

# 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

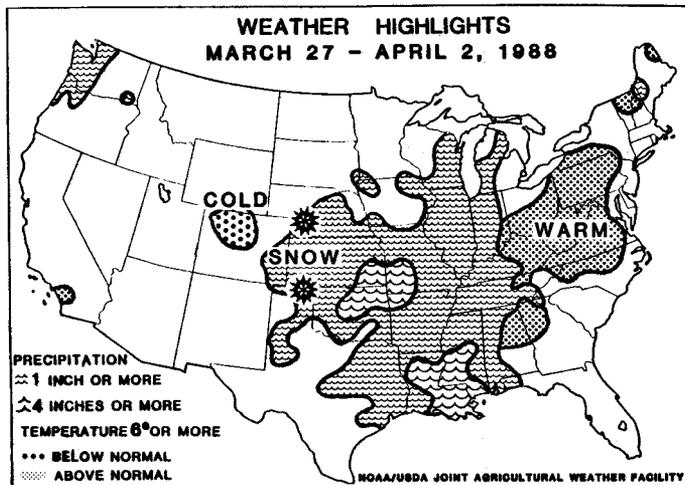
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## National Weather Summary

March 27 - April 2, 1988



**HIGHLIGHTS:** A storm system, moving through the Nation's midsection early in the week, produced substantial rains in the Mississippi Valley. A second storm developed over New Mexico and Colorado at midweek, and caused heavy snowfall in the central and southern Great Plains and severe thunderstorms with heavy rain in the lower Mississippi Valley and gulf coastal regions through the remainder of the week.

**SUNDAY...**Wintry weather invaded the northern Plains, bringing snow and strong winds to the Dakotas, Montana, and Wyoming, while temperatures rose into the seventies and eighties over the central and southern Plains. Strong thunderstorms developed in western Texas in the afternoon. Snow showers occurred in New York and Pennsylvania. Rain fell in eastern New England.

**MONDAY...**An eastward-moving cold front produced showers and thunderstorms in the middle Mississippi Valley and the southern Plains, and brought cold weather with snow to the northern Plains. Severe thunderstorms struck at many points in Oklahoma, Arkansas, Kansas, Illinois, and Missouri. Snow started to fall in Colorado. Freezing rain, sleet, and snow fell in parts of Minnesota and Michigan.

**TUESDAY...**A band of showers and thunderstorms accompanied a cold front extending across the lower Mississippi Valley from Louisiana to Tennessee. Rain showers also extended from southeastern Missouri and western Kentucky into lower Michigan. Rain was mixed with snow from Wisconsin to Missouri. In the West, rain showers and mountain snow showers were widely scattered across the northern half of the Rockies. Temperatures were unseasonably warm across much of the eastern third of the Nation. Daytime highs reached the seventies as far north as the lower Great Lakes.

**WEDNESDAY...**A storm system developing over New Mexico and Colorado spread snow across much of the central Rockies, while a few rain showers and snow showers spread into southwestern South Dakota and the Nebraska Panhandle. Strong winds, associated with the Rocky Mountain storm system, continued over much of Utah and the southwestern United States. Rain and a few thunderstorms extended from southeastern Texas across Louisiana and Mississippi. Rain showers were scattered over the southern Appalachians. Daytime high temperatures were only in the thirties and forties in Nevada, the northern and central Rockies, the northern Great Plains, and the upper Mississippi Valley.

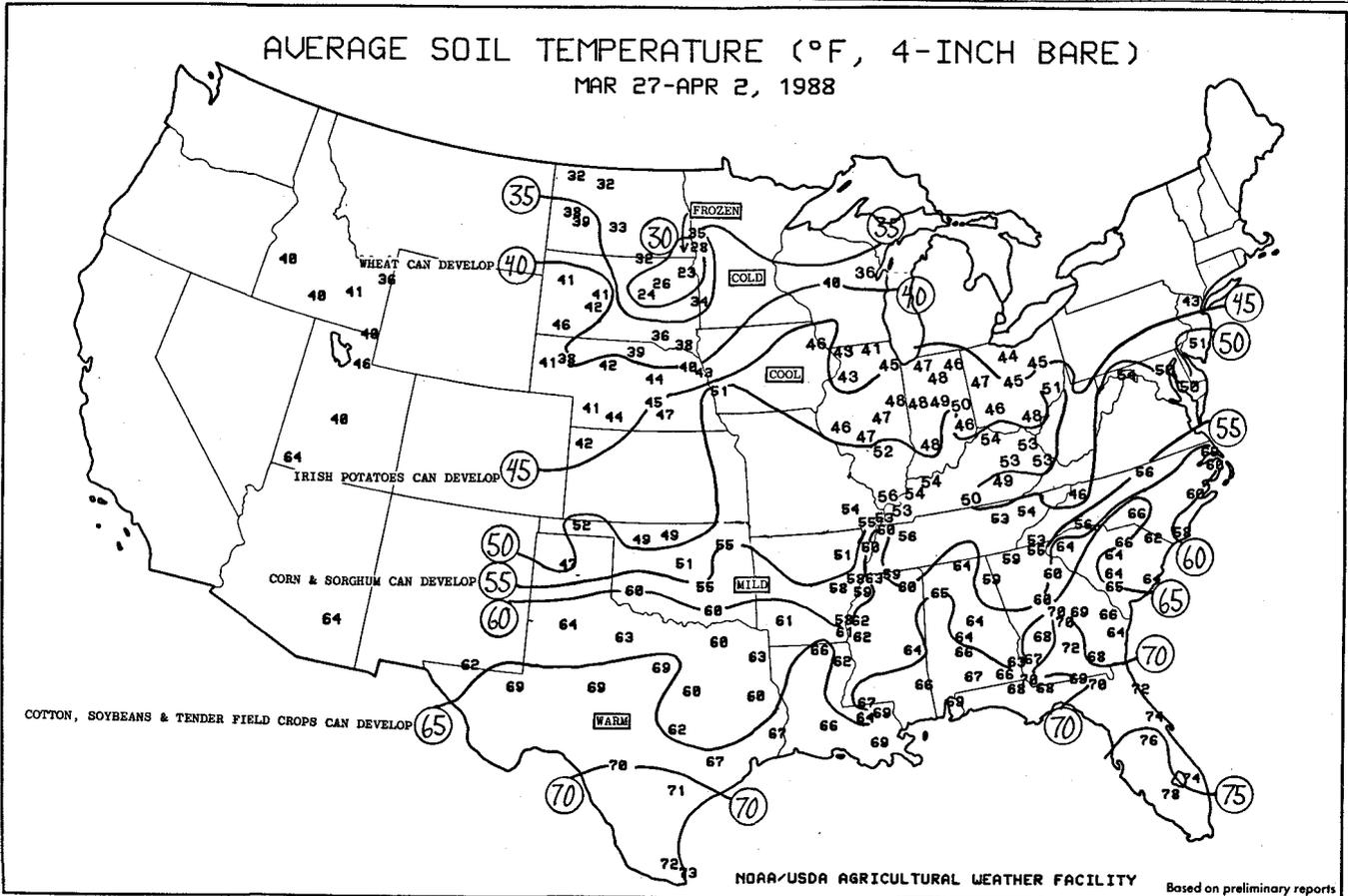
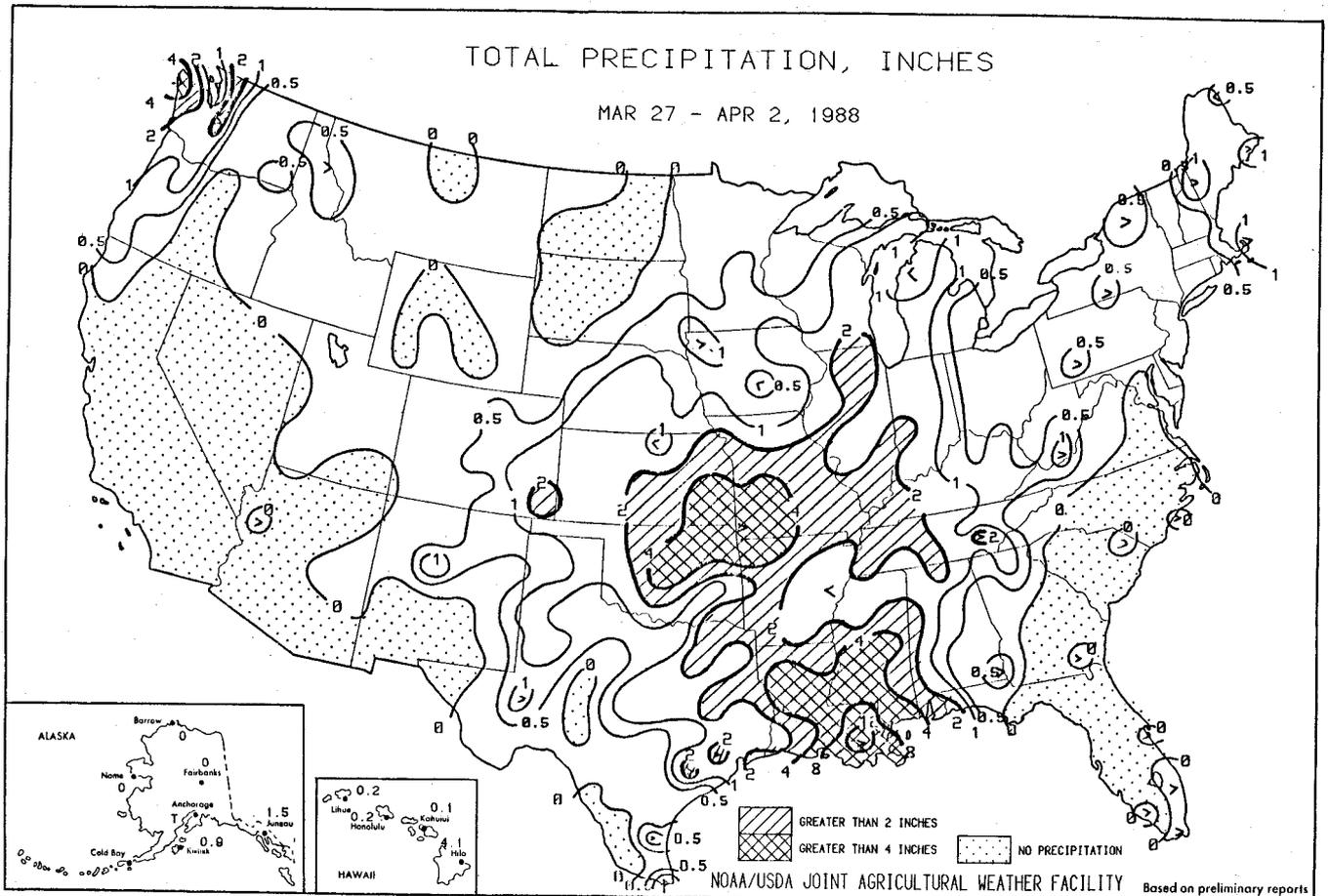
**THURSDAY...**A winter-like storm over New Mexico and Colorado produced heavy snowfall. Rain showers extended from the southern half of the Great Plains to the lower Ohio Valley, with thunderstorms mainly along the central gulf coast. Showers and thunderstorms were scattered from Mississippi across the Tennessee Valley and the Ohio Valley. Showers and thunderstorms were also scattered across Oklahoma, Kansas, south-central Nebraska, and southeastern Texas. Temperatures remained below freezing during the day over much of eastern Colorado, southeastern Wyoming, and the Nebraska Panhandle.

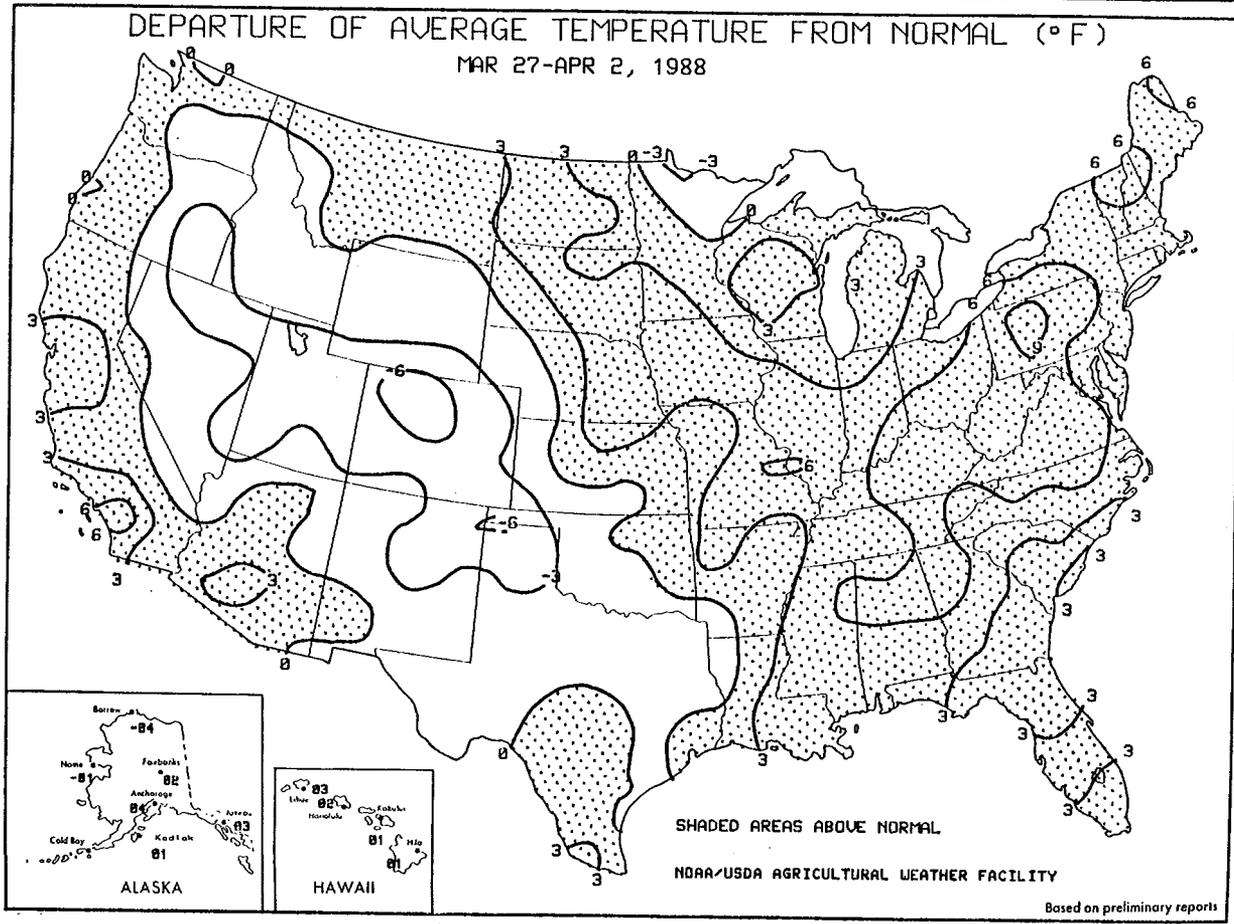
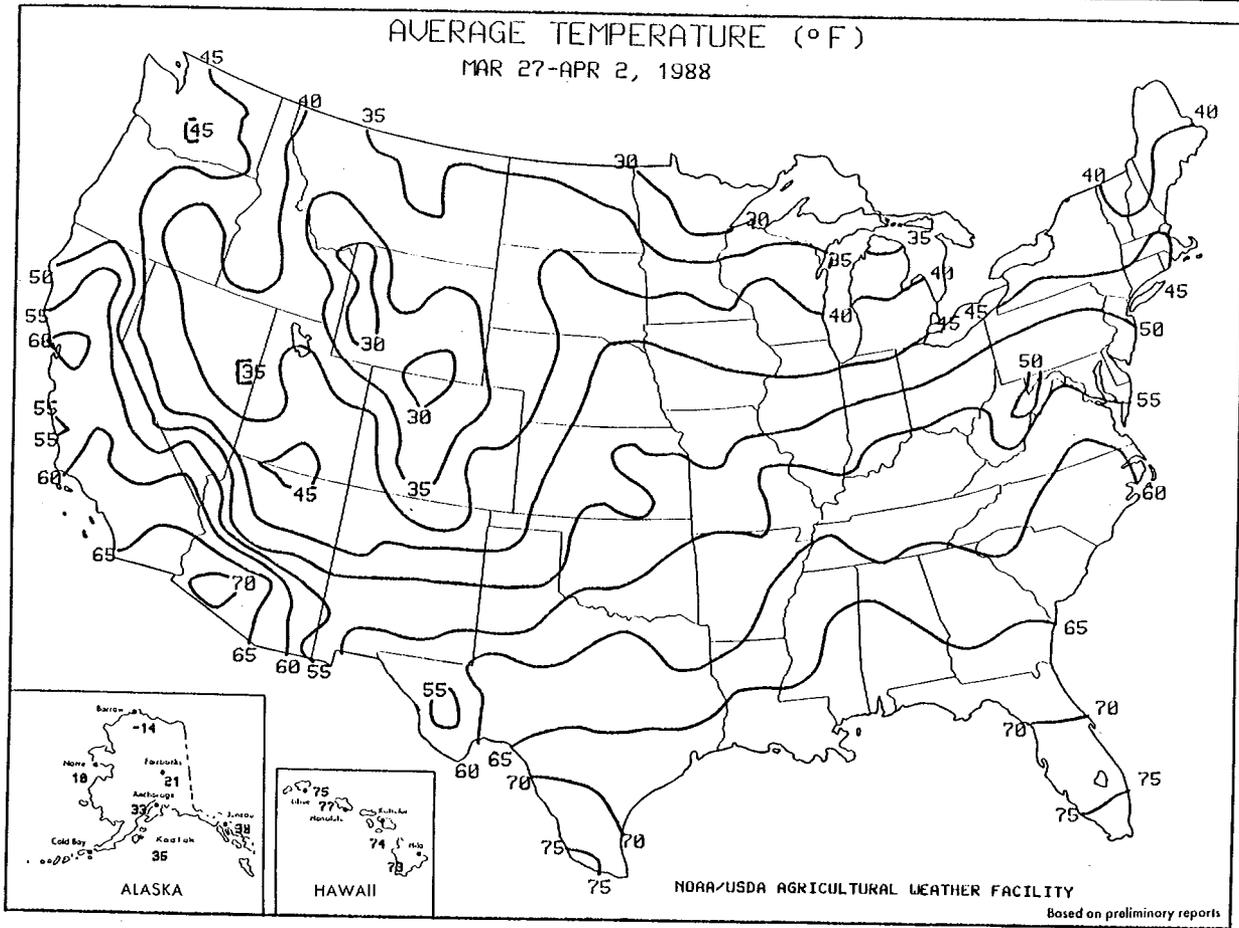
**FRIDAY...**An intense storm centered over western Oklahoma produced heavy snow and blizzard conditions in Colorado, New Mexico, western and northern Texas, western Kansas, and western Oklahoma. Associated with this system was a band of showers and thunderstorms reaching from southeastern Kansas and southwestern Missouri, across western Arkansas and eastern Oklahoma, and into Louisiana and southeastern Texas. Rain also fell over central and eastern Kansas, southern Nebraska, western Missouri, and southwestern Iowa. The heavy rains caused local flooding.

