

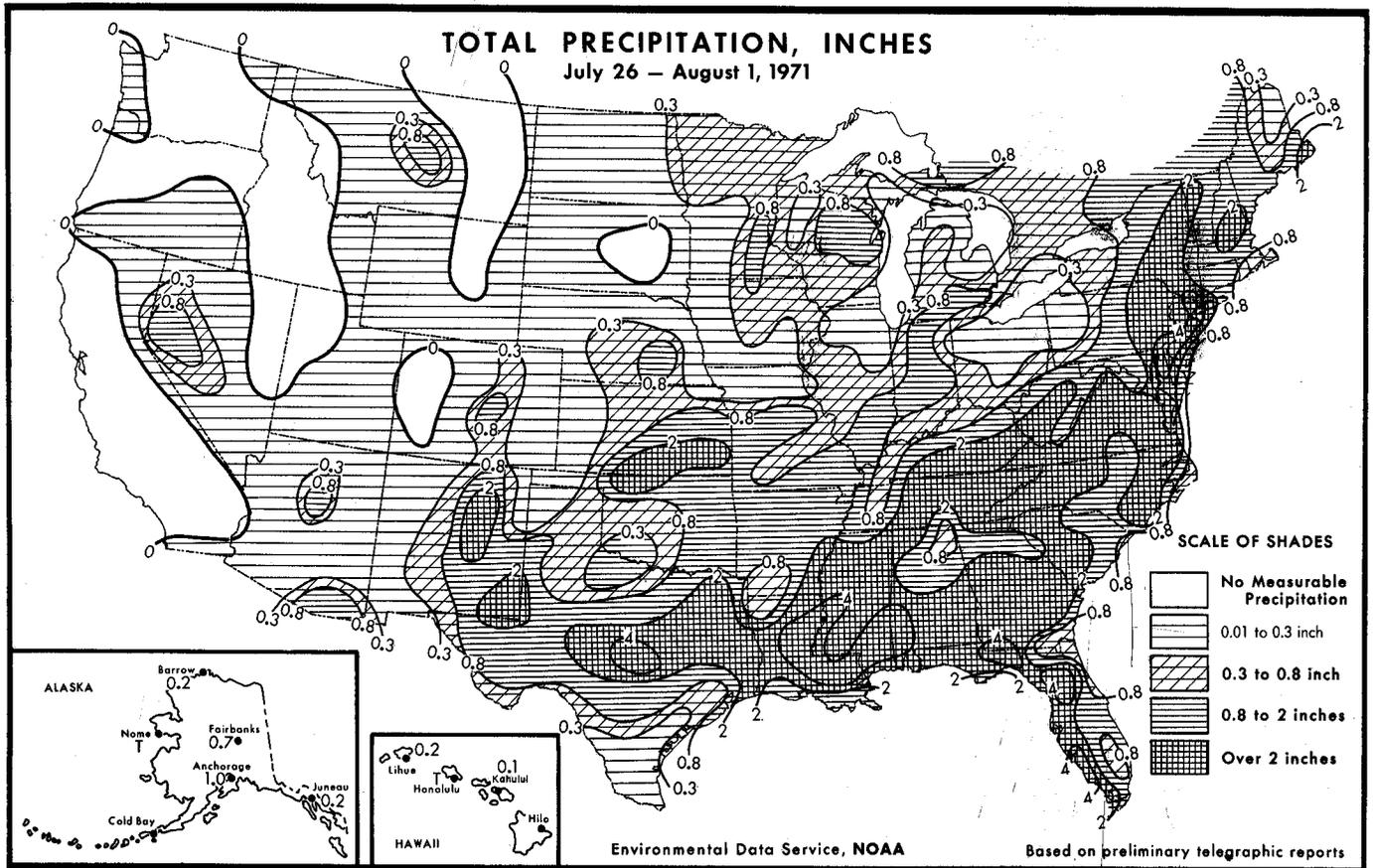
Weekly Weather & Crop Bulletin

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Edited by Lucius W. Dye

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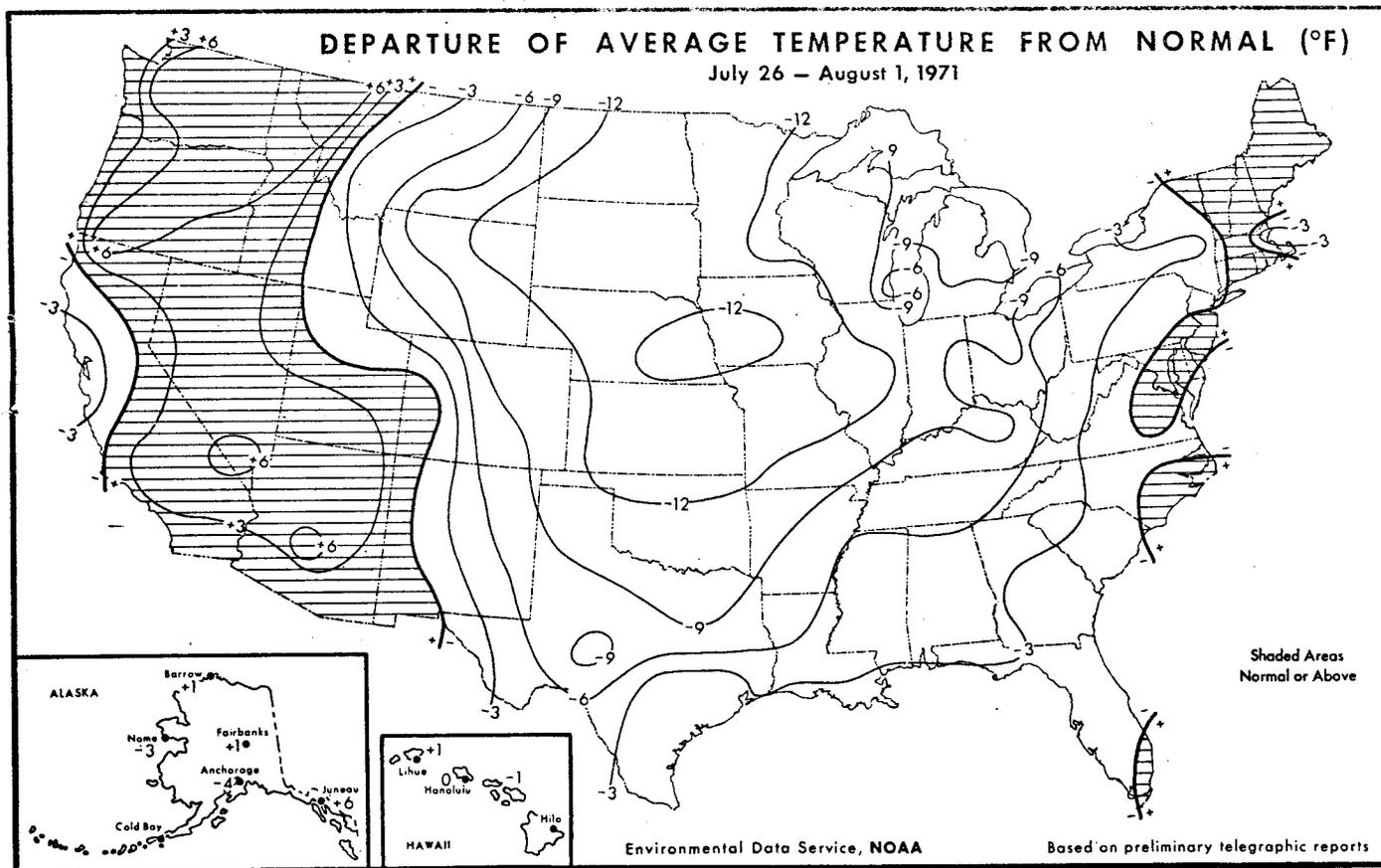


NATIONAL WEATHER SUMMARY

HIGHLIGHTS: Midsummer heat intensified over the Far West. Over mid-America, temperatures in the last week of July were more like those expected in early autumn. Much of the central and eastern portions of the Nation received generous rains.

PRECIPITATION: A polar air mass spilled into mid-America and spread southward and eastward. Tropical Gulf air continued to flow northward across Dixie and into the East. Thunderstorms occurred in the warm humid air and along the front that separated the two air masses. Numerous scattered downpours occurred here and there. A downpour of 1.56 inches of rain in 36 minutes Monday afternoon at Albuquerque, N. Mex., caused rock slides that closed roads. Tuesday afternoon, scattered heavy showers occurred from eastern Nebraska to northeastern Texas, also across the Southland to Georgia.

More thundershowers fell in Kansas, northeastern Texas, and from Ohio to the Lower Mississippi River Valley Wednesday afternoon and evening. Dodge City, Kans., registered 1.64 inches of rain in the 24-hour period ending at 6 a.m. Thursday. Other stations in the Dodge City vicinity received 3.00 to more than 4.00 inches and a number of stations in northeastern Texas received 1.00 to 3.00 inches or more in the same 24-hour period. Totals exceeding 1.00 inch were recorded in Kentucky, Tennessee, Mississippi and Louisiana. Thursday's rains extended from the Rocky Mountains to the Atlantic Ocean. Some totals north of Lufkin, Tex., measured Friday morning exceeded 3.00 inches. Southern New Hampshire received 2.50-inch rains Thursday and early Friday. Weekend rains covered most of the eastern third of the Nation. The southern Rocky Mountains received light showers Sunday.



TEMPERATURE: Summer heat continued in the Far Southwest. Needles, Calif., registered 116° Monday and Tuesday afternoons. Warm summer temperatures also persisted in the interior portions of Washington and Oregon where afternoon temperatures reached the 90's on most days and 100° or higher on 1 or 2 afternoons. Maximums reached the 90's in New Mexico, Texas, along the Gulf coast and on the Florida Peninsula. A large, dry, cool air mass pushed into the North Central States from Canada early in the week. It brought weather more characteristic of September than July. It dropped nighttime temperatures into the 40's and held afternoon readings in the 60's. Parts of Montana and North Dakota cooled to the 30's Monday morning. Big Piney, Wyo., registered 36° Tuesday morning and Sheridan, Wyo., recorded 35° Thursday. This is the coldest July temperature of record for Sheridan. Temperatures in the 40's were common Thursday morning from Montana to the Great Lakes. The Dakotas to Missouri cooled to 30's and 40's Friday morning. Some of these recorded colder temperatures than had ever occurred in any July. Among them were: Huron, S. Dak., 37°; Valentine, Nebr., 38°; Grand Island, Nebr., 42°; Norfolk, Nebr., 42°; Omaha, Nebr., 45°; Lincoln, Nebr., 46°; Burlington, Iowa, 46°; Des Moines, Iowa, 47°; Kansas City, Mo., 52°.

The temperature at Agate, Nebr., dropped to 29°, the coldest July temperature of record for Nebraska.

Afternoons were cool, too. Maximums over the northern Great Plains Thursday were mostly in the 60's and low 70's. St. Cloud, Minn., warmed only to 58° Thursday.

