

WEEKLY WEATHER AND CROP BULLETIN

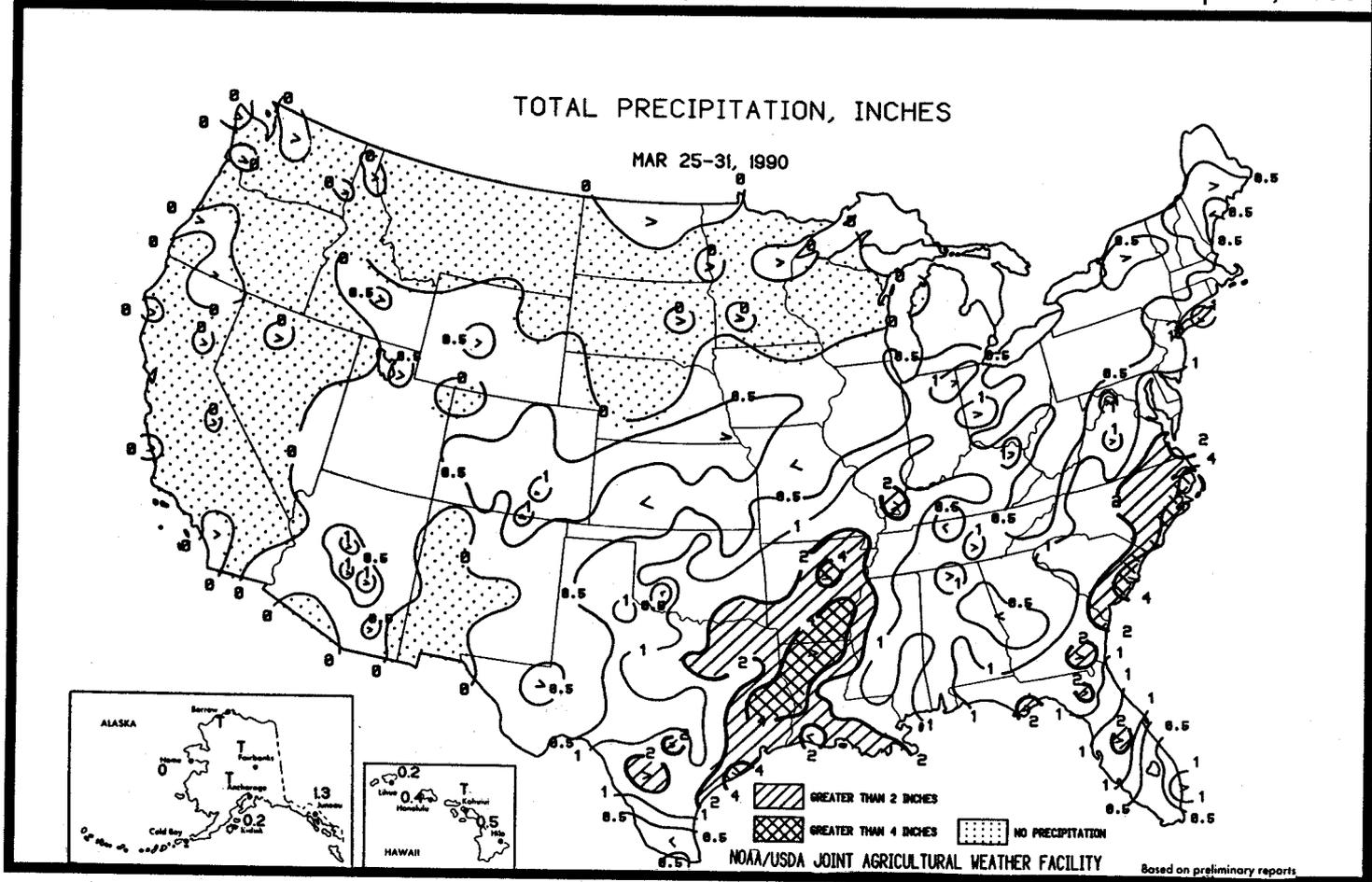
U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration, National Weather Service

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

Volume 77, No. 13

Washington, D.C.

April 3, 1990



HIGHLIGHTS

March 25-31, 1990

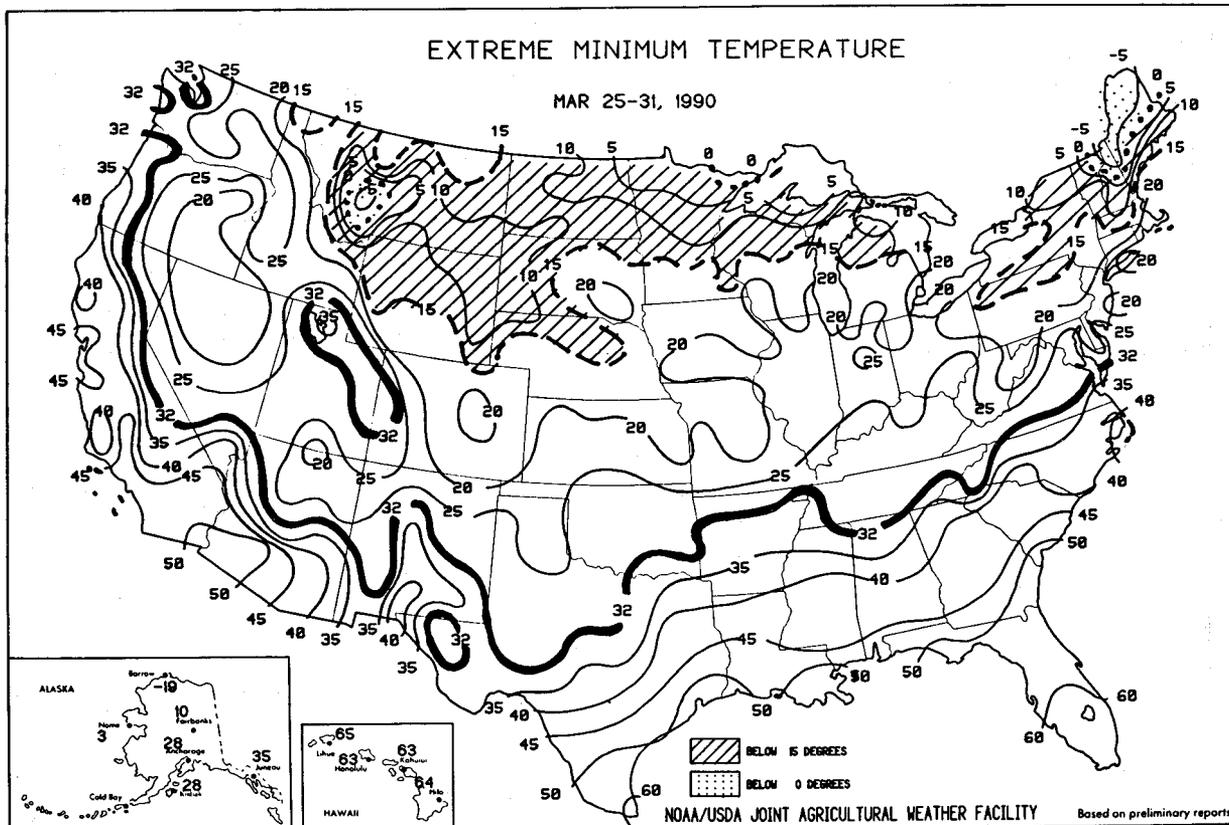
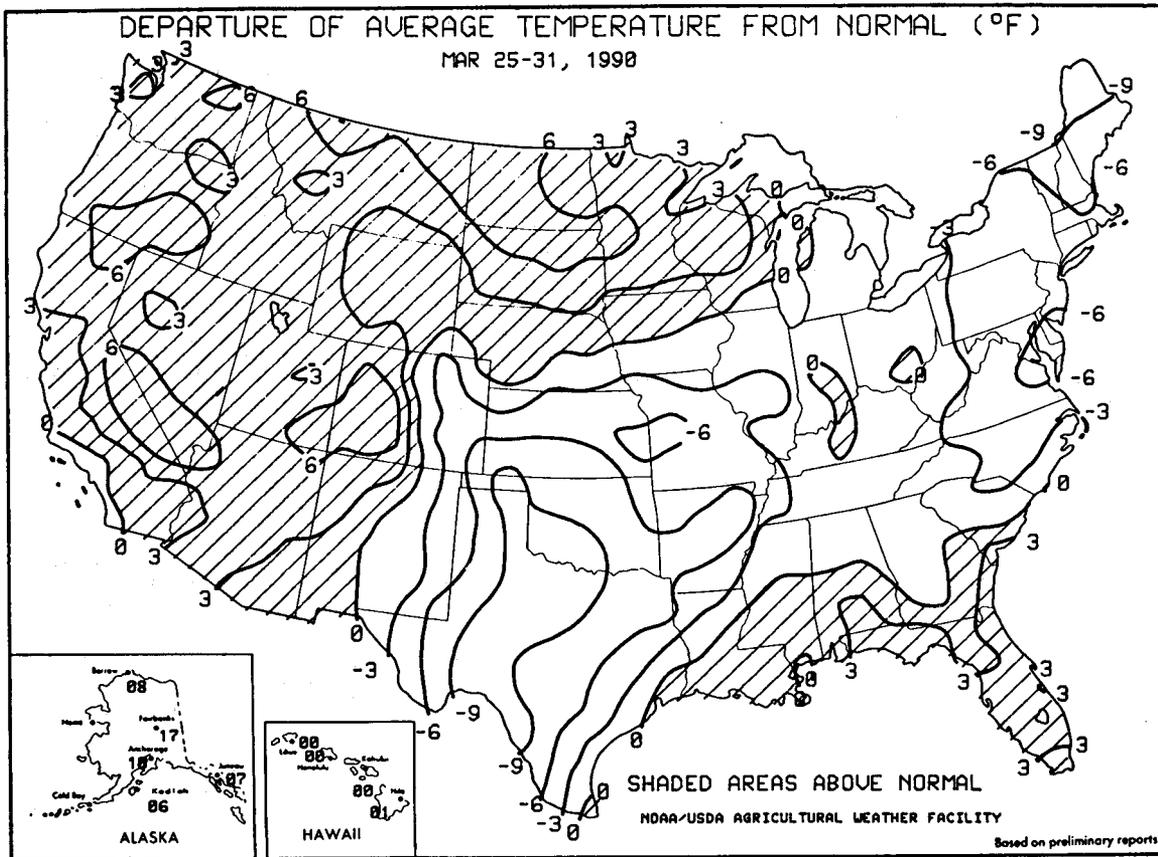
Quiet spring weather continued to dominate much of the Nation early in the week as only light to moderate precipitation fell along a stationary front stretching from the central Plains to the middle Atlantic coast. By Tuesday, however, precipitation spread from the central Rockies to the lower Mississippi Valley as a major storm system developed. The system drifted eastward, causing widespread rainfall from the central and southern Rockies to the Atlantic coast during the remainder of the week. Heavy snow blanketed the Rockies, while severe thunderstorms caused heavy rain and spawned tornadoes from eastern Texas into Louisiana. Torrential rains caused local flooding along the Carolina coast during the latter part of the week. Thunderstorms brought rain and some drought relief to southern Florida at week's end, but warm dry weather continued to plague the West.

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Picking a Safe Planting Date

It's that time of year again when colorful seed catalogs are in demand, and agriculturists are full of enthusiasm and expectation as the spring planting season approaches. Growers need all the weather and climatic information that is available to help reduce the risk of replanting which can be costly not only for loss of seed, labor, and soil moisture, but because it affects crop development schedules, yield, and price received.

Three primary ingredients are needed to obtain a good stand of seedlings--warm soil and air temperatures after planting, adequate soil moisture, and high quality seed.

To keep up with the status of spring soil temperatures and the speed that warming progresses northward, a soil temperature map will be published on a space-available basis. The 4-inch bare soil measurement was selected because of its widespread use across the Nation and as a compromise between the 2, 6, and 8-inch observations that are used in a few areas. The weekly average was selected as the best measure to represent the temperature regime. It is the mean of the daily maxima and minima. The soil temperature data is supplied by the National Weather Service, state universities, and USDA.

Four-inch soil temperatures vary throughout the year and follow a pattern similar to those of air temperatures but with a slight time lag. Figure 1 shows the month-to-month variation and the springtime rapid rise. Figure 2 indicates the hour-to-hour variations. The solid line depicts the diurnal (daily) changes under clear skies while the dashed line shows the smaller changes that occur under cloudy conditions. The average for the day can be ascertained from the 10 to 11 a.m. reading.

Location and depth of soil thermometers, time of observations, interpretation and planting rules vary considerably across the Nation. Even within a state variations can occur.

How warm must the soil be for seed germination? This depends upon the type of crop. It ranges from low for wheat and cabbage to moderate for corn and tomatoes to high for cotton and watermelon. Duration of temperature is also a controlling factor; more days are necessary for emergence at the cooler temperatures than when the optimum range is reached. Temperature-duration-crop germination data is contained in the accompanying tables 1, 2, and 3.

Crop planting rules differ greatly, although most appear to be based upon soil temperatures averaging between the minimum for germination and the lower value of the optimum range. Seed quality is also a controlling factor. For example, a planting rule for cotton can be derived from the emergence data obtained under actual field conditions as depicted in figure 3. In other words, to get 50% field emergence from seed having 90% laboratory germination (high quality), cotton may be planted when the soil temperature averages 66°. For seed testing 80% (medium quality), plant at

TABLE 1. CARDINAL TEMPERATURE POINTS FOR GERMINATION OF CERTAIN CROP SEEDS*

Crop	Cardinal Points in Degree Fahrenheit			Days Required for Germination at Indicated Temperatures			
	Minimum	Optimum	Maximum	40°F	54°F	60°F	66°F
Red clover	34	86	99	7.5	3.0	1.75	1.0
Alfalfa	34	86	99	6.0	3.75	2.75	2.0
Heup	31-36	85	113	5.0	2.0	1.0	1.0
Peas	34-36	80	95	5.0	3.0	1.75	1.75
Rye	34-36	77	86	4.0	2.5	1.0	1.0
Vetch	31-30	86	95	6.0	5.0	2.0	2.0
Flax	33-37	77	86	8.0	4.5	2.0	2.0
Timothy	37-39	79	86	—	6.5	3.25	3.0
Wheat	30-40	77	86-90	6.0	3.0	2.0	1.75
Barley	30-40	68	82-86	6.0	3.0	2.0	1.75
Oats	30-41	77	86	7.0	3.75	2.75	2.0
Carrot	30-41	77	86	—	6.75	4.25	3.25
Sugar beet	30-41	77	82-86	22.0	9.0	3.75	3.75
Lentils	30-41	86	97	6.0	4.0	2.0	1.75
Maize	46-50	89-93	104-111	—	11.25	3.25	3.0
Sorghum	46-50	89-93	104	—	11.25	4.75	4.0
Rice	50-53	86-90	97-101	—	—	—	—
Tobacco	53-57	82	93	—	—	9.0	6.25
Pumpkin	34	89-93	104	—	—	10.75	4.0
Melon	34-39	85	104	—	—	13.0	17.0

* Adapted from data by F. Haberlaudi in *Größe Ernährungsphysiologisches Practicum höherer From Crop Adaptation and Distribution by Carroll P. Wilsie, W. E. Freeman & Co. © 1962.*

SOIL TEMPERATURE CONDITIONS FOR VEGETABLE SEED GERMINATION¹ TABLE 2

Crop	Minimum, °F.	Optimum Range, °F.	Optimum, °F.	Maximum, °F.
Asparagus	50	60-85	75	95
Bean	60	60-85	80	95
Bean, lima	60	65-85	85	85
Beet	40	50-85	85	95
Cabbage	40	45-95	85	100
Carrot	40	45-85	80	95
Cauliflower	40	45-85	80	100
Celery	40	60-70	70 ²	85 ²
Chard, Swiss	40	50-85	85	95
Corn	50	60-95	95	105
Cucumber	60	60-95	95	105
Eggplant	60	75-90	85	95
Lettuce	35	40-80	75	85
Muskmelon	60	75-95	90	100
Okra	60	70-95	95	105
Onion	35	50-95	75	95
Parsley	40	50-85	75	90
Parsnip	35	50-70	65	85
Pea	40	40-75	75	85
Pepper	60	65-95	85	95
Pumpkin	60	70-90	95	100
Radish	40	45-90	85	95
Spinach	35	45-75	70	85
Squash	60	70-95	95	100
Tomato	50	60-85	85	95
Turnip	40	60-105	85	105
Watermelon	60	70-95	95	105

¹ Compiled by J. F. Harrington, Dept. of Vegetable Crops, Univ. of Calif. at Davis.

² Daily fluctuation to 60° or lower at night is essential.

From *Handbook for Vegetable Growers* by J. E. Knott. John Wiley & Sons, Inc. © 1957.

Figure 1—Average monthly 4-inch soil temperature near Northeast Arkansas Experiment Station, Keiser, Arkansas.

