greatest recorded in 5 years. Livestock mostly good. Snowcover limiting grazing of stalk fields. Little movement of grain to market, waiting for higher prices. Feeder cattle to auctions brisk. Main activities; tending livestock, machinery repair, bookkeeping.

KANSAS: Central temperatures 8° below normal; western districts 6° below normal; eastern third 4° below normal. Precipitation 0.10 in. west central to 0.50 in. southeast.

Warm temperatures at weekend melted much of snowcover. Wheat generally good.

KENTUCKY: Cloudy skies, rain. Temperatures above normal, upper 30s to around 40°. Rain 1.00, 2.00 in. few locations 2.00 to 2.50 in.

Soil moisture surplus, flooding in river bottoms, lowlands. No field activity. Some drowning expected on winter grains. Wet conditions stressful to livestock, especially newborn, young stock. Burley markets reopened about \$3.00 per cwt. higher than pre Christmas sales.

LOUISIANA: Temperatures 3.1° below normal west central to 6.1° above normal east central. Extremes 34°; 74°. Rainfall 0.83 in. north central to 6.60 in. southeast.

Main activities: Crawfishing, livestock care, general farm maintenance, routine chores.

MARYLAND & DELAWARE: **MARYLAND:** Precipitation 2.10 in. Temperature 34.0°, normal 32.7°. Extremes 10°; 56°.

Activities for the week: Repairing fence; hauling manure; spreading fertilizer; maintaining machinery; caring for livestock.

DELAWARE: Precipitation 3.19 in. Temperature 36.4°, normal 33.8°. Extremes 19°; 57°.

Activities for the week: Repairing fence; hauling

manure; spreading fertilizer; maintaining machinery; caring for livestock.

MICHIGAN: Temperatures 3° above to 2° below normal. Extremes -12°; 35°. Precipitation 0.14 to 0.83 in. across the State. State experienced another layer of snow during the latter part of the week.

Cattle appear to be in good shape, feed stocks continue to be adequate. Small number of corn fields continue to be harvested. Major activities included: Removing snow, purchasing seed for spring planting, caring for livestock, making winter repairs on equipment.

MINNESOTA: Temperatures 2 to 7° below normal in the northwest, to 2 to 4° above normal elsewhere. Extremes 36° International Falls; 43° above at Redwood Falls. Precipitation none to 0.52 across the State. Greatest weekly total 0.52 in. at Caledonia.

MISSISSIPPI: Temperatures 5° above normal. Extremes 32°; 72°. Rainfall was above normal. Rainfall 2.93 in., 1.74 in. above normal. Soil temperatures 49°.

Days suitable for fieldwork none, 1.1 1989, 1.9 avg. Soil moisture 8% adequate, 59% surplus, 33% excessive. Pasture 22% poor, 29% fair, 49% excellent. Livestock 84% fair, 16% good. Hay, roughage 50% short, 50% adequate. Feed grain 13% short, 87% adequate. Wheat 3% very poor, 22% poor, 70% fair, 5% good. Activities: Feeding livestock, getting equipment ready for spring.

MISSOURI: Temperatures slightly below normal. Precipitation ranged less than 0.50 in. northern half to 1.00 to 2.00 in. south central, southeast. Most precipitation was ice or snow.

Freezing rain, ice made farm work, traveling difficult, care of livestock more demanding. Outside work kept to minimum.

MONTANA: Temperatures above normal western valleys. Central plains had temperatures near normal, below while in parts of eastern plains temperatures much below normal. Precipitation 0.01 to 0.94 in. western area. All other areas mostly dry.

Winter wheat 3% very poor, 23% poor, 37% fair, 33% good, 4% excellent. Winter damage from recent sub zero cold not assessable until early spring. Soils remain abnormally dry. Snowcover very poor during early stages of arctic air. Currently, snowcover protection 16% poor, 19% fair, 44% good, 21% excellent. Virtually all livestock on supplemental feed. Hay supplies adequate. Recent thaws providing limited grazing.

NEBRASKA: Temperatures 3° above in west to 4° below normal in the east. Precipitation occurred mid week with amounts varying from traces in the west up to a third of an inch in the central portion. Extremes -13°; 59°.

NEVADA: Temperatures normal to slightly below normal. Extremes -16°; 68°. Precipitation trace to 0.29.

Moderation of temperatures reduced livestock stress, feeding requirements. Snowcover began

melting across the State. Major activities include feeding of livestock, general farm, ranch maintenance.

NEW ENGLAND: Precipitation 0.25 to 1.95 in. Temperatures -5° to 5° northern Maine, 10° to high teens rest of north, high teens to high 20s south. Maximum temperatures low 20s extreme north, to mid 40s south; minimum temperatures -20° north to 15° south.

Major farm activities: General repairs, maintenance, tending livestock, moving crops from storage.

NEW JERSEY: Temperatures slightly below normal, 25° south, 32° north, 36° coastal. Extremes 3°; 58°. Precipitation above normal, 1.66 in. north, 3.10 in. south, 4.38 in. coastal. Heaviest 24 hour total 2.48 in. on 11th, 12th. Heaviest 24 hour snowfall 6.00 in. on 11th, 12th. Depth of snow on ground 14th none south to 3.00 to 4.00 in. north. Farmers caring for livestock, tending to other normal winter chores.

NEW MEXICO: Temperatures over the State were varied. Southeast, northwest quadrants reported below normal with the rest of the State reporting above normal. Temperatures 5° below normal at Tucumcari to 4° above at Des Moines. Precipitation a trace at Chama to 0.35 in. at Alamogordo.

NEW YORK: Temperatures below normal early week. Returned to normal mid week. Extremes -24°; 48°. First three days of week were dry. On 9th a disturbance brought 1.00 to 3.00 in. of snow to eastern areas. Major snow storm on 18th, 19th. Snowfalls of 4.00 to 12.00 in. common.

Major activities: Caring for livestock, chores, attending meetings, planning for upcoming season. Cold temperatures, snow made outside activities difficult.

NORTH CAROLINA: Temperatures 5° above normal in the Mountains, 1° below in the Piedmont, 4° above at the Coast. Precipitation 0.82 to 4.38 in.

Days suitable for fieldwork 1.3. Soil moisture 3% short, 41% adequate, 56% surplus. Pasture 1% very poor, 7% poor, 50% fair, 41% good, 1% excellent. Crop condition: Wheat 20% fair, 76% good, 4% excellent; oats 22% fair, 75% good, 3% excellent; barley 22% fair, 76% good, 2% excellent; rye 21% fair, 76% good, 3% excellent. Hay, roughage supplies 7% short, 86% adequate, 7% surplus. Feed grain supplies 1% very short, 4% short, 95% adequate. Activities: tending livestock; preparing tobacco plant beds; cutting wood; equipment repair; general farm maintenance.

NORTH DAKOTA: Temperatures 5 to 10° below normal. Extremes 33° below northeast to 44° above southwest. Precipitation 0.02 to 0.06 in. statewide.

Snowcover was reduced by warm temperatures over the weekend. Livestock in mostly good condition. Hay supplies adequate.

OHIO: High temperatures in 30s, low temperatures in mid 20s to mid 30s. Readings generally 3 to 15° above normal. Precipitation 0.40 to 1.00 in. in the form of rain, sleet, snow. Soil temperatures averaged near to slightly above freezing.

Periodic precipitation, dampness kept most farmers indoors taking care of machinery, livestock, bookkeeping, marketing. Soils have plenty of moisture. There is no snowcover.

OKLAHOMA: Temperatures 5° below normal north central to 1° below normal east central. Precipitation 0.21 in. north central to 1.03 in. southwest.

Cold weather continues to keep wheat in dormancy. Recent rain caused more delay for fieldwork. Cattle good; prices untested due to slow market.

OREGON: Temperatures warmed to above normal by mid week in all but few isolated spots. Several sites in Willamette Valley, Columbia Basin recorded new record maximum temperatures on 11th, 12th. Cool air remained trapped in a few areas east of the Cascades, conditions continued to moderate throughout week. Nearly all areas had precipitation. Greatest amounts along coast, in coast range were 2.42 to 8.28 in. Least amounts east of Cascades 0.01 to 0.47 in.

Soil moisture adequate to surplus west, short to adequate east except northeast mountains surplus. Winter wheat, barley may have some damage, stand loss, frost heaving due to extreme cold prior to last week particularly where snow cover was minimal Columbia Basin Cos. Livestock, mostly good west, fair to good east. Routine winter feeding east. Some calving, lambing continued. Range, pasture mostly dormant even in west.

PENNSYLVANIA: Above normal precipitation, fluctuating temperatures dominated the weeks weather. Temperature 28°, 2° above normal. Extremes 3°; 45°. Precipitation 1.04 in, 0.37 in. above normal.

Activities: Spreading manure; maintaining machinery; caring for livestock, attending State Farm Show.

PUERTO RICO: Island rainfall 1.03 in. was 0.33 in. above normal. The highest rainfall 3.27 in. at Pico Del Este Luquillo, 2.90 in. at Vieques, 2.33 in. at San Lorenzo. Highest 24 hour total 1.90 in. at Vieques. Divisional temperature about 75 to 77° on the coast, 69 to 74° in the Interior with mean station temperature 62° at Pico Del Este Luquillo to 79° at Guayama. Extremes 58°; 89°.

SOUTH CAROLINA: Temperatures 43° Upstate to 52° along the coast. Rainfall 2.00 in. or more Upstate to 1.50 in. elsewhere.

Farm activities: Rainfall slowed fieldwork; however, planting tobacco seed beds, land preparation for spring planting continued between showers. Small grains in good condition.

SOUTH DAKOTA: Week began cold, ended with a warming trend. Temperatures 5 to 15° below normal over most of State. Black Hills 5 to 10° above normal. Extremes -23°; 53°. Snowfall variable, mostly less than 1.00 in. Snowcover generally 1.00 to 3.00 in., southwest, south central only a trace.

TENNESSEE: Rainfall lingered 7th, 8th behind cold front. Cold fronts mid week, weekend brought additional rainfall. Most stations recorded above normal rainfall totals. Temperatures above normal statewide.

Soil moisture supplies mostly adequate to surplus. Feed supplies adequate. Cattle, hogs mostly good. Repairs, tending livestock, general farm chores main activities.