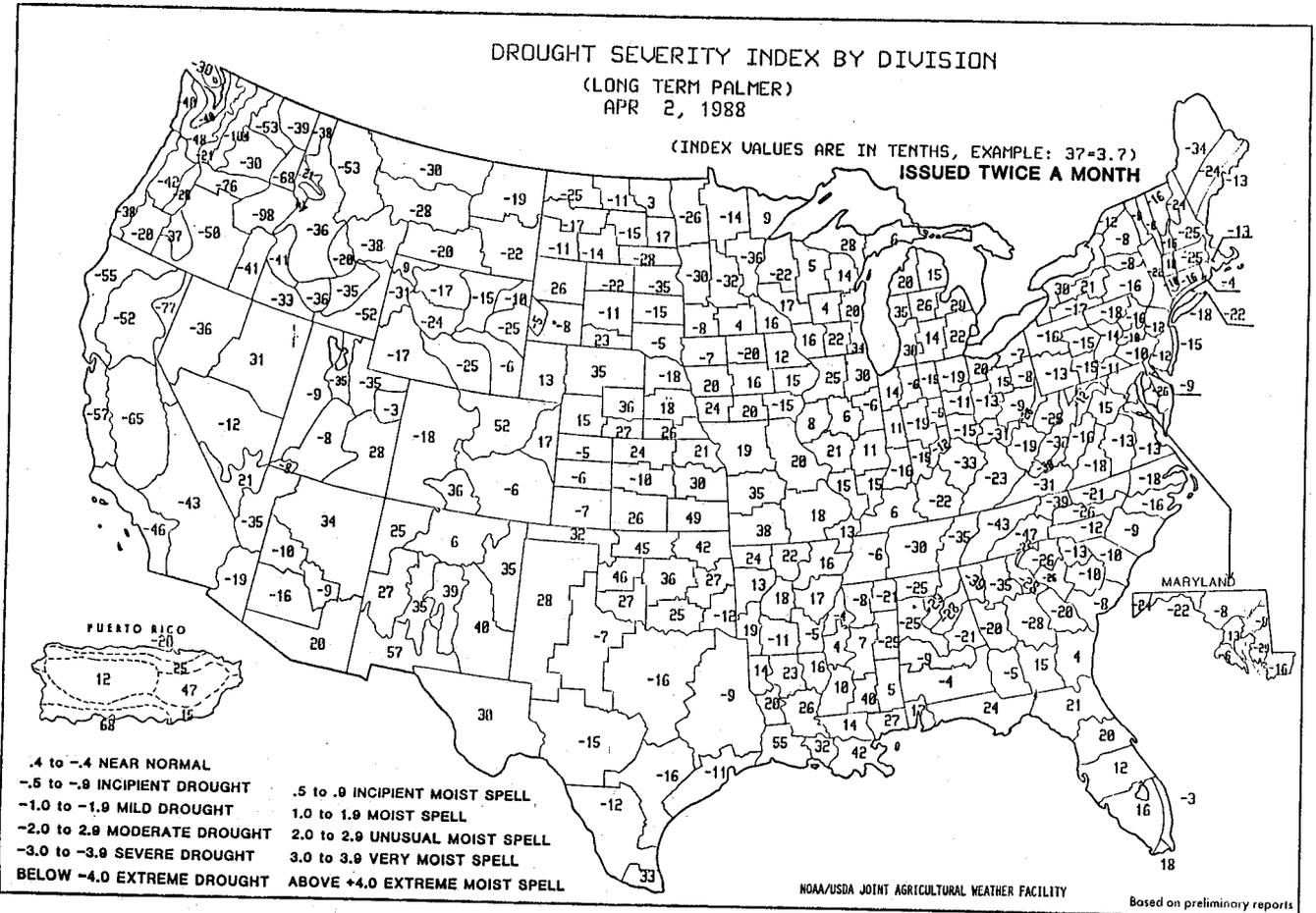
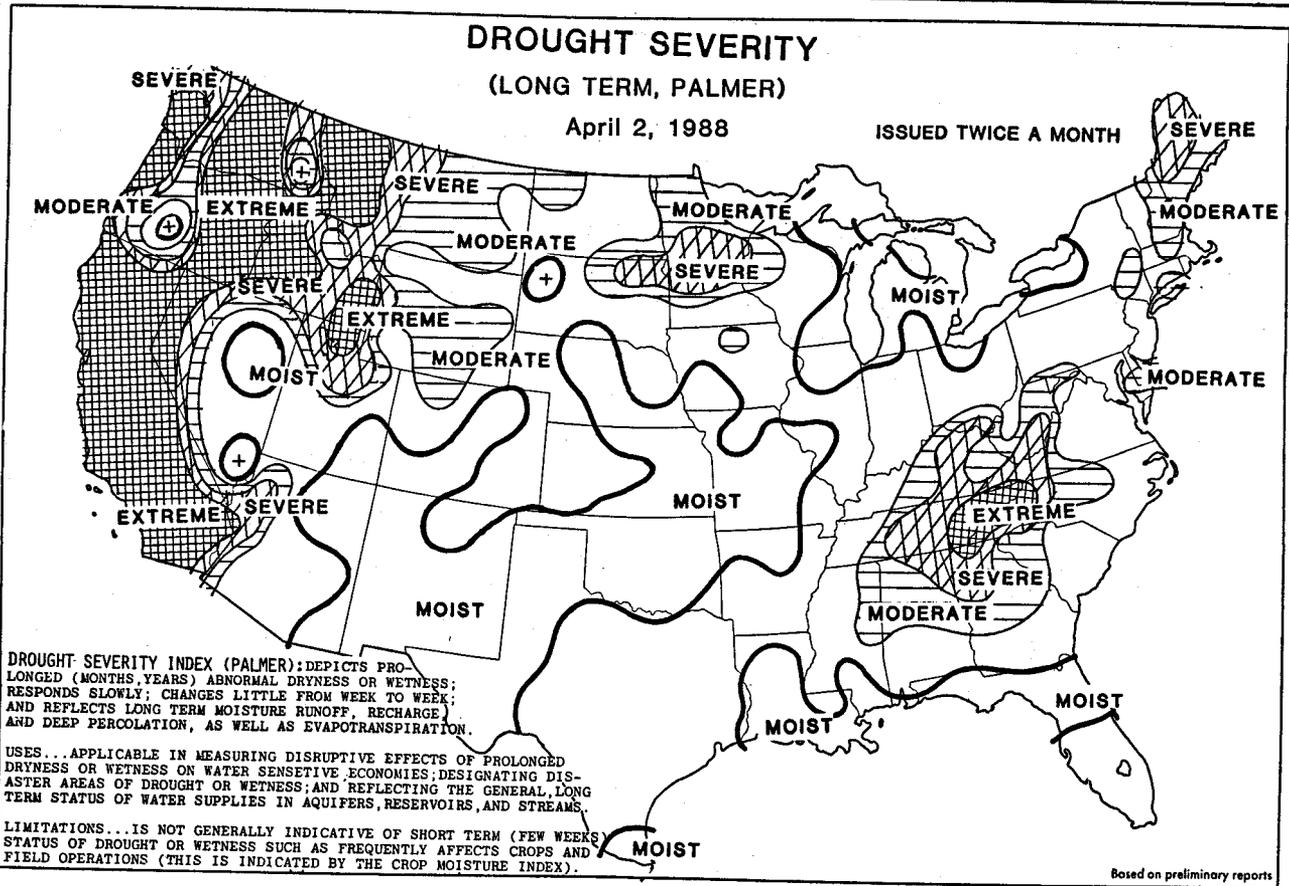
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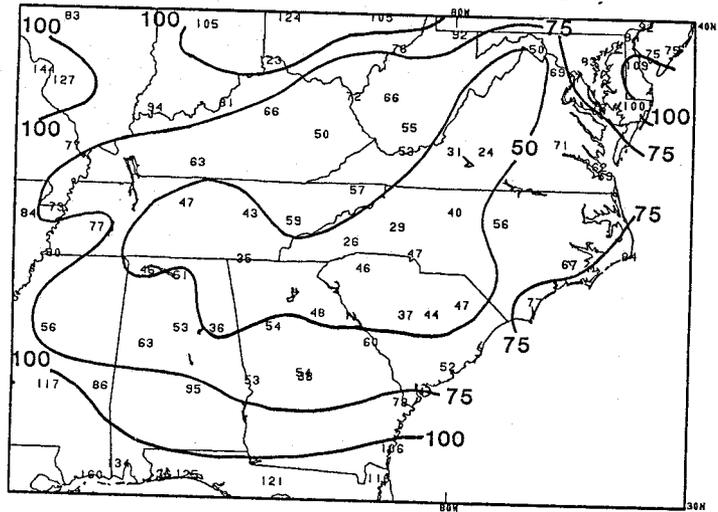


## CURRENT DROUGHT SITUATION IN THE UNITED STATES

The Drought Severity Index (DSI), that the map shows on the opposite page, depicts two areas of extreme drought. One spreads over much of the West, and the other covers eastern Tennessee and western North Carolina.

Rains in recent weeks alleviated dryness along coastal regions of the Pacific Northwest. (See the Weekly Weather and Crop Bulletin, Vol. 75, No. 10, for further discussion of the western drought.) The dryness in the southeastern United States coincides with much of the area stricken by the extreme Southeast drought of 1986 (see Weekly Weather and Crop Bulletin, Vol. 73, No. 31). The Tennessee Valley Authority reports that tributary storage reservoirs in the eastern Tennessee Valley are now lower than they were in April 1986.

Percentage of Normal Precipitation, January 24-April 2, 1988



## NOTABLE U.S. DROUGHTS

Droughts are abnormal moisture deficiencies over an affected region lasting from a month to years. The most memorable droughts are those that spread over large areas and endured a long time, causing extensive damage to agriculture, creating serious water shortages, inflaming forestlands, and impairing the economy.

One of the most notable drought periods was the Dust Bowl of the 1930's that affected much of the Nation. An example of conditions in this decade is a statement taken from the September 15, 1936, Weekly Weather and Crop Bulletin (WWCB).

"The passing of August brought to a close one of the most disastrous summer droughts ever experienced in U.S. history. The heart of the agricultural section of the country, that part lying between the Appalachian and Rocky Mountains, experienced an unprecedentedly hot, dry summer, with rainfall less than half the normal over large areas. The deficiencies in rainfall centered in Missouri, Kansas, and Oklahoma, where temperatures were unprecedentedly high and there was less than one-third the normal rainfall for the three summer months, June - August."

After a decade of generally good weather for agriculture, drought returned in the early 1950's. The September 27, 1954, issue described the situation:

"The summer of 1954 (June, July, August) has been one of the hottest and driest on record from Kansas, Oklahoma, and Texas to the Atlantic Coast. Little Rock, Arkansas, a good example of the persistent heat, at the end of August had during the year a total of 43 days with maximum temperatures of 100° F or over, greatly exceeding the previous record of 23 in 1943. Also, this station received only 23 percent of its normal summer rainfall."

A measure of prolonged and abnormal moisture deficiencies called the Drought Severity Index (DSI) was developed to categorize and compare periods of droughts. Wayne Palmer introduced his index in the WWCB in 1961. Palmer grew up on his father's farm in southwestern Nebraska and became interested in studying and classifying drought after his father struggled through the drought of the 1930's. Palmer himself fought the drought of the 1950's after leaving the National Weather Bureau for several years to work his aging father's farm. The DSI is based on the principles of a balance between moisture supply and demand and was derived from past scenarios of monthly temperature averages and precipitation totals during periods of historical extreme droughts from 1910 to 1960. The calculations take into account the current weather and soil conditions and the normal climate of the area. The DSI is useful in delineating disaster areas and indicating the availability of irrigation water supplies, reservoir levels, range conditions, amount of stock

water, and potential intensity of forest fires (see WWCB, Vol. 74, No. 16, for an explanation of the index).

Palmer found the DSI useful in monitoring the 1960's Northeast Drought of which he wrote several stories in the WWCB. The following is an excerpt from his July 25, 1966, article:

"The mild to moderate drought condition that had developed in central Ohio was completely eliminated by the series of severe thunderstorms which covered Ohio from Sandusky to the Ohio River on July 12 and 13. Note the radical change in the index values in that region since July 8."

"Throughout most of the remainder of the Northeast the regime of abnormally dry weather continued and the drought has become more serious. By mid-July most points were reporting crop moisture shortages as well as low streamflow and declining water tables. The region of most serious agricultural drought appears to be located in southeastern Pennsylvania. The heart of this dry region is probably in the Gettysburg-Harrisburg-York area where most pastures and lawns are as brown as in midwinter. Corn is only 1 to 3 feet high and much of it is obviously damaged beyond the point where normal production is possible. If rain does not come soon in this area, corn production is likely to be nearer to zero than to normal."

While the DSI evaluates the scope of prolonged periods of abnormally dry weather, it does not necessarily reflect moisture conditions which are needed for agriculture. For example, modest rainfall in the most recent 2 or 3 weeks would be very beneficial for crops but would not be near enough to restore low reservoirs to a near-normal level. Palmer developed the Crop Moisture Index (CMI) to measure the status of agricultural drought or wetness which was introduced in the WWCB in 1968. The index measures the degree to which moisture requirements of growing crops were met and responds rapidly to changes in rainfall. The index is not applicable to germinating and shallow rooted crops or for cool season crops growing when temperatures are averaging below 55° F. The timing of rainfall is also important to note in using the CMI since the response of a specific crop varies according to growth stage (see WWCB, Vol. 74, No. 18 for an explanation of the CMI).

Both indices are now regularly featured in the WWCB during the growing season, delineating areas of prolonged dryness (DSI) and areas where recent lack or excess of rain has affected crops (CMI). Since the DSI changes slowly from week to week, it will generally be published every other week. The CMI will be published weekly but will not start until May since it is not applicable during cool weather.