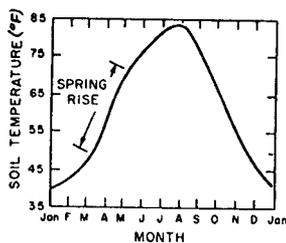
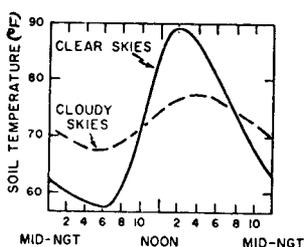


Figure 2—Hourly 4-inch soil temperature in May near Keiser, Arkansas with clear skies and cloudy skies.



From *Soil Temperatures and Cotton Planting in the Mid-South* by Riley, Newton, Measells, Downey and Hand. Miss. Ag. Exp. Sta. Bul. 678, Feb. 1964.

70°, or if seed quality is 70% or less (low quality), wait until the soil temperature is above 75°. The temperature limits selected were 1/4, 1/2, and 3/4 of the 20° span between the minimum germinating temperature and the beginning of the optimum range. The minimum is 60° and the beginning of the optimum range under field conditions is about 80°.

Applying the same technique to tomato and some corn varieties which have a minimum germinating temperature of 50° and an optimum threshold beginning at 60° would result in the following rule: plant when soil temperatures average 53° for high quality seed, 55° for medium quality, and above 58° for the lower quality seed.

Cold temperatures may deal a crippling blow to tender young seedlings. So it is wise to delay planting, not only until the soil is warm but until chances dwindle for a critically cold air

TABLE 3
DAYS TO APPEARANCE OF SEEDLINGS AT VARIOUS SOIL TEMPERATURES FROM SEED PLANTED AT ONE-HALF INCH DEPTH¹

More days than shown below are needed at greater depths. Soil temperatures are slightly cooler there, and the seedlings have a greater distance to grow. The days from planting to emergence determine when a pre-emergence weed-control treatment can be used effectively.

Crop	Soil Temperature in Degrees Fahrenheit								
	32	41	50	59	68	77	86	95	104
Asparagus	x	x	53	24	15	10	11	19	28
Bean	x	x	x	16	11	8	6	6	x
Bean, lima			x	30	18	6	6	x	
Beet		42	17	10	6	5	4	4	
Cabbage			15	9	6	4	3		
Carrot	x	51	17	10	7	6	6	8	x
Cauliflower			19	10	6	5	4		
Celery	x	41	16	12	7	x	x	x	
Corn	x	x	22	12	7	4	4	3	x
Cucumber	x	x	x	13	6	4	3	3	
Eggplant					13	8	5		
Lettuce	49	15	7	4	3	2	2	x	x
Muskmelon					8	4	3		
Okra	x	x	x	27	17	12	7	6	6
Onion	135	31	13	7	5	4	4	12	x
Parsley			29	17	14	13	12		
Parsnip	171	57	27	19	14	15	32	x	x
Pea		36	13	9	7	6	6		
Pepper	x	x	x	25	12	8	8	9	x
Radish		29	11	6	4	3	3		
Spinach	62	22	12	7	6	5	6	x	x
Tomato	x	x	43	14	8	6	6	9	x
Turnip	x	x	5	3	2	1	1	1	2
Watermelon			x		12	5	4	3	

x = little or no germination.
 . . . = not tested.
¹Data compiled by J. F. Harrington, Dept. of Vegetable Crops, Univ. of Calif. at Davis.
 From Handbook for Vegetable Growers by J. E. Knott. John Wiley & Sons, Inc. © 1957.

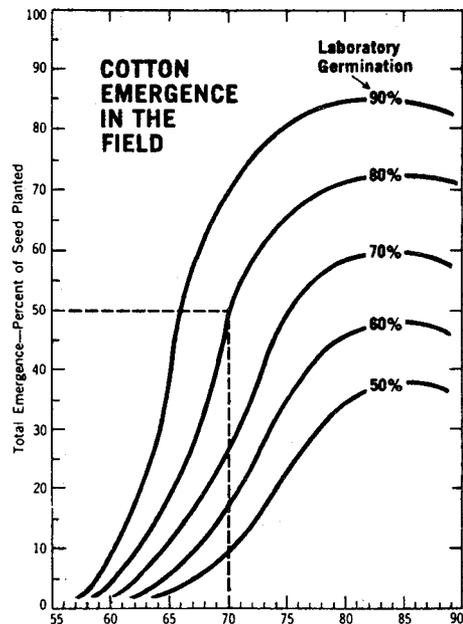


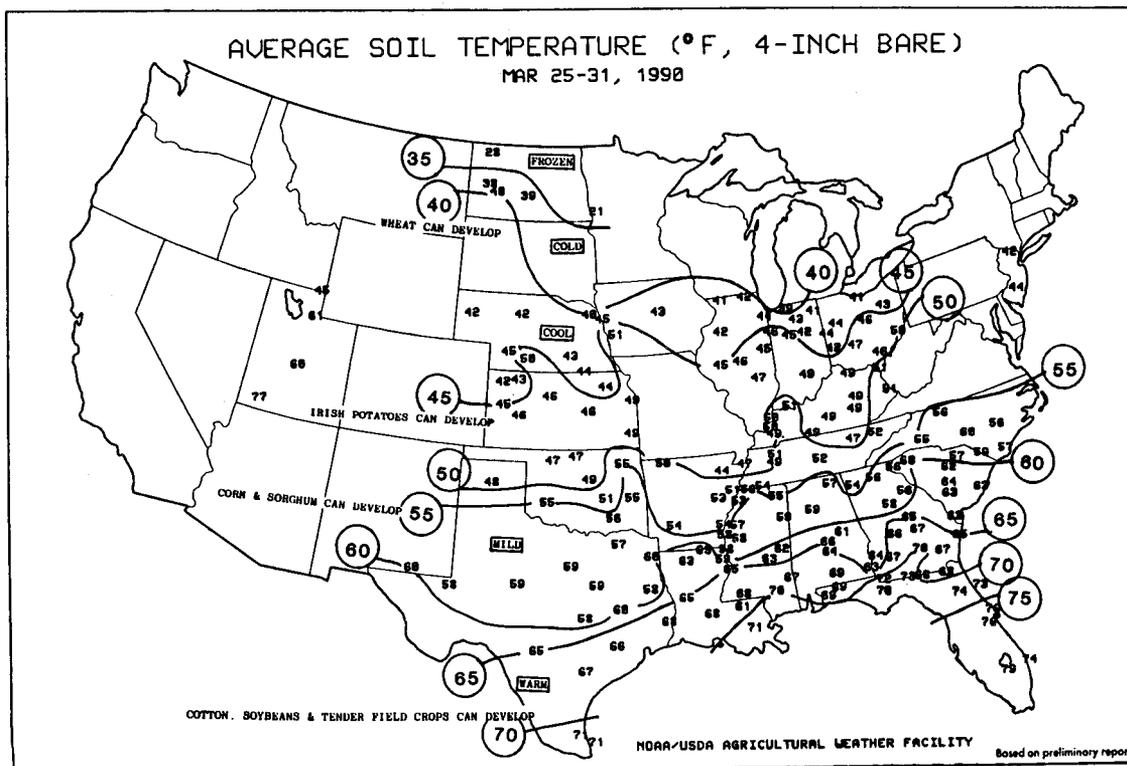
Figure 3. Mean Soil Temperature (°F) at 2-Inch Depth from Planting to Final Emergence. From Picking a Safe Cotton-Planting Date by Donald J. Haddock. The Progressive Farmer, Feb. 1967.

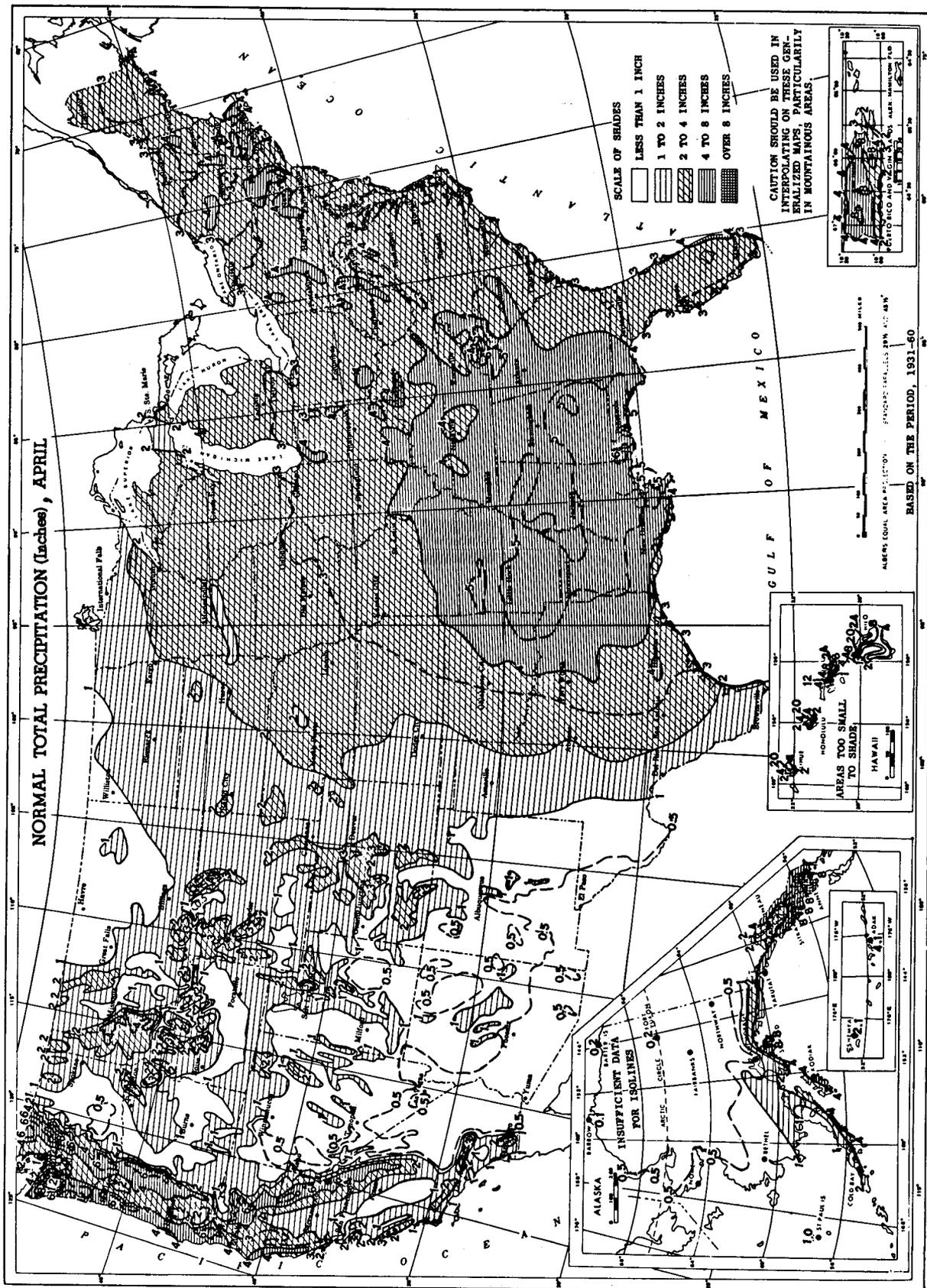
mass hitting the region. The chart, Mean Date * of Last 32° Temperature in Spring, shows the dates on which the chance of the last freeze has fallen to 50%. This risk is rather high though

for tender crops, and would probably result in replanting about every other year. The risk is reduced to 10% (1 year in 10) by waiting about 18 days, and down to 5% risk (1 year in 20) by delaying about 23 days after the mean date on the chart.

* See Weekly Weather and Crop Bulletin, February 27, 1990, Vol. 77, No. 8.

(The preceding article was published in the March 17, 1987, issue of the Bulletin. It was written by Don Haddock, the Bulletin's former managing editor.)





