

WEEKLY WEATHER AND CROP BULLETIN

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

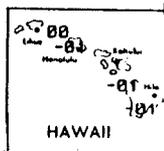
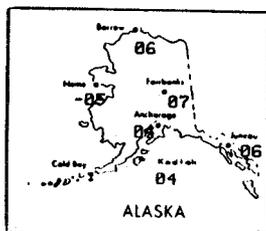
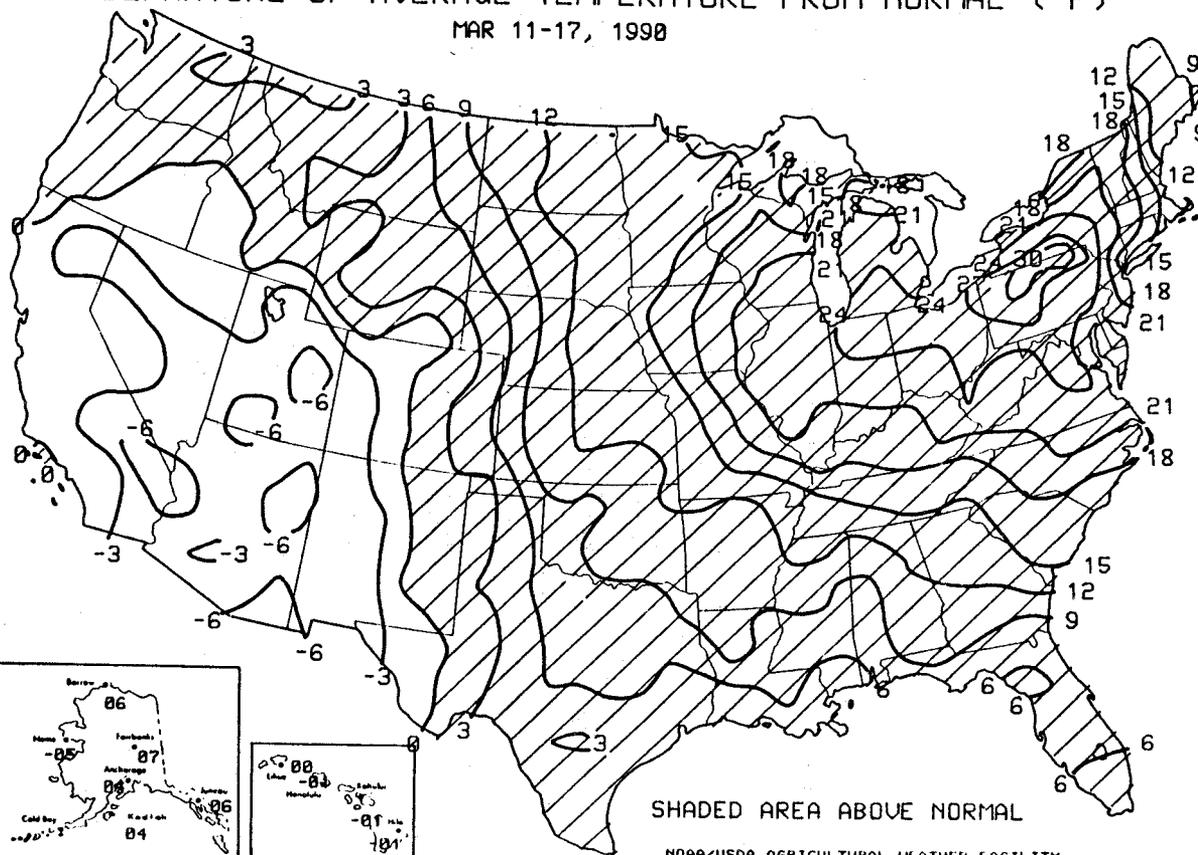
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DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)
MAR 11-17, 1990



SHADED AREA ABOVE NORMAL

NOAA/USDA AGRICULTURAL WEATHER FACILITY

Based on preliminary reports

flooding in the Southeast on Thursday and Friday. Over 10 inches of rainfall caused severe flooding in (Continued to p. 8)

HIGHLIGHTS

March 11-17, 1990

HIGHLIGHTS: A record heat wave in the East, flooding in the South, and severe storms in the Plains headlined an extraordinary week of weather.

A powerful frontal system edged eastward during the week, spreading heavy rain and severe weather from the Great Plains to the Atlantic coast. Early in the week, severe thunderstorms developed in the unseasonably warm moist air ahead of the system and produced high wind, hail, and tornadoes from the southern Plains to the upper Mississippi Valley. Snow fell across the northern Plains into the Great Lakes behind the system. By Friday, Fargo, North Dakota, had 11 inches of snow on the ground. On Wednesday and Thursday, thunderstorms spawned more tornadoes, including one which remained on the ground in Kansas for over 2 hours. Torrential rains triggered

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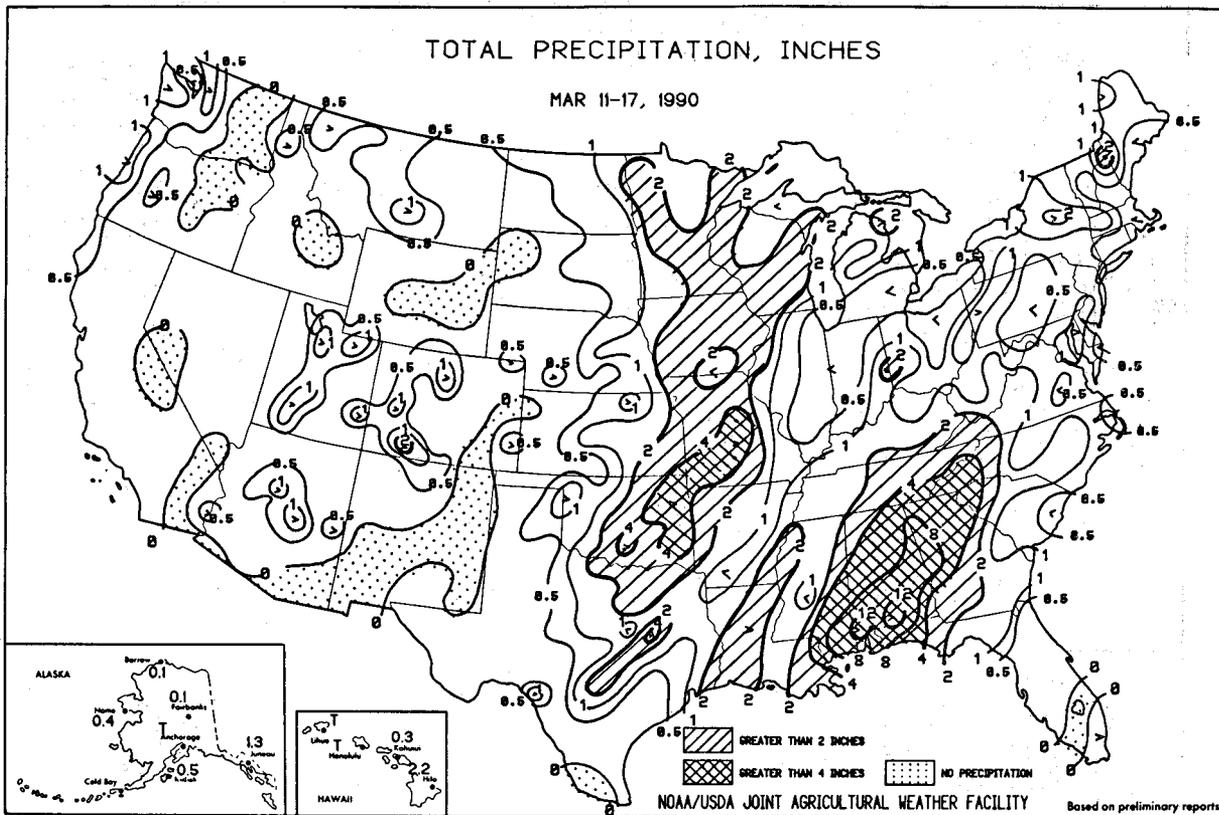
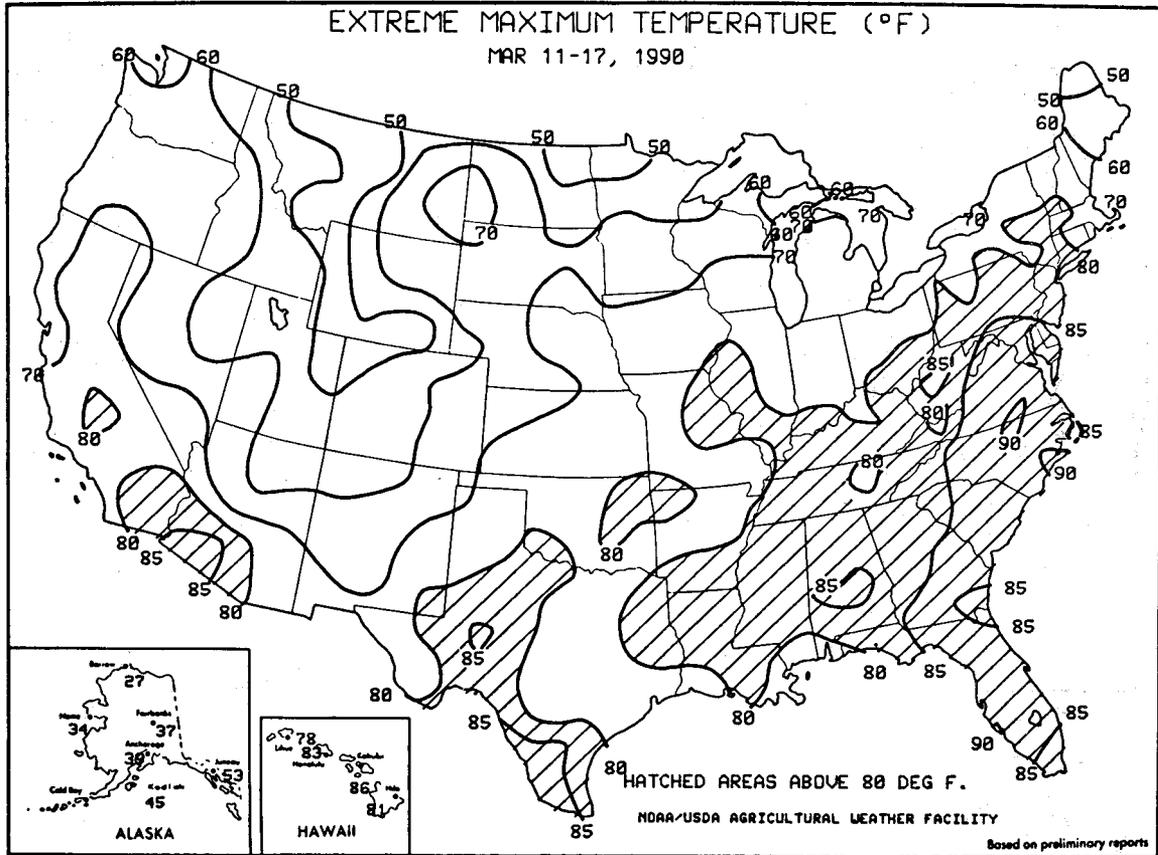


Figure 1

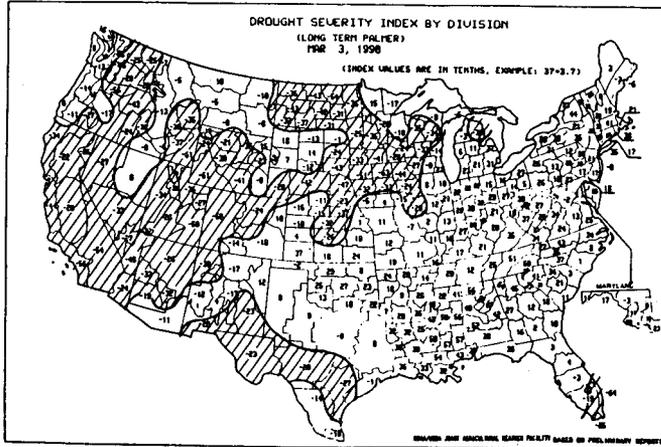
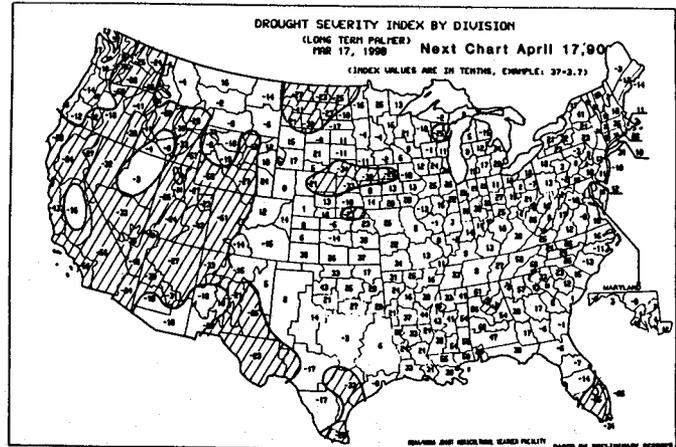


Figure 2



Storms Vanquish Long-term Drought in the Plains

Snow, hail, wind, and rain (just about everything in Mother Nature's grab bag) hit the Central United States on March 11-17. Though the severe weather caused property losses and flooding and soil erosion, the abundant moisture accompanying the storms replenished subsoil moisture supplies in areas that still had not fully recovered from the 1988 drought.

