

# WEEKLY WEATHER AND CROP BULLETIN

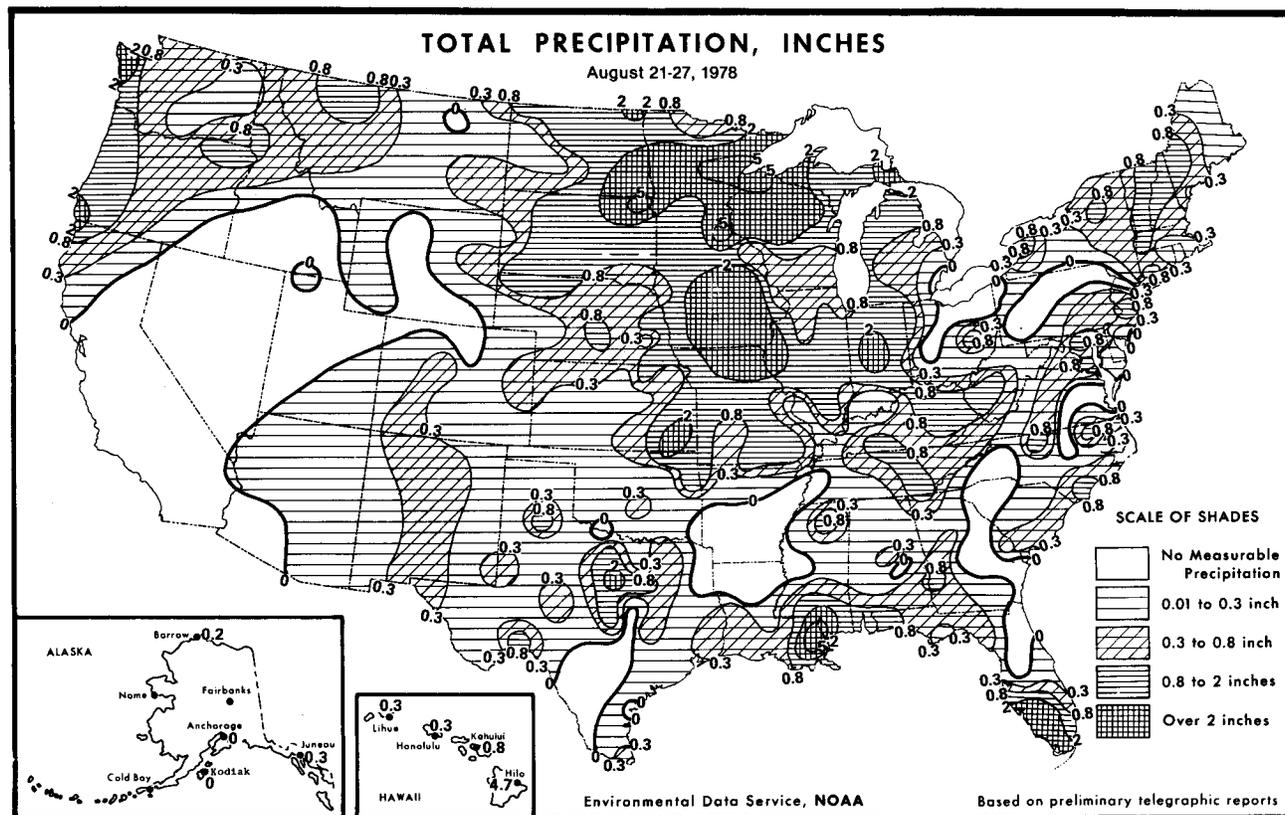
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## National Weather Summary

August 21 - 27

**HIGHLIGHTS:** Warm, moist air from the Gulf of Mexico moved northward and touched off severe weather from the central Mississippi Valley to the northern Plains and eastward to the Great Lakes area. Local flooding from heavy rains hit several sections.

Cool air caused lower-than-normal readings from the Plateau Region westward. A southerly flow of warm air baked the central Plains---about 10 degrees above normal at some stations. Most of New England was 3 to 5 degrees cooler than normal.

Rain was locally heavy but widely scattered on Monday. Central Minnesota was pelted by hail;

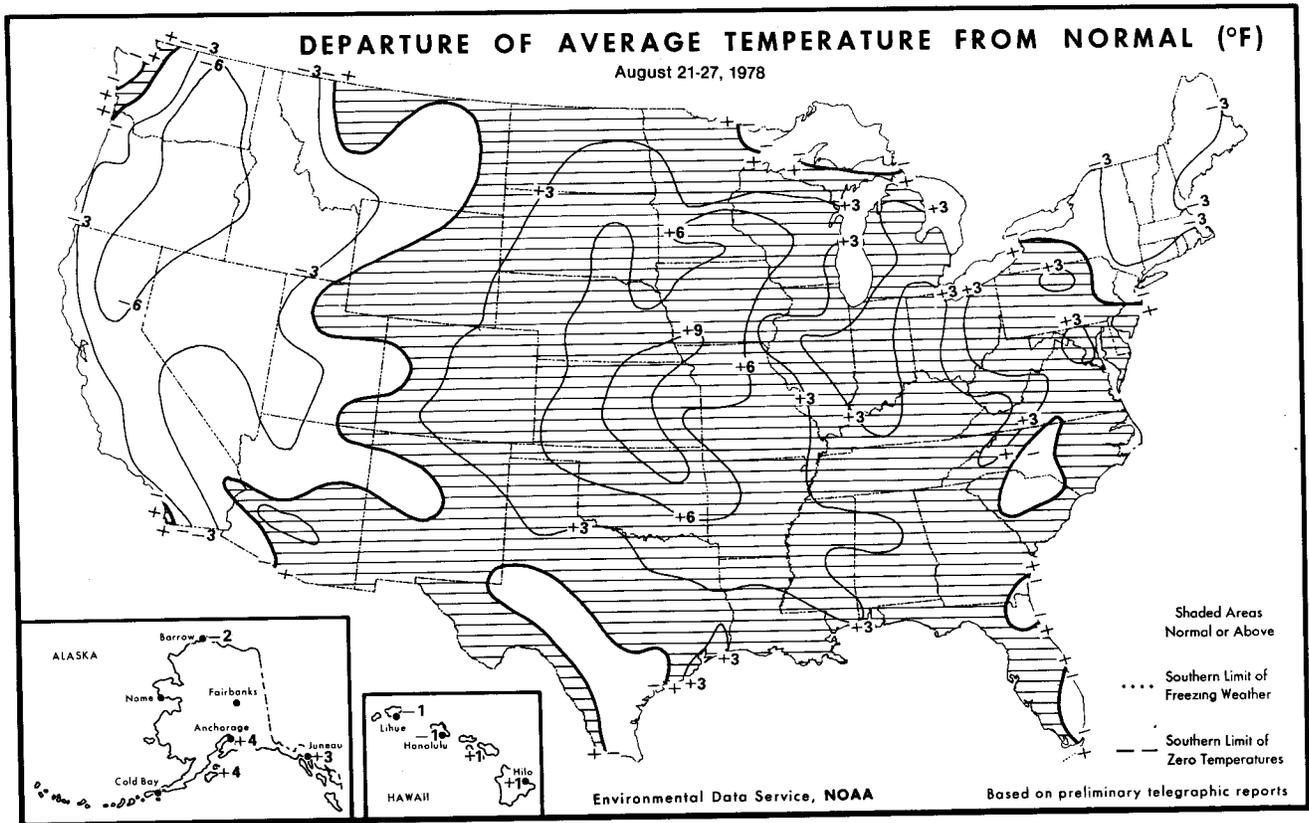
northern Iowa and southern Texas gathered up to 2.2 inches of rain; and Pensacola, Fla., notched an inch and one-quarter. Other areas scored less than an inch. Brownsville, southern Texas, managed a half-inch, the first rain since the end of July.

Cool temperatures edged into the Northwest and Appalachians; Beckley, southern West Virginia, reached only 48°, 3 degrees under the old record.

Thunderstorms ranged from the Pacific Northwest across the northern tier of States to Wisconsin and Illinois on Tuesday. A sampling showed an inch at Pendleton, northeastern Oregon; 1.7 inches at Cutbank, northern Montana, and Fargo; two and a half inches at Duluth, eastern Minnesota; and a couple of inches at Park Falls, northern Wisconsin.

Intense storms also rumbled across the southern tier where Albuquerque measured a half-inch and New Orleans, four and three-quarters inches.

Heavy nighttime downpours drenched Minnesota and Wisconsin triggering local flooding on Wednesday. Many upstate stations reported at least 5 inches while some called in 6 or 7-inch measurements;



Duluth established a record 24-hour rainfall of 5.27 in.

In the South, Ft. Myers, on Florida's Gulf Coast, received four and a half inches of rain.

Temperatures soared in the southern Plains; several Kansas and Oklahoma points passed the century mark. By contrast, Alamosa, southern Colorado, equaled its record low of 36°.

Heavy rain persisted in the upper Midwest on Thursday; Eau Claire, western Wisconsin, was soaked by 2 inches, and some isolated points in that State and Michigan noted up to 5 inches. The upper half of the West Coast checked in with some heavy rain. Crescent City, northwestern California, had 1.3 inches and Brookings, southwestern Oregon, chalked up more than 2 inches. In the East, Buffalo, N.Y., collected nearly an inch.

Hot readings continued to bake Kansas and Oklahoma with 100° temperatures extending to Missouri and Arkansas. The Northeast told a different story; Burlington, Vt., reached only 58° for a high.

Strong thunderstorms formed over the middle Mississippi and Ohio Valleys and the northern Plains on Friday. Joplin, southwestern Missouri, contended with high winds and an inch and one-half of rain. Heading eastward, Harmony, western Indiana, got 1.4 inches; Lexington, Ky., 1.7; and Charleston, W.Va., 1.5. Mid-afternoon tornadoes touched down in North Dakota and Illinois and hail pummeled towns in Tennessee, Missouri, Iowa, and

North Dakota. Nearly 2 inches covered Greensboro, northern North Carolina. Showers continued in the Pacific Northwest, but remained below an inch.

Some stations in Wyoming and Maine reported readings below freezing.

Thunderstorms gathered over eastern Kansas and northwestern Missouri on Saturday packing rain and winds of nearly 100 mph. Another set of storms brought one to more than 2 inches of rain to the upper half of the Plains and Iowa. Tornadoes whirled through North Dakota and Minnesota. Half-inch rainfalls dotted the southern tier of States from Arizona to Florida.

The only record temperature for the day was a chilly 66° at Jacksonville, Fla., which tied the 1930 mark.

Sunday thunderstorms multiplied over several sections of the Nation from the Plains eastward to the Atlantic Seaboard. The upper portions of the Plains and Mississippi Valley were hit by intense weather that dumped more than 2 inches on some stations. In the Ohio Valley, Indianapolis received 2.5 inches; Zanesville, east central Ohio, an inch; Edmondson County, south central Kentucky, 2 to 3 inches; and Martinsburg, eastern West Virginia, 1.5 inches.

Along the Atlantic Coast, New Bern, eastern North Carolina, gathered over an inch. Northern Delaware measured large amounts of rain.

Tornadoes were spotted in Texas and South Carolina.



## National Agricultural Summary

August 21 - 27

**HIGHLIGHTS:** Rains delayed final small grain harvests in the north central States and the Pacific Northwest. Some growers feared dampened grain could sprout. Spring wheat harvest reached 63% compared with 1977's 85% and the 66% average. Winter wheat planting for the 1979 crop advanced slowly in the Southwest. More corn gradually slipped safely into the mature stage though most development fell in the dough to dent stage. Corn harvest advanced northward through the Southern States. Soybean pod set was well advanced; early northern stands began yellowing and dropping leaves. Cotton rated mostly fair to good; dry soils stressed the crop. Only a few bolls opened; harvest extended from Texas to southern California. Grain sorghum heading was well advanced and began turning color. Rice harvest reached Arkansas. Grasslands deteriorated in most areas of the Southwest because of dry soils and generally high temperatures.

