

WEEKLY WEATHER AND CROP BULLETIN

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

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

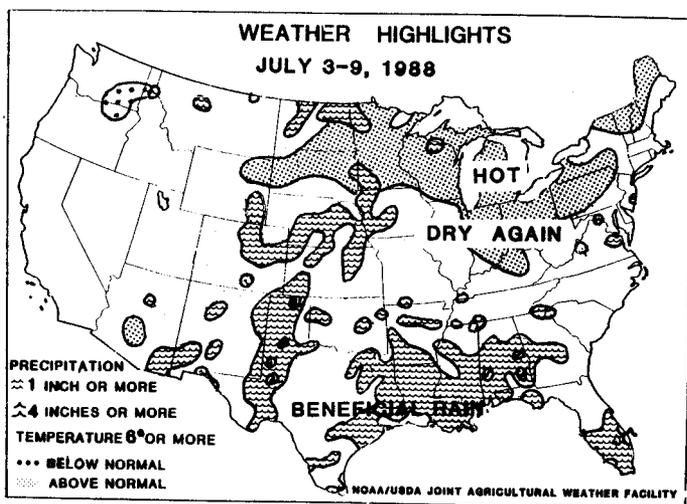
Volume 75, No. 28

Washington, D.C.

July 12, 1988

National Weather Summary

July 3 to 9, 1988



HIGHLIGHTS: Record-breaking high temperatures and continued lack of rain worsened drought conditions in the Corn Belt. The heat also affected the Northeast, Southwest, and North-central regions, though a cold front brought rain and lower temperatures to the Plains States by the end of the week. Thunderstorms dropped heavy rains in scattered locations from Texas eastward to Georgia and Florida. The Pacific Northwest was cool.

SUNDAY...High pressure centered over the Midwest kept most of the country warm and dry. A stationary front brought thunderstorms to the Gulf States.

MONDAY...High pressure centered off the east coast pumped hot air into much of the country. Temperatures soared into the triple digits in the northern Plains. Stationary fronts brought thunderstorms to the Gulf States and the northern Plains.

TUESDAY...Hot, dry weather again prevailed across much of the country, as temperatures reached the 100's in the Dakotas and the 90's nearly everywhere else. Exceptions to the heat included the Gulf States and the Pacific Northwest. Thunderstorms brought rain to the Deep South, while showers fell in the Northwest.

WEDNESDAY...The central and eastern United States endured a third day of the heat wave, as temperatures again attained the century mark in the

Dakotas and approached that level in the Great Lakes region, Ohio Valley, and the Mid-Atlantic States, breaking many records. A southeastward-moving cold front brought scattered thunderstorms to the Dakotas. Pleasantly cool weather extended from Montana westward to the Pacific coast.

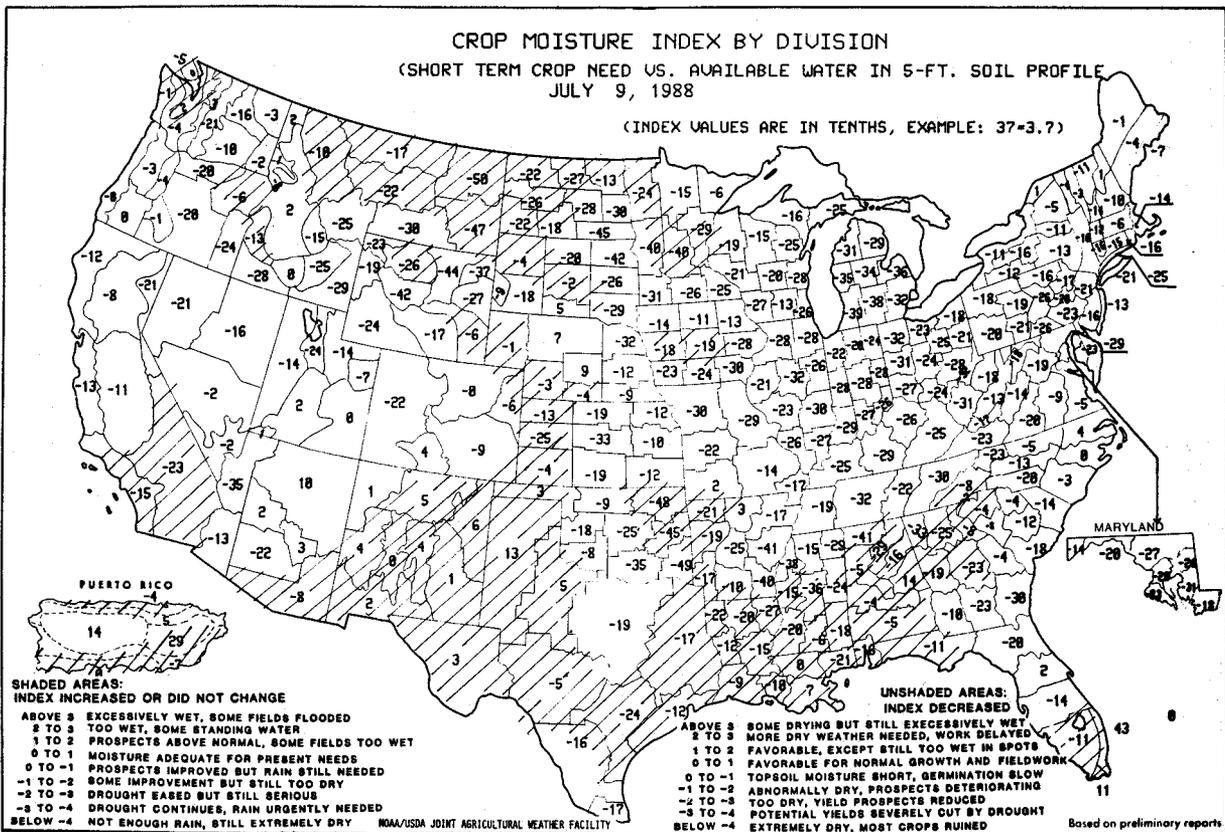
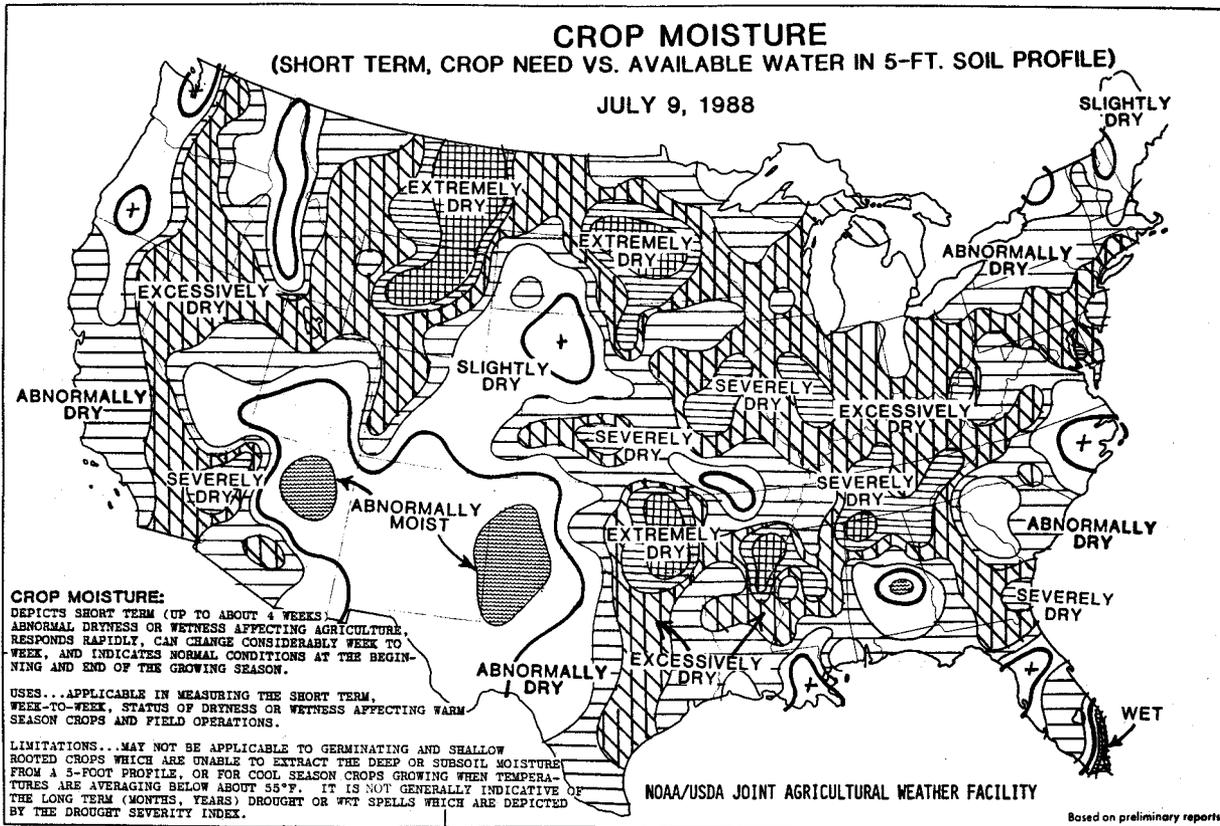
THURSDAY...Blistering heat continued for the fourth day over the eastern third of the country, but a slow-moving cold front again brought relief to the North-central States, with thunderstorms bringing rain from Minnesota southwestward into Kansas and westward into Colorado. Thunderstorms dotted the countryside across the Gulf States.

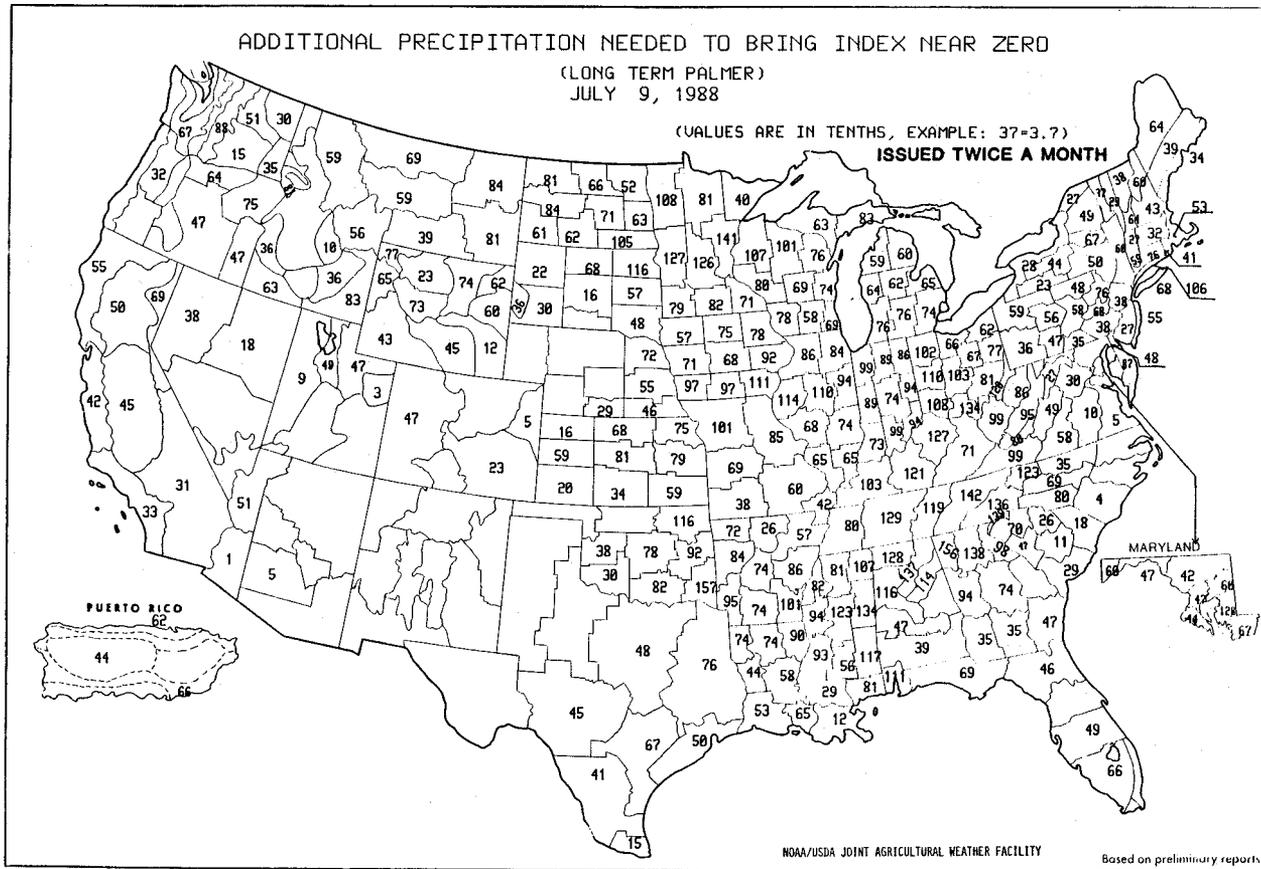
FRIDAY...The cold front slowly moved eastward to Wisconsin, Iowa, and Nebraska, bringing needed moisture to those States. The searing heat continued for the fifth day in the East. The mercury reached the century mark in the Ohio Valley, Tennessee Valley, and the Mid-Atlantic States.

SATURDAY...The cold front meandered eastward to Illinois and Michigan, while the leading edge of a second surge of cooler air crossed the Dakotas. Numerous thunderstorms broke out in Wisconsin and Ohio. The eastern third of the country sweltered through a sixth day of heat. Temperatures attained triple digit levels in the Ohio and Tennessee Valley.

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The Palmer Drought Index Why and How It Was Developed

It seems likely that some of you readers have forgotten or never knew why the Palmer Drought Index was developed. Here is the background.

In 1956 a serious drought was underway in parts of the United States. The Director of Credit Services for the U.S. Department of Agriculture came to the Weather Bureau, as it was named at that time, and asked for some guidance. His office was being bombarded with requests for drought relief funds. He needed some criteria in order that the drought disaster designation could be made on an objective basis in some way to ensure that Federal funds did not necessarily go to the district whose politicians made the most noise. This started the research designed to help make such decisions.

The monthly climatological records of temperature and rainfall for various U.S. areas, as far back as 1887 in some cases, were examined along with the published accounts of drought effects that had been experienced. Items such as crop and pasture conditions, stream flow, and reservoir storage were taken into account. The few most serious drought situations were tabulated for each of the various areas and were originally classed as "disaster" cases. Later this designation was changed to "extreme" drought.

Anyone who has studied the drought problem soon becomes aware that drought is a relative term. In a moist climate, reservoirs and streams can go dry even though there has been

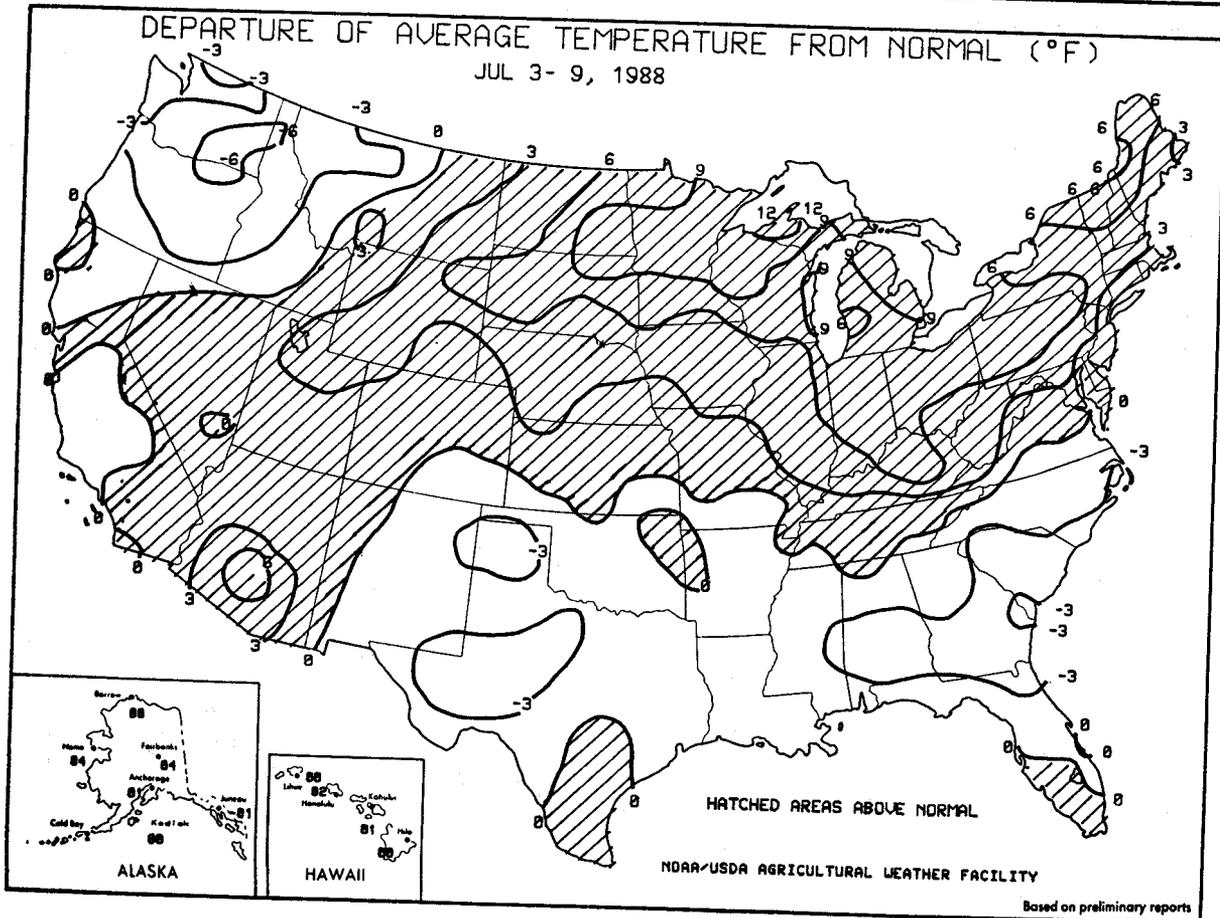
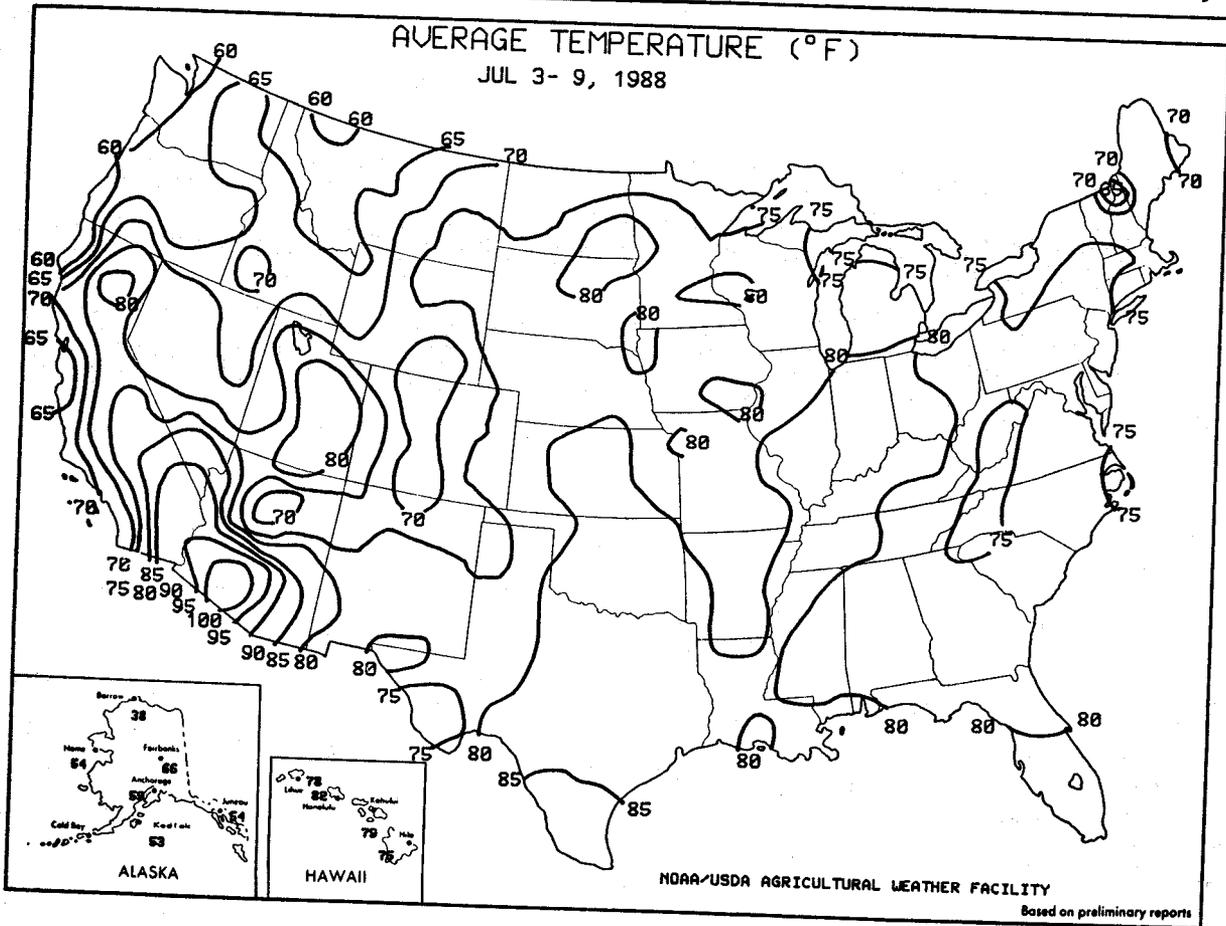
enough rain at fortuitous intervals to make good crops. So, a drought must be regarded as a prolonged and abnormal moisture deficiency. "Abnormal" is the primary concept here.

