

WEEKLY WEATHER AND CROP BULLETIN

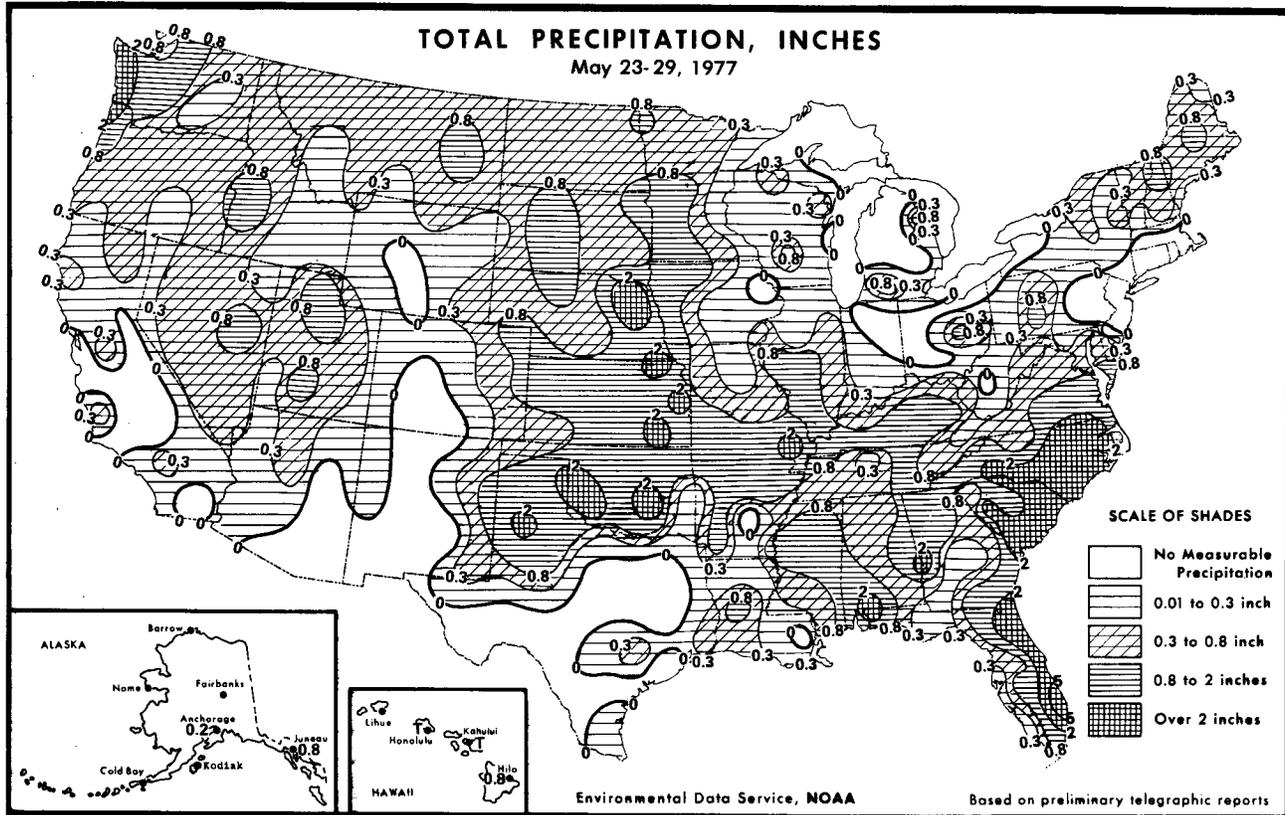
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National Weather Summary

For the week of May 23-29

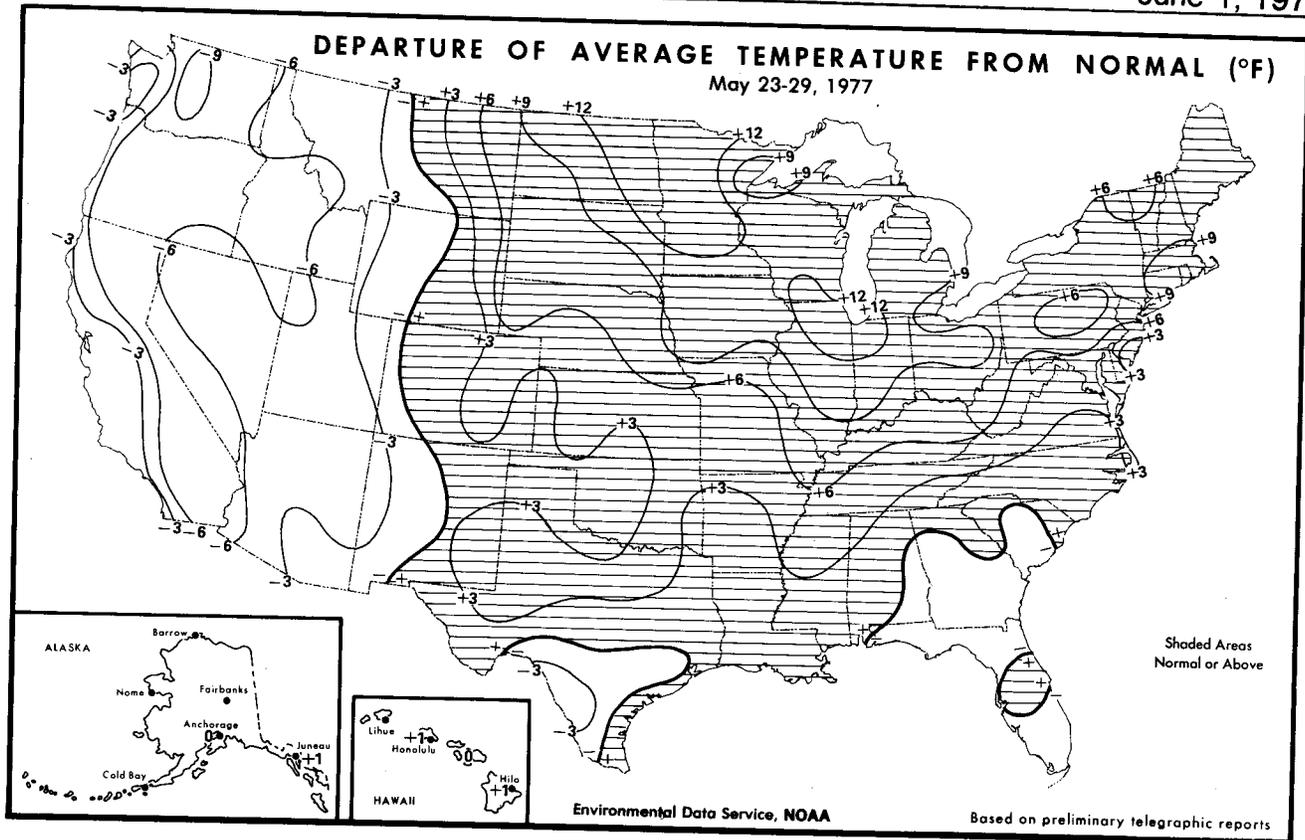
Highlights: The week's heaviest precipitation fell along the Atlantic Coast from North Carolina to Florida; two to five inches was common. Portions of the Plains, from Nebraska southward to the Texas Panhandle, received from one-half to more than two inches of rain. Severe thunderstorms, hail, and tornadoes were reported in the Plains eastward to the Mississippi Valley. The extreme northern Pacific Coast received up to three inches of moisture.

Lower than normal temperatures cooled the Nation west of the Rocky Mountains; readings dipped 9° below average in central Washington. In contrast, east of the Rockies, temperatures were well above normal except along the Gulf Coast and the Atlantic Coast of Florida and southeastern Georgia and South Carolina. Minnesota and eastern North Dakota showed 10 to 14° higher than expected. Chicago set a May record of more than 10 days' readings in the 90's.

Heavy Monday morning rains moved from south central Kansas into north central and northeastern Oklahoma; streams swelled, but precipitation diminished as noon neared. A slow-moving front dispersed widely scattered showers in the upper half of the Plains and from the Mississippi Valley to the Atlantic.

Afternoon and evening showers dampened parts of the Pacific Coast eastward to the Intermountain region. Los Angeles set a record for this day of one-tenth inch of rain. Tornadoes spun through Arkansas, Minnesota, and New Mexico where hail also was reported. Late evening rain caused some flooding in northwestern Pennsylvania.

A persistent trough of low pressure over the Pacific Coast kept temperatures cool with showers on Tuesday. Readings 30° below normal reached as far east as Phoenix where showers produced unseasonable moisture.



A large area of showers dampened the Southeast from central Virginia southward to Georgia. Showers and thunderstorms were reported in the southern half of the Great Plains and from the Great Lakes to the lower three-quarters of the Mississippi Valley. By evening, a tornado touched down in Kansas; thunderstorms moved through western North Dakota; and thundershowers dumped one-half inch of rain in portions of southern Louisiana.

Wednesday showers and thundershowers darkened much of the Atlantic Coast from New Jersey southward to Georgia and westward to Kentucky and Tennessee. Afternoon brought the heaviest rain to the central Gulf States northward to southern Illinois. Thundershowers reached from southwest into Nebraska through the Oklahoma and Texas Panhandles into northeastern New Mexico. Showers also dotted western Wyoming, Utah, and extreme northern California.

The weather turned unstable over the Nation's midsection before evening. Hail and 13 tornadoes ripped through the central and southern Plains. Late Wednesday, damaging hail also peppered Maine and Montana. High temperature records were set from Minnesota through the Great Lakes to New England.

The strength and coverage of thunderstorms increased by midday, Thursday, over the southern half of the Atlantic Coast States westward to eastern Mississippi. Afternoon thunderstorms, some severe, pounded the Great Plains. Before evening, hail, high winds, and tornadoes charged through the Nation's midsection. Less intense rains covered the lower Mississippi Valley. Twisters were spotted in Alabama and Georgia. Downpours of more than three inches drenched such widely separated locales as West Palm Beach, Fla., Edgefield, S.C., and Lubbock, Tex.

Scattered showers fell along the Pacific Coast from Washington to northern California eastward to the Rockies.

The Great Plains were the focus of heavy thunderstorms on Friday. Hail and locally heavy rains hit several areas north of Oklahoma. Precipitation crept into the mid-Mississippi Valley across the eastern Gulf into the southern Atlantic Coast States. North Carolina was hit especially hard; the Lumber River rose to major flooding. Florida reeled under heavy rain and hail. Scattered showers and isolated thunderstorms continued from the Pacific Northwest over northern Utah and Nevada into the Rockies.

Early Saturday morning thunderstorms extended over portions of the central Plains and Mississippi Valley. This activity was highlighted later in the day by hail and severe storms over northeastern and central Illinois, eastern Colorado, eastern Oklahoma, and western Arkansas. Hail and tornadoes bumped Kansas and Minnesota.