**SMALL GRAINS:** Rains in the Pacific Northwest, the Dakotas, and Minnesota held combines at bay, prolonging the winter wheat harvest. However, very little winter wheat remained for harvest. Growers in Texas, Washington, Minnesota, and New Mexico seeded acreage for 1979 winter wheat; most other States in the Great Plains expect to start in one or 2 weeks.

Spring wheat harvest in the 5 major producing States advanced to 63%, well behind 1977's 85% but close to the 66% average. Rains also delayed harvest of this crop, but in spite of the wet conditions, farmers combined 14% of the crop in one week--about equal to other recent years. Growers were concerned that some of the dampened grain may sprout in Washington and Oregon.

Oats harvest in the major north central States ranged from complete in Iowa and South Dakota to 75% in North Dakota, 85% in Wisconsin, and 87% in Minnesota. Rains stalled harvest operations, lodged some fields, and encouraged weed growth.

Barley combining was almost complete in most of the north central States but reached only 25% in Montana and 40% in Idaho. Similar weather conditions afflicted the barley harvest.

**CORN:** Corn rated good to some excellent in the north central States. Some corn advanced to the mature stage, safe from damaging frost, including 6% in South Dakota and 15% in Kansas. Early Wisconsin corn needed 2 weeks to mature and late corn needed 4 weeks. Most of the crop was well into the dough stage. Dent stage in the north central States ranged from 15% in Nebraska to 47% in Illinois. Most of the Corn Belt except Ohio received good rains during the week, but topsoils were reported short to adequate and subsoils adequate.

In the South, most corn was mature. Harvest advanced into Tidewater Virginia, just starting in North Carolina, reached 27% in South Carolina, 25% in Georgia, 23% in Alabama, 12% in Mississippi, 50% in Louisiana and 35% in Texas. Harvest raced past last year in the south central States but lagged in the Southeast.

**SOYBEANS:** Soybeans in the eastern Corn Belt rated good. Pod set neared completion in most States; Ohio lagged at 65%. Leaf yellowing ranged from 5% in Indiana, to 8% in Illinois, and 10% in Michigan. Topsoil moisture rated short to adequate but was not a limiting factor.

In the western north central States, yellowing was more advanced, ranging from 12% in Minnesota to 15% in Iowa. In South Dakota, 15% of the soybeans dropped leaves. Missouri's crop lagged because of its southern location in the region and late planting; bloom stood at 89% and pod set 66%--both figures close to normal. The condition generally was good.

Dry soils and high temperatures stressed the southern crop; the condition rated only fair to good. Non-irrigated stands in Arkansas were severely stressed and rated poor. Bloom was almost finished, and pod set in most States ranged from 70 to 84%; Arkansas lagged at 58% and Oklahoma 46%. Some early fields matured.

**COTTON:** Cotton rated fair in most areas with some good stands reflecting better growing conditions. Growers sprayed insects as populations rose above control levels. Boll set was almost complete. Dry soils stressed the Arkansas, Mississippi, Texas and South Carolina crops; other areas needed rain but did not reach a critical stage. Bolls began opening but reached no more than 15% in most States. Harvest spread across the Southwest. Texas picking reached 14%, ahead of 1977's 10% and the 8% average. Arizona harvest increased and picking began in southern California.

**OTHER CROPS:** Grain sorghum heading wound down to completion. The major States advanced over 90% except 75% in Kansas. Coloring ranged from 15% in Kansas and Nebraska to 33% in South Dakota. Harvest reached 66% in Texas and advanced into the southern High Plains. Oklahoma growers harvested a few scattered fields.

Rice harvest reached 93% in Texas, on schedule; and Louisiana, at 70%, well ahead of recent years. Rice harvest began in Arkansas. California rice headed and growers drained fields in preparation for combining.

Drought became serious in Maine's potato country but rains now could produce worse problems including cracks, hollow heart, and poorly shaped tubers. Growers harvested some potatoes for processing. Michigan harvest reached 15%. Idaho growers dug early potatoes; 10% of the vines died. Northwest growers harvested Norgolds, Russets, and Burbanks.

**FRUITS AND NUTS:** Apple harvest continued in all areas. Dry New England soils kept apples from sizing. Peach harvests were complete in southern areas but continued in the north. Citrus groves rated excellent in all areas; fruit was sizing with the help of irrigation. Western growers picked a wide variety of fruit.

**VEGETABLES:** Summer vegetable harvests advanced on schedule in northern areas. Florida growers prepared and planted fall crops, and harvested a light volume of squash and okra from the extreme south. Texas producers also planted fall crops and harvested melons, squash, cucumbers, bell peppers, peas, and tomatoes. Rain damaged some New Mexico lettuce. California vegetables moved in moderate volume; bell pepper and tomato harvests increased.

**PASTURES AND LIVESTOCK:** Pastures rated fair to good in the north central States, Northeast, and South Atlantic States; some areas needed rain but grasses showed no stress. In the south central States, grassland rated mostly fair; dry conditions became serious in Texas and Arkansas; producers sold cattle to conserve feed. Western pastures were dry. Fire danger was high in California. Northwest rains greened pastures.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., Aug. 27, 1978