# National Weather Data for Selected Cities

## Weather Data for the Week Ending April 2, 1988

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	TEMPERATURE °F		PRECIPITATION	
																		90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	75	54	81	36	64	6	.9	-.5	.5	3.9	56	11.5	68	90	44	0	0	0	0	5	1
MOBILE	77	58	80	48	67	3	2.9	1.5	2.5	10.4	151	21.3	129	98	56	0	0	0	0	3	1
MONTGOMERY	79	54	84	40	67	6	.3	-.9	.3	5.5	88	16.9	112	91	41	0	0	0	0	3	0
AK ANCHORAGE	39	27	42	19	33	4	.7	-.1	.7	.7	96	1.4	59	90	53	0	0	0	0	7	0
BARROW	-7	-22	-3	-29	-14	4	.7	0	.7	.1	71	.1	26	80	70	0	0	0	0	7	0
FAIRBANKS	31	11	36	-3	21	2	1.5	-.1	.7	.1	29	.6	41	75	42	0	0	0	0	7	0
JUNEAU	41	35	44	32	38	3	.9	-.9	.7	4.8	137	13.8	126	99	78	0	0	0	0	7	0
KODIAK	42	28	46	16	35	1	.9	-.1	.3	8.9	215	26.0	172	93	62	0	0	0	0	7	0
NOME	20	0	27	-13	10	1	.9	-.1	.3	.9	146	2.7	143	70	47	0	0	0	0	6	0
AZ PHOENIX	82	54	97	49	68	1	0	-.1	0	.2	20	1.3	61	28	9	1	1	0	0	7	0
PRESOTT	64	29	76	19	46	1	0	-.1	0	.3	19	2.1	43	43	11	1	1	0	0	0	0
TUCSON	80	48	94	38	64	3	0	-.1	0	.4	49	1.3	60	43	11	1	1	0	0	0	0
YUMA	82	57	96	51	69	2	0	0	0	.4	20	2.0	52	13	10	1	1	0	0	0	0
AR FORT SMITH	74	47	81	30	59	3	3.9	3.0	3.4	8.5	204	12.2	142	93	43	0	0	0	0	3	1
LITTLE ROCK	70	47	79	34	59	1	1.5	.4	.8	4.9	96	11.1	86	75	55	0	0	0	0	3	1
CA BAKERSFIELD	77	44	84	40	61	1	0	-.2	0	.4	45	1.6	54	60	19	0	0	0	0	6	1
EUREKA	55	44	59	40	50	1	0	-1.0	0	.4	45	1.6	54	60	19	0	0	0	0	6	0
FRESNO	75	44	81	39	59	3	0	-.3	0	1.2	23	8.9	50	77	64	0	0	0	0	0	0
LOS ANGELES	75	54	79	50	65	6	0	-.3	0	.3	16	2.6	47	74	18	0	0	0	0	0	0
REDDING	72	44	79	36	58	1	0	-.3	0	.1	4	3.5	47	86	29	0	0	0	0	0	0
SACRAMENTO	74	47	78	41	60	1	0	-.9	0	.5	10	7.9	39	58	19	0	0	0	0	0	0
SAN DIEGO	74	55	78	50	64	4	0	-.4	0	.2	8	4.7	52	59	20	0	0	0	0	0	0
SAN FRANCISCO	69	47	74	43	58	5	0	-.6	0	.6	33	2.9	52	82	33	0	0	0	0	0	0
CO DENVER	48	24	78	17	36	6	0	-.5	0	.1	2	4.4	41	80	31	0	0	0	0	0	0
GRAND JUNCTION	55	28	77	19	42	1	.7	.3	.4	1.3	98	2.3	91	86	39	0	0	0	0	7	0
PUEBLO	56	25	85	17	41	4	.2	0	.2	.7	94	2.0	103	69	20	0	0	0	0	6	2
CT BRIDGEPORT	54	39	58	36	47	3	.9	-.7	.5	1.2	172	2.2	177	90	35	0	0	0	0	7	3
HARTFORD	57	34	66	30	46	3	.1	-.8	.1	1.5	36	7.8	74	80	44	0	0	0	0	1	0
DC WASHINGTON	68	46	76	38	57	6	.7	-.7	.1	2.2	49	9.5	85	87	38	0	0	0	0	4	2
FL APALACHICOLA	74	59	77	51	67	2	.1	-.9	.1	2.3	62	7.9	87	87	44	0	0	0	0	2	0
DAYTONA BEACH	77	61	78	55	69	0	0	-.6	0	5.1	120	16.5	142	94	62	0	0	0	0	0	0
JACKSONVILLE	78	53	81	45	66	0	0	-.6	0	4.6	146	11.6	134	94	54	0	0	0	0	0	0
KEY WEST	81	73	82	70	77	1	0	-.7	0	2.7	74	15.1	147	97	46	0	0	0	0	0	0
MIAMI	80	71	82	68	76	2	0	-.2	0	1.7	132	6.9	138	82	64	0	0	0	0	0	0
ORLANDO	82	62	84	59	72	2	0	-.5	0	.4	19	2.9	47	79	54	0	0	0	0	1	0
TALLAHASSEE	80	51	83	39	66	3	0	-.6	0	6.1	178	10.6	120	94	41	0	0	0	0	1	0
TAMPA	83	63	85	56	73	4	0	-1.1	0	7.4	126	18.0	115	93	39	0	0	0	0	0	0
WEST PALM BEACH	80	68	86	64	74	2	.1	-.5	.4	1.6	116	8.3	94	91	43	0	0	0	0	0	0
GA ATLANTA	74	54	79	45	64	7	.4	-.9	.4	5.5	194	11.9	145	83	54	0	0	0	0	3	0
AUGUSTA	78	45	81	37	61	2	0	-1.0	0	2.9	47	10.9	69	73	39	0	0	0	0	1	0
MACON	78	50	83	35	64	4	0	-1.0	0	3.1	61	10.7	81	78	35	0	0	0	0	1	0
SAVANNAH	77	51	79	43	64	2	0	-1.0	0	3.2	59	11.1	78	90	34	0	0	0	0	0	0
HI HILO	79	66	80	64	73	1	0	-.8	0	2.1	52	9.6	92	92	36	0	0	0	0	0	0
HONOLULU	84	69	87	67	77	2	4.1	1.0	2.3	13.4	93	33.7	89	95	66	0	0	0	0	6	2
KAHULUI	83	66	87	63	75	1	.2	-.5	.1	.7	20	5.0	50	87	50	0	0	0	0	6	2
LIHUE	80	70	81	66	75	3	.1	-.4	.1	.9	32	9.6	97	87	53	0	0	0	0	3	0
ID BOISE	54	30	70	22	42	3	.2	-.7	.1	1.6	33	13.0	88	88	66	0	0	0	0	1	0
LEWISTON	53	35	66	30	44	4	.2	-.2	.2	1.5	133	3.2	84	86	26	0	0	0	0	5	0
POCATELLO	52	23	69	20	38	2	.1	-.2	.1	1.0	95	2.2	64	77	39	0	0	0	0	2	0
IL CHICAGO	54	35	64	28	45	2	1.8	1.0	.8	.8	84	2.1	71	82	27	0	0	0	0	7	2
MOLINE	56	35	70	26	45	3	1.4	.6	.9	2.6	86	5.8	99	91	52	0	0	0	0	3	4
PEORIA	60	36	71	25	48	4	2.0	1.2	.9	2.6	86	5.4	91	90	51	0	0	0	0	3	3
QUINCY	60	37	79	28	49	3	1.2	.3	1.0	2.9	93	5.6	91	95	52	0	0	0	0	3	4
ROCKFORD	55	31	63	19	43	3	3.2	2.4	1.3	1.9	54	3.5	55	95	53	0	0	0	0	3	3
SPRINGFIELD	61	39	75	27	50	2	1.4	.5	1.3	2.8	98	5.8	106	91	50	0	0	0	0	4	3
IN EVANSVILLE	66	44	78	30	55	5	1.2	.1	.5	3.3	68	10.5	95	91	50	0	0	0	0	2	3
FORT WAYNE	55	39	66	32	47	4	.7	-.1	.3	3.4	105	6.9	94	92	56	0	0	0	0	1	4
INDIANAPOLIS	61	41	72	30	51	5	1.3	.5	.5	3.7	96	9.1	101	90	53	0	0	0	0	2	4
SOUTH BEND	54	36	63	30	45	3	1.3	.4	.6	3.1	92	7.3	93	90	54	0	0	0	0	1	4
IA DES MOINES	61	35	72	27	48	6	.4	-.2	.2	1.0	42	2.0	44	83	34	0	0	0	0	3	5
SIOUX CITY	61	34	80	27	47	6	1.0	.5	1.0	1.6	84	2.7	78	75	35	0	0	0	0	4	3
WATERLOO	55	31	59	22	43	4	1.1	.4	.8	1.7	67	2.8	65	96	44	0	0	0	0	3	1
KS CONCORDIA	60	39	78	30	50	3	1.0	.5	.7	1.2	62	2.6	74	73	42	0	0	0	0	1	1
DODGE CITY	57	36	82	28	47	1	1.4	1.0	1.8	1.2	1.8	112	2.8	109	85	45	0	0	0	1	3
GOODLAND	52	30	87	20	41	-1	1.5	1.3	.9	1.8	165	3.6	198	80	45	0	0	0	0	4	1
TOPEKA	62	38	80	29	50	2	2.3	1.6	1.9	2.7	111	5.2	118	87	44	0	0	0	0	6	3
WICHITA	58	38	75	32	48	-2	2.7	2.2	1.7	4.6	207	5.3	139	90	51	0	0	0	0	2	4
KY BOWLING GREEN	71	46	78	31	58	7	1.4	.2	.8	2.9	49	10.1	69	88	43	0	0	0	0	1	5
LEXINGTON	68	46	78	31	57	8	.4	-.6	.2	2.6	51	8.6	71	79	46	0	0	0	0	1	4
LOUISVILLE	69	48	79	34	58	7	.7	-.3	.4	3.4	68	11.0	94	79	42	0	0	0	0	1	4
LA ALEXANDRIA	74	55	82	49	65	2	5.3	4.1	2.5	10.6	199	15.7	107	86	55	0	0	0	0	0	3
BATON ROUGE	78	58	83	52	68	4	5.2	4.0	2.0	10.6	212	27.0	184	95	57	0	0	0	0	0	3
LAKE CHARLES	74	58	78	50	66	2	2.2	1.5	.9	7.3	216	15.5	136	95	66	0	0	0	0	0	5
NEW ORLEANS	77	60	81	51	69	4	10.4	9.3	4.4	17.0	340	32.0	209	100	66	0	0	0	0	5	4

Based on 1961-80 normals

Weather Data for the Week Ending April 2, 1988

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 JAN 1	PCT. NORMAL SINCE JAN 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERATURE		PRECIPITATION	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
SHREVEPORT	72	49	80	41	60	-1	3.3	2.4	2.2	6.1	148	11.7	100	94	58	0	0	4	2
ME CARIBOU	46	27	55	20	37	6	.4	-2	.4	1.2	47	6.6	93	92	51	0	6	2	0
PORTLAND	54	31	61	26	42	5	.7	-2	.7	1.9	44	7.2	61	90	37	0	5	1	0
MD BALTIMORE	63	43	70	32	53	5	1.3	-1.8	1.0	2.4	60	8.8	88	89	45	0	1	0	0
SALISBURY	66	43	74	34	54	5	1.0	-2	1.0	4.4	102	12.5	112	94	45	0	0	2	1
MA BOSTON	51	38	59	34	45	2	.7	-2	.7	3.7	85	10.2	84	82	46	0	0	2	1
CHATHAM	49	37	53	31	43	2	1.1	.2	1.0	3.0	70	10.9	84	86	63	0	0	1	1
MI ALPENA	44	25	54	21	35	1	1.4	.9	.4	2.9	142	5.5	107	97	57	0	7	4	0
DETROIT	55	37	67	29	46	5	.4	-3	.2	1.2	44	4.6	72	85	49	0	0	4	0
FLINT	53	32	63	25	43	4	.3	-3	.2	1.5	64	4.3	80	87	43	0	2	5	0
GRAND RAPIDS	50	31	60	24	41	4	1.7	1.0	.6	2.7	94	6.2	97	93	53	0	5	2	1
HOUGHTON LAKE	45	28	57	22	37	2	.9	.4	.7	2.4	115	5.2	107	90	53	0	5	5	2
LANSING	52	32	61	24	42	2	.8	.2	.3	1.8	69	4.5	78	93	50	0	5	4	0
MARQUETTE	41	22	53	17	31	-2	.3	-3	.2	3.7	162	8.6	155	93	53	0	7	2	0
MUSKEGON	52	31	61	26	42	3	1.7	1.0	.9	2.2	79	6.7	99	90	46	0	4	4	0
SAULT ST. MARIE	41	21	51	12	31	0	1.0	.5	.4	2.9	135	7.0	115	93	53	0	7	5	1
MN ALEXANDRIA	45	24	55	21	35	2	.3	0	.3	2.5	186	3.7	127	91	45	0	7	2	0
DULUTH	36	21	44	16	29	-2	.2	-3	.1	2.6	137	3.5	88	92	56	0	7	3	0
INT'L FALLS	39	13	57	-1	26	-3	.2	-1	.2	1.8	148	2.3	85	90	36	0	7	2	0
MINNEAPOLIS	50	29	59	21	40	3	.4	-1	.3	1.6	89	3.3	94	84	37	0	7	2	0
ROCHESTER	49	28	53	17	38	2	.7	.2	.4	1.8	91	3.2	91	87	42	0	4	2	0
MS GREENWOOD	75	53	82	40	64	5	1.6	.2	.7	4.7	70	9.0	70	87	42	0	5	2	0
JACKSON	77	53	84	41	65	5	5.0	3.7	2.0	9.5	159	15.6	102	97	55	0	0	5	1
MERIDIAN	77	52	83	38	65	5	3.3	1.8	1.9	6.9	98	13.8	82	97	50	0	0	5	3
MO CAPE GIRARDEAU	68	45	78	32	56	1	2.1	1.0	1.4	4.2	79	9.6	84	88	36	0	1	4	1
COLUMBIA	64	40	81	28	52	3	2.6	1.7	1.1	4.7	130	8.5	116	94	54	0	3	4	3
KANSAS CITY	60	38	77	30	49	0	2.5	1.8	1.7	3.2	112	5.3	100	86	47	0	1	5	1
SAINT LOUIS	66	42	81	31	54	5	1.8	1.0	1.6	5.0	141	10.5	141	87	46	0	1	4	3
SPRINGFIELD	66	41	76	25	54	4	4.7	3.8	2.1	7.9	210	11.4	150	92	49	0	2	4	1
MT BILLINGS	53	26	72	19	39	1	.1	-3	.1	.7	57	1.8	65	77	27	0	6	7	0
GLASGOW	51	22	73	11	36	1	T	-1	T	.2	65	.9	91	75	26	0	7	3	0
GREAT FALLS	48	28	63	21	38	2	.1	-1	.1	.4	44	1.7	62	79	35	0	5	4	0
HAVRE	49	24	67	15	36	1	T	-2	T	.5	76	1.0	59	76	38	0	5	0	0
HELENA	49	25	64	17	37	1	.3	.1	.1	.5	59	1.2	65	88	31	0	7	4	0
KALISPELL	46	30	59	21	38	2	.1	-1	0	.8	88	2.6	73	86	43	0	5	2	0
MILES CITY	53	25	73	16	39	2	T	-2	T	.3	40	.7	36	66	23	0	6	1	0
MISSOULA	47	27	62	22	37	-2	.2	0	.1	1.0	120	2.4	77	92	43	0	6	3	0
NE GRAND ISLAND	59	35	81	27	47	5	1.1	.7	1.1	1.2	72	2.7	89	73	37	0	2	2	1
LINCOLN	61	36	79	26	48	5	.8	.3	.4	.9	43	1.5	40	70	30	0	2	3	0
NORFOLK	59	34	81	29	47	6	.9	.5	.9	1.1	66	2.3	77	72	36	0	2	2	0
NORTH PLATTE	52	29	84	21	40	0	1.3	.9	1.2	1.6	132	2.3	109	85	40	0	5	3	1
OMAHA	61	36	79	31	48	4	.9	.4	.6	1.0	48	1.6	43	70	41	0	2	2	1
SCOTTSBLUFF	53	23	82	14	38	-2	.1	-2	.1	1.1	106	2.0	106	83	32	0	7	1	0
VALENTINE	54	26	85	15	40	1	.7	.4	.7	1.2	126	2.6	161	76	26	0	5	1	1
NV ELY	51	18	66	13	34	-2	T	-2	T	.3	30	1.6	68	66	21	0	7	0	0
LAS VEGAS	72	44	88	34	58	-1	0	0	0	0	.9	67	26	11	0	0	0	0	0
RENO	60	26	72	21	43	0	0	0	0	0	.5	18	58	14	0	6	0	0	0
WINNEMUCCA	56	20	72	14	38	-3	0	0	0	.1	14	1.5	67	65	15	0	7	1	0
NH CONCORD	57	28	66	25	42	5	.3	-4	.3	1.3	42	5.5	65	87	34	0	6	0	0
NJ ATLANTIC CITY	58	39	65	34	49	3	.1	-8	.1	2.3	54	9.1	81	96	45	0	0	1	0
NM ALBUQUERQUE	62	33	82	26	47	-3	1.1	1.0	.6	1.4	265	1.6	124	58	20	0	5	2	2
CLOVIS	65	37	80	31	51	0	.6	.4	.4	.7	126	1.2	82	73	29	0	1	3	0
ROSWELL	69	37	82	27	53	-2	T	-1	T	T	10	1.7	143	77	21	0	2	1	0
NY ALBANY	54	33	64	24	43	3	.3	-4	.2	1.7	53	6.7	84	95	45	0	3	2	0
BINGHAMTON	55	34	69	28	44	7	.4	-3	.3	1.9	62	7.3	91	90	45	0	4	3	0
BUFFALO	56	33	78	29	45	6	.1	-6	.1	3.0	95	8.7	100	91	46	0	3	3	0
NEW YORK	58	42	66	40	50	4	T	-9	T	2.0	46	8.0	76	84	36	0	0	1	0
ROCHESTER	56	30	73	26	43	4	.1	-5	0	1.6	61	4.5	61	90	49	0	6	2	0
SYRACUSE	57	33	72	29	45	6	.3	-5	.2	1.8	55	5.5	63	88	45	0	4	2	0
NC ASHEVILLE	68	40	73	27	54	3	.1	-9	0	1.4	27	6.0	51	90	42	0	3	2	0
CHARLOTTE	74	49	79	38	62	6	0	-1.0	0	3.3	65	7.8	62	84	28	0	0	0	0
GREENSBORO	73	45	78	32	59	6	0	-8	0	1.9	46	5.5	50	88	33	0	1	0	0
HATTERAS	70	48	76	41	59	4	.1	-7	.1	3.1	74	12.9	98	98	47	0	0	1	0
NEW BERN	75	46	80	41	61	4	T	-7	T	3.3	86	10.5	88	93	36	0	0	0	0
RALEIGH	74	47	80	34	61	6	0	-8	0	1.8	45	7.3	67	91	31	0	0	0	0
WILMINGTON	73	47	78	39	60	2	T	-8	T	4.1	96	11.5	100	96	43	0	0	0	0
ND BISMARCK	52	23	67	13	38	4	T	-2	T	.9	118	2.0	116	75	25	0	7	0	0
FARGO	46	24	61	20	35	2	.1	-2	.1	1.0	109	2.9	152	89	39	0	7	1	0
GRAND FORKS	44	25	57	20	34	3	.2	-1	.2	.9	105	1.7	80	90	49	0	7	1	0
WILLISTON	51	22	74	14	36	3	T	-2	T	.6	100	1.7	104	77	25	0	6	2	0
OH AKRON-CANTON	60	38	76	27	49	7	T	-8	T	2.1	59	6.0	71	85	46	0	2	2	0
CINCINNATI	65	44	77	28	55	7	.5	-4	.2	3.8	90	11.4	113	83	47	0	2	4	0
CLEVELAND	59	36	77	25	48	5	.1	-6	.1	2.3	72	6.2	78	87	49	0	3	3	0
COLUMBUS	63	41	77	26	52	6	.1	-7	.1	2.6	76	9.0	107	83	47	0	2	4	0