Showers were widely placed over the Pacific Northwest and New England. The same situation existed for the southern Atlantic Coast States, the southern Plains, and the northern Intermountain and Rocky Mountain regions.

Three-inch hailstones clobbered south central Kansas on Sunday. Showers and thunderstorms dampened many areas east of the Rockies including the central Great Lakes, Ohio Valley, and from Florida through the southern two-thirds of the Atlantic Coast.

Hail and tornadoes clipped east central Colorado, southwestern Kansas, and parts of Texas toward evening. Earlier tornadoes were sighted in Minnesota and Indiana.

National Agricultural Summary

For the week of May 23-29

HIGHLIGHTS: Rains interrupted winter wheat harvest and row crop planting in several of the Great Plains States. Farmers delayed planting in some southern areas because of dry soils; the low soil moisture and high temperatures stressed corn in several southeastern States. New seedlings in the eastern Corn Belt needed moisture to germinate. Corn planting advanced to 98% complete compared with 97% last year. Cotton planting reached 84%, 1 point less than 1976. Farmers planted 76% of the soybean crop by May 29, surpassing 1976's 70% and the 51% average. Sorghum planting advanced to 61% complete, ahead of the 53% last year and 55% average. Winter wheat harvest advanced slowly; rains fell throughout most of the major winter wheat area where the crop was mature. Soil moisture rated adequate in most of the Great Plains, elsewhere soil moisture was short. Farmers enjoyed good haying weather in much of the Nation; many areas need moisture for regrowth.

SMALL GRAINS: The Nation's winter wheat crop rated good; plants headed in Montana, turned color on the southern Great Plains, and were mature in the extreme South. In the eastern North Central States, much of the wheat headed and turned color. Harvest advanced into Oklahoma and extended across most of the Southern U. S.

In Kansas, 10% of the crop turned color, equal to the average but ahead of 1976's 5%; almost half the winter wheat turned in the Southeast and 25% in the South Central area. Heavy rains halted Oklahoma combining after farmers cut a few test fields. No significant acreage was harvested. Excessive rains lodged tall wheat in some areas. Nearly 60% of the Oklahoma crop was in soft dough to ripe stage. Texas wheat matured rapidly and harvest advanced as weather permitted. Producers combined a few fields on the southern Low Plains; only 2% of the Texas crop was harvested. Wind and hail lodged some Panhandle fields. The Nebraska winter wheat crop was 75% headed and in good condition.

The Nation's oats crop was early--up to two weeks ahead of normal. The Iowa oats crop was 22% headed.

CORN: The Nation's corn farmers planted 98% of the 1977 corn crop by May 29, 1 point ahead of last year's pace. Rains delayed the final plantings in the western Corn Belt. Plantings also lagged in Kentucky and Michigan.

In the eastern North Central States, from 75 to 89% of the crop emerged to good stands and grew to an average height of 7 inches. New seedlings needed moisture to germinate in Ohio and Indiana.

In the western North Central States, the corn rated good to excellent with most emerged and was 2 weeks ahead of normal; the crop grew fast.

The corn crop needed moisture in several southern States including Louisiana, Arkansas, Georgia and Florida. Some Florida stands were lost to dry weather.

SOYBEANS: The U. S. soybean crop reached 76% planted, surpassing 1976's 70% and the 51% average.

Planting advanced to 87% complete in the eastern North Central States, 4 points ahead of 1976 and far ahead of the 56% average. Recent

seedlings needed moisture, but earlier plantings emerged and grew well.

In the western North Central States planting reached 84% complete, 10 points more than last year and 30 points more than average. Between 74 and 80% of the crop emerged.

In the South Central States farmers planted 61% of the soybean crop by May 29, 5 points ahead of 1976 and almost 20 points more than the average. Some areas needed moisture to assure good germination.

COTTON: Producers in the 11 southern States planted 84% of the 1977 cotton crop by May 29, 1 point less than last year. Planting was virtually complete in all the States except Oklahoma and Texas. Rains slowed Oklahoma farmers and required much replanting. The crop was 25% planted, less than half the 54% last year and far behind the 40% average. Texas growers planted 77% of the cotton crop, nearly equal the 78% last year and 79% average. Farmers must replant significant Panhandle acreage damaged by heavy rains. The crop was squaring from south central Texas southward. Squaring was observed throughout the cotton production area and ranged from just beginning in Louisiana to 7% in Georgia. Low temperatures slowed California's cotton growth.

OTHER CROPS: Sorghum planting advanced to 61% complete in the major producing States, exceeding both 1976's 53% and the 55% average. Progress ranged from 35% complete in Kansas and 40% in Oklahoma, where rains delayed planting; to 83% in Texas. Rains also damaged some northern High Plains fields in Texas. The crop began heading in south central Texas.

Potato planting in Aroostock County, Maine, was more than 75% complete. In Idaho, growers planted 90% of the crop surpassing last year's 75%; about 35% of the crop emerged.

FRUITS AND NUTS: Peach picking advanced in the southern States; rains helped increase the size of some peaches. The Georgia crop was 18% harvested compared with 17% last year and the 5% average. Producers thinned peaches in northern areas. California growers picked cherries. Producers harvested some citrus in California, Arizona, Texas and Florida. Rain helped some Florida citrus groves, but growers irrigated elsewhere.

VEGETABLES: In Florida, vegetable shipments declined 5%. Cabbage, celery, sweet corn, eggplant, escarole, lettuce, peppers, potatoes, radishes, and squash declined; snap beans, carrots, cucumbers, and tomatoes held steady; only okra and watermelon supplies increased. Texas growers harvested a wide variety of vegetables and melons. Rains damaged crops in some parts of Texas; other portions needed moisture. California growers harvested broccoli, cauliflower, carrots, asparagus, and onions.

PASTURES AND LIVESTOCK: Pastures provided subnormal amounts of forage in most of the western States, across the extreme northern part of the Nation, and in several southeastern States; elsewhere, pastures were fair to good. Haying was as much as 2 to 3 weeks earlier than usual; extended clear weather in many areas was the reason. Only farmers in the southern Great Plains reported rain-damaged hay.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., May 29, 1977

