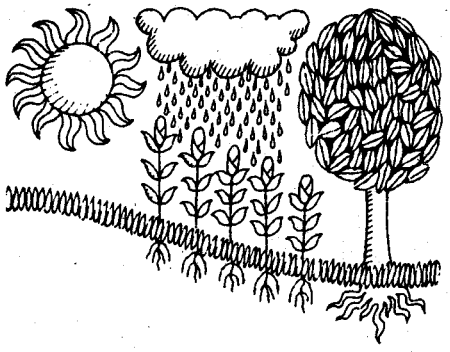

WEEKLY WEATHER AND CROP BULLETIN

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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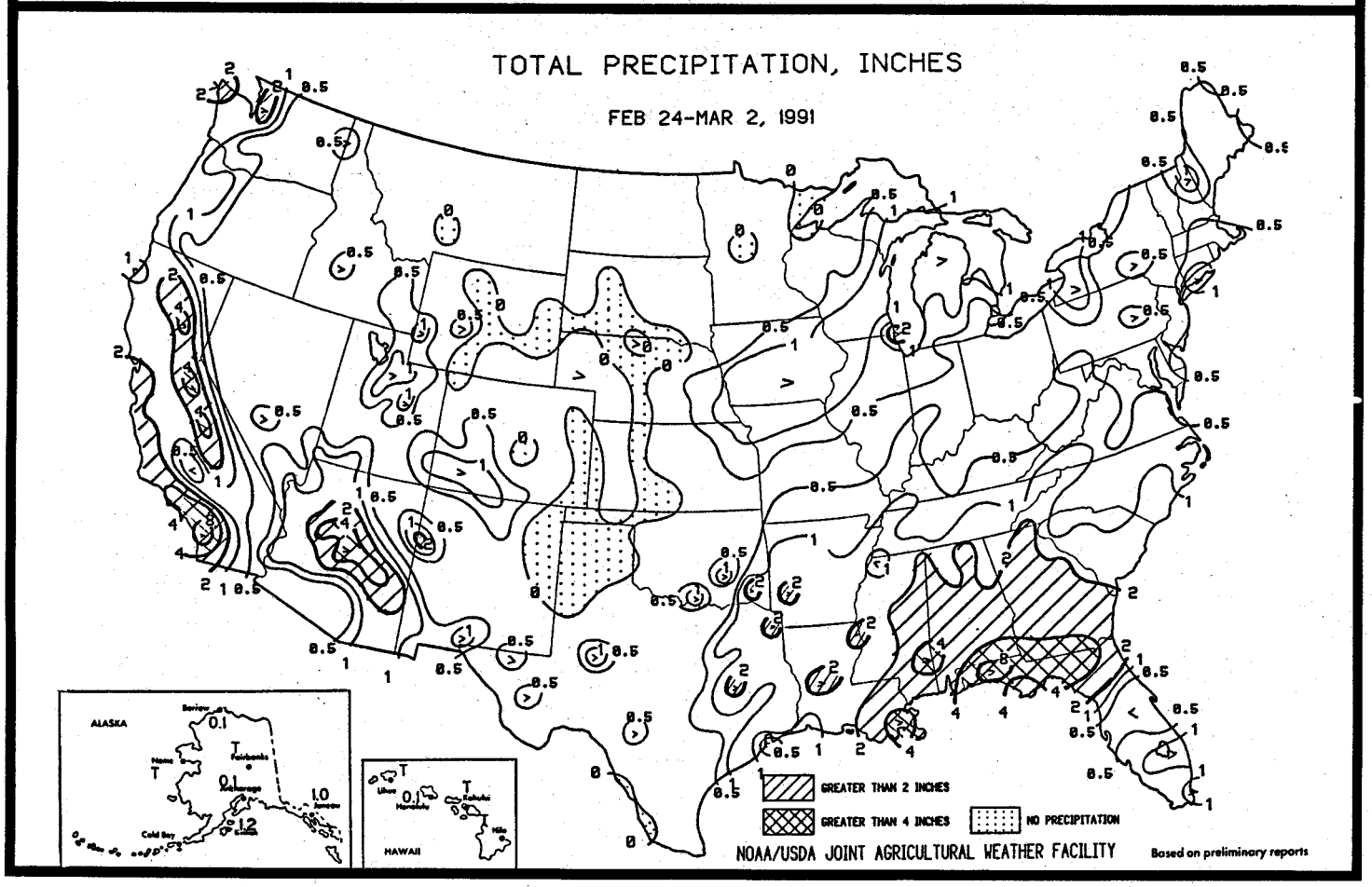

HIGHLIGHTS

February 24 - March 2, 1991

After an ominously quiet start to the week, a wild, energetic weather pattern eased drought in **California**, dumped heavy snow on the mountains of the **Southwest**, and ravaged the **Southeast** with tornadoes and drenching rain. Through Tuesday, 20 record highs were noted along the **West coast**. Three minor storm systems dropped up to half a foot of snow in the **upper Great Lakes**, the **Ozark Mountains**, and the **Black Hills of South Dakota**, respectively. The second storm also produced a narrow band of 7-inch snowfall in **New York City**. Pesky snow showers plagued the **Great Lakes States**. But at midweek, the first of several intense storms lashed **California** with rain and wind, including two rare tornadoes. Rainfall totaled 2 to 4 inches along the coast from **San Francisco** southward, causing widespread urban flooding. The State's heaviest rain fell in the mountains northeast of

(Continued to back cover)

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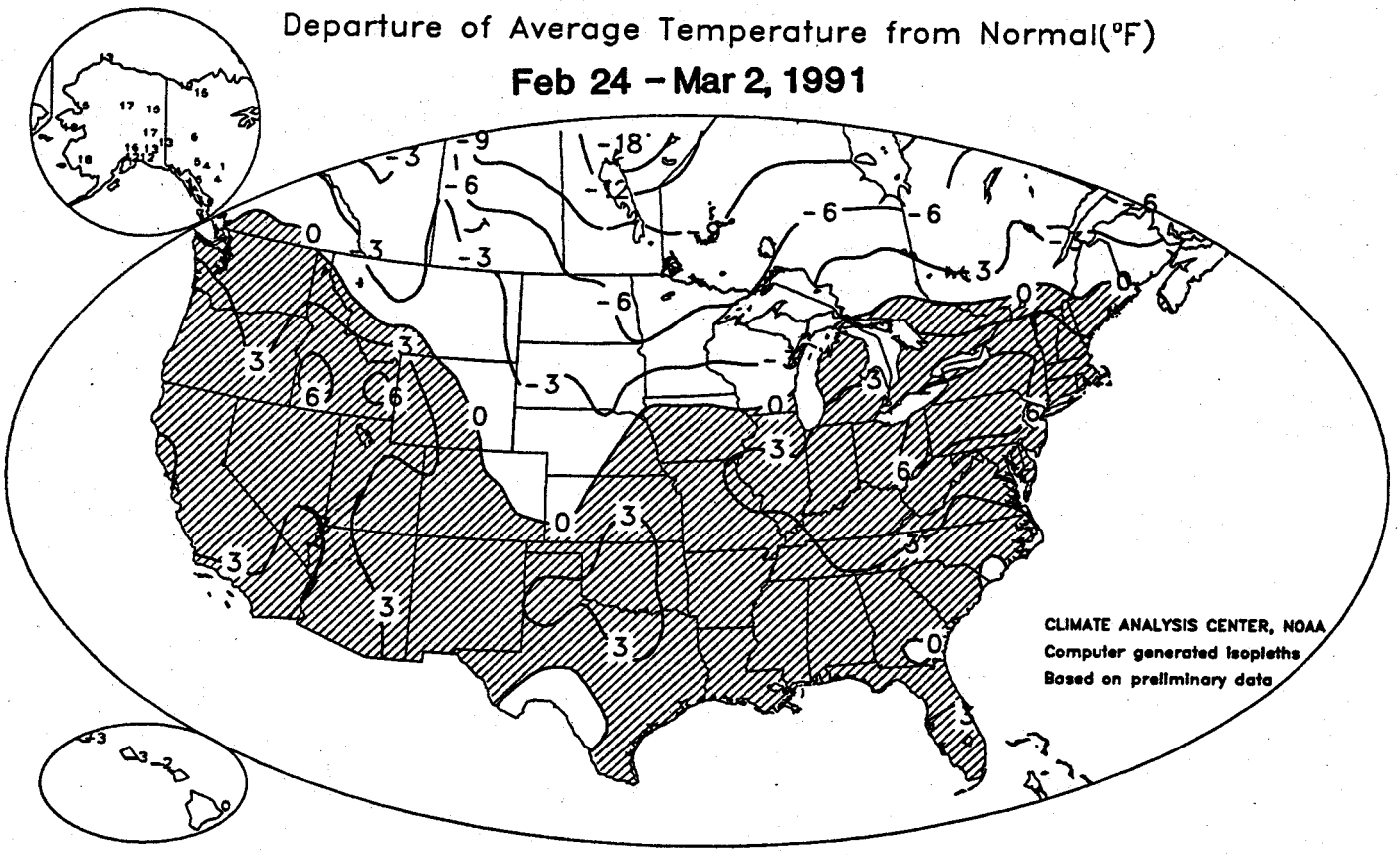
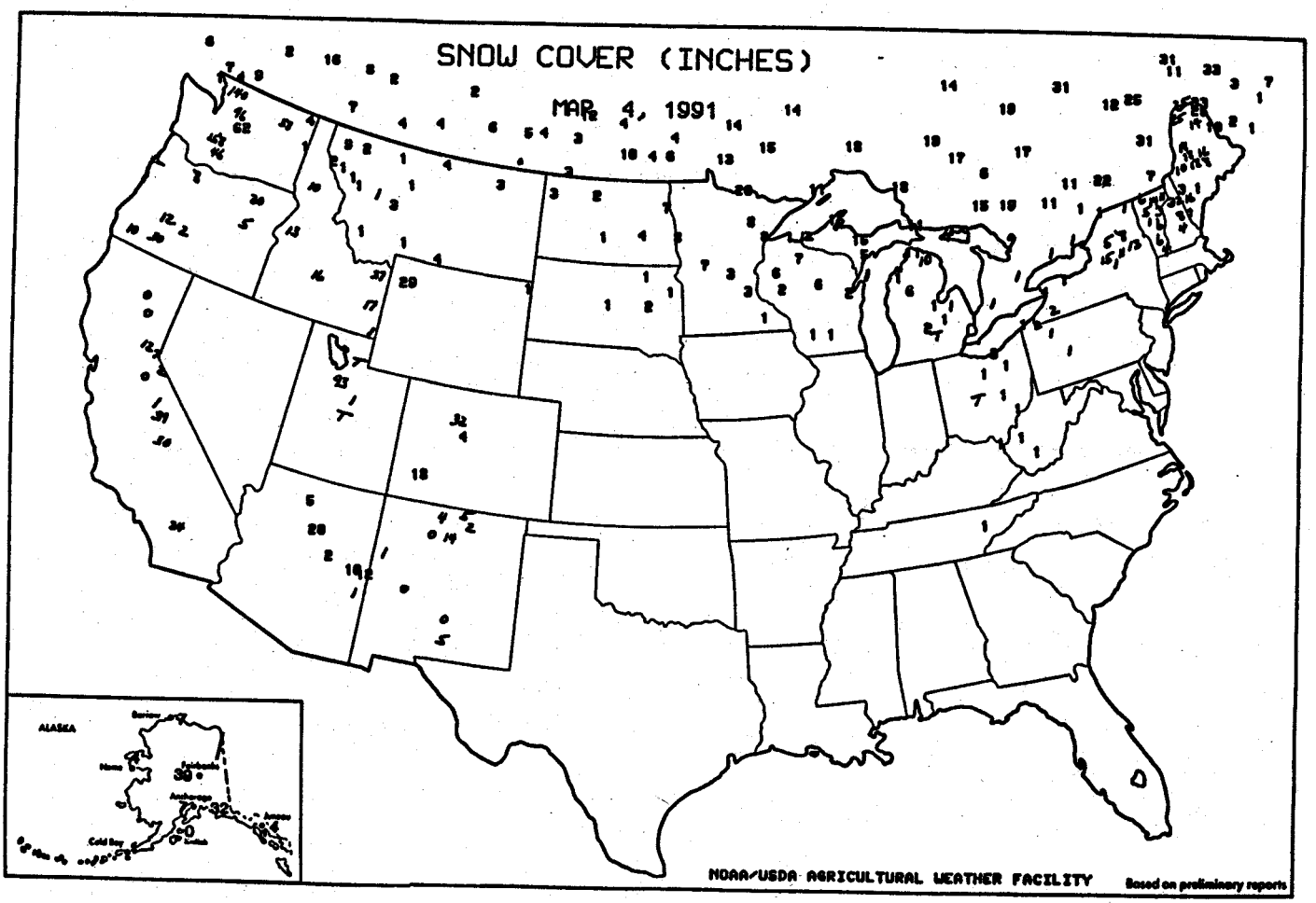
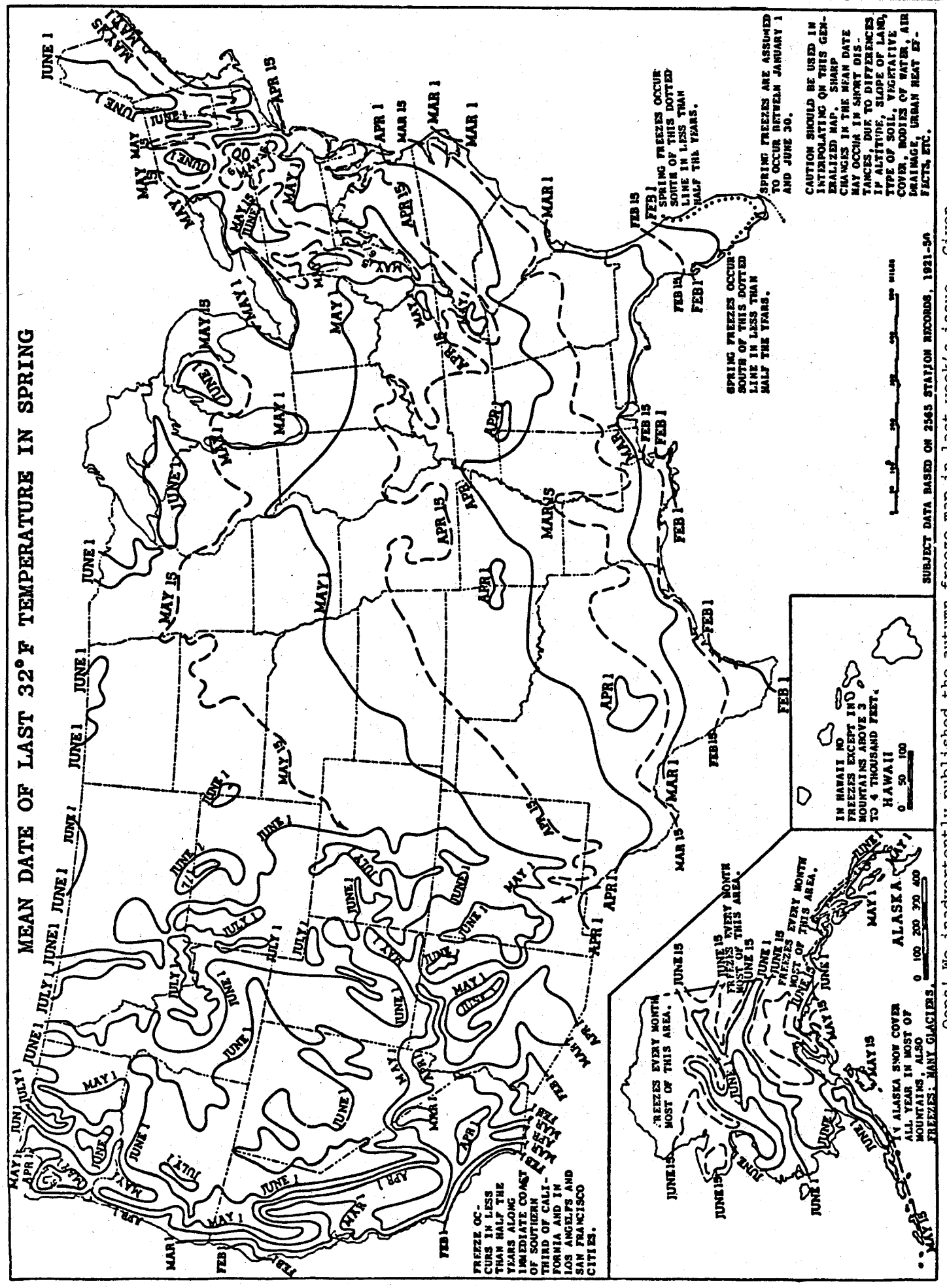

Departure of Average Temperature from Normal(°F)
Feb 24 – Mar 2, 1991
CLIMATE ANALYSIS CENTER, NOAA
Computer generated isopleths
Based on preliminary data


SNOW COVER (INCHES)
MAR 4, 1991
ALASKA
NOAA/USDA AGRICULTURAL WEATHER FACILITY
Based on preliminary reports



Oops! We inadvertently published the autumn freeze map in last week's issue. Given the time of year, this spring freeze map should be more helpful.