The Palmer drought maps for March 3 and 17 give some idea of the impact of the recent rain and snow on the extent of long-term dryness. To simplify the maps, I have depicted drought by only shading areas with index numbers -2 or less.

The March 3 map depicts drought extending from North Dakota southeastward through Minnesota and Wisconsin, southward into western Illinois and northern Iowa, and westward into Nebraska and north-central Kansas (fig. 1). Long-term drought also covered much of the Rocky Mountain region and the Pacific States. The drought in the Plains dates back to 1988. The March 17 map shows that 2 weeks of widespread rains have finally erased drought in Illinois and Kansas and over most of Iowa, Wisconsin, and Minnesota (fig 2). In addition, the snowstorm greatly diminished dryness in North Dakota.

As a result, recent storms significantly improved river flow, subsoil moisture, and water supplies. Low soil moisture is no longer a major concern for farmers in the hard red winter wheat region or the western Corn Belt. Prospects are now more favorable for April planting of spring wheat in the northern Plains.

The situation is less optimistic in other areas of the country. The latest drought map indicates that long-term drought continues in California, where 4 consecutive years of deficient precipitation have created water shortages. Drought also lingers in southern Texas and southern Florida.

Note also that excess water is a problem in the South, where index values as high as +7.6 in northwest Georgia are very unusual and indicative of the flood problems occurring in the Gulf Coast States. Some of the recent floods were the worst in at least 10 years and have been blamed for 14 deaths.

Douglas Le Comte

National Weather Data for Selected Cities

Weather Data for the Week Ending March 17, 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	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	74	53	82	43	64	11	4.0	2.5	2.4	5.0	139	19.9	148	93	50	0	0	0	0	2	2
MOBILE	74	58	79	48	66	6	11.4	9.9	7.2	11.7	333	27.2	210	99	59	0	0	0	0	3	3
MONTGOMERY	78	53	85	49	65	9	11.0	9.6	7.9	11.6	357	29.4	247	98	50	0	0	0	0	2	2
AK ANCHORAGE	35	17	39	8	26	3	T	-1	T	.5	124	3.3	166	88	52	0	7	1	1	0	0
BARROW	-2	-20	27	-35	-11	6	.1	0	0	.1	143	.2	42	85	73	0	7	3	0	0	0
FAIRBANKS	28	0	37	-18	14	7	.1	0	.1	.1	46	1.3	110	89	51	0	7	7	0	0	0
JUNEAU	43	30	53	17	37	6	1.5	.7	.6	3.0	160	11.1	119	97	68	0	4	5	2	1	1
KODIAK	42	29	45	23	36	4	.5	-.5	.2	1.9	83	11.4	87	91	57	0	5	4	4	0	0
NOME	15	-10	34	-27	1	-5	.4	.3	.4	.5	193	2.0	126	93	81	0	6	6	2	2	0
AZ PHOENIX	69	46	84	40	58	-2	.1	-1	.1	.3	64	1.8	103	60	18	0	0	0	0	0	0
PRESCOTT	50	24	68	17	37	-5	.4	0	.3	.4	45	2.9	71	76	31	0	6	3	2	2	0
TUCSON	66	39	83	30	52	-5	0	0	.2	.2	48	1.9	103	58	18	0	2	0	0	0	0
YUMA	73	46	86	40	60	-4	0	0	0	0	0	.1	20	43	15	0	0	0	0	0	0
AR FORT SMITH	72	49	83	37	61	11	2.3	1.4	1.3	3.3	162	14.3	226	96	45	0	0	0	0	2	2
LITTLE ROCK	72	56	77	47	64	12	1.1	0	1.0	6.7	274	16.2	160	76	51	0	0	0	2	1	1
CA BAKERSFIELD	67	40	82	34	54	-3	T	-2	T	.4	78	2.2	89	91	31	0	0	0	0	0	0
EUREKA	55	42	60	35	49	0	.6	-.5	.3	3.3	113	15.0	100	93	72	0	0	0	5	0	0
FRESNO	64	41	78	33	52	-2	.1	-2	.1	.7	74	4.8	100	94	37	0	0	0	1	0	0
LOS ANGELES	66	47	78	39	56	-1	.1	-3	.1	.1	13	3.9	60	83	34	0	0	0	1	0	0
REDDING	62	37	74	28	49	-5	.2	-1.0	.1	2.4	82	11.9	67	89	33	0	0	3	2	2	0
SACRAMENTO	62	40	72	34	51	-2	T	-.5	T	.9	70	8.7	108	94	44	0	0	0	0	0	0
SAN DIEGO	66	49	77	46	57	-1	.1	-.3	.1	.1	11	3.7	79	74	31	0	0	0	1	1	0
SAN FRANCISCO	59	45	65	39	52	0	.1	-.5	.1	.8	51	6.1	65	94	51	0	0	0	0	0	0
CO DENVER	50	28	61	14	39	2	.4	.1	.4	2.3	390	3.5	200	85	31	0	4	4	3	3	0
GRAND JUNCTION	47	26	58	16	36	-5	-1	0	.1	.4	103	1.5	98	89	34	0	7	7	0	0	0
PUEBLO	56	28	67	20	42	3	T	-1	T	.5	152	1.8	220	76	22	0	5	0	1	2	1
CT BRIDGEPORT	60	40	84	36	50	13	.2	-.7	.2	.6	26	6.4	77	98	67	0	0	0	0	0	0
HARTFORD	70	42	79	34	56	20	.6	-.4	.4	.8	37	8.2	92	98	54	0	0	0	2	2	1
DC WASHINGTON	81	55	89	48	68	23	1.4	.6	1.4	1.5	78	5.6	78	90	46	0	0	0	0	1	1
FL APALACHICOLA	74	59	77	52	67	7	1.8	.8	1.8	2.0	89	8.4	89	98	71	0	0	0	3	3	1
DAYTONA BEACH	82	59	88	53	71	7	.2	-.5	.2	.3	16	7.2	101	95	52	0	0	0	0	1	0
JACKSONVILLE	83	58	86	52	71	9	.4	-.4	.4	.6	29	6.5	76	95	49	0	0	0	1	1	0
KEY WEST	81	73	85	69	77	3	T	-.3	T	.5	71	1.5	33	85	62	0	0	0	0	0	0
MIAMI	83	70	85	65	76	5	T	-.4	T	.6	64	2.1	41	80	52	0	0	0	1	1	0
ORLANDO	85	61	88	57	73	7	.3	-.4	.3	.4	19	5.5	76	93	43	0	0	0	0	0	0
TALLAHASSEE	81	54	86	46	68	8	1.9	.6	1.9	1.9	62	11.8	92	96	51	0	0	0	1	1	0
TAMPA	85	63	87	58	74	8	.3	-.5	.3	.3	17	5.5	76	93	45	0	0	0	0	0	0
WEST PALM BEACH	82	69	86	62	76	6	.1	-.6	.1	.8	54	3.4	50	81	55	0	0	0	1	0	0
CA ATLANTA	76	58	82	51	67	15	5.9	4.5	4.6	7.8	240	25.9	206	92	43	0	0	0	3	2	2
AUGUSTA	84	55	88	50	69	15	.6	-.5	.6	1.2	43	6.6	61	95	43	0	0	0	2	1	1
MACON	80	56	84	50	68	12	3.2	2.0	2.3	4.2	144	12.3	105	95	49	0	0	0	3	2	2
SAVANNAH	84	58	87	54	71	13	1.3	.5	1.3	1.3	63	8.5	101	92	44	0	0	0	1	1	0
HI HILO	78	64	81	59	71	-1	2.2	-.8	1.4	10.4	139	45.8	151	93	60	0	0	0	3	1	1
HONOLULU	80	66	83	61	73	-1	T	-.8	T	.3	14	8.7	102	80	49	0	0	0	5	0	0
KAHULUI	79	63	86	55	71	-1	.3	-.4	.3	1.5	89	10.1	118	93	58	0	0	0	1	1	0
LIEUE	76	67	78	61	72	0	T	-1.0	T	2.4	98	12.9	105	80	63	0	0	0	0	0	0
ID BOISE	51	28	62	17	39	-2	.1	-.1	.1	.6	107	2.2	68	88	38	0	6	2	0	0	0
LEWISTON	56	37	63	33	46	4	T	-.2	T	.6	111	1.2	41	71	38	0	0	0	0	0	0
POCATELLO	45	25	53	16	35	0	.3	.1	.3	1.9	402	2.7	111	86	45	0	6	2	0	0	0
IL CHICAGO	67	49	81	34	58	22	.4	-.2	.1	2.1	164	6.6	162	88	55	0	0	0	4	0	0
MOLINE	66	50	80	33	58	24	2.6	2.0	1.9	6.2	473	10.0	238	91	57	0	0	0	5	1	0
PEORIA	68	50	80	33	59	22	.6	-.1	.5	3.4	244	8.7	198	95	52	0	0	0	2	0	0
QUINCY	68	50	80	33	59	21	1.1	.4	.8	2.7	170	7.6	173	90	53	0	0	0	4	1	1
ROCKFORD	66	47	78	34	56	24	.9	-.4	.4	1.9	162	4.9	131	90	58	0	0	0	5	0	0
SPRINGFIELD	69	51	80	36	60	21	.6	-.1	.4	2.6	170	8.9	187	94	51	0	0	0	2	0	0
IN EVANSVILLE	72	53	82	42	62	19	.6	-.4	.6	.7	28	10.5	125	92	50	0	0	0	1	1	1
FORT WAYNE	69	53	76	38	61	25	.5	-.1	.4	1.6	107	10.7	194	94	62	0	0	0	2	0	0
INDIANAPOLIS	71	53	79	41	62	23	.4	-.4	.4	1.3	66	8.1	116	89	52	0	0	0	2	0	0
SOUTH BEND	69	52	79	35	60	25	.1	-.6	0	0	0	0	0	0	0	0	0	0	2	0	0
IA DES MOINES	59	45	76	31	52	18	2.1	1.6	.9	1.2	83	7.4	125	90	50	0	0	0	3	0	0
SIOUX CITY	57	39	72	29	48	15	1.1	-.7	.8	5.2	494	7.5	241	92	62	0	1	4	4	2	2
WATERLOO	60	42	75	31	51	21	3.0	2.5	1.2	4.1	400	4.9	179	94	60	0	2	4	4	1	1
KS CONCORDIA	60	43	75	33	52	12	.8	-.4	.5	3.0	320	3.7	155	86	53	0	0	0	2	1	1
DODGE CITY	64	38	78	29	51	10	.1	-.2	.1	1.2	163	4.0	241	82	26	0	3	2	0	0	0
GOODLAND	57	32	67	26	45	8	T	-.2	T	.9	173	2.0	165	83	28	0	5	0	0	0	0
TOPEKA	63	45	78	32	54	13	1.4	.9	.4	2.4	226	5.9	198	92	58	0	1	6	0	0	0
WICHITA	64	45	76	34	54	11	1.1	-.7	.7	2.2	213	6.1	242	87	53	0	0	0	3	1	1
KY BOWLING GREEN	73	54	82	46	64	18	1.7	-.4	1.4	1.9	61	14.2	123	94	54	0	0	0	2	1	1
LEXINGTON	72	54	79	42	63	20	.8	-.3	.5	.9	36	8.5	90	94	54	0	0	0	3	0	0
LOUISVILLE	73	56	82	46	64	20	1.1	-.1	.7	1.4	56	12.0	132	91	49	0	0	0	2	1	1
LA ALEXANDRIA	74	60	83	50	67	9	3.4	2.3	2.4	4.3	163	21.8	186	75	52	0	0	0	3	2	2
BATON ROUGE	75	58	82	45	67	7	1.5	.5	1.2	3.9	159	22.4	186	99	58	0	0	0	3	1	1
LAKE CHARLES	69	58	76	46	64	4	2.3	1.6	1.0	3.5	209	17.0	177	97	68	0	0	0	4	2	2
NEW ORLEANS	75	59	80	47	67	6	3.0	1.9	1.6	4.2	158	23.2	182	97	60	0	0	0	2	2	2