The weekend brought a warming trend to the central and eastern sections of the Nation and temperatures started their return to normal.

In sharp contrast to the cool "autumn" weather that spread over mid-America, July heat intensified in the West. Many stations from Washington and Idaho to California and Arizona saw 100° heat at least once over the weekend. One of the hottest temperatures that has come to our attention was 121° at Furnace Creek, Calif., Saturday afternoon.

Most places west of the Rockies averaged warmer than normal. Much of the Great Basin averaged 3° or more above normal. Above-normal average temperatures also occurred in New England and in portions of the Atlantic coast. A large area from the Dakotas to the Great Lakes and southward to northern Texas averaged 9° to 14° cooler than normal.

L. W. Dye

NATIONAL AGRICULTURAL SUMMARY

AGRICULTURAL HIGHLIGHTS: Cold temperatures limit crop development. * Hard rains from Texas to New England improved moisture supply. * Rail strike slowed harvesting of various crops in the West.

SMALL GRAINS: Combines continued to roll in the Northern section of the Nation. Weather conditions were good for harvesting, but late afternoon showers and high humidity hindered combining in localized areas. Well over 90 percent of the winter wheat crop is already binned in Nebraska, Colorado and South Dakota. Montana wheat growers also made good headway on the fall planted acreage with some starting to cut spring wheat. One of the coldest July weeks on record in North Dakota aided filling of spring seeded grains. Hard red spring wheat, oats and barley are about half ripe in North Dakota. Less than 10 percent of the winter wheat crop is combined in Wyoming, but about 30 percent of the irrigated Utah crop is cut. Weather was ideal for combining in southwest Idaho. Warm dry weather also spurred grain combining in Washington and Oregon.

Wheat combining is in the wrapup stage in the East, however, New York growers are an exception with only 15 percent of their crop in. Oats harvest ranges from near completion in Iowa to only 15 percent cut in Wisconsin.

CORN: It was a dry week in the Corn Belt, but unseasonably cool temperatures greatly minimized the loss of soil moisture. However, an inch of rain was common across the southern border of the Corn Belt. Growth and development were slowed during the week by record low July temperatures. Readings dipped into the 40's in many States. About 80 percent of the crop is in the silk stage, except for Missouri and Illinois where silking is nearing 100 percent and remains well ahead of last season. Crop prospects continue to look impressive as 97 percent of the Illinois and Iowa crop are in good to excellent condition, and 1/4 of the ears in the dough stage.

Outside the North Central States, the crop made rapid growth and remained in good shape. Moisture is adequate, if not excessive over much of the South following 2 weeks of heavy rains. The corn crop outlook was revived in Maryland due to the moisture. Development continues well ahead of last season in Tennessee and Kentucky.

Southern corn leaf blight infection showed an increase in many States, although the spread was slowed by record low temperatures in the Corn Belt.

SOYBEANS: It was another good week for the 1971 soybean crop. The moisture situation in the South remained excellent, with hard rains greatly improving prospects in Arkansas. The Louisiana acreage is setting a good crop of pods with fields in many other States starting to pod.

In the North podding was about half completed, which is well ahead of last season and average. Podding is about 10 days ahead in Illinois.

COTTON: Heavy rains that hit from Texas to the Eastern Seaboard improved the cotton outlook. The crop progressed favorably, but warmer temperatures will be welcomed to speed maturity. Cotton growers are hoping for a week of dryer weather so they can resume their insect and weed control programs. Frequent showers have

hindered these operations the last few weeks. Only limited aerial application was available in soggy Louisiana fields. Georgia prospects still look the best in years. About 2 percent of the Texas crop is picked, with bolls starting to open in South Carolina. Warm weather was beneficial for the California and Arizona crops. Bolls are starting to open in central Arizona.

OTHER CROPS: Harvest of the 1971 sorghum crop is 25 percent complete in Texas, and increasing in California. Whereas in the Central Great Plains the crop is only about 1/3 headed, with greenbugs doing considerable damage in Kansas and South Dakota. Rains greatly improved prospects in Louisiana, while the irrigated crop is doing good in New Mexico. Rain and cold continued to play havoc with the tobacco crop. The Kentucky crop is only fair with warm dry weather needed to speed development. South Carolina growers were bothered by rain and lack of curing space in their harvest attempts. Digging of sugar beets in California slowed as a result of the railroad strike. Michigan dry beans made average development, while progress was very good in Colorado with some acreage blooming. Cutting started in California's Sacramento Valley. The fall potato crop is making good development from Idaho to Maine. Digging started in Wisconsin and Michigan, but rains, low prices and the rail strike discouraged digging in many other States. Heavy rains improved Texas hay prospects. Rains kept haying at a standstill in the South, but baling and chopping were rapid in dryer regions of the Nation.

Fruits and Nuts: Picking of early peaches started in the North, with hot weather pushing maturity in Washington. Some early variety apples were picked in New York, but rains slowed work in North Carolina. Tart cherry picking is active in Michigan, New York, Wisconsin and Utah as growers find more blocks of fruit ready to pick. Large, good quality fruit crops continue to be expected in California. Grapes are maturing well.

Vegetables: Many vegetable fields in the South were too wet for harvesting, with quality of some crops lowered due to the excessive moisture. Rains along the Eastern Seaboard improved crop prospects. Picking of tomatoes and sweet corn is becoming general in the North. Lettuce cutting was widespread in New York, with cutting in California below normal and some air shipments made to eastern markets.

PASTURES AND LIVESTOCK: The grazing outlook was greatly improved from New Mexico eastward into the South and then North into New England. Needed rain fell over this area, with the northern half of Texas benefitting tremendously from the storms. Grazing is still limited in some Oklahoma areas, but farther South in Alabama and Georgia pastures are furnishing abundant feed. A good rain is needed from the Northern Great Plains to the Pacific Northwest to revive dying pastures.