National Weather Data for Selected Cities

Weather Data for the Week Ending March 2, 1991

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																TEMP. °F		PRECIP.	
	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
AL BIRMINGHAM	62	41	76	28	51	2	1.7	.3	1.4	1.7	415	9.2	90	90	42	0	2	3	1
MOBILE	65	47	75	37	56	0	2.6	1.2	2.4	2.6	664	22.0	224	95	54	0	0	3	1
MONTGOMERY	64	42	74	28	53	1	2.3	1.1	2.1	2.3	624	13.4	148	93	46	0	1	3	1
AK ANCHORAGE	41	23	48	15	32	12	.1	-.1	.1	.0	0	1.0	62	97	62	0	7	2	0
BARROW	3	-15	11	-27	-6	13	.1	.0	.0	T	0	.2	41	82	68	0	7	2	0
FAIRBANKS	30	4	37	-7	17	16	T	-.1	T	.0	0	1.3	133	89	56	0	7	0	0
JUNEAU	41	29	54	18	35	5	1.0	.1	.6	.0	0	11.4	150	78	56	0	5	2	1
KODIAK	42	30	47	25	36	5	1.2	.1	.9	.0	0	20.8	187	99	78	0	4	4	1
NOME	33	12	46	-11	23	19	T	-.1	T	.0	0	1.6	120	84	62	0	6	1	0
AZ PHOENIX	74	54	82	50	64	6	.6	.5	.5	.2	250	1.3	101	56	27	0	0	2	0
PRESCOTT	57	30	66	23	44	3	3.0	2.7	1.6	1.6	>1000	3.8	112	66	32	0	4	3	2
TUCSON	70	48	78	44	59	4	.3	.2	.3	.3	540	2.3	160	73	25	0	0	2	0
YUMA	80	56	87	51	68	6	.5	.4	.3	.3	>1000	1.3	211	58	23	0	0	3	0
AR FORT SMITH	61	35	74	22	48	2	1.6	.8	1.4	1.5	677	4.5	99	89	38	0	3	4	1
LITTLE ROCK	60	39	73	30	50	2	1.0	.0	1.0	1.0	378	9.3	116	70	43	0	1	2	1
CA BAKERSFIELD	72	48	82	43	60	5	.1	-.1	.1	.1	83	.8	38	81	35	0	0	3	0
EUREKA	59	46	71	42	53	4	.9	-.3	.5	.7	209	5.1	41	88	62	0	0	3	0
FRESNO	69	47	80	41	58	6	1.8	1.4	1.2	1.2	>1000	2.3	58	89	42	0	0	4	1
LOS ANGELES	62	54	63	50	58	0	3.3	2.7	1.6	.9	723	4.9	86	91	70	0	0	3	3
REDDING	68	44	78	34	56	3	2.3	1.0	1.5	2.2	614	7.1	47	84	41	0	0	3	2
SACRAMENTO	66	46	76	38	56	4	1.4	.8	.5	.8	513	4.2	60	94	50	0	0	4	1
SAN DIEGO	64	55	66	50	59	2	3.3	2.9	1.2	1.2	>1000	4.4	115	90	69	0	0	3	3
SAN FRANCISCO	64	49	74	42	56	4	2.3	1.6	.9	.7	368	4.7	59	93	56	0	0	4	3
CO DENVER	49	22	63	13	36	0	.1	-.1	.1	T	33	.9	70	75	27	0	7	2	0
GRAND JUNCTION	49	30	52	24	40	2	.2	.0	.1	.2	400	1.2	101	85	40	0	4	3	0
PUEBLO	54	21	68	8	38	0	T	-.1	T	.0	0	.1	17	76	22	0	6	1	0
CT BRIDGEPORT	44	30	59	19	37	4	1.0	.2	.5	.5	235	5.2	80	90	58	0	6	4	1
HARTFORD	45	25	63	11	35	4	.5	-.3	.5	.5	204	4.7	68	93	46	0	6	3	0
DC WASHINGTON	54	35	71	27	45	4	.2	-.6	.1	.1	48	3.8	69	86	44	0	4	3	0
FL APALACHICOLA	66	53	70	40	59	2	3.7	2.7	3.7	3.7	>1000	27.8	374	95	64	0	0	1	1
DAYTONA BEACH	73	54	82	49	64	3	T	-.8	T	T	10	3.9	69	94	58	0	0	2	0
JACKSONVILLE	69	49	81	36	59	1	3.3	2.4	3.3	3.3	>1000	15.0	222	92	53	0	0	1	1
KEY WEST	82	71	85	65	77	5	T	-.4	T	.0	0	2.5	66	90	66	0	0	0	0
MIAMI	81	67	85	59	74	4	.7	.2	.4	.0	0	3.6	87	92	61	0	0	3	0
ORLANDO	77	57	86	50	67	4	T	-.8	T	.0	0	3.4	61	90	49	0	0	1	0
TALLAHASSEE	68	46	75	31	57	1	6.5	5.2	6.5	6.5	>1000	26.3	263	93	50	0	1	1	1
TAMPA	75	59	86	50	67	4	.1	-.7	.1	.0	0	2.8	52	92	55	0	0	2	0
WEST PALM BEACH	79	65	87	57	72	5	2.0	1.3	.9	T	12	14.8	271	93	60	0	0	4	2
GA ATLANTA	61	40	73	30	50	3	2.0	.8	1.8	1.8	506	9.6	99	87	43	0	1	2	1
AUGUSTA	64	39	77	29	52	2	1.4	.3	1.1	1.4	461	10.9	131	91	44	0	2	2	1
MACON	64	41	75	29	53	1	3.4	2.2	2.5	3.3	979	15.9	176	97	49	0	2	3	2
SAVANNAH	66	44	76	33	55	1	2.3	1.4	2.3	2.3	942	11.5	176	88	45	0	0	1	1
HI HILO	79	63	83	58	71	0	T	-3.4	T	.0	0	13.2	55	88	53	0	0	1	0
HONOLULU	80	60	82	55	70	-3	.1	-.7	.1	T	0	2.9	43	83	43	0	0	1	0
KAHULUI	80	60	83	55	70	-2	T	-.6	T	.0	0	4.9	69	89	46	0	0	1	0
LIHUE	77	59	80	56	68	-4	T	-.9	T	.0	0	2.3	22	83	45	0	0	0	0
ID BOISE	57	33	59	26	45	6	.1	-.1	.1	.1	200	1.5	56	80	32	0	5	2	0
LEWISTON	56	34	60	32	45	4	.3	.1	.3	.3	483	.8	32	67	39	0	1	1	0
POCATELLO	49	26	55	20	38	6	.7	.5	.4	.7	>1000	1.7	84	85	35	0	5	3	0
IL CHICAGO	39	23	51	12	31	1	.6	.2	.5	.6	458	2.6	90	92	55	0	6	4	0
MOLINE	40	24	54	13	32	3	1.6	1.2	1.0	1.6	>1000	3.2	106	94	58	0	6	3	2
PEORIA	41	26	59	14	34	3	.6	.1	.5	.6	393	2.3	73	94	57	0	6	3	0
QUINCY	45	28	67	20	37	4	.6	.1	.6	.6	394	1.5	50	86	50	0	6	3	1
ROCKFORD	36	21	49	10	29	1	1.0	.6	.8	1.0	873	2.5	95	89	59	0	6	3	1
SPRINGFIELD	46	29	61	19	37	4	.4	-.2	.3	.4	233	2.4	69	94	58	0	5	3	0
IN EVANSVILLE	53	32	66	21	43	4	.5	-.4	.5	.5	173	6.5	103	85	43	0	4	3	0
FORT WAYNE	44	26	61	16	35	5	.5	-.1	.3	.4	219	3.4	82	87	57	0	5	3	0
INDIANAPOLIS	46	29	61	16	38	4	.3	-.4	.3	.3	145	3.8	72	89	56	0	5	3	0
SOUTH BEND	41	28	58	18	35	5	.8	.3	.3	.6	373	4.0	87	87	56	0	6	6	0
IA DES MOINES	42	21	60	11	31	2	1.4	1.0	1.2	1.3	>1000	2.4	111	88	54	0	6	4	1
SIOUX CITY	38	20	56	13	29	2	.1	-.2	.1	.1	56	.9	55	86	52	0	7	2	0
WATERLOO	34	17	47	6	25	0	1.0	.6	.8	.9	890	2.0	109	94	70	0	6	3	1
KS CONCORDIA	48	23	67	16	35	0	.3	.0	.3	.3	356	1.1	68	84	41	0	7	1	0
DODGE CITY	53	24	70	11	38	1	T	-.2	T	T	0	.3	30	80	30	0	7	0	0
GOODLAND	47	16	61	5	32	-2	T	-.1	T	T	0	.4	47	80	33	0	7	1	0
TOPEKA	49	25	66	17	37	1	.7	.4	.7	.7	645	1.5	73	90	49	0	6	2	1
WICHITA	55	29	73	23	42	3	T	-.3	T	T	10	.6	35	76	32	0	5	1	0
KY BOWLING GREEN	55	34	69	23	44	4	.3	-.9	.3	.3	82	10.8	121	91	51	0	5	1	0
LEXINGTON	53	32	69	21	43	5	.2	-.8	.2	.2	54	6.6	93	82	44	0	5	2	0
LOUISVILLE	54	33	69	23	43	4	.4	-.5	.3	.3	121	7.4	108	85	39	0	5	2	0
LA ALEXANDRIA	65	44	76	32	54	-1	2.5	1.4	2.0	2.3	735	16.2	172	94	50	0	1	3	1
BATON ROUGE	67	47	77	39	57	1	1.5	.3	.8	1.5	517	19.0	194	91	53	0	0	2	2
LAKE CHARLES	65	48	74	36	57	1	.9	.2	.7	.7	370	17.6	217	95	60	0	0	2	1
NEW ORLEANS	67	49	78	39	58	1	4.4	3.2	2.6	4.4	>1000	29.1	278	94	56	0	0	2	2

Based on 1951-80 normals

Weather Data for the Week Ending March 2, 1991

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																TEMP. °F		PRECIP.	
	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
SHREVEPORT	67	40	78	30	54	1	1.2	.4	1.1	1.1	505	14.0	181	94	42	0	3	3	1
ME CARIBOU	28	3	45	-9	15	-2	.6	.1	.6	.6	400	3.8	82	84	50	0	7	2	1
PORTLAND	39	21	54	9	30	4	.4	-.5	.4	.4	179	5.2	69	87	48	0	7	2	0
MD BALTIMORE	54	31	72	21	43	5	.1	-.7	.1	.1	22	4.3	70	83	37	0	4	3	0
SALISBURY	54	33	68	21	43	4	.6	-.3	.4	.4	165	7.3	105	97	50	0	4	2	0
MA BOSTON	45	30	65	16	38	5	.4	-.6	.3	.3	115	5.1	64	88	49	0	5	3	0
CHATHAM	42	31	53	19	36	3	.5	-.5	.3	.2	67	5.5	63	91	68	0	3	2	0
MI ALPENA	33	14	46	4	24	2	.8	.4	.4	.8	750	2.2	71	93	59	0	7	2	0
DETROIT	43	24	63	16	33	4	.5	.0	.2	.4	292	2.8	76	88	56	0	6	4	0
FLINT	38	20	57	9	29	3	.5	.1	.3	.5	418	2.6	85	90	64	0	6	4	0
GRAND RAPIDS	37	21	53	11	29	2	.9	.5	.5	.9	662	2.8	78	94	66	0	6	4	0
HOUGHTON LAKE	32	12	46	-4	22	1	1.1	.8	.6	1.0	>1000	2.9	100	94	66	0	7	5	1
LANSING	39	22	59	15	30	4	1.4	1.0	1.0	1.4	>1000	3.4	110	92	63	0	6	4	1
MARQUETTE	26	0	39	-13	13	-4	.8	.2	.4	.6	380	3.3	81	91	69	0	7	4	0
MUSKEGON	37	23	54	16	30	3	1.0	.6	.6	.9	692	3.0	73	93	65	0	6	4	1
SAULT ST. MARIE	28	4	37	-8	16	-2	1.0	.6	.6	1.0	850	3.2	80	93	58	0	7	2	1
MN ALEXANDRIA	22	2	32	-11	12	-5	T	-.2	T	T	0	1.5	92	89	61	0	7	0	0
DULUTH	21	2	32	-5	12	-5	T	-.3	T	T	0	1.1	50	87	51	0	7	0	0
INT'L FALLS	19	-6	32	-16	6	-6	.1	-.1	.1	.1	183	1.8	114	85	50	0	7	2	0
MINNEAPOLIS	28	9	40	-3	18	-3	.1	-.2	.1	T	0	1.5	87	88	55	0	7	3	0
ROCHESTER	29	13	40	1	21	0	.5	.2	.4	.4	475	1.5	95	92	68	0	7	5	0
MS GREENWOOD	61	40	72	27	50	0	1.6	.3	1.4	1.5	416	14.5	144	97	50	0	2	3	1
JACKSON	66	41	81	32	53	2	1.8	.7	1.2	1.7	544	12.0	126	96	48	0	1	3	2
MERIDIAN	66	41	79	30	53	2	2.6	1.3	1.7	2.6	656	15.7	158	95	42	0	1	3	2
MO CAPE GIRARDEAU	52	33	64	23	42	--	.5	-.4	.5	.5	175	6.6	106	92	56	0	4	2	0
COLUMBIA	51	30	70	19	40	4	.4	-.2	.3	.3	178	2.0	52	84	51	0	5	3	0
KANSAS CITY	46	23	63	17	35	-2	1.0	.6	1.0	1.0	769	2.6	100	90	51	0	6	2	1
SAINT LOUIS	51	34	68	22	43	5	.3	-.3	.3	.3	178	2.8	70	80	41	0	4	1	0
SPRINGFIELD	51	30	64	20	41	1	.7	.0	.4	.3	147	4.2	108	89	51	0	5	2	0
MT BILLINGS	39	17	48	3	28	-3	.1	-.1	.1	T	80	1.3	79	81	44	0	7	3	0
GLASGOW	28	12	44	-2	20	0	.2	.2	.1	.1	400	.6	89	91	62	0	7	5	0
GREAT FALLS	37	12	49	-2	24	-5	.3	.1	.1	.1	240	1.0	56	88	48	0	7	4	0
HAVRE	31	14	45	1	22	-2	.4	.3	.2	.1	500	.6	57	88	53	0	7	3	0
HELENA	35	13	49	-7	24	-5	.1	.0	.1	.1	275	.4	37	85	44	0	7	2	0
KALISPELL	33	17	46	8	25	-4	.1	-.1	.1	.1	83	2.2	83	88	58	0	7	3	0
MILES CITY	32	14	41	3	23	-3	.1	.0	.1	T	100	1.0	86	90	63	0	7	3	0
MISSOULA	41	21	52	13	31	0	.1	-.1	.1	.1	160	.9	41	85	41	0	7	2	0
NE GRAND ISLAND	46	17	66	11	31	1	.3	.1	.3	.3	457	.9	67	87	37	0	7	1	0
LINCOLN	47	21	66	15	34	4	.6	.3	.6	.6	689	1.7	94	83	39	0	7	1	1
NORFOLK	41	17	60	8	29	1	T	-.3	T	T	0	1.3	99	90	44	0	7	1	0
NORTH PLATTE	44	15	65	2	29	-1	.1	-.1	.1	T	0	.6	59	86	40	0	7	1	0
OMAHA	40	21	61	14	31	-1	1.3	1.0	1.3	1.3	>1000	2.7	158	82	52	0	7	2	1
SCOTTSBLUFF	44	14	60	9	29	-3	.1	.0	.1	T	60	.9	101	89	37	0	7	3	0
VALENTINE	39	14	61	3	27	-1	T	-.1	T	T	0	.7	89	91	44	0	7	2	0
NV ELY	50	19	56	8	34	3	.2	.0	.2	.2	250	.4	30	77	30	0	7	2	0
LAS VEGAS	66	43	74	39	55	2	.9	.7	.5	.3	>1000	1.1	112	58	24	0	0	3	1
RENO	58	28	67	19	43	4	.2	.0	.1	.1	183	.3	15	75	27	0	5	3	0
WINNEMUCCA	57	24	63	14	40	3	.2	.1	.2	.1	125	.7	46	78	29	0	4	2	0
NH CONCORD	42	20	63	5	31	5	.2	-.4	.2	.2	124	3.5	64	92	40	0	6	2	0
NJ ATLANTIC CITY	51	30	66	16	40	4	1.2	.3	.9	.9	356	7.2	103	94	52	0	5	3	1
NM ALBUQUERQUE	57	34	64	27	45	3	.1	.0	.1	.1	167	.7	91	71	23	0	3	2	0
CLOVIS	60	34	67	27	47	3	T	-.1	T	.0	0	.7	72	75	31	0	4	0	0
ROSWELL	62	39	70	28	50	4	T	-.1	T	.0	0	.5	64	63	26	0	2	1	0
NY ALBANY	44	24	65	9	34	7	.1	-.6	.1	.1	28	3.9	81	86	39	0	6	1	0
BINGHAMTON	40	24	63	12	32	7	.7	.1	.5	.5	312	4.8	97	86	49	0	5	2	1
BUFFALO	42	25	66	15	34	6	1.7	1.1	1.1	1.1	653	5.2	95	94	56	0	5	7	1
NEW YORK	47	34	64	24	41	5	1.0	.1	.7	.3	121	5.2	82	90	54	0	3	2	1
ROCHESTER	43	26	68	15	34	7	.5	-.1	.3	.3	200	3.2	66	95	52	0	5	6	0
SYRACUSE	45	25	69	16	35	8	.4	-.3	.2	.3	132	4.2	78	91	39	0	6	4	0
NC ASHEVILLE	56	30	65	21	43	1	.9	-.1	.8	.8	283	5.8	86	96	52	0	4	3	1
CHARLOTTE	60	38	69	29	49	3	.6	-.4	.4	.6	184	7.9	101	83	43	0	2	4	0
GREENSBORO	58	34	69	24	46	3	.8	-.1	.3	.5	188	6.1	86	86	43	0	4	4	0
HATTERAS	59	43	70	35	51	3	.8	-.1	.7	.7	263	14.2	156	92	58	0	0	4	1
NEW BERN	60	38	71	30	49	1	.7	-.2	.7	.7	260	9.9	120	93	54	0	3	3	1
RALEIGH	58	34	71	22	46	2	.7	-.1	.7	.7	271	5.5	76	88	44	0	4	2	1
WILMINGTON	60	39	70	27	49	-1	1.3	.4	1.1	1.1	423	13.0	177	97	57	0	2	4	1
ND BISMARCK	25	7	35	-4	16	-3	.1	.0	.0	T	67	.4	45	87	63	0	7	5	0
FARGO	16	-1	30	-14	8	-8	.2	.1	.2	.2	600	1.7	182	85	65	0	7	3	0
GRAND FORKS	16	-4	30	-14	6	-8	.1	.0	.1	.1	125	1.1	87	87	60	0	7	3	0
WILLISTON	24	9	37	-2	16	-3	.2	.1	.1	.1	600	.7	69	88	60	0	7	3	0
OH AKRON-CANTON	46	30	69	19	38	8	.2	-.5	.1	.1	26	4.5	91	83	47	0	5	5	0
CINCINNATI	50	31	64	19	41	5	.3	-.5	.2	.2	96	7.1	117	83	46	0	5	2	0
CLEVELAND	45	26	64	13	36	5	.2	-.4	.1	.1	41	4.6	95	84	53	0	5	5	0
COLUMBUS	48	30	65	20	39	5	.1	-.5	.1	.1	44	4.4	86	81	46	0	5	2	0