Based on 1951-80 normals

Weather Data for the Week Ending March 17, 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	
																		1	2	3	4
SHREVEPORT	77	55	85	43	66	9	.9	-.1	.9	1.6	79	18.5	195	90	43	0	0	1	1		
ME CARIBOU	41	30	45	20	36	12	.5	-.1	.2	.5	37	5.8	101	89	62	0	4	2	0		
PORTLAND	50	37	62	35	44	12	.2	-.7	-.1	.2	8	5.9	62	98	65	0	0	4	0		
MD BALTIMORE	79	52	86	43	66	23	.9	-.1	.9	1.0	49	5.8	73	93	50	0	0	1	1		
SALISBURY	80	53	88	40	67	23	.1	-.8	-.1	.7	31	6.7	75	93	46	0	0	1	0		
MA BOSTON	62	42	73	37	52	15	.3	-.7	-.1	.3	15	7.5	76	97	59	0	0	2	0		
CHATHAM	50	39	60	37	45	8	.1	-.8	-.1	.6	25	10.0	93	95	80	0	0	2	0		
MI ALPENA	60	36	76	30	48	21	2.3	1.8	1.5	2.4	257	5.9	148	96	57	0	2	5	1		
DETROIT	66	47	77	34	56	22	.3	-.2	.2	1.2	94	7.9	166	98	63	0	0	3	0		
FLINT	68	49	78	34	59	27	.3	-.2	-.1	.9	83	5.1	126	93	55	0	0	3	0		
GRAND RAPIDS	66	48	76	32	57	25	.4	-.2	-.2	1.0	81	5.5	116	90	56	0	1	5	0		
BOUGHTON LAKE	58	39	76	30	49	22	.6	-.2	.5	.7	71	3.0	82	95	59	0	1	2	1		
LANSING	67	49	77	33	58	26	.2	-.4	-.1	.7	59	4.5	108	94	56	0	0	3	0		
MARQUETTE	49	33	62	23	41	19	1.3	.6	.4	1.5	104	5.2	97	95	68	0	3	5	0		
MUSKOGON	62	45	72	33	54	22	1.0	.4	.8	1.7	137	5.7	109	94	66	0	0	2	1		
SAULT ST. MARIE	46	35	52	25	40	17	1.8	1.4	.9	1.9	183	6.5	132	97	71	0	2	4	1		
MN ALEXANDRIA	42	30	63	17	36	13	2.3	2.0	1.0	2.3	418	2.8	134	98	80	0	5	5	2		
DULUTH	40	29	54	18	35	12	2.8	2.4	1.1	3.0	339	4.0	137	97	68	0	4	7	2		
INT'L FALLS	42	29	53	13	36	16	1.2	1.0	.5	1.3	231	2.2	105	96	69	0	4	5	0		
MINNEAPOLIS	51	36	69	29	44	16	2.8	2.4	1.3	3.7	429	4.5	182	95	65	0	3	6	1		
ROCHESTER	54	37	67	29	46	18	2.7	2.3	1.1	3.4	408	4.7	200	95	71	0	2	6	3		
MS GREENWOOD	72	57	82	44	65	10	1.5	-.1	1.2	4.6	138	18.2	140	94	54	0	0	2	1		
JACKSON	73	55	82	41	64	8	1.0	-.3	.9	3.0	103	23.5	193	97	58	0	0	3	3		
MERIDIAN	75	55	84	43	65	9	4.5	3.0	2.9	5.4	152	32.4	247	96	54	0	0	2	2		
MO CAPE GIRARDEAU	70	55	78	40	63	--	.6	-.6	.5	1.1	42	14.6	170	93	60	0	0	4	0		
COLUMBIA	67	50	81	38	59	17	4.6	3.8	3.9	5.9	348	11.6	218	84	57	0	0	4	1		
KANSAS CITY	62	47	77	33	54	13	2.2	1.6	.9	2.8	213	6.1	163	92	53	0	0	4	2		
SAINT LOUIS	72	55	84	44	64	21	.7	0	.4	1.1	66	6.1	110	87	41	0	0	5	0		
SPRINGFIELD	65	50	79	39	58	14	5.6	4.8	2.4	6.8	385	17.7	323	93	53	0	0	4	3		
MT BILLINGS	46	30	67	25	38	5	1.0	.8	.5	1.1	230	1.9	89	87	43	0	4	4	0		
GLASGOW	41	25	61	19	33	7	.2	-.2	-.1	.2	177	.6	82	91	55	0	7	3	0		
GREAT FALLS	39	24	46	18	31	1	.8	.6	.5	1.3	296	1.8	84	91	62	0	7	1	0		
HAVRE	37	22	44	9	30	1	.5	.4	.5	.5	209	.5	41	82	69	0	7	1	0		
HELENA	42	27	53	22	35	4	.3	-.2	-.2	.6	171	1.2	81	87	49	0	7	4	0		
KALISPELL	41	27	48	22	34	3	.5	-.3	-.3	.8	166	3.4	110	85	64	0	7	4	0		
MILES CITY	46	27	72	20	37	6	.1	-.1	0	.1	39	.2	17	88	45	0	6	4	0		
MISSOULA	43	28	53	23	35	2	.2	0	-.1	.3	60	1.5	56	91	52	0	6	4	0		
NE GRAND ISLAND	58	38	70	30	48	13	.2	-.1	.2	2.1	297	3.0	148	89	47	0	2	3	0		
LINCOLN	60	43	75	31	51	16	.7	.3	.7	1.8	193	2.5	95	84	50	0	1	2	1		
NORFOLK	56	39	71	32	48	15	1.0	-.6	.9	2.0	263	3.1	153	89	49	0	3	3	1		
NORTH PLATTE	55	31	69	25	43	9	.1	-.1	1.0	1.5	279	1.9	135	90	35	0	4	2	0		
OMAHA	57	43	74	30	50	14	1.4	1.0	1.0	2.7	298	3.8	149	88	62	0	1	5	1		
SCOTTSBLUFF	48	28	61	16	38	3	.4	-.2	.4	2.0	428	3.3	254	90	40	0	5	1	0		
VALENTINE	50	31	70	27	41	9	.3	-.1	.2	1.3	329	1.6	132	95	43	0	5	4	0		
NV RLY	42	13	58	-4	27	-5	.5	.3	.3	.8	164	2.7	144	87	36	0	7	3	0		
LAS VEGAS	63	39	75	32	51	4	0	0	0	0	0	1.6	134	47	16	0	1	0	0		
RENO	52	28	69	20	40	0	0	0	0	0	0	2.0	75	84	31	0	6	2	0		
WINNEMUCCA	50	22	66	11	36	-2	0	0	0	0	0	1.6	173	1.5	79	86	30	0	6	1	
NH CONCORD	58	36	73	33	47	16	.6	-.1	.5	.6	35	6.0	88	98	60	0	0	2	0		
NJ ATLANTIC CITY	78	48	85	42	63	22	.5	-.4	.5	.6	27	4.1	46	98	48	0	0	2	1		
NM ALBUQUERQUE	54	30	63	26	42	-4	.1	-.1	.1	.3	107	1.0	99	65	20	0	5	1	0		
CLOVIS	62	35	74	26	48	3	0	0	0	0	0	2.2	187	65	18	0	3	0	0		
ROSWELL	66	36	75	30	51	1	.1	0	.1	.6	267	1.3	125	49	15	0	3	1	0		
NY ALBANY	68	43	82	35	55	23	1.6	.9	1.2	1.6	101	9.4	151	94	55	0	0	3	1		
BINGHAMTON	70	50	78	41	60	30	.6	-.1	.5	.7	45	7.3	115	93	54	0	0	2	0		
BUFFALO	65	45	79	38	55	23	.6	-.1	.4	.8	49	9.4	135	96	63	0	0	3	0		
NEW YORK	68	44	83	40	56	16	.7	-.3	.7	1.0	45	6.5	78	92	55	0	0	2	1		
ROCHESTER	67	47	82	38	57	24	.9	.3	.6	1.0	70	6.4	106	99	59	0	0	4	1		
SYRACUSE	68	45	82	37	57	24	2.3	1.6	1.0	2.4	146	8.5	124	99	57	0	0	6	2		
NC ASHEVILLE	72	51	81	45	61	16	4.3	3.2	2.3	5.4	206	16.7	186	97	51	0	0	3	2		
CHARLOTTE	80	58	86	54	69	19	1.0	-.2	.9	2.5	91	12.0	117	90	46	0	0	3	1		
GREENSBORO	79	56	86	49	68	20	.6	-.3	.5	1.3	62	9.4	104	90	50	0	0	3	0		
HATTERAS	78	61	81	44	69	18	.1	-.9	.1	1.5	65	10.2	92	94	57	0	0	1	0		
NEW BERN	84	58	89	45	71	19	.8	-.1	.7	1.6	77	7.0	70	95	44	0	0	2	1		
RALEIGH	85	59	90	52	72	23	.7	-.1	.7	1.5	73	8.4	93	89	41	1	0	1	1		
WILMINGTON	82	58	87	47	70	17	.8	-.2	.8	1.0	45	5.4	58	93	47	0	0	1	1		
ND BISMARCK	46	30	61	24	38	13	.5	.4	.3	.5	173	1.0	82	90	52	0	5	4	0		
FARGO	42	29	60	13	36	13	1.5	1.3	.7	1.5	448	2.2	174	99	72	0	5	6	1		
GRAND FORKS	39	31	50	19	35	14	2.2	2.1	.9	2.2	605	2.7	165	98	72	0	4	4	3		
WILLISTON	44	28	71	24	36	12	.4	.3	.2	.4	175	.8	69	92	59	0	6	3	0		
OH AKRON-CANTON	70	53	78	39	62	26	.3	-.5	.2	.8	43	7.7	120	93	57	0	0	2	0		
CINCINNATI	71	54	80	40	63	22	.8	-.1	.5	1.6	74	10.0	126	89	51	0	0	3	0		
CLEVELAND	70	52	80	41	61	25	.2	-.5	.2	.5	32	7.5	122	91	55	0	0	2	0		
COLUMBUS	71	53	79	40	62	23	.3	-.5	.2	.6	37	8.2	125	94	54	0	0	4	0		