National Weather Data for Selected Cities

Weather Data for the Week Ending March 31, 1990

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 Mar 1	PCT. NORMAL SINCE Mar 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		
AL BIRMINGHAM	65	48	77	32	56	-1	.5	-1.0	.2	5.5	83	19.7	119	97	62	0	1	4	0	0	
MOBILE	74	54	81	46	64	1	.5	-.9	.5	12.2	189	27.7	174	95	52	0	0	1	1	1	
MONTGOMERY	71	52	78	41	61	1	.8	-.5	.6	12.4	210	30.2	207	93	56	0	0	2	1	1	
AK ANCHORAGE	42	31	47	28	37	10	T	-.1	T	.5	74	3.4	146	89	57	0	4	1	0	0	
BARROW	3	-10	12	-19	-4	8	T	0	T	.1	87	.2	46	90	76	0	7	2	0	0	
FAIRBANKS	45	21	48	10	33	17	T	-.1	T	.1	28	1.3	99	89	44	0	6	0	0	0	
JUNEAU	44	37	47	35	40	7	1.5	.8	.6	4.9	146	13.1	122	98	74	0	0	5	5	1	
KODIAK	44	34	52	28	39	6	1.7	.9	.7	5.4	138	14.9	101	93	68	0	2	5	5	2	
NOME	29	16	39	3	22	12	.2	0	-.1	.7	129	2.1	116	95	75	0	5	4	2	0	
AZ PHOENIX	81	60	93	54	71	8	.1	-.1	0	.4	44	1.8	88	55	25	2	0	2	2	0	
PRESCOTT	60	38	73	30	49	4	.6	-.3	.3	1.0	66	3.5	74	66	32	0	1	3	3	0	
TUCSON	76	52	88	42	64	4	-.2	-.1	-.1	.4	57	2.0	98	62	21	0	0	2	2	0	
YUMA	81	58	91	53	70	3	-.2	-.2	-.1	.1	47	.2	28	55	19	1	0	2	2	0	
AR FORT SMITH	57	43	70	33	50	5	.7	-.3	.5	4.6	119	15.7	191	98	65	0	0	5	5	5	
LITTLE ROCK	55	44	64	33	49	-7	3.1	2.0	1.5	10.1	216	19.7	159	90	70	0	0	5	5	3	
CA BAKERSFIELD	76	48	80	46	62	3	0	-.2	0	.5	53	2.2	76	82	29	0	0	0	0	0	
EUREKA	58	47	62	43	52	4	0	-1.0	0	3.3	66	15.0	87	90	73	0	0	0	0	0	
FRESNO	74	46	78	43	60	4	0	-.3	0	.7	42	4.8	88	91	32	0	0	0	0	0	
LOS ANGELES	61	53	66	49	57	-1	0	-.3	0	.1	8	3.9	54	90	64	0	0	0	0	0	
REDDING	76	44	80	40	60	4	0	-1.0	0	2.4	48	11.7	60	74	25	0	0	0	0	0	
SACRAMENTO	74	42	77	40	58	4	0	-.4	0	.9	42	8.7	98	96	34	0	0	0	0	0	
SAN DIEGO	63	55	66	53	59	0	.1	-.2	-.1	.2	14	3.9	71	84	55	0	0	1	1	0	
SAN FRANCISCO	62	47	65	45	54	1	0	-.5	0	.8	30	6.2	59	92	59	0	0	0	0	0	
CO DENVER	48	29	62	21	38	-2	.7	-.3	-.2	3.1	261	4.4	188	96	51	0	7	4	4	1	
GRAND JUNCTION	63	41	74	33	52	7	.6	-.4	-.5	1.1	147	2.2	118	67	29	0	0	2	3	0	
PUEBLO	51	30	70	21	40	-3	.7	-.5	-.3	1.1	174	2.4	210	93	50	0	5	3	3	0	
CT BRIDGEPORT	45	31	54	24	38	-4	.5	-.4	-.5	2.1	54	7.9	78	72	43	0	4	1	1	0	
HARTFORD	46	26	53	18	36	-5	.5	-.5	-.5	2.5	60	9.9	91	76	36	0	5	1	1	0	
DC WASHINGTON	50	38	55	32	44	-6	.8	0	.4	2.6	75	6.8	78	89	54	0	1	4	4	0	
FL APALACHICOLA	75	58	79	52	66	3	2.1	1.3	2.1	4.2	103	10.5	94	97	57	0	0	1	1	2	
DAYTONA BEACH	79	59	82	51	69	3	1.7	1.1	1.0	1.9	65	9.0	106	98	58	0	0	3	3	0	
JACKSONVILLE	80	59	85	54	70	5	1.0	-.3	.7	1.6	45	7.4	75	95	54	0	0	2	2	0	
KEY WEST	82	72	84	69	77	1	.3	0	.2	.8	61	1.8	37	87	64	0	0	0	0	0	
MIAMI	83	68	84	65	76	2	1.1	.6	1.0	2.3	122	3.7	62	88	51	0	0	2	2	1	
ORLANDO	83	62	88	56	73	4	1.7	1.1	.8	1.9	59	6.3	74	95	46	0	0	3	3	2	
TALLAHASSEE	90	55	84	48	68	5	1.3	-.2	1.3	3.4	61	13.8	91	95	48	0	0	1	1	1	
TAMPA	84	64	87	57	74	5	1.4	-.7	1.4	1.7	50	6.8	79	93	49	0	0	0	0	0	
WEST PALM BEACH	84	68	87	62	76	4	.8	-.2	.8	1.9	72	4.5	56	87	53	0	0	2	1	1	
GA ATLANTA	63	47	75	40	55	-1	.1	-.7	.5	8.4	142	26.6	175	91	60	0	0	5	3	0	
AUGUSTA	68	49	83	44	59	1	.9	-.2	.4	2.0	42	7.4	58	87	54	0	0	0	0	0	
MACON	68	48	80	40	58	-2	.3	-.8	-.2	4.6	88	12.6	91	95	59	0	0	2	4	0	
SAVANNAH	73	56	83	52	65	3	2.5	1.6	1.3	3.8	99	10.8	107	91	57	0	0	4	2	0	
HI HILO	80	65	83	64	73	1	.5	-2.6	.4	10.9	80	55.2	152	90	55	0	0	3	3	0	
HONOLULU	82	66	84	63	74	0	T	-.3	T	.7	21	9.1	92	88	51	0	0	0	0	0	
KAHULUI	81	65	83	63	73	0	T	-.5	T	.5	54	12.4	126	93	58	0	0	0	0	0	
LIHUE	77	67	81	65	72	0	.2	-.8	-.1	3.0	66	13.6	94	87	63	0	0	3	3	0	
ID BOISE	64	31	70	28	47	4	0	-.3	0	.8	75	2.4	65	80	21	0	6	0	0	0	
LEWISTON	65	36	72	30	51	5	0	-.3	0	1.1	104	1.8	53	73	30	0	1	0	0	0	
POCATELLO	57	28	66	24	42	4	.1	-.2	-.1	2.3	248	3.1	107	87	27	0	6	1	0	0	
IL CHICAGO	46	31	53	22	39	-3	.5	-.3	-.4	3.1	114	7.3	134	87	51	0	4	2	0	0	
MOLINE	49	29	55	19	39	-3	.3	-.4	-.3	6.7	243	10.3	183	88	46	0	4	1	0	0	
PEORIA	49	33	53	22	41	-3	.3	-.4	-.3	4.0	138	9.3	158	87	54	0	3	3	0	0	
QUINCY	48	34	52	20	41	-1	.1	-.3	-.3	2.9	91	7.8	130	89	53	0	3	2	0	0	
ROCKFORD	47	29	53	19	38	-2	.2	-.5	-.2	2.7	103	5.6	110	88	45	0	4	2	0	0	
SPRINGFIELD	50	34	53	22	42	-.3	.3	-.5	-.2	3.4	111	9.8	155	90	59	0	3	2	0	0	
IN EVANSVILLE	56	39	62	26	48	-.2	.7	-.3	-.4	2.2	47	12.0	113	92	57	0	3	3	0	0	
FORT WAYNE	47	30	50	19	39	-.3	1.0	-.3	-.8	3.1	105	12.1	173	90	52	0	4	4	1	1	
INDIANAPOLIS	53	36	61	23	45	0	.6	-.2	-.4	2.0	56	8.8	102	80	49	0	3	4	0	0	
SOUTH BEND	47	30	52	19	38	-.2	.6	-.2	-.5	2.8	92	8.8	118	85	45	0	4	2	0	0	
IA DES MOINES	47	32	55	21	40	0	.5	-.1	-.3	5.8	267	8.1	190	84	52	0	3	3	0	0	
SIOUX CITY	52	30	59	18	41	2	T	-.4	-.1	2.2	127	2.8	86	88	42	0	4	2	0	0	
WATERLOO	49	28	54	19	38	1	T	-.6	T	4.5	201	5.3	134	87	44	0	4	1	0	0	
KS CONCORDIA	48	33	56	17	41	-4	.7	-.2	-.3	4.1	218	4.7	143	94	65	0	2	4	0	0	
DODGE CITY	47	30	58	22	39	-.3	.5	-.1	-.2	1.6	113	4.5	184	95	58	0	4	4	0	0	
GOODLAND	49	29	62	20	39	-.2	.7	-.5	.6	1.6	160	2.8	161	97	57	0	5	3	1	1	
TOPEKA	48	33	57	13	41	-.6	.6	0	.3	3.8	171	7.3	177	98	63	0	3	5	0	0	
WICHITA	50	35	56	24	42	-.6	.4	-.2	-.1	2.7	130	6.6	185	91	59	0	3	5	0	0	
KY BOWLING GREEN	59	41	66	28	50	0	.5	-.8	.5	3.5	63	15.8	112	93	58	0	2	2	0	0	
LEXINGTON	56	38	64	24	47	0	.6	-.5	.5	1.9	40	9.5	82	89	54	0	3	3	1	1	
LOUISVILLE	58	41	64	28	49	0	.7	-.4	.7	2.8	59	13.4	119	83	50	0	3	1	1	1	
LA ALEXANDRIA	70	54	77	46	62	1	1.9	-.7	1.3	6.1	125	23.6	169	87	61	0	0	2	2	2	
BATON ROUGE	75	56	81	47	66	2	1.7	-.7	1.2	5.8	127	25.1	178	95	57	0	0	3	1	1	
LAKE CHARLES	72	55	78	49	64	0	1.8	1.1	1.0	5.3	169	19.3	175	97	66	0	0	4	2	2	
NEW ORLEANS	74	56	79	52	65	1	1.8	.8	1.4	6.0	127	28.4	191	95	57	0	0	3	3	1	

Based on 1951-80 normals

Weather Data for the Week Ending March 31, 1990

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 Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE		.50 INCH OR MORE	
																		TEMP. °F	PRECIP.		
SHREVEPORT	60	48	76	40	54	-6	3.4	2.4	3.1	4.9	130	21.9	195	94	72	0	0	4	1	0	0
ME CARIBOU	31	7	40	-2	19	-10	1.2	1.4	1.1	1.2	48	6.4	92	74	41	0	0	7	7	4	0
PORTLAND	41	20	50	14	31	-6	1.4	1.5	1.3	1.4	36	7.1	63	81	36	0	0	4	2	4	0
MD BALTIMORE	49	34	54	25	42	-6	1.1	1.3	1.5	2.5	69	7.7	80	92	60	0	0	4	4	4	0
SALISBURY	49	34	53	22	42	-6	1.3	1.5	1.5	3.4	84	9.4	87	96	59	0	0	4	4	4	0
MA BOSTON	42	28	51	20	35	-7	1.6	1.4	1.6	1.7	42	9.1	77	76	39	0	0	1	1	1	1
CHATHAM	41	30	48	24	36	-4	1.9	1.0	1.9	3.0	75	12.6	100	75	49	0	0	6	5	1	1
MI ALPENA	38	21	45	9	30	-3	1.1	1.4	1.1	2.9	155	6.4	132	89	48	0	0	7	4	4	0
DETROIT	47	30	51	20	39	-1	1.3	1.4	1.2	1.9	76	8.8	145	91	51	0	0	4	3	0	0
FLINT	45	27	54	18	36	-2	1.2	1.4	1.1	1.5	68	5.9	115	86	45	0	0	4	3	0	0
GRAND RAPIDS	45	27	54	17	36	-2	1.4	1.3	1.2	2.0	76	6.4	106	83	45	0	0	4	2	0	0
HOUGHTON LAKE	43	24	53	12	33	1	1.4	1.5	1.1	1.1	59	3.8	80	81	44	0	0	5	1	0	0
LANSING	45	27	53	19	36	-3	1.4	1.3	1.2	1.4	58	5.6	103	89	47	0	0	4	3	0	0
MARQUETTE	42	17	62	-1	29	1	1.2	1.5	1.1	1.9	66	5.6	83	91	36	0	0	7	2	0	0
MUSKOGON	45	29	54	18	37	0	1.3	1.4	1.2	2.4	96	6.5	100	84	42	0	0	4	2	0	0
SAULT ST. MARIE	35	18	41	9	26	-3	1.1	1.4	1.0	2.4	119	6.9	118	87	52	0	0	7	2	0	0
MN ALEXANDRIA	50	27	58	14	38	8	1.4	1.4	1.4	2.3	195	2.8	103	88	51	0	0	5	0	0	0
DULUTH	43	20	61	6	31	2	1.3	1.2	1.3	3.4	190	4.4	114	82	41	0	0	6	2	0	0
INT'L FALLS	45	19	61	2	32	5	1.2	1.3	1.4	1.4	124	2.5	95	76	30	0	0	5	0	0	0
MINNEAPOLIS	52	29	59	18	40	5	1.4	1.4	1.4	3.7	217	4.5	136	76	30	0	0	1	0	0	0
ROCHESTER	49	25	57	14	37	2	1.0	1.5	1.0	3.6	202	4.8	147	82	35	0	0	6	0	0	0
MS GREENWOOD	65	48	78	36	57	-2	1.2	1.3	1.5	5.7	92	19.4	122	97	58	0	0	0	0	0	0
JACKSON	72	51	81	43	61	2	1.5	1.8	1.3	3.6	64	24.0	162	96	52	0	0	0	0	0	0
MERIDIAN	73	51	80	40	62	3	1.4	1.1	1.1	6.8	103	34.0	210	94	49	0	0	3	3	1	1
MO CAPE GIRARDEAU	56	40	62	25	48	-1	1.3	1.1	1.7	3.0	59	16.2	148	95	61	0	0	3	3	3	3
COLUMBIA	48	34	55	17	41	-7	1.5	1.4	1.4	7.2	217	13.1	188	91	60	0	0	3	3	5	0
KANSAS CITY	48	34	56	13	41	-7	1.5	1.2	1.3	3.9	148	7.2	143	91	61	0	0	3	3	5	0
SAINT LOUIS	52	37	58	22	45	-3	1.7	1.1	1.4	2.7	82	7.6	108	84	56	0	0	3	3	0	0
SPRINGFIELD	51	36	60	21	44	-5	1.8	1.1	1.7	7.9	229	18.8	262	94	63	0	0	3	3	5	0
MT BILLINGS	54	25	68	8	39	2	1.7	1.3	1.7	1.7	165	2.5	93	80	31	0	0	6	0	0	0
GLASGOW	57	23	68	16	40	7	1.0	1.1	1.0	1.3	94	7	73	84	24	0	0	6	0	0	0
GREAT FALLS	55	26	67	17	41	6	1.0	1.2	1.0	1.7	187	2.2	82	73	26	0	0	5	0	0	0
HAVRE	53	26	64	15	39	5	1.0	1.2	1.0	1.8	150	8	54	89	36	0	0	5	0	0	0
HELENA	53	20	67	-1	36	1	1.0	1.2	1.0	1.9	132	1.5	86	85	31	0	0	7	0	0	0
KALISPELL	56	26	63	18	41	5	1.0	1.2	1.0	1.1	138	3.8	110	89	28	0	0	7	0	0	0
MILES CITY	56	25	70	14	41	5	1.0	1.2	1.0	1.1	122	3	16	79	26	0	0	6	0	0	0
MISSOULA	58	24	67	15	41	4	1.0	1.2	1.0	1.7	89	1.9	64	85	24	0	0	7	0	0	0
NE GRAND ISLAND	48	30	60	18	39	-1	1.5	1.0	1.4	3.0	196	3.8	135	93	58	0	0	3	3	0	0
LINCOLN	50	31	56	17	41	-1	1.7	1.2	1.4	2.9	147	3.5	99	92	55	0	0	3	3	0	0
NORFOLK	51	29	56	15	40	1	1.3	1.2	1.1	2.3	152	3.4	123	90	45	0	0	4	4	0	0
NORTH PLATTE	51	30	65	17	41	2	1.0	1.3	1.1	1.8	159	2.2	109	92	43	0	0	2	0	0	0
OMAHA	49	33	54	20	41	-1	1.4	1.1	1.2	3.2	171	4.3	121	81	51	0	0	2	4	0	0
SCOTTSBLUFF	51	27	65	13	39	0	1.1	1.2	1.0	2.6	272	4.0	222	91	42	0	0	5	2	0	0
VALENTINE	54	24	64	12	39	2	1.3	1.3	1.3	1.3	156	1.9	114	91	32	0	0	6	0	0	0
NV RLY	57	24	69	21	40	5	1.2	1.2	1.2	1.8	89	2.7	120	85	21	0	0	7	1	0	0
LAS VEGAS	76	53	86	45	65	6	1.1	1.1	1.1	1.1	0	1.6	118	46	16	0	0	0	0	0	0
RENO	65	30	71	27	47	5	1.1	1.1	1.1	1.1	10	2.7	93	70	17	0	0	6	0	0	0
WINNEMUCCA	64	24	71	17	44	3	1.1	1.2	1.1	1.6	89	1.5	68	76	20	0	0	6	1	0	0
NE CONCORD	43	17	50	7	30	-6	1.1	1.6	1.1	1.6	56	7.1	87	88	32	0	0	7	1	0	0
NJ ATLANTIC CITY	47	31	53	18	39	-6	1.8	1.1	1.3	2.6	65	6.3	58	92	49	0	0	4	4	0	0
NM ALBUQUERQUE	62	38	74	35	50	1	1.1	1.1	1.1	1.1	82	1.1	85	86	29	0	0	0	3	0	0
CLOVIS	56	37	70	29	47	1	1.2	1.2	1.2	1.2	35	2.4	162	87	47	0	0	1	2	0	0
ROSWELL	63	40	77	34	52	3	1.3	1.2	1.2	1.8	203	1.4	114	72	31	0	0	0	2	0	0
NY ALBANY	44	21	50	13	31	-4	1.4	1.3	1.4	1.7	59	8.3	108	85	38	0	0	7	2	0	0
BINGHAMTON	41	21	50	13	31	-5	1.4	1.5	1.2	1.5	51	10.1	121	81	49	0	0	5	2	0	0
BUFFALO	42	28	50	20	35	-3	1.2	1.5	1.4	1.7	59	8.3	108	85	38	0	0	7	2	0	0
NEW YORK	48	34	54	28	41	-4	1.6	1.4	1.5	2.7	67	8.4	82	63	41	0	0	1	3	1	1
ROCHESTER	42	27	48	19	34	-4	1.5	1.4	1.2	1.6	61	7.1	99	88	44	0	0	5	3	0	0
SYRACUSE	43	24	50	17	34	-4	1.5	1.2	1.5	3.7	120	9.8	118	86	37	0	0	5	2	0	0
NC ASHEVILLE	57	39	71	30	48	-2	1.5	1.6	1.3	6.0	124	17.3	155	97	56	0	0	1	3	0	0
CHARLOTTE	59	45	66	42	52	-2	1.0	1.0	1.0	3.6	74	13.1	106	95	51	0	0	0	6	1	1
GREENSBORO	57	41	64	34	49	-3	1.2	1.3	1.8	2.6	68	10.8	100	87	49	0	0	0	3	1	1
HATTERAS	60	48	68	44	54	0	4.7	3.8	2.3	6.9	175	15.7	123	93	67	0	0	0	4	2	2
NEW BERN	61	47	71	39	54	-2	4.0	3.2	3.1	6.6	181	12.0	103	97	64	0	0	0	5	2	2
RALEIGH	57	42	62	34	49	-4	3.5	2.7	2.7	5.0	137	11.9	112	95	55	0	0	0	3	2	2
WILMINGTON	66	49	74	39	57	0	3.7	2.8	2.6	5.1	126	9.7	87	97	62	0	0	0	4	2	2
ND BISMARCK	57	23	69	10	40	8	1.1	1.2	1.0	1.6	82	1.1	67	85	28	0	0	6	0	0	0
FARGO	48	25	62	10	37	6	1.1	1.2	1.0	1.5	190	2.1	121	93	54	0	0	5	2	0	0
GRAND FORKS	44	20	62	4	32	3	1.1	1.2	1.0	2.2	291	2.7	130	87	51	0	0	5	0	0	0
WILLISTON	56	22	70	13	39	7	1.1	1.2	1.0	1.4	79	.8	54	87	28	0	0	6	0	0	0
OR AKRON-CANTON	50	30	67	19	40	-1	1.3	1.5	1.2	1.3	38	8.4	105	84	44	0	0	4	3	0	0
CINCINNATI	54	38	62	22	46	-1	1.4	1.5	1.2	2.8	70	11.2	114	83	45	0	0	3	2	0	0
CLEVELAND	48	29	59	18	38	-3	1.1	1.6	1.1	1.9	29	7.9	104	86	46	0	0	4	3	0	0
COLUMBUS	54	34	67	22	44	0	1.4	1.4	1.2												

