

WEEKLY WEATHER AND CROP BULLETIN

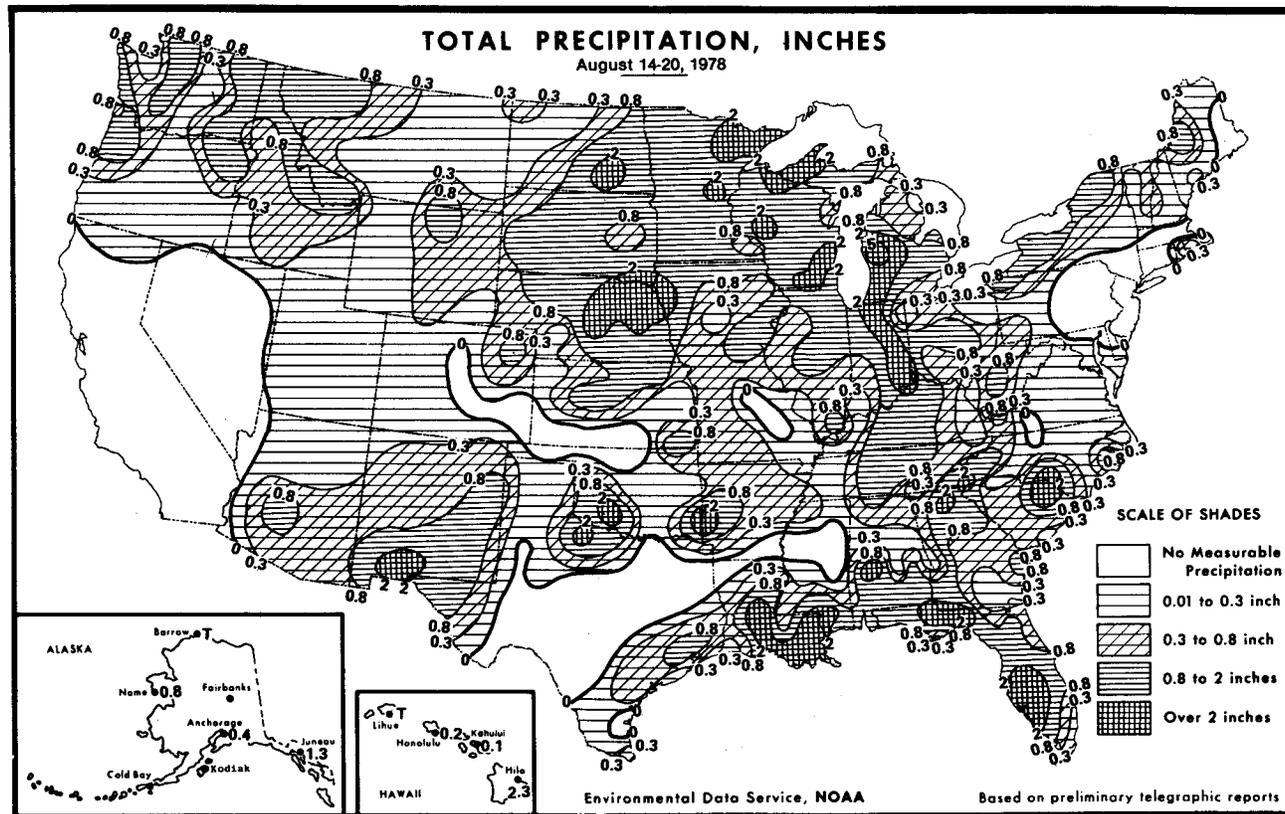
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National Weather Summary

August 14 - 20

HIGHLIGHTS: Several masses of cold, Canadian air moved into the northwestern U.S., and brought autumnlike temperatures to many parts of the Rockies and Plateau areas. The cool air edged slowly eastward and alleviated the heat wave in the middle Atlantic States and Northeast.

Severe weather marched ahead of the cool air in the northern Plains and Great Lakes region.

Monday thundershowers fell over the Delta Region in early afternoon; New Orleans gathered 2.62 in. By early evening, a line of heavy storms formed over the Great Plains and reached into Iowa. Hail, high winds, rain, and tornadoes pummeled the area.

