

# WEEKLY WEATHER AND CROP BULLETIN

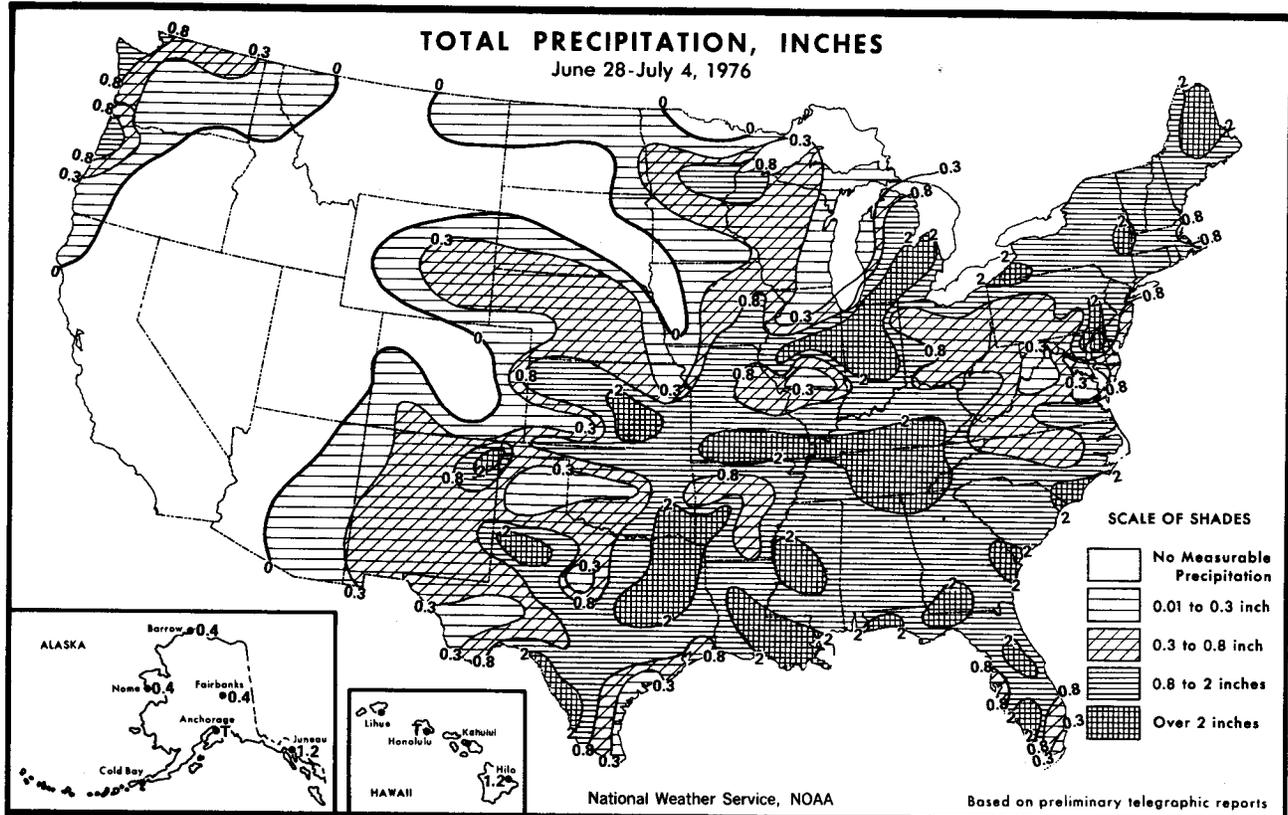
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## National Weather Summary

For the week of June 28 - July 4

**HIGHLIGHTS:** Widespread precipitation turned up across the eastern two-thirds and northwest corner of the Nation. Temperature followed suit, slipping below normal throughout these areas, except in the extreme Northeast. Above normal readings broke or matched previous record highs in Idaho and sections of Washington. Severe weather in central U.S. focused on Illinois the first half of the week, then produced heavy rains and local flooding in Kansas, Missouri, and surrounding areas.

On the heels of a stationary frontal system, showers and thundershowers on Monday stretched from Kansas along the Ohio Valley and lower Great Lakes region into New York. Associated with the front, severe afternoon thunderstorms spawned 17 tornadoes across the area. More than half of the twisters zeroed in on Illinois, but caused no major damage or injury.

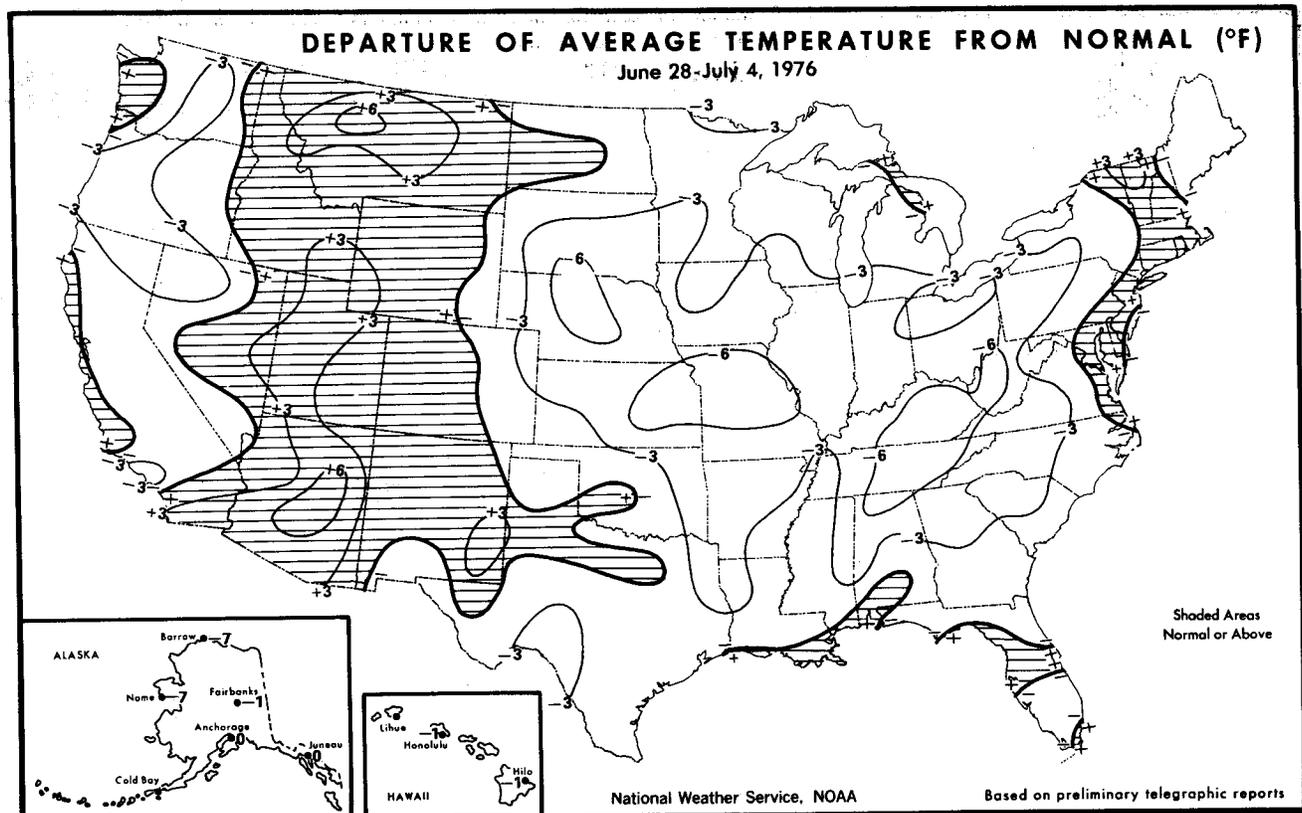
Winds associated with the severe weather that whirled across North Dakota, Minnesota, and Kentucky reached 80 mph in places.

Except for a few mountain showers in lower regions, daytime precipitation left the Rockies and Far West untouched.

Though slightly cooler air along the northern coast took the edge off California's hot spell, most of the State still sweltered. The mercury inched upward in New England, the central Plains, and the West and scored nearly 100° in sections of Kansas, Colorado, Utah, and Nevada.

Tuesday morning's thunderstorms made little noise, but by noon picked up from Oklahoma and Kansas through the central Mississippi Valley into the upper Great Lakes region into the western Ohio Valley. Severe weather again made the news in north central Illinois, where nine tornadoes damaged crops and some property.

Meantime temperatures warmed into the 80's from



the Gulf Coast across the southern Plains, Mississippi Valley, and east to the Atlantic Coast. Readings in the 70's favored the Great Lakes region, New England, and the northern and central Plains.

In the Pacific Northwest unseasonably hot air gripped Idaho and portions of Washington. In Idaho, Boise scored a record breaking 100° and Pocatella matched its previous record high of 96°. On the cooler side, a cold front moving through Washington kept maximum temperatures in the western half of the State in the mid 60's to mid 70's.

Severe weather persisted at midweek throughout the Southeast, as a line of heavy thunderstorms tramped across portions of Arkansas and Tennessee. Daytime showers and thunderstorms gathered momentum as they moved eastward.

Wednesday afternoon precipitation included areas from the Ohio Valley and central Great Lakes region through the northern Atlantic Coast inland to the Appalachians. Ahead of the cold front rainfall also dampened southern Atlantic and Gulf Coast areas.

Low clouds and morning fog broke the week long record breaking heat wave in the Southwest. In the northern Rockies, though, the heat was still on, thanks to a high pressure system centered over Minnesota. Warm, southerly winds pushed maximum temperatures into the mid to upper 90's in portions of Montana (Great Falls, 99° and Havre, 96°), Idaho, and Wyoming.

Scattered showers and thundershowers highlighted Thursday's national weather map. Rain appeared from the Rockies across the lower Great Plains into the lower Mississippi Valley. Forecasters traced

more precipitation along the southern Atlantic and Gulf Coasts and from the eastern Great Lakes region into northern New England.

Afternoon temperatures climbed haltingly, even though generally fair skies covered most of the Nation. Cloaked in a cool air flow, the eastern Great Lakes region and northern Appalachians measured readings in the 60's, and thermometers in Maine registered in the 50's and 60's.

Weather records compiled for June credited San Diego, Calif. with its warmest June on record. To the north, Yakima, Wash. looked back on its third coolest June on the books.

On Friday heavy thunderstorms came to life along a warm front in parts of Kansas, Missouri, and Arkansas. Primary target of locally heavy rains, southeast Kansas reported nearly 7 inches of rain in a 24-hour period in one location. A survey of isolated severe weather turned up one tornado near Ocala, Fla. and 80 mph winds in northeast Oklahoma.

Heavy rain and local flooding darkened weekend weather prospects in central U.S. In just a day's time Joplin and Lamar in Missouri and Beaumont in southeast Kansas collected around 9 inches of rain. A total 12 1/2 inches of rain in 24 hours in Cherryvale, Kans. fell just short of its alltime record.

Though Saturday evening rains tapered off in southeast Kansas, thundershowers still rumbled from southern Missouri southward into the Gulf States.

A slow moving thunderstorm produced heavy rains on Sunday that in turn triggered flash floods in parts of Texas. Except for scattered moisture in southern and eastern U.S. pleasant, dry conditions wrapped up the weather week for most of the Nation.

## National Agricultural Summary

For the week of June 28 - July 4

**HIGHLIGHTS:** Soil moisture was short in many of the North Central States, but shower activity provided just enough moisture to maintain corn growth. Other moisture short areas included the Mountain States, California, and several middle Atlantic States. The South had adequate to surplus soil moisture. Small grain harvest, delayed by rains in Kansas, lagged progress of most previous years. Cotton condition improved, but crop development fell behind in the eastern South Central States and southern Atlantic Coast States.

**SMALL GRAINS:** Combining advanced rapidly toward completion in the western South Central States, where rainfall missed the major winter wheat producing areas. Farmers were not as lucky in Kansas, where rains disrupted harvesting schedules. Nationwide, winter wheat harvest, at 44% complete, trailed last year's 49% and 51% average.

Troubled by rain, the Kansas wheat harvest stood at 50% complete, compared with 55% last year and 65% average. Combining was most active in the southern two-thirds of the State. Oklahoma's harvest was nearly complete in the Panhandle. Statewide, combining was 95% complete, near average but ahead of last year. In Texas combining was active on the Plains with 87% of the crop harvested statewide, behind last year and average.

Dry weather accelerated maturity of the U. S. spring wheat crop. South Dakota farmers cut some small grains for hay and silage, or turned cattle onto the fields to supplement short pastures. Minnesota's spring wheat was 95% headed, compared with 47% last year and 61% average. In Montana 60% of the spring wheat crop was headed; normally only 15% is developed to that stage.

**CORN:** Though condition of the U. S. corn crop was good, several North Central States need more rain soon to maintain crop development. Corn height averaged 22 to 48 inches in the North Central States. This height generally falls short of last year's growth but exceeds the average for recent years by 7 to 12 inches. Among the South Central States corn development ranged from 44 to 52% tasseled in Mississippi and Alabama to 20% silked in Kentucky.

Iowa corn, in good to excellent condition, developed rapidly, reaching an average height of 42 inches with a few of the earliest fields tasseling. In Minnesota some corn showed moisture stress in west central and southwest areas, while several south central fields neared tasseling. Wisconsin corn needs rain now. That State's early corn looks good, but late corn is uneven.

**COTTON:** The condition of the cotton crop was poor to fair in Arkansas and Mississippi and fair to good elsewhere, except in Oklahoma, where cotton was in good to excellent shape. In some States squaring lagged previous years by a large margin. In Alabama 18% of the crop was squaring, compared with 75% last year and 70% average. In Mississippi squaring stood at 51%, compared with 45% in 1975 and 61% average. Only 4% of the Mississippi cotton was blooming, less than half of 1975's 9% and far behind 20% average. The Georgia cotton crop improved; 30% was setting bolls compared with 50% last year. In Texas

cotton was growing well in various stages of development. Boll weevil populations increased in all areas. Abandoned cotton acreage was replanted to soybeans in Arkansas and Tennessee.

**SOYBEANS:** The Nation's soybean crop was in good condition, but many fields in North Central States need moisture. Plants averaged 10 to 15 inches high, generally equal to or above last year and the normal. Planting neared completion in most States with most of the activity centered on second crop soybeans following small grains. In Alabama 2% of the crop bloomed, much less than 16% last year.

**OTHER CROPS:** The sorghum crop was in good condition in the major producing States. Harvest in Texas progressed through southern and central areas. In Oklahoma some of the crop began heading.

Frost slightly damaged Idaho potatoes and 10% of the potato rows were closed. Maine potatoes achieved good growth.

Colorado's sugarbeets were in good condition. Digging was well along in California's Imperial Valley and should start soon in the San Joaquin Valley.

Rice harvest should begin soon in Texas. About 34% of the Louisiana crop was headed. The Arkansas crop made good growth and was jointing.

The U. S. peanut crop was in good condition. Virginia growers applied pesticides and landplaster. In Oklahoma planting was complete and 6% of the crop was flowering, compared with 3% in 1975 and 8% average. In Georgia most of the crop was blooming and 53% was pegging. About 36% of Alabama's crop was pegging, behind 1975's 51% and 55% average.

Virginia growers irrigated tobacco and pulled some lower leaves. North Carolina producers harvested 4% of the crop, about the same as 1975. Tobacco was in good condition in Kentucky and Tennessee.

**FRUITS AND NUTS:** Peach harvest became increasingly active in northern production areas. In South Carolina, harvest reached 59% complete, ahead of 37% last year and 27% average. Georgia's peach harvest hit the 75% mark, just ahead of 1975's 73% and far ahead of the 55% average. Sweet and tart cherry harvests were underway in Michigan. Growers thinned fruit trees in Washington.