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	+ 1	.5	-.3	La. Baton Rouge . . .	78	+ 1	T	-.9	Youngstown . . .	69	+ 8	.1	-.7
Mobile . . .	77	0	1.0	-.1	Lake Charles . . .	78	+ 1	T	-.7	OKLA., Okla. City . . .	73	+ 2	1.9	+ .7
Montgomery . . .	76	+ 1	.3	-.5	New Orleans . . .	78	+ 1	T	-1.0	Tulsa . . .	75	+ 4	1.3	+ .1
ALASKA. Anchorage . . .	49	0	.2	+ .1	Shreveport . . .	77	+ 1	.2	-.8	OREG. Astoria . . .	51	- 3	2.1	+1.5
Barrow . . .	---	---	---	---	MAINE. Caribou . . .	62	+ 8	.2	-.5	Burns . . .	47	- 7	.3	0
Fairbanks . . .	---	---	---	---	Portland . . .	63	+ 7	T	-.7	Medford . . .	54	- 6	.2	-.1
Juneau . . .	50	+ 1	.8	+ .1	MD. Baltimore . . .	71	+ 4	.5	-.3	Pendleton . . .	54	- 7	.7	+ .4
Kodiak . . .	---	---	---	---	MASS. Boston . . .	72	+ 10	T	-.8	Portland . . .	53	- 6	.6	+ .1
Nome . . .	---	---	---	---	Chatham . . .	61	---	0	---	Salem . . .	52	- 6	.9	+ .4
ARIZ. Flagstaff . . .	49	- 4	.4	+ .3	MICH. Alpena . . .	63	+ 9	0	---	PA. Allentown . . .	71	+ 8	T	-.8
Phoenix . . .	77	- 2	1	+ .1	Detroit . . .	70	+ 8	0	-.8	Erie . . .	65	+ 7	0	-.8
Tucson . . .	74	- 2	0	0	Flint . . .	69	+ 10	T	-.7	Harrisburg . . .	74	+ 6	0	-.8
Winslow . . .	62	- 4	0	- .1	Grand Rapids . . .	72	+ 11	T	-.7	Philadelphia . . .	71	+ 5	T	-.8
Yuma . . .	75	- 6	T	0	Houghton Lake . . .	66	+ 10	0	-.7	Pittsburgh . . .	69	+ 6	T	-.8
ARK. Fort Smith . . .	75	+ 2	.1	-1.1	Lansing . . .	70	+ 10	T	-.8	Scranton . . .	67	+ 5	0	-.8
Little Rock . . .	73	0	T	-1.1	Marquette . . .	62	+ 9	0	-.6	R.I. Providence . . .	70	+ 10	.0	-.7
CALIF. Bakersfield . . .	70	- 2	T	0	Muskegon . . .	70	+ 11	0	-.7	S.C. Charleston . . .	74	0	4.0	+3.0
Eureka . . .	52	- 2	.2	-.2	S. Ste. Marie . . .	61	+ 9	T	-.7	Columbia . . .	73	- 2	.8	0
Fresno . . .	68	- 2	T	0	MINN. Duluth . . .	61	+ 8	T	-.9	Greenville . . .	73	+ 1	.5	-.2
Los Angeles . . .	63	- 3	.2	+ .2	Internatl. Falls . . .	67	+ 13	.4	-.3	S.D. Aberdeen . . .	68	+ 9	.7	0
Red Bluff . . .	63	- 7	.2	0	Minneapolis . . .	74	+ 13	T	-.8	Huron . . .	68	+ 8	.4	-.3
San Diego . . .	62	- 2	T	0	Rochester . . .	70	+ 10	.4	-.8	Rapid City . . .	64	+ 6	.3	-.4
San Francisco . . .	58	- 1	T	0	St. Cloud . . .	71	+ 13	.7	-.2	Sioux Falls . . .	70	+ 9	.7	-.2
Stockton . . .	66	- 1	.5	+ .4	MISS. Jackson . . .	77	+ 2	.3	-.6	TENN. Chattanooga . . .	73	+ 2	1.2	+ .5
COLO. Denver . . .	62	+ 2	.1	-.5	Meridian . . .	76	+ 1	1.4	+ .3	Knoxville . . .	73	+ 2	.3	-.5
Grand Junction . . .	65	0	.1	0	MO. Columbia . . .	72	+ 5	.3	-.8	Memphis . . .	79	+ 5	.4	-.5
Pueblo . . .	68	+ 4	.1	-.3	Kansas City . . .	72	+ 4	.5	-.6	Nashville . . .	76	+ 5	.2	-.7
CONN. Bridgeport . . .	67	+ 6	0	-.8	St. Louis . . .	75	+ 6	.6	-.3	TEX. Abilene . . .	78	+ 3	.1	-.8
Hartford . . .	72	+ 10	T	-.8	Springfield . . .	71	+ 3	1.2	+ .1	Amarillo . . .	69	0	1.4	+ .6
D.C. Washington . . .	74	+ 5	.4	-.4	MONT. Billings . . .	57	0	.3	-.2	Austin . . .	77	0	.1	-.8
FLA. Apalachicola . . .	75	- 2	.2	-.5	Glasgow . . .	60	+ 3	.6	+ .2	Beaumont . . .	79	+ 2	.3	-.8
Daytona Beach . . .	77	0	3.7	+2.9	Great Falls . . .	51	- 5	.5	-.2	Brownsville . . .	81	+ 1	.1	-.6
Ft. Myers . . .	78	- 1	T	-1.3	Havre . . .	57	0	.7	+ .3	Corpus Christi . . .	79	0	.2	-.5
Jacksonville . . .	75	- 1	2.2	+1.3	Helena . . .	50	- 5	.1	-.4	Dallas . . .	---	---	---	---
Key West . . .	81	- 1	T	-.7	Kalispell . . .	49	- 4	.6	+ .1	Del Rio . . .	77	- 3	T	-.6
Lakeland . . .	78	0	1.4	+ .4	Miles City . . .	63	+ 4	1.2	+ .6	El Paso . . .	76	+ 1	0	-.1
Miami . . .	78	- 1	1.3	-.4	Missoula . . .	49	- 5	.5	+ .1	Fort Worth . . .	80	+ 5	0	-.9
Orlando . . .	78	0	.6	-.3	NEBR. Grand Island . . .	69	+ 5	.6	-.4	Galveston . . .	78	0	0	-.8
Tallahassee . . .	75	- 2	.3	-.7	Lincoln . . .	71	+ 6	1.2	+ .3	Houston . . .	75	- 3	0	-1.2
Tampa . . .	79	0	.1	-.7	Norfolk . . .	70	+ 7	2.8	+1.8	Lubbock . . .	74	+ 3	1.4	+ .6
W. Palm Beach . . .	78	- 1	5.3	+3.9	N. Platte . . .	65	+ 4	.4	-.4	Midland . . .	80	+ 5	T	-.5
GA. Atlanta . . .	70	- 2	1.2	+ .4	Omaha . . .	74	+ 10	.9	-.1	San Angelo . . .	78	+ 1	T	-.6
Augusta . . .	74	0	.8	0	Valentine . . .	---	---	---	---	San Antonio . . .	76	- 2	.1	-.6
Macon . . .	75	- 1	.1	-.7	NEV. Ely . . .	47	- 5	1.1	+ .9	Victoria . . .	78	0	0	-.9
Savannah . . .	74	- 1	.9	-.2	Las Vegas . . .	69	- 7	.4	+ .4	Waco . . .	79	+ 2	0	-1.0
HAWAII. Hilo . . .	75	+ 1	.8	-1.1	Reno . . .	51	- 6	T	-.1	Wichita Falls . . .	76	+ 1	.3	-.7
Honolulu . . .	79	+ 1	T	-.2	Winnemucca . . .	53	- 3	.4	+ .2	UTAH. Blanding . . .	57	- 3	.3	- 2
Kahului . . .	76	0	T	-.1	N.H. Concord . . .	66	+ 7	T	-.3	Salt Lake City . . .	56	- 5	1.4	+1.1
Lihue . . .	---	---	---	---	N.J. Atlantic City . . .	67	+ 2	T	-.8	Trenton . . .	70	+ 5	0	-.8
IDAHO. Boise . . .	53	- 7	1.1	+ .8	N. MEX. Albuquerque . . .	67	+ 1	0	-.1	Roswell . . .	76	- 5	T	-.3
Lewiston . . .	55	- 5	.4	0	N.Y. Albany . . .	67	+ 6	.1	-.7	Binghamton . . .	66	+ 8	T	-.6
Pocatello . . .	52	- 5	.2	-.1	Buffalo . . .	67	+ 8	T	-.8	Richmond . . .	71	+ 2	1.7	+ .9
ILL. Cairo . . .	79	+ 7	1.3	+ .1	New York . . .	72	+ 7	T	-.6	Roanoke . . .	71	+ 4	.5	-.3
Chicago . . .	76	+ 12	T	-.8	Rochester . . .	67	+ 7	0	-.7	WASH. Colville . . .	49	- 8	.4	0
Moline . . .	75	+ 11	.3	-.6	Syracuse . . .	68	+ 8	T	-.6	Omak . . .	52	- 8	.5	+ .2
Peoria . . .	74	+ 9	.1	-.7	N.C. Asheville . . .	68	+ 2	1.7	+ .5	Quillayute . . .	47	- 6	3.1	+2.2
Rockford . . .	74	+ 12	.1	-.8	Charlotte . . .	71	+ 0	2.3	+1.6	Seattle-Tacoma . . .	54	- 3	1.3	+ .9
Springfield . . .	76	+ 9	1.1	+ .3	Greensboro . . .	73	+ 1	.5	-.2	Spokane . . .	49	- 8	.3	-.1
IND. Evansville . . .	77	+ 8	.5	-.5	Hatteras . . .	73	+ 3	1.1	+ .3	Walla Walla . . .	56	- 6	.5	+ .1
Ft. Wayne . . .	74	+ 11	T	-.9	Raleigh . . .	71	+ 0	2.3	+1.5	Yakima . . .	51	- 9	.1	0
Indianapolis . . .	76	+ 10	.3	-.6	Wilmington . . .	73	+ 0	4.8	+3.8	W. Va. Beckley . . .	67	+ 6	.2	-.7
South Bend . . .	75	+ 13	T	-.7	Fargo . . .	65	+ 9	.5	-.1	Charleston . . .	72	+ 5	T	-.8
IOWA. Burlington . . .	73	+ 8	.5	-.4	Williston . . .	66	+ 9	.7	+ .1	Huntington . . .	73	+ 6	.7	-.1
Des Moines . . .	74	+ 10	.1	-1.0	OHIO. Akron-Canton . . .	72	+ 10	T	-.9	Parkersburg . . .	74	+ 7	T	-.8
Dubuque . . .	72	+ 11	T	-1.1	Cincinnati . . .	73	+ 7	.1	-.7	WIS. Green Bay . . .	68	+ 10	0	-.7
Sioux City . . .	71	+ 7	1.6	+ .7	Cleveland . . .	67	+ 5	0	-.8	La Crosse . . .	73	+ 11	.1	-.8
KANS. Concordia . . .	71	+ 5	1.6	+ .5	Columbus . . .	73	+ 9	.1	-.9	Madison . . .	71	+ 12	.2	-.7
Dodge City . . .	71	+ 4	.6	-.2	Dayton . . .	73	+ 8	T	-.9	Milwaukee . . .	65	+ 8	T	-.7
Goodland . . .	63	+ 1	1.5	+ .9	Dayton . . .	73	+ 8	T	-.9	WYO. Casper . . .	57	+ 1	.1	-.3
Topeka . . .	73	+ 5	.5	-.5	Louisville . . .	75	+ 7	.3	-.7	Cheyenne . . .	55	0	.4	-.2
Wichita . . .	71	+ 2	1.9	+1.0	La. Baton Rouge . . .	78	+ 1	T	-.9	Lander . . .	54	- 1	0	-.6
WYO. Lexington . . .	74	+ 6	.9	-.1	Lake Charles . . .	78	+ 1	T	-.7	Sheridan . . .	55	- 1	.5	-.1
Louisville . . .	75	+ 7	.3	-.7	New Orleans . . .	78	+ 1	T	-1.0	P.R. San Juan . . .	80	0	3.3	+1.8

Based on 1941-70 normals

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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.

ALABAMA: Scattered showers and near normal temperatures.

Soil moisture short. Fieldwork: 5 days suitable. Cotton fair to good. Some replanting soybeans. Soybeans fair condition; 51% planted, 53% 1976, 57% average. Peanut planting delayed, 83% complete, 96% 1976. Wheat harvest 23% complete, 11% 1976. Lack of moisture delaying potato harvest. Pastures fair.

ALASKA: Tanana Valley high temperatures slightly below normal. low temperatures slightly above normal. Precipitation much above normal. Matanuska Valley temperatures slightly below normal. Precipitation below normal. Kenai Peninsula temperatures below normal. Precipitation above normal. Kodiak Island high temperatures normal while low temperatures much below normal. Precipitation well below normal.

Favorable weather conditions allowed excellent progress planting small grains and potatoes. Early planted fields starting to emerge. Fieldwork on schedule most areas except Fairbanks. Soil moisture shortages few areas throughout rail belt.

ARIZONA: Rain most areas 24th, dry otherwise. Low humidities, warming. Temperatures 2 to 7° below normal.

Cotton good growth, squaring. Small grain harvest increasing. Sorghum field preparation well advanced; 80% planted. Safflower good progress. Sugarbeet harvest nearing completion west, well advanced Salt River Valley. Fall beets good growth. Lettuce harvest central areas virtually complete. Cantaloups, water-melons good growth, fruit sizing well. Cantaloup harvest expected soon. Grapes, good progress, earlier varieties approaching maturity. Picking deciduous fruit active, Salt River Valley. Valencia harvest continued full swing. Grapefruit harvest increasing. Conditions remain generally poor; drought conditions. Very little rain lower. Mountain ranges only fair to good. Cattle, calves lower ranges fair to good; higher ranges mostly good.

ARKANSAS: Temperature 1 to 5° above normal. Extremes: 56 and 97°. Rainfall spotty, with northwest receiving most.

Soil moisture short. Fieldwork: 5.8 days suitable. Soybean planting 62% complete, 56% 1976, average 45%. Crop fair to good condition. Cotton virtually all planted at 99%, same as last year. Squares reported some early planted fields. Stands good. Rice seeding 98% complete, same as year ago. Crop in good condition. Water weevil populations heavy. Corn good condition, need moisture. Sorghum planting complete except for fields to be seeded after small grain harvest. Wheat harvest 6% complete, same as last year. Oat harvest 3% complete. Peaches good condition and sizing well. Harvest underway early varieties.

CALIFORNIA: Cold and wet storms beginning and end of period produced rain with snow higher mountains. Temperatures 5° below normal. Precipitation light.

Small grains maturing slowly. Harvest not yet in full swing. Desert sugarbeet harvest continues. Cotton growth slow, insect problems minor. Rice development slow. Corn, sorghum mostly planted. Dry beans being planted. Alfalfa all stages of growth and harvest. Almonds developing well. Cherry harvest underway. Nectarine and peach thin-

ning continues. Pears pruned and walnuts sizing well. Broccoli, cauliflower, carrots, artichokes, asparagus, onions harvested. Melon season beginning. Plant growth good in general. Rangelands improved slightly. New grass appearing, stock water supplies increase. Cattle fair, supplemental feeding continues.

