

# 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

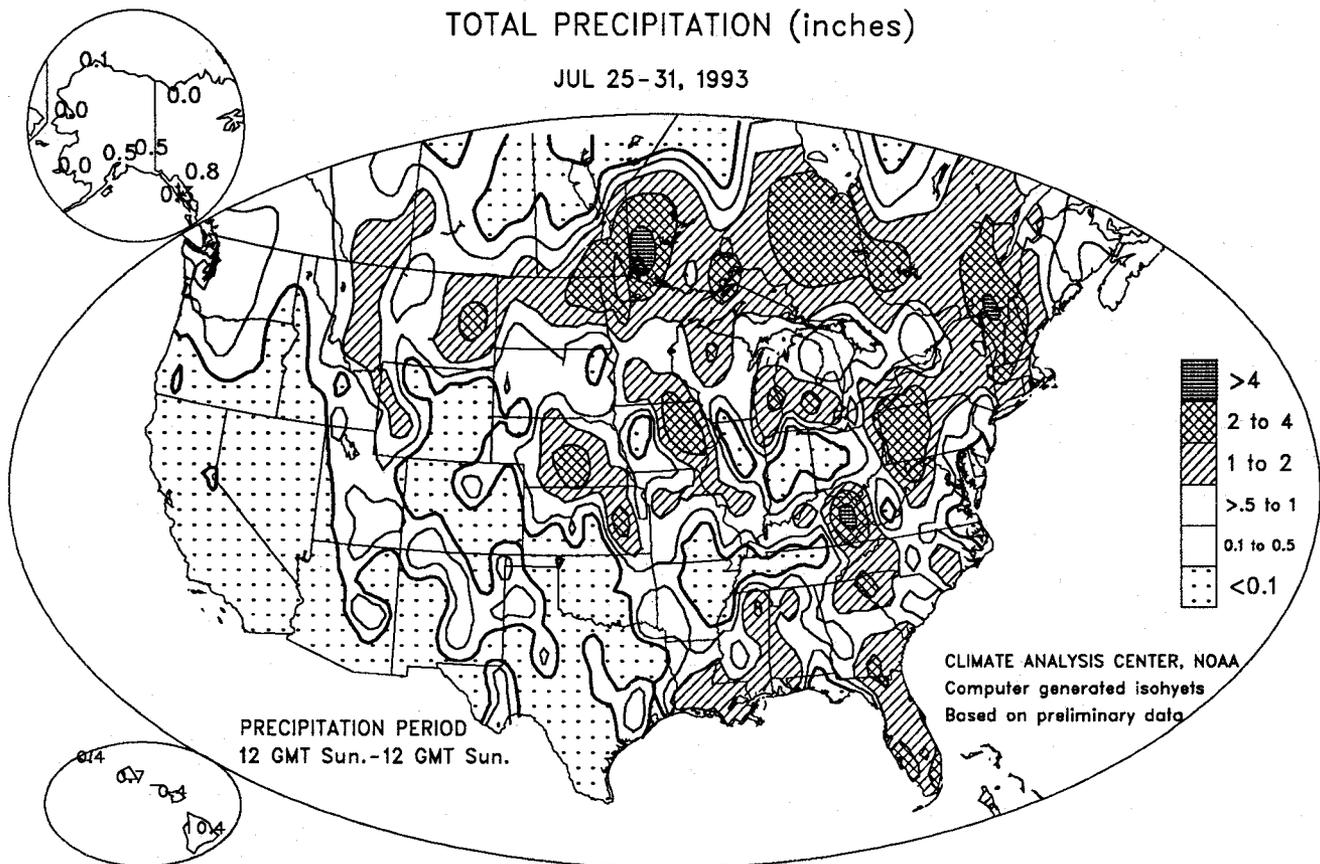
Volume 80, No. 31

Washington, D.C.

August 3, 1993

## TOTAL PRECIPITATION (inches)

JUL 25-31, 1993



## HIGHLIGHTS

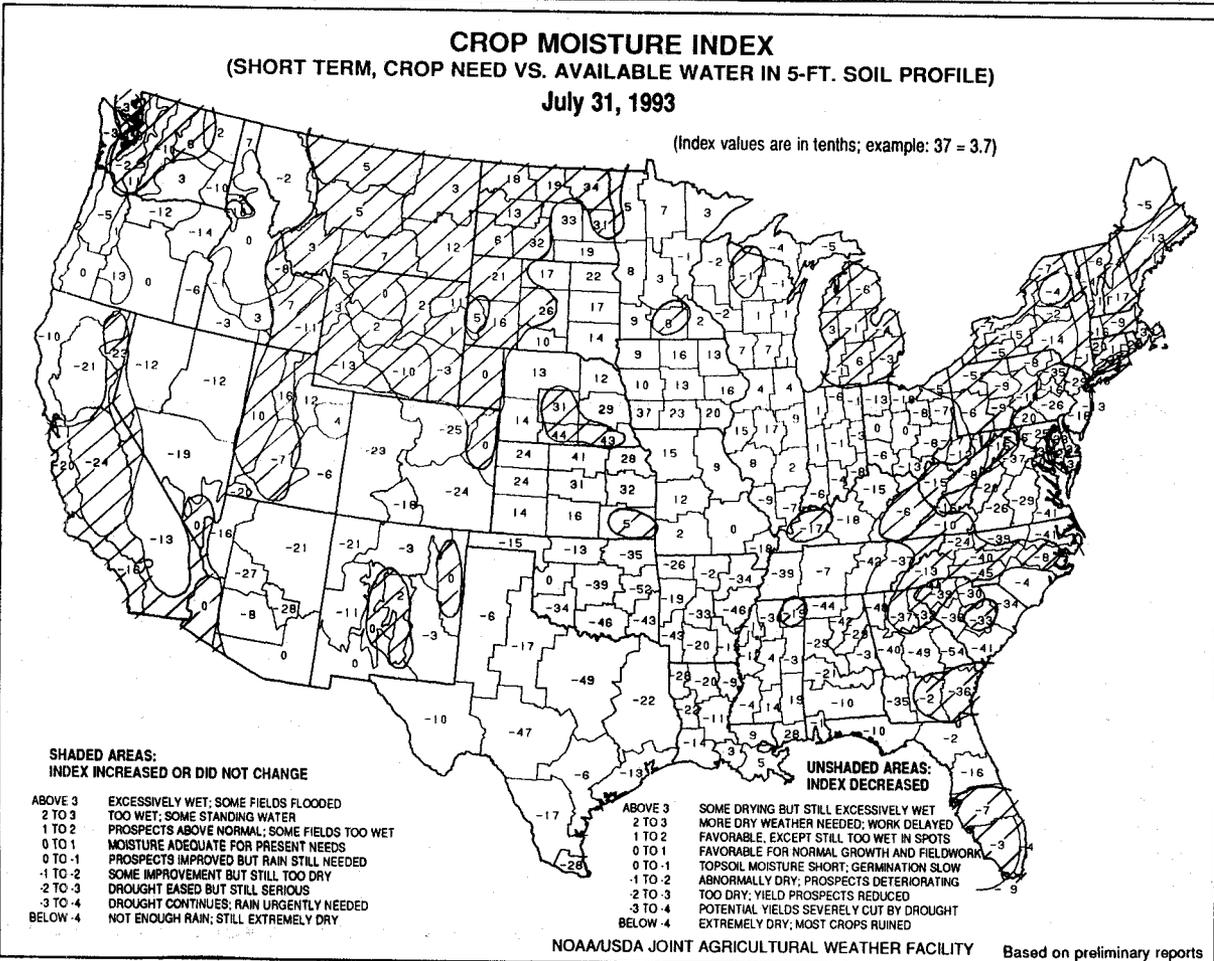
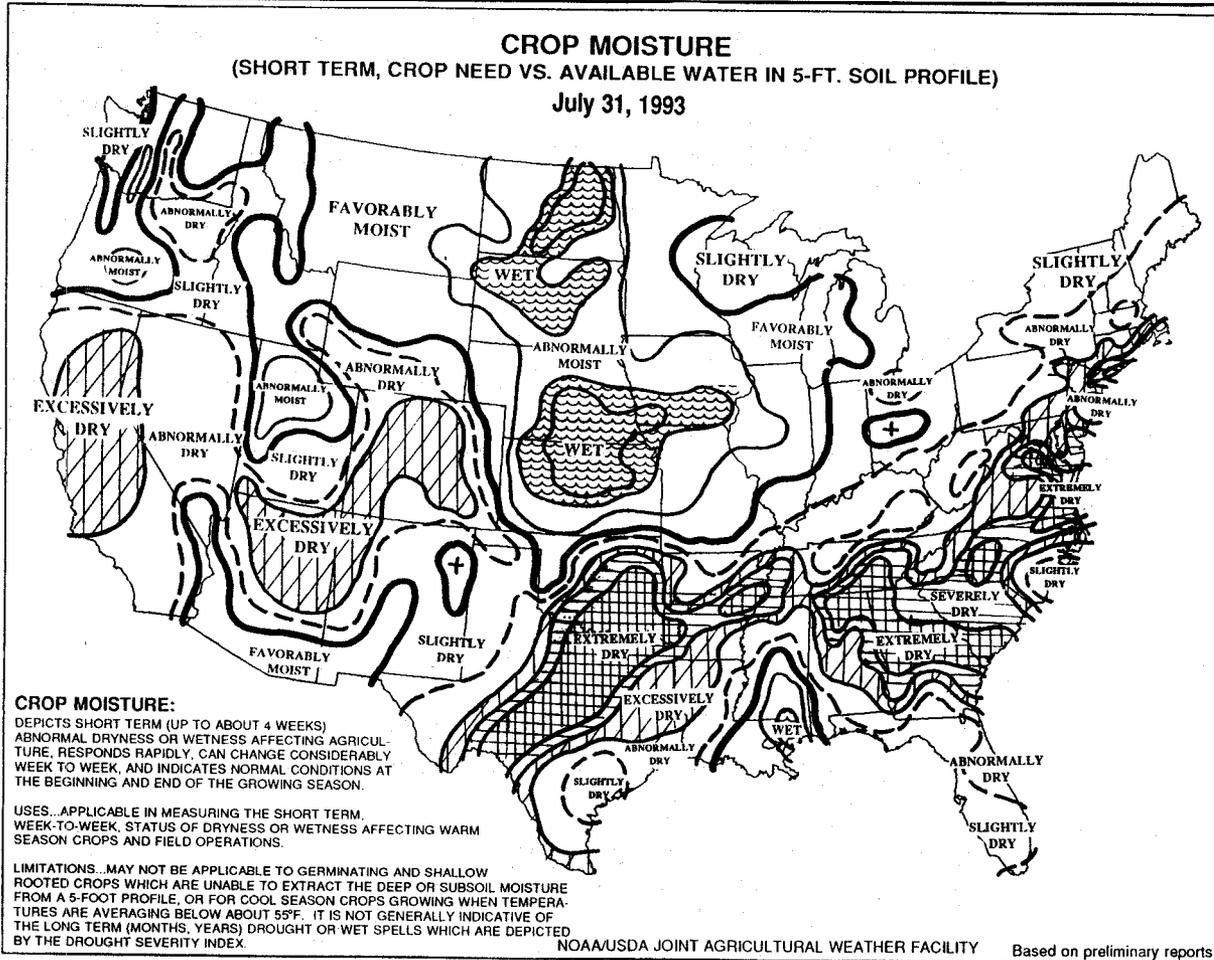
July 25 - 31, 1993

A long-awaited weather pattern change brought several dry days to the saturated **middle Mississippi Valley**, but not until a final round of heavy rain lashed the region. Elsewhere, a late-week cold front toppled the **Southeast's** heatwave, while excessive heat migrated westward into the **South-Central and Western States**. Dry weather continued in **central and eastern Texas**, where little or no rain has fallen since late June. During the first half of the week, rainfall caused additional flooding problems in the **northern and central Plains**. Portions of the **Red River** remained above flood stage, with a crest expected to push northward to the **Canadian border** by August 8. The **Mississippi River at Dubuque, IA** finally fell below flood stage on July 27 for the first time in 34 days. The former record at **Dubuque** of 30 days had been set in April - May 1965. But the Mississippi remained considerably  
(Continued to back cover)

## Contents

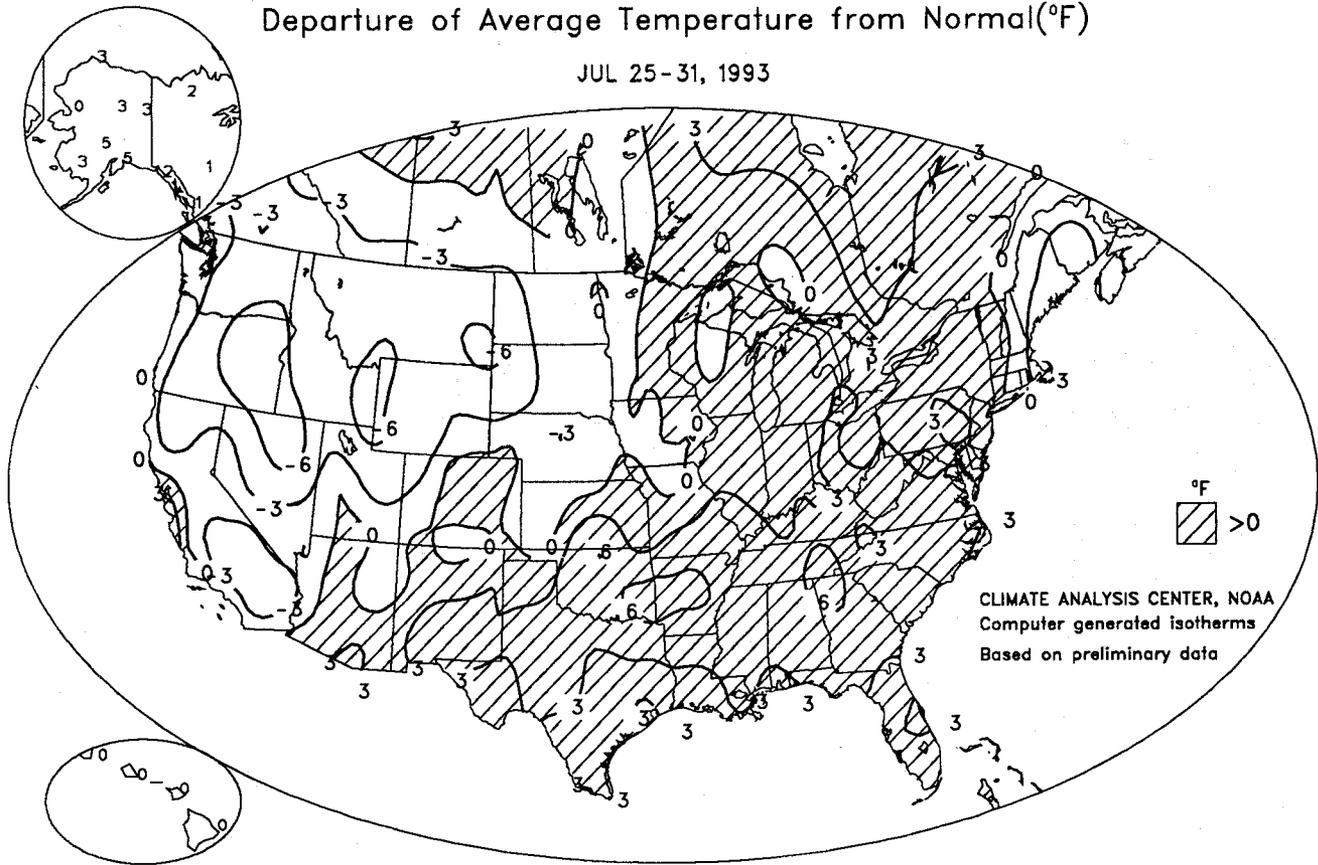
Page

Highlights & Total Precipitation Map .....	1
Crop Moisture Maps .....	2
Temperature Departure & Extreme Maximum Maps ..	3
<b>90-Day Weather Outlook</b> .....	<b>4</b>
Growing Degree Day Table .....	5
National Weather Data for Selected Cities .....	6
<b>July Weather and Crop Summary</b> .....	<b>9</b>
July Precipitation & Temperature Maps .....	10
July Weather for Selected Cities .....	12
<b>U.S. Weather and Flooding in 1993 and 1947</b> ....	<b>13</b>
National Agricultural Summary .....	15
Crop Progress and Condition Tables .....	16
State Summaries of Weather and Agriculture ....	18
International Weather and Crop Summary & <b>July Temperature/Precipitation Table</b> .....	<b>25</b>
<b>Indian Monsoon Update</b> .....	<b>30</b>
<b>Sahel Rainy Season Update</b> .....	<b>31</b>
Subscription and Mailing Permit Information ..	32



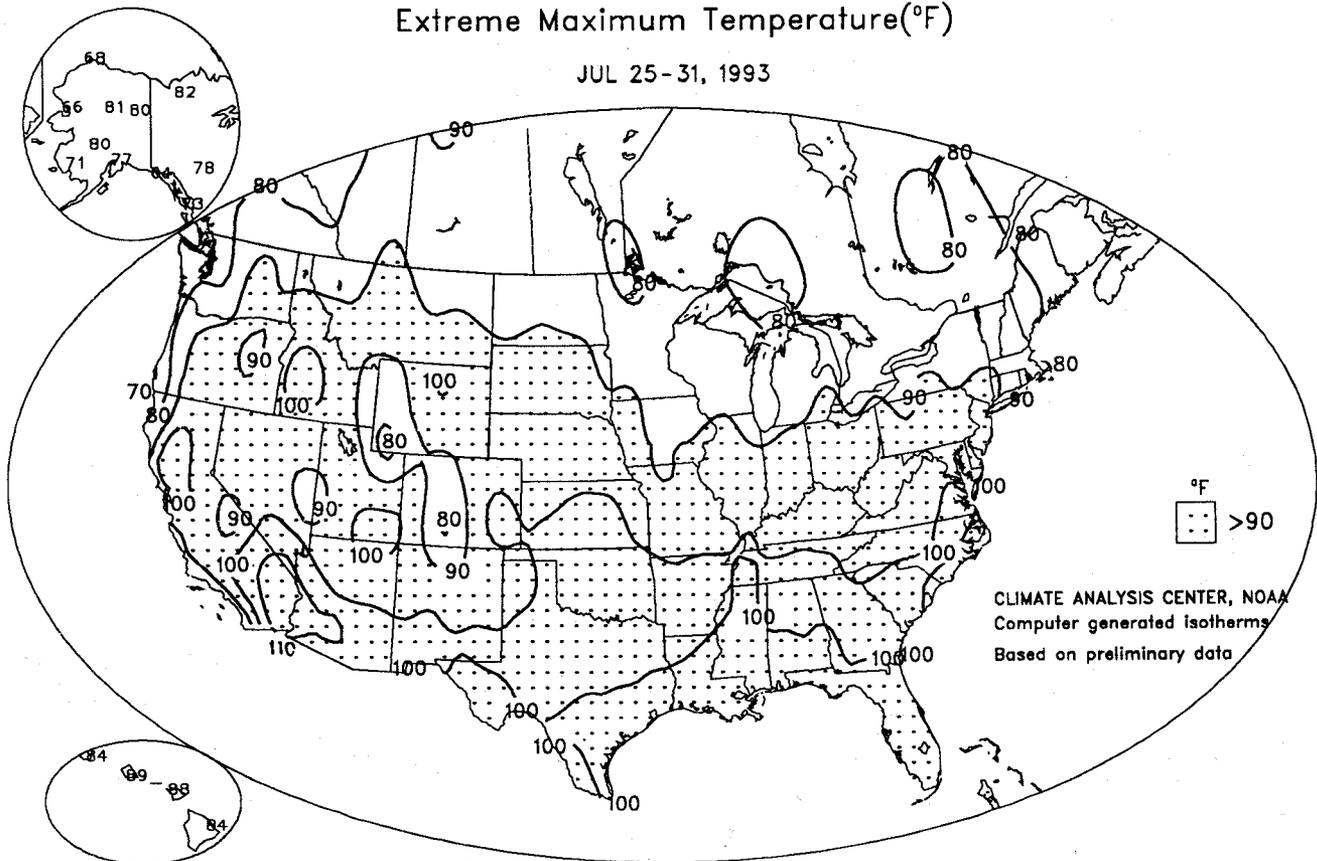
### Departure of Average Temperature from Normal(°F)