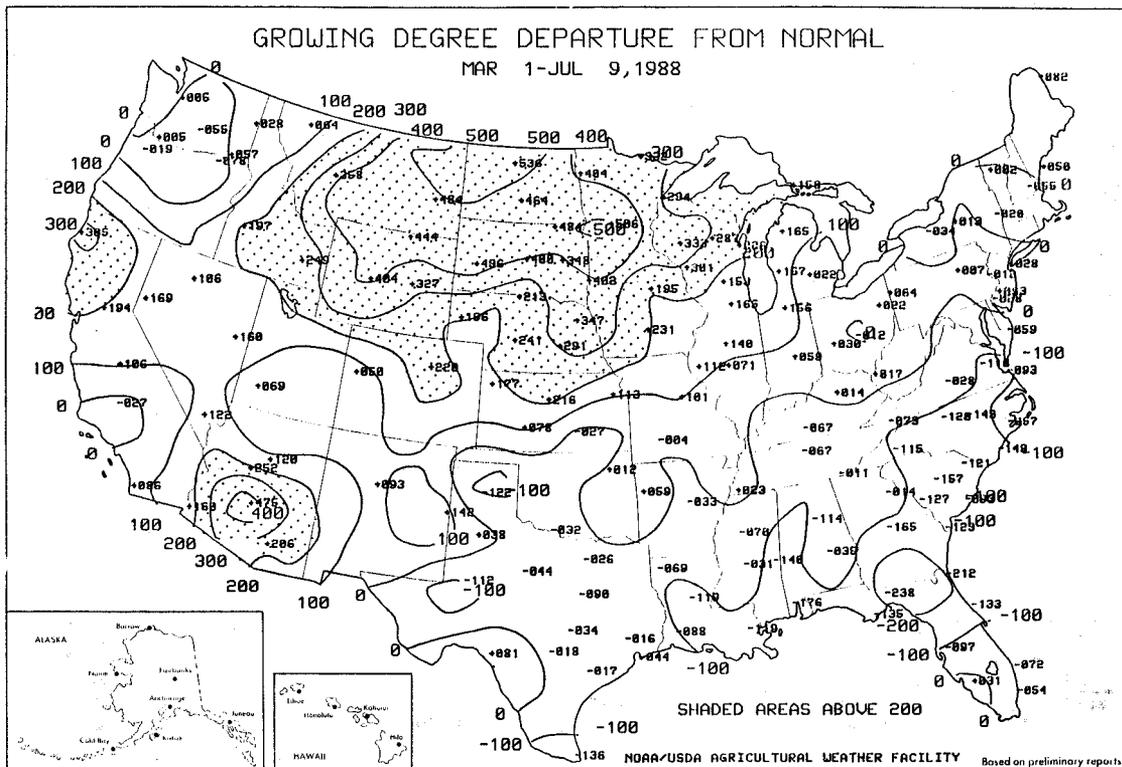
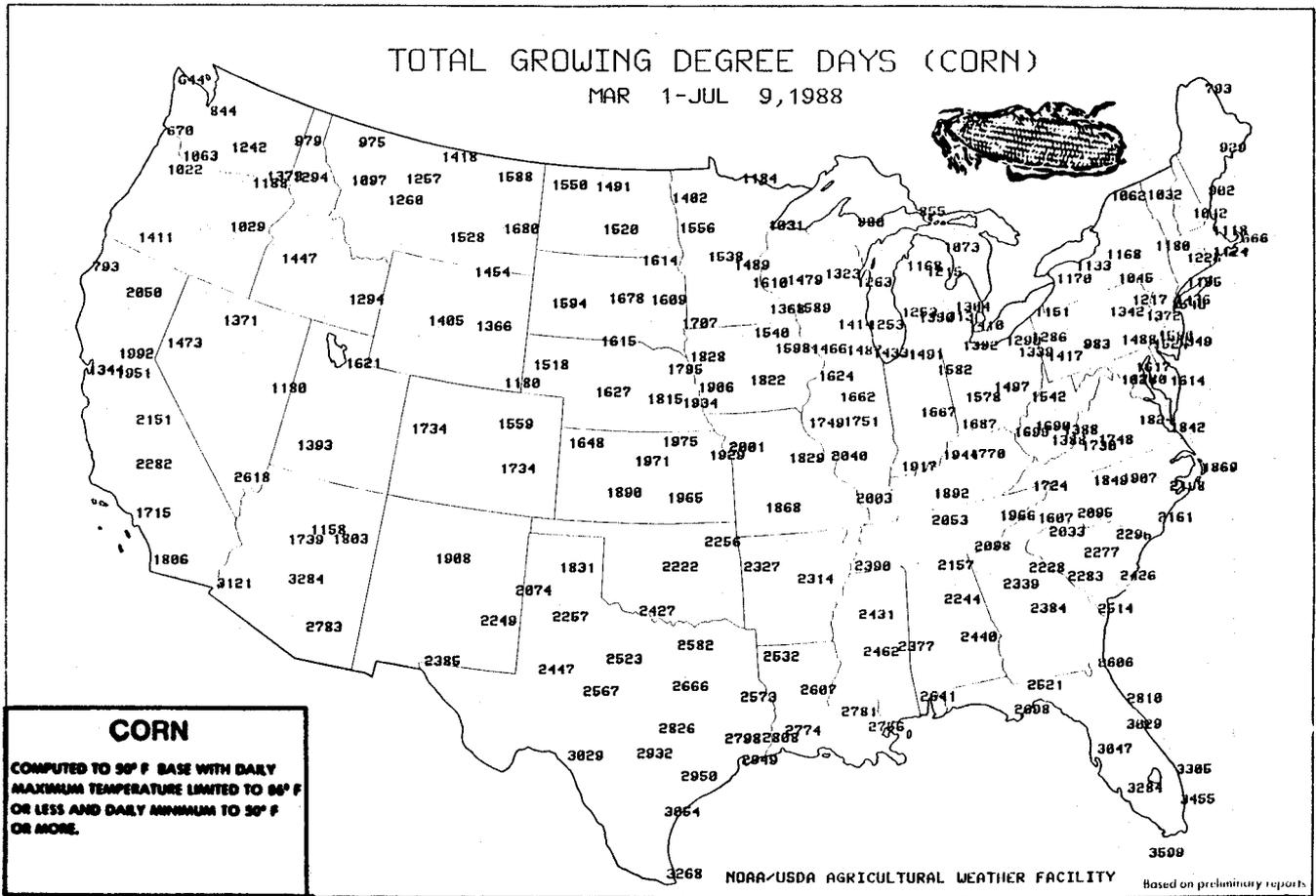
In 1956 the thinking was that anyone whose enterprise depended on the weather should be aware that periods of abnormally dry weather occur from time to time. Further, they should be prepared to survive even a fairly long dry spell on their own resources. But, some help should be provided if the weather produced a moisture shortage that is very extreme for a few months such as April through July in 1934 in western Kansas. Also, help is probably in order if somewhat drier than normal weather persists for a long time (for example, a couple of years or more) and gradually brings about an extremely serious situation.

On this basis, drought disasters can occur in almost all climates, but they tend to be relatively rare events, occurring in only 5 to 10 percent of the years.

The method of computing drought severity is fairly objective; the computations are made on computers and have been used in various countries around the world. Over the years, the results have been quite satisfactory; that is, the computations produce "extreme" index values for those areas where extremely serious effects of drought are being experienced. The details of the computational procedure were published in 1965 as Weather Bureau Research Paper No. 45.

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National Weather Data for Selected Cities

Weather Data for the Week Ending JULY 9, 1988

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE JUNE 1	PCT. NORMAL SINCE JUNE 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERATURE		PRECIPITATION	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	89	68	98	61	78	-1	.4	-.9	.2	1.2	23	16.8	54	93	48	3	0	3	0
MOBILE	89	70	94	66	80	-3	3.7	2.1	2.1	6.3	87	29.7	87	95	53	3	0	3	2
MONTGOMERY	87	68	94	63	78	-4	2.1	1.0	1.7	5.3	109	31.0	111	97	55	2	0	3	1
AK ANCHORAGE	64	53	67	52	59	1	T	-.4	T	.8	49	3.1	61	81	56	0	0	1	0
BARROW	44	33	51	30	38	0	T	-.2	T	.2	28	.4	26	96	78	0	3	0	0
FAIRBANKS	76	56	80	52	66	4	-.1	-.3	-.1	2.4	129	4.6	114	83	39	0	0	2	0
JUNEAU	60	48	67	45	54	-2	1.0	.1	.6	3.2	78	22.5	106	98	64	0	0	2	1
KODIAK	59	47	65	42	53	0	1.1	.4	1.0	2.8	56	37.5	130	96	73	0	0	2	1
NOME	63	45	70	39	54	4	T	-.4	T	1.4	80	5.3	113	90	51	0	0	2	0
AZ PHOENIX	109	87	110	83	98	6	T	-.1	T	T	6	2.4	86	38	15	7	0	0	0
PRESCOTT	89	60	91	57	75	2	-.2	-.4	-.1	1.7	131	6.1	83	64	24	4	0	3	0
TUCSON	104	78	106	74	91	5	-.1	-.4	-.1	.2	23	2.7	78	50	18	7	0	1	0
YUMA	108	80	112	77	94	2	0	0	0	.1	500	1.1	122	58	20	7	0	0	0
AR FORT SMITH	95	71	100	64	83	2	T	-.7	T	1.8	39	17.3	79	93	40	6	0	1	0
LITTLE ROCK	89	71	93	68	80	-2	T	-.8	T	2.4	51	17.7	63	81	52	3	0	1	0
CA BAKERSFIELD	97	65	103	61	81	-3	0	0	0	T	33	3.0	79	58	20	7	0	0	0
EUREKA	63	51	68	48	57	1	T	0	T	2.2	404	15.9	71	92	73	0	0	1	0
FRESNO	97	64	102	59	81	0	0	0	0	T	67	5.5	79	97	19	7	0	0	0
LOS ANGELES	73	61	77	59	67	-1	0	0	0	T	0	4.6	56	90	63	0	0	0	0
REDDING	97	63	110	57	80	-3	0	-.1	0	1.7	196	16.9	69	63	15	5	0	0	0
SACRAMENTO	95	58	104	55	76	1	0	0	0	.2	154	6.9	65	75	20	5	0	0	0
SAN DIEGO	74	63	76	62	69	0	0	0	0	0	0	6.7	104	89	62	0	0	0	0
SAN FRANCISCO	72	52	83	50	62	0	0	0	0	.6	545	7.3	59	90	49	0	0	0	0
CO DENVER	89	61	96	55	75	2	1.6	1.2	1.4	2.9	138	10.1	115	74	28	4	0	4	1
GRAND JUNCTION	93	66	97	62	80	1	-.2	.1	-.1	.4	69	4.5	116	53	18	6	0	2	0
PUEBLO	93	57	99	54	75	-1	1.0	.6	1.0	2.9	176	7.2	136	90	29	4	0	3	0
CT BRIDGEPORT	83	64	88	56	74	1	T	-.7	T	.9	24	13.9	65	87	51	0	0	1	0
HARTFORD	90	61	97	52	76	3	-.1	-.5	-.1	.8	19	16.0	71	90	33	3	0	2	0
DC WASHINGTON	94	69	99	63	82	3	T	-.8	T	.9	21	15.4	78	80	35	6	0	0	0
FL APALACHICOLA	87	71	90	67	79	-2	1.0	-.5	1.0	6.0	88	27.1	111	91	58	1	0	2	1
DAYTONA BEACH	86	74	88	68	80	-1	-.7	-.6	.6	3.1	38	18.2	81	87	60	0	0	2	1
JACKSONVILLE	88	67	93	62	77	-5	.1	-1.3	-.1	3.9	52	23.8	96	92	49	1	0	1	0
KEY WEST	89	78	91	76	84	-1	1.9	1.0	1.7	5.4	89	21.1	132	90	63	3	0	4	1
MIAMI	89	76	93	74	83	1	2.4	.9	1.7	15.1	137	25.0	93	95	60	4	0	5	1
ORLANDO	86	70	92	68	78	-4	-.7	-1.1	-.7	6.6	70	22.0	91	97	58	1	0	2	1
TALLAHASSEE	90	68	94	59	79	-2	T	-1.9	T	3.2	35	25.5	75	92	46	4	0	1	0
TAMPA	90	72	92	70	81	-1	T	-1.6	T	5.2	71	16.6	78	89	52	5	0	0	0
WEST PALM BEACH	87	74	90	73	81	-1	4.9	3.4	1.7	16.4	167	38.9	143	96	67	1	0	5	3
GA ATLANTA	87	69	99	66	78	0	-.1	-1.0	-.1	.4	7	18.6	65	84	48	3	0	1	0
AUGUSTA	88	65	97	57	77	-3	T	-1.0	T	4.9	95	22.3	89	95	47	3	0	0	0
MACON	88	66	96	58	77	-4	1.6	.6	1.5	2.5	49	21.2	80	93	43	3	0	2	1
SAVANNAH	88	69	95	64	78	-3	0	-1.6	0	2.7	34	20.9	80	89	42	2	0	0	0
HI HILO	82	69	83	65	75	0	2.1	.3	1.4	7.3	87	61.3	91	95	61	0	0	5	1
HONOLULU	89	74	89	73	82	2	.1	0	0	.1	20	6.9	52	78	47	0	0	2	0
KAHULUI	86	72	88	67	79	1	T	-.1	T	.1	21	12.2	106	84	49	0	0	1	0
LIHUE	83	74	85	72	79	0	.4	0	.2	1.0	48	20.5	90	89	65	0	0	4	0
ID BOISE	88	52	96	45	70	-3	T	-.1	T	.5	49	6.8	96	63	15	4	0	1	0
LEWISTON	82	54	96	45	68	-5	-.2	0	-.2	1.8	118	6.0	81	68	26	2	0	1	0
POCATELLO	88	53	96	43	70	0	T	-.1	T	.4	30	4.4	68	59	15	3	0	0	0
IL CHICAGO	95	63	99	52	79	7	0	-.8	0	1.1	20	9.7	54	79	27	5	0	0	0
MOLINE	94	63	98	53	79	4	0	-1.1	0	1.2	20	10.0	51	85	28	6	0	0	0
PEORIA	95	64	97	53	79	5	0	-.9	0	.6	12	9.4	50	80	28	6	0	0	0
QUINCY	92	65	95	57	79	2	T	-1.0	T	2.8	54	9.1	46	83	32	6	0	0	0
ROCKFORD	94	62	97	52	78	6	0	-1.1	0	.5	8	10.0	52	85	28	6	0	0	0
SPRINGFIELD	94	67	96	61	80	4	0	-.8	0	.6	14	9.9	54	86	34	6	0	0	0
IN EVANSVILLE	97	66	102	60	82	4	T	-.9	T	1.1	24	14.3	60	82	28	7	0	0	0
FORT WAYNE	99	64	102	53	81	8	0	-.8	0	.8	17	12.1	64	67	20	7	0	0	0
INDIANAPOLIS	98	67	101	60	83	8	0	-1.0	0	.3	6	14.0	66	69	23	7	0	0	0
SOUTH BEND	96	63	100	49	80	7	0	-.8	0	.5	10	12.0	62	84	28	6	0	0	0
IA DES MOINES	93	67	97	57	80	4	2.3	1.6	2.3	5.1	100	8.9	53	84	38	5	0	1	1
SIOUX CITY	93	68	99	57	80	5	.4	-.4	.4	1.0	20	7.7	55	89	47	4	0	1	0
WATERLOO	91	65	95	55	78	5	.5	-.6	.5	3.6	63	9.4	54	89	40	5	0	1	0
KS CONCORDIA	91	70	97	63	81	2	.4	-.4	.3	3.6	69	9.4	63	85	44	5	0	2	0
DODGE CITY	94	68	98	62	81	1	.5	-.2	.3	.7	18	8.9	77	91	34	6	0	3	0
GOODLAND	94	63	101	56	79	3	1.4	-.8	.7	3.2	94	12.2	131	85	28	5	0	3	2
TOPEKA	89	67	92	62	78	0	1.0	0	1.0	4.3	67	13.5	76	97	55	3	0	1	1
WICHITA	94	69	98	60	81	0	.5	-.4	.5	2.5	48	12.9	86	91	38	6	0	1	1
KY BOWLING GREEN	94	66	102	61	80	2	T	-1.0	T	2.1	36	16.5	58	98	36	6	0	1	0
LEXINGTON	98	67	103	58	83	7	.2	-.9	.2	.9	15	15.2	59	71	22	7	0	1	0
LOUISVILLE	98	70	103	59	84	7	0	-.9	0	.9	18	17.6	72	73	24	7	0	0	0
LA ALEXANDRIA	91	75	98	73	83	1	3.5	2.5	3.0	4.5	88	22.9	76	85	53	3	0	5	1
BATON ROUGE	90	73	95	72	81	-1	2.3	-.8	.9	6.5	128	37.6	126	94	58	3	0	4	3
LAKE CHARLES	87	73	92	72	80	-1	.6	-.6	.4	6.3	113	27.1	103	97	67	2	0	5	0
NEW ORLEANS	87	73	92	71	80	-2	2.0	-.6	1.1	12.8	196	47.6	153	98	69	1	0	4	2