States and Stations	Temperature of		Precipitation Inches		States and Stations	Temperature of		Precipitation Inches		States and Stations	Temperature of		Precipitation Inches	
	Average	Departure	Total	Departure		Average	Departure	Total	Departure		Average	Departure	Total	Departure
ALA. Birmingham . . .	82	+ 4	1.1	-.8	LA. Baton Rouge . . .	82	+ 1	.3	-.6	Youngstown . . .	69	+ 1	0	-.7
Mobile . . .	84	+ 3	1.0	-.5	Lake Charles . . .	83	+ 1	.6	-.4	OKLA. Okla. City . . .	86	+ 6	.1	-.5
Montgomery . . .	81	+ 1	0	-.8	New Orleans . . .	83	+ 1	5.4	+ 4.2	Tulsa . . .	90	+ 10	.1	-.6
ALASKA. Anchorage . . .	59	+ 4	0	-.6	Shreveport . . .	86	+ 3	T	-.6	OREG. Astoria . . .	61	+ 1	1.2	+ .8
Barrow . . .	35	- 2	.2	0	MAINE. Caribou . . .	58	- 3	.1	-.7	Burns . . .	58	- 6	.3	+ .2
Fairbanks . . .	--	--	--	--	Portland . . .	64	- 1	.2	-.4	Medford . . .	64	- 5	1.4	+ 1.3
Juneau . . .	56	+ 3	.3	-.9	MD. Baltimore . . .	76	+ 2	1.0	+ .1	Pendleton . . .	63	- 7	1.0	+ .9
Kodiak . . .	59	+ 4	0	1.1	MASS. Boston . . .	66	+ 4	.4	-.4	Portland . . .	63	- 3	.5	+ .3
Nome . . .	--	--	--	--	Chatham . . .	65	--	.4	--	Salem . . .	63	- 2	1.1	+ .9
ARIZ. Flagstaff . . .	60	- 2	.1	-.5	MICH. Alpena . . .	65	+ 2	1.2	+ .5	PA. Allentown . . .	69	- 1	.7	-.2
Phoenix . . .	91	+ 3	T	-.3	Detroit . . .	74	+ 4	T	-.7	Erie . . .	69	+ 2	0	-.8
Tucson . . .	85	+ 2	.2	-.3	Flint . . .	71	+ 4	.3	-.4	Harrisburg . . .	74	+ 1	.6	-.1
Winslow . . .	75	0	.1	-.2	Grand Rapids . . .	70	+ 1	.6	0	Philadelphia . . .	76	+ 2	.1	-.8
Yuma . . .	89	- 3	0	-.1	Houghton Lake . . .	68	+ 4	.9	+ .3	Pittsburgh . . .	70	+ 1	T	-.7
ARK. Fort Smith . . .	87	+ 7	T	-.7	Lansing . . .	71	+ 3	.6	0	Scranton . . .	67	- 2	T	-.7
Eureka . . .	85	+ 5	0	-.7	Marquette . . .	64	0	1.5	+ .8	R.I. Providence . . .	67	- 2	.2	-.7
CALIF. Bakersfield . . .	76	- 4	0	0	Muskegon . . .	70	+ 2	1.3	+ .7	S.C. Charleston . . .	80	+ 1	.4	-.9
Fresno . . .	59	+ 2	.6	+ .5	S. Ste. Marie . . .	61	- 1	2.7	+ 1.9	Columbia . . .	78	- 1	T	- 1.2
Los Angeles . . .	74	- 3	0	0	MINN. Duluth . . .	62	0	5.9	+ 5.1	Greenville . . .	77	0	T	-.9
Red Bluff . . .	72	- 7	.1	0	Internat'l Falls . . .	63	+ 2	.4	-.4	S.D. Aberdeen . . .	74	+ 5	2.2	+ 1.7
San Diego . . .	72	+ 1	0	0	Minneapolis . . .	75	+ 7	3.8	+ 3.2	Huron . . .	77	+ 7	1.0	+ .5
San Francisco . . .	63	0	T	0	Rochester . . .	73	+ 6	.5	-.3	Rapid City . . .	73	+ 3	.3	0
Stockton . . .	71	- 4	0	0	St. Cloud . . .	69	+ 2	1.0	+ .1	Sioux Falls . . .	76	+ 6	.9	+ .2
COLO. Denver . . .	74	+ 4	T	-.3	MISS. Jackson . . .	84	+ 3	0	-.8	TENN. Chattanooga . . .	79	+ 2	1.0	+ .3
Grand Junction . . .	73	- 1	T	-.3	Meridian . . .	81	+ 1	T	-.8	Knoxville . . .	78	+ 1	.3	-.4
Pueblo . . .	77	+ 4	.1	-.3	MO. Columbia . . .	81	+ 6	1.3	+ .5	Memphis . . .	82	+ 3	0	-.7
CONN. Bridgeport . . .	71	- 1	.9	+ .1	Kansas City . . .	84	+ 8	.8	-.1	Nashville . . .	80	+ 2	.4	-.3
Hartford . . .	65	- 4	.2	-.7	St. Louis . . .	80	+ 4	.2	-.4	TEX. Abilene . . .	84	+ 1	.2	-.3
D.C. Washington . . .	80	+ 4	.4	-.6	Springfield . . .	81	+ 5	.3	-.4	Amarillo . . .	79	+ 3	.1	-.5
FLA. Apalachicola . . .	81	0	T	- 1.9	MONT. Billings . . .	67	- 1	.2	-.1	Austin . . .	86	+ 2	T	-.6
Daytona Beach . . .	82	+ 1	.2	- 1.4	Glasgow . . .	65	- 2	T	-.4	Beaumont . . .	86	+ 3	.3	- 1.0
Ft. Myers . . .	84	+ 1	4.6	+ 2.8	Great Falls . . .	66	+ 1	.3	0	Brownsville . . .	84	0	.7	-.1
Jacksonville . . .	80	- 1	T	- 1.8	Havre . . .	66	0	.2	-.1	Corpus Christi . . .	84	- 1	0	-.9
Key West . . .	85	+ 1	.9	-.3	Helena . . .	64	0	.4	+ .2	Del Rio . . .	86	+ 1	.1	-.3
Lakeland . . .	84	+ 2	0	- 1.6	Kalispell . . .	56	- 5	.6	+ .2	El Paso . . .	80	+ 1	.6	+ .4
Miami . . .	81	- 2	1.6	0	Miles City . . .	70	0	.4	+ .1	Fort Worth . . .	87	+ 3	.3	-.3
Orlando . . .	83	+ 1	T	- 1.5	Missoula . . .	59	- 4	.4	+ .2	Galveston . . .	89	+ 6	.1	- 1.0
Tallahassee . . .	81	0	.5	- 1.0	NEBR. Grand Island . . .	80	+ 7	.3	-.3	Houston . . .	83	0	.3	-.7
Tampa . . .	84	+ 2	.6	- 1.2	Lincoln . . .	82	+ 8	.1	-.7	Lubbock . . .	80	+ 3	.2	-.2
W. Palm Beach . . .	81	- 2	.4	- 1.3	Norfolk . . .	78	+ 6	.4	-.2	Midland . . .	80	- 1	.3	0
GA. Atlanta . . .	79	+ 2	.2	-.5	N. Platte . . .	77	+ 6	.2	-.2	San Angelo . . .	80	- 3	.7	+ .3
Augusta . . .	79	0	T	-.9	Omaha . . .	80	+ 8	1.0	+ .1	San Antonio . . .	83	- 1	0	-.7
Macon . . .	80	0	0	-.8	Valentine . . .	76	+ 5	.8	+ .3	Victoria . . .	84	0	.3	-.5
Savannah . . .	82	+ 2	T	- 1.4	NEV. Ely . . .	61	- 3	0	-.1	Waco . . .	87	+ 2	T	-.5
HAWAII. Hilo . . .	77	+ 1	4.7	+ 2.4	Las Vegas . . .	84	- 2	0	-.1	Wichita Falls . . .	86	+ 2	T	-.5
Honolulu . . .	80	- 1	.3	+ .2	Reno . . .	60	- 5	0	0	UTAH. Blanding . . .	70	+ 1	T	-.4
Kahului . . .	80	+ 1	.8	+ .7	Winnemucca . . .	61	- 5	0	-.1	Salt Lake City . . .	74	+ 1	0	-.2
Lihue . . .	79	- 1	.3	-.2	N.H. Concord . . .	63	- 3	.8	+ .1	VT. Burlington . . .	61	- 5	.6	-.2
IDAHO. Boise . . .	64	- 6	T	-.1	N.J. Atlantic City . . .	73	+ 1	T	- 1.1	VA. Lynchburg . . .	76	+ 3	.4	-.5
Lewiston . . .	65	- 5	.8	+ .7	Trenton . . .	73	0	1.8	+ .9	Norfolk . . .	78	+ 2	T	- 1.3
Pocatello . . .	64	- 4	0	-.1	N.MEX. Albuquerque . . .	75	- 1	.6	+ .3	Richmond . . .	77	+ 2	0	- 1.1
ILL. Cairo . . .	79	+ 1	.2	-.6	Roswell . . .	77	0	.2	-.1	Roanoke . . .	76	+ 3	.2	-.7
Chicago . . .	74	+ 1	.3	-.4	N.Y. Albany . . .	63	- 5	.4	-.3	WASH. Colville . . .	60	- 5	.1	-.1
Moline . . .	75	+ 3	1.8	+ 1.0	Binghamton . . .	66	0	T	-.8	Omak . . .	61	- 6	.7	+ .6
Peoria . . .	75	+ 3	.5	-.2	Buffalo . . .	67	0	.8	0	Quillayute . . .	58	- 1	3.0	+ 2.3
Rockford . . .	74	+ 4	.4	-.4	New York . . .	73	- 1	0	- 1.0	Seattle-Tacoma . . .	63	0	.5	+ .2
Springfield . . .	75	+ 2	1.4	+ .8	Rochester . . .	68	0	.1	-.5	Spokane . . .	60	- 6	T	-.1
IND. Evansville . . .	78	+ 3	T	-.6	Syracuse . . .	68	- 1	.2	-.6	Walla Walla . . .	66	- 6	.5	+ .4
Ft. Wayne . . .	73	+ 3	1.2	+ .6	N.C. Asheville . . .	75	+ 3	T	- 1.0	Yakima . . .	61	- 6	.2	+ .1
Indianapolis . . .	76	+ 4	2.7	+ 2.1	Charlotte . . .	77	0	T	-.8	W.VA. Beckley . . .	70	+ 2	.3	-.5
South Bend . . .	74	+ 4	1.2	+ .5	Greensboro . . .	74	- 1	1.9	+ .9	Charleston . . .	79	+ 6	1.5	+ .7
IOWA. Burlington . . .	75	+ 2	2.2	+ 1.4	Hatteras . . .	78	+ 1	T	- 1.5	Huntington . . .	77	+ 4	.8	+ .1
Des Moines . . .	80	+ 8	2.5	+ 1.7	Raleigh . . .	77	+ 1	0	- 1.1	Parkersburg . . .	75	+ 2	.1	-.6
Dubuque . . .	73	+ 4	.4	-.6	Wilmington . . .	79	0	.9	-.6	WISC. Green Bay . . .	70	+ 4	1.8	+ 1.2
Sioux City . . .	76	+ 4	.3	-.4	N.DAK. Bismarck . . .	70	+ 3	.2	-.2	La Crosse . . .	77	+ 7	.5	-.2
KANS. Concordia . . .	85	+ 9	.1	-.6	Fargo . . .	71	+ 4	2.3	+ 1.7	Madison . . .	72	+ 5	.5	-.2
Dodge City . . .	85	+ 8	.2	-.4	Williston . . .	67	0	.2	-.2	Milwaukee . . .	70	+ 2	.6	0
Goodland . . .	75	+ 3	.3	-.1	OHIO. Akron-Canton . . .	71	+ 2	T	-.6	WYO. Casper . . .	70	+ 2	.3	+ .2
Topeka . . .	82	+ 6	.5	-.4	Cincinnati . . .	75	+ 2	.5	0	Cheyenne . . .	68	+ 2	T	-.3
Wichita . . .	88	+ 10	.7	0	Cleveland . . .	72	+ 3	T	-.6	Lander . . .	68	+ 1	0	-.1
KY. Lexington . . .	75	+ 1	1.8	+ 1.1	Columbus . . .	74	+ 3	T	-.6	Sheridan . . .	66	- 1	T	-.3
Louisville . . .	79	+ 4	T	-.7	Dayton . . .	71	- 1	0	-.6	P.R. San Juan . . .	84	+ 2	.2	- 1.4
					Toledo . . .	70	0	.1	-.6					

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 ESCS State offices in cooperation with the National Weather Service.

**ALABAMA:** Temperatures 3° above normal. Second week without rain many locations.

Soil moisture short. Fieldwork: 5.9 days suitable. Cotton fair to good condition; nearly all setting bolls, few fields with open bolls. Corn fair to good condition; 64% mature, 69% 1977, 62% average. Corn harvest 23% completed, 28% 1977. Soybeans fair to good condition; 72% setting pods, 76% 1977, 72% average. Peanuts good condition, a few early fields harvested. Pastures fair to good.

**ALASKA:** After little light rain early week it was sunny and warm. Temperatures near 70 to mid-70's most days. Temperatures 6 to 10° above normal and rainfall much below normal.

Nearly ideal weather hastened ripening small grains and maturity of vegetables. Rain and wet conditions prevented most harvesting activity in Tanana Valley. Small grain development up to 3 weeks behind 1977. Barley combining limited with less than 50% crop reaching ripe stage. Harvesting first and second cutting hay and mixed grain for silage excellent progress in Matanuska Valley. Digging early potatoes. Soil moisture supplies short to adequate.

**ARIZONA:** Monsoon brought precipitation all areas except extreme west. Dry air later in week, no precipitation after 23d except extreme southeast. Temperatures near normal.

Cotton good progress, harvest increasing. Stub cotton being defoliated some areas. Harvest early sorghum underway. Corn southeast, good progress. Fall sugarbeets good top, taproot growth. Some fields prepared, planting spring beets. Alfalfa haying still underway, sixth cutting nearing completion west. Field preparations fall lettuce advanced rapidly. Early seeded fields good stands. Lettuce planting nearing completion, Cochise area. Fieldwork continued, mixed vegetables, melons. Lemon harvest accelerated Yuma area. Other citrus fruit sizing well. Groves generally in good condition. Scattered showers improved range conditions higher elevations. Range, pastures remain mostly poor. Topsoil moisture adequate mountain regions, mostly short deserts. Water hauling and supplemental feeding limited. Cattle, calves mostly good condition. Sheep, lambs good progress on summer ranges.

**ARKANSAS:** Temperatures ranged from normal to 7° above normal. Dry except last two days; greatest amount 1.19 in. Southern part dry. Temperature extremes 106° high; 49° low.

Crops deteriorated and livestock marketings increased due to lack of rainfall. Soil moisture short. Fieldwork: 6.3 days available. Soybean condition deteriorated, now poor to fair; 68% blooms; 58% set pods; 10% mature. Non-irrigated fields severe stress. Cotton fair condition; open bolls 6%; non-irrigated "cutting-out". Rice condition good, 83% forming heads; harvest progress 2%, 5% 1977, 3% average. Corn, sorghum fair condition. Corn 10% harvested, 23% 1977. Sorghum harvest 10% complete, 22% 1977. Peach harvest northwest. Apple harvest increasing; good quality, size. Grape harvest increasing, good quality. Pastures below average condition; more producers feeding hay. Hay harvest very limited. Cattle fair condition.

**CALIFORNIA:** Temperatures below normal in Sacramento and San Joaquin Valleys, but greatest departure over northeast interior. Scattered precipitation over north coast and northern mountains; spotty over Sierra Nevada and deserts of southeast interior.

Field corn harvest beginning early planted fields. Silage corn chopping active. Sugarbeets making favorable growth. Dry bean cutting, windrowing early fields begun. Cotton picking oegun south. Pesticide applications continue. Boll set down. Rice headed out. Draining of fields gaining momentum. Sorghum grain harvest continues. Alfalfa seed harvest underway. Apple harvest progressing; Delicious being picked. Fig, prune, peach, pear, plum, nectarine harvests continue active. Almond shaking becoming active. Harvest Thompson seedless grapes for raisins increasing. Table grape harvest active; wine grape harvest increasing. Pomegranates being picked. Citrus, avocado harvests normal. Date packing Riverside continues. Broccoli, cauliflower, carrots, celery, lettuce continue moderate. Bell peppers, fresh market tomatoes picking up. Melons and strawberries slowing. Summer potato, sweetpotato harvest increasing. Marketing cattle continues mountain areas. Rangeland provides good feed; fire danger high.

**COLORADO:** Numerous showers southwest, widely scattered elsewhere. Temperatures mild to warm after cool start. Mountain readings below freezing many locations. Afternoon highs in 90's eastern plains, 80's western slope, 60's and 70's mountains.

Corn very good condition; in or past dough stage 62%, 57% 1977. Spring barley harvested 86%, 71% 1977, 58% average. Spring wheat harvested 74%. Dry beans good condition; cut 3%, 12% 1977, 5% average; threshed 1%, 6% 1977, 2% average. Sorghum good condition; headed 92%, 87% 1977. Alfalfa good condition; second cutting 97%, 82% 1977; third cutting 30%, 46% 1977. Potatoes good condition. Sugarbeets very good condition. Ranges and pastures poor, livestock good condition. Fieldwork: 7 days suitable.

**FLORIDA:** Scattered thundershowers over Panhandle 21st. Midweek heavy showers southern portions with rainfall averaging from 0.38 to over 5.50 in. End of period thundershower activity below seasonal norm. Temperatures near normal.