JUL 25-31, 1993



### Extreme Maximum Temperature(°F)

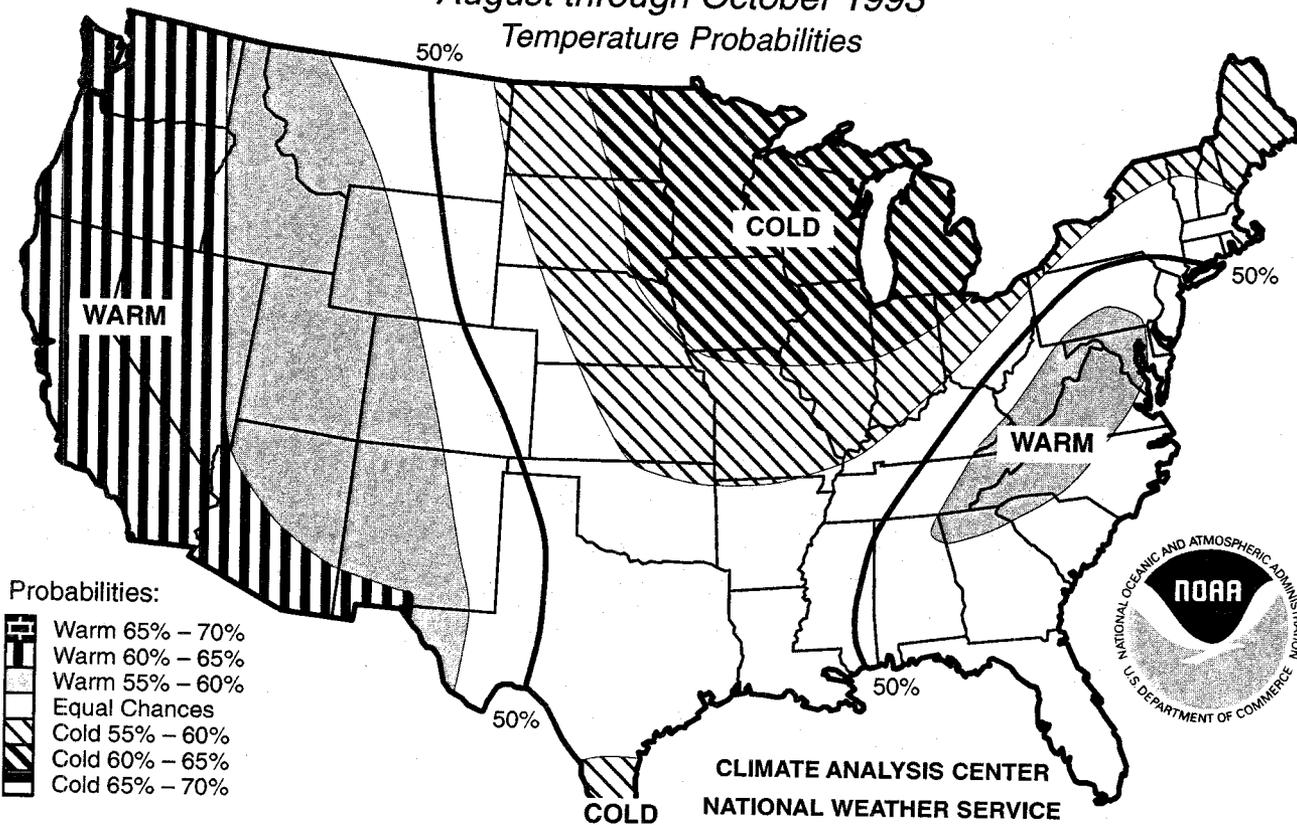
JUL 25-31, 1993



### THREE-MONTHLY WEATHER OUTLOOK

August through October 1993

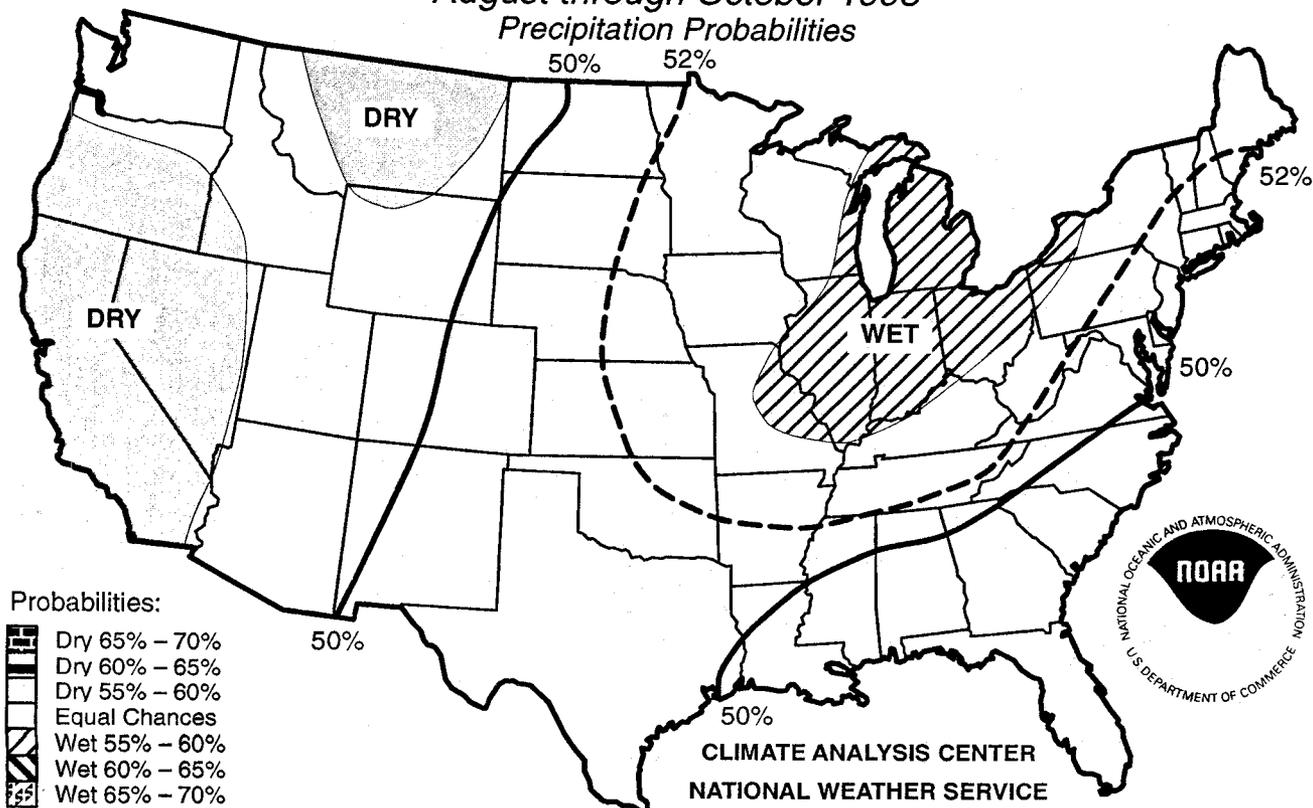
Temperature Probabilities



### THREE-MONTHLY WEATHER OUTLOOK

August through October 1993

Precipitation Probabilities



## CUMULATIVE GROWING DEGREE DAYS (CORN\*) April 1 - July 31, 1993

STATES AND STATIONS	TOTAL	DEP. FROM NORMAL	STATES AND STATIONS	TOTAL	DEP. FROM NORMAL	STATES AND STATIONS	TOTAL	DEP. FROM NORMAL
AL ANNISTON	2602	+ 5	SALINA	2175	- 77	OK ALTUS	2693	- 25
BIRMINGHAM	2632	- 16	TOPEKA/BILLARD	2133	- 85	GAGE	2355	- 27
MOBILE	2850	- 177	WICHITA	2256	- 117	HOBART	2545	- 47
MONTGOMERY	2765	+ 46	KY LEXINGTON	2226	+ 85	MCALISTER	2764	+ 102
MUSCLE SHOALS	2632	+ 68	BOWLING GREEN	2384	+ 60	PONCA CITY	2544	+ 35
OSKAR	2819	- 8	PADUCAH	2519	+ 96	TULSA	2519	- 112
TUSCALOOSA	2732	- 13	LA LAFAYETTE	2970	- 82	OR BAKER	1113	- 153
AZ DOUGLAS	2571	+ 163	LAKE CHARLES	3035	- 68	EUGENE	1241	- 49
FLAGSTAFF	1479	+ 178	MONROE	2854	- 19	NORTH BEND	960	+ 223
PHOENIX	3561	+ 476	NEW ORLEANS	2921	- 134	PENDELTON	1463	- 144
TUCSON	3033	+ 206	SHREVEPORT	2821	+ 18	REDMOND	1093	- 172
YUMA	3565	+ 384	ME AUGUSTA	1421	+ 117	PORTLAND	1376	+ 59
PRESCOTT	2021	+ 260	CARIBOU	1094	+ 85	SALEM	1368	+ 97
AR EL DORADO	2693	- 44	HOULTON	1131	+ 17	SEXTON SUMMIT	653	- 299
FAYETTEVILLE	2365	+ 51	PORTLAND	1353	+ 148	PA ALLENTOWN	2018	+ 225
FORT SMITH	2627	+ 11	MA SALLISBURY	2236	+ 163	PHILADELPHIA	2329	+ 437
JONESBORO	2600	- 44	MA WORCESTER	1470	+ 59	WILLIAMSPORT	1960	+ 229
LITTLE ROCK	2681	+ 35	MI JACKSON	1629	- 24	SC BEAUFORT	2980	+ 130
TEXARKANA	2768	- 68	LANGING	1617	- 56	CHARLESTON	2900	+ 118
CA BAKERSFIELD	2563	- 16	MUSKEGON	1530	+ 68	COLUMBIA	2771	+ 66
BLUE CANYON	977	- 192	PELLSTON	1184	- 5	FLORENCE	2860	+ 157
DAGGETT	2831	+ 82	SAULT STE. MARIE	1414	- 78	SUMTER/SHAW AFB	2742	+ 44
EUREKA	932	+ 432	TRAVERSE CITY	871	+ 52	SD ABERDEEN	1480	- 33
FRESNO	2475	+ 185	MN DULUTH	1062	- 164	HURON	1503	- 176
MARYSVILLE	2318	+ 118	INT'L FALLS	1486	- 110	PIERRE	1504	- 172
MERCED	2333	+ 149	MINNEAPOLIS	1360	---	RAPID CITY	1264	- 259
MT SHASTA	1082	- 230	ROCHESTER	1264	- 170	SIoux FALLS	1541	- 185
PASO ROBLES	1972	+ 136	ALEXANDRIA	3036	- 62	WATERTOWN	1246	- 238
RED BLUFF	2222	- 96	MS BILOXI	2692	+ 25	TN BRISTOL	2239	+ 115
RIVERSIDE	2377	+ 263	COLUMBUS	2786	+ 62	CHATTANOOGA	2614	+ 161
SANTA ANA	2480	+ 500	JACKSON	2771	+ 17	CROSSVILLE	2211	+ 285
SAN DIEGO	2107	+ 248	MERIDIAN	2784	- 29	MEMPHIS	2765	+ 28
SACRAMENTO	2076	+ 70	MO COLUMBIA	2169	+ 46	NASHVILLE	2517	+ 36
THERMAL	3104	+ 7	JOPLIN	2370	- 38	TX ABILENE	2859	+ 19
CO ALAMOSA	1286	- 26	SPRINGFIELD	2249	+ 11	AMARILLO	2281	+ 24
DENVER	1688	+ 25	VICHY	2263	+ 25	AUSTIN	3089	+ 13
EAGLE	1244	- 140	MT HELENA	1067	- 151	BROWNSVILLE	3453	+ 16
GRAND JUNCTION	1944	- 119	KALISPELL	1012	- 214	COLLEGE STATION	2992	- 40
LA JUNTA	2063	+ 27	MILES CITY	1354	- 241	DALHART	2161	+ 35
DE DOVER	2170	+ 27	NE GRAND ISLAND	1784	- 149	DALLAS/FT WORTH	2969	+ 98
WILMINGTON	2212	+ 223	NORFOLK	1769	- 107	GALVESTON	3326	+ 59
FL DAYTONA BEACH	2964	- 94	NORTH PLATTE	1662	- 84	HOUSTON/INTCNEL	3088	+ 81
FORT MYERS	3308	+ 38	VALENTINE	1537	- 263	KINGSVILLE/NAS	3421	+ 112
GAINESVILLE	2858	- 160	SCOTT/SBLUFF	1575	- 99	LAREDO	3473	+ 75
JACKSONVILLE	2901	- 103	SNEDNEY	1518	- 13	LUBBOCK	2657	+ 168
FORT LAUDERDALE	3601	+ 248	NV ELKO	1223	- 192	MCALLEN	3503	+ 164
MIAMI	3566	+ 102	ELY	1293	- 25	MIDLAND	2782	+ 39
MILTON	2909	+ 12	LAS VEGAS	3096	+ 262	PALACIOS	3200	- 55
PENSACOLA	2972	- 101	RENO	1552	+ 15	SAN ANTONIO	3135	+ 6
ST PETERSBURG	3285	- 106	WINNEMUCCA	1504	- 42	VICTORIA	3168	+ 20
TALLAHASSEE	2854	- 72	NH CONCORD	1620	+ 160	WACO	2971	- 64
TAMPA	3157	- 73	NJ NEWARK	2385	+ 414	WICHITA FALLS	2702	- 66
VERO BEACH	3154	- 11	NM ALBUQUERQUE	2372	+ 309	WINN	2856	+ 66
GA ATHENS	2662	+ 118	CARLSBAD	2829	+ 148	UT CEDAR CITY	1662	- 9
AUGUSTA	2807	+ 136	CLOVIS	2349	+ 147	VT BARRE-MONTPELIER	1309	+ 94
BRUNSWICK	2916	- 87	GALLUP	1770	+ 81	BURLINGTON	1559	+ 153
COLUMBUS/METRO	2852	+ 66	TRUTH OR CONSEQ.	2558	+ 158	VA CHARLOTTESVILLE	2336	+ 124
MACON	2798	+ 3	ALBANY	1730	+ 138	HAMPTON/LANGLEY	2558	+ 238
SAVANNAH	2957	+ 95	ELMIRA	1674	+ 162	LYNCHBURG	2407	+ 278
ID BOISE	1490	- 140	GLENS FALLS	1571	+ 115	NORFOLK	2554	+ 222
BURLEY	1357	- 70	ROCHESTER	1596	+ 43	RICHMOND	2440	+ 141
IDAHO FALLS	1089	- 217	SYRACUSE	1628	+ 89	WA BELLINGHAM	1051	+ 129
POCATELLO	1187	- 213	UTICA	1478	+ 40	HOQUIAM	947	+ 160
IL BELLEVILLE	2305	+ 54	WATERTOWN	1423	- 14	SEATTLE-TACOMA	1125	+ 49
CHICAGO/MIDWAY	1849	- 8	ASHVILLE	2123	+ 128	SPOKANE	1152	- 149
DECATUR	2089	- 44	FAYETTEVILLE	2664	+ 141	TACOMA	1183	+ 24
PEORIA	2058	+ 114	GREENSBORO	2527	+ 212	WALLA WALLA	1586	- 89
ROCKFORD	1812	+ 66	HICKORY	2417	+ 118	WENATCHEE	1628	- 112
SPRINGFIELD	2146	+ 42	RALEIGH	2558	+ 176	YAKIMA	1507	- 69
QUINCY	2047	- 16	WILMINGTON	2772	+ 122	WV HUNTINGTON	2265	+ 271
IN INDIANAPOLIS	2077	+ 65	NEW BERN	2676	+ 100	MARTINSBURG	2024	+ 59
SOUTH BEND	1801	+ 66	ND BISMARCK	1237	- 184	MORGANTOWN	1998	+ 93
TERRE HAUTE	2158	+ 105	DICKINSON	1041	- 280	WI EAU CLAIRE	1402	- 135
IA DES MOINES	1827	- 179	JAMESTOWN	1182	- 215	GREEN BAY	1413	0
MASON CITY	1527	- 239	MINOT	1078	- 238	LACROSSE	1589	- 122
OTTUMWA	1943	- 56	GRAND FORKS	1279	- 82	MADISON	1676	+ 11
KS CHANUTE	2234	- 96	OH AKRON-CANTON	1770	+ 83	WAUSAU	1275	- 135
DODGE CITY	2075	- 116	COLUMBUS	1978	+ 104	CASPER	1311	- 75
GARDEN CITY	1992	- 166	DAYTON	1976	+ 22	LANDER	1227	- 133
GOODLAND	1713	- 103	FINDLAY	1726	- 40	SHERIDAN	1164	- 166
MEDICINE LODGE	2363	- 40	YOUNGSTOWN	1703	+ 128	WORLAND	1436	- 66
RUSSELL	2063	- 97	ZANESVILLE	1914	+ 90			

Based on 1951-80 normals.

\* Growing degree days for corn are computed to a 50°F base with the daily maximum temperature limited to 86°F or lower, and the daily minimum to 50°F or higher.

# National Weather Data for Selected Cities

## Weather Data for the Week Ending July 31, 1993

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 Jun 1	PCT. NORMAL SINCE Jun 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE	MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE		.50 INCH OR MORE	
																		OR MORE	OR MORE		
AL BIRMINGHAM	98	71	101	61	85	5	.2	-.9	.1	2.6	29	22.3	64	94	41	7	0	3	0	0	
MOBILE	94	75	97	73	84	2	.1	-1.6	.1	8.7	73	41.7	108	95	52	7	0	3	0	0	
MONTGOMERY	98	73	100	64	86	5	.1	-1.1	.0	5.8	55	28.1	79	93	43	7	0	2	0	0	
AK ANCHORAGE	73	55	77	51	64	5	.1	-.4	.1	.8	26	4.4	68	83	54	0	0	2	0	0	
BARROW	52	36	68	31	44	4	.3	-.1	.2	1.1	92	2.0	96	94	64	0	3	3	0	0	
FAIRBANKS	80	55	85	49	67	6	.6	-.5	.2	1.6	48	5.2	96	80	37	0	0	0	0	0	
JUNEAU	66	52	76	50	59	3	1.1	.0	.7	4.9	67	28.7	114	92	63	0	0	2	1	1	
KODIAK	65	52	71	47	58	3	1.0	.1	.6	5.7	67	37.7	106	96	70	0	0	3	1	1	
NOME	58	48	66	41	53	1	.4	-.6	.2	1.3	40	6.0	92	97	73	0	0	0	0	0	
AZ PHOENIX	107	82	113	78	95	1	.0	-.2	.0	.1	1	8.7	246	40	13	7	0	0	0	0	
PRESCOTT	92	60	96	54	76	3	.0	-.9	.0	.1	3	12.0	121	41	13	5	0	0	0	0	
TUCSON	106	75	109	68	91	4	.4	-.6	.2	.3	11	7.7	143	47	13	7	0	0	0	0	
YUMA	109	82	115	79	95	1	.0	-.1	.0	.0	0	3.3	269	41	14	7	0	0	0	0	
AR FORT SMITH	102	75	105	72	89	6	.0	-.7	.2	5.2	82	26.9	112	85	33	7	0	0	0	0	
LITTLE ROCK	99	77	103	75	88	7	.0	-.7	.0	4.7	63	26.1	92	75	40	7	0	0	0	0	
CA BAKERSFIELD	94	67	100	64	80	0	-.4	.0	.0	.5	436	6.6	172	55	20	6	0	0	0	0	
BUREKA	63	51	68	50	57	0	.0	.0	.0	1.6	248	29.8	142	90	63	0	0	0	0	0	
FRESNO	95	66	100	63	80	0	-.2	.0	.0	1.6	>1000	11.5	163	67	29	6	0	0	0	0	
LOS ANGELES	75	65	77	62	70	0	.0	.0	.0	.7	>1000	18.5	237	86	50	0	0	0	0	0	
REDDING	96	66	108	59	81	0	-.1	.0	.0	.7	89	35.3	186	63	19	6	0	0	0	0	
SACRAMENTO	89	58	100	54	74	0	-.3	.0	.0	1.3	735	19.1	177	88	31	3	0	0	0	0	
SAN DIEGO	74	66	76	64	70	0	-.2	.0	.0	.4	478	15.5	251	86	48	0	0	1	0	0	
SAN FRANCISCO	79	57	97	53	68	5	.0	.0	.0	.2	114	19.4	158	84	45	1	0	0	0	0	
CO DENVER	94	58	99	53	76	2	.2	-.3	.2	2.6	69	7.8	77	73	22	5	0	1	0	0	
GRAND JUNCTION	95	63	99	56	79	0	-.1	.0	.0	.1	5	7.6	134	58	14	6	0	0	0	0	
PUEBLO	96	58	101	52	77	2	.0	-.5	.2	2.9	86	8.6	124	73	17	7	0	0	0	0	
CT BRIDGEPORT	84	68	90	66	76	2	1.2	.4	.7	3.0	41	19.0	76	80	49	1	0	4	1	1	
HARTFORD	84	64	90	61	74	0	1.2	.5	1.2	7.5	109	26.4	105	92	54	1	0	2	1	1	
DC WASHINGTON	92	73	100	69	83	2	.3	-.5	.3	3.1	43	22.1	100	86	50	5	0	1	0	0	
FL APALACHICOLA	95	74	99	73	85	3	1.3	-.5	1.3	4.6	38	24.3	83	96	58	7	0	1	1	1	
DAYTONA BEACH	93	75	98	73	84	3	.9	-.4	.8	7.2	64	21.1	82	96	77	0	0	2	1	1	
JACKSONVILLE	95	73	99	71	84	2	.4	-.9	.2	8.0	71	23.1	83	98	47	7	0	3	0	0	
KEY WEST	92	81	93	80	87	2	.2	-.8	.2	2.2	25	18.0	93	76	61	7	0	1	0	0	
MIAMI	93	78	95	74	85	3	3.4	2.1	1.4	10.9	73	29.4	96	83	53	6	0	4	3	3	
ORLANDO	96	75	97	72	85	3	2.6	1.0	2.6	11.0	75	27.7	97	91	44	7	0	2	1	1	
TALLAHASSEE	98	72	101	68	85	3	.2	-1.8	.2	11.0	70	34.2	84	91	44	7	0	1	0	0	
TAMPA	95	77	97	75	86	4	.5	-1.1	.2	6.1	51	20.1	82	86	50	7	0	4	0	0	
WEST PALM BEACH	92	76	94	74	84	1	2.1	.8	1.0	8.3	59	34.1	107	90	51	7	0	4	2	2	
GA ATLANTA	97	73	101	68	85	6	1.2	.1	1.0	9.1	106	30.8	95	81	39	7	0	2	1	1	
AUGUSTA	101	72	104	66	86	5	.2	-.8	.2	4.0	48	23.6	83	89	39	7	0	1	0	0	
MACON	99	73	102	67	86	5	.5	-.5	.5	5.5	70	30.1	104	88	38	7	0	1	0	0	
SAVANNAH	98	75	103	70	87	5	2.1	.5	2.0	6.8	57	28.2	95	86	42	7	0	2	1	1	
HI HILO	82	70	84	68	76	0	4.0	1.7	1.7	25.0	157	58.5	78	95	78	0	0	7	3	3	
HONOLULU	88	74	89	71	81	0	.0	-.1	.2	.8	76	2.4	20	77	54	0	0	1	0	0	
KAHULUI	86	72	88	68	79	0	.2	.0	.2	.8	120	6.2	47	79	59	0	0	1	0	0	
LIHUE	84	74	84	74	79	0	.2	-.2	.1	2.3	61	8.5	36	80	67	0	0	3	0	0	
ID BOISE	86	54	102	46	70	0	-.5	.0	.0	2.6	225	10.7	146	77	22	2	0	0	0	0	
LEWISTON	83	56	97	51	70	0	-.6	.0	.1	2.8	147	10.2	134	72	28	1	0	0	0	0	
POCATELLO	81	50	93	42	66	0	-.3	.2	.3	4.0	241	13.5	182	82	32	1	0	2	0	0	
IL CHICAGO	85	65	89	58	75	1	.8	.0	.8	14.4	194	30.0	150	90	51	0	0	2	1	1	
MOLINE	85	67	93	60	76	1	1.5	.4	.9	19.1	207	35.9	155	93	57	3	0	4	1	1	
PEORIA	86	67	93	61	76	1	.2	-.7	.2	15.9	194	33.3	155	92	58	2	0	2	0	0	
QUINCY	86	68	91	63	77	1	1.3	.3	.9	12.0	144	22.7	100	87	51	2	0	2	1	1	
ROCKFORD	85	65	90	60	75	1	.2	-.7	.2	15.6	180	31.9	153	94	55	1	0	1	0	0	
SPRINGFIELD	87	67	93	60	77	1	1.1	.3	1.1	16.7	240	31.3	151	90	51	1	0	2	1	1	
IN EVANSVILLE	93	71	98	62	82	3	.1	-.9	.1	7.0	85	25.0	88	82	46	4	0	1	0	0	
FORT WAYNE	87	65	93	54	76	2	.2	-.8	.2	9.8	140	28.8	140	92	48	2	0	0	0	0	
INDIANAPOLIS	88	65	94	57	77	1	.2	-.8	.2	10.1	127	26.0	107	92	50	3	0	1	0	0	
SOUTH BEND	85	64	90	53	74	1	.2	-.6	.2	12.4	156	26.5	119	90	44	2	0	1	0	0	
IA DES MOINES	86	66	91	62	76	1	.9	.1	.9	17.4	205	34.3	168	91	57	1	0	2	1	1	
SIoux CITY	85	64	90	58	74	0	-.4	-.3	.4	10.9	157	21.3	132	93	54	1	0	2	0	0	
WATERLOO	83	65	86	58	74	1	3.3	2.2	1.4	21.4	230	37.0	178	95	60	0	0	3	2	2	
KS CONCORDIA	91	68	98	63	80	0	.4	-.4	.4	23.4	287	34.1	186	90	48	3	0	1	0	0	
DODGE CITY	95	66	101	61	81	0	.0	-.7	.2	9.6	151	19.9	141	86	36	6	0	1	0	0	
GOODLAND	90	60	98	54	75	0	.0	-.6	.0	5.5	91	11.0	86	87	35	3	0	0	0	0	
TOPEKA	91	71	99	67	81	2	1.0	.3	1.0	13.2	144	31.6	150	87	50	4	0	1	1	1	
WICHITA	97	74	104	72	86	5	.0	-.7	.0	7.7	84	23.3	111	78	41	7	0	0	0	0	
KY BOWLING GREEN	92	69	98	58	81	2	.2	-.1	.0	6.2	69	21.4	68	93	46	5	0	0	0	0	
LEXINGTON	90	67	96	56	79	3	.7	-.4	.7	8.8	102	25.2	92	88	44	4	0	1	1	1	
LOUISVILLE	92	70	97	62	81	4	.8	-.2	.8	8.6	108	27.9	101	86	46	4	0	2	1	1	
LA BATON ROUGE	94	76	96	75	85	3	.2	-1.4	.1	7.5	67	42.8	117	97	56	6	0	2	0	0	
LAKE CHARLES	94	75	97	73	84	2	.5	-.7	.2	11.5	114	42.2	138	94	55	7	0	3	0	0	
NEW ORLEANS	95	77	98	75	86	4	.1	-1.3	.1	10.7	90	39.0	105	95	52	7	0	1	0	0	
SREVEPORT	99	75	102	73	87	5	.0	-.8	.2	16.0	201	38.9	129	92	42	7	0	1	0	0	

Based on 1961-90 normals.

Weather Data for the Week Ending July 31, 1993

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 Jun 1	PCT. NORMAL SINCE Jun 1	TOTAL IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	TEMP. °F		PRECIP.	
																		.01 INCH OR MORE	.50 INCH OR MORE	.01 INCH OR MORE	.50 INCH OR MORE
ME CARIBOU	70	56	76	42	63	.3	.2	-.7	.2	7.0	101	20.0	104	91	60	0	0	3	0		
PORTLAND	72	60	78	57	66	.8	.8	-.1	.5	5.6	86	25.3	102	95	54	0	0	1	0		
MD BALTIMORE	90	70	97	64	80	T	T	-.8	T	4.3	58	25.3	107	80	46	3	0	0	0		
SALLSBURY	90	70	97	62	80	.3	.3	-.1	.3	2.8	35	26.3	101	94	51	3	0	0	0		
MA BOSTON	78	63	86	60	71	.6	.6	.0	.6	3.5	59	24.1	102	88	51	0	0	2	1		
CHATHAM	71	59	76	56	65	.3	1.0	-.3	1.0	4.8	76	22.9	90	93	55	0	0	2	1		
MI ALPENA	81	59	90	52	70	.5	.5	-.2	.4	5.7	95	13.8	86	98	49	1	1	0	0		
DETROIT	85	66	93	57	75	1.1	1.1	.4	1.0	8.2	121	20.1	107	83	49	1	0	4	1		
FLINT	83	62	89	51	73	1.8	1.8	1.2	1.0	7.6	128	19.0	116	88	45	0	0	3	2		
GRAND RAPIDS	83	63	87	53	73	.5	.5	-.2	.3	7.9	115	22.7	118	87	45	0	0	2	0		
HOUGHTON LAKE	80	62	87	51	71	.4	.4	-.3	.3	6.1	109	14.8	98	90	50	0	0	3	1		
LANSING	83	62	88	48	73	2.1	2.1	1.5	2.1	9.4	158	21.8	131	93	52	0	0	1	0		
MARQUETTE	75	60	81	51	67	.4	.4	-.3	.3	4.4	69	17.2	92	91	51	0	0	3	0		
MUSKEGON	71	64	87	53	73	2.8	2.8	2.3	1.1	8.3	186	20.4	125	92	54	0	0	4	3		
SAULT ST. MARIE	73	55	81	49	64	1.0	1.0	-.3	.7	7.0	120	18.2	105	95	53	0	0	5	1		
MN ALEXANDRIA	80	62	85	58	71	.1	.1	-.6	.1	10.2	142	20.1	131	90	53	0	0	1	0		
DULUTH	76	59	79	52	67	.8	.8	-.1	.3	12.7	171	22.5	135	94	52	0	0	6	0		
INT'L FALLS	77	59	83	51	68	1.6	1.6	-.8	.8	8.0	107	13.6	96	96	47	0	0	4	2		
MINNEAPOLIS	81	65	85	59	73	.6	.6	-.2	.4	11.9	157	20.8	121	85	52	0	0	3	0		
ROCHESTER	80	62	85	57	71	1.1	1.1	-.1	.4	12.4	157	26.3	151	93	51	0	0	3	0		
MS GREENWOOD	99	75	101	70	87	5	5	-.4	4	4.7	55	28.8	85	97	49	7	0	1	0		
JACKSON	95	75	96	71	85	4	4	-.9	4	10.8	149	31.2	91	100	52	7	0	1	0		
MERIDIAN	96	74	99	68	85	4	4	-.3	2	6.3	72	35.2	98	93	47	7	0	2	0		
MO CAPE GIRARDEAU	94	72	100	68	83	4	4	-.5	5	7.8	111	28.5	102	85	43	5	0	1	0		
COLUMBIA	90	70	92	64	80	2	2	-.3	3	17.5	229	34.4	153	92	53	5	0	1	0		
KANSAS CITY	91	69	98	65	80	1	1	-.4	2	16.6	182	34.9	159	91	51	4	0	2	0		
SAINT LOUIS	91	75	97	70	83	3	3	-.4	4	12.2	161	31.9	142	79	47	4	0	2	0		
SPRINGFIELD	93	71	96	64	82	3	3	-.4	4	12.9	160	28.6	117	85	49	6	0	1	0		
MT BILLINGS	78	56	90	51	67	1.3	1.3	1.1	1.2	7.1	243	10.7	108	79	36	1	0	2	1		
GLASGOW	79	56	90	53	68	1.6	1.6	1.2	1.0	6.8	178	10.2	139	88	39	1	0	3	2		
GREAT FALLS	75	51	93	44	63	1.6	1.6	-.2	3	7.1	195	16.0	158	86	44	1	0	2	0		
HAVRE	78	54	100	48	66	1.1	1.1	-.1	1	7.6	240	10.4	142	86	41	1	0	1	0		
HELENA	77	52	95	47	64	1.2	1.2	1.0	.8	7.9	264	13.5	181	86	37	1	0	2	1		
KALISPELL	75	50	85	39	62	.4	.4	-.2	2	9.5	285	16.5	166	92	41	0	0	3	0		
MILES CITY	79	59	93	52	69	1.8	1.8	1.5	1.2	11.1	256	16.0	167	91	51	1	0	2	2		
MISSOULA	80	51	93	41	65	.1	.1	-.1	1	3.5	129	9.5	113	84	32	1	0	1	0		
NE GRAND ISLAND	87	65	95	58	76	2.7	2.7	2.1	1.5	15.6	231	24.1	150	90	50	2	0	2	2		
LINCOLN	87	67	95	62	77	-1	-1	-.7	1	8.1	115	18.7	109	97	51	2	0	0	0		
NORFOLK	87	66	93	61	76	1	1	-.9	3	7	15.4	200	25.6	152	89	52	2	0	2	1	
NORTH PLATTE	87	59	95	51	73	-1	-1	-.7	1	11.6	180	18.6	134	95	46	2	0	2	1		
OMAHA	86	68	92	62	77	0	0	-.5	1	17.7	247	29.3	164	89	57	2	0	2	0		
SCOTTSSBLUFF	89	55	97	49	72	-.3	-.3	-.1	3	8.7	184	15.0	135	90	27	3	0	1	0		
VALENTINE	88	59	99	53	74	1.1	1.1	-.4	6	7.2	105	14.0	95	92	35	2	0	2	2		
NV ELY	86	43	91	34	65	-.4	-.4	-.2	1.5	96	7.3	120	74	13	2	0	1	0	0		
LAS VEGAS	105	77	109	75	91	0	0	-.1	0	1	17	4.4	187	46	12	7	0	0	0		
RENO	90	55	97	50	72	0	0	-.1	0	4	47	4.9	107	71	15	4	0	0	0		
WINNEMUCCA	90	47	97	40	68	-5	-5	-.1	0	1.2	107	6.2	125	75	16	4	0	0	0		
NH CONCORD	81	60	89	54	71	1	1	1.7	-.9	8	4.1	64	15.0	74	95	52	0	0	3	1	
NJ ATLANTIC CITY	87	66	92	60	77	1	1	-.2	-.8	2	3.1	49	21.5	91	89	49	2	0	1	0	
NM ALBUQUERQUE	97	65	99	59	81	2	2	-.3	1	7	34	3.6	82	60	21	7	0	2	0		
CLOVIS	92	67	94	66	80	3	3	1.0	3	1.0	6.5	120	8.6	90	75	31	6	0	1	1	
ROSWELL	99	70	100	66	85	4	4	.1	3	3.9	119	6.4	108	68	20	7	0	1	0		
NY ALBANY	82	64	89	58	73	1	1	5.0	4.2	2.2	9.4	139	26.3	127	91	51	0	0	3	3	
BINGHAMTON	79	62	86	56	70	1	1	1.3	-.6	1.1	6.3	89	23.9	113	88	51	0	0	3	1	
BUFFALO	82	65	89	59	73	2	2	.7	-.0	.5	6.8	102	20.5	101	85	48	0	0	3	0	
NEW YORK	88	71	94	65	80	3	3	.5	-.4	5	3.4	44	22.0	89	78	42	2	0	2	0	
ROCHESTER	82	63	90	55	73	2	2	.6	-.1	3	4.4	78	15.1	86	97	56	1	0	3	0	
SYRACUSE	82	64	90	57	73	2	2	1.1	-.3	6	7.7	101	25.7	120	94	55	1	0	5	1	
NC ASHVILLE	90	65	95	58	78	4	4	1.0	-.2	7	3.2	33	23.0	71	91	42	5	0	2	1	
CHARLOTTE	95	73	100	68	84	4	4	.1	-.9	1	1.7	23	22.8	88	80	38	6	0	1	0	
GREENSBORO	92	70	97	63	81	4	4	.5	-.6	2	6.4	77	30.1	118	82	45	4	0	3	0	
HATTERAS	89	74	91	68	82	3	3	-.1	-.1	1	5.2	57	27.5	91	90	61	3	0	1	0	
NEW BERN	93	73	99	70	83	3	3	.6	-.1	6	9.6	78	31.3	96	89	51	5	0	1	1	
RALEIGH	93	72	99	65	83	4	4	-.1	-.8	1	2.4	32	23.4	93	83	44	4	0	1	0	
WILMINGTON	94	73	101	69	84	4	4	1.1	-.5	8	10.7	91	34.5	106	95	53	7	0	2	1	
ND BISMARCK	82	59	92	56	70	-1	-1	.8	-.3	4	18.3	377	23.0	222	93	46	1	0	3	0	
FARGO	81	63	89	57	72	1	1	.4	-.2	4	12.0	217	17.2	144	90	47	0	0	2	0	
GRAND FORKS	80	62	87	58	71	1	1	3.3	2.8	3.3	11.6	208	14.3	129	93	56	0	0	2	1	
WILLISTON	79	54	84	49	67	-5	-5	1.0	-.6	9	10.1	229	12.6	136	92	44	0	0	2	1	
OH AKRON-CANTON	85	64	95	57	75	2	2	.2	-.7	1	7.3	101	22.6	103	87	48	3	0	3	0	
CINCINNATI	82	66	99	50	79	3	3	T	-.9	T	6.1	75	22.4	87	89	42	4	0	1	0	
CLEVELAND	86	67	96	57	76	4	4	1.3	-.5	7	7.8	107	23.4	111	83	46	2	0	3	2	
COLUMBUS	87	65	94	56	76	3	3	T	-.8	T	9.3	122	25.7	114	82	49	3	0	1	0	
DAYTON	89	66	96	56	77	3	3	T	-.8	T	10.9	149	32.2	144	85	47	4	0	0	0	

Based on 1961-90 normals.