TEXAS: Rain accumulated over south central, southeast last week. Stalled frontal system set up overrunning situation allowing showers to linger over same areas for extended time. Cloudiness heavy over State as system stalled much of week. Result rather small daily temperature ranges most areas. East, upper coastal, south central well above average rainfall totals for week, year. Departures range slightly below normal in Trans Pecos, lower Rio Grande Valley to nearly 1.90 in. above normal south central. Temperature departures below normal all parts of State, greatest in rolling plains north, lower Rio Grande Valley. Temperatures closest to normal high plains, Trans Pecos.

Crops: Wet, cold weather low plains continued delay completion of cotton harvest. Small grains most areas showing some signs recovery from recent freezing temperatures. Some later wheat oat fields lost in plains, still too early for complete assessment on damage from winter kill. Producers thankful last week's rainfall, now want more sunshine warmer temperatures. Cold temperatures greatly decreased insect problems in affected areas. Statewide wheat condition is rated at 61% of normal compared with 32% last year. Other field crops: Pecans 96% harvested, 100% 1989, 97% avg. Oats 100% planted, 100% 1989, 99% avg.

Commercial Vegetables: Rio Grande Valley, most vegetable crops making good recovery from earlier cold temperatures. Cabbage, leafy green harvest continued. Onion stands continued good progress. San Antonio Winter Garden, cabbage harvest increasing weather permitting. Yields reported fair. Onion progress remained good. Pecan harvest slowly progressed. Cold, wet weather continued delay completion. Yields fair, grades varied poor to good.

Range and Livestock: Range winter pastures in Plains providing little grazing. Some cattle pulled from over grazed wheat. Ranges pastures other areas wet, good condition. Forage quality low, quantity adequate. Livestock condition holding steady. Some shrinkage evident because cold, wet weather, body condition remained good all classes. Supplemental feeding haying continued heavier in northern areas where temperatures colder. Heavy rains east caused problems for feed delivery to cattle. Ranchers want more sunshine warmer temperatures for remainder of calving season. Range, pasture 2% very poor, 15% poor, 52% fair, 26% good, 5% excellent.

UTAH: Precipitation 0.25 in. statewide except Dixie, which received 0.87 in. Temperature maximums 4° below normal throughout the State; minimums averaged slightly below normal in the northern half of the State, about 6° above normal in southern half.

Relief from extremely cold temperatures was welcomed by farmers in the State. Snowpack is reported to be less than normal, caused drought concerns for the coming year. Major farm activities: Care, feeding of livestock, income tax preparation, equipment maintenance.

VIRGINIA: Temperatures 2 to 3° above normal. Extremes 17°; 69°. Precipitation near normal, ranged 0.66 to 3.12 in.

Days suitable for fieldwork 0.7. Topsoil moisture 37% adequate, 63% surplus. Winter grains and grazing crops 2% very poor, 11% poor, 29% fair, 56% good, 2% excellent. Forage from pastures, winter grazing crops, dairy cattle 9%, beef cattle 25%, sheep 24%. Feed supply plentiful. Feeding, care of livestock, lambing, calving, icing conditions caused problems, pruning fruit trees, marketing burley tobacco, equipment repair, preparing for taxes.

WASHINGTON: Temperatures 3 to 11° below normal, east; 1° above normal to 8° below normal, west. Precipitation none to 2.96 in. east; 1.31 to 3.53 in. west.

Days suitable for fieldwork 0.6. Soil moisture 61% short, 30% adequate, 9% surplus. Range, pasture 15% very poor, 35% poor, 20% fair, 30% good. Hay, other roughage 5% short, 95% adequate. Winter wheat 5% very poor, 59% poor, 36% fair. Barley 14% very poor, 70% poor, 15% fair, 1% good. Weather continued cold during the week. Considerable fruit bud damage from cold weather has occurred to soft fruit. Winter wheat was damaged from extreme cold temperatures, the extent of the damage will not be fully known until spring. Livestock producers continue winter feeding.

WEST VIRGINIA: Temperature 36°. Extremes 14°; 53°. Precipitation 1.28 in.

Days suitable for fieldwork 0.6. Soil moisture 11% adequate, 89% surplus. Wheat, barley good. Cattle, sheep good. Hay feed supplies 74% adequate, 26% surplus. Other feed supplies adequate. Farm activities: Feeding livestock, general maintenance.

WISCONSIN: Temperature 17°. Extremes -25°; 39°. Temperatures were normal to near normal this week.

Snowfall 10th to 11th; 1.00 to 4.00 in. across north, 4.00 to 10.0 in. across southern half of State. Greatest accumulations along the western shore of Lake Michigan. Light snow, freezing drizzle in the south, central on 12th. Snow depths as of 11th, 9.30 in. compared to 8.40 in. average. Statewide average frost depths 10.5 in. compared to 11.4 in. average. Deepest frost depths along eastern border of State.

WYOMING: Temperatures below normal. Precipitation below normal statewide.

Winter wheat fair to good. Additional moisture needed. Livestock mostly good. Early calving, lambing starting. Cooler than usual temperatures increasing stress, increasing feed requirements.

International Weather and Crop Summary

HIGHLIGHTS

January 6-12, 1991

WESTERN USSR ... Well above-normal temperatures continue to diminish protective snow cover in the west and south, leaving winter grains vulnerable to potential extreme cold.

NORTHWESTERN AFRICA ... Dry weather covers vegetative winter grains in Morocco, Algeria, and Tunisia.

EUROPE ... Continued mild weather in northwestern winter grain areas causes crops to lose winter hardiness. Persistent dryness in southern Spain limits moisture for vegetative winter grains.

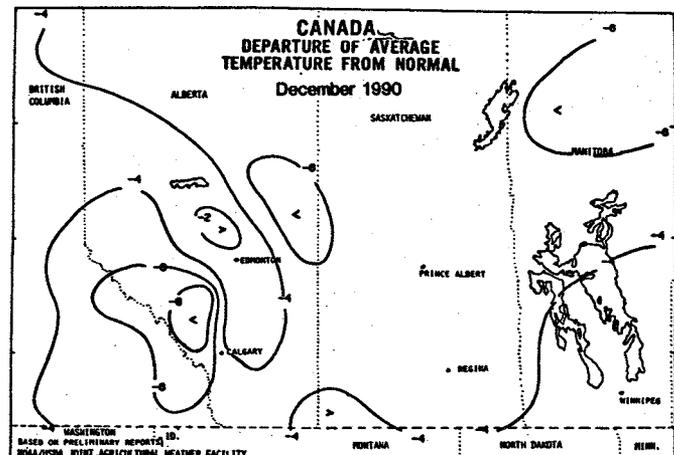
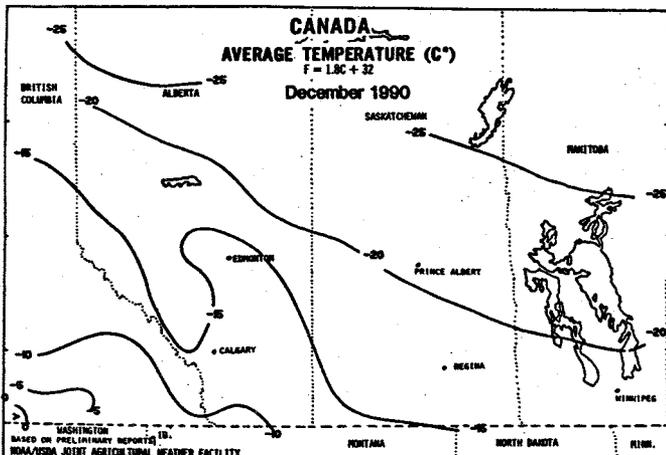
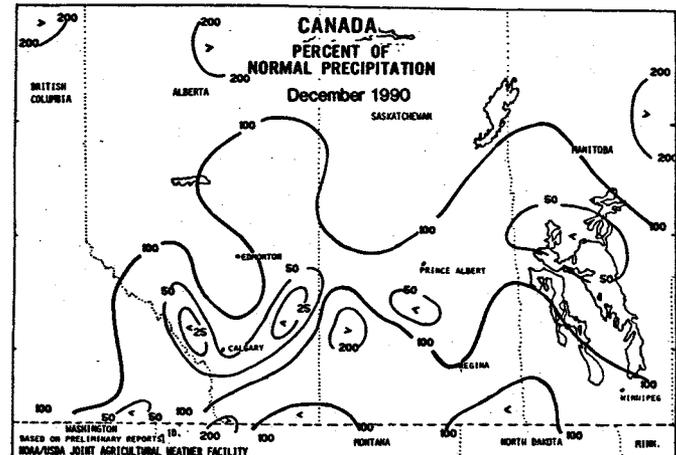
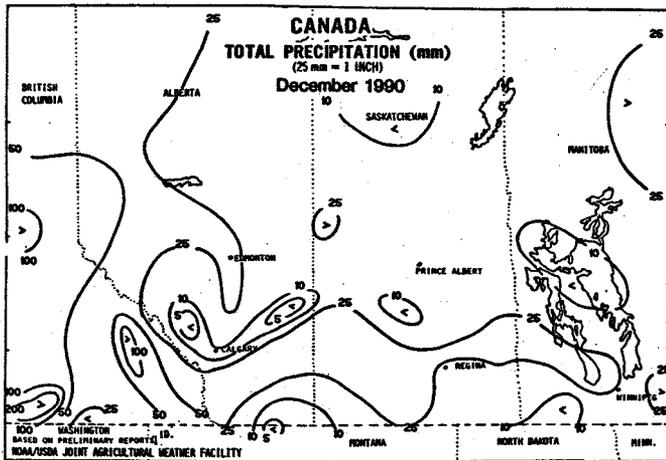
EASTERN ASIA ... Beneficial showers cover southern China. Cool, dry weather covers China's dormant winter wheat.

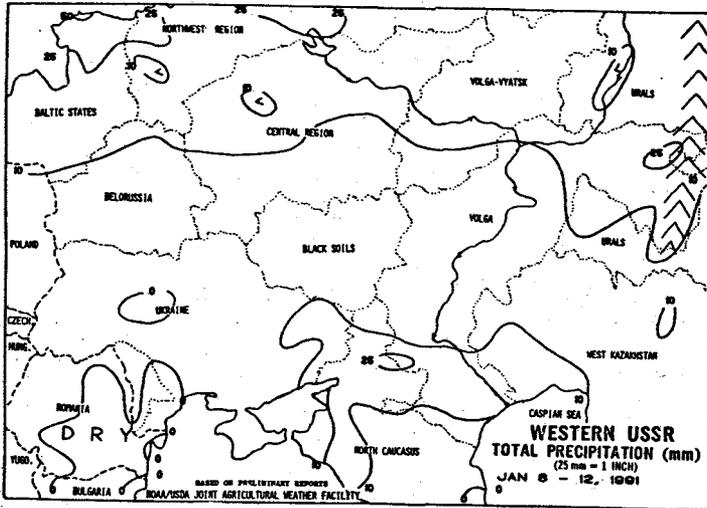
SOUTHEAST ASIA ... Widespread showers boost irrigation for Java's rice but cause more local flooding. Showers increase over the eastern Philippines.