Based on 1981-80 normals

Weather Data for the Week Ending April 2, 1988

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	TEMPERATURE °F		PRECIPITATION		
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE	
DAYTON	63	41	72	30	52	7	.3	-.4	.2	3.2	97	8.5	106	84	52	0	2	3	0	
TOLEDO	56	34	72	25	45	4	.1	-.6		1.7	62	4.2	64	92	51	0	4	3	0	
YOUNGSTOWN	61	36	77	24	49	7	.1	-.7		1.7	47	5.3	63	88	44	0	3	3	0	
OK OKLAHOMA CITY	63	43	77	35	53	-1	5.1	4.6	2.8	8.7	389	10.4	227	87	47	0	0	0	0	
TULSA	63	44	78	32	53	-2	4.1	3.2	1.7	8.1	238	10.3	156	90	45	0	1	4	3	
OR ASTORIA	52	40	57	35	46	1	1.9	-.9	.9	8.9	117	19.0	72	96	67	0	0	6	3	
BURNS	50	22	69	14	36	-4	.1	-.1	0	.6	59	1.9	47	83	26	0	6	2	1	
MEDFORD	63	34	78	26	49	-1	.3	-.3	0	1.0	90	3.0	75	84	41	0	4	2	0	
PENDLETON	56	35	68	28	45	1	.1	-.1	.8	4.0	106	10.1	72	96	56	0	3	2	0	
PORTLAND	57	40	65	35	48	-1	.3	-.2	.2	1.0	90	3.0	75	84	41	0	4	2	0	
SALEM	57	38	67	33	47	1	.1	-.1	.6	4.0	89	11.5	71	94	52	0	0	4	1	
PA ALLENTOWN	60	41	68	36	51	6	.1	-.8	0	2.6	63	8.6	82	82	40	0	0	4	1	
ERIE	56	34	78	30	45	5	.1	-.7	0	2.5	80	6.5	82	82	40	0	0	3	0	
HARRISBURG	62	42	73	35	52	6	.1	-.8	0	2.0	53	7.4	78	83	44	0	0	3	0	
PHILADELPHIA	65	43	71	39	54	6	.1	-.9	0	2.3	55	9.1	89	88	41	0	0	1	0	
PITTSBURGH	63	40	79	27	52	7	.1	-.8	0	2.6	68	7.5	83	90	49	0	2	2	0	
SCRANTON	58	40	67	34	49	7	.1	-.5	.1	2.1	73	5.8	81	81	36	0	2	2	0	
RI PROVIDENCE	57	35	62	33	46	4	.4	-.6	.4	4.1	90	12.1	97	89	38	0	0	0	0	
SC CHARLESTON	77	51	79	43	64	4	.4	-.8	0	1.8	39	6.9	61	98	37	0	0	2	0	
COLUMBIA	79	44	83	34	61	2	.7	-.1	0	2.0	36	8.1	58	95	30	0	0	0	0	
FLORENCE	79	47	83	38	63	4	.1	-.8	.1	2.8	63	6.8	60	95	28	0	0	1	0	
GREENVILLE	73	47	77	37	60	4	.1	-.3	0	3.7	58	9.4	62	80	39	0	0	0	0	
SD ABERDEEN	53	22	72	14	38	2	0	-.3	0	.4	33	1.0	46	75	25	0	7	1	0	
HURON	54	28	76	19	41	3	.8	-.4	.8	1.6	122	2.6	101	80	29	0	6	2	0	
RAPID CITY	54	24	65	20	39	1	.1	-.3	.1	.5	46	1.0	48	80	29	0	6	2	1	
SIOUX FALLS	55	30	77	25	43	3	.2	-.7	1.0	1.6	95	3.4	107	76	25	0	6	0	0	
TN CHATTANOOGA	73	50	80	34	61	6	.7	-.6	.5	2.4	35	11.3	68	90	38	0	2	1	0	
KNOXVILLE	72	46	81	30	59	5	.4	-.7	.3	2.7	46	9.9	67	92	40	0	2	3	0	
MEMPHIS	73	50	81	38	61	4	2.5	1.2	1.7	4.5	76	12.2	82	86	47	0	0	5	1	
NASHVILLE	68	47	80	31	58	3	1.4	-.2	.9	3.1	52	8.8	61	87	55	0	1	5	1	
TX ABILENE	74	46	85	35	60	0	.5	-.4	.5	1.7	189	2.1	105	86	40	0	3	3	0	
AMARILLO	58	35	80	30	46	-5	.3	-.2	.1	2.8	151	3.4	57	92	47	0	0	3	0	
AUSTIN	76	54	84	42	65	2	1.2	-.5	.9	5.6	170	13.9	119	96	61	0	0	4	1	
BRAUNMONT	75	57	81	49	66	2	.3	-.2	.1	2.8	151	3.4	57	92	47	0	0	3	0	
BROWNSVILLE	80	65	86	53	73	1	1.1	-.9	1.1	1.4	249	6.9	207	98	64	0	0	4	1	
CORPUS CHRISTI	77	59	87	49	68	-1	.5	-.2	.3	.9	105	2.9	73	97	60	0	0	1	1	
DEL RIO	79	55	88	41	67	0	.1	-.2	.1	.2	20	.4	18	70	24	0	0	3	0	
EL PASO	73	42	86	28	58	-2	0	-.1	0	.2	31	1.1	92	40	9	0	2	0	0	
FORT WORTH	72	48	81	35	60	-1	1.1	.4	.6	2.5	94	4.6	73	87	49	0	2	4	1	
GALVESTON	71	61	75	50	66	1	1.5	1.0	1.0	4.4	194	8.3	108	98	71	0	0	3	2	
HOUSTON	76	56	81	47	66	0	1.9	1.2	1.7	4.9	171	7.5	77	95	58	0	0	3	1	
LUBBOCK	68	39	86	31	54	-1	.7	.5	.5	1.7	184	2.4	128	90	33	0	1	3	0	
MIDLAND	76	42	87	33	59	0	.6	-.4	.6	.7	142	1.2	80	80	23	0	1	1	0	
SAN ANGELO	78	45	86	33	61	-1	0	-.3	0	.7	80	1.1	48	80	24	0	0	1	0	
SAN ANTONIO	78	54	85	43	66	0	.1	-.3	.1	.9	58	2.2	44	87	41	0	0	0	0	
VICTORIA	75	58	80	47	67	-1	.1	0	.2	1.8	120	4.6	81	99	66	0	0	3	0	
WACO	74	50	84	38	62	0	1.2	.6	1.0	3.3	150	5.4	91	91	51	0	0	4	0	
WICHITA FALLS	72	43	90	30	58	-1	1.0	.5	.7	5.5	278	7.3	186	88	38	1	1	2	1	
UT BLANDING	54	24	72	13	39	-4	.4	-.1	.3	.1	96	2.7	104	80	21	0	7	2	0	
CEDAR CITY	54	22	70	12	38	-4	.4	-.1	.3	.9	50	2.1	47	73	26	0	6	1	0	
SALT LAKE CITY	53	29	66	25	41	-3	.1	-.3	.2	1.6	65	3.9	66	89	40	0	3	2	0	
VT BURLINGTON	53	31	64	23	42	6	.3	-.3	.2	2.1	53	7.9	72	91	41	0	0	0	0	
VA NORFOLK	72	47	80	41	59	6	.1	-.8	.1	2.0	53	7.6	74	93	35	0	1	0	0	
RICHMOND	72	45	81	31	59	6	.1	-.7	.1	2.1	53	7.9	72	91	41	0	0	0	0	
ROANOKE	72	43	77	33	58	7	.1	-.7	.1	2.0	53	7.6	74	93	35	0	1	0	0	
WA QUILLAYUTE	50	39	53	32	45	1	.2	-.5	.2	1.1	29	4.1	41	87	36	0	0	1	0	
SEATTLE-TACOMA	53	39	58	34	46	0	4.1	1.8	2.4	15.6	125	33.3	85	98	70	0	1	6	2	
SPOKANE	50	31	62	23	41	-1	1.1	.4	.7	4.5	120	9.3	66	97	57	0	0	4	1	
YAKIMA	59	29	70	21	44	-1	.6	-.3	.5	2.0	144	4.1	75	88	44	0	5	2	0	
WV BECKLEY	66	45	74	26	55	-1	.1	-.1	.2	.2	32	.9	32	83	30	0	6	1	0	
CHARLESTON	70	45	81	28	58	8	1.0	-.1	.9	2.6	62	6.5	59	79	37	0	2	3	1	
HUNTINGTON	69	46	83	29	58	7	.3	-.6	.2	2.7	65	6.9	63	87	34	0	1	2	0	
PARKERSBURG	66	44	80	26	55	7	.1	-.7	.1	3.1	72	7.5	72	83	37	0	1	4	0	
WI GREEN BAY	48	30	54	25	39	3	1.4	.9	.7	3.7	97	6.5	69	78	35	0	2	2	0	
LACROSSE	53	32	60	21	43	4	1.2	.6	.6	1.8	87	4.3	100	93	44	0	5	3	2	
MADISON	53	30	55	20	41	3	1.4	.8	.8	2.5	116	3.6	91	85	31	0	4	2	2	
MILWAUKEE	48	31	55	26	40	1	1.8	.8	.8	1.8	78	4.1	91	90	42	0	4	2	2	
WAUSAU	50	28	57	23	39	4	1.8	1.1	.8	2.1	75	6.7	114	98	64	0	5	3	2	
WY CASPER	48	19	65	14	34	-3	1.0	.5	.6	2.2	104	2.6	65	91	43	0	6	2	1	
CHEYENNE	43	22	69	11	32	-4	.2	-.1	.1	.7	66	1.8	84	79	25	0	7	0	0	
LANDER	48	22	64	18	35	-1	.2	-.1	.1	1.3	127	2.5	135	78	34	0	6	2	0	
SHERIDAN	52	21	72	13	37	0	.1	-.3	.1	1.4	110	1.8	75	64	25	0	7	1	0	
PR SAN JUAN	82	71	83	70	76	-2	.8	-.2	.6	1.7	52	2.1	76	85	30	0	6	1	0	

Based on 1961-80 normals

(Continued from front cover)

SATURDAY...A cold front moving onshore in the Pacific Northwest produced rain, mountain snow, and strong winds in western Washington and western

Oregon. Showers and thunderstorms were scattered throughout upper and middle Mississippi Valley, Indiana, and lower Michigan. Snow ended over the central Great Plains.

## National Agricultural Summary

March 28 to April 3, 1988

**HIGHLIGHTS:** Precipitation slowed fieldwork in the southern and central Great Plains, Delta, and Corn Belt. Below-normal temperatures slowed small grain growth in the southern and west-central Great Plains. Soil moisture was mostly adequate. Snow and rain provided much needed moisture in the central Great Plains. Fieldwork averaged 5 to 6 days in the Southeast, and less than 4 days in the Delta, Corn Belt, and central Great Plains.

Winter wheat was mostly good to fair. Corn planting was underway as far north as Kansas. Planting was underway in Missouri and Kentucky. Cotton planting progressed rapidly in California and Arizona. Rice planting continued lagging behind normal in Texas and Louisiana. Livestock was mostly good.

**SMALL GRAINS:** Winter wheat and small grains were mostly good to fair except in the Delta where condition was fair to good. Crop condition varied in the central and northern Great Plains, ranging from poor to good. Snow and below-normal temperatures slowed small grain growth in the west central and southern Great Plains but provided much needed moisture. Above-normal temperatures promoted growth in most of the eastern half of the Nation and along the West Coast.

In Texas, high winds further depleted available soil moisture in dryland small grain fields. Small grains were heading in central and southern Texas, but additional moisture is needed. Irrigated fields progressed well. Precipitation and near-normal temperatures enhanced small grain prospects in Oklahoma. Moderate hail and excessive water caused some damage in central areas.

Kansas wheat began jointing. Wind damage was evident but was light to moderate in the western third of the State. However, wind damage was severe in some counties. Wheat streak mosaic, wheat spindle streak, and soil-borne mosaic diseases were present in the State. Oat and barley seeding neared completion. Nebraska's wheat was good to fair. Subsoil moisture improved, but topsoil moisture was dry with wind erosion in most areas. Winterkill and Russian aphids were noticeable in western Kansas. Wheat was fair to good in South Dakota. Spring wheat seeding began in Colorado. Montana's wheat was mostly greening.

In Washington, cooler temperatures slowed spring seeded crop growth and reduced Russian wheat aphid population. Warmer-than-normal soil temperatures produced good root development in eastern Oregon's dryland winter wheat. Idaho's spring wheat seeding reached 16 percent (%) completion equaling the average. Winter wheat was good. Small grains developed rapidly in California. Maturity was earlier than usual and many fields began heading. Low moisture stressed dryland small grain in most areas. Wheat and barley progressed well throughout Arizona. Frost damaged some small grain in south-central areas.

Warmer temperatures pushed small grain development to near normal in most Southeast and Delta States. Heading was 2 percentage points ahead of normal in Alabama but trailed 17 points behind normal in Louisiana. Jointing was 2 and 5 points behind normal in Mississippi and Georgia, respectively.

**OTHER CROPS:** Corn planting moved as far north as Kansas and was underway in Missouri. Precipitation slowed planting in the Delta. Alabama seedings were 54% finished, compared with 42%

normally. Thirty-four percent of Georgia's acreage was seeded but trailed 9 points behind normal. In South Carolina, seeding was 13 points above average and more than doubled the 1987 pace. North Carolina's acreage was 17 percent seeded, compared with 22% normally. Corn planting surged 10 points ahead of normal to 62% completion in Texas. Some freeze-damaged corn was replanted along the upper Coast. Corn planting was 19% finished in Louisiana, compared with 12% in 1987 and 51% average.

Texas cotton seeding progressed well in the Blackland and central areas. Planting was in full swing along the Upper Coast as weather permitted. Seeding was 10% finished, 3 points above the average. Cotton seeding was in full swing in California with ideal weather conditions. Early seeded fields germinated well. Arizona's cotton planting advanced to 35% completion. Planting was underway in New Mexico. Cotton seedbed preparation continued ahead of normal in Oklahoma.

Rice planting reached 24% completion in Texas, 3 points ahead of 1987 but 4 points below average. Louisiana's planting lagged 15 points behind normal at 6% completion. Preparations for seeding rice progressed well in California.

Sorghum planting in Texas was 49% complete, 3 points above average. Planting drew to a close in the Blacklands and central areas but should begin soon in the Plains. Seedbed preparation progressed ahead of normal in Oklahoma.

Georgia tobacco was fair to good at 30% transplanted. Transplanting was running 4 points behind normal. South Carolina tobacco was 4% transplanted. Tobacco beds were 75% seeded in Kentucky and 84% seeded in Tennessee.

**FRUITS AND NUTS:** Georgia peaches bloomed heavily. Freeze damage has been minimal thus far. Early variety peaches suffered major freeze damage in Coastal Plains region of South Carolina. Early budding peaches suffered heavy losses in Texas. Peaches began blooming in southern New Jersey.

In Florida, citrus trees began petal drop, but most were still in the open bloom stage. Grapefruit movement slowed but valencia orange harvest increased. Texas citrus groves were good but irrigation was heavy. Harvest was drawing to a close in many groves. Pecan trees budded out in many areas. In California, wind caused sizable almond drop. Avocado and citrus harvests were ongoing. Apple trees reached the bloom stage in eastern Arizona. Valencia orange and grapefruit harvests and shipping continued in central and western Arizona.

**VEGETABLES:** Irrigation was active in Florida's vegetable producing areas. Crops were mostly good. Spring planting was finished in most areas. Vegetable harvest increased seasonally. Cooler weather slowed vegetable growth and progress in east Texas. Wet conditions slowed planting. California vegetable harvest consisted mostly of carrots, broccoli, celery, lettuce, and strawberries. Head, leaf, and romaine lettuce and cauliflower were the major crops harvested in western Arizona.

**PASTURES AND LIVESTOCK:** Pastures showed signs of improving in the eastern half of the Nation. Livestock was mostly colder and temperatures caused some problem in the central Great Plains.

## 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 totals mostly over 1.00 in. west, local amounts near 3.00 in.; less than 0.33 in. east central, wiregrass areas; 3.00 in. near coast. Temperatures averaged 6 to 10° above normal.

Days suitable for fieldwork 5.1. Soil moisture 24% short, 67% adequate, 9% surplus. Acreage intended for spring planting 58% prepared, 43% 1987. Corn 54% planted, 47% 1987, 42% avg. Small amount sorghum, peanuts planted. Winter wheat 15% headed, 20% 1987, 13% avg.; 55% fair, 45% good. Livestock mostly fair; pastures fair to poor. Pasture feed supplies 61% short, 39% adequate. Primary activities: Land preparation; planting corn, potatoes, watermelons, vegetables; applying fertilizer, lime, pre-plant herbicides to cropland; spraying fruit, pecan trees; marketing catfish, building fish ponds; topdressing small grains; routine care livestock, poultry.

**ARIZONA:** Cold storm system over Great Basin 27th. Winds 20 to 40 mph 28th with blowing dust. Snow flurries north. Temperatures 28th, 8 to 16° lower south; 15 to 30° north. Low pressure system moved into State 30th. Snow flurries north. Scattered light snow showers central, northeast 31st. Warming trend 1st, 2nd. Average temperatures 4° below normal to 4° above.