Steve J. Pscodna
Agricultural Statistician

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., August 1, 1971

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 . . .	75	-7	1.4	+ .3	New Orleans . . .	80	-2	1.6	+ .1	OKLA. Okla. City . .	73	-11	.7	+ .2
Mobile . . .	80	-3	4.0	+1.6	Shreveport . . .	77	-8	.7	0	Tulsa . . .	71	-12	1.1	+ .6
Montgomery . . .	79	-4	3.2	+2.1	MAINE. Caribou . .	66	0	.3	-.6	OREG. Astoria . . .	62	+1	T	-.3
ALASKA. Anchorage .	53	-4	1.0	+ .5	Portland . . .	71	+1	1.3	+ .7	Burns . . .	76	+6	.1	0
Barrow . . .	41	+1	.2	0	MD. Baltimore . . .	79	+2	5.4	+4.3	Medford . . .	81	+8	T	0
Fairbanks . . .	60	+1	.7	+ .2	MASS. Boston . . .	73	-3	1.0	+ .4	Pendleton . . .	86	+12	0	-.1
Juneau . . .	62	+6	.2	-.9	Nantucket . . .	68	---	.2	---	Portland . . .	71	+3	T	-.1
Nome . . .	47	-3	T	-.7	MICH. Alpena . . .	59	-8	.1	-.6	Salem . . .	71	+4	T	-.1
ARIZ. Flagstaff . .	70	+4	.9	+ .3	Detroit . . .	65	-10	.9	+ .3	PA. Allentown . . .	73	-1	3.1	+2.0
Phoenix . . .	96	+6	T	-.4	Flint . . .	63	-8	.2	-.5	Erie . . .	65	-6	.3	-.5
Tucson . . .	86	0	1.0	-.4	Grand Rapids . . .	63	-9	.4	-.2	Harrisburg . . .	77	+1	2.9	+2.1
Winslow . . .	85	+5	T	-.3	Houghton Lake . .	59	-8	.4	-.2	Philadelphia . . .	80	+4	6.1	+5.1
Yuma . . .	96	+2	T	-.1	Lansing . . .	62	-10	1.0	+ .3	Pittsburgh . . .	68	-4	.2	-.6
ARK. Fort Smith . .	74	-10	1.2	+ .6	Marquette . . .	59	-9	.2	-.5	Scranton . . .	71	-2	3.3	+2.2
Little Rock . . .	75	-7	1.1	+ .4	Muskegon . . .	62	-10	.2	-.4	R. I. Providence . .	76	+3	3.4	-.2
CALIF. Bakersfield .	89	+4	0	0	S. Ste. Marie . . .	57	-8	2.0	+1.4	S. C. Charleston . .	80	-1	1.9	-.2
Eureka . . .	56	-1	T	0	MINN. Duluth . . .	57	-11	.7	-.1	Columbia . . .	80	-2	3.2	+1.8
Fresno . . .	84	+2	0	0	Internatl Falls . .	54	-13	.6	-.2	Greenville . . .	76	-4	2.6	+1.3
Los Angeles . . .	77	+3	0	0	Minneapolis . . .	63	-10	.9	+ .2	S. DAK. Aberdeen . .	61	-14	T	-.5
Red Bluff . . .	84	0	0	0	Rochester . . .	61	-12	.4	-.4	Huron . . .	62	-14	0	-.4
San Diego . . .	72	+1	T	0	St. Cloud . . .	59	-13	.3	-.5	Rapid City . . .	61	-14	.1	-.2
San Francisco . . .	59	-5	T	0	MISS. Jackson . . .	78	-4	2.5	+1.5	Sioux Falls . . .	63	-12	T	-.7
Stockton . . .	---	---	---	---	Meridian . . .	77	-5	4.1	+2.8	TENN. Chattanooga .	75	-6	3.3	+2.2
COLO. Denver . . .	64	-10	.1	-.2	MO. Columbia . . .	66	-14	1.0	+ .2	Knoxville . . .	73	-6	3.9	+2.8
Grand Junction . .	80	+2	0	-.2	Kansas City . . .	69	-14	.8	+ .2	Memphis . . .	75	-6	1.3	+ .5
Pueblo . . .	69	-8	.2	-.3	St. Louis . . .	68	-10	.7	+ .1	Nashville . . .	73	-7	2.7	+1.6
CONN. Bridgeport . .	75	0	5.1	+4.2	Springfield . . .	68	-11	.4	-.4	TEX. Abilene . . .	76	-8	1.7	+1.3
Hartford . . .	75	+2	1.6	+ .7	MONT. Billings . .	65	-11	.2	0	Amarillo . . .	69	-11	.7	+ .2
D. C. Washington . .	80	+1	1.8	+ .7	Glasgow . . .	66	-5	0	-.3	Austin . . .	83	-2	1.2	+ .8
FLA. Apalachicola .	82	0	2.1	+ .3	Great Falls . . .	---	---	---	---	Beaumont . . .	79	-3	2.4	+1.1
Ft. Myers . . .	82	-1	4.7	+2.8	Havre . . .	69	-2	T	-.2	Brownsville . . .	---	---	---	---
Jacksonville . . .	82	-1	.1	-1.6	Helena . . .	64	-5	T	-.2	Corpus Christi . .	86	+1	.3	-.2
Key West . . .	83	-1	1.9	+1.0	Kalispell . . .	76	+10	T	-.2	Dallas . . .	76	-10	2.7	+2.4
Lakeland . . .	82	0	.6	-1.0	Miles City . . .	67	-9	0	-.3	Del Rio . . .	81	-6	.4	+ .1
Miami . . .	83	+1	.9	-.6	Missoula . . .	73	+5	0	-.2	El Paso . . .	82	0	.1	-.2
Orlando . . .	---	---	---	---	NEBR. Grand Island	68	-10	---	---	Fort Worth . . .	76	-11	1.9	+1.5
Tallahassee . . .	78	-3	5.7	+3.9	Lincoln . . .	69	-12	T	-.7	Galveston . . .	81	-3	2.2	+1.1
Tampa . . .	80	-2	2.6	+ .7	Norfolk . . .	65	-12	T	-.6	Houston . . .	82	-1	.6	-.4
GA. Atlanta . . .	75	-4	3.3	+2.3	North Platte . . .	64	-13	.3	-.2	Lubbock . . .	73	-7	.6	+ .2
Augusta . . .	80	-2	2.5	+1.5	Omaha . . .	66	-11	T	-.8	Midland . . .	75	-8	1.7	+1.3
Macon . . .	80	-2	2.6	+1.5	Valentine . . .	64	-13	.1	-.4	San Angelo . . .	75	-10	3.1	+2.8
Savannah . . .	80	-2	2.0	+ .6	NEV. Ely . . .	72	+3	T	-.2	San Antonio . . .	---	---	---	---
HAWAII. Hilo . . .	---	---	---	---	Las Vegas . . .	96	+6	.1	-.1	Victoria . . .	85	+1	T	-.8
Honolulu . . .	79	0	T	-.1	Reno . . .	---	---	---	---	Waco . . .	79	-7	2.0	+1.6
Kahului . . .	78	-1	.1	0	Winnemucca . . .	---	---	---	---	Wichita Falls . . .	77	-10	.2	-.2
Lihue . . .	79	+1	.2	-.3	N. H. Concord . . .	71	-1	3.1	+2.4	UTAH. Blanding . .	76	+3	.1	-.2
IDAHO. Boise . . .	81	+5	0	0	N. J. Atlantic City	76	0	.6	-.5	Salt Lake City . . .	77	-1	T	-.1
Lewiston . . .	84	+9	0	-.1	Trenton . . .	77	+1	3.5	+2.5	VT. Burlington . . .	70	+1	2.0	+1.2
Pocatello . . .	71	-2	T	-.1	N. MEX. Albuquerque	75	-3	.4	+ .1	VA. Lynchburg . . .	75	-1	2.1	+1.1
ILL. Cairo . . .	72	-9	1.0	+ .3	Roswell . . .	75	-5	1.7	+1.3	Norfolk . . .	77	-2	2.3	+1.0
Chicago . . .	65	-11	.1	-.7	N. Y. Albany . . .	70	-3	1.9	+1.2	Richmond . . .	72	-6	2.4	+1.0
Moline . . .	63	-12	.1	-.6	Binghamton . . .	66	-3	2.9	+2.1	Roanoke . . .	74	-2	3.0	+1.9
Peoria . . .	63	-14	.6	-.2	Buffalo . . .	67	-3	.4	-.2	WASH. Colville . .	77	+7	.3	+ .1
Rockford . . .	64	-11	T	-.9	New York . . .	77	-1	6.5	+5.6	Omak . . .	79	+7	T	-.1
Springfield . . .	64	-4	.4	-.3	Rochester . . .	69	-3	.8	+ .2	Quillayute . . .	61	0	.1	-.3
IND. Evansville . .	70	-9	.5	-.3	Syracuse . . .	68	-5	1.7	+1.0	Seattle-Tacoma . .	74	+8	---	---
Fort Wayne . . .	65	-9	.2	-.5	N. C. Asheville . .	71	-4	2.6	+1.6	Spokane . . .	77	+5	0	-.1
Indianapolis . . .	67	-9	1.0	+ .2	Charlotte . . .	77	-3	1.3	+ .1	Walla Walla . . .	86	+9	0	0
South Bend . . .	63	-11	2.2	+1.5	Greensboro . . .	77	-1	2.2	0	Yakima . . .	81	+9	T	0
IOWA. Burlington . .	64	-12	.5	-.3	Hatteras . . .	80	+1	.8	-.7	W. VA. Beckley . . .	67	-4	1.4	+ .4
Des Moines . . .	67	-10	.3	-.3	Raleigh . . .	78	0	.9	-.4	Charleston . . .	70	-5	2.2	+ .9
Dubuque . . .	61	-12	.4	-.4	Wilmington . . .	81	+1	3.1	+1.5	Huntington . . .	68	-8	1.9	+ .8
Sioux City . . .	66	-12	.1	-.6	N. DAK. Bismarck .	59	-14	.1	-.3	Parkersburg . . .	70	-6	1.7	+ .8
KANS. Concordia . .	68	-13	.6	-.1	Fargo . . .	58	-14	.5	-.1	WIS. Green Bay . .	62	-9	1.1	+ .6
Dodge City . . .	69	-13	.6	-.1	Williston . . .	61	-11	T	-.3	La Crosse . . .	63	-12	.6	-.2
Goodland . . .	67	-11	.2	-.4	OHIO. Akron-Canton	68	-5	.1	-.7	Madison . . .	62	-10	.3	-.4
Topeka . . .	68	-13	1.1	+ .3	Cincinnati . . .	69	-8	.5	-.3	Milwaukee . . .	64	-6	.1	-.5
Wichita . . .	69	-13	2.9	+2.2	Cleveland . . .	66	-7	.2	-.7	WYO. Casper . . .	63	-10	T	-.2
KY. Lexington . . .	68	-10	1.4	+ .5	Columbus . . .	66	-9	.3	-.5	Cheyenne . . .	61	-10	.3	-.1
Louisville . . .	69	-9	.5	-.3	Dayton . . .	68	-7	.8	+ .1	Lander . . .	65	-7	T	-.1
LA. Baton Rouge . .	79	-4	5.2	+4.0	Toledo . . .	63	-10	.3	-.2	Sheridan . . .	61	-12	T	-.2
Lake Charles . . .	80	-3	1.1	-.3	Youngstown . . .	66	-5	.1	-.9	P. R. San Juan . . .	83	+2	.4	-1.0

* Departures are from 30-year means (1931-60). Based on preliminary reports

CONDENSED STATE SUMMARIES

These summaries provide brief descriptions of condition and activities important on a national scale. Detailed reports of crop and weather conditions during the growing season are contained in State issues of Weekly Weather and Crop Bulletins published by field offices of the Statistical Reporting Service, U.S.D.A. in cooperation with NOAA Climatologists

ALABAMA: Mostly cloudy mild and humid with occasional rain and thundershowers throughout week. Temperatures much cooler than usual. Rain-fall heavy all sections with more than 3.00 inches over much of south. Recurring rains limited cultivation late crops, harvest of those matured and rendered insect control measures ineffective. Corn made good growth--68% dough stage and 30% dented. DEW Line reports increase in old strains of Southern corn leaf blight, but still no buildup of the "killer" strain that took its toll of 1970 crop. Soybean growth excellent, 37% blooming. Peanuts made good progress. Weeds and leaf spot causing damage. Harvesting peanuts for boiling underway. Many vegetable fields too wet for harvest. Quality lowered, especially tomatoes. Wet weather and low prices discouraged digging Irish potatoes, Sand Mountain. Feed available from pastures adequate to surplus. Livestock mostly good.

ALASKA: Temperatures were near normal Tanana Valley, well below normal elsewhere with extensive frost over Kenai Peninsula. Shelter temperatures were as low as 34°. Precipitation was heavy Matanuska Valley and Anchorage area, generally below normal elsewhere. Crop growth slowed by cool temperatures all areas. Hay harvest stopped by frequent showers. Topsoil moisture mostly adequate, subsoil short. Crop prospects average. Commercial vegetables average Tanana Valley to below average rest of Railbelt. Height of grain averages 6 inches Kenai Peninsula to 36 inches Tanana Valley.

ARIZONA: Temperatures were above normal over much of State. Thundershower activity rather widespread with heaviest rainfall totals in mountains in eastern and southeastern parts of State. Strong winds and blowing dust in irrigated valleys in south. Cotton continues to make good growth. Many central, southwest fields showing open bolls. Some hail damage southeast, but losses not extensive. Spraying for lygus, pink bollworms continues. Sorghum good condition. Greenbugs controls required. Safflower harvest continues active. Spring-planted sugar beets making good progress. Land preparations for fall vegetable planting active. Watermelon, cantaloupe harvest virtually complete Salt River Valley. Lettuce planting underway Cochise County. New crop citrus prospects good, fruit sizing well. Some ranges beginning to respond to recent summer showers. Water hauling, supplemental feeding still required many areas.

ARKANSAS: Weekly mean temperatures 8° to 10° below normal, from upper 60's northwest to mid-70's elsewhere. Daily extremes: 47° to 93°. Showers around midweek with over 1.00 inch precipitation most of State. Three inches or more over much of southwest and east-central. Heaviest 4.85 inches. Crop prospects improved by rains. Soil moisture now adequate to excessive all areas, except few counties northwest and north-central. Cotton growing and fruiting well. Open weather needed to control buildup weevils and worms. Rice good to excellent, with earliest fields heading. Soybeans greatly improved by rains. Plants earliest fields blooming and setting pods. Feed crops fair to good. Some early corn and sorghums damaged by dry weather earlier. Southern corn

leaf blight reported in State, but most of crop in dent stage and no longer susceptible to major damage from this disease. Rains interrupted hay harvest. Apple and peach harvests active. Marketing watermelons and summer vegetables. Grazing outlook greatly improved.

CALIFORNIA: Below-normal temperatures along coast and in delta but above normal elsewhere. A few thundershowers in mountains. Continued warm weather beneficial. Cotton setting bolls San Joaquin Valley. Dry bean cutting started Sacramento Valley. Digging sugar beets slowed some areas by rail strike. Conditions favorable all areas. Fresh shipments reduced by rail, dock strikes. Harvest about done apricots, fully active peaches, plums, nectarines, fresh grapes; increasing Bartlett pears, apples. Large, good quality crops expected. Heavy prune crop developing well. Almonds maturing on schedule. Large crop walnuts made good progress. Good crops raisins, wine and table type grapes maturing well. Movement remaining citrus slowed by strikes. Ranges dry. Livestock good. Hot weather lowers milk, egg, and meat production. Honey extractions nearing completion. Broccoli, cauliflower very light Salinas, Santa Maria. Cantaloupes nearly finished Kern, Huron; slowed Firebaugh-Mendota; underway Riverside. Carrot harvest slow. Shipment celery slow Central Coast. Sweet corn active South Coast; slow Brentwood, San Joaquin. Cucumber harvest slow South Coast, upper San Joaquin. Lettuce harvest Salinas, Santa Maria below normal; some air shipments. Onions complete Stockton; slow Santa Clara. Potatoes slow. Market tomato harvest slow, cannery harvest active. Watermelon harvest slow San Joaquin.