Soil moisture mostly adequate, few dry spots showing up. Corn, hay harvests active, tobacco harvest nearly complete. Peanuts and soybeans good to excellent condition. Peanut harvest just beginning in Panhandle. Sugarcane rapid growth; cutting for seed underway. Most pastures good to excellent. Water levels high some low lying areas including several Gulf coastal sections which received heavy midweek rains. Hot, drying weather in few central, northern localities beginning to slow summer forage growth. Cattle, calves good to excellent condition. Most citrus groves excellent condition. Rain needed all areas. Some irrigation on grapefruit. Fresh fruit testing underway for maturity levels. Caretakers very active. Vegetable planting very active. Tomato plantings progressing well; overall crop condition mostly good; making good growth. Cuke seeding west central areas increasing. Pickle crop making good

growth. Harvest about complete early fall acreage in Dade and new plantings to begin this week. Eggplant, pepper, celery, sweet corn plantings increasing. Snap bean planting underway southeast, Dade. Early acreage up to good stands. Light cabbage seeding underway Dade. Squash, okra harvest light in Dade.

GEORGIA: Temperatures near normal mountains, central and south, 1 to 2° above average western and coastal portions. Few widely scattered thundershowers first and middle part of period with rainfall less than 0.50 in.

Soil moisture short to adequate, few areas very short. Fieldwork: 6 days suitable. Haying and insect control very active. Corn poor to fair; 25% harvested, 30% last year, 13% average. Peanuts good; 2% dug and 1% threshed, slightly ahead of last year. Soybeans good. Cotton mostly fair to good with 10% open. Tobacco 91% harvested, last year about complete. Apples fair to good, down from last week; 45% picked, 42% last year. Pecans fair to good. Hay fair to mostly good, up slightly from last week. Pastures fair to mostly good. Cattle and hogs good.

HAWAII: Weather favorable. Temperatures continue high some sections. Rains most areas keeping soil moisture adequate.

Vegetable supplies: Head and mustard cabbage, daikon heavy. Others light to moderate. Banana supplies steady. Papaya supplies decreasing. Sugar harvesting steady. Pineapple harvesting decreasing. Pastures good.

IDAHO: Average temperatures in mid-50's to 60's. Precipitation above normal north, limited elsewhere.

Harvest activity normal south, limited north. Winter wheat 65% harvested, 1977 90%. Spring wheat 40% harvested, last year 60%, normal 50%. Barley and oats 40% harvested, 1977 55% and 60% respectively. Digging early potatoes; about 10% vines dying. Prune, peach, and onion harvests underway. Ranges near normal with some improvement from recent rains.

ILLINOIS: Temperatures 2 to 4° above normal. Precipitation scattered, mostly 0.33 to 2.00 in.

Corn 85% dough, 1977 100%, average 98%; 47% dent, 1977 94%, average 81%; condition good. Soybeans pod set 90%, 1977 100%, average 100%; turning yellow 8%, 1977 22%, 27% average; condition good. Winter wheat land 50% plowed, 1977 79%, average 68%. Third cutting alfalfa hay 48% complete, 1977 82%, average 63%; condition good. Pasture conditions good to fair. Soil moisture short to adequate. Fieldwork; 6.3 days suitable.

INDIANA: Temperatures 4° above normal, highest 99°. Showers heavy 27th. Rain central area 3.00 to 4.00 in.; northwest and southeast averaged 1.00 in.; few tenths southwest.

Fieldwork: 6 days suitable. Topsoil moisture short to adequate. Subsoil moisture adequate. Corn 90% in dough, 1977 100%, average 80%; 35% dented. Soybeans 100% setting pods; 5% turning yellow, 1977 15%. Corn and soybean condition good. Wheat land 25% plowed, 1977 25%, average 45%. Apples 25% picked, 1977 45%, average 25%. Tobacco 15% harvested, 1977 20%. Pastures fair to good.

IOWA: Continued warm with moderate to heavy showers.

Fieldwork: 6.0 days suitable. Corn mostly good to excellent condition; 100% in or past dough; 35% dent, 85% 1977, 50% average. Some corn borer damage. Soybeans good to excellent; 15% leaves turning, 32% 1977. Topsoil moisture short to

adequate. Subsoil moisture adequate. Third cutting alfalfa hay 40% complete, 67% 1977, 43% average. Pasture and livestock mostly good condition.

KANSAS: Spotty precipitation weekend; most significant rain southeast and south central, over 1.00 in. to as much as 3.12 in. Rainfall north and west much lighter. Temperatures 80° northwest and 84 to 88° elsewhere, 7 to 11° above normal.

Hot weather stressing dryland crops. Weekend rains may relieve stress some areas. Corn 80% dough, 90% last year, 85% average; 35% dent, 65% last year, 50% average; 15% mature, 35% last year, 20% average. Sorghum headed 75%, 85% last year, 80% average; starting to color 15%, 35% last year, 20% average. Soybeans setting pods 75%, 85% last year, 80% average. Third cutting alfalfa 85%, 90% last year, 75% average. Fourth cutting alfalfa 15%, 30% last year.

KENTUCKY: Rainfall late week averaged 0.33 to 0.50 in. Temperatures in mid to upper 70's.

Soil moisture short to adequate. Dry to very dry west and west central. Corn condition poor to fair west, good to excellent central and east; milk or earlier 14%, dough 38%, dented but not mature 39%, mature 9%. Stage of development behind last year. Soybeans mostly good to fair, nearly 70% podded. Burley tobacco 75% topped and 7% cut. Cutting became active most areas. Crop good to excellent in important bluegrass area. Dark type cutting begun but less than 5% complete.

LOUISIANA: Temperatures 1 to 5° above normal. Extremes: 101 and 64°. Scattered showers southern half; mostly light.

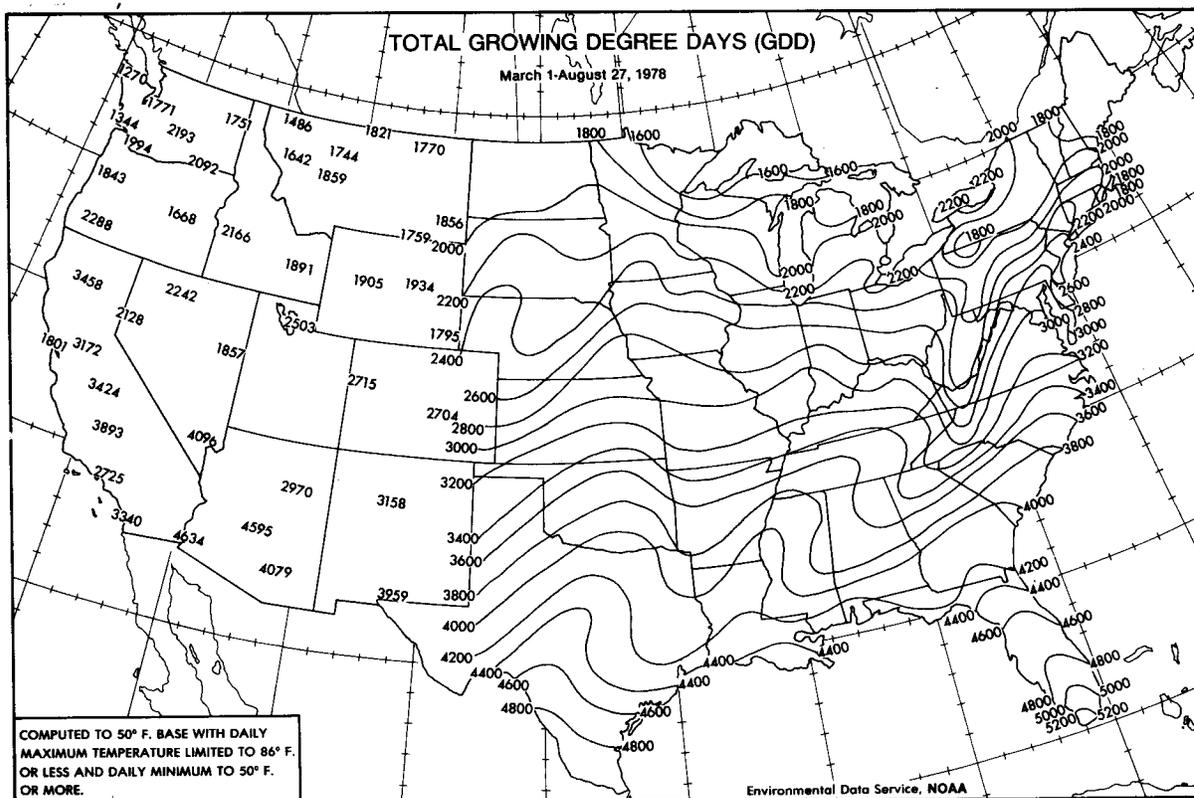
Fieldwork: 5.0 days suitable. Soil moisture short north, adequate south. Rice good; 70% harvested, 56% last year, 51% average. Soybeans fair to good; 96% blooming or beyond; 84% setting pods, 85% last year. Cotton fair; 16% bolls open, 12% last year. Corn fair to good; 50% harvested, 27% last year, 26% average. Sorghum fair to good; 77% turning color, 57% last year; 37% ripe; 22% harvested. Sugarcane, sweetpotatoes fair to good; 23% dug, 24% last year, 22% average. Pastures, cattle fair to good. Hay fair.

MARYLAND & DELAWARE: Temperatures 2° above normal. Highs low 90's, lows mid-50's. Precipitation very light, many areas none.

Fieldwork: 7.0 days suitable. Topsoil moisture short to adequate, subsoil adequate. Pastures supplying average amounts of feed. Corn 55% dent stage, 65% 1977, 47% average; 10% matured. Corn for silage 20% harvested. Soybeans 60% podded, 65% 1977, 63% average; 5% yellowed. Tobacco 35% harvested, 38% 1977, 40% average. Fourth cutting alfalfa 35% completed. Vegetable harvest continues in full swing.

MICHIGAN: Temperatures above normal. Highs reached 80's and low 90's 24th. Precipitation heavy northern half of Lower and most of Upper. Precipitation light over southeastern Lower.

Fieldwork: 6 days suitable. Soil moisture short. Pasture feed supplies short to adequate. Corn 15% dented, 80% dough. Oats 95% harvested, 95% last year, 90% normally. Potatoes 15% dug—dry beans 75% leaves turned, 95% set pods. Soybeans 10% leaves turning. Hay second cutting 90% complete, 90% last year. Summer apples 70% harvested. Peaches 45% harvested. Plums 15% harvested. Pear harvest started. Pickle harvesting 70% complete. Sweet corn, tomato, onion, and other fresh vegetable harvests continue.



**MINNESOTA:** Temperatures 4 to 6° above normal west and south and 2 to 3° above normal central and northeast. Extremes: 94 and 45°. Precipitation excessive many sections; 2.00 to 2.70 in. above normal east central and northeast, 0.70 to 1.10 in. above northwest, central, and southeast, normal to 0.40 in. above normal south central and west central to 0.30 in. below normal southwest.

Rains, humid weather stalled small grain harvest but warm temperatures helped push row crop development. Topsoil moisture mostly adequate except short in west central and surplus in north central, northeast. Corn 85% in dough, 1977 99%, normal 83%; denting 32%, 1977 85%, normal 47%. Soybeans 12% turning yellow, 1977 50%, normal 31%. Combined: Spring wheat 70%, 1977 90%, normal 75%; oats 87%, 1977 96%, normal 89%; barley 91%, 1977 99%, normal 88%; flax 13%, 1977 46%, normal 43%. Seeded: Winter wheat 8%, 1977 11%, normal 13%; rye 8%, 1977 11%, normal 11%.