Cotton planting advanced throughout State, 35% planted by weekend. Strong winds 28th, 29th made fieldwork difficult west. Alfalfa harvest continued west. Strong winds caused some leaf loss during curing. Spraying for aphids continued northwest. Central crop mostly good. Some growers gearing up for first cuttings. Wheat, barley stands progressed well throughout State. Both crops excellent west; 37% heading stage. Irrigation continued central where 30% heading stage. South central suffered some frost damage, 30% heading stage. Irrigation continued east; 60% jointing stage. Southeast 80% jointing, 10% heading. Corn plantings progressed rapidly central, continued southeast. Western area head lettuce harvest, shipping major crop activity along with leaf, romaine lettuce, cauliflower shipments. Other mixed vegetables also shipped. Artichokes shipped Parker-Poston area. Melons continued good progress. Central head lettuce harvest continued Harquahala-Aguila area. Salt River Valley, Marana-Eloy producers expecting increased harvest, shipping head lettuce. Assorted vegetables also harvested in valley. Valencia orange, grapefruit harvest, shipping continued central, west. Apple trees bloom stage east; some frost protection taken. Ranges need rain; very dry conditions throughout State. Little moisture received last weeks of March. Desert, high elevation ranges 80% of normal; mid-elevation ranges 60% of normal. Soil moisture short statewide. Feed conditions adequate due to ideal warm growing conditions January, February, March. Cattle, calves fair to good throughout State. Sheep, lambs fair to good. Insect damage minimal.

**ARKANSAS:** Mild, temperatures slightly above normal. Temperature extremes 25°; 85°. Rainfall most days all sections with amounts moderate to occasionally heavy. Rainfall totals 0.89 to 5.69 in.

Land preparation slowed by rains. Fruit trees good. Tomato setting underway around Warren, Monticello. Watching for diseases in wheat.

Pastures doing well with recent rains, warm weather. Livestock good.

**CALIFORNIA:** High pressure over west coast remained well entrenched. Results much higher than normal temperatures, no rain.

Warm, dry weather, rapid progress field activities. Small grain development rapid. Maturity early, many fields heading. Dryland grain low moisture stress most areas, small grain crop expected. Second irrigation irrigated grain. Preparations seeding rice full swing. Cotton seeding full swing, ideal conditions. Good germination early fields. Seeding new sugarbeets, harvesting overwintered, good progress. Active control ground squirrels alfalfa, pastures. Hay, green-chop harvests increased, alfalfa, forage mix, small grains. Seeding field corn more active. Fertilizing, weed control, thinning, fungicide and pesticide application, irrigation active. Avocado, citrus harvest ongoing. Wind caused sizable almond drop. Strong, dry winds affected vegetable crops. White, crooked necks asparagus. Young tomatoes needed sprinkling. Artichokes heavy Salinas. Asparagus heavy, variable quality Sacramento Valley, Selma District, Delta. Broccoli heavy Coachella; harvest active Westside. Carrots harvested Riverside, growing well Westside. Celery harvest continued south coast. Lettuce movement light, good quality Riverside, central San Joaquin Valley. Potato moderate sheds full time north. Potato harvest continued Hemet. Strawberry harvest full swing south coast, gaining momentum central coast. Fresh market tomato plants transplanted Westside. Livestock fair to good. Supplemental feeding heavy Redding, continued other areas. Cattle moved to market earlier as feed supplies short. Rangeland, pasture, water supplies depleted by warm, dry weather. Much rangeland northern areas past help. Ranchers looking hard for irrigated pasture, even surrounding States.

**COLORADO:** Winter storm covered most of State 30th to 31st. Precipitation 0.25 to 0.99 in. Snowfall 2 to 16 in. Average temperatures 1 to 3° below normal.

Days suitable for fieldwork 3.6. Soil moisture 11% short, 89% adequate. Winter wheat good. Spring wheat 5% seeded, 1% emerged. Barley 20% seeded, 1% emerged. Oats 19% seeded, 1% emerged. Onions 10% planted. Sugarbeets 10% planted. Livestock good. Cows calved 52%. Ewes lambed 45%. Ranges, pastures mostly fair.

**FLORIDA:** Showers early week south, extreme western Panhandle. Spotty, light rain rest of week. Temperatures slightly above normal. Most rainfall amounts less than 0.25 in. but some locations over western part of Panhandle received 2.00 to 3.00 in., 2nd.

Soil moisture mostly adequate; scattered areas short. Corn planting active. Early fields up; condition good. Tobacco transplanting active. Winter wheat heading. Land preparation peanuts active. Sugarcane harvest completed. Pastures improved with warm weather, mostly adequate moisture statewide. Cattle fair to mostly good. Open bloom continued on citrus, some petal drop. Irrigation being applied. New foliage all areas most trees. Early orange harvest completed. Valencia harvest increased. Grapefruit movement active but slowed somewhat. Temple, honey tangerine harvest virtually completed. Vegetable producing areas experienced mild weather, minimal rain, entire week. Irrigation active. Condition

most crops generally good. Spring planting completed most areas. Total volume increased seasonally. Volume leaders: Tomatoes, potatoes, celery, peppers, cabbage, strawberries. Also available good volume carrots, snap beans, cucumbers, lettuce, squash, sweet corn, radishes, escarole, endive. West central strawberry volume peaking.

**GEORGIA:** Temperatures 7 to 9° above normal north, 5 to 9° above normal central, south. Rain over 0.50 in. north, 1.00 to 2.00 in. northeast. Central, south under 0.50 in., under 0.10 in. east, southeast. Rainfall since January 1st, 4.00 to 9.00 in. below normal north, 1.00 to 3.00 in. below normal central. South, extreme southeast 1.00 to 5.00 in. above normal.

Days suitable for fieldwork 5.8. Soil moisture 4% very short, 54% short, 40% adequate, 2% surplus. Corn planting rapid pace, now ahead of average. Corn 4% poor, 14% fair, 73% good, 9% excellent; 55% planted, 35% 1987, 54% avg. Cotton 0% planted, 0% 1987, 1% avg. Peanuts 0% planted, 1% avg. Tobacco 8% fair, 79% good, 13% excellent; 30% transplanted, 12% 1987, 34% avg. Watermelon planting very active, now ahead of average. Wheat disease showing up west central, south. Dry east central. Wheat 17% fair, 70% good, 13% excellent; 79% jointing, 81% 1987, 83% avg.; 19% boot, 31% 1987, 41% avg.; 3% headed, 5% 1987, 16% avg. Other small grains improved. Apples good; bloom way behind normal. Peaches heavy bloom. Little cold damage from 2 weeks ago evident; 96% blooming, 95% 1987, 95% avg. Pasture liming, fertilizing active. Condition slightly improved. Livestock fair to mostly good.

**HAWAII:** Variable weather. Frequent showers, sometimes heavy at start, end of week. Farming slowed, some flooding. Middle of week, mostly dry. Record high temperatures 4th, 5th. Temperatures upper 60s to upper 80s. Rainfall 0.20 to 8.00 in. Variable winds 5 to 20 mph.

Days suitable for fieldwork 7.0. Papaya production light. Banana production steady. Head cabbage output heavy, good quality. Chinese cabbage production moderate to heavy, good quality. Shipments to west coast continued. Ginger root harvesting slowed, preparations for next season's crop intensified. Head lettuce yields steady, disease lessened.

**IDAHO:** Precipitation above normal north, below normal rest. Temperatures below normal.

Days suitable for fieldwork 3.0. Soil moisture 12% very short, 50% short, 37% adequate. Irrigation water supply fair, good. Spring wheat 16% seeded, 20% 1987, 16% avg. Emergence limited. Winter wheat good. Barley 13% seeded, 16% 1987, 12% avg.; 2% emerged. Sugarbeets 28% planted, 44% 1987, 28% avg. Onions 50% planted, 56% 1987, 48% avg. Dry peas 3% planted, 3% 1987, 3% avg. Oat, potato seeding underway. Fruit trees budding. Calving 77%, 77% 1987, 77% avg. Lambing 94%, 89% 1987, 84% avg. Livestock; hay, roughage supplies good.

**ILLINOIS:** Temperatures near normal, mid 40s north, upper 40s to lower 50s central, mid to upper 50s south. Precipitation above normal, generally 1.50 to 3.25 in. north; 1.50 to 2.50 in. central, south.

Winter wheat mostly good, early growth excellent. Livestock good.

**INDIANA:** Temperatures averaged 2 to 6° above normal. Lows averaged mid 30s to around 40s. Highs averaged mid 50s to mid 60s. Precipitation above normal. Totals 0.10 in. northeast to 1.50 in. central.

Days suitable for fieldwork 1.5. Topsoil moisture 4% short, 52% adequate, 44% surplus. Subsoil moisture 15% short, 65% adequate, 20% surplus. Spring cropland 70% tilled, 70% 1987, 57% avg. Wheat 1% very poor, 7% poor, 50% fair, 40% good, 2% excellent. Wheat 4 in. high, 4 in. 1987, 4 in. avg. Wheat 2% jointed, 2% 1987, 3% avg. Oats 25% seeded, 55% 1987, 35% avg. Clover 50% seeded, 65% 1987, 50% avg. Pastures 11% very poor, 22% poor, 46% fair, 21% good.

**IOWA:** Temperatures averaged 5° above normal. Precipitation normal amounts. Precipitation amounts 0.75 to 1.25 in. 28th to 29th, 1st to 3rd. Temperature extremes 17° Atlantic 30th to 73° Burlington 2nd.

Days suitable for fieldwork 3.9. Topsoil moisture 45% short, 54% adequate, 1% surplus; subsoil moisture 21% short, 78% adequate, 1% surplus. Winter wheat 5% poor, 44% fair, 43% good, 8% excellent. Oats 25% sown, 8% 1987, 14% avg. Seedbed preparation 50%; fertilizer application 38%. Livestock mostly good to excellent. Good weather made weight gains excellent. Some TGE indicated in hogs across State.

**KANSAS:** Temperatures near normal, 41° northwest to 53° south central. Heavy precipitation southeast 3.60 in.; east central, 2.77 in., local amounts 5.00 to 6.50 in. Other areas 0.50 to 1.50 in. average except west central 0.04 in.

Days suitable for fieldwork 4.5. Topsoil moisture 61% short, 24% adequate, 15% surplus. Subsoil 34% short, 56% adequate, 10% surplus. Wheat received much needed moisture, rain, snow, weeks end. Wheat 3% very poor, 20% poor, 26% fair, 39% good, 12% excellent. Prior to weekend moisture, wind damage evident, light to moderate western third, some counties severe. Freeze damage none to light. Wheat 2% jointed, 25% 1987, 5% avg. Russian wheat aphid light levels western third. Wheat streak mosaic present most State, mostly light levels, affected plants chlorotic. Wheat spindle streak central, south central. Soil borne mosaic, leaf rust present also. Oats, barley 90% seeded. Preparing ground for spring planting where moisture conditions permit. Corn planting underway some locations. Range, pasture good statewide; best conditions east, worst southwest, northwest. Pastures supplying 25% cattle roughage requirements. Feed supply adequate. Calving active.

**KENTUCKY:** Wet, mild pattern. Morning lows ranged 30s, 40s first half; 60s over weekend. High temperatures 70s early, again over weekend. Rain 1.50 to 2.00 in. west, north; 0.50 to 0.75 in. southeast.

Days suitable for fieldwork 3.4. Soil moisture 2% very short, 38% short, 53% adequate, 7% surplus. Tobacco beds 75% seeded, 82% 1987, 71% avg. Wheat 2% very poor, 3% poor, 30% fair, 61% good, 4% excellent. Winter loss moderate, light main grain producing area. Winter legumes 10% damaged. Pastures fair; 25% roughage from pastures. Newborn calves generally good.

**LOUISIANA:** Temperatures 1 to 4° above normal. Temperature extremes 39°; 85°. Rainfall averaged 2.99 to 8.85 in.

Days suitable for fieldwork 1.8. Soil moisture 7% adequate, 93% surplus. Spring plowing 31%, 22% 1987, 48% avg. Corn 19% planted, 12% 1987, 51% avg.; 9% emerged, 6% 1987, 40% avg. Rice 6% planted, 16% 1987, 21% avg.; 3% emerged, 10% 1987, 12% avg. Winter wheat fair to good; 9% headed, 22% 1987, 28% avg. Pasture, livestock, sugarcane fair to good. Vegetables fair. Harvesting strawberries. Main activities: Spring plowing; addressing pastures, wheat; harvesting crawfish;

water leveling rice fields; planting corn, rice. Most work halted after heavy rains midweek.

**MARYLAND & DELAWARE:** Maryland: Average temperature 54°, normal 48°. Lowest temperature 21°, highest temperature 80°.

Precipitation averaged 1.49 in. through 1st. Many areas needed additional moisture. Early farmers in fields.

Delaware: Average temperature 53°, normal 48°. Precipitation averaged 1.70 in. through 1st. Some areas needed additional moisture. Early farmers in fields.

**MICHIGAN:** Temperatures ranged 1 to 4° above normal. Temperature extremes 12°; 67°. Precipitation ranged 0.26 to 1.70 in. across State.

Winter wheat good. Most fields too wet for fieldwork. Activities: Marketing crops, livestock; purchasing seed, fertilizer; preparing machinery for planting, pruning fruit trees. Calving, lambing active. Feed supplies excellent. Livestock aided by mild weather. Livestock excellent.

**MINNESOTA:** Temperatures averaged near normal to 5° above normal for State. Extremes -1°; 73°. Precipitation averaged 0.22 in. below normal northwest, near normal to 0.54 in. above normal elsewhere. Precipitation totals averaged 0.05 to 0.96 in. for State. Greatest weekly total 1.37 in. Snowfall averaged trace or less. Snow depth weeks end averaged 2 in. north central, northeast; trace or less elsewhere.

Much needed rain received statewide. Livestock remained good. Field activities underway southwest, other southern areas by weekend if no more precipitation.

**MISSISSIPPI:** Average temperatures 3 to 6° above normal. Extremes 35°; 85°. Wetter, warmer than normal over entire State. Greatest 24-hour total rainfall 4.46 in. Greatest weekly rainfall 7.91 in.

Days suitable for fieldwork 1.9, 1.9 1987, 2.9 avg. Soil moisture 30% adequate, 45% surplus, 25% excessive. Corn 25% planted, 17% 1987, 29% avg. Wheat fair to good; 68% jointing, 81% 1987, 70% avg. Hay, feed supplies slightly less than adequate. Pastures, livestock mostly good. Rains kept farmers out of fields, improved pastures. Some planting of peanuts, sweetpotatoes, corn.

**MISSOURI:** Temperatures averaged 4° above normal. Precipitation 1.00 to over 4.00 in., heaviest southwest.

Days suitable for fieldwork 2.1. Topsoil moisture 16% short, 49% adequate, 35% surplus. Corn 1% planted, 1% 1987, 2% avg. Oats 50% sown, 52% 1987, 41% avg. Wheat 1% poor, 22% fair, 66% good, 11% excellent. Supply of hay, roughage 16% short, 79% adequate, 5% surplus. Pasture 1% very poor, 14% poor, 44% fair, 40% good, 1% excellent.

**MONTANA:** Heavy snow, blizzard conditions swept north central and central early week. Precipitation heavy snow areas over 0.50 in. Amounts 0.50 to 1.00 in. west, southwest. Northeast mostly dry, remainder of State received 0.10 to 0.25 in. Temperatures very near normal; beginning cold, warming into 60s and 70s by weekend. Topsoil moisture shortage relieved north central, central; still short other areas. Winter wheat fair to good, damage light to moderate, crop mostly greening. Field tillage underway most areas. Calving, lambing good, nearly 75% complete.

**NEBRASKA:** Temperatures averaged 4° below normal west, 5° above normal east. Precipitation 0.50 to

1.50 in. across State midweek, weekend. Extremes 14°; 78°.

Winter wheat 41% fair, 57% good, 2% excellent. Instances of winterkill, overwintering of Russian wheat aphids in southwest and west. Soil moisture supplies improved but topsoil moisture continued dry with wind erosion occurring in most areas. Range, pastures average. Supplies of feed grains, hay, forage average. Calving losses this winter average to below average. Calving, lambing continued with some problems following late winter storms west.

**NEVADA:** Temperatures well above normal early, but northerly flow air midweek dropped temperatures dramatically. Some light precipitation associated with low pressure system north, traces remainder areas.

Good progress fieldwork beginning period. Cold, traces precipitation, gusty winds remainder. Marketing potatoes continued.

**NEW ENGLAND:** Average precipitation 0.50 in. northeastern Maine, less than 0.10 in. remainder. Average temperatures ranged upper 30s northern Maine to upper 40s southern coast. Temperatures several degrees above normal.

Major farm activities: Sugaring tapering off with the onset of warmer weather, pruning fruit trees, moving livestock to pasture.

**NEW JERSEY:** Temperatures averaged above normal. Extremes 27°; 72°. Rainfall averaged 0.10 in. north, south; 0.06 in. central. Heaviest 24-hour 0.12 in. on 1st, 2nd. Estimated soil moisture percent field capacity averaged 96% north, 92% central, 91% south. Four inch soil temperatures averaged 43° north, 48° central, 49° south.

Soil moisture active. Early planting increased. Peach bloom began some southern areas. Fall sown grains, hay, pastures started to make growth. Application of lime, fertilizer continued.

**NEW MEXICO:** Average weekly temperatures 1 to 7° below normal. Badly needed moisture in major wheat area with rain, snow end of month.

Days suitable for fieldwork 5.9. Soil moisture 44% short, 56% adequate. Cotton planting began some locations; field preparation continued for corn, milo crops; also spraying to control alfalfa, wheat pests. Barley 20% poor, 80% good. Wheat 13% poor, 40% fair, 47% good. Onions 33% fair, 67% good; lettuce 100% fair. Cattle 62% fair, 38% good. Sheep 50% fair, 50% good. Range 87% fair, 13% good.

**NEW YORK:** Mild average temperatures 5° above normal. Extremes 16° Newcomb, 78° Buffalo. Precipitation well below normal.

Pastures began to green. Routine farm work continued.