Weather Data for the Week Ending March 31, 1990

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 Mar 1	PCT. NORMAL SINCE Mar 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		
DAYTON	51	34	61	23	43	-2	1.2	.5	.7	3.7	121	11.8	153	86	44	0	4	0	0	0	
TOLEDO	46	29	50	17	38	-2	1.3	.7	.7	3.5	134	11.0	173	92	47	0	4	0	0	0	
YOUNGSTOWN	50	27	64	15	39	-1	1.1	.7	.1	1.1	33	7.7	94	83	41	0	4	0	0	0	
OK OKLAHOMA CITY	52	38	68	27	45	-8	.7	.1	.4	4.4	213	10.9	252	93	65	0	4	0	0	0	
TULSA	53	41	67	30	47	-6	.5	.4	.2	6.5	209	13.6	220	93	59	0	4	0	0	0	
OR ASTORIA	58	39	65	31	49	3	T	-1.5	T	5.2	71	33.1	129	96	60	0	2	0	0	0	
BURNS	60	26	69	20	43	5	0	-2	0	1.5	58	1.6	47	74	23	0	0	0	0	0	
MEDFORD	71	36	77	33	54	7	T	-4	T	1.5	81	5.5	75	88	26	0	0	0	0	0	
PENDLETON	62	34	70	27	48	2	0	-2	0	1.1	110	2.2	57	72	28	0	0	0	0	0	
PORTLAND	66	40	71	34	53	6	0	-7	0	2.5	70	13.9	102	86	37	0	0	0	0	0	
SALEM	66	34	72	30	50	4	0	-9	0	2.4	56	16.1	102	93	40	0	0	0	0	0	
PA ALLENTOWN	47	28	52	19	37	-5	.4	-6	.3	1.5	39	8.4	83	80	44	0	0	0	0	0	
ERIE	44	29	53	17	36	-2	.5	-3	.3	1.3	45	9.3	127	80	47	0	0	0	0	0	
HARRISBURG	47	31	53	21	39	-6	.3	-5	.1	1.7	50	8.7	95	85	43	0	0	0	0	0	
PHILADELPHIA	48	33	54	27	41	-5	.6	-3	.4	2.6	67	8.1	83	85	50	0	0	0	0	0	
PITTSBURGH	52	30	68	17	41	-2	.2	-6	.1	1.5	41	8.1	92	84	43	0	0	0	0	0	
SCRANTON	43	26	50	18	35	-6	.3	-3	.3	1.9	74	8.4	122	78	43	0	0	0	0	0	
RI PROVIDENCE	45	28	53	21	36	-5	.5	-5	.5	2.0	47	9.9	83	76	36	0	0	0	0	0	
SC CHARLESTON	71	54	83	49	62	3	6.1	5.2	4.1	6.7	152	12.3	112	96	63	0	0	0	0	0	
COLUMBIA	66	48	81	41	57	-1	1.1	0	.6	2.3	44	7.3	54	97	55	0	0	0	0	0	
FLORENCE	64	48	77	40	56	-2	1.4	.5	.6	2.6	63	5.4	49	94	59	0	0	0	0	0	
GREENVILLE	61	43	74	37	52	-3	1.3	-1	.6	6.7	111	17.0	116	95	58	0	0	0	0	0	
SD ABERDEEN	56	26	64	15	41	8	T	-3	T	.8	83	1.3	65	92	34	0	0	0	0	0	
HURON	56	26	63	15	41	6	.1	-3	.1	1.3	109	1.9	82	88	32	0	0	0	0	0	
RAPID CITY	55	25	68	6	40	4	0	-3	0	1.2	117	1.8	88	83	30	0	0	0	0	0	
SIoux FALLS	52	26	59	16	39	3	T	-4	T	1.6	101	2.0	67	86	39	0	0	0	0	0	
TN CHATTANOOGA	61	44	74	32	53	-1	.8	-6	.5	9.5	150	26.7	165	92	53	0	0	0	0	0	
KNOXVILLE	61	43	71	32	52	-1	.3	-9	.2	5.7	105	18.5	130	87	48	0	0	0	0	0	
MEMPHIS	61	46	74	33	53	-2	1.2	-2	.8	5.7	104	18.6	130	94	60	0	0	0	0	0	
NASHVILLE	61	44	75	29	52	-1	.4	-9	.3	3.3	59	10.8	77	85	50	0	0	0	0	0	
TX ABILENE	56	41	77	29	48	-11	1.2	.9	.7	2.4	223	6.7	223	97	71	0	0	0	0	0	
AMARILLO	51	32	67	24	42	-8	1.8	.6	.8	2.6	298	5.4	292	97	60	0	0	0	0	0	
AUSTIN	64	51	78	39	57	-6	.5	.1	.2	2.1	125	6.9	121	95	74	0	0	0	0	0	
BEAUMONT	73	57	79	52	65	2	2.7	2.0	1.4	6.6	215	22.7	200	94	67	0	0	0	0	0	
BROWNSVILLE	79	66	87	62	73	1	.4	.3	.4	.8	165	1.9	60	99	70	0	0	0	0	0	
CORPUS CHRISTI	74	60	79	52	67	-2	2.1	1.9	1.6	3.0	381	7.3	191	94	74	0	0	0	0	0	
DEL RIO	62	50	75	39	56	-10	1.5	1.3	1.2	3.2	508	5.0	248	80	59	0	0	0	0	0	
EL PASO	71	45	76	40	58	-1	T	-1	T	.4	132	.8	76	62	21	0	0	0	0	0	
FORT WORTH	58	45	69	34	51	-8	2.0	1.3	.8	5.9	250	15.1	256	99	75	0	0	0	0	0	
GALVESTON	70	60	73	55	65	1	1.3	.8	1.0	4.1	195	11.2	151	95	73	0	0	0	0	0	
HOUSTON	70	55	76	50	63	-2	3.7	3.0	1.7	5.1	192	13.6	144	93	68	0	0	0	0	0	
LUBBOCK	56	37	80	26	46	-8	.4	.2	.4	.9	99	3.4	187	99	59	0	0	0	0	0	
MIDLAND	58	41	80	28	49	-9	.4	.3	.4	.9	188	2.2	153	97	59	0	0	0	0	0	
SAN ANGELO	59	42	78	31	51	-10	.6	.3	.4	.9	110	4.1	186	96	69	0	0	0	0	0	
SAN ANTONIO	64	51	73	40	58	-7	2.1	1.7	1.1	5.2	395	9.0	193	97	73	0	0	0	0	0	
VICTORIA	71	55	77	46	63	-4	1.8	1.5	.8	3.0	224	6.8	125	92	67	0	0	0	0	0	
WACO	60	48	77	35	54	-7	1.0	.4	.7	5.1	256	10.6	187	96	76	0	0	0	0	0	
WICHITA FALLS	55	41	70	31	48	-9	1.0	.5	.6	5.4	299	12.2	331	97	70	0	0	0	0	0	
UT CEDAR CITY	59	34	68	28	47	5	.2	-1	.2	1.0	97	3.8	153	83	32	0	0	0	0	0	
SALT LAKE CITY	59	36	66	33	48	4	.6	.2	.5	2.2	128	3.1	71	82	38	0	0	0	0	0	
VT BURLINGTON	40	18	50	8	29	-5	.3	.2	.3	1.8	83	7.0	122	80	34	0	0	0	0	0	
VA NORFOLK	51	42	55	33	47	-6	1.4	.6	.7	3.5	91	9.7	90	93	62	0	0	0	0	0	
RICHMOND	52	39	59	29	45	-6	1.3	.5	.6	2.5	71	7.8	79	97	63	0	0	0	0	0	
ROANOKE	55	36	70	28	46	-4	1.2	.4	.5	3.4	93	8.5	88	93	51	0	0	0	0	0	
WA QUILLAYUTE	56	38	61	29	47	3	.1	.0	.0	8.7	73	41.6	108	98	60	0	0	0	0	0	
SEATTLE-TACOMA	60	40	67	34	50	4	.4	.0	.0	2.6	72	15.8	115	85	42	0	0	0	0	0	
SPOKANE	60	30	66	20	45	5	0	.0	.0	.9	63	4.3	80	71	27	0	0	0	0	0	
YAKIMA	68	28	75	20	48	0	0	.0	.0	.3	35	1.8	66	82	19	0	0	0	0	0	
WV BECKLEY	50	33	65	23	42	3	.3	-1	.7	1.1	2.3	57	9.9	94	88	54	0	0	0	0	0
CHARLESTON	59	38	76	26	49	-3	.2	-1	.1	1.9	49	8.6	81	90	43	0	0	0	0	0	
HUNTINGTON	59	39	72	29	49	-7	.7	-3	.6	2.4	61	9.0	89	88	41	0	0	0	0	0	
PARKERSBURG	57	37	72	25	47	0	.6	-3	.5	2.2	63	8.7	96	87	40	0	0	0	0	0	
WI GREEN BAY	48	24	58	16	36	2	T	-5	T	3.3	173	4.5	110	87	34	0	0	0	0	0	
LACROSSE	51	29	57	20	40	0	T	-5	T	3.2	170	4.7	127	78	33	0	0	0	0	0	
MADISON	48	26	55	17	37	0	.5	.0	.0	4.2	196	6.8	160	84	40	0	0	0	0	0	
MILWAUKEE	43	29	51	23	36	1	.5	-2	.5	2.8	107	7.2	132	86	49	0	0	0	0	0	
WAUSAU	50	26	59	13	38	5	T	-5	T	2.4	124	3.9	103	80	30	0	0	0	0	0	
WY CASPER	50	23	63	13	36	1	.2	-1	.2	1.1	116	2.1	106	93	39	0	0	0	0	0	
CHEYENNE	40	24	52	11	32	-3	.4	.2	.3	3.7	376	4.7	262	99	72	0	0	0	0	0	
LANDER	48	25	61	15	37	2	.8	.5	.5	1.6	140	1.7	77	80	39	0	0	0	0	0	
SHERIDAN	52	22	66	5	37	2	.1	-2	.1	1.0	95	2.4	93	87	30	0	0	0	0	0	

Based on 1951-80 normals

National Agricultural Summary

March 26-April 1, 1990

HIGHLIGHTS: Rain again slowed fieldwork in the southern Great Plains, Delta, and Southeast. Rain added to soil moisture supplies in portions of the Corn Belt. Lack of moisture stressed winter wheat and pastures in the northern Great Plains and portions of the West. Beneficial rains fell in Florida's fruit and vegetable-producing areas. Freezing temperatures damaged early peaches in portions of the Delta and Southeast.

SMALL GRAIN: Rain improved winter wheat condition in portions of the central Great Plains. Crop condition was mostly good in Colorado and Kansas. Nebraska's winter wheat was fair to good. Russian wheat aphid and armyworm infestations were heavy in the Panhandle. Winter wheat needed rain in the northern Great Plains. Montana's crop was mostly good to fair. In the southern Great Plains, excess moisture caused some yellowing and hampered fertilizer application. Crop condition was good to fair in Oklahoma and Missouri. Rain improved winter wheat in northern Texas, but excess moisture caused some yellowing in the Blacklands. Winter wheat was mostly good in the Corn Belt and good to fair in the Southeast. Powdery mildew was a continuing problem in Georgia. In California, small grains were mostly good and early fields were heading. Some dryland fields were suffering from lack of moisture. Idaho's winter wheat was mostly good and spring small grain seeding was ahead of normal. Lack of moisture stressed winter wheat in the Columbia Basin of Oregon. Washington's winter wheat was good to fair. Russian wheat aphids were also a problem in eastern Washington.

OTHER FIELD CROPS: Cotton planting was underway in Georgia. Rain slowed cotton planting in portions of Arizona and Texas. In Texas, planting was nearly complete in the Coastal Bend and Rio Grande Valley and was underway in the Upper Coast. Rain slowed land preparation in other areas of Texas. Cotton planting increased seasonally in California. Fields were germinating in the southern areas. Corn planting was over half finished in Georgia. Cool nights slowed growth in the early planted fields. Corn planting was underway in North and South Carolina. Rain slowed corn and sorghum planting in Texas. Rice seeding was underway in Mississippi and continued in Louisiana and Texas. Rain slowed rice seeding in the Upper Coast area of Texas. Tobacco plant bed seeding continued in Kentucky and Tennessee. Tobacco was good to fair in Georgia and North Carolina and fair to good in South Carolina. Transplanting was over half finished in Georgia.

FRUIT AND NUTS: Some rain fell in all of Florida's citrus producing areas. The new crop fruit progressed well. Valencia orange and grapefruit harvests slowed seasonally and the temple orange harvest was nearly complete. Apples and peaches were good to fair in Georgia. South Carolina's early peach crop suffered extensive freeze damage. Virginia's peach crop was very poor to poor. Freezing temperatures caused some peach crop damage in northern Arkansas and the Plains area of Texas. Pecan trees were leafing in central and southern Texas. Citrus harvest continued in Arizona. New-crop citrus was blooming in California. Orange and lemon harvests continued, and the desert grapefruit harvest was nearly complete. Early stone fruit and almonds were setting fruit. Cherries were in full bloom, and grapes and walnuts were leafing. Fruit trees were beginning to bloom in Idaho, Oregon, and Washington. Some frost damage occurred to peaches and apricots in Benton County, Washington.

VEGETABLES: Beneficial rains fell in Florida's vegetable producing areas. Spring-crop harvests gained momentum. Watermelon planting continued in Georgia, South Carolina, and Mississippi. Irish potatoes were fair to good in North Carolina. Onion harvest activity increased in the Rio Grande Valley, Texas. Rain slowed vegetable harvests in the San Antonio-Winter Garden area. Carrot planting was underway in the High Plains. Rain slowed onion planting. Vegetable harvests continued in Arizona. Broccoli and cauliflower harvests continued in central California but were nearly complete in the south. Iceberg and leaf lettuce harvests began. Ground preparation for spring planting was active. Onion, pea, and potato planting continued in Oregon and Washington. In Idaho, onion planting was over half finished.

PASTURES AND LIVESTOCK: Pastures were good to fair in the Delta and the East. Ranges needed rain in most of the West. Livestock was mostly good.

(Continued from front cover)

The abnormally warm weather over the **West** moved into the **North Central States**, while unseasonably cool air remained over the **southern Plains** and the **northern and middle Atlantic Coast States**. During the first of the week, temperatures dipped into the low 20's over the hard red winter wheat regions in **southwestern Kansas** and the **Texas and Oklahoma panhandles**, and dove into the teens over the blossoming peach trees in the **central Appalachians**.

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 1.00 to 2.00 in. Temperatures 1 to 3° below normal north; 2° above normal elsewhere.

Days suitable for fieldwork 4.3. Soil moisture 44% adequate, 56% surplus. Scattered showers continued to hamper most field activities. Acreage intended for spring planting 36% prepared, 44% 1989, 54% avg. Fieldwork progress 75% behind normal, 25% on schedule. Corn 44% planted, 48% 1989, 46% avg.; some fields replanted south. Winter wheat 29% headed, 27% 1989, 15% avg.; 1% very poor, 2% poor, 40% fair, 54% good, 3% excellent; disease, insect pressure light most areas. Pastures 7% poor, 36% fair, 50% good, 7% excellent. Feed supplies from pastures 16% short, 84% adequate. Livestock 16% fair, 84% good. Primary activities: Preparing land for spring planting; planting corn, potatoes, other vegetable crops; applying fertilizer, herbicides to cropland; top dressing winter annuals; fertilizing pastures; spraying fruit, pecan trees; thinning peaches; repairing farm ponds, terraces, roads, fences; general care of livestock, poultry, catfish.

ARIZONA: Cloudy, cool east 25th, 26th; light showers 27th, east; cold, stormy, strong gusty winds north central 28th; heavy showers, snow, hail 29th. Temperatures normal to 7° above. Extremes 22°; 75° higher elevations, 41°; 93° desert. Precipitation traces west, southeast to 0.88 in. north central.

Cotton 20% planted, 32% 1989, 29% avg.; weather slowed planting; final seedbed preparations, pre irrigation continued. Small grains jointing 98%, 99% 1989, 96% avg.; heading 50%, 56% 1989, 55% avg.; 5% turning color; 50% good, 50% excellent. Alfalfa condition 57% good, 43% excellent; first cuttings continued; windy, wet conditions caused unfavorable curing. Isolated spraying Egyptian alfalfa weevil west. Citrus crops harvested last week west, central. Valencia oranges, grapefruit, kinnow tangerine harvest completed central; asparagus, artichokes harvested west; mixed vegetables harvested west, central; harvest, packing spring lettuce continued. Cattle, calves mostly fair; new calf crop slow; sheep, lambs fair, good. Northeast stock tanks remained dry, hay supplies nearly gone, poor range conditions continued; north central received snowfall, filled stock tanks, aided spring feed; south central ranges provided average feed supplies, adequate stock water; southeast received much needed rain, snowfall.

ARKANSAS: Cool wet week. Temperatures below normal. Rainfall statewide most of week, heaviest southeast. Temperature extremes 24°; 81°. Rainfall 0.69 to 5.53 in.

Soil moisture adequate to surplus. About 25 to 30% of peach crop in northern counties had some freeze damage. Wheat good. Pastures making excellent growth. Livestock good.

CALIFORNIA: Only spotty shower activity, temperatures most areas above normal.