**MISSISSIPPI:** Temperatures 2° above normal. Extremes: 57 and 101°. Scattered rainfall over southern areas.

Soil moisture short to very short except south central, southeast adequate to short. Fieldwork: 6.1 days suitable. Dry weather stressing cotton, soybeans. Soybeans 97% blooming, 97% 1977; 78% podding, 77% 1977; 5% turning, 8% 1977. Cotton 15% open bolls, 32% 1977, 7% average. Corn 96% dented, 99% 1977; 60% mature, 67% 1977; 12% harvested, 10% 1977. Corn silage 82% harvested, 80% 1977. Rice 90% headed, 88% 1977; 15% mature, 10% 1977. Sorghum 63% ripe, 62% 1977; 18% harvested, 19% 1977. Sorghum silage 61% harvested, 53% 1977. Hay crops 78% harvested, 70% 1977, 70% average. Sweetpotatoes, 27% harvested, 15% 1977, 24% average. Soybeans, corn, pasture fair to good condition. Cotton fair condition. Rice good condition.

**MISSOURI:** Temperatures 2 to 6° above normal. Precipitation light as scattered thunderstorms.

Fieldwork: 6.0 days suitable. Grain sorghum 91% headed, last year 94%, normal 87%. Soybeans 89% blooming, last year and normal 100%; 66% setting pods, last year 84%, normal 73%. Corn 95% silked, last year and normal 100%; 60% in dough stage, last year 100%, normal 80%; 32% dented, last year 90%, normal 58%. Alfalfa hay harvest third cutting 71% complete, last year 81%, normal 69%. Cotton 6% with open bolls, last year 23%, normal 3%. Condition of crops and pasture mostly fair to good. Soil moisture mostly short.

**MONTANA:** Scattered heavy rain early week. Some thunderstorms severe, accompanied by strong winds and damaging hail. Largest amounts near 2.00 in. north central. Days warm and nights cool, temperatures near normal central to 5° below normal west.

Topsoil moisture mostly adequate. Fieldwork: 4.5 days suitable. Winter wheat 85% harvested, 10% ripe, 5% turning; normal 80%, 15%, 5% respectively. Expected start of winter wheat seeding September 5. Spring wheat 30% harvested, 40% ripe, 25% turning, 5% green; normal 50%, 25%, 20%, 5%. Barley 25% harvested, 35% ripe, 35% turning, 5% green; normal 50%, 30%, 15%, 5%. Oats 40% harvested, 30% ripe, 25% turning, 5% green; normal 55%, 25%, 15%, 5%. Haying 50% second cutting complete; 85% wild hay. Winter hay supplies adequate to surplus.

**NEBRASKA:** Temperatures 4 to 6° above normal. Precipitation generally light; occasional thunder-showers produced over 1.00 in. isolated areas.

Hot, humid weather encouraged row crop maturity. Corn dent 15%, year ago 75%, normal 45%. Corn dough 70%, year ago and normal 90%. Sorghum

turning 15%, year ago 75%, normal 35%; heading over 95%, year ago and normal 100%. Soybean podding over 95%, year ago and normal 100%. Third cutting alfalfa hay 60%, year ago over 70%. Fieldwork: 6.8 days suitable.

NEVADA: Temperatures 5° below normal except near normal extreme south. Extremes: 103 and 17°. No precipitation.

Small grain harvest continued under favorable weather conditions. Second cutting alfalfa completed northern areas, fifth cutting underway southern valleys. Cantaloupe harvest underway Fallon area.

NEW ENGLAND: Sunny, dry 21st and 23d. Rainy, cooler most areas 24th. Most of Maine, except extreme northern and eastern areas, received their first appreciable rain in more than three weeks.

Drought in northern Aroostook County, Maine becoming serious. If rains come now it will be too late to prevent problems such as growth cracks, hollow heart, and ill-shaped tubers. Some harvesting for early potato processing beginning. In Maine and New Hampshire soil dry to extremely dry and corn on dryer soils suffering from lack of moisture. Conditions in Vermont and three southern New England States are better. Cranberries sizing well. Apples coloring, but not sizing well in dry locations. Most vegetable crops doing very well.

NEW JERSEY: Temperatures slightly below normal. Extremes: 48 and 90°. Rainfall averaged 0.29 in. north, 1.76 in. central and 0.20 in. south.

Soil moisture short. Harvesting summer vegetables, irrigating and hay making major activities. Condition of field corn and soybeans very good.

NEW MEXICO: Scattered showers through 24th. Generally dry over weekend. Most rainfall totals less than 0.25 in.

Moisture short. Cotton bolls just beginning to open in extreme south. Fourth alfalfa cutting 75% complete in southern half. Irrigated grain sorghum and corn good. Dryland sorghum fair; over 90% headed. Over 80% corn in dough stage. Little winter wheat being sown. Green chile harvest active. Onion harvest very slow. Young lettuce damaged by rains. Apple harvest underway in south. Livestock good, pastures dry.

NEW YORK: Temperatures variable, cool on 24th and 25th north. Rain on 24th and 25th moderate to heavy in Adirondacks and Catskills, light elsewhere.

Corn condition good. Wheat harvest about done. Oats 80% harvested, 90% 1977. Second cutting alfalfa 85% in, 90% 1977. Third cutting 10%, 20% 1977. Harvest of vegetable crops moving along. Apple condition good; harvest of early varieties progressing. Peach harvest activity increasing.

NORTH CAROLINA: Temperatures 2 to 4° above normal. Precipitation light; heaviest in east.

Fieldwork: 5.8 days suitable. Soil moisture short to adequate. Condition of flue-cured tobacco, corn, cotton, peanuts, soybeans, hay crops, Irish potatoes, sweetpotatoes and apples mostly good. Pasture fair to good. Harvested: Flue-cured tobacco 63%, 1977 61%, average 72%; sweetpotatoes 11%, 1977 8%, average 8%; hays 90%, 1977 75%, average 74%; apples 22%, 1977 16%, average 22%. Corn harvest just getting underway.

NORTH DAKOTA: Rain widespread; amounts less than 0.50 in. southwest to more than 2.00 in. northeast,

with up to 3.43 in. extreme northeast. Heavy thunderstorms brought large hail and high winds to many parts 26th to 27th. Temperatures near normal. Extremes: 37 and 97°.

Rainfall slowed small grain harvest, but helpful for restoring soil moisture. Late seeded small grains and row crops also benefited as they were showing moisture stress. Harvesting: Hard spring wheat 60% combined, 77% 1977, 57% average; durum 45% combined, 59% 1977, 39% average; barley 91% combined, 91% 1977, 75% average; oats 75% combined, 85% 1977, 72% average.

OHIO: Temperatures 3 to 5° above normal; most rainfall occurred over weekend. Showers scattered and total amounts generally under 0.75 in.

Main activities: Cutting hay and combining hay seed; topping and spraying tobacco; harvesting fresh vegetables, melons, processing tomatoes, and cucumbers; fruit picking and vineyard spraying; filling silos; clipping pastures; and caring for livestock. Major crops doing well. Livestock in good condition with calves weighing more than in average years. Corn in dent 40%, 55% 1977, 45% average. Soybeans setting pods 65%, 70% 1977, 70% average. Corn silage cut 10%, 15% 1977, 10% average. Processing tomatoes 15%, 20% 1977. Alfalfa 3d cutting 40%, 50% 1977, 40% average. Tobacco topped 75%, 85% 1977, 65% average. Fieldwork: 6.5 days favorable. Pasture condition good. Soil moisture short to adequate.

OKLAHOMA: Temperatures ranged 2° above normal southwest and 6 to 8° above normal elsewhere. Rainfall quite varied ranging from 0.03 in. southeast to 1.18 in. northeast.

Topsoil and subsoil moisture supplies short. Wheat seeding will begin within a week or so. Corn for silage good condition with cutting well underway in Panhandle. Sorghum rated fair with 4% mature, 7% 1977, 15% normal. Harvest activity very scattered. Cotton fair condition with 92% setting bolls, 97% 1977, 84% normal. Dryland cotton needs rain but condition not critical. Soybeans rated fair with 46% setting pods, 72% 1977, 53% normal; crop critically short of rain in east. Peanuts rated fair with 66% pegging, 81% 1977 and normal. Native pastures fair to poor with over 50% providing inadequate supplies of forage. Livestock rated good to fair. Fieldwork: 6.4 days suitable.

OREGON: Cool and wet. Heavy rainfall all areas. Coastal areas received from 1.50 to 3.36 in., interior valleys 1.00 to 2.00 in., and northeastern area received over 1.00 in. Southeastern area driest with less than 0.50 in. Temperatures near normal along coast but ranged from 4 to 8° below normal elsewhere. Extremes: High 80's, low 50's west; low 80's, high 30's east.

Farm activity halted by rains. Grain harvest in final stages in west and at various stages in east. Some concern over sprout damage to unharvested fields. Haying interrupted. Grass seed harvest continues on final varieties. Pear, early peach and apple harvests underway. Prune harvest to begin soon in western valleys. Berry harvests nearly complete. Vegetable growth delayed by weather. Sweet corn, snap beans, cucumbers being picked. Potato and onion harvests continue. Pastures and rangelands greening, fall feed ample and livestock look good.

PENNSYLVANIA: Pleasant, sunny days and cool clear nights through 24th. Unsettled conditions remainder of period with heavy showers producing 2.00 to 5.00 in. rainfall 27th southeast. Temperatures near to

several degrees above normal with extremes 42 and 91°.

Fieldwork: 6 days suitable. Soil moisture mostly adequate to short. Activities: Combining wheat, oats; making hay; baling straw; plowing; alfalfa seeding; digging potatoes; spraying; cutting tobacco; filling silos. Oats 92% combined, last year 95%. Potatoes 21% dug, last year 25%. Corn 55% dough, 14% dented, last year 21% dented. Plowing 19%, last year 38%. Alfalfa second cut 87%, third cut 36%, third cut last year 48%. Clo-tim second cut 56%. Hay quality mostly good. Feed from pastures average.

PUERTO RICO: Island average rainfall 0.91 in. or 0.80 in. below normal. Temperatures about 81° on coasts and 76° interior. Extremes: 94 and 59°.

SOUTH CAROLINA: Temperatures near normal; highest 97°. Below normal rainfall occurring mostly on weekend.

Soil moisture short to adequate. Fieldwork: Over 5 days suitable. Corn condition fair, 85% mature, 91% last year, 72% average; 27% harvested including silage, 40% last year. Cotton fair to good condition, some growth slowed due to inadequate moisture; 12% open bolls, 30% last year, 12% average. Soybeans good condition, some suffering due dry soil; setting pods 59%, 56% last year, 60% average; worms, insects reported many fields. Tobacco 89% harvested, 86% last year, quality improved. Apples 24% harvested, 28% last year, 29% average; harvesting Yellow and Red Delicious, quality good. Grape harvest 88%, 1978 and 1977, average 66%; most going to processors, some fresh market. Peach harvest rapidly declining, will end by September 9. Commercial peanut harvesting not yet underway; dry weather affected pegging some areas. Pastures need rain some areas. Cutting fall hay.

SOUTH DAKOTA: Hot and humid moderated at weekend by cooler air and rain. Rainfall spotty.