Based on 1951-80 normals

Weather Data for the Week Ending March 17, 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	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE		.50 INCH OR MORE	
																		TEMP. °F	PRECIP.		
DAYTON	70	53	78	37	61	23	1.4	.7	.5	2.2	139	10.3	165	92	56	0	0	4	1		
TOLEDO	70	52	79	40	61	26	.5	.0	.4	1.8	138	9.3	182	94	54	0	0	2	0		
YOUNGSTOWN	71	53	79	41	62	28	.3	.5	.3	.8	48	7.6	115	89	50	0	0	0	0		
OK OKLAHOMA CITY	69	49	79	39	59	10	2.3	1.8	1.1	3.7	344	10.1	305	86	52	0	0	3	3		
TULSA	69	50	83	40	60	11	4.4	3.7	2.1	5.9	377	12.8	277	89	49	0	0	0	0		
OR ASTORIA	54	38	65	29	46	1	.6	-1.1	.2	4.9	119	32.7	145	95	63	0	2	4	3		
BURNS	48	22	60	15	35	-1	.1	-.2	.2	.5	100	1.4	46	90	33	0	6	1	0		
MEDFORD	57	35	70	24	46	0	.1	-.2	.1	1.2	113	5.2	79	92	47	0	3	2	0		
PENDLETON	55	34	66	28	44	1	.1	-.3	.1	.8	140	1.9	55	77	36	0	3	0	0		
PORTLAND	56	37	65	29	47	1	.4	-.3	.2	2.3	111	13.6	112	97	52	0	3	0	0		
SALEM	55	36	63	27	46	1	.3	-.5	.2	2.2	88	16.0	114	94	55	0	3	4	0		
PA ALLENTOWN	77	49	83	43	63	25	.3	-.7	.2	1.0	48	7.9	95	96	51	0	3	4	0		
ERIE	70	53	81	41	62	29	.8	-.1	.7	.6	39	8.4	143	89	53	0	0	2	1		
HARRISBURG	77	52	84	45	65	25	.7	-.4	.2	.8	43	7.4	97	95	49	0	0	3	0		
PHILADELPHIA	79	49	85	42	64	23	.9	-.1	.5	1.0	49	6.4	80	94	49	0	0	0	0		
PITTSBURGH	73	55	80	44	64	26	.8	-.1	.7	.9	49	7.3	104	91	51	0	0	2	1		
SCRANTON	74	52	80	45	63	28	.5	-.1	.4	.8	57	7.3	129	93	51	0	0	3	0		
RI PROVIDENCE	64	41	77	36	53	16	.4	-.5	.3	.5	22	8.3	82	98	61	0	0	4	0		
SC CHARLESTON	83	61	88	54	72	16	.4	-.6	.3	1.2	40	6.1	55	92	44	0	0	2	0		
COLUMBIA	84	59	88	55	72	18	1.0	-.6	.6	1.2	53	4.1	44	92	41	0	0	1	0		
FLORENCE	85	58	88	50	72	18	.6	-.6	.3	2.1	164	15.1	126	91	50	0	0	2	0		
GREENVILLE	77	56	84	51	66	16	3.9	2.5	1.0	5.4	171	1.2	76	98	65	0	3	2	0		
SD ABERDEEN	44	32	57	27	39	12	.5	.3	.2	.7	147	1.2	76	98	65	0	3	4	0		
HURON	50	33	71	27	42	13	.6	.3	.4	1.0	171	1.6	94	91	49	0	0	0	0		
RAPID CITY	48	29	68	25	39	7	.1	-.2	0	1.0	222	1.6	111	89	42	0	3	2	0		
STOUX FALLS	51	33	68	27	42	12	.8	.4	.4	1.3	164	1.7	75	94	58	0	4	0	0		
TN CHATTANOOGA	76	53	82	50	65	15	4.4	2.9	3.5	8.7	251	25.9	194	98	47	0	4	4	0		
KNOXVILLE	75	54	85	46	64	16	3.3	2.0	5.2	171	18.0	153	97	48	0	0	3	2			
MEMPHIS	73	55	82	43	64	13	1.3	.1	1.3	3.9	135	16.8	143	91	53	0	0	1	1		
NASHVILLE	74	56	82	45	65	17	1.6	.3	1.3	2.7	88	10.1	88	88	48	0	0	3	1		
TX ABILENE	74	49	82	36	61	6	.9	.7	.7	1.2	244	5.4	221	89	32	0	0	2	1		
AMARILLO	62	35	74	26	49	3	.5	.3	.5	1.7	367	4.5	303	81	25	0	0	4	0		
AUSTIN	75	56	79	45	65	5	1.1	.7	1.0	1.6	179	6.4	130	91	48	0	0	1	0		
BRAUMONT	71	58	78	47	65	6	2.4	1.7	1.4	3.9	232	19.9	199	95	65	0	0	4	1		
BROWNSVILLE	80	64	84	50	72	4	T	-.1	T	.4	152	1.6	52	91	53	0	0	4	2		
CORPUS CHRISTI	78	62	82	46	70	4	T	-.2	T	.9	212	5.3	151	96	52	0	0	1	0		
DEL RIO	-999	57	-999	42	-999	--	1.1	1.0	1.0	1.3	470	3.3	199	90	76	0	0	3	0		
EL PASO	64	37	75	30	51	-4	-.1	0	.1	.4	205	.8	84	52	15	0	2	1	0		
FORT WORTH	73	53	77	41	63	8	3.0	2.5	2.0	3.9	342	13.1	280	90	50	0	0	2	0		
GALVESTON	70	60	74	54	65	4	2.0	1.5	1.7	2.7	239	9.9	153	92	66	0	0	2	2		
HOUSTON	74	57	77	45	65	4	.7	.1	.3	1.6	108	10.0	122	94	53	0	0	4	1		
LUBBOCK	67	39	80	30	53	4	.2	0	.2	.4	91	2.9	214	81	14	0	2	2	0		
MIDLAND	70	41	85	30	56	1	-.2	.1	.1	.5	200	1.9	158	79	14	0	2	2	0		
SAN ANGELO	75	48	84	35	62	5	.2	0	-.2	.3	83	3.5	195	82	26	0	0	1	0		
SAN ANTONIO	74	54	78	41	64	3	1.9	1.6	1.6	3.1	461	6.9	172	93	48	0	0	4	1		
VICTORIA	75	58	78	48	66	3	.2	-.1	.1	1.2	168	5.0	104	95	54	0	0	5	0		
WACO	75	56	77	43	66	8	.9	.5	.9	4.1	429	9.6	207	89	45	0	0	2	1		
WICHITA FALLS	73	50	83	37	62	9	3.2	2.8	1.4	4.3	502	11.7	422	90	45	0	0	3	0		
UT CEDAR CITY	43	21	62	11	32	-7	.6	.3	.4	.8	146	3.6	181	100	53	0	7	3	0		
SALT LAKE CITY	46	24	55	12	35	-5	1.1	.8	.8	1.6	183	2.5	71	91	40	0	6	4	1		
VT BURLINGTON	62	39	78	34	50	22	.7	-.2	-.4	.7	58	5.8	125	97	57	0	0	3	0		
VA NORFOLK	84	59	88	48	72	24	.7	-.2	-.7	1.4	66	7.5	83	91	40	0	0	1	0		
RICHMOND	84	57	89	50	71	25	.4	-.4	-.4	.8	40	6.0	72	90	40	0	0	2	0		
ROANOKE	79	57	86	52	68	23	1.2	-.4	-.8	1.8	88	7.0	87	88	44	0	0	2	1		
WA QUILLAYUTE	52	38	62	30	45	3	1.6	-.2	-.8	8.0	116	40.8	122	97	60	0	1	4	2		
SEATTLE-TACOMA	54	37	60	32	46	2	.8	0	.4	2.2	108	15.6	127	97	50	0	2	3	0		
SPOKANE	49	29	57	23	39	2	.1	-.3	-.1	.7	88	4.1	85	89	47	0	6	1	0		
YAKIMA	57	26	63	20	42	0	-.1	-.1	-.1	.2	58	1.8	72	88	30	0	6	1	0		
WV BECKLEY	71	54	77	43	62	22	.9	-.1	.6	1.4	63	9.1	103	84	49	0	0	2	1		
CHARLESTON	79	59	89	49	69	25	.9	0	.5	1.2	53	7.7	89	83	39	0	0	3	0		
HUNTINGTON	78	58	84	48	68	23	1.1	-.1	.6	1.1	52	7.6	93	79	37	0	0	3	1		
PARKERSBURG	76	57	82	45	67	24	1.1	.3	.5	1.2	63	7.6	104	87	44	0	0	3	0		
WI GREEN BAY	58	38	70	30	48	20	2.4	2.0	1.0	3.1	341	4.3	139	94	67	0	1	6	3		
LACROSSE	59	42	74	33	51	20	2.6	2.2	1.6	3.1	352	4.5	168	95	59	0	0	3	0		
MADISON	62	43	75	33	52	22	3.2	2.7	1.6	4.0	390	6.6	210	91	59	0	0	6	2		
MILWAUKEE	65	45	76	32	55	23	1.0	.5	.5	1.8	144	6.2	148	91	55	0	0	3	3		
WAUSAU	54	37	67	27	46	20	1.8	1.4	1.2	2.4	259	3.9	140	97	58	0	1	6	1		
WY CASPER	45	24	59	17	35	4	T	-.2	T	.8	179	1.8	121	77	32	0	6	0	0		
CHEYENNE	38	23	50	11	30	-1	.3	-.1	.3	2.6	544	3.7	290	97	58	0	7	3	0		
LANDER	47	25	54	18	36	5	T	-.1	T	.6	124	.7	44	72	26	0	6	0	0		
SHERIDAN	45	27	67	14	36	5	.4	.2	.2	.7	140	1.9	97	90	41	0	5	4	0		

Based on 1951-80 normals

National Agricultural Summary

March 12-18, 1990

HIGHLIGHTS: Rain continued to increase soil moisture supplies in the **western Corn Belt** and portions of the **northern Great Plains**. Heavy rains added to the already surplus moisture supplies in much of the **Delta**. Rain improved winter wheat prospects in most of the **Great Plains** and portions of the **Pacific Northwest**. Range and pasture conditions continued to improve in most areas. Warm, dry weather prevailed in **Florida's** fruit and vegetable producing areas.

SMALL GRAIN: Beneficial rains fell in portions of the Great Plains. Rain increased soil moisture supplies and winter wheat prospects in portions of Nebraska and South Dakota. In Montana, winter wheat was good to fair. Some precipitation fell in most areas. Rain and warm weather provided excellent growing conditions in Kansas. Disease and insect problems remained light. Colorado and Oklahoma's winter wheat was good to fair. Heavy rains flattened some winter wheat fields in southwestern Oklahoma. In Texas, small grain prospects continued to improve. In the Blacklands, rust was a problem in some fields. Fields were beginning to head in the central and southern areas. Arkansas' crop was good. Heavy rains damaged some fields in low-lying areas. North Carolina's winter wheat was good to fair. Georgia's crop was good but hessian flies and powdery mildew were problems in some fields. In the Corn Belt, winter wheat was mostly good. Winter wheat was good to excellent in Idaho and good to fair in Washington. Spring small grain seeding was underway in the Columbia Basin of Oregon. California's small grains were good, but Russian wheat aphid problems were severe in many areas.

OTHER FIELD CROPS: Rain and wet fields continued to slow spring fieldwork in the Delta. Corn planting continued as weather allowed. Rice seeding continued in Louisiana. Corn planting was one-third complete in Georgia. Tobacco transplanting was active. Corn planting progressed well in southern Texas but was slowed by rain in the central area and the Blacklands. Cotton and sorghum planting continued in the Rio Grande Valley and the Coastal Bend area. Rain increased soil moisture supplies in the western Corn Belt.

FRUIT AND NUTS: Irrigation was active in Florida's citrus producing areas. Trees were setting new crop fruit. Temple harvest was nearly complete. Peaches were good to excellent in Georgia. Peach trees were setting fruit in east Texas. Arizona's citrus harvest included Valencia oranges, grapefruit, and tangerines. In California, almonds were in full bloom. Some petal fall occurred. Thompson seedless grapes were leafing in Fresno County. Desert grapefruit, lemon, Navel, and Valencia orange harvests were active.