Based on 1951-80 normals

Weather Data for the Week Ending March 2, 1991

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																TEMP. °F		PRECIP.	
	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
DAYTON	47	29	62	16	38	4	.2	-.4	.2	.2	118	5.3	110	87	52	0	5	2	0
TOLEDO	44	25	63	15	35	5	.5	.0	.2	.2	171	3.1	78	91	53	0	6	4	0
YOUNGSTOWN	45	28	71	16	37	8	.3	-.3	.2	.2	94	3.8	75	86	50	0	5	4	0
OK OKLAHOMA CITY	59	36	79	30	48	3	.1	-.3	.1	.1	118	1.1	45	75	36	0	4	1	0
TULSA	58	35	76	27	47	3	.4	-.2	.1	.2	150	2.1	64	81	39	0	5	3	0
OR ASTORIA	57	41	66	36	49	4	1.2	-.5	1.2	1.2	248	16.6	87	93	61	0	0	2	1
BURNS	54	22	58	16	38	3	T	-.2	T	T	67	1.1	42	84	29	0	6	1	0
MEDFORD	65	34	74	29	49	5	.4	-.1	.3	.3	215	3.6	63	94	41	0	4	3	0
PENDLETON	54	30	58	28	42	0	.4	.2	.4	.4	614	2.0	69	86	45	0	6	2	0
PORTLAND	61	36	67	30	48	4	.7	-.1	.6	.7	300	6.9	67	90	45	0	2	2	1
SALEM	63	36	71	29	49	5	1.2	.2	1.1	1.2	403	7.4	62	90	47	0	3	2	1
PA ALLENTOWN	50	28	70	18	39	6	.1	-.7	.1	.1	39	4.0	61	90	45	0	6	2	0
ERIE	45	29	70	20	37	9	.4	-.1	.2	.3	156	4.0	87	84	52	0	5	5	0
HARRISBURG	51	31	73	23	41	6	.3	-.5	.3	.3	133	4.2	72	85	36	0	6	1	0
PHILADELPHIA	53	32	71	22	43	6	T	-.8	T	T	9	4.9	79	93	48	0	5	2	0
PITTSBURGH	49	30	74	20	40	7	.2	-.5	.1	.2	85	4.6	85	81	39	0	5	3	0
SCRANTON	46	28	68	18	37	7	.2	-.4	.1	.1	93	3.0	69	81	43	0	6	3	0
RI PROVIDENCE	45	26	63	13	36	3	.7	-.3	.5	.5	204	6.3	78	93	53	0	6	3	1
SC CHARLESTON	64	43	75	33	53	1	1.0	.1	1.0	1.0	371	9.8	141	96	58	0	0	2	1
COLUMBIA	63	38	77	27	50	0	.8	-.3	.6	.8	259	8.2	94	91	46	0	2	2	1
FLORENCE	62	39	75	27	50	1	1.2	.3	1.2	1.2	441	7.8	109	92	49	0	1	2	1
GREENVILLE	60	35	67	22	47	1	.7	-.6	.6	.7	189	7.7	85	89	43	0	3	2	1
SD ABERDEEN	23	10	35	-5	16	-4	.1	-.1	.0	T	0	.8	70	84	65	0	7	4	0
HURON	29	10	46	-2	20	-3	.2	-.1	.1	T	0	1.0	84	91	63	0	7	5	0
RAPID CITY	37	14	53	4	25	-4	.1	-.1	.0	T	80	1.1	110	92	53	0	7	3	0
SIOUX FALLS	33	14	53	3	24	0	.1	-.2	.0	T	0	.6	38	90	57	0	7	4	0
TN CHATTANOOGA	60	37	77	27	49	4	1.4	.1	1.3	1.3	323	12.1	118	91	46	0	3	2	1
KNOXVILLE	59	36	74	29	47	3	.7	-.5	.3	.3	97	9.8	108	87	44	0	3	3	0
MEMPHIS	59	37	70	27	48	1	.9	-.3	.9	.9	284	10.3	111	89	46	0	4	2	1
NASHVILLE	58	35	74	24	46	3	.6	-.6	.5	.5	158	8.9	101	86	43	0	3	3	1
TX ABILENE	65	39	76	31	52	1	T	-.2	T	T	67	2.9	144	76	32	0	1	1	0
AMARILLO	59	31	72	25	45	3	T	-.2	T	T	0	.9	80	74	26	0	5	0	0
AUSTIN	67	48	82	40	58	2	.3	-.2	.2	.1	45	12.2	294	84	41	0	0	3	0
BEAUMONT	68	49	80	38	59	2	1.3	.4	.9	1.2	586	20.6	242	97	59	0	0	3	1
BROWNSVILLE	79	56	96	49	67	2	T	-.2	T	.0	0	3.0	107	96	48	2	0	1	0
CORPUS CHRISTI	72	53	90	46	62	1	T	-.2	T	T	50	3.8	121	95	53	1	0	2	0
DEL RIO	68	46	85	42	57	-2	.1	-.1	.1	.0	0	1.3	92	72	32	0	0	1	0
EL PASO	63	42	72	31	52	1	.3	.2	.2	.1	500	1.6	190	71	30	0	1	2	0
FORT WORTH	67	43	81	34	55	4	.1	-.4	.1	.1	50	5.4	146	83	38	0	0	1	0
GALVESTON	66	54	76	42	60	2	.4	-.2	.1	.2	162	17.3	316	90	62	0	0	4	0
HOUSTON	68	49	80	38	58	1	1.6	.9	1.4	T	12	15.6	224	94	50	0	0	3	1
LUBBOCK	63	36	72	27	49	4	T	-.2	T	T	0	1.7	175	76	28	0	2	1	0
MIDLAND	64	38	72	29	51	0	.2	.1	.2	.0	0	2.1	210	78	30	0	2	1	0
SAN ANGELO	65	40	76	27	52	0	.1	-.1	.1	T	50	2.4	158	83	36	0	2	2	0
SAN ANTONIO	67	48	83	37	58	0	.1	-.2	.1	.1	100	7.5	218	89	44	0	0	2	0
VICTORIA	69	50	85	41	60	1	.2	-.2	.2	T	30	10.9	259	95	53	0	0	4	0
WACO	69	44	80	31	56	3	.4	-.1	.3	.4	345	5.0	131	86	38	0	1	3	0
WICHITA FALLS	66	38	82	30	52	4	T	-.3	T	T	22	2.7	136	79	27	0	3	1	0
UT CEDAR CITY	51	27	57	19	39	3	.3	.1	.2	.1	233	1.2	81	82	31	0	4	2	0
SALT LAKE CITY	51	31	55	26	41	4	.6	.3	.6	.6	678	2.3	85	83	37	0	4	3	1
VT BURLINGTON	38	21	58	7	29	7	.3	-.2	.3	.3	208	2.4	66	89	40	0	5	2	0
VA NORFOLK	56	38	70	30	47	3	.6	-.2	.3	.3	138	5.9	82	95	53	0	2	3	0
RICHMOND	57	34	72	26	46	4	1.0	.2	.6	.6	274	5.4	82	92	50	0	4	3	1
ROANOKE	55	32	68	25	43	3	.9	.1	.6	.7	292	6.3	102	83	41	0	5	3	1
WA QUILLAYUTE	57	34	68	27	46	3	2.7	-.2	1.8	2.7	333	32.0	117	98	51	0	2	2	2
SEATTLE-TACOMA	57	37	66	35	47	3	1.6	.6	1.1	1.6	624	10.7	102	95	50	0	0	2	1
SPOKANE	47	24	53	16	36	1	.9	.5	.7	.9	944	3.4	81	90	46	0	7	2	1
YAKIMA	55	25	61	22	40	1	.2	.1	.2	.2	575	.8	37	93	39	0	7	2	0
WV BECKLEY	50	30	70	21	40	5	.8	-.1	.4	.6	238	7.2	106	87	46	0	5	5	0
CHARLESTON	57	33	81	23	45	6	.2	-.6	.1	.1	38	5.8	85	80	38	0	5	3	0
HUNTINGTON	57	34	79	26	45	6	.4	-.5	.2	.2	71	5.8	93	78	35	0	5	3	0
PARKERSBURG	54	33	78	24	43	6	T	-.7	T	T	5	5.5	96	81	40	0	5	1	0
WI GREEN BAY	29	9	38	-3	19	-3	1.2	.9	.8	1.2	>1000	2.1	93	92	60	0	7	2	1
LACROSSE	32	14	41	5	23	-1	.4	.1	.3	.3	378	1.7	93	90	59	0	7	2	0
MADISON	34	15	46	6	25	0	1.7	1.4	.9	1.7	>1000	3.3	150	91	59	0	7	4	2
MILWAUKEE	36	20	49	12	28	1	1.0	.6	.7	.9	723	2.9	94	87	53	0	6	3	1
WAUSAU	27	6	36	-9	17	-3	.4	.1	.3	.3	378	1.6	82	95	69	0	7	2	0
WY CASPER	41	17	52	16	29	0	T	-.2	T	T	40	.9	88	91	39	0	7	1	0
CHEYENNE	42	15	50	6	29	-2	.1	-.1	.0	T	80	.5	63	81	33	0	7	4	0
LANDER	41	20	45	17	30	2	.1	-.1	.1	T	0	1.2	100	79	38	0	7	1	0
SHERIDAN	36	17	50	8	27	-2	T	-.2	T	T	60	1.5	96	91	51	0	7	1	0

Based on 1951-80 normals

February Weather and Crop Summary

Except for a brief cold spell in the East in mid-February, the month proved to be rather bearable temperature-wise. The most anomalously warm regions were the northern Plains and the northern Rockies, as temperature departures exceeded +15° F in eastern Montana. Lewiston, ID and Helena, MT enjoyed their mildest February on record. The Nation's only below-normal temperature readings for the month were found in a tiny portion of the central Rockies.

Precipitation highlights included drought-easing rains in California at month's end, and a continuation of abnormally wet conditions in the Gulf Coast States. Farther east, Savannah, GA reported its record driest February (0.26 inches) following its wettest January on record. Beneficial snow fell in the Dakotas, while the central and southern Plains received insubstantial moisture. Not to be outdone, Helena, MT also set a February record for dryness (0.02 inches).

February began on a spring-like note, and nationwide warmth continued until the 10th. Over 175 record-high temperatures were set during this time. Rain fell in northern California for the first 4 days of the month, but ended abruptly, not to return for 3 weeks. A strong storm dumped locally heavy rain from eastern Texas to the Ohio Valley.

Cooler air filtered into the East after the 10th. A powerful storm developed in the central Plains, spawning two tornadoes in Missouri and spreading rain and snow from the Mississippi River eastward. Strong northwesterly winds behind the storm dragged the coldest air of the winter deep into the Southeast, setting 30 minimum temperature records on the 16th. In northern Florida, minimum temperatures plunged into the mid-20's.

But the cold was quickly replaced by heavy rain. Six consecutive days of heavy rain (February 17-22) in various parts of the Southeast resulted in 6- to 12-inch totals and flash flooding in southeastern Arkansas, northeastern Louisiana, northern Mississippi, northern Alabama, northwestern Georgia, and central Tennessee. The series of storms also produced hail along the Gulf coast, and three tornadoes in eastern Texas. Meanwhile, a Pacific storm spread heavy rain and wind into the Pacific Northwest before dumping 6 to 18 inches of snow in South Dakota. Several weaker storms dropped lighter amounts of snow from North Dakota to Wisconsin.

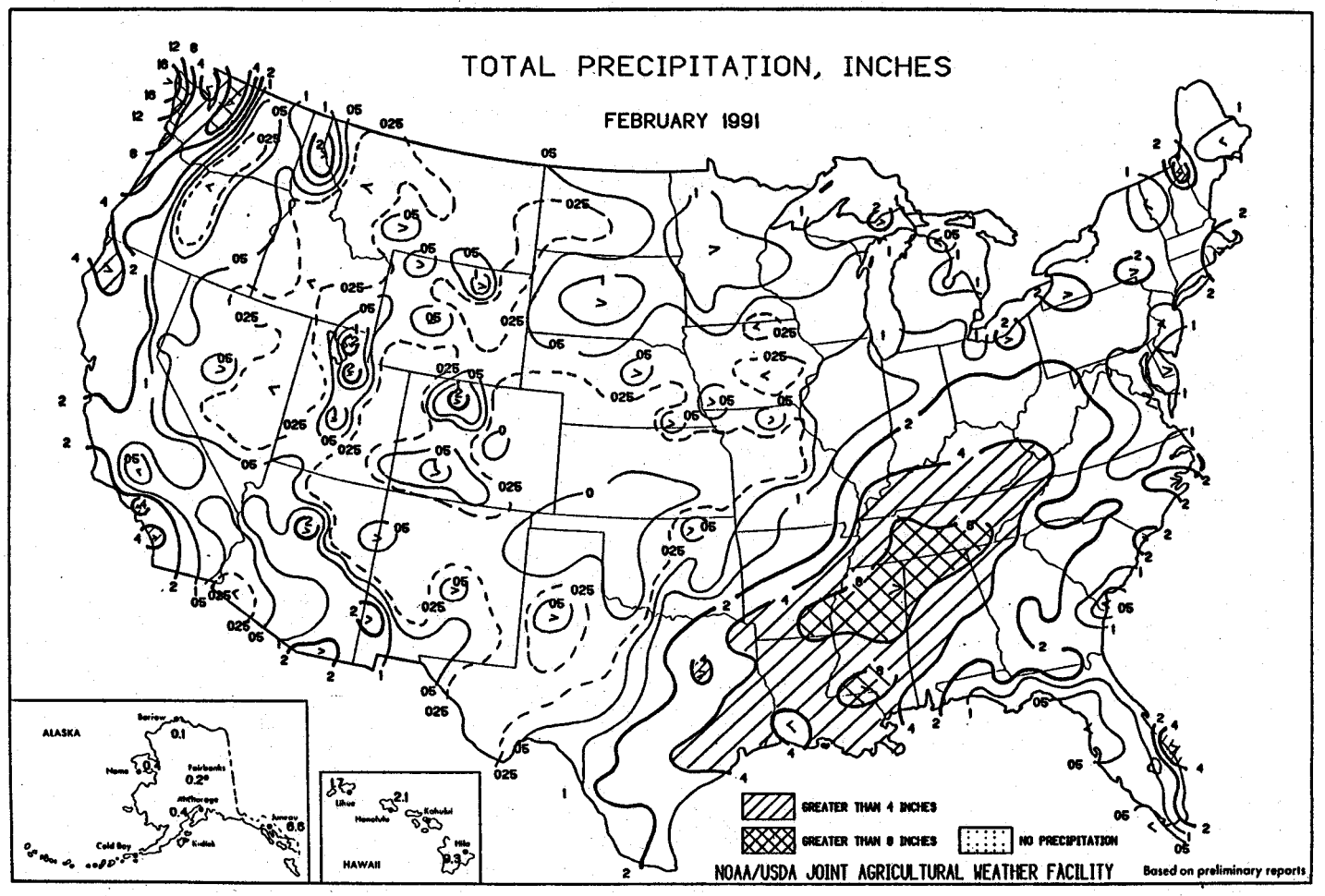
Rapid changes occurred at month's end. A weak storm surprised the Ozark mountains and New York City with about half a foot of snow. But just when it looked like March would come in "like a lamb," the first in a series of storms hit California with heavy rain on the 27th. Heavy snow began to pound the higher mountains of the Southwest. As February wound down, arctic air invaded the northern Plains, and strong thunderstorms erupted along the Gulf coast.

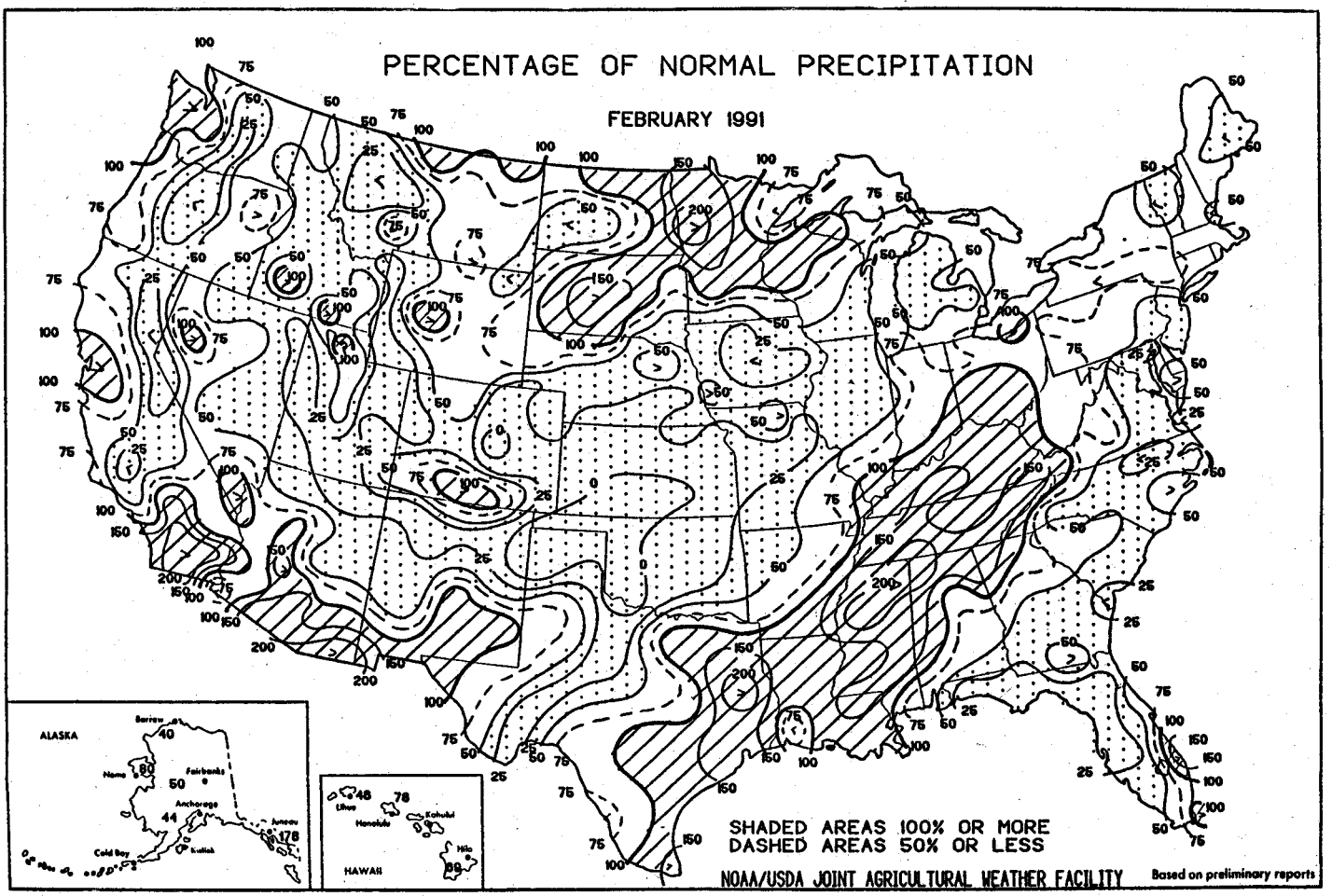
Fieldwork

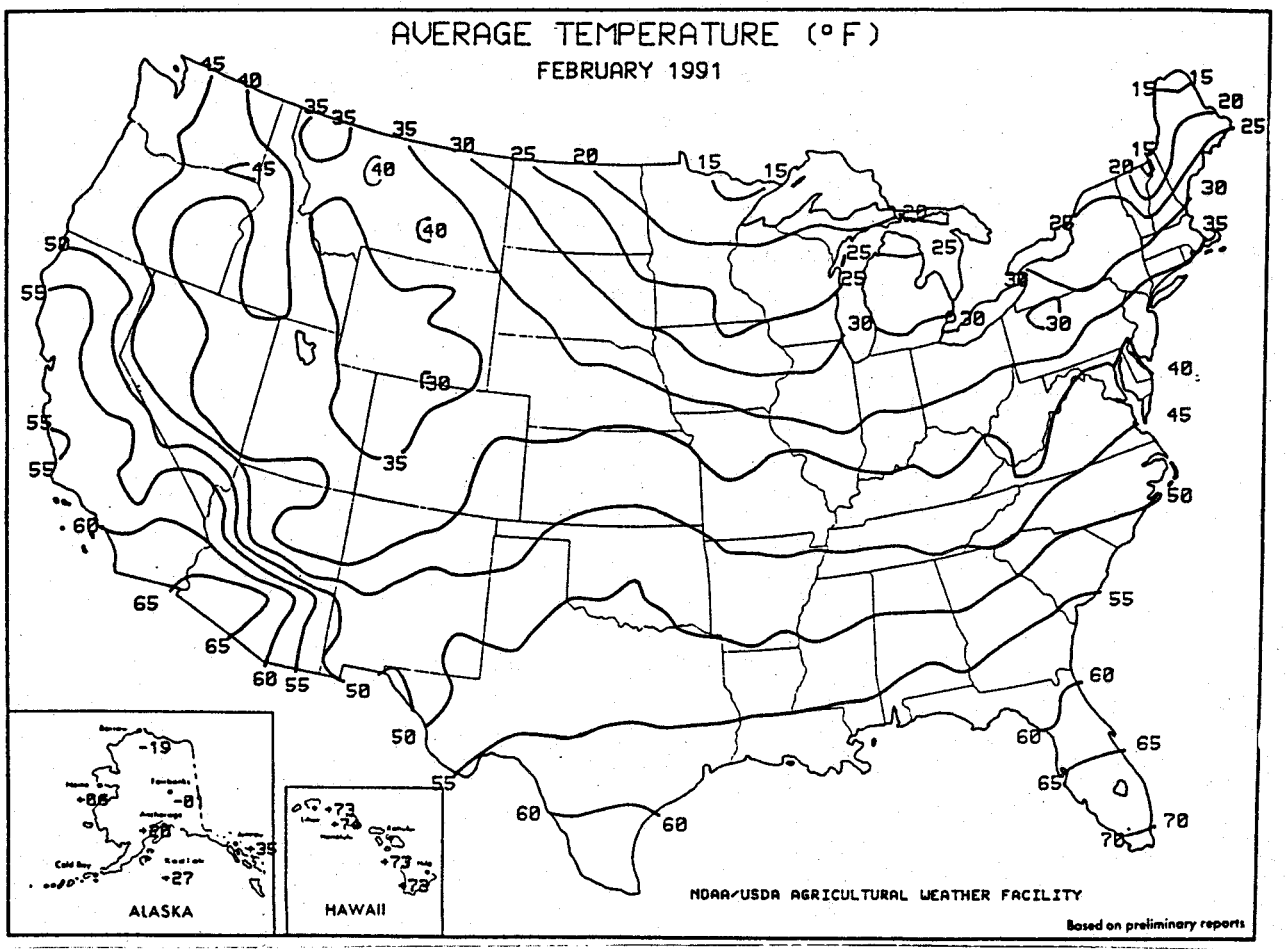
Ground preparation for cotton planting began in Arizona and California. However, California cotton land preparation was slowed due to unknown availability of irrigation water. Rain and wet field conditions slowed land preparation in the Delta and Ohio Valley. By the end of February, corn planting and land preparation had begun in most southern States. By the end of the month, rain in California encouraged ground preparation for corn, cotton, and dry beans.