**VEGETABLES:** Rains and cool temperatures delayed planting and growth of vegetables in New York. Summer harvests advanced in New Jersey. In Wisconsin crops need rain and green pea harvest continued. The Florida vegetable season was nearly finished. Texas vegetable harvests were active in central, eastern, and northern areas. In California, supplies of broccoli and cauliflower were moderate and for celery and tomatoes supplies were heavier.

**PASTURES AND LIVESTOCK:** Pastures ranged from fair to good, except in several western North Central States, most of the Mountain States, and California where dry pastures provided inadequate forage. South Dakota cattlemen culled closely and moved herds to pastures in other States. In California cattle grazed on irrigated pasture and supplemental feeding was common.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., July 4, 1976

States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches	
	Average	Departure	Total	Departure		Average	Departure	Total	Departure		Average	Departure	Total	Departure
ALA.Birmingham . . .	76	-3	1.6	+ .5	La.Baton Rouge . . .	80	-2	2.8	+1.6	Youngstown . . .	67	-3	.6	- .3
Mobile . . .	83	+2	1.3	- .5	Lake Charles . . .	81	-1	1.6	+ .2	OKLA.Okla. City . . .	80	0	.2	- .6
Montgomery . . .	81	0	.9	- .3	New Orleans . . .	81	0	2.1	+ .7	Tulsa . . .	77	-3	1.2	+ .2
ALASKA Anchorage . . .	57	0	T	- .4	Shreveport . . .	77	-5	1.5	+ .8	OREG.Astoria . . .	60	+1	.6	+ .2
Barrow . . .	30	-7	.4	+ .3	MAINE.Caribou . . .	61	-2	2.2	+1.4	Burns . . .	63	-2	0	- .1
Fairbanks . . .	60	-1	.4	0	Portland . . .	63	-3	1.3	+ .7	Medford . . .	64	-5	0	- .1
Juneau . . .	55	0	1.2	+ .3	MD.Baltimore . . .	76	+1	2.5	+1.6	Pendleton . . .	68	-2	0	- .1
Kodiak . . .	-	-	-	-	MASS.Boston . . .	72	0	.6	- .1	Portland . . .	65	0	.3	+ .1
Nome . . .	42	-7	.4	0	Chatham . . .	67	-	.9	-	Salem . . .	82	-3	.9	+ .7
ARIZ.Flagstaff . . .	66	+3	T	- .4	MICH.Alpena . . .	65	+1	1.6	+1.0	PA.Allentown . . .	73	0	.9	0
Phoenix . . .	95	+6	.1	0	Detroit . . .	68	-3	1.0	+ .3	Erie . . .	64	-4	2.3	+1.5
Tucson . . .	89	+4	.1	- .2	Flint . . .	67	-2	3.2	+2.5	Harrisburg . . .	74	-1	.5	- .3
Winslow . . .	82	+6	.2	0	Grand Rapids . . .	67	-3	1.9	+1.1	Philadelphia . . .	77	+1	1.0	+ .1
Yuma . . .	92	+2	0	0	Houghton Lake . . .	63	-2	1.5	+ .7	Pittsburgh . . .	66	-5	.6	- .2
ARK.Fort Smith . . .	76	-5	.3	- .5	Lansing . . .	67	-3	3.4	+2.7	Scranton . . .	70	-1	1.8	+ .9
Little Rock . . .	77	-3	.5	- .3	Marquette . . .	62	-2	.2	- .6	R.I.Providence . . .	70	0	.8	+ .2
CALIF.Bakersfield . . .	81	0	0	0	Muskegon . . .	66	-3	.3	- .3	S.C.Charleston . . .	79	-1	1.3	- .5
Eureka . . .	56	0	.1	0	S. Ste. Marie . . .	64	+2	.1	- .6	Columbia . . .	77	-4	1.4	+ .3
Fresno . . .	75	-3	0	0	MINN.Duluth . . .	61	-2	1.1	+ .1	Greenville . . .	73	-5	1.6	+ .6
Los Angeles . . .	67	-4	0	0	Internatl Falls . . .	63	-3	0	-1.0	S.D.Aberdeen . . .	68	-1	T	- .8
Red Bluff . . .	78	-2	0	- .1	Minneapolis . . .	69	-1	.5	- .4	Huron . . .	66	-5	0	- .7
San Diego . . .	72	+4	0	0	Rochester . . .	67	-2	.1	- .9	Rapid City . . .	66	-3	.2	- .5
San Francisco . . .	63	+1	T	0	St. Cloud . . .	65	-3	.7	- .7	Sioux Falls . . .	68	-3	0	- .9
Stockton . . .	74	-1	0	0	MISS.Jackson . . .	80	-1	2.4	+1.5	TENN.Chattanooga . . .	72	-6	2.4	+1.3
COLO.Denver . . .	72	+2	T	- .4	Meridian . . .	76	-5	1.6	+ .5	Knoxville . . .	71	-6	2.2	+1.2
Grand Junction . . .	78	+2	T	- .1	MO.Columbia . . .	69	-7	1.4	- .6	Memphis . . .	78	-3	1.0	+ .2
Pueblo . . .	75	0	T	- .4	Kansas City . . .	70	-7	1.2	0	Nashville . . .	73	-6	2.6	+1.8
CONN.Bridgeport . . .	74	+2	1.8	+1.1	St. Louis . . .	72	-6	.3	- .7	TEX.Abilene . . .	82	-1	.2	- .8
Hartford . . .	74	+3	1.2	+ .4	Springfield . . .	71	-5	3.5	+2.5	Amarillo . . .	77	-1	.2	- .5
D.C.Washington . . .	79	+1	.1	- .7	MONT.Billings . . .	71	+3	T	- .4	Austin . . .	82	-2	1.8	+1.2
FLA.Apalachicola . . .	81	0	.5	-1.1	Glasgow . . .	70	+3	2.6	+2.1	Beaumont . . .	83	+1	.8	- .4
Daytona Beach . . .	79	-2	1.2	- .4	Great Falls . . .	72	+6	T	- .5	Brownsville . . .	83	-1	.3	- .1
Ft. Myers . . .	81	-1	2.3	+ .1	Havre . . .	70	+3	T	- .5	Corpus Christi . . .	83	-1	.2	- .3
Jacksonville . . .	80	-1	1.4	- .3	Helena . . .	66	+2	T	- .4	Dallas . . .	-	-	-	-
Key West . . .	83	-1	T	-1.1	Kalispell . . .	63	+2	T	- .4	Del Rio . . .	83	-3	2.5	+2.1
Lakeland . . .	82	+1	1.4	- .4	Miles City . . .	72	+1	T	- .6	El Paso . . .	81	-1	.7	+ .4
Miami . . .	83	+1	T	-1.9	Missoula . . .	67	+4	0	- .4	Fort Worth . . .	85	+2	1.7	+1.2
Orlando . . .	81	0	2.8	+ .8	NEBR.Grand Island . . .	69	-6	.3	- .6	Galveston . . .	82	-1	.8	- .2
Tallahassee . . .	80	-1	2.3	+ .4	Lincoln . . .	71	-5	.3	- .6	Houston . . .	82	-1	.8	- .2
Tampa . . .	81	0	.5	-1.4	Norfolk . . .	69	-5	.3	- .7	Lubbock . . .	80	+1	2.3	+1.7
W.Palm Beach . . .	80	-1	.5	-1.3	N.Platte . . .	66	-6	.3	- .5	Midland . . .	80	-2	.4	0
GA.Atlanta . . .	73	-5	1.9	+ .9	Omaha . . .	71	-3	T	- .3	San Angelo . . .	81	-3	.8	+ .4
Augusta . . .	78	-2	1.1	+ .1	Valentine . . .	65	-7	1.7	+1.0	San Antonio . . .	82	-2	1.5	+1.0
Macon . . .	78	-3	1.3	+ .3	NEV.Ely . . .	66	+3	0	- .2	Victoria . . .	82	-2	T	.7
Savannah . . .	79	-2	2.0	+ .3	Las Vegas . . .	86	-1	0	- .1	Waco . . .	83	-1	3.6	+3.2
HAWAII.Hilo . . .	74	-1	1.2	- .5	Reno . . .	65	-1	0	- .1	Wichita Falls . . .	82	-2	.7	+ .1
Honolulu . . .	79	-1	T	- .1	Winnemucca . . .	63	-5	0	- .1	UTAH.Blanding . . .	72	+1	0	- .1
Kahului . . .	-	-	-	-	N.H.Concord . . .	69	+1	1.9	+1.1	Salt Lake City . . .	77	+4	0	- .2
Lihue . . .	-	-	-	-	N.J.Atlantic City . . .	73	-1	.4	- .5	VT.Burlington . . .	72	+3	1.0	+ .2
IDAHO Boise . . .	73	+2	0	- .1	Trenton . . .	76	+1	.4	- .5	VA.Lynchburg . . .	70	-5	.8	- .1
Lewiston . . .	71	+1	.1	- .2	N.MEX.Albuquerque . . .	78	0	.7	+ .5	Norfolk . . .	79	+2	1.0	- .1
Pocatello . . .	70	+3	T	- .2	Roswell . . .	82	+3	.8	+ .4	Richmond . . .	76	-1	.3	- .8
ILL.Cairo . . .	77	-3	2.6	+1.8	N.Y.Albany . . .	70	-1	2.5	+1.8	Roanoke . . .	70	-4	.2	- .6
Chicago . . .	69	-5	.3	- .7	Binghamton . . .	67	-1	1.6	+ .8	WASH.Colville . . .	-	-	-	-
Moline . . .	69	-5	.2	- .9	Buffalo . . .	67	-2	1.1	+ .5	Omak . . .	65	-3	.6	+ .4
Peoria . . .	70	-4	2.4	+1.5	New York . . .	77	+2	1.4	+ .7	Quillayute . . .	67	-1	1.0	+ .3
Rockford . . .	67	-5	.1	-1.0	Rochester . . .	69	-1	1.1	+ .5	Seattle-Tacoma . . .	64	+1	.3	0
Springfield . . .	72	-4	.2	- .8	Syracuse . . .	67	-3	.9	+ .2	Spokane . . .	67	+1	.1	- .1
IND.Evansville . . .	72	-5	.9	+ .1	N.C.Asheville . . .	68	-5	.8	- .3	Walla Walla . . .	70	-2	T	.2
Ft. Wayne . . .	70	-3	.3	- .6	Charlotte . . .	74	-4	1.5	+ .5	Yakima . . .	63	-5	.1	0
Indianapolis . . .	71	-3	2.3	+1.4	Greensboro . . .	72	-4	.5	- .5	W.Va.Beckley . . .	65	-5	.5	- .6
South Bend . . .	68	-3	2.7	+1.8	Hatteras . . .	76	-1	1.2	- .1	Charleston . . .	69	-6	1.4	+ .4
IOWA.Burlington . . .	69	-5	1.6	+ .6	Raleigh . . .	75	-2	.4	- .6	Huntington . . .	70	-5	1.4	+ .5
Des Moines . . .	70	-4	.7	- .3	Wilmington . . .	79	-1	2.4	+ .7	Parkersburg . . .	69	-6	.6	- .4
Dubuque . . .	66	-5	.6	- .5	N.DAK.Bismarck . . .	69	+1	T	- .7	WIS.Green Bay . . .	67	-1	.1	- .7
Sioux City . . .	69	-5	T	- .9	Fargo . . .	67	-2	.4	- .4	La Crosse . . .	68	-4	.4	- .6
KANS.Concordia . . .	72	-4	.5	- .5	Williston . . .	67	0	.1	- .6	Madison . . .	66	-3	.2	- .8
Dodge City . . .	75	-2	.1	- .6	OHIO.Akron-Canton . . .	67	-4	.4	- .4	Milwaukee . . .	67	-1	T	.8
Goodland . . .	70	-4	1.9	+1.3	Cincinnati . . .	70	-5	.7	- .3	WYO.Casper . . .	67	0	.7	+ .4
Topeka . . .	70	-7	.2	-1.0	Cleveland . . .	69	-2	1.1	+ .3	Cheyenne . . .	65	-1	.2	- .3
Wichita . . .	73	-6	5.1	+4.0	Columbus . . .	70	-3	.7	- .3	Lander . . .	69	+2	.1	- .2
N.Y.Lexington . . .	68	-8	1.3	+ .2	Dayton . . .	69	-5	1.3	+ .4	Sheridan . . .	67	0	T	- .5
Louisville . . .	72	-4	1.0	+ .1	Toledo . . .	72	0	.9	+ .1	P.R.San Juan . . .	83	+3	-	-

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## 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 SRS State offices in cooperation with the National Weather Service, NOAA.

**ALABAMA:** Temperatures 2° below average. Rainfall abundant with scattered showers early and general rains later.

Fieldwork: 5.0 days suitable. Soil moisture adequate. Cotton fair condition, 18% squaring, 75% 1975, 70% average. Corn good condition, 52% tasseling, 57% 1975, 51% average. Soybeans good condition, 2% blooming, 16% 1975. Peanuts good condition, 36% pegging, 51% 1975, 55% average. Pastures good.

**ALASKA:** Tanana Valley warm and sunny. Clouds and light precipitation first of week. Precipitation below normal. Matanuska Valley warm and dry. Maximum temperatures above normal reaching 80's in few locations. Temperatures normal and light rain fell end of week. Much drier than normal. Kenai Peninsula sunny, warm and dry. Cooling sea breezes held daytime temperatures down in coastal sections. Clouds and light rain returned after midweek. Relatively dry. Kodiak Island sunny and warm, turning cloudy and damp. Precipitation light and temperatures above normal.

Rains late week slowed hay harvest. Oat and barley fields beginning to head in some areas. Average height of grain about 16 in. Tanana Valley and 12 in. Matanuska Valley. First cutting hay 25% to 35% harvested. Ground moisture adequate.

**ARIZONA:** Temperatures normal to 6° above. Scattered showers eastern two-thirds last half. Dry and less humidity first half. Precipitation below 0.25 in. but isolated 1.00 in. in southeast and central mountains.

Cultivation, irrigation, weed control for cotton. Spraying pink bollworms scattered fields. Salt River, central areas, no serious insect problems. Early cotton setting bolls. Cotton seeded following small grain good stands. Small grain harvest well advanced. Planting late grain sorghum active. Early fields good progress. Hay cutting active. Sugarbeet harvest near complete. Fall crop normal growth. Cantaloup tapering off. Watermelon increasing. Potato harvest nearing completion. Harvest grapes continued. Grapefruit, valencia orange harvest continued. Limited rain little benefit. Desert ranges poor, higher elevations good. Soil moisture short. Limited supplemental feeding lower deserts. Cattle, calves higher elevations mostly good, desert ranges fair.

**ARKANSAS:** Below normal temperatures, general rainfall. Extremes: 95 and 52°. Most precipitation 4.05 in., least a trace.

Soybean planting 93% complete, 96% last year, average 93%. Many fields to be replanted. Condition remains fair to good. Cotton growth started, squaring progressed. Poor fields planted to soybeans. Cotton poor to fair. Rice condition good, jointing continued. Corn and sorghum good, sorghum booting, corn tasseling. All but 1% wheat harvested, about average. Oat harvest 100% complete. Quality and quantity peaches good. Tomato harvest progressing, yield good. Pastures adequate. Rains slowed hay cuttings. Flies and ticks bothersome. Cattle condition good.

**CALIFORNIA:** Hot dry weather. Greatest departures from normal, generally 5 to 10° above, along central and south coast; most localities reported highest temperatures near 110°. Trend toward colder over northeast, extreme north coast, and northern end of Sacramento Valley. Freezing temperatures northeast corner. Precipitation only along extreme north coast.

Small grain harvest active. Grain hay cutting near complete major areas. Alfalfa hay harvest about at peak. Cotton blooming, setting bolls early areas. Planting double crop beans, milo active. Sugarbeet digging well along Imperial Valley, start soon San Joaquin Valley. Picking Thompson seedless grapes. Harvest early Bartlett pears. Damage from previous hot weather showing in lettuce and strawberries. Broccoli, cauliflower moderate. Celery, fresh tomato, heavier. Lettuce lighter. Cantaloups, carrots, onions continue. Rangeland dry. Supplemental feeding many areas. Cattle being moved irrigated pasture, heavy thinning herds. Stock water supplies low. Threat range fires continues.