Weather Data for the Week Ending July 31, 1993

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 Jun 1	PCT. NORMAL SINCE Jun 1	TOTAL, IN., SINCE Jun 1	PCT. NORMAL SINCE Jun 1	AVERAGE	MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	TEMP. °F		PRECIP.	
																			.01 INCH OR MORE	.50 INCH OR MORE		
INDIANA	88	66	96	55	77	5	.6	-.1	.6	6.2	88	18.8	99	88	47	3	0	1	2			
OHIO	84	63	95	56	74	3	3.0	2.2	1.8	7.5	94	21.2	97	85	49	3	0	3	2			
OKLAHOMA	100	73	103	70	87	4	.0	-.5	.0	3.8	55	24.6	121	77	33	7	0	0	0			
OKLAHOMA CITY	99	76	103	73	88	4	.3	-.3	.3	6.2	82	25.3	106	78	39	7	0	1	0			
OREGON	67	54	74	50	60	0	.4	.2	.2	5.5	155	33.7	94	92	62	0	0	3	0			
ASTORIA	79	42	89	37	60	-7	-.0	-.1	.0	1.1	89	7.6	136	86	28	0	0	0	0			
BURNS	87	51	96	45	69	-5	T	-.1	T	1.9	225	11.7	123	85	26	2	0	0	0			
MEDFORD	81	55	93	51	68	-6	T	-.1	T	2.2	219	9.6	141	70	28	2	0	1	0			
PENDLETON	77	56	85	54	66	-3	T	.4	T	4.1	194	21.9	114	92	46	0	0	2	0			
PORTLAND	78	52	88	49	65	-2	T	.2	T	4.2	222	24.9	120	91	40	0	0	2	0			
SALEM	86	67	92	61	77	2	.4	-.5	.3	7.1	90	26.7	107	86	51	2	0	3	0			
PENNSYLVANIA	83	69	94	64	76	4	.9	-.1	.4	6.7	90	19.3	89	86	55	1	0	3	0			
ALLENTOWN	90	71	97	66	80	4	.4	-.4	.3	6.2	83	25.6	106	84	41	4	0	2	0			
ERIE	90	72	96	66	81	6	.2	-.8	.2	3.5	40	21.8	80	81	46	4	0	1	0			
HARRISBURG	90	72	96	66	81	6	.2	-.8	.2	3.5	40	21.8	80	81	46	4	0	1	0			
PHILADELPHIA	86	66	96	60	76	4	.5	-.3	.5	6.2	83	22.8	101	80	44	4	0	3	1			
PITTSBURGH	85	66	93	59	76	4	.4	-.4	.1	2.9	37	18.8	89	84	49	2	0	6	0			
SCRANTON	80	64	87	62	72	-1	1.1	.3	.7	3.6	55	24.3	94	91	58	0	0	2	1			
RI	96	75	100	73	85	4	.4	-1.2	.4	7.9	60	31.1	100	89	49	7	0	1	0			
PROVIDENCE	97	73	103	64	85	4	.5	-.8	.5	2.8	27	24.1	79	90	41	7	0	1	1			
SC CHARLESTON	96	75	103	71	85	4	1.4	.2	1.4	5.3	54	20.6	76	90	41	7	0	3	1			
COLUMBIA	96	75	103	71	85	4	1.4	.2	1.4	5.3	54	20.6	76	90	41	7	0	3	1			
FLORENCE	95	69	101	62	82	4	.3	-.9	.0	.9	10	27.9	88	82	37	7	0	2	0			
GREENVILLE	84	62	92	56	73	0	-.1	-.4	.3	13.6	207	19.7	146	92	46	1	0	3	0			
SD ABERDEEN	83	63	90	59	73	-2	.9	.4	.8	13.8	229	22.8	166	93	52	1	0	3	1			
HURON	82	55	95	50	69	-5	.3	-.1	.2	7.7	151	15.1	130	90	45	1	0	2	0			
RAPID CITY	84	64	90	60	74	0	.3	-.3	.3	14.3	235	28.7	199	91	49	2	0	1	0			
STOUK FALLS	100	72	104	64	86	7	T	-1.0	T	2.9	35	25.9	79	84	38	7	0	1	0			
TN CHATTANOOGA	96	69	100	61	83	6	T	-1.0	T	2.9	34	21.7	73	82	37	6	0	0	0			
KNOXVILLE	98	78	99	75	88	5	T	-.9	T	5.1	69	24.9	80	80	45	7	0	0	0			
MEMPHIS	95	73	99	65	84	4	T	-.9	T	9.0	119	28.1	97	84	43	6	0	0	0			
NASHVILLE	101	76	103	74	89	4	.0	-.5	.0	4.1	82	10.1	75	67	23	7	0	0	0			
TX ABILENE	93	67	97	65	80	1	T	-.6	T	6.1	97	10.8	91	77	37	7	0	0	0			
AMARILLO	99	76	101	74	88	3	.0	-.4	.0	4.0	69	20.9	111	88	36	7	0	0	0			
AUSTIN	96	76	97	73	86	3	.9	-.3	.5	14.7	134	45.3	143	97	56	7	0	3	1			
BEAUMONT	95	76	97	73	86	1	.0	-.4	.0	6.7	145	17.1	139	95	46	7	0	0	0			
BROWNSVILLE	94	75	95	72	84	0	T	-.5	T	12.0	208	28.4	184	99	52	7	0	0	0			
CORPUS CHRISTI	100	77	101	74	88	4	.0	-.4	.0	6.3	132	10.1	73	76	38	7	0	0	0			
DEL RIO	100	75	103	71	88	6	T	-.4	T	2.4	110	4.2	112	50	19	7	0	1	0			
EL PASO	102	78	103	75	90	6	.0	-.4	.0	3.8	68	19.5	90	77	31	7	0	0	0			
FORT WORTH	92	82	93	82	87	3	T	-.9	T	3.4	40	30.0	135	81	66	7	0	0	0			
GALVESTON	98	75	99	73	87	4	.3	-.6	.3	12.6	119	43.8	146	93	44	7	0	2	0			
HOUSTON	99	70	101	65	85	5	.1	-.5	.1	4.6	90	9.6	92	68	29	7	0	1	0			
LUBBOCK	99	71	102	68	85	3	T	-.4	T	4.0	132	8.4	111	70	27	7	0	0	0			
MIDLAND	101	75	104	74	88	5	.0	-.2	.0	1.8	52	9.2	84	71	25	7	0	0	0			
SAN ANGELO	98	77	100	75	88	2	.0	-.4	.0	6.4	108	27.3	154	85	37	7	0	0	0			
SAN ANTONIO	96	76	99	75	86	3	.9	-.1	.7	12.5	142	41.2	169	95	48	7	0	3	1			
VICTORIA	99	76	101	73	87	1	.0	-.4	.0	2.2	41	18.5	97	86	38	7	0	0	0			
WACO	102	75	103	73	88	4	.0	-.4	.0	3.9	70	19.7	106	72	32	7	0	0	0			
WICHITA FALLS	90	56	96	52	73	-2	.0	-.3	.0	1.0	66	7.8	121	51	17	3	0	0	0			
UT CEDAR CITY	87	60	96	50	74	-5	.4	.2	.3	2.5	145	14.0	141	70	30	3	0	2	0			
SALT LAKE CITY	80	64	87	57	72	1	1.7	.9	1.3	6.7	94	18.2	98	97	49	0	0	5	1			
VT BURLINGTON	91	75	103	72	83	5	T	-1.2	T	3.2	35	22.8	85	78	50	3	0	1	0			
VA NORFOLK	94	71	101	68	82	4	.3	-.9	.3	3.6	42	26.1	103	82	47	6	0	2	0			
RICHMOND	91	68	98	62	80	4	.2	-.7	.2	3.7	53	24.0	102	81	43	4	0	2	0			
ROANOKE	66	52	74	48	59	-1	.2	-.3	.1	4.6	82	43.4	76	98	69	0	0	4	0			
WA QUILLAYUTE	71	53	78	51	62	-4	.4	.3	.2	3.8	166	20.4	106	95	54	0	0	3	0			
SEATTLE-TACOMA	76	52	87	45	64	-6	.2	-.1	.2	2.6	132	9.2	97	86	36	0	0	1	0			
SPOKANE	83	49	89	45	66	-5	.4	.4	.3	1.3	188	4.5	105	86	33	0	0	3	0			
YAKIMA	86	64	92	59	75	5	T	-1.0	T	4.8	56	22.2	88	84	45	3	0	0	0			
WV BECKLEY	92	68	100	61	80	5	.3	-.8	.2	7.0	81	22.3	88	88	43	4	0	2	0			
CHARLESTON	90	67	97	57	79	5	1.8	.6	1.8	8.5	100	24.6	95	86	46	4	0	1	1			
HUNTINGTON	89	67	95	62	78	3	T	-1.0	T	5.1	62	22.6	89	91	46	4	0	0	0			
PARKERSBURG	82	63	86	57	72	3	1.3	.6	1.3	13.7	210	24.4	153	88	50	0	0	1	1			
WI GREEN BAY	83	66	87	59	74	1	.4	-.4	.4	14.6	189	31.4	178	97	55	0	0	2	0			
LACROSSE	83	64	89	54	74	2	1.6	.7	1.1	16.0	210	31.2	170	87	52	0	0	4	1			
MADISON	85	67	89	61	76	5	.4	-.4	.4	10.6	158	25.7	137	79	47	0	0	1	0			
MILWAUKEE	79	61	84	54	70	0	1.1	.2	.5	10.5	133	23.4	130	96	58	0	0	4	1			
WAUSAU	87	53	99	46	70	-2	.4	-.1	.3	3.6	134	11.1	130	79	23	4	0	2	0			
WY CASPER	87	54	93	47	71	1	T	-.4	T	4.0	95	10.2	104	75	21	2	0	2	0			
CHEYENNE	84	54	94	43	69	-3	.5	-.3	.5	5.8	255	12.3	139	67	20	3	0	1	0			
LANDER	80	52	99	45	66	-4	.1	.0	.1	6.9	221	13.5	140	88	42	1	0	1	0			
SHERIDAN																						

Based on 1961-90 normals.

# July Weather and Crop Summary

## Weather

Catastrophic river flooding struck the upper half of the Mississippi Valley and the lower Missouri basin, and dozens of monthly temperature and rainfall records were broken in opposite quadrants of the Nation due to the sheer persistence and strength of a trough-ridge couplet. The energetic trough--fueled by a strong north Pacific jet stream and infused with abundant subtropical moisture--brought record cold to the Northwest and delivered record rainfall to many areas within the Missouri and middle Mississippi River watersheds. Equally anomalous and unyielding was the ridge over the Southeastern States, which suppressed thunderstorm activity and induced a month-long heatwave.

Although similar weather patterns have been observed during portions of other growing seasons (e.g. early-summer 1947), never before this century has such a powerful, stubborn trough-ridge couplet dominated throughout June and July. In the Southeast, several locations notched 90°F readings on every day in July, including Chattanooga, TN and Atlanta, GA. Montgomery, AL endured an average July maximum temperature of 97°F. Atlanta reached the 100°F mark on seven occasions, while Columbia, SC remarkably attained that level 17 times during the month. Record July heat was registered as far north as the Middle Atlantic cities of Richmond, VA, Washington, DC, and Philadelphia, PA. Greenville-Spartanburg, SC suffered through not only its hottest July on record, but its driest (0.75 inches of rain) as well.

Extremely dry weather was noted across much of the Nation's southern tier. Records for July dryness were established in scattered locations from Arizona to the Carolinas. In parts of central and eastern Texas, including Waco and Dallas-Ft. Worth, no measurable rain fell during the month. But farther north, Concordia, KS broke its July rainfall record by more than 5 inches, and its 16.75-inch inundation was the station's heaviest 1-month total on record. July rainfall records were also established in locations such as Peoria, IL (10.15 inches), Huron, SD (6.69 inches), Bismarck, ND (13.75 inches), Williston, ND (6.28 inches), Miles City, MT (6.34 inches), and Glasgow, MT (5.93 inches).

In the Northwest, damp, cool conditions dominated. Spokane, WA observed a combination of its coldest (8.6°F below normal) and fifth wettest (2.08 inches of rain) July on record. The gigantic western trough held sway over weather conditions as far south as Salt Lake City, UT, which had its coldest July ever. The mercury reached 90°F on only 7 days during the month in Salt Lake City, 16 days fewer than normal.

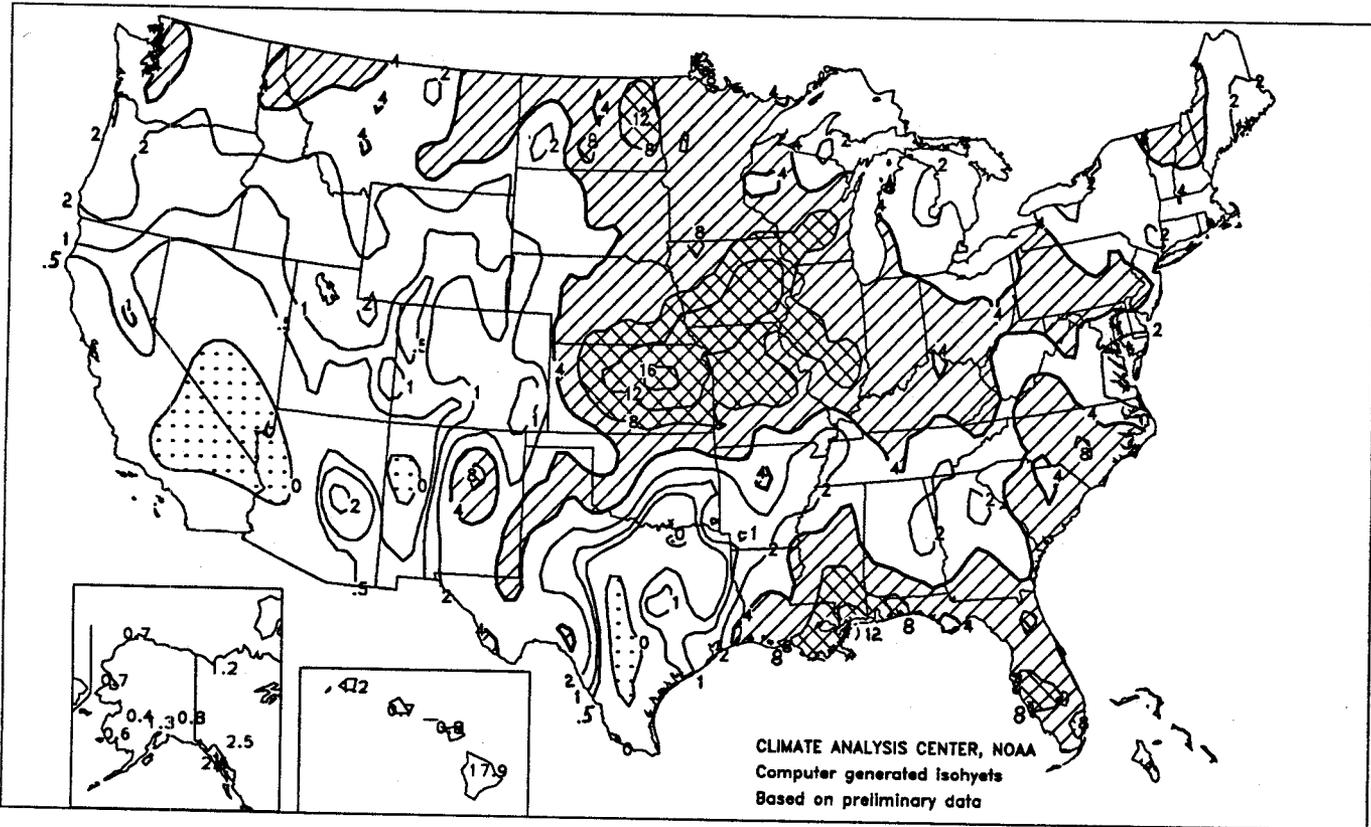
Toward month's end, a dramatic shift in the weather pattern began to break the Southeast's heatwave and permitted the Nation's mid-section to start drying out. Meanwhile, heat quickly spread into the West. On July 29, Worland, WY attained 102°F to notch a daily record high. During the first 28 days of the month, Worland established 13 daily record lows. Farther east, Bristol, TN, which had its hottest month on record, closed the month with a daily record low of 55°F.

## Fieldwork

The month of July will be remembered for: excessive rainfall and flooding in the Midwest; hot, dry, drought-like conditions in the Southeast; and above normal rainfall in the Northwest. The beginning of July saw **winter wheat** harvest active. Hot, dry conditions in the Southeast and South allowed the harvest to finish in these areas by the end of the month, while excessive moisture in the Midwest hampered and delayed harvest. Drier conditions the end of the period allowed harvest to advance in the Midwest and begin in the Northwest. Cool, damp conditions during July over the major **spring wheat** growing areas delayed crop development. The end of July, virtually no acreage had been harvested, compared to 20% average. **Corn** development was more than 1 week behind normal in early July. Heavy rains in the Midwest and excessive heat in the Southeast battered the crop during the month. Although drier conditions the end of the month allowed the crop to improve, growth in many fields remained uneven, and crop development remained more than 1 week behind normal. Wet conditions delayed the completion of **soybean** planting until the middle of July. Crop development has been hindered by cool conditions in the Midwest and dry conditions in the Southeast. Drier conditions in late July allowed the crop to recover, but the condition of the crop declined from the beginning of the month. Hot, dry conditions in early July favored **cotton** development. Crop development, as measured by cotton setting bolls, was ahead of last year and average. However, the continued dry and hot conditions stressed the crop in the South and Southeast and lowered crop condition from the beginning of July. **Sorghum** planting finished in early July. Crop development was slightly behind normal because of cool, damp conditions in the Central Plains growing areas. Favorable conditions over the **rice** production areas allowed the crop condition to improve during July. Producers started the rice harvest at the end of the month.

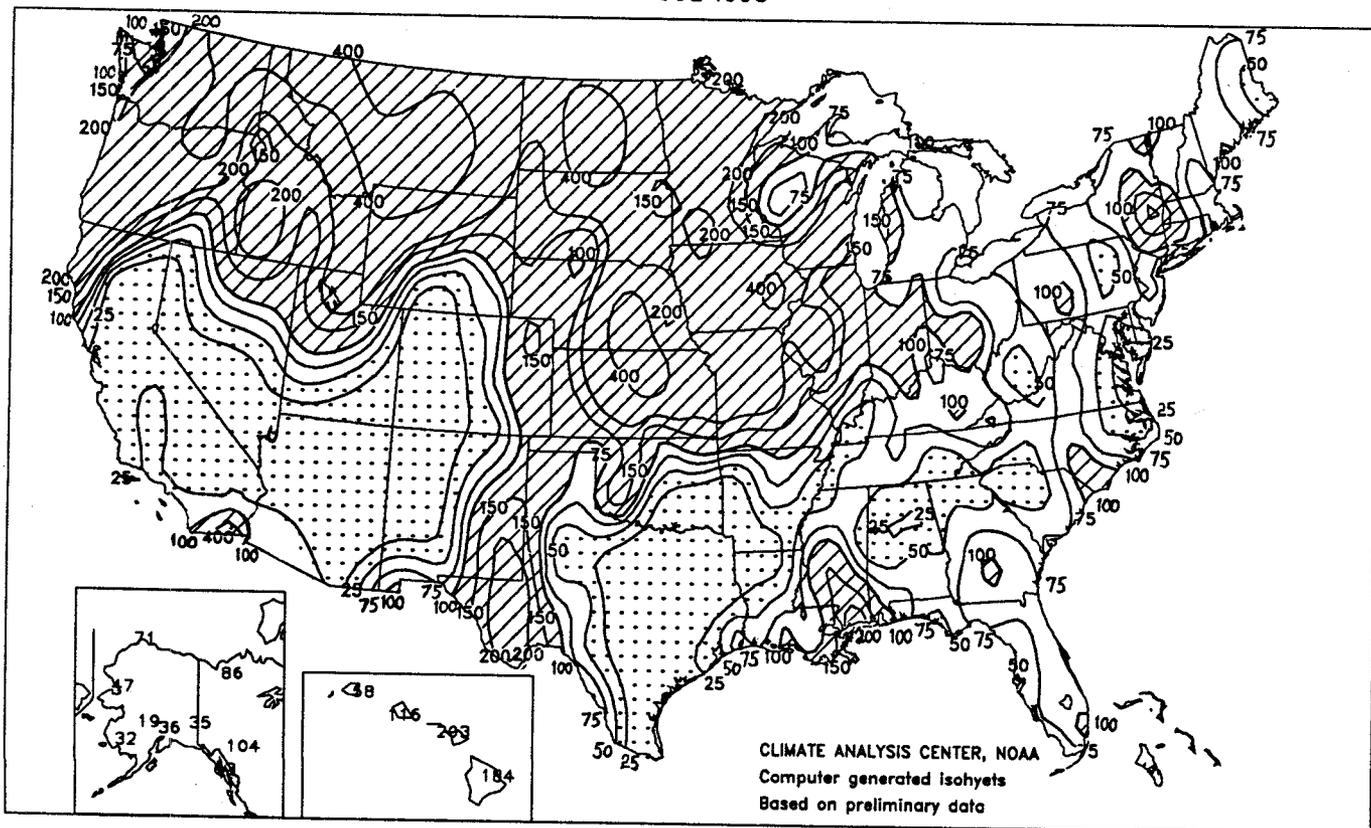
TOTAL PRECIPITATION (inches)