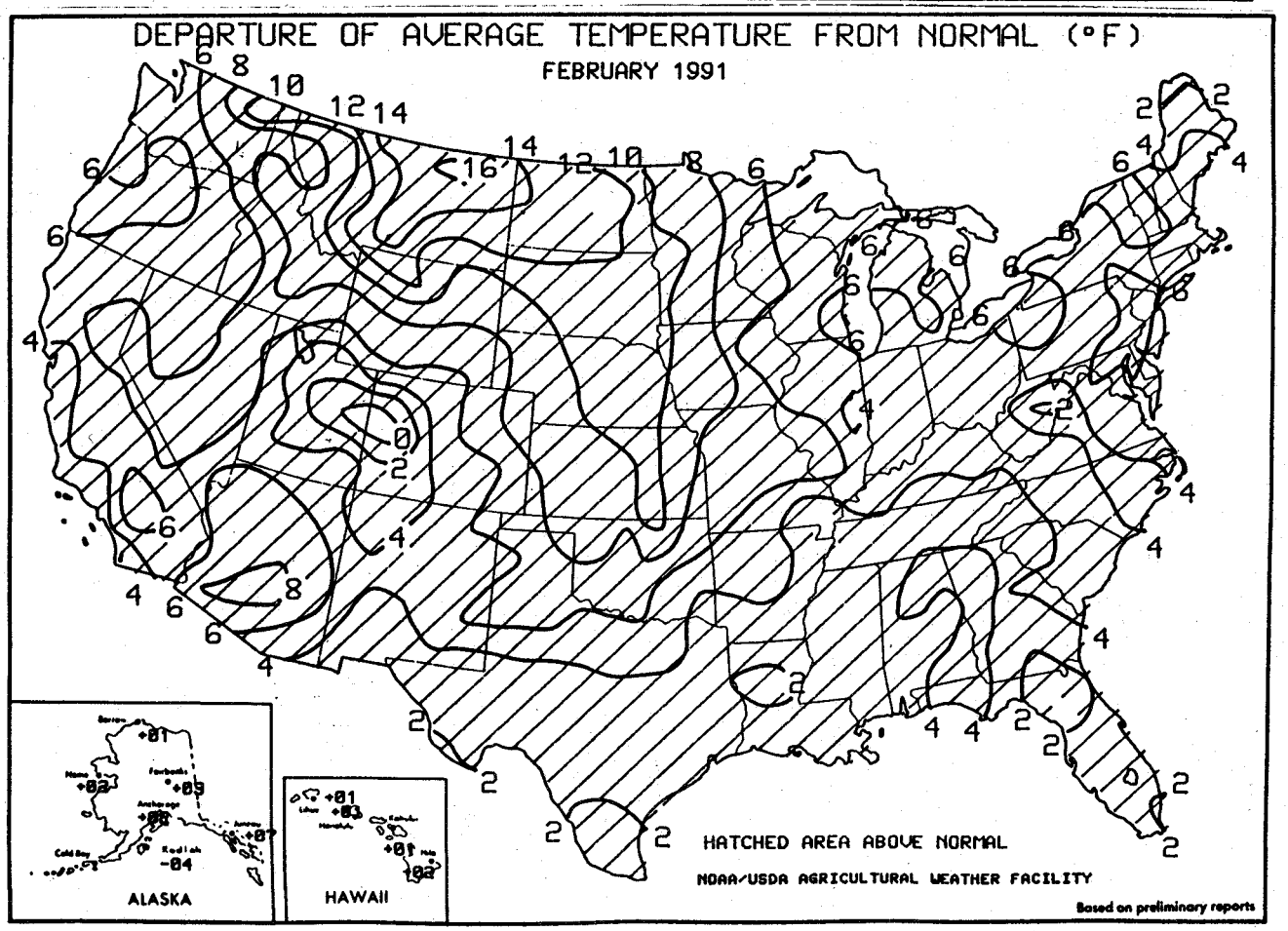
Winter Wheat

Winter wheat condition was mostly fair to good. Temperatures averaged above normal most of the month. The warmer weather limited the protective snow cover. Topdressing continued during the month where the soil was not too wet. Waterlogged wheat was evident in the Delta. Wheat in central Kansas was treated for army cutworms. By mid-February, wheat in Oregon had begun to green, but the extent of winter kill was unknown. Winter wheat producers in Washington had begun to replant some winter-damaged fields. By the end of the month, wheat in Oklahoma and the Texas High Plains was greening, but additional moisture was needed for development. Army cutworms caused moderate damage to winter wheat fields in Kansas. Washington winter wheat kill was intensified by dry soil and low nighttime temperatures.


TOTAL PRECIPITATION, INCHES
FEBRUARY 1991
ALASKA
HAWAII
GREATER THAN 4 INCHES
GREATER THAN 8 INCHES
NO PRECIPITATION
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary reports


PERCENTAGE OF NORMAL PRECIPITATION
FEBRUARY 1991
ALASKA
HAWAII
SHADED AREAS 100% OR MORE
DASHED AREAS 50% OR LESS
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary reports


AVERAGE TEMPERATURE (°F)
FEBRUARY 1991
ALASKA
HAWAII
NOAA/USDA AGRICULTURAL WEATHER FACILITY
Based on preliminary reports


DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)
FEBRUARY 1991
ALASKA
HAWAII
HATCHED AREA ABOVE NORMAL
NOAA/USDA AGRICULTURAL WEATHER FACILITY
Based on preliminary reports

TEMPERATURE AND PRECIPITATION SUMMARY
FEBRUARY 1991

STATES AND STATIONS	Temp. °F AVERAGE	Temp. °F DEPARTURE	Precip. TOTAL	Precip. DEPARTURE
AL BIRMINGHAM	50	4	4.3	-0.4
HUNTSVILLE	48	4	8.5	3.7
MOBILE	56	2	3.4	-1.5
MONTGOMERY	53	4	2.8	-1.7
AK ANCHORAGE	20	2	0.4	-0.5
BARROW	-19	1	0.1	-0.1
FAIRBANKS	-1	3	0.2	-0.3
JUNEAU	35	7	6.5	2.8
KODIAK	27	-3	10.2	5.1
NOME	6	2	0.4	-0.1
AZ FLAGSTAFF	37	6	2.1	0.1
PHOENIX	66	10	0.6	0.0
PRESCOTT	45	6	1.6	0.0
TUCSON	60	6	0.9	0.3
WINSLOW	41	3	0.2	-0.3
YUMA	67	7	0.2	0.0
AR FORT SMITH	48	5	0.8	-1.7
LITTLE ROCK	49	5	2.6	-1.2
CA BAKERSFIELD	57	4	0.1	-0.9
BISHOP	--	-	0.1	-0.9
EUREKA	53	4	2.8	-2.4
FRESNO	56	5	1.0	-0.8
LOS ANGELES	60	3	2.5	0.1
REDDING	54	3	4.0	-2.2
SACRAMENTO	55	5	3.1	0.2
SAN DIEGO	60	3	2.5	1.1
SAN FRANCISCO	55	4	3.8	0.6
STOCKTON	55	5	2.4	0.4
CO ALAMOSA	26	3	0.4	0.1
CO. SPRINGS	38	5	T	-0.3
DENVER	40	7	0.1	-0.6
GRAND JUNCTION	32	-1	0.1	-0.4
PUEBLO	39	4	T	-0.2
CT BRIDGEPORT	36	6	1.8	-1.2
HARTFORD	34	6	1.8	-1.4
DC WASHINGTON	43	5	0.8	-1.8
FL APALACHICOLA	59	4	0.7	-2.9
DAYTONA BEACH	62	3	1.6	-1.5
FT. MYERS	68	4	0.8	-1.3
JACKSONVILLE	59	2	1.5	-2.1
KEY WEST	73	3	0.3	-1.7
MIAMI	70	2	2.0	0.0
ORLANDO	64	3	1.0	-2.1
TALLAHASSEE	57	3	0.9	-4.1
TAMPA	64	3	0.4	-2.6
WEST PALM BEACH	68	2	4.4	1.8
GA ATHEN	49	4	3.3	-0.9
ATLANTA	49	4	3.1	-1.3
AUGUSTA	52	5	2.0	-2.1
MACON	53	4	1.7	-2.7
SAVANNAH	56	4	0.3	-2.9
HI HILO	73	2	9.3	-4.1
HONOLULU	73	1	2.1	-0.6
KAHULUI	73	1	4.9	2.0
LIHUE	73	1	1.7	-2.0
ID BOISE	42	5	0.5	-0.6
LEWISTON	48	9	0.3	-0.6
POCATELLO	37	7	0.3	-0.6
IL CAIRO	--	-	4.5	1.1
CHICAGO	31	6	0.6	-0.5
MOLINE	32	6	0.4	-0.8
PEORIA	32	5	0.6	-0.8
QUINCY	35	7	0.2	-1.2
ROCKFORD	28	5	0.4	-0.7
SPRINGFIELD	35	6	0.7	-1.0
IN EVANSVILLE	40	5	3.0	0.0
FORT WAYNE	32	5	1.3	-0.7
INDIANAPOLIS	35	5	1.9	-0.5
SOUTH BEND	32	6	1.8	-0.2
IA DES MOINES	33	9	0.2	-0.9
DUBUQUE	27	6	0.5	-0.8
SIOUX CITY	33	10	0.4	-0.6
WATERLOO	26	5	0.3	-0.6
KS CONCORDIA	41	9	0.2	-0.7
DODGE CITY	44	9	T	-0.5
GOODLAND	40	8	0.1	-0.2
TOPEKA	41	9	T	-1.0
WICHITA	45	9	T	-0.8
KY BOWLING GREEN	41	4	6.9	2.9
JACKSON	41	8	4.5	0.8
LEXINGTON	39	4	3.9	0.6
LOUISVILLE	40	4	3.7	0.5

STATES AND STATIONS	Temp. °F AVERAGE	Temp. °F DEPARTURE	Precip. TOTAL	Precip. DEPARTURE
PADUCAH	42	5	4.1	0.7
LA ALEXANDRIA	54	1	4.2	-0.4
BATON ROUGE	57	3	7.8	2.9
LAKE CHARLES	57	3	2.6	-0.8
NEW ORLEANS	58	3	5.4	0.2
SHREVEPORT	52	2	5.1	1.7
ME CARIBOU	15	2	1.1	-1.0
PORTLAND	30	6	1.9	-1.7
MD BALTIMORE	41	6	0.7	-2.2
SALISBURY	41	4	1.7	-1.6
MA BOSTON	36	5	1.6	-2.1
CHATHAM	35	4	2.4	-1.8
MI ALPENA	26	7	0.5	-0.8
DETROIT	31	5	0.9	-0.7
FLINT	29	6	0.7	-0.8
GRAND RAPIDS	29	5	0.6	-0.9
HOUGHTON LAKE	24	6	0.6	-0.7
LANSING	29	7	0.8	-0.6
MARQUETTE	20	6	1.8	-0.1
MUSKEGON	29	5	0.8	-0.9
SAULT ST. MARIE	19	4	0.6	-1.0
MN ALEXANDRIA	22	10	1.0	0.3
DULUTH	19	7	0.6	-0.3
INT'L FALLS	15	8	0.9	0.2
MINNEAPOLIS	24	7	1.0	0.2
ROCHESTER	24	7	0.4	-0.2
ST CLOUD	22	8	1.1	0.3
MS GREENWOOD	49	2	9.7	5.2
JACKSON	52	3	5.3	1.0
MERIDIAN	52	3	7.4	2.8
TUPELO	48	3	10.9	6.3
MO CAPE GIRARDEAU	--	-	2.6	-0.4
COLUMBIA	40	7	0.1	-1.8
KANSAS CITY	39	6	0.2	-1.0
SAINT LOUIS	42	8	1.0	-1.1
SPRINGFIELD	43	7	0.9	-1.2
MT BILLINGS	41	13	0.5	-0.2
GLASGOW	32	16	0.3	0.0
GREAT FALLS	39	12	0.2	-0.5
HAVRE	36	15	0.5	0.0
HELENA	38	11	T	- 0.4
KALISPELL	33	7	0.4	-0.6
MILES CITY	35	13	0.4	-0.2
MISSOULA	35	7	0.2	-0.6
NE GRAND ISLAND	38	11	0.1	-0.7
LINCOLN	38	11	0.1	-0.9
NORFOLK	35	11	0.5	-0.3
NORTH PLATTE	38	10	0.2	-0.3
OMAHA	35	8	0.5	-0.4
SCOTTSBLUFF	37	7	0.4	0.0
VALENTINE	34	11	0.6	0.1
NV ELKO	37	6	0.5	-0.3
ELY	36	7	0.2	-0.5
LAS VEGAS	56	6	0.5	0.1
RENO	44	6	0.2	-0.7
WINNEMUCCA	40	5	0.3	-0.3
NH CONCORD	28	6	1.4	-1.0
NJ ATLANTIC CITY	38	5	1.2	-2.1
NM ALBUQUERQUE	45	5	0.1	-0.3
CLOVIS	48	6	0.1	-0.4
ROSWELL	50	6	0.3	-0.1
NY ALBANY	30	7	1.7	-0.6
BINGHAMTON	28	6	2.1	-0.1
BUFFALO	31	6	2.1	-0.3
NEW YORK	40	7	1.9	-1.1
ROCHESTER	31	6	1.2	-1.2
SYRACUSE	30	5	1.5	-1.1
NC ASHEVILLE	42	3	1.7	-1.6
CHARLOTTE	48	5	1.3	-2.5
GREENSBORO	45	5	1.2	-2.2
HATTERAS	50	4	1.1	-3.0
NEW BERN	50	4	1.9	-2.0
RALEIGH	47	5	0.7	-2.7
WILMINGTON	51	4	1.6	-1.8
ND BISMARCK	28	13	0.2	-0.2
FARGO	21	9	1.3	0.9
GRAND FORKS	19	10	0.8	0.3
WILLISTON	29	14	0.4	-0.1
OH AKRON-CANTON	33	6	2.0	-0.2
CINCINNATI	37	5	4.0	1.3
CLEVELAND	33	5	2.3	0.1
COLUMBUS	36	6	2.3	0.1

STATES AND STATIONS	Temp. °F AVERAGE	Temp. °F DEPARTURE	Precip. TOTAL	Precip. DEPARTURE
DAYTON	35	5	2.6	0.5
MANSFIELD	32	5	1.6	-0.3
TOLEDO	32	5	1.4	-0.4
YOUNGSTOWN	32	6	1.5	-0.7
OK OKLAHOMA CITY	49	8	T	-1.3
TULSA	48	8	0.4	-1.3
OR ASTORIA	48	4	8.6	0.8
BURNS	37	4	0.6	-0.4
MEDFORD	48	5	1.7	-0.4
PENDLETON	45	5	0.6	-0.5
PORTLAND	49	6	3.6	-0.3
SALEM	49	6	3.7	-0.8
PA ALLENTOWN	36	6	1.1	-1.9
ERIE	33	8	1.6	-0.5
HARRISBURG	37	6	1.4	-1.4
PHILADELPHIA	40	7	0.7	-2.0
PITTSBURGH	35	6	1.9	-0.5
SCRANTON	33	6	1.4	-0.7
WILLIAMSPORT	34	6	1.7	-1.1
RI PROVIDENCE	35	5	2.3	-1.4
SC CHARLESTON	55	5	0.9	-2.4
COLUMBIA	52	4	1.9	-2.1
FLORENCE	52	4	1.0	-2.4
GREENVILLE	46	3	2.2	-2.1
SD ABERDEEN	28	12	0.7	0.1
HURON	30	11	0.9	0.2
RAPID CITY	36	10	0.8	0.2
SIOUX FALLS	30	11	0.3	-0.6
TN BRISTOL	41	3	5.4	2.0
CHATTANOOGA	46	4	8.1	3.4
KNOXVILLE	44	2	7.0	2.8
MEMPHIS	48	4	6.5	2.2
NASHVILLE	44	3	5.4	1.4
TX ABILENE	52	4	0.1	-0.8
AMARILLO	46	6	T	-0.6
AUSTIN	57	3	3.0	0.5
BEAUMONT	58	3	4.5	0.3
BROWNSVILLE	64	2	2.5	1.0
CORPUS CHRISTI	61	3	2.1	0.6
DEL RIO	58	2	0.8	-0.1
EL PASO	51	3	0.7	0.2
FORT WORTH	54	5	2.6	0.8
GALVESTON	59	3	6.3	4.0
HOUSTON	57	2	5.8	2.5
LAREDO	61	1	0.6	-0.4
LUBBOCK	49	6	0.5	0.0
MIDLAND	51	3	0.2	-0.3
SAN ANGELO	52	2	0.3	-0.6
SAN ANTONIO	57	2	2.3	0.5
VICTORIA	59	3	3.0	0.8
WACO	54	3	1.4	-0.6
WICHITA FALLS	51	6	T	-1.0
UT BLANDING	--	-	0.5	-0.5
CEDAR CITY	38	4	0.3	-0.5
SALT LAKE CITY	37	2	0.6	-0.7
VT BURLINGTON	26	8	0.5	-1.2
VA LYNCHBURG	42	5	2.2	-0.7
NORFOLK	46	5	0.8	-2.4
RICHMOND	44	5	1.1	-2.0
ROANOKE	43	5	2.1	-1.1
WA COLVILLE	38	7	1.0	-0.5
QUILLAYUTE	46	5	16.4	4.3
SEATTLE-TACOMA	48	5	4.7	0.5
SPOKANE	39	7	0.8	-0.8
WALLA WALLA	--	-	0.9	-0.5
YAKIMA	42	6	0.2	-0.5
WV BECKLEY	38	5	2.5	-0.7
CHARLESTON	40	4	3.0	-0.1
ELKINS	34	4	2.5	-0.3
HUNTINGTON	40	4	3.5	0.6
PARKERSBURG	38	4	2.4	-0.1
WI GREEN BAY	24	6	0.4	-0.6
LACROSSE	26	5	0.5	-0.4
MADISON	26	6	0.4	-0.6
MILWAUKEE	30	6	0.4	-0.9
WAUSAU	22	6	0.9	-0.1
WY CASPER	35	8	0.4	-0.2
CHEYENNE	36	7	0.1	-0.3
LANDER	34	8	0.7	0.1
SHERIDAN	36	10	0.6	-0.2
PR SAN JUAN	78	1	2.3	0.1