VEGETABLES: Springlike weather prevailed over Florida's major vegetable producing areas. Harvest activity continued to gain momentum. Sweet corn harvest was underway in the Belle Glade area. Watermelon planting was underway in portions of the Delta. Irish potato planting was over half finished in North Carolina. Early vegetable planting was underway in Alabama. Vegetables were fair to poor in Louisiana. Vegetable growth was good in the Rio Grande Valley, Texas. Carrot, cabbage, celery, and lettuce harvests continued. Onion and potato planting was underway in the High Plains. Lettuce harvest continued in Arizona. Artichoke, asparagus, broccoli, and cauliflower harvests continued in California. Quality was variable. Cantaloupe planting was ongoing in the Huron district. Red potato harvest was nearly complete in Riverside County.

PASTURES AND LIVESTOCK: Pastures were good to fair in the Delta and Southeast. Livestock was in good condition. Spring lambing and calving continued in most areas.

(Continued from front cover)

parts of **Alabama** and **Georgia**. Beneficial rains soaked the **eastern seaboard** at week's end.

Numerous record-high temperatures for the date were broken daily in advance of the slow-moving cold front. Some stations broke their previous records by as much as 23° F as temperatures averaged from 3 to 30° F above normal over the eastern two-thirds of the Nation. From March 12 through 15, temperatures soaring into the 70's and 80's set at least 250 daily records across the eastern half of the country. On Tuesday, **Washington, DC's** 100-year maximum temperature record of 74° F was already broken at 8:01 a.m. On Wednesday, **Charleston, West Virginia's** record high of 89° F was the highest in the **Nation**. (By the following Monday, winter returned--2 inches of snow were on the ground.) Flooding resulted from the unseasonably high temperatures melting the snow across **New England**. Much cooler air moved into the **central and eastern portions of the country** behind the cold front at the end of the week.

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 3.00 to 5.00 in.; 6.00 to 10.00 in. many locations; over 16.00 in. isolated areas. Temperatures 5 to 10° above normal.

Ideal conditions for all field activities existed through mid week; heavy rain weekend caused serious flooding along waterways. Acreage intended for spring planting 31% prepared, 32% 1989, 34% avg. Fieldwork progress 68% behind normal, 30% on schedule, 2% ahead of schedule. Corn planted 31%, 29% 1989, 22% avg. Winter wheat 16% headed, 13% 1989, 4% avg.; 1% poor, 33% fair, 66% good. Pastures 37% fair, 63% good. Livestock 5% poor, 20% fair, 75% good. Primary activities: Land preparation; applying fertilizers, herbicides; planting corn, spring potatoes, early vegetables; top dressing winter annuals; fertilizing pastures; pruning, spraying fruit trees; planting pine trees; general care of livestock, poultry, catfish.

ARIZONA: Cold front spread strong winds, snow north, rain south early in period; minimum temperatures 14th -4° high elevations to 30° deserts. Warming 15th to 17th; temperatures 50° high elevations, 60 to 80° deserts. Temperatures 2 to 8° below normal; precipitation from none to 1.33 in.

Cotton 2% planted, 9% 1989; activities included seedbed preparations, furrowing, pre plant pesticide applications, listing, pre irrigation. Wheat, barley 67% good, 33% excellent; jointing 93%, 83% 1989, 80% avg.; heading 22%, 12% 1989, 14% avg. First cutting alfalfa continued west, began elsewhere; progress light; condition mostly good. Citrus crops harvested included valencia oranges, grapefruit west, central; tangerines central; harvest, shipping head lettuce west; harvest, packing spring lettuce, mixed vegetables west, central. Frost injury spring potatoes central.

ARKANSAS: Temperatures well above normal. Thunderstorms middle of week, heaviest rain northwest, southwest sections. Extremes 31°; 83°. Rainfall 0.56 to 3.45 in.

Soil moisture adequate to surplus. Wheat good except some local damage from flooding in low areas. Fruit potentials good. Pastures good. Livestock good.

CALIFORNIA: Low pressure through off coast early in week allowing weak weather disturbances to rotate north end of State. Systems were warm not very wet. Later high pressure dominated, pushing moisture north of State allowing temperatures to warm above normal.

Mostly open weather, good progress fieldwork. Most small grains good condition, earliest heading. Russian wheat aphid populations severe many areas, controls being applied. Cotton seeding progressed southern areas. New crop sugarbeets hoed, thinned. Safflower planting continued. Alfalfa harvest seasonally active southern areas. Weevil controls applied central areas. Field preparations cotton, sugarbeets, corn, other spring crops active. Normal cultural activities, pruning, fertilizing, weed control ongoing in orchards, vineyards. Almonds full bloom, some petal fall. Thompson Seedless grapes leafing out Fresno County. Bloom in stone fruit. Desert grapefruit, lemon, navel, valencia orange picking active. Artichokes continued moderate

supply, variable quality. Asparagus harvest increasing volume improved quality. Broccoli fairly heavy supply central coast, variable quality. Cauliflower light to moderate supply central coast, variable quality. Replanting melon fields ongoing desert. Cantaloupe fields being planted Huron district. Red potato harvest completed Riverside County. Livestock generally good statewide. Range, pasture conditions improved slowly northern counties Sacramento Valley due to mild temperatures, rainfall. Conditions improved more slowly San Joaquin Valley due to drier weather. Water supplies low most areas due to lack of runoff. Supplemental feeding continued.

COLORADO: New snow 3.00 to 9.00 in. fell in the mountains, across the eastern plains, followed by warmer temperature. Temperatures 3 to 8° above normal.

Soil moisture supplies 12% very short, 27% short, 52% adequate, 9% surplus. Winter wheat 4% very poor, 6% poor, 21% fair, 62% good, 7% excellent. Most fields were too wet to work, calving continued at normal pace, lambing is well ahead of normal. Death losses were slightly below normal. Pasture, range conditions improving.

FLORIDA: Very warm week. Temperatures 6 to 8° above normal. Daily maximum readings into 80s common through 16th with few 90s south. Flash flooding western Panhandle late week; local rain totals exceeded 15.00 in. Eastern Panhandle, Big Bend areas received 1.00 to 3.00 in. of rain. Significant rains again eluded Peninsula with most totals 0.50 in. or less. Extremes 39°; 95°.

Soil moisture Panhandle, northern Peninsula adequate; central, southern Peninsula short. Land preparation active spring seeded crops. Corn planting, tobacco transplanting active. Excessive weekend rains Panhandle, parts of northern Peninsula, flooded, eroded some recently planted corn fields. Winter wheat good except some lodging from weekend storm. Sugarcane harvest complete. Moisture shortages over much of Peninsula continued to limit forage supplies, despite warm temperatures favorable for growth. Pastures mostly fair Panhandle; varied from poor to good, Peninsula. Cattle continued improvement; overall, fair to generally good. Few weekend showers citrus belt; more rain needed, irrigation continued. Bloom almost over. Trees generally setting new crop fruit. Salvage harvesting damaged valencia oranges about complete; some fresh movement of undamaged valencias. Grapefruit harvest slowing. Temple harvest about complete. Spring like weather prevailed over major vegetable producing areas. Harvest continues increase. Volume leaders: Tomatoes, cabbage, cucumbers, celery, peppers, squash, strawberries. Also available good volume tablestock potatoes, snap beans, sweet corn, lettuce, carrots, radishes, eggplant, escarole. Initial harvest Belle Glade sweet corn underway.

GEORGIA: Rainfall 5.00 to 7.00 in. north, west central; 2.00 in. southwest, near 1.00 in. elsewhere. Heaviest 10.20 in. at Epworth. Rainfall 3 days except 1 day over east. Temperatures 10° above normal. Extremes 38°; 87°. Days suitable for fieldwork 5.3. Soil moisture 2% very short, 25% short, 43% adequate, 30%

surplus. Corn good, 33% planted, ahead of last year, average. Tobacco beds fair to mostly good, 12% transplanted, 7% avg. Tobacco fair to excellent, mostly good. Watermelons good, 37% planted, ahead last year, average. Wheat 76% jointing, 75% 1989, 62% avg.; 14% boot, 20% 1989, 10% avg.; Condition good, powdery mildew, hessian fly causing problems. Rye, other small grains good. Apples fair to good; 24% blooming, far ahead last year, average. Peaches mostly good to excellent; 100% blooming, well ahead last year, average, early harvest expected. Onions good, irrigation active. Pastures fair to mostly good. Livestock good. Main activities: Busy week. Planting corn, watermelons, other vegetables, transplanting tobacco. Land preparation active. Irrigating onions, corn in southern part of State.

HAWAII: Weather variable, gusty trades 15 to 30 mph early part of week. Shower band passed through island chain mid week. Sunny skies, warmer temperatures more prevalent weekend. Temperatures high 60s to low 80s. Rainfall none to 1.40 in.

Days suitable for farm work 7.0. Sugar harvesting resumed most areas of State. Banana, papaya production seasonally low, spraying to control fungus diseases increased. Warmer temperatures aided forage grass growth. Ginger root planting, harvesting operations active with improved weather.

IDAHO: Temperatures 2° above normal to 2° below normal in the north. Elsewhere temperatures up to 5° below normal. Precipitation levels were below normal statewide.

Fieldwork all areas of State. Planting onions, sugarbeets, grains southwest. Planting grains on sandy soils south central. Seed potatoes sorted, shipped, planted east. Winter crops good to excellent condition, little erosion north. Other activities: fertilizing, shopwork, pruning fruit trees. Livestock good condition. Calving, lambing winding down many areas. Complications isolated areas of north, east. Other livestock activities: repairing fences, shearing, feeding cattle.

ILLINOIS: Temperatures 12 to 18° above across State. Precipitation 1.00 to 2.00 in. west central, northwest, far south, 0.10 to 0.75 in. elsewhere.

Winter wheat 33% excellent, 63% good, 4% fair. Livestock mostly good to excellent.

INDIANA: Temperatures 15 to 20° above normal. Lows mid 40s, highs mid 60s. Precipitation 0.25 to 0.75 in.

Spring fieldwork confined to east central, southern areas. Other activities: Plowing, chiseling, hauling manure, spreading fertilizer, seeding grasses, repairing equipment, cleaning fence rows, ditches, preparing tobacco beds, purchasing supplies, selling grain, top dressing wheat, care of livestock. Hay supplies adequate. Livestock good. Wheat greening up.

IOWA: Temperatures 8 to 20° above normal. Extremes 8°; 80°. Another very wet week; precipitation totals 0.92 to 3.87 in; average 1.98 in. Heavy rain with little ground frost has replenished depleted soil moisture supplies. Livestock mostly good. Spring calving in full swing. Losses appear normal despite extremely muddy conditions.

KANSAS: Temperatures well above normal all areas, varying 9° above southwest to 13° above central, northeast. Rainfall all areas, 0.10 in. northwest to 3.28 in. southeast.

Days suitable for fieldwork 1.5. Topsoil 4% short, 63% adequate, 33% surplus. Subsurface 39% short, 48% adequate, 13% surplus. Wheat excellent growth, development with rain, warm weather. Disease, insect problems very light to moderate for time of year. Few fields southeast, south central starting to joint, some late fall seeded fields just starting to emerge. Oat, barley seeding good progress. Range, pastures greening up. Forage supplies short, prospects good. Lambing, calving past halfway point, few problems.

KENTUCKY: Very warm, highs near 70°, lows near 50°; 10 to 20° above normal. Rainfall variable 0.50 to 2.50 in. Most locations 1.00 in.

Soil moisture mostly adequate. Fertilizing, disking widespread. Wheat growth advancing rapidly due to continued warm temperatures. Tobacco beds generally prepared, many seeded. Livestock have wintered well, warm weather benefitted newborn calves.

LOUISIANA: Temperatures 4 to 10° above normal. Extremes 38°; 85°. Rainfall 0.92 to 3.74 in.