**NORTH CAROLINA:** Temperatures averaged 2 to 7° above normal across State. Temperature extremes 25°; 82°. Precipitation ranged none to 0.75 in.

Days suitable for fieldwork 5.6. Soil moisture 5% very short, 42% short, 53% adequate. Wheat 25% fair, 69% good, 6% excellent. Oats 29% fair, 67% good, 4% excellent. Barley 25% fair, 71% good, 4% excellent. Rye 4% poor, 22% fair, 70% good, 4% excellent. Pasture 2% very poor, 8% poor, 35% fair, 54% good, 1% excellent. Hay and roughage supplies 10% short, 85% adequate, 5% surplus. Feed grain supplies 12% short, 83% adequate, 5% surplus. Tobacco plantbeds 7% poor, 29% fair, 63% good, 1% excellent. Irish potatoes 99% planted, 81% 1987, 80% avg. Irish potatoes 10% poor, 16% fair, 74% good. Corn 17% planted, 1% 1987, 22% avg. Major farm activities: Preparing land for spring planting; care of tobacco plantbeds; transplanting cabbage; planting potatoes, corn; pruning fruit

trees, ornamentals; applying lime; feeding livestock; general farm maintenance.

**NORTH DAKOTA:** Warm, dry statewide. Temperatures average 1 to 6° above normal. Extremes 8° southwest, 31st; 74° west central, northwest, 2nd. Precipitation below normal, ranged none to 0.05 in.

Topsoil moisture below normal; 44% very short, 51% short, 5% adequate. Subsoil moisture below normal; 22% very short, 62% short, 16% adequate. Dry, windy conditions caused soil erosion in unprotected fields. Spring seeding isolated areas; precipitation needed for further advancement. Winter wheat 37% poor, 55% fair, 8% good; 81% dormant, 19% green. Winterkill 2% below normal, 31% normal, 67% above normal. Livestock good to excellent; calving 54%, lambing 74%, shearing 68%. Feed supplies adequate to surplus. Pastures poor to fair, 88% open for grazing.

**OHIO:** Temperatures ranged from overnight lows in 20s to daytime highs in 70s. Temperatures averaged 50s to 60s for highs, 30s to low 40s for lows; 2 to 7° above normal. Precipitation beginning and end of period produced total rainfall 1.00 to 2.00 in. Soil temperatures ranged upper 30s to mid 50s.

Periodic showers, thunderstorms kept soils saturated. Grass, winter wheat greening quickly. Pruning active northeast. Early vegetables planted including sweet corn, peas, cabbage.

**OKLAHOMA:** Temperatures averaged 4° below normal Panhandle to 3° above normal east central. Precipitation averaged 0.51 in. Panhandle to 4.27 in. northeast.

Days suitable for fieldwork 3.0. Topsoil moisture 50% adequate, 50% surplus. Subsoil moisture 100% adequate. Wheat 8% fair, 90% good, 2% excellent; 30% jointing, 50% 1987, 45% avg. Copious precipitation, near normal temperatures enhanced prospects. Moderate hail, flood damage received central. Some producers spraying to control weeds. Sorghum 15% seedbed prepared, 15% 1987, 35% avg. Cotton 45% seedbed prepared, 10% 1987, 30% avg. Pastures improved with added moisture. Cattle trading active, prices up sharply from preceding week.

**OREGON:** Temperatures below normal across State. Largest departures, up to 5° below normal, northeastern, north central mountains. All areas precipitation. Coast, coastal mountains 2.00 to 3.00 in. Willamette Valley 0.75 in. Eastern locales 0.50 in.

Soil moisture 68% short, 24% adequate, 8% surplus. Barley 75% seeded, 73% 1987, 60% avg. Field crop growth slower than normal west, due to cooler than usual nights. Dryland winter wheat shows good root development east, due to warmer than normal soil temperatures; may help crop through dry spring. Grass seed fair to good; hay, red clover good; much crimson clover lost to freezes Willamette Valley. Irrigation underway all crops Jackson County. Alfalfa broke dormancy eastern high desert. Field preparation for spring grain seeding continued east. Caneberry training underway, filberts leafing out Willamette Valley. Blossom sprays applied cherries west, bloomed last week. Bing cherries started bloom Milton-Freewater. Peaches bloomed up to 2 weeks ago west. Bartlett pears bloomed west. President plums bloomed Milton-Freewater. Cranberries at bud break, crop looks good. Vegetable planting preparations halted by rain Willamette Valley; seed crops growing well; green peas emerged; some winter cauliflower harvested. Onions seeded Jackson County, Milton-Freewater. Growers weeded, fertilized fall seeded onions Willamette Valley, Milton-Freewater. Asparagus harvest set to begin Umatilla County. First processing sweet corn planted southwest. Garlic, lettuce seed crops look

good central area. Potato fieldwork underway Klamath Basin, central locales; seed potato growers cutting, shipping seed. Livestock mostly good. Calving, lambing going well east. Ranchers hauling water already At low elevations eastern rangeland poor to fair, prospects much below normal. Higher elevation ranges started green-up, look good, but moisture reserves low. Western pastures much improved with recent rains, some areas over grazed last fall haven't recovered.

**PENNSYLVANIA:** Dry, warm. Average temperature 50°, 10° above normal. Temperature extremes 23°, 81°. Average precipitation 0.12 in., 0.69 in. below normal.

Activities: Early spring activities; hauling manure; machinery maintenance; caring for livestock.

**PUERTO RICO:** Island rainfall averaged 1.65 in., 1.00 in. above normal. Highest weekly total rainfall 4.31 in. Pico Del Este-Luquillo, 3.72 in. Trujillo Alto, 3.14 in. Negro-Coroza. Highest 24-hour total 2.18 in. Coroza Viejo. Accumulated total rainfall since January 1st 8.77 in. San Juan WSFO mean temperature 77°, 1° above normal. Total rainfall 1.03 in., 0.43 in. above normal. Divisional temperature averaged 76 to 77° on coasts, 69 to 73° interior divisions with mean station temperature ranged 61° Pico Del Este-Luquillo to 79° Roosevelt Roads. Lowest minimum temperature 53° Pico Del Este-Luquillo. Highest maximum temperature 89° Coloso.

**SOUTH CAROLINA:** Temperatures averaged several degrees above normal. No rainfall southern, eastern part of State; 2.16 in. mountains, 0.80 in. foothills on 3rd.

Days available for fieldwork 6.2. Soil moisture 9% very short, 76% short, 15% adequate. Corn fair to good; 43% planted, 14% 1987, 36% avg. Tobacco fair to good; 4% planted, 3% 1987, 8% avg. Watermelons fair to good; 49% planted, 37% 1987, 45% avg. Tomatoes good; 72% planted, 81% 1987, 82% avg. Spring cukes fair to good; 24% planted, 45% 1987, 55% avg. Wheat good; 1% headed, 1% 1987. Oats fair to good; 1% headed, 3% 1987. Peaches fair to mostly good. Major freeze damage early varieties Coastal Plains.

**SOUTH DAKOTA:** Average temperatures ranged 5° below to 6° above normal. Extremes 7°, 89°. Precipitation above normal southeast; below normal elsewhere.

Winter wheat fair to good. Livestock good. Pastures greening up.

**TENNESSEE:** Cold front moved across State 29th, 30th then became stationary to south of State causing wet weather statewide 29th through 3rd. Temperatures averaged 6 to 10° above normal. Precipitation ranged 0.75 in. below normal east to 0.75 in. above normal west. Rainfall averaged 0.50 in. east to over 2.00 in. west.

Days suitable for fieldwork 4.2. Soil moisture 10% very short, 40% short, 45% adequate, 5% surplus. Corn 4% planted, 3% 1987, 4% avg. Tobacco beds 84% seeded, 79% 1987, 80% avg. Wheat 2% poor, 24% fair, 68% good, 6% excellent. Warm temperatures promoted small grain growth, greening. Apples, peaches mostly good, blooming. Fertilizer application continued in most areas. Feed supplies adequate. Livestock good with strong feeder calf market. Main activities: Land preparation; topdressing small grains; planting corn, vegetables; spraying fruit trees; tending livestock.

**TEXAS:** Weather changeable across State. Temperatures gradually milder with spring. Moist flow from Gulf showers east, Panhandle early week.

Cold front pushed through, some snow Panhandle. Weekend much warmer temperatures topping 90° southwest. Temperatures varied. Readings below normal High Plains, Trans-Pecos. Temperatures slightly above normal elsewhere. Precipitation ranged below normal portions south, west. Above normal elsewhere.

**Crops:** Dryland small grain fields Plains need rain, high winds further depleted available soil moisture. Aphid controls continued. Early week front brought cooler temperatures, slowed growth. Irrigated fields good progress. Fields Blacklands received rain. Early fields heading. Fields central; south heading, needed additional moisture. Warmer weather should help progress. Wheat 1% headed, 5% 1987, 5% avg. Corn planting Plains should begin couple of weeks, weather permitting. Soil condition good because pre-plant irrigation. Rainfall short. Planting virtually completed most other portions State. Fields recovering from late freeze some areas. Some replanting Upper Coast. Rainfall Blacklands should benefit growing conditions. Growth good Coastal Bend, Rio Grande Valley. Corn 62% planted, 51% 1987, 52% avg. Grain sorghum planting winding down central, Blacklands. Early stands look good. Some replanting Upper Coast. Planting to begin soon Plains. Sorghum 49% planted, 38% 1987, 46% avg. Cotton planting progressed central, Blacklands. Planting full swing Upper Coast as weather permitted. Planting winding down Valley, high winds caused some problems. Land preparations continued Plains. Cotton 10% planted, 9% 1987, 7% avg. Rice planting good progress Upper Coast. Rice 24% planted, 21% 1987, 28% avg.

**Commercial Vegetables:** Rio Grande Valley limited supplies carrots, cabbage, many growers finished. Onion harvest continued. Seed stem problems continued early varieties. Melons good progress. Winds caused problems. Citrus groves good condition under heavy irrigation. Harvest winding down many groves. San Antonio-Winter Garden irrigation steady onions, melons insure good progress. Harvest cabbage, carrots, spinach winding down. High Plains transplanting onions, potatoes continued. East cooler weather slowed growth progress. Wet conditions slowed planting. Trans-Pecos cantaloup planting continued. Thrips some onion fields. Peach producers Hill Country hoping make some production later varieties. Heavy losses early budding varieties. East producers expecting small crop. Pecan trees budding out many areas.

**Range and Pasture:** Native range, pasture grasses additional greening most areas with warmer temperatures. Some wheat pastures provided adequate grazing. However, additional moisture greatly improve conditions. Producers fertilizing pastures scattered areas. Livestock good. Feeding slowed wetter areas. Markets steady.

**UTAH:** Precipitation none to light. Temperatures 3° below to 1° above normal.

Seeding, land preparation beginning as weather permits. Soils cool, wet. Lambing, calving continued. Major activities: Care of livestock, hauling manure, planning spring fieldwork, purchasing supplies, equipment maintenance, tax records.

**VIRGINIA:** Above normal temperatures, precipitation. Temperatures averaged 6° above normal, range 21 to 81°. Precipitation average ranged 0.18 to 2.80 in., 1.00 in. most common amount.

Days suitable for fieldwork 5.4. Topsoil moisture 64% short, 36% adequate. Small grains, pastures, tobacco plantbeds, fruit mostly good to

excellent. Began planting corn. Irrigated tobacco plantbeds. Burley tobacco plantbeds 80% seeded. Seeded spring oats. Topdressed small grains, sprayed with herbicides. Sprayed alfalfa to control alfalfa weevil. Potatoes 95% planted. Pastures, hayland overseeded, topdressed. Peaches began blooming. Some cattle sales, sheep shearing. Moved some cattle to pastures.

**WASHINGTON:** Several weather disturbances crossed State with strong, gusty winds. Temperatures mostly mild except for cool nights. Precipitation above normal westside, near normal eastside.

Scattered showers limited days suitable for fieldwork 0 to 3 days eastern, western areas; 5 to 7 days central area. Moisture improved dryland crops, more rainfall needed. Soil moisture 70% short, 30% adequate in winter grain areas. Cooler temperatures slowed spring seeded crop growth, reduced Russian wheat aphid population. Gusty winds damaged some crops Grant County. Potato planting underway Benton, Franklin Counties. Cold weather slowed fruit tree bud development Chelan County. Frosts caused moderate damage to blossoming fruit trees Benton County. Most trees yet to blossom, however, sweet cherry trees early districts Benton, Yakima Counties in blossom stage. Caneberries west of Cascades leafing out; raspberries, budding. Blueberry buds open King, Pierce Counties. Asparagus growers grooming fields prior to harvest Yakima, Benton Counties. Expected beginning asparagus harvest dates 4th to 8th Walla Walla, 10th to 14th Yakima Valley. Green pea seedings completed Cowlitz County. Sweet corn acreage to be reduced Kittitas County due to uncertain irrigation water supply. Range, pastures mostly short. Dry conditions limited pasture regrowth, short grazing season expected. Hay, roughage feed supplies mostly adequate, surplus.

**WEST VIRGINIA:** Average temperature 57°, 11° above normal. Temperature extremes 17°; 84°. Average precipitation 0.62 in.; Rainfall ranged none to 1.25 in. across State.

Days suitable for fieldwork 3.9. Soil moisture 11% very short, 11% short, 78% adequate. Wheat, barley good to fair. Feed supplies adequate to short. Cows calved 79%; ewes lambled 85%. Farm activities: Livestock care, plowing, general farm maintenance.

**WISCONSIN:** Temperatures averaged 39°, 1° above normal. Extremes 14°; 63°. Precipitation 0.50 to 1.80 in. Heaviest rain central, south.

Days suitable for fieldwork 0.9. Soil moisture 5% short, 81% adequate, 14% surplus. Spring plowing, oat seeding just began. Maple syrup season underway, flow varies. Other activities: Manure spreading, machinery repair.

**WYOMING:** Temperatures below normal. Below normal precipitation.

Days suitable for fieldwork 4.0. Topsoil moisture 37% short, 61% adequate, 2% surplus. Subsoil moisture 33% short, 63% adequate, 4% surplus. Spring wheat small amount planted, small amount 1987, 5% avg. Oats none planted, small amount 1987, 5% avg. Barley 30% planted, 10% 1987, 25% avg. Sugarbeets none planted, none 1987, 5% avg. Winter wheat fair. Light to moderate wind, freeze damage. Alfalfa prospects good. Livestock mostly good. Spring calves 60% born, 50% 1987, 50% avg. Death losses light to normal. Farm flock: Ewes lambled 65%, 55% 1987, 60% avg.; shorn 55%, 50% 1987, 50% avg. Range flock: Ewes lambled 30%, 25% 1987, 20% avg.; shorn 30%, 25% 1987, 25% avg. Death losses light to normal. Range, pasture fair to good. Supplemental feeding continued as needed.

International Weather and Crop Summary

March 27-April 2, 1988

March 1988  
MONTHLY DATA FROM SELECTED FOREIGN CITIES  
CLIMATE ANALYSIS CENTER-NMC-NWS-NOAA  
\*\*\* = DATA NOT AVAILABLE

HIGHLIGHTS:

**UNITED STATES** ... Precipitation slows fieldwork in the southern and central Great Plains, Delta, and Corn Belt. Snow and rain provide much needed moisture in the Central Great Plains.

**WESTERN U.S.S.R.** ... Unseasonable mild weather melts snow in the north and promotes winter grain greening in the south.

**EUROPE** ... Persistent rain and flooding continue across the north. Moderate to heavy rain benefits winter grains in northern Italy.

**SOUTH ASIA** ... Dry, hot weather stresses immature wheat and rice.

**NORTHWESTERN AFRICA** ... Dry weather continues to stress winter grains over much of the region.

**SOUTH AFRICA** ... Dry, warm weather benefits maturing corn.

**SOUTHEAST ASIA** ... Beneficial showers continue across southern Indonesia, but dry weather persists in parts of Malaysia. Very heavy rain results in local flooding in the southern Philippines.

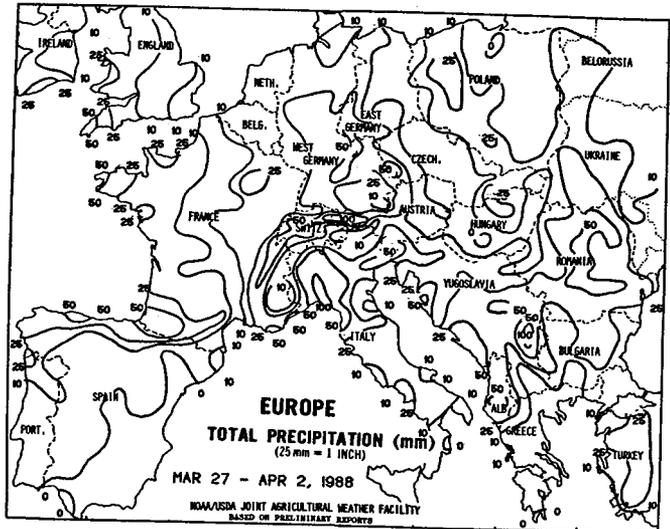
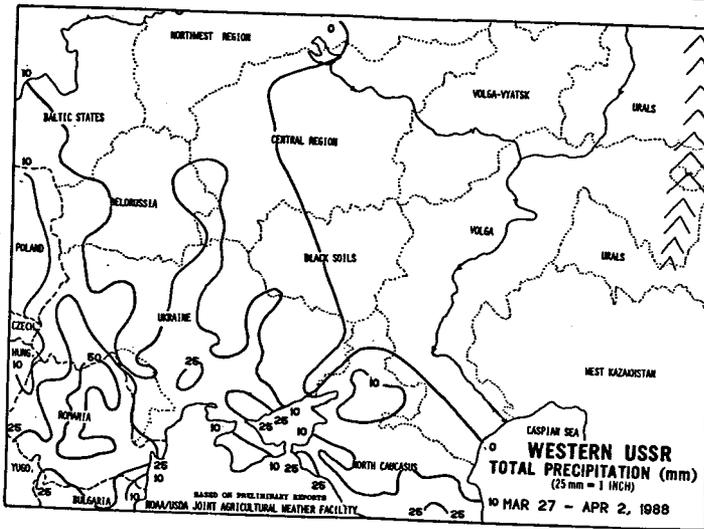
**EASTERN ASIA** ... Heavy rain continues across southeastern China. Below-normal temperatures slow crop growth across the southeast.