SOUTH AFRICA ... Widespread showers bring some relief to vegetative to reproductive corn.

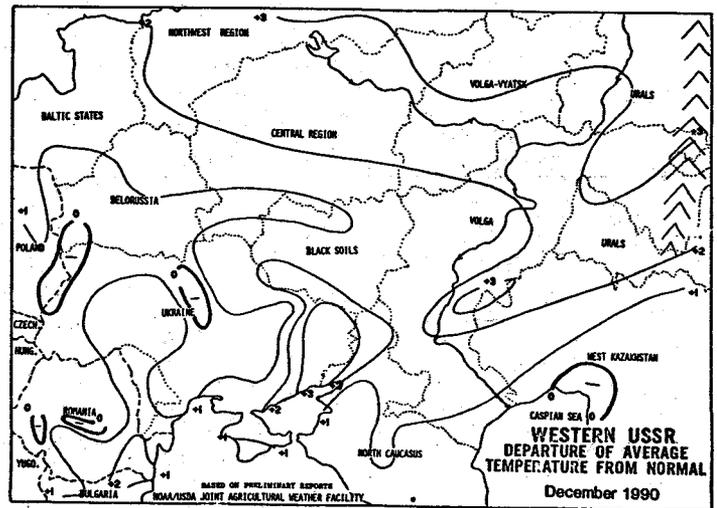
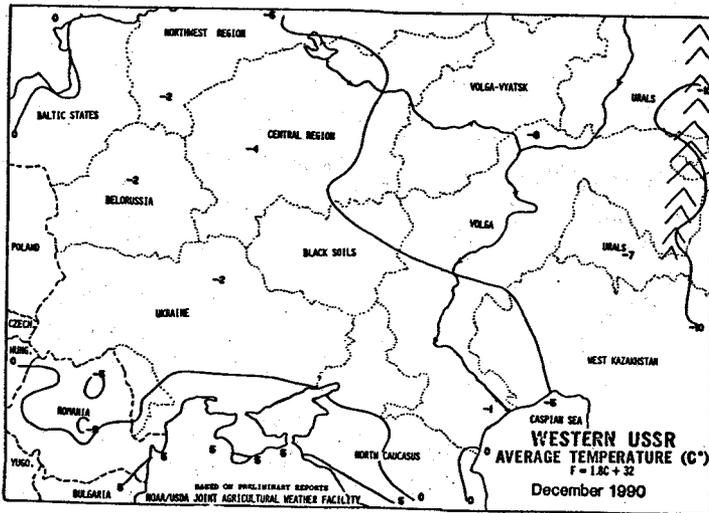
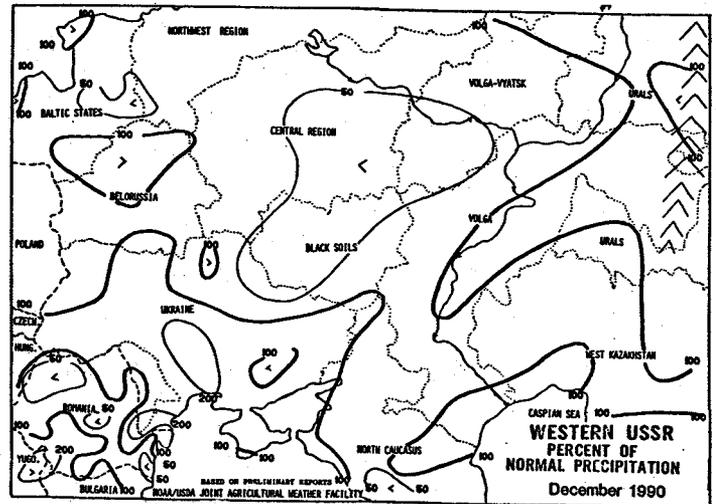
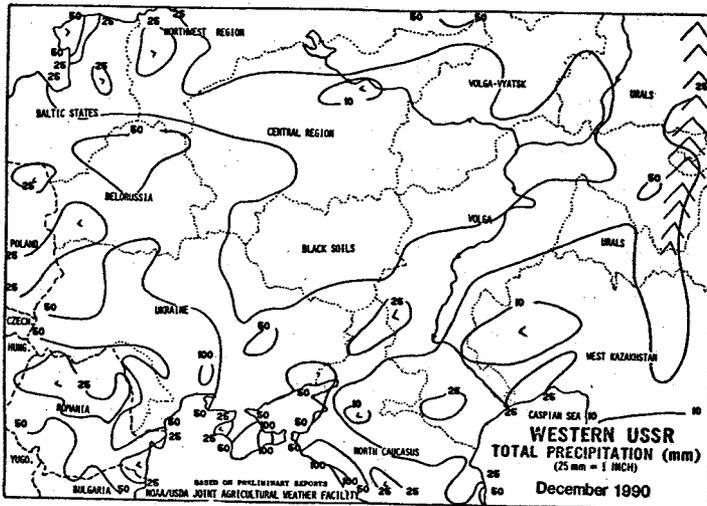
SOUTH AMERICA ... In Argentina, adequate moisture favors crop development. In south-central Brazil, dry, warm weather persists as soybeans begin to flower.

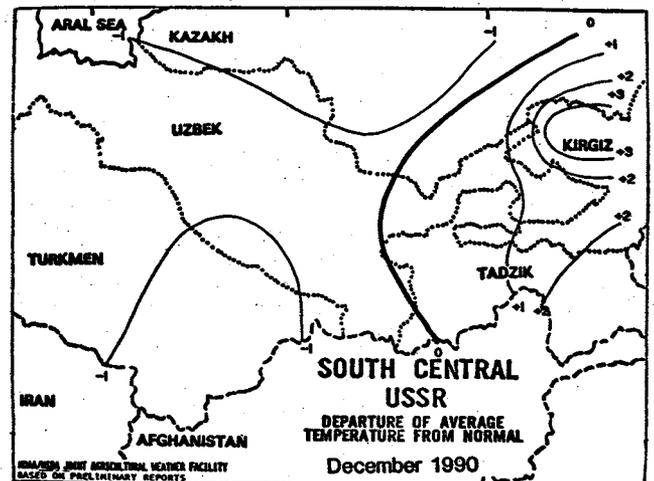
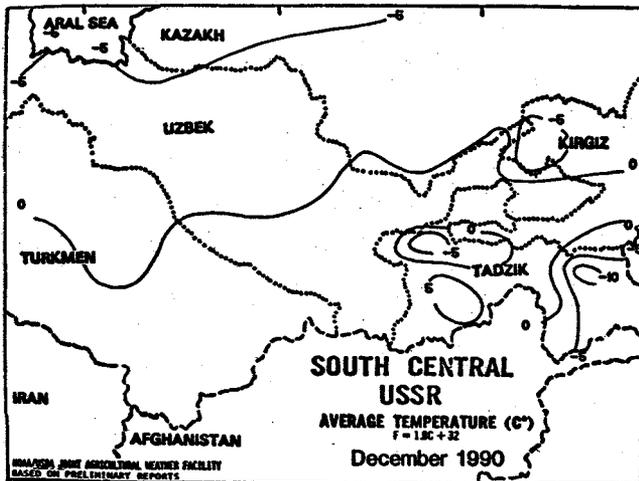
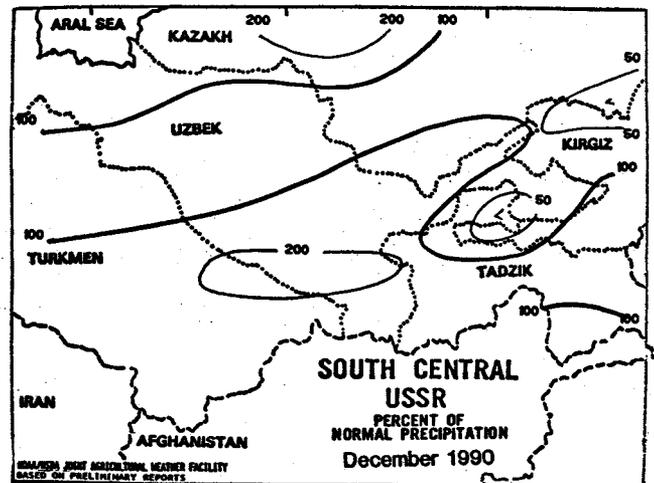
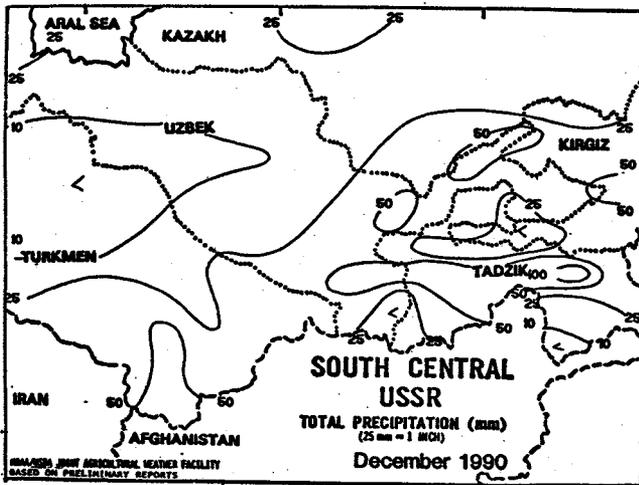
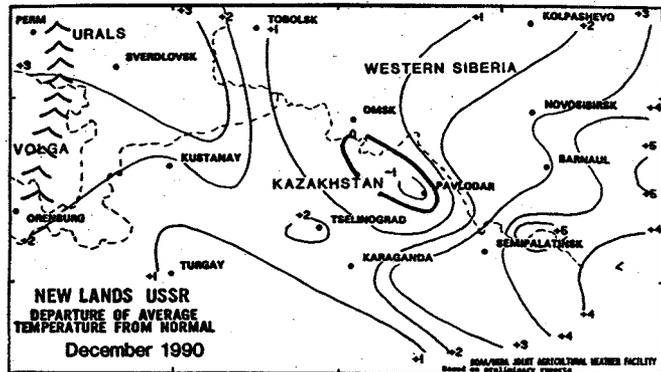
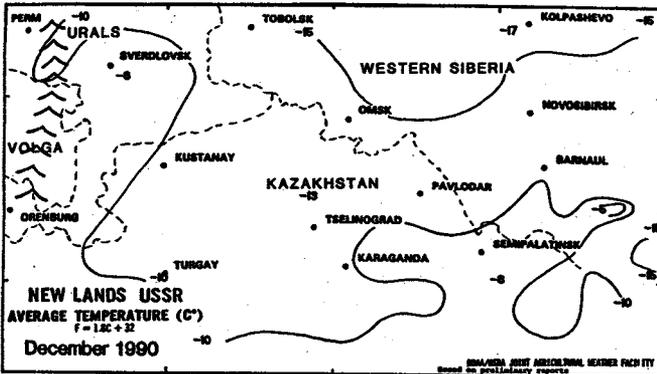
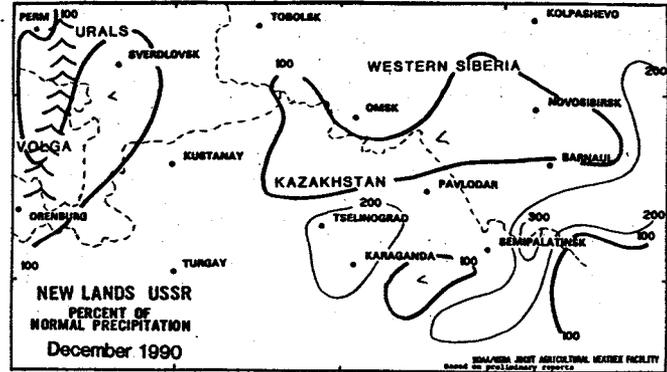
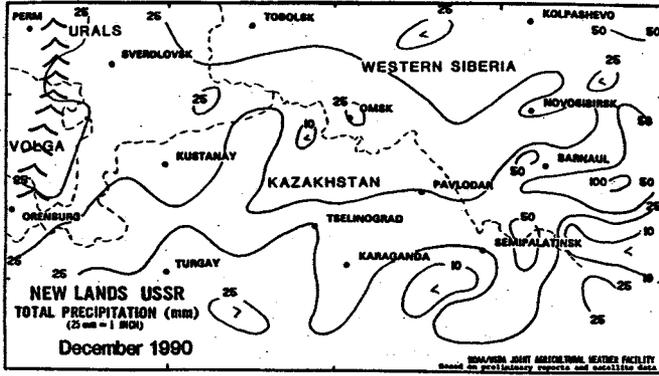
AUSTRALIA ... Heavy tropical showers soak the north, but drier weather returns to eastern summer crop areas.