Days suitable for fieldwork 2.7. Soil moisture supplies: 13% adequate, 87% surplus. Spring plowing 16%, 28% 1989, 27% avg. Corn planted 18%, 16% 1989, 19% avg.; emerged 5%, 2% 1989, 5% avg. Rice planted 4%, 5% 1989, 5% avg.; emerged 1%, 1% 1989, 1% avg. Blackbirds caused problems in planted fields. Sugarcane 27% very poor, 33% poor, 40% fair. Damage due to excess moisture increased daily. Wheat headed 6%, 5% 1989, 3% avg., 4% poor, 63% fair, 29% good, 4% excellent. Rust, Septoria in fields increased in incidence, severity. Livestock 2% poor, 72% fair, 26% good. Pasture 17% poor, 62% fair, 21% good. Vegetable 13% very poor, 28% poor, 53% fair, 3% good, 3% excellent.

MARYLAND & DELAWARE: MARYLAND: Precipitation 0.09 in. Temperature 65°, normal 42°. Extremes 37°; 89°.

DELAWARE: Precipitation 0.14 in. Temperature 63°, normal 43°. Extremes 36°; 87°.

MICHIGAN: Temperatures 16 to 26° above normal. Extremes 20°; 79°. Precipitation 0.18 to 2.24 in. across the State. Localized flooding in southern districts. Soils saturated most areas.

Major activities: Fertilizer application, pruning, spraying orchards, marketing grain, preparing machinery for spring planting season. Fields too wet to permit tillage. Livestock excellent condition. Feed supplies adequate. Lambing, calving activity increasing. Cows moving to pastures.

MINNESOTA: Temperatures 11 to 17° above normal for the State. Extremes 4°; 83°. Precipitation 0.41 to 2.17 in. Greatest weekly total 2.97 in. at Red Wing.

MISSISSIPPI: Temperatures 9° above normal. Extremes 38°; 84°. Moderately wet north, dry central, wet south. Rainfall 2.44 in., 1.05 above normal.

Days suitable for fieldwork 1.5, 4.6 1989, 3.0 avg. Soil moisture 9% adequate, 40% surplus, 51% excessive. Wheat 64% jointing, 52% 1989, 44% avg.; 8% poor, 36% fair, 56% good. Corn 8% planted, 7% 1989, 11% avg. Watermelons 7% planted, 6% 1989, 6% avg. Livestock 5% poor, 43% fair, 52% good. Pastures 8% poor, 48% fair, 44% good. Hay supply 19% short, 81% adequate. Activities: Equipment preparation, wheat fertilizing picking up.

MISSOURI: Temperatures 14 to 22° above normal. Over 4.00 in. rain some southwest, central areas,

more moderate amounts elsewhere. Rivers high, some localized flooding.

Rain providing excess topsoil moisture central, south, restoring subsoil moisture. Moisture northern counties improved, could use more for stock ponds, subsoil moisture. Fieldwork generally not started. Pastures, wheat making good growth.

MONTANA: Precipitation statewide with significant amounts west, central. Temperatures much above normal northeast, normal to slightly above elsewhere.

Topsoil 30% short 66% adequate, 4% surplus. Subsoil 35% short, 65% adequate. Winter wheat 1% very poor, 7% poor, 27% fair, 64% good, 1% excellent. Winter wheat 38% dormant, 62% greening. Wind damage to winter wheat to date 17% none, 55% light, 20% moderate, 8% heavy. Field tillage progress 92% none, 5% just started, 3% well underway. Livestock mostly good to excellent. Calving 44% complete. Lambing 33% complete.

NEBRASKA: Temperatures near normal in the west to 12° above normal in east. Precipitation throughout few hundredths up to 1.50 in. Extremes 16°; 75°.

NEVADA: Unsettled weather occurred early. Strong westerly jet stream mid week spread light, scattered moisture all areas. Temperatures below normal. Extremes -4°; 84°.

Fieldwork delayed again by inclement weather. Snow showers, gusty winds not favorable calving, lambing operations.

NEW ENGLAND: Precipitation (rainfall and water equivalent of snow) 1.00 to 2.00 in. central, western Massachusetts, 0.50 to 1.00 in. remainder. Temperatures upper 30s near Canadian border to mid 50s along south coast. Temperatures well above normal.

Major farm activities: Repairing machinery, tending livestock, moving crops from storage, maple sugaring.

NEW JERSEY: Temperatures much above normal. Extremes 29°; 87°. Rainfall 0.91 in. north, 1.1 2 in. central, 1.38 in. south. Heaviest 24 hour total 1.88 in. on 17th, 18th. Estimated soil moisture percent field capacity 95% north, 90% central, 85% south. Four inch soil temperatures 54° north, 55° central, 57° south.

Early soil preparation well advanced. Vegetable plantings on light soils continued. Fruit pruning well advanced. Record early bloom may occur. Fertilizer, lime spreading continued.

NEW MEXICO: Temperatures varied widely over State; precipitation limited to northwest, north central locations.

Days suitable for fieldwork 5.7. Soil moisture 62% short, 38% adequate. Wheat 10% very poor, 25% poor, 40% fair, 25% good. Cattle poor to good, sheep fair to good, range poor to good.

NEW YORK: Hot week for late winter. Temperatures 20 to 25° above normal. Highs reached well into 70s most areas on the 13th, 14th, 15th, 16th. Extremes 29° at Messena; 83° at New York City. Rainfall plentiful, falling primarily on 12th, 17th up to 2.37 in. Combination of rain, mild weather caused rapid snow melt, flooding in Adirondacks, St. Lawrence Valley. Ice jams also contributed to flooding.

Major activities: Tending livestock, moving crops from storage, machinery maintenance, repair, purchasing seed, chemicals, fertilizer needed for spring planting. Maple syrup season

off to slow start due to unseasonably warm weather. Producers hoping for colder nights, warm days.

NORTH CAROLINA: Temperatures 14° to 21° above normal across the State. Extremes 36°; 91°. Precipitation none to 8.11 in.

Days suitable for fieldwork 5.5. Soil moisture 2% short, 91% adequate, 7% surplus. Pasture 1% very poor, 24% fair, 69% good, 6% excellent. Livestock feed from pasture 46%. Crop condition: Wheat, 21% fair, 74% good, 5% excellent; oats 27% fair, 68% good, 5% excellent; barley 19% fair, 77% good, 4% excellent; rye 18% fair, 77% good, 5% excellent; tobacco plant beds 1% poor, 21% fair, 69% good, 9% excellent. Irish potatoes planted 56%; cabbage transplanted 49%. Hay, roughage supplies 5% short, 87% adequate, 8% surplus. Feed grain supplies 6% short, 93% adequate, 1% surplus. Major activities: Top dressing small grains, land preparation, tending tobacco beds. Other activities included: Fertilizing pastures, tending livestock, planting potatoes, general farm maintenance.

NORTH DAKOTA: Mild, precipitation statewide. Temperatures 8° above normal southwest to 13° above normal north central, northeast. Precipitation as rain, snow 0.26 in. southwest to 1.68 in. northeast.

Snowcover improved. Winter grains mostly poor to fair. Livestock mostly good, received supplemental forages. Calving, lambing kept ranchers busy. Hay supplies mostly adequate.

OHIO: High temperatures mid 60s to low 70s. Lows mid 40s to low 50s. Readings generally 15 to 23° above normal. Precipitation 0.20 to 1.00 in; up to 0.50 in. subnormal. Soil temperatures upper 40s to mid 50s; 10 to 18° above normal.

Unseasonably mild, dry weather gave farmers a chance to spread fertilizer, lime, perform tillage operations. Fruit growers concerned that bud development is too far advanced if cold weather enters the picture again. Some bud development is up to a month ahead of normal.

OKLAHOMA: Temperatures 5° above normal west central to 9° above normal east central. Precipitation 0.44 in. Panhandle to 2.12 in. south central.

Days suitable for fieldwork 1.9. Topsoil 20% adequate, 80% surplus. Subsoil 2% short, 98% adequate. Wheat 20% fair, 73% good, 7% excellent; 25% jointing, 10% 1989, 10% avg. Some farmers may apply fertilizer, herbicides by air because of prolonged wet fields. Wheat flattened by heavy rains southwest. Sunshine needed for growth to accelerate. Small amount of corn acreage planted east. Pastures good to fair. Cattle good; marketings down, prices up from preceding week.

OREGON: Temperatures close to normal, within 5° plus or minus. Although overnight lows single digits or teens east of Cascades, daytime highs warm enough to make averages near normal. West of Cascades readings near normal days, nights. Widespread precipitation fairly light except coastal locations, Coast Range, northeastern mountains heavier amounts.

Soil moisture surplus coast; adequate to surplus Willamette Valley; adequate northeastern mountains, Klamath Basin; mostly short elsewhere. Winter wheat good west, fair to good east. Russian wheat aphids have mostly disappeared, spring grain seeding underway Columbia Basin. Field activities halted by rain, snow showers northeast, Klamath. Other areas fertilizing, liming, plowing. Sugarbeets 15% planted Malheur

County. Fruit tree, caneberry pruning winding down. Early season spraying, fertilizing in orchards. Strawberries coming out of dormancy Willamette Valley. Cranberry growers sprinkled for frost protection south coast. Onions 40% planted Malheur County. Seedbed preparation for potatoes central area. Livestock mostly good. Range, pasture poor to fair most of east, except northeast good to excellent; mostly good west, except southwest fair. Good calving, lambing weather. Some branding at lower elevations east. Snow pack, water supplies improved northeast, Klamath Basin. Stream flow forecasts remain much below normal southeast.

PENNSYLVANIA: Commonwealth experienced a very warm week with below normal precipitation. Temperature 61°, 27° above normal. Extremes 34°; 85°. Precipitation 0.57 in., 0.20 in. below normal.

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

PUERTO RICO: Rainfall 2.62 in. was 2.05 in. below normal. Highest rainfall 11.73 in. Pico Del Este Luquillo, 7.64 in. Negro Corozal, 7.11 in. Morovis. Highest 24 hour total 3.50 in. Pico Del Este Luquillo. Temperatures 75 to 77° on coast. Temperatures 68 to 71° mean station. Extremes 52°; 88°.

SOUTH CAROLINA: Temperatures 14 to 18° above normal. Rainfall varied heaviest 5.00 in. mountains to 0.11 in. along the coast.

Farm activities: Pollen mildew problems on wheat, land preparation, planting corn.

SOUTH DAKOTA: Temperatures 5 to 15° above normal. Extremes 17°; 74°. Precipitation above normal east, central, west central. Range 0.26 in. below normal to 0.92 in. above normal. Maximum melted precipitation 1.77 in. Yearly precipitation above normal northeast, central, southwest, below normal northwest, parts of southeast. Range 1.30 in. below normal to 1.39 in. above normal. Snowcover 1.00 to 3.00 in. northeast, 7.00 in. northern Black Hills.

TENNESSEE: Slow moving front mid week caused above normal precipitation middle, east. Precipitation 0.07 in. below normal west, 0.22 in. above normal Plateau, 2.00 in. above normal east. Rainfall exceeded 3.00 in. some east locations. Temperatures 10 to 14° above normal. Highs upper 60s to mid 70s. Lows upper 40s to mid 50s.

Soil moisture surplus to adequate. Muddy fields limited land preparation, small grain topdressing. Some aerial application nitrogen to wheat. Wheat mostly good. Primary activities: Livestock chores, equipment maintenance, new crop preparations.

TEXAS: Large storm system north of State aided by several upper air disturbances triggered strong winds, rains over much of the State. Slow moving frontal system left heavy amounts of rain central, eastern sections. Western, northern sections State rainfall slightly below normal, eastern sections above normal. Southern high plains temperatures below normal. Temperatures east above normal.