**COLORADO:** Temperatures ranging from 28 to 104°. Below normal temperatures across northeast midweek. Latter part above normal temperatures with isolated severe thunderstorms, hail, flash floods, and a few funnel clouds. Precipitation general, light and a little below normal.

Winter wheat condition poor, 90% turned color, 35% ripe, harvested 10%, 5% 1975, 24% average. Oats and spring barley condition good. Sugarbeets very good condition. Dry beans condition good. Sorghum condition fair. Corn, good condition, average height 21 in. Potato condition. Summer very good, fall good. Alfalfa first cut 73%. Soil moisture short. Ranges and pastures very poor to good.

**FLORIDA:** Normal summertime weather prevailed with afternoon and evening thundershowers increasing over weekend. Temperatures near normal. Rainfall light to moderate averaging 0.25 to 0.50 in. with isolated locations near 3.00 in.

Corn prospects good. Tobacco harvest well advanced. Haying disrupted by showers. Soybeans fair to good condition. Peanuts making good progress. Sugarcane growth good. Pasture conditions near normal. Panhandle and north soil moisture adequate for good grass growth. Cattle, calves fair to good condition. Central and south rainfall adequate to excessive; standing water in parts of south, not unusual for this time of year. Citrus grove condition excellent, moisture adequate to surplus, new foliage all ages, new crop fruit excellent. Valencia harvest slowing. Vegetable season rapidly nearing end. Watermelons providing bulk of volume shipped. Sweet corn winding down. Celery harvest almost over. Light supplies eggplant, peppers, squash available.

**GEORGIA:** Temperatures near normal south, 2 to 3° below normal elsewhere, averaging 70's in mountains, 80's south. Rainfall general varying widely from 0.50 in. in a few locations to 4.50 in. at Calhoun. Heavy rains of 1.00 to 3.00

in. north over the 3d and 4th. Extremes: 50 and 93°.

Soil moisture adequate to excessive. Fieldwork: 4.0 days suitable. Corn condition fair to mostly good. Cotton improved but still fair to good, 30% setting bolls, 50% year ago. Peanut condition good, 88% blooming, 53% pegging; 87% blooming, 60% pegging year ago. Soybean condition good. Tobacco 40% harvested, last year and average 26%. Watermelons mostly fair to good, 30% harvested compared to 32% year ago. Peach harvesting 75% complete, 73% year ago, 55% average. Apple condition fair to mostly good. Pastures, cattle and hogs good condition.

**HAWAII:** Partly cloudy. Few scattered showers all islands. Most leeward areas dry. Heavy irrigation necessary.

Crop progress fair to good. Vegetable supplies adequate. Bananas supplies light. Papayas supplies moderate to heavy. Pineapples reaching maturity. Sugar harvest steady. Pastures leeward section poor. Moisture adequate windward section.

**IDAHO:** Temperatures hit record lows and highs. Few light showers in north.

Diverse temperatures limit crop progress. Frost 3d did limited damage to potatoes, beans, and corn. Spring wheat 45% headed, 25% 1975. Winter wheat 10% turned, 1% 1975. Potato crop 10% rows closed. Range and pastures excellent condition. Cattle excellent condition.

**ILLINOIS:** Temperatures 4 to 6° below normal. Precipitation 0.33 to over 4.00 in., heaviest extreme south.

Corn good; average height 48 in., 55 in. 1975, 37 in. average; most advanced height 62 in., 73 in. 1975, 56 in. average. Soybeans good. Winter wheat 65% combined, 78% 1975, 75% average. Oats mostly good, 98% filled, 100% 1975, 98% average; 65% turned yellow, 67% 1975, 62% average. Barley 67% combined. Second crop alfalfa mostly good; 35% cut, 23% 1975, 19% average. Pastures mostly fair to good. Soil moisture short to adequate. Fieldwork: 4.8 days suitable.

**INDIANA:** Scattered thundershowers and below normal temperatures ranging from 48° northeast on 3d to 89° southwest on 30th. Rainfall ranged from 0.26 in. to 2.67 in. Most areas 0.80 to 1.50 in.

Fieldwork: 3.0 days suitable. Topsoil moisture adequate to surplus. Subsoil moisture mostly adequate. Wheat 15% combined, 1975 35%, average 25%. Wheat 80% ripe. Oat combining underway. Barley 65% combined, rye 25% combined. Corn 39 in. high, 1975 39 in., average 27 in. Soybeans 11 in., 1975 12 in., average 7 in. First cutting alfalfa hay complete. Clover hay 90% cut, 1975 80%. Pastures mostly fair to good.

**IOWA:** Temperatures averaged 4 to 5° below normal. Precipitation well below normal.

Favorable weather; crops made rapid progress. Cool temperatures and rain reduced effects of dryness northern third, more still needed. Fieldwork: 5.5 days suitable. Corn continued rapid development. Average height 42 in., tallest averaging 54 in.. Few early fields tasseling. Corn in mostly good to excellent condition, fair northwest. Soybean progress improved, still slower than corn. Soybean stands 89% of full, 3% decrease from earlier. Reduced stands caused by herbicide damage, iron deficiency, lack of moisture. Soybean condi-

tion mostly good. Oats maturing rapidly, turning all areas. Cool weather helpful to kernel development. Oat condition good, but short in dry areas. Oats, winter wheat harvest underway, some oats being cut for silage. Hay condition mostly good. Second cutting alfalfa 22% harvested, 11% 1975, 13% average. First cutting clover hay 83% harvested, 75% last year, 73% average. Hay regrowth variable depending on moisture supplies. Topsoil moisture adequate. Subsoil moisture adequate. Livestock condition good. Pasture condition variable, depending on moisture.

**KANSAS:** Heavy record breaking rains 4.00 to 8.00 in. portions southeast and south central 30th and 1st. Major floods resulted. Otherwise spotty showers and thunderstorms. Temperatures 77° southwest to from 72 to 74° elsewhere. Near normal west from 4 to 6° below normal central and east.

Rain hampered wheat harvest; 50% harvested, 55% last year, 65% average. All areas harvesting, but major activity southern two-thirds. Few fields corn past tasseling stage, 20% last year, 10% average. Soybean planting nearing completion. Second cutting alfalfa 45% complete, 45% last year, 50% average. Spider mites in corn western one-third. Greenbugs in sorghum, problem diminishing. Limited hail damage eastern one-third. Pastures very dry western one-third.

**KENTUCKY:** Scattered rainfall each day but 1st. Average from 1.00 in. northeast to near 4.00 in. far west. Temperatures around 5° below normal.

Fieldwork: 4.0 days favorable. Soil moisture mostly adequate except surplus west. Activities included cultivating row crops, planting soybeans, harvesting wheat, and cutting hay. All crops growing rapidly. Soybeans average 10 in. high, 11 in. last year, 9 in. average. Corn 18% tasseling, 21% last year, 15% average. Tobacco stands 94% burley, 91% darks, last year 92% and 91%, averaging 92% and 90%. Tobacco height, 70% over 12 in. tall, 53% last year, 58% average. Second cutting alfalfa hay 43% complete. About 75% of all hay cut has been saved.

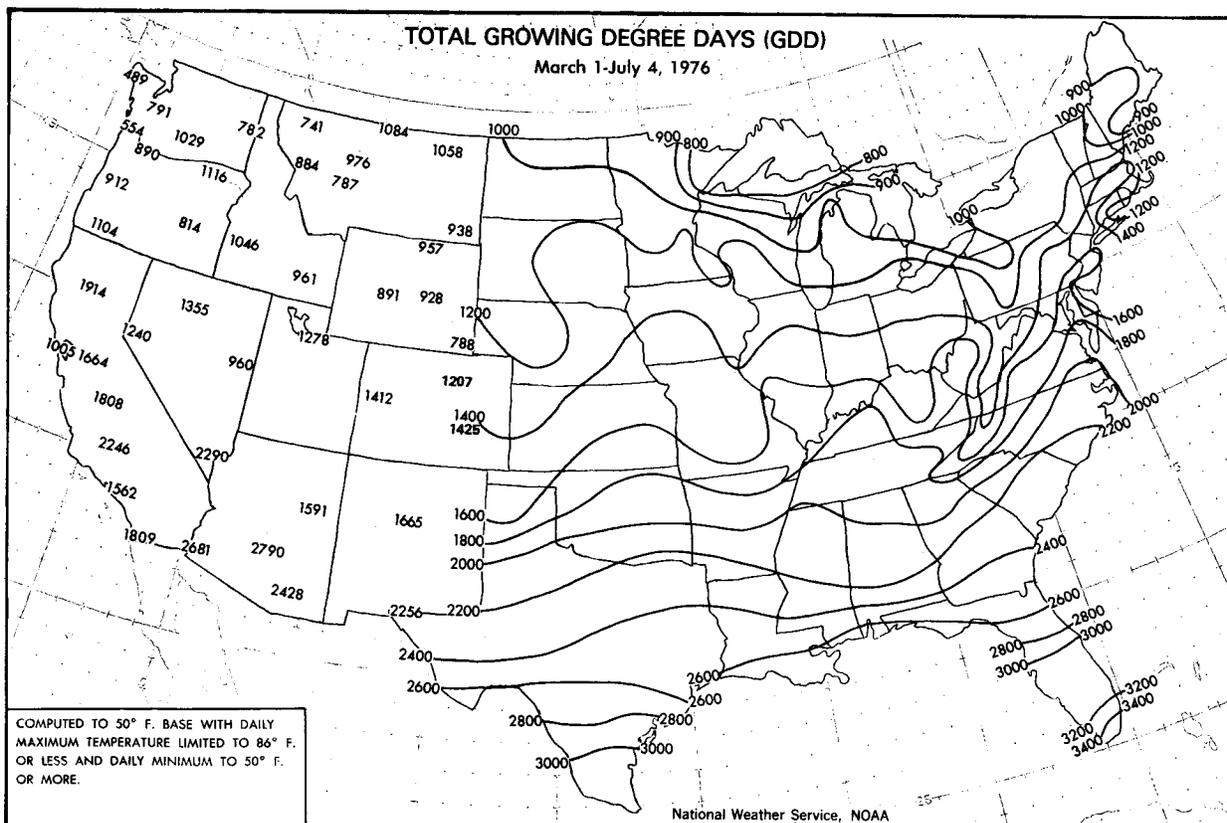
**LOUISIANA:** Temperatures normal south, 3° below north. Extremes: 97 and 66°.

Soil moisture adequate. Fieldwork: 4.0 days suitable. Cotton 54% squaring; making good growth. Rice 34% headed. Soybeans good, 96% up to stand. Corn good; 89% silking, 54% dough. Sugarcane good. Sweetpotato transplanting 95% complete, 87% last year. Pastures, cattle good.

**MARYLAND & DELAWARE:** Temperatures slightly above normal. Highs, upper 90's; lows, lower 50's. Precipitation 0.06 to 2.30 in., mostly from thundershowers. Weekend temperatures pleasant; less humid, with thundershowers.

Early planted corn starting to tassel. Most fields in good condition, need rain. Soybeans 95% planted, equal to 1975 progress. Small grains being harvested. Progress: Barley, 90%; wheat, 65%; rye, 50%; oats, 40%. Second cutting alfalfa 75% complete, other hay 40%. Early tomatoes harvested. Vegetables irrigated. Early fruit harvested. Some orchards further damaged by hail.

**MICHIGAN:** Temperatures near normal to 3° above in the 60's. Precipitation moderate to heavy with 4.00 in. Saginaw Bay Area; light over west central, northwestern Lower and Upper Peninsula. Warm weather and scattered rainfall speeded



crop development. Soil moisture adequate to surplus. Fieldwork: 3.0 days suitable. Corn height 22 in. equal to normal, 31 in. 1975. Wheat 80% yellow, 60% 1975, 92% normal. Some fields badly lodged from rain and wind. Oats 80% headed 4% yellow, last year 57% headed 2% yellow, normal 55% headed 3% yellow. Dry beans 95% planted, some damage from excess water in the "thumb" area. Some soybean fields appear uneven. First haying 77% complete, 65% 1975, 62% average. Pasture feed supply average. Most fruit sizing well. Sweet cherry harvest already underway southwest, tart cherry shaking just started. Moisture and temperatures favorable for all vegetable crops, development average to slightly better. Strawberry picking 90% complete.

**MINNESOTA:** Temperatures near normal northwest third, 3° below normal southeast two-thirds. Extremes: 89 and 42°. Precipitation locally near 1.00 in. portions of east central into northeast to none extreme northwest and southwest. Average 0.30 to 0.70 in. most of east and central, less than 0.30 in. most of west. Growing season precipitation departures 0.50 in. below normal northern border, 1.60 in. below extreme southeast, 4.00 to 5.00 in. below most of State, 6.00 in. below southwest.

Row crops made good progress; ahead of normal development. Some corn showing moisture stress west central, southwest. Several fields in south central nearing tasseling stage. Small grains ripening quickly. Few fields already combined southwest. Average height: Corn 35 in., 1975 30 in., normal 28 in. Soybeans 12 in., 1975 10 in., normal 11 in. Percent headed: Spring wheat 95%, 1975 47%, normal 61%; Oats 93%, 1975 60%, normal 69%; Barley 90%, 1975 50%, normal

64%. Percent turning ripe: Winter wheat 78%, 1975 34%, normal 33%; Rye 81%, 1975 40%, normal 43%. First crop alfalfa 93% cut, 1975 82%, normal 91%. Prospects fair for second crop.

**MISSISSIPPI:** Temperatures 1 to 5° below normal. Extremes: 56 and 97°.

Soil moisture mostly adequate. Fieldwork: 4.7 days suitable. Cotton 51% squaring, 45% 1975, 61% average; 4% blooming, 9% 1975, 20% average. Soybeans 98% planted, 90% 1975, 89% average; 90% up to a stand, 76% 1975. Corn 44% silked, 34% 1975; 14% in dough stage. Winter wheat and oats harvest virtually completed. Sorghums 91% planted, 90% 1975, 88% average. Sweetpotatoes 90% planted, 93% 1975. Hay 45% harvested, 31% 1975, 39% average. Irish potatoes 86% harvested, 76% 1975, 81% average. Peaches 51% harvested, 42% 1975. Cucumbers 47% harvested, 54% 1975. Cotton in poor to fair condition. Soybeans and corn in good condition. Other crops in fair to good condition.

**MISSOURI:** Temperatures below normal. Bootheel 1° below normal, east Ozarks 5° below normal, remainder 6° below normal. Precipitation heavy in Bootheel and west Ozarks, averaging 1.75 to 2.00 in. Elsewhere precipitation averaged 0.50 to 1.00 in.

Fieldwork: 4.4 days suitable. Soybeans 93% planted, 1975 97%, normal 95%. Grain sorghum 96% planted, 1975 95%, 97% normal. Wheat 99% ripened. Wheat 63% harvested, 1975 82%, normal 75%. Second cutting alfalfa 46% complete, 52% normal. Clover-timothy hay 74% harvested. Corn 6% silked. Condition of corn good. Cotton 17% squaring. Condition of cotton fair. Con-

dition of pastures fair to good. Soil moisture supply short to adequate.

**MONTANA:** Temperatures as much as 4° above normal. Precipitation light to none except locally heavy northeast.

First cutting alfalfa hay, helped by warm dry weather, 35% done. Wild hay 15% completed. Range feed supply adequate. Winter wheat and spring crops in good condition. Winter wheat 70% headed, 25% turning; normally 65% headed, 2% turning. Spring wheat 35% in boot, 60% headed; normal 85% in boot, 15% headed. Barley 45% in boot, 45% headed; normal 90% in boot, 10% headed. Oats 30% in boot, 60% headed; normal 85% in boot, 10% headed. Soil moisture short to adequate northwest and south. Adequate elsewhere.