COLORADO: Warm and mild beginning week, changed to cloudy, windy, cool midweek. Severe thunderstorms southeast, 1.20 to 3.70 in. reported. Cloudy, cool wet weather, north and east portions 28th. Light snow over higher mountain passes. Temperatures slightly below normal.

Winter wheat good condition except fair southwest, 94% jointed 1977, 89% 1976, 93% average; 58% headed 1977, 57% 1976, 51% average. Soil moisture short. Spring seedings: Sorghum 45% 1977, 54% 1976, 41% average. Corn 94% 1977, 95% 1976, 90% average. Dry beans 22% 1977, 24% 1976, 25% average. Spring oats good condition, barley and corn very good. Alfalfa in fair condition. Livestock in good condition.

FLORIDA: Warm and humid with scattered thunder-showers. Temperatures near normal. Rainfall from none up to 6.00 in. few locations.

Soil moisture short. Light to very heavy showers late week brought some relief, but good, soaking rains badly needed Panhandle, extending through central Peninsula. Much early field corn near total loss from dry soils. Planting peanuts, soybeans curtailed due to dryness. Tobacco irrigation heavy. Harvest wheat, oats well advanced; some areas in Panhandle complete. Peach, nectarine harvest well advanced; dry weather reduced sizing. Sugarcane growth variable, generally good and improving; stands spotty, few cold damaged fields. Pasture conditions vary widely. Extreme drought Panhandle, central and upper western peninsular coastal areas. Hay supplies short some areas. Seeding pasture grasses delayed driest localities. Cattle condition poor most of Panhandle, upper Peninsula; poor to fair elsewhere. Rain many citrus areas, irrigation continues elsewhere. Very little new growth. Valencia harvest active; grapefruit supplies running out. Pruning continues. Vegetable shipments decreased 5%. Supplies watermelons, okra increased; snap beans, carrots, cucumbers, tomatoes held steady while cabbage, celery, sweet corn, eggplant, escarole, lettuce, peppers, potatoes, radishes, squash decreased. Watermelon harvest full swing some areas.

GEORGIA: Temperatures 1° below normal. Widely scattered thundershowers relieved some dry sections. Amounts 0.50 to 1.25 in. except 0.25 in. southwest. Widely scattered showers weekend.

Soil moisture very short southwest, short central, adequate to excessive southeast and north. Fieldwork: 4 days suitable. Scattered rain alleviated drought in certain areas. Corn condition fair to good; moisture stressed many areas. Earworm and budworm on corn. Tobacco condition fair to good; irrigation and insecticide application active. Cotton condition mostly fair to good; 7% squaring. Peanut condi-

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tion mostly fair to good; 18% blooming. Soybeans fair to good, 41% planted. Last year 54%, average 50%. Sorghum 35% planted, last year 44%, average 32%. Wheat harvest 30% complete, last year 22%, average 14%. Oat harvest 40% complete, last year 26%, average 14%. Hay poor to fair condition. Peaches fair to good condition; harvest 18% complete, last year 17% and average 5%. Apples fair to good condition. Watermelons mostly fair to good condition. Pastures poor to fair condition; growth stunted by drought. Cattle fair to good. Hogs fair to mostly good.

HAWAII: Weather warm. Light showers higher elevation.

Sunny periods improved crop progress all Islands. Insects increasing, spraying becoming frequent. Heavy irrigation parts of Maui. Vegetable supplies: Leaf crops continue short, other adequate. Banana, papaya supplies light. Pineapple harvesting increasing. Sugar harvesting steady. Pastures fair to good.

IDAHO: Temperatures below normal. Extremes: 29 and 81°. Above normal precipitation fell.

Crops benefited from recent rain but cool weather retarded growth. Grain crops emerged 1976, 1977: boot 1976, 1977. Winter wheat 100%, 100%; 35%, 25%. Spring wheat 70%, 95%; 5%, 5%. Barley 75%, 95%; 15%, 5%. Potatoes planted 75% 1976, 90% 1977. Potatoes emerged 30% 1976, 35% 1977.

ILLINOIS: Temperatures 7 to 12° above normal. Precipitation little or none northwest; up to 1.00 in. elsewhere.

Corn good; 89% full stand. Soybeans 91% planted, 87% 1976, 61% average. Grain sorghum 75% planted. Winter wheat 92% filled, 83% 1976, 75% average; 35% turned yellow, 27% 1976, 13% average; mostly good. Oats 45% headed, 31% 1976, 28% average; 15% filled, 14% 1976, 7% average; mostly good. First crop alfalfa hay 76% cut, 35% 1976, 23% average; red clover hay 70% cut, 36% 1976, 25% average; alfalfa and red clover hay mostly good. Pastures mostly fair to good. Soil moisture short. Fieldwork: 6.8 days suitable.

INDIANA: Dry, hot. Temperatures often in 90's 10° above normal. Showers extremely spotty and local.

Fieldwork: 7 days suitable. Topsoil moisture mostly short; subsoil moisture short to adequate. Pastures mostly fair to good. Corn planting complete, 1976 100%, average 80%. Corn 85% emerged. Corn 7 in. high, 1976 5 in., average 3 in. Stands fair to mostly good. Soybeans 80% planted, 1976 80%, average 45%. Soybeans 60% emerged. Wheat 95% headed, 20% in milk or later. Oats 20% headed, 1976 20%, average 5%. Barley 90% headed; rye 85% headed. Tobacco plants 40% set, 1976 30%, average 15%.

IOWA: Hot with spotty shower activity.

Topsoil and subsoil moisture short. Corn 97% emerged, stand is 94% of full stand, 2% of acreage to be replanted. Soybean planting 93% complete, 88% last year, average 61%. 74% of soybean acreage emerged. 46% of 1st cutting alfalfa complete, 13% last year, average 4%. 22% of oats acreage headed; earliest reported. Corn, clover hay good. Soybeans, oats, wheat, and pasture mostly good to fair. Alfalfa mostly good to excellent.

KANSAS: Scattered numerous showers and thunderstorms. About 50% all stations received over 1.00 in. mois-

ture. Temperatures averaged 68° northwest to 70° southeast or 2° above normal southwest to 6° above normal northeast.

Wheat turning as harvest approaches; 10% turning, same as average, 5% a year ago; 45% turning southeast, 25% south central. 95% heading, 90% last year and average. Row crop planting slowed by rains. Corn 90% planted, same as last year, 85% average. Sorghum 35% planted, same as average, 20% last year. Soybeans 35% planted, 20% last year, 30% average. Range and pasture condition good to excellent. Stock ponds near full as result recent rains.

KENTUCKY: Temperatures well above normal with average readings in low to mid-70's. Precipitation ranged from 0.75 in. west to less than 0.10 in. central.

Fieldwork: 5.5 days suitable. Main activities: Planting and cultivating corn, seeding soybeans, setting tobacco and harvesting hay. Topsoil moisture short despite shower activity. Corn planting now 90% complete, 93% last year and 84% average; most looking good, averaging 8 in. high, 7 in. 1976. Good stands; 93% full stand, compared to 88% last year, highest percentage on record. Soybean seedings made some progress; farmers waiting for moisture to finish planting. Planting 49% compared with 37% average. Tobacco setting progressed rapidly but not under best conditions. Poor stands resulting from dry soil and hot sun, some being cut up and reset. Burley now 52% set, most advanced since 1965 compares with 46% last year and 32% average. Darks 53% set. Small grains ripening, half wheat turning, earliest barley harvest started in west. Pastures deteriorating.

LOUISIANA: Temperatures 1 to 3° above normal. Extremes: 59 and 97°.

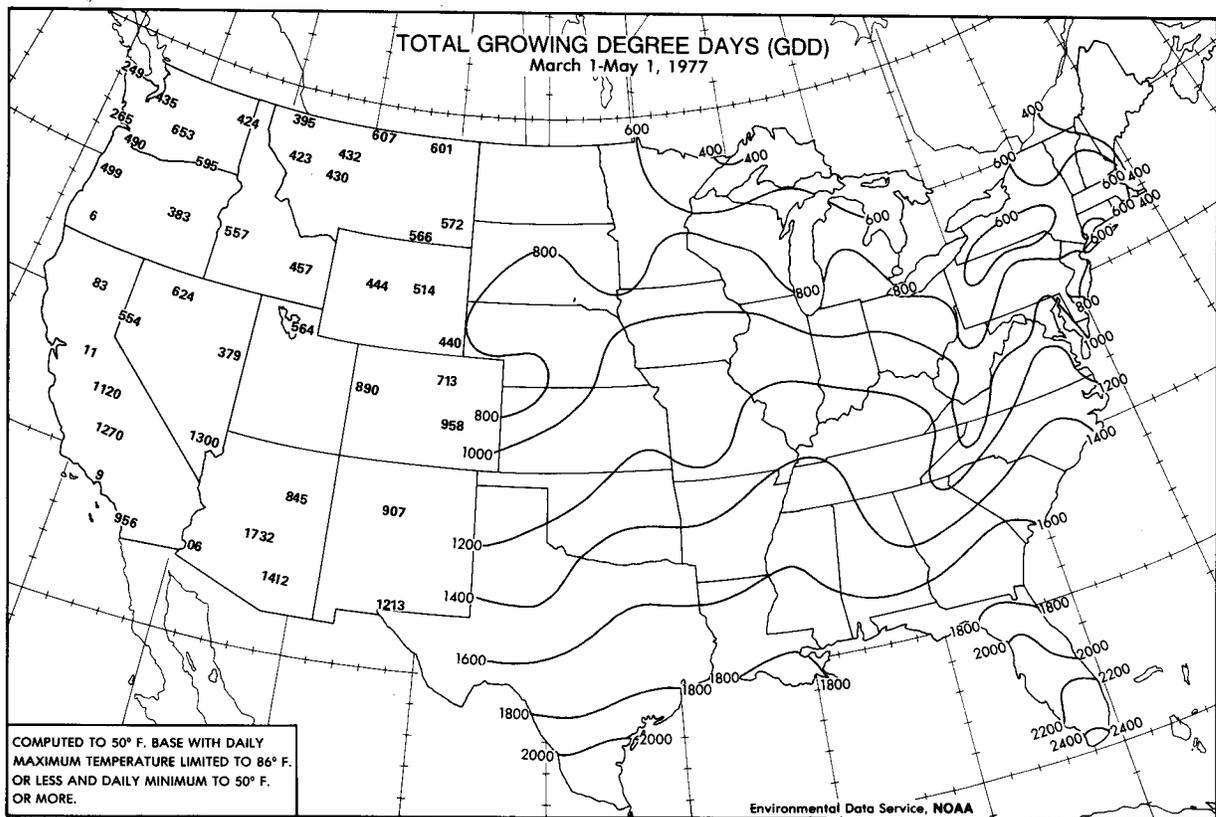
Soil moisture short. Fieldwork: 5.8 days suitable. Main activities: Planting, cultivation, application of fertilizers and pesticides, harvesting small grains. Rice growth and development good. Cotton 92% up to stand, 78% last year; squaring beginning. Corn 8% silked; condition fair to good, needs rain. Soybeans 70% planted, 60% last year, 47% average; 51% up to stand. Sorghum 73% planted, 74% last year; 66% up to stand. Sweetpotato transplanting 68%, 56% last year. Sugarcane good condition. Oats 59% harvested. Wheat 54% harvested. Irish potato harvest near completion. Pastures fair to good; cattle good.