Based on 1951-80 normals

Weather Data for the Week Ending JULY 9, 1988

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS						
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE June 1	PCT. NORMAL SINCE June 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	TEMPERATURE		PRECIPITATION	
																		°F	°F	.01 INCH OR MORE	.50 INCH OR MORE
ME SHREVEPORT	91	70	97	67	80	-2	.6	-.2	.4	.8	17	14.2	56	96	49	4	0	3	0		
ME CARIBOU	83	59	91	50	71	6	.1	-.7	.1	2.7	64	13.2	79	99	53	1	0	2	0		
ME PORTLAND	86	59	92	49	72	5	T	-.7	T	2.4	62	17.5	78	92	51	2	0	0	0		
MD BALTIMORE	93	65	98	57	79	3	T	-.8	T	.8	17	16.5	77	93	38	7	0	0	0		
MD SALISBURY	87	63	92	55	75	-1	.3	-.6	.3	2.0	43	22.0	99	93	45	1	0	2	0		
MA BOSTON	87	65	94	59	76	3	T	-.6	T	1.5	41	15.8	89	86	47	3	0	0	0		
MA CHATHAM	74	59	76	54	67	0	T	-.6	T	2.5	70	17.8	75	90	66	0	0	0	0		
MI ALPENA	94	57	100	43	76	10	0	-.7	0	.8	21	10.4	72	89	30	5	0	0	0		
MI DETROIT	96	65	101	53	81	9	0	-.7	0	1.0	23	7.8	48	73	21	6	0	0	0		
MI FLINT	97	61	101	48	79	9	0	-.6	0	.6	16	7.9	52	74	20	6	0	0	0		
MI GRAND RAPIDS	95	60	100	47	78	7	0	-.7	0	.3	5	10.1	59	81	24	6	0	0	0		
MI HOUGHTON LAKE	93	57	97	43	75	9	0	-.7	0	.9	22	8.8	63	85	27	6	0	0	0		
MI LANSING	97	59	100	45	78	8	0	-.6	0	.2	4	8.9	58	77	21	6	0	0	0		
MI MARQUETTE	89	62	98	45	76	11	.2	-.6	.1	.9	18	12.3	64	82	37	4	0	2	0		
MI MUSKOGON	90	59	96	47	75	5	0	-.5	0	.5	15	11.2	73	85	30	5	0	0	0		
MI SAULT ST. MARIE	91	55	97	43	73	10	T	-.7	T	.5	13	11.1	73	92	33	5	0	1	0		
MN ALEXANDRIA	92	67	100	60	80	10	.1	-.6	.1	.8	16	6.3	48	78	37	4	0	1	0		
MN DULUTH	89	61	97	52	75	11	.1	-.7	.1	4.7	93	12.6	88	93	45	2	0	2	0		
MN INT'L FALLS	89	61	98	52	75	9	.2	-.7	.1	4.6	96	8.3	72	90	41	2	0	3	0		
MN MINNEAPOLIS	93	71	99	61	82	9	.1	-.7	.1	.3	6	6.6	48	79	41	5	0	1	0		
MN ROCHESTER	88	64	94	53	76	6	.3	-.6	.2	1.9	38	9.6	67	87	46	3	0	2	0		
MS GREENWOOD	90	70	94	66	80	-2	.4	-.6	.4	.8	17	13.6	44	93	47	5	0	1	0		
MS JACKSON	90	69	97	64	80	-2	.5	-.5	.4	.6	14	19.9	66	94	47	5	0	2	0		
MS MERIDIAN	88	67	94	61	77	-4	1.1	-.1	.7	3.0	59	22.4	72	98	53	4	0	3	1		
MO CAPE GIRARDEAU	94	68	100	64	81	-1	0	-.8	0	.7	15	15.1	61	89	35	7	0	0	0		
MO COLUMBIA	93	65	95	58	79	1	0	-.7	0	.7	15	13.0	65	89	36	6	0	0	0		
MO KANSAS CITY	92	71	95	66	81	2	.3	-.7	.3	2.1	35	9.9	53	86	43	5	0	2	0		
MO SAINT LOUIS	95	71	97	65	83	4	0	-.9	0	2.0	41	14.9	78	72	30	7	0	0	0		
MO SPRINGFIELD	87	68	91	66	77	0	T	-.9	T	7.3	126	24.8	116	93	51	2	0	0	0		
MT BILLINGS	89	59	101	49	74	3	T	-.2	T	.4	19	5.9	63	56	17	3	0	0	0		
MT GLASGOW	85	58	97	50	72	2	1.0	.6	.8	2.5	83	5.1	80	74	25	2	0	2	1		
MT GREAT FALLS	79	49	87	44	64	-4	1.8	1.5	.9	3.2	103	7.2	74	78	29	0	0	3	2		
MT HAVRE	80	52	87	47	66	-3	T	-.3	T	1.8	68	2.9	41	80	31	0	0	0	0		
MT HELENA	81	52	89	44	67	0	.2	-.1	.1	1.7	73	6.1	87	74	27	0	0	3	0		
MT KALISPELL	75	45	87	38	60	-4	.2	0	.2	1.7	68	8.1	91	93	33	0	0	3	0		
MT MILES CITY	92	63	102	52	78	4	0	-.4	0	.7	22	2.0	23	82	18	5	0	0	0		
MT MISSOULA	79	47	89	36	63	-3	.4	.2	.3	2.1	99	8.3	107	94	30	0	0	4	0		
NE GRAND ISLAND	88	67	94	62	78	1	2.3	1.7	2.2	7.0	156	12.7	93	91	54	4	0	2	1		
NE LINCOLN	92	69	99	58	81	4	.2	-.5	.2	1.0	21	7.4	49	89	46	4	0	2	0		
NE NORFOLK	91	68	97	56	80	4	1.7	.9	1.5	3.0	56	11.9	84	91	48	5	0	2	1		
NE NORTH PLATTE	92	65	97	59	79	5	1.7	.9	1.6	4.8	102	11.5	96	85	38	4	0	3	1		
NE OMAHA	88	70	94	61	79	2	.5	-.4	.4	3.4	66	11.5	72	87	60	4	0	2	0		
NE SCOTT'S BLUFF	93	59	100	56	76	3	.2	-.4	.2	2.5	68	11.9	125	89	24	4	0	2	0		
NE VALENTINE	94	64	102	56	79	5	T	-.6	T	3.4	93	11.8	118	75	32	4	0	0	0		
NV ELY	89	49	93	44	69	3	0	-.1	0	.6	65	4.4	84	42	14	3	0	0	0		
NV LAS VEGAS	105	78	111	74	92	2	0	-.1	0	T	24	1.7	91	23	12	7	0	0	0		
NV RENO	89	52	99	46	71	2	0	-.1	0	.6	151	2.2	49	60	16	4	0	0	0		
NV WINNEMUCCA	92	52	99	49	72	1	0	-.1	0	.5	52	4.0	85	32	16	5	0	0	0		
NH CONCORD	89	58	94	48	74	5	T	-.6	T	1.2	31	12.8	71	96	38	3	0	2	1		
NJ ATLANTIC CITY	86	63	92	53	75	1	1.6	.8	1.6	2.7	70	16.7	79	91	46	1	0	2	1		
NM ALBUQUERQUE	91	65	96	59	78	-1	1.5	1.3	1.0	2.8	337	5.9	200	77	25	4	0	3	1		
NM CLOVIS	85	66	88	65	75	-2	1.1	.4	.9	5.3	154	12.2	155	92	48	0	0	2	1		
NM ROSWELL	90	67	93	64	78	-2	.4	0	.3	1.9	131	7.3	194	88	36	5	0	4	0		
NY ALBANY	92	61	99	50	77	6	0	-.7	0	1.6	39	13.4	74	89	37	5	0	0	0		
NY BINGHAMTON	90	63	95	53	77	8	0	-.8	0	1.1	25	14.7	79	77	27	5	0	0	0		
NY BUFFALO	93	64	97	57	78	8	0	-.6	0	1.6	45	15.9	89	73	27	6	0	0	0		
NY NEW YORK	86	69	94	65	78	2	.5	-.3	.5	1.4	35	16.1	74	81	44	1	0	1	0		
NY ROCHESTER	93	58	98	51	75	4	0	-.6	0	1.1	32	9.7	61	89	26	5	0	0	0		
NY SYRACUSE	91	60	97	51	75	5	0	-.8	0	2.5	54	13.7	70	90	36	5	0	0	0		
NC ASHEVILLE	82	59	96	52	70	-3	.2	-.7	.2	1.1	24	11.6	49	100	50	2	0	1	0		
NC CHARLOTTE	86	65	98	61	76	-3	.5	-.4	.4	2.0	43	14.3	60	91	42	3	0	3	0		
NC GREENSBORO	87	63	96	56	75	-2	.7	-.2	.7	3.9	76	15.9	71	91	44	3	0	1	1		
NC HATTERAS	83	63	85	58	73	-4	T	-1.1	T	2.3	40	22.5	87	97	50	0	0	1	0		
NC NEW BERN	88	65	93	60	76	-2	T	-1.5	T	5.4	77	25.6	98	90	43	3	0	0	0		
NC RALEIGH	89	62	97	59	76	-2	0	-1.0	0	2.9	59	16.6	75	91	39	3	0	0	0		
NC WILMINGTON	85	64	90	59	75	-5	.4	-1.3	.3	3.3	42	25.9	98	92	46	1	0	2	0		
ND BISMARCK	91	62	99	53	76	7	.4	-.1	.2	2.6	72	5.8	64	91	35	4	0	2	0		
ND FARGO	94	68	106	58	81	11	.3	-.5	.2	1.6	38	6.2	63	82	37	4	0	2	0		
ND GRAND FORKS	90	62	104	54	76	8	2.3	1.7	2.0	3.4	90	6.4	70	93	40	3	0	2	0		
ND WILLISTON	86	58	94	50	72	3	.2	-.3	.1	3.7	114	6.9	87	87	29	2	0	2	0		
OH AKRON-CANTON	95	66	100	57	81	9	0	-.9	0	.4	8	11.0	57	64	22	6	0	0	0		
OH CINCINNATI	98	67	103	58	83	8	0	-1.0	0	1.2	22	18.2	80	68	23	7	0	0	0		
OH CLEVELAND	94	63	99	56	79	7	0	-.8	0	.7	15	11.5	61	74	27	5	0	0	0		
OH COLUMBUS	96	63	100	52	80	6	0	-.9	0	1.3	26	14.8	72	80	25	6	0	0	0		

Weather Data for the Week Ending JULY 9, 1988

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS						
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE June 1	PCT. NORMAL SINCE June 1	TOTAL, IN., SINCE JAN 1	PCT. NORMAL SINCE JAN 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	TEMPERATURE °F		PRECIPITATION	
																		°01 INCH OR MORE	°50 INCH OR MORE	°01 INCH OR MORE	°50 INCH OR MORE
DAYTON	97	67	101	58	82	7	0	-1.7	0	1.4	30	13.4	68	64	22	7	0	0	0	0	
TOLEDO	98	59	103	47	79	7	0	-1.7	0	.3	6	7.3	43	81	21	7	0	0	0	0	
YOUNGSTOWN	96	58	100	46	77	7	0	-1.9	0	.7	15	11.8	60	78	22	6	0	0	0	0	
OK OKLAHOMA CITY	90	69	94	67	80	-2	T	-1.7	T	3.7	79	17.5	100	92	48	4	0	2	0	0	
TULSA	94	72	99	64	83	1	.1	-1.8	.1	.6	11	13.7	64	85	37	7	0	1	0	0	
OR ASTORIA	66	48	71	43	57	-3	.2	-1.1	.1	4.1	144	30.2	83	94	61	0	0	3	0	0	
BURNS	82	43	93	30	63	-5	T	0	T	.7	105	4.4	79	67	17	2	1	1	0	0	
MEDFORD	88	51	97	42	70	-1	T	-1.1	0	1.0	144	6.8	86	79	19	3	0	0	0	0	
PENDLETON	79	53	93	45	66	-7	0	-1.1	0	.3	41	7.3	109	58	23	2	2	0	0	0	
PORTLAND	75	52	87	48	64	-3	.3	-1.1	.3	2.6	169	19.0	97	88	44	0	0	1	0	0	
SALEM	77	47	88	38	62	-4	T	-1.1	T	2.0	153	18.8	87	96	38	0	0	1	0	0	
PA ALLENTOWN	92	64	97	50	78	5	T	-1.9	T	1.9	41	19.2	86	98	38	5	0	1	0	0	
ERIE	89	64	96	56	77	8	0	-1.8	0	1.3	26	13.9	73	68	29	4	0	0	0	0	
HARRISBURG	95	65	101	53	80	5	T	-1.7	T	1.0	22	16.9	81	82	27	6	0	1	0	0	
PHILADELPHIA	93	67	97	58	80	4	.1	-1.7	.1	.7	14	16.4	76	89	39	5	0	1	0	0	
PITTSBURGH	96	63	101	51	79	8	0	-1.9	0	1.3	27	13.5	67	79	25	6	0	0	0	0	
SCHAFY	93	63	99	48	78	7	0	-1.8	0	1.2	26	13.8	78	85	27	5	0	0	0	0	
RI PROVIDENCE	84	62	87	55	73	1	.4	-1.2	.4	1.3	36	19.3	84	96	53	0	0	2	0	0	
SC CHARLESTON	87	67	92	63	77	-3	T	-1.6	T	2.5	29	14.5	54	94	45	2	0	1	0	0	
COLUMBIA	91	64	103	55	78	-3	.5	-1.7	.3	2.1	35	15.3	57	91	35	5	0	2	0	0	
FLORENCE	90	65	98	58	78	-2	.1	-1.2	.1	2.1	34	15.0	63	89	39	4	0	1	0	0	
GREENVILLE	85	64	98	59	74	-4	.9	-1.2	.5	4.1	72	18.9	66	98	54	3	0	4	0	0	
SD ABERDEEN	97	67	105	60	82	11	.3	-1.3	.2	1.6	40	6.2	58	86	31	6	0	2	0	0	
HURON	92	67	102	59	79	6	.1	-1.5	.1	1.5	37	10.9	98	88	42	3	0	3	0	0	
RAPID CITY	95	63	105	56	79	8	.1	-1.5	.1	1.2	30	6.0	57	70	20	6	0	1	0	0	
SIoux FALLS	93	69	101	59	81	8	.2	-1.5	.1	1.1	24	8.0	61	87	42	4	0	3	0	0	
TN CHATTANOOGA	88	65	102	60	77	-1	.2	-1.8	.1	1.1	24	17.4	59	95	45	4	0	2	0	0	
KNOXVILLE	92	65	102	60	78	1	.1	-1.9	.1	.6	12	15.0	55	94	37	5	0	1	0	0	
MEMPHIS	92	72	95	69	82	0	T	-1.9	T	3.2	69	20.4	68	85	43	6	0	0	0	0	
NASHVILLE	96	69	105	64	83	4	.2	-1.7	.2	.6	13	12.5	45	88	32	6	0	1	0	0	
TX ABILENE	90	70	93	68	80	-3	.4	-1.1	.3	4.1	134	10.1	85	87	43	5	0	2	0	0	
AMARILLO	84	65	89	62	74	-4	1.1	-1.5	1.0	4.8	113	14.7	145	95	51	0	0	3	1	0	
AUSTIN	94	74	99	72	84	0	.6	-1.1	.5	3.2	89	11.8	71	95	44	7	0	3	0	0	
BEAUMONT	89	74	97	72	82	-1	2.2	-.9	.7	7.0	107	24.0	89	97	61	2	0	5	3	1	
BROWNSVILLE	95	76	96	75	85	2	.6	-.3	.6	3.5	112	10.6	105	95	50	7	0	1	1	0	
CORPUS CHRISTI	94	75	97	74	85	0	.4	-.2	.2	2.0	44	6.4	46	97	51	7	0	3	0	0	
DEL RIO	93	75	96	73	84	-2	.1	-.3	.1	1.9	87	3.9	47	60	32	5	0	1	0	0	
EL PASO	93	69	96	67	81	-2	1.6	1.2	.8	3.0	299	4.4	176	91	35	7	0	5	2	1	
PORT WORTH	94	73	96	71	83	-2	1.4	-.9	1.3	4.6	156	13.1	75	93	44	6	0	2	1	0	
GALVESTON	85	77	89	73	81	-2	3.2	2.3	1.7	5.6	121	19.9	109	86	65	0	0	5	2	2	
HOUSTON	90	74	98	72	82	-1	1.5	-.6	1.2	3.5	64	13.5	57	97	59	2	0	4	1	0	
LUBBOCK	89	68	93	66	78	-2	2.0	1.4	1.0	3.8	110	9.0	100	98	51	4	0	4	2	2	
MIDLAND	88	68	94	67	78	-4	5.2	4.9	3.6	6.1	320	9.6	154	94	47	5	0	3	2	0	
SAN ANGELO	91	69	95	68	80	-4	.1	-1.2	.1	2.2	101	8.0	92	92	45	5	0	2	0	0	
SAN ANTONIO	94	76	99	74	85	1	.4	-1.1	.4	5.9	166	9.7	66	91	44	7	0	1	0	0	
VICTORIA	92	75	98	72	84	0	1.3	-.7	1.1	3.1	57	7.4	41	96	54	5	0	3	1	0	
WACO	96	72	100	69	84	-2	.2	-.2	.2	5.8	189	12.9	75	96	43	7	0	2	0	0	
WICHITA FALLS	94	70	97	69	82	-3	0	-1.5	0	2.7	79	12.8	88	93	41	7	0	0	0	0	
UT BLANDING	89	59	92	55	74	1	0	-1.2	0	1.3	203	5.9	118	60	32	1	0	0	0	0	
CEDAR CITY	91	59	96	53	75	2	0	-1.2	0	.7	90	7.9	158	48	15	3	0	0	0	0	
SALT LAKE CITY	94	66	99	58	80	4	T	-1.2	T	3	6.2	67	56	19	5	0	0	0	0	0	
VT BURLINGTON	90	61	97	52	76	7	0	-1.8	0	3.6	78	11.2	70	91	35	4	0	0	0	0	
VA NORFOLK	85	66	93	62	76	-2	.3	-.8	.3	4.1	84	21.1	94	89	44	1	0	2	0	0	
RICHMOND	92	64	99	58	78	1	1.5	-.4	1.5	3.8	75	18.7	87	89	35	5	0	1	1	0	
ROANOKE	92	60	100	52	76	0	.6	-.2	.5	4.2	98	14.5	70	93	33	4	0	2	1	0	
WA QUILLYATE	68	45	78	39	56	-2	.3	-.3	.3	3.2	91	55.3	101	97	54	0	0	3	0	0	
SEATTLE-TACOMA	72	51	83	50	62	-3	T	-1.2	T	1.8	117	16.5	85	92	43	0	0	1	0	0	
SPOKANE	75	49	90	42	62	-6	.1	-1.1	.1	1.2	87	8.5	92	79	25	1	0	1	0	0	
YAKIMA	82	45	95	36	63	-6	0	0	0	1.0	161	3.5	81	83	22	2	0	0	0	0	
WV BECKLEY	88	60	94	51	74	5	0	-1.1	0	2.3	43	14.4	62	77	29	3	0	0	0	0	
CHARLESTON	96	62	102	51	79	5	T	-1.2	T	.9	20	12.6	56	83	24	7	0	0	0	0	
HUNTINGTON	97	61	102	52	79	4	T	-1.1	T	.8	16	13.3	60	81	23	7	0	0	0	0	
PARKERSBURG	97	62	102	52	79	5	.1	-.9	.1	.8	16	11.0	52	83	24	6	0	1	0	0	
WI GREEN BAY	94	63	98	50	78	9	.6	-1.1	.6	1.3	31	7.5	53	86	35	5	0	1	1	0	
LACROSSE	94	67	99	55	81	8	.5	-.4	.5	3.7	71	9.8	63	88	38	5	0	1	0	0	
MADISON	93	63	96	55	78	7	.3	-.6	.3	2.4	48	9.4	60	84	30	6	0	1	0	0	
MILWAUKEE	92	67	99	60	80	10	0	-1.8	0	.7	15	11.2	69	87	29	5	0	0	0	0	
WAUSAU	92	64	97	55	78	9	.2	-.7	.2	1.9	38	7.4	47	83	31	5	0	1	0	0	
WY CASPER	89	56	98	47	73	3	.5	-.3	.3	.8	53	4.5	63	73	19	3	0	4	0	0	
CHEYENNE	83	56	94	51	70	2	1.0	-.6	.9	3.1	120	10.5	131	86	30	1	0	5	1	0	
LANDER	90	58	95	53	74	5	T	-1.2	T	.2	13	4.9	56	60	16	4	0	1	0	0	
SHERIDAN	91	57	101	49	74	5	T	-1.3	T	.6	21	7.2	74	67	20	5	0	0	0	0	
PR SAN JUAN	91	77	93	75	84	2	1.0	-.1	.6	2.7	43	26.8	116	94	74	3	0	3	1	0	

June Weather and Crop Summary

Weather Summary

HIGHLIGHTS: June of 1988 was the hottest June in more than 50 years in the northern Plains, and one of the driest ever in much of the eastern half of the country. Monthly temperatures were above-normal across more than two-thirds of the country, with only the eastern seaboard, Gulf States, and some areas in the West measuring below-normal readings. Moderate-to-heavy rainfall eased drought conditions in the Plains States, but hot, dry weather worsened drought conditions in the Mississippi and Ohio Valley. Above-normal rainfall was mainly limited to Texas, New Mexico, Florida, the West Coast, and scattered areas along the Gulf and East coasts.

JUNE 1-7...By the end of the period, high temperatures prevailed across most of the country, with only the Far West and Northeast remaining cool. A vigorous storm system brought rain to the Pacific Northwest, and widespread thunderstorms pelted the central and southern Plains with rain.

JUNE 8-14...A southward-moving cold front brought cooler air and needed rains to much of the eastern half of the country. Parts of Iowa, Missouri, and Illinois received abundant rain. Thunderstorms also dampened the northern and central Plains and Rockies. By the end of the period, warm, dry weather again prevailed across the East.

JUNE 15-21...A frontal system moved through the drought-stricken Ohio Valley, but brought only sparse rainfall. By the end of the period, hot, dry weather affected much of the country again.

JUNE 22-28...A hot air mass draped itself across the country, breaking hundreds of high temperature records. A cold front moved southward from Canada on June 28, bringing abundant rainfall to the western Corn Belt.

JUNE 29-30...The southward-advancing cold front brought moisture to parched farmlands in the western Corn Belt. The Ohio Valley got relief from the heat, but negligible rain fell. Overnight temperatures dipped into the 40's in the Great Lakes region and the Northeast, with a few locations even reaching the 30's. It snowed on Mt. Washington in New Hampshire.

Crops Continued Under Stress

June began with extremely dry conditions in the northern Rocky Mountain States and most of the eastern half of the Nation. As the month progressed, crop condition worsened, especially from Montana through the northern Great Plains into the Corn Belt. Near midmonth, precipitation across the northern Great Plains did very little to ease the drought and improve crop condition. The lack of moisture combined with high temperatures continued stressing crops and limiting growth throughout most of the eastern half of the Nation. Plants wilted in some areas as moisture supplies shorten. The third week of June, triple-digit temperatures further aggravated the drought. Corn, cotton, soybean, sorghum, and spring wheat condition continued declining. Precipitation and lower temperatures eased drought

stress in the Great Plains, Delta, and western Corn Belt. The lower temperatures eased stress in the central and eastern Corn Belt, and Appalachian States, but inadequate moisture plagued crop development and growth, despite the precipitation, crops showed very little improvement.

Corn began the month mostly good to fair but condition declined to mostly fair by month's end. Inadequate moisture hindered growth and development in most areas during June. By July 3, 6 percent of the acreage was silking, compared with 17 percent in 1987 and 8 percent normally. Silking was underway in all major producing States except Colorado, Michigan, Minnesota, Pennsylvania, South Dakota, and Wisconsin. Corn reached the dent stage in Alabama, Georgia, and Texas.