COLORADO: Temperatures near normal southwest. Below normal other areas, much below eastern plains. Minimums late in week in low 40's in northeast. Below freezing northern mountains. Some new record lows for dates. Moderate to locally heavy rains east. Little or none mountains and west. Small grain harvest made favorable progress. Late afternoon showers hindered combining local areas northeast. Growth and development field crops slowed by cold temperatures several nights. Development behind year earlier. Surface soil moisture short most areas. Light to moderate hail damage sugar beets, corn, and beans. Winter wheat ripe except northwest. Harvest 94% complete. Winter barley 96% ripe, 87% harvested. Spring barley and oats 57% combined. Corn condition good, 52% tasseled. Sorghum condition good and 10% headed. Sugar beets and dry beans very good. Small acreage blooming. Summer and fall potatoes excellent. Harvest late summer potatoes limited progress. Second cutting alfalfa 48% complete. Pasture and range conditions fair.

FLORIDA: The pattern of afternoon showers and thunderstorms continued. Temperatures averaged 1° to 2° below normal as afternoon cloudiness depressed daily high temperatures. Rainfall amounts averaged 1.50 inches to 3.00 inches over most of State except 0.75 inch lower east coast and only spotty rainfall in Keys. Locally heavy showers resulted in weekly totals of 6.25 inches at Vero Beach, 4.91 inches at Clermont, and 4.84 inches at

Monticello. Good yields expected for all Florida field crops. Flue-cured tobacco sales begin August 3. Peanut harvest mid-August. Rains delaying haying. Pastures and livestock good. Calf marketings increasing. Citrus trees and new crop excellent condition. Harvest summer vegetables declined. Land preparations for fall crops celery and tomato seed bed preparation active. Some eggplant up to stands. Tomatoes seeded Manatee area 2 inches high.

GEORGIA: Rainfall heavy to excessive most areas in almost daily showers. Only a few widely scattered places had less than 1.00 inch and numerous observers measured over 4.00 inches. Rains were especially heavy during weekend in parts of north. About 4.00 inches fell in a 3-hour period at Jasper Saturday morning. Frequent showers and high percentage of cloudiness kept maximum temperatures well below normal while minimum temperatures were more seasonal. Highs were mostly in 80's with low 90's occurring on only 2 to 4 days in south. Lows were in high 60's and low 70's except in mountains where low 60's were the rule. Averages ranged from near normal southwest to 4° below normal parts of north. Soil moisture excessive most areas. Field activities limited. Conditions favorable for buildup diseases and insects as control measures difficult to apply and effectiveness reduced by frequent showers. Condition of corn, cotton, peanuts, and soybeans still best in recent years. Peach harvest 88%; tobacco 63% completed. Growth hay crops excellent, but over maturity and rain damage reduced quality. Pecans best in recent years. Pastures furnishing abundant grazing and cattle condition good. Light movement vegetables mountains.

HAWAII: Weather favorable for good growth and harvest. Sugar harvest less than year ago. Pineapple production at seasonal peak. Vegetable supplies adequate. Banana supplies light. Papayas steady. Pastures dry most areas. Cattle good condition.

IDAHO: Temperatures continued near or slightly above normal. Except for isolated mountain thundershowers, no precipitation was reported. Good crop development under ideal growing conditions. Grasshopper damage increasing. Localized control programs underway. Winter grain harvest well underway southwestern counties, beginning other areas. Second cutting alfalfa progressing. Field corn mostly tassel to milk stage. Detasseling continuing seed fields. Sweet corn for processing harvest 1 week away. Lower ranges dry. Fire danger high. Higher ranges furnishing good grazing. Livestock good. Potatoes good, normal development; tuber set good. Fruit crops development normal, sizing well.

ILLINOIS: Dry week with record low temperatures many locations. Precipitation ranged from .2 inch northeast to 1.7 inches east. Temperatures averaged about 10° below normal. Corn crop 61% excellent, 36% good, 3% fair. Corn virtually all silked, 25% dough stage. Southern corn leaf blight causing less damage than earlier expected, with conditions remaining about the same as last week. Soybeans 61% excellent, 37% good, 2% fair. Nearly all reached bloom stage, 65% started to pod, about 10 days ahead last year. Oats virtually all harvested. Alfalfa hay nearly 90% 2d crop cut. Third crop about 10% in. Pastures mostly good. Soil moisture 23% short, 67% adequate, 10% surplus. Moisture short far north

and deep southern counties. Five days suitable fieldwork; main activities combining oats, baling hay and straw and mowing weeds.

INDIANA: Cool week. Temperatures averaged 10° below normal and some daily lows of 48° to 50° were recordbreaking for date. Showers at mid-week averaged 0.50 inch in extreme northeast and southwest. Across the center from northwest to southeast, amounts averaged 1.60 inches. Evaporation, relative humidity, soil temperatures, and solar radiation were all below normal. Days suitable 4. Topsoil and subsoil moisture mostly adequate. Spraying for corn blight active. Spread slowed by cool weather. Corn crop 85% silked, well ahead 60% last year. Nearly 25% dough stage, 5% begun to dent. Wheat land 20% plowed. Harvest this year's crop nearly complete. Oats 90% combined. Nearly 60% soybeans set pods ahead of 40% last year. Alfalfa hay 75% cut second time. Pastures fair to good.

IOWA: Cool dry week. Temperatures averaged 10° to 12° below normal. Minima to 36° at Oakland, 30th. Fourth consecutive cool week. Third consecutive dry week. Crops generally good to excellent. Maturity ahead of average. Nearly 6 days suitable for fieldwork. Nearly all corn 75% or more silked, 30% in dough stage. Reported corn condition: 52% excellent, 45% good, and 3% fair. Southern corn leaf blight has intensified. Leaf sheath and ear infections in eastern counties, infection light to moderate with scattered severely infected fields. Spraying in progress eastern 1/2 State. Western half State infection generally low. Purple sheath spot many fields. Reported soybean condition: 47% excellent, 48% good, 4% fair, and 1% poor. Crop 85% blooming, 55% setting pods, last year 45% setting pods. Oat harvest nearly completed. Alfalfa second cutting nearly complete. Clover hay over 50%. Pastures mostly good. Soil moisture mostly adequate.

KANSAS: Unseasonably cool. One of coolest summer weeks of record for Kansas. Weekly mean temperatures averaged 11° to 14° below normal. Maxima generally in 70's and 80's, most minima in 50's and 60's. Minima July 30 dipped to 40's and 50's. Lowest was 43° in several locations north. Widespread generally 1.00 to 4.00 inches east-central, central, and southern Kansas; 0.25 to 0.75 inch elsewhere. Crops and pastures benefited greatly from widespread rain. Corn development and growth rapid. Some 87% tassel stage, moderately ahead of average 77%; 26% dough stage. Southern corn leaf blight confirmed 38 counties with about 1/4 reporting damage of consequence. Some corn rootworms, borers, and ear worms. Sorghum 26% headed, 24% last year. Considerable greenbug damage sorghums some areas, and local problems from corn leaf aphids and army cutworms. Soybeans responded to rains, 40% podding. Most pastures and ranges benefited from additional moisture, but livestock some drier areas needed supplemental feed. Some temporary summer pasture became available. Alfalfa 3d cutting 43% complete, 35% last year, 34% average. Peach picking underway and apple crop progressing.

KENTUCKY: Cool and wet with temperatures 5° to 10° below normal. Rain on 5 days, extremes 0.33 inch to 3.62 inches. Early-morning temperatures principally in western half near record at several locations on 28th, 31st and 1st. On the 31st, low of 49° at Greenville and Mayfield and 48° at Irvington. Soil moisture plentiful. Not since

1958 has the end of July been so wet. Corn good to excellent condition, 3/4 crop milk stage or beyond. Maturity ahead last year and normal. Southern leaf blight infection continues, but cool weather slowed spread. Tobacco fair, development behind last year and usual. Tobacco needs warm, dry weather. Burley about 20% blooming with 5% topped. Soybeans looking good, 40% blooming. Pastures excellent, hay crop good but quality of hay hurt where cut fields rained on.

LOUISIANA: Precipitation heavy to excessive most areas. Daily showers and thundershowers and abundant cloudiness kept temperatures 3° to 7° below normals. Extremes 95° at Leesville last Monday and 58° at Oak Grove on Saturday. Precipitation totals ranged from less than 0.50 inch few local areas to more than 5.00 inches scattered areas statewide. Most places well in excess of 2.00 inches. Greatest 24-hour total reported 6.08 inches 7 a.m. July 30 at Logansport. Fieldwork slowed by wet weather, less than 2 days suitable. Soil moisture adequate to excessive. Cotton fruiting satisfactory. Conditions fair to good. Insect control work mostly limited to areal applications. Soybean setting good crop, excess rain bringing on grass and weeds. Light harvest rice continued. Sugarcane growing fast, borer activity under control. Corn yield prospects fair to good. Some corn leaf blight noted, but little consequence. Sorghum prospects good and improving. Sweetpotato condition and growth fair to good. Light digging continued. Harvest watermelons, okra, hot peppers, and peaches in progress. Haying slowed by frequent rains. Pasture feed greatly improved. Livestock good.

MARYLAND AND DELAWARE: Beneficial rains most areas. Totals mostly 1.00 to 5.00 inches; however, some totals over 10.00 inches in north east Baltimore area while extreme thunderstorm activity late on 1st gave totals 5.00 to 8.00 inches. Temperatures averaged near normal. July temperatures averaged slightly below normal while rainfall quite variable but mostly below normal. Weekend showers "locally damaging" brought welcome moisture to most areas. Corn and soybean prospects revived. Harvest spring oats continues. Cantaloupe harvest active, tomatoes and watermelons starting. Peach harvest lagging one week western Maryland, but near full activity.

MICHIGAN: Unseasonably cool, scattered showers, north early, south midweek, with substantial amounts east Upper, southwest and south-central Lower Peninsula. Up to 3 days with new record low's, mid-30's north, 40's south. Temperature averages 6° to 9° below normal Upper Peninsula, 5° to 11° below normal Lower Peninsula. Precipitation 0.25 to over 2.00 inches Upper Peninsula, Lower Peninsula, 1.00 to 2.00 inches extreme north, southwest, and south-central, 0.10 to 0.30 inch elsewhere. Moderate rain helped crops southwest, south-central and Saginaw Valley areas. Soil moisture still critically short west-central, central and southeastern areas. State averaged 5 days suitable for fieldwork. Corn development good south-central and west-central areas, fair to poor elsewhere. Corn over 60% silked. Wheat harvest nearing completion, oats 1/3 harvested, yields below average. Dry bean development fair to good. Soybean growth limited by dry soils south, good elsewhere, over 1/3 setting pods. Early potato digging underway. Second cutting hay about 1/2 made. Pasture feed supply below average. Tart cherry harvest complete southwest, active northwest. Early peach picking started southwest. Pickle harvest active.