Based on 1951-80 normals

Heating Degree Days (Base 65°) For

February 1991

States and Stations	TOTAL	Depart Normal
AL. Birmingham	420	-112
Mobile	258	-84
Montgomery	322	-117
AK. Anchorage	1265	-54
Barrow	2336	-33
Fairbanks	1847	-85
Nome	1654	-74
AZ. Flagstaff	773	-187
Phoenix	27	-242
Tucson	140	-147
Winslow	679	-66
Yuma	12	-164
AR. Fort Smith	481	-152
Little Rock	412	-173
CA. Bakersfield	212	-123
Eureka	336	-120
Fresno	253	-153
Los Angeles	145	-88
Redding	310	-99
Stockton	285	-127
San Diego	152	-44
San Francisco	265	-110
CO. Denver	684	-195
Pueblo	730	-104
CO. Bridgeport	799	-164
Hartford	863	-184
DC. Washington	608	-162
FL. Apalachicola	180	-131
Jacksonville	199	-103
Key West	8	-29
Miami	31	-31
Orlando	88	-84
W. Palm Beach	44	-42
Tallahassee	232	-109
Tampa	84	-102
GA. Atlanta	437	-126
Augusta	355	-140
Macon	325	-127
Savannah	260	-127
ID. Boise	651	-158
Lewiston	478	-264
Pocatello	786	-208
IL. Chicago	945	-147
Moline	928	-189
Peoria	909	-161
Rockford	1018	-147
Springfield	827	-167
Fort Wayne	920	-161
Indianapolis	824	-159
South Bend	910	-171
IA. Des Moines	875	-259
Dubuque	1063	-161
Souix City	887	-283
KS. Concordia	661	-294
Dodge City	591	-249
Goodland	694	-233
Topeka	657	-253
Wichita	567	-270
KY. Lexington	719	-132
Louisville	677	-138
LA. Baton Rouge	238	-104
Lake Charles	229	-95
New Orleans	196	-122
Shreveport	357	-81
ME. Caribou	1392	-64
Portland	979	-197

States and Stations	TOTAL	Depart Normal
MD. Baltimore	674	-174
MA. Boston	803	-157
Chatham	844	-105
MI. Alpena	1080	-236
Detroit	939	-159
Flint	994	-174
Grand Rapids	997	-159
Houghton Lake	939	-377
Lansing	990	-178
Marquette	1250	-170
S. Ste. Marie	1282	-138
MN. Duluth	1273	-211
Internatl Falls	1383	-230
Minneapolis	1130	-200
Rochester	1154	-190
St. Cloud	1197	-239
MS. Jackson	368	-94
Meridian	349	-115
MO. Columbia	698	-213
Kansas City	709	-212
St. Louis	648	-226
Springfield	620	-186
MT. Billings	665	-360
Glasgow	921	-454
Great Falls	714	-358
Havre	807	-464
Helena	767	-325
Kalispell	880	-204
Miles City	826	-375
Missoula	838	-195
NE. Grand Island	742	-316
Lincoln	760	-318
Norfolk	843	-311
North Platte	762	-294
Omaha	825	-287
Valentine	860	-282
NV. Ely	807	-207
Las Vegas	247	-170
Reno	588	-185
Winnemucca	685	-135
NH. Concord	1024	-174
NJ. Atlantic City	737	-153
NM. Albuquerque	563	-154
NY. Albany	973	-192
Binghamton	1018	-175
Buffalo	956	-178
New York	687	-201
Rochester	957	-180
Syracuse	980	-168
NC. Asheville	627	-98
Charlotte	457	-162
Greensboro	546	-157
Hatteras	408	-135
Raleigh	501	-154
Wilmington	382	-116
ND. Bismark	1028	-386
Fargo	1242	-270
Williston	999	-412
OH. Akron-Canton	880	-178
Cinncinnati	773	-148
Cleveland	897	-156
Columbus	817	-169
Dayton	835	-156
Toledo	928	-170
Youngstown	927	-168

States and Stations	TOTAL	Depart Normal
OK. Okla. City	444	-234
Tulsa	459	-221
OR. Astoria	469	-122
Burns	766	-116
Medford	477	-156
Pendleton	564	-153
Portland	446	-164
Salem	449	-175
PA. Allentown	806	-194
Erie	898	-222
Harrisburg	769	-169
Philadelphia	694	-199
Pittsburg	820	-194
Scranton	877	-193
RI. Providence	829	-171
SC. Charleston	293	-141
Columbia	376	-132
Greenville	515	-84
SD. Aberdeen	1035	-345
Huron	781	-532
Rapid City	807	-285
Sioux Falls	977	-308
TN. Chattanooga	534	-110
Knoxville	589	-69
Memphis	473	-129
Nashville	586	-103
TX. Abilene	358	-121
Amarillo	529	-182
Austin	242	-105
Beamont	208	-98
Brownsville	69	-66
Corpus Christi	123	-86
Del Rio	195	-87
El Paso	383	-82
Fort Worth	314	-155
Galveston	167	-115
Houston	222	-92
Lubbock	444	-183
Midland	398	-86
San Angelo	364	-64
San Antonia	240	-79
Victoria	186	-82
Waco	312	-103
Wichita Falls	376	-176
UT. Salt Lake City	792	-73
VT. Burlington	1072	-241
VA. Lynchburg	631	-142
Norfolk	527	-142
Richmond	582	-149
Roanoke	618	-141
WA. Quillayute	515	-137
Seattle-Tacoma	474	-148
Spokane	716	-197
Walla Walla		
Yakima	652	-157
WV Beckley	765	-151
Charleston	685	-138
Huntington	882	64
WI. Green Bay	1154	-168
La Crosse	1090	-178
Madison	1072	-174
Milwaukee	980	-196
WY Casper	819	-248
Cheyenne	799	-201
Lander	865	-235
Sheridan	811	-278

Based on 1951-80 normals.

February Weather in Historical Perspective

February 1991 was mild and dry. This was the third warmest February on record, according to preliminary temperature data for the contiguous United States (fig. 1). This was also the second driest February on record, based on areally weighted standardized precipitation data (fig. 2).

Temperatures were above normal across the entire country, with all regions ranking in the upper third of the historical distribution (table 1). The Northwest region had the warmest February on record, while the West North Central region ranked second warmest and West third warmest. The driest regions stretched across the northern and eastern fringes of the country, with the Northeast having the sixth driest February on record. Precipitation in the West (California and Nevada) ranked close to average for the month. If not for heavy rains the last 3 days of the month, this would have been one of the driest February's of the past 97 years. Much of southern California was completely dry until the storms struck at month's end.

For the fourth consecutive year, the Hard Red Winter wheat region has had below-normal precipitation since autumn planting (fig. 3). Important growing areas in southern Kansas, western Oklahoma, and the northern Texas Panhandle measured no precipitation throughout February. Once again, spring precipitation will be crucial for a successful U.S winter wheat crop.

Figure 1

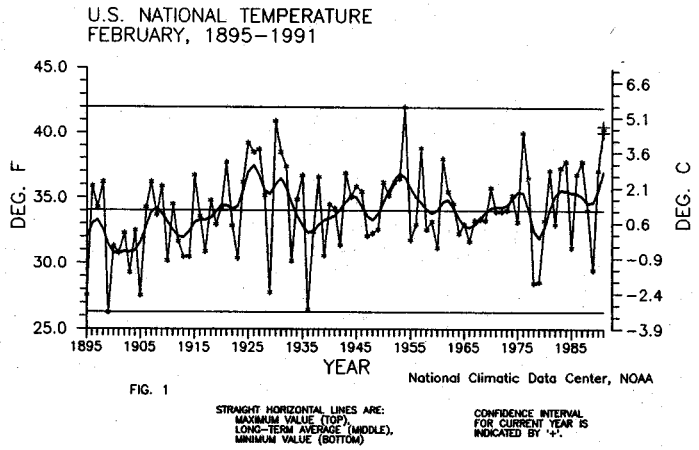


TABLE 1. TEMPERATURE AND PRECIPITATION RANKINGS FOR FEB 1991, BASED ON THE PERIOD 1895-1991. 1 = DRIEST/COLDEST, 97 = WETTEST/HOTTEST.

REGION	PRECIPITATION	TEMPERATURE
NORTHEAST	6	90
EAST NORTH CENTRAL	20	90
CENTRAL	48	80
SOUTHEAST	14	76
WEST NORTH CENTRAL	10	96
SOUTH	35	86
SOUTHWEST	22	88
NORTHWEST	19	97
WEST	48	95
NATIONAL	8	95

Figure 2

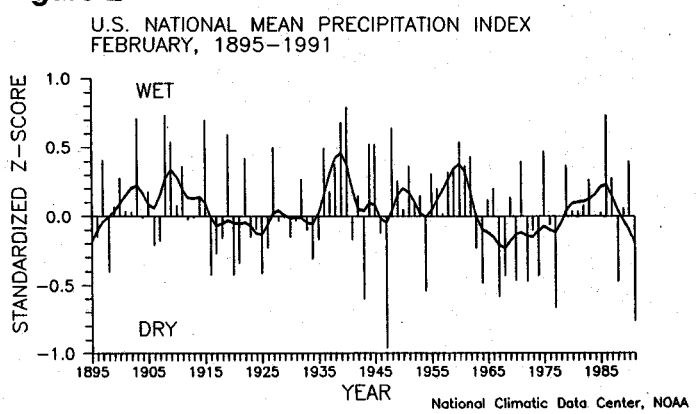
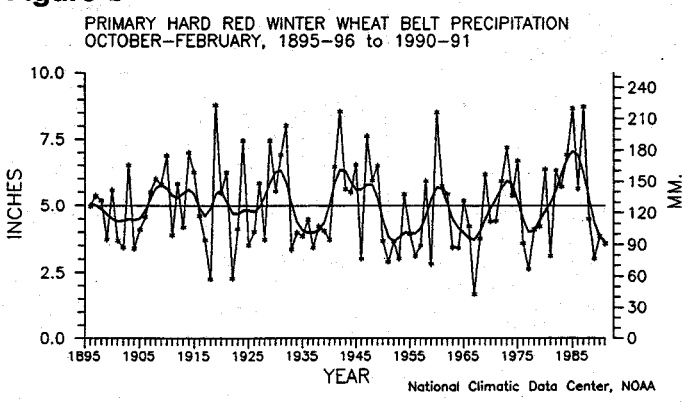


Figure 3



California Drought Update

A much welcomed, much needed stormy pattern rapidly evolved over the eastern Pacific Ocean in late February. Tantalizing showers, the first rain in 6 weeks, pushed ashore in southern California on the 27th. Heavy rain developed that night from San Francisco southward. By 4 a.m. Pacific Standard Time (PST) on Thursday, up to 5 inches of rain had pelted the southern coastal mountains. A 1- to 2-inch rainfall was noted at all sea-level stations south of San Francisco Bay. Even Death Valley recorded an inch from this initial surge of moisture.

Substantial rain continued in southern California until March 1. Storm rainfall totals were generally 3 to 5 inches in coastal areas but approached 15 inches in the mountains northeast of San Diego (fig. 1). Rain and mountain snow reached northern California by the 28th, continuing until March 4. Liquid equivalent precipitation exceeded 4 inches along the west slopes of the southern Cascades and the Sierra Nevada range from Mount Shasta southward to Sequoia National Park.

But the drought is not over. Through the end of February, this water year (October 1, 1990 to September 30, 1991) is still the third driest on record, after 1977 and 1924 (fig. 2). A comparison to 1977 shows similar percentages of normal precipitation through the end of February (fig. 3). Only about 30 percent of the annual total precipitation can be expected for the next 7 months (fig. 4). The Metropolitan Water District, which serves 15 million customers in southern California, has already reduced water supplies by 50 percent to agricultural users and by 20 percent to residential customers. In the State's fertile, but irrigation-dependent, Central Valley, a 75- to 100-percent reduction in water deliveries is a precaution in case the drought lasts into a sixth year.

But the storm has been good news to the State's ailing snowpack, runoff, and reservoir levels. In just 5 days, statewide percentage of normal precipitation for the water year vaulted from 21 to 41 percent. In the Sierra Nevada Mountains, snowpack increased from 14 percent of normal to 42 percent of normal. Badger Pass, at 7,300 feet, went from bare ground to a 39-inch pack by March 4. The rain and future meltwater will also boost reservoir levels and stream runoff. At the end of February, the State's reservoir holdings stood at 48 percent of normal. The State's runoff, as measured by river gauging stations, was an anemic 15 percent of normal. Though more recent data is not yet available, reservoir levels and runoff improved during the first few days of March.

An update of figure 3 through March 4 shows water year precipitation at about 50 percent of normal in Eureka, Sacramento, San Francisco, and Bakersfield. Data in other locations are: Los Angeles, 45 percent; Fresno, 65 percent; and San Diego, 83 percent.

Figure 1

California Storm Totals (inches)

4 a.m. Feb. 27 - 4 a.m. Mar 4 (PST)

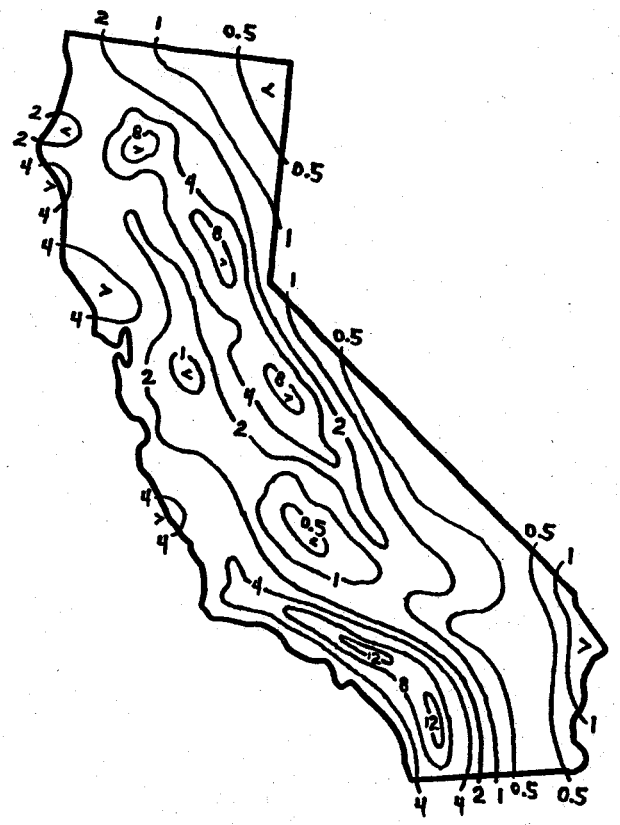


Figure 2

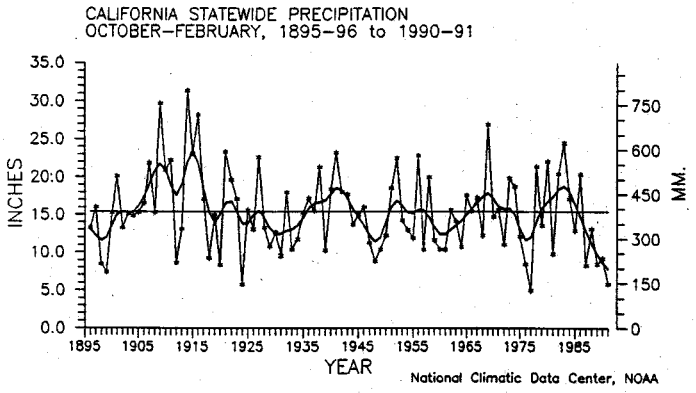


Figure 3

Percentage of Normal Precipitation

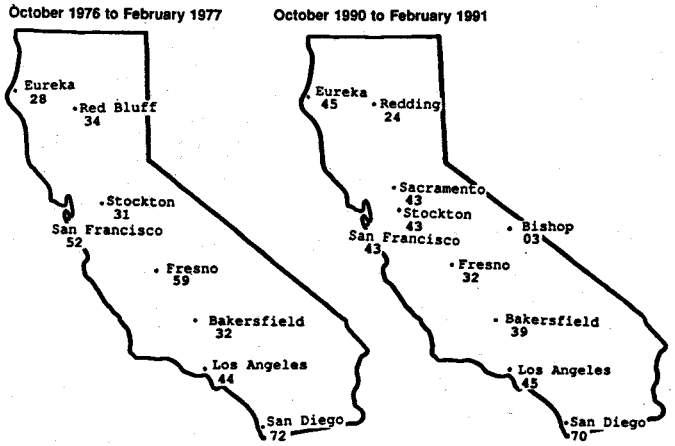
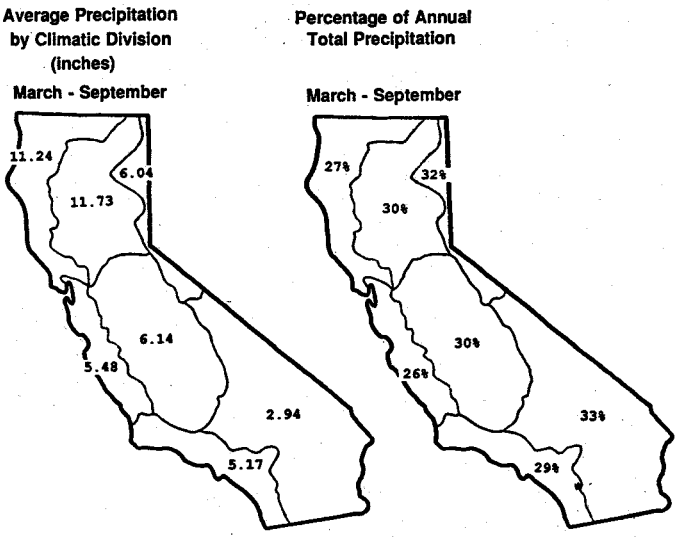


Figure 4



-Brad Rippey

National Agricultural Summary

February 25 - March 3, 1991

HIGHLIGHTS: Rains brought some relief to **California.** Fields to be planted and growing crops benefited from the much needed moisture. Warm weather caused winter wheat to break dormancy and start to green in most of the **Plains States.** Corn planting and land preparation was active in most **southern States.**

SMALL GRAINS: Winter wheat was in mostly good condition. Most States were topdressing small grain fields. Rains benefited small grains throughout California. Winter wheat was breaking dormancy due to the warm weather in most Southern Plains States. About 5 percent (%) of the wheat in Montana was greening. Army cutworms caused moderate damage to winter wheat in Kansas. Blowing soil damaged wheat fields in Nebraska due to lack of snow cover. In Oregon, some winter wheat fields were reseeded. Washington wheat winter kill was intensified by dry soil and low nighttime temperatures. Small grains in Arizona were 3% headed, 2 percentage points below the 5-year average. Snow covered 42% of the winter wheat and 52% of the rye crops in North Dakota. Texas small grains continued to show good signs of progress. However, dry weather, cutworms, and greenbugs were concerns of producers in the High Plains.

OTHER FIELD CROPS: A few fields of corn were planted in Alabama, Florida, and Georgia. Sorghum and corn planting continued in south Texas, with isolated showers causing a few delays. Sugarcane harvest continued active in Florida. Bare fields in Iowa suffered some wind erosion due to lack of snow cover. South Carolina tobacco plants in beds began to grow and were in good condition. Virginia tobacco plant beds were about one-third seeded and in mostly good condition. Ground preparation for corn, cotton, and dry beans continued in California

FRUIT AND NUTS: Raspberry and pear buds were opening in the western areas of Washington. The apple crop was only slightly winter damaged. Arizona grapefruit and Valencia orange harvests continued. Rain was beneficial to fruit trees in Florida, but high winds caused some fruit scarring and bloom loss. Early and midseason fruit harvests were virtually complete, with most temple oranges going to processors. Georgia early peach varieties were blooming. Some California Central Valley navel orange trees that were not severely freeze damaged showed bud development. Riverside Valencia harvest was about to begin

VEGETABLES: North Carolina Irish potato crop was 19% planted and the cabbage crop was 21% transplanted. Onions were seeded in the Oregon Hermiston-Boardman area. Tillage had begun in Washington for planting the early vegetable crop. Arizona vegetable harvests continued. Florida winter vegetable harvests remained active despite rain and wind. Planting of the next vegetable crop was almost complete in the south and active in the north. Melon planting in the Texas Rio Grande Valley was virtually complete. Harvest of cole crops began, with good yields expected. The San Antonio Winter Garden spinach, carrot, and onion harvests continued. High Plains onion and potato plantings continued, but more moisture was needed to stimulate growth. California asparagus, broccoli, winter potato, strawberry, and cauliflower harvests continued with variable quality. Onion and processing tomato plantings continued.