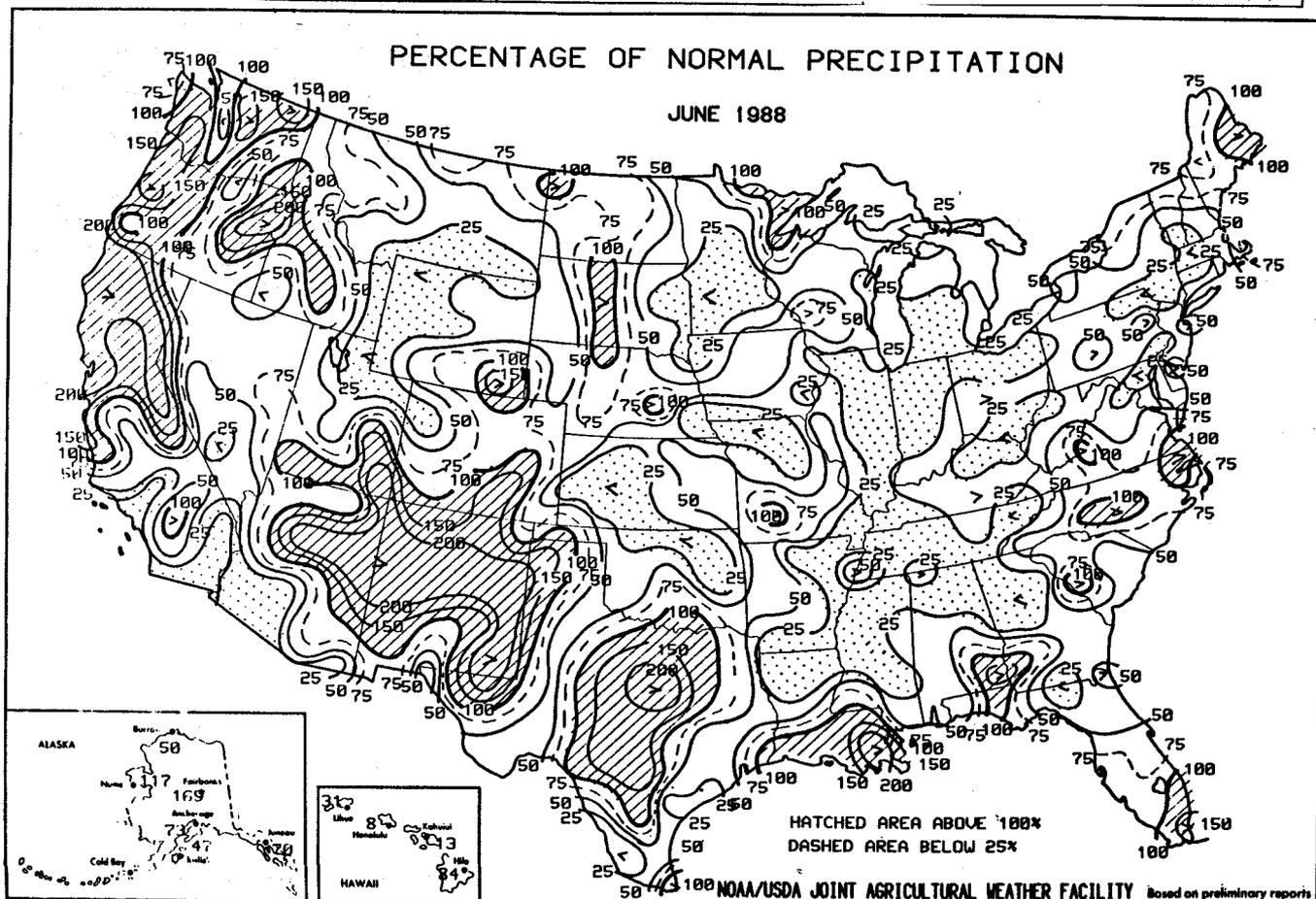
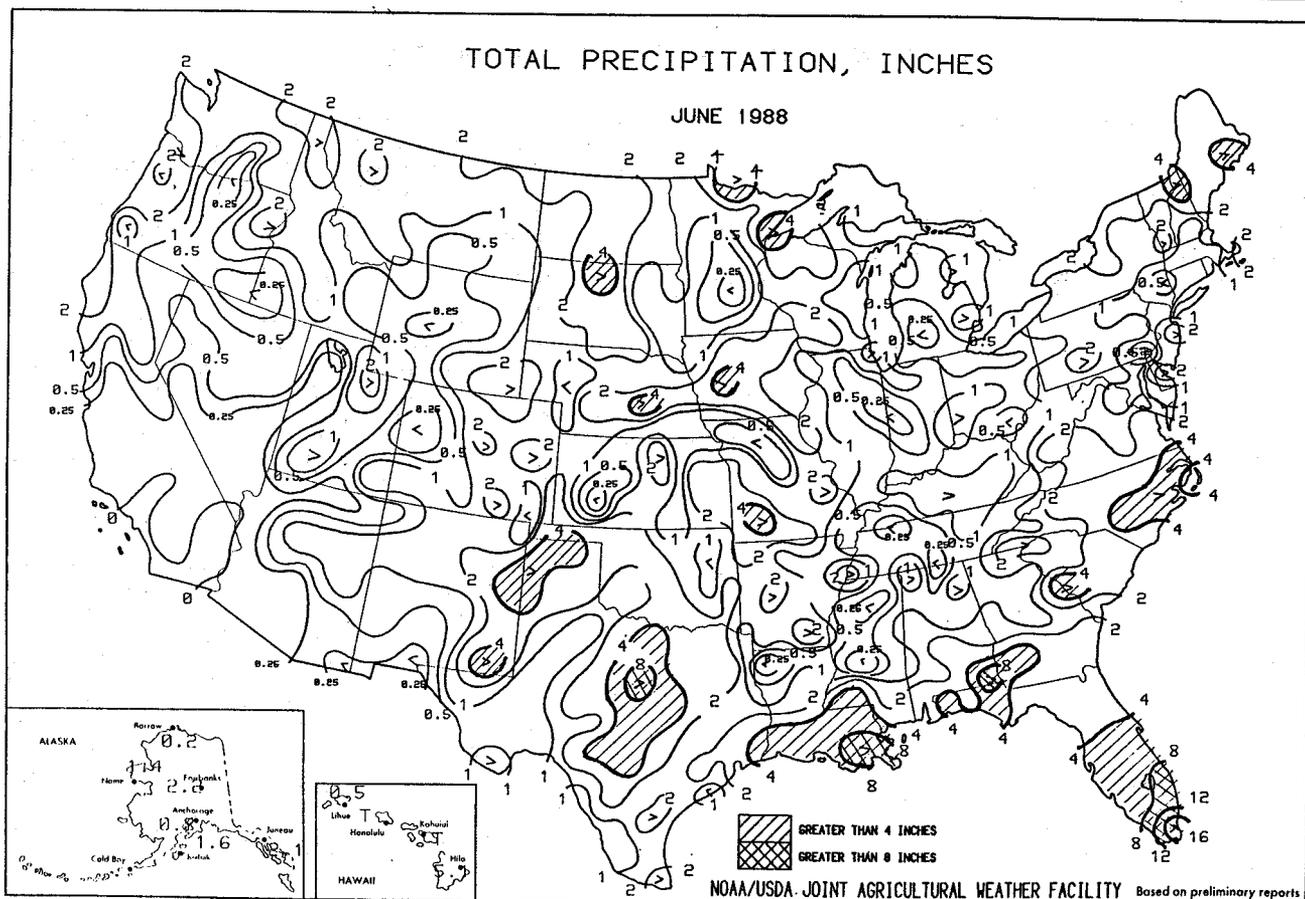
Soybeans were virtually all planted in the Corn Belt and central Great Plains by the end of June. Dryness nearly curtailed planting in the Delta, Southeast, and Appalachian States until the end of the month. Precipitation allowed planting to resume in the Delta and Southeast where more than 10 percent of the acreage remained to be planted in most States. Soybeans were blooming in all major producing States except Michigan, North Carolina, Ohio, and South Carolina by the end of June. Seventeen percent of the acreage was blooming, nearly doubling the average. Soybeans were in mostly fair condition.

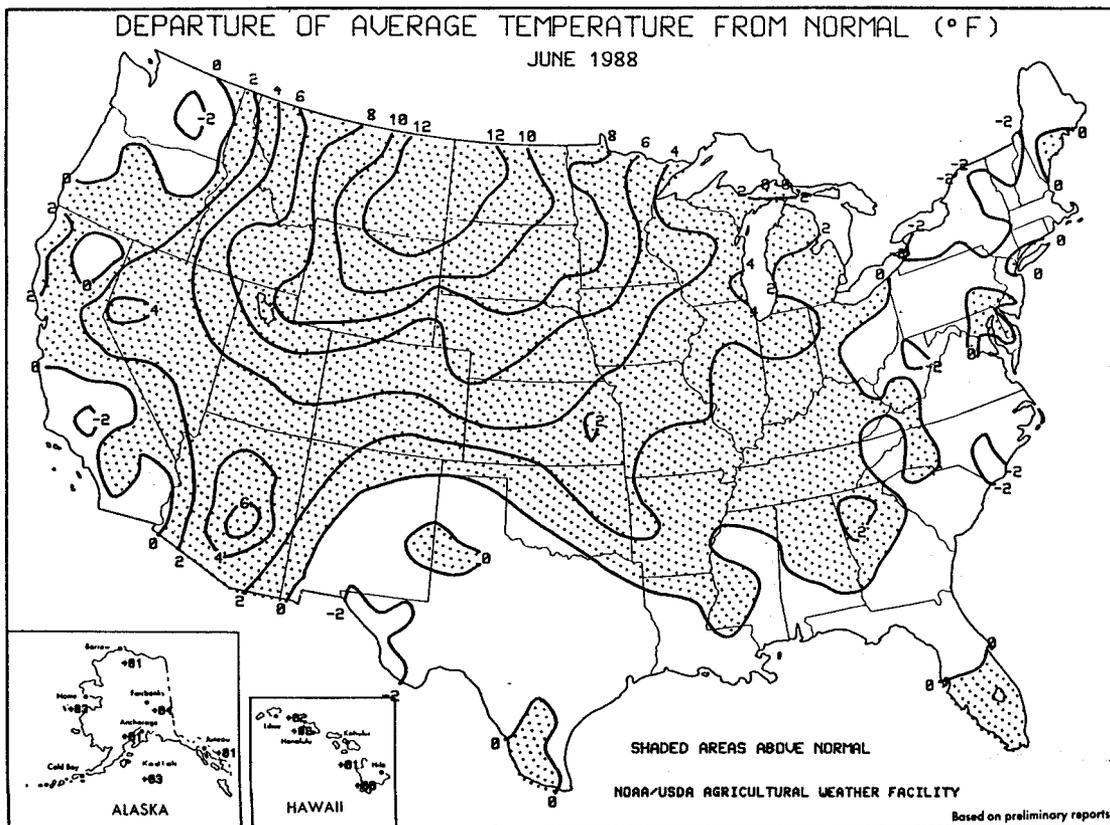
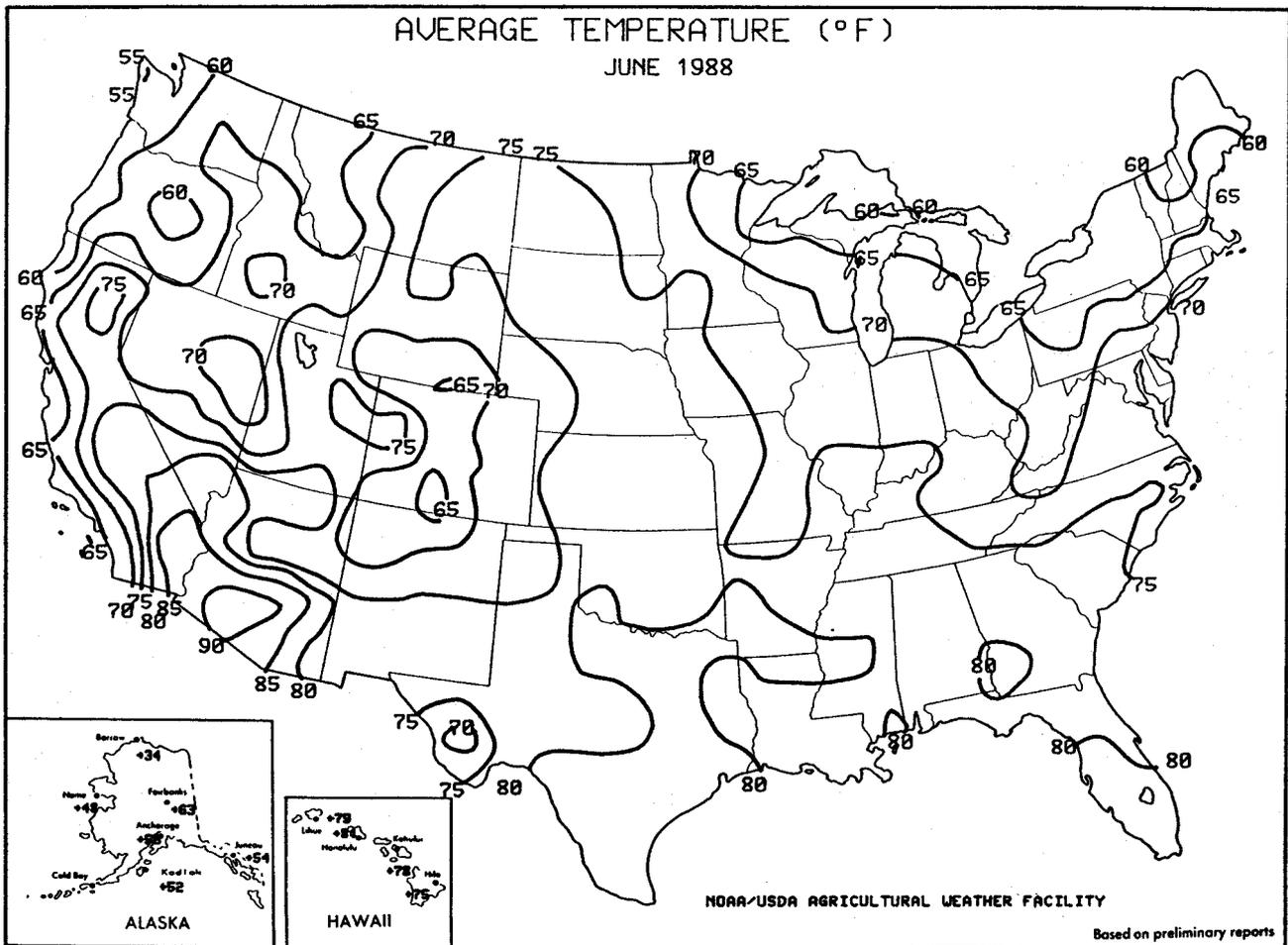
By mid-June, cotton was finished planted except in Oklahoma and Texas. On July 3, planting was near completion in these States. In the 14 major producing States, squaring was 10 points ahead of the 50 percent average and slightly ahead of 1987. Eleven percent of the acreage had set bolls, compared with 18 percent in 1987 and 14 percent normally. At the end of June, dryness left cotton mostly fair to poor except in the southern Great Plains and Southwest where condition was mostly good to fair.

Sorghum was virtually planted by the end of June but a few acres remained to be planted in Oklahoma and Texas. Sorghum was heading in Arkansas, Oklahoma, Texas, and Louisiana. In Texas, harvest started in the Rio Grande Valley, Coastal Bend, and along the Upper Coast.

Rice was 7 percent headed, 2 points below average on July 3rd. Heading was limited to Louisiana and Mississippi.

The dry weather proved to be beneficial for the winter wheat harvest. At the beginning of June, only 3 percent of the acreage was harvested in the 20 major producing States. Six of the 20 major producing were combining wheat but all were behind normal. Near midmonth harvest reached 23 percent completion 6 points ahead of normal. From midmonth on combines roared through the central Great Plains and by July 3, 64 percent of the acreage was harvested. This was 6 points ahead of 1987 and 20 points above the 5-year average. Wheat harvest was virtually finished in Kansas, Oklahoma, Missouri, Illinois, Arkansas and Georgia. Spring wheat was 87 percent headed, 30 points ahead of normal by July 3. Heading was finished in South Dakota and neared completion in Minnesota. Inadequate moisture plagued crop development and growth in the Northern Great Plains and Rocky Mountain States the entire month. Crop condition was mostly poor except in Idaho where condition was mostly good.





Temperature and Precipitation Data for June 1988

States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches	
	Average	Departure	Total	Departure		Average	Departure	Total	Departure		Average	Departure	Total	Departure
AL BIRMINGHAM	78	1	0.6	-3.0	BATON ROUGE	80	0	4.2	1.0	DAYTON	71	0	1.4	-2.4
MOBILE	80	-1	2.3	-2.7	LAKE CHARLES	79	-1	5.7	1.6	TOLEDO	70	1	0.3	-3.2
MONTGOMERY	79	0	2.3	-1.2	NEW ORLEANS	78	-2	11.3	6.7	YOUNGSTOWN	66	0	0.7	-2.8
AK ANCHORAGE	56	1	0.8	-0.3	SHREVEPORT	80	0	0.1	-3.3	OK OKLAHOMA CITY	78	1	3.6	-0.2
BARROW	34	0	0.2	-0.2	ME CARIBOU	59	-2	2.4	-0.8	TULSA	80	2	0.6	-4.0
FAIRBANKS	63	4	2.2	0.9	PORTLAND	64	1	2.4	-0.7	OR ASTORIA	56	0	3.5	1.0
JUNEAU	54	1	2.0	-0.9	MD BALTIMORE	73	1	0.8	-2.9	BURNS	61	0	1.0	0.4
KODIAK	52	2	1.6	-2.4	CHATHAM	61	-1	2.3	-0.4	MEDFORD	66	1	1.0	0.4
NOME	48	3	1.4	0.2	SALISBURY	72	0	1.7	-1.8	PENDLETON	64	-2	0.3	-0.4
AZ FLAGSTAFF	62	3	1.8	1.2	MA BOSTON	68	0	1.3	-1.6	PORTLAND	63	0	2.3	0.9
PHOENIX	93	7	T	-0.1	MI ALPENA	65	3	0.8	-2.3	SALEM	61	0	2.0	0.8
PRESCOTT	72	5	0.9	0.3	DETROIT	70	2	1.0	-2.4	PA ALLENTOWN	68	-1	1.8	-1.6
TUCSON	87	4	0.2	-0.1	FLINT	67	1	0.6	-2.6	ERIE	66	0	1.3	-2.7
WINSLOW	73	1	1.1	0.7	GRAND RAPIDS	68	1	0.3	-3.4	HARRISBURG	71	0	1.0	-2.6
YUMA	87	0	0.1	0.1	HOUGHTON LAKE	66	3	0.9	-2.3	PHILADELPHIA	72	1	0.6	-3.3
AR FORT SMITH	80	2	1.8	-1.9	LANSING	68	1	0.2	-3.7	PITTSBURGH	68	0	1.3	-2.2
LITTLE ROCK	79	1	1.6	-2.1	MARQUETTE	61	2	0.7	-3.2	SCRANTON	65	-2	0.8	-2.7
CA BAKERSFIELD	75	-3	T	0.0	MUSKEGON	67	2	0.5	-2.0	RI PROVIDENCE	67	0	0.9	-1.9
EUREKA	58	3	2.2	1.7	SAULT ST. MARIE	59	1	0.5	-2.7	SC CHARLESTON	77	-1	2.3	-4.2
FRESNO	76	1	T	0.0	MN ALEXANDRIA	73	8	0.7	-3.3	COLUMBIA	77	-1	1.7	-2.8
LOS ANGELES	64	-2	0.0	0.0	DULUTH	63	4	4.6	0.6	FLORENCE	76	-1	2.1	-2.6
REDDING	75	-2	1.7	0.9	INT'L FALLS	68	6	4.4	0.8	GREENVILLE	75	0	3.3	-1.1
SACRAMENTO	73	2	0.2	0.1	MINNEAPOLIS	74	6	0.2	-3.8	SD ABERDEEN	75	9	0.9	-2.3
SAN DIEGO	65	-1	0.0	0.0	ROCHESTER	70	4	1.5	-2.2	HURON	75	8	0.8	-2.5
SAN FRANCISCO	63	2	0.6	0.5	ST. CLOUD	71	6	0.1	-4.4	RAPID CITY	76	10	1.1	-2.2
STOCKTON	72	-1	0.2	0.1	MS GREENWOOD	79	-1	0.1	-3.3	SIoux FALLS	76	8	0.9	-2.8
CO DENVER	72	5	1.3	-0.3	JACKSON	80	1	0.1	-3.0	TN BRISTAL	71	-1	0.9	-2.6
GRAND JUNCTION	77	4	0.2	-0.2	MERIDIAN	78	0	0.9	-2.6	CHATTANOOGA	77	2	0.6	-2.7
PUEBLO	73	2	1.9	0.7	MO COLUMBIA	75	2	0.5	-3.2	KNOXVILLE	74	0	0.5	-3.4
CT BRIDGEPORT	69	1	0.8	-2.1	KANSAS CITY	78	3	1.8	-2.9	MEMPHIS	80	2	2.2	-1.4
HARTFORD	67	-2	0.7	-2.7	SAINT LOUIS	78	3	2.0	-1.7	NASHVILLE	77	2	0.5	-3.2
DC WASHINGTON	74	0	1.0	-2.4	SPRINGFIELD	75	1	5.4	0.7	TX ABILENE	79	-2	3.8	1.2
FL APALACHICOLA	79	-1	3.6	-1.2	MT BILLINGS	76	12	0.4	-1.6	AMARILLO	73	-2	3.7	0.2
DAYTONA BEACH	79	0	2.4	-4.0	GLASGOW	77	13	1.5	-0.9	AUSTIN	80	-1	2.6	-0.4
FT. MYERS	83	2	7.2	-1.5	GREAT FALLS	70	8	1.4	-1.3	BEAUMONT	80	-1	4.6	0.6
JACKSONVILLE	78	-2	3.7	-2.1	HAVRE	71	8	1.8	-0.4	BROWNSVILLE	82	-1	2.9	0.2
KEY WEST	82	-1	3.6	-1.5	HELENA	68	8	1.5	-0.5	CORPUS CHRISTI	81	-1	1.6	-2.2
MIAMI	82	1	10.4	1.2	KALISPELL	63	4	1.5	-0.7	DEL RIO	83	-1	1.8	0.1
ORLANDO	80	-1	4.2	-2.9	MILES CITY	79	13	0.7	-2.1	EL PASO	79	-2	T	-0.5
TALLAHASSEE	78	-1	2.1	-4.4	MISSOULA	64	4	1.7	-0.1	FORT WORTH	80	-1	3.2	0.9
TAMPA	81	0	5.2	-0.1	NE GRAND ISLAND	77	6	4.4	0.7	GALVESTON	81	-1	2.4	-1.1
WEST PALM BEACH	81	0	11.0	3.0	LINCOLN	78	6	0.7	-3.2	HOUSTON	81	0	2.0	-2.4
GA ATLANTA	79	3	0.2	-3.2	NORFOLK	76	5	1.3	-3.0	LUBBOCK	78	0	1.0	-1.8
AUGUSTA	76	-1	4.9	1.0	NORTH PLATTE	75	6	3.1	-0.6	MIDLAND	79	-1	0.8	-0.6
MACON	79	0	0.9	-2.8	OMAHA	77	5	2.9	-1.2	SAN ANGELO	79	-2	2.1	0.3
SAVANNAH	78	-1	2.6	-3.1	SCOTTSBLUFF	73	5	2.3	-0.6	SAN ANTONIO	81	-1	5.5	2.5
HI HILO	75	0	5.1	-1.0	VALENTINE	77	8	3.4	0.5	VICTORIA	81	-1	1.7	-2.8
HONOLULU	81	2	T	-0.4	NV ELKO	65	4	0.6	-0.3	WACO	80	-2	5.6	3.0
KAHULUI	78	1	T	-0.2	ELY	63	4	0.6	-0.2	WICHITA FALLS	80	-1	2.5	-0.4
LIHUE	79	2	0.5	-1.1	LAS VEGAS	85	2	T	0.0	UT BLANDING	71	4	1.4	1.0
ID BOISE	71	5	0.5	-0.5	RENO	67	5	0.6	0.3	CEDAR CITY	69	3	0.7	0.2
LEWISTON	67	1	1.7	0.3	WINNEMUCCA	67	3	0.5	-0.4	MILFORD	69	3	0.3	-0.1
POCATELLO	70	7	0.4	-0.7	NH CONCORD	63	-2	0.8	-2.1	SALT LAKE CITY	76	8	T	-0.9
IL CAIRO	-	-	0.5	-3.9	NJ ATLANTIC CITY	69	0	1.0	-1.7	VT BURLINGTON	63	-2	3.3	-0.4
CHICAGO	72	3	1.1	-3.2	NM ALBUQUERQUE	74	-1	1.3	0.8	VA LYNCHBURG	71	-1	2.0	-1.5
MOLINE	73	2	1.2	-3.1	CLOVIS	75	1	4.0	1.4	NORFOLK	74	-1	3.8	0.4
PEORIA	73	2	0.6	-3.3	ROSWELL	78	-1	1.3	0.3	RICHMOND	73	-1	2.3	-1.3
QUINCY	74	1	2.8	-1.2	ALBANY	65	-2	1.4	-1.8	ROANOKE	71	-1	3.7	0.3
ROCKFORD	71	2	0.5	-4.1	NY BINGHAMTON	63	-2	1.1	-2.5	WA QUILLAYUTE	55	-1	2.3	-0.5
SPRINGFIELD	74	1	0.6	-2.9	BUFFALO	64	-2	1.6	-1.1	SEATTLE-TACOMA	60	0	1.6	0.2
IN EVANSVILLE	76	1	1.1	-2.4	NEW YORK	72	1	0.9	-2.2	SPokane	62	0	1.1	-0.1
FORT WAYNE	73	3	0.8	-2.9	ROCHESTER	64	-3	1.1	-1.7	WALLA WALLA	67	-1	1.1	0.2
INDIANAPOLIS	73	2	0.4	-3.6	SYRACUSE	64	-2	2.5	-1.1	YAKIMA	62	-2	1.0	0.4
SOUTH BEND	72	3	0.5	-3.4	NC ASHEVILLE	69	-1	0.9	-2.8	WV BECKLEY	66	1	2.3	-1.7
IA DES MOINES	76	4	2.8	-1.4	CHARLOTTE	75	0	1.6	-2.0	CHARLESTON	71	0	0.9	-2.4
DUBUQUE	71	3	0.7	-3.5	GREENSBORO	72	-1	3.2	-0.7	ELKINS	63	-2	1.7	-2.7
SIoux CITY	76	5	0.5	-3.5	HATTERAS	72	-2	2.3	-2.0	HUNTINGTON	71	-1	0.8	-2.6
WATERLOO	73	4	3.1	-1.2	NEW BERN	75	-1	5.4	0.3	PARKERSBURG	69	-2	0.8	-3.1
KS CONCORDIA	79	5	3.2	-1.1	RALeIGH	72	-2	2.9	-0.8	WI GREEN BAY	68	4	0.7	-2.5
DODGE CITY	77	3	0.2	-2.9	WILMINGTON	74	-2	2.9	-2.7	LACROSSE	74	5	3.3	-0.9
GOODLAND	75	5	1.9	-0.9	ND BISMARCK	76	11	2.2	-0.8	MADISON	70	3	2.1	-1.8
TOPEKA	75	1	3.1	-2.0	FARGO	74	9	1.2	-1.8	MILWAUKEE	70	5	0.7	-2.9
WICHITA	79	2	1.9	-2.1	GRAND FORKS	71	8	1.1	-1.8	WAUSAU	68	4	1.8	-2.2
KY BOWLING GREEN	74	-1	2.1	-2.4	WILLISTON	77	13	3.5	0.8	WY CASPER	73	10	0.3	-0.9
JACKSON	73	2	1.4	-2.4	OH AKRON-CANTON	68	0	0.4	-2.9	CHEYENNE	67	6	2.0	0.0
LEXINGTON	74	2	0.6	-3.7	CINCINNATI	72	1	1.2	-2.9	LANDER	73	10	0.2	-1.2
LOUISVILLE	75	2	0.9	-2.7	CLEVELAND	69	0	0.7	-2.8	SHERIDAN	74	12	0.6	-1.7
LA ALEXANDRIA	79	-1	1.1	-2.8	COLUMBUS	69	-1	1.3	-2.7	PR SAN JUAN	84	3	1.5	-3.4