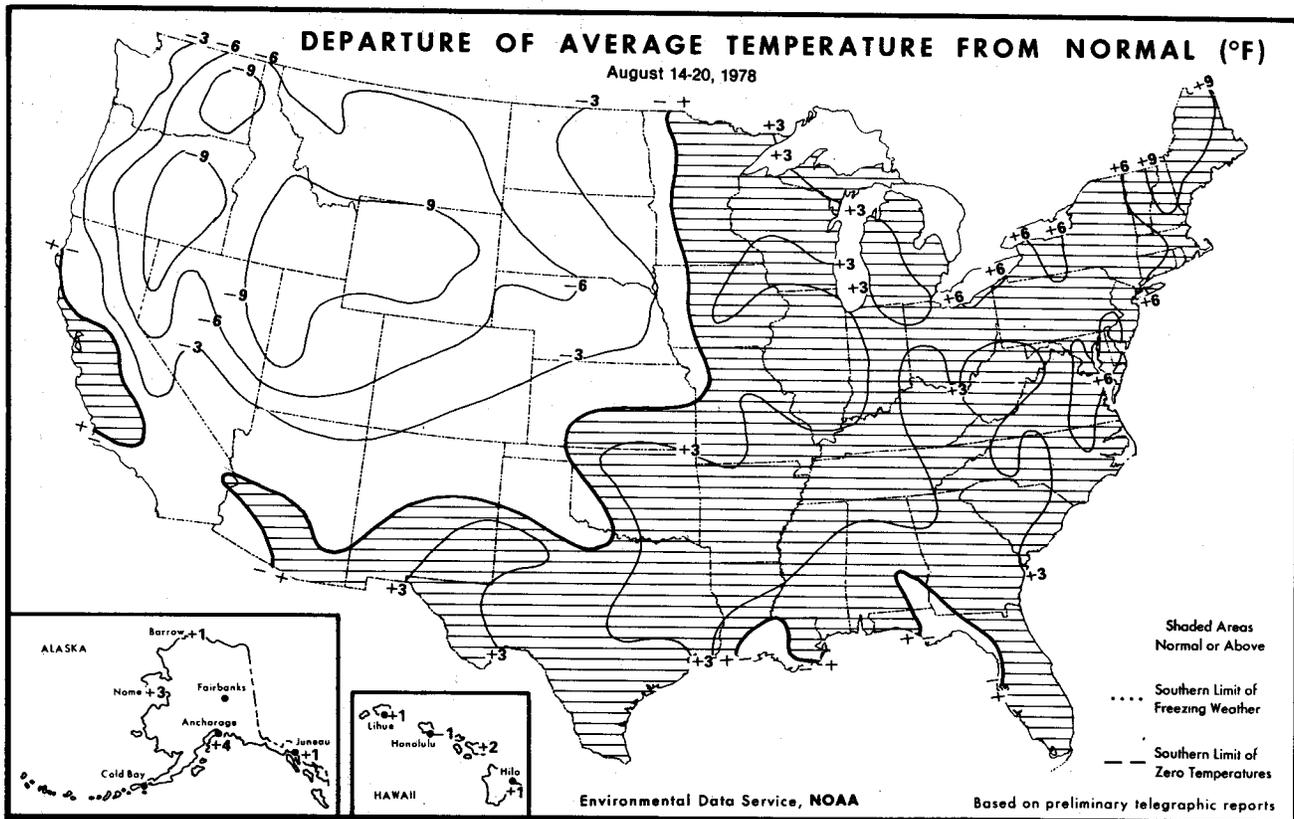
The heaviest rain soaked Nebraska with one to 2 inches. Other rain areas showed 1.76 in. at Tallahassee and a half-inch in the Pacific Northwest.

For the day, six tornadoes were sighted---one each in North Carolina, Nebraska, North Dakota, and Colorado and 2 in Minnesota.

Though chilly temperatures moved into the Rockies, record high readings warmed the upper Midwest. Minneapolis hit a new mark of 96° while Traverse City, western Michigan, noted 95°.