JUL 1993



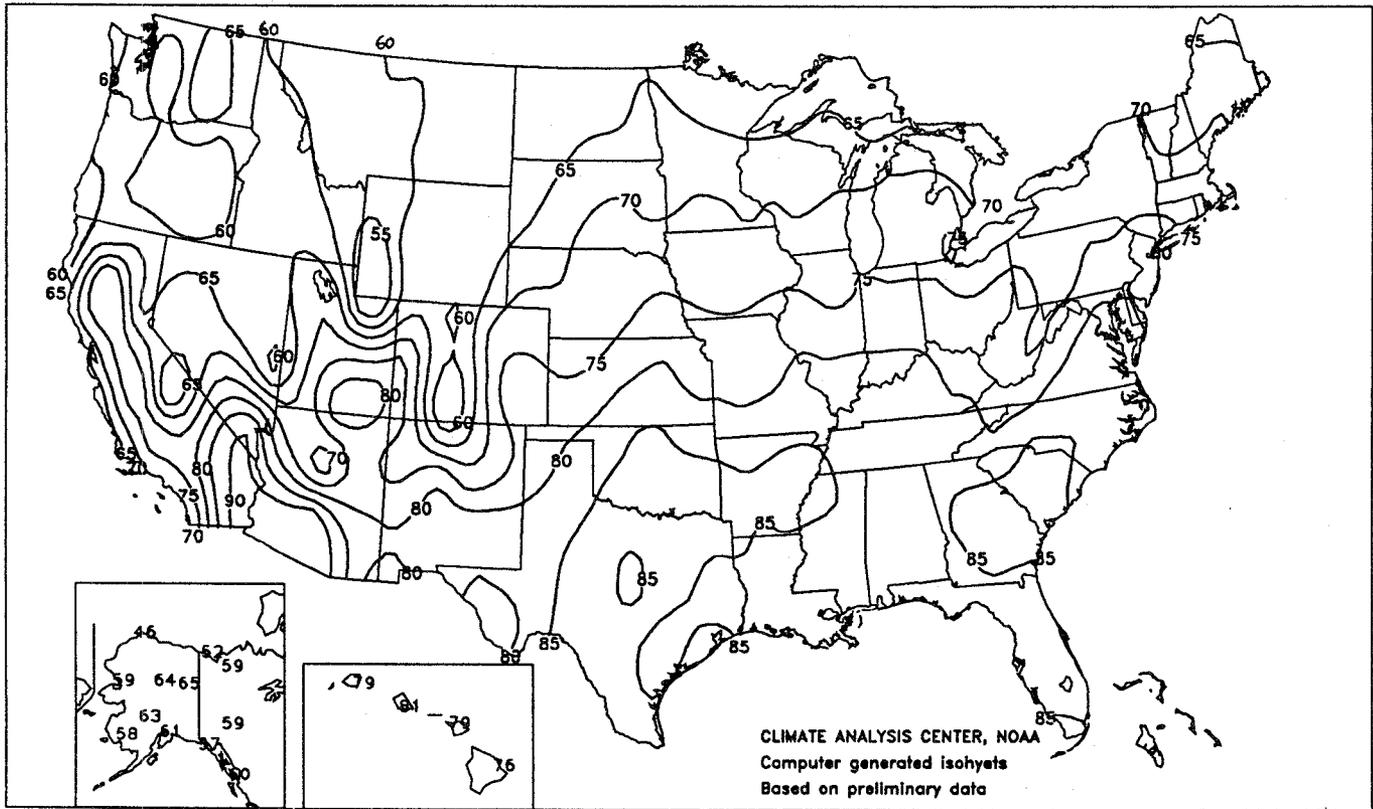
PERCENT OF NORMAL PRECIPITATION

JUL 1993



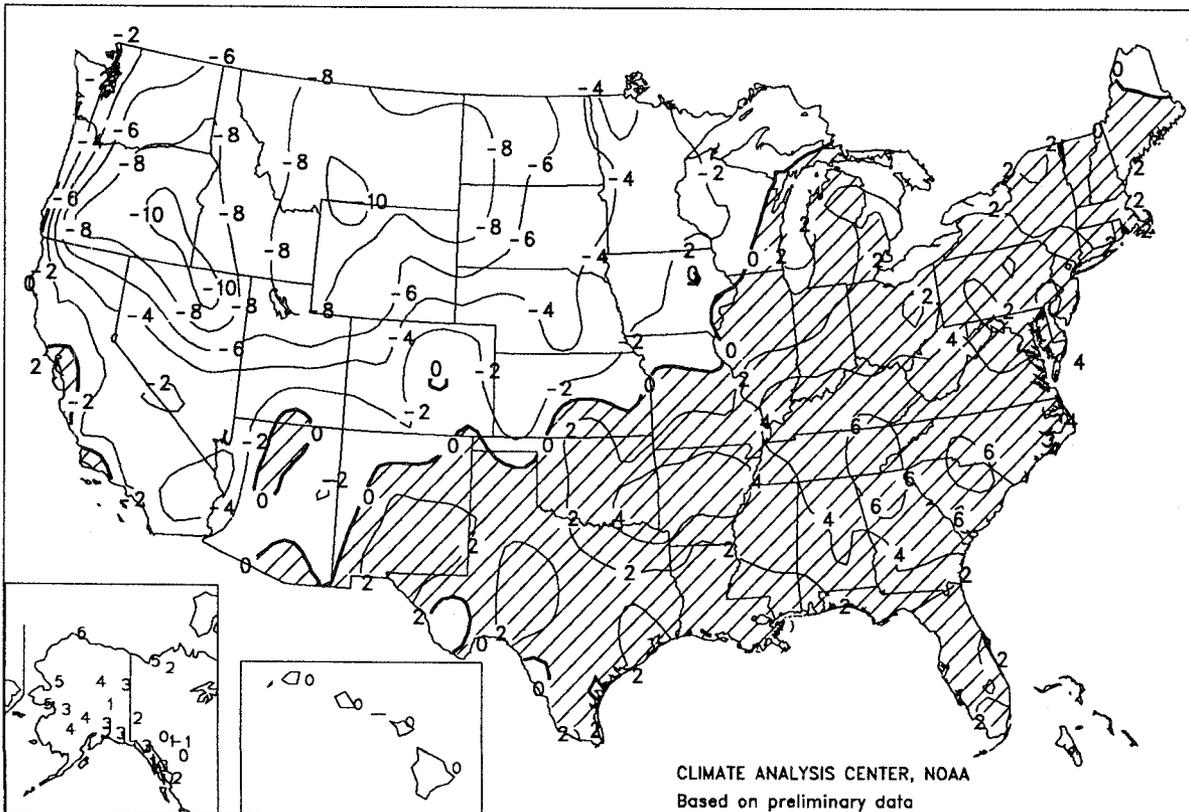
AVERAGE TEMPERATURE(°F)

JUL 1993



Departure of Average Temperature from Normal(°F)

JUL 1993



# TEMPERATURE AND PRECIPITATION SUMMARY

## July 1993

STATES AND STATIONS	Temp. °F		Precip.		STATES AND STATIONS	Temp. °F		Precip.		STATES AND STATIONS	Temp. °F		Precip.	
	AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE		AVERAGE	DEPARTURE	TOTAL	DEPARTURE
AL BIRMINGHAM	84	4	1.2	-4.1	LA BATON ROUGE	82	0	4.5	-2.3	OK YOUNGSTOWN	73	3	3.5	-0.6
AL HUNTSVILLE	83	4	2.2	-2.8	LA LAKE CHARLES	83	1	1.7	-3.5	OK OKLAHOMA CITY	84	2	1.2	-1.4
AL MOBILE	83	0	5.6	-1.2	LA NEW ORLEANS	83	1	5.8	-0.4	OK TULSA	84	1	2.4	-0.7
AK ANCHORAGE	80	5	2.9	-2.6	ME SHREVEPORT	85	3	0.3	-3.5	OR ASTORIA	59	-1	1.8	0.7
AK BARROW	61	3	0.6	-1.1	ME CARIBOU	65	0	2.5	-1.5	OR BURNS	57	-9	0.5	0.1
AK FAIRBANKS	46	6	0.7	-0.3	ME PORTLAND	70	1	2.7	-0.4	OR MEDFORD	65	-8	0.7	0.4
AK JUNEAU	66	3	0.4	-1.5	MD BALTIMORE	80	3	1.7	-2.0	OR PENDELTON	65	-7	1.4	1.1
AK KODIAK	59	4	1.2	-2.9	MD SALISBURY	80	4	0.4	-3.9	OR PORTLAND	64	-4	2.4	1.8
AK NOME	57	3	2.2	-1.6	MA BOSTON	75	1	1.8	-1.1	OR SALEM	63	-3	1.1	0.5
AZ FLAGSTAFF	56	5	0.9	-1.3	MA CHATHAM	69	2	2.4	-0.8	PA ALLENTOWN	77	7	3.0	-1.2
AZ PHOENIX	65	-1	T	-2.5	MI ALPENA	69	2	1.7	-1.2	PA ERIE	75	3	2.8	-0.6
AZ PRESCOTT	93	-1	T	-0.8	MI DETROIT	76	3	2.2	-1.0	PA HARRISBURG	78	4	1.6	-2.0
AZ TUCSON	74	1	0.0	-3.2	MI FLINT	73	2	2.3	-0.4	PA PHILADELPHIA	81	2	2.0	-2.3
AZ WINSLOW	88	1	0.3	-2.1	MI GRAND RAPIDS	73	1	1.8	-1.4	PA PITTSBURGH	76	3	2.8	-0.9
AR FORT SMITH	76	-2	T	-1.4	MI HOUGHTON LAKE	70	3	1.3	-1.3	PA SCRANTON	75	4	1.0	-2.8
AR LITTLE ROCK	93	0	0.0	-0.3	MI LANSING	72	1	2.9	0.3	PA WILLIAMSPORT	77	4	1.8	-2.1
AR YUMA	87	5	0.2	-2.8	MI MARQUETTE	66	1	2.0	-0.9	RI PROVIDENCE	74	2	2.2	-1.0
CA BAKERSFIELD	86	5	2.6	-0.5	MI MUSKEGON	72	2	3.9	1.8	SC CHARLESTON	85	4	4.2	-2.6
CA BISHOP	81	-3	0.0	0.0	MN SAULT ST. MARIE	64	0	3.2	0.5	SC COLUMBIA	86	5	2.0	-3.5
CA EUREKA	74	-3	--	--	MN ALEXANDRIA	68	-4	6.3	3.2	SC FLORENCE	87	6	3.9	-1.6
CA FRESNO	57	0	0.4	0.2	MN DULUTH	64	-2	5.8	2.1	SC GREENVILLE	83	3	0.8	-3.9
CA FRESNO	80	-2	0.0	0.0	MN INT'L FALLS	64	-2	6.0	2.4	SD ABERDEEN	69	-3	7.4	4.2
CA LOS ANGELES	69	1	0.0	0.0	MN MINNEAPOLIS	70	-3	5.6	2.0	SD HURON	70	-4	6.7	4.0
CA REDDING	81	0	0.0	-0.2	MN ROCHESTER	69	-2	5.0	0.8	SD RAPID CITY	65	-7	4.3	2.3
CA SACRAMENTO	74	-1	0.0	0.0	MN ST. CLOUD	68	-2	3.8	0.4	SD SIOUX FALLS	71	-3	7.9	5.2
CA SAN DIEGO	70	-1	T	0.0	MS GREENWOOD	85	4	3.4	-0.9	TN BRISTOL	80	5	4.6	0.4
CA SAN FRANCISCO	65	2	0.0	0.0	MS JACKSON	83	1	7.0	3.0	TN CHATTANOOGA	85	7	1.3	-3.6
CA STOCKTON	--	--	--	--	MS MERIDIAN	83	2	2.8	-2.4	TN KNOXVILLE	83	6	2.0	-2.6
CO ALAMOSA	63	-2	0.3	-0.9	MO TUBE CITY	84	3	3.8	-0.5	TX MEMPHIS	86	4	0.9	-2.9
CO CO. SPRINGS	71	0	2.4	-0.5	MO CAPE GIRARDEAU	84	4	2.9	-0.6	TX NASHVILLE	83	4	3.6	-0.3
CO DENVER	73	0	0.9	-1.0	MO COLUMBIA	78	1	10.2	6.5	TX ABILENE	86	2	0.2	-1.8
CO GRAND JUNCTION	77	-3	T	-0.7	MO KANSAS CITY	78	-1	10.9	6.5	TX AMARILLO	79	0	3.4	0.7
CO PUEBLO	75	-2	1.2	-0.8	MO SAINT LOUIS	82	2	5.1	1.2	TX AUSTIN	85	1	0.0	-2.0
CT BRIDGEPORT	77	3	1.6	-2.2	MO SPRINGFIELD	80	2	4.2	1.3	TX BEAUMONT	84	2	5.4	0.0
CT HARTFORD	74	1	4.9	1.7	MT BILLINGS	63	-10	5.1	4.1	TX BROWNSVILLE	85	0	0.0	-1.9
DC WASHINGTON	83	3	1.4	-2.4	MT GLASGOW	63	-8	5.9	4.2	TX CORPUS CHRISTI	83	-1	0.0	-2.4
FL APALACHICOLA	83	2	2.4	-4.5	MT GREAT FALLS	58	-10	4.5	3.2	TX DEL RIO	86	2	1.0	-0.9
FL DAYTONA BEACH	83	1	5.0	-0.4	MT HAVRE	60	-9	5.4	4.0	TX EL PASO	85	3	1.0	-0.6
FL FT. MYERS	83	0	7.0	-1.6	MT HELENA	60	-10	4.7	3.6	TX FORT WORTH	87	4	0.0	-2.2
FL JACKSONVILLE	84	3	5.4	-0.4	MT KALISPELL	57	-6	6.0	4.9	TX GALVESTON	85	3	0.1	-3.9
FL KEY WEST	86	1	0.4	-3.2	MT MILES CITY	64	-10	6.3	4.8	TX HOUSTON	86	3	0.5	-4.0
FL MIAMI	85	2	7.3	1.6	MT MISSOULA	57	-7	2.0	1.1	TX LAREDO	--	--	--	--
FL ORLANDO	84	2	6.5	-0.8	NE GRAND ISLAND	74	-3	10.7	7.8	TX LUBBOCK	82	2	0.8	-1.6
FL TALLAHASSEE	83	2	8.0	-0.8	NE LINCOLN	76	-2	2.3	-0.9	TX MIDLAND	83	2	0.9	-0.8
FL TAMPA	84	2	2.9	-3.7	NE NORFOLK	73	-2	9.0	5.8	TX SAN ANGELO	86	3	0.8	-0.2
FL WEST PALM BEACH	83	0	5.4	-0.6	NE OMAHA	71	-2	5.5	2.4	TX SAN ANTONIO	86	1	0.0	-2.2
GA ATHENS	85	6	1.5	-3.7	NE SCOTTSDALE	74	-2	8.9	5.6	TX VICTORIA	85	2	1.2	-3.1
GA ATLANTA	85	7	3.0	-2.0	NE VALENTINE	70	-4	3.1	1.0	TX WACO	86	0	0.0	-2.0
GA AUGUSTA	86	5	2.5	-1.8	NV ELKO	60	-10	T	-0.3	TX WICHITA FALLS	86	2	0.7	-1.0
GA MACON	86	5	2.2	-2.1	NV ELY	62	-6	0.3	-0.4	UT BLANDING	75	-1	--	--
GA SAVANNAH	87	5	4.3	-2.0	NV LAS VEGAS	89	-2	0.0	-0.4	UT CEDAR CITY	71	-3	0.3	-0.8
HI HILO	76	0	18.4	8.7	NV RENO	69	-3	0.0	-0.3	UT SALT LAKE CITY	70	-8	1.4	0.6
HI HONOLULU	81	0	0.7	0.1	NH WINNEMUCCA	65	-7	0.2	-0.1	VT BURLINGTON	72	2	3.3	-0.3
HI KAHULUI	79	1	0.8	0.4	NH CONCORD	71	2	2.1	-1.1	VA LYNCHBURG	81	5	5.1	1.2
HI LIHUE	79	0	1.2	-0.9	NJ ATLANTIC CITY	76	2	1.8	-2.1	VA NORFOLK	83	5	0.4	-4.7
ID BOISE	65	-9	0.5	0.2	NM ALBUQUERQUE	80	2	0.2	-1.1	VA RICHMOND	83	4	1.9	-3.1
ID LEWISTON	65	-9	1.2	0.5	NM CLOVIS	79	2	4.4	1.9	VA ROANOKE	80	4	1.2	-2.7
ID FOCATELLO	61	-9	1.1	0.4	NM ROSWELL	83	2	3.4	1.7	WA COLVILLE	62	-6	3.4	2.6
IL CAIRO	--	--	--	--	NY ALBANY	73	1	6.6	3.4	WA QUILLAYUTE	58	-1	1.0	-1.6
IL CHICAGO	74	1	4.4	0.8	NY BINGHAMTON	70	0	2.3	-1.2	WA SEATTLE-TACOMA	61	-4	1.3	0.5
IL MOLINE	76	0	5.8	0.9	NY BUFFALO	73	2	1.8	-1.3	WA SPOKANE	60	-8	2.1	1.4
IL PEORIA	76	1	10.2	6.0	NY NEW YORK	80	4	1.7	-2.4	WA WALLA WALLA	68	-8	1.6	1.2
IL QUINCY	76	-1	6.2	1.7	NY ROCHESTER	72	2	1.7	-1.0	WA YAKIMA	63	-7	0.6	0.4
IL ROCKFORD	74	1	3.7	-0.4	NY SYRACUSE	73	2	4.8	1.0	WV BECKLEY	74	5	1.6	-3.0
IL SPRINGFIELD	77	1	9.5	5.9	NC ASHEVILLE	78	5	2.1	-2.7	WV CHARLESTON	79	4	2.0	-3.0
IN EVANSVILLE	83	4	2.4	-2.2	NC CHARLOTTE	85	6	1.6	-2.4	WV ELKINS	73	4	2.7	-1.8
IN FORT WAYNE	76	2	3.7	0.3	NC GREENSBORO	82	5	3.3	-1.2	WV HUNTINGTON	79	5	2.8	-2.2
IN INDIANAPOLIS	77	2	4.9	0.5	NC HATTERAS	82	4	2.0	-3.0	WV PARKERSBURG	77	3	2.3	-2.1
IN SOUTH BEND	74	2	1.5	-2.3	NC NEW BERN	83	4	4.9	-2.2	WI GREEN BAY	70	1	6.8	3.7
IA DES MOINES	74	-1	9.8	5.8	NC RALEIGH	83	4	2.1	-1.9	WI LACROSSE	71	-2	3.8	0.0
IA DUBUQUE	71	-1	8.5	4.2	ND WILMINGTON	84	5	7.0	0.1	WI MADISON	72	0	9.3	5.5
IA SIOUX CITY	73	-3	6.7	3.4	ND BISMARCK	64	-6	13.8	11.6	WI MILWAUKEE	73	2	4.2	0.8
IA WATERLOO	73	0	11.3	6.5	ND FARGO	67	-4	7.7	5.0	WI WAUSAU	68	-2	2.2	-1.7
KS CONCORDIA	77	-2	16.8	13.1	ND GRAND FORKS	66	-3	7.4	4.7	WY CASPER	67	-4	0.9	-0.4
KS DODGE CITY	78	-2	6.1	2.9	OH WILLISTON	62	-8	6.3	4.2	WY CHEYENNE	66	-2	0.6	-1.4
KS GOODLAND	73	-3	3.6	0.8	OH AKRON-CANTON	74	2	1.9	-2.2	WY LANDER	65	-6	0.8	0.0
KS TOPEKA	78	0	11.0	7.4	OH CINCINNATI	79	4	1.3	-3.0	WY SHERIDAN	62	-8	3.3	2.4
KY WICHITA	82	1	3.3	-0.3	OH CLEVELAND	75	3	2.6	-0.9	PR SAN JUAN	83	0	7.3	3.0
KY BOWLING GREEN	81	3	3.3	-1.4	OH COLUMBUS	76	3	6.0	2.2					
KY JACKSON	79	--	4.7	--	OH DAYTON	77	3	4.7	1.1					
KY LEXINGTON	80	4	3.4	-1.6	OH MANSFIELD	74	2	1.9	-2.1					
KY LOUISVILLE	82	5	4.6	0.1	OH TOLEDO	76	4	1.6	-1.7					
KY PADUCAH	84	6	0.6	-3.6										

Based on 1961-90 normals.

## A Comparison of U.S. Weather and Flooding in 1993 and 1947

"Severe flooding occurred for the third consecutive week in the north-central portion of the country. Many severe and damaging flash floods were reported in the smaller streams of Kansas, Nebraska, Iowa, and Missouri and record high stages were reached or exceeded at many points. The Mississippi River from Burlington, IA to Cape Girardeau, MO, and the Missouri River below Nebraska City, NE, remained at critically high stages the entire week and caused extensive overflow."

--*Weekly Weather and Crop Bulletin*,  
June 24, 1947

Although Mississippi and Missouri River flooding in June 1947 was not as intense or prolonged as in July 1993, similar weather patterns were observed in the United States prior to and during the anomalous summer floods. During the springs of both 1947 and 1993, conditions antecedent to major flooding included cool weather east of the Rockies (fig. 1) and wet conditions from the central Plains to the Great Lakes States.

In late May 1947, a series of strong storms began to pummel the middle and upper Mississippi Valley (fig. 2), where soils were already wet due to heavy spring precipitation. Serious flooding developed by June 4 along the Mississippi River from Keokuk, IA southward to near St. Louis, MO, and along several tributaries, including the Des Moines River. Flooding also developed on the lower Missouri River and numerous tributaries. Although rainfall waned by late June, the Mississippi River flood crest did not reach St. Louis until July 2. At that time, St. Louis' crest of 40.26 feet was the second highest on record (behind 1844), but has been since surpassed

by the floods of mid-July 1951 (40.28 feet), late-April 1973 (43.3 feet), and 1993 (crest exceeded 49.0 feet in early August).

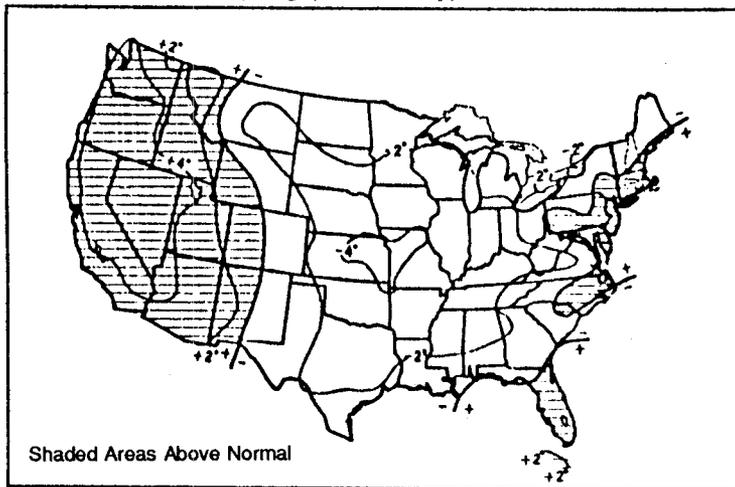
In early June 1993, atmospheric conditions similar to those observed 46 years earlier evolved across the United States (fig. 3): a trough (cool weather) took up residence over the Northwest, while a ridge (heat) overspread the Southeast. Between airmasses, rain began to occur repeatedly across the Nation's mid-section. The situation in 1993 was exacerbated by an almost year-long spate (since early July 1992) of consistently near- to above-normal precipitation, as well as the stubbornness of the weather pattern.

Major flooding developed in the upper Mississippi Valley in late June, but unlike 1947, heavy rainfall persisted across the upper half of the Mississippi basin for an additional month. Therefore, crests in 1993 were not only higher, but lasted longer, than in 1947. A comparison of selected flood crests for both 1947 and 1993 appears in figure 4.

The only other time in this century that significant and widespread summer flooding occurred in the middle Mississippi and lower Missouri basins was during June-July 1951. Flooding was induced by more intense rainfall of shorter duration than in either 1947 or 1993, and confined to a smaller area. The 1951 flood primarily affected eastern Kansas and northern Missouri, with extensive damage occurring in the Kansas City, MO area. Kansas City's July 14, 1951, record crest was topped by more than 2 feet on July 27, 1993, but the city benefited from a floodwall that had been raised about 5 feet after the 1951 inundation.

**Figure 1**

Departure of Average Temperature from Normal (°F)  
Spring (March-May) 1947



Departure of Average Temperature from Normal (°F)  
Spring (March-May) 1993

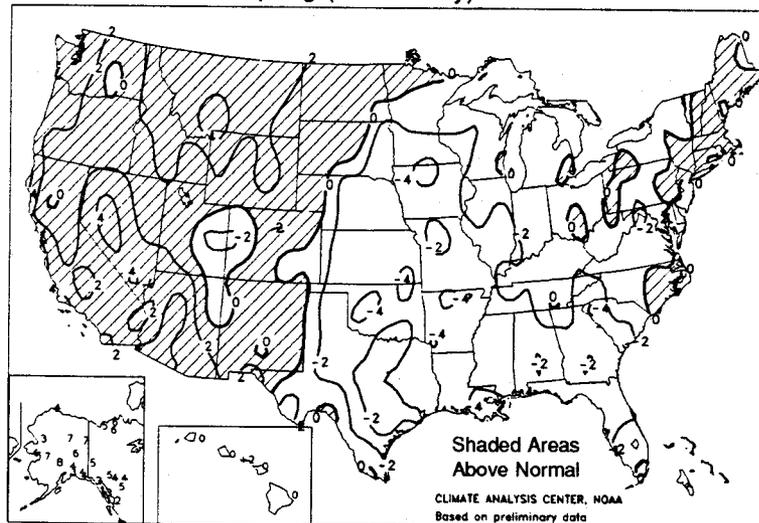
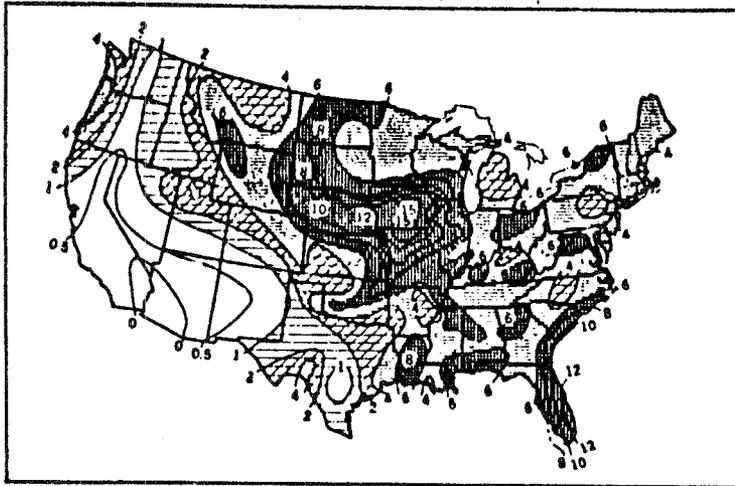


Figure 2

Total Precipitation (Inches)  
May 27 - June 30, 1947



Total Rainfall (Inches)  
June 1 - July 28, 1993

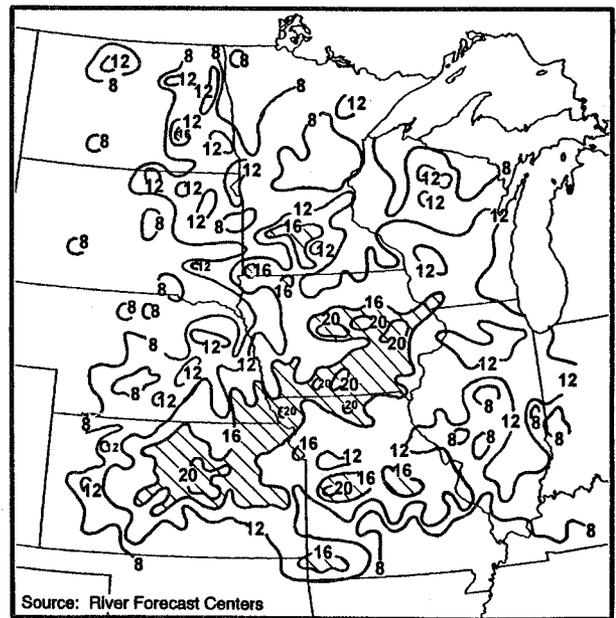
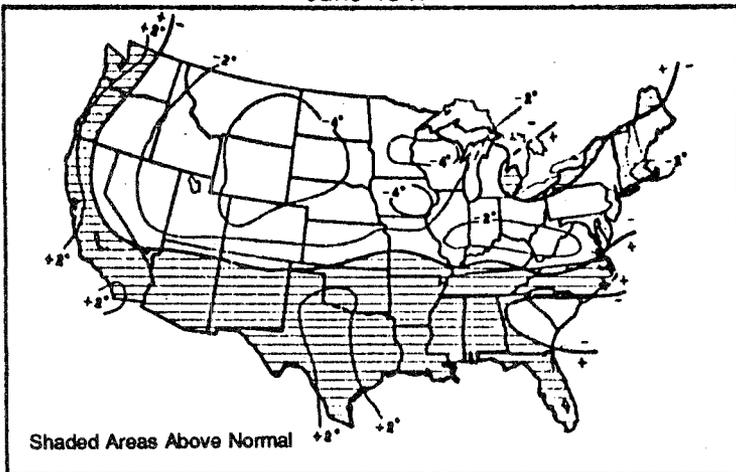
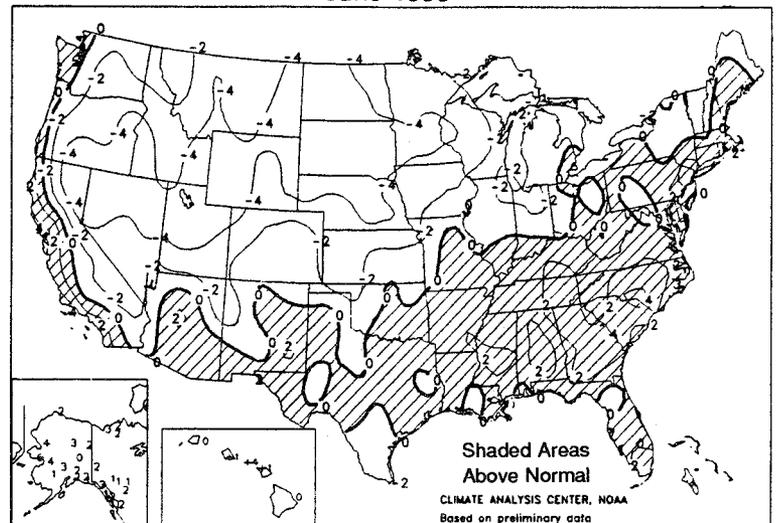


Figure 3

Departure of Average Temperature from Normal (°F)  
June 1947



Departure of Average Temperature from Normal (°F)  
June 1993



## National Agricultural Summary

July 26 - August 1, 1993

**HIGHLIGHTS:** Scattered showers occurred over much of the Nation, with only the West, Southwest, and Texas dry. Although the scattered precipitation in the Midwest added to the flooding problems in some areas, it allowed harvesting and cultivating to advance in others. The scattered showers brought temporary relief to some portions of the Southeast. Stifling temperatures occurred over the Southeast the early part of the week. Temperatures generally were above-normal from Arizona to New England, and Florida to Minnesota. Although the warmer temperatures stressed livestock and poultry, the drier conditions and warm temperatures promoted crop growth.