MINNESOTA: Temperatures very cold for July. Temperatures averaged 13° below normal across State. For the 10-year period, 1962 to date, this is the coldest week for the summer months. The mean temperatures are similar to those recorded in mid-September. Extremes 87°, 32°. Precipitation varied from 0.50 inch to 1.00 inch in north and southeast 1/4 of State, rest of State received little to no precipitation. Corn development slowed by cool temperatures. Top-soil moisture short south, west-central and central districts, adequate to surplus rest of State. Most corn tasseled, normal 71%. Southern corn leaf blight identified 25 counties. Infection at trace level. Soybeans setting pods 45%, normal 30%. Flax turning ripe 36%, normal 29%. Small grain harvest well along south, delayed by rains northwest. Small grains combined: Spring wheat 8%, normal 4%; oats 27%, normal 18%; barley 18%, normal 15%; rye 46%, normal 38%; winter wheat 49%, normal 23%.

MISSISSIPPI: Wet week with rain generally on 5 to 7 days and weekly totals mostly 2.00 to 7.00 inches with 9.93 inches at Belzoni. Weekly average temperatures continued below normal, most stations were 3° to 6° below. Temperatures went to 94° on 27th. Over weekend: Merrill received 4.85 inches rain; some flash flooding Friday night at Meridian, man drowned; and temperatures were generally cooler with 52° Saturday morning. Rains limited fieldwork to average of only 1 1/2 days. Soil moisture adequate to surplus in northern and southern portions and surplus to excessive central half State. Cotton, corn, sweet potatoes, and pecans fair to good condition; while all other crops, pastures, and livestock mostly good. Watermelon and sweetpotato crops are 43% and 21% harvested. Corn 33% dented; 11% soybeans setting pods, and sorghum crop 62% headed.

MISSOURI: Recordbreaking cold air covered the State as many stations established new minimum temperature records for July 30 and 31. Temperatures averaged 7° to 13° below normal. Rainfall was moderate north. Heaviest amounts were in west-central Plains where amounts averaged 1.75 inches. Over 90% corn silked, compared 79% last year. Southern corn leaf blight continues to increase in monitoring plots and farmers' fields. Extended periods high relative humidity conducive to blight development. "Hot spots" now found most areas of State. Majority corn reported good condition, as yet. Soybeans 69% blooming, 55% last year, majority good. Cotton 75% setting bolls, 22% ahead of last years 53%. Sorghum grain 67% heading, last year 42%. Third cutting alfalfa nearly 20% complete, 26% last year.

MONTANA: Another very dry week except for some scattered light to moderate showers central and north-central. Hot west of the Continental Divide to unseasonably cool eastern half. Some very cool nights with minimums mid-30's southern divisions midweek. Soil moisture continues short over most of State. Spring crops have made good growth considering dry summer, but are suffering from dry conditions many areas. Grain maturity was forced. Harvest winter wheat making good progress. Spring wheat, barley and oats harvest have started some areas. Wild hay harvest made good progress. Sweet cherry harvest underway, but behind normal.

NEBRASKA: Exceptionally cold week. Temperatures averaged 10° to 13° below normal. Frost observed in Sandhills. New all-time July low's set at some stations and new July State low set with

29° at Agate. Scattered showers, locally heavy in northeast. Topsoils dry many areas, but crop conditions good to excellent. About 85% corn has reached silking stage. Sorghum 40% heading, or normal for this date. Soybeans podding on 45% of acreage, normal for this date. Farmers keeping close watch for insect and disease problems in row crops and spraying when needed to prevent losses. Wheat harvest nearing completion Panhandle, but showers and high humidity slowed cutting operations. Second crop alfalfa almost harvested and 10% of the 3d crop cut. Livestock conditions good.

NEVADA: Second warm week with temperatures all divisions averaging 4° to 10° above normal. Light to moderate precipitation in north. Intense locally heavy thunderstorms with minor local flooding in Reno area. Light to moderate rainfall in south, Pioche had 0.37 inch. Las Vegas 0.05 inch. Second cutting alfalfa hay underway nearly all areas with 4th cutting south nearly complete. Harvest other hays about 1/2 complete. Small grain harvest beginning lower elevations central and western valleys and completed southern valleys. Cotton development slow Pahrump Valley. Cattle and sheep good with very few contracts signed.

NEW ENGLAND: Warm and humid with frequent rain. Week averaged monthly normal to 4° above normal though no day exceeded 90°. Yields from scattered showers and thunderstorms were heaviest in latter half of week with locally washing rains on July 29, 30, 31, and August 1. Totals widely variable from 0.25 to 4.50 inches, but most were 0.50 to 2.00 inches. Totals over 3.00 inches were mostly in southwestern Connecticut and southern New Hampshire. Well distributed rains last 2 weeks terminated drought. Pastures reviving. Corn, potatoes, and vegetables growing well. Maine potatoes passing bloom peak, development ideal. Tomato and sweet corn harvest general. Apple prospects good. Several early varieties and first peaches being harvested. Cranberry prospects good, but water reserves still rather short.

NEW JERSEY: Temperatures averaged near normal ranging from upper 40's to low 90's. A few showers early in week followed by moderate to heavy showers and thunderstorms most of State over weekend. Totals ranged from 0.60 inch at Pomona to 7.20 inches at Canoe Brook. Local flooding in some areas of Central and North Jersey. Some areas of South Jersey could use additional moisture. Midsummer crop harvest heavy. Heavy machine harvesters will have to wait until fields dry. Processing tomato harvesting underway. Apple and peach sizes will improve from the rains. Blueberry harvest over 3/4 complete. Grain harvest well advanced. Other field crops and pastures will benefit from the much-needed rains. Corn leaf blight is severe in some isolated areas. Spray preparations have started in these areas.

NEW MEXICO: Showers throughout week with very light totals northwest. 1.00 to 3.00 inches southeast and in some mountain localities. Some southern localities more than doubled their rainfall total for the year to date but are still below normal for the 7-month period. Temperatures averaged near normal in west and below normal elsewhere. Warmest Thursday. Cooler at end of week. Daytime temperatures averaged near 15° below normal in northeast. Most minimum temperature on Sunday. Moisture condition

generally improved. Still some dry areas. Irrigated and dryland sorghum good condition. Cotton good with heavy fruiting. Alfalfa harvest delayed due rain. Onion harvest still active Mesilla Valley. Ranges and livestock improved.

NEW YORK: Average temperatures near normal throughout State except western portion where temperatures were 2° to 3° below normal. Temperatures mild throughout week except on 28th when minimums in low 40's reported in central New York State. Wet week. Many areas reported rainfall in excess of 1.00 inch. Tornado in Mahopac, Putnam County, evening of 29th. Soil moisture adequate to surplus. Corn growing rapidly, except southeast where previously dry conditions have retarded growth. Corn mostly tasseled central area. Wheat harvest underway when weather permits, about 15% harvested. Oat condition variable. Dry beans generally excellent. Hay cutting continues. No potatoes harvested Long Island. Upstate potatoes good condition with early varieties sizing well. Volume harvest celery and lettuce continues Orange County. Volume harvest lettuce Oswego and Elba continues. Set and transplant onions Orange County harvested. Sweet corn harvest advancing all areas and Hudson Valley in full swing. Good supplies snap beans and tomatoes available. Condition fruit good. Weather conducive to good sizing tart cherries. Harvest at peak western New York. Some picking Lodi and Transparent apples Hudson Valley, also few early peaches. Grapes continue good development and good crop expected.

NORTH CAROLINA: Temperatures averaged near normal with little trend. Precipitation variable in daily showers and scattered thundershowers. Daily amounts zero to 3.00 inches. Totals 0.50 inch to 5.00 inches averaging 2.00 inches. Soil moisture mostly adequate to surplus. Mountains and coastal plain wet. Few dry spots central and northern Piedmont. Flue-cured tobacco good. Harvest active Types 11, 12 and 13. Corn good. Blight severe on leaves most non-resistant types. Lesions developing on shucks and ears some fields. Cotton, peanuts, soybeans, sweetpotatoes, and other crops generally good. Commercial Irish potato harvest complete. Early-maturing apple harvest progressing. Peach harvest past peak. Labor supply mostly adequate. Railroad strike posing threat.

NORTH DAKOTA: Temperatures averaged 12° to 14° below normal over State except in northwest section where temperatures averaged 9° below normal. Precipitation amounts ranged from 0 to 0.10 inch over State except in northeast and east-central where amounts were recorded to nearly 0.50 inch. Record or near record-breaking low temperatures with scattered showers aided proper filling small grains. Combining small grains continue to progress satisfactorily, but slowed by cool damp weather. About 1/2 barley and oats and nearly 1/2 hard red spring wheat turned ripe. Cattle in good condition, but insects causing discomfort.

OHIO: Cold spell which began on 9th continued. At Columbus this past month was 2d coolest July of record. Many locations did not record a single temperature in the 90's during all of July 1971. Showers were widespread 26th, 28th, 29th, and 30th. Amounts generally in 0.30 to 1.00 inch range. Locally higher amounts over south-central and southeast areas near the Ohio River. Four days favorable fieldwork. Corn 80% silk; and 15% dough stage. Last year corn 80% and normally 60% silk. Soybeans 65% pods set,

leaves green comparable 15% pods set, and 10% pods set for the average. Second cutting alfalfa 75% in. Second cutting clover-timothy 50% finished, last year 45%. Wheat 95% harvested. Oats 85% combined, last year 75%, usual 65%. Potato harvest just beginning. Tobacco 5% topped, below last year. Southern corn leaf blight confirmed 75 of 88 Counties and spreading in west with some fields afflicted moderately to severely.

OKLAHOMA: Unseasonably cool week with temperatures 9° to 14° below normal. Extremes: 100° and 49°. Rainfall ranged from 0.50 inch southwest to 1.30 inches east-central and southeast. Statewide rain continued to improve surface soil moisture, except southwest Oklahoma where supplies declined slightly. Surface moisture 31% short, 67% adequate, 2% surplus. Still mostly short west-central and southwest. Row crops continued to improve most areas, and rated mostly good to excellent, except cotton fair to good. Crop development continues behind year ago. Cotton only 55% squaring, 10% setting bolls. Corn 2/5 and grain sorghum 1/5 dough. About 1/4 peanut crop spiking. Nearly 1/2 soybeans flowering. Third cutting alfalfa 56% completed. Pastures responding to recent moisture, but grazing still limited west-central and southwest.

OREGON: Sunny warming trend statewide except morning coastal fog and low clouds with partial clearing afternoons. Coast temperatures averaged near normal to 2° below normal, elsewhere mostly 4° to 9° above normal. Coast maxima 62° to 68°, inland 89° to 105° with 1 to 5 days above 100° along north-central and east-central border areas. Minima 41° to 61°. Most of state dry except a few widely scattered amounts from trace to 0.04 inch. Coastal drizzle on 2 to 5 days up to 0.18 inch at Newport. Grain and grass seed harvest continues active. Grain maturing rapidly. Peppermint harvest beginning. Pears and apples sizing nicely. Bosenberry and Marion blackberry harvest active with raspberry picking nearing completion. Pole bean harvest started. Sweet corn making good growth with continued hot weather. Fresh market potato harvest hampered by rail strike. Grasshoppers have invaded certain areas eastern Oregon.