**NEBRASKA:** Temperatures near normal Panhandle and 5 to 10° below normal elsewhere. Showers and thunderstorms last half, heaviest in the Panhandle and extreme southwest.

Topsoil moisture supplies short. Subsoil moisture supplies short. Winter wheat condition fair; 60% ripe, 50% normal and 30% 1975; 10% harvested, 1975 5% and normal 5%. Corn good condition. Irrigation systems running or being prepared. Sorghum and soybeans good condition. Alfalfa and wild hay fair to good condition. Second cutting of alfalfa 15% completed. Pasture and range feed supplies short; some supplemental feeding.

**NEVADA:** No precipitation and temperatures slightly above normal. Extremes: 112 and 27°.

Alfalfa first cuttings complete except central highlands. Third cuttings nearly finished southern valleys. Small grain harvest completed south, extending northward. Winds and no rain dried ranges.

**NEW ENGLAND:** Temperatures near normal. High mid-70's to mid-80's. Maine was exception; relatively cool, high in 60's 27th and 30th. Frequent showers. Rains 30th gave 0.50 in. to 1.00 in. north and 0.75 to 1.00 in. south and central.

Maine potatoes continue good growth. Corn and truck crops doing well. Rains still needed in some areas. Continued showers stalled most haying. First cutting 55% complete north, 90% south.

**NEW JERSEY:** Temperatures slightly below normal north and near normal elsewhere. Extremes: 96 and 48°. Rainfall averaged 2.41 in. north, 1.45 in. central and 0.72 in. south. Estimated soil moisture, in percent of field capacity averaged: 89% north, 58% central and 45% south. Soil temperature averaged 72 to 76°.

Soil moisture varied, most areas need a good rain. Harvest of summer vegetables increasing. Irish potato harvest about to begin, irrigation continues active. Apple and peach harvest increasing. Blueberry movement heavy. Barley combining well advanced. Wheat harvest active. Soybeans 95% planted, some going in after barley and wheat harvest. Field corn curled in some areas. First cutting of hay finished.

**NEW MEXICO:** Little day to day temperature variation with averages within 1 or 2° of normal. Scattered showers all sections with totals mostly light but ranging up to 2.00 in.

Soil moisture short to very short. Cotton fair to good. Weather favorable for growth. Alfalfa good. First cut complete in north and second cut

started. In south, second cut 80% complete, few on third cut. Harvest of winter wheat more than 75% complete. Durum harvest 30% complete. Irrigated grain sorghum good, very little dryland planted. Barley good 50% harvested. Corn good condition. Apples good. Onions fair to good as sacking continued. Ranges fair. Livestock fair to good.

**NEW YORK:** Temperatures near normal. Extremes: 91 and 42°. Rainfall above normal, greatest departures Upper Hudson Valley. Spotty showers common. Rainfall heavy all areas 30th. Minor flooding interior southeast.

Rain, humidity stalled fieldwork. First cutting alfalfa 55% complete, 80% last year. Clover-timothy 35% complete, 70% last year. Uncut hay overripening. Corn growth good. Wheat starting to turn. Early planted oats condition good, better than late planted. Wet conditions holding back vegetables. Onion fields showing leaf blight and tip burn. Sweet corn and snap beans planting schedules delayed. Beets poor condition. Cabbage transplants poor, fields growing weedy. Apples sizing but drop continues. Some hail damage. Severe cracking widespread in sweet cherries. Diseases including scab appearing in orchards.

**NORTH CAROLINA:** Precipitation well above normal coastal areas and below normal Piedmont. Temperatures slightly below normal.

Fieldwork: 4.8 days suitable. Soil moisture mostly adequate. Flue-cured tobacco good; 4% harvested, 1975 4%. Corn good. Cotton fair to good. Peanuts good. Soybeans good. Planting continues following small grain harvest. Irish potatoes mostly good; 67% harvested, 1975 60%. Sorghum planting nearing completion. Wheat harvest 85% complete, 1975 92%. Oats 90% combined, 1975 95%. Barley harvest 92% complete, 1975 96%. Rye 94%, 1975 94%.

**NORTH DAKOTA:** Temperatures slightly below normal ranging 4° below normal southwest and south central to 2° below normal northwest, central, east central and southeast. Extremes: 88 and 40°. Precipitation below normal ranging from 0.77 in. west central to 0.10 in. northeast. Most precipitation 1.05 in. Generally sunny and mild 3d and 4th.

Replanting poorest grain fields to roughage crops in dry areas largely wound up. Swathing rye, winter wheat and some early barley in southeast. Areas further north, crops are later and could still use rain. Farmers working fallow land and harvesting hay.

**OHIO:** Temperatures near normal. Extremes: 87 and 48°. Precipitation each day ranged 0.22 in. northwest to 1.85 in. southeast.

Corn and soybean condition mostly good. Average height: Corn 41 in., 45 in. 1975 and 33 in. normal; Soybeans 15 in., 15 in. 1975 and 11 in. normal. Wheat: Ripe 75%, 65% 1975 and 45% normal; Harvest 20%, 30% 1975 and 15% normal. Oats 5% ripe, 15% 1975 and 10% normal. Barley harvest 55%, 55% 1975 and 30% normal. Second cutting alfalfa hay 15% cut, 10% 1975 and 10% normal. First cutting clover-timothy hay 90% cut, 90% 1975 and 75% normal. Second cutting hay prospects greatly improved. Soil moisture adequate. Fieldwork: 4.0 days suitable.

**OKLAHOMA:** Temperatures 2° above normal to 3° below normal. Precipitation ranged from 0.07 in. southwest to 2.20 in. north central. Weekend warm with very heavy rains northeast resulted in some flooding. Much lighter rains mostly less than 0.50 in. other areas.

Wheat harvest nearly complete except Panhandle. At 95% harvest ahead of year ago and near average. Corn mostly good, 14% tasseled, normal 33%. Green-bug problems persist in sorghums and spraying continues. Crop in good condition. Planting virtually completed, 84% up to stand. Early heading begun. All cotton acreages planted, 93% up to stand; 6% squared, same as 1975, normal 8%. Conditions mostly good to excellent. Peanut planting complete, 92% up to stand; 6% flowering, 3% flowered 1975, normal 8%. Conditions mostly good to fair. Some insect problems. Soybean conditions mostly good to excellent. Planting 97% complete. Second cutting alfalfa hay about 80% baled, near normal. Yields, quality good. Pecans fair to poor condition. Set is light. Growers spraying for diseases, webworms. Ranges good condition. Many ranges northwest only fair, 25% southern and eastern ranges excellent. Cattle good to excellent condition, making good gains.

OREGON: Temperatures over interior a few degrees below normal while along coast near normal. Extremes: Low 90's, low 30's west; Low 100's, low 20's east. Precipitation occurred primarily latter part and amounted to 0.10 to approximately 0.30 in. over northeast and lesser amounts elsewhere.

Frost damage to grain, hay and potatoes in east. Barley harvest begun. Strawberry harvest past peak. Pruning peach trees to remove leaf curl. Pea harvest 50% complete. Beans starting to bloom. Livestock in good condition. Range and pasture in good condition.

PENNSYLVANIA: Hot and humid with afternoon and evening thundershowers through 30th; cooler and considerably drier later. Temperatures 2 to 5° below normal. Extremes: 95 and 41°. Rainfall measured from less than 0.50 in. most central and western areas to more than 1.00 in. east of Susquehanna River.

Soil moisture adequate. Fieldwork: 3.0 days suitable. Activities: Cultivating, spraying, planting tobacco and soybeans, combining barley and wheat, making hay and haylage, harvesting cherries, apples and peaches. Corn height 24 in., last year 23 in. Tobacco and soybean planting completed. Barley 42% ripe, 28% harvested, last year 16% harvested. Wheat 69% turning, 13% ripe, trace harvested-- couple days ahead of 1975. Oats 82% headed, 13% yellow--last year under 5% turning. Alfalfa first cut 88%, second cut 17%. Clo-tim first cut 72%. Hay quality fair. Pastures average. Japanese beetles active on grapes and snap beans.

PUERTO RICO: Island rainfall 0.59 in. or 0.53 in. below normal. Temperatures about 80° on coasts and 75° interior. Extremes: 93 and 52°.

SOUTH CAROLINA: Rainfall above usual in central and east. Least rainfall in mountains. Heaviest rainfall in midland. Temperatures 1 to 3° below normal. First half warmest with a few 90° or above readings in central and east.

Soil moisture mostly surplus. Rain delayed fieldwork. Some damage to crops due to excessive moisture. Cotton crop condition fair. Watermelons poor. Peanuts, soybeans and hay crops fair to good. Corn, tobacco, pasture and peaches good. Corn silked 77%, dough stage 34%. Soybeans planted 92% 1976, 96% 1975, 91% average. Peaches harvested 59% 1976, 37% 1975, 27% average. Tobacco harvested 14% 1976, 12% 1975, 14% average. Wheat harvested 90% 1976, 95% 1975, 89% average.

SOUTH DAKOTA: Scattered showers, mostly west and extreme south. Precipitation deficit ranges from 3.00 to 8.00 in. Below normal in east. West

slightly above normal precipitation. Temperatures as much as 7° below normal. Extremes: 97 and 38°.

Topsoil moisture short eastern two-thirds, adequate west. Row crops, good condition, some stands spotty, need rain. Small grains maturing early. Much cut for hay, silage or grazed by livestock. Harvesting of small grains to be used for grain underway. Percent harvested. Winter wheat 11%, rye 13%, oats 9%, barley 3%, spring wheat 3%.

Cattle sales and movements to other states for pasturing continues as drought conditions persist in east. Pastures improved only slightly following recent rains. Small grain hay and stubble fields providing temporary feed for cattle.

TENNESSEE: Showers and thundershowers widespread. Average number of days with rain was four. Precipitation ranged from 0.50 to 4.00 in. Temperatures ranged from 3 to 6° below normal with cooler areas east.

Widespread showers slowed farm activities including haying, small grain and vegetable harvest. Fieldwork: 3.0 days suitable. Soil moisture adequate to surplus. Cotton crop 45% squaring, 70% last year, 65% average. Cool damp weather causing cotton seeding disease with many fields plowed up and replanted to soybeans. Weeds and grasses becoming problem. Soybeans 92% planted, 97% last year, 95% average. Wheat harvested 85%, 95% last year, 64% average. Oats harvested 75%, 90% last year, 78% average. Barley harvested 85%, 88% last year, 87% average. Corn silked 20%, 40% last year, 30% average. Second cutting alfalfa 80%, 70% last year, 74% average. Tobacco in good condition.

TEXAS: Scattered showers every day, rainfall generally above normal. Temperatures 1 to 2° below normal.

Crops made good progress. Haying continues active. Wheat harvesting progressed on Plains where dryland yields now appear better than originally expected. Oats harvesting virtually complete. Corn continues to make excellent progress. Cotton growing well in various stages. Boll weevils increasing all areas. Sorghum harvesting progressed south, central. Fields good all areas, moisture needed on Plains. Rice harvesting expected to begin this week. Prospects very favorable. Peanut planting continues north, central complete other regions.

Lower Rio Grande Valley: Honeydew harvest complete. Okra, peppers in light supply. Citrus in good condition. Coastal Bend: Watermelon harvest active. San Antonio-Winter Garden: Planting late-season carrots underway. Watermelon movement declining. Central Texas: Harvest tomatoes, bell peppers continues. High insect levels in some tomato, squash fields. East Texas: Sweetpotatoes good progress. Harvest tomatoes, sweet corn, beans, squash, cucumbers, and peas active. North Texas: Tomato harvest underway, blight in some areas. Okra, cantaloup harvest to begin soon. Potatoes developing well. Knox-Haskell: Many potato sheds completed harvest activity. High Plains: Onion harvest underway. Potato and cucumber harvest to begin soon. Trans-Pecos: Harvest squash, cabbage, onions continues. Peaches: Mid-season peach harvest continues Central Texas.

Hot winds continued to dry pastures. Weekend rainstorms should improve them. Cattle generally good. Screwworms increasing south. Ticks, flies, mosquitoes chief pests central, east.

UTAH: Fair and mild except one or two isolated thundershowers. Temperatures ranged from near normal to 6° above.

Spring wheat 75% headed, oats 65%, and barley 85%. First crop alfalfa hay over 85% harvested.

Winter wheat ripening--some harvesting will start soon. Sweet cherry harvest in progress--production good. Green peas for processing being harvested. Beans after peas being planted. Livestock generally good condition, ranges getting quite dry, water will be short some areas.

VIRGINIA: Temperatures near normal. Extremes: 95 and 25°. Scattered showers and thunderstorms almost daily. Rainfall average 0.50 in.

Fieldwork: 5.1 days favorable. Topsoil moisture adequate to short. Crops, pasture conditions improved. Corn 18% silked, some stress from low moisture conditions. Soybean planting continues. Peanuts received fungicides, herbicides, landplaster. Small grain harvest progress: Barley 89%, 1975 90%, average 67%; Wheat 66%, 1975 65%, average 37%; Oats 68%, 1975 69%, average 51%. Tobacco irrigation continued, some lower leaves pulled. Cultivation, application of pesticides very active. Haying progressed. Cattle marketing continued, good condition. Potato, snapbeans, cucumbers harvested.

WASHINGTON: West: Temperatures normal. Precipitation subnormal except slightly above in southwest.

Crops and grasses did well with sun and rain. Strawberries nearly complete. Most hay cut. Most grass silage cut, put into silos or made into green feed. Fruit being thinned.

East: Temperatures 2 to 6° subnormal. Precipitation subnormal.

Cherry maturity slow in some areas; harvest in full swing in others. Apples thinned by hand and chemicals. Grains showing varied weather stress. Frost damage in winter and spring wheat, peas. Foot rot, drought, stripe rust may lower yields in some areas. Others look good but behind normal. Early winter barley being harvested. Green pea harvest 45% complete. Second cutting alfalfa underway. Ranges improved.

WEST VIRGINIA: Temperatures below normal. Extremes: 94 and 42°. Precipitation below normal, except southwest near normal.

Soil moisture adequate. Fieldwork: 4.2 days suitable. Hay harvest, cultivating and small grain harvest active. Crops mostly fair to good. Small grains harvested: Barley 29%, 1975 48%; Wheat 4%, 1975 8%; Oats 1%, 1975 6%. First cutting hay 69% complete, 1975 75%. Corn improving, good to fair condition. Potatoes good to fair. Pastures improving, mostly fair to good condition. Burley tobacco 90% set, needs rain, in fair to good condition. Livestock in good condition.

WISCONSIN: Temperatures 5° subnormal. Highest temperatures in upper 80's 4th. Rainfall again spotty and light, averaging 0.50 in. or less. Much of rain fell on 29th.

Soil moisture short. Corn growing good but needs rain now. Corn average height 27 in., 1975 30 in., normal 20 in. Early corn very good, late corn uneven. Oats 75% headed, 1975 45%, normal 60%. Outlook poor for oats, straw short and lack of moisture for filling kernels. Winter wheat and rye ripening. Early oats changing color. Hay 90% first crop harvested, 1975 60%, normal 65%. Good quality first crop but quantity below normal. Second crop growth good on early cut first crop but late cut fields dormant. Pasture condition poor. Soybeans need more moisture. Irrigated potatoes and vegetables good, unirrigated acreage needs rain. Harvest continues on later peas and strawberries, yields reduced by dry weather.

WYOMING: Temperatures slightly below normal north-east, near normal elsewhere. Precipitation below normal, however, most widespread east.