Based on 1951-80 normals.

National Agricultural Summary

July 4 to 10, 1988

HIGHLIGHTS: Precipitation improved crops in the central Great Plains, Delta, and Southeast, but much more moisture is needed to alleviate the drought. High temperatures and the lack of moisture continued taking its toll on crops in the central and eastern Corn Belt. Soil moisture remained short in most areas of the Nation. Fieldwork averaged slightly more than 6 days in most areas. Rain limited fieldwork to less than 5 days in some Delta States.

Dry weather pushed wheat harvest to 75 percent (%) completion, 15 percentage points above the 5-year average. Harvest moved into the Pacific Northwest. Spring wheat was 95% headed, 15 points ahead of normal. Harvest was underway in Minnesota. Corn was silking on 19% of the acreage, 2 times slower than in 1987 but slightly ahead of normal. Corn was mostly fair to poor. Soybeans blooming reached 18% completion, 13 points ahead of normal. Precipitation allowed farmers to virtually complete seeding in the Delta and Southeast. Soybeans were fair to poor. Cotton improved with rain in the Delta and Southeast. Squares were present on 75% of the acreage, 11 points ahead of normal. Twenty-one percent of the acreage set bolls, slightly behind normal. Sorghum was 18% headed, 1 point below average. Livestock was mostly fair.

SMALL GRAINS: Winter wheat was 75% harvested, compared with 65% in 1987 and 60% normally. Harvest increased 10 points above the previous week. Harvest jumped dramatically in Ohio and Michigan, 44 and 49 points, respectively. A fourth of the acreage was combined in Nebraska, while nearly one-third of South Dakota's acreage was cut. Harvest neared completion in Illinois, Indiana, New Mexico, and Texas. Harvest was just beginning in Oregon and Montana. Test cutting was underway in Washington. Harvest had not begun in Idaho.

Spring wheat was 95% headed, surpassing the average by 15 points but nearly equalled 1987. Crop condition was mostly poor. Idaho's spring wheat was mostly good. Heading neared completion while 18% of the acreage turned color. Harvest was underway in Minnesota.

CORN: Corn was mostly fair to poor. High temperatures and the lack of moisture pushed crop condition to mostly poor in the Corn Belt. Rain improved Georgia's corn but development was behind normal. In Kansas, corn tasseled ahead of schedule with a few pollination problems. Corn entered the pollination stage with a critical moisture shortage problem in Kentucky. Corn suffered further deterioration in northern Missouri. Nebraska's corn tasseled in many areas. Lack of precipitation and excess heat dried corn stands drastically in Ohio. In the 17 major producing States, corn silking was 19% finished, just slightly ahead of normal. Despite the early seeding, silking was 19 points behind 1987.

SOYBEANS: Precipitation allowed soybean planting to resume in the Delta and Southeast. Most States neared completion. A few acres of soybeans remained to be planted in Missouri and Kansas. Thirty-five percent of the soybean acreage was blooming in the 19 major producing States, 9 points behind 1987, but 13 points ahead of normal. The lack of moisture caused blooming to lag behind normal in the Delta and Southeast. Blooming was considerably ahead of normal in most Corn Belt

States. Soybeans were mostly fair to poor in the Corn Belt and mostly poor in the Delta. Precipitation improved condition in the central Great Plains and Southeast to mostly fair to good. Nebraska's soybean plants were smaller than normal because of the drought. Kansas soybeans were blooming but a few early fields set pods. Pod setting was underway in Alabama, Georgia, and Illinois.

COTTON: Cotton squaring equaled 1987 but was 11 points ahead of the 64% average. Boll setting climbed 10 points ahead of the previous week but was still 9 points behind 1987 year and 1 point below normal. Cotton was mostly good to fair. Rain improved cotton growth in Arkansas. In Georgia, cotton developed slowly but showed some improvement. Cotton bolls opened rapidly in southern Texas and some early planted fields were defoliated. Dryness caused some plants to shed squares in central and Blackland areas. California's cotton looked good but development was 3 weeks behind normal in some areas. Growers sprayed to combat heavy insect infestations in central Arizona.

SORGHUM: Sorghum was 18% headed, compared with 21% in 1987 and 19% normally. Heading lagged behind normal in virtually all major producing States. Sorghum was mostly fair to good. Sorghum harvest increased in the Valley, Coastal Bend, and southern Texas. Showers interrupted harvest along the Upper Coast. Harvest moved into south-central areas and heading continued from the Blacklands to the Low Plains.

OTHER CROPS: Rice was 12% head, 2 points below average. Heading lagged behind normal in Mississippi and Texas.

Tobacco harvest was active in Georgia. The dry weather stunted tobacco growth in Kentucky.

Alabama's peanuts were 70% pegged, 13 points above average. The crop was mostly fair to good. Peanuts developed slower than normal in Georgia. Planting was virtually finished in Texas.

FRUITS AND NUTS: Florida's citrus trees were good. Young trees showed new growth, but some older trees were not yet flushed with new foliage. Valencia harvest slowed and grapefruit harvest was virtually complete. Citrus progressed well in Texas. In California, citrus and stonefruit harvests were active. Nut crops progressed well. Valencia orange and grapefruit harvests continued in central Arizona.

VEGETABLES: In Florida, growers prepared land for fall crops. Harvest was mostly finished, but a few tomatoes were picked for local sales in northern areas. Some late sweet corn was harvested in the Zellwood area. In the Rio Grande Valley, preparation for fall planting continued.

California's vegetable harvest consisted mostly of broccoli, carrots, celery, sweet corn, lettuce, and melons.

PASTURES AND LIVESTOCK: Pastures showed some signs of growth in the Delta and Southeast. Growth was still limited in these and most other areas. Growth was virtually nonexistent in the Corn Belt. Livestock was mostly fair. Farmers culled herds as hay supplies shortened. Heat stress caused some losses in Iowa.

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: Beneficial rains again central, southern portions State; lighter amounts northern third; 2.00 to 3.00 in. central, south with most totals less than 0.50 in. north. Temperatures averaged 5° below normal except extreme north 1° above normal.

Days suitable for fieldwork 4.3. Soil moisture 26% very short, 44% short, 28% adequate, 2% surplus. Light rains brought some relief to drought conditions, but more general rains needed to alleviate drought, especially in northern areas. Corn 80% silked, 90% 1987, 83% avg.; 50% dented, 37% 1987, 27% avg.; 20% mature, 18% 1987, 8% avg.; 37% very poor, 46% poor, 17% fair. Sorghum 97% planted, 95% 1987, 95% avg.; 10% very poor, 31% poor, 52% fair, 7% good. Cotton 95% squaring, 90% 1987, 86% avg.; 32% setting bolls, 35% 1987, 23% avg.; 4% very poor, 24% poor, 60% fair, 12% good. Soybeans 94% planted, 96% 1987, 96% avg.; 16% blooming, 18% 1987, 16% avg.; 6% setting pods, 6% 1987, 4% avg.; 9% very poor, 25% poor, 55% fair, 11% good. Peanuts 70% pegging, 68% 1987, 57% avg.; 54% fair, 38% good, 8% excellent. Livestock mostly fair to good; pastures 31% very poor, 37% poor, 30% fair, 2% good. Pasture feed supplies 39% very short, 48% short, 13% adequate. Hay, roughage supplies 52% very short, 44% short, 4% adequate. Primary activities: Harvesting vegetables, fruits, potatoes, catfish; controlling insects on fruit, vegetables; spraying cotton; cultivating row crops; applying fungicides to peanuts; managing fishponds; general care of livestock, poultry.

ARIZONA: Low grade monsoon-type weather 6th; widely scattered showers, thunderstorms White Mountains, southeast. Dry southwesterly winds western half; sunny, very hot. Thunderstorm activity 8th, 9th wide spread, intense, extended further north, west. Rainfall amounts 0.10 to 1.00 in. eastern two-thirds; little west. Average temperatures 2° below to 6° above normal.

Cotton 96% squaring, 60% setting bolls. Central cotton fields hit hard by insects; active spraying for boll weevils, pink boll worms, army worms, spider mites. Insect infestations light to moderate other areas. Irrigation, cultivation continued statewide. Crop mostly good. Alfalfa good to excellent; cutting, irrigation primary activities. Insect, weed infestations light, except moderate levels south central. Hay, roughage supplies 89% adequate, 11% surplus. Small grain harvest neared completion, 98% harvested. Processing tomato harvest continued west. Grapes, watermelons, honeydew shipments continued. Cantaloup, honeydews, mixed melons harvested, shipped central areas. Chipper potatoes, assorted vegetables harvested. Dry onion harvest progressed east. Valencia oranges, grapefruit harvest continued central.

ARKANSAS: Temperatures near to slightly below normal. Scattered thundershowers mostly southern portion, provided temporary relief from summer drought. Temperature extremes 60°; 100°. Rainfall totals none to 2.33 in.

Days suitable for fieldwork 6.0. Soil moisture supplies 89% short, 11% adequate. Still planting soybeans, recent moisture should aid germination. Sorghum 100% emerged, 100% 1987. Cotton, rice, soybean growth improved due to recent rains. Corn grain in blister stage; 16% poor, 44% fair, 40% good. Irrigation continued in some areas. Second cutting of hay continued. Tomato harvest winding

down. Livestock fair. Hay supplies short to very short. Pasture QApoor, recent rains provided temporary relief. Stock water supplies short.

CALIFORNIA: Week began with low pressure along coast. This kept temperatures below normal with isolated showers over northern mountains. By midweek strong high pressure built over State with temperatures warming above normal. Overall, State dry and temperatures averaged near normal for week.

Dry bean planting completed some areas. Field corn stands tasseling, silking early fields. Cotton planting looked good, progress 3 weeks behind some areas. Growers busy thinning, fertilizing, irrigating, applying materials, control insects, weeds. Wheat, barley harvesting full swing, few areas moving toward completion. Field burning, preparation for 2nd cropping continued. Alfalfa hay cut, baled, some 2nd cutting northern counties. Fields for seed full bloom. Rice fields Butte County showed recovery from stressful start. Wild rice harvest continued, some wind damage Sacramento Valley. Safflower fields bloom Fresno, past bloom other areas. Sugarbeet fields cultivated, treated for mildew, harvest continued Fresno. Irrigation, weed control active. Apricot harvest complete. Mildew, insect control in vineyards. Stonefruit, citrus harvests active. Nut crops progressed well. Broccoli moderate Salinas-Watsonville, fairly heavy Santa Maria area, good quality. Cauliflower moderate both Salinas-Watsonville, Santa Maria good quality. Carrot fairly heavy Salinas-Watsonville, continued active Westside. Celery moderate both Salinas-Watsonville, Santa Maria good quality. Harvest completed south coast. Sweet corn harvest progressed Sacramento Valley, Delta, Huron District, south coast. Lettuce fairly heavy both Salinas-Watsonville, Santa Maria variable quality, weight. Light harvesting south coast. Melons good quality, progressing well San Joaquin Valley. Cantaloup harvest started light volume Westside, picking mixed melons continued. Harvest Palo Verde, Coachella Valley slowed towards completion. Dry onion digging dehydrating, fresh market active Delta, Westside, desert. Fall potato fields Tulelake-Butte Valley continued well. Strawberry moderate Salinas-Watsonville, very light Santa Maria variable quality. Picking for freezer market very light south coast. Harvest completed strawberries Sacramento Valley, picking other berries continued. Tomato harvest fresh market progressed statewide. Fields for processing north, central valley areas continued to ripen. Harvest for processing continued Palo Verde Valley. Livestock fair to good statewide. Nonirrigated rangeland pastures dry statewide. Hay supplies adequate. Irrigated pastures holding up well. Cattle movement to market showed seasonal slow down. Water supplies adequate northern counties, low to very low other areas.

COLORADO: Mostly dry western valleys, considerable moisture in mountains and east. Precipitation ranged 0.04 to 1.25 in. Average temperatures 5° below to 8° above normal.

Days suitable for fieldwork 5.7. Soil moisture 16% very short, 47% short, 37% adequate. Wheat 50% harvested. Corn mostly good to excellent. Spring wheat 63% headed, 11% turning color. Livestock good to excellent, pastures fair to good.

FLORIDA: Thunderstorms scattered over most of State as weak cold front moved in early week. System stalled, producing locally heavy rains parts of central, south. As much as 3.00 to 5.00 in. of rain weekend in spots. Slightly cooler air behind front left temperatures 2° below normal readings north with near normal central, south.

Soil moisture improved somewhat, Panhandle, northern Peninsula; however, very few western Panhandle, upper Peninsula localities have adequate moisture. Elsewhere, moisture supplies ranged from short, west central Peninsula to surplus some lower east coast areas. More widespread general rains needed, nearly all northern crop producing areas. Showers benefited peanuts, soybeans, tobacco but too late for some corn. Tobacco irrigation, harvest active. Soybean planting resumed where rains sufficient. Haymaking more active where sufficient growth available. Scattered showers continued to improve forage prospects some northern Panhandle areas; helped maintain southern pastures. Hay, roughage supplies statewide 62% short, 38% adequate; mostly poor to fair from west central Peninsula northward with few localities showing fair to good grazing; however, some hay feeding continued. Elsewhere Peninsula fair to mostly good. Cattle, Panhandle poor to good, mostly fair. Herds elsewhere fair to mostly good with some excellent several southern Peninsula localities. Citrus trees good. Rain spotty; irrigation continued. More rain needed. Young trees showed new growth, some older trees not yet flushed with young foliage. Valencia harvest slowed. Grapefruit harvest virtually completed. Limited showers, warm days, nights, vegetable producing areas. Many northern, west central localities dry. Last harvest zellwood sweet corn. Tomatoes picked for local sales, north. Most harvests completed. Growers prepared land for fall crops.

GEORGIA: Rainfall typical summer pattern 1.00 to 2.00 in. common, other locations light. East less than 0.25 in. Temperatures slightly below normal. Maximums 90s, several locations 100° or higher.

Days suitable for fieldwork 5.6. Soil moisture 30% very short, 53% short, 17% adequate. Corn improved, development behind average. Cotton improved, development slow. Peanuts much improved, rain in peanut belt, development slower than normal. Soybean pod set began. Tobacco improved, harvest active. Apples fair to good, none harvested. Peaches mostly fair, harvest near 75% completed. Pastures, hay some improvement; poor to fair. Hay supplies 30% very short, 59% short, 11% adequate. Livestock fair to good.

HAWAII: Mostly sunny, warm weather continued. Cooling trade winds from high pressure area helped lower maximum temperatures by degree or two. Rainfall light to moderate, windward and interior areas. Irrigation heavy, hampered by gusty winds early week. Rainfall none to 5.60 in. Trade winds 10 to 25 mph.

Days suitable for fieldwork 7.0. Chinese cabbage production moderate. Head cabbage output moderate to heavy, quality good. Smaller head size due to warmer weather. Head lettuce supplies light. Cucurbit production continued heavy. Papaya production expected to keep increasing through August. Post Fourth of July watermelon production lower, but higher than 1987.

IDAHO: Cool, wet weather, north. Near normal temperatures, dry rest of State.

Days suitable for fieldwork 6.0. Soil moisture 17% very short, 46% short, 37% adequate. Irrigation water supplies fair. Potatoes good; 85% height 12 in. and beyond; 40% closing middles. Spring wheat good; 90% headed, 94% 1987, 80% avg.; 18% turning color. Nearly all winter wheat headed,

50% turning color; good. Spring barley 92% headed, 25% turning color. Cherries 94% harvested, 82% avg. First cut alfalfa over 90% harvested; 2nd cutting alfalfa 8% harvested. Mint harvest underway. Livestock good. Range, pasture fair. Hay, roughage 24% short, 71% adequate, 5% surplus.

ILLINOIS: Temperature lows averaged normal west, 1 to 6° above normal east; highs averaged 5 to 12° above normal. Precipitation averaged 0.25 to 0.40 in. east central, 0.25 in. or less elsewhere.

Days suitable for fieldwork 7.0. Soil moisture 100% short. Soybeans 5% setting pods, 50% 1987, 15% avg. Oats 90% turning yellow, 100% 1987, 78% avg.; 68% ripe, 82% 1987, 42% avg.; 27% harvested for grain, 61% 1987, 37% avg.; 10% very poor, 24% poor, 53% fair, 13% good. Alfalfa 2nd crop cut 70%, 71% 1987, 56% avg.; 18% very poor, 38% poor, 42% fair, 2% good. Hay, roughage supplies 32% very short, 50% short, 18% adequate. Pasture 57% very poor, 35% poor, 8% fair.

INDIANA: Temperatures 5 to 10° above normal. Lows mid to upper 60s, highs mid 90s to 104°. Precipitation minimal. Totals less than 0.10 to 1.00 in.

Days suitable for fieldwork 6.9. Topsoil moisture 100% short. Subsoil moisture 99% short, 1% adequate. Corn, soybeans deteriorated. Corn height 45 in., 76 in. 1987, 55 in. avg. Soybeans height 12 in., 23 in. 1987, 14 in. avg. Oats 25% combined, 38% 1987, 13% avg. Alfalfa 67% cut twice, 46% 1987, 40% avg. Pastures 84% very poor, 16% poor. Forage for livestock 67% short, 33% adequate. Hot, dry week severely stressed crops.

IOWA: Temperatures 5 to 8° above normal; extremes 56 to 101°. Precipitation averaged 0.70 in.; extremes 0.04 to 3.85 in.

Days suitable for fieldwork 6.9. Topsoil moisture 98% short, 2% adequate; subsoil moisture 98% short, 2% adequate. Oats 10% very poor, 34% poor, 46% fair, 10% good. Oats 99% turning color, 94% 1987, 67% avg. Oats 39% harvested, 18% 1987, 8% avg. Winter wheat fair to poor. Winter wheat 71% harvested, 53% 1987, 28% avg. Hay 35% very poor, 45% poor, 18% fair, 2% good. Second crop alfalfa 46% harvested, 46% 1987, 31% avg. Availability of hay for feed 8% very short, 31% short, 59% adequate, 2% surplus. Hay being fed to supplement pastures 1% none, 19% light, 50% moderate, 30% heavy. Corn 30% tasseled, 60% 1987, 22% avg. Livestock mostly good. Some losses from heat stress. Heavy movement cows, sows, to market because of high grain prices. Pastures 71% very poor, 22% poor, 6% fair, 1% good.