MARYLAND AND DELAWARE: Temperatures 5° above normal. Highs mid-80's; lows upper 50's. Precipitation widespread; amounts 0.50 to 2.00 in. Weekend sunny and dry.

Pastures supplying below average to average amounts of feed. Soil moisture supplies short. Corn planting 95%, 1976 95%, average 82%. Fields dry. Soybeans 40% planted, 1976 35%, average 26%. Haymaking in full swing, excellent weather conditions. First cutting alfalfa 85%, clover and clover mixtures 50%. Rain needed to promote second growth. Vegetable planting active, many fields irrigated. Tobacco growers transplanting plants, stripping and marketing 1976 crop. Fruit thinning underway.

MICHIGAN: Temperatures 7 to 13° above normal. Record highs upper 80's and 90's. Precipitation light to none.

Soil moisture very short. Fieldwork: 6 days suitable. Pastures short. Plantings delayed due to dryness. Corn 95% planted, 75% last year, 70% normal. Winter wheat 55% headed, 17% last year, 5% normal. Potatoes 90% planted, 70% last year and normal. Soybeans 75% planted, 30% last



year and normal. Dry beans 10% planted, none last year and 2% normal. Hay 10% first cut. Alfalfa weevil active. Fruit set light to average. Development of vegetables active. Asparagus harvest 80%, 45% last year and normal. Strawberry picking started.

MINNESOTA: Temperatures 2 to 10° above normal north-east and 10 to 15° above normal elsewhere. Extremes: 90 and 41°. Precipitation less than 0.25 in. extreme east and 0.25 to 1.00 in. elsewhere except 1.00 to 1.30 in. south central, west central and extreme northwest.

Crop growth good to excellent, development two weeks ahead of normal. All planting nearly completed. All small grains, most corn emerged. In south, few early corn fields nearly knee high, some small grain heading, alfalfa hay cutting active. Planted: Soybeans 93%, 1976 87%, normal 70%; flaxseed 95%, 1976 91%, normal 71%; sunflowers 95%, 1976 88%. Emerged: Corn 97%, 1976 85%, normal 64%; soybeans 80%, 1976 54%, normal 33%. Corn height 7 in., 1976 3 in.: Alfalfa hay 15% cut, 1976 2%, normal 1%.

MISSISSIPPI: Temperatures near normal. Extremes: 55 and 93°. Soil moisture short to very short. Fieldwork: 6.1 days suitable. Soybeans 57% planted, 57% 1976, 31% average; 39% up to stand, 30% 1976. Cotton 95% up to stand, 79% 1976, 73% average; 6% squaring. Rice 90% up to stand, 89% 1976. Corn 96% up to stand, 88% 1976. Sorghums 60% planted, 62% 1976, 48% average. Winter wheat 73% ripe, 90% 1976; 15% harvested, 5% 1976, 12% average. Oats 88% ripe, 57% 1976; 13% harvested, 10% 1976, 18% average. Sweetpotatoes 71% planted, 54% 1976, 51% average. Peanuts 95% planted, 91% 1976. Hay crops 30% harvested, 19% 1976, 20% average. Irish potatoes 15% harvested, 9% 1976. Crops in

good to fair condition. Pastures in fair condition.

MISSOURI: Temperatures 4 to 6° above normal. Thunderstorms averaged less than 1.00 in. except the west central plains 1.00 in., and the Bootheel 2.50 in.

Soybeans 80% planted, 56% 1976, 48% normal. Grain sorghum 82% planted, 55% 1976, 53% normal. 1st cutting alfalfa hay 74% harvested, 37% 1976, 50% normal. 52% wheat turning color, 43% 1976, 27% normal. Wheat condition fair to good. Soil moisture short.

MONTANA: Warm beginning but much cooler by week's end. Precipitation above normal except isolated areas. Frequent showers and thunderstorms with hail damage east of Divide. Freezing temperatures over weekend.

Topsoil moisture generally adequate. Growth and condition all crops fair to good. Corn about 80% seeded, potatoes 65% and dry beans 90%. Winter wheat 50% in boot or beyond, 25% last year, 10% average. Stands generally fair to good. Much winter wheat headed in south. Hay and range growth slow north, about average South. Nearly 70% livestock moved to summer ranges.

NEBRASKA: Temperatures 4 to 8° above normal. Rainfall mostly 0.50 to 3.00 in. Hail and flooding some areas.

Topsoil and subsoil moisture adequate. Winter wheat mostly good condition; 75% headed compared to 50% a year ago. Corn planting 95% completed, same as 1976, 90% average. Some replanting due to flooding and cutworms. Grain sorghum planting 75% complete compared to 60% 1976 and 55% normal. Soybeans 60% planted; same as 1976 but above 50% normal. Pasture and range feed supplies mostly adequate.

NEVADA: Temperatures below normal, changing to above normal near end. Precipitation generally light.

Crops responding to warmer weather. Ranges mostly spotty.

NEW ENGLAND: Early week temperatures 15 to 20° above normal but sharp cooling north and gradual cooling south resulted in reading several degrees below normal at end of week.

No precipitation south but northern areas received 0.75 to 1.00 in.

Season 10 days ahead of normal. All crops appear to be doing well except hay and pastures short in many areas due to dry soil. Potato planting in Aroostook County, Maine more than 75% completed.

NEW JERSEY: Dry. Temperatures averaged 2 to 6° above normal. Extremes: 42 and 92°. Rainfall averaged 0.14 in. north, none central and 0.02 in. south. Soil moisture in percent of field capacity 60% north, 38% central and 27% south. Soil temperature averaged 68°.

Cool nights slowed crop development. Irrigating most areas. Asparagus, lettuce, peas, spinach and "greens" harvests continue with moderate to good volume available. Harvest of strawberries, escarole and endive increasing. Hay making increasing. Apple and peach prospects good but some winter damage evident and "June drop" started. Condition of small grains variable; some winter damage. Field corn and soybean planting active.

NEW MEXICO: Slight cooling 24th and 25th, warming again end of week.

Dryland wheat fair, irrigated wheat good. Fields coloring, some combining expected about June 10. Durum wheat, alfalfa, barley, lettuce, onions, fair to good. Cotton, corn seeding 99% completed; good stands. First cutting alfalfa 60% completed with good yields. Grain sorghum planting continuing. Ranges, livestock fair to good.

NEW YORK: Temperatures mainly in 60's; 3 to 8° above normal. Extremes: 90 and 24°. Precipitation very light; 0.50 in. north, little or none south.

Rapid planting progress. Corn 85% in, 42% 1976. Oat planting about done. Pasture, hay growth slowed by dry conditions. Dry conditions slowing germination and growth of some processing vegetables. Good Long Island potato growth. Upstate potato planting nearly complete. June apple drop heavy in west. Champlain Valley fruit set good. Some strawberries being irrigated. Early Finger Lakes grape bloom expected. Pears in fair condition. Peach prospects good.

NORTH CAROLINA: Mild, wet weather. Temperatures about normal.

Fieldwork: 2.9 days suitable. Soil moisture adequate. Farm activities: Planting soybeans, resetting tobacco, and cultivating. Crop conditions: Wheat, oats, barley, and pasture mostly fair; cotton and Irish potatoes mostly fair to good; corn and flue-cured tobacco fair to mostly good; peaches mostly good. Planting: Corn 99% completed, 1976 97%, average 93%; cotton 99%, 1976 99%, average 96%; peanuts 95%, 1976 98%, average 90%; soybeans 71%, 1976 61%, average 51%; sorghum grain 67%, 1976 66%. Flue-cured tobacco transplanting 97% complete, 1976 97%, average 92%; burley 46%, 1976 60%, sweetpotatoes 70% transplanted, 1976 62%.

NORTH DAKOTA: Temperatures 5 to 10° above normal. Extremes: 38 and 95°. Eastern and western areas received beneficial rains; central area relatively dry with amounts less than 0.50 in.

Small grain seeding virtually complete. Row crop seeding nearing completion. Hard red spring wheat planting 99% complete this year, 86% normally. Pasture growth poor. Marketing livestock in southwest areas due to short feed supplies.

OHIO: Temperatures above normal. Extremes: 47 and 93°. Scattered showers; greatest amount 0.74 in.

Condition of emerged corn and soybean crops generally good. Soil moisture needed for germination of newly seeded soybean and corn fields, hay and pasture growth, and to help activate herbicides. Some seeded tomato fields replanted with transplants. Soybeans 85% planted, 2 weeks ahead of normal, 85% 1976, 60% normal. Tobacco 15% planted, equal to average, 10% last year. Hay cutting 2 to 3 weeks ahead of normal. Alfalfa 40% cut, 20% 1976, 15% normal. Percent of acreage emerged: Corn 75%, soybeans 50%, stands in some areas spotty due to lack of moisture. Wheat short, 85% headed, equal to last year, 65% normal. Oats 10% headed, 5% last year and normal. Barley began to turn color. Fieldwork: 7 days suitable. Main activities: Cutting hay, planting, blocking beets, spraying herbicides and insecticides. Soil moisture short. Condition of pasture fair to good; livestock condition good.

OKLAHOMA: Heavy rains halted wheat harvest after few test fields cut 26th. Wheat condition good with near 60% in soft dough to ripe stage, compared 64% year earlier and 75% average. No measurable acreage harvested. Considerable lodging in tall wheat where rains excessive. Armyworms heavy in some fields but damage expected comparatively light. Oats and barley good condition. Oats 73% soft dough to ripe compared 72% average, and barley late with 65% soft dough or past compared average 81%. Corn planting now nearly complete and condition generally good. Nearly 70% crop up to stand compared with 66% year ago, 58% average. Sorghum planting held up by rains with under 40% planted, compared 47% year ago and 40% average; 18% up to stand. Cotton replant heavy, as repeated rains delay progress. Just over 25% seeded compared 54% year ago and 40% average. Condition good to fair. Peanut replant also heavy but seeding ahead with 40% acres planted, compared with 30% year ago and average. Soybeans 35% planted, behind 39% year ago and ahead 30% average; condition good. First cutting alfalfa 80% taken but large portion tonnage damaged by rain. Average for date 86% first cutting. Ranges in good to excellent condition, with ample grass and full stock ponds. Topsoil moisture adequate.