PUERTO RICO: Rainfall averaged 1.04 inches or 0.41 inch below normal. Heaviest rains fell in eastern Luquillo Mountains where up to 3.81 inches were reported, also in the western coast and western Cordillera where up to 2.86 inches were recorded. A dry section of less than 1.00 inch extended from the north coast west of San Juan to the south coast. Crop moisture continues too dry along north and south coasts and parts of eastern interior, while conditions were too wet in parts of western interior. All other divisions were near normal. Temperatures averaged 80° on coast and 75° interior divisions with an average departure of 0.8° below normal. Highest maximum 94°, lowest minimum 56°. Sugarcane plantations active seeding and cultivating new crop. Coffee zones report good progress with fieldwork, except few zones too dry for normal development. Pastures generally good to excellent, except few zones too dry. Minor crops developing well all zones, except some dry areas where crop moisture too low for normal growth.

SOUTH CAROLINA: Rainfall frequent all areas. Averages were 1.50 to 2.00 inches all divisions except Central which had 3.00 inches. Greatest amount was 6.67 inches at Pelion in Lexington County. Average temperatures were about 1° below

normal, ranging from 77° in northwest to 80° in south. Soil moisture adequate to excessive. Rain hampered all farming activities. Tobacco good to excellent, 61% harvested. Rains, lack of available curing space slowed harvest, but still ahead last year. Cotton condition mostly good. Practically all squaring, 88% setting bolls, bolls opening 8%. Corn good to excellent. Practically all past silk stage, 80% dough stage, 17% matured. Condition soybeans good to excellent, 26% blooming, 3% setting pods. Condition sorghum, peanuts good to excellent. Peach condition good, harvest 70% complete. Grapes mostly good. Apple crops good to excellent. Hay crops, pastures good to excellent. Watermelons mostly good, 83% picked.

SOUTH DAKOTA: Cool dry week. Weekly temperatures averaged from 9° to 14° below normal. This is 3d week in a row with subnormal temperatures. Extremes ranged from 30° near Ladelle on 30th to 94° at Philip on 31st. Damaging frost occurred morning of 30th mostly in low areas. Weekly precipitation totals about 0.10 inch or less. One of the largest amounts was 0.25 inch at

Mission which was reported on 26th. Unseasonably cool weather and local frost slowed crop growth and development. Harvest small grains complete many early areas. Late areas well underway. Percent harvest completed; winter wheat 93, normal 84, winter rye 84, normal 72, spring wheat 37, normal 34, oats 77, normal 57, and barley 70, normal 54. Lack of moisture was somewhat compensated for by cool weather in keeping row crops from burning, but moisture needed in most areas. No new development reported Southern corn leaf blight. Green bugs in sorghum grain are problem. Corn 82% silked, about normal. Soybeans over 90% bloom or past, well ahead normal. Sorghum grain 37% headed, normal 27%. Flax 24% ripe, normal 18%. Pastures becoming dry in many areas. Some second cutting hay short. Livestock good. Flies and mosquitoes prevalent.

TENNESSEE: Temperatures averaged 5° to 7° below normal. Rains of previous weekend and last Monday and Tuesday followed by mild to cool weather. Clouds and precipitation again in east over weekend. Temperature extremes: 87° several points in west Wednesday and 54° Jackson Saturday. Weekly precipitation totals ranged widely. Some under 1.00 inch in west, most 2.00 to 4.00 inches rest of State. Greatest reported total this week 6.15 inches at Livingston. Rainfall restricted farm activity. Hay harvest and tobacco topping occurred between showers. Soybeans grew rapidly. About 55% blooming and 15% setting pods. Corn development continues ahead of last year with 90% silked, 55% dough and 15% dent stage. Cotton also developing rapidly. About 95% squaring and 75% setting bolls. Excess rains damaging Burley tobacco. Topping well underway. Hay and pasture conditions good. Hay harvest difficult due to showers. Days favorable for fieldwork averaged 2.1. Soil moisture 40% adequate, 3% short, and 57% surplus.

TEXAS: Substantial rains of 1.00 to 3.00 inches fell on each of 3 consecutive days in north-central Texas and northern Edwards Plateau first of week. These were followed by 2.00- to 6.00-inch rains in southern Edwards Plateau and Winter Garden Saturday and Sunday. Showers fell in all sections of State during week but only light amounts fell on High Plains and middle and lower coastal sections. Brady caught 13.69 inches and Kaufman 9.63 inches. Impressive

24-hour totals Sunday include Laredo 5.50 inches, Carrizo Springs 6.00 inches, and Mullin 4.80 inches. Needed rain fell over most of northern half State, relieved drought conditions Blacklands, East Texas, Cross Timbers and Low Plains. Ranges and pastures improving Edwards Plateau, High and Low Plains and Cross Timbers area. Stockwater short Low Plains and Cross Timbers. Late hay prospects improved by recent rains. Harvest major crops; cotton 2%, 2% last year; corn 3%, 2% last year; sorghum 25%, 17% last year. High Plains vegetable harvest active although interrupted by showers. Potato digging at peak, while onion harvest declining. Carrot digging underway, but movement light. Fall lettuce being planted at Hereford. Trans-Pecos onion harvest past peak. Cantaloupe harvest active Pecos, North Texas. Watermelon harvest nearly complete south-central, past peak East Texas, beginning North Texas. Rains boosted prospects late melons. Cabbage seeding underway Winter Garden, with carrot planting to start soon. Early plantings fall tomatoes, peppers satisfactory progress Lower Valley. Peach harvest past peak with supplies below last year. Pecan prospects boosted by rains, but nut set below normal.

UTAH: Few isolated thundershowers with generally light amounts of precipitation. Temperatures ranged from near normal to 6° above normal. Most stations recorded maximums in the 90's and 7 stations recorded 100° or higher. Farmers busy day and night irrigating to offset searing heat. Dryland winter wheat harvest over half completed. Harvest irrigated winter wheat and spring grains, mostly irrigated, underway. Percent completion: 30 irrigated winter wheat, 15 spring wheat, 5 oats, and 20 barley. Haying active most areas. Alfalfa 2d crop cut. Clo-tim and wild hay 65% cut. About 70% apricots and 30% tart cherries picked. Corn, sugar beets and vegetable crops making good progress.

VIRGINIA: Temperatures mostly below normal. Precipitation generally heavy from frequent showers and thundershowers. Soil moisture improved in Piedmont and Tidewater. North dry southwest wet. Southern corn leaf blight present and threatens corn, but damage significant only in southeast. Spraying continued. Flue-cured tobacco 10% harvested. Peanuts pegging well. Haying continued. Curing difficult southwest. Picking peaches and earlier apples. Apples sizing well. Eastern Shore growers harvesting Irish potatoes, tomatoes and cucumbers. Tomatoes harvested northern neck. Watermelon harvest began.

WASHINGTON: Western Washington: Warm and dry. Cloudy with fog along coast with brief periods of afternoon clearing. Clouds and fog moved into interior latter part of period with afternoon clearing. No precipitation. Average temperatures coastal were normal and 6° to 8° above normal in interior. Green peas, broccoli, lettuce, and cauliflower harvests continuing. Raspberry harvest peak, currants underway and early blueberries beginning. Early corn tasseling, but short. Hay 2d cutting starting.

Pastures need moisture. Eastern Washington: Hot and dry. Thunderstorms with high winds and hail moved through northeast Washington on 28th. Average temperatures 6° to 8° above normal. Dryland wheat harvest underway most areas, except beginning Palouse. Heat damaged fields central area. Early potato harvest continues, mint getting underway. Peas and lentil yields variable due hot weather. Walla Walla cucumbers and Zucchini being harvested. Peaches maturing rapidly with early type being harvested. Second cutting alfalfa nearing completion. Pastures need moisture.

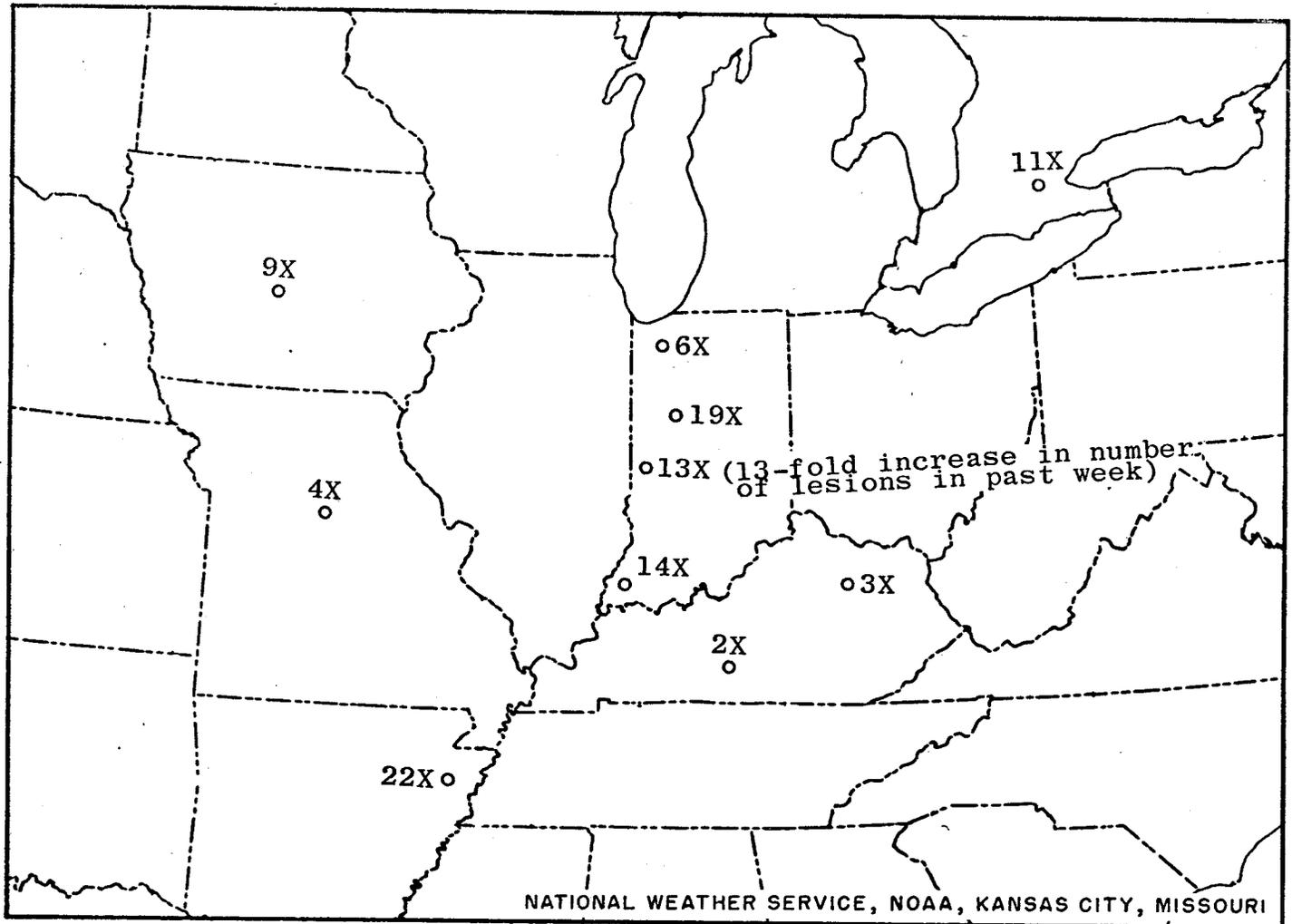
WEST VIRGINIA: Cool damp week with rain almost every day. Weekly totals over 1.00 inch but over 3.00 inches Clarksburg. Frequent rain kept harvesting activities at slow pace. An average of 4 days suitable fieldwork. Between rains main activities were combining grains, making hay, and caring for gardens. State has adequate to surplus moisture, except eastern Panhandle where weekend rains relieved very dry situation. Early apple and peach harvest full swing. Peach orchards use irrigation where available to size fruit. Flies remain bothersome to livestock.