KANSAS: Temperatures averaged 80 to 82°, 1 to 5° above normal. Rainfall light early week, more general toward end of week. Totals vary from less than 0.25 in. central, 0.75 to 1.50 in. west, 0.48 in. east. Locally heavy rains 3.00 to 5.00 in. scattered stations.

Days suitable for fieldwork 6.0. Topsoil moisture 74% short, 26% adequate. Subsoil moisture 67% short, 33% adequate. Wheat harvest complete, one of fastest on record. Planting sorghum, soybeans neared completion. Very few fields double-crop stands behind wheat left for planting. Spider mites, chinch bug widespread in corn, sorghum. Light to moderate European, southwestern corn borer infestations southwest, south central counties. Corn tasseling ahead schedule, few pollination problems. Soybeans blooming few early fields setting pods, condition generally good considering head, moisture stress. Range, pastures temporary relief from recent rains. Grazing short, ranchers feeding, culling to match herds with carrying capacity. Some ranchers hauling water.

Third cutting alfalfa started, outlook poor. Second cutting about over.

KENTUCKY: Week very hot, dry. First part of week, highs 90s; late week above 100° for 3 consecutive days. Daily lows 3 to 5° above normal, highs averaged 8 to 12° above normal. No rain first part of week, only isolated showers by weekend. Rainfall averaged 1.00 to 1.50 in. below normal.

Days suitable for fieldwork 6.0. Soil moisture 98% very short, 2% short. Stock water 30% very short, 55% short, 15% adequate. Some livestock ponds dry. Corn crop entered pollination stage with critical moisture shortage. Daily twisting, curling. Corn very poor to poor. Soybean planting continued on limited basis due to limited moisture. Tobacco growth stunted. Burley prospects below average. Winter wheat 94% harvested, 96% 1987, 89% avg. Cool season grass pastures dormant. Pastures 80% very poor, 20% poor. Hay, roughage supplies for remainder of feeding season 65% very short, 31% short, 4% adequate.

LOUISIANA: Temperature 1 to 3° below normal. Temperature extremes 66°; 100°. Rainfall averaged 0.99 to 3.63 in.

Days suitable for fieldwork 3.8. Soil moisture 10% very short, 24% short, 56% adequate, 10% surplus. Corn fair; 99% silked, 67% dough stage, 9% mature. Sorghum 34% headed, 47% 1987, 59% avg.; 1% turning color. Soybeans 87% emerged. Sweetpotatoes fair; 91% planted, 100% 1987, 99% avg. Hay 1st cutting 88%. Peaches fair to good; 63% harvested. Sugarcane good. Pasture, pecans, vegetables fair. Livestock fair to good. Hay, roughage supplies short to very short; 84% livestock feed from pastures. Main activities: Fertilizing rice; harvesting hay, vegetables, peaches; planting soybeans, sweetpotatoes; cultivating, spraying soybeans.

MARYLAND & DELAWARE: **Maryland:** Precipitation averaged 0.04 in. Isolated thunderstorms only. Average temperature 76°, normal 75°. General temperature extremes 49°; 101°. Mountain extremes 36°; 102°.

Days suitable for fieldwork 6.9. Topsoil moisture 90% very short, 10% short. Subsoil moisture 80% very short, 20% short. Pasture 90% poor, 10% fair. Immediate hay supply adequate. Corn 80% poor, 20% fair. Soybeans 50% poor, 50% fair. Soybeans 80% planted, 95% avg. Moisture adequate for further soybean planting. Tobacco 70% poor, 30% fair. Wheat, barley, rye good. Wheat 85% harvested, 75% 1987. Barley 98% harvested, 99% avg. Rye 65% harvested, 75% avg. Alfalfa 2nd cutting 85%, 70% avg. Other hay 2nd cutting 45%, 45% avg. Apples 50% fair, 50% good. Peaches 70% fair, 30% good.

Delaware: Precipitation averaged trace. Average temperature 76°, normal 75°.

Days suitable for fieldwork 7.0. Topsoil moisture very short. Subsoil moisture 70% very short, 30% short. Pasture poor. Immediate hay supply adequate. Corn 40% poor, 60% fair. Soybeans 10% poor, 90% fair. Soybeans 70% planted, 95% avg. Wheat 20% fair, 80% good. Wheat 90% harvested, 80% avg. Barley 100% harvested, 100% avg. Apples, peaches 30% fair, 70% good.

MICHIGAN: Temperatures ranged 5 to 11° above normal. Temperature extremes 44°; 103°. Precipitation ranged none to 0.62 in. across State.

Days suitable for fieldwork 7.0. Soil moisture 100% short. Corn 5% silked, 15% 1987, 3% avg.; 30% very poor, 30% poor, 25% fair, 14% good, 1% excellent. Soybeans 10% blooming, 30% 1987, 10% avg.; 20% very poor, 30% poor, 35% fair, 14% good, 1% excellent. Wheat 50% harvested, 20% 1987, 5%

avg. Pastures supplied 20% of livestock feed supplies. Hay, roughage supplies 63% very short, 33% short, 4% adequate. Major activities: Wheat harvest, dry bean planting, cutting hay, cultivation, cherry picking.

MINNESOTA: Temperatures averaged 7 to 10° above normal. Temperature extremes 49°; 104°. Precipitation averaged 0.22 to 1.16 in. Greatest weekly total 3.09 in.

Days suitable for fieldwork 6.4. Topsoil moisture 81% very short, 16% short, 3% adequate. Spring wheat 62% turning ripe, 49% 1987, 14% avg.; 5% combined, none 1987, none avg. Oats 89% turning ripe, 82% 1987, 27% avg.; 9% combined, 3% 1987, 1% avg. Barley 69% turning ripe, 62% 1987, 23% avg.; 4% combined, 1% 1987, none avg. Corn height 52 in., 59 in. 1987, 41 in. avg.; 28% tasseling, 41% 1987, 10% avg. Soybeans height 18 in. avg., 19 in. 1987, 13 in. avg.; 71% blooming, 53% 1987, 18% avg. Winter wheat 32% harvested for grain, 8% 1987, 2% avg. Rye 33% harvested for grain, 6% 1987, 1% avg. Soybeans 15% very poor, 22% poor, 44% fair, 17% good, 2% excellent. Field corn 27% very poor, 23% poor, 43% fair, 7% good. Spring wheat 40% very poor, 41% poor, 19% fair. Hay supplies for remainder of feeding season 39% very short, 46% short, 15% adequate. Livestock feed now obtained from pastures 27%.

MISSISSIPPI: Mostly cool weather with measurable rain on 3 to 4 days south; 1 to 2 days north. Total weekly rainfall none to 5.38 in. Most received less than 1.00 in.

Days suitable for fieldwork 4.9, 4.0 1987, 5.7 avg. Soil moisture 15% very short, 55% short, 30% adequate. Corn poor to very poor; 81% silking, 84% 1987, 78% avg.; 45% dough, 47% 1987, 42% avg. Sorghum poor to fair; 27% heading, 35% 1987, 30% avg. Cotton fair to good; 90% squaring, 97% 1987, 91% avg.; 37% setting bolls, 42% 1987, 22% avg. Rice good; 5% heading, 5% 1987, 8% avg. Soybeans poor; 90% planted, 98% 1987, 94% avg.; 10% blooming, 11% 1987, 10% avg. Peaches 55% harvested, 85% 1987, 59% avg. Hay 53% harvested, 50% 1987, 49% avg. Wheat 100% harvested, 100% 1987, 97% avg. Pasture poor to very poor. Livestock mostly fair. Rains improved conditions for all crops, allowed more soybean planting. Activities: Cultivation, soybean planting, applying chemicals. Hay, roughage 65% very short, 35% short.

MISSOURI: Temperatures averaged 2 to 5° above normal except below normal Bootheel. Precipitation 0.25 in. across western, southern counties. Some locally heavy rains in excess 1.00 in.

Days suitable for fieldwork 6.5. Topsoil moisture supplies 95% short, 5% adequate. Crop conditions little change from previous week's low levels. Further deterioration of corn northern districts. Oats 94% harvested, 76% 1987, 53% avg. Alfalfa 2nd cutting 79% harvested, 82% 1987, 65% avg. Other hay 92% harvested, 85% 1987, 81% avg. Supplies of hay, roughage 43% very short, 53% short, 4% adequate. Stock water supplies 16% critically short, 70% short, 14% adequate, worst shortage north central counties. Pasture 68% very poor, 26% poor, 6% fair.

MONTANA: Temperatures 5 to 10° above normal southeast but near or slightly below normal elsewhere. Scattered thunderstorms early week brought large hail, strong winds and over 1.75 in. rain in spots. Most areas averaged 0.20 to 0.70 in. precipitation.

Days suitable for fieldwork 5.6. Topsoil moisture 60% short, 39% adequate, 1% surplus. Subsoil moisture 82% short, 18% adequate. Winter wheat 23% very poor, 35% poor, 29% fair, 12% good,

1% excellent. Barley 29% very poor, 31% poor, 25% fair, 13% good, 2% excellent. Oats 36% very poor, 31% poor, 22% fair, 10% good, 1% excellent. Range, pasture feed 41% very poor, 36% poor, 14% fair, 8% good, 1% excellent. Winter wheat harvest started; 78% turning or beyond, 57% 1987, 36% avg. Barley 87% headed, 85% 1987, 64% avg. Oats 86% headed, 80% 1987, 57% avg. Hay, roughage supplies 43% very short, 36% short, 18% adequate, 3% surplus. First cutting alfalfa 84% harvested, 86% 1987, 71% avg. Other hay 59% harvested, 48% 1987, 38% avg. Second cutting alfalfa underway in places; 2% statewide.

NEBRASKA: Hot, dry weather occurred first of week followed by cooler temperatures, some rain. Severe weather, heavy rains. Temperatures ranged 1 to 6° above normal. Extremes 50°; 102°.

Days suitable for fieldwork 6.3. Topsoil moisture 68% short, 32% adequate. Subsoil moisture 71% short, 29% adequate. Wheat 90% ripe, 81% 1987, 67% avg. Corn tasseling many areas. Smaller soybean plants being seen due to drought. Alfalfa hay 1% very poor, 53% poor, 42% fair, 4% good. Alfalfa 2nd cutting 60%, 44% 1987, 34% avg. Oats 55% harvested, 25% 1987, 20% avg. Pasture, range feeds short. Hay, roughage supplies mostly adequate to short. Some livestock moved from pastures to other feeding areas; occurred east, central.

NEVADA: Dry conditions continued. Windy early, few isolated thundershowers late. Trace amount precipitation. Average temperature as much as 10° above normal. Extremes 25°; 115°.

Hot, dry weather ideal small grain, hay harvests. Ranges, pastures continued to deteriorate from searing temperatures. Stock water ponds drying fast. Hay, roughage supplies 36% very short, 52% adequate, 12% surplus.

NEW ENGLAND: Precipitation averaged 0.50 to 0.75 in. over northern, central Maine and over central, western Massachusetts to 0.25 in. or less over remainder of New England. Temperatures averaged from low 70s near Canadian Border to upper 70s along south coast. Temperatures slightly above normal north, near normal south.

Days suitable for fieldwork 6.9. Fieldwork 2.0 days ahead. Soil moisture 24% very short, 71% short, 5% adequate; grazing availability 11% very short, 61% short, 28% adequate. Hay, roughage 5% very short, 55% short, 40% adequate. Fed now being obtained from pasture 30%. Maine potatoes good. Rhode Island potatoes fair to good. Connecticut River Valley potatoes fair to good. Field corn fair to good. Sweet corn poor to good. Outdoor tobacco fair. First crop hay 95% cut, 80% avg.; good to excellent. Second crop hay 6% cut, 11% avg.; poor to fair. Apple drop average; scab infection light to average. Blueberry set average. Strawberries 90% harvested. Major farm activities: Haying, harvesting strawberries, vegetables; spraying, irrigating.

NEW JERSEY: Temperatures averaged much above normal. Extremes 53°; 103°. Rainfall averaged 0.09 in. north, 0.18 in. central, 0.52 in. south. Heaviest 24-hour total 1.62 in. on 9th, 10th. Estimated soil moisture percent field capacity averaged 33% north, 22% central, 17% south. Four inch soil temperatures averaged 72° north, central; 74° south.

Scattered weekend showers beneficial; all areas of State need good soaking rain. Above normal temperatures adding to crop stress. Irrigation pumping at full capacity, some pond levels low. Summer vegetable harvest increased. Clingstone peach harvest began. Blueberry harvest active. Raspberry, blackberry picking continued from limited acreage. Field corn, soybean conditions

continued to deteriorate. Hay, pasture growth very poor.

NEW MEXICO: Temperatures ranged 45° Chama to 99° Truth or Consequences. Showers, thundershowers statewide.

Days suitable for fieldwork 5.1. Soil moisture 6% short, 75% adequate, 19% surplus. Wheat 92% harvested, yields below average. Cotton 70% squaring, 20% setting bolls; 10% poor, 50% fair, 40% good. Onions 100% good; harvest slowed by wet fields. Cattle 38% fair, 56% good, 6% excellent. Sheep 8% fair, 84% good, 8% excellent. Range improved to 50% fair, 44% good, 6% excellent. Hay, roughage stocks adequate statewide; no local shortages.

NEW YORK: Week started seasonably, ended with blistering heat. Record or near record heat covered State by 8th. Lows in 60s highs on 8th ranged 93 to 99°. Precipitation very scarce with most areas receiving no rain.

Days suitable for fieldwork 7.0. Soil moisture very short to short. Pastures mostly poor. Hay fair, needs rain for regrowth. Second cutting alfalfa underway. Clover-timothy hay 84% harvested, 69% 1987, 66% avg. Hay, roughage supplies 12% very short, 59% short, 29% adequate. Corn mostly fair. Dry bean emergence slow, uneven. Vegetables under stress except where irrigated. Sweet corn needs rain for ear development. Orange County onions good, crop behind schedule. Lake Ontario peaches fair; other fruits good. Sweet cherries 33% harvested. Grapes Finger Lakes area good to excellent despite dryness.

NORTH CAROLINA: Temperatures averaged 2 to 5° below normal statewide. Temperature extremes 46°; 100°. Precipitation ranged none to 1.77 in. across State.

Days suitable for fieldwork 6.2. Soil moisture 19% very short, 64% short, 17% adequate. Pasture 6% very poor, 29% poor, 38% fair, 27% good. Tobacco 1% very poor, 4% poor, 40% fair, 54% good, 1% excellent. Peanuts 4% poor, 7% fair, 89% good. Sweetpotatoes 100% transplanted, 99% 1987, 99% avg.; 19% fair, 75% good, 6% excellent. Irish potatoes 80% harvested, 79% 1987, 70% avg.; 4% poor, 42% fair, 46% good, 8% excellent. Peaches 41% harvested, 46% 1987, 56% avg.; 31% fair, 63% good, 6% excellent. Truck crops 5% poor, 34% fair, 56% good, 5% excellent. Sorghum 100% planted, 95% 1987, 93% avg. Hay, roughage supplies 2% very short, 27% short, 67% adequate, 4% surplus; 6% very poor, 23% poor, 39% fair, 32% good. Livestock feed obtained from pasture 65%. Apples 11% poor, 56% fair, 33% good. Major farm activities: Cutting hay; harvesting small grains, Irish potatoes, peaches, truck crops, flue-cured tobacco; topping, applying sucker control to tobacco; planting soybeans, sorghum; transplanting sweetpotatoes; fertilizing, spraying nursery crops, peanuts, tobacco, soybeans; cultivating tobacco, soybeans, truck crops, corn; tending livestock; general farm maintenance.

NORTH DAKOTA: Temperatures averaged 6 to 10° above normal. Extremes 48°; 106°. Precipitation variable statewide; heaviest 2.64 in. northeast.

Days suitable for fieldwork 6.4. Moisture supplies improved slightly. Topsoil 35% very short, 45% short, 20% adequate. Subsoil 48% very short, 45% short, 7% adequate. Excessive heat, wind caused further damage to crops. Spring wheat 32% very poor, 49% poor, 15% fair, 4% good; durum 23%, 60%, 17%; winter wheat 31%, 55%, 14%; oats 52%, 44%, 4%; barley 32%, 47%, 21%; corn 20%, 32%, 32%, 16%; flax 20%, 31%, 46%, 3%; soybeans 32%, 27%, 41%; sunflower 5%, 9%, 50%, 36%; dry edible beans 1%, 7%, 35%, 57%; potatoes 74%, 26%. Heat stress

pushing crops through growth stages. Winter wheat 14% combined, 2% 1987, none avg.; spring wheat 24% turning and beyond, 10% 1987, 4% avg.; durum 11%, 7% 1987, 2% avg.; oats 30%, 18% 1987, 7% avg.; barley 36%, 29% 1987, 13% avg.; potatoes 46% bloom or beyond, 63% 1987, 37% avg.; flax 38%, 35% 1987, 28% avg.; dry edible beans 45%, 20% 1987, 17% avg.; soybeans 49%, 19% 1987, 13% avg.; sunflower 1%, 1% 1987, none avg. Pastures very poor to poor.

OHIO: Average high temperatures reached or exceeded 100°. Average low temperatures 50s to low 60s. Rain end of weekend averaged 0.30 to 0.60 in. north, 0.10 to 0.20 in. south.

Days suitable for fieldwork 7.0. Soil moisture 99% short, 17% adequate. Lack of precipitation, excess heat dried corn stands drastically. Wheat harvest surged ahead. Activities included baling straw, hay; liquidating livestock, some harvesting of oats. Spider mites damaged soybeans north. Corn poor to very poor. Soybeans fair to poor. Hay, pasture continued to worsen; both very poor. Hay, pasture supplies 37% very short, 47% short, 16% adequate. Much more rain needed to save soybeans. Corn, hay, pasture already beyond help many areas of State.

OKLAHOMA: Temperatures averaged 2° above normal northeast to 3° below normal Panhandle. Precipitation averaged 0.05 in. central to 0.81 in. Panhandle.

Days suitable for fieldwork 6.3. Topsoil moisture 65% short, 35% adequate. Subsoil moisture 65% short, 35% adequate. Approximately 65% stubble plowed. Cotton 40% fair, 60% good; 45% squaring, 35% 1987, 10% avg.; 15% setting bolls, 5% 1987, 1% avg. Sorghum 2% very poor, 8% poor, 20% fair, 70% good; 85% up to stand, 97% 1987, 80% avg.; 10% heading, 10% 1987, 5% avg. Peanuts 90% up to stand, 95% 1987, 95% avg.; 15% pegging, 20% 1987, 25% avg. Corn 50% tasseling, 80% 1987, 55% avg.; 15% milk to soft-dough 20% 1987, 20% avg. Light rainfall brought temporary relief. Pastures mostly fair. Livestock good. Marketings of cattle mostly average, down from last week. Prices up slightly from previous week.

OREGON: Record breaking cold overnight, average temperature 3 to 5° below normal except southwest valleys, north Cascades, high plateaus normal. Brookings 2° above normal. Precipitation less than 0.50 in., North Cascades; 0.10 extreme southeast; 0.20 in. north valleys.

Soil moisture 29% short, 71% adequate. Barley harvest underway, Wasco. Grass seed swathed, none harvested Union County. Cereal grains turning color Deschutes area. Wheat turning color upper Willamette Valley. Grass seed being cut, harvested. Hay, roughage adequate mid Willamette Valley. Field corn near tasseling, Jackson County. Cherry harvest underway Hood River; Bing cherry harvest ending Wasco County. Caneberry harvest beginning Willamette Valley. Blueberry harvest continued Washington, Jackson Counties. Onions bulbing Jackson County. Vegetables growing well, northwest. Livestock, range, pasture good.

PENNSYLVANIA: Many record high temperatures broken as temperatures soared into low 100s. Precipitation occurred only as some scattered thunderstorms. Averaged temperature 78°, 9° above average. Temperature extremes 45°, 103°. Average precipitation 0.06 in., 0.84 in. below normal.

Days suitable for fieldwork 7.0. Soil moisture 100% short. Corn none silked, none 1987, 2% avg. Corn height 21 in., 44 in. 1987, 34 in. avg.; 21% very poor, 37% poor, 32% fair, 10% good. Tobacco 100% transplanted, 100% 1987, 100% avg. Soybeans 97% planted, 97% 1987, 97% avg. Soybeans 14% very poor, 33% poor, 42% fair, 10% good, 1% excellent.

Barley 9% heading or headed, 7% 1987; 15% turning yellow, 13% 1987; 18% ripe, 20% 1987; 58% harvested, 60% 1987. Wheat 6% heading or headed, 9% 1987; 31% turning yellow, 34% 1987; 47% ripe, 42% 1987; 16% harvested, 15% 1987. Wheat 1% very poor, 5% poor, 37% fair, 43% good, 14% excellent. Oats 45% heading or headed, 44% 1987; 46% turning yellow, 46% 1987; 9% ripe, 10% 1987. Oats 5% very poor, 22% poor, 37% fair, 30% good, 6% excellent. First cutting alfalfa 99%, 96% 1987. Second cutting alfalfa 50%, 34% 1987. First cutting clover-timothy 96%, 89% 1987. Hay stands mostly fair to good. Feed from pastures below average. Hay, roughage supplies 28% very short, 47% short, 25% adequate; 17% of livestock feed now obtained from pastures. Activities: Too dry, hot for much activity. Some areas able to plant soybeans; transplant tobacco; harvest barley, wheat, hay, haylage, vegetables; weed control; care for livestock; maintain machinery.

PUERTO RICO: Island average rainfall 1.43 in., 0.23 in. above normal. Highest weekly total rainfall 6.48 in. San Lorenzo followed by 3.23 in. Canovanas, 2.99 in. Juncos. Highest 24-hour total rainfall 2.16 in. Rio Piedras. Total rainfall since January 1st 26.94 in., 4% above normal. Divisional temperature averaged about 80 to 82° coasts, 76 to 78° interior with mean station temperature ranging from 68° Pico Del Este-Luquillo to 84° Roosevelt Roads. Lowest minimum temperature 64° Pico Del Este-Luquillo, highest maximum temperature 94° several places.