Small grain harvest nearing end. Plowing in full swing. Row crops could use more rain and warm weather. Third cuttings alfalfa will begin soon. Topsoil moisture adequate southeast, north central and west central; short to critically short elsewhere. Fieldwork: 5.2 days suitable. Winter wheat 4% seeded, 1977 4%, normal 0%. Rye 5% seeded, 1977 11%, normal 4%. Sorghum 90% headed, 1977 100%, normal 95%; 33% showing color, 1977 49%, normal 25%. Corn 28% dented, 1977 64%, normal 51%; 6% mature (safe from frost), 1977 11%, normal 2%. Soybeans 15% shedding leaves, 1977 11%, normal 3%. Flax 45% harvested, 1977 73%, normal 69%. Spring wheat 95% harvested, 1977 100%, normal 100%. Alfalfa 2d cutting 90% harvested, 1977 100%, normal 100%.

TENNESSEE: Hot, dry; temperatures 1 to 4° above normal. Rainfall less than 0.50 in. east.

Fieldwork: 5.6 days suitable. Soil moisture very short west, adequate east. Corn dent stage 73%, 1977 84%, average 71%; mature 24%, 1977 39%, average 23%. Cotton open bolls 8%, 1977 24%, average 4%. Soybeans blooming 100%, 1977 98%, average 95%; soybeans setting pods 79%, 1977 86%, average 65%. Burley tobacco topped 75%, 1977 89%; harvested 21%, 1977 51%, average 38%. Fall plowing complete 31%, 1977 37%, average 36%. Budworms in corn. Grasshoppers in soybeans and tobacco. Boll weevils slight. Bollworms above control levels. Pastures fair. Cattle good condition. Rain needed desperately in west.

TEXAS: Partly cloudy skies with scattered afternoon and evening thunderstorms. Cooler tempera-

tures and thunderstorms upper Gulf Coast 27th. Temperatures near normal in central; 1 to 3° above normal in northwest, southwest, north central, upper Gulf Coast. Edwards Plateau temperatures 4° above normal. Readings 1° below normal in south central, lower Gulf Coast; 3° below in east. Rainfall ranged from 0.50 in. north to 0.25 in. elsewhere; except far south 0.75 in. Rainfall 0.25 in. less than normal.

Cotton harvest nearly complete in valley; progressing well from central Blacklands southward; with 14% harvested, 10% 1977, 8% average. Dryland cotton on southern High Plains and northern Low Plains stressed for moisture; irrigated cotton good condition. Infestations of bollworms and armyworms reported on northern High Plains. Grain sorghum harvest active southern Low Plains; nearly complete Blacklands; 66% harvested; 60% last year; average 56%. Few early fields harvested southern High Plains. Sorghum on northern High Plains good progress where moisture adequate. Corn harvest nearing completion from Blacklands southward; 35% harvested, 1977 17%, 22% average. Crop nearing maturity on northern High Plains; silage harvest active. Rice harvest nearing completion; 93% harvested, same as last year, 90% average. Peanut harvest 16% complete, 7% 1977, 12% average. Peanut stands in Cross-Timbers making good progress; need additional moisture for continued development. Soybeans along upper Gulf Coast making good progress; most fields blooming; few fields setting pods. On northern High Plains some fields blooming; others in pod filling stage. Wheat planting getting underway on High Plains; 1% of 1979 crop planted, 2% last year, 6% average. Sunflowers on High Plains making normal progress; harvest in some areas to begin soon. Late planted fields blooming. Some sugarbeet fields on northern High Plains infested with armyworms.

Land preparation and planting fall vegetables continued. Citrus irrigation continued. Cucumber planting underway. Harvests of melons, squash, cucumbers, bell peppers, peas, tomatoes continued.

Pastures and range land remain dry. Scattered showers in Trans-Pecos, Edwards Plateau, Coastal Bend improved some pastures. Tank water supplies low in parts of southern Plains, Cross-Timbers, Blacklands, East Texas. Many ranchers culled herds and sold calves due to lack of grazing. Livestock fair to good condition. Goat shearing active.

UTAH: Scattered showers with light accumulations mostly north. Temperatures ranged from 4° below normal to near normal, most frost in mountains.

Soil moisture continues low in nonirrigated areas. Winter wheat harvest 95% complete, spring wheat and barley harvest 85%. Alfalfa seed harvest just beginning. Snap beans 50% picked, sweet corn 30%, and tomatoes 5%. Peach and pear harvest in progress south, 2 weeks away north. Livestock good to fair condition. Range feed, ranges now in use, fair to good. Outlook for winter range feed poor to fair.

VIRGINIA: Temperatures slightly above average. Extremes: 95 and 46°. Precipitation light, mainly southwest sections, averaging less than 0.10 in.

Topsoil moisture short to adequate. Fieldwork: 5.9 days suitable. Harvest progress: Corn 1%, 8% 1977, 3% average; apples 5%, 9% 1977; tobacco--flue 34%, 41% 1977, 43% average; fire 9%, 33% 1977, 28% average; burley 2%, 15% 1977 and average; sun 6%, 37% 1977, 24% average. Pastures, corn, soybeans, tobacco, peanuts, hay good to excellent. Late planted corn, soybean growth stressed by dry conditions. Activities: Tobacco harvesting, hay

balancing, corn silage harvesting, alfalfa seeding, land preparation for fall seedings.

WASHINGTON: West: Temperatures 10° subnormal except near normal San Juans and 20° below east Cascade foothills. Precipitation 1.20 in. above normal coast; 0.50 in. above Puget Sound; 0.30 in. above east Cascade foothills; 0.20 in. subnormal San Juans.

Pasture grass responding to rains. Rain hampered harvest of cucumbers, snap beans, lettuce, cauliflower, early sweet corn and carrots, blueberries, blackberries, seed crops.

East: Temperatures 5° subnormal. Precipitation 0.20 to 0.50 in. above normal.

Harvesting hops, Norgolds, Russet Burbanks, mint, peaches, Bartlett pears. Rain stopped wheat, barley, lentil, dry pea harvest and damaged some hay and dry beans in windrow. Farmers fear sprouting. Seeding some winter wheat, working stubble, summerfallow. Livestock good. Pastures improving.

WEST VIRGINIA: Temperatures slightly above normal. Precipitation below normal.

Fieldwork: 5.5 days suitable. Soil moisture adequate. Major activities: Haying, pasture clipping. Hay 2d cutting 60% complete, 62% 1977, 59% average. Oats 89% complete, 91% 1977, 89% average. Potatoes 29% complete, 31% 1977, 35% average. Pasture and all crops good.

WISCONSIN: Warm, humid, wet. Temperatures 3° above normal. Highs 70's to 80's and some 90's

south midweek. Lows 50's to 60's and a few 70's. Rainfall very heavy north in thunderstorms 21st, 22d, and 26th. Southern areas generally had less than 1.00 in. Cooler and drier air end of week.

Combining of remaining oats slowed by wet weather. Oats 85% harvested, 1977 95%, normal 85%. Lodging and weed growth causes harvesting problems. Corn crop developing well with good growing and maturing weather. Corn 30% in dent, 1977 65%, normal 25%. Early corn will be safe from frost in couple weeks, late corn needs another month. Soybeans filling pods. Harvesting second and third crop hay continuing. Hay storage facilities becoming full. Pasture conditions above normal. Tobacco harvest becoming more active, crop varies considerably. Early apples being picked; good quality. Cranberries look good. Soil moisture surplus north, short to adequate other areas.

WYOMING: Precipitation below normal. Temperatures hovered around season norms; 90° plus temperatures predominated. Minimum temperatures dropped into 20's.

Topsoil moisture adequate. Winter wheat harvest in wind-up stages. Spring wheat 75% mature, 55% harvested. Oats 66% mature, 42% harvested. Barley 84% mature, 55% harvested. Winter wheat for 1979 18% planted. Row crops generally good condition. Most corn silked. Second cutting alfalfa 53% complete, third cutting 8% complete. Other hay 88% harvested. Stored feed supplies average to above average.

## World Weather and Crop Update

August 21 - 27

USSR. Weather held generally fair throughout European USSR with dry weather in the early portion of the week giving way to scattered showers on the weekend. Crop progress and harvesting was relatively unaffected by weather conditions. In the northern new lands, temperatures began to drop near frost levels which is common this time of year; these conditions generally did not hurt crops.

ASIA. Rain fell in the western portions of the North China plains generally helping the crops. There was only very light rain in central China, though, and not enough to provide much relief to the dry summer which has prevailed over the rice belt region. In the extreme south---Kwangtung, Kwangsi, and Yunnan provinces---heavy rains fell throughout the week as is customary for this time of year. In India, the usual late summer monsoon continued in full force helping to guarantee an abundant fall harvest. Rains were particularly heavy along the west coast of the Peninsula. Typhoon Elaine moved away from the Philippines into the South China Sea leaving considerable rice and vegetable damage from wind and flooding.

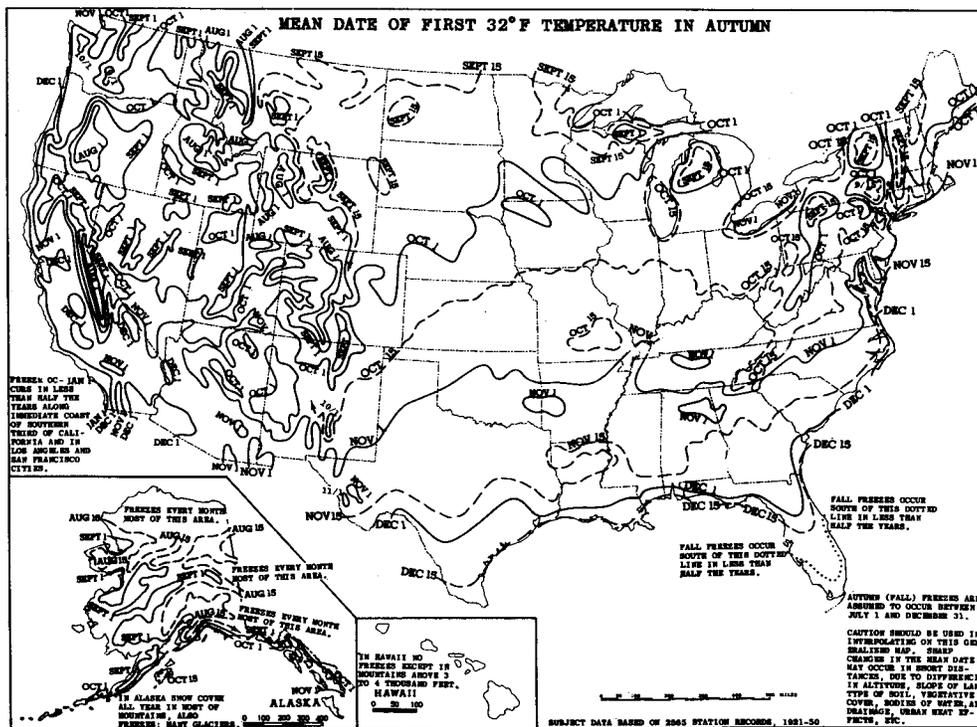
AUSTRALIA. It was generally dry in Australia, and particularly in the Southwest regions which are beginning to feel some stress from the lack of rain. The only exception to the dry conditions was in the extreme western portion of the country where daily isolated showers provided nearly 30 mm of rain.