OREGON: Temperatures 2 to 7° below normal. Extremes: 60's, 30's west; 70's, 30's east. Precipitation ranged 0.93 to 1.74 in. along coast, 0.40 to 0.90 in. western valleys, 0.27 to 1.00 in. east.

Soil moisture adequate west, short in south and east. Grain, hay, seed crops fair to good west; poor to fair east. First cutting hay continuing. Working summer fallow. Irrigation and weed control continuing. Cherry crop looks fair to good. Prunes showing good sets. Strawberries developing normally. Vegetable development, planting slowed by cool, wet weather. Potato planting continued. Livestock in fair to good condition. Feed supplies short in east. Rains improved forage growth. Stock water shortages becoming more severe.

PENNSYLVANIA: Fair, dry weather. Temperatures 2 to 6° above normal with extremes 32 and 96°. Scattered thunderstorms across west and north 23d and 24th deposited 0.50 in. or less rainfall most places. Few spots measured 1.50 to 2.50 in.

Fieldwork: 6 days suitable. Soil moisture short. Activities: Cultivating; spraying; mowing; making hay and silage; peach thinning; plowing; harvesting asparagus and strawberries; planting potatoes, corn, soybeans, tomatoes, transplanting tomatoes, some corn replanting. Plowing complete. Soybeans planted 60%. Corn planted 86%, last year 84%. Potatoes virtually all planted, last year 87%. Barley 14% boot, 75% headed, last year 60% headed. Alfalfa first cut 35%, 50% for silage. Hay quality good.

PUERTO RICO: Island rainfall 3.24 in. or 1.51 in above normal. Temperatures about 79° on coasts and 74° interior. Extremes: 93 and 59°. Heavy rains totalling 3.00 to 5.00 in. fell in interior ending hydrological drought. Most major water storage facilities filled to capacity. More rains needed south central coast to terminate rationing there.

Agricultural drought relieved all zones from these rains. Rains helped development of crops but interrupted field operations some areas. Pastures recuperating from drought effects. Fertilizing and cultivating active.

SOUTH CAROLINA: Temperatures above normal. Scattered thundershowers alleviated drought. Most areas had adequate rainfall except central, north central.

Cotton planting almost complete. Soybean planting nearing halfway mark. Condition of corn crop improved with recent rainfall. Peach harvest continuing. Rains helped size maturing fruit. Tobacco in good condition since rainfall. Other activities were harvesting cabbage, snap beans, squash, and cucumbers. Cotton planted 99% 1977, 99% 1976. Soybeans planted 43% 1977, 47% 1976, 55% average.

SOUTH DAKOTA: Thundershowers averaged 0.50 in. east; 1.00 in. west. Temperatures above normal; extremes: 39 and 90°.

Topsoil moisture adequate except short northwest and north central. Subsoil moisture short except adequate in south central. Small grain development 2 weeks ahead of normal. Percent heading: Rye 79%, 1976 60%, normal 50%; winter wheat 60%, 1976 46%, normal 13%; barley 24%, 1976 8%, normal 0%; oats 17%, 1976 4%, normal 0%; spring wheat 8%, 1976 4%, normal 0%. Spraying for weeds in small grains in full swing. Percent planted: Corn 93%, 1976 90%, normal 83%; soybeans 94%, 1976 89%, normal 64%; flax 96%, 1976 94%, normal 84%; sorghum 52%, 1976 41%, normal 38%. Corn plants making rapid progress under ideal growing condition. Average corn height 4 in., 1976 2 in., normal 3 in. Some cutworm damage and weed problems in corn and other crops. Alfalfa 11% harvested, 1976 3%, normal 0%. Livestock in good condition, stock water supplies adequate except short northwest.

TENNESSEE: Temperatures 3 to 5° above normal. Precipitation 0.25 in.

Soil moisture short. Pastures and cattle condition fair. Most planting halted due to dry soil. Corn planted 93%, last year 91%, normal 84%. Cotton planted 100%, last year 97%, normal 93%. Soybeans planted 68%, last year 52%, normal 41%. Tobacco transplanted 75%, last year 80%, normal 65%. Wheat turned color 85%, last year 70%, normal 55%. Oats turned color 65%,

last year 60%, normal 42%. Barley turned color 80%, last year 85%, normal 66%. Alfalfa hay first cutting 90%, last year 80%, normal 80%.

TEXAS: High pressure dominated, causing morning cloudiness over south, elsewhere fair to partly cloudy, southerly winds, humid. Widely scattered thunderstorms in northwest, triggered by weak front midweek. Elsewhere, warm, dry weather. Rainfall 0.50 in. above normal Panhandle; near normal south Plains; elsewhere well below normal. Temperatures 3 to 4° above normal west, north; 1 to 2° above normal south.

Planting cotton, sorghum, soybeans, and peanuts very active. Locally heavy rains, hail damaged crops parts of Panhandle. Blowing sand, high winds also caused damage southern High Plains. Crops need moisture for continued good growth east. Moisture generally adequate other areas. Wheat harvest started few early fields southern Low Plains. Cotton planted: 77% 1977, 78% 1976, 79% average. Corn planted: 99% 1977, 100% 1976, 100% average. Sorghum planted: 83% 1977, 81% 1976, 81% average. Peanuts planted: 34% 1977, 30% 1976, 41% average. Soybeans planted: 42% 1977, 45% 1976, 40% average. Wheat harvested: 2% 1977, 3% 1976, 10% average. Oats harvested: 14% 1977, 7% 1976, 32% average. Flax harvested: 54% 1977, 19% 1976, 71% average.

Harvest bell peppers, tomatoes, onions, cabbage, cucumbers, cantaloups, honeydews, watermelons on increase. Citrus harvest nears completion. Rains, high wind damaged some crops. Peach harvest continues south, central, east. Thinning now active on High Plains. Pecan trees in north, central, east being sprayed for insect control. Wet humid weather in south central allowed scab disease to progress. Pastures, ranges continue response to moisture most areas. Additional moisture needed to maintain growth many areas. Livestock good to excellent condition.

UTAH: Rain and snow first portion; fair with rising temperatures latter portion. Moisture generally light southeast but moderate to heavy elsewhere. Temperatures 3 to 12° below normal.

Alfalfa hay conditions fair to good. Fruit outlook good except sweet and sour cherries fair to good. Current irrigation water limited to 25 to 75% of normal for late May. Nonirrigated land soil moisture short to adequate. Planting spring crops slow due to storms. Range and pasture feed conditions poor but improving. Range lambing 85% complete, movement of cattle and sheep to spring ranges almost completed.

VIRGINIA: Temperatures above normal. Extremes: 88 and 41°. Rainfall 1.00 to over 3.00 in. some areas.

Topsoil moisture short to adequate. Fieldwork: 4.1 days suitable. Corn, tobacco, soybean planting, hay harvest, chemical application, are main activities. Corn 94% planted, 92% 1976, 86% average. Soybeans 38% seeded, 36% 1976, 32% average. Peanuts 94% planted, 95% 1976, 90% average. Small grain ensilage harvest active. Flue-cured tobacco 81% transplanted, 82% 1976, 62% average. Fire-cured 66% transplanted, 57% 1976, 40% average. Burley tobacco 50% transplanted, 55% 1976, 28% average. Pasture hay fair condition. Vegetables, potatoes irrigated. Livestock good condition.

WASHINGTON: West: Temperatures averaged 2 to 5° subnormal. Precipitation averaged 1.80 in. above normal to 0.10 in. below normal.

Cool weather excellent for growth. Pasture and hay growing rapidly. Haying to begin soon.

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East: Temperatures averaged 6 to 10° below normal. Precipitation averaged 0.10 to 0.20 in. above normal.

High rangelands, helped by rainfall; low ranges critical. Seeding alfalfa, beans, corn, oats, barley, forage crops. Hop fields strung. Asparagus harvest continues. First cutting alfalfa complete. Cherry crop production may be lower but size, quality good. Apples beginning natural drop. Winter wheat condition fair to good and improving with rain. Spring grains given a lift. Wheat heading but stands short. Hay production below normal. Sheep, lambs in excellent condition. Lambs coming to market. Cattle doing well on high pastures.

WEST VIRGINIA: Temperatures well above normal. Extremes: 33 and 92°. Precipitation well below normal.

Fieldwork: 5.6 days suitable. Main farm activities: Hay harvesting and planting corn. Soil moisture short. Planting progress: Spring oats 98%, potatoes complete and corn 88%. Emerged: Spring oats 90%, potatoes 85%, tobacco 90% and corn 66%. First cutting hay 19%. Barley 4% pre-jointed, 28% jointed and 68% heading. Wheat 8% pre-jointed, 34% jointing and 58% heading. Condition of growing crops mostly fair. Pasture and hay short from dry weather.

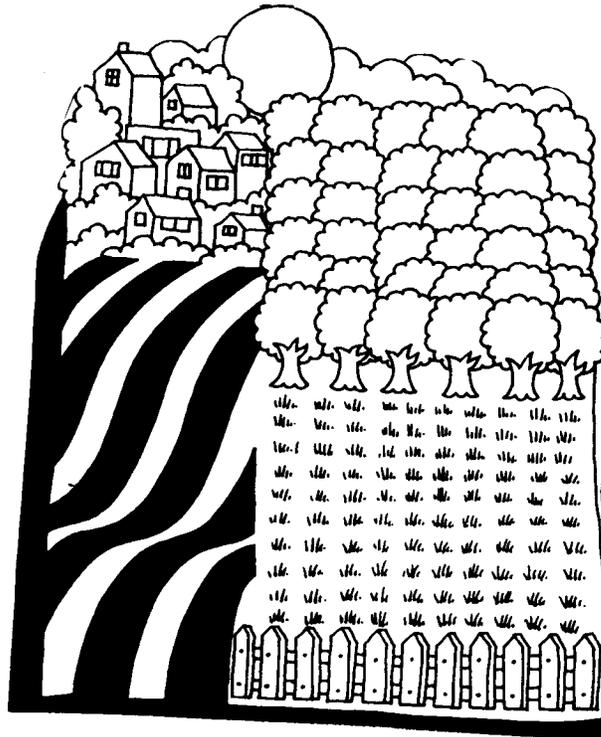
WISCONSIN: Sunny, warm, dry. Temperatures averaged 11° above normal. Isolated thunderstorms but rain-

fall amounts light and spotty. Some significant rainfall weekend.

Hay harvest underway. First crop 10% harvested, 1976 1%, normal none. Stands variable. Corn 98% planted, 1976 95%, normal 75%. Early corn growing rapidly where moisture available, some knee high already. Late corn spotty emergence where too dry. Oats look good except where chemical residue hurt crop. Early oats heading out 3 weeks ahead of normal. Winter wheat headed but growth much shorter than usual due to dry weather last fall. Soybeans 80% planted, 1976 55%, normal 35%; early soybeans emerged. Pasture conditions below normal due to hot, dry weather. Early peas in blossom, harvest to begin soon. Strawberries ready to pick. Tobacco planting started. Sweet corn and other vegetables still being planted. Insects numerous. Soil moisture short.