**SOUTH AMERICA** ... Rain helps relieve dryness in southern Brazil. Heavy rain continues harvest delays across Argentina's summer crop areas.

**AUSTRALIA** ... Moisture from a tropical low spreads across much of Australia, causing delays in cotton and sorghum harvest.

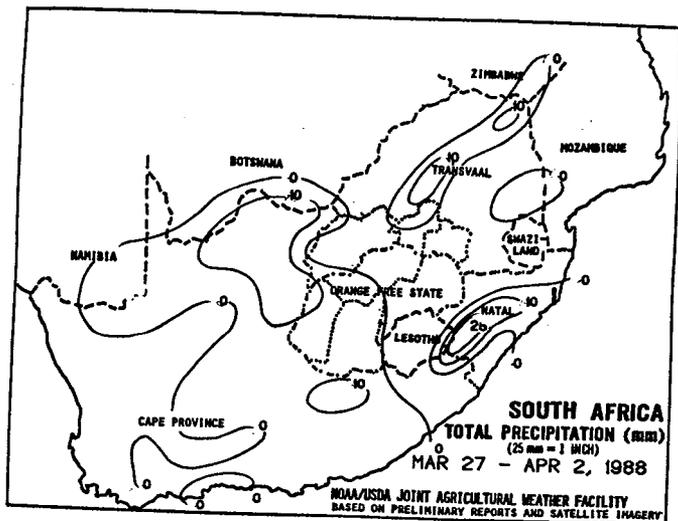
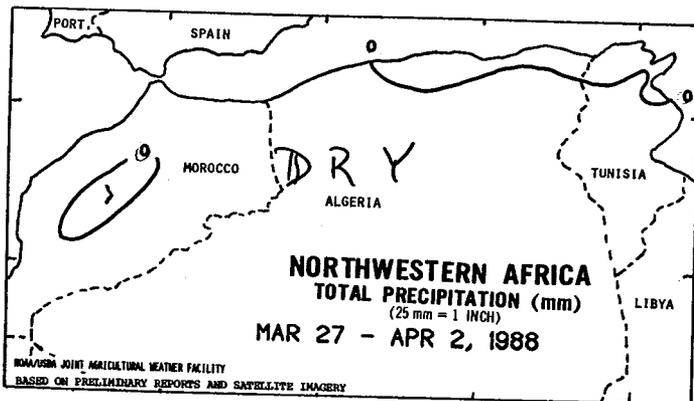
COUNTRY	CITY	TEMPERATURE (C)					PRECIPITATION (MM)		
		AVG MAX	AVG MIN	HI	LO	DPART	F/NRM	TOTAL	F/NRM
NORWAY	OSLO	0	-8	5	-18	-4	-1.1	132.6	92.5
SWEDEN	STOCKHOLM	1	-5	7	-17	-2	-1.6	20.8	-2.0
FINLAND	HELSINKI	-1	-6	2	-22	-3	-0.2	70.9	40.8
U KING	GLASGOW	8	2	13	-6	5	-0.9	120.7	49.6
	EDINBURGH	9	2	15	-7	5	0.0	52.0	10.3
	BIRMINGHAM	9	4	13	-4	7	1.2	77.9	26.4
	LONDON	10	4	14	-6	7	1.3	80.7	23.3
IRELAND	DUBLIN	10	5	13	-1	7	1.1	83.8	33.7
ICELND	REYKJAVIK	2	-2	8	-10	0	-1.4	77.1	4.6
DENMRK	COPENHAGEN	4	-1	9	-9	2	-0.3	31.7	-0.3
LUKEMB	LUXEMBOURG	6	1	12	-5	4	-0.9	121.4	64.7
SWITZL	ZURICH	6	1	19	-7	4	-0.7	196.1	127.6
	GENEVA	9	2	19	-6	6	0.2	112.0	38.0
FRANCE	PARIS	10	4	15	-2	7	0.5	103.9	60.8
	STRASBOURG	9	3	20	-5	6	0.5	96.8	62.6
	BOURGES	10	4	15	-4	7	-0.1	70.1	12.1
	BORDEAUX	13	5	20	-4	9	0.3	118.8	44.9
	TOULOUSE	13	4	18	-6	8	-0.2	100.7	43.8
	MARSEILLE	14	6	20	-4	10	-0.4	61.8	17.5
SPAIN	VALLADOLID	15	2	22	-5	9	0.8	1.0	-42.7
	MADRID	18	3	26	-3	11	0.8	0.7	-46.6
	SEVILLE	23	9	30	1	16	2.1	3.0	-71.6
E GRMY	LEIPZIG	6	1	13	-5	3	-0.3	50.9	16.4
	DRESDEN	5	1	15	-5	3	-0.3	75.4	38.4
W GRMY	HAMBURG	6	1	12	-5	3	0.1	110.5	67.0
	BERLIN	6	1	13	-4	3	-0.6	71.1	38.6
	DUSSELDORF	8	3	14	-4	6	-0.5	124.6	83.7
	STUFGART	6	1	16	-9	4	-0.9	158.6	117.3
	NURNBERG	6	1	15	-7	3	-0.5	149.9	107.5
	MUNICH	6	-1	16	-10	3	-0.5	131.8	78.3
AUSTRI	VIENNA	7	1	16	-7	4	-1.1	59.0	28.0
	INNSBRUCK	7	-1	13	-10	3	-1.2	120.7	74.1
CZECH	PRAGUE	5	-1	14	-9	2	-0.7	34.0	5.9
POLAND	WARSAW	4	-2	14	-10	1	-0.2	43.1	19.6
	LODZ	5	-1	12	-8	2	-0.3	47.6	11.5
	KATOWICE	5	-2	14	-7	2	-0.8	58.5	20.4
	PRZEMYSL	4	-1	12	-8	2	-0.1	64.5	33.4
HUNGAR	BUDAPEST	9	2	15	-5	5	-0.2	30.8	4.8
YUGOSL	SARAJEVO	9	0	16	-14	4	0.1	117.7	33.6
ROMANI	BUCHAREST	11	2	19	-5	6	2.5	68.9	36.5
BULGAR	SOFIA	9	2	17	-4	5	0.3	47.9	10.4
ITALY	MILAN	14	4	20	-4	9	1.5	48.0	-31.6
	VERONA	14	3	20	-4	9	0.7	59.2	2.9
	VENICE	12	3	17	-1	8	-0.1	98.4	35.7
	GENOA	15	9	22	1	12	0.2	112.2	25.3
	ROME	15	6	18	-1	11	0.1	31.2	-32.7
	NAPLES	16	6	19	-4	11	0.2	62.8	-22.0
GREECE	THESSALONIKA	13	5	20	-2	9	-0.2	91.0	49.4
	LARISSA	15	3	21	-6	9	-1.0	24.3	-17.1
	ATHENS	15	9	19	3	12	-0.5	78.0	43.6
TURKEY	ISTANBUL	12	6	20	-1	9	2.2	39.2	-23.8
	ANKARA	9	-1	19	-9	4	-1.1	79.7	52.7
CYPRUS	LARNACA	18	8	21	3	13	-0.6	96.0	56.9
USSR	TALLINN	1	-4	10	-11	-2	1.0	40.7	16.7
	LENINGRAD	1	-3	8	-10	-1	2.5	41.8	12.3
	KAUNAS	2	-4	12	-14	-2	-0.5	49.0	19.2
	MINSK	2	-3	12	-8	0	2.1	55.3	20.7
	KAZAN	-1	-9	8	-19	-5	1.3	24.5	3.1
	MOSCOW	2	-4	10	-9	-1	2.2	35.2	-0.7
	SVERDLOVSK	2	-11	13	-25	-4	0.6	4.0	-13.2
	OMSK	0	-12	8	-21	-6	3.5	1.5	-9.9
	KUSTANAY	-1	-11	12	-21	-6	3.5	5.4	-9.4
	KRASNOYARSK	-2	-12	5	-23	-7	1.0	5.5	-8.0
	NOVOSIBIRSK	-2	-11	3	-20	-6	5.3	5.1	-10.1
	BARNAUL	-2	-11	1	-19	-7	1.4	2.9	-18.6
	KHABAROVSK	-4	-13	4	-22	-8	-0.7	8.9	-9.2
	VLADIVOSTOK	1	-5	11	-12	-2	0.6	10.7	-15.1
	KIEV	4	-1	12	-7	2	1.5	51.5	12.5
	LVOV	4	-3	14	-15	1	0.2	64.5	25.9
	KIROVOGRAD	5	0	15	-7	2	2.6	53.0	29.0

COUNTRY CITY		TEMPERATURE (C)					PRECIPITATION (MM)			COUNTRY CITY		TEMPERATURE (C)					PRECIPITATION (MM)			
March 1988		AVG MAX	AVG MIN	HI	LO	DPART	DPART	TOTAL	DPART	March 1988		AVG MAX	AVG MIN	HI	LO	DPART	DPART	TOTAL	DPART	
						F/NRM	F/NRM		F/NRM							F/NRM	F/NRM		F/NRM	
USSR	ODESSA	6	2	12	-3	4	1.7	92.8	65.1	TANZAN	DAR ES SALAAM	33	23	35	16	28	0.7	196.1	61.8	
	YALTA	10	4	16	-4	7	0.9	87.0	45.1	GABON	LIBREVILLE	31	24	33	22	27	0.4	659.1	254.0	
	VORONEZH	2	-4	10	-11	-1	2.4	18.7	-12.2	TOGO	LOME	33	26	34	22	29	1.4	67.0	-3.1	
	SARATOV	-1	-7	3	-14	-4	0.8	25.8	5.5	B FASO	OUAGADOUGOU	39	25	42	21	32	1.3	0.1	-6.0	
	KHARKOV	4	-1	13	-5	2	2.9	51.6	23.3	IVRY C	ABIDJAN	32	26	34	22	29	1.0	66.3	-48.7	
	VOLGOGRAD	3	-3	13	-11	0	3.1	18.3	-12.1	MOZAMB	MAPUTO	31	23	36	21	27	1.8	120.7	32.0	
	ROSTOV	6	1	15	-4	4	2.6	28.3	-7.0	ZAMBIA	KABWE	**	18	**	18	**	**	104.0	-9.3	
	ASTRAKHAN	7	-2	16	-6	3	2.3	8.9	-7.4	ZIMBAB	HARARE	26	16	29	13	21	1.3	143.2	56.6	
	KRASNODAR	11	3	19	-2	7	3.3	74.5	18.7	S AFRI	PRETORIA	28	18	32	14	23	2.6	135.1	60.4	
	ORENBURG	-1	-10	7	-20	-5	0.3	23.8	1.9		KROONSTAD	27	16	30	13	22	1.6	110.6	25.5	
	TSELINOGRAD	-3	-12	3	-25	-8	2.9	8.6	-0.6		JOHANNESBURG	25	15	28	12	20	2.3	131.3	51.3	
	KARAGANDA	-3	-12	3	-22	-8	-0.4	6.7	-10.6		BETHAL	24	14	27	11	19	1.3	56.2	-30.9	
	TBILISI	11	3	17	-2	7	0.4	65.7	33.4		DURBAN	28	22	34	19	25	1.7	310.8	185.3	
	TASHKENT	14	5	25	-2	9	1.1	41.2	-37.9		CAPE TOWN	25	15	35	7	20	0.9	32.5	18.1	
	ASHKHABAD	17	5	28	0	11	1.6	34.7	-9.9	CANADA	TORONTO	4	-5	19	-17	-1	0.0	23.4	-37.8	
SYRIA	DAMASCUS	17	4	25	-1	11	-1.0	16.9	-6.0		MONTREAL	2	-7	16	-18	-3	-0.5	27.0	-46.6	
ISRAEL	JERUSALEM	15	6	24	1	10	-1.9	109.8	19.0		WINNIPEG	1	-10	11	-18	-5	3.3	24.4	1.7	
PAKIST	KARACHI	31	20	35	14	25	0.8	0.1	-11.0		REGINA	4	-8	16	-21	-3	5.1	16.9	-0.9	
INDIA	AMRITSAR	26	10	32	5	18	-1.1	4.9	-24.0		SASKATOON	1	-9	9	-21	-4	4.7	34.4	16.4	
	NEW DELHI	29	16	35	11	23	-0.2	49.2	33.1		LETHBRIDGE	9	-3	17	-12	3	4.5	20.0	-4.2	
	AHMEDABAD	35	21	38	16	28	0.5	0.1	0.1		CALGARY	7	-5	16	-13	1	4.7	19.9	3.8	
	INDORE	35	16	39	12	26	0.4	0.1	-2.8		EDMONTON	8	-3	17	-10	2	7.2	6.7	-11.8	
	CALCUTTA	34	22	37	19	28	0.4	45.0	23.0		VANCOUVER	10	4	13	-2	7	1.0	138.3	37.3	
	VERAVAL	31	19	35	15	25	-0.3	0.1	0.1	MEXICO	GUADALAJARA	27	9	34	3	18	-1.2	6.4	0.0	
	BOMBAY	31	21	34	18	26	-0.4	0.1	0.0		MEXICO CITY	25	11	29	5	18	1.8	83.2	74.6	
	POONA	35	16	37	13	25	-1.0	0.1	-4.9		ACAPULCO	33	22	36	20	27	0.9	0.1	0.1	
	BEGAMPET	36	23	39	20	29	1.4	0.1	-10.8		BERMUD	ST. GEORGES	21	16	29	10	19	0.9	107.0	-5.8
	MADRAS	34	25	38	23	30	1.5	0.1	-3.1		BAHAMA	NASSAU	26	18	31	12	22	0.2	5.4	-25.0
	MANGALORE	34	23	36	22	29	0.4	0.1	-8.8		CUBA	HAVANA	27	20	30	15	23	0.0	29.9	-13.4
H KONG	HONG KONG	19	16	27	10	17	-1.3	40.2	-14.6		JAMAIC	KINGSTON	32	23	35	21	27	1.2	4.9	-14.9
N KREA	PYONGYANG	6	-5	13	-13	1	-1.6	21.0	-30.1		P RICO	SAN JUAN	29	22	33	19	25	0.1	42.3	-13.5
S KREA	SEOUL	9	1	16	-7	5	1.1	31.0	-24.9		CUADEL	RAIZET	29	21	31	18	25	1.0	50.4	3.1
JAPAN	SAPPORO	3	-3	10	-12	0	0.1	71.1	-6.8		MARTIN	LAMENTIN	29	23	30	20	26	1.8	33.8	-36.0
	NAGOYA	12	4	18	-1	8	0.9	142.1	43.7		BARBAD	BRIDGETOWN	29	23	31	21	26	0.4	12.1	-26.0
	TOKYO	12	5	21	1	9	0.1	186.8	84.4		TRINID	PORT OF SPAIN	32	22	33	19	27	1.5	1.9	-30.2
	YOKOHAMA	11	5	18	1	8	-0.2	184.2	65.4		COLOMB	BOGOTA	20	6	22	-2	13	-0.1	28.5	-26.9
	KYOTO	12	4	19	-2	8	1.5	127.0	19.2		VENEZU	CARACAS	30	22	31	20	26	0.9	3.4	-21.6
	OSAKA	12	5	19	-1	9	0.3	106.5	6.2		F GUIA	CAYENNE	30	23	31	21	27	1.7	9.7	-393.4
THAILN	PHETCHABUN	37	24	40	20	31	2.3	0.4	-46.1		BRAZIL	FORTALEZA	30	24	32	22	27	0.2	561.3	233.7
	BANGKOK	34	26	37	17	30	1.0	3.2	-19.3		RECIFE		32	23	35	21	28	1.0	159.9	-92.0
MALAYS	KUALA LUMPUR	32	24	35	21	28	1.5	342.1	112.8		BELO HORIZONTE	29	19	34	17	24	1.2	130.4	-5.9	
VIETNM	HANOI	22	18	36	14	21	0.7	102.7	64.6		CAMPO GRANDE	30	22	33	20	26	2.0	170.4	30.4	
CHINA	HARBIN	1	-11	12	-21	-5	1.7	3.1	-8.3		FRANCA		28	17	30	13	22	1.2	163.6	-23.3
	HAMI	10	-4	18	-15	3	-1.1	0.1	-1.2		RIO DE JANEIRO	30	23	33	20	27	0.8	125.0	-18.2	
	LANCHOW	8	-1	18	-10	4	-1.6	22.2	13.9		LONDRINA	30	20	34	16	25	1.7	150.0	16.2	
	BEIJING	10	-1	18	-8	5	0.1	9.1	0.4		SANTA MARIA	32	19	37	14	25	2.4	38.5	-70.5	
	TIENTSIN	9	1	19	-7	5	0.0	9.2	2.8	PERU	LIMA	26	19	28	18	23	0.9	0.1	-0.3	
	LHASA	14	-1	20	-6	6	1.7	0.5	-2.9		BOLIVI	LA PAZ	13	4	18	1	8	-0.4	332.8	255.6
	KUNMING	21	7	25	0	14	1.3	0.1	-13.8		CHILE	SANTIAGO	28	10	32	5	19	1.3	7.6	4.8
	CHENGCHOW	12	2	22	-7	7	-1.5	26.0	-0.8		ARGENT	IGUAZU	32	20	35	12	26	**	17.9	****
	YEHCHANG	13	6	23	0	9	-1.8	27.2	-34.6		FORMOSA		35	22	38	16	29	3.9	22.9	-134.1
	HANKOW	12	5	26	-3	9	-1.3	51.6	-51.6		CERES		32	21	37	15	27	3.8	125.5	-9.3
	CHIHKIANG	13	6	35	0	10	-1.2	55.7	-27.9		CORDOBA		28	18	35	13	23	2.5	208.3	96.1
	SHANGHAI	11	5	27	-4	8	-0.4	88.5	10.3		RIO CUARTO	26	17	33	9	21	1.8	208.7	97.8	
	NANCHANG	12	7	33	1	9	-1.8	147.0	-16.1		ROSARIO	28	19	34	13	24	2.8	243.3	76.0	
	TAIPEI	20	15	32	11	18	0.4	275.6	101.6		BUENOS AIRES	27	17	33	11	22	2.1	379.3	280.0	
	CANTON	18	13	30	3	15	-2.3	113.0	32.4		SANTA ROSA	27	14	34	4	20	0.8	125.2	40.3	
	NANNING	17	12	35	7	15	-2.8	53.3	-1.3		TRES ARROYOS	25	15	32	7	20	2.0	72.2	-23.8	
CNRY I	LAS PALMAS	22	15	28	11	19	0.7	27.3	16.8	MIDW I	MIDWAY ISLAND	23	18	25	15	20	1.4	18.6	-113.4	
MOROCC	CASABLANCA	19	10	26	5	15	0.0	16.2	-43.8	N CALD	NOUMEA	28	22	30	19	25	-0.5	103.2	-15.5	
	MARRAKECH	23	10	30	5	17	1.5	27.4	-2.2	FLJI	NAUSORI	30	24	33	20	27	0.5	300.8	-71.6	
ALGERI	ALGER	19	6	28	1	12	-0.6	53.3	-16.8	SAMOA	PAGO PAGO	31	26	32	23	28	1.2	333.6	49.2	
	BATNA	14	3	24	-1	9	0.2	16.1	-26.8	TAHITI	PAPEETE	31	24	33	23	28	0.7	620.1	466.4	
TUNISI	TUNIS	19	9	28	3	14	0.9	41.8	-9.0	N ZEAL	AUCKLAND	22	14	27	9	18	-1.1	248.1	166.2	
NIGER	NIAMEY	39	25	43	20	32	1.7	0.1	-3.1		WELLINGTON	18	12	25	6	15	-0.7	66.6	-28.9	
MALI	TIMBUKTU	37	22	42	12	29	1.5	0.1	0.1	PA N G	PORT MORESBY	30	25	34	24	28	0.7	135.3	-67.7	
	BAMAKO	39	27	41	23	33	2.3	0.1	-3.7	AUSTRAL	DARWIN	32	26	34	23	29	0.6	332.8	30.5	
MAURIT	NOUAKCHOTT	34	20	44	14	27	2.3	0.1	-1.7		MOREE		29	18	37	10	23	-0.3		