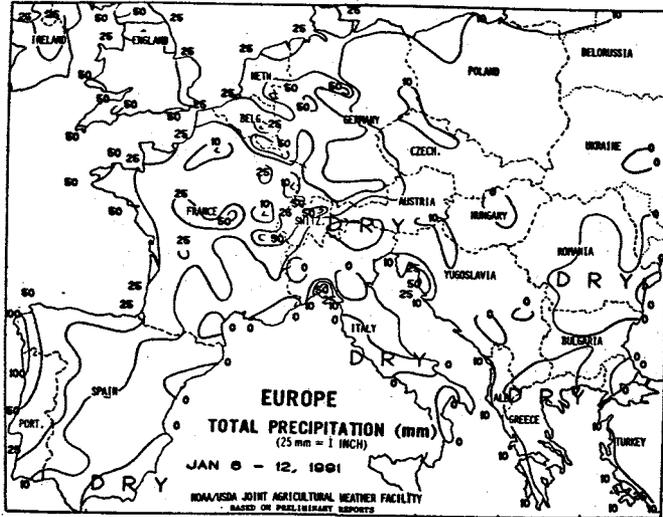




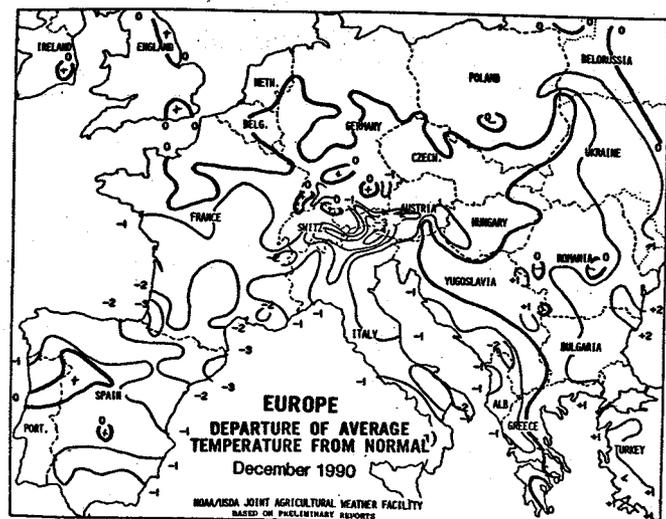
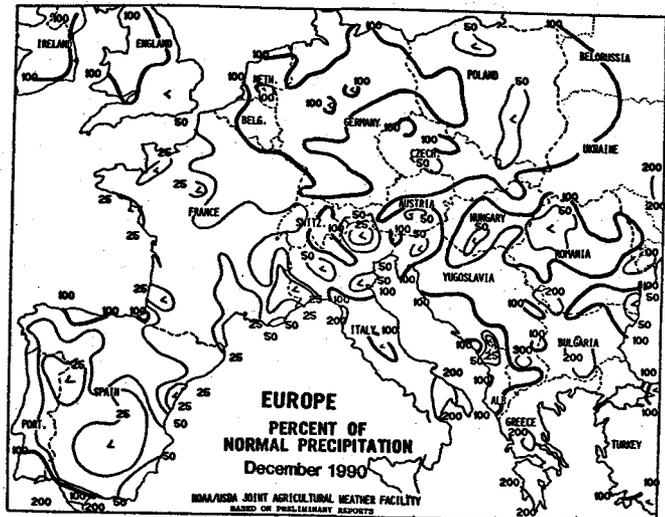
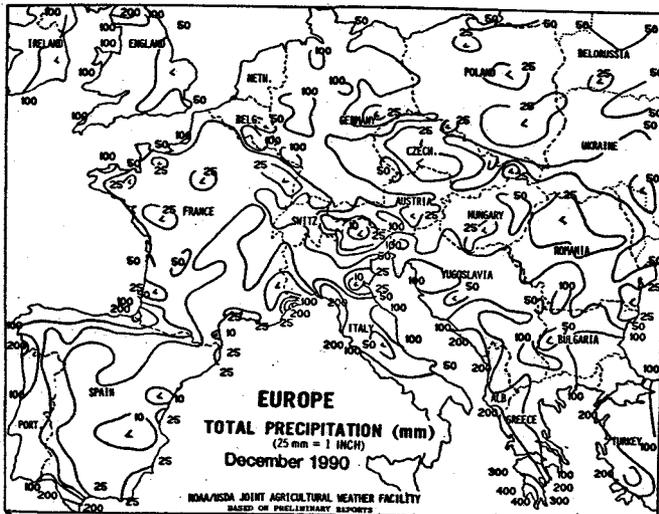
WESTERN USSR ... Unseasonably mild weather continued over the region accompanied by widespread light precipitation. Greatest amounts of precipitation (10-25mm) fell mostly as rain in the Baltic States, the eastern Ukraine, and the northern North Caucasus. Weekly average temperatures ranged from 7 to 10 degrees Celsius (C) above normal over the entire region. This past week's mild weather continued to diminish protective snow cover in the west and south, leaving winter grains vulnerable to potential extreme cold. In December, overwintering conditions for winter grains continued mostly favorable. Low soil moisture reserves in the southern Ukraine were boosted by above-normal precipitation. Precipitation over the remainder of the region was mostly below normal. Mild weather in early December was briefly interrupted by a period of unseasonably cool weather which began around December 16 and continued through December 27. The coldest weather covered winter grains in the Central Region, Volga Vyatsk, Black Soils Region, and the Upper Volga, although temperatures were not low enough to harm winter grains protected by a shallow to moderate snow cover.