WYOMING: Temperatures above normal. Precipitation below normal.

Soil moisture short to adequate. Dry bean planting started last week; 21% in the ground. Corn 88% planted; 64% emerged. Potatoes 79% sown; 41% emerged. Sugarbeet tops 91% above ground. Winter wheat 6% headed. Small grain, alfalfa prospects fair to good. Stock water supplies short in south. Some stockmen hauling water. Range ewes 80% lambled, range sheep 93% shorn.



World Weather and Crop Update

USSR. Spring sowing, which was 83 percent seeded for the country by May 23, neared completion. Sowing was centered in the principal spring wheat regions of Siberia and North Kazakhstan where conditions were generally favorable, although some areas needed surface moisture. Soil moisture conditions in European USSR continued favorable as timely rains fell throughout most of the area. Excellent rains fell in the central Volga Region and the southern Urals; this improved the moisture deficit which had developed.

ASIA. In the People's Republic of China, rainfall was generally light in the major north and north-east regions producing winter wheat, coarse grains and soybeans. Rainfall was spotty in the rice growing areas south of the Yangtze River. For the second week in a row, heavy rains of 3 to 6 inches fell in Kwangtung, the PRC's leading rice growing province which earlier had been affected by a severe drought. In India, the monsoon appeared in the formative stage; increasing thunderstorms were noted. Significant showers over most of the Australian wheat growing areas should help get the newly planted winter wheat off to a good start.

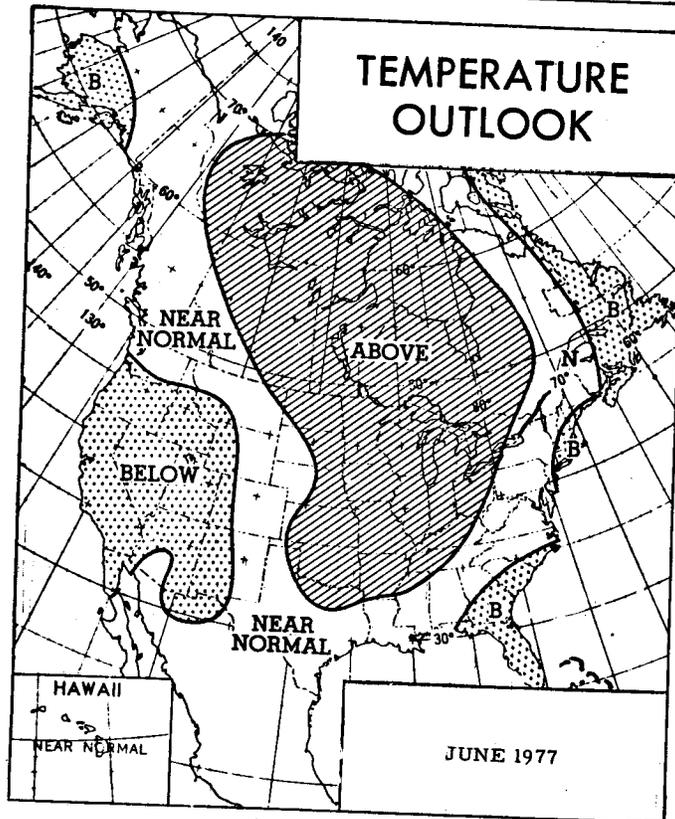
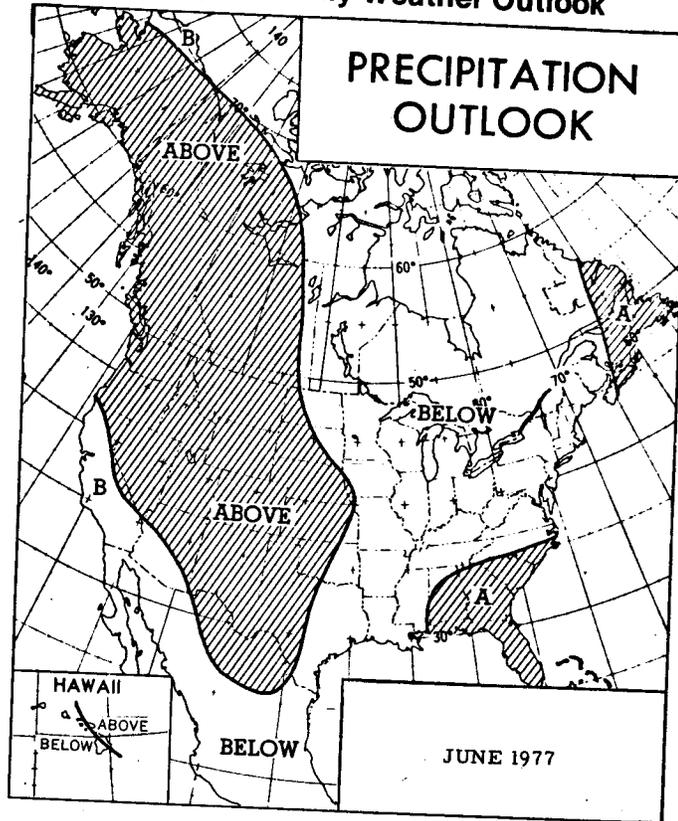
EUROPE. Welcome dry weather prevailed over most of western Europe. Spring sowing was nearly completed in those areas hampered by damp weather. Conditions also were more favorable in the Po Valley of northern Italy where crops were retarded by excessive precipitation. Unirrigated crops in southern Italy, however, were under heavy stress because of lack of rain. Crops in central and southern Spain also needed rain. Precipitation was generally light in the northern half of eastern Europe, but moderate to heavy local showers moistened the southern part of this region. Greece and Turkey also recorded scattered light showers during the past week.

AFRICA. It was dry in Morocco, Algeria, and Tunisia. Excellent harvest weather prevailed in the main agricultural areas in South Africa where corn was harvested.

SOUTH AMERICA. Temperatures were mild in the principal agricultural regions of Brazil. Moderate to heavy showers fell in Rio Grande do Sul, Brazil's southernmost state, but rain was light and widely scattered in the other areas. In Argentina, shower activity was confined mainly to the northern half of that country. Light and widely scattered showers, however, fell on newly planted wheat fields in Buenos Aires province. Temperatures were about normal for this time of year.

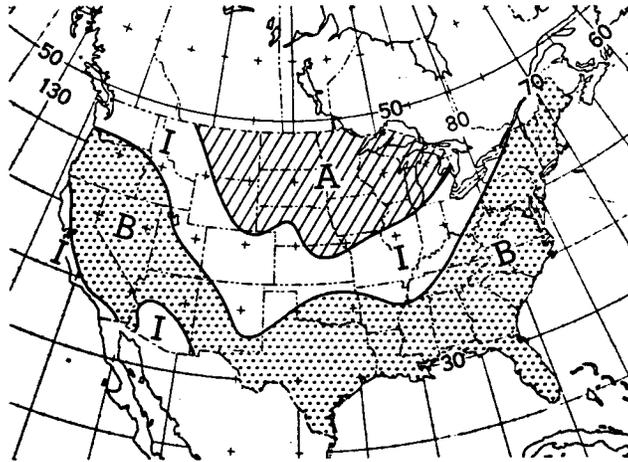
NORTH AMERICA. Substantial rains in the spring wheat areas of the Canadian Prairie Provinces virtually erased the moisture deficit that persisted through mid-May. Additional rains over the U.S. northern Great Plains also improved the moisture situation in this important spring wheat region. Heavy rains again dampened the heart of the hard winter wheat belt. Light, but frequent, showers were recorded in the Pacific Northwest wheat areas. But it was generally dry in the extreme southeastern U.S. where unirrigated crops and pastures needed rain.

Average Monthly Weather Outlook



OUTLOOK FOR SUMMER AVERAGE TEMPERATURES

June through August 1977



Above Normal, 60% chance of occurrence



Below Normal, 60% chance of occurrence



Indeterminate, 50% chance of Above Normal
50% chance of Below Normal

The two categories Above and Below are to be compared to the long-term average or "normal" temperatures of the years 1941-70. Each category has a natural climatic frequency or probability of 50%. Each carries a 60% probability of occurring where forecast (shaded area), based on the verification scores of eighteen years of experimental seasonal predictions.