PASTURES AND LIVESTOCK: Pasture and livestock were in mostly good to fair condition. Calving was active in most States. Variable weather stressed newborn animals in the Plains and Northern States. Water for livestock was short in most areas of California, with recent rains a benefit to pastures.

State Summaries of Weather and Agriculture

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

ALABAMA: Rainfall 1.00 to 2.00 in. north, 2.00 to 4.00 in. central, 4.00 to 7.00 in south. Temperatures within 2° of normal. Lows reached 20s north, 30s south; highs mid 70s.

Acreage intended for spring planting 19% prepared, 11% 1990. Fieldwork progress 51% on schedule; 44% behind normal, 1 to 2 weeks; 5% ahead of normal. Few fields corn planted south. Winter wheat 82% good, 18% fair. Livestock 54% fair, 46% good. Hay, roughage supplies for remainder of feeding season 60% short, 40% adequate. Soil moisture 55% surplus, 44% adequate, 1% short. Primary activities: Equipment maintenance; fence building; farm planning; tax preparation; disking; applying nitrogen to wheat; soil testing; planting potatoes, corn; harvesting, restocking catfish; general care, feeding of livestock, poultry, catfish.

ARIZONA: Sunny, above normal temperatures through 26th. Increased clouds, rain late 27th. Rain statewide 28th to 2nd; hail central; snow mountains. Temperatures 1 to 6° above normal. Extremes 41°; 86° deserts, 16°; 78° higher elevations. Precipitation 0.32 in. south central to 4.76 in. north central. Rain limited cotton activities to first half of week, applying pre plant fertilizers, herbicides, listing, pre irrigation; planting continued, less than 5%. First cuttings alfalfa continued west, some rain damage; green chopping began central; pesticides for Egyptian alfalfa weevils, alfalfa aphids applied central, west; crop good to excellent, except southeast fair. Small grains 44% jointed, 74% 1990, 54% avg.; 3% headed, 15% 1990, 5% avg.; crop mostly good condition. Grapefruit, valencia oranges, mixed vegetables, spring lettuce harvested west, central. Cattle, calves mostly fair. Northern ranges poor, soil moisture remained short. Stock water supplies short. Cattle, calves good; stock water supplies, soil moisture adequate south central. Southeastern forage growing well; stockwater supplies, soil moisture adequate. Insect damage minimal.

ARKANSAS: Temperatures near normal. Wide spread rain last half of week, heaviest south. Extremes 17°; 77°. Rainfall 0.39 to 2.33 in.

Wheat fertilizing in northeast. Limited fieldwork northeast. Moisture excessive in southeast. Fruits in southwest starting to swell. Cattle condition good, quantity, quality of hay decreasing.

CALIFORNIA: High pressure responsible for warm dry weather early in the week gave way to much needed rain. A low pressure trough developed off the coast allowing moist southwesterly flow to spread precipitation over the State mid through late week. Mid week rain interrupted field activities most areas. Small grains, forage crops growth good. Dryland fields should improve, additional moisture. Broad leaf herbicide applications ongoing. Forage, silage alfalfa cut, some areas. Ground preparation corn, cotton, dry beans continued. Replanting freeze damaged sugarbeets underway, some fields emerged. Limited harvest over wintered sugarbeets continued. Winter cultural activities continued; orchards, vineyards. Rain halted some activities. Central Valley; stone fruit orchards, almonds bloomed. Wind, rain caused some bloom damage. Bee colonies remained plum, almond orchards facilitating pollination. Central Valley; some Navel orange trees not severely freeze damaged showed bud development. Riverside County; Desert grapefruit packed, some navels packed. Valencia harvest beginning soon, Riverside. Asparagus harvest underway. Broccoli moderate supply, variable quality. Cauliflower light supply, variable quality. Winter potato harvest continued Hemet San Jacinto area. Strawberry harvest began Santa Maria area variable quality. South coast strawberry harvest near seasonal normal before rain began 27th. Sweet potato hotbed preparation continued. Planting onions, processing tomatoes continued Fresno county. Cattle on supplemental feed most areas. Range conditions poor to very poor southern two thirds of State poor to good northern third. Water short most areas extremely short southern counties. Recent rains helped some pastures.

COLORADO: Week began with up to 4.00 in. of new snow in the northern mountains, clear weather returned through 27th with warmer than normal temperatures. Heavy snowfall occurred in the southwest, central mountains late in the week while the northern mountains received less than 6.00 in. of new snow, the east remained dry with cooler temperatures. High winds over the weekend warmed temperatures. Quickly, caused considerable blowing of topsoil in the northeast.

FLORIDA: Temperatures just below normal Panhandle, 2 to 4° above normal elsewhere. Rain 5.00 to 8.00 in. across north, 1.00 to 3.00 in. Peninsula. Strong winds buffeted all areas over weekend. Some crop damage. Soil moisture mostly short central Peninsula; mostly adequate throughout other areas. Tobacco growers maintaining tobacco beds, making preparations to transplant. Corn planting, making field preparations for other spring seeded crops increasing. Sugarcane harvest continued active. Pastures 12% poor, 35% fair, 41% good, 12% excellent. Cattle fair to excellent in north, fair to good in south. Rain all areas, beneficial to trees, bloom. Bloom all stages most areas. Early to mid harvest all but complete. Valencia movement increasing with advanced maturity. Grapefruit harvest very active. Most Temples currently going to processors. Caretakers cutting cover crops, unbanking young trees. Weekend winds tossed vegetable crops, all areas. Fruit scarring, bloom loss, windburn evident most fields. Planting near complete south, active north. Harvest winter crops active. Volume leaders: Tomatoes, cabbage, peppers, potatoes, strawberries, celery, squash, carrots. Also available snap beans, sweet corn, cucumbers, eggplant, escarole, lettuce, radishes.

GEORGIA: Wet week. Heaviest rains south half where 5.00 in. or more common. Over 8.00 in. Near Bainbridge, Camilla. Most rain 1st to weekend. Rain over north 1.00 to 3.00 in. Temperatures a couple degrees above normal. Warmest temperatures mid 60s northeast mountains, upper 70s extreme south. Freezing temperatures at mid week. Lowest temperatures mostly upper 20s to low 30s, low 20s colder mountain locations, to mid to upper 30s extreme southeast. Soil moisture

adequate to mostly surplus, excessive rains on 2nd to 3rd. Soils saturated, some flooding, erosion, central, southwest. Land preparation active early in week, about one third complete in southern half. Onions fair to good, growers fertilizing, spraying for diseases. Wheat, other small grains fair to mostly good, top dressing applications of nitrogen nearly complete southern half of State. Tobacco plant beds fair to good. Corn planting active extreme southwest. Early peach tree varieties blooming in central. Pastures fair to good. Cattle, hogs fair to good.

HAWAII: Mostly favorable weather. Sunny skies, light to moderate showers. Cool night temperatures, near record lows. Insect population increase, some serious infestations. Temperatures high 50s to mostly high 70s. Rainfall none to 0.70 in. Days suitable for farm work 7.0. Papaya production remains low. Ginger root harvesting active, farmers preparing fields for next crop. Tomato production below normal, heavy insect damage in major winter area. Chinese, head cabbage production steady.

IDAHO: Temperatures were above normal except for areas in the north. Most of the State received precipitation but overall below normal levels. Soil moisture remained adequate in North, remainder of State short. Some select areas reported spring wheat seeding, generally its still a little wet, early. Farm activities: Livestock care, attending meetings, shop work, fencing work, pruning fruit trees. Calving, lambing continued across State. Livestock reported in good condition. Hay, roughage supplies adequate.

ILLINOIS: Temperatures 1 to 3° above normal. Precipitation generally less than 0.75 in. south; 0.50 to 1.50 in. central, north. Soil moisture mostly adequate. Winter wheat fair to good.

INDIANA: Temperatures 0 to 3° above normal. Lows teens to low 20s, highs 50s to 60. Precipitation 0.25 to 0.75 in. Fields muddy, most areas. Other activities: Top dressing wheat, applying fertilizer, plowing, selling grain, hauling manure, mending fences, attending farm auctions, machinery maintenance, purchasing supplies, attending meetings, tax preparation, care of livestock. Hay supplies adequate. Livestock mostly good condition. Wheat fair to good condition.

IOWA: Temperatures 1 below to 3° above normal. Extremes 3°; 65°. Precipitation 0.02 to 1.97 in.; average 0.97 in. Wettest week in four months except northwest which remains dry. TGE in pigs with some heavy losses. Warmer weather leaving feed lots muddy. Snow cover disappearing, wind erosion on bare fields light to moderate.

KANSAS: Temperatures 6° above normal. Precipitation 0.16 in. northeast to only a few hundredths central, west. Wheat, spurred by recent warm weather, greening up, starting to break dormancy. Surface moisture short most areas may limit growth rate. Army cutworms widespread, damage moderate to severe central, western areas. Some control measures necessary. Wheat diseases present; too early to assess incidence, severity. Range, pastures short; feed grain, hay, forage supplies adequate. Warm weather favorable for lambing, calving; death losses light.

KENTUCKY: High temperatures lower 50s west, north, near normal; upper 50s south, central, southeast, -5 to -10° above normal. Low temperatures mid 30s, 5° above normal. Rainfall 0.25 to 0.50 in. north to 1.00 to 2.00 in. southeast to south central. Most rain fell 2rd. Soil moisture ample, well drained soils dried enough to permit limited fieldwork. Primary activities top dressing wheat and spreading manure. Variable temperatures causing discomfort to livestock, especially newborns. Hay supplies adequate.

LOUISIANA: Temperatures .7° below normal to .9° above normal. Extremes 27°; 80°. Rainfall 0.07 in. northwest to 2.73 in. southeast. Wet fields kept activities to a minimum. Main activities: Caring for livestock, repairing equipment, harvesting crawfish, drainage work, preparing farm plans.

MARYLAND & DELAWARE: MARYLAND: Precipitation 0.06 in. Temperature 40.1°, normal 37.4°. Extremes 14°; 72°. Activities for the week: Repairing fence; hauling manure; spreading fertilizer; maintaining machinery; tax preparation; caring for livestock.

DELAWARE: Precipitation 0.08 in. Temperature 41.1°, normal 38.3°. Extremes 22°; 68°.

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

MICHIGAN: Temperatures 8° below to 5° above normal. Extremes -8°; 63°. Precipitation 0.07 to 1.53 in. across the State. Seasonal temperatures early in the week gave way to milder temperatures by weekend. Overall, normal conditions enabled farmers to engage in outdoor activities. Livestock is in good shape, a few reports of calves born this week. Feed supplies are in good shape. Major activities included: Fruit tree pruning, cleaning orchards, hauling manure, tax preparation, selling, purchasing seed for spring planting, caring for and marketing livestock.

MINNESOTA: Temperatures 2 to 7° below normal for the State. Extremes 20°; 49° above at Pipestone, Worthington. Precipitation above normal in the northwest, southeast; below normal elsewhere for the State. Greatest precipitation for the week was 0.58 in. at Caledonia.

MISSISSIPPI: Temperatures 2° above normal. Extremes 20°; 82°. Temperatures 51°. Wet statewide. Rainfall 2.22 in., 0.94 in. above normal. Soil temperatures 52°. Days suitable for fieldwork 0.9, 1.4 1990, 2.1 avg. Soil moisture 13% adequate, 76% surplus, 11% excessive. Pasture 19% poor, 33% fair, 32% good, 16% excellent. Wheat 9% very poor, 29% poor, 48% fair, 14% good. Hay supply 63% short, 25% adequate, 12% surplus. Livestock 52% fair, 32% good, 16% excellent. Activities: Feeding livestock, preparation for spring planting.

MISSOURI: Temperatures 4° above normal northeast to 1° below normal southwest. Rainfall over 1.00 in. northwest, north central, 0.67 in. northeast, south east, less than 0.50 in. elsewhere. Topsoil moisture 21% short, 67% adequate, 10% surplus. Subsoil moisture 17% short, 78% adequate, 5% surplus. Some tillage begun western counties, most areas need more drying. Wheat 12% poor, 51% fair, 37% good. Hay 2% very short, 4% short, 72% adequate, 22% surplus. Livestock condition 12% fair, 80% good, 8% excellent.

MONTANA: Warm, dry early in week shifting to arctic air by mid week. Below zero readings several locations. Moisture reported all areas. Amounts mostly less than 0.25 in. Winter wheat 10% very poor, 30% poor, 50% fair, 10% good. Recent abnormal cold may have caused some freeze damage to greening stands. Assessment not possible until later. Nearly 5% of crop greening. Snows added limited soil moisture most areas. Grazing mostly open. Recent cold, wind put stress on livestock. Calving about 25% done, lambing

20%. Nearly all livestock receiving some supplemental feed.

NEBRASKA: Temperatures near normal, northern half of State, to 4° above normal, east central. Extremes 2°; 66°. Scattered precipitation occurred throughout week, amounts from a trace, west up to 1.34 in. east. Winter wheat 15% poor, 46% fair, 39% good. Blowing soil damaged fields, west, southwest. Crop breaking dormancy several areas in southern half of State. Some winter kill reported due to lack of snow cover. Pasture, range 1% very poor, 21% poor, 52% fair, 26% good. Feed grain, hay, forage supplies average to slightly above average. Mild weather helped to stretch feed supplies, livestock still utilizing stalk fields in most areas. Livestock losses at a low level due to mild weather. Cattle condition 13% fair, 74% good, 13% excellent. Calving 20% complete, very few problems. Lambing well underway, also few problems. Main activities: Equipment maintenance; attending meetings; calving, lambing, moving grain to market, some fieldwork. Fieldwork consists of: cutting, shredding stalks; disking; fertilizer application; chiseling in west, southwest to rough up wheat fields to reduce blowing soil.

NEVADA: Temperatures above normal. Extremes 8°; 77°. Precipitation none to 1.32. Mild temperatures, sunshine prevailed early in week. Several frontal systems brought high winds, much needed moisture late in week. No major crop or livestock losses reported due to the winds, however, buildings few areas sustained some damage. Major farm, ranch activities include livestock care, general maintenance.

NEW ENGLAND: Precipitation 0.13 to 1.34 in. Temperatures 12° northern Maine; low 20s to low 30s elsewhere north, low to high 30s south. Maximum temperatures low 40s north to mid 60s south; minimum temperatures -19° north to 20° south. Major farm activities: General repairs, maintenance, tending livestock, moving crops from storage, small operations beginning to tap maple.

NEW JERSEY: Temperatures much above normal, 46° south, 41° north, 44° coastal. Extremes 18°; 75°. Precipitation above normal, 1.88 in. north, 1.89 in. south, 2.10 in. coastal. Heaviest 24 hour total 2.55 in. on 3rd, 4th. Heaviest 24 hour snowfall 4.00 in. on 26th, 27th. Farmers caring for livestock, tending to other normal winter chores.

NEW MEXICO: Temperatures over the State varied, 3° below normal at Chama to 4° above at Clovis. Precipitation a trace at Clayton to 2.01 in. at Silver City.

NEW YORK: Temperatures near or slightly below normal through midweek. By weekend, temperatures were well above normal with highs in the 50s to 60s. Extremes -12°; 69°. Precipitation above normal in west with liquid equivalent of 0.50 to 1.50 in. falling. About an inch fell from the Lower Hudson Valley to Long Island. Under an inch fell in the remainder of eastern areas. Major activities: Tending livestock, spreading manure, machinery maintenance, attending meetings, preparing for upcoming maple season.

NORTH CAROLINA: Temperatures 4° above normal in the mountains, 6° above in the Piedmont, 6° above at the Coast. Precipitation 0.60 to 1.50 in.

Days suitable for fieldwork 4.4. Soil moisture 1% very short, 7 % short, 84% adequate, 8% surplus. Pasture 1% very poor, 14% poor, 34% fair, 51% good. Crop condition: Wheat 18% fair, 78% good, 4% excellent; oats 19% fair, 77% good, 4% excellent; barley 20% fair, 77% good, 3% excellent; rye 1% poor, 13% fair, 81% good, 5 % excellent. Tobacco plant beds 17% fair, 81% good, 2% excellent. Irish potatoes planted 19%; cabbage transplanted 21%. Hay, roughage supplies 2% very short, 10% short, 83% adequate, 5% surplus. Feed grain supplies 10% short, 87% adequate, 3% surplus. Activities: Tending livestock; preparing, seeding tobacco plant beds; cutting wood; pruning trees; equipment repair; top dressing small grains, pastures; land preparation; planting irish potatoes cabbage; general farm maintenance.

NORTH DAKOTA: Temperatures 4 to 7° below normal. Precipitation 0.09 in. north central to 0.20 in. east central. Snow cover was 2.20 in. Snow cover adequate to protect 42% winter wheat, 52% rye, 41% alfalfa. Conditions of seedings mostly fair. Cattle, sheep in mostly good. Calving 13% complete, lambing 25%, shearing 45%. Hay supplies mostly adequate.

OHIO: Temperatures varied widely with readings rising as much as 50 to 55° from early to late in the period. Extremes teens to the 70s. Highs low 40s to mid 50s. Lows mid 20s to upper 30s. Temperatures 2 to 8° above normal. Precipitation was very limited until the last day of the period. Rainfall 0.20 to 0.50 in. with a maximum of 1.00 in. Soil temperatures mid 30s to the low 40s. Winter wheat had no snow cover, conditions mild until the end of the period.

OKLAHOMA: Temperatures 3° above normal southeast to 7° above normal Panhandle. Precipitation trace Panhandle to 0.91 in. east central. Topsoil 60% short, 38% adequate, 2% surplus. Subsoil 45% short, 55% adequate. Wheat 10% poor, 70% fair, 20% good; 7% jointing, 10% 1990, 5% avg. Prolonged dry weather restricted growth despite recent warm temperatures. Army cutworm infestation moderate to severe west. Corn, soybean seedbed preparation over 5% complete. Pastures 25% poor, 72% fair, 3% good. Forage supplies very short west, southeast. Cattle good to fair; marketing average, prices stable to slightly higher than preceding week.

OREGON: Week began with warm, sunny days, cool nights; ended wet, windy. Temperatures 3 to 7° above normal, except north central area 2° below to 1° above normal. Precipitation, mainly on the 2nd, avg. about 2.00 in. along the coast, southern Willamette Valley; under 0.25 in. east of Cascades except north central areas received 0.50 to 0.70 in. Soil moisture short to adequate east, adequate to surplus west. Some reseeding of damaged winter wheat fields underway Columbia Basin. Spring wheat seed in short supply. Hay fields just breaking dormancy; peas for processing, onions being seeded Hermiston Boardman area. Livestock fair to good; range, pasture poor to fair. Spring grass growth started central, north coast.

PENNSYLVANIA: Cold mid week gave way to unseasonably warm weekend. Temperature 36°, 7° above normal. Extremes 0°; 75°. Precipitation 0.39 in, 0.28 in. below normal. Activities: Spreading manure; maintaining machinery; caring for livestock.

PUERTO RICO: Island rainfall 0.29 in., 0.25 in. below normal. Highest rainfall 2.89 in. at Pico Del Este Luquillo, 0.70 in. at San Lorenzo, 0.62 in. at Rio Blanco lower. Highest 24 hour total 1.70 in. at Pico Del Este Luquillo. Divisional temperature 77 to 78° on Coasts, 70 to 75° in the Interior with Mean station temperatures 62.7° at Pico del Este Luquillo to 78.8° at San Juan WSFO. Extremes 53°; 91°.

SOUTH CAROLINA: Temperatures 2 to 3° above normal. Rainfall varied 2.00 to 5.00 in. eastern

half to less than 1.00 in. northwest. The largest 24 hour amount was 3.43 in. at Lake Wylie on March 3rd.