SOUTH CAROLINA: Temperatures rose to mid 90s to low 100s. Rainfall ranged 1.00 in. upstate to less than 0.10 in. Coastal Plain.

Days suitable for fieldwork 6.3. Soil moisture 23% very short, 74% short, 3% adequate. Cotton 60% squaring, 86% 1987, 88% avg.; 16% setting bolls, 34% 1987, 49% avg.; 5% poor, 87% fair, 8% good. Soybeans 97% planted, 97% 1987, 97% avg.; 1% blooming, 4% 1987, 5% avg.; 4% poor, 90% fair, 6% good. Tobacco fair to good; 75% topped, 67% 1987, 83% avg. Peanuts fair to good. Sorghum fair; 83% planted, 91% 1987, 90% avg. Oats 100% harvested, 96% 1987, 96% avg. Peaches fair to good; 38% harvested, 45% 1987, 48% avg. Pastures poor to fair. Livestock fair to good. Hay, roughage supplies 27% very short, 66% short, 7% adequate.

SOUTH DAKOTA: Average temperatures 5 to 8° above normal. Extremes 51°, 106°. Rainfall for growing season below normal; light rain scattered areas.

Days suitable for fieldwork 5.9. Topsoil moisture worsened; 33% critically short, 47% short, 20% adequate. Subsoil moisture 45% critically short, 39% short, 16% adequate. Many small grain acres being cut for hay. Crops still suffering from heat, moisture stress. Small grain harvest underway.

TENNESSEE: Hot, dry week. High pressure entrenched over State until weekend. Temperatures 1 to 6° above normal. Extremes 56°, 105°. Showers southeast 4th, middle 9th, west 10th. Averaged 0.25 in. east, middle; 0.50 in. west.

Days suitable for fieldwork 6.2. Soil moisture 89% very short, 11% short. Corn 46% tasseling, 78% 1987, 53% avg.; 6% dough, 24% 1987, 13% avg. Alfalfa 2nd cutting 82% harvested, 86% 1987, 86% avg. Cotton condition improved with heavy showers, mostly fair. Soybean planting resumed west. Pastures poor. Hay short. Cattle poor to fair.

TEXAS: Widely scattered thunderstorms eastern half first half week. Weekend, thunderstorm activity shifted westward. Thunderstorms more widespread 10th because of increased moisture, instability.

Temperatures cooler than normal because cloud cover, widespread thunderstorms. Most areas wetter than normal High Plains; Trans-Pecos received most rainfall. Lower Valley, north central drier than normal.

Crops: Small grain harvest Plains some progress; continued rain kept producers from completing. Yields vary widely, depending on insect, disease problems growing season. Corn harvest underway Valley, Coastal Bend. Some fields south also harvested. Fields central, east dent stage. Many fields east cut for silage because poor development. Blacklands, fields dough stage, scattered showers helped progress. Rains Plains helped make excellent progress. Corn 64% doughing, 60% 1987, 61% avg.; 40% dented, 30% 1987, 44% avg.; 10% mature, 1% 1987, 9% avg. Grain sorghum harvest increased Valley, Coastal Bend, south. Dry weather reduced yields. Showers Upper Coast held up harvest progress slightly. Harvest beginning south central. Fields heading Blacklands to Low Plains, progress improved with continued rain. Planting completed Plains; few fields wetter areas remain to be planted. Sorghum 99% planted, 100% 1987, 99% avg.; 30% turning color, 40% 1987, 45% avg.; 19% mature 19%, 10% 1987, 24% avg.; 6% harvested, 1% 1987, 10% avg. Cotton opening rapidly southern areas, early fields defoliated. Showers improved progress central, Blacklands. More rain needed as plants begin set bolls. Some plants shedding squares because dry weather. Warmer temperatures, continued rain increased prospects Plains. Many areas now need some drying conditions. Progress ahead normal Plains. Some limited spraying flea hoppers took place. Cotton 99% planted, 100% 1987, 100% avg.; 4% open bolls, none 1987, 1% avg. Rice heading Upper Coast, some producers preparing for harvest. Many other fields being flooded. Peanut planting winding down Cross-Timbers, most fields good stands. Irrigation remained steady, dryland fields need more rain. South, insects some problems. Stands good Plains, prolonged wetness caused some disease problems. Soybean showing good growth Plains, Upper Coast, recent rains helped both areas. Planting continued Plains, weather permitted. Other Field Crops: Oats 84% harvested, 89% 1987, 89% avg. Peanuts 98% planted, 93% 1987, 94% avg. Soybeans 97% planted, 99% 1987, 97% avg. Sunflowers 73% planted, 98% 1987, 97% avg.

Commercial Vegetables: Rio Grande Valley preparation fall planting continued. Few tomatoes, peppers harvested. Citrus good progress. Normal operations continued. San Antonio-Winter Garden irrigation continued recently planted fields. Harvest tomatoes, peppers, sweet corn, cucumbers continued. East sweetpotatoes holding on, plants need rain to survive. Some losses watermelon fields, other production low. High Plains onion harvest underway where dry enough. Potato harvest just beginning. Trans-Pecos onion, cabbage harvest continued. Cantaloup harvest beginning. Chili peppers blooming. Peach harvest continued. Pecan sets look good most areas. Casebearer treatments underway second generations. Aphids increased some areas. Recent rains should help.

Range and Pasture: Range, pasture conditions improved Plains with additional moisture. Some greening central with scattered showers. Hay cutting continued, yields low. Liquidation livestock herds continued drier areas. Some fertilization pastures after scattered showers east.

UTAH: Precipitation light. Temperatures 4 to 6° above normal.

Days suitable for fieldwork 6.7. Soil moisture 67% short, 33% adequate. Winter wheat 78% turned color, 98% 1987, 83% avg.; 23% ripe, 42% 1987, 25% avg.; 5% harvested, 11% 1987, 7% avg. Barley 80% turned color, 80% 1987, 67% avg.; 14% ripe, 20%

1987, 12% avg. Spring wheat 75% turned color, 80% 1987, 65% avg.; 3% ripe, 6% 1987, 3% avg. Oats 70% headed, 80% 1987, 77% avg.; 39% turned color, 41% 1987, 26% avg.; 3% ripe, 3% 1987, 2% avg. Alfalfa 2nd cutting 18%, 19% 1987, 12% avg. Corn height 43 in., 46 in. 1987, 38 in. avg. Sweet cherry harvest almost complete. Tart cherry, apricot harvests underway. Pastures, range fair. Irrigation water supplies 7% very short, 57% short, 36% adequate. Stock water 33% short, 67% adequate. Hay, roughage 7% short, 93% adequate. Livestock good. Major farm activities: Irrigation, harvesting fruit, haying, preparation for grain harvest.

VIRGINIA: Warm, hazy, little or no precipitation. Temperature range 40 to 101°. Precipitation none to 0.08 in.

Days suitable for fieldwork 6.3. Topsoil moisture 50% very short, 50% short. Continued moisture stress, crop conditions declined most areas. Best conditions southeast, worst southwest. Corn poor to fair. Corn 26% in or beyond silk stage, 34% 1987, 43% avg. Soybeans fair to good. Soybeans 95% planted, 95% 1987, 90% avg. Recently planted stands slow to germinate. Flue-cured tobacco good to excellent; irrigated, topped. Burley tobacco fair. Peanuts good to excellent. Barley harvest virtually complete. Wheat 89% harvested, 88% 1987, 89% avg. Potatoes about 50% harvested. Pastures very poor mountains, poor central, fair to good southeast. Hay good southeast, poor to fair elsewhere. Feeding livestock some areas.

WASHINGTON: High pressure covered eastern State first of week; moist, cool onshore flow kept temperatures below normal. During midweek, moist air advanced across Cascades to eastern sections bringing cooler temperatures, scattered showers.

Days suitable for fieldwork 6.3. Soil moisture 45% short, 55% adequate. Scattered showers periodically interrupted field activity, delayed grain harvest. Some winter wheat, barley combining occurred but full-scale harvest operations did not get underway. Russian wheat aphids sighted in Adams, Whitman Counties. Most sightings occurred in late seeded spring wheat, barley. Early potato harvest began Benton, Franklin Counties. First cutting Timothy hay underway Kittitas County. First cutting alfalfa hay finished most areas. Second cutting alfalfa hay winding down Columbia Basin, just getting underway later areas. Cool temperatures delayed corn development western areas. Hay, other roughage feed supplies 5% short, 60% adequate, 35% surplus. Strawberry harvest winding down, raspberry harvest full swing, blueberry development continued rapid pace. Cherry harvest winding down, peach harvest underway Benton, Yakima Counties. Lettuce harvest continued Pierce County. Green pea fields full bloom Lewis, Snohomish Counties. Overall cool season vegetables appeared excellent, warm season vegetables lagged behind normal development. Range, pasture mostly adequate western State, short to adequate east.

WEST VIRGINIA: Average temperature 77°, 5° above normal. Extremes 43° Greenbank; 105° Creston. Precipitation averaged 0.02 in.

Days suitable for fieldwork 6.1. Soil moisture 95% very short, 5% short. Wheat, oats mostly fair to very poor. Barley fair to poor. Wheat 97% ripe, 63% harvested. Barley 99% ripe, 82% harvested. Oats 100% headed, 43% ripe, 13% harvested. Corn mostly poor to very poor; 30% silked, 12% dough. Tobacco very poor to fair. Apples poor to fair. Peaches fair to poor. Peaches in final swell. Pasture, hay mostly poor to very poor. Cattle mostly fair to good. Sheep mostly fair to poor. Feed supplies 26% very short, 46% short, 28% adequate. Livestock feed from

pasture 78%. Farm activities: Haying, general farm maintenance, livestock care, gardening, clipping, liming pastures.

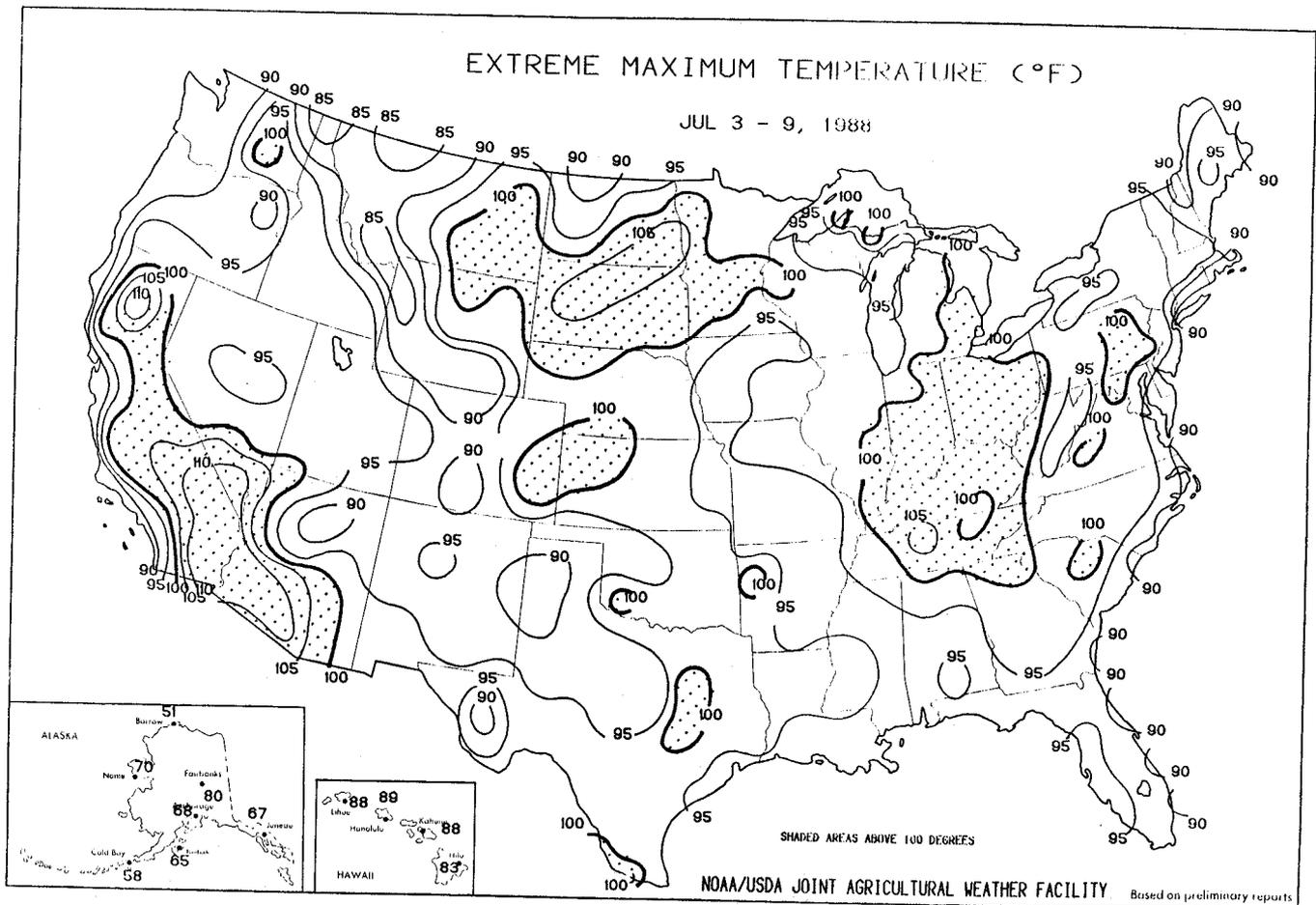
WISCONSIN: Temperatures averaged 79°, 8° above normal. Extremes 46°; 103°. Precipitation trace to 1.10 in. Still more rain needed.

Days suitable for fieldwork 6.8. Soil moisture 100% short. Crop condition declined; 33% very poor, 46% poor, 21% fair. Corn 10% very poor, 45% poor, 40% fair, 5% good. Corn height 39 in., 57 in. 1987, 41 in. avg. Second crop hay 28% cut, 17% 1987, 14% avg. Slow regrowth caused many farmers not to cut 2nd crop. Wheat harvest begun, yields fair, kernels smaller than normal. Sweet corn tasseling to 2 ft.

WYOMING: Temperatures above normal. Rainfall below normal except isolated areas in southeast.

Days suitable for fieldwork 7.0. Topsoil moisture 94% short, 6% adequate. Subsoil moisture

88% short, 12% adequate. Winter wheat poor to fair; none boot, none 1987, 5% avg.; 10% headed, 15% 1987, 30% avg.; 55% turning color, 55% 1987, 50% avg.; 35% mature, 30% 1987, 15% avg.; harvest starting. Barley fair to good; 5% jointed; 10% boot, 10% 1987, 15% avg.; 50% headed, 40% 1987, 50% avg.; 30% turning color, 40% 1987, 25% avg.; 5% mature, 10% 1987, 10% avg. Spring wheat poor to good; 5% boot, 15% 1987, 20% avg.; 45% headed, 55% 1987, 60% avg.; 35% turning color, 25% 1987, 15% avg.; 15% mature, 5% 1987, 5% avg. Oats fair to good; 5% jointed; 20% boot, 20% 1987, 25% avg.; 45% headed, 60% 1987, 65% avg.; 20% turning color, 15% 1987, 10% avg.; 10% mature, 5% 1987. Corn, sugarbeets mostly good. Dry beans 25% bloom. Potatoes 20% bloom. Alfalfa fair to good; 1st cutting 90%, 80% 1987, 75% avg. Other hay 50% harvested, 35% 1987, 35% avg. Livestock feed obtained from pastures 90%. Hay, roughage supplies remainder feeding season 15% very short, 50% short, 35% adequate.



Crop Progress 1/
FOR WEEK ENDING JULY 10, 1988

COTTON
% SETTING BOLLS

	1988	1987	AVG.
ALA	32	35	23
ARIZ	60	75	76
ARK	31	70	38
CALIF	10	35	28
GA	29	36	46
LA	33	38	29
MISS	37	42	22
MO	14	90	25
N MEX	20	8	21
N C	5	36	24
OKLA	15	5	1
S C	16	34	49
TENN	20	28	12
TEX	14	17	13

14 STATES 21 30 22
THESE 14 STATES PRODUCED 100%
OF THE 1987 COTTON CROP.

COTTON
% SQUARING

	1988	1987	AVG.
ALA	95	90	86
ARIZ	96	99	98
ARK	96	97	92
CALIF	75	98	85
GA	87	99	91
LA	80	93	79
MISS	90	97	91
MO	95	100	77
N MEX	70	60	69
N C	50	81	70
OKLA	45	35	10
S C	60	86	88
TENN	90	94	78
TEX	67	56	44

14 STATES 75 75 64
THESE 14 STATES PRODUCED 100%
OF THE 1987 COTTON CROP.

CORN
% SILKING

	1988	1987	AVG.
COLO	0	1	0
GA	91	98	96
ILL	35	74	36
IND	9	60	23
IOWA	12	34	9
KANS	25	45	15
KY	28	64	38
MICH	5	15	3
MINN	8	6	1
MO	45	69	36
NEBR	20	22	11
N C	67	65	72
OHIO	3	40	13
PA	0	0	2
S DAK	1	3	0
TEX	68	74	77
WIS	2	9	3

17 STATES 19 38 18
THESE 17 STATES PRODUCED 94%
OF THE 1987 CORN CROP.

SOYBEANS
% PLANTED

	1988	1987	AVG.
ALA	94	96	96
ARK	94	99	98
GA	92	99	98
ILL	100	100	100
IND	100	100	100
IOWA	100	100	100
KANS	96	96	95
KY	92	98	96
LA	97	96	98
MICH	100	100	100
MINN	100	100	100
MISS	90	98	94
MO	99	100	98
NEBR	100	100	100
N C	93	94	96
OHIO	100	100	100
S C	97	97	97
S DAK	100	100	100
TENN	92	99	98

19 STATES 98 99 99
THESE 19 STATES PRODUCED 96%
OF THE 1987 SOYBEANS CROP.

SOYBEANS
% BLOOM

	1988	1987	AVG.
ALA	16	18	16
ARK	3	8	6
GA	9	16	18
ILL	54	75	41
IND	23	64	28
IOWA	60	58	27
KANS	15	25	10
KY	15	25	14
LA	5	13	15
MICH	10	30	10
MINN	71	53	18
MISS	10	11	10
MO	36	45	21
NEBR	40	32	22
N C	2	6	3
OHIO	26	46	18
S C	1	4	5
S DAK	41	39	16
TENN	8	13	9

19 STATES 35 44 22
THESE 19 STATES PRODUCED 96%
OF THE 1987 SOYBEANS CROP.

WINTER WHEAT
% HARVESTED

	1988	1987	AVG.
ARK	100	99	98
CALIF	75	95	91
COLO	47	8	12
GA	100	100	99
IDAHO	0	0	0
ILL	99	100	84
IND	95	89	66
KANS	100	90	80
MICH	50	20	5
MO	100	97	83
MONT	7	0	0
NEBR	70	51	43
N MEX	92	100	NA
N C	100	100	NA
OHIO	82	49	35
OKLA	100	100	100
OREG	1	7	3
S DAK	42	11	8
TEX	96	94	94
WASH	0	4	1

20 STATES 75 66 NA
EXCL. STATES WITH NA 75 65 60

THESE 20 STATES PRODUCED 91%
OF THE 1987 WINTER WHEAT CROP.
NA - NOT AVAILABLE.

SPRING WHEAT
% HEADED

	1988	1987	AVG.
IDAHO	90	94	80
MINN	100	99	89
MONT	89	85	66
N DAK	95	93	75
S DAK	100	100	100

5 STATES 95 94 80
THESE 5 STATES PRODUCED 95%
OF THE 1987 SPRING WHEAT CROP.

	RICE % HEADED		
	1988	1987	AVG.
ARK	0	0	0
CALIF	0	0	0
LA	35	22	35
MISS	5	5	8
TEX	46	57	55
5 STATES	12	11	14

THESE 5 STATES PRODUCED 97% OF THE 1987 RICE CROP.

	GRAIN SORGHUM % HEADED		
	1988	1987	AVG.
ARK	14	52	NA
ILL	2	69	NA
KANS	0	5	1
LA	34	47	59
MISS	27	35	30
MO	8	29	11
NEBR	0	0	0
OKLA	10	10	5
S DAK	1	0	0
TENN	16	44	27
TEX	59	54	60
11 STATES	18	23	NA

EXCL. STATES WITH NA 18 21 19

THESE 11 STATES PRODUCED 96% OF THE 1987 GRAIN SORGHUM CROP.

NA - NOT AVAILABLE.

1/ AVERAGES FOR THESE SUMMARIES ARE FOR THE YEARS 1983 - 1987.