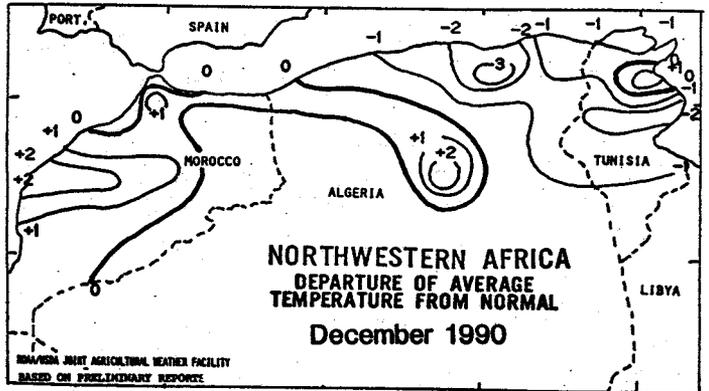
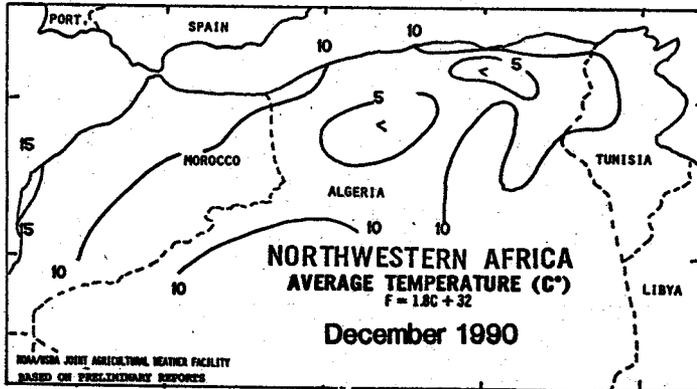
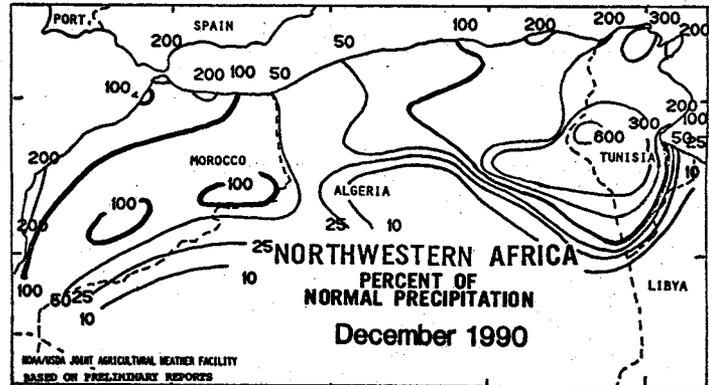
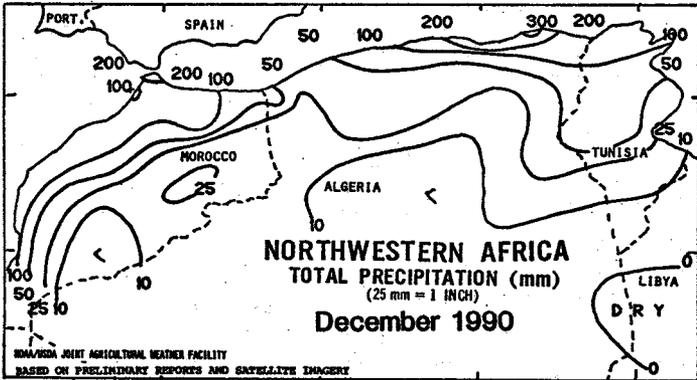
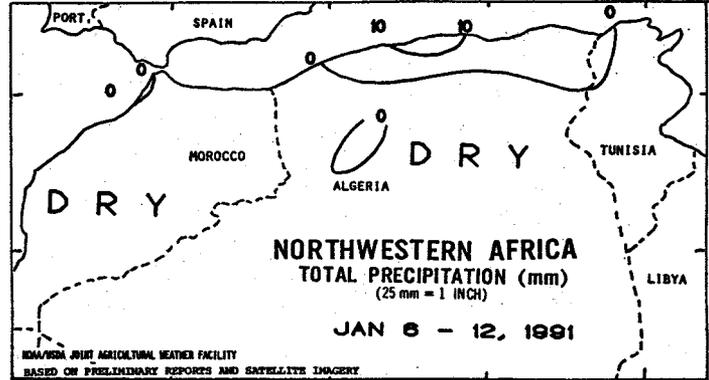


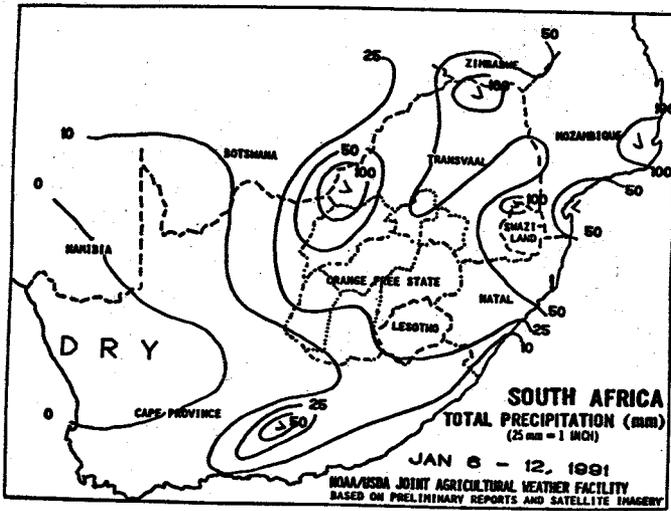


EUROPE ... A strong west to east flow continued over northern Europe, ushering in mild weather and widespread precipitation. Greatest amounts of precipitation (25-50mm) fell mainly in the form of rain over England, parts of northern France, the Benelux, and the western portion of Germany. Light precipitation (generally less than 10mm) covered southern and eastern Europe. Weekly average temperatures were 3-5 degrees C above normal in western Europe and 6-8 degrees C above normal in the east. Well below-normal precipitation since early December has covered winter grain areas in Spain, limiting moisture for vegetative winter grains in the south. Above-normal December precipitation over southeastern Europe benefited vegetative winter grains in southern Italy and Greece, and increased moisture reserves for dormant winter grains in southern Romania and Bulgaria. The above-normal temperature pattern which has covered northern Europe for the past several weeks has caused winter grains in England, northern France, Benelux, and Germany to lose winter hardiness, with crops likely becoming semidormant in some areas.

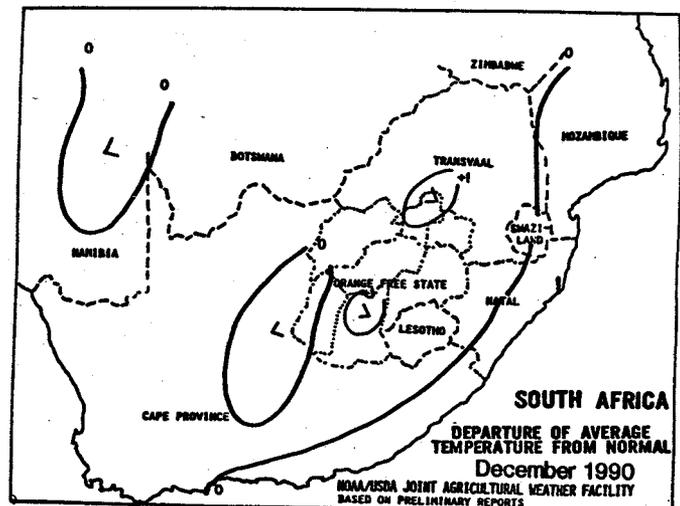
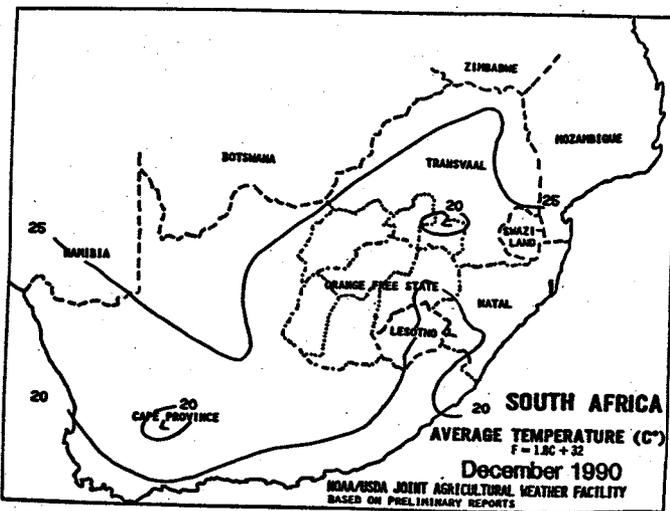
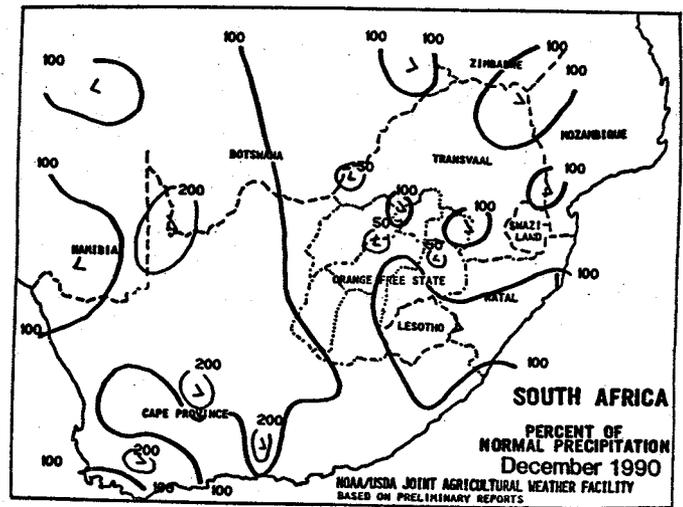
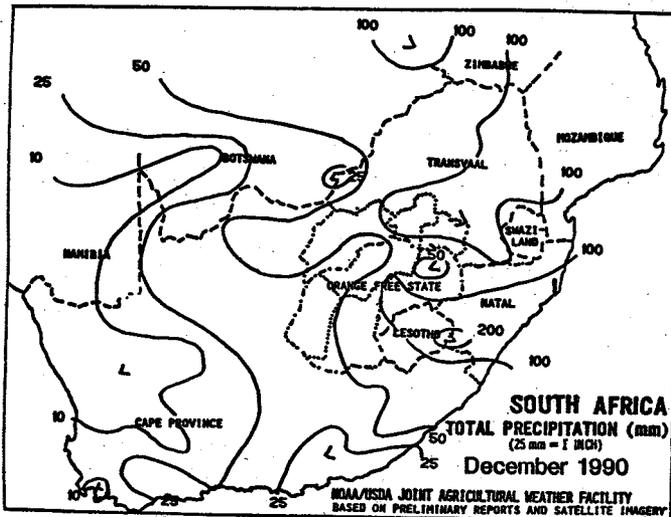