As a cold front slipped through the Rockies into the Plains on Tuesday, thunderstorms charged into the midlands carrying one to 2 inches of rain. By evening, the leading edge reached the Mississippi Valley and the Great Lakes touching off intense weather including tornadoes in South Dakota, Wisconsin, Illinois, and Michigan. Wausau, central Wisconsin, gathered an inch and one-half and Marquette in Michigan's peninsula got more than an inch.

Other reports of precipitation totaled more than an inch in the Pacific Northwest and Wichita



Falls, Tex., and an inch and more in New York State and Georgia. A twister touched down in Kempville, southeastern Virginia.

Following the cold front, the thermometer plummeted in the Rockies and western Plains. In Colorado, temperatures chilled Alamosa, 35°; Denver, 44°; and Pueblo, 50°. Dodge City, Kans., joined the records at 56°. By contrast, Caribou, Maine, matched its record high at 91°.

Early Wednesday storms dumped hail and up to 2 inches of rain on Michigan and Indiana. This remained the most severe weather for the day, though some rain and hail clipped parts of Kansas and Arkansas. Light rain fell on sections of the East, South, and Northwest; Watertown, western New York chalked up an inch. Meantime, snow spread from the mountains of Idaho to the higher elevations of Montana and Wyoming; a foot of snow whitened Mt. Holmes in Yellowstone Park.

Temperatures plunged to record levels again in the central Rockies and Plains. The same trio of Colorado cities set new marks---Alamosa's 36°, Denver's 47°, and Pueblo's 48°. In Nebraska, North Platte reported a record-equaling 47° and Wichita dipped below its 89-year old mark by 3 to 57°. Northern New England continued hot.

Thursday's heaviest storms brought hail, high winds, and rain and spawned tornadoes in Minnesota. Bemidji, north central Minnesota, scored 1.20 in. Other areas of precipitation included an inch at Bowling Green, southern Kentucky, and .65 inch at Peoria, Ill., as well as hail at Fargo, N. Dak., and points in Indiana and Kentucky. A tornado was sighted at Myakka, west central Florida. Heavy snow fell at the high elevations from northwestern Montana through Wyoming.

Temperature extremes kept record heat in Maine where Caribou, 89°, and Portland, 93°, opened the books. It was very hot over the southern Plains also, however, to the north Boise, Idaho, hit a record low of 40°.

Thunderstorms rumbled over the middle Mississippi and Ohio Valleys Friday morning. Three to

4 inches of rain drenched stations in Indiana's eastern half while nearly an inch covered parts of northern Kentucky. By afternoon, clouds formed over Wisconsin and Minnesota where one-half to one and a half inches fell. Other rain areas included a half to one inch in portions of Florida, Iowa, Oklahoma, and the northern Rockies.

Idaho notched 2 record low temperatures---42° at Boise and 37° at Pocatello, both undercutting the 1902 marks by one degree.

A strong high pressure system settled over the center of the Nation on Saturday carrying cool temperatures, but pushing heavy storms along its leading edge. One to 2 inches of rain hit many points in Michigan, and Fremont, north of Grand Rapids, was inundated by 5.18 in. Intense storms formed over the Southwest and the Deep South to Florida; a sampling showed 1.37 in. at Deming, southwestern New Mexico; 3.5 inches at Laurel, southeastern Mississippi; and Tampa's 1.5 inches. Further north, Nashville and Watertown, N.Y., reported an inch and Erie, Pa., 1.5 inches. In the southern Plains, towns in Oklahoma measured one to 2 inches. Tornadoes touched down near Houston and Sandpoint, northern Idaho.

The cool air forced a record low at Williston, N. Dak., 38°, and record-equaling readings in Wyoming---Cheyenne's 40° and Casper's 42°. Laramie, Wyo., shivered at 28°, its lowest-ever August temperature.

Sunday's heaviest rain fell across the Southwest to West Texas. Up to 2 inches drenched southern New Mexico and El Paso County, Texas, triggering flash flooding. Phoenix collected over an inch. Rain also fell in the South from East Texas to the Atlantic Coast; measurements tallied 1.3 inches at New Orleans and an inch at New Bern, eastern North Carolina.