**SMALL GRAINS:** Winter wheat harvest in the 19 major wheat-producing States advanced to 77 percent (%) complete, compared with 84% by this time in 1992 and 88% average. Drier conditions across the Central Great Plains and the Midwest regions of the Nation allowed good progress. Damp conditions continued to hinder the harvest in the Northwest. Cool conditions continue to delay spring wheat development. For the five major producing States, no harvest activity was reported, compared with 1% last year and 21% average. Spring wheat condition declined, with 74% of the crop rated good to excellent, compared with 81% last week. Wet conditions delayed small grain harvests in Oregon. Rust was reported in oat fields in South Dakota and Wisconsin.

**CORN:** Corn silking progress in the 17 major producing States reached 53%, compared with 72% a year ago and 79% average. Corn in the dough stage was 10% compared with 15% last year and 22% average. Sunshine and warmer conditions allowed the crop to improve in many areas of the Midwest. Dry conditions continued to stress the crop in the Southeast and Atlantic coast regions. In Ohio, rain is needed to promote pollination. Corn condition was 53% good to excellent, up from the previous week.

**SOYBEANS:** Soybean blooming progress was 60%, compared with 71% last year and 72% average. Setting pods averaged 18% compared with 31% a year ago and 38% average. Sunny and drier conditions improved the crop in the Midwest. Dry conditions in the East and Southeast impeded crop growth. Some river bottom fields were flooded in Kentucky. Double-cropped soybeans needed rain in Ohio and Tennessee. The condition of the crop increased with 45% of the crop good to excellent compared to 40% last week.

**COTTON:** Cotton setting bolls in the 14 major producing States was 75%, compared with 66% last year and 70% average. The condition of the crop declined as 54% of the crop was rated good to excellent, compared with 57% last week. The crop in the Southeast continued to deteriorate under the continued hot, dry conditions. Shedding problems were reported in the Texas Plains and Blacklands. The cotton crops in California and Arizona rated mostly good to excellent.

**SORGHUM:** Grain sorghum headed at 39%, compared with 45% last year. The 5-year average for the 12 major producing States (excluding New Mexico) was 49%. Grain sorghum coloring averaged 24%, compared with 26% last year and average. Drier conditions in the Midwest caused sorghum condition to improve.

About 57% of the crop was rated good to excellent, compared with 56% last week. Harvesting advanced in many parts of Texas. Light to moderate infestations of armyworms began to appear in fields in southeast Kansas.

**RICE:** Rice heading progress was 1 week behind normal in the five major producing States with 33% headed, compared with 53% last year and 40% average. Progress of the rice harvest reached 2%, compared with 5% last year and 4% average. Early harvest began in Louisiana, with good yields reported. Rice condition declined slightly, with 70% good to excellent, compared with 71% last week.

**OTHER FIELD CROPS:** Continued hot, dry conditions slowed growth and crop development of peanuts in Georgia, Texas, and Virginia. Extreme heat and lack of moisture also hurt the tobacco crop in Georgia and eastern Tennessee. Although the middle Tennessee crop is in good condition, black shank damage is still evident. Early tobacco fields were cut in Kentucky. Rain continued to hamper the hay harvest in the Northwest. The drier conditions in the Midwest allowed first-cutting harvest to near completion and second cutting to advance.

**FRUIT AND NUTS:** Although rainfall totals were below-normal for July over Florida, the citrus crop shows abundant new growth. Dry conditions in the Hudson Valley of New York have hurt non-irrigated orchards and stressed some vineyards. In many areas of Texas, water is needed to fill the nuts for the pecan crop. Some shedding has occurred, but a good crop is still expected. The Washington apple and pear crops progressed normally.

**VEGETABLES:** Fall planting activities advanced in Florida and Texas. Vegetable harvests advanced nationally, but hot conditions slowed progress in East Texas. Some disease problems occurred on peppers in the Trans-Pecos region of Texas.

**PASTURE AND LIVESTOCK:** Dry conditions from New York to Georgia caused pasture conditions to decline. Drier conditions in the Midwest allowed pasture and feedlot conditions to improve. Continued moisture in the Northwest has kept their pastures in relatively good condition. Supplemental feeding continued where pastures are short and feed supplies adequate. Some culling of herds occurred in Georgia. Dry pasture conditions in California and Texas have increased fire hazards. Livestock in the South and Southeast were stressed by the early week hot temperatures. Nationally, livestock condition rated fair to good.

**Crop Progress**

for the Week Ending August 1, 1993

**COTTON**  
(Percent Setting Bolls)

	Current	Last Wk	1992	Avg.
AL	74	52	93	94
AZ	99	95	98	96
AR	83	75	90	90
CA	85	60	95	91
GA	89	67	94	93
LA	89	88	97	85
MS	76	55	91	87
MO	90	66	85	90
NM	79	54	71	74
NC	83	60	59	74
OK	80	52	16	38
SC	87	74	73	76
TN	93	68	73	75
TX	63	45	39	51
14 States	75	58	66	70

These 14 States produced 99% of the 1992 cotton crop.

**GRAIN SORGHUM**  
(Percent Headed)

	Current	Last Wk	1992	Avg.
AR	57	38	92	66
CO	30	2	3	9
IL	28	8	55	50
KS	10	4	15	20
LA	82	74	97	81
MS	71	62	91	81
MO	34	21	65	55
NE	0	0	12	36
NM	18	2	19	NA
OK	33	23	29	41
SD	3	2	5	25
TX	74	69	73	74
12 States	38	32	44	NA
Excl. States with NA	39	32	45	49

NA - not available.  
These 12 States produced 99% of the 1992 grain sorghum crop.

**SOYBEANS**  
(Percent Blooming)

	Current	Last Wk	1992	Avg.
AL	52	36	65	60
AR	37	27	43	30
GA	48	34	59	59
IL	79	56	86	85
IN	79	63	85	83
IA	54	30	84	88
KS	45	30	60	65
KY	62	46	63	58
LA	61	48	75	53
MI	60	40	50	60
MN	50	25	52	80
MS	49	33	67	51
MO	59	28	72	63
NE	52	34	74	82
NC	34	19	32	34
OH	89	67	80	72
SC	45	30	36	34
SD	34	19	63	76
TN	44	27	50	39
19 States	60	39	71	72

These 19 States produced 95% of the 1992 soybean crop.

**SOYBEANS**  
(Percent Setting Pods)

	Current	Last Wk	1992	Avg.
AL	29	10	41	33
AR	12	7	24	12
GA	22	12	29	29
IL	27	13	45	55
IN	21	7	29	34
IA	15	5	45	54
KS	10	4	20	35
KY	19	10	22	18
LA	31	21	48	27
MI	10	0	4	15
MN	12	5	19	41
MS	15	6	33	26
MO	16	5	33	31
NE	9	5	22	31
NC	13	0	14	15
OH	30	16	28	37
SC	15	6	15	11
SD	10	0	19	38
TN	10	4	16	13
19 States	18	7	31	38

These 19 States produced 95% of the 1992 soybean crop.

**GRAIN SORGHUM**  
(Percent Coloring)

	Current	Last Wk	1992	Avg.
AR	12	9	35	15
CO	0	0	0	0
IL	0	0	8	8
KS	0	0	0	1
LA	24	12	53	39
MS	25	10	47	41
MO	2	0	7	9
NE	0	0	0	0
NM	0	0	0	NA
OK	7	5	5	10
SD	0	0	0	0
TX	60	55	60	61
12 States	23	21	25	NA
Excl. States with NA	24	21	26	26

NA - not available.  
These 12 States produced 99% of the 1992 grain sorghum crop.

**CORN**  
(Percent Silking)

	Current	Last Wk	1992	Avg.
CO	40	11	41	50
GA	100	100	100	100
IL	85	55	95	92
IN	80	53	80	80
IA	24	6	83	85
KS	85	70	85	90
KY	92	80	91	84
MI	45	10	30	60
MN	20	1	44	64
MO	64	38	90	88
NE	61	29	81	87
NC	95	90	96	96
OH	70	40	68	71
PA	44	19	34	42
SD	16	0	36	60
TX	91	75	91	93
WI	10	3	35	58
17 States	53	30	72	79

These 17 States produced 94% of the 1992 corn crop.

**CORN**  
(Percent Dough)

	Current	Last Wk	1992	Avg.
CO	4	0	2	4
GA	98	91	97	97
IL	16	5	30	40
IN	9	3	18	28
IA	0	0	0	10
KS	25	10	35	45
KY	27	13	33	25
MI	0	0	0	1
MN	0	0	0	3
MO	21	11	47	48
NE	4	0	10	15
NC	74	65	71	73
OH	8	0	13	21
PA	0	0	0	3
SD	0	0	1	11
TX	73	61	69	77
WI	0	0	1	8
17 States	10	5	15	22

These 17 States produced 94% of the 1992 corn crop.

**WINTER WHEAT**  
(Percent Harvested)

	Current	Last Wk	1992	Avg.
AR	100	100	100	100
CA	99	97	99	99
CO	85	57	93	92
GA	100	100	100	100
ID	3	2	31	17
IL	95	90	94	99
IN	99	94	79	95
KS	90	80	98	100
MI	85	40	60	85
MO	87	70	93	100
MT	0	0	4	32
NE	62	28	73	94
NC	100	100	100	100
OH	99	90	68	91
OK	100	100	100	100
OR	18	8	67	37
SD	22	2	33	82
TX	100	99	100	100
WA	11	9	53	33
19 States	77	68	84	88

These 19 States produced 90% of the 1992 winter wheat crop.

**SPRING WHEAT  
(Percent Headed)**

ID	Current	Last Wk	1992	Avg.
MN	0	0	13	6
MT	0	0	0	20
ND	0	0	0	13
SD	0	0	4	18
5 States	0	0	1	21

These 5 States produced 96% of the 1992 spring wheat crop.

**RICE  
(Percent Headed)**

AR	Current	Last Wk	1992	Avg.
CA	20	8	49	23
LA	5	0	5	5
MS	67	61	81	70
TX	25	20	52	48
5 States	58	44	75	87
5 States	33	23	53	40

These 5 States produced 97% of the 1992 rice crop.

**RICE  
(Percent Harvested)**

AR	Current	Last Wk	1992	Avg.
CA	0	0	0	0
LA	0	0	0	0
MS	7	0	18	12
TX	0	0	0	0
5 States	4	0	13	13
5 States	2	0	5	4

These 5 States produced 97% of the 1992 rice crop.

**Crop Condition  
(Percent)**

for the Week Ending August 1, 1993

**RICE**

State	VP	P	F	G	EX
AR	0	0	10	90	0
CA	0	0	20	80	0
LA	0	0	66	34	0
MS	0	15	50	35	0
TX	0	0	31	66	3
5 State	0	1	29	70	0
Prev Week	0	0	29	70	1
Prev Year	0	0	38	59	3

**SPRING WHEAT**

State	VP	P	F	G	EX
ID	0	1	15	71	13
MN	1	14	39	43	3
MT	2	6	17	48	27
ND	0	0	21	69	10
SD	0	2	21	60	17
5 State	0	3	23	61	13
Prev Week	0	2	17	64	17
Prev Year	1	4	22	60	13

**CORN**

State	VP	P	F	G	EX
CO	1	5	12	58	24
GA	16	26	38	20	0
IL	0	1	13	66	20
IN	0	1	24	66	9
IA	2	23	51	23	1
KS	0	4	12	53	31
KY	0	5	42	51	2
MI	2	8	20	50	20
MN	19	37	38	4	2
MO	2	16	44	35	3
NE	1	6	28	61	4
NC	14	51	30	4	1
OH	1	4	22	49	24
PA	1	10	31	45	13
SD	4	18	38	35	5
TX	1	3	19	58	19
WI	3	12	39	44	2
17 State	3	13	31	44	9
Prev Week	4	14	33	41	8
Prev Year	1	3	17	58	21

**SORGHUM**

State	VP	P	F	G	EX
AR	0	1	52	47	0
CO	0	3	13	67	17
IL	0	0	21	73	6
KS	0	3	29	45	23
LA	0	3	55	34	8
MS	0	10	57	33	0
MO	1	23	52	23	1
NE	4	15	40	39	2
NM	3	15	43	39	0
OK	0	2	15	83	0
SD	0	14	36	49	1
TX	0	7	32	49	12
12 State	1	8	34	46	11
Prev Week	1	10	33	47	9
Prev Year	0	2	16	60	22

**COTTON**

State	VP	P	F	G	EX
AL	0	37	28	35	0
AZ	0	0	10	85	5
AR	0	0	25	75	0
CA	0	0	0	95	5
GA	5	41	36	18	0
LA	0	0	61	39	0
MS	9	10	68	13	0
MO	0	0	80	20	0
NM	0	0	40	55	5
NC	2	9	55	32	2
OK	0	0	6	94	0
SC	12	63	25	0	0
TN	0	0	45	54	1
TX	1	2	38	44	15
14 State	2	6	38	47	7
Prev Week	0	5	38	55	2
Prev Year	3	8	39	43	7

**SOYBEANS**

State	VP	P	F	G	EX
AL	0	31	39	30	0
AR	0	4	65	31	0
GA	22	28	42	8	0
IL	0	2	20	66	12
IN	0	0	25	67	8
IA	2	20	54	23	1
KS	0	5	28	57	10
KY	1	3	32	63	1
LA	0	7	55	33	5
MI	1	4	25	50	20
MN	13	41	40	4	2
MS	1	9	66	24	0
MO	3	22	50	25	0
NE	0	4	36	58	2
NC	1	16	62	21	0
OH	1	5	22	51	21
SC	5	52	37	6	0
SD	1	25	44	29	1
TN	0	16	53	29	2
19 State	2	14	39	39	6
Prev Week	3	16	41	35	5
Prev Year	1	4	22	61	12

VP - Very Poor P - Poor F - Fair  
G - Good EX - Excellent

## State Summaries of Weather and Agriculture

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

**ALABAMA:** Rainfall 1.61 in. north; 0.07 to 2.68 in., central 0.01 to 1.94 in. south. Temperatures normal 4° above normal north; 1 to 5° above normal central; 2 to 5° above normal south. Lows 54 to 69° north; 57 to 68° central; 62 to 72° south. Highs 96 to 104° north; 97 to 102° central; 95 to 100° south.

Days suitable for fieldwork 6.3. Soil 77% short, 23% adequate. Corn dented 64%, 88% 1992, 86% avg.; mature 31%, 52% 1992, 59% avg.; harvested 10%, 14% 1992, 25% avg.; 25% very poor, 28% poor, 25% fair, 22% good. Sorghum planted 0%, 1% 1992, 6% avg.; 13% very poor, 17% poor, 35% fair, 35% good. Peanuts pegged 81%, 99% 1992, 99% avg.; 65% fair, 35% good. Pasture 12% very poor, 32% poor, 45% fair, 11% good. Primary activities: Cultivating, spraying fields, harvesting vegetables, corn, general care of livestock, poultry, catfish.

**ALASKA:** Railbelt-wide temperatures remained slightly above normal. Precipitation since May has been below normal throughout the State.

Days suitable for baling hay 6. First crop harvest was nearly 100% complete, 25% ahead of last year. Crop growth 45% slow, 50% moderate, 5% rapid. By weekend 80% barley, 55% oats turned color. Last year at this time, barley, oats were primarily in the dough stage of development. Barley 10% poor, 25% fair, 55% good, 10% excellent. Commercial potato 10% poor, 15% fair, 65% good, 10% excellent. Topsoil 75% short, 25% adequate. Subsoil 80% short, 20% adequate.

**ARIZONA:** Precipitation limited to showers 27th, 28th, far southeastern areas; scattered showers 29th, 30th, eastern; thunderstorms 31st central, eastern. Sunny, warm throughout State. Temperatures varied 4° below to 5° above normal. Extremes 40°; 102° higher elevations; 58°; 117° deserts.

Cotton setting bolls 99%, 98% 1992, 96% avg.; open bolls 16%, 16% 1992, 15% avg. Activities: Irrigating, fertilizing, pesticide applications, pest monitoring, cultivating. Cotton 10% fair, 85% good, 5% excellent. Insects, weeds mostly light. Whitefly, aphids increasing in western areas. Alfalfa mostly good. Harvest light to moderate west, south central; active central, east. Weeds light to moderate, insects mostly light; disease light. Central areas, cantaloupe, honeydews, watermelons, green onions, chilies, grapefruit harvested. Cabbage, apples, peaches harvested eastern production areas. Cattle, calves fair north; mostly good central, southeast. Soil moisture short north; short central, southeast; Stockwater short to adequate north; mostly adequate central, short to adequate southeast. Range, feed supplies below average north; average central; below average to average southeast. Insect damage light.

**ARKANSAS:** Hot, temperatures little above normal. Scattered showers occurred statewide. Extremes 59°; 108°. Rainfall none to 1.86 in.

Days suitable for fieldwork 7. Dry weather continued to remove soil moisture. Slow rate of crop growth. Soil 94% short, 6% adequate. Cotton, soybeans cultivation continued. Sheath blast reported in rice fields, fungicides applied. Producers continued to apply fertilizer to rice fields. Cotton fields sprayed for weevils. Earworm infestation reported in soybeans fields. Corn, cotton, soybeans irrigation continued. Corn 3% poor, 39% fair, 58% good. Extreme heat continued to stress in poultry flocks.

Livestock good. Hay cutting continued. Pastures good, some producers feeding hay.

**CALIFORNIA:** An upper level low pressure area brought slightly below to near normal temperatures to State. Beginning of a strong warming trend on 30th. Very little precipitation. North coast, south coast areas had rain less than 0.05 in.

Hot, dry weather prevailed. Field activities progressed rapidly. Small grain harvest wrapping up, straw baling, second crop ground preparation following. Rice growing rapidly, remained behind normal. Cotton excellent growth, irrigated, cultivated, treated lygus, mites. Whitefly treatments ongoing desert areas. Seed alfalfa irrigated, drying for harvest. Corn silage harvested, treated mites. Corn for grain maturing southern areas. Safflower drying for harvest. Over-wintered sugarbeets harvested, new crop fields thinned, weeded, treated insects. Alfalfa, sudan grass cut hay. Summer fruit harvest continued including peaches, plums, nectarines, table grapes, apples, Asian pears, Valencia oranges. Prune harvest began, Colusa County. Almond, olive growers prepared for harvest. Broccoli, cauliflower, celery harvests light central coast. Lettuce harvest seasonally normal central coast. Fresh market tomato harvest progressed central valleys, central coast. Processing tomato harvest increased. Melons harvest active. Onion harvest progressed normally. Carrot harvest active. Sweet corn harvest. Other crops harvested: Garlic, cucumbers, eggplant, peppers, green beans, squash, miscellaneous others. Rangeland feed adequate. Conditions fair to good most areas. Supplemental feeding light. Fire hazard conditions exist. Livestock remain good.

**COLORADO:** Overall weather pattern remained about the same. Southwest flow brought an increase of moisture over the State. Most of the basins received measurable amounts, with the Kansas River Basin receiving 3.78 in. Temperatures near normal for most of the basins with the exception of the Kansas River Basin, which avg. 3° below normal.

Days suitable for fieldwork 6.2. Soil moisture 18% very short, 35% short, 44% adequate, 3% surplus. Alfalfa 2nd cutting 59%, 41% 1992, 45% avg. Spring barley harvested 27%, 29% 1992, 37% avg. Oats harvested 29%, 34% 1992, 40% avg. Dry beans flowering 43%, 35% 1992, 47% avg. Corn silking 40%, 41% 1992, 50% avg. Sorghum headed 30%, 3% 1992, 9% avg. Winter wheat harvested 85%, 93% 1992, 92% avg. Summer potatoes harvested 3%, 4% 1992, 5% avg.; 1% very poor, 2% poor, 10% fair, 55% good, 32% excellent. Fall potato 15% poor, 20% fair, 42% good, 23% excellent. Dry onion 1% very poor, 3% poor, 14% fair, 60% good, 22% excellent. Corn 1% very poor, 5% poor, 12% fair, 58% good, 24% excellent. Sugarbeets 3% poor, 9% fair, 71% good, 17% excellent. Livestock mostly good to excellent. Pasture, range feed condition declined, mostly fair.

**FLORIDA:** Temperature 4° above normal. Highs around 100° across north, upper 90s central, middle 90s south. Cold front weekend brought middle, upper 60s north, 70s elsewhere. One to 3 days rain across north, central, 3 to 7 days rain south. North under 0.25 to 2.00 in. Central, south rainfall over 0.25 in. common, some locations 1.00 to 3.00 in.

Soil moisture short to adequate. Rainfall quite varied, 0.50 in. to over 2.00 in. Growers haying, cutting corn for silage. Growers harvesting tobacco, tobacco market open. Cotton, peanuts,

soybeans, sugarcane making good progress. Most citrus very good condition. Rainfall generally below average for July. Some irrigation continues. Abundant new growth. New crop fruit progressing well most areas. Harvest virtually complete. Caretakers cutting cover crops, fertilizing, spraying. Growers preparing land, laying plastic for fall crop north, central, coastal vegetable producing areas. Transplanting fall tomatoes continued north. State's pastures fair to excellent. Scattered showers covering most areas. Hay harvest active. Pasture 20% fair, 60% good, 20% excellent. Cattle herds fair to mostly good to excellent.

**GEORGIA:** Unusually hot. Temperatures 3 to 5° above normal. Many locations high temperatures on several days. Hottest temperatures 99 to 104°. Coolest temperatures upper 60s to mid 70s, but lowered into mid 50s to lower 60s after frontal passage. Widely scattered thunderstorms each day except 31st, 1st. Rain 1 to 3 days, amounts from under 0.25 in., 1.00 to 3.00 in. southern third, north central sections. Much of central, east central less than 0.50 in.

Days suitable for fieldwork 6.3. Soil moisture 62% very short, 29% short, 9% adequate. Corn 16% very poor, 26% poor, 38% fair, 20% good; 83% dent, 91% 1992, 87% avg.; 38% mature, 49% 1992, 54% avg.; 2% harvested for grain, 3% 1992, 6% avg.; much of dryland crop virtually gone, remainder reporting extreme heat stress. Irrigated corn fair to good. Cotton 5% very poor, 41% poor, 36% fair, 18% good; 99% squaring, 100% 1992, 100% avg.; lack of moisture, high temperatures causing crop deterioration. Sorghum 5% very poor, 48% poor, 40% fair, 7% good. Peanuts 6% very poor, 19% poor, 49% fair, 26% good; 96% pegging, 99% 1992, 99% avg.; irrigating active. High temperatures delaying pegging, growth. Soybeans 22% very poor, 28% poor, 42% fair, 8% good; slow growth, some dying from heat, lack of moisture. Tobacco 2% very poor, 66% fair, 32% good; 37% harvested, 67% 1992, 61% avg.; lack of moisture, extreme heat slowing tobacco growth. Watermelons 1% very poor, 55% poor, 42% fair, 2% good; 91% harvested, 95% 1992, 93% avg. Other vegetables 2% very poor, 18% poor, 65% fair, 15% good. Apples 16% poor, 23% fair, 61% good; 6% harvested, 7% 1992, 8% avg. Peaches 11% poor, 29% fair, 60% good; 93% harvested, 91% 1992, 94% avg. Pecans 1% very poor, 27% fair, 72% good. Hay 43% very poor, 42% poor, 13% fair, 2% good. Limited hay cutting, quality poor. Pasture 28% very poor, 39% poor, 28% fair, 5% good. Continuing to deteriorate. Cattle 1% very poor, 6% poor, 75% fair, 17% good, 1% excellent; high temperatures, lack of feed causing farmers to start culling herds. Hogs 3% very poor, 4% poor, 57% fair, 33% good, 3% excellent; farmers trying to find ways to keep the hogs cool.

**HAWAII:** High pressure system brought rain, trade winds to State. Weekend weather warm, Honolulu temperature reached 90° 1st, matching 1991 record. Rainfall none to 5.20 in.

Hawaii island had wet weather leaving mix effects on crops. Excessive water adverse for areas already soaked from last weeks rains, beneficial to drier areas of the State. Banana production near last weeks level. Papaya picking at seasonally high levels. Watermelon supplies moderate.

**IDAHO:** Temperatures 4 to 10° below normal. Precipitation 0.02 to 0.55 in. north; none southwest; none to 0.18 in. southcentral; 0.08 to 0.84 in. east. Minor hail damage Oneida, Caribou counties. Frost damage becoming more apparent Franklin county cereals.

Days suitable for fieldwork 6. Soil moisture 3% short, 94% adequate, 3% surplus. Winter wheat 3% harvested, 79% turning color, 18% headed. Spring wheat 1% not yet in the boot stage, 9%

booted, 59% headed, 31% turning color. Spring barley 1% not yet in the boot stage, 6% booting, 55% headed, 37% turning color, 1% harvested. Oats harvested 6%, 35% 1992, 16% avg. Potatoes not yet 12 in. high 7%, 12 in. high 26%, closing middles 67%. Potatoes 1% very poor, 4% poor, 18% fair, 69% good, 8% excellent. Alfalfa first cutting 99%, 100% 1992, 100% avg. Alfalfa second cutting 33%, 63% 1992, 52% avg. Cherries harvested 98%, 100% 1992, 99% avg. Peaches harvested 19%, 69% 1992, NA avg. Mint first cutting 17%, 58% 1992, 40% avg. Irrigation water supplies 7% fair, 75% good, 18% excellent. Activities: Haying, irrigating, weeding, spraying, cultivating beans, harvesting winter barley, fertilizing, spraying potatoes for early blight. Pasture, range 93% of normal. Livestock good to excellent.