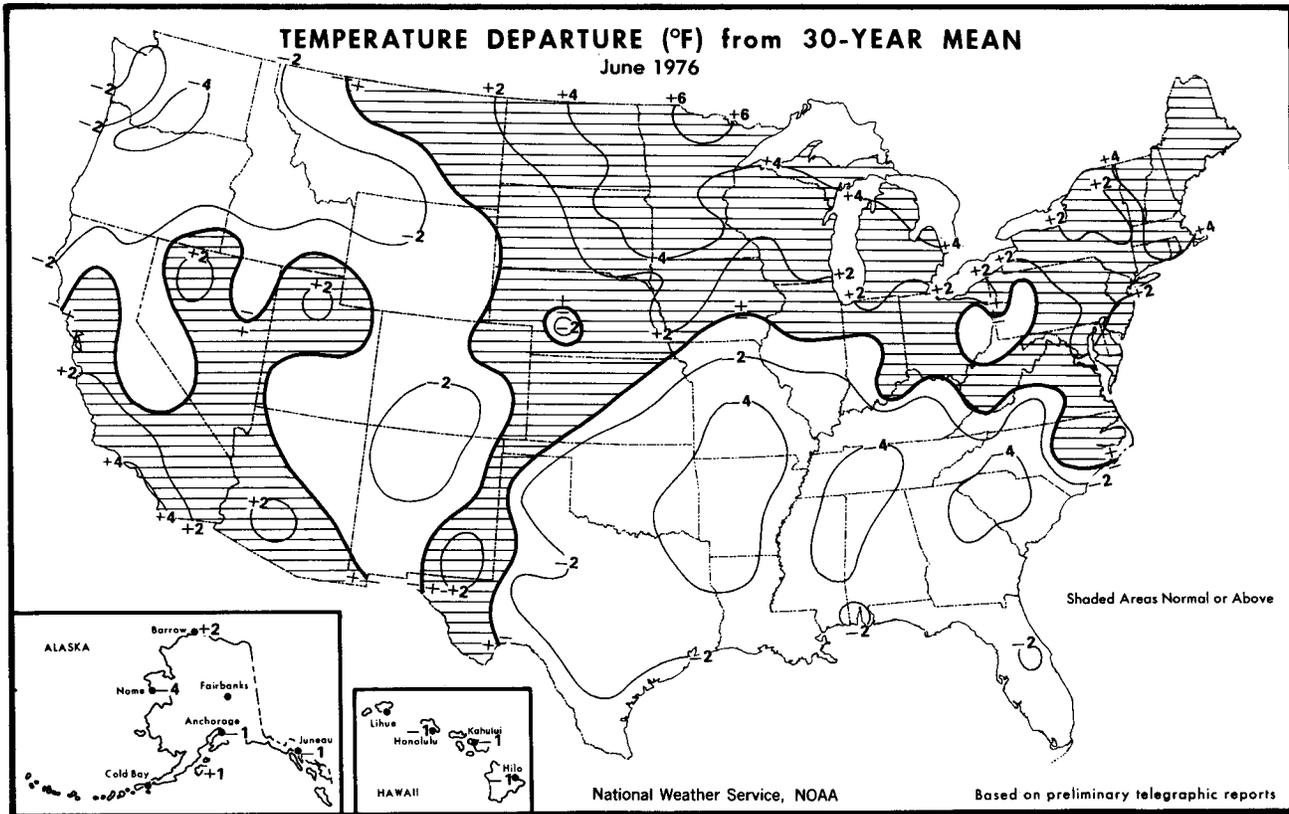
Alfalfa haying 37% complete, other hay 22%. Soil moisture adequate. Winter wheat 29% turning color. Spring wheat 73% headed, barley 49% headed, oats 26% headed. Sugarbeets 96% thinned.

Heating Degree Days (Base 65° F.)

June 1976

ALA. Birmingham . . . . .	0	MAINE, Caribou . . . . .	123	OKLA. Okla. City . . . . .	0
Mobile . . . . .	0	Portland . . . . .	94	Tulsa . . . . .	0
Montgomery . . . . .	0	MD. Baltimore . . . . .	11	OREG. Astoria . . . . .	269
ALASKA, Anchorage . . . . .	332	MASS. Boston . . . . .	16	Burns U. . . . .	262
Barrow . . . . .	943	Chatham . . . . .	91	Medford . . . . .	128
Fairbanks . . . . .	---	MICH. Alpena . . . . .	68	Pendleton . . . . .	89
Juneau . . . . .	381	Detroit . . . . .	6	Portland . . . . .	155
Nome . . . . .	674	Flint . . . . .	16	Salem . . . . .	243
ARIZ. Flagstaff . . . . .	190	Grand Rapids . . . . .	18	PA. Allentown . . . . .	28
Phoenix . . . . .	0	Houghton Lake . . . . .	53	Erie . . . . .	51
Tucson . . . . .	0	Lansing . . . . .	30	Harrisburg . . . . .	23
Winslow . . . . .	8	Marquette U. . . . .	78	Philadelphia . . . . .	13
Yuma . . . . .	0	S. Ste. Marie . . . . .	100	Pittsburgh . . . . .	24
ARK. Fort Smith . . . . .	0	MINN. Duluth . . . . .	101	Scranton . . . . .	31
Little Rock . . . . .	0	Internatl Falls . . . . .	83	R. I. Providence . . . . .	39
CALIF. Bakersfield . . . . .	0	Minneapolis . . . . .	11	S. C. Charleston . . . . .	3
Eureka U. . . . .	360	Rochester . . . . .	22	Columbia . . . . .	4
Fresno . . . . .	9	St. Cloud . . . . .	32	Greenville . . . . .	15
Los Angeles U. . . . .	12	MISS. Jackson . . . . .	0	S. DAK. Aberdeen . . . . .	39
Red Bluff . . . . .	3	Meridian . . . . .	0	Huron . . . . .	39
Stockton . . . . .	7	MO. Columbia . . . . .	2	Rapid City . . . . .	98
San Diego . . . . .	0	Kansas City . . . . .	6	Sioux Falls . . . . .	23
San Francisco . . . . .	136	St. Louis . . . . .	0	TENN. Chattanooga . . . . .	2
COLO. Denver . . . . .	64	Springfield . . . . .	3	Knoxville . . . . .	0
Grand Junction . . . . .	25	MONT. Billings . . . . .	138	Memphis . . . . .	0
Pueblo . . . . .	25	Glasgow . . . . .	109	Nashville . . . . .	0
CONN. Bridgeport . . . . .	37	Great Falls . . . . .	165	TEX. Abilene . . . . .	0
Hartford . . . . .	20	Havre . . . . .	120	Amarillo . . . . .	0
D. C. Washington . . . . .	0	Helena . . . . .	257	Austin . . . . .	0
FLA. Apalachicola . . . . .	0	Kalispell . . . . .	271	Beaumont . . . . .	0
Ft. Myers . . . . .	0	Miles City . . . . .	32	Brownsville . . . . .	0
Jacksonville . . . . .	0	Missoula . . . . .	258	Corpus Christi . . . . .	0
Key West . . . . .	0	NEBR. Grand Island . . . . .	11	Del Rio . . . . .	0
Lakeland U. . . . .	0	Lincoln . . . . .	11	El Paso . . . . .	0
Miami . . . . .	0	Norfolk . . . . .	15	Fort Worth . . . . .	0
Orlando . . . . .	0	North Platte . . . . .	70	Galveston U. . . . .	0
Daytona Beach . . . . .	0	Omaha . . . . .	4	Houston . . . . .	0
Tallahassee . . . . .	0	Valentine . . . . .	58	Lubbock . . . . .	0
Tampa . . . . .	0	NEV. Ely . . . . .	220	Midland . . . . .	0
GA. Atlanta . . . . .	4	Las Vegas . . . . .	0	San Angelo . . . . .	0
Augusta . . . . .	2	Reno . . . . .	139	San Antonio . . . . .	0
Macon . . . . .	0	Winnemucca . . . . .	68	Victoria . . . . .	0
Savannah . . . . .	0	N. H. Concord . . . . .	60	Waco . . . . .	0
IDAHO, Boise . . . . .	132	N. J. Atlantic City . . . . .	55	Wichita Falls . . . . .	0
Lewiston . . . . .	118	Trenton U. . . . .	21	UTAH, Blanding R . . . . .	60
Pocatello . . . . .	140	N. MEX. Albuquerque . . . . .	1	Salt Lake City . . . . .	67
ILL. Cairo U. . . . .	0	Roswell . . . . .	0	VT. Burlington . . . . .	50
Chicago . . . . .	16	N. Y. Albany . . . . .	43	VA. Lynchburg . . . . .	23
Moline . . . . .	2	Binghamton . . . . .	50	Norfolk . . . . .	6
Peoria . . . . .	5	Buffalo . . . . .	40	Richmond . . . . .	11
Rockford . . . . .	16	New York . . . . .	14	Roanoke . . . . .	22
Springfield . . . . .	2	Rochester . . . . .	35	WASH. Colville . . . . .	231
IND. Evansville . . . . .	0	Syracuse . . . . .	47	Omak . . . . .	---
Fort Wayne . . . . .	1	N. C. Asheville . . . . .	33	Quillayute . . . . .	357
Indianapolis . . . . .	1	Charlotte . . . . .	12	Seattle-Tacoma . . . . .	157
South Bend . . . . .	7	Greensboro . . . . .	20	Spokane . . . . .	213
IOWA, Burlington . . . . .	7	Hatteras R. . . . .	4	Walla Walla U. . . . .	92
Des Moines . . . . .	4	Raleigh . . . . .	6	Yakima . . . . .	173
Dubuque . . . . .	16	Wilmington . . . . .	0	W. VA. Beckley . . . . .	37
Sioux City . . . . .	18	N. DAK. Bismarck . . . . .	65	Charleston . . . . .	4
KANS. Concordia . . . . .	2	Fargo . . . . .	55	Huntington . . . . .	3
Dodge City . . . . .	3	Williston U. . . . .	87	Parkersburg U. . . . .	4
Goodland . . . . .	14	OHIO, Akron-Canton . . . . .	24	WIS. Green Bay . . . . .	29
Topeka . . . . .	5	Cincinnati U. . . . .	5	Madison . . . . .	32
Wichita . . . . .	2	Cleveland . . . . .	25	Milwaukee . . . . .	43
KY. Lexington . . . . .	2	Columbus . . . . .	4	WYO. Casper . . . . .	149
Louisville . . . . .	1	Dayton . . . . .	2	Cheyenne . . . . .	158
LA. Baton Rouge . . . . .	0	Toledo . . . . .	16	Lander . . . . .	170
Lake Charles . . . . .	0	Youngstown . . . . .	22	Sheridan . . . . .	161
New Orleans . . . . .	0				
Shreveport . . . . .	0				

Preliminary reports from airport locations, except those marked U for urban and R for rural.  
\*Estimated.



### June Weather Summary

**HIGHLIGHTS:** June precipitation encompassed all of the U.S., except some small areas in the desert Southwest. From northeast Texas to Michigan and eastward, rainfall was normal or above normal. Rainfall was also above normal in northern portions of the Rockies and Minnesota. Moisture brought considerable relief to Minnesota in the drought-stricken northern Plains, but dryness persisted in southeast North Dakota, eastern South Dakota, and north central Nebraska. Wisconsin and southern Minnesota also suffered too dry conditions. The June mean temperature was below normal in most of the Nation. Only the area from the northern Plains through the Great Lakes region and into New England was warmer than normal. Readings in the drought area of the northern Plains ran 3 to 5° above normal.

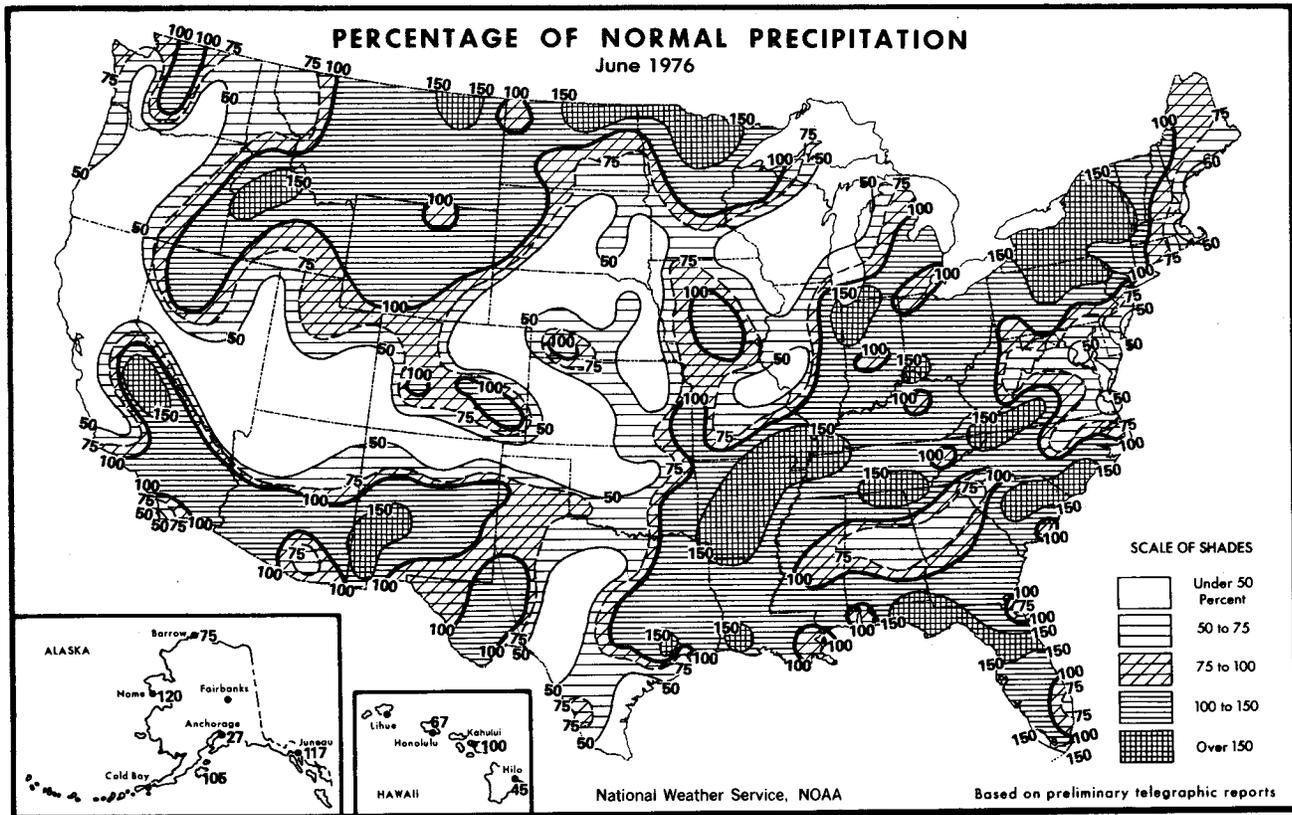
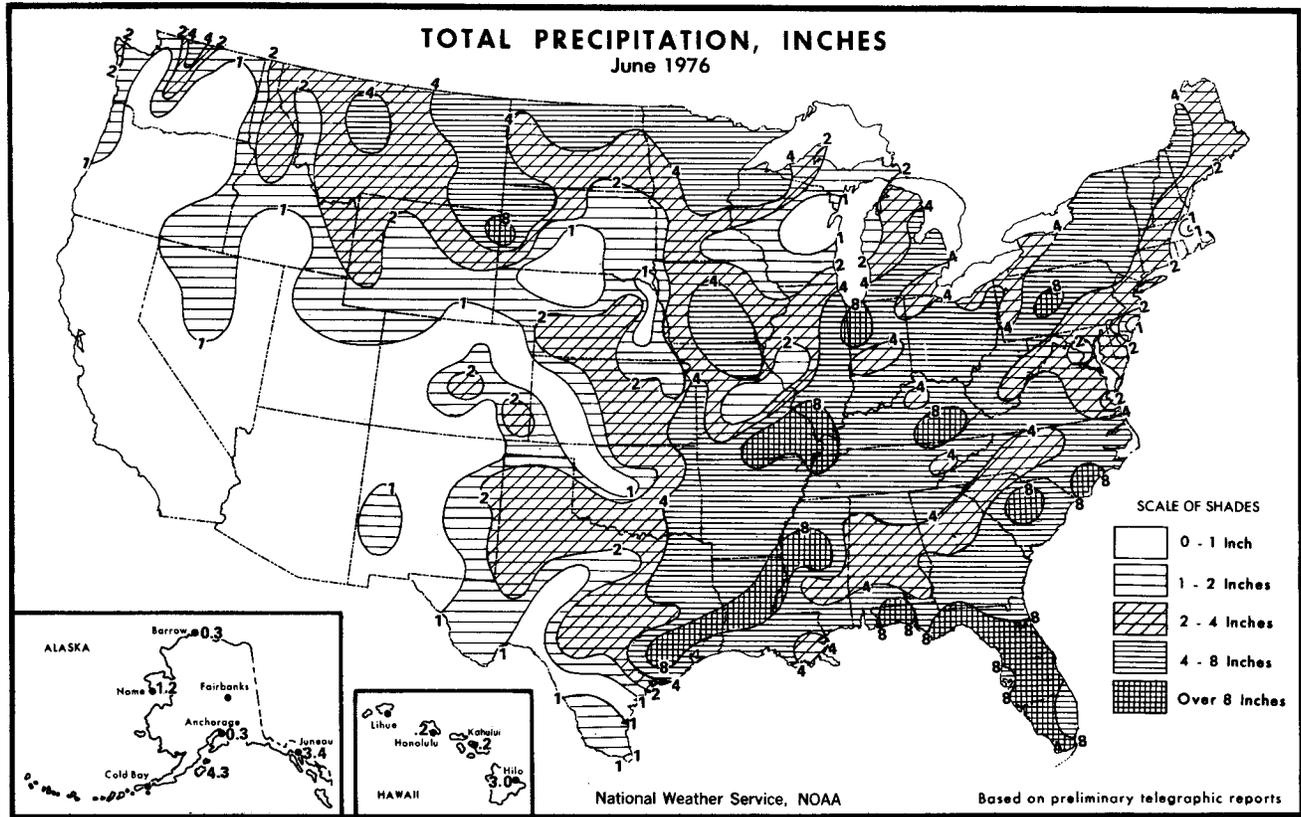
Precipitation in the first week of June concentrated on all areas southeast of a line from eastern Texas northward into Montana. Dry areas in the western Dakotas, north central Nebraska, Minnesota, and parts of Wisconsin recorded no rain. A few showers fell in northern California, but the rest of the State remained dry. Severe weather was common in the eastern U.S. precipitation areas, but little damage was reported. Average temperature was above normal from Arizona to Wisconsin and westward through most of the Rockies. North Dakota averaged 12 to 15° above normal. Eastern U.S. and the Far West measured below normal readings.