Crops: Small grains improved across most areas State. Some topdressing Plains. Very little insect activity. Fields Blacklands look very good. Some rust problems. Many fields heading central, south. Yield prospects improved. Corn planting moved ahead southern part State; rains delayed progress central, Blacklands. Some

early planted fields emerging. Producers ready to start planting Plains, as fields dry, temperatures warm. Corn 15% planted, 36% 1989, 38% avg. Grain sorghum planting good progress Valley, Coastal Bend. Planting getting underway central, Blacklands, rain delayed activities. Producers prepared land Plains. Sorghum 7% planted, 19% 1989, 25% avg. Some additional cotton planting occurred Valley, Coastal Bend. Producers other areas preparing land. Cotton 4% planted, 3% 1989, 4% avg. Rice producers Upper Coast begin planting soon. Rice none planted, none 1989, 1% avg.

Commercial Vegetables: Rio Grande Valley, peppers, tomatoes, melons up, showing good progress. Harvest carrots, cabbage, celery, lettuce continued. Pruning, hedging, bulldozing activities increased many citrus groves. San Antonio Winter Garden, carrot, cabbage harvest continued. Fresh, processed spinach harvest beginning to wind down. Eastern State, some planting occurred; rain provided some delays. High Plains, onions, potatoes being planted. Trans Pecos, some early chilies planted. Land preparation other vegetables continued. Peach trees continued bloom with warmer temperatures. Some fruit setting east.

Range and Livestock: Ranges, pastures continued improve most areas last week. Small grains Plains providing more forage, more stockers brought in to pasture. Some producers spraying weeds. Continued movement off wheat for grain continued. Producers working sheep Hill Country. Some cattle sprayed for lice.

UTAH: Precipitation moderate to heavy mountainous areas, moderate elsewhere. Temperatures 3° below normal southwestern third, about normal elsewhere.

Spring field preparation in full swing. Planting of spring grains underway. Soil moisture still low in southern, eastern parts of State, better in northern areas. Calving, feeding livestock continued. Lambing also continued. Grass beginning to grow on ranges, pastures.

VIRGINIA: Unseasonably warm with temperatures 22° above normal. Extreme high 89°. Precipitation 1.08 in. west to none in the east.

Days suitable for fieldwork 6.2. Topsoil 2% surplus, 73% adequate, 25% short. Pasture 8% excellent, 65% good, 20% fair, 7% poor. Alfalfa 4% excellent, 70% good, 26% fair. Barley 5% excellent, 69% good, 26% fair. Wheat 7% excellent, 57% good, 36% fair. Apples, peaches mostly fair to good. Tobacco plantbed seeding over 80% complete with condition fair to excellent. Land preparation continued for corn, soybeans. Peaches blooming. Fertilizing, overseeding pastures, hayland.

WASHINGTON: Temperatures 2° below normal to 3° above normal, east; 3° below normal to 1° above normal, west. Precipitation 0.06 to 0.82 in., east; 0.31 to 1.28 in., west.

Days suitable for fieldwork 4.5. Soil moisture 20% short, 79% adequate, 1% surplus. Range, pasture 65% short, 35% adequate. Hay, other roughage 15% very short, 35% short, 40% adequate, 10% surplus. Poor weather continued to slow field activity across the State. Field preparation, fertilizing, planting took place where it was dry. Pastures, ranges continued spring growth. Trees, plants continued to come out of dormancy. Winter wheat 40% fair, 60% good. Pruning of caneberries, fruit trees continued. Calving, lambing, winter feeding programs continued.

WEST VIRGINIA: Temperature 61°, 18 to 25° above normal which included record breaking highs. Extremes 31°; 89°. Precipitation 0.77 in.

Days suitable for fieldwork 4.7. Soil moisture 9% short, 91% adequate. Livestock good. Calving 50% complete; lambing 46% complete. Feed supplies adequate to surplus. Wheat, barley good to fair. Farm activities: Calving, lambing, soil preparation, sowing tobacco beds.

WISCONSIN: Temperature 47°. Extremes 1°; 77°. Precipitation 1.70 to 3.60. Mild temperatures. Rainfall statewide.

WYOMING: Temperatures mostly above normal. Precipitation generally below normal.

Winter wheat fair to good. Snowcover melting, improving moisture conditions. Livestock mostly good. Supplemental feeding continuing most areas. Calving, lambing, shearing active.

International Weather and Crop Summary

HIGHLIGHTS

March 11-17, 1990

USSR ... The 10th consecutive week of unseasonably warm weather covers the region. Continued warm and mostly dry weather in the south provides favorable conditions for early spring fieldwork.

EUROPE ... Above-normal temperatures continue across nearly all crop areas. Scattered beneficial showers fall in sections of the south.

SOUTH ASIA ... Heavy rain falls in northernmost Pakistan but most wheat areas remain favorably dry.

EASTERN ASIA ... Heavy rain and possible flooding return to sections of the south. Above-normal temperatures accelerate greening of winter grains in the North China Plain.

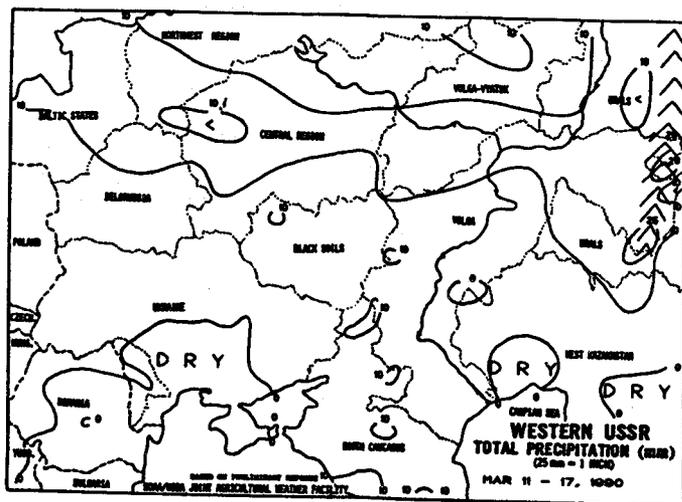
SOUTHEAST ASIA ... Beneficial preplanting rains continue in Indochina.

SOUTH AMERICA ... Wet weather slows early grain and oilseed harvesting over much of Argentina and southern Brazil.

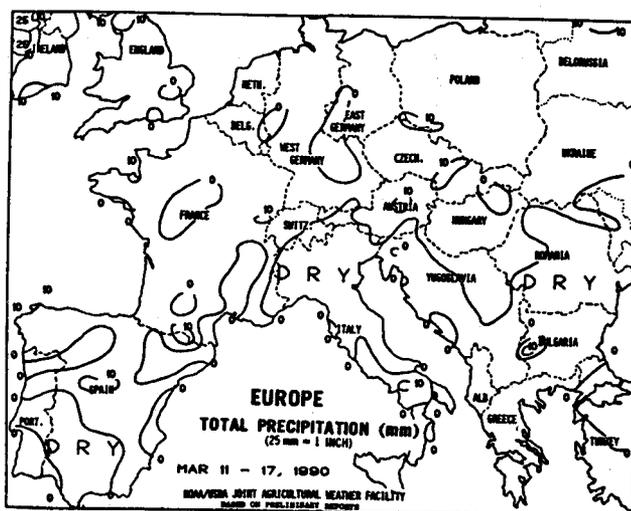
SOUTH AFRICA ... Widespread rain benefits immature crops but leaves maturing corn too wet.

AUSTRALIA ... Dryness favors summer crop harvest in the east. Beneficial pre-season rain falls in Western Australia.

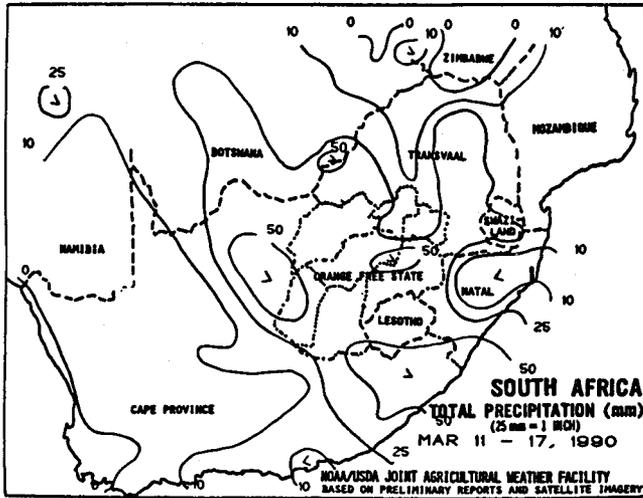
NORTHWESTERN AFRICA ... Winter grains are advancing through reproduction. Dry weather returns to Moroccan winter grain areas. Variable rain brings minimal relief to winter grains in Algeria and Tunisia, previously stressed by prolonged dryness.



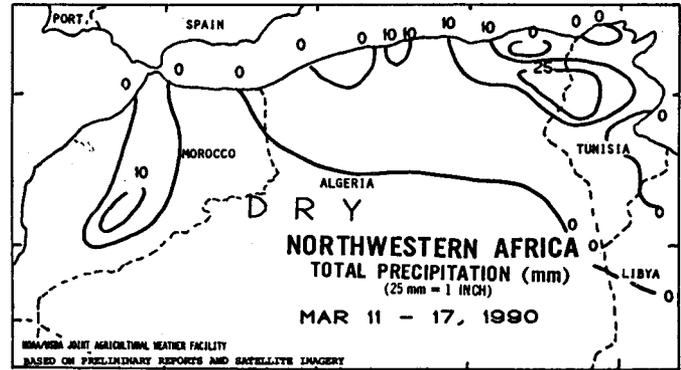
WESTERN USSR ... The 10th consecutive week of unseasonably warm weather persisted over the region, although temperatures were lower than the previous week. Weekly average temperatures generally ranged from 2 to 5 degrees (C) above normal. Widespread, light precipitation (10-18mm) covered northern crop areas, while light, scattered rainfall (1-10mm) fell over most of the Ukraine and the North Caucasus. Continued unseasonably warm and mostly dry weather in the Ukraine and North Caucasus has helped to condition topsoils, providing favorable conditions for early spring fieldwork in preparation for spring grain planting.



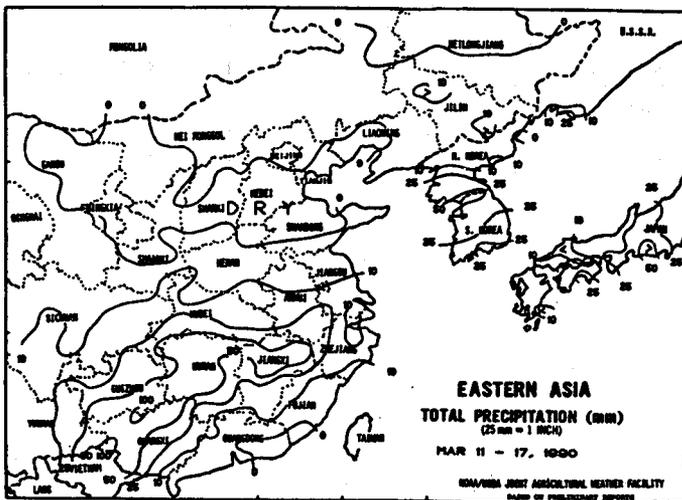
EUROPE ... Above-normal temperatures (ranging from 1 to 3 degrees C above normal in the south to 4-7 degrees C above normal in the north) persisted across nearly all of Europe, continuing a trend since early winter. The unseasonable warmth has accelerated winter grains growth and development in most growing areas. In sections of northern and central Italy and the southern Balkans, however, abnormally dry weather continues to limit vegetative growth. Elsewhere, scattered, mostly light showers (less than 10mm) provided beneficial moisture to crop areas of northern Spain and southern Italy. In the north, scattered light rain (less than 10mm) caused only minor delays in early spring planting.