Dry weather, rapid progress field activities. Most small grains good condition. Early fields heading. Many dryland fields, moisture stress. Growers irrigating. Early winter forage green chopped. Some wild rice seeded. Rice stubble burned. Working levees, seedbeds. Some early

corn seeded. Cotton seeding increased, germinating southern areas. Seeding safflower, Sudan progressed. Overwintered sugarbeets harvested. New crop treated aphids. Seeding preparations corn, dry beans active. Alfalfa harvest seasonal. Sheep grazed seed alfalfa fields. Normal cultural activities continued in orchards. Almonds, early stone fruit setting fruit. Avocado harvest slow. Cherries full bloom. Date pollination active. Grapes, walnuts leafing out. Desert grapefruit harvest near completion. Orange, lemon picking continued. New crop citrus blooming. Ground preparation, planting fresh market tomatoes, cantaloupes, sugar peas, squash, peppers, beans, eggplants. Good yields anticipated for spinach, melon fields. Strawberry fields fumigated. Processing tomatoes growing well, some just planted. Warmer weather beneficial irrigation active. Quality artichokes continued to improve. Asparagus harvest very active, good quality. Broccoli, cauliflower harvest central areas, nearly completed in the south. Harvest iceberg, leaf lettuce getting started. Carrot harvest going strong. South central, southern areas harvesting spinach, green onions, quality good. Harvest desert potatoes early to mid April. Livestock good condition, statewide. Range, pasture grasses continued to dry; warm, dry weather prevailed. Supplemental feeding necessary northern counties. Water supplies below normal. Water shortages more serious foothills.

COLORADO: Cool temperatures with fog, rain, snow dominated east, southern areas. Eastern temperatures 7 to 10° below normal, 4 to 5° below normal south. Western State was mostly dry, 6 to 7° above normal.

Days suitable for fieldwork 2.9. Soil moisture supplies 10% very short, 30% short, 55% adequate, 5% surplus. Winter wheat continued to improve; 6% poor, 18% fair, 57% good, 19% excellent. Fieldwork halted due to wet weather in most areas. Calving remained normal, lambing ahead of normal. Death losses normal. Range, pasture conditions improved in most areas.

FLORIDA: Much of State received rain, most late week, early weekend. Rain 1.00 in., ranged 0.25 in. to over 2.00 in. Temperatures 3 to 6° above normal. Maximum temperatures 80s, few low 90s interior Peninsula. Cool temperatures mostly 50s, mid 40s Panhandle to 60 extreme south.

Soil moisture Panhandle surplus to adequate; Peninsula mostly short. Corn planting, tobacco transplanting active. Land preparation active spring seeded crops. Winter wheat, sugarcane made good progress. Pastures fair in Panhandle. Peninsula pastures poor to good, some pastures browning due to dryness. Cattle fair to good. Some rain all citrus areas. New crop fruit progressing well. Valencia harvest moving slowly. Grapefruit movement very low with limited supplies. Temple harvest all but complete. Caretakers active spraying, controlling cover crops hedging, topping, pruning. Rain welcomed over major vegetable producing areas. Temperatures returned to above normal. Spring harvest gaining. Volume leaders: Tomatoes, potatoes, sweet corn, cucumbers, cabbage, peppers, celery, lettuce, squash, snap beans. Also good volume: Carrots, radishes, eggplant, escarole, strawberries. Planting Everglades celery completed.

GEORGIA: Rain over State, wide range in temperatures. Rain under 0.80 in. north, west central. Eastern, southern areas 1.00 to 2.00 in., local areas near 4.00 in. Highs mid to upper 70s north, low 80s central, mid 80s south. Lows mid 30s mountains, around 40° central, around 50° southeast.

Days suitable for fieldwork 4.5. Soil moisture 17% short, 47% adequate, 36% surplus. Corn 23% fair, 68% good, 9% excellent; 67% planted, 58% 1989, 60% avg.; cool nights slowing growth, good stands. Some cotton planted, 0% 1989, 1% avg. Tobacco 35% fair, 58% good, 7% excellent; 54% transplanted, 57% 1989, 41% avg.; Transplanting progressing normally. Watermelons 35% fair, 52% good, 13% excellent; 72% planted, 62% 1989, 64% avg. Wheat 1% very poor, 6% poor, 34% fair, 59% good; 93% jointing, 99% 1989, 87% avg.; 53% boot, 71% 1989, 45% avg.; 18% headed, 32% 1989, 18% avg. Powdery mildew widespread, spraying active. Hessian flies heavy south. Rye 30% fair, 69% good, 1% excellent. Other small grains 1% poor, 25% fair, 74% good. Apples 27% fair, 73% good; 46% blooming, 23% 1989, 26% avg. Peaches 1% very poor, 3% poor, 24% fair, 72% good; Most frost damage northern third, light elsewhere. Onions 17% good, 83% excellent. Pasture 19% fair, 77% good, 4% excellent. Cattle, hogs good.

HAWAII: Generally favorable weather over islands. Sunny skies some cloudy periods, scattered showers prevailed. Winds variable 10 to 25 mph. Temperatures low 60s to low 80s. Rainfall none to 2.20 in.

Days suitable for farm work 7.0. Papaya production light.

IDAHO: Temperatures warm up to 6° above normal. Light, spotty precipitation fell in the south central, east.

Days suitable for fieldwork 6.0. Soil moisture supplies 6% very short, 42% short, 44% adequate, 8% surplus. Spring wheat planted 15% 1990, 0% 1989, 7% avg; emerged 2% 1990. Spring barley planted 11% 1990, 0% 1989, 6% avg; emerged 1% 1990. Potatoes planted 2% 1990. Sugarbeets 29% 1990, 0% 1989, 13% avg. Onions planted 64% 1990, 0% 1989, 30% avg. Winter wheat 1% very poor, 5% poor, 16% fair, 61% good, 17% excellent. Fieldwork all areas. Wet conditions north, fungus problems being treated. Concern for lack of irrigation water, salinity southwest. Fruit trees warmer areas coming in to or blooming, bud stage elsewhere. Some blowing winter wheat south central. Livestock good. Calving 71% complete. Lambing 81% complete. Some movement sheep to spring range. Hay, roughage supplies short to adequate east, adequate elsewhere.

ILLINOIS: Temperatures normal to 2° below normal across State. Precipitation 0.30 to 0.80 in. north, central; 1.00 to 1.80 in. south.

Winter wheat mostly good. Livestock mostly good condition.

INDIANA: Temperatures near normal. Lows mid 30s to low 40s, highs upper 40s to 50s. Precipitation 0.75 to 1.70 in.

Days suitable for fieldwork 2.8. Topsoil 2% short, 72% adequate, 26% surplus. Subsoil 1% short, 87% adequate, 12% surplus. Spring cropland 65% tilled, 58% 1989, 62% avg. Wheat condition 5% poor, 22% fair, 64% good, 9% excellent. Wheat 5 in. high, 4 in. 1989, 4 in. avg. Wheat 7% jointed, 2% 1989, 2% avg. Oats 28% seeded, 14% 1989, 22% avg. Clover 59% seeded, 46% 1989, 49% avg. Pasture 5% poor, 36% fair, 49% good, 10% excellent. Wet soils limited fieldwork most areas.

IOWA: Temperatures 0 to 3° above normal. Extremes 15°; 65°. Precipitation; trace to 0.90 in; average 0.27 in.

Days suitable for fieldwork 3.5. Topsoil 27% short, 69% adequate, 4% surplus. Subsoil 82% short, 18% adequate. Winter wheat 3% poor, 32% fair, 57% good, 8% excellent. Oats 12% sown, 10% 1989, 17% avg. Seedbed preparation 52% completed. Fertilizer application 44% completed. Southern areas of State waiting on top soils to dry out before field work starts. Livestock mostly good. Some feed lots were muddy following the rains that fell during the week. Calving across the State was in full swing the past week, with minimal losses indicated.

KANSAS: Temperatures 3 to 4° below normal southwest, south central; near normal elsewhere. Precipitation 0.50 in. north, west central; 0.30 to 0.50 in. elsewhere.

Days suitable for fieldwork 2.0. Topsoil 6% short, 63% adequate, 31% surplus. Subsurface 30% short, 61% adequate, 9% surplus. Wheat continues excellent growth, jointing 10% 1990, 1% 1989, 5% avg. Condition 30% excellent, 40% good, 28% fair, 2% poor. Scattered light freeze damage, locally moderate to heavy southeast, south central where jointing was well advanced. Seedbed preparation slowed by wet weather. Lambing, calving about over; few problems. Range, pastures improving; ranchers burning off old growth. Hay, grain forage supplies adequate.

KENTUCKY: Week started cold, ended mild. Temperatures near normal. Extremes 40°; 60°. Precipitation near normal. West 1.50 in. rain; central, east 1.00 in.

Days suitable fieldwork 3.0. Soil moisture 8% short, 73% adequate, 19% surplus. Tobacco beds 77% seeded, 72% 1989, 76% avg. Wheat 29% fair, 66% good, 5% excellent. Winter loss 6%. Stand loss legumes 6%. Pastures 2% poor, 22% fair, 63% good, 13% excellent; 40% roughage from pastures.

LOUISIANA: Temperatures 1 to 5° below normal. Extremes 34°; 81°. Rainfall 1.22 to 4.54 in.

Days suitable for fieldwork 4.3. Soil moisture supplies: 35% adequate, 65% surplus. Spring Plowing 37%, 45% 1989, 44% avg. Corn planted 59%, 34% 1989, 39% avg.; emerged 20%, 23% 1989, 26% avg. Rice planted 16%, 16% 1989, 16% avg.; emerged 8%, 10% 1989, 8% avg. Sorghum planted 6%, 1% 1989, 2% avg. Sugarcane 27% very poor, 18% poor, 37% fair, 18% good. Wheat headed 52%, 21% 1989, 21% avg., 59% fair, 36% good, 5% excellent. Problems with rust diseases, septorial blight continued. Livestock 57% fair, 43% good. Pasture 7% poor, 53% fair, 40% good. Vegetables 14% poor, 68% fair, 18% good.

MARYLAND & DELAWARE: **MARYLAND:** Precipitation 0.64 in. Temperature 41°, normal 47°. Extremes 14°; 70°.

DELAWARE: Precipitation 0.78 in. Temperature 41°, normal 47°. Extremes 22°; 69°.

MICHIGAN: Temperatures 3° below to 1° above normal. Extremes 6°; 62°. Precipitation none to 0.57 in. across the State.

Major activities: Fertilizer application, pruning orchards, marketing hay, grain, attending farm sales, limited spring tillage. Fields starting to dry out. Livestock excellent condition. Spring calving active. Livestock movement to pastures increasing. Feed supplies adequate.

MINNESOTA: Temperatures 3 to 6° above normal for State. Extremes 1°; 62°. Precipitation 0.02 to 0.21 in. Greatest weekly total 0.91 in. at Itasca.

MISSISSIPPI: Temperatures 2° below normal. Extremes 27°; 81°. Wet north, dry central, south. State rainfall 1.13 in., 0.25 below normal.

Days suitable for fieldwork 2.5, 1.8 1989, 3.2 avg. Soil moisture 2% short, 42% adequate, 37% surplus, 19% excessive. Wheat 82% jointing, 71% 1989, 73% avg.; 10% poor, 57% fair, 32% good, 1% excellent, 10% heading. Corn 21% planted, 18% 1989, 27% avg.; 11% emerged. Watermelons 34% planted, 14% 1989, 20% avg. Livestock 41% fair, 59% good. Pastures 5% poor, 54% fair, 37% good, 4% excellent. Hay supply 75% adequate, 25% short. Rice 4% planted. Sorghum 3% planted. Activities: Land preparation for cotton, some shopwork.

MISSOURI: Temperatures several degrees below normal. Cloudiness, showers most areas, 1.50 to 2.00 in. south central, southeast, less than 1.00 in. other areas.

Days suitable for fieldwork 0.5. Topsoil 4% short, 41% adequate, 55% surplus. Subsoil moisture 27% short, 52% adequate, 21% surplus. Rain, muddy conditions preventing fieldwork. Oats sown 29%, 57% 1989, 51% avg. Ground worked at least once for spring crops, including fall tillage 48%, 50% 1989, 43% avg. Wheat 5% poor, 40% fair, 52% good, 3% excellent. Wet fields preventing wheat fertilization. Pasture 3% very poor, 7% poor, 35% fair, 50% good, 5% excellent. Hay supply 6% short, 70% adequate, 24% surplus. Livestock water 8% short, 92% adequate.

MONTANA: Dry, warm temperatures 3 to 8° above normal west, normal to 8° above east.

Topsoil 17% short, 80% adequate, 3% surplus. Subsoil 28% short, 70% adequate, 2% surplus. Winter wheat 1% very poor, 11% poor, 37% fair, 46% good, 5% excellent. Winter wheat 42% still dormant, 51% greening, 7% green and growing. Wind damage to winter wheat to date 31% none, 46% light, 18% moderate, 5% heavy. Field tillage work in progress 86% none, 8% just started, 6% well underway. Cattle, calves general condition 3% fair, 77% good, 20% excellent. Sheep, lambs general condition, 4% fair, 78% good, 18% excellent. Calving 63% done, lambing 56% complete.

NEBRASKA: Temperatures normal to 4° above normal. Extremes 14°; 69°. Precipitation few hundredths to 0.75 in.

Winter wheat 10% poor, 46% fair, 44% good. Crop greening up nicely with very little winter kill reported. Spraying for weeds in southern part of State. Russian wheat aphids, heavy infestations of army worms reported in Panhandle. Concern about chinch bugs in southeast. Oats, barley seeding in some areas. Fieldwork consisted of cutting, shredding of stalks; disking; fertilizer, herbicide application; planting of small grains. Wet fields slowed tillage. seedbed preparation for sugarbeet planting in the West. Other activities: Moving grain to elevators, machinery repair, ordering seed, calving, livestock chores. Feed grain supplies mostly average; hay, forage supplies average to below average; pasture, range supplies below average. Spring calving, lambing continued, calving considered 65% complete with calf losses average to below average. Only one area West, with average losses due to scours.

NEVADA: Some clouds early, fast moving fronts produced gusty winds, only light scattered showers central, east. Remainder of week mostly sunny, warm with cool nights.

Good progress fieldwork all areas. Light, scattered showers, gusty winds no major hindrance. Marketing potatoes continued with very favorable prices.

NEW ENGLAND: Precipitation (rainfall and water equivalent of snow) 0.25 to 0.50 in. Temperatures 20° near Canadian boarder to upper 30s along south coast. Below normal north, near normal south.

Major farm activities: Repairing machinery, tending livestock, moving crops from storage. Maple sugaring, good sap runs weekend of 31st.

NEW JERSEY: Temperatures much below normal. Extremes 13°; 56°. Rainfall 0.79 in. north, 0.87 in. central, 0.79 in. south. Heaviest 24 hour total 0.64 in. on 30th, 31st. Estimated soil moisture percent field capacity 99% north, 98% central, 99% south. Four inch soil temperatures 41° north, 42° central, 43° south. Cooler temperatures slowed early crop growth. Cold temperatures caused varying amounts of fruit blossom damage. Wet weather hampered soil preparation, planting.

NEW MEXICO: Temperatures slightly above normal west, few degrees below normal east. Extremes 17°; 81°. Precipitation none to 0.98 in.

Days suitable for fieldwork 6.5. Soil moisture 85% short, 15% adequate. Wheat 10% very poor, 20% poor, 40% fair, 30% good. Cattle poor to good, branding some areas. Sheep poor to good, lambing, shearing continue. Range poor to good, some areas still extremely dry.

NEW YORK: Weather close to normal. Dry 25th, early 26th with low temperatures in the teens, highs in the 40s. Cold air brought snow squalls to UpState areas late on 26th. Unseasonably cold on 27th with lows -5 to 10°. Cold weather continued on 28th, 29th. It was dry except for scattered flurries near the Great Lakes, Adirondacks. The 30th brought more winter weather. Wet snow spread across the State during the day. Up to 4.00 in. accumulated at higher elevations. Rain fell in New York City, Long Island. Extremes -8°; 64°.

Major activities: Tending livestock, moving crops from storage, purchasing supplies for spring planting, maple sugaring. Colder nights beneficial for maple syrup producers, although warmer days needed in some areas.

NORTH CAROLINA: Temperatures 10 to 5° below normal across State. Precipitation 0.35 to 4.46 in.

Days suitable for fieldwork 4.3. Soil moisture 3% short, 62% adequate, 35% surplus. Pasture 4% poor, 22% fair, 65% good, 9% excellent. Livestock feed from pasture 49%. Corn planted 10%. Crop condition: Wheat, 16% fair, 82% good, 2% excellent; oats 1% poor, 22% fair, 76% good, 1% excellent; barley 18% fair, 81% good, 1% excellent; rye 16% fair, 83% good, 1% excellent; tobacco plant beds 33% fair, 60% good, 7% excellent; irish potatoes 53% fair, 44% good, 3% excellent. Irish potatoes planted 91%; cabbage transplanted 79%. Hay, roughage supplies 6% short, 91% adequate, 3% surplus. Feed grain supplies 6% short, 93% adequate, 1% surplus. Major activities: Land preparation, tending tobacco beds, topdressing small grains, planting corn. Other activities included: Fertilizing pastures, tending livestock, planting Christmas trees, general farm maintenance.