NOAA National Weather Service
Long Range Prediction Group

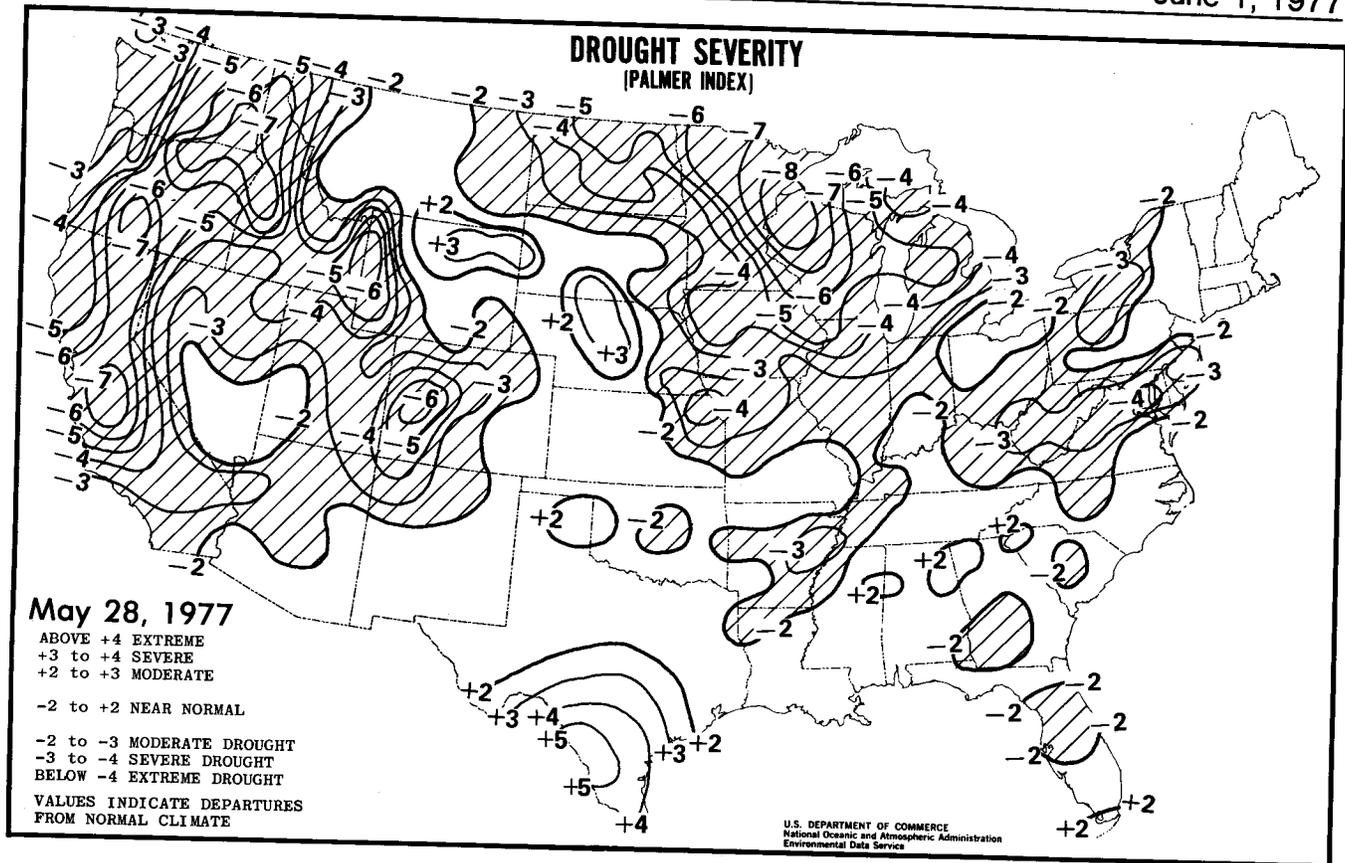
May 27, 1977

90-DAY WEATHER OUTLOOK FOR JUNE THROUGH AUGUST,
1977 NATIONAL WEATHER SERVICE, WASHINGTON, DC

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Summer average weather patterns this year are expected to be much like those of 1976. The north central states, from Michigan to eastern Wyoming and Montana, face odds of 3 to 2 for higher temperatures than normal. Many other areas have the prospect of a cool summer, at the same odds. They include the entire East Coast, the South, and much of the Southwest and Far West. An intermediate zone, stretching from the Ohio Valley through the central Plains and northern Rockies to Washington State, remains a toss-up.

Much of the hot north central region will probably also be dry. Wisconsin, Minnesota, Iowa, the Dakotas and Nebraska are given 5 to 4 odds of receiving less than usual rainfall. Similar odds favor a dry summer in the mid-Atlantic coastal region. More rain than usual should fall on Florida, Texas, the central part of the lower Mississippi Valley, the Great Basin and the Northwest. Again, 5 to 4 odds. Other areas are rated even. The odds cited are based on verifications of eighteen previous summer outlooks.



THE PALMER AND CROP MOISTURE INDICES

The Palmer Index was designed to evaluate 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 provide a measure of the current status of agricultural drought; i.e. the effects of short periods of very dry weather. For this reason the Crop Moisture Index was developed to respond rapidly to changes in the soil moisture situation and take into account only those moisture aspects which affect vegetation and field operations.

If one is interested in the overall soil moisture situation, which will integrate the effects of the past weather over weeks and even months, the Palmer Index provides the best evaluation. However, if one is interested in the availability of moisture to meet current demands, the Crop Moisture Index is the most useful. For example, a recent rain might have replenished the soil sufficiently to meet the current demands. However if the Palmer Index is highly negative, one can interpret this to mean that the overall soil moisture situation is very poor.

A negative CMI value means that the demand for moisture, or the potential evapotranspiration, has been greater than available supplies so that actual transpiration has been reduced. On the other hand, positive CMI values mean that either actual evapotranspiration exceeded the expected amount, or

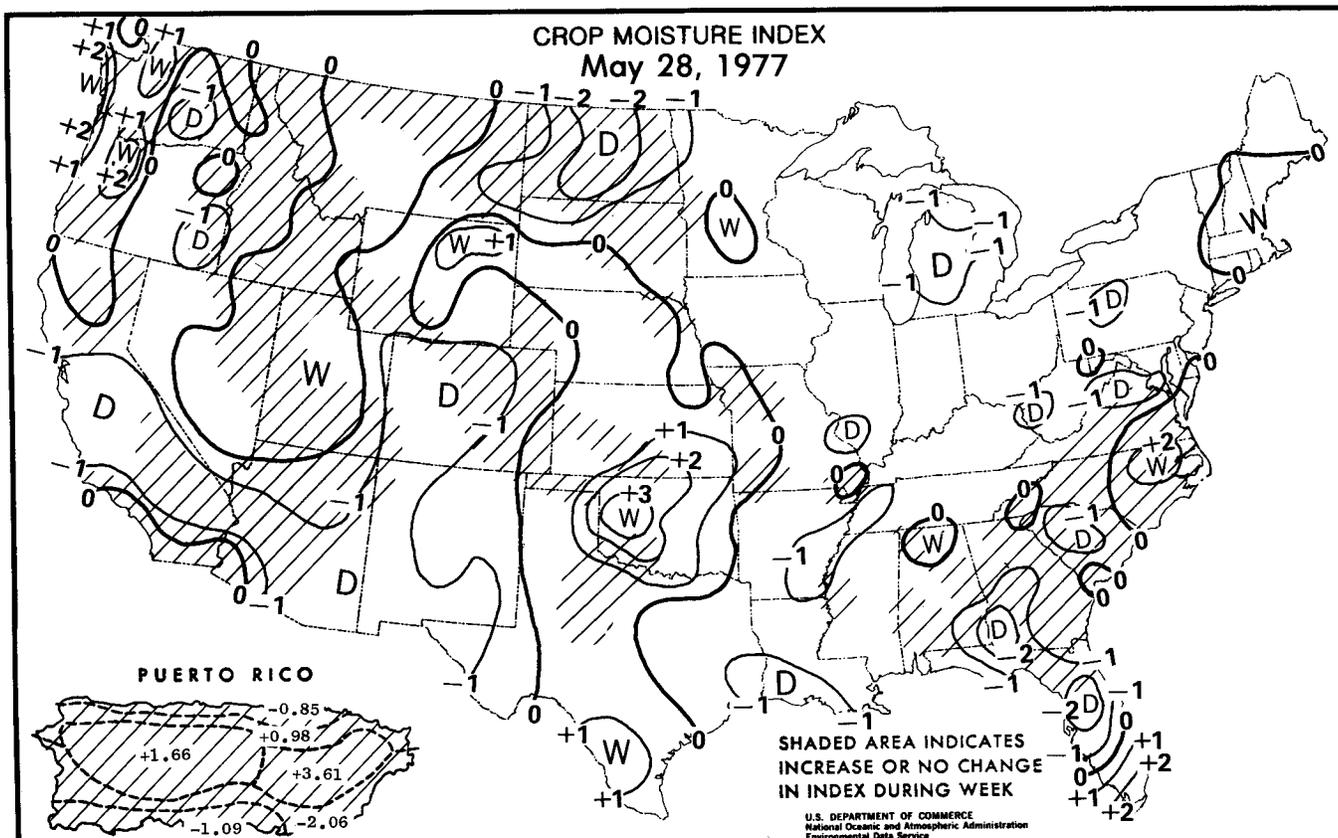
recent rainfall exceeded the moisture requirements of the crops and the additional moisture was added to the soil or was regarded as runoff.

• Negative Palmer Index values imply negative abnormalities of either evapotranspiration, the amount of moisture stored in or added to the soil, or of runoff, or a combination of all these types of moisture shortages. In other words, negative PI values simply indicate that the weather has been abnormally dry, and do not specify the exact nature of the effects of the dry weather.

However, positive PI values indicate that the moisture supply either from current or antecedent rainfall exceeded the amount required to sustain soil moisture levels that would be considered as normal and appropriate for the climate of the area.

In brief summary, Palmer Index values are based on all aspects of the moisture situation, but the Crop Moisture values refer only to the crop moisture situation. In addition, the PI values are highly dependent on antecedent moisture conditions, whereas CMI values are much more responsive to weekly or current rainfall, or the lack of it.

The CMI map will appear each week in the Bulletin during the season from now through October. The Palmer Index will be published only in the first issue of each month during the same period.



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



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Planting Progress

Percent of acreage planted as of May 29

SORGHUM

	1977	1976	Avg.
Colo.	45	51	41
Kans.	35	20	35
Mo.	82	55	53
Nebr.	75	60	55
Okla.	40	47	40
S. D.	52	41	38
Tex.	83	81	81
7 States	61	53	55

These 7 States produced 90% of the 1976 U. S. sorghum crop.

COTTON

	1977	1976	Avg.
Ala.	100	100	NA
Ark.	99	99	NA
Ga.	100	100	NA
La.	100	NA	NA
Miss.	100	100	NA
Mo.	100	100	NA
N. C.	99	99	96
Okla.	25	54	40
S. C.	99	99	NA
Tenn.	100	100	NA
Tex.	77	78	79
11 States	84	85	84

These 11 States produced 67% of the U. S. cotton crop.

SOYBEANS

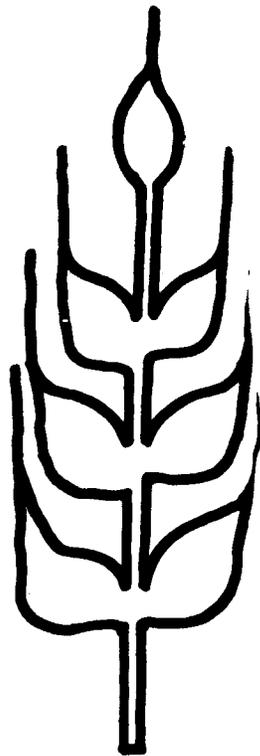
	1977	1976	Avg.
Ala.	51	53	57
Ark.	62	56	45
Ga.	41	54	50
Ill.	91	87	61
Ind.	80	80	45
Iowa	93	88	61
Kans.	35	20	30
Ky.	49	NA	37
La.	70	60	47
Mich.	75	30	30
Minn.	93	87	70
Miss.	57	57	31
Mo.	80	56	48
Nebr.	60	60	50
N. C.	71	61	51
Ohio	85	85	60
S. C.	43	47	55
Tenn.	68	52	41
U. S.	76	70	51

These 18 States produced 96% of the 1976 U. S. soybean crop.

CORN

	1977	1976	Avg.
Ga.	100	100	NA
Ill.	100	100	NA
Ind.	100	100	80
Iowa	100	100	NA
Kans.	90	90	85
Ky.	90	93	84
Mich.	95	75	70
Minn.	100	100	NA
Mo.	100	NA	NA
Nebr.	95	95	90
N. C.	99	97	93
Ohio	100	100	NA
Pa.	86	84	NA
S. D.	93	90	83
Tex.	99	100	100
Wis.	98	95	75
U. S.	93	97	88

These 16 States produced 92% of the U. S. corn crop.



NA Not Available