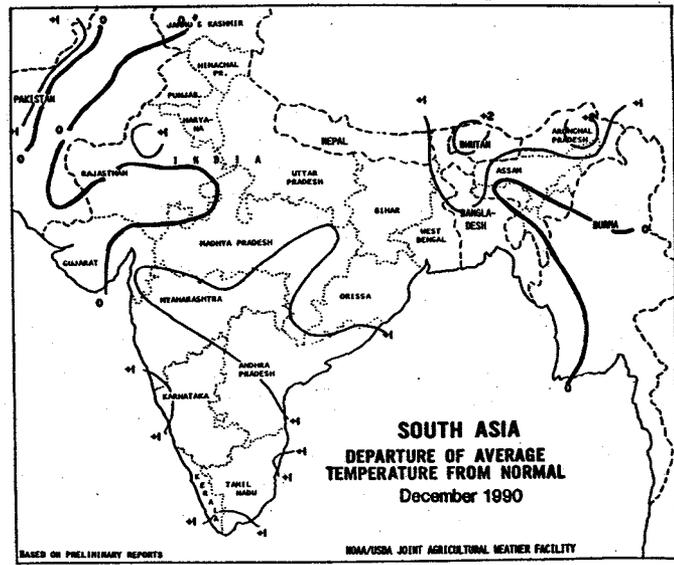
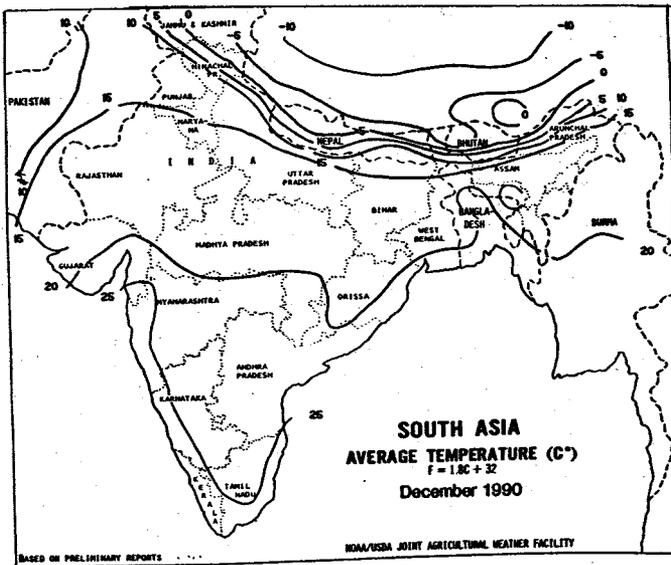
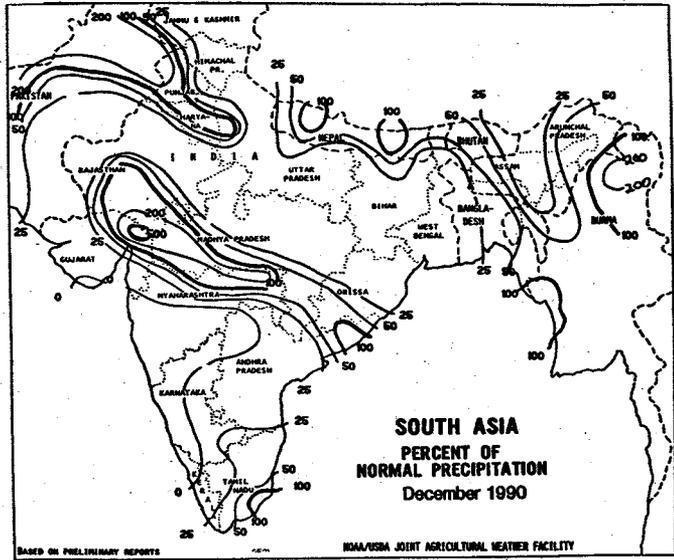
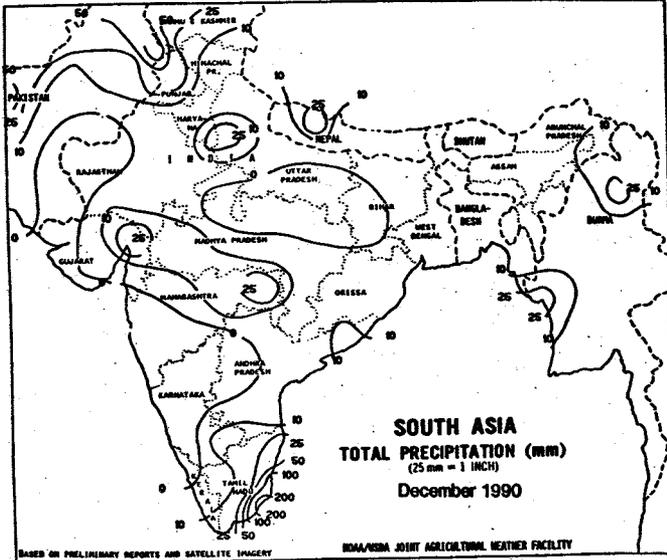
NORTHWESTERN AFRICA ... Dry weather covered vegetative winter grains in Morocco, Algeria, and Tunisia. In December, near- to above-normal precipitation benefited emerging winter grains over most of the region. Two to three times the normal precipitation in Tunisia soaked topsoils, providing abundant moisture for early growth of winter grains. However, December's wet weather created the potential for local flooding, especially in northernmost crop areas where rainfall was the greatest. Monthly average temperatures in December were below normal in Algeria and Tunisia, slowing winter grain emergence and early growth. Above-normal temperatures in these areas this past week helped to promote crop growth.

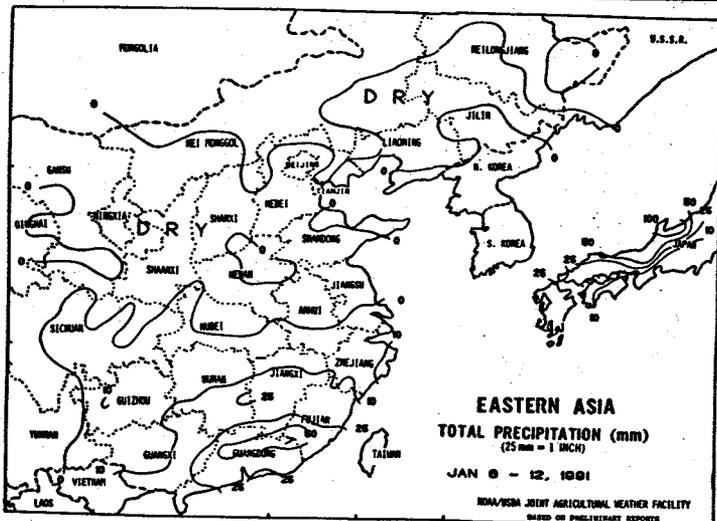




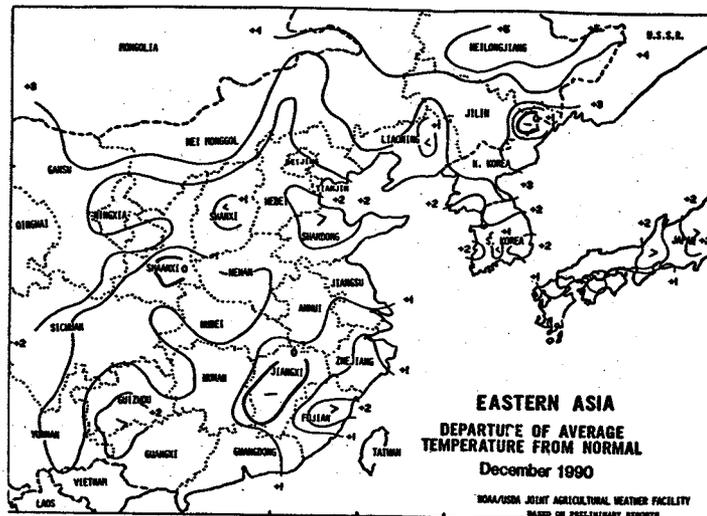
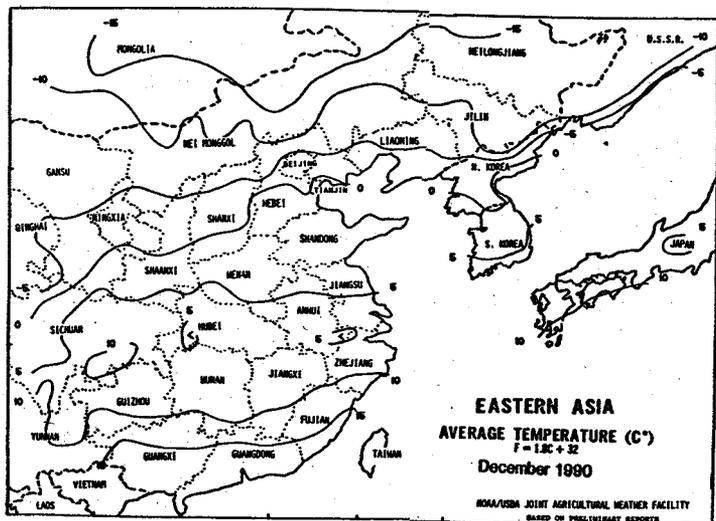
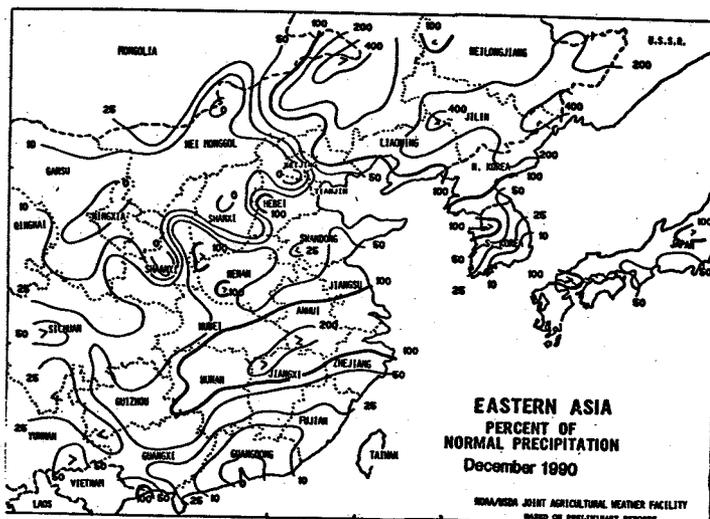
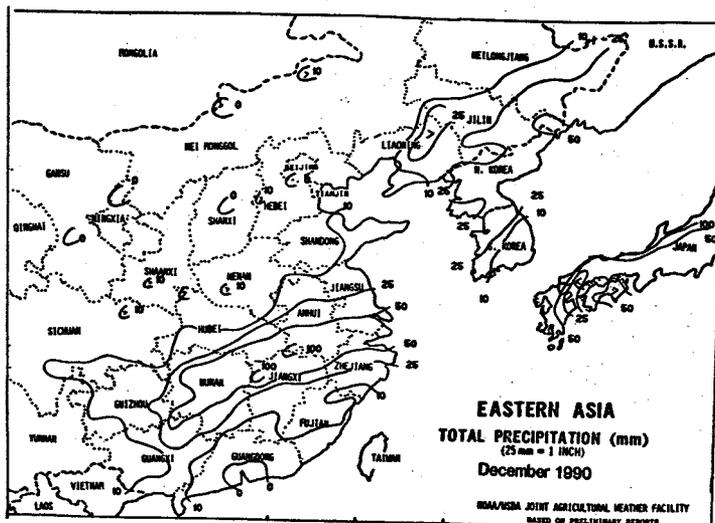
SOUTH AFRICA ... Much needed rainfall and cooler temperatures swept across the Maize Triangle, bringing relief to vegetative to reproductive corn suffering recent periods of heat and moisture stress. Amounts generally ranged from 25 to 60mm but local accumulations in the eastern and northwestern Triangle exceeded 100mm, possibly causing some flooding. Moderate to heavy showers (15-64mm) also covered crop regions of Natal and the eastern Cape Province. In December, rainfall was near to above normal over eastern and southern areas of the Maize Triangle, but much of the central and western Triangle continued below normal. Most of the rains fell early in the month, especially in the west, providing timely topsoil moisture for late plantings. However, unfavorably dry and warm weather the remainder of the month limited moisture for normal emergence and establishment.