WISCONSIN: Very chilly week with temperatures averaging 9° to 12° below normal. Some of coldest July weather of record saw mercury drop into upper 30's and low and middle 40's on several nights throughout State. Scattered showers about midweek, and again on Sunday evening in the south. Amounts between 0.50 and 1.00 inch in most instances. Crops doing well. Corn 50% in silk. Cool weather slowing maturity. Crop generally rated excellent. No significant upswing infection level Southern corn leaf blight. Severity level rated light. Oats 15% combined. Yields variable. Second crop haying 25% completed. Tobacco doing well. Topping about to get underway. Soybeans excellent. Vegetable crops doing fine. Harvests cucumbers, early potatoes, snap beans, and beets going on. Sweet corn harvest starting. Cherry harvest Door County past peak. Soil moisture 70% adequate and 30% short.

WYOMING: Scattered light showers occurred statewide. Chugwater reported most moisture with 1.07 inch. A cold spell over State during the week dropped average temperatures as much as 15° below normal in some areas. Maxima were mostly mid-80's west of Divide and Upper Platte Drainage, high 80's and low 90's elsewhere. Minima were mostly 30's and low 40's statewide. Temperature extremes: 95° at Torrington and 21° at Foxpark. Main agricultural activities haying and irrigating. Winter wheat progress still slow with only about half matured by weekend and less than 10% harvested. Spring-planted grain continued to make good progress. About 2/3 spring wheat hard dough and 1/4 soft dough stage. About 1/3 oats hard dough, 1/3 soft dough, while approximately 5% mature. Barley about 5% harvested. Alfalfa 2d cutting about 15% complete, while other tame hays about 3/4 cut. Surface soil moisture generally short. Stockwater supplies generally adequate.

CORN BLIGHT SIMULATION

ESTIMATED JULY 22-29 MULTIPLICATION RATE



COOL WEEK RESTRAINS CORN BLIGHT

With ample rainfall, then clearing and heavy dews, Southern Corn Leaf Blight could have multiplied more rapidly than the Waggoner simulator program indicates it did last week. As seen from the accompanying map, rates of increase between July 22 and 29 were of the order of 10 or more times in Iowa, Indiana, and Ontario. The computer is simply saying that, based on last week's weather alone, the number of lesions on corn plants would be expected to increase 9 times around Ames, Iowa, and perhaps as much as 19 times near Lafayette, Indiana. These are considered moderate rates of increase.

Since moisture was so plentiful, infection could have been much more severe except for the low temperatures in the Midwest. Minimum air temperatures were in the low fifties and even high forties. The blight fungus needs at least 55°F. and more normally 65°F. to establish itself in a

wet corn leaf. With warmer conditions it develops faster.

The real danger now is through August. A return to more normal temperatures and still clear nights favorable to condensation of the plentiful moisture supply in most Corn Belt fields can produce increased infection. Leaves will become too dry for infection as fall approaches but the stalks and ears remain vulnerable. Dry windy nights and decreased rainfall would be most helpful in bringing the current crop through with only minor damage. The National Weather Service computer at Kansas City and another at Purdue University will continue to produce estimates of the weather impact on this continuing threat to corn production. Next week we will report again on their output.

Gerald L. Barger

PERSISTENCE OF DROUGHTS THAT EXISTED ON AUGUST 1. (1931-1970)

STATE	AREA	Number of Drought Periods (1931-1970)	Percent of cases when drought also existed 2, 3, 4 and 10 months later			
			OCT. 1	NOV. 1	DEC. 1	JUNE 1
N. MEX	Northeast	24	84 %	84 %	72 %	60 %
"	Southeast	21	86	86	82	77
OKLA.	Panhandle	19	90	90	80	70
"	West cent.	16	65	65	59	41
"	Southwest	16	76	71	65	47
"	South cent.	14	53	47	60	47
"	Southeast	14	67	53	53	40
TEXAS	High Plains	21	82	73	68	68
"	Low Plains	20	71	71	76	57
"	North cent.	15	69	62	56	50
"	East	20	86	76	57	38
"	Trans Pecos	20	76	76	71	71
"	Edwards Plat.	18	68	63	68	58
"	South cent.	16	88	82	71	53
"	Upper Coast	20	86	71	62	38
"	South	18	74	68	68	53

PERSISTENCE OF JULY DROUGHT

In the May 3, 1971, issue of this Bulletin a brief article pointed out that April drought in the Texas-Oklahoma area persists into July about 80% of the time. This year was one of those times, so the question now is, how persistent are July droughts in that region?

The table above summarized all the instances during the 40-year period, 1931-1970, when drought was going on at the end of July in each of 16 climatological divisions in Texas, Oklahoma and eastern New Mexico. For example, during this 40-year period, drought existed in northeastern New Mexico on August 1 in 24 separate years. In 84% of those years the drought persisted through September and October. However, only 72% of the cases continued through November. And, by the first of June the next spring, only 60% of the 24 original droughts were still going on.

Inasmuch as most of the areas had only about 20 droughts during this period, the sample is rather small. It is, therefore, doubtful that the percentage differences between divisions have much significance. In summary, it appears that there are about 3 chances out of 4 that a drought existing on August 1 will persist through September, around 7 chances out of 10 that the drought will also exist during October and November, and about 1 chance in 2 that drought will also exist in the same area by the end of next May.

Another logical question is, what are the chances that a drought which existed on August 1 will become more severe? Considering all drought

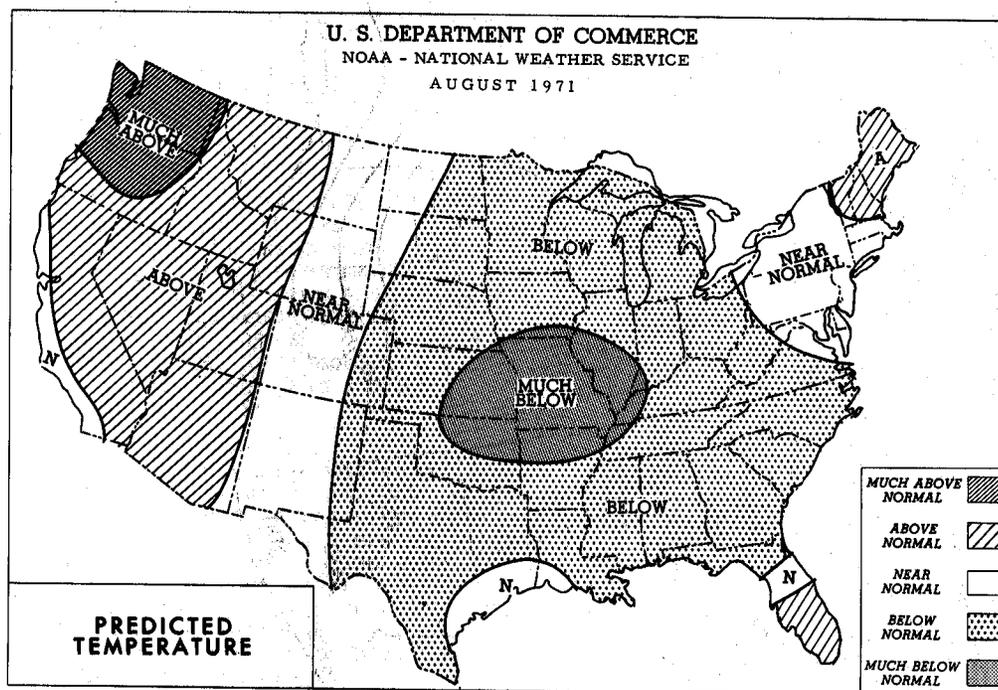
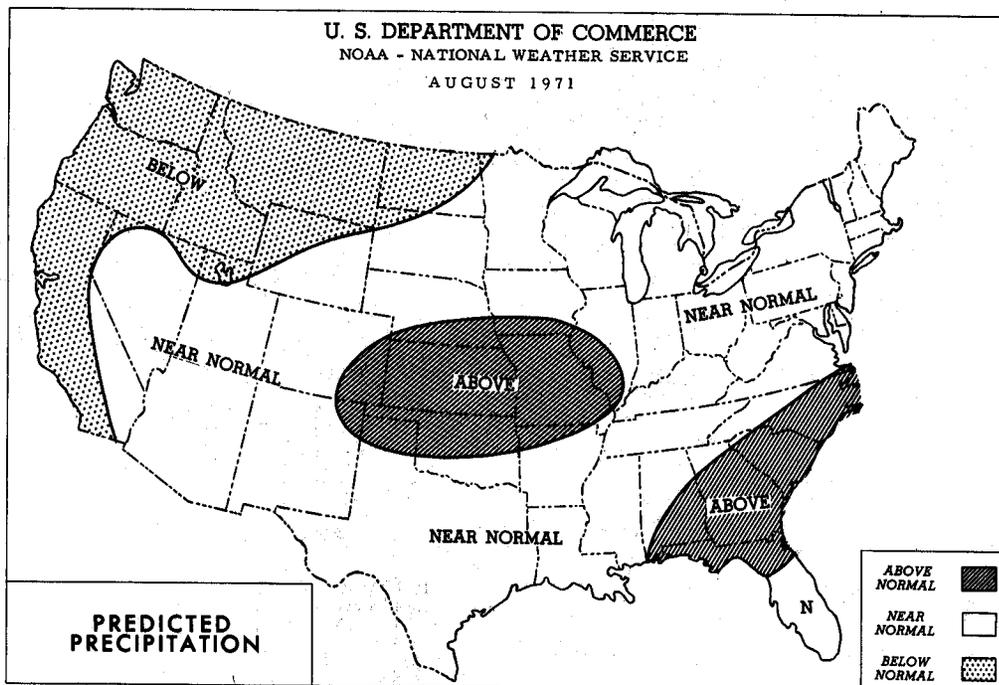
periods in each area during the 40 years, it turns out that only about 45% of them increased in severity by the end of September, 40% became more severe by the end of October, 35% were more severe by the end of November, and only 30% were more severe by the end of May the following spring.