**ILLINOIS:** Drier weather occurred over much of State, although a cold front produced scattered thunderstorms. Precipitation 0.30 to 1.25 in. southern two-thirds of State, less than 0.30 in. across northern third. Temperatures mostly 1 to 4° above normal highs in the mid 80s to 90s, lows mid 60s to lower 70s.

Days suitable for fieldwork 4.5. Scattered showers, continued flooding in the west destroyed more crop acres, while crops in the rest of the State improved, with 86% of the corn, 78% of the soybeans good to excellent. Soil moisture supplies 30th 2% short, 59% adequate, 39% surplus. Some progress was made in harvesting small grains, spraying, haying.

**INDIANA:** Temperatures low to mid 80s north to around 90° south. Readings 1 to 4° above normal over the central, south, normal to 2° above normal in north. Lows from the low to mid 60s north to the mid 60s to 70° south. Low normal to 3° above normal over most of State. Rainfall 0.20 in. or less over the northern parts of State. Central, southern areas averaged around 0.20 to 1.00 in.

Days suitable for fieldwork 6. Dry conditions becoming a problem throughout most of State. Pastures 90% of normal, 94% last week. Topsoil 41% short, 58% adequate, 1% surplus. Subsoil 17% short, 81% adequate, 2% surplus. Oats harvested 64%, 46% 1992, 70% avg. Alfalfa hay 2nd cutting 87%, 62% 1992, 78% avg.

**IOWA:** Temperatures 1° below normal northwest, 2° above normal southeast. Extremes 53°; 94°. Precipitation 0.04 to 4.05 in.; average 1.05 in. (normal 0.89 in.). Tenth consecutive week of above normal rainfall. Wettest July since records began in 1873.

Days suitable for fieldwork 3.6. Topsoil 30% adequate, 70% surplus. Subsoil 12% adequate, 88% surplus. Corn tasseled 40%, 95% 1992, 95% normal. Soybean acreage cultivated for the first time 55%, 100% 1992, 100% normal. Oat acreage turning color 95%, 100% 1992, 100% normal; harvested 25%, 58% 1992, 86% normal. First crop alfalfa hay harvested 95%, 100% 1992, 100% normal; 2nd crop alfalfa hay harvested 30%, 68% 1992, 85% normal. First crop clover hay harvested 76%, 100% 1992, 100% normal. Winter wheat harvested 38%, 78% 1992, 95% normal. Oat 10% very poor, 40% poor, 40% fair, 10% good. Winter wheat 13% very poor, 35% poor, 42% fair, 9% good, 1% excellent. Pasture condition 1% very poor, 7% poor, 23% fair, 50% good, 19% excellent. Hay 8% very poor, 34% poor, 37% fair, 18% good, 3% excellent. Warm, dry weather last week provided some relief to States row crops, allowed many to harvest hay. Crop conditions are extremely varied with a marked separation between crops on well drained ground, crops on saturated soils. Weather also improved the conditions of fields, feed lots for livestock.

**KANSAS:** Temperatures within 2° normal, below normal west, north central, above normal elsewhere. Precipitation 0.02 in. southwest, 0.96 in. northeast.

Days suitable for fieldwork 5.0. Topsoil 23% short to very short, 54% adequate, 23% surplus. Subsurface 3% short to very short,

64% adequate, 33% surplus. Wheat harvested 90%, 98% 1992, 100% avg. Clear, dry weather most of week allowed fields to dry out, harvest to resume. Quality harvested wheat continues to decline. Corn silking has caught up with last year, still slightly behind avg. Warm temperatures, abundant sunshine allowed marked improvement over last week. However, moderate infestations European, southwestern corn borer developing southern counties. Light, moderate infestations armyworms in sorghum beginning to appear southeast. Soybean acreage improved with warm, sunny weather. Second cutting alfalfa 80%, 90% 1992, 100% avg. Third cutting 20%, 25% 1992, 45% avg. Pastures mostly good to excellent.

**KENTUCKY:** Hot, mostly dry. Cold front cooled temperatures, lowered humidity by weekend. Highs 3 to 6° above normal most areas, lows averaged near normal to 3° above normal. Precipitation lacking most locations, deficits of 0.33 to 0.75 in. common.

Days suitable for fieldwork 5.7. Soil moisture 31% very short, 50% short, 18% adequate, 1% surplus. Tobacco 10% poor, 54% fair, 34% good, 2% excellent. Burley blooming or beyond 62%, 78% 1992, 62% avg.; topped 25%, 41% 1992, 27% avg. Earliest tobacco fields being cut. Some river bottom flooding, primarily soybeans along the Mississippi. Corn, soybean highly variable. Pasture, hay fair to good.

**LOUISIANA:** No weather data available.

Days suitable for fieldwork 5.2. Soil moisture 5% very short, 44% short, 41% adequate, 10% surplus. Corn 5% poor, 50% fair, 45% good; 95% dough stage, 100% 1992, 98% avg.; 47% mature, 77% 1992, 66% avg.; 1% harvested, 5% 1992, 7% avg. Cotton 0% open bolls, 0% 1992, 1% avg. Insecticide application increased, irrigation was active. Hay 99% first cutting, 97% 1992, 95% avg.; 19% final cutting, 38% 1992, 12% avg. Second cutting was in full swing. Peaches 78% harvested, 95% 1992, 92% avg. Rice 17% ripe, 38% 1992, 24% avg. Early harvest began in most areas, yields are good. Sorghum 1% ripe, 16% 1992, 10% avg.; 0% harvested, 0% 1992, 0% avg. Soybeans 97% emerged, 100% 1992, 99% avg. Spraying for weeds, insects, aerial blight. Sweet potatoes 13% poor, 27% fair, 60% good; 95% planted, 100% 1992, 100% avg.; 0% harvested, 9% 1992, 6% avg. Sugarcane 1% poor, 4% fair, 85% good, 10% excellent. Spraying for borers, planting preparation active. Livestock 27% fair, 68% good, 5% excellent. Heat stress visible on cattle. Pastures 1% very poor, 1% poor, 6% fair, 91% good, 1% excellent. Vegetables 6% poor, 77% fair, 17% good.

**MARYLAND & DELAWARE:** MARYLAND: Precipitation 0.28 in. Temperature 79.9°, normal 76.0°. Extremes 46°; 100°.

Days suitable for fieldwork 6.7. Topsoil, 55% very short, 45% short. Subsoil 30% very short, 60% short, 10% adequate. Corn poor to fair; 72% silked, 71% 1992, 76% avg.; 26% dough, 18% 1992, 28% avg.; 1% dent, 3% 1992, 7% avg. Soybean poor to mostly fair; 39% bloomed, 44% 1992, 44% avg.; 5% setting pods, 8% 1992, 14% avg. Sorghum fair 14% headed, 17% 1992, 15% avg. Tobacco poor; 35% bloomed, 46% 1992, 47% avg.; 13% topped, 16% 1992, 17% avg. Pasture poor dry condition; hay supplies adequate. Alfalfa hay 59% third cut, 23% 1992, 30% avg. Other hay 69% second cut, 59% 1992, 55% avg.; 10% third cut, 7% 1992, 4% avg. Sweet corn 32% harvested, 41% 1992, 50% avg. Watermelons 47% harvested, 22% 1992, 36% avg. Cantaloupes 58% harvested, 31% 1992, 45% avg. Potatoes 45% harvested, 34% 1992, 46% avg. Tomatoes 49% harvested, 18% 1992, 41% avg. Peaches fair to mostly good; 32% picked, 16% 1992, 29% avg. Apples good; 2% harvested, 1% 1992, 5% avg. DELAWARE: Precipitation 0.02 in. Temperature 79.0°, normal 76.4°. Extremes 63°; 97°.

Days suitable for fieldwork 7.0. Topsoil 57% very short, 43% short. Subsoil 57% very short, 43% short. Corn poor; 97% silked, 90% 1992, 92% avg.; 18% dough, 16% 1992, 20% avg.; 7% dent, 1% 1992, 2% avg. Soybeans poor to fair; 40% bloomed, 39% 1992, 35% avg.; 6% setting pods, 6% 1992, 5% avg. Sorghum poor to fair; 9% headed, 12% 1992, 13% avg. Alfalfa hay 29% third cut, 20% 1992, 33% avg. Other hay 80% second cut, 63% 1992, 73% avg.; 18% third cut, 1% 1992, 9% avg. Pasture severe drought; hay supplies short. Sweet corn 55% harvested, 45% 1992, 44% avg. Cantaloupes 52% harvested, 24% 1992, 44% avg. Watermelons 24% harvested, 13% 1992, 22% avg. Potatoes 35% harvested, 34% 1992, 28% avg. Tomatoes 21% harvested, 11% 1992, 21% avg. Peaches fair to good; 31% harvested, 22% 1992, 48% avg. Apples fair to mostly good; 15% harvested, 3% 1992, 4% avg.

**MICHIGAN:** Extremes 46°; 96°. Precipitation 0.03 to 7.52 in. across State.

Days suitable for fieldwork 6.0. Soil moisture 30% short, 65% adequate, 5% surplus. Dry beans 50% blooming, 40% 1992, 50% avg.; 15% setting pods, 0% 1992, 10% avg.; 5% very poor, 10% poor, 35% fair, 40% good, 10% excellent. Oats 85% turning, 50% 1992, 90% avg.; 40% ripe, 10% 1992, 50% avg.; 5% harvested, 0% 1992, 20% avg.; 2% very poor, 8% poor, 30% fair, 45% good, 15% excellent. Wheat 98% ripe, 90% 1992, 98% avg. Potatoes 20% harvested, 5% 1992, 10% avg. Hay 60% second cutting, 40% 1992, 50% avg.; 2% very poor, 3% poor, 20% fair, 50% good, 25% excellent. Pasture 90% of normal. Major activities: Baling straw, cutting hay, harvesting cherries, oats, wheat, irrigating.

**MINNESOTA:** Temperatures 1° below normal to 1° above normal for State. Extremes 50°; 90°. Precipitation 0.21 to 0.43 in. below normal southeast, east central; 0.06 to 0.89 in. above normal elsewhere. Precipitation 0.41 to 1.82 in. for State. Greatest weekly precipitation 3.58 in.

Days suitable for fieldwork 3.8. Topsoil 4% short, 32% adequate 64% surplus. Spring wheat 54% turning ripe, 57% 1992, 86% avg. Oats 76% turning ripe, 79% 1992, 94% avg.; 10% cut, 7% 1992, 63% avg.; 3% combined, 6% 1992, 48% avg. Barley 57% turning ripe, 55% 1992, 89% avg. Corn 50% height, NA 1992, NA avg.; 27% tasseled, 71% 1992, 82% avg. Soybeans 17 in. height, NA 1992, NA avg.; 50% blooming, 52% 1992, 80% avg.; 12% setting pods, 19% 1992, 41% avg. Spring wheat 1% very poor, 14% poor, 39% fair, 43% good, 3% excellent. Oats 3% very poor, 13% poor, 35% fair, 43% good, 6% excellent. Barley 2% very poor, 11% poor, 35% fair, 47% good, 5% excellent. Corn 19% very poor, 37% poor, 38% fair, 4% good, 2% excellent. Soybeans 13% very poor, 41% poor, 40% fair, 4% good, 2% excellent.

**MISSISSIPPI:** Temperatures 85°, 3.3° above normal. Extremes 57°; 101°. Northeast district acquired over 2.00 in. rainfall, while rest State received less than 1.00 in., average 0.59 in., 0.45 in., below normal. Soil temperatures 91°.

Days suitable for fieldwork 6.3, 3.0 1992, 4.6 avg. Soil moisture 19% very short, 42% short, 39% adequate. Corn 92% silked, 99% 1992, 97% avg.; 67% dough, 80% 1992, 78% avg.; 39% dent, 60% 1992, 59% avg.; 11% mature, 28% 1992, 27% avg.; 10% silage harvested, 34% 1992, 36% avg.; 9% very poor, 21% poor, 40% fair, 30% good. Cotton 76% setting bolls, 91% 1992, 87% avg.; 9% very poor, 10% poor, 68% fair, 13% good. Rice 25% heading, 52% 1992, 48% avg.; 15% poor, 50% fair, 35% good. Sorghum 71% heading, 91% 1992, 81% avg.; 25% turning color, 47% 1992, 41% avg.; 5% mature, 13% 1992, 14% avg.; 2% silage harvested, 26% 1992, 23% avg.; 10% poor, 57% fair, 33% good. Soybeans 49% blooming, 67% 1992, 51% avg.; 15% podding, 33% 1992, 26% avg.; 1% very poor, 9% poor, 66% fair, 24% good. Sweet potatoes 26% poor, 47% fair, 27% good. Watermelons 54%

harvested, 75% 1992, 70% avg.; 1% very poor, 32% poor, 41% fair, 26% good. Hay 74% harvested, 76% 1992, 65% avg. Peaches 88% harvested, 92% 1992, 91% avg.; 16% poor, 47% fair, 37% good. Livestock 28% fair, 65% good, 7% excellent. Pasture 90% of normal. Activities: Insect control, hay harvesting.

**MISSOURI:** Temperatures near normal to 3° above normal in northern, eastern regions. Rainfall 0.61 in., ranging from 0.34 in. south central, 0.88 in. northeast, north central, northeast. Severe flooding continues along Missouri, Mississippi rivers.

Days suitable for fieldwork 4.4, varying 2.2 northwest to 6.9 southeast. Topsoil 19% short, 31% adequate, 50% surplus, northwestern, north central still mostly surplus, southeast short. Corn tasseling 84%, 100% 1992, 94% avg. Most field crops in many northern areas stressed by excess moisture, while southeastern crops need rain. Oats harvested 66%, 75% 1992, 93% avg. Second crop alfalfa 66%, 83% 1992, 93% avg. Other hay 79%, 90% 1992, 92% avg. Pasture 5% poor, 21% fair, 55% good, 19% excellent.

**MONTANA:** Temperatures near normal 0° below to 4° normal. Moderate to heavy precipitation statewide.

Days suitable for fieldwork slightly over 2.9. Topsoil 2% short, 74% adequate, 24% surplus. Subsoil 3% short, 83% adequate, 14% surplus. Winter wheat 1% very poor, 5% poor, 17% fair, 53% good, 24% excellent. Barley 1% very poor, 4% poor, 15% fair, 53% good, 27% excellent. Oats 2% poor, 13% fair, 54% good, 31% excellent. Sugarbeets 1% poor, 12% fair, 76% good, 11% excellent. First cutting alfalfa hay 62% complete, 90% 1992, 98% avg. Other hay 40% complete, 90% 1992, 83% avg. Pasture, range feed 102% of normal, up 5 points from last week.

**NEBRASKA:** Temperatures near normals. Precipitation first part of week varying from 0.20 in. to nearly 2.00 in.

Days suitable for fieldwork 3.3. Topsoil 3% short, 41% adequate, 56% surplus. Subsoil 2% short, 51% adequate, 47% surplus. Winter wheat 11% very poor, 14% poor, 33% fair, 33% good, 9% excellent; 62% harvested, 73% 1992, 94% avg. Corn 1% very poor, 6% poor, 28% fair, 61% good, 4% excellent; 61% silked, 81% 1992, 87% avg.; 4% dough, 10% 1992, 15% avg. Soybeans 4% poor, 36% fair, 58% good, 2% excellent; 52% blooming, 74% 1992, 82% avg.; 9% setting pods, 22% 1992, 31% avg. Sorghum 4% very poor, 15% poor, 40% fair, 39% good, 2% excellent. Dry beans 3% poor, 27% fair, 70% good; 39% blooming; 3% setting pods. Alfalfa 1% very poor, 8% poor, 27% fair, 58% good, 6% excellent; 65% second cutting, 86% 1992, 91% avg. Wild hay 9% fair, 66% good, 25% excellent. Pasture, range 108% of normal.

**NEVADA:** Low pressure system dominated first of week, by weekend high pressure ridge moved in with gusty winds. Temperatures slightly below normal. Precipitation limited to trace amounts in northeast.

Irrigation water supplies generally adequate. Development, progress most crops slightly behind last year. Small grain, hay harvest proceeding well. Good progress harvesting garlic. Livestock good, stockwater mostly adequate.

**NEW ENGLAND:** Precipitation none to 1.61 in. Maine; 0.61 to 2.93 in. rest of region. Temperatures 63 to 73° north; 68 to 76° south. Maximum temperatures 76 to 90° north; 85 to 90° south. Minimum temperatures 40 to 57° north; 46 to 66° south.

Days suitable for fieldwork 5.2. Soil moisture 15% very short, 54% short, 29% adequate, 2% surplus. Available grazing 16% very short, 66% short, 18% adequate. Fieldwork progress 1 to 2

days behind schedule. Pasture 60% of normal. Potatoes across the region good to fair. Maine oat good to fair. Field corn fair to good. Second cutting hay 35% harvested, 40% 1992, 40% avg.; fair to good. Shade tobacco 25% harvested, good. Outdoor tobacco 5% harvested, good. Sweet corn harvested 20%, 20% 1992, 20% avg.; fair to good. Apples less than 5% harvested, size medium, color fair, good. Peaches 5% harvested, size medium, fair to good. Pears size medium, good. Raspberries 55% harvested, size medium, good to excellent. Highbush blueberries 45% harvested, size medium, good. Maine wild blueberries fair to good. Cranberries size medium to small, good to excellent. Major farm activities: Applying herbicides, insecticides, fungicides as needed. Harvesting second cutting of hay, vegetables. Early varieties of potatoes being harvested along with some varieties of apples.

**NEW JERSEY:** Temperatures slightly above normal. Extremes 57°; 96°. Rainfall 0.25 in. north, 0.09 in. central, 0.25 in. south. Heaviest 24 hour total 0.39 in. on 28th, 29th. Estimated soil moisture, in percent field capacity, 39% north, 51% central, 39% south. Four inch soil temperatures 73° north, 74° central, 76° south.

Soil moisture content short to adequate depending on area. Rainfall needed in all areas. Irrigation of crops still being used. Moderate supply of cucumbers, eggplant, peppers, squash, tomatoes, cantaloupe, melons are available. Light volume of beans, sweet corn, green onions, leeks, parsley, leafy greens also available. Peach harvest underway with Red Haven variety. Blueberry harvest almost complete. Field corn tassel stage. Early planted soybeans are up, rain is still needed. Pasture poor.

**NEW MEXICO:** Temperatures 3° above normal for State with anomalies as great as 6° above normal in the southeast plains. Once again, thunderstorms favored the eastern half of State with higher totals around 1.50 in.

Days suitable for fieldwork 6.7. Soil moisture 80% short, 20% adequate. Crop conditions: Alfalfa 24% fair, 68% good, 8% excellent; some rain damage. Corn 19% fair, 73% good, 8% excellent. Chile 5% poor, 18% fair, 77% good. Onions mostly good; harvest declining. Potatoes fair to good; harvest active. Apples 40% fair, 60% good. Pecans 25% fair, 75% good. Cattle, sheep poor to excellent. Range conditions 70% of normal.

**NEW YORK:** Extremes 48°; 94°. Precipitation 0.07 to 4.96 in. Week began dry, seasonable, turned cooler with showers in the western half of the State. Midweek was warmer with 90s common over the southern half. Cold front moved over the State on the 29th bringing scattered thunderstorms through the 30th. Albany received 3.42 in. of rain, breaking the 24 hour rainfall record for July. Weekend dry, seasonable.

Days suitable for fieldwork 5.9. Soil moisture mostly short. Pasture 65% of normal. Hot, dry conditions deteriorated pastures statewide. Corn fair to good, tasseling. Some leaf curling due to dryness. Hay fair to good. Second cutting alfalfa 59% finished, 31% 1992, 45% avg. Winter wheat 87% harvested, 50% 1992, 59% avg. Dry beans good. Oat harvest underway. Hot, very dry in southeast, south central areas. Crops damaged where irrigation not available. Streams, ponds used for irrigation are drying up. Dry conditions in Hudson Valley fruit area. Young orchards without irrigation in poor condition. Early apple varieties being harvested. Grapes show some drought stress. Vegetable harvests gained momentum. Most crops good condition, rainfall needed. Irrigation needed many areas. Onion harvest in Orange County started.

**NORTH CAROLINA:** Temperatures 3 to 4° above normal. Precipitation 4.73 in. at Clinton to no rain at a few locations.

Days suitable for fieldwork 6.2. Soil moisture 27% very short, 60% short, 13% adequate. Crop condition: Pasture 8% very poor,

38% poor, 46% fair, 8% good. Field tobacco 10% poor, 56% fair, 34% good. Irish potatoes 37% poor, 38% fair, 25% good. Corn 14% very poor, 51% poor, 30% fair, 4% good, 1% excellent. Hay 6% very poor, 39% poor, 46% fair, 9% good. Peaches 4% poor, 50% fair, 46% good. Truck crops 20% poor, 57% fair, 23% good. Cotton 2% very poor, 9% poor, 55% fair, 32% good, 2% excellent. Peanuts 48% fair, 52% good. Soybeans 1% very poor, 16% poor, 62% fair, 21% good; Sweet potatoes 6% poor, 48% fair, 46% good. Apples 71% fair, 29% good. Sorghum 3% very poor, 31% poor, 49% fair, 17% good. Hay, roughage supplies 4% very short, 46% short, 49% adequate, 1% surplus. Peaches harvested 72%, 78% 1992, 75% avg. Flue cured tobacco harvested 16%, 27% 1992, 23% avg. Corn for silage harvested 10%, 10% 1992, 10% avg. Cotton squared 93%, 86% 1992, 93% avg.; setting bolls 83%, 59% 1992, 74% avg. Corn silked 95%, 96% 1992, 96% avg.; soft dough 74%, 71% 1992, 73% avg.; dented 46%, 50% 1992, 48% avg. Soybeans flowered 34%, 32% 1992, 34% avg.; setting pods 13%, 14% 1992, 15% avg. Second cutting hay 70% completed. Third cutting hay 17% completed. Major activities: Irrigating crops, topping, suckering, harvesting tobacco. Other activities included: Scouting cotton, peanuts; harvesting vegetables, fruits; cutting hay; harvesting corn for silage; tending livestock; general farm maintenance.

**NORTH DAKOTA:** Continued very wet until midweek when drier conditions finally arrived. Precipitation 0.76 in. south central to 5.59 in. east central. Temperatures 1 to 4° below normal. Extremes 41° north central; 98° south central.

Days suitable for fieldwork 4.6. Topsoil 60% adequate, 40% surplus. Subsoil 63% adequate, 37% surplus. Small grains mostly good, development behind last year, average due to cool wet weather. Spring wheat 21% fair, 69% good, 10% excellent; durum 24% fair, 62% good, 14% excellent; barley 16% fair, 73% good, 11% excellent; oats 16% fair, 71% good, 13% excellent; winter wheat 3% poor, 36% fair, 49% good, 12% excellent. Hard red spring wheat 19% turning and beyond, 44% 1992, 76% avg. Durum wheat 7% turning and beyond, 22% 1992, 57% avg. Oats 21% turning and beyond, 53% 1992, 79% avg. Barley 31% turning and beyond, 58% 1992, 87% avg. Winter wheat 3% swathed or combined, 28% 1992, 70% avg. Heavy rains, cool weather are effecting development of late season crops, with the exception of potatoes. Corn 13% very poor, 54% poor, 27% fair, 6% good. Flax 8% poor, 22% fair, 58% good, 12% excellent. Sugarbeets 2% poor, 12% fair, 86% good. Potatoes 28% poor, 3% fair, 69% good. Dry beans 2% very poor, 45% poor, 25% fair, 28% good. Soybeans 9% very poor, 53% poor, 38% fair. Sunflowers 18% poor, 49% fair, 33% good. Flax 69% blooming and beyond, 77% 1992, 87% avg. Dry beans 17% podding and beyond, 26% 1992, 67% avg. Soybeans 14% podding and beyond, 25% 1992, 61% avg. Potatoes 99% blooming and beyond, 76% 1992, 94% avg.; 73% rows filled, 54% 1992, 55% avg. Corn 13% tasseling and beyond, 29% 1992, 69% avg. Sunflowers 2% blooming and beyond, 7% 1992, 37% avg. Range, pasture 98% of normal. Hay 75% of normal. Alfalfa hay first cutting 71% complete, second cutting 8%, other hay 37%. Stockwater supplies 1% short, 75% adequate, 24% surplus.

**OHIO:** Excessive heat, humidity through 29th followed by considerably cooler air late in the week. Temperatures 72 to 77°, 2 to 4° above normal. Daytime highs varied in the 80s to near 90° with mean minimums near 60° to the mid 60s. Particularly hot with a high temperature 99° at Cincinnati on 29th. Precipitation was scarce for most of the State although upwards of 3.00 in. fell in parts of the northeast. Only 0.10 in. or less in most areas.

Days suitable for fieldwork 6.4. Topsoil 49% short, 47% adequate, 4% surplus; wet in some west central areas, rain needed

over most of State. Oats ripe 90%, 66% 1992, 80% avg.; oats harvested 40%, 16% 1992, 53% avg. Summer apples harvested 25%, 20% 1992, 32% avg. Potatoes harvested 10%, 5% 1992, 5% avg. Alfalfa 2nd cut harvested 90%, 50% 1992, 72% avg.; other hay 65%, 31% 1992, 47% avg.; alfalfa 3rd cut harvested 12%. Oats 2% very poor, 8% poor, 32% fair, 52% good, 6% excellent. Pasture 5% very poor, 10% poor, 30% fair, 46% good, 9% excellent. Hay 1% very poor, 8% poor, 25% fair, 51% good, 15% excellent. Many farmers across State in need of rain to relieve heat stress, promote good pollination in corn. Double crop soybeans have emerged well, need rain also.

**OKLAHOMA:** Temperatures 3° above normal Panhandle to 6° above normal east central. Precipitation none in west central, northeast to 0.10 in. central, east central.

Days suitable for fieldwork 6.8. Topsoil 82% short, 18% adequate. Subsoil 41% short, 59% adequate. Corn 98% tasseling, 100% 1992, 93% avg.; 65% milk to soft, 76% 1992, 55% avg.; 6% mature, 4% 1992, 8% avg. Sorghum 2% poor, 15% fair, 83% good; 33% heading, 29% 1992, 41% avg.; 7% milk to soft, 5% 1992, 10% avg.; 4% mature, 0% 1992, 0% avg. Soybeans 93% up to stand, 90% 1992, 100% avg.; 36% flowering, 33% 1992, 42% avg.; 16% setting pods, 11% 1992, 14% avg. Peanuts 18% fair, 82% good; 81% pegging, 80% 1992, 79% avg.; 55% setting pods, 27% 1992, 35% avg. Cotton 6% fair, 94% good; 99% squaring, 74% 1992, 78% avg.; 80% setting bolls, 16% 1992, 38% avg. Alfalfa 69% 3rd cut, 29% 1992, 78% avg.; 4% 4th cut, 0% 1992, 8% avg. Pastures 92% of normal. Cattle prices mixed. Marketings average.