Crop Condition
FOR WEEK ENDING JULY 10, 1988

CORN						COTTON						SOYBEANS					
STATE	VP	P	F	G	EX	STATE	VP	P	F	G	EX	STATE	VP	P	F	G	EX
COLO	0	2	14	58	26	ALA	4	24	60	12	0	ALA	9	25	55	11	0
GA	5	26	54	15	0	ARIZ	0	0	14	86	0	ARK	2	60	32	6	0
ILL	20	46	32	2	0	ARK	0	11	54	35	0	GA	1	14	56	29	0
IND	46	44	10	0	0	CALIF	0	0	15	50	35	ILL	7	22	61	10	0
IOWA	13	42	34	11	0	GA	0	3	62	35	0	IND	9	54	36	1	0
KANS	4	26	29	32	9	LA	0	29	54	17	0	IOWA	2	23	54	19	2
KY	50	38	12	0	0	MISS	5	10	45	40	0	KANS	1	2	32	42	23
MICH	30	30	25	14	1	MO	0	13	62	25	0	KY	22	44	34	0	0
MINN	27	23	43	7	0	N MEX	0	10	50	40	0	LA	5	28	28	39	0
MO	29	48	23	0	0	N C	0	15	27	52	6	MICH	20	30	35	14	1
NEBR	0	7	63	30	0	OKLA	0	0	40	60	0	MINN	15	22	44	17	2
N C	2	12	41	45	0	S C	0	5	87	8	0	MISS	15	50	30	5	0
OHIO	36	36	25	3	0	TENN	9	15	73	3	0	MO	7	39	52	2	0
PA	21	37	32	10	0	TEX	2	4	25	49	20	NEBR	0	2	68	30	0
S DAK	1	10	48	39	2	14 STATE	2	7	34	42	15	N C	0	4	42	54	0
TEX	2	12	28	44	14							OHIO	25	35	34	6	0
WISC	10	45	40	5	0							S C	0	4	90	6	0
17 STATE	18	32	36	13	1							S DAK	0	0	48	48	4
												TENN	21	45	34	0	0
												19 STATE	8	29	47	15	1

RICE						GRAIN SORGHUM						SPRING WHEAT					
STATE	VP	P	F	G	EX	STATE	VP	P	F	G	EX	STATE	VP	P	F	G	EX
ARK	0	5	56	39	0	ARK	3	33	60	4	0	IDAHO	10	7	15	56	12
CALIF	0	5	20	70	5	ILL	17	28	52	3	0	MINN	40	41	19	0	0
LA	0	1	14	85	0	KANS	5	12	32	45	6	MONT	35	39	21	4	1
MISS	0	20	20	60	0	LA	20	12	40	28	0	N DAK	32	49	15	4	0
TEX	0	1	19	77	3	MISS	10	45	45	0	0	S DAK	17	52	26	4	1
5 STATE	0	5	35	59	1	MO	4	42	52	2	0	5 STATE	31	45	18	5	1
						NEBR	0	4	70	26	0						
						OKLA	2	8	20	70	0						
						S DAK	0	1	40	57	2						
						TENN	26	53	21	0	0						
						TEX	3	10	30	46	11						
						11 STATE	4	14	39	38	5						

International Weather and Crop Summary

July 3-9, 1988

HIGHLIGHTS:

USSR ... In Western USSR, early-week hot, dry weather favors maturing wheat but was unfavorable for corn. By midweek, showers and cooler weather alleviate stress. In the New Lands, spring grains are entering the heading stage. Soil moisture is unfavorably low for crop growth in many areas.

EUROPE ... Hot, dry weather stresses summer crops in the southeast. Heavy rain continues harvest delays in Portugal and northern Spain.

SOUTH ASIA ... Dry pockets persist in southern India, limiting moisture for planting and establishment. Beneficial showers fell elsewhere, though parts of the southwest and east are too wet.

EASTERN ASIA ... Early-week heat stresses crops in eastern crop areas. Heavy rain favors summer crops, causes flooding over the north.

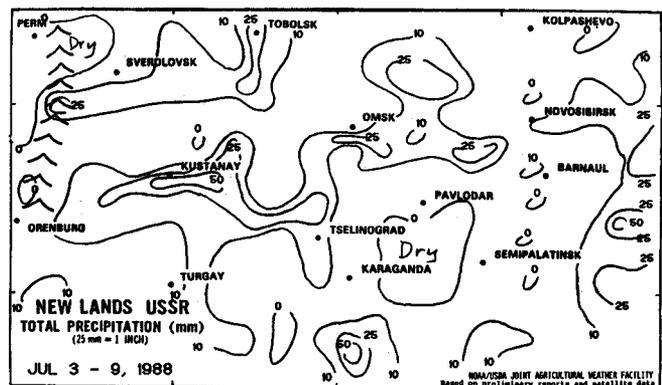
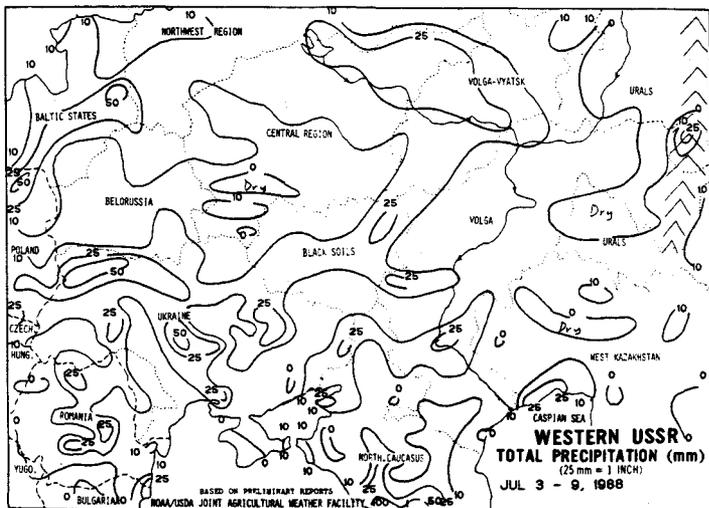
SOUTHEAST ASIA ... Light to moderate rain covers Thailand's reproductive to filling corn. Scattered, mostly light rain covers vegetative rainfed rice.

SOUTH AMERICA ... Persistent dryness and cold weather delay Argentina's wheat planting. Showers keep southern Brazil's wheat moist, while dry weather prevails in northern coffee areas.

AUSTRALIA ... Widespread heavy rain ends dryness and causes sugarcane harvest delays in eastern crop areas. Light to moderate rain continues planting delays in the south and west.

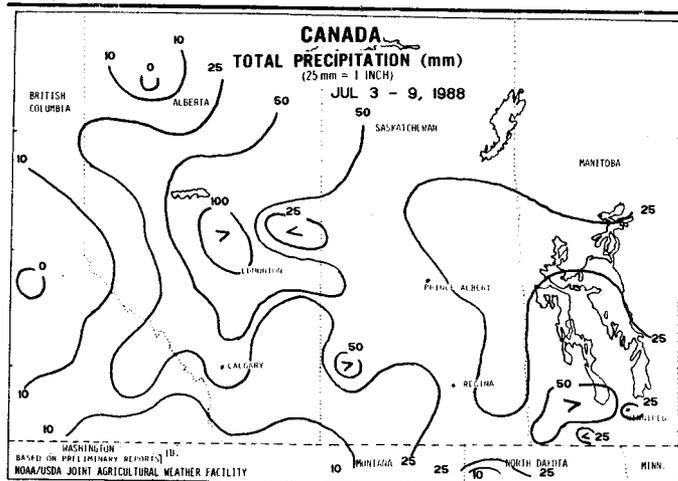
MEXICO ... Widespread, substantial rain favors crop development in all areas.

CANADA ... Widespread showers and cooler weather bring some relief to Prairie crops in or nearing reproduction.

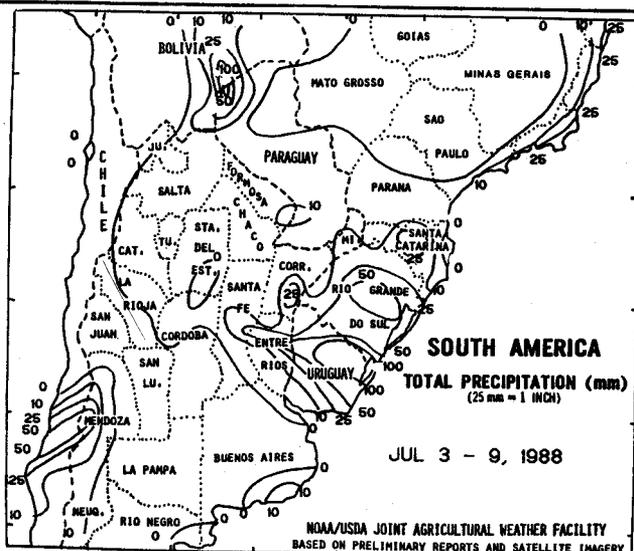


USSR ... In Western USSR, early-week hot, dry weather covered crops in the Ukraine and North Caucasus, favoring winter grain maturation and early harvesting. However, maximum temperatures ranged from 33 to 37 degrees C in the southern Ukraine and North Caucasus, which were above optimum levels for corn entering the tasseling stage. On July 7, cooler weather and showers alleviated stress on corn. Further north, warm weather and widespread light showers favored spring barley, in the reproductive phase in the Baltic States and Belorussia, and filling in the Central Region and Black Soils Region. In the Volga, early-week hot, dry weather, particularly in eastern growing areas, continued to stress spring wheat and barley in the reproductive and filling stages. Weekly average temperatures over much of the region were 2 to 4 degrees C above normal.

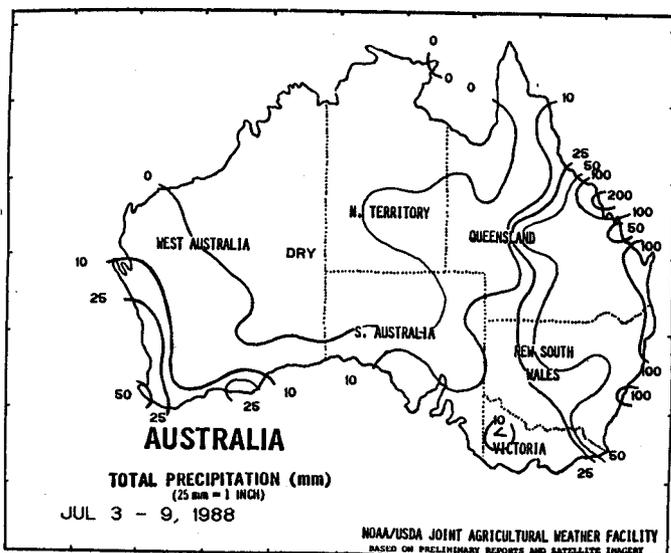
In the New Lands, unfavorably hot, dry weather early in the week continued to stress grains in the eastern portion of the Upper Volga, the Urals, and Kazakhstan. Spring grains were jointing in the northern Urals and Western Siberia and were entering the highly moisture and temperature sensitive reproductive phase in the southern Urals and Kazakhstan. Early-week maximum temperatures ranged from 33 to 37 degrees C in the eastern Volga, Urals, and Kazakhstan, and 27 to 30 degrees C in Western Siberia. On July 5, showers and cooler weather relieved heat stress in the northern Urals and Kazakhstan, but soil moisture remained unfavorably low for crop growth in most areas. In Western Siberia, although cumulative precipitation since early June has been generally below normal, near-to below-normal temperatures in eastern areas helped to lower crop stress.



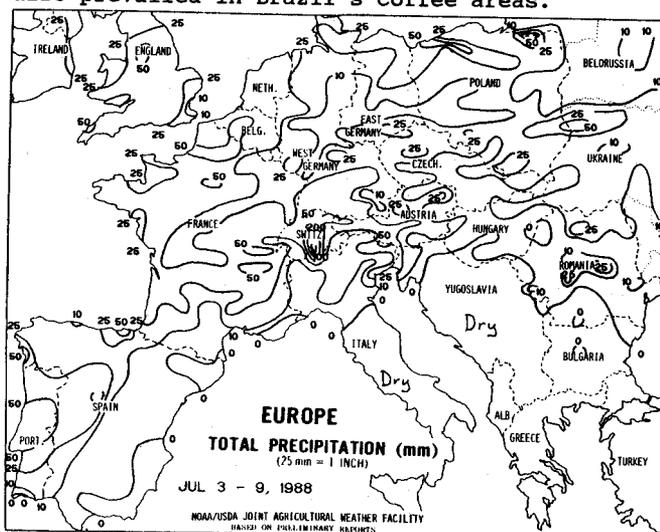
CANADA ... Widespread showers (10-50mm or more) and cooler weather covered most Prairie crop regions, bringing some relief to crops stressed by recent periods of unfavorably dry, hot weather. Heaviest rainfall (50-100mm or more) was in northern Alberta, portions of northwestern Saskatchewan, and chronically dry regions of western Manitoba. Lightest rain (less than 15mm), however, continued over southern Alberta and southwestern and northeastern Saskatchewan. Most crops are in or nearing the reproductive phase, requiring more rain and mild weather for normal development.



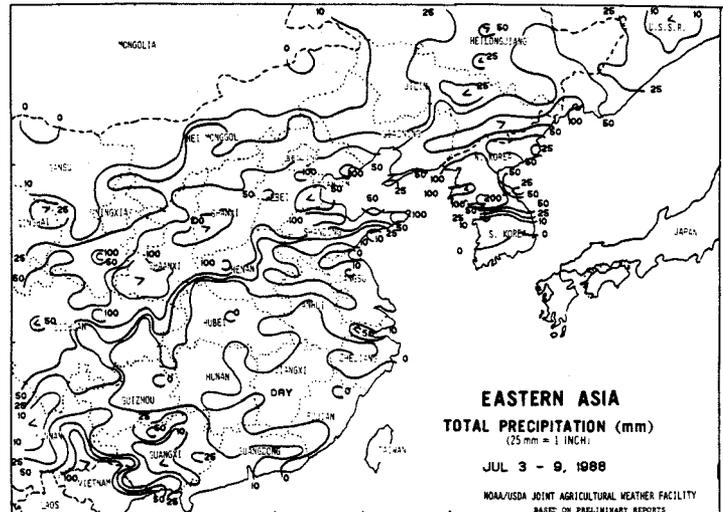
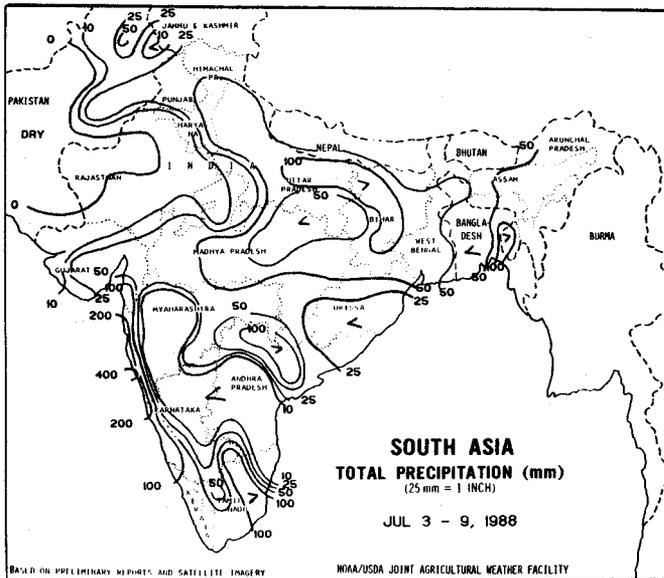
SOUTH AMERICA ... In Argentina, dry weather persisted over the major wheat producing areas, causing further planting delays. Emergence of early sown crops has also been hampered by episodes of unseasonably cold weather. Weekly mean temperatures averaged 3-6 degrees C below normal, with lowest minimum temperatures ranging from 4 to 11 degrees C below freezing. Wheat planting has fallen behind last year's pace. In south-central Brazil, more showers during midweek kept Rio Grande do Sul's wheat moist, while only scattered showers fell in Santa Catarina and Parana. Mostly dry, mild weather also prevailed in Brazil's coffee areas.



AUSTRALIA ... Widespread heavy rain (greater than 50mm, with isolated amounts over 100mm) ended persistent dryness in winter grain areas of Queensland and northern New South Wales, but caused extensive delays in sugarcane harvesting in eastern Queensland. The rain was the first substantial precipitation in over a month in eastern crop areas, which by July normally receive only light winter rainfall. In contrast, light to moderate rain (10-25mm, with isolated amounts greater than 25mm) over winter crop areas in southern New South Wales, and Western Australia continued a wetter than normal pattern that has delayed planting in areas. Weekly mean temperatures were above normal over all growing areas except for Western Australia's where they were near normal.

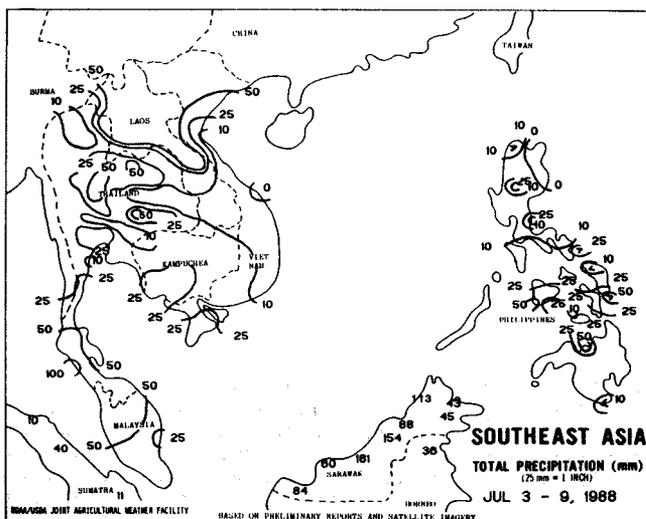


EUROPE ... Hot and dry weather developed over southeastern Europe, with maximum temperatures exceeding 35 degrees C over Balkan crop areas for much of the week. The heat favored harvest conditions for winter grains but stressed corn nearing sensitive reproductive stages. Soils in southeastern Europe are becoming increasingly dry after several weeks of below-normal rainfall. In contrast, moderate to heavy rain (greater than 25mm) continued over much of northwestern Europe, favoring summer crops but slowing dry down of maturing winter grains. Heavy rain (greater than 25mm, with isolated amounts over 50mm) continued over Portugal and northwestern Spain, causing further harvest delays and a deterioration in quality of fruit and vegetable crops. Mean weekly temperatures across the continent ranged from much below normal in the west to much above normal in the southeast.



SOUTH ASIA ... Pockets of drier than normal weather (less than 10mm) persisted in the south over western Maharashtra, central Karnataka, southern Andhra Pradesh, and northeastern Tamil Nadu. Elsewhere, rainfall increased from the previous week over southern interior crop regions, with local amounts reaching 146mm. Moisture continued limited over much of the south for late crop planting and establishment. Seasonably heavy showers (100-200mm or more) continued along the southwest coast, reaching as far north as Gujarat and causing local flooding. Moderate to heavy showers (25-200mm or more) continued over central and northern India and portions of northern Pakistan as the southwest monsoon circulation continued its northward progress. Conditions are generally favorable over most central and northern summer crop regions for planting and early vegetative growth. Moderate to heavy rain (50-100mm or more) maintained favorable growing conditions in most eastern rice regions, but rainfall continued to be excessive from southern Bangladesh eastward, exacerbating flood conditions.

EASTERN ASIA ... Hot and dry weather stressed summer crops in or near reproductive stages over many eastern growing areas early in the week. By week's end, a cool front brought relief in the form of moderate to heavy rain (greater than 25mm) and cooler temperatures except for the south. Very heavy rain (greater than 100mm, with isolated amounts over 150mm) likely caused flooding in areas of Gansu, Shaanxi, Henan, Shandong, and in the Yalu River Valley. In the south, remnants of a tropical depression brought scattered rain (15-25mm, with isolated amounts greater than 100mm) to sections of Yunnan, Guizhou, Guangxi, and Guangdong, while much of the Yangtze River Valley remained mostly dry. Weekly mean temperatures ranged from above normal over central, eastern, and southern crop areas to below normal over the west and north.



SOUTHEAST ASIA ... Variable light to moderate rain (7-67mm) covered reproductive to filling corn across Thailand. Temperatures, however, continued seasonably warm, maintaining high evaporation rates. Mostly light rain and warm weather (less than 25mm) covered Thailand's vegetative rice. Dry, warmer than normal weather persisted along Vietnam's central coast but scattered, mostly moderate rain fell elsewhere over Indochina, including most rice regions of northern and southern Vietnam. In the Philippines, rainfall averaged less than 10mm over most grain regions of Luzon with light to moderate rain (5-25mm or more) over most other crop regions.

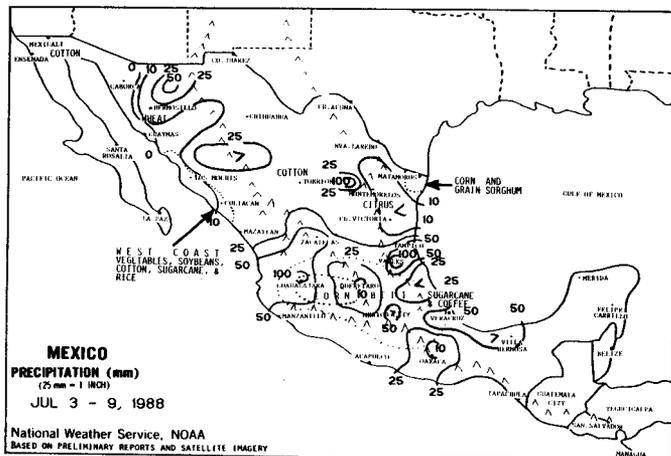
The Weekly Weather and Crop Bulletin (ISSN 0043-1974) is published weekly and jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the Weekly Weather Chronicle. It is issued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

Annual subscriptions: domestic \$25, foreign \$33 (in U.S. funds by international money order or check drawn on U.S. bank) payable to U.S. Department of Commerce, NOAA. POSTMASTER: Send address changes to Weekly Weather and Crop Bulletin, NOAA/USDA, Joint Agricultural Weather Facility, USDA South Building, Room 5844, Washington, D.C. 20250. Order subscriptions from the office and address listed above. Second class postage paid at Washington, D.C. and additional mailing offices.

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MEXICO ... Widespread rain benefited most crop areas. Substantial showers (10-69mm) in the northwest helped irrigation reservoirs, while rain throughout the west coast farming region and the north-central cotton and range lands promoted crop growth. Tropical showers covered nearly all of the Southern Plateau corn belt, favoring corn emergence and development. Showers were also widespread throughout southern Mexico. Locally heavy rain (100-173mm) was scattered over the Southern Plateau and interior portions of the northeast. Two consecutive weeks of vigorous shower activity in Mexico have improved growing conditions in most areas.

NOAA/USDA Joint Agricultural
Weather Facility
Room 5844 USDA South Building
Washington, D.C. 20250

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

WEEKLY NEWS BULLETIN
SECOND CLASS

SECOND CLASS MAIL
POSTAGE AND FEES PAID
NOAA PERMIT NO.

ISSN 0043 1974