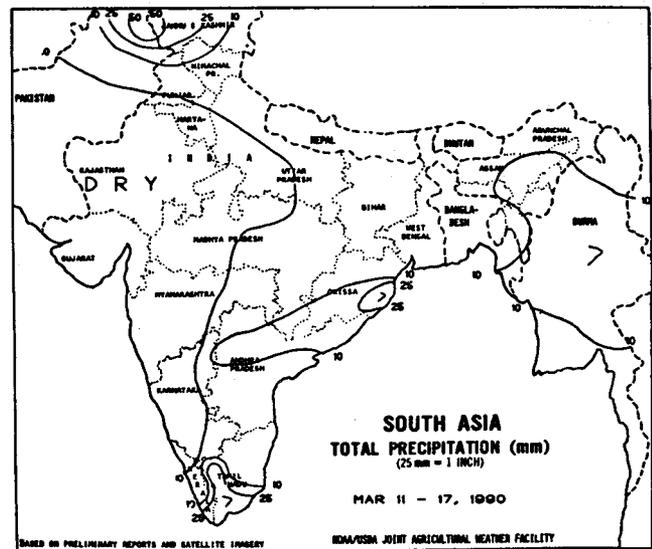
SOUTH AFRICA ... Variable, light to heavy rain (10-52mm) over the western two-thirds of the Maize Triangle benefited late-planted crops but created unfavorably wet conditions for maturing corn. Corn harvesting usually begins as early as April in the west, necessitating drier conditions for fieldwork. Lighter rainfall (4-28mm) and seasonable temperatures maintained favorable conditions for immature crops in the eastern Maize Triangle and surrounding areas. Moderate to heavy rain (25-50mm or more), however, continued over the eastern Cape Province and the southern half of Natal's sugarcane region.



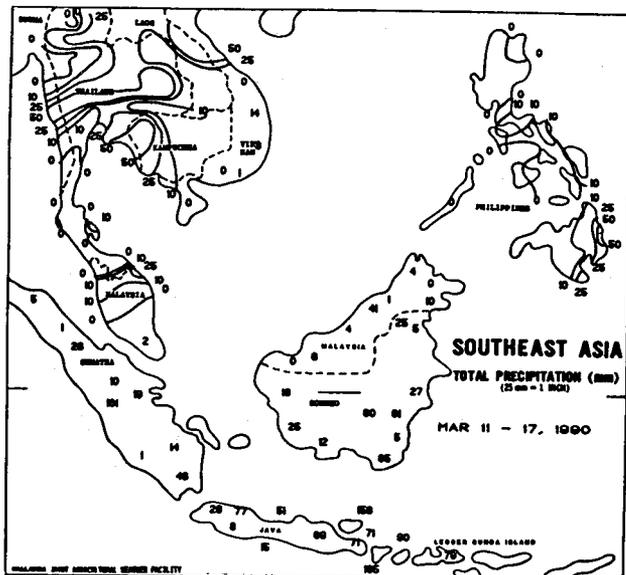
NORTHWESTERN AFRICA ... Winter grains were advancing through reproduction throughout the region. Following last week's beneficial precipitation, dry weather returned to winter grain areas in Morocco. Moisture reserves continued limited for crop growth, and additional moisture is needed to prevent the development of significant stress. In Algeria, unfavorable dryness continued over western and central crop areas, causing further deterioration in crop condition. Although widespread rain (10-25mm) moistened southernmost crop areas in eastern Algeria, insufficient rain continued over crop areas along the coast. Further east, adverse dryness continued over Tunisian winter grain areas, except for extreme southern crop areas which received beneficial rain (25-35mm).



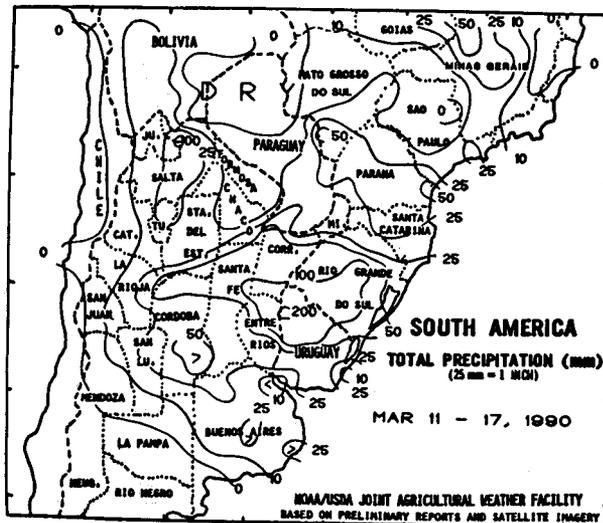
EASTERN ASIA ... Heavy rain (25-80mm, with scattered amounts in excess of 80mm) returned to sections of Guangxi, Guizhou, Hunan, and Jiangxi, bringing many soils back to saturation. Very heavy rain (100-125mm) in western Guangxi may have caused localized flooding. Heavy rain (25-60mm) also fell in central and southern sections of the Korean Peninsula and in southern Japan. Light to moderate rain (5-20mm, with isolated amounts in excess of 20mm) in northern sections of the Yangtze Valley caused delays in spring fieldwork. In the North China Plain, above-normal temperatures (3-5 degrees C above normal) continued for the second consecutive week, causing rapid greening and early vegetative growth of winter grains.



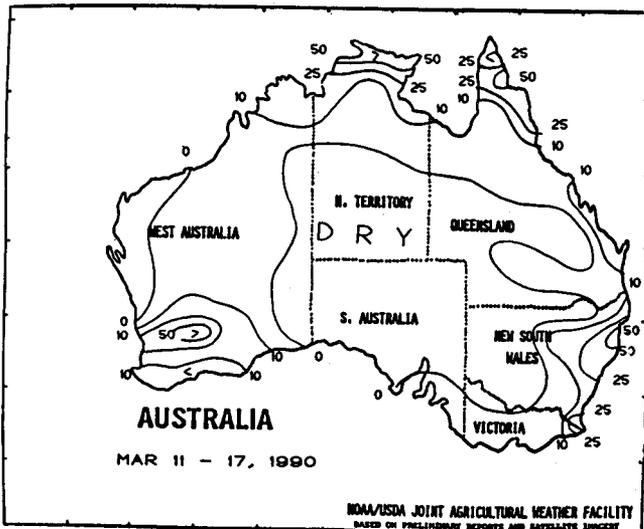
SOUTH ASIA ... Variable, locally heavy rain (15-77mm) fell over northernmost Pakistan, boosting irrigation reserves but likely causing local flooding. Only scattered, light rain (1-7mm) and seasonably warm weather over the primary winter wheat areas of Pakistan and India benefited filling to maturing crops. Light to moderate rain and near- to below-normal temperatures dominated eastern India, with local amounts of 10-25mm or more boosting local irrigation reserves. Harvest of the current rice crop in coastal India and Bangladesh usually occurs from March to the end of May.



SOUTHEAST ASIA ... Widespread rain (10-50mm or more) over much of Indochina continued to improve irrigation reserves and preplanting conditions, although seasonably warm temperatures maintained high evaporation rates. The rain in Thailand was the most widespread of the season to date. Further south, dry weather dominated Peninsular Thailand and Malaysia. Rainfall also continued to taper off over Indonesia, but amounts over Java ranged from 25 to 77mm. Local flooding from excessive rain (100-185mm) occurred in western Sumatra and the islands east of Java. In the Philippines, moderate rain (25-50mm or more) was limited to eastern Mindanao as light showers fell elsewhere.



SOUTH AMERICA ... In Argentina, wet weather slowed early grain and oilseed harvesting throughout Cordoba and Santa Fe, where weekly rainfall ranged from 25 to 95mm. Sunflower, sorghum, and corn harvesting advanced in western Buenos Aires, where weekly rainfall averaged 15mm or less. Scattered, heavier showers (15-39mm) over the remainder of Buenos Aires caused some harvest interference. Cooler weather pushed into northern cotton areas, alleviating heat stress on ripening crops. Rainfall averaged 25-50mm or more in northwestern sugarcane areas and in the northeast, while 5-10mm of rain fell over western cotton areas of Chaco and Formosa. In south-central Brazil, heavy rain (50-100mm or more) again soaked maturing soybeans in much of Rio Grande do Sul. Showers diminished over extreme northern portions of the state, but increased again in Parana and southern Mato Grosso do Sul, where 15-61mm slowed early soybean harvesting. Rain in far northern soybean areas benefited immature crops in Goias and Minas Gerais.



AUSTRALIA ... Dry and warm weather (weekly mean temperatures 1-3 degrees C above normal) continued over most summer crop areas, allowing rapid harvest progress. Widely scattered showers (5-15mm) caused minor delays in extreme western crop areas of central New South Wales and south-central Queensland. Scattered rain (5-50mm) along Queensland's eastern coast benefited some of the vegetative sugarcane crop, although unseasonable dryness returned to most growing areas. Rainfall in eastern coastal Queensland normally diminishes rapidly during late March and April prior to the winter dry season. In the south, beneficial pre-season rain (5-35mm) fell across crop areas of Western Australia, while South Australia and Victoria remained mostly dry.

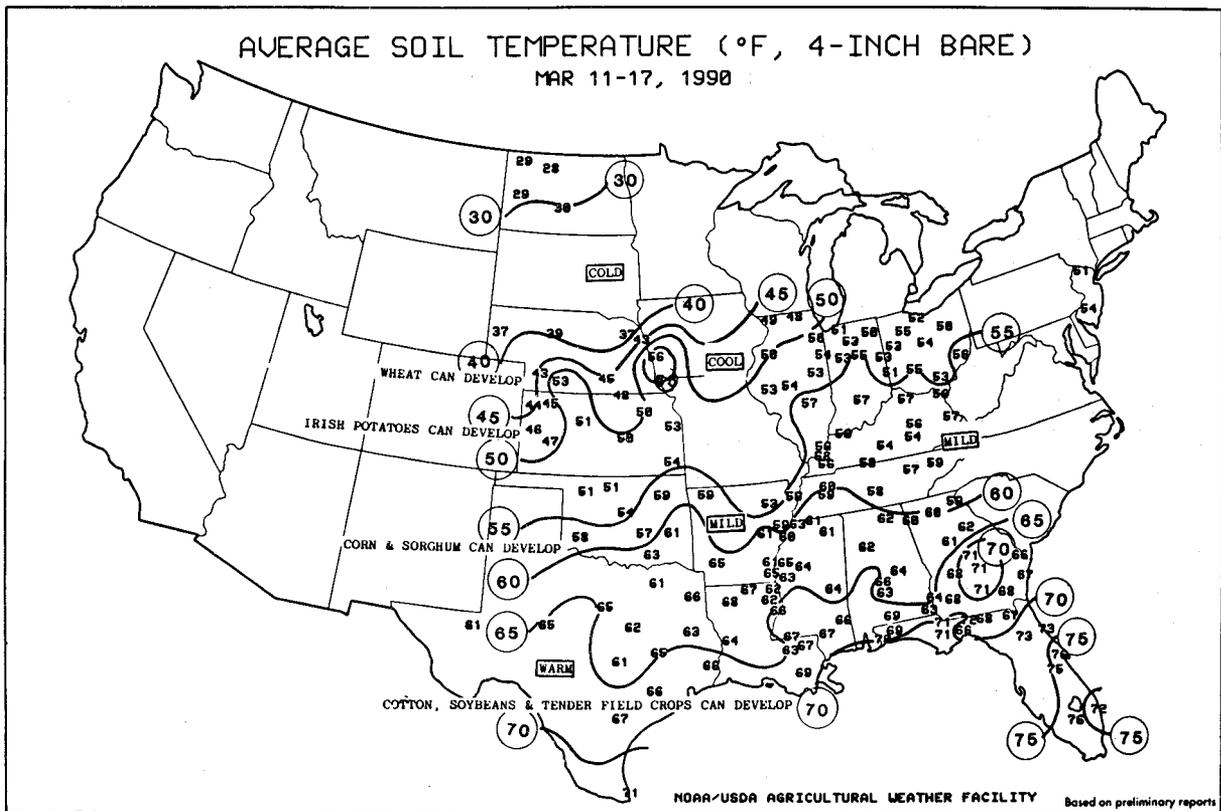
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