**OREGON:** Temperatures most areas were well below normal statewide, except coastal regions 1 to 4° above normal. Precipitation above normal rainfall western sections, eastern sections mostly dry with scattered showers in the northeastern, north central, Cascades regions.

Soil moisture 9% short, 89% adequate, 2% surplus. Wheat 18% harvested. Barley 20% harvested. Grain harvest delayed, wet conditions, sprouting continued concern; western areas. Eastern grain harvest underway, no sprouting. Hay harvest continued, slowed by showers. Grass seed harvest halted by rains, sprouting in windrows. Willamette Valley snap beans, summer squash, onion harvest continued. Columbia Basin early potato, onion harvest underway, watermelon harvest continues. Cranberry fruit sizing continued, showing red blush on surface fruit; southern coast. Raspberry harvest winding down, (some rot), blackberry harvest continued, blueberry harvest continued (heavy crop), boysenberry harvest continues, early variety peach harvest underway, early variety apples ripening; Willamette Valley. Early peach harvest underway, southwestern valley. Livestock good to excellent. Range, pastures above normal statewide, 110% of normal.

**PENNSYLVANIA:** Above normal temperatures, precipitation. Temperatures 80°, 9° above normal. Extremes 49°; 98°. Precipitation 1.16 in., 0.30 in. above normal.

Days suitable for fieldwork 6. Soil moisture 91% short, 9% adequate. Corn height 63 in., 61 in. 1992, 55 in. avg. Soybean 4% very poor, 7% poor, 25% fair, 52% good, 12% excellent. Barley 100% turning yellow, 100% 1992; 95% ripe, 97% 1992; 85% harvested, 77% 1992. Wheat 100% turning yellow, 96% 1992; 94% ripe, 89% 1992; 79% harvested, 41% 1992; 4% very poor, 7% poor, 27% fair, 50% good, 12% excellent. Oats 95% turning yellow, 85% 1992; 70% ripe, 53% 1992; 39% harvested, 15% 1992; 1% very poor, 14% poor, 36% fair, 42% good, 7% excellent. Alfalfa first cutting 100% complete, 100% 1992; 2nd cutting alfalfa 78% complete, 49% 1992. Quality of hay made 4% poor, 40% fair, 56% good. First cutting of timothy clover 100% complete, 97% 1992. Feed from pastures severe drought. Peach 15% below avg., 71%

avg., 14% above avg. Apple 10% below avg., 63% avg., 27% above avg. Activities: Making hay, filling silos; baling straw; harvesting small grains; hauling manure; caring for livestock.

**PUERTO RICO:** Rainfall 0.96 in. 0.40 in. below normal. Rainfall 2.95 in. Trujillo Alto, 1.94 in. San Lorenzo 3S, 1.92 in. Corozal Aes. Highest 24 hour total 1.58 in. Trujillo Alto 27th. Temperature 82.9° is 0.9° above normal, rainfall 0.77 to 0.40 in. Temperatures 80 to 81° on coast, 74 to 78° Interior. Extremes 58°, 97°.

**SOUTH CAROLINA:** Rainfall 0.70 in. Temperatures 4 to 6° above normal.

Days suitable for fieldwork 6.5. Soil moisture 51% very short, 45% short, 4% adequate. Corn very poor to poor; 90% dough, 95% 1992, 89% avg.; 53% mature, 39% 1992, 46% avg.; 9% harvested, 6% 1992, 5% avg. Sorghum poor; 96% planted, 86% 1992, 93% avg.; 9% harvested, 8% 1992, 7% avg. Tobacco poor to fair; 93% topped, 100% 1992, 99% avg.; 27% harvested, 47% 1992, 42% avg. Cantaloupes poor to fair; 75% harvested, 84% 1992, 81% avg. Watermelons poor to fair; 79% harvested, 90% 1992, 85% avg. Cucumbers poor to fair; 86% harvested, 88% 1992, N/A avg. Fall hay poor; 30% harvested, 35% 1992, 30% avg. Peaches poor to fair; 67% harvested, 69% 1992, 72% avg. Pasture poor.

**SOUTH DAKOTA:** Temperatures at or slightly below normal last week. Extremes 35°, 98°. Rainfall was again widespread, generally 0.50 to 2.00 in. with the greatest amounts found in the northwest, north central. Maximum 2.00 in.

Days suitable for fieldwork 3.7. Topsoil 3% short, 48% adequate, 49% surplus. Subsoil 4% short, 48% adequate, 48% surplus. Winter wheat 20% fair, 59% good, 21% excellent. Rye 9% poor, 25% fair, 51% good, 15% excellent. Oats 1% very poor, 6% poor, 21% fair, 58% good, 14% excellent. Barley 17% fair, 60% good, 23% excellent. Flax 25% fair, 57% good, 18% excellent. Sunflowers 4% poor, 18% fair, 67% good, 11% excellent. Winter wheat harvest was in full swing in most areas last week. Yields varied, most were above normal. Fields were still soft in most areas. Rust was in some oat fields, scabbing in spring wheat. Last weeks sunshine helped improve row crops grow, continued heat, dry weather is still needed. Early planted row crops were in good condition, the rest of the crops were very uneven, spotty. Farmers are very concerned about the row crops maturing before the fall frost. Livestock 2% fair, 70% good, 28% excellent. Pasture 100% of normal. Many areas started their second cutting of alfalfa as it did not rain in some areas for up to six days in a row.

**TENNESSEE:** Temperatures 8° above normal to 3° below normal. Extremes 54°, 104°. Rainfall was practically absent from the State with a small amount falling mainly in the northeast. Bristol recorded 0.72 in. precipitation while Memphis came in at 0.01 in.

Days suitable for fieldwork 6.2. Soil moisture 48% very short, 47% short, 5% adequate. Corn 95% tasseling, 99% 1992, 87% avg.; 41% dough stage, 62% 1992, 50% avg.; 9% dent stage, 20% 1992, 19% avg.; 9% very poor, 13% poor, 52% fair, 26% good. Cotton 93% setting bolls, 73% 1992, 75% avg.; 45% fair, 54% good, 1% excellent. Sorghum 74% headed, 77% 1992, 63% avg.; 3% very poor, 4% poor, 66% fair, 27% good. Soybeans 44% blooming, 50% 1992, 39% avg.; 10% setting pods, 16% 1992, 13% avg.; 16% poor, 53% fair, 29% good, 2% excellent. Tobacco 28% topped, 47% 1992, 34% avg.; 7% very poor, 16% poor, 62% fair, 15% good. Cattle 3% very poor, 9% poor, 48% fair, 40% good. Cotton condition declined due to a lack of

rainfall. Crop will rebound if rain is received in week to ten days. Aphids, spider mites increasing, so far controls have been effective. Record heat, no rain is crippling pastures, tobacco in east. Tobacco good condition in middle, black shank damage is still evident. Corn also needs rain to help fill crop out. Some silage cutting began. Soybeans need additional moisture, cooler temperatures for pod set, fill. Single crop beans are setting pods. Double crop beans need moisture the greatest.

**TEXAS:** Last week dry for most locations. Only crop districts reporting significant rainfall were northern, southern High Plains, Upper Coast. Northern East Texas. Temperatures above normal across State except southern High Plains, Cross Timbers, South Texas.

Crops: Corn fields in Plains continued make good progress despite extreme heat. Some fields entering dent stage. Harvest beginning the Blacklands. In Central Texas, harvest increasing under hot, open conditions. Harvest beginning to wind down many areas Valley, Coastal Bend. Corn dented 54%; 51% 1992; 61% avg.; mature 36%; 38% 1992; 49% avg.; harvested 16%; 7% 1992; 21% avg. Cotton harvest valley were increasing rapidly under open conditions. Yields have been good for most part. Boll retention remains big concern Plains; however currently very light shedding has occurred. Shedding however becoming big problem in some fields in Blacklands. Some deterioration from hot, dry conditions occurred Central Texas also. A few early fields are beginning to open. Cotton open bolls 7%; 6% 1992; 10% avg.; harvested 2%; 1% 1992; 3% avg. Grain sorghum fields the Plains were turning color rapidly under hot temperatures. Harvest beginning Cross Timbers where fields have experienced some decline. Harvest increasing Blacklands. Harvest full swing Central Texas most yields have been good. Harvest winding down Valley, Coastal Bend. Sorghum mature 42%; 46% 1992; 47% avg.; harvested 28%; 27% 1992; 37% avg. Rice harvest getting underway along Upper Coast. Conditions remained mostly open for harvest. Peanut crop continued make good progress Cross Timbers under steady irrigation. Dryland fields need moisture. In Central Texas, dryland fields experiencing slow growth. Peanuts 100% planted; 99% 1992; 100% avg. Soybeans early fields continued look good. Later fields could use moisture. Other crops: Oats 96% harvested; 100% 1992; 99% avg. Sunflowers 100% planted; 99% 1992; 99% avg.

Commercial Vegetables: In the Rio Grande Valley, land preparations continued without much delay. In East Texas, vegetable production slowed because hot conditions, however good supplies are still available. In the High Plains, harvest onions, potatoes, cabbage, cucumbers, pumpkins continued. In the Trans-Pecos, peppers showing some disease problems. Harvest cantaloupes continued. Harvest late Peaches nearly completed. Pecans were entering critical water stage in many areas, rain needed to help fill the nuts. A good crop is expected, however some shedding is occurring.

Range and Livestock: Ranges, pastures across most State could use good rain. Some areas are critical need for moisture to help relieve the fire potential. Grasses drying up, many producers continued to supplemental feeding. Overall livestock have remained good.

**UTAH:** Temperature maximums 4° below normal, minimums 3° below normal. Precipitation was extremely heavy in north central, heavy in northern mountains, western, moderate in south central, Uinta Basin, light in southeast, none in Dixie.

Days suitable for fieldwork 6.3. Soil moisture 65% short, 34% adequate, 1% surplus. Irrigation water supply 8% short, 89% adequate, 3% surplus. Stockwater supply 1% short, 97% adequate, 2% surplus. Hay, other roughage supplies 2% short, 70% adequate, 28% surplus. Winter wheat ripe 78%, 100% 1992; harvested 7%,

76% 1992, 63% avg. Spring wheat ripe 50%, 91% 1992; harvested 3%, 52% 1992, 40% avg. Barley ripe 58%, 92% 1992; harvested 16%, 57% 1992, 47% avg. Oats: ripe 39%, 62% 1992, 50% avg.; harvested for hay or silage 70%, 75% 1992, 56% avg. Corn height 57 in., 71 in. 1992; tasseling 40%, 68% 1992, 56% avg. Alfalfa hay 2nd cutting 67% complete, 90% 1992, 75% avg. Other hay cut 68%, 81% 1992, 78% avg. Tart cherries picked 93%. Pasture, range good to excellent.

**VIRGINIA:** Temperatures above normal. Extremes 52°; 103°. Scattered showers, thunderstorms. Most areas received little or no precipitation.

Days suitable for fieldwork 6.1. Topsoil 55% very short, 43% short, 2% adequate. Pasture 26% very poor, 49% poor, 24% fair, 1% good. Alfalfa 9% very poor, 32% poor, 47% fair, 12% good. Other hay 22% very poor, 34% poor, 40% fair, 3% good. Potatoes 86% harvested. Corn silked 72%, 69% 1992, 70% avg. Corn dough stage 39%, 37% 1992, 39% avg.; dented 16%, 15% 1992, 17% avg.; 31% very poor, 29% poor, 35% fair, 5% good. Peanut 86% fair, 14% good. Soybeans blooming 39%, 35% 1992, 38% avg.; setting pods 20%, 18% 1992, 18% avg.; 20% very poor, 46% poor, 32% fair, 2% good. All tobacco 3% very poor, 11% poor, 66% fair, 20% good. Flue tobacco 15% harvested, 13% 1992, 12% avg. Peach harvest about 33% completed. Summer apple harvest just beginning. Livestock 2% very poor, 11% poor, 44% fair, 42% good, 1% excellent. Earworms in southeast in corn, possible problem in soybeans, peanuts, cotton. Hard, dry soil conditions causing some pegging problems in peanuts. Irrigating, topping tobacco, harvesting cucumbers, tomatoes, peppers, supplemental feeding to livestock. Very little hay harvesting.

**WASHINGTON:** Temperatures 5° below normal to normal west; 12° below normal to 3° below normal east. Precipitation 0.23 to 0.65 in. west; none to 0.54 in. east.

Days suitable for fieldwork 4.7. Soil moisture 13% short, 85% adequate, 2% surplus. Irrigation water supply 15% short, 85% adequate. Hay, other roughage 5% very short, 2% short, 93% adequate. Range, pasture 14% poor, 16% fair, 34% good, 36% excellent. Winter wheat dryland 5% fair, 85% good, 10% excellent; irrigated 100% good. Spring wheat dryland 5% fair, 95% good; irrigated 100% good. Barley dryland 10% fair, 80% good, 10% excellent; irrigated 95% good, 5% excellent. Potatoes 100% good. Winter grain harvest continued to be slowed due to the uncooperative weather. Yields mostly good for the winter wheat that has been harvested. Spring grains were still a week or so away from harvest. Weather continued to wreak havoc on the hay crop, although not as badly as the previous few months. Blueberry, blackberry harvests were in full swing. Apples, pears were both progressing nicely with minimal problems.

**WEST VIRGINIA:** Temperature 75°. Extremes 51°; 100°. Precipitation 0.75 in. Days suitable for fieldwork 6.0. Soil moisture 41% very short, 59% short. Tobacco 100% good. Hay

17% very poor, 33% poor, 34% fair, 16% good; 100% 1st cut, 40% 2nd cut. Pastures 25% very poor, 44% poor, 24% fair, 7% good; 66% of normal. Cattle 7% poor, 8% fair, 85% good. Sheep 27% poor, 30% fair, 43% good. Apples fair. Peaches poor to fair. Wheat 100% harvested. Oats 100% ripe, 79% harvested. Corn 6% very poor, 5% poor, 85% fair, 4% good; 52% silked, 7% dough stage. Soybeans 85% fair, 15% good; 40% blooming. Gardens 5% very poor, 9% poor, 55% fair, 31% good. Farm activities: General maintenance, moving livestock, cutting hay, topping tobacco, harvesting oats, peaches.

**WISCONSIN:** Showers or thunderstorms affected State each day, generally remained widely scattered, light. Temperature 71°; 2° above normal. Extremes 45°; 91°. Precipitation 0.20 to 1.60 in.

Days suitable for fieldwork 4.9. Soil moisture 6% short, 62% adequate, 32% surplus. Pasture 93% of normal, 74% 1992, 66% avg. General condition of crops: 10% poor, 41% fair, 48% good, 1% excellent. Oats 2% very poor, 10% poor, 27% fair, 55% good, 6% excellent; harvested 5% harvested, 6% 1992, 31% avg. Corn 3% very poor, 12% poor, 39% fair, 44% good, 2% excellent; height 58 in.; silked 10% silked, 35% 1992, 58% avg. Soybean 5% poor, 37% fair, 53% good, 5% excellent. Alfalfa 2nd cut 37% harvested, 49% 1992, 64% avg. Winter wheat harvested 12% harvested, 13% 1992, 55% avg. Hay, roughage supply 29% short, 63% adequate, 8% surplus. Many farmers report that conditions have improved in the past couple of weeks, although most crops are still well behind normal. Much more heat and a late frost are the wishes of most State farmers this year. A few areas of the State could really use a dose of rain. Crop conditions have been on a gradual upward swing for the past couple of weeks. With the recent dry weather, alfalfa harvest continues to be the first priority for many farmers. Quite a few reporters have indicated a very good quality second harvest. Although total hay, roughage supply is mostly adequate, comments indicated that the supply of good quality hay may be short. Corn is growing quite a bit faster lately. A number of reporters stated that tasseling, silking has come on quickly. Still not many oats fields ready for grain harvest; however, a few producers mentioned that oatlage was made last week. Many reporters have noticed a lot of rust in their small grain fields.

**WYOMING:** Temperatures below normal over most of the State with extremes normal to 11° below normal. Precipitation above normal over most of the State. Wettest areas were the extreme northeast, extreme west where stations received 1.00 to 2.00 in.

Days suitable for fieldwork 6.1. Topsoil 20% short, 80% adequate. Spring wheat 4% harvested, 12% 1992, 16% avg. Oats 2% harvested, 5% 1992, 9% avg. Barley 6% harvested, 18% 1992, 20% avg. Winter wheat 25% harvested, 36% 1992, 49% avg. Corn silked 2%, 23% 1992, 26% avg. Dry beans 33% setting pods, 35% 1992, 43% avg. Alfalfa 1st cutting completed 93%, 89% 1992, 98% avg.; 2nd cutting completed 5%, 21% 1992, 26% avg. Other hay harvested 64%, 53% 1992, 65% avg. Moderate hail damage in Campbell, Laramie, Weston counties during last two weeks. Range, pastures excellent.

July 1993

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

International Weather and Crop Summary  
HIGHLIGHTS

July 25 - 31, 1993

**FSU:** Welcome drier weather covered Belarus and western Ukraine. In the **New Lands**, cool, wet weather maintained highly favorable growing conditions for spring grains.

**EUROPE:** Rain disrupted winter grain harvesting across northern Europe.

**SOUTH ASIA:** Showers benefited vegetative to reproductive crops in central and southern India. Dry weather brought some relief to flooded regions in the east and northwest.

**SOUTHEAST ASIA:** Dry pockets persisted over Thailand's rice and corn areas.

**EASTERN ASIA:** Adequate moisture exists for summer crops across China. Two tropical cyclones brought heavy rains and flooding to southern Japan.

**AUSTRALIA:** Rains favored wheat across eastern and southern Australia.

**SOUTH AMERICA:** Cold temperatures may have damaged coffee and winter wheat across southern Brazil.

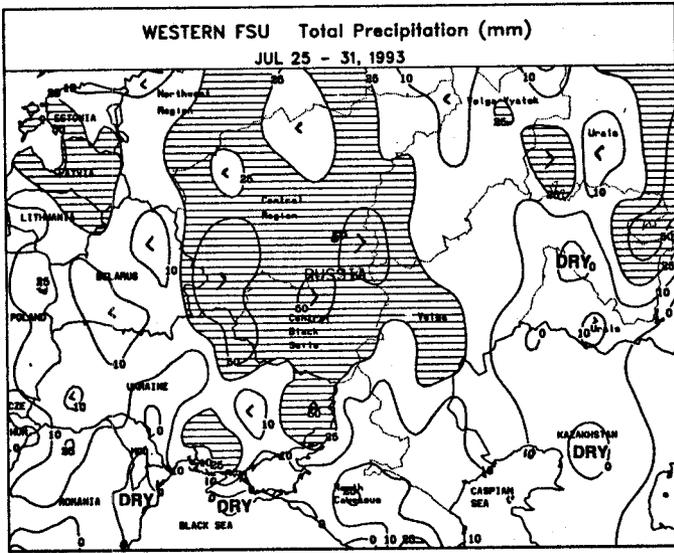
**MEXICO:** Seasonal rains continued to favor corn.

**CANADA:** Soggy weather increased concerns for reproductive to filling Prairie crops.

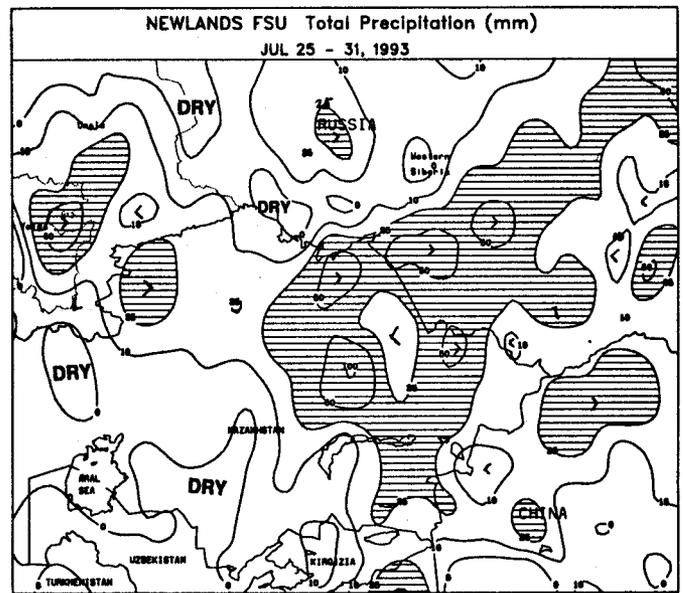
COUNTRY	CITY	TEMPERATURE (C)					PRECIPITATION (MM)	
		AVG MAX	AVG MIN	HI MAX	LO MIN	AVG	DPART F/NRM	TOTAL F/NRM
NORWAY	OSLO	18	10	25	5	14	-0.8	122 44
SWEDEN	STOCKHOLM	21	12	26	8	17	-0.4	75 4
FINLND	HELSINKI	21	11	26	6	16	-0.7	99 26
U KING	GLASGOW	17	10	22	5	14	-2.0	56 -26
	EDINBURGH	18	10	21	5	14	-0.5	40 -18
	BIRMINGHAM	20	11	25	4	16	-0.3	60 12
	LONDON	21	11	27	5	16	-0.7	56 11
IRELND	DUBLIN	18	12	23	8	15	-0.2	60 10
ICELND	REYKJAVIK	13	8	20	5	11	0.0	22 -30
DENMRK	COPENHAGEN	19	12	25	8	15	-2.4	106 35
LUXEMB	LUXEMBOURG	21	12	29	8	17	-0.3	116 50
SWITZL	ZURICH	21	13	31	8	17	-0.4	286 167
	GENEVA	24	14	32	7	19	0.1	53 -15
FRANCE	PARIS/ORLY	23	13	30	7	18	***	29 ***
	STRASBOURG	24	14	32	7	19	0.1	68 12
	BOURGES	24	13	31	7	19	-0.4	27 -25
	BORDEAUX	25	14	33	9	20	-0.3	47 0
	TOULOUSE	25	15	35	11	20	-1.2	52 10
	MARSEILLE	28	18	36	13	23	-0.3	3 -11
SPAIN	VALLADOLID	30	13	39	6	21	-0.1	9 -8
	MADRID	33	16	39	10	25	0.0	0 -7
	SEVILLE	37	21	42	17	29	1.0	0 -1
PORTUG	LISBON	30	18	38	15	24	1.7	0 -3
GERMNY	HAMBURG	20	12	25	9	16	-0.7	147 65
	BERLIN	21	13	28	9	17	-1.4	77 24
	DUSSELDORF	22	13	30	8	18	-0.6	108 33
	LEIPZIG	21	12	30	8	17	-1.0	117 54
	DRESDEN	22	13	29	8	18	-0.6	125 16
	STUTTGART	22	13	33	6	18	0.0	72 -6
	NURNBERG	23	13	32	8	18	-0.4	115 47
AUSTRI	VIENNA	25	14	32	10	20	-0.7	132 62
	INNSBRUCK	23	12	32	7	17	-0.5	219 91
CZECH	PRAGUE	22	11	29	6	17	-0.9	98 31
POLAND	WARSAW	22	12	30	8	17	-1.0	66 -1
	LODZ	22	12	31	7	17	-1.1	71 -20
	KATOWICE	22	12	31	7	17	-0.8	83 -11
	PRZEMYSL	22	13	29	8	17	-0.4	115 15
HUNGAR	BUDAPEST	26	15	34	10	20	-0.4	74 22
F YUGO	BELGRADE	29	17	40	11	23	1.3	57 -12
ROMANI	BUCHAREST	29	13	35	8	21	-1.6	62 -3
BULGAR	SOFIA	28	15	36	5	21	1.3	8 -51
ITALY	MILAN	28	17	33	11	22	-0.8	94 31
	VERONA	30	17	35	10	23	-0.4	28 -33
	VENICE	27	18	30	13	23	-0.6	69 5
	GENOA	26	20	32	17	23	-1.3	11 -16
	ROME	28	18	33	13	23	-1.1	1 -13
	NAPLES	30	17	37	-18	23	-0.9	1 -24
GREECE	THESSALONIKA	32	19	36	16	25	-1.1	2 -22
	LARISSA	34	18	39	13	26	-0.9	1 -20
	ATHENS	32	22	36	17	27	-0.3	0 -2
TURKEY	ISTANBUL	28	19	33	14	23	0.0	0 -21
	ANKARA	29	10	35	1	19	-4.3	4 -16
CYPRUS	LARNACA	33	22	38	18	27	0.1	0 -1
ESTONI	TALLINN	20	12	28	7	16	-0.4	64 -13
LITHUA	KAUNAS	20	12	25	9	16	-0.9	205 133
FSU	ST. PETERSBURG	21	14	25	9	17	-0.5	90 13
	MINSK	21	13	30	9	17	-0.4	190 88
	KAZAN	24	15	29	11	19	-0.1	37 -31
	MOSCOW	22	14	28	9	18	-0.1	118 27
	YEKATERINBURG	23	14	29	6	19	-0.1	235 156
	OMSK	23	14	31	4	**	***	100 39
	KUSTANAY	26	15	30	8	20	-0.5	90 32
	KRASNOYARSK	27	14	33	6	20	2.1	13 -68
	NOVOSIBIRSK	25	15	29	8	20	1.4	97 38
	BARNAUL	25	16	31	8	20	0.6	84 22
	KHABAROVSK	28	16	33	13	22	1.1	22 -110
	VLADIVOSTOK	19	15	22	12	17	-0.1	115 -28
	KIEV	23	14	33	10	18	-1.1	110 24
	LVOV	21	12	28	6	17	-0.8	184 85
	KIROVOGRAD	24	13	34	7	18	-2.8	49 -12

Based on Preliminary Reports

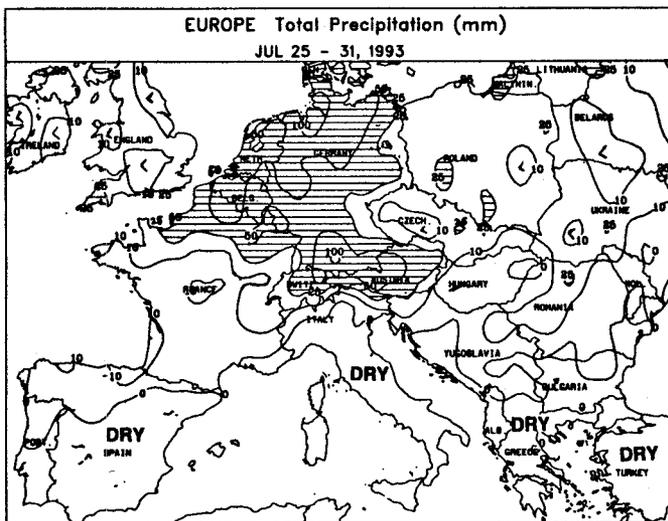




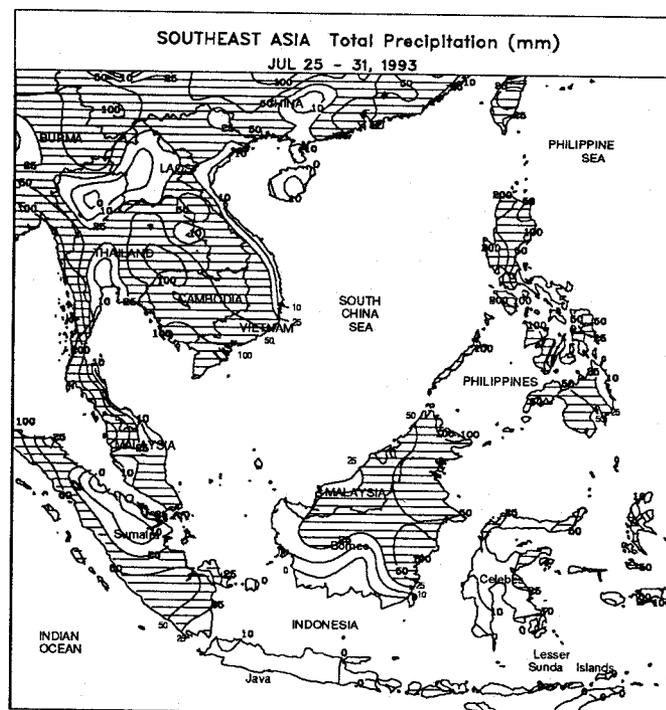
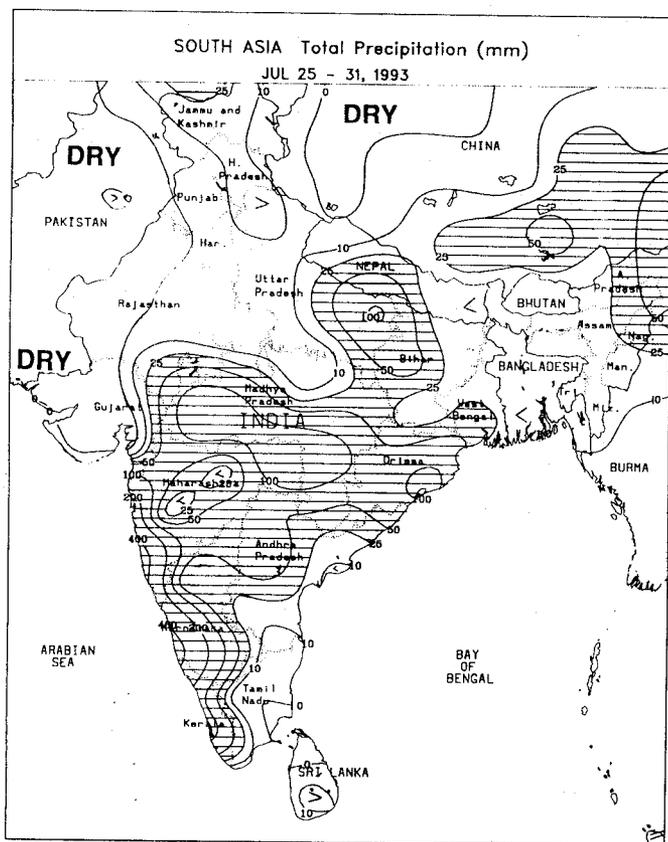
**FSU-WESTERN:** Winter grain harvesting was well underway over most of the region, while spring grains were being harvested mainly in southern areas. Beneficial drier weather covered Belarus and western Ukraine, helping to ease persistent wetness. However, light showers (6-20 mm) kept soils saturated, making winter grain harvest conditions difficult. The area of greatest rainfall (25-84 mm) shifted eastward, covering Central Region, southern Volga Vyatsk, Central Black Soils, and extreme eastern Ukraine. While the rain benefited filling spring grains in the north, it interrupted winter and spring grain harvesting in the south. Variable amounts of rain (10-39 mm) covered the Volga Valley, benefiting spring grains and sunflowers in the filling stage. In Ukraine, light to moderate showers (10-25 mm, with local amounts in excess of 25 mm) provided favorable moisture conditions for corn, sunflowers, and sugar beets. Weekly average temperatures were near normal over Western FSU.