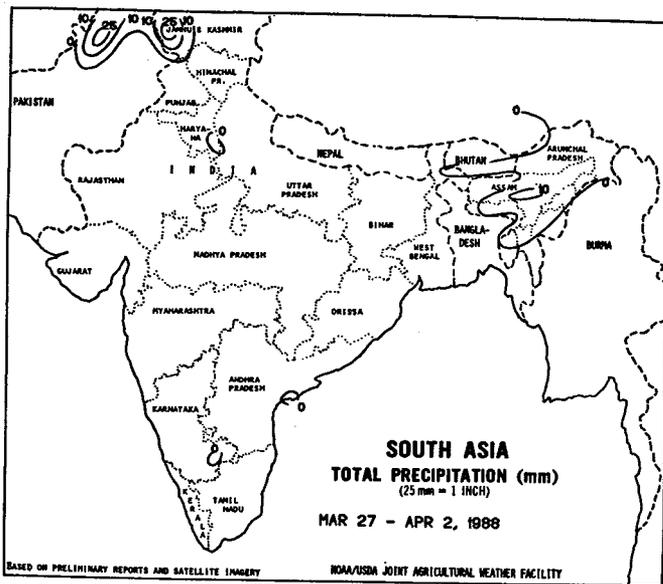
**WESTERN U.S.S.R** ... Unseasonable warm weather continued to melt snow cover in the north and promoted early winter grain growth in the south. Mild weather, daily temperatures averaging 7 to 11 degrees Celsius, and rain showers over winter grain areas in the Ukraine, North Caucasus, and the lower Volga caused crops to begin greening about 1 week earlier than usual. In addition, soil temperatures were likely high enough to allow early-season fieldwork with spring grain planting taking place in the extreme south. Crop areas in the middle and upper Volga continued unseasonably cold and dry. Topsoil moisture for early crop growth is abundant over most of the region.

**EUROPE** ... A persistent wet weather pattern remained entrenched over Europe, with widespread rain over all the continent except the extreme southwest. Light to moderate rain kept soils saturated over most northern growing areas, with flooding reported along many major rivers. Moderate to heavy rain (greater than 25mm) ended several consecutive weeks of dryness in northern Italy, benefiting vegetative to heading winter grains. Many wheat areas in Spain remain too dry, however, and rain will be needed as crops enter reproductive stages during the next few weeks. Weekly average temperatures were near normal to above normal over the northeastern growing areas, and normal to below normal in the southwest.

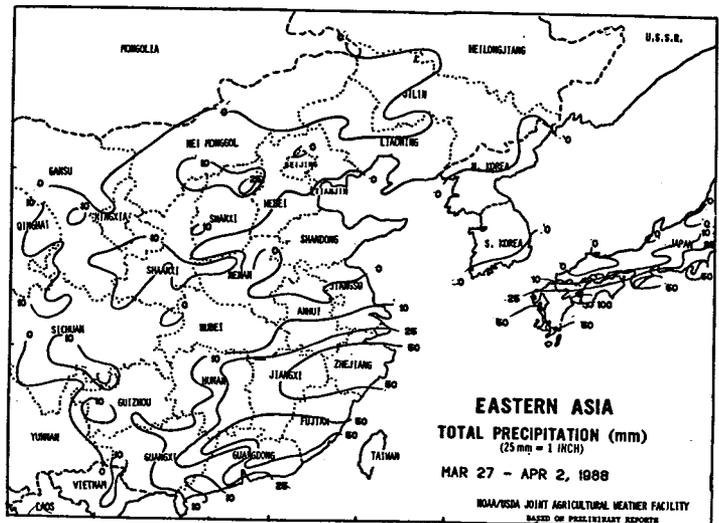


**NORTHWESTERN AFRICA** ... Dry weather covered most winter grain areas. Although growing conditions over Moroccan winter grain areas have been more favorable than last year, dry weather for the past 4 weeks has placed increasing stress on crops in the reproductive and filling stages of development, limiting their yield potential. In Algeria and Tunisia, this past week's dry weather continued an insufficient rainfall pattern which has covered winter grain areas since the beginning of the growing season, causing a significant reduction in crop prospects.

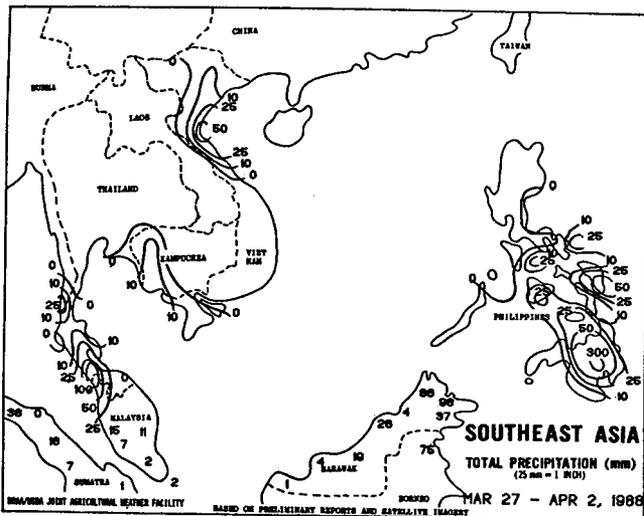
**SOUTH AFRICA** ... Dry, warm weather continued across the Maize Triangle, benefiting maturing corn. Light to moderate rain (1-31mm) continued over crop areas of Natal and the Cape Province. Corn harvesting usually takes place from April to July and is currently underway in many regions.



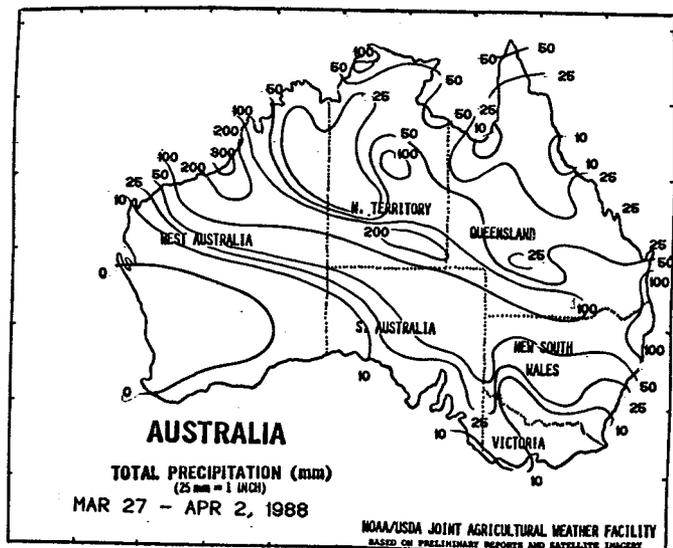
**SOUTH ASIA** ... Dry, hot weather covered India's grain regions, stressing immature wheat and rice. The warm weather has hastened maturity of late planted wheat across India, but much of the crop in north-central growing areas is in early filling and requires cooler weather for normal development.



**EASTERN ASIA** ... Heavy rain (greater than 25mm) persisted across southeastern China, keeping soils saturated and possibly causing flooding in Guangdong, Jiangxi, Fujian, and Zhejiang. Light to moderate rain favored vegetative winter grains in southern and western Chinese growing areas, while northern Chinese and Korean growing areas remained mostly dry. Recent precipitation in crop areas of Gansu, Shanxi, and Hebei has helped relieve dryness, although areas of Shandong and Yunnan remain too dry. In Japan, moderate to heavy rain continued over southern and eastern growing areas, while the north and west remained mostly dry. Much below-normal temperatures continued across southeastern China, slowing growth of rice and winter grains.



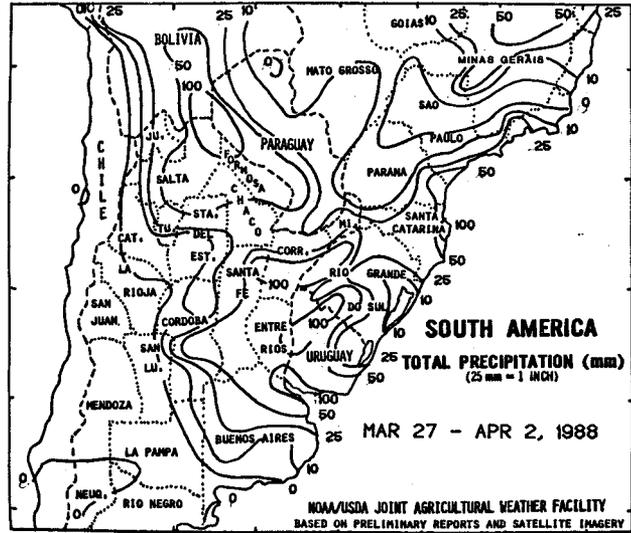
**SOUTHEAST ASIA** ... Widespread, moderate to heavy rain (25-100mm or more) continued across crop regions of southern Indonesia, but light rain (less than 25mm) covered most crop areas north of Java. Most crop regions of Malaysia received less than 10mm, including the eastern coast of western Malaysia which was drier than normal for the third straight week. Further north, scattered rain (3-33mm) occurred over peninsular Thailand, western Kampuchea, and rice regions of northern Vietnam. In the Philippines, very heavy showers (200-372mm) caused local flooding over central Mindanao. Variable light to moderate rain (4-47mm) fell elsewhere in the central, and southern islands as Luzon was mostly dry.



**AUSTRALIA** ... A tropical low moved into northwestern Western Australia on the 27th, bringing very heavy rain (up to 332mm) to coastal areas. Moisture with the system spread east-southeastward across the continent, reaching southern Queensland and New South Wales by the 30th. Widespread heavy rain fell over most summer crop areas, causing delays in sorghum and cotton harvesting, but breaking a persistent dry pattern and improving pre-season soil moisture levels for winter grains. The rain also improved rangeland conditions in western sections of Queensland and New South Wales, where persistent summer dryness stressed

pasture and forage crops. Light to moderate rain covered wheat areas in South Australia and parts of Victoria, while southwestern growing areas of Western Australia remained mostly dry.

**SOUTH AMERICA** ... In Brazil, moderate to heavy rain (greater than 25mm) fell in Rio Grande do Sul, helping to relieve dryness in late maturing soybeans. The rain may have come too late to prevent damage in the late planted crop, however. Very heavy rain (greater than 100mm) in western Rio Grande do Sul may have caused minor flooding and delays in soybean harvesting. Elsewhere, mostly dry weather favored corn and soybean harvesting across growing areas of Parana, Sao Paulo, and Minas Gerais. In Argentina, moderate to heavy rain (greater than 25mm) continued over growing areas of Buenos Aires, Sante Fe, and Entre Rios, causing continued delays in harvest. Beneficial drier weather developed over the region by week's end. Weekly mean temperatures continued above normal in Brazilian growing areas, and normal to above normal in Argentina's summer crop areas.



# Track Crop Developments Around the Globe

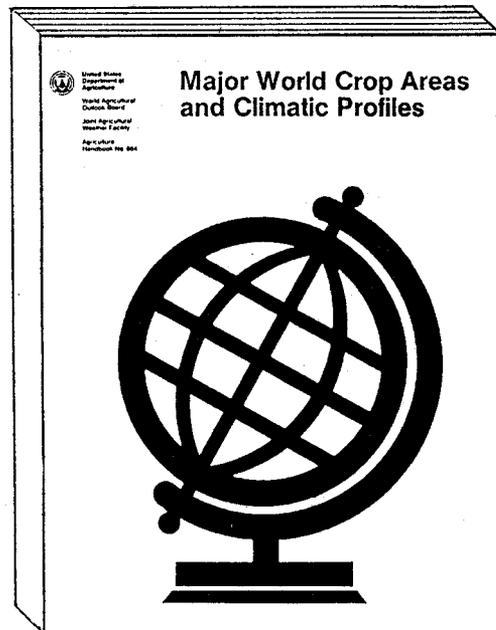
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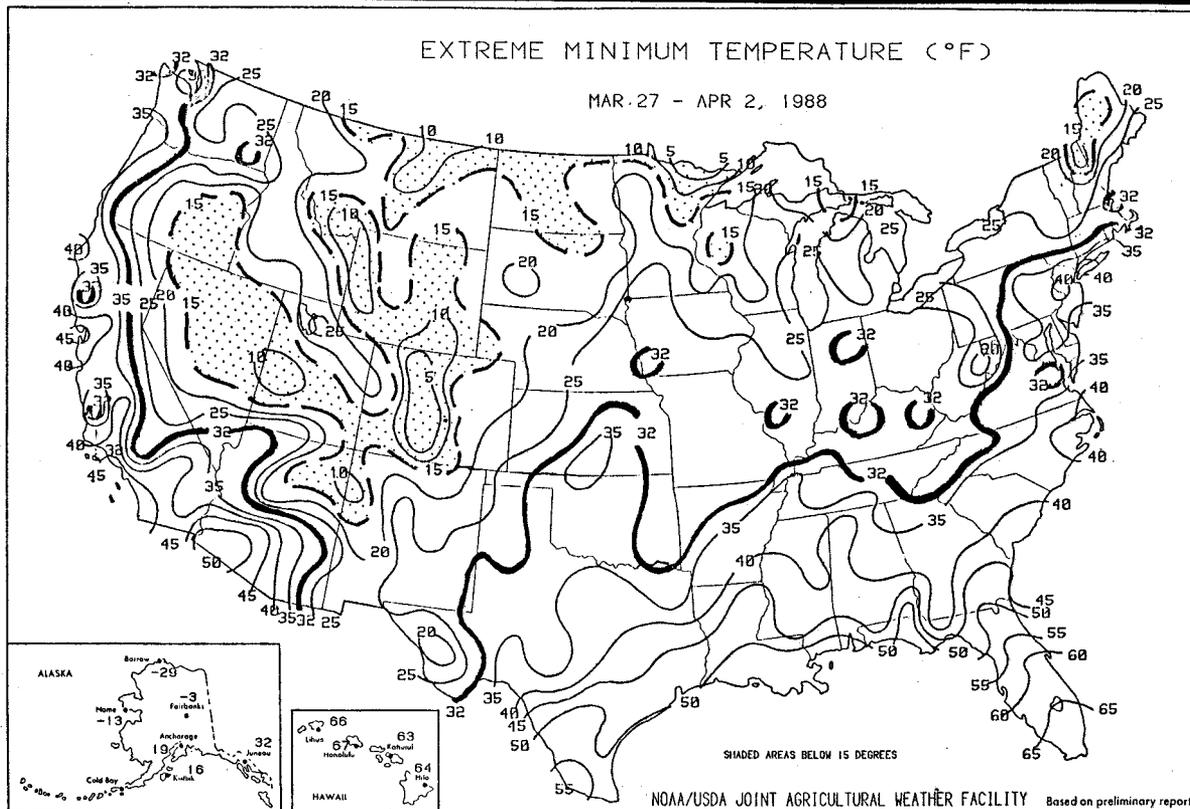
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