The second week of June brought rain to the moisture-starved areas of the northern Plains. Except for north central Minnesota, where over 2 inches fell, amounts were minimal and only relieved

dryness somewhat. Average weekly temperatures that again ranged up to 12° above normal in the drought area increased moisture demand. Precipitation extended westward to the Coast, and even California recorded some light rain in all but the desert area. Elsewhere, light showers fell along the Appalachians and moderate to heavy rain occurred in southern Florida. Temperature nationwide averaged below normal in the South and West and above normal elsewhere.

In the week following mid-June, rain dampened the entire Nation, except the Southwest and a strip just east of the Rockies. Heavy rain in the East focused on the lower Mississippi Valley, southern coastal areas, and along the Appalachians. The central drought area again received timely but inadequate rains. However, the extreme heat eased in the Nation's midsection, and temperature that averaged about 3° below normal reduced moisture demand. Readings were above normal along the West Coast and in the Northeast and below normal across the rest of the country. Contrasting temperatures early in the week put Palm Springs, Calif. at 102° and Alamoso, Colo. at 27° on the same morning.

Precipitation in the last week of the month favored nearly all of the Nation. The only rainless areas were western Oregon, California, southern Nevada, and southwestern Arizona. The drought area in the upper Plains grew smaller, but some portions remained critically dry. Extreme drought in California sharply cut into stockwater supplies and increased the fire danger. Temperature averaged well above normal in California and above normal in the Great Lakes area and Northeast. The rest of the Nation, from Washington to Florida, was cooler than normal.



Temperature and Precipitation Data for June 1976

States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches	
	Average	Departure	Total	Departure		Average	Departure	Total	Departure		Average	Departure	Total	Departure
ALA.Birmingham . . .	74	-3	2.8	-1.2	La.Baton Rouge . . .	78	-2	4.9	+1.1	Youngstown . . .	69	+2	4.1	+ .5
Mobile . . . . .	80	0	4.7	-1.4	Lake Charles . . .	78	-3	7.5	+2.5	OKLA.Okla. City . .	75	-2	1.9	-3.3
Montgomery . . . .	77	-2	2.7	-1.3	New Orleans . . . .	78	-2	3.4	-1.3	Tulsa . . . . .	56	-1	1.9	-2.8
ALASKA.Anchorage . .	54	-1	.3	-.8	Shreveport . . . .	76	-4	4.4	+1.1	OREG.Astoria . . . .	57	-2	.7	-1.2
Barrow . . . . .	35	+2	.3	-.1	MAINE.Caribou . . .	64	+4	2.9	-.5	Burns . . . . .	62	-2	T	-.9
Fairbanks . . . . .	52	-1	3.4	+ .5	Portland . . . . .	66	+4	1.5	-1.6	Medford . . . . .	64	-2	.3	-.7
Juneau . . . . .	51	+1	4.3	+ .2	MD.Baltimore . . . .	75	+3	2.5	-.6	Pendleton . . . . .	60	-2	.8	-.8
Kodiak . . . . .	42	-4	1.2	+ .2	MASS.Boston . . . .	73	+5	.6	-2.6	Portland . . . . .	57	-4	1.0	+.4
Nome . . . . .	59	+1	T	-.6	Chatham . . . . .	63	+	1.2	-.1	Salem . . . . .	73	+3	3.6	+ .1
ARIZ.Flagstaff . . .	88	+3	.1	0	MICH.Alpena . . . .	66	+5	2.8	-.1	PA.Allentown . . . .	66	+1	4.0	+ .5
Phoenix . . . . .	83	0	.1	-.1	Detroit . . . . .	71	+3	3.3	-.1	Erie . . . . .	73	+1	2.4	-.7
Tucson . . . . .	71	-1	.2	-.1	Flint . . . . .	69	+3	4.1	+ .7	Harrisburg . . . . .	75	+3	3.4	-.3
Winslow . . . . .	87	+1	0	0	Grand Rapids . . . .	70	+3	2.8	-.6	Philadelphia . . . .	68	-1	3.4	-.1
Yuma . . . . .	73	-5	4.6	+ .7	Houghton Lake . . . .	66	+3	2.8	-.5	Pittsburgh . . . . .	70	+2	5.4	+2.0
ARK.Fort Smith . . .	74	-4	6.6	+3.1	Lansing . . . . .	69	+2	4.5	+1.0	Scranton . . . . .	70	+4	1.6	-1.1
Little Rock . . . . .	80	+3	T	-.1	Marquette . . . . .	64	+4	1.6	-1.8	R.I.Providence . . . .	76	-2	5.6	-.7
CALIF.Bakersfield . .	53	-2	.1	-.6	Muskegon . . . . .	68	+2	1.4	-1.2	S.C.Charleston . . . .	75	-4	11.7	+7.9
Eureka . . . . .	73	-1	.4	+ .3	S. Ste. Marie . . . .	62	+3	1.9	-1.4	Columbia . . . . .	71	-5	2.8	-1.3
Fresno . . . . .	72	+4	.2	+ .2	MINN.Duluth . . . .	63	+4	6.2	+1.8	Greenville . . . . .	70	+5	1.4	-2.2
Los Angeles . . . . .	78	0	T	-.5	Internatl Falls . . . .	67	+7	7.0	+3.1	S.D.Aberdeen . . . .	69	+2	2.0	-1.8
Red Bluff . . . . .	70	+4	T	-.1	Minneapolis . . . . .	72	+5	3.9	0	Huron . . . . .	64	0	4.8	+1.1
San Diego . . . . .	63	+1	T	-.1	Rochester . . . . .	68	+2	1.2	-3.4	Rapid City . . . . .	72	-4	1.0	-3.3
San Francisco . . . .	73	+1	T	-.1	St. Cloud . . . . .	68	+3	4.8	+ .2	Sioux Falls . . . . .	73	-3	6.8	+3.1
Stockton . . . . .	66	0	.6	-1.3	MISS.Jackson . . . .	74	-5	3.7	0	TENN.Chattanooga . . .	74	-2	3.5	+ .1
COLO.Denver . . . . .	70	-1	.1	-.5	Meridian . . . . .	70	-3	1.8	-2.8	Knoxville . . . . .	76	-3	4.1	+ .6
Grand Junction . . . .	69	-2	1.3	-.1	MO.Columbia . . . . .	71	-3	5.1	-.5	Memphis . . . . .	73	-4	4.7	+1.3
Pueblo . . . . .	70	+2	2.6	0	Kansas City . . . . .	73	-2	2.3	-2.1	Nashville . . . . .	79	-1	.7	-2.1
CONN.Bridgeport . . .	72	+4	2.9	-.6	St. Louis . . . . .	70	-4	3.2	-1.5	TEX.Abilene . . . . .	72	-3	2.9	-.6
Hartford . . . . .	78	+3	1.2	-2.3	Springfield . . . . .	61	-2	2.7	+ .1	Amarillo . . . . .	80	-2	3.2	+ .1
D.C.Washington . . . .	77	-3	8.0	+2.7	MONT.Billings . . . .	61	-2	2.7	+ .1	Austin . . . . .	79	-2	6.2	+1.4
FLA.Apalachicola . . .	77	-2	11.1	+4.5	Glasgow . . . . .	63	+1	4.3	-1.6	Beaumont . . . . .	82	-1	.8	-2.0
Daytona Beach . . . .	79	-2	10.6	+1.7	Great Falls . . . . .	61	0	4.1	+1.0	Corpus Christi . . . .	82	0	.8	-1.9
Ft. Myers . . . . .	76	-3	4.3	-.2	Havre . . . . .	62	0	2.7	+ .1	Dallas . . . . .	83	-1	.5	-1.5
Jacksonville . . . . .	81	-3	10.2	+5.6	Helena . . . . .	57	-2	2.7	+ .3	Del Rio . . . . .	79	-1	.5	-.1
Key West . . . . .	79	-2	9.2	+2.5	Kalispell . . . . .	56	-1	1.7	-.9	El Paso . . . . .	79	-2	1.4	-1.7
Lakeland . . . . .	79	-2	6.8	-2.2	Miles City . . . . .	66	+1	3.5	+ .2	Fort Worth . . . . .	80	-1	4.1	0
Miami . . . . .	80	0	9.9	+2.8	Missoula . . . . .	57	-2	1.5	-.6	Galveston . . . . .	78	-3	2.6	-1.9
Orlando . . . . .	78	-2	11.0	+4.4	NEBR.Grand Island . .	72	0	.6	-4.4	Houston . . . . .	77	0	2.5	-.3
Tallahassee . . . . .	79	-2	7.2	+ .7	Lincoln . . . . .	71	+1	2.5	-2.4	Lubbock . . . . .	78	-2	2.1	+ .6
Tampa . . . . .	78	-3	4.5	-3.6	Norfolk . . . . .	65	-3	2.4	-1.4	Midland . . . . .	80	-2	1.4	-1.5
W.Palm Beach . . . . .	74	-2	2.4	-1.3	N.Platte . . . . .	73	+3	2.8	-2.1	San Angelo . . . . .	80	-2	1.6	-1.2
GA.Atlanta . . . . .	75	-3	4.8	+1.1	Omaha . . . . .	68	+1	.4	-3.2	San Antonio . . . . .	81	-1	1.3	-2.0
Augusta . . . . .	76	-4	3.1	-.8	Valentine . . . . .	58	0	.3	-.6	Victoria . . . . .	80	-2	3.2	+ .5
Macon . . . . .	76	-3	7.5	+1.6	NEV.Ely . . . . .	82	0	0	-.1	Waco . . . . .	78	-3	2.2	-1.2
Savannah . . . . .	74	-1	3.0	-3.6	Las Vegas . . . . .	61	-1	T	-.4	Wichita Falls . . . . .	65	-1	T	-.5
HAWAII.Hilo . . . . .	78	-1	.2	-.1	Reno . . . . .	65	+3	1.1	+ .1	UTAH.Blanding . . . .	68	+2	1.2	-.1
Honolulu . . . . .	76	-1	.2	0	Winnemucca . . . . .	69	+4	2.7	-.7	Salt Lake City . . . .	69	+4	4.0	+ .5
Kahului . . . . .	63	-2	1.7	+ .6	N.H.Concord . . . . .	70	0	1.0	-2.4	VT.Burlington . . . . .	70	-3	7.3	+3.9
Lihue . . . . .	63	-2	1.2	-.6	N.J.Atlantic City . . .	71	0	2.6	-.6	VA.Lynchburg . . . . .	76	+1	1.6	-2.0
IDAHO.Boise . . . . .	62	-3	8.9	+4.5	Trenton . . . . .	73	-2	.6	+ .1	Richmond . . . . .	75	+1	2.9	-.6
Lewiston . . . . .	75	-3	6.6	+2.6	N.MEX.Albuquerque . .	79	+2	1.6	+ .4	Roanoke . . . . .	70	-2	5.2	+1.7
Pocatello . . . . .	72	+1	6.6	+2.6	Roswell . . . . .	69	+1	5.4	+2.4	WASH.Colville . . . . .	58	-3	.9	-.8
ILL.Cairo . . . . .	71	0	2.0	-2.4	N.Y.Albany . . . . .	67	+2	4.4	+ .8	Omak . . . . .	61	-3	1.1	-.1
Chicago . . . . .	71	0	2.9	-1.0	Binghamton . . . . .	68	+2	3.4	+1.2	Quillayute . . . . .	53	-2	2.8	-.7
Moline . . . . .	69	0	2.2	-2.2	Buffalo . . . . .	74	+2	2.7	-.2	Seattle-Tacoma . . . .	60	0	.6	-.9
Peoria . . . . .	72	-1	1.4	-2.8	New York . . . . .	70	+3	3.4	+ .9	Spokane . . . . .	59	-3	.8	-.6
Rockford . . . . .	73	-2	4.2	+ .6	Rochester . . . . .	68	+1	7.4	+4.3	Walla Walla . . . . .	64	-3	.6	-.6
Springfield . . . . .	71	+1	3.9	0	Syracuse . . . . .	68	-3	5.5	+1.5	Yakima . . . . .	60	-5	.7	0
IND.Evansville . . . .	71	-1	4.0	-.2	N.C.Asheville . . . . .	72	-4	3.8	+ .1	W.Va.Beckley . . . . .	72	0	4.2	+ .9
Ft. Wayne . . . . .	71	+2	6.6	+2.9	Charlotte . . . . .	71	-3	3.9	0	Charleston . . . . .	72	0	4.3	+ .9
Indianapolis . . . . .	70	-1	2.9	-1.8	Greensboro . . . . .	74	0	4.7	-.1	Huntington . . . . .	71	-1	4.5	+ .5
South Bend . . . . .	68	0	1.5	-3.8	Hatteras . . . . .	75	+1	2.6	-1.1	Parkersburg . . . . .	68	+3	.3	-3.1
IOWA.Burlington . . . .	70	0	.8	-3.8	Raleigh . . . . .	76	-2	12.7	+7.1	WIS.Green Bay . . . . .	70	+1	1.8	-2.6
Des Moines . . . . .	73	0	1.6	-3.4	Wilmington . . . . .	67	+3	2.7	-.9	La Crosse . . . . .	68	+2	1.4	-2.9
Dubuque . . . . .	74	0	.5	-2.8	Fargo . . . . .	69	+4	2.3	-.9	Madison . . . . .	68	+3	2.3	-1.3
KANS.Concordia . . . .	69	0	1.1	-2.8	Williston . . . . .	65	+2	2.5	-.8	Milwaukee . . . . .	61	-1	1.7	+ .3
Dodge City . . . . .	69	0	1.7	-4.1	OHIO.Akron-Canton . .	67	-1	3.9	+ .4	WYO.Casper . . . . .	60	-1	.7	-1.7
Goodland . . . . .	73	-1	3.1	-1.4	Cincinnati . . . . .	72	0	5.9	+2.1	Cheyenne . . . . .	60	-1	2.0	+ .1
Topeka . . . . .	74	-2	3.3	-1.0	Cleveland . . . . .	70	+2	3.6	+ .3	Lander . . . . .	60	-1	2.3	-.7
Wichita . . . . .	71	-2	4.7	+ .6	Columbus . . . . .	71	+1	4.5	+ .4	Sheridan . . . . .	60	-1	2.3	-.7
KY.Lexington . . . . .	73	0	4.7	+ .6	Dayton . . . . .	71	0	5.3	+1.4	P.R.San Juan . . . . .	--	--	--	--
Louisville . . . . .	69	0	3.7	+ .3	Toledo . . . . .	69	0	3.7	+ .3					

## Droughts That Made U.S. History

Probably the best remembered drought period in U.S. history was in the 1930's, when, at one time or another, practically all of the Nation was affected. This period of unusual dryness seems to have begun in the Northeast in 1929 and spread rapidly westward. Most areas improved after 1936, but some areas suffered drought throughout the decade.