Farm activities: Wet conditions continued to slow land preparation for spring planting. Applying nitrogen top dressing to small grains continued as weather permitted. Tobacco plant beds reported in generally good condition with plants beginning to grow. Peach growers continued pruning peach trees, currently on schedule.

SOUTH DAKOTA: Light precipitation fell in form of light rain, freezing drizzle, light snow. Temperature near normal. Extremes -8°; 62°.Precipitation below normal for most of State. Only parts of the Black Hills report average precipitation.

TENNESSEE: Cold front brought widespread rainfall. Amounts meager. Temperatures 1 to 4° above normal. Precipitation above normal east, slightly below elsewhere. Rainfall 1.00 in. west, 2.00 in. Plateau.

TEXAS: Early in week, upper air disturbances produced light rains over southeast, south central counties then far south before mid week. At mid week, cold front, another upper air disturbance triggered rains across much of State. Some heavy amounts in north central, eastern, southeast sections. Beautiful spring like weather was rule 1st with temperatures climbing 90° or more in far southern areas. Some showers returned in eastern south central areas late week. Cold surge brought temperatures down statewide late in weekend. For week, temperatures mostly near to above normal with slightly below normal readings reported in southern High Plains, Coastal Bend. Precipitation below normal except eastern State, Trans Pecos, Upper Coast.

Crops: Small grains continued good signs of progress across State. However, dry weather, cut worm, greenbugs becoming increasing concern to producers on Plains. Most fields in Blacklands, central areas still remained too wet for fertilize applications, conditions continued to improve. Statewide wheat 66% of normal compared with 41% 1990. Corn, sorghum planting continued at steady pace in Valley, southern areas with isolated showers causing few delays. Producers in central areas, most coastal areas delayed by wet conditions, but some planting resumed on lighter soil type fields. Planting in Blacklands slightly increased, soil conditions continued delaying factor. Corn planted 5% 1991, 1% 1990, 10% avg. Sorghum planted 1% 1991, 0% 1990, 5% avg. Cotton producers in Valley, Coastal Bend anxiously awaiting arrival of planting season, while producers on Plains continued field preparations for spring planting. Peach pruning, dormant spraying winding down in Blacklands, east, central areas as blooms continued to peek out trees across State.

Commercial Vegetables: Rio Grande Valley, melon planting completed for most part. Harvest of cole crops started. Yield expectations remained high. Disease pressure remained high due to cloudy overcast, humid weather. San Antonio Winter Garden, spinach harvest continued slowly as quality varied. Carrot harvest began. Onions continued with good progress. Eastern areas, soil conditions, recent showers suppressed land preparations, planting progress. High Plains, onion, potato planting continued, but moisture needed to stimulate growth. Trans Pecos, land preparations slowed some areas by isolated showers, but progress resumed on limited basis.

Range and Livestock: Livestock continued good shape across State. Moisture desperately needed on Plains to encourage spring grasses, promote forage production. Fertilize applications on pastures remained low most areas due either insufficient moisture, or saturated grounds. Spring shearing continued steady in Hill Country. Range, pasture 1% very poor, 11% poor, 53% fair, 31% good, 4% excellent.

UTAH: Northeast portion of the State 0.09 in., southwest portion 0.23 in. Generally, temperature maximums were 5° above normal, minimums 2° above normal. Livestock fair to good. Calving, lambing continuing as normal. Major farm activities: Attend producer meetings, maintenance of equipment, care of livestock.

VIRGINIA: Temperatures below normal at beginning of week, improved to above normal. Extremes 16°; 72°. Precipitation was below normal. Days suitable for fieldwork 3.1. Topsoil moisture 12% short, 73% adequate, 15% surplus. Winter grains 4% poor, 29% fair, 65% good, 2% excellent. Barley 2% poor, 39% fair, 56% good, 3% excellent. Pasture condition 5% very poor, 16% poor, 48% fair, 29% good, 2% excellent. Alfalfa 6% very poor, 6% poor, 50% fair, 35% good, 3% excellent. Peach bud development progressing. Tobacco plantbeds 33% seeded and mostly fair to good condition. Top dressing small grains, fruit tree pruning, soil sampling, land preparation for spring planting, and planting potatoes.

WASHINGTON: Temperatures 1° below normal to 8° above normal, east; 1 to 5° above normal west. Precipitation none to 0.37 in., east; none to 0.35 in. west. Days suitable for fieldwork 5.0. Soil moisture 72% short, 27% adequate, 1% surplus. Range, pasture 12% very poor, 27% poor, 43% fair, 18% good. Hay, other roughage 92% adequate, 6% good, 2% surplus. Winter wheat 87% very poor, 5% poor, 8% fair. Temperatures above normal with little precipitation early in the week. As the weekend, snow fell over most of eastern areas, in the Bellingham area. Southern sections of western areas received rain. Frost reported most nights. Raspberry, pear buds opening in western areas. Field tillage started in western areas for planting of early vegetables. Pruning continued on fruit trees, caneberries. Winter damage being assessed on soft fruit. Apples seem to be only slightly damaged. Winter kill to wheat, barley being intensified by dry soil, cold nighttime temperatures. Calving continued. Range, pastures doing poorly, east of the Cascades.

WEST VIRGINIA: Temperature 42°. Extremes 15°; 80°. Precipitation 1.17 in., 0.11 in. below to 0.62 in. above normal. Days suitable for fieldwork 2.6. Soil moisture 52% adequate, 48% surplus. Wheat, barley good. Cattle, sheep good. Calving 35% complete. Lambing 48% complete. Hay supplies 60% adequate, 40% surplus. Other feed 85% adequate, 15% surplus. Farm activities: General maintenance, feeding livestock, calving, lambing.

WISCONSIN: Temperature 21°. Extremes 25°; 49°. Patchy light snow, flurries across the State on 26th to 27th. Northern areas received up to 2.00 in. on 28th. Rain across southern areas 1st; 0.50 to 1.60 in. Some northern areas received rain, snow mixture. Snow in east central areas 1st with some areas receiving between 3.00 to 4.00 in.

WYOMING: Temperatures above normal. Precipitation above normal northwest, below normal elsewhere. Winter wheat fair to good, additional moisture needed. Calving, lambing continuing. Mild weather decreasing stress. Livestock mostly good.

International Weather and Crop Summary

HIGHLIGHTS

February 24 - March 2, 1991

WESTERN USSR ... Overwintering conditions continue favorable for dormant winter grains. Snow cover increases in most areas.

NORTHWESTERN AFRICA ... Light to moderate precipitation covers vegetative winter grains in Morocco and Algeria.

EUROPE ... Unusually mild weather over England, France, and northern Italy causes winter grains to lose winter hardiness. Beneficial precipitation continues to cover southern Spain, where winter grains are in the vegetative stage.

EASTERN ASIA ... Pre-planting showers return to most of southern China. Continued cold weather causes only minor damage to winter wheat.

SOUTHEAST ASIA ... Seasonable rain continues over Indonesia and returns to western Malaysia's palm oil regions.

SOUTH AFRICA ... Dry, seasonably warm weather favors growth of immature corn.

SOUTH AMERICA ... Insufficient moisture severely stresses Brazil's southern soybeans. Ample moisture favors Brazil's northern soybeans and Argentina's summer crops.

AUSTRALIA ... Drier weather favors maturing summer crops.

FEBRUARY 1991

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

COUNTRY	CITY	TEMPERATURE (C) AVG MAX	AVG MIN	HI MAX	LO MIN	AVG	DPART F/NRM	PRECIPITATION (MM) TOTAL	DPART F/NRM
NORWAY	OSLO	-3	-10	7	-22	-7	0.9	30	-17
SWEDEN	STOCKHOLM	-1	-5	8	-15	-3	0.0	30	1
FINLND	HELSINKI	-4	-9	4	-17	-6	0.5	16	-18
U KING	GLASGOW	6	-1	11	-10	3	-1.7	62	-27
	EDINBURGH	6	0	12	-7	3	-0.6	64	22
	BIRMINGHAM	5	-1	13	-10	2	-1.8	28	-21
	LONDON	5	-2	11	-11	2	-2.4	44	-9
IRELND	DUBLIN	7	2	13	-5	4	-0.8	58	7
ICELND	REYKJAVIK	4	0	9	-7	2	1.7	170	99
DENMRK	COPENHAGEN	1	-3	9	-8	-1	-0.8	12	-28
LUXEMB	LUXEMBOURG	2	-4	12	-16	-1	-2.6	15	-45
SWITZL	ZURICH	3	-4	16	-13	-1	-1.6	20	-60
	GENEVA	4	-3	16	-9	1	-1.8	17	-63
FRANCE	PARIS	5	-2	17	-12	1	-2.9	8	-37
	STRASBOURG	3	-5	15	-14	-1	-3.0	4	-31
	BOURGES	6	-3	21	-13	2	-2.5	25	-33
	BORDEAUX	10	2	21	-8	6	-0.4	20	-66
	TOULOUSE	10	2	18	-6	6	-0.3	15	-37
	MARSEILLE	11	2	17	-4	7	-0.8	10	-45
SPAIN	VALLADOLID	9	1	19	-5	5	-0.6	38	2
	MADRID	10	1	18	-9	5	-1.2	56	5
	SEVILLE	16	6	21	2	11	-1.0	107	24
GERMNY	LEIPZIG	1	-5	13	-16	-2	-2.6	17	-14
	DRESDEN	1	-5	13	-17	-2	-1.3	8	-28
	HAMBURG	1	-4	14	-12	-2	-2.3	26	-14
	BERLIN	1	-5	12	-14	-2	-2.7	19	-14
	DUSSELDORF	4	-3	17	-12	1	-1.8	28	-25
	STUTTGART	3	-6	16	-18	-2	-2.5	12	-34
	NURNBERG	2	-6	14	-14	-2	-2.8	13	-26
	MUNICH	2	-8	15	-16	-3	-2.7	21	-34
AUSTRI	VIENNA	1	-7	11	-17	-3	-3.3	24	-7
	INNSBRUCK	6	-7	17	-12	-1	-1.2	25	-16
CZECH	PRAGUE	1	-8	12	-19	-4	-2.9	14	-7
POLAND	WARSAW	-1	-7	8	-21	-4	-1.5	17	-8
	LODZ	-1	-7	11	-18	-4	-2.2	14	-17
	KATOWICE	0	-8	9	-21	-4	-2.2	22	-14
	PRZEMYSL	-2	-8	10	-26	-5	-2.8	24	-8
HUNGAR	BUDAPEST	2	-6	9	-15	-2	-2.9	32	0
YUGOSL	SARAJEVO	4	-6	12	-17	-1	0.2	72	6
ROMANI	BUCHAREST	1	-7	5	-19	-3	-2.4	16	-21
BULGAR	SOFIA	2	-5	10	-18	-1	-3.0	50	12
ITALY	MILAN	6	-5	18	-13	1	-3.1	3	-63
	VERONA	6	-3	16	-12	1	-3.0	23	-28
	VENICE	7	-1	18	-9	3	-1.8	16	-41
	GENOA	9	3	16	-4	6	-2.5	74	-17
	ROME	13	4	19	-4	9	-0.1	46	-23
	NAPLES	13	6	18	-2	9	0.3	46	-47
GREECE	THESSALONIKA	8	2	16	-10	5	-1.8	37	0
	LARISSA	10	1	18	-10	6	-1.7	15	-23
	ATHENS	13	7	18	-1	10	-1.2	102	66
TURKEY	ISTANBUL	8	2	14	-6	5	-0.6	46	-24
	ANKARA	3	-7	10	-24	-2	-2.5	28	-3
CYPRUS	LARNACA	17	7	19	1	12	-0.4	36	-26
USSR	TALLINN	-2	-7	5	-14	-5	1.4	37	12
	LENINGRAD	-4	-8	4	-16	-6	1.4	47	16
	KAUNAS	-2	-7	5	-16	-5	0.1	38	7
	MINSK	-4	-8	5	-24	-6	0.4	34	3
	KAZAN	-7	-13	1	-25	-10	2.8	31	6
	MOSCOW	-4	-9	5	-29	-7	1.6	40	4
	SVERDLOVSK	-9	-17	2	-34	-13	0.1	12	-8
	OMSK	-12	-18	-1	-36	-15	2.5	19	7
	KUSTANAY	-12	-20	0	-35	-16	0.2	5	-7
	KRASNOYARSK	-9	-15	5	-27	-12	3.6	38	25
	NOVOSIBIRSK	-11	-18	0	-34	-15	3.1	23	8
	BARNAUL	-12	-18	2	-33	-15	1.0	19	-3
	KHABAROVSK	-12	-22	-4	-26	-17	0.5	2	-9
	VLADIVOSTOK	-5	-12	3	-19	-9	2.1	4	-16
	KIEV	-3	-9	6	-21	-6	-1.2	54	9
	LVOV	-2	-9	8	-26	-6	-2.0	39	-7
	KIROVOGRAD	-3	-9	5	-21	-6	-1.4	17	-13

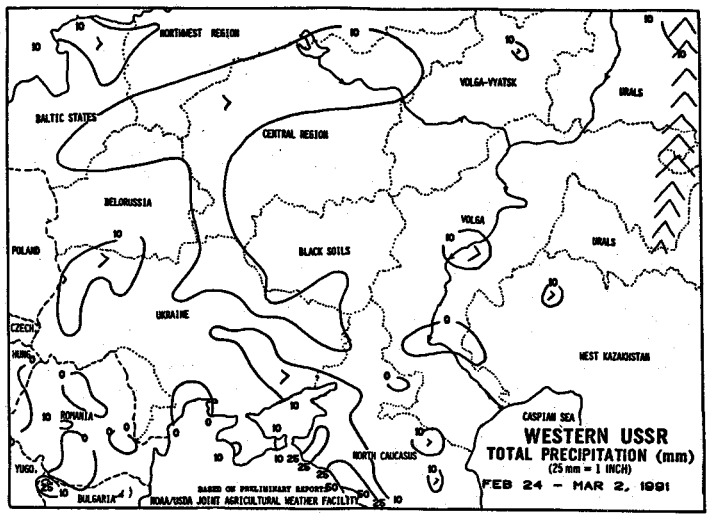
Based on Preliminary Reports

FEBRUARY 1991

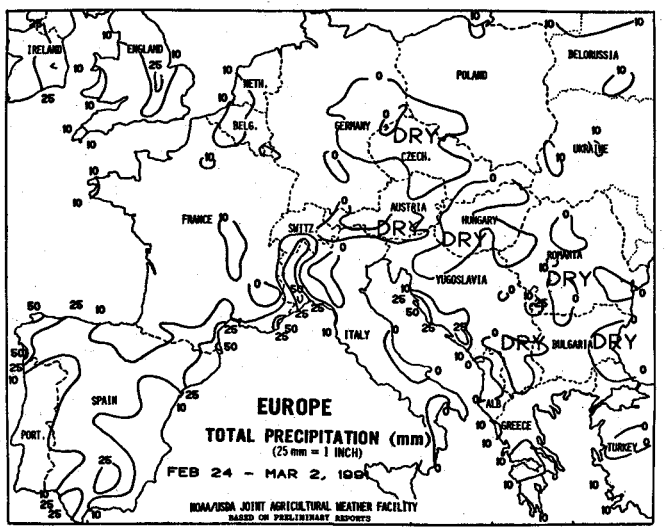
COUNTRY	CITY	TEMPERATURE (C) AVG MAX	AVG MIN	HI MAX	LO MIN	AVG	DPART F/NRM	PRECIPITATION (MM) TOTAL	DPART F/NRM
USSR	ODESSA	-1	-5	6	-17	-3	-1.3	26	-15
	YALTA	4	-1	10	-8	2	-2.1	26	-34
	VORONEZH	-5	-11	2	-27	-8	0.4	42	12
	SARATOV	-6	-11	0	-19	-9	2.8	45	20
	KHARKOV	-4	-10	3	-21	-7	-1.1	35	0
	VOLGOGRAD	-6	-12	2	-21	-9	-0.1	15	-13
	ROSTOV	-4	-9	2	-20	-7	-2.6	34	-32
	ASTRAKHAN	-2	-9	5	-22	-5	0.1	5	-5
	KRASNODAR	0	-10	11	-24	-5	-4.9	25	-29
	ORENBURG	-8	-16	1	-25	-12	1.4	9	-14
	TSELINOGRAD	-13	-22	-2	-37	-18	-0.7	9	2
	KARAGANDA	-10	-20	2	-33	-15	-1.2	4	-14
	TBILISI	6	-2	13	-8	3	-0.8	24	1
	TASHKENT	9	0	22	-9	4	2.0	29	-23
	ASHKHABAD	9	0	21	-7	5	0.5	28	0
SYRIA	DAMASCUS	15	0	19	-7	8	-1.0	10	-22
ISRAEL	JERUSALEM	12	**	12	**	**	***	0	-118
PAKIST	KARACHI	27	14	31	7	20	-0.4	0	-9
INDIA	AMRITSAR	21	8	24	1	14	0.0	11	-11
	NEW DELHI	24	12	29	7	18	0.6	46	31
	AHMEDABAD	31	15	35	8	23	-0.1	0	-1
	INDORE	30	12	35	7	21	0.8	0	-2
	CALCUTTA	31	18	35	15	25	1.8	0	-12
	VERAVAL	29	14	33	7	21	-1.3	0	-1
	BOMBAY	30	17	33	14	24	-0.5	0	-1
	POONA	33	12	35	6	23	-0.1	0	0
	BEGAMPET	33	19	38	14	26	1.7	0	-5
	MADRAS	32	22	36	20	27	1.0	0	-4
	MANGALORE	34	21	37	19	28	0.7	0	-2
H KONG	HONG KONG	19	16	23	12	17	1.5	9	-32
N KREA	PYONGYANG	0	-10	6	-20	-5	0.0	20	9
S KREA	SEOUL	3	-4	12	-15	-1	1.3	29	8
JAPAN	SAPPORO	1	-6	6	-16	-3	1.2	110	18
	NAGOYA	9	1	15	-3	5	0.4	70	8
	TOKYO	10	3	17	-1	7	1.2	70	7
	YOKOHAMA	11	3	17	-1	7	1.3	92	20
	KYOTO	9	1	14	-4	5	1.2	83	17
	OSAKA	10	3	17	-2	6	0.7	67	7
THAILN	PHETCHABUN	35	18	39	16	27	-0.2	0	-21
	BANGKOK	34	23	37	19	29	0.8	7	-18
MALAYS	KUALA LUMPUR	32	23	35	21	28	1.4	92	-65
VIETNM	HANOI	21	17	29	13	19	2.1	21	-7
CHINA	HARBIN	-6	-19	2	-26	-13	3.2	3	-2
	HAMI	4	-10	8	-17	-3	1.9	1	1
	LANCHOW	6	-4	14	-8	1	3.1	2	-1
	BEIJING	5	-5	10	-13	0	2.1	2	-6
	TIENTSIN	6	-3	12	-11	1	2.6	1	-5
	LHASA	11	-5	18	-10	3	1.5	2	-1
	KUNMING	17	4	23	1	11	1.4	5	-6
	CHENGCHOW	9	-1	15	-6	4	1.8	11	-1
	YEHCHANG	11	5	18	2	8	1.5	43	15
	HANKOW	10	4	16	-1	7	2.1	115	55
	CHIHKIANG	11	6	19	1	8	1.9	57	9
	SHANGHAI	9	4	16	-1	6	1.9	117	55
	NANCHANG	12	6	16	1	9	2.6	96	1
	TAIPEI	20	15	27	9	17	2.2	84	-52
	CANTON	21	13	26	9	17	3.1	4	-50
	NANNING	20	14	30	9	17	3.4	8	-28
CNRY I	LAS PALMAS	21	14	23	12	17	0.0	21	-1
MOROCC	CASABLANCA	16	8	21	5	12	-1.4	162	102
	MARRAKECH	17	7	25	2	12	-1.3	89	54
ALGERI	ALGER	15	6	19	0	11	-0.6	103	16
	BATNA	11	2	18	-4	6	0.2	23	-7
TUNISI	TUNIS	15	8	19	4	11	-0.2	69	11
NIGER	NIAMEY	38	22	42	17	30	2.4	0	0
MALI	TIMBUKTU	32	17	37	13	25	0.0	0	0
	BAMAKO	36	23	39	19	29	1.5	0	0
MAURIT	NOUAKCHOTT	30	16	34	12	23	0.1	0	-2
SENEGL	DAKAR	24	18	31	15	21	0.3	0	-1
CHAG A	DIEGO GARCIA	30	26	31	23	28	0.8	262	-19
LIBYA	TRIPOLI	18	7	27	2	13	-0.5	27	-11
	BENGHAZI	17	9	22	6	13	-0.6	62	27
EGYPT	CAIRO	21	10	28	3	15	0.2	2	-2
	ASWAN	24	13	32	9	19	0.3	0	0
ETHIOP	ADDIS ABABA	24	10	26	5	17	0.1	33	-4
KENYA	NAIROBI	29	13	32	9	21	0.5	6	-39