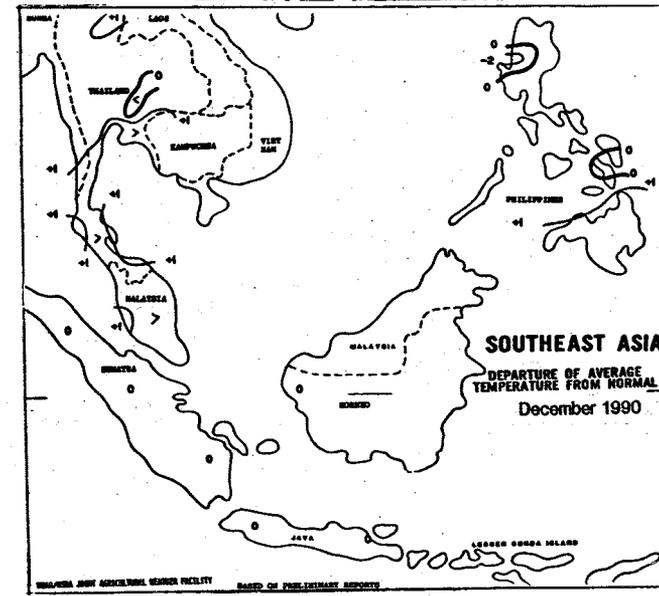
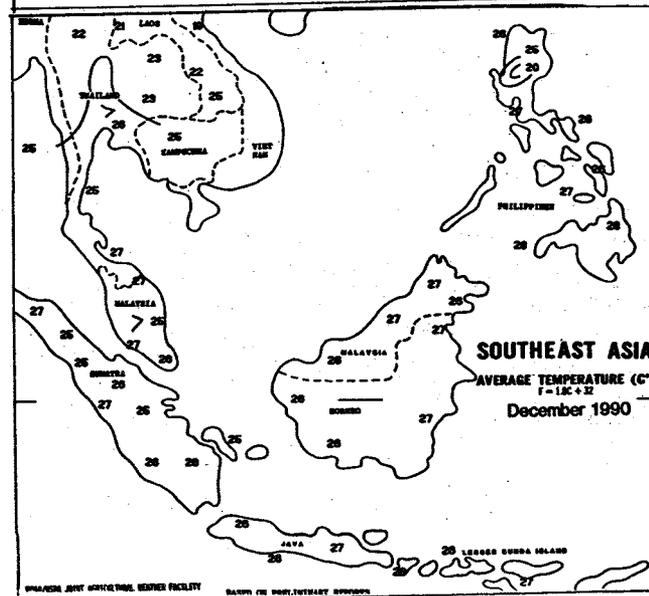
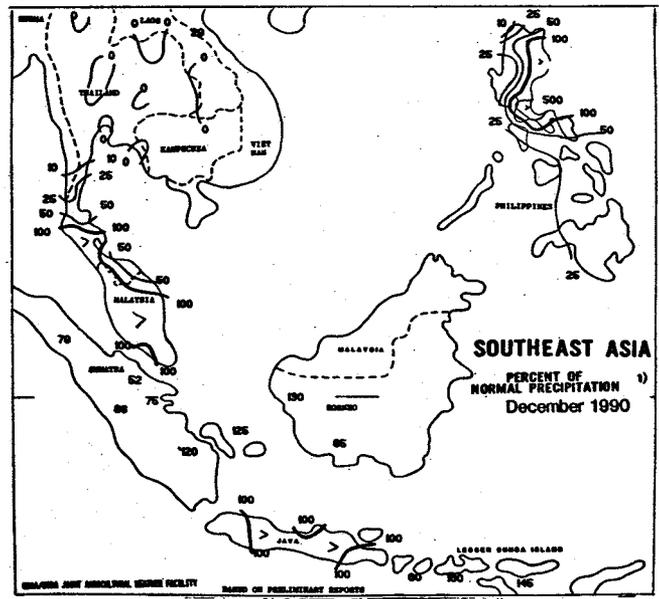
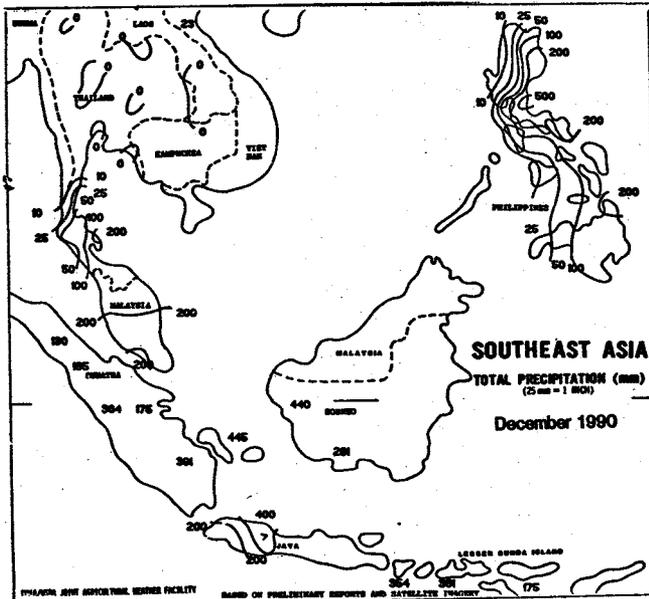
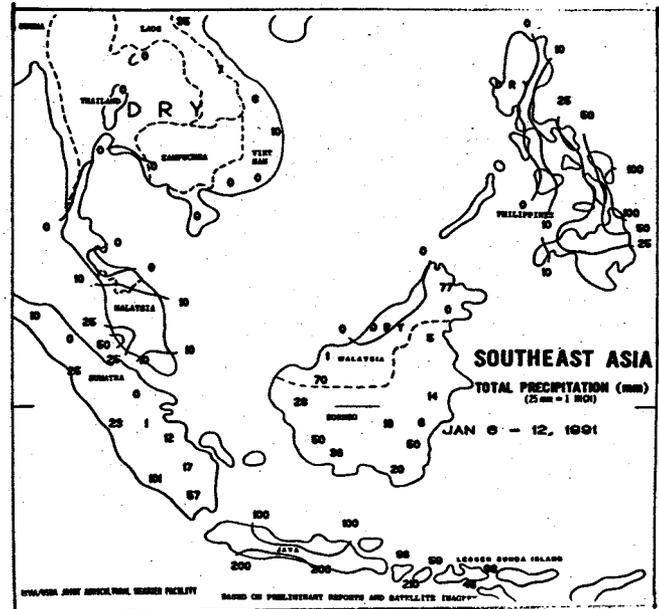


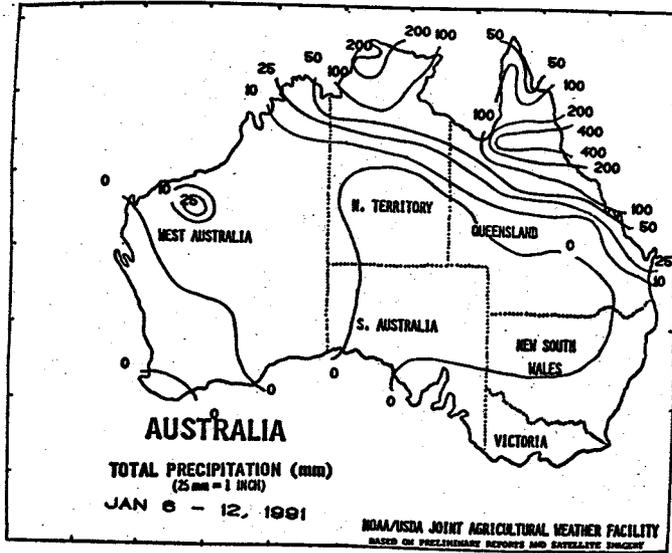


EASTERN ASIA ... Beneficial showers (10mm or more) covered much of southern China, with amounts reaching 25-70mm from eastern Guangxi to southern Fujian. The moisture improved conditions for upcoming rice plantings following December's below-normal rainfall. Rainfall was light (50mm or less) over the Yangtze Valley, but near- to above-normal rainfall since early December from northern Hunan and southern Hubei eastward has greatly improved moisture reserves for spring plantings. Further north, dry, seasonably cool weather covered China's dormant winter wheat. In December, mostly dry, gradually cooler weather covered China's wheat, bringing crops into dormancy. In contrast, wetter- and warmer-than-normal weather covered parts of Manchuria and the Koreas.