**FSU-NEW LANDS:** Unseasonably cool, wet weather covered Kazakhstan, maintaining highly favorable growing conditions for spring grains in the filling stage. Precipitation amounts ranged from 12 to 25 mm, with local amounts exceeding 50 mm. Further north, drier weather (10-25 mm) over the Urals was welcomed, following last week's heavy rainfall. Little if any precipitation covered western areas in Western Siberia, while wet weather (25-50 mm) covered remaining spring grain areas in the east. Weekly average temperatures were 2-4 degrees Celsius (C) below normal over Kazakhstan and most of Western Siberia.



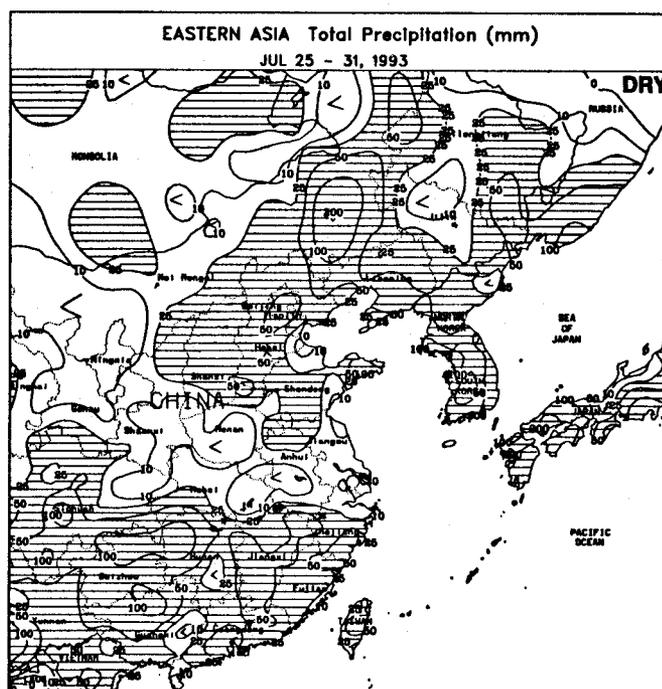
**EUROPE:** Substantial rain disrupted winter grain harvesting in north-central Europe. Weekly rainfall ranged from 25 to 77 mm from extreme northern France across the Benelux countries to Germany, with locally heavier amounts (75-94 mm) in northwestern Germany. Periodic showers also produced 10-41 mm over most of the United Kingdom and Poland, slowing harvest progress. Light rain (10 mm or less) covered the major corn growing areas of France, Hungary, and Romania. The corn crop is in the grain-filling stages of development. Although rainfall has been light in recent weeks in southern France, ample moisture in June and early July provided favorable moisture for crop development. In contrast, moisture has been limited in east-central and southeastern Europe. Drier weather returned to Hungary following last week's much-needed rain, while dry conditions persisted in Bulgaria. In Scandinavia, widespread rain (20-50 mm, with scattered amounts of 50-85 mm) covered all grain areas from Denmark to Finland, maintaining moist soils for immature crops.

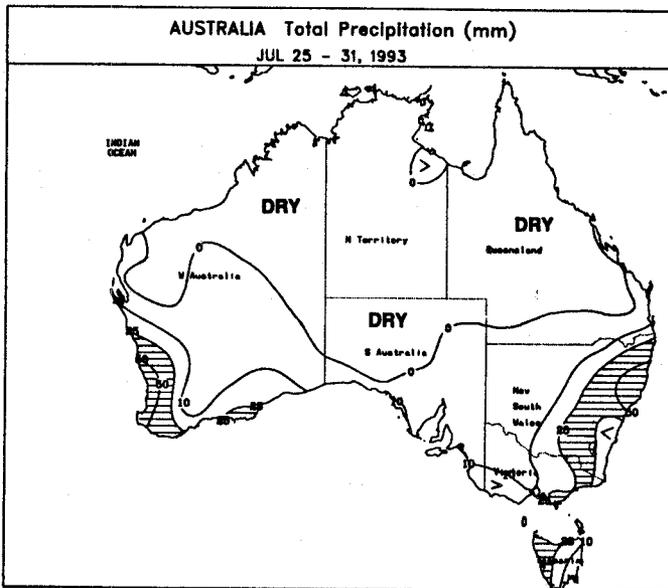


**SOUTHEAST ASIA:** Pockets of hot, dry weather persisted over corn regions of central Thailand and rice areas of the Northern Hills region. In both areas, temperatures averaged 2-3 degrees C above normal (with highs of 38-40 degrees C), stressing immature crops and accelerating growth of newly transplanted rice. However, heavy showers (50-166 mm) increased moisture reserves from eastern Thailand to the Mekong Delta. August is one of Indochina's wettest months, and rice cropping patterns are designed to take advantage of the typically heavy rain. In the Philippines, moderate to heavy showers (50-100 mm or more) fell over west coastal crop areas, while seasonably lighter rain dominated the east.

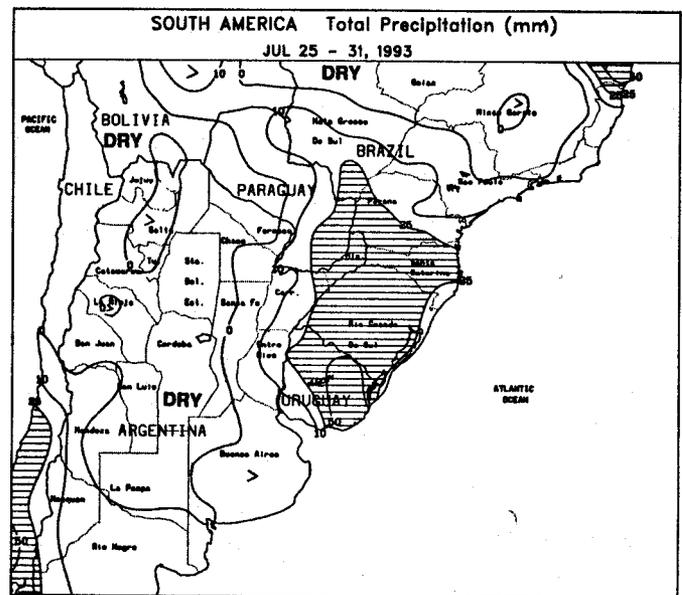
**SOUTH ASIA:** Moderate to heavy showers (25-168 mm) covered most primary crop areas of southern and central India, benefiting vegetative to reproductive crops. The rainfall was especially welcome over India's southern interior, which has been trending drier than normal for most of the season. However, some flooding likely occurred in oilseed and cotton areas of western Madhya Pradesh. Inundating rains (100-300 mm, with local reports exceeding 400 mm) covered a large stretch of the southwest coast, flooding some rice areas. In contrast, drier weather returned to the eastern states and Bangladesh, alleviating local flooding. Dry weather also dominated crop regions of northeastern India and Pakistan. Primary groundnut and cotton areas of Gujarat reported no rain. The dryness in the northwest brought some relief to flooded areas but predominately rainfed crop areas of Gujarat and Rajasthan require a more consistent rainfall pattern for normal development. Pakistan's crop areas, also trending dry in places, are mostly irrigated.

**EASTERN ASIA:** Widespread showers (20-100 mm) continued to cover most of China, aiding rainfed summer crops and increasing irrigation reserves. Portions of central China (Anhui, Hubei, Henan, and Shaanxi) received lesser amounts (5-20 mm), and additional rainfall is still needed. Temperatures averaged 1 to 3 degrees C below normal across central and northern China, while extreme southern China experienced slightly higher than normal temperatures. Two tropical cyclones passed across southern Japan, bringing widespread heavy rains (100-300 mm), causing flooding, and possibly damaging rice paddy fields. Tropical Cyclone Ofelia first made landfall on Shikoku Island on July 26, with sustained winds of 50-55 mph. Tropical Cyclone Percy passed across Kyushu Island on July 29, with sustained winds of 80-90 mph.

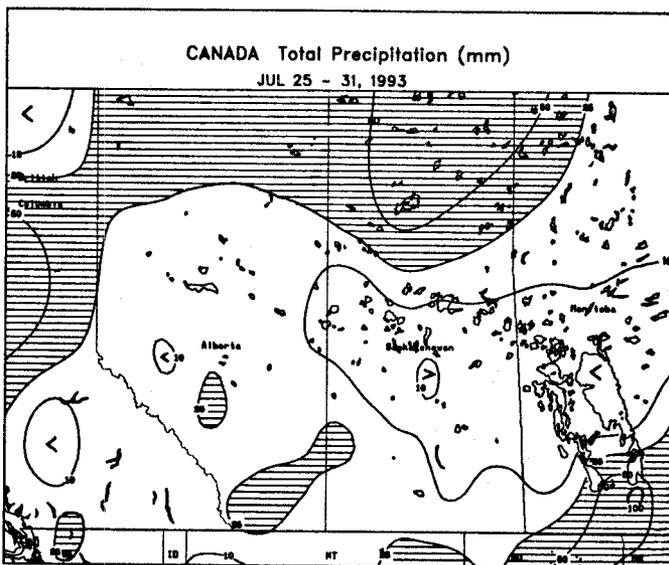




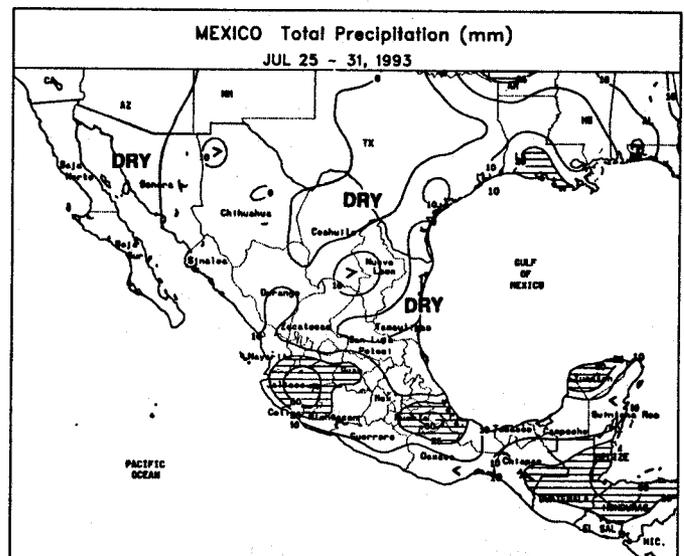
**AUSTRALIA:** Light to moderate rains (8-35 mm) fell across the wheat areas of New South Wales, South Australia, and Victoria, favoring vegetative winter wheat. However, southern Queensland received only very light rain (less than 5 mm). Western Australia received 6-50 mm of rain, keeping soils well watered for vegetative wheat. Temperatures averaged 2 degrees C above normal across the southern and eastern wheat areas, while the west averaged near normal.



**SOUTH AMERICA:** A cold front brought low temperatures to southern Brazil late in the week, and may have caused scattered frost in northern Parana's coffee region. On July 31, minimum temperatures as low as 1 degree C were reported at Maringa and Londrina in northern Parana. This year's crop is currently being harvested, therefore, any damage is limited to next year's coffee crop. Additionally, near-freezing temperatures were reported across southern Parana into Rio Grande do Sul, possibly damaging reproductive winter wheat. Moderate rain (10-30 mm) covered this same region, keeping soil moisture adequate to excellent for winter wheat. Across central Argentina, dry weather prevailed helping to ease flooding. Temperatures averaged 2-4 degrees C below normal across central Argentina and southern Brazil.



**CANADA:** Light to moderate showers (10-45) swept across the Prairies, increasing quality and disease concerns about grains and oilseeds in the reproductive to filling stages. Temperatures averaged 1-2 degrees C below normal, despite a brief period of warm weather (highs of 28-32 degrees C, with local areas reaching 34 C) at week's end. In Ontario, light to moderate rain (8-39 mm) and warmer weather benefited reproductive summer crops. Drier weather is needed in northern crop areas for winter wheat harvests.



**MEXICO:** Light to moderate showers (12-80 mm) continued across the Southern Plateau corn belt, aiding corn. Scattered showers (6-22 mm) fell across northeastern Mexico, favoring sorghum and cotton. Temperatures averaged 1-3 degrees C above normal across the main corn belt.

# 1993 Southwest Monsoon Update

The 1993 southwest monsoon season has so far been marked by contrasting conditions in South and Southeast Asia. While drought has plagued crops in the Philippines and portions of Indochina, flood-prone areas of South Asia have been fraught with inundating rains. The following is a summary of conditions to date in both regions and their likely agricultural impacts.

In April, the southwest monsoon began its northward progress into Southeast Asia. As it reached northern Thailand, the monsoon circulation was generally weak over Indochina. Although rainfall was timely and frequent early in the growing season, accumulations have been below normal over much of the region. Especially hard-hit by bouts of hot, dry weather have been Thailand's rainfed rice and corn areas, portions of which advanced through reproduction during June's most stressful period. A recent return to hot, dry conditions is stressing Thailand's immature grains, including nursery rice usually transplanted in July. In the Philippines, drought persisted until Typhoon Koryn passed over northern Luzon in late June. Since then, frequent (albeit below-normal) rainfall has been timely for rice, corn, and sugarcane, but more is still needed to significantly improve conditions.

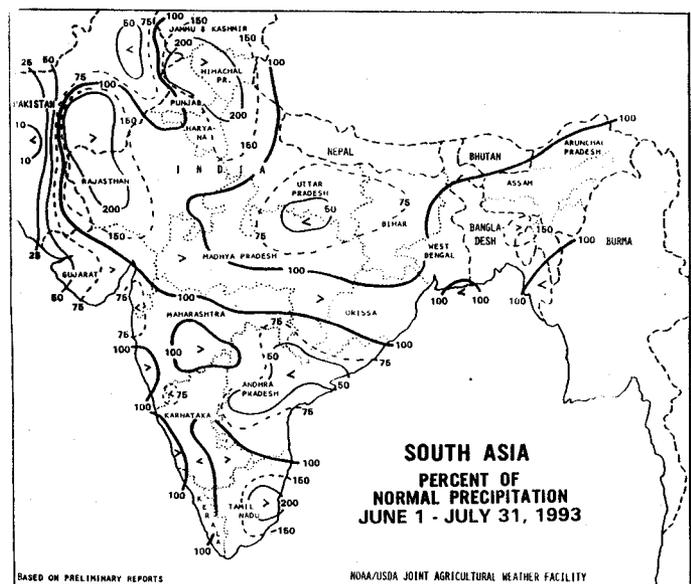
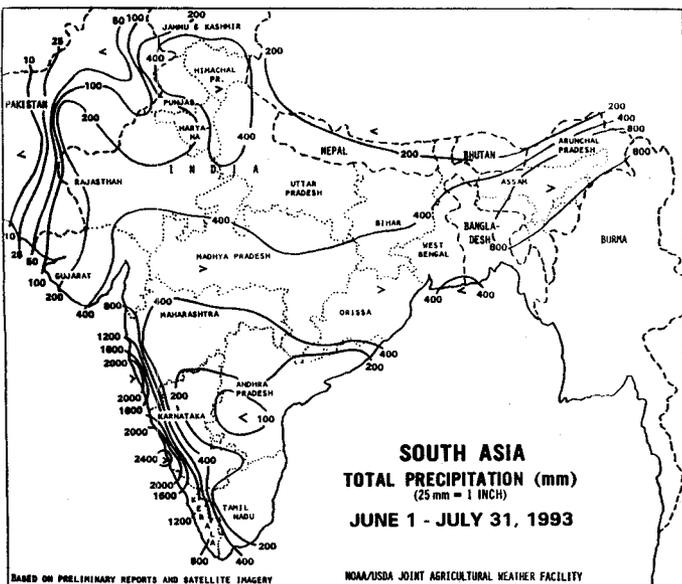
In contrast, the monsoon strengthened as it arrived over southern India around the normal date of June 1. During June, the monsoon progressed normally, reaching central and northern crop areas by early July. Central and southern India's grains and oilseeds are primarily rainfed, and the showers associated with the monsoon were timely for

planting. However, rainfall was excessive in eastern India and Bangladesh, with widespread reports of flooding. These rains were a continuation of pre-monsoon wetness during April and May that resulted in earlier flooding and delays in winter wheat and rice harvest. Main-season rice planting, usually lasting from May to July, was hampered by the wetness, and some crop damage was reported due to the more recent flooding. Inundations also occurred in the northwest, with heaviest rains concentrated in rice and cotton areas of India's Punjab and Haryana states.

Unseasonable dryness was confined to India's southern interior, limiting moisture for cotton, grain, and oilseed establishment. Recent showers benefited vegetative to reproductive crops but more consistent, soaking rains are needed to improve overall crop prospects.

Although the rainy season is about half over, planting and transplanting operations are still underway in both South and Southeast Asia, with reproduction of many crops expected in August. A continuation of rain in non-flooded areas of India, and an increase in moisture over Southeast Asia are still needed. A timely withdrawal of the monsoon will also be important this year, especially in irrigated cotton regions of northwest India and Pakistan. In recent years, untimely rain and flooding during September damaged open bolls, disrupted spraying for pests and diseases, and, where flooding occurred, physically destroyed portions of the crop.

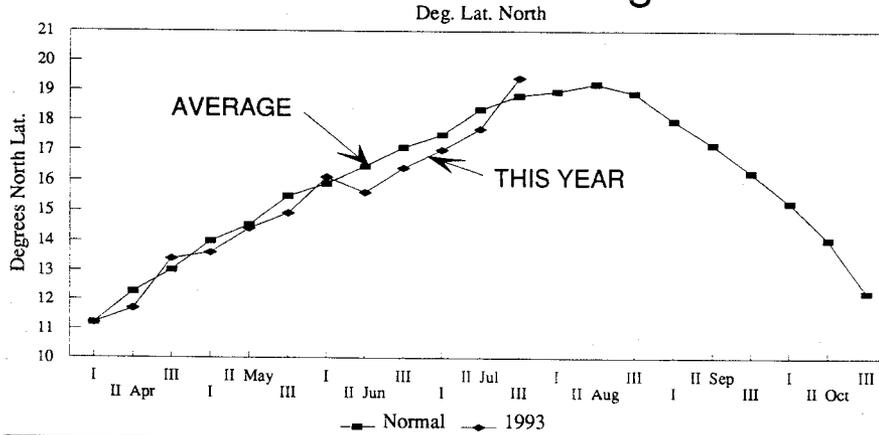
--Mark Brusberg and Dave Secora



## Sahel Rainy Season Update

The progress of the rainy season across West Africa has been somewhat behind schedule this season, as shown by the lagging northward movement of the Intertropical Discontinuity (ITD). The ITD, which reflects the northern boundary of the humid air, was south of the 14-year mean position from mid-June through mid-July. As a result, weather over much of the Sahel zone was hotter and drier than usual until late July, when the African monsoon surged northward above the 19th parallel. Eastern Niger and northern Senegal have been most affected by deficient moisture. Parts of Senegal's groundnut basin reported as little as 1 mm of rain from June 1 through July 17, making this one of the worst starts to the growing season in the past 40 years.

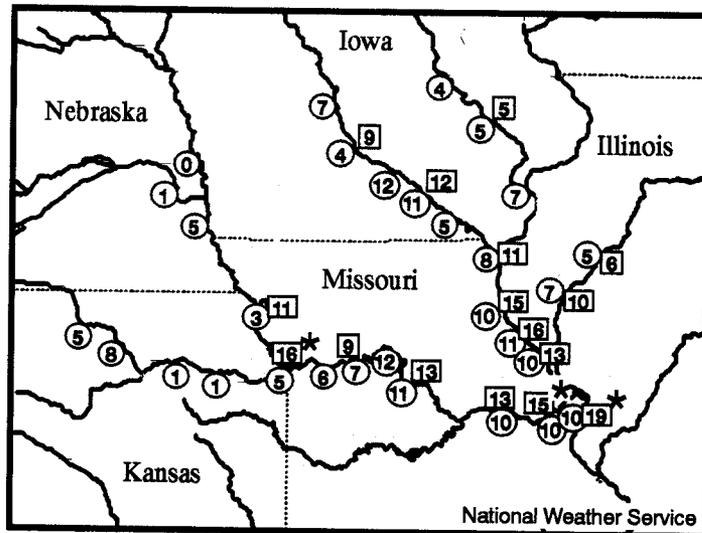
### W. African ITD Progress



(Continued from p. 14)

Figure 4

### Selected River Crests of 1947 and 1993 (Feet above flood stage)



○ 1947  
□ 1993

Note: Crest data for 1993 is preliminary and updated through July 20, except where an \* appears. For Kansas City, St. Charles, and St. Louis, data has been updated to reflect the latest, highest crest.

The Weekly Weather and Crop Bulletin 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 first class \$45, foreign \$55 (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, DC 20250**. Order subscriptions from the office and address listed above. First class postage paid at Washington, DC, and additional mailing offices.

**U.S. DEPARTMENT OF COMMERCE**

National Oceanic and Atmospheric Administration  
National Weather Service/Climate Analysis Center  
Managing Editor . . . . . **Douglas Le Comte**  
Editor . . . . . **Brad Rippey** (202) 720-1444  
Meteorologists . . . . . **David Secora**  
**Vilhelm Ejerknæs, Jeff Savadel, and Brian Morris.**

Subscriptions . . . . . **Joyce Houston** (202) 720-7917

**U.S. DEPARTMENT OF AGRICULTURE**

Economics Management Staff  
E.M.S. Editor . . . . . **Sharon Lee**  
National Agricultural Statistics Service  
Agricultural Statistician . . **David Mueller** (202) 720-2157  
State Summaries Editor . . . **Klara Haskins** (202) 720-8033  
World Agricultural Outlook Board  
Agricultural Weather Analysts . . **Ray Motha** (202) 720-9805  
**Tom Puterbaugh, Mark Brusberg, and Bob Stefanski.**

(Continued from front cover)

above flood stage along the entire length of the Missouri-Illinois border. A final flurry of crests from the Illinois, Missouri, and Mississippi Rivers broke numerous levees and set all-time records in river levels toward week's end. On the Missouri River, Kansas City, MO survived a crest of more than 16 feet above flood stage on July 27 because the height of its floodwall had been increased after the flood of July 1951. But farther downstream, a levee near Chesterfield, MO burst on July 30, inundating parts of the town and the Spirit of St. Louis general aviation facility. At the confluence of the Missouri and Mississippi Rivers, nearly 50 percent of St. Charles County, MO remained under water. During the morning hours of August 1, a series of levees were broken or overtopped on the Illinois side of the Mississippi River, flooding agricultural land. And later on August 1, water backed up through the sewer system into Alton, IL, closing a water treatment plant that serves more than 70,000 people.

Before the heatwave broke in the Southeast, about 70 daily record highs were established. The high of 104°F in Huntsville, AL on Tuesday tied an all-time record. Norfolk, VA equalled a July record with a 103°F reading on Thursday. But as heat edged westward late in the week, streaks of 90°F heat were halted at 33 days in Charlotte, NC, and at 30 days in Knoxville, TN. Farther north, Mansfield, OH registered its first 90°F reading of the year on Monday. In the West, a dozen daily record lows were set before a rapid warm-up. Ely, NV (34°F) set its seventh daily record low of the month on Tuesday. A day earlier, Pueblo, CO not only notched a daily record low (52°F), but also tied a daily record high (101°F). By Saturday, heat reached the West coast, while chilly weather arrived in the East. San Jose, CA (103°F) was one of 10 stations to report a daily record high, while formerly heat-stricken Bristol, TN enjoyed a daily record low of 55°F.

**WEEKLY NEWS BULLETIN  
FIRST CLASS**

NOAA/USDA Joint Agricultural  
Weather Facility  
USDA South Building, Room 5844  
Washington, DC 20250

FIRST CLASS MAIL  
POSTAGE & FEES PAID  
NOAA  
PERMIT NO. G-19

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300