Dryness was especially severe in 1934 as indicated by the map at the top of page 16. A 1934 issue of the Weekly Weather and Crop Bulletin (WWCB) summarized drought conditions as of the end of May of that year:

At the end of May the most extensive drought in the climatological history of the United States had developed in the interior, and in the Northwestern and Western States. In the northern Plains precipitation prior to 1934 had been below normal for several years. For example, in Minnesota, every 1 of the last 5 years up to and including 1933 had below normal rainfall, with an accumulated deficiency of 18.62 inches, and since the beginning of 1934 the shortage has become greater at a more rapid rate than theretofore. The accumulated deficiency for North Dakota during the past 5 years is 12.54 inches, while for the 3 spring months, from March to May, inclusive, 1934, there was an average for the State of only 1.27 inches, which was by far the lowest ever recorded for these months. In the Ohio Valley the drought is of more recent inception. In this area the deficiencies in rainfall began generally just about a year ago, but nearly every month since then has had less than normal.

Timely rains in June 1934 saved northern portions of the Plains and Rockies from total disaster, but were inadequate to replenish soil moisture and relieve drought. As indicated by the area of the map enclosed by the -4 line, extreme drought, by July 1, 1934, affected parts of New York, Pennsylvania, and Ohio westward to the Plateau and Intermountain regions.

Drought continued through 1934, though timely rains saved crops in some parched areas. Conditions began to improve in the spring of 1935 and continued to look up until midsummer, when western areas again began drying out. Thanks to general wintertime rains, however, 1935 ended much better than 1934.

But relief was short-lived. Drought was not widespread or severe on April 1, 1936 (see WWCB, vol. 63, no. 14), but grew more severe in May 1936. By July 1, 1936 moisture conditions deteriorated drastically, and large areas of the country measured little or no rain in May or June. As a result, agricultural drought was much more serious than indicated by the Palmer Index map at the bottom of page 16. Although the 1936 map shows fewer, smaller areas of extreme drought, compared to the map for same date in 1934, conditions in 1936 caused greater alarm within the agricultural industry (WWCB, June 30, 1936):

Serious drought, for the third time in the last 6 years, prevails over the principal agricultural sections of the country. The present urgent need for rain, however, is more widespread than was the

case in either 1930 or 1934 at this season of the year. In the other cases the situation was not nearly so critical at the end of June, but in both instances the drought was most severe and caused the greatest crop damage during July and August.

Drought continued to intensify and spread during the balance of 1936 (WWCB, vol. 63, no. 14, p. 12), but relief came in the winter of 1936. Although there was some incidence of drought, especially in the West, serious drought slowly disappeared during the remainder of the 1930's, and in fact, an abnormally wet situation prevailed throughout the 1940's.

After a decade of generally good weather for agriculture, drought returned in the early 1950's. In the fall of 1952, serious drought appeared in many areas west of the Mississippi River. Rains relieved some areas in 1953, but by the end of the year drought intensified in the middle Mississippi Valley and spread eastward and westward. On April 1, 1954, severe drought ranged from Maryland to Missouri and from New Mexico to southern Wisconsin (WWCB, vol. 63, no. 14, p. 13). By July 1, 1954 (see map at top of p. 17) the drought grew more severe in the West and spread southeastward. The July 12, 1954 issue of the Bulletin described the situation:

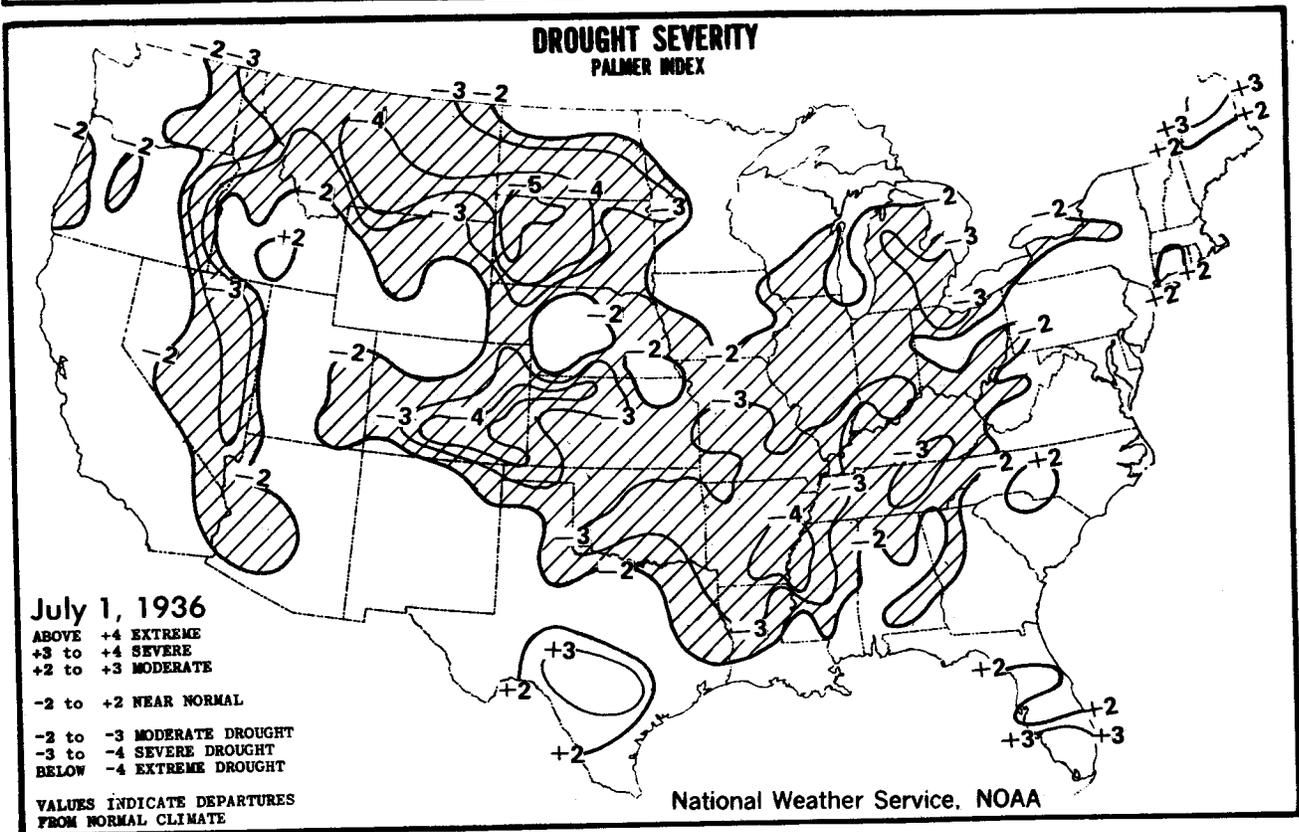
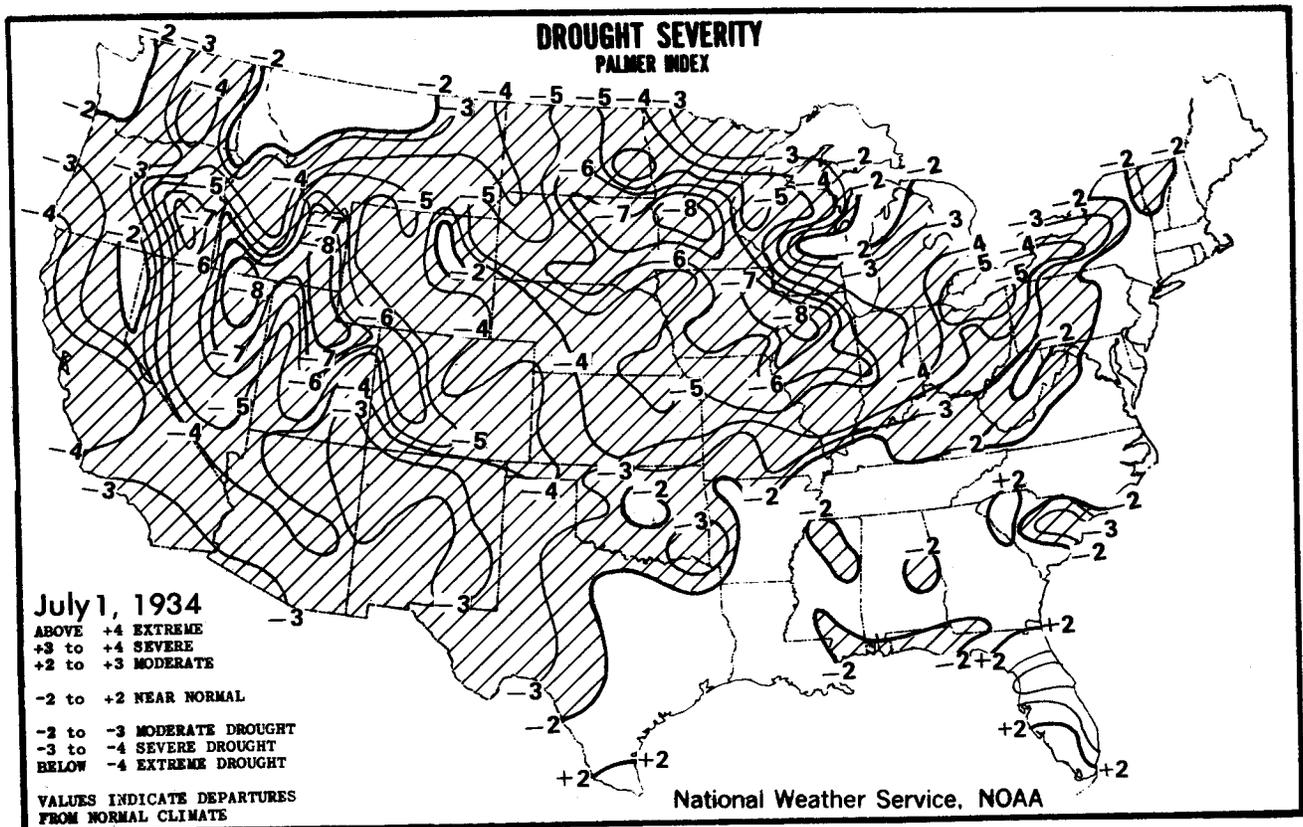
Only one-quarter to about one-half of the usual precipitation has been received during the last 8 weeks in many sections of the Atlantic States from southern New England southward to Georgia, and thence westward over the lower Mississippi Valley, eastern and central Texas, most of Oklahoma, western portions of Kansas and Nebraska, and most of Wyoming, Colorado, New Mexico, California, and Nevada. The moisture deficiency was intensified by persistent hot, sunny weather during the last 4 weeks in middle and southern sections. For the fourth consecutive week hot, dry weather extended over most of the southern two-thirds of the United States east of the Continental Divide. . . .

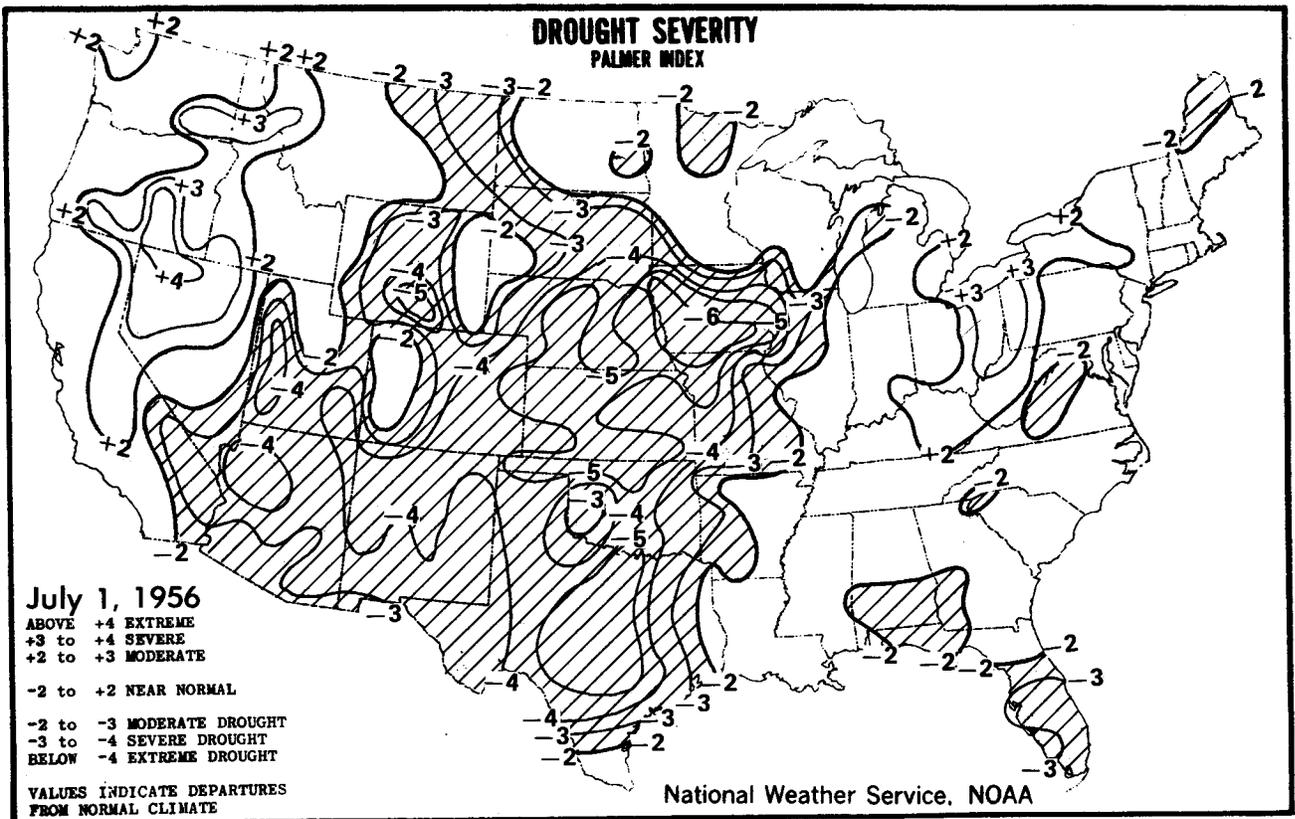
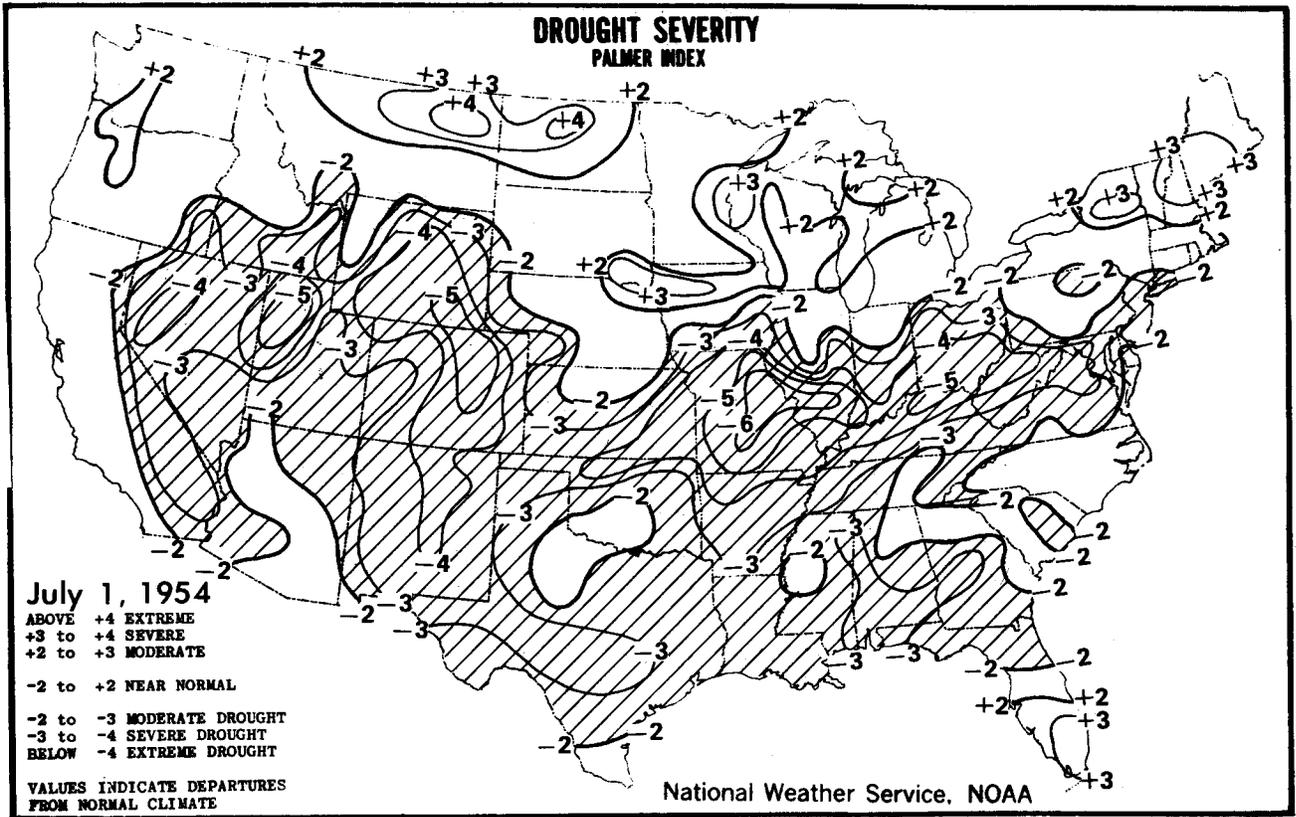
Soaking rains in the Southeast and most of the East relieved drought in those areas in late 1954 and in the Plains and West by early 1955. Sporadic moisture shortages in 1955 plagued the United States, especially the central Plains, but records indicate no widespread drought, as in the previous and following years.