Under the circumstances existing this summer, these figures on the frequency of increases in drought intensity probably have little meaning because the drought already rates as either severe or extreme in southeastern New Mexico, west-central and southwestern Oklahoma, and all of Texas except the South and Trans-Pecos areas. In the 20 or so cases used to compute the frequencies above, only about 1/4 of the droughts were as bad as the current situation. Overall, it appears that the odds are considerably in favor of a decrease in the severity of the current drought during the next few months.

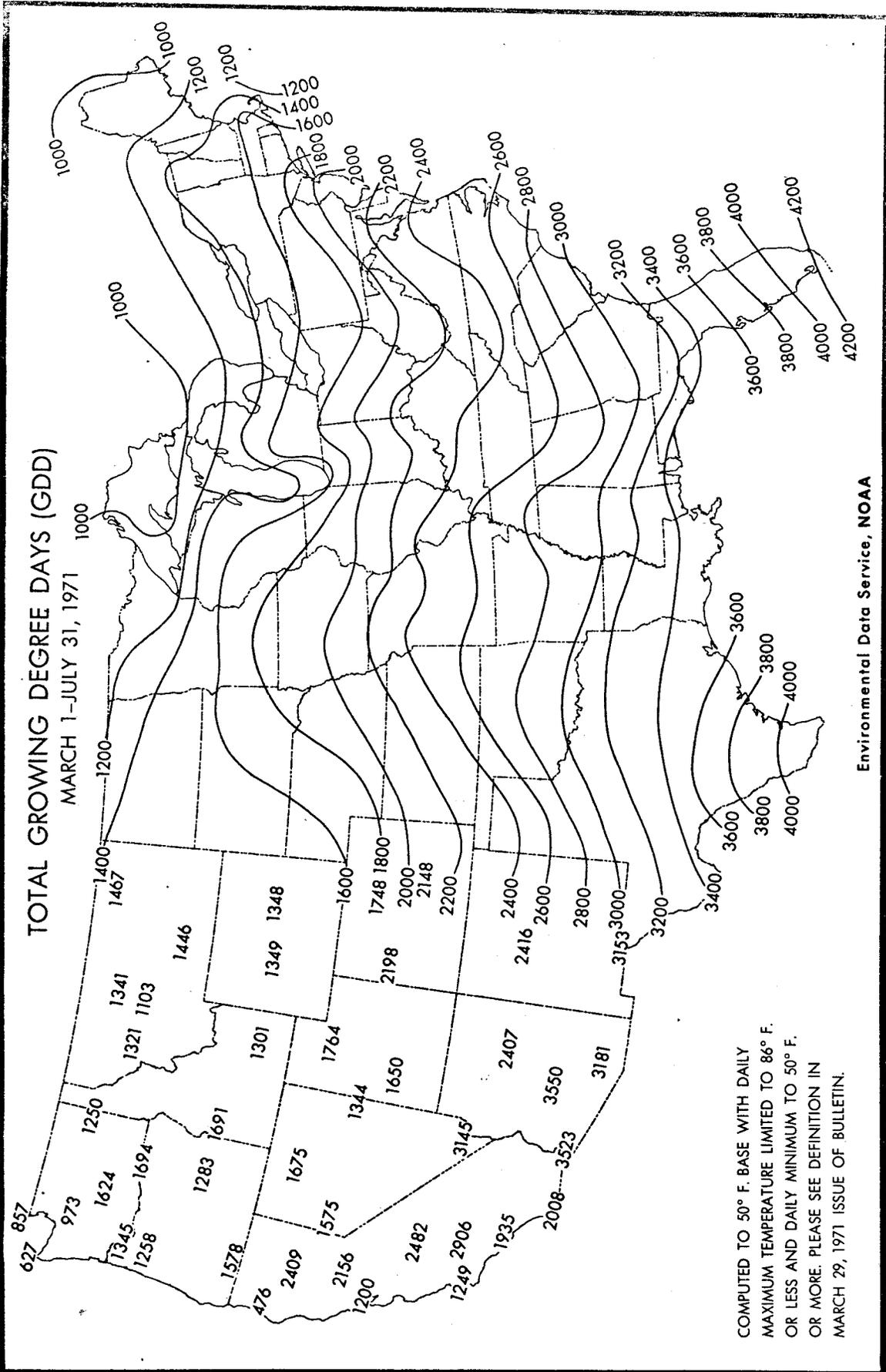
Another factor to consider is the small, but distinct possibility that the rains over the drought area during the last couple of weeks mark a return of predominately normal or wetter-than-normal weather to that area. In other words, the abnormally dry weather—the drought—may have already ended. However, as the situation stands now, the climatological odds are that these rains are providing only a welcome interruption of the abnormally dry weather.

Wayne C. Palmer

AVERAGE MONTHLY WEATHER OUTLOOK

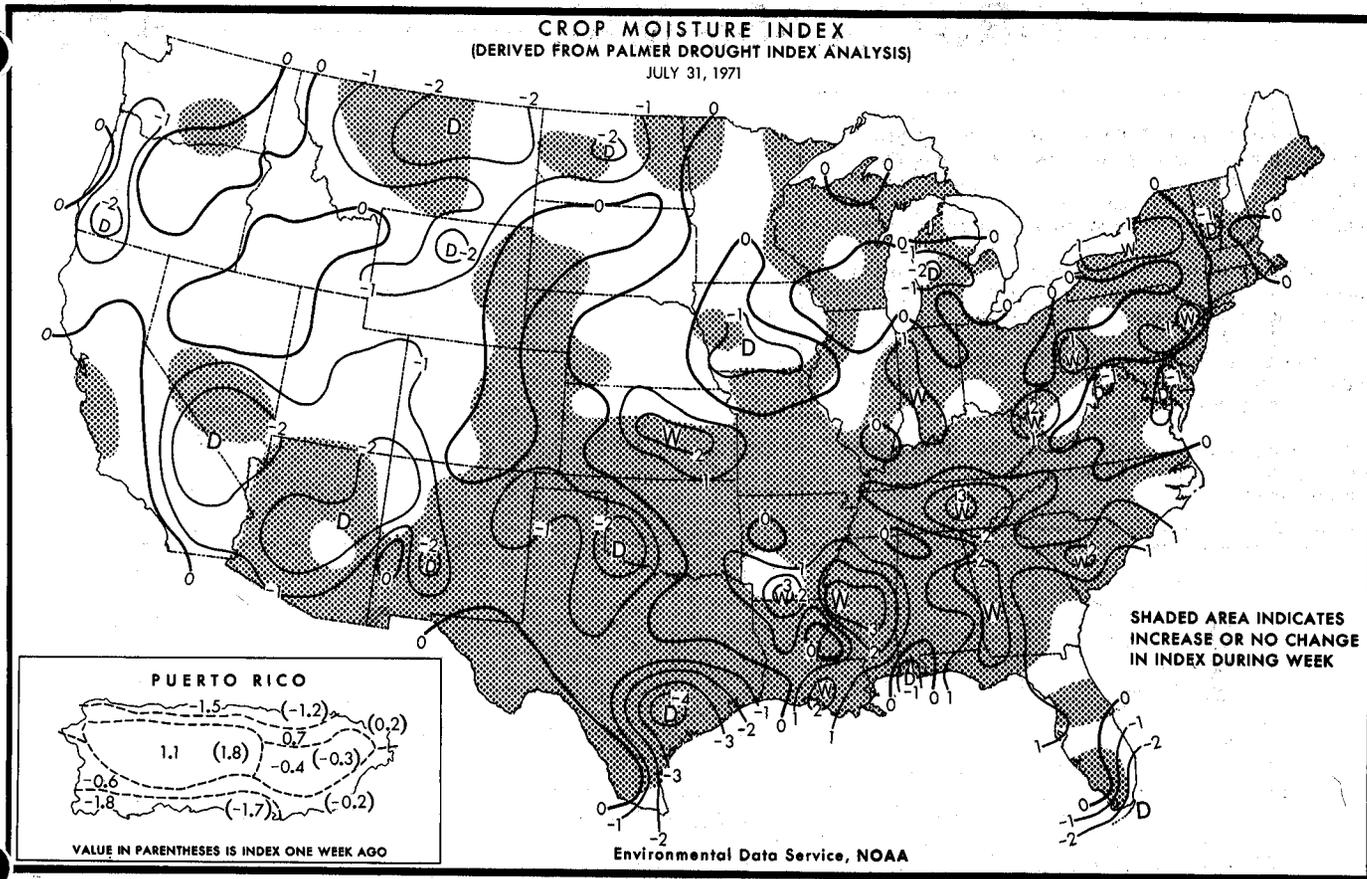


The above prognostic charts show the expected categories of average temperature and total precipitation for the period indicated. They were extracted from the Extended Forecast Division's publication "Average Monthly Weather Outlook" which contains additional information necessary for complete interpretation.



COMPUTED TO 50° F. BASE WITH DAILY
 MAXIMUM TEMPERATURE LIMITED TO 86° F.
 OR LESS AND DAILY MINIMUM TO 50° F.
 OR MORE. PLEASE SEE DEFINITION IN
 MARCH 29, 1971 ISSUE OF BULLETIN.

Environmental Data Service, NOAA



INDEX DECREASED DURING WEEK
(Unshaded Areas)

INDEX INCREASED OR DID NOT CHANGE DURING WEEK
(Shaded areas)

INDEX

- 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 EXCEPTIONALLY DRY, MOST CROPS ABOUT RUINED

INDEX

- 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 NORMAL 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 EXCEPTIONALLY DRY.

The map above is based on weekly areal mean values of temperature and precipitation for 350 climatological divisions. Weather during previous weeks has been taken into account through successive weekly computations of both topsoil and subsoil moisture. The map shows recent crop moisture conditions; i.e., areas in which crops have been hindered by abnormal dryness or wetness, and areas where moisture conditions have been favorable.

This is a generalized picture; local variations caused by the occurrence or absence of heavy rain or by soil differences are not shown. Shallow rooted crops and crops in areas with poor soils are likely, on occasion, to suffer more than indicated. Conditions may be better than shown in areas having exceptionally good soils.

The legend applies primarily to growing rather than matured vegetation. Interpretation of the

effects on crops and native vegetation must, therefore, take account of the stage of growth as well as the status and trend of moisture conditions. The trend is indicated by the shading which denotes areas where the index did not decrease below its value of a week previous; i.e., conditions did not become noticeably drier during the week. A trend toward drier occurred in the unshaded regions. The lines show the crop moisture situation according to the computed index values which may be interpreted using the legends above. One legend applies to the unshaded areas, the other to the shaded. Centers of relative maximum and minimum index values are marked for easier recognition - W for wet and D for dry. In irrigated regions the index values merely reflect departures from ordinary irrigation requirements.

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