COUNTRY	CITY	TEMPERATURE (C) AVG MAX	AVG MIN	HI MAX	LO MIN	AVG	DPART F/NRM	PRECIPITATION (MM) TOTAL	DPART F/NRM
TANZAN	DAR ES SALAAM	32	24	34	20	28	0.4	32	-37
GABON	LIBREVILLE	31	25	31	25	28	0.9	1	-271
TOGO	LOME	32	26	34	22	29	1.0	24	-8
B FASO	OUAGADOUGOU	37	22	40	19	30	1.7	0	-2
IVRY C	ABIDJAN	31	26	32	21	28	0.9	39	-20
MOZAMB	MAPUTO	31	23	34	19	27	0.9	107	-33
ZAMBIA	KABWE	27	18	30	16	23	1.8	169	-37
ZIMBAB	HARARE	27	17	29	13	22	1.6	95	-63
S AFRI	PRETORIA	29	18	33	14	23	2.0	90	4
	KROONSTAD	29	16	33	10	22	0.1	62	-21
	JOHANNESBURG	26	14	29	8	20	0.9	116	20
	BETHAL	26	13	29	8	19	0.1	145	51
	DURBAN	28	22	32	18	25	1.3	208	98
	CAPE TOWN	25	15	32	11	20	-0.1	13	-4
CANADA	TORONTO	2	-7	11	-21	-3	3.3	24	-22
	MONTREAL	-1	-10	8	-21	-6	3.3	50	-15
	WINNIPEG	-5	-15	6	-26	-10	5.3	14	-4
	REGINA	0	-11	8	-24	-6	7.7	12	-4
	SASKATOON	-2	-13	8	-27	-7	7.2	14	-2
	LETHBRIDGE	9	-4	14	-17	3	7.7	19	0
	CALGARY	7	-5	16	-17	1	8.1	16	0
	EDMONTON	4	-5	10	-20	-1	8.6	19	1
	VANCOUVER	10	4	14	-1	7	2.5	143	28
MEXICO	GUADALAJARA	26	9	30	4	17	0.2	6	-1
	MEXICO CITY	24	10	29	7	17	3.2	8	2
	ACAPULCO	32	23	34	21	27	0.9	0	0
BERMUD	ST. GEORGES	22	17	26	9	19	1.7	167	60
BAHAMA	NASSAU	27	18	30	12	22	1.6	3	-38
CUBA	HAVANA	26	20	32	12	23	1.1	9	-44
JAMAIC	KINGSTON	31	22	35	20	27	0.9	5	-16
P RICO	SAN JUAN	30	21	32	19	25	0.7	58	3
GUADEL	RAIZET	29	22	31	19	25	1.6	17	-32
MARINQ	LAMENTIN	29	22	31	19	26	1.9	27	-61
BARBAD	BRIDGETOWN	29	24	30	22	27	1.0	27	-21
TRINID	PORT OF SPAIN	31	22	33	19	27	1.7	21	-27
COLOMB	BOGOTA	21	8	28	4	14	1.5	18	-23
VENEZU	CARACAS	29	22	37	20	25	0.8	4	-26
F GUIA	CAYENNE	29	24	31	22	27	1.3	219	-149
BRAZIL	FORTALEZA	30	24	31	22	27	-0.4	126	-99
	RECIFE	30	24	31	21	27	-0.4	24	-83
	BELO HORIZONTE	29	20	31	18	24	1.3	202	-14
	CAMPO GRANDE	30	21	34	18	26	1.6	157	-42
	FRANCA	27	20	31	17	23	2.0	205	-15
	RIO DE JANEIRO	29	25	33	22	27	0.0	31	-120
	LONDRINA	30	19	33	14	25	0.5	41	-157
	SANTA MARIA	31	18	36	10	24	0.0	37	-104
	PORTO ALEGRE	30	17	36	9	24	-1.0	19	-85
PERU	LIMA	27	19	31	17	23	0.5	0	-1
BOLIVI	LA PAZ	15	4	19	1	9	0.6	89	-16
CHILE	SANTIAGO	31	10	34	8	21	0.7	0	0
ARGENT	IGUAZU	32	19	35	12	26	***	1	***
	FORMOSA	33	20	37	13	26	-0.6	87	-49
	CERES	31	17	38	10	24	-0.8	60	-44
	CORDOBA	29	16	36	12	23	0.1	104	-7
	RIO CUARTO	27	17	35	10	22	-0.2	197	111
	ROSARIO	29	16	35	8	22	-0.5	21	-87
	BUENOS AIRES	28	15	34	7	22	-0.6	18	-80
	SANTA ROSA	29	15	36	8	22	-0.5	75	3
	TRES ARROYOS	27	19	37	12	23	2.1	105	42
MIDW I	MIDWAY ISLAND	21	16	23	12	18	-0.4	83	-28
N CALD	NOUMEA	30	24	36	21	27	1.1	169	61
FIJI	NAUSORI	30	24	32	18	27	0.2	358	27
SAMOA	PAGO PAGO	31	25	34	24	28	0.7	534	212
TAHITI	PAPEETE	32	24	35	23	28	1.6	108	-117
N ZEAL	AUCKLAND	24	17	29	13	20	0.4	126	34
PA N G	PORT MORESBY	30	24	33	22	27	-0.3	90	-117
AUSTRL	DARWIN	29	25	32	23	27	-0.8	584	221
	MOREE	33	22	37	17	27	1.2	104	35
	BRISBANE	28	22	32	19	25	0.1	110	-65
	PERTH	30	18	46	12	24	-1.0	23	9
	CEDUNA	29	15	43	9	21	-0.2	1	-13
	ADELAIDE	28	15	38	12	21	-0.5	0	-45
	MELBOURNE	23	13	40	8	18	-2.0	0	-55
	WAGGA	34	18	41	11	26	2.4	4	-31
	CANBERRA	30	15	37	9	22	2.3	20	-36
PHILIP	MANILA	31	23	33	21	27	0.8	6	1

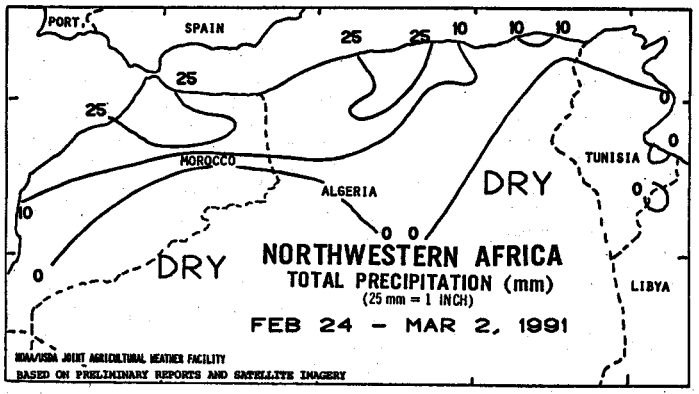
Based on Preliminary Reports



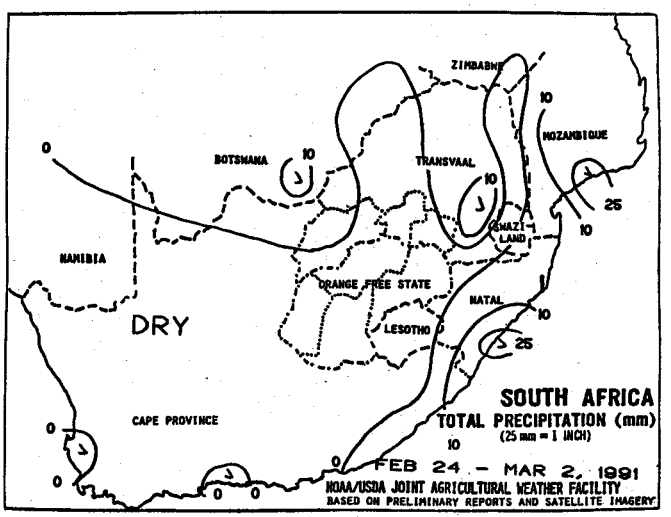
WESTERN USSR ... A storm system moved gradually eastward across the region, ushering in cooler weather that turned early-week rain into snow. Greatest amounts of precipitation (10-22mm) covered winter grain areas in the eastern Ukraine, the western portion of the Central Region, and northern Belorussia. Precipitation amounts were mostly less than 10mm over remaining crop areas. Snow cover increased in most areas except for the northwestern Ukraine and the western North Caucasus which remained snow free. Usually, snow cover begins to retreat northward during March in major winter wheat areas. Weekly average temperatures were 3-6 degrees Celsius (C) above normal in the north and 1-3 degrees C above normal in the south.



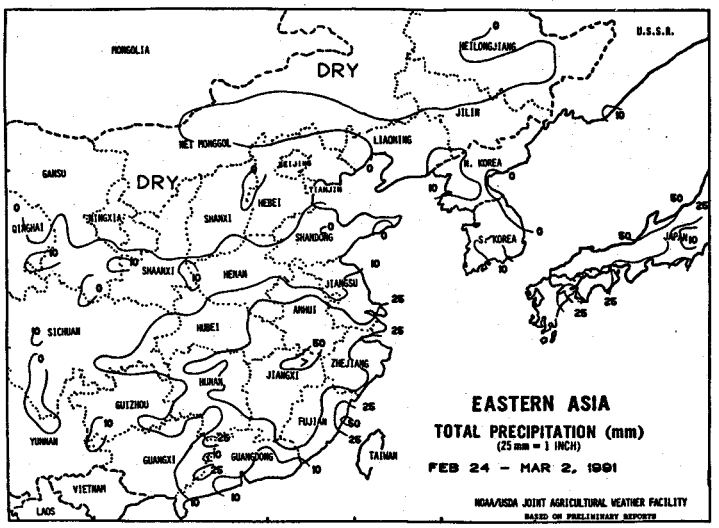
EUROPE ... An active storm track across the Mediterranean continued to bring beneficial precipitation (10-41mm) to southern Spain. Little moisture (less than 10mm) fell over remaining winter grain areas in Europe. Weekly average temperatures were 2-4 degrees C above normal over the region. Weekly average temperatures in England, France, and northern Italy ranged from 7 to 10 degrees C above freezing, causing winter grains to lose winter hardiness. Weekly average temperatures in Spain, southern Italy, and Greece ranged from 10 to 14 degrees C. Active growth of winter grains was occurring in these areas. In Eastern Europe, weekly average temperatures ranged from 1 to 3 degrees C above freezing. Winter grains remained dormant in Eastern Europe.



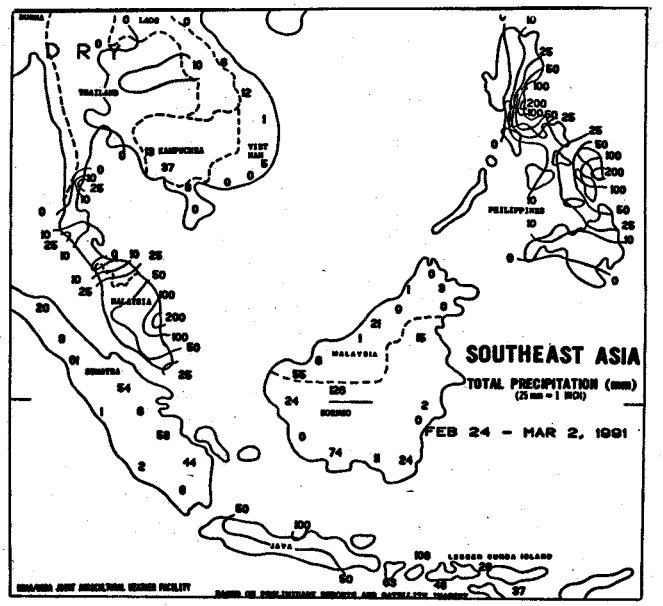
NORTHWESTERN AFRICA ... Light precipitation (10-29mm) continued to benefit Moroccan winter grains. Light to moderate showers (10-47mm) over Algeria continued to provide adequate to abundant moisture for crops. Mostly dry weather prevailed over winter grain areas in Tunisia. Winter grains were in the jointing stage over much of the region and normally advance through the critical reproductive and filling stages from late March through April.



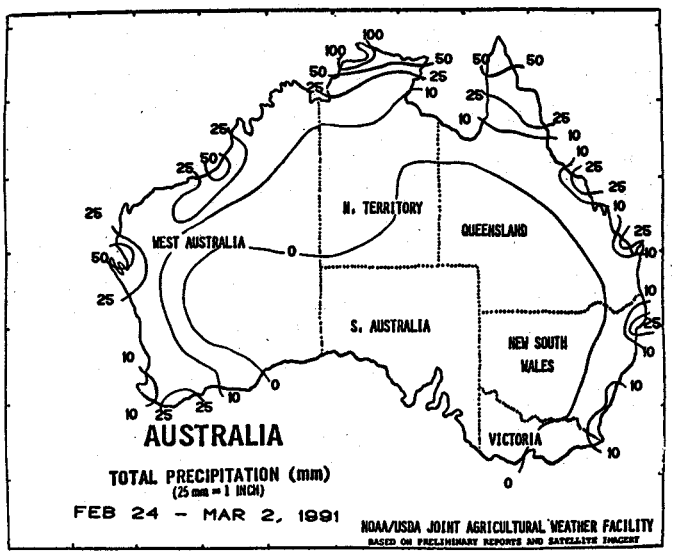
SOUTH AFRICA ... Dry weather covered most primary crop areas, with temperatures averaging 1-3 degrees C above normal across the Maize Triangle. The reversal of the unseasonable rainy pattern favored growth of immature corn, slowed by recent weeks of cool, wet weather. In contrast, light to moderate rain (10-38mm) lingered over local crop regions of the Cape Province and Natal's southern sugarcane areas.



EASTERN ASIA ... Moderate showers (10-25mm or more, with local accumulations exceeding 50mm) returned to southern China's primary crop regions, increasing moisture reserves for upcoming plantings. However, rainfall continued below normal along the southern coast from Guangxi to southern Fujian, with accumulations generally below 15mm. More rain is needed in south coastal rice areas for planting of early double-crop rice, usually underway in early March. Further north, cold weather continued last week over China's winter wheat areas, with minimum temperatures as low as -8 degrees C possibly burning back new growth of crops just breaking dormancy. Minimum temperatures over wheat regions from Shandong northward ranged from -10 to -20 degrees C. The cold weather likely had little impact on dormant winter wheat, although the region was void of snow cover.



SOUTHEAST ASIA ... Highly variable showers (25-150mm) maintained adequate irrigation reserves over southern Indonesia's primary rice areas. Beneficial showers (34-75mm) returned to palm oil regions of western Malaysia, but drier-than-normal conditions again prevailed in the east. Further north, light to moderate rain (10-45mm) fell locally over peninsular Thailand as well as portions of eastern Thailand's rainfed rice areas. In the Philippines, beneficial rain (10-50mm or more) continued for the second week from southern Luzon to northern Mindanao. Local flooding from excessive rains (100-224mm) likely occurred in eastern Luzon and the east-central islands. Rainfall in recent weeks has improved local irrigation reserves, but a timely start to the rainy season in April and May is critical for planting of main season crops.



AUSTRALIA ... Dry weather throughout the summer crop areas of southeastern Queensland and northern New South Wales benefited maturing sorghum and cotton. Some early harvesting is likely underway in the primary growing areas. Elsewhere, tropical showers diminished along Queensland's eastern sugarcane coast, with weekly rainfall totals generally averaging 25-50mm. Showers produced less rainfall than the previous week across northern Australia as well, with only isolated amounts of 50-150mm scattered over the region. Beneficial rain (10-25mm) fell in wheat areas of southwestern West Australia, where preseason rains will be needed for the upcoming planting season. Dry weather prevailed in southern winter wheat areas.

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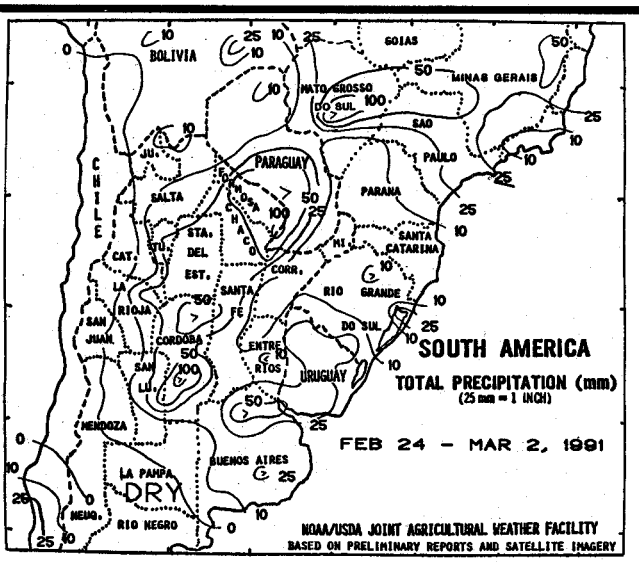
SOUTH AMERICA ... In south-central Brazil, storms continued to produce significant rainfall across northern soybean areas, but inadequate moisture persisted in the south. In Rio Grande do Sul, where soybeans in the pod filling stage are severely stressed by prolonged dryness, weekly rainfall averaged 10-30mm in the extreme south along the border with Uruguay, and mostly less than 5mm in the primary growing areas. Isolated showers produced 10-26mm in very scattered locations in the southern state. The unfavorable dryness extended into southwestern Parana. Beneficial rain (10-32mm) fell from northern Parana northward, with locally heavy downpours (100-181mm) in Mato Grosso do Sul and northwestern Sao Paulo. In Argentina, widespread showers covered the entire region, including corn, soybean, and cotton areas, favoring crop development. Locally heavy rain (50-112mm) in Cordoba slowed early sorghum and oilseed harvesting. Abundant rain (50-75mm) also fell in northeastern Buenos Aires and in northern cotton areas.



(Continued from front cover)
San Diego, with reports of 14.64 inches in **Cuyamaca Park** and 12.72 inches in **Julian**. The storms added 2 feet or more to the feeble snowpack in the **Sierra Nevada of California**. Similar amounts of snow fell throughout the mountains of the **Southwest**, including 31.5 inches in **Flagstaff, AZ**. At week's end, stormy weather overspread the **Nation**. Cold air poured southward through the **Plains** and record warmth rode up the **East coast**. The clashing airmasses spawned 15 tornadoes along the **Gulf coast**. More than 30 high temperature records fell in the **East**, and the mercury soared to 98° F in **McAllen, TX**. Torrential rain induced flash flooding in the **Southeast**. **Tallahassee, FL** nearly doubled its normal March rainfall in 2 days with a 9-inch deluge. Elsewhere, 1 to 2 inches of rain soaked an area from **eastern Nebraska** to **Michigan**, while light snow fell in the **northern Plains**.

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