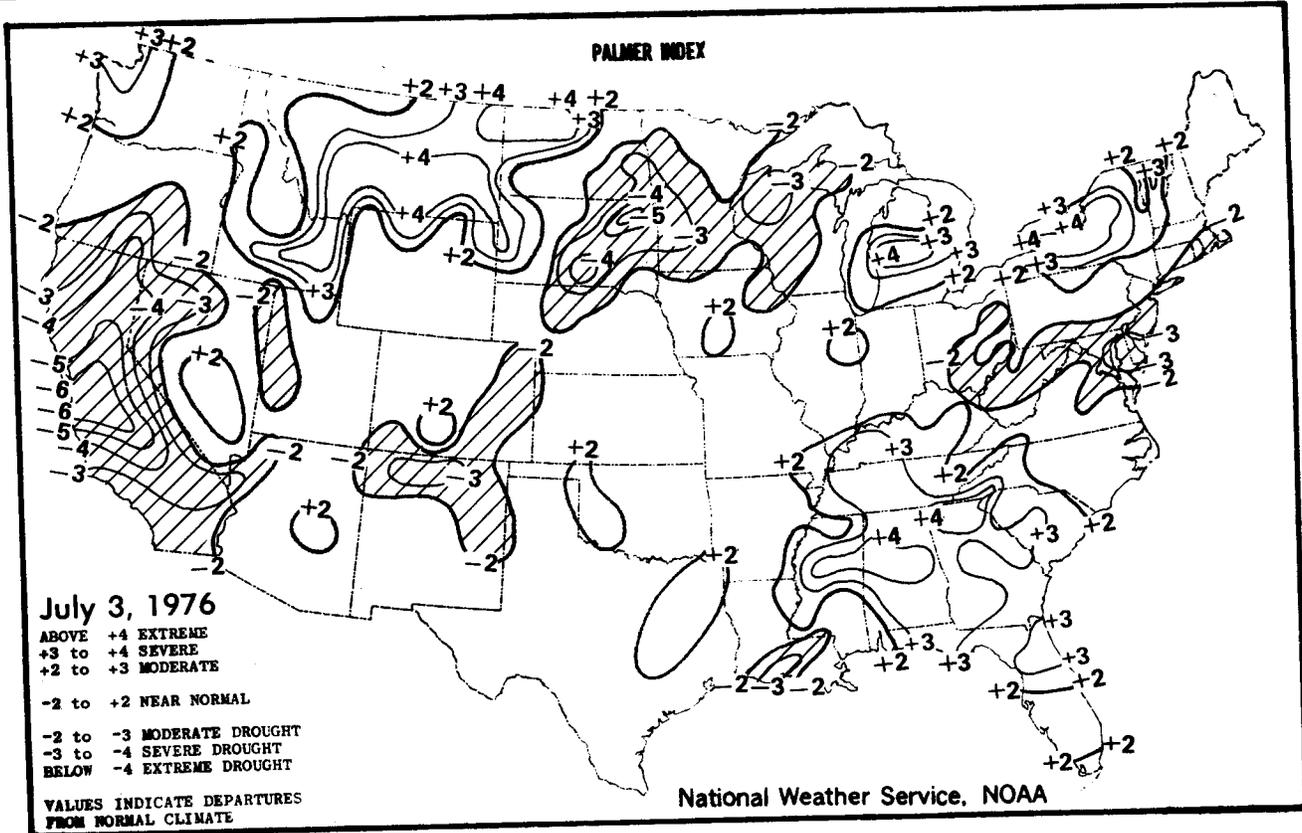
In the 1956 drought below normal precipitation in nearly every month brought the drought on very slowly. Subnormal rains were timely, and so enabled most crops to get started and to grow. However, without reserve soil moisture, crops were damaged each time the timely rains failed. Areas most affected by the moisture shortage were the central and southern Plains, the Southwest, and southern Rockies. Many stands of all crops eventually were plowed under or in some cases, turned to pasture. In contrast, States outside the drought areas produced excellent crops.

In a 1956 issue, the Bulletin reported that "high temperatures and strong winds caused blowing dust and further reduced the scant soil moisture supplies in the middle and southern Great Plains."

Pastures and stockwater especially were hard hit by this drought. Herds were severely depleted as current feed supplies disappeared and prospects for winter feed diminished. The drought continued until the spring of 1957, when substantial rains fell in most of the dry areas.







### Using the Palmer and Crop Moisture Indexes

The Palmer Index (PI) evaluates the scope, severity, and frequency of prolonged periods of abnormally wet or dry weather. For this purpose it works reasonably well. However, it does not measure the current status of agricultural drought, such as the effects of short periods of dry weather. For this reason the Crop Moisture Index (CMI) was developed to respond rapidly to changes in the soil moisture situation and to reflect only those moisture factors that affect vegetation and field operations.

The Palmer Index best evaluates the overall soil moisture situation, since it reflects the effects of the weather over weeks and even months. The Crop Moisture Index is the most useful in determining the availability of moisture to meet current demands. For example, a recent rain may replenish the soil enough to meet current demands. But if the Palmer Index value is highly negative, the overall soil moisture situation could still be very poor.

Negative CMI values mean that the demand for moisture, or the potential evapotranspiration, ex-

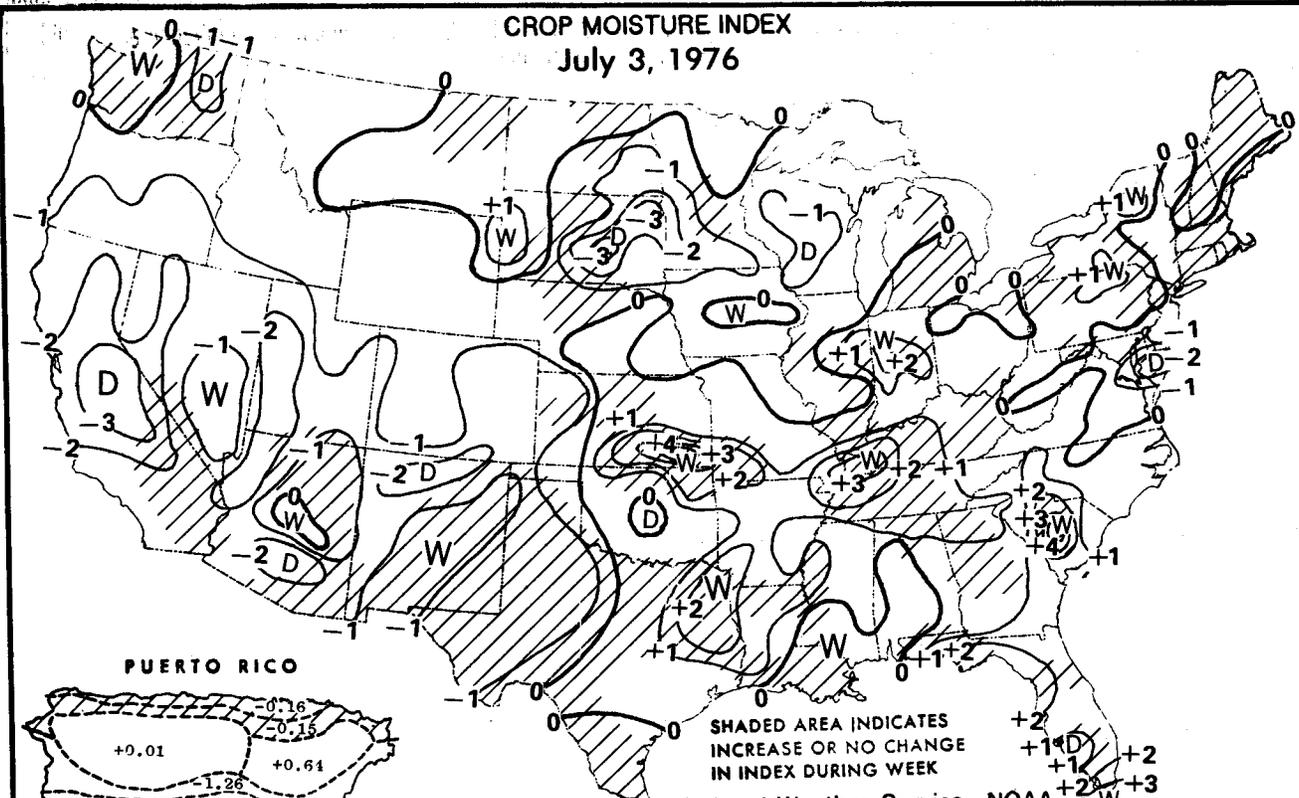
ceeded available supplies, and so reduced actual transpiration. On the other hand, positive CMI values mean either that actual evapotranspiration was greater than expected, or that recent rainfall exceeded crop moisture requirements and additional moisture went into the soil or was regarded as runoff.

Negative Palmer Index values imply negative abnormalities of evapotranspiration, moisture stored in or added to the soil, runoff, or a combination of all these types of moisture shortages. In other words, negative PI values indicate abnormally dry weather but do not show the effect of the dryness.

Positive PI values indicate that the moisture supply either from current or previous rainfalls, exceeded the amount needed to sustain soil moisture at a level considered normal for the climate of the area.

Palmer Index values are based on all aspects of the moisture situation, but Crop Moisture values refer only to current moisture requirements. While PI values show long-term moisture conditions, CMI values are more responsive to recent rainfall or its absence.

**CROP MOISTURE INDEX**  
July 3, 1976



SHADED AREA INDICATES INCREASE OR NO CHANGE IN INDEX DURING WEEK

National Weather Service, NOAA

The Crop Moisture Index measures the degree to which moisture requirements of growing crops were met during the previous week. The index is computed from average weekly values of temperature and precipitation. These values are used to calculate the potential moisture demand. Taking into account the previous soil moisture condition and current rainfall, the actual moisture loss is determined.

If the potential moisture demand, or potential evapotranspiration, exceeds available moisture supplies, actual evapotranspiration is reduced and the CMI gives a negative

value. However, if moisture meets or exceeds demand the index is positive.

Shaded areas indicate the index was unchanged or increased from the previous week's value; soils dried in the unshaded areas. Centers of positive and negative areas are identified by W for wet and D for dry.

Local moisture conditions may vary because of differences in rainfall distribution or soil types. The type of agriculture and stage of crop development must be considered when assessing the impact of moisture conditions based on the Crop Moisture Index. Some general guidelines follow.

**UNSHADED AREAS: INDEX DECREASED**

ABOVE	3.0	SOME DRYING BUT STILL EXCESSIVELY WET
2.0 to	3.0	MORE DRY WEATHER NEEDED, WORK DELAYED
1.0 to	2.0	FAVORABLE, EXCEPT STILL TOO WET IN SPOTS
0 to	1.0	FAVORABLE FOR NORMAL GROWTH AND FIELDWORK
0 to	-1.0	TOPSOIL MOISTURE SHORT GERMINATION SLOW
-1.0 to	-2.0	ABNORMALLY DRY, PROSPECTS DETERIORATING
-2.0 to	-3.0	TOO DRY, YIELD PROSPECTS REDUCED
-3.0 to	-4.0	POTENTIAL YIELDS SEVERELY CUT BY DROUGHT
BELOW	-4.0	EXTREMELY DRY, MOST CROPS RUINED

**SHADED AREA: INDEX INCREASED OR DID NOT CHANGE**

ABOVE	3.0	EXCESSIVELY WET, SOME FIELDS FLOODED
2.0 to	3.0	TOO WET, SOME STANDING WATER
1.0 to	2.0	PROSPECTS ABOVE NORMAL, SOME FIELDS TOO WET
0 to	1.0	MOISTURE ADEQUATE FOR PRESENT NEEDS
0 to	-1.0	PROSPECTS IMPROVED BUT RAIN STILL NEEDED
-1.0 to	-2.0	SOME IMPROVEMENT BUT STILL TOO DRY
-2.0 to	-3.0	DROUGHT EASED BUT STILL SERIOUS
-3.0 to	-4.0	DROUGHT CONTINUES, RAIN URGENTLY NEEDED
BELOW	-4.0	NOT ENOUGH RAIN, STILL EXTREMELY DRY

Agricultural Climatology Service Office  
South Building Mail Unit  
U. S. Department of Agriculture  
Washington, D.C. 20250

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### HARVESTING PROGRESS

Percent of Acreage Harvested  
(as of July 4)

#### winter wheat

	1976	1975	Avg.
Colo.	10	5	24
Ill.	65	78	75
Ind.	15	35	25
Kans.	50	55	65
Mo.	63	82	75
Mont.	0	0	0
Nebr.	10	5	5
Ohio	20	30	15
Okla.	95	93	95
Oreg.	0	0	0
S. Dak.	11	0	0
Tex.	87	93	95
Wash.	0	0	0
U. S.	44	49	51

These 13 States produced 82%  
of the Nation's winter wheat  
in 1975.