AFRICA. Widely scattered sprinkles did little to alleviate the persistent hot, dry weather which has dominated North Africa during most of this summer. The beginning of last week was completely dry, and only at the end of the week did a few light showers arrive to barely keep down the dust. Tunisia received some relief with 5 to 16 mm of rain. Central Africa, too, remained dry experiencing only light scattered showers which accumulated less than 10 mm in about 25% of the area. In the Southeast mountains, there was 50 percent coverage of rain totaling between 10 to

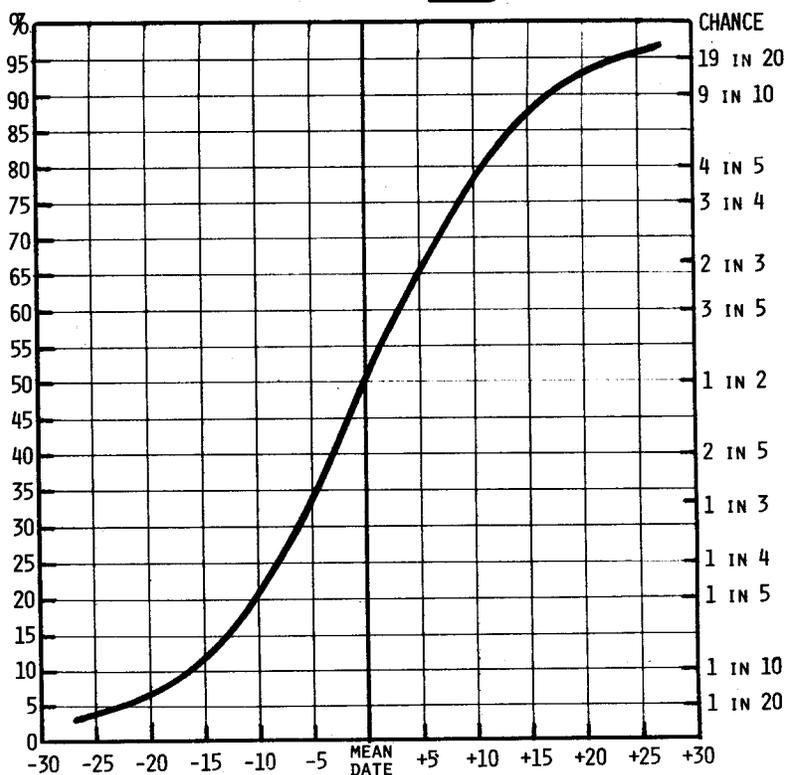
50 mm as the normal summer dry spell appeared to be breaking. Along the Southeast coast, normal temperatures combined with scattered showers that left between 10 and 40 mm of rain.

EUROPE. Fair weather and sunshine prevailed over most of western Europe last week with only light showers occurring in the northern regions. The United Kingdom had seasonal temperatures and less than 5 mm of precipitation, while West Germany was partly cloudy all week with light showers leaving less than 10 mm of moisture. Northeast Europe was still wet and cool, typical of this summer, providing less than favorable crop conditions. Spain, France, and the Southwest regions started a stretch of warm, sunny days. Poland's wet, cool summer continued with moisture accumulations of 5 to 25 mm adding to already excessive amounts. So far, moisture for August is 200 percent above normal. Turkey continued with hot and dry weather except for showers along the Black Sea coast.

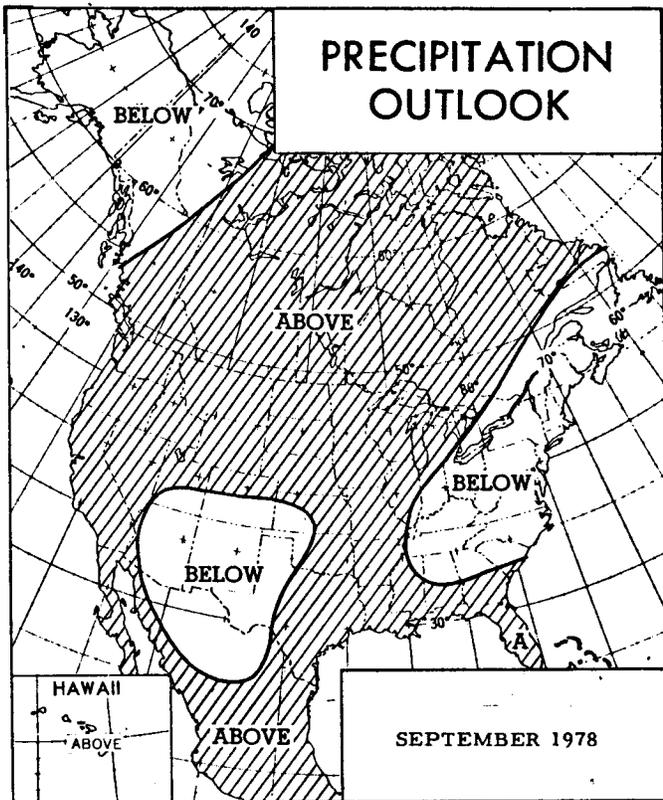
AMERICAS. Dry weather continued in Brazil, and will soon near the critical point without some moisture relief. Wheat production in Parana is expected to be down slightly due to frost last week. The extent of frost damage to the coffee crop cannot be assessed until plants begin to bud. Soil moisture is down and August planting could be affected by the persistence of arid conditions. Argentina has had only very scattered showers which provided less than 10 mm of moisture and did little to break the continuing dry spell. At the time of this writing, though, satellite photos show a storm developing in the central regions which could provide rain in the next few days. In Canada's northern Manitoba region very light showers fell leaving less than 10 mm of moisture, while southern Manitoba areas received between 10 to 50 mm. The week in Saskatchewan started off dry, but showers developed later leaving 5 to 15 mm of rain with up to 40 mm along the southern border. Western Canada's summer has generally been favorable and crops are expected to be above long-term average yields. Alberta had near normal temperatures and received between 5 and 15 mm of rain with heavier accumulations in isolated areas.



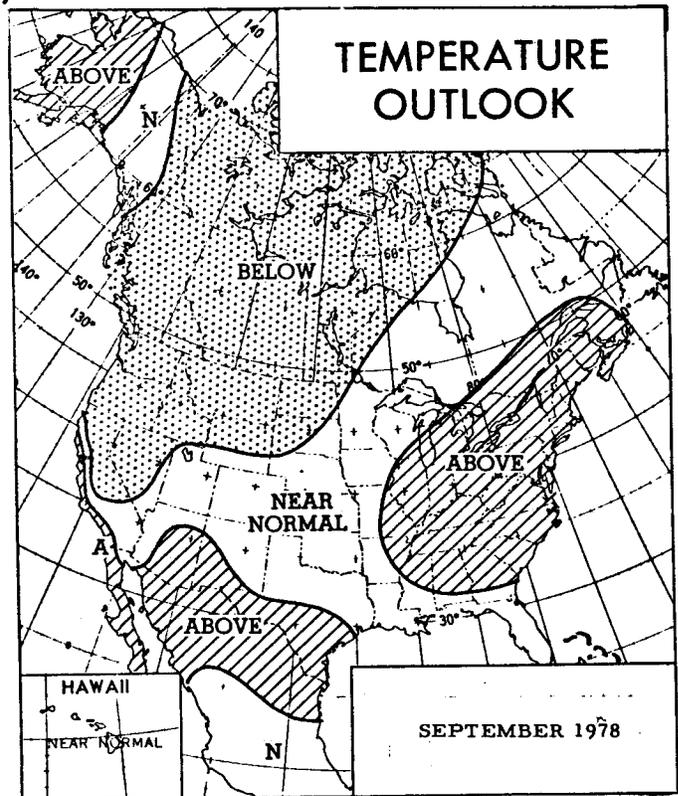
PROBABILITY OF FIRST FALL FREEZE BEFORE A CERTAIN DATE



NUMBER OF DAYS TO SUBSTRACT FROM, OR ADD TO, THE MEAN DATE OF FIRST FREEZE (32°F OR LOWER) IN THE FALL, TO OBTAIN OTHER PROBABILITIES OF OCCURRENCE. THE NATIONAL CURVE DEPICTED ABOVE WAS DERIVED FROM NUMEROUS, LONG-TERM REPORTS THROUGHOUT THE NATION. DH

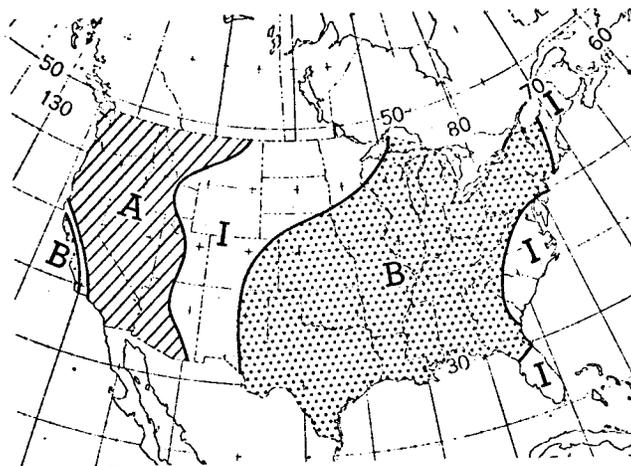


*Average Monthly Weather Outlook*



OUTLOOK FOR FALL AVERAGE TEMPERATURES

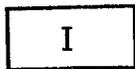
September through November 1978



Above Normal, 60% chance of occurrence



Below Normal, 60% chance of occurrence

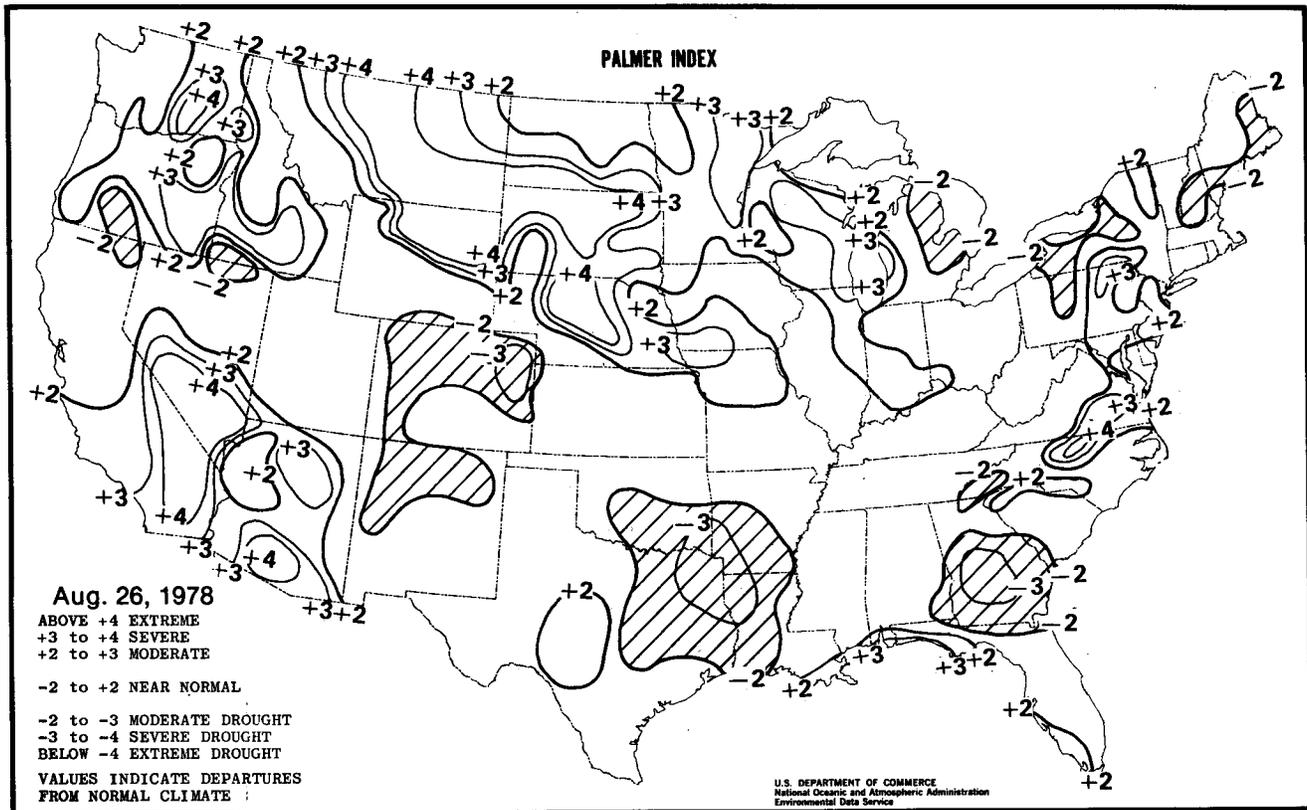


Indeterminate, 50% chance of Above Normal  
50% chance of Below Normal

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 nineteen years of experimental seasonal predictions.