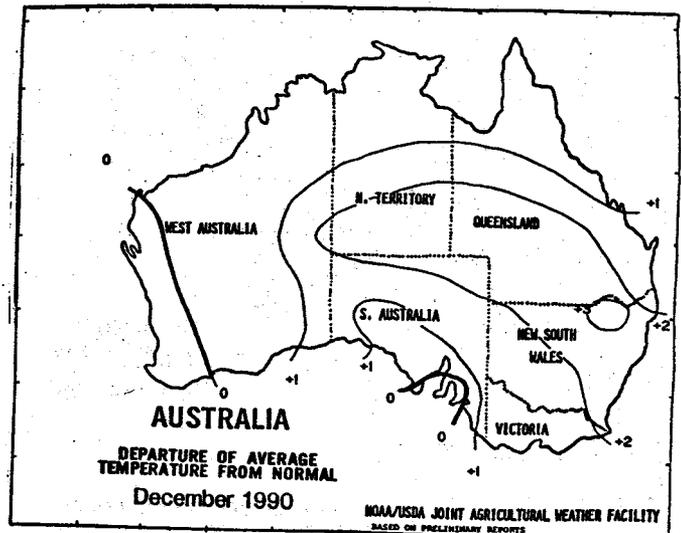
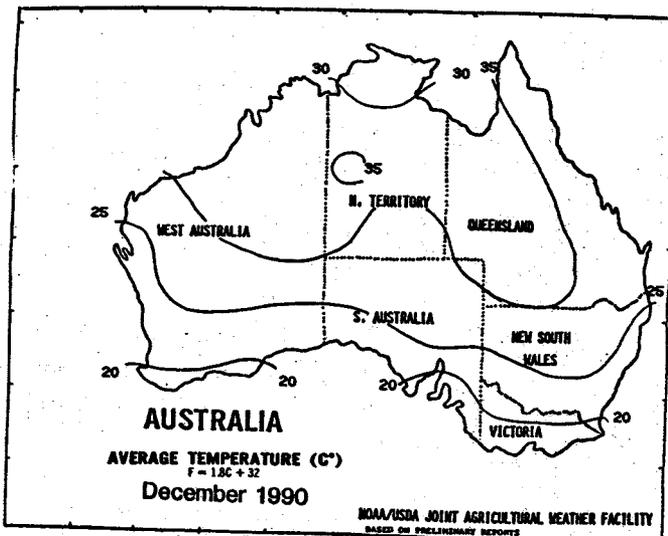
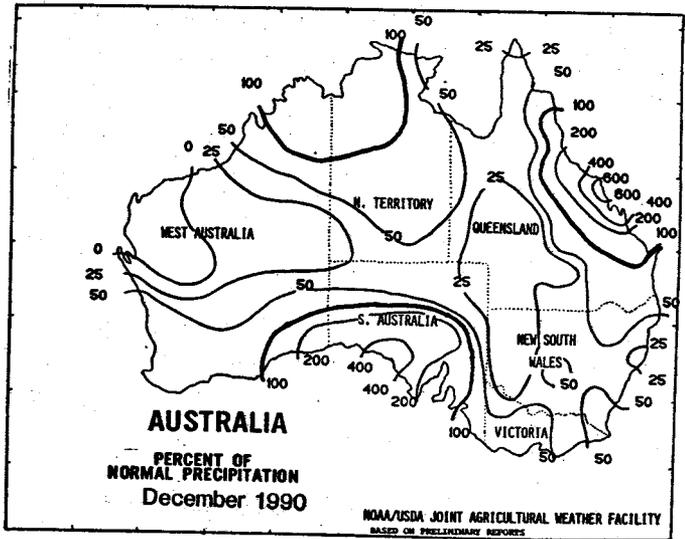
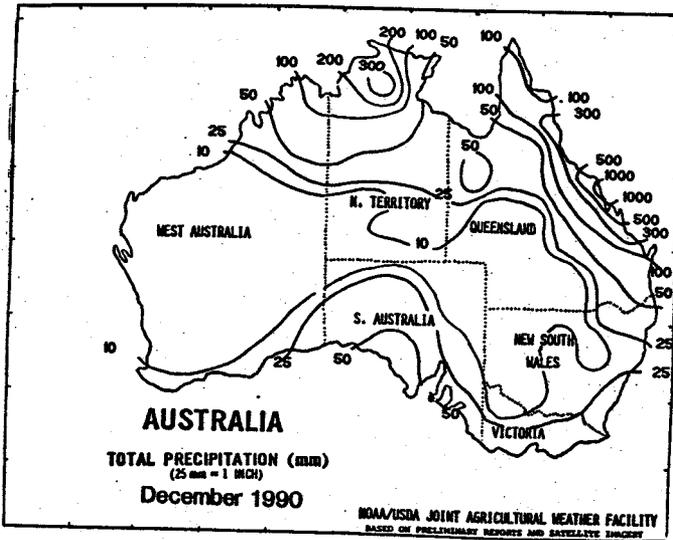


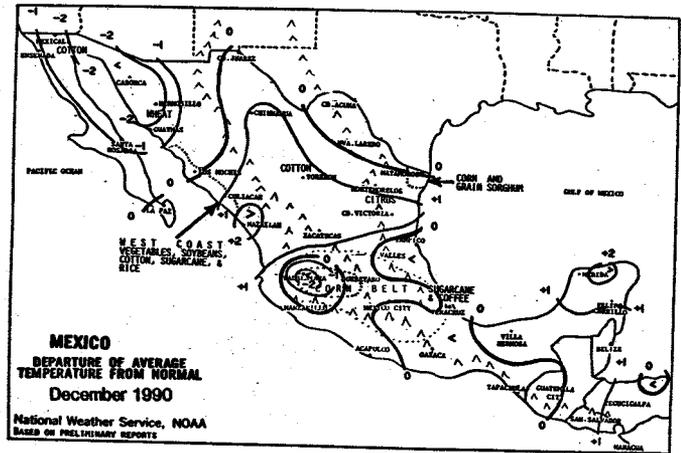
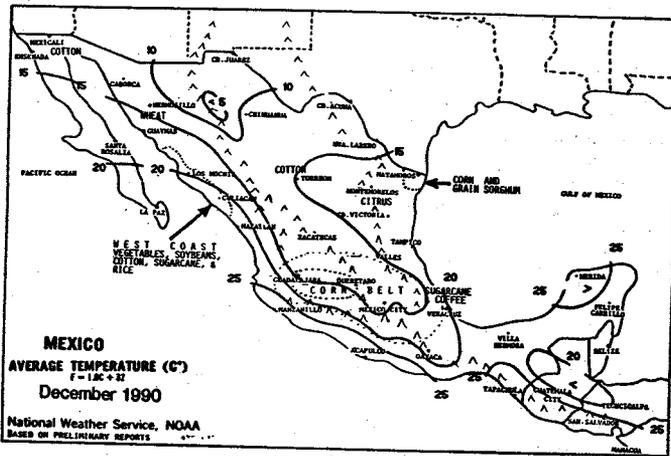
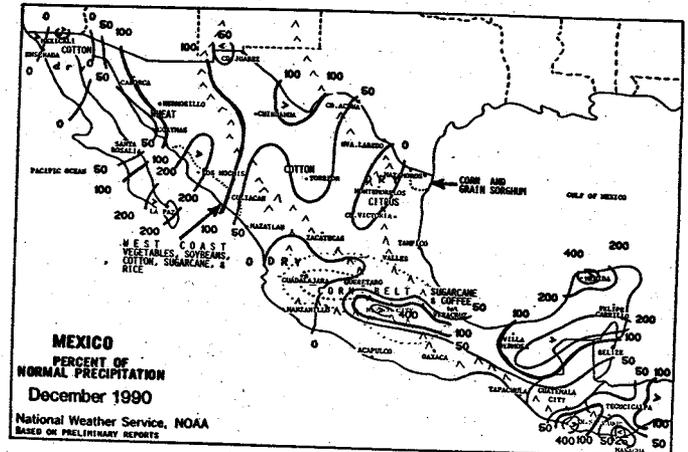
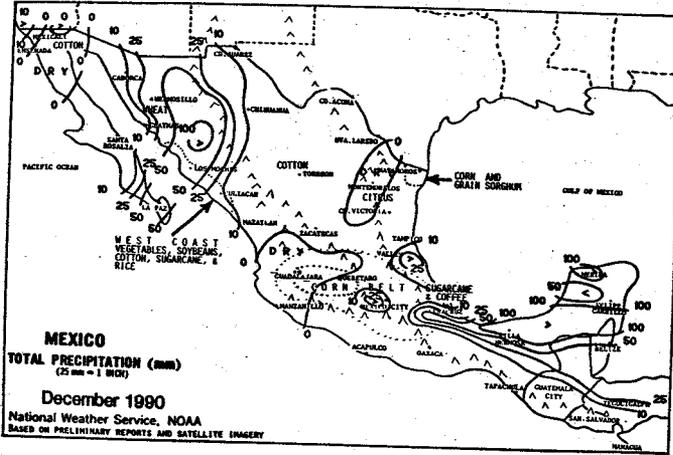
SOUTHEAST ASIA ... Moderate to heavy showers (50-150mm or more) continued over southern Indonesia, maintaining ample irrigation reserves in primary rice regions but causing more local flooding. Rainfall tapered off from last week elsewhere in Indonesia as well as Malaysia, where rainfall exceeded 25mm over only local palm oil regions. In the Philippines, rainfall increased from southeastern Luzon southward through Mindanao, with most areas receiving 15-70mm. More rain, however, is needed further west and north. In December, near- to above-normal rainfall over most crop regions of Indonesia and Malaysia maintained adequate moisture reserves for normal crop development but caused some flooding, especially over southern Indonesia and eastern Malaysia. December rainfall was below normal over most of the Philippines, with crop regions south of Luzon receiving less than 50 percent of normal. More rain is needed across the region for normal development of immature grains.





AUSTRALIA ... Heavy tropical showers soaked northern portions of the country, while mostly dry weather prevailed in eastern summer crop areas. Weekly rainfall generally ranged 50-100mm or more across the north, with 200-480mm along the north coast of the Northern Territory and in northern Queensland. Locally heavy showers continued along Queensland's east coast sugarcane areas where December rainfall reached 200-600 percent of normal as a result of tropical cyclone Joy, which lingered along the coast into early January. Severe flooding reportedly damaged sugarcane and other crops. Elsewhere, mostly below-average December rainfall promoted wheat harvesting, but heat and dryness stressed summer crops in northern New South Wales and southeastern Queensland.





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(Continued from front cover)
from **Arkansas** to the **Carolinas**. **Coastal Mississippi** was inundated with up to 10 inches of rain. On the northern fringe of the storm, 8-10 inches of snow blanketed **western Maryland**. Meanwhile, the first of three storms hit the **Pacific Northwest** and **northern Rockies** with rain, freezing rain, and snow. At midweek, **southern California** had a quick shot of light rain. Elsewhere, precipitation continued in the **Northwest**, ice glazed surfaces from the **east-central Plains** to the **mid-Atlantic region**, and extremely heavy rain developed in the **Gulf Coast States** and the **Southeast**. Rainfall exceeded 5 inches in many locations from **eastern Texas** to the **panhandle of Florida**. On Friday, a weak disturbance touched off snow in the **upper Midwest**. **Chicago, IL** had a 6-inch accumulation. Late in the week, winter storms pounded the **Northwest** and the **Northeast**. High winds and heavy rain lashed the **Pacific Northwest**, while more than half a foot of snow fell from the **central Appalachians** to **Maine**.

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