NORTH DAKOTA: Temperatures 1° above normal northeast to 8° above normal south central. Extremes 2° south central; 72° south central. Precipitation below normal, none to 0.08 in.

Topsoil 37% very short, 42% short, 21% adequate. Subsoil 63% very short, 33% short, 4% adequate. Average expected starting date for spring fieldwork April 13th. Winter wheat 13% very poor, 32% poor, 53% fair, 2% good; 86% dormant, 14% green. Livestock mostly good, received supplemental forages, calving 52% completed, lambing 68%, shearing 70%. Hay, roughage supplies mostly adequate. Pastures 93% dormant; 83% open for grazing.

OHIO: Dry early, wet late in period. Precipitation 0.50 to 1.50 in. Temperatures close to normal to slightly above normal. Highs upper 40s to 50s; lows mostly in 30s. Four inch soil temperatures maximums mid 40s to mid 50s; minimums mid 30s to low 40s.

Fieldwork active early in period; tilling, spreading fertilizer. Some early crops planted. Winter wheat green, growing.

OKLAHOMA: Temperatures 2° below normal east central to 7° below normal south central. Precipitation 0.20 in. northeast to 1.54 in. south central.

Days suitable for fieldwork 4.0. Topsoil 40% adequate, 60% surplus. Subsoil 100% adequate. Wheat 15% fair, 80% good, 5% excellent; 55% jointing, 30% 1989, 40% avg. Recent rainfall enhanced prospects warm, dry weather needed to finish top dressing, herbicide application. Fertilized fields turning yellow from excessive moisture south. Cotton 30% seedbed prepared, 30% 1989, 30% avg. Sorghum 30% seedbed prepared, 35% 1989, 25% avg. Seedbeds need reworked rain soaked areas. Pastures mostly good. Cattle good; marketings average, prices up from preceding week.

OREGON: Sunny most of week. Temperatures 2 to 6° above normal west, slightly below normal east due to cool nights. Only precipitation occurred 26th southwest; amounts less than 0.10 in.

Soil moisture 62% short, 38% adequate. Early seeded winter wheat in the Columbia Basin affected most by low moisture. Fertilizer applications neared completion on winter wheat. Fields preparations well underway across State, seeding of spring crops progressed well. Hay crops greening early under clear, warm weather. Fruit tree development also accelerated. Full bloom from cherries expected one to two weeks early the Dalles; delayed dormant sprays applied. Pears in blossom southeast. Hood river Valley pears, apples required frost protection several nights; spraying, fertilizing continued. Pruning, bloom spraying finished on apples, peaches Willamette Valley; also berries started to show budbreak. Blight control on hazelnuts. Ground preparation, planting onions, peas, potatoes Willamette Valley. Potato, onion fieldwork active Malheur county. Potato planting continued Hermiston Broadman. Livestock mostly good. Range, pasture mainly good west, northeast mountains; fair to poor elsewhere. Already hauling stockwater southeast, central areas.

PENNSYLVANIA: Cold dry weather at the beginning of week, milder wet weather by the end. Temperature 37°, 3° below normal. Extremes 10°, 68°. Precipitation 0.30 in., 0.51 in. below normal.

Activities: Hauling manure, caring for livestock, maintaining machinery, fixing fence, early Spring activities.

PUERTO RICO: Precipitation 0.77 in., 0.12 in. above normal. Rainfall 4.44 in. at Pico Del Este Luquillo, 2.90 in. at Borinquen Airport, 1.92 in. at Rio Blanco Lower. Highest 24 hour total 1.92 in. at Borinquen Airport. Divisional temperatures 76 to 77° on the Coast, 70 to 72° in the Interior. Extremes 52°; 90°.

SOUTH CAROLINA: Temperatures 6° below normal in northwest to 2° above normal in southern portion of the State. Rainfall 1.00 in. west central to 2.10 in. southern areas.

Days suitable for fieldwork 3.7. Soil moisture 5% short, 74% adequate, 21% surplus. Tobacco fair to good; 18% planted, 4% 1989, 3% avg. Corn good; 48% planted, 21% 1989, 31% avg. Watermelons fair to good; 30% planted, 44% 1989, 40% avg. Cantaloupes fair to good; 12% planted, 17% 1989, 20% avg. Tomatoes good; 85% planted, 32% 1989, 57% avg. Oats good; 9% headed, 3% 1989, 2% avg. Wheat good; 12% headed, 6% 1989, 2% avg. Early peach crop loss estimated at 61% statewide; 62% Upper State; 72% Ridge; 32% Coastal Plains.

SOUTH DAKOTA: Temperatures 3° below to 8° above normal. Extremes -3°; 69°. Precipitation very light. Maximum melted precipitation 0.14 in. Yearly precipitation above normal central, central Black Hills, below normal elsewhere. Precipitation 1.62 in. below normal to 1.37 in. above normal.

TENNESSEE: High pressure brought cold temperatures early week. High moved eastward mid week, with return of southerly flow, warming. Above normal temperatures followed late week, with a slow moving low pressure system brought rain. Temperatures 2 to 5° above normal west, near or slightly below normal east, middle. Precipitation near to slightly above normal west, substantially below normal middle, east. Rainfall 0.13 in. Bristol to 1.71 in. Dyersburg.

Soil moisture 1% short, 61% adequate, 38% surplus. Rains slowed wheat topdressing. Much of peach crop destroyed by freezes. Apples, strawberries, pears freeze damaged to lesser degree. Most tobacco beds seeded with plants coming up earlier than normal. Corn planting just getting underway. Pastures greening up, providing limited grazing. Cattle mostly good.

TEXAS: Significant rains covered large area last week with heaviest showers northeastern, eastern counties. Several drier growing areas picked up some beneficial moisture. Temperatures started out below normal early week, warming trend brought readings closer to normal. Rainfall above normal all areas. Temperatures were below normal over much State. Readings south very close to normal.

Crops: Small grains improved north because warmer temperatures, weekly showers major growing areas. Growing conditions good Plains; insect pressures increasing some fields. Fields Blacklands needed sunshine, some fields yellowing from excessive moisture. Many fields heading. Progress good central, fields for grazing providing good forage. Wheat 4% headed, 1% 1989, 4% avg. Rains delayed corn planting throughout Blacklands, northeast, heavy downpours reported some areas. Producers central not able to finish planting, showers stalled progress. Most planting complete Coastal Bend, south. Rainfall benefit planted fields. Planting winding down Upper Coast, wet conditions. Producers completed most field preparations Plains. Soil temperatures must warm up before planting can begin. Corn 49% planted, 57% 1989, 55% avg. Grain sorghum planting remained behind schedule,

continued rain kept producers many areas out of fields. Planted, emerged fields benefit from rains. Producers Plains, Cross Timbers begin planting as soil dries, warms up. Sorghum 35% planted, 41% 1989, 43% avg. Cotton producers gearing up begin planting central. Most planting complete Coastal Bend, Valley. Planting underway Upper Coast. Showers slowed land preparations other areas. Cotton 10% planted, 9% 1989, 8% avg. Rice planting slowed by rain Upper Coast. Rice 26% planted, 32% 1989, 26% avg. Emerged none, 1% 1989, 1% avg.

Commercial Vegetables: Rio Grande Valley, onion harvest increasing. Melon crop making very good progress, prospects look good. Some carrots, cabbage harvested. Celery harvest light. San Antonio Winter Garden, little harvest activity occurred because rain. Watermelon stands good. Some isolated hail damage cabbage, onions. Eastern areas, some sweet potatoes bedded; continued rain slowed most activity. Heavy rains caused some damage other planted vegetables. High Plains, carrot planting underway. Onion planting slowed by rain. Some potatoes knocked back by cooler, wetter weather. Trans Pecos, land preparations continued peppers, melons. Planted onions making good progress. Peaches received some damage Plains because cold weather early week. Trees blooming. East, Hill Country crops look very good, barring any weather problems. Some thinning occurring. Pecan trees leafing out central, south.

Range and Livestock: Ranges, pastures continued improving last weeks rains across State. Trans Pecos received much needed showers, area still remains dry. Frost nipped some grasses portions Plains. Calving, lambing continued Hill Country. Body conditions livestock seemed good last week. Supplemental feeding decreased many areas.

UTAH: Precipitation 60% of normal western third; 125% elsewhere. Temperatures 8° above normal.

Spring fieldwork continued to progress near normal. Seeding of spring crops ongoing. Fruit trees blooming early some areas. Lambing, calving, shearing of sheep continued. Range, pasture grasses coming out of dormancy.

VIRGINIA: Temperatures 5 to 10° below normal. Extremes 18°; 77°. Precipitation was widespread with the greatest amount of 1.27 in. recorded at Amelia in the central district.

Days suitable for fieldwork totaled 3.1 days. Topsoil 27% surplus, 67% adequate, 6% short. Pasture condition 16% excellent, 69% good, 15% fair. Alfalfa 10% excellent, 70% good, 20% fair. Barley 5% excellent, 72% good, 23% fair. Wheat excellent, 63% good, 25% fair. Apples mostly fair to good condition. Peaches 47% very poor, 29% poor, 18% fair, 6% good. Tobacco planted 62%

good, 38% fair. Corn planting has just started. Activities included land preparations for corn, soybean planting, alfalfa spraying, livestock care, equipment repairs, tobacco planted care.

WASHINGTON: Temperatures normal to 3° above normal, east; normal to 2° above normal, west. Precipitation none, east; none, west.

Days suitable for fieldwork, 6.8. Soil moisture 45% short, 55% adequate. Range, pasture 55% short, 40% adequate, 5% surplus. Hay, other roughage 15% very short, 35% short, 45% adequate, 5% surplus. Favorable weather allowed fieldwork across the State. Plowing, field preparation, fertilizing, weed control and planting were the main activities. Wheat, barley, onions, green peas, potatoes, dry peas were being planted. Spring wheat planted 40%, 20% 1989, 33% avg. Winter wheat conditions 40% fair, 60% good. Russian wheat aphids were active in unsprayed fields in Eastern Washington. Fruit trees were blooming in many areas with some frost damage to peaches, apricots in Benton County. Calving, lambing were winding down. Some cattle were placed on pastures.

WEST VIRGINIA: Temperature 46°, 4° below to 3° above normal. High 76°; low 14°. Precipitation avg. 0.45 in.; below normal.

Days suitable for fieldwork 4.2. Soil moisture 8% short, 84% adequate, 8% surplus. Livestock good to excellent. Calving 78% complete; lambing 75% complete. Feed supplies adequate to surplus. Wheat, barley good to fair. Farm activities: livestock care, soil preparation, spring seeding, preparing tobacco beds, fencing.

WISCONSIN: Temperature 34°, 3° below normal. Extremes -2°; 63°. Precipitation 0.20 to 0.60 in.

Days suitable for fieldwork 4.9. Cool weather delayed fieldwork. Soil moisture 61% short, 39% adequate. Spring plowing 5% complete. Winter wheat stands greening in south. Maple syrup season variable depending on location.

WYOMING: Temperatures, precipitation mostly below normal.

Days suitable for fieldwork 3.0. Topsoil 23% short, 66% adequate, 11% surplus. Subsoil moisture 48% short, 48% adequate, 4% surplus. Spring wheat 5% planted, 5% 1989, 5% avg. Oats small amount planted, 5% 1989, 5% avg. Barley 20% planted, 15% 1989, 15% avg. Winter wheat 25% fair, 70% good, 5% excellent. Wind, freeze damage light to moderate. Alfalfa prospects mostly good. Livestock mostly good. Spring calves born 50%, 50% 1989, 40% avg. Death losses light to normal. Farm flock: Ewes lambed 55%, 60% 1989, 45% avg.; shorn 55%, 55% 1989, 45% avg. Range flock: Ewes lambed 20%, 30% 1989, 15% avg.; shorn 30%, 30% 1989, 20% avg. Death losses light to normal. Ranges, pastures mostly fair to good.

International Weather and Crop Summary

March 25-31, 1990

HIGHLIGHTS

USSR ... Winter grains continue breaking dormancy. Spring grain planting is underway in the south.

EUROPE ... Much needed rain reduces dryness for winter grains in sections of the south.

SOUTH ASIA ... Drier weather helps northern wheat. Rainfall benefits eastern rice areas but causes local flooding.

EASTERN ASIA ... Widespread rain covers all but northern Chinese crop areas. Unseasonably warm and dry weather allows spring fieldwork in Manchuria.

SOUTHEAST ASIA ... Hot, dry weather returns to Thailand.

SOUTH AMERICA ... Periodic showers continue to slow early harvesting throughout Argentina and south-central Brazil.

SOUTH AFRICA ... Drier weather favors maturing corn. Heavy rain covers Natal's sugar, causing local flooding.

AUSTRALIA ... Heavy rain alleviates dryness but causes flooding and harvest delays in eastern Queensland.

NORTHWESTERN AFRICA ... Beneficial rain falls over most crop areas, easing prolonged moisture stress. However, subfreezing temperatures may hurt crops in Algeria.