NOAA, National Weather Service  
Climate Analysis Center

August 29, 1978



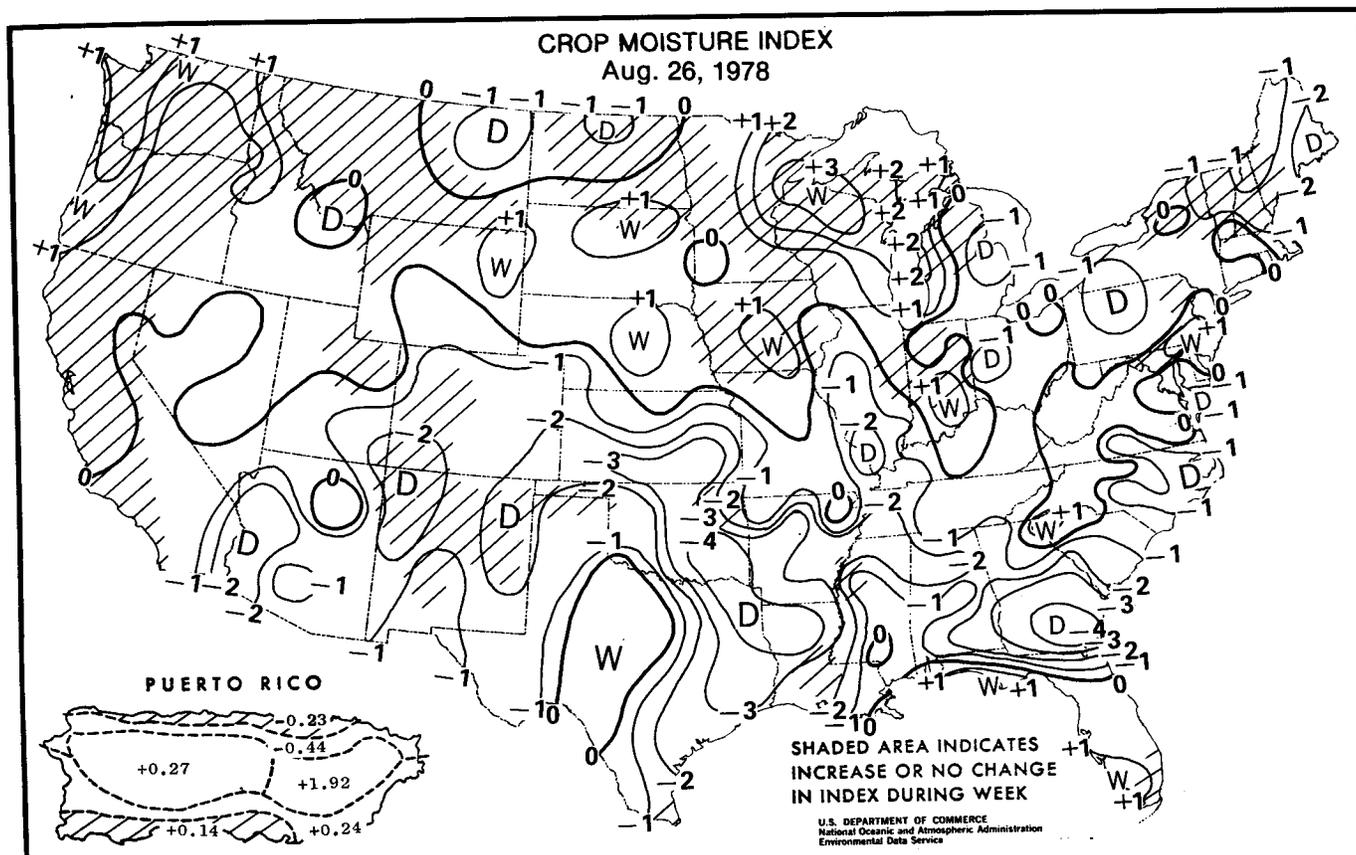
The Palmer Index

The Palmer Index is an index of meteorological drought, which may be defined as a prolonged and abnormal moisture deficiency. The general concept is one of supply and demand. Supply is represented by precipitation and stored soil moisture. Demand is the combination of potential evapotranspiration, the amount needed to recharge the soil moisture, and the runoff needed to keep the rivers, lakes, and reservoirs at a normal level. The results of this water balance accounting produce a positive or negative anomaly which is then weighted by a climate factor. The final product is an index that expresses the abnormality for that particular place for the period of time being computed. This manipulation allows the index to have a reasonably comparable local significance in space and time, that is, a certain index value obtained for a division in New York would have the same local significance as a like value in the more arid areas of western Kansas. This monthly increment is added to a portion of the previous month's index to include the duration of the anomaly in the final index.

The Palmer Index was designed as a climatological indicator of the scope and severity of past droughts. Using the Palmer Index on a real-time basis presents difficulties. A day or so of normal or better rainfall is certainly welcome in an area that has experienced a long drought, but one cannot know whether it indicates the end of the drought or just a brief respite. In order to

make the program have some real-time value, a system of computing a "probability" that a weather spell has ended was devised. This is not entirely satisfactory, but does allow one to assign a definite index value at times when there may be some doubt as to whether it should be positive (wet) or negative (dry).

Another aspect of using the Palmer Index is that one must remember that the demand part of the computations includes three parameters---potential evapotranspiration, recharge of soil moisture, and runoff, any one of which may produce a negative index. For instance if only enough rain fell to satisfy most of the expected evapotranspiration, but not enough to supply the expected recharge and runoff, then a negative index would result. If such a situation continued then one might find that agriculture was progressing at a near normal pace but the Palmer Index would be indicating a worsening drought. In this situation the drought would cause shallow wells and springs to go dry and the levels of rivers, lakes and reservoirs to fall below normal and, if this odd situation continued long enough, would cause serious economic stress to the livestock industry and eventually to other industries and cities. Then if rainfall fell below the minimum needed for agriculture, crops would suffer drastic and rapid decline because there would be no reserve water in the soil. Such a situation, to some extent, occurred during the Northeast drought in the 1960's when New York City almost ran out of water.



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 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.

<b>UNSHADED AREAS: INDEX DECREASED</b>	
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

<b>SHADED AREAS: INDEX INCREASED OR DID NOT CHANGE</b>	
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

**HARVESTING PROGRESS**

**SPRING WHEAT  
PERCENT OF ACREAGE HARVESTED  
AS OF AUGUST 27**

	1978	1977	AVG.
IDA	40	60	50
MINN	70	90	75
MONT	30	90	50
N DAK	60	77	57
S DAK	95	100	100
<b>5 STATES</b>	<b>63</b>	<b>85</b>	<b>66</b>

THESE 5 STATES PRODUCED  
97% OF THE 1977 U.S. SPRING  
WHEAT CROP - EXCLUDING DURUM.

Agricultural Weather Facility  
USDA South Bldg., Room 1248  
Washington, DC 20250

# IMMEDIATE - U. S. Weather Report

This Report Will be Treated in All Respects as Letter Mail

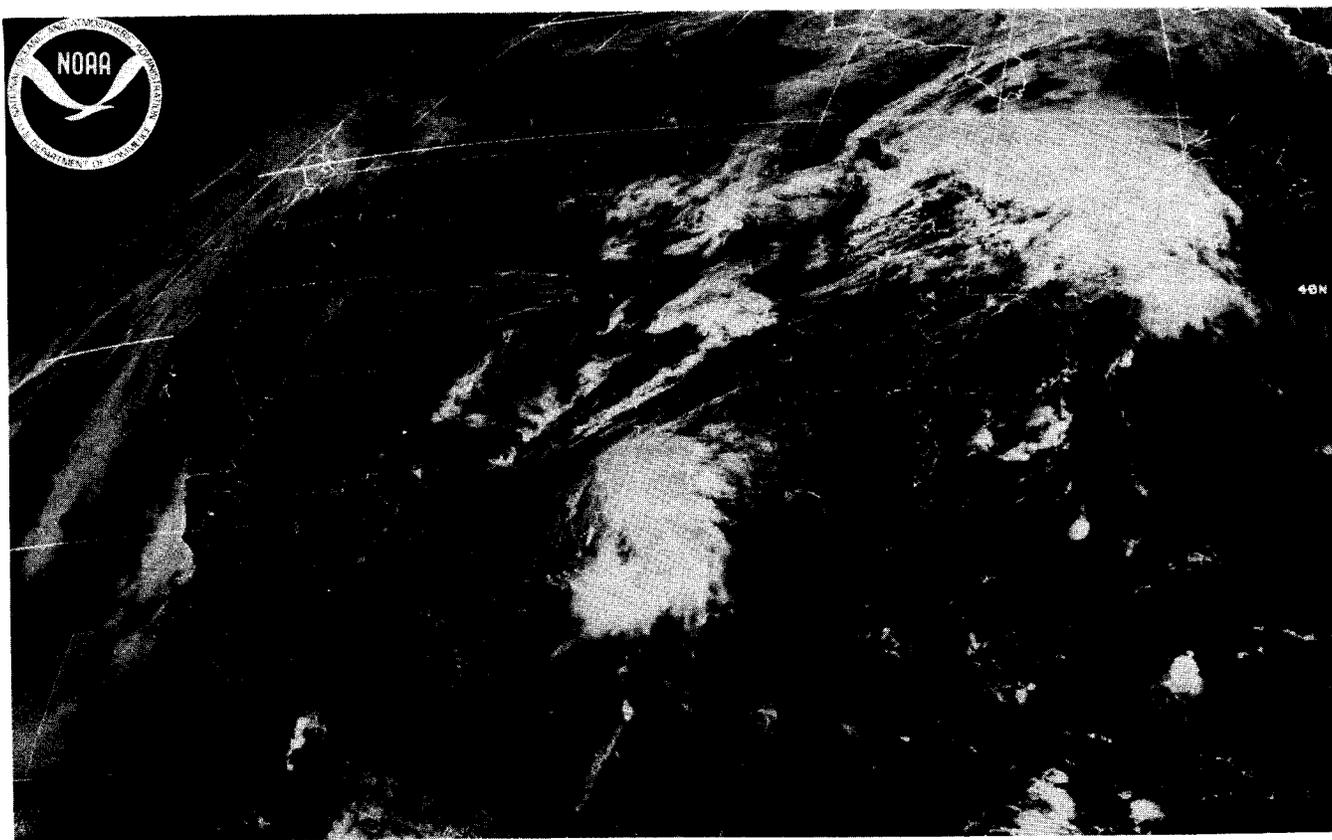
POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE



COM 210

## FIRST CLASS MAIL

NATIONAL ENVIRONMENTAL SATELLITE SERVICE PHOTO TAKEN AT 12:00 PM. (CDT), MON., AUGUST 28



Tropical Storm Debra moved from the Gulf of Mexico onto the Texas/Louisiana coast about 9:00 pm (CDT) on August 28. The storm entered the mainland about midway between Beaumont, Tex., and Lake Charles, La. Heavy rain accompanied the disturbance.