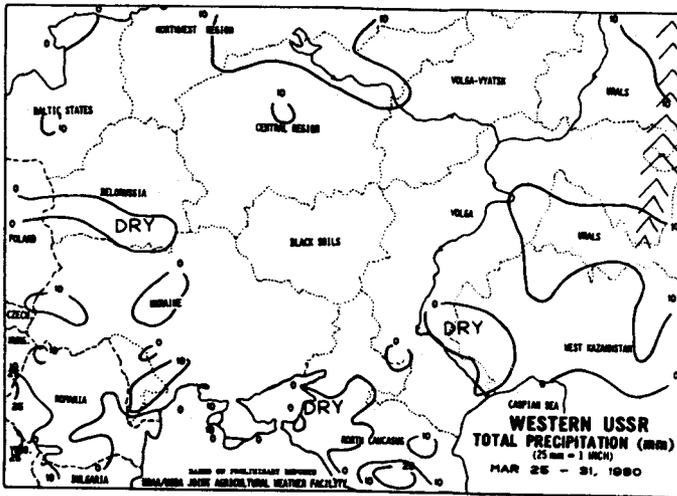
March 1990

MONTHLY DATA FROM SELECTED FOREIGN CITIES
CLIMATE ANALYSIS CENTER-NMC-NWS-NOAA
*** = DATA NOT AVAILABLE

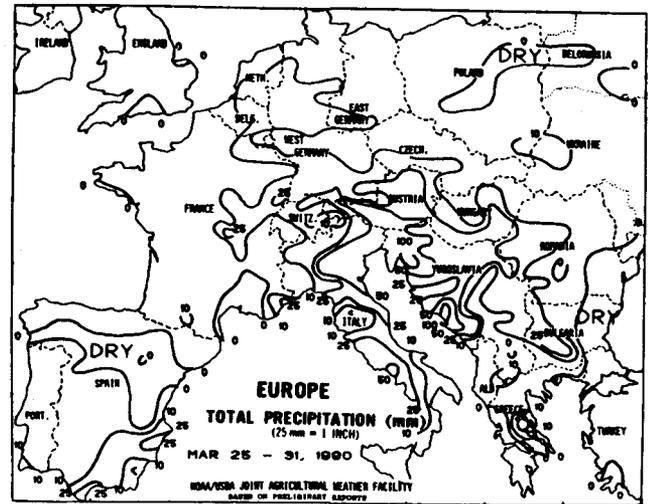
COUNTRY	CITY	TEMPERATURE (C)					PRECIPITATION (MM)		
		AVG MAX	AVG MIN	HI MAX	LO MIN	DPART AVG	F/NRM TOTAL	DPART F/NRM	
NORWAY	OSLO	8	-1	16	-8	4	6.2	19.3	-20.8
SWEDEN	STOCKHOLM	8	1	16	-7	4	4.6	32.7	9.9
FINLND	HELSINKI	5	-2	13	-12	1	4.4	44.6	14.5
U KING	GLASGOW	10	5	14	-3	8	1.8	150.9	79.8
	EDINBURGH	11	5	15	-4	8	2.8	45.6	3.9
	BIRMINGHAM	13	5	21	-4	9	3.5	15.4	-36.1
	LONDON	13	4	20	-2	8	2.6	6.4	-51.0
IRELND	DUBLIN	12	6	17	-1	9	2.9	10.7	-39.4
ICELND	REYKJAVIK	0	-4	5	-13	-2	-3.1	84.7	12.2
DENMRK	COPENHAGEN	10	3	16	-3	6	4.2	38.7	6.7
LUXEMB	LUXEMBOURG	11	4	19	-2	8	3.0	20.7	-36.0
SWITZL	ZURICH	12	4	23	-3	8	3.7	53.3	-15.2
	GENEVA	14	3	25	-4	8	2.8	17.5	-56.5
FRANCE	PARIS	14	4	23	-3	9	2.2	7.1	-36.0
	STRASBOURG	14	4	24	-3	9	3.3	16.4	-17.8
	BOURGES	15	3	23	-3	9	2.0	11.4	-46.6
	BORDEAUX	17	5	26	-3	11	2.5	5.8	-68.1
	TOULOUSE	17	5	27	-4	11	2.1	7.8	-49.1
	MARSEILLE	18	8	22	1	13	2.5	12.8	-31.5
SPAIN	VALLADOLID	17	4	25	-2	10	2.4	1.0	-42.7
	MADRID	17	4	26	-2	11	1.1	20.0	-27.3
	SEVILLE	23	11	30	1	17	2.9	10.9	-63.7
E GRMY	LEIPZIG	12	4	21	0	8	4.5	20.6	-13.9
	DRESDEN	12	5	21	-2	8	5.0	39.5	2.5
W GRMY	HAMBURG	11	4	21	-2	8	4.4	91.1	47.6
	BERLIN	12	5	21	0	8	4.5	41.4	8.9
	DUSSELDORF	13	6	22	0	9	3.3	47.1	6.2
	STUTTGART	13	2	23	-3	7	3.0	22.4	-18.9
	NURNBERG	12	2	21	-3	7	3.5	24.2	-18.2
	MUNICH	13	2	24	-5	7	4.1	56.3	2.8
AUSTRI	VIENNA	15	4	24	-1	9	4.2	36.4	5.4
	INNSBRUCK	15	2	24	-4	8	3.6	40.7	-5.9
CZECH	PRAGUE	12	3	20	-2	7	4.6	19.9	-8.2
POLAND	WARSAW	11	2	20	-3	7	5.5	28.7	5.2
	LODZ	11	3	21	-2	7	5.0	25.4	-10.7
	KATOWICE	12	3	22	-3	7	4.9	34.0	-4.1
	PRZEMYSL	11	3	22	-5	7	5.3	29.9	-1.2
HUNGAR	BUDAPEST	15	5	22	-2	10	4.6	4.3	-21.7
YUGOSL	SARAJEVO	16	2	24	-5	9	4.6	42.0	-42.1
ROMANI	BUCHAREST	18	3	25	-7	10	6.3	3.1	-29.3
BULGAR	SOFIA	16	3	24	-3	9	4.6	26.5	-11.0
ITALY	MILAN	17	4	24	-4	11	2.7	25.6	-54.0
	VERONA	17	5	24	-2	11	2.6	72.0	15.7
	VENICE	15	5	20	-2	10	2.6	42.6	-20.1
	GENOA	16	11	23	6	13	1.8	1.6	-85.3
	ROME	16	6	19	-1	11	0.5	56.0	-7.9
	NAPLES	18	8	23	0	13	2.6	72.2	-12.6
GREECE	THESSALONIKA	19	5	25	-2	12	2.5	4.9	-36.7
	LARISSA	19	2	27	-9	11	1.1	9.9	-31.5
	ATHENS	18	9	22	2	14	1.1	0.8	-33.6
TURKEY	ISTANBUL	14	6	23	-1	10	3.1	11.8	-51.2
	ANKARA	14	-4	20	-12	5	0.1	22.1	-4.9
CYPRUS	LARNACA	20	9	23	6	14	0.6	24.6	-14.5
USSR	TALLINN	5	0	16	-8	3	5.3	69.0	45.0
	LENINGRAD	4	-1	14	-9	2	4.8	56.0	26.5
	KAUNAS	9	2	19	-5	6	6.5	46.9	17.1
	MINSK	8	1	19	-9	5	6.8	48.1	13.5
	KAZAN	2	-3	7	-14	-1	5.3	49.7	28.3
	MOSCOW	5	-1	17	-10	2	5.4	74.6	38.7
	SVERDLOVSK	2	-5	11	-17	-2	3.2	17.6	0.4
	OMSK	0	-6	4	-18	-3	6.8	50.0	38.6
	KUSTANAY	1	-5	5	-16	-2	7.2	35.4	20.6
	KRASNOYARSK	5	-3	11	-13	1	8.3	4.8	-8.7
	NOVOSIBIRSK	0	-5	6	-14	-3	9.0	21.6	6.4
	BARNAUL	1	-6	9	-14	-2	5.8	32.9	11.4
	KHABAROVSK	2	-9	17	-20	-4	3.9	13.9	-4.2
	VLADIVOSTOK	6	-2	15	-8	2	4.6	11.8	-14.0
	KIEV	11	3	22	-5	7	7.1	8.9	-30.1
	LVOV	11	1	21	-6	6	5.5	43.1	4.5
	KIROVOGRAD	12	1	21	-9	7	7.1	7.4	-16.6

BASED ON PRELIMINARY REPORTS

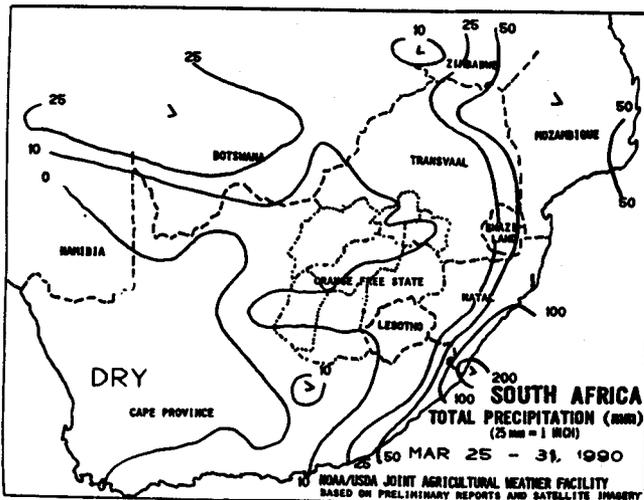
COUNTRY CITY		TEMPERATURE (C)					PRECIPITATION (MM)			COUNTRY CITY		TEMPERATURE (C)					PRECIPITATION (MM)				
March 1990		AVG	AVG	HI	LO	DPART	F/NRM		DPART	March 1990		AVG	AVG	HI	LO	DPART	F/NRM		DPART		
		MAX	MIN	MAX	MIN	AVG	F	NRM	TOTAL	F	NRM	MAX	MIN	MAX	MIN	AVG	F	NRM	TOTAL	F	NRM
USSR	ODESSA	13	5	21	3	9	6.4	0.6	27.1	TANZAN	DAR ES SALAAM	31	23	33	21	27	-0.3	89.5	-44.8		
	YALTA	12	4	19	-3	8	1.8	10.6	-31.3	GABON	LIBREVILLE	31	25	33	22	28	0.8	89.7	-315.4		
	VORONEZH	8	0	18	-8	4	7.0	30.2	-0.7	TOGO	LOME	33	26	35	22	30	1.9	15.1	-55.0		
	SARATOV	6	1	16	-7	4	8.4	25.1	4.8	B FASO	OUAGADOUGOU	38	22	42	19	30	-1.2	0.1	-6.0		
	KHARKOV	9	2	20	-7	6	6.6	16.7	-11.6	IVRY C	ABIDJAN	33	27	34	23	30	2.3	44.8	-70.2		
	VOLGOGRAD	9	0	20	-8	4	7.4	14.3	-16.1	MOZAMB	MAPUTO	30	22	37	19	26	0.5	103.6	14.9		
	ROSTOV	10	2	18	-6	6	5.0	22.4	-12.9	ZAMBIA	KABWE	26	16	30	13	21	0.7	77.2	-36.1		
	ASTRAKHAN	12	2	21	-5	7	6.4	5.1	-11.2	ZIMBAB	HARARE	27	15	30	13	21	1.7	68.3	-18.3		
	KRASNODAR	13	2	24	-8	7	3.8	30.5	-25.3	S AFRI	PRETORIA	27	16	32	13	22	1.5	93.4	18.7		
	OENBURG	3	-2	14	-12	1	6.1	69.1	47.2		KROONSTAD	27	13	32	9	20	0.2	90.0	8.0		
	TSELINOGRAD	-1	-7	3	-18	-4	6.6	52.0	42.8		JOHANNESBURG	23	12	27	10	18	-0.1	84.8	4.8		
	KARAGANDA	-1	-8	4	-13	-5	3.0	33.2	15.9		BETHAL	24	11	29	8	18	-0.3	78.4	0.4		
	TBILISI	14	3	23	-5	9	2.2	4.7	-27.6		DURBAN	27	20	31	17	23	-0.2	237.9	112.4		
	TASHKENT	14	5	22	-2	10	1.6	35.6	-43.5	CANADA	CAPE TOWN	26	14	30	8	20	0.9	1.0	-13.4		
	ASHKHABAD	18	5	25	-1	11	1.9	25.7	-18.9		TORONTO	5	-4	22	-14	1	1.5	29.3	-31.9		
SYRIA	DAMASCUS	19	3	26	-7	11	-0.6	20.0	-2.9		MONTREAL	4	-6	13	-17	-1	1.2	40.4	-33.2		
ISRAEL	JERUSALEM	15	6	20	1	11	-1.5	93.9	3.1		WINNIPEG	0	-9	13	-21	-4	3.8	32.6	9.9		
PAKIST	KARACHI	30	18	34	10	24	-0.9	0.1	-11.0		REGINA	3	-6	16	-17	-1	6.2	36.8	19.0		
INDIA	AMRITSAR	25	11	29	5	18	-1.7	102.4	73.5		SASKATOON	3	-7	15	-19	-2	6.5	8.5	-9.5		
	NEW DELHI	27	15	33	8	21	-1.7	2.4	-13.7		LETHBRIDGE	9	-5	19	-16	2	4.3	29.3	5.1		
	AHMEDABAD	34	19	38	13	27	-0.9	0.1	0.1		CALGARY	8	-6	18	-18	1	4.8	8.4	-7.7		
	INDORE	33	15	38	10	24	-0.9	0.1	-2.8		EDMONTON	6	-5	16	-17	1	5.5	16.1	-2.4		
	CALCUTTA	30	20	36	16	25	-2.1	53.2	31.2	MEXICO	VANCOUVER	11	2	15	-2	7	0.7	107.6	6.6		
	VERAVAL	30	18	37	13	24	-1.1	0.1	0.1		GUADALAJARA	29	9	36	3	19	-0.1	1.1	-5.3		
	BOMBAY	31	21	37	16	26	-0.6	3.0	2.9		MEXICO CITY	23	12	28	4	18	1.5	14.9	6.3		
	POONA	34	15	37	9	24	-2.0	0.1	-4.9		ACAPULCO	33	23	34	21	28	1.4	0.1	0.1		
	BEGAMPET	35	22	38	19	29	0.9	38.2	27.3	BERMUD	ST. GEORGES	22	18	25	10	20	2.2	42.2	-70.6		
	MADRAS	34	25	37	21	29	1.2	22.9	19.7	BAHAMA	NASSAU	27	20	30	16	24	1.4	13.5	-16.9		
	MANGALORE	34	23	35	21	28	0.2	0.1	-8.8	CUBA	HAVANA	28	20	32	18	24	0.7	18.0	-25.3		
H KONG	HONG KONG	21	17	28	11	19	0.7	29.1	-25.7	JAMAIC	KINGSTON	31	22	33	21	27	0.5	15.3	-4.5		
N KREA	PYONGYANG	9	-1	17	-7	4	1.8	77.1	26.0	P RICO	SAN JUAN	**	24	**	21	25	-0.5	79.8	21.1		
S KREA	SEOUL	12	4	19	-1	8	4.2	94.2	38.3	GUADEL	RAIZET	29	21	31	19	25	0.9	48.6	1.3		
JAPAN	SAPPORO	7	-1	13	-4	3	3.4	80.5	2.6	MARTNQ	LAMENTIN	29	22	30	18	26	1.6	34.8	-35.0		
	NAGOYA	15	6	23	0	10	2.7	118.0	19.6	BARBAD	BRIDGETOWN	29	23	29	19	26	0.2	17.6	-20.5		
	TOKYO	14	8	21	4	11	2.6	83.5	-18.9	TRINID	PORT OF SPAIN	32	22	33	20	27	1.5	9.3	-22.8		
	YOKOHAMA	15	7	21	4	11	2.6	85.5	-33.3	COLOMB	BOGOTA	19	9	22	3	14	0.8	54.4	-5.3		
	KYOTO	15	5	22	0	10	3.2	137.8	30.0	VENEZU	CARACAS	29	23	30	21	26	0.7	10.1	-14.9		
	OSAKA	15	7	22	2	11	2.6	117.8	17.5	F GUIA	CAYENNE	29	24	31	23	27	1.0	448.9	45.8		
THAILN	PHETCHABUN	35	22	37	21	28	-1.0	130.8	86.6	BRAZIL	FORTALEZA	30	24	31	22	27	0.3	143.8	-183.8		
	BANGKOK	34	26	36	23	30	0.5	51.0	28.5		RECIFE	30	23	30	21	27	0.0	22.7	-229.2		
MALAYS	KUALA LUMPUR	34	24	35	22	29	2.1	145.4	-83.9		BELO HORIZONTE	30	20	32	18	25	2.0	138.8	2.5		
VIETNM	HANOI	22	19	31	13	20	0.4	204.3	166.2		CAMPO GRANDE	32	21	36	18	27	2.8	209.7	69.7		
CHINA	HARBIN	7	-4	19	-17	2	8.0	24.2	12.8		FRANCA	28	19	32	16	23	1.9	131.0	-55.9		
	HAMI	13	-1	21	-10	6	2.0	4.6	3.3		RIO DE JANEIRO	29	24	31	23	26	0.3	3.8	-139.4		
	LANCHOW	13	3	21	-3	8	2.8	15.9	7.6		LONDRINA	31	20	34	17	25	2.1	131.1	-2.7		
	BEIJING	12	3	20	-3	8	3.2	41.1	32.4		SANTA MARIA	27	19	33	7	23	0.0	188.0	79.0		
	TIENTSIN	13	4	20	-3	8	3.4	32.8	26.4	PERU	LIMA	27	20	29	18	23	1.3	0.1	-0.8		
	LHASA	11	-3	16	-8	4	-0.8	1.6	-1.8	BOLIVI	LA PAZ	16	2	19	-2	9	0.0	17.9	-59.3		
	KUNMING	19	6	25	1	12	-0.5	36.4	22.5	CHILE	SANTIAGO	28	8	32	1	18	0.4	6.1	3.3		
	CHENGCHOW	14	4	23	-3	9	0.5	97.0	70.2	ARGENT	IGUAZU	31	20	37	11	26	***	107.0	***		
	YEHCHANG	16	8	24	1	12	1.1	51.2	-10.6		FORMOSA	34	22	42	10	28	2.9	109.4	-47.6		
	HANKOW	16	8	26	2	12	2.0	95.2	-8.0		CERES	27	18	35	5	22	-0.4	297.6	162.8		
	CHIHKIANG	16	8	28	1	12	1.2	94.1	10.5		CORDOBA	24	16	31	4	20	-0.4	179.1	66.9		
	SHANGHAI	16	8	26	0	12	3.6	84.7	6.5		RIO CUARTO	24	15	33	5	19	-0.3	194.2	83.3		
	NANCHANG	17	10	29	4	14	2.9	116.5	-46.6		ROSARIO	25	16	30	4	20	-0.5	112.5	-54.8		
	TALPEI	22	17	30	11	19	2.0	93.9	-80.1		BUENOS AIRES	24	14	29	3	19	-0.7	114.0	14.7		
	CANTON	23	16	29	9	19	1.8	51.6	-29.0		SANTA ROSA	24	13	32	2	18	-1.1	74.0	-10.9		
	NANNING	22	17	33	9	19	1.8	192.4	137.8		TRES ARROYOS	24	11	31	4	18	-0.3	55.0	-41.0		
CNRY I	LAS PALMAS	24	17	33	13	21	2.7	20.0	9.5	MIDW I	MIDWAY ISLAND	22	18	24	15	20	1.1	61.3	-70.7		
MOROCC	CASABLANCA	20	11	24	8	16	1.1	40.3	-19.7	N CALD	NOUMEA	29	24	33	20	27	1.3	167.2	48.5		
	MAHRAKECH	25	12	31	9	18	3.0	33.7	4.1	FLJI	NAUSORI	29	23	32	18	26	-0.2	441.4	69.0		
ALGERI	ALGER	22	10	29	2	16	2.6	34.9	-35.2	SAMOA	PAGO PAGO	30	25	32	23	28	0.5	220.4	-64.0		
	BATNA	17	5	25	-3	11	2.2	34.5	-8.4	TAHITI	PAPEETE	31	24	34	22	28	0.6	196.7	43.0		
TUNISI	TUNIS	19	9	26	1	14	0.7	26.4	-24.4	N ZEAL	AUCKLAND	24	17	28	9	20	1.6	98.3	16.4		
NIGER	NIAMEY	37	21	43	18	29	-1.2	0.1	-3.1	PA N G	PORT MORESBY	30	23	33	20	27	-0.3	340.8	137.8		
MALI	TIMBUKTU	37	21	43	16	29	1.0	0.1	0.1	AUSTRL	DARWIN	32	25	33	20	28	0.2	221.4	-80.9		
	BAMAKO	38	26	41	20	32	1.7	0.1	-3.7		MOREE	30	18	38	10	24	0.4	8.1	-40.2		
MAURIT	NOUAKCHOTT	36	23	42	16	29	5.0	0.1	-1.7		BRISBANE	26	19	30	15	23	-1.2	196.8	46.8		
SENEGL	DAKAR	28	20	38	18	24															



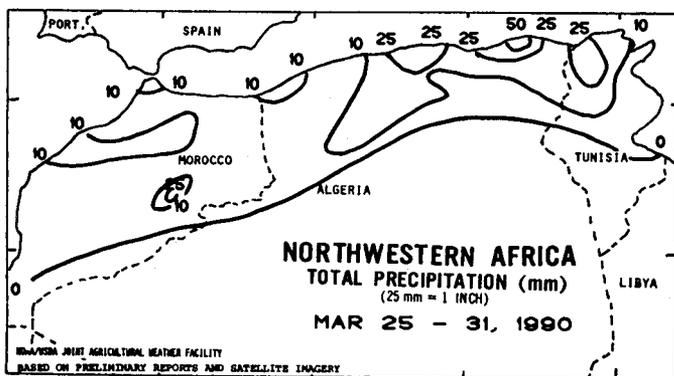
WESTERN USSR ... Although the 12th consecutive week of unseasonably warm weather continued over the region, the weather was cooler than the previous week. Weekly average temperatures generally ranged from 2 to 5 degrees Celsius (C) above normal over the region, with temperatures reaching 5-7 degrees C above normal in the Ukraine. Winter grains continued breaking dormancy over the Baltic States, Belorussia, the northern Ukraine, southern Black Soils Region, and the lower Volga. Winter grains were in, or nearing, the jointing stage in the southern Ukraine and the western North Caucasus, where spring grain planting was underway. Precipitation over the region continued light (generally less than 10mm). Light rain in the southwestern Ukraine moistened topsoils, promoting vegetative winter grain growth. Colder weather over the weekend may have burned some new growth in the lower Volga and northern North Caucasus, but caused little or no damage to vegetative wheat in the south.



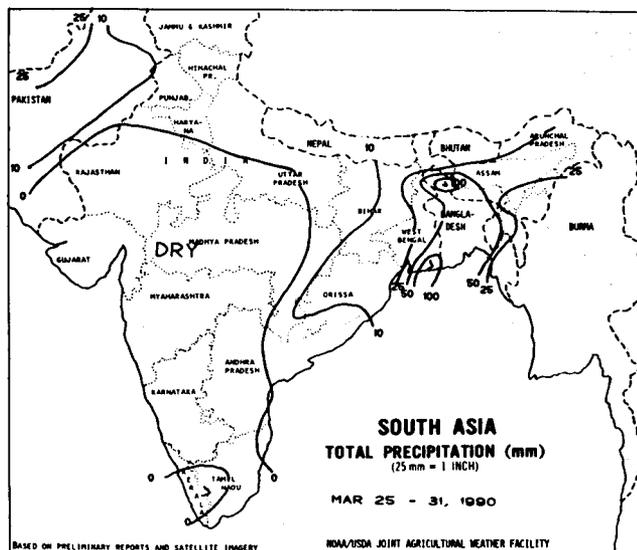
EUROPE ... A slow moving area of low pressure brought much needed rain (20-60mm, with isolated amounts in excess of 60mm) to sections of central and northeastern Italy, northern Yugoslavia, southern Hungary, and western Bulgaria, helping to reduce stress for winter grains. Scattered, mostly light rain (less than 10mm) brought only limited relief to much of southern France, northwestern Italy, and the southern and eastern Balkans, which remain unfavorably dry. A second system brought rain (5-30mm, with isolated amounts greater than 30mm) to southern sections of Portugal and Spain on the 31st, improving growing conditions for winter and spring planted crops. In the north, light to moderate rain (5-15mm) maintained good soil moisture for vegetative winter grains in Benelux and West Germany, while scattered, light rain (less than 10mm) covered other crop areas. Mean temperatures fell to below normal (1-4 degrees C below normal) over western crop areas, but remained above normal in the east.



SOUTH AFRICA ... Rainfall tapered off from the previous week across the primary corn areas, with only local areas of the Orange Free State receiving moderate amounts (21-23mm). Seasonably warm weather accompanied the dryness in the western half of the Maize Triangle, benefiting mature crops. Periods of cooler-than-normal weather, however, continued in the eastern Maize Triangle, slowing crop growth. Elsewhere, heavy rain (50-100mm or more) early in the week over coastal areas of the eastern Cape Province and Natal benefited sugarcane but caused local flooding. Two-day totals in local areas of southern Natal exceeded 200mm.

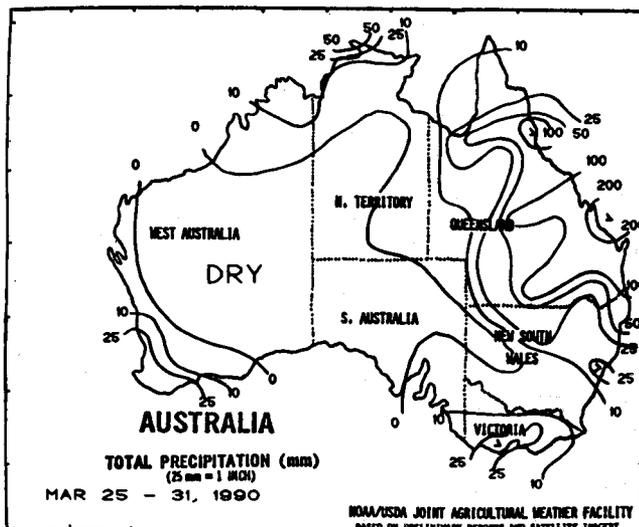


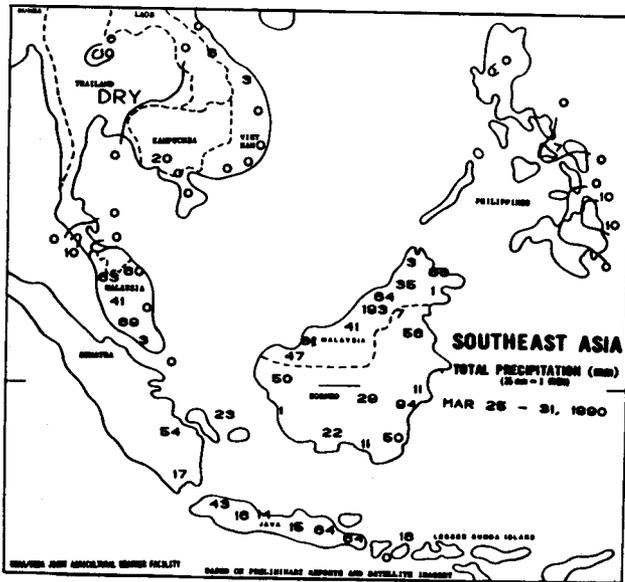
NORTHWESTERN AFRICA ... Winter grains were mostly in the reproductive-filling stages over the region. Unseasonably warm, dry weather continued over Moroccan winter grain areas until the weekend, when variable showers (3-24mm) slowed further declines in crop conditions. In Tunisia, beneficial precipitation (10-28mm) moistened the region, bringing temporary relief to winter grains stressed by previous dryness. In Algeria, widespread precipitation (10-56mm) in eastern and central crop areas brought relief to winter grains previously stressed by prolonged dryness. Scattered, variable showers (1-22mm) fell in western Algeria. Adverse dryness has diminished prospects for winter grains, especially in western and central Algeria. In addition, from March 27 to 29, subfreezing temperatures, ranging from -1 to -4 degrees C, over southern crop areas in central and eastern Algeria likely caused some damage to winter grains in the highly temperature-sensitive reproductive phase.



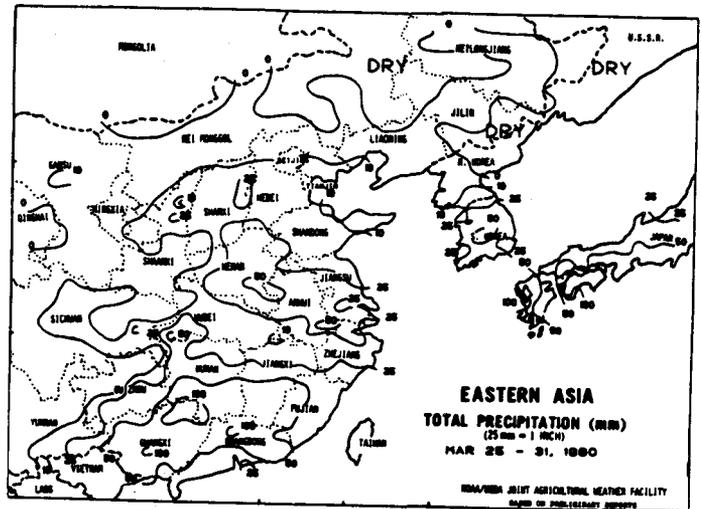
SOUTH ASIA ... Drier weather helped alleviate excessive wetness in the winter wheat areas of northern Pakistan and northern India, but late-week scattered, light rain (2-10mm) and mild weather slowed the drying process. Harvesting in the north is usually well underway during April, necessitating warmer and drier weather to avoid delays. Variable rain (10-50mm or more) in the eastern rice areas boosted irrigation reserves for immature fall planted rice and newly planted crops in Bangladesh. Locally heavy rain (102-114mm), however, over Bangladesh likely caused some flooding.

AUSTRALIA ... Residual tropical moisture brought further heavy rain (25-100mm, with numerous amounts in excess of 100mm) to much of central and eastern Queensland. Torrential rainfall (100-250mm, with isolated amounts greater than 250mm) caused localized flooding in central coastal Queensland and extensive summer crop harvest delays in northern growing areas. However, the rain greatly improved prospects for sugarcane in areas that were missed by last week's heavy rainfall in southeastern Queensland and increased preplanting soil moisture levels for winter grains. Elsewhere, light to moderate rain (5-25mm) fell across crop areas of Western Australia, bringing soil moisture to favorable pre-season levels for winter grains. Scattered rain (5-20mm) also fell across sections of New South Wales and Victoria, while South Australia remained mostly dry.

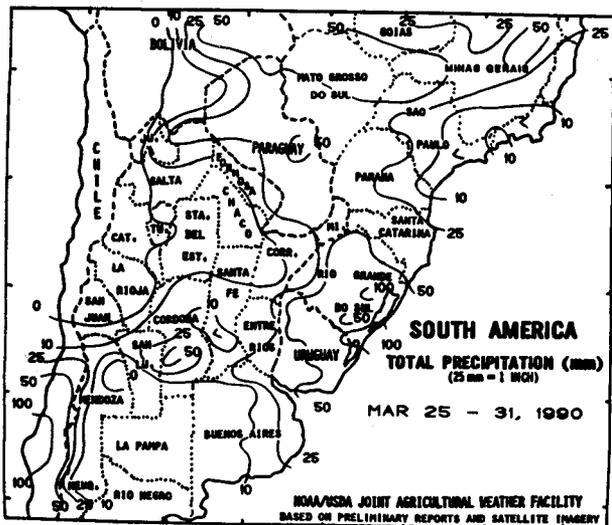




SOUTHEAST ASIA ... Hot, dry weather returned to Thailand's primary rice areas, with only isolated, infrequent showers dotting the region. Daily high temperatures ranged from 35 to 41 degrees C, increasing evaporative losses following weeks of unseasonably heavy rainfall. Further south, scattered showers (25-50mm or more) returned to Malaysia, with locally heavy rain (193mm) causing some flooding in eastern Malaysia. Moderate to heavy rain (25-50mm or more) maintained favorable irrigation reserves over most rice areas of southern Indonesia. In the Philippines, rainfall tapered off over eastern Mindanao as dry, warm weather continued to dominate the region.



EASTERN ASIA ... Widespread rain (10-60mm, with scattered amounts in excess of 60mm) fell over all but northern Chinese crop areas, delaying spring planting but benefiting winter grains and oilseeds. Isolated very heavy rain (100-150mm) on already saturated soils likely caused flooding in northern sections of Guangxi and Guangdong. Moderate to heavy rain (20-50mm, with isolated rain in excess of 50mm) also fell across much of South Korea and southern Japan. Mostly dry and unseasonably warm weather (mean temperatures from 5 to 10 degrees C above normal) allowed rapid progress in spring fieldwork across Manchuria. Below-normal temperatures (1-4 degrees C below normal) in southern China slowed vegetative growth of early crop rice.



SOUTH AMERICA ... In Argentina, light showers (less than 10mm) allowed some harvest progress in western Buenos Aires, La Pampa, and portions of Santa Fe, but heavier showers (20-55mm) interfered with fieldwork in eastern Buenos Aires and southern Cordoba. Sunflower, corn, and sorghum harvesting have reached approximately 75, 20, and 15 percent completion, respectively, slowed somewhat by early harvest-season rainfall. Minimum temperatures plunged briefly to the 2-4 degrees C range, with an isolated high-elevation station in southwestern Buenos Aires dropping below freezing, on March 27. In south-central Brazil, late-week heavy rain (36-91mm) delayed early soybean harvesting in western Rio Grande do Sul. Heavier rain soaked eastern portions of the state. Early-week showers produced 25-75mm of rain in the major soybean areas of western Parana, Mato Grosso do Sul, southern Goias, western Sao Paulo, and southern Minas Gerais. Drier weather during the latter half of the week improved field conditions in these areas.

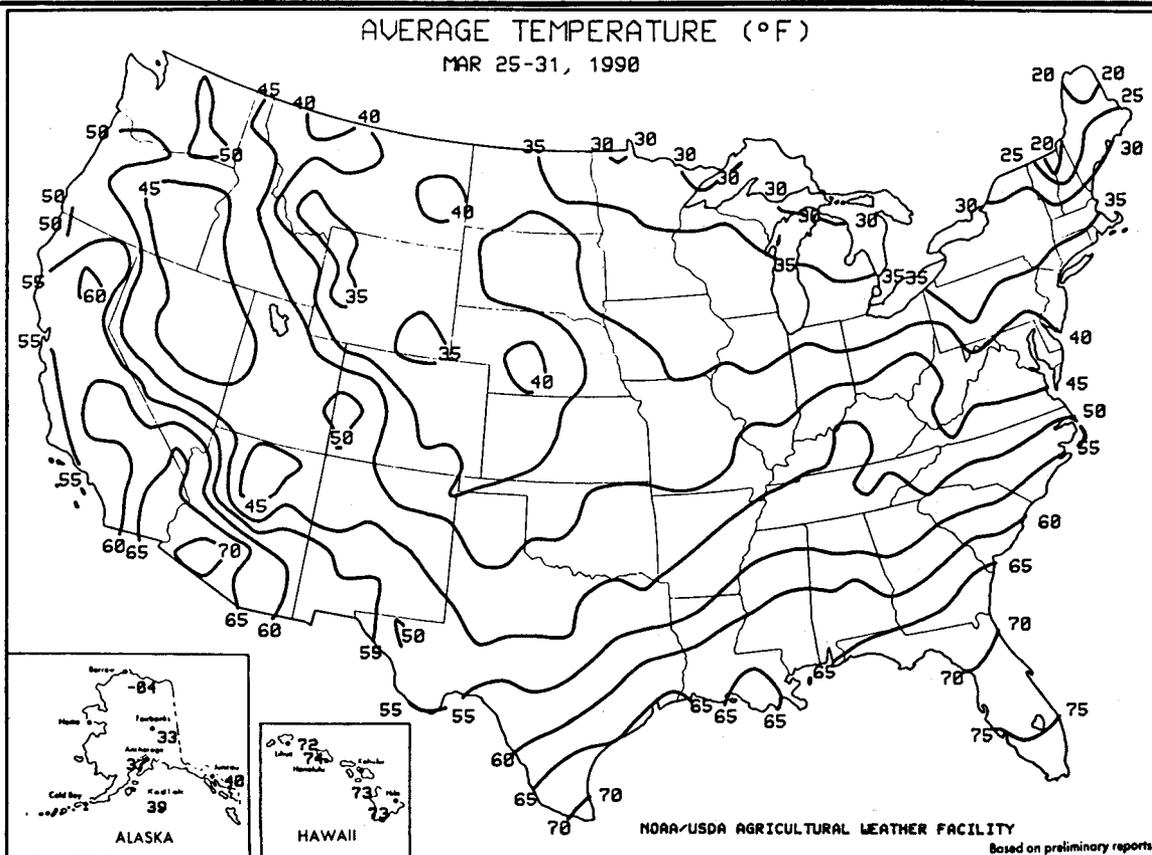
The Weekly Weather and Crop Bulletin (ISSN 0043-1974) is published weekly and jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the Weekly Weather Chronicle. It is issued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

Annual subscriptions: domestic \$35, foreign \$50 (in U.S. funds by international money order or check drawn on U.S. bank) payable to U.S. Department of Commerce, NOAA. POSTMASTER: Send address changes to Weekly Weather and Crop Bulletin, NOAA/USDA, Joint Agricultural Weather Facility, USDA South Building, Room 5844, Washington, D.C. 20250. Order subscriptions from the office and address listed above. Second class postage paid at Washington, D.C. and additional mailing offices.

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**WEEKLY NEWS BULLETIN
SECOND CLASS**

**SECOND CLASS MAIL
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NOAA PERMIT NO.
ISSN 0043 1974**