Temperatures soared in the Tar Heel State; Wilmington, N.C., reached a record 97° while Cape Hatteras equalled its high of 91°, marking the sixth consecutive day setting or tying the record high reading.



National Agricultural Summary

August 14 - 20

HIGHLIGHTS: Rains delayed small grain harvests across the North, but also improved row crop growth. Topsoil moisture rated short to adequate throughout the Corn Belt, however, subsoil moisture was adequate. The South registered adequate to, in some areas, surplus moisture, but the south central States rated only short to adequate; western portions of the region were driest. The West remained dry although rains dampened parts of Arizona and the Pacific Northwest. Spring wheat harvest reached 49%, short of 1977's 70% and the 53% average. Oats and barley harvests slowly advanced but rains delayed progress. Growers seeded some 1979 winter wheat. Corn rated good in the Corn Belt and fair to good elsewhere; most of the crop reached well into the dough stage. Corn harvest became widespread across the South. Soybean podding was well advanced, and earliest north central fields showed some yellowing. Cotton rated fair to good; bolls began opening. Cotton picking was limited to Texas and Arizona. Grain sorghum heading moved far along in the central and northern Great Plains; earliest fields showed color while harvest advanced into Oklahoma. Texas and Louisiana rice harvests were well advanced and ahead of normal.

SMALL GRAINS: Winter wheat combining rolled through most northern States centering in the Northwest and Montana. Winter wheat combining reached 50% in Idaho and 65% in Montana. Growers in New Mexico began seeding wheat for 1979 harvest. In the north central States, growers plowed land for wheat seeding; Indiana stood at 20% and Illinois 45%, both behind the average.

Spring wheat harvest reached 49%, lagging 1977's pace by 21 points yet only 4 points less than average. Rain slowed combining in several States, but in the 5 major producing States farmers harvested 21% of the crop during the week--more than usually harvested.

Rains also plagued barley and oats combining. Wisconsin oats lodged and the moisture encouraged weed growth which slowed harvest machinery. Oats harvest stood at 70% in Wisconsin, 84% in Minnesota, and 58% in North Dakota; other major States were virtually finished. Barley harvest reached 87% in Minnesota, 80% in North Dakota, 15% in Montana, and 20% in Idaho.

CORN: Corn rated good in the north central States with most of the crop in the dough stage and some beginning to dent. Some areas had a shortage of topsoil moisture, but subsoils had adequate supplies. In the eastern north central States, from 40 to 77% of the corn reached the dough stage or beyond compared with the average range of 35 to 92% in the region. About 10% in Michigan to 39% in Illinois was dented. Wisconsin's late corn needed 4 to 6 weeks to mature.

In the western north central States, dough stage ranged from a low 40% in Missouri to 70% in Iowa. Up to 20% of the corn dented; most States fell about 15 to 20 points behind the average.

Corn harvest in the South became widespread and reached 22% in South Carolina, 17% in Georgia, 10% in Mississippi, 43% in Louisiana, and 32% in Texas. Condition of the southern crop scored fair to good.

SOYBEANS: Soybeans in the eastern Corn Belt rated good. Pod set ranged from 45% in Ohio, to 70% in Indiana and Michigan, and 85% in Illinois--only 5 to 12 points less than normal. Leaves in early fields began yellowing.

In the western Corn Belt, podding ranged from 50% in Missouri to 60% in Kansas, 85% in Nebraska, 90% in South Dakota, 95% in Iowa, and 96% in Minnesota--trailing the average by only 2 to 18 points.

In the south central States, pod set ranged from 27 to 76%; 2 to 14 points less than average. Rains in some areas greatly helped the crop.

COTTON: Boll set was almost complete. Growers battled the annual summer insect build-up. Bolls began opening and ranged from 1% in Missouri and Arkansas to 4% in South Carolina, 5% in Mississippi, and 14% in Louisiana. Texas harvest reached 11%, ahead of 1977's 7% and the 6% average. Arizona also reported some limited picking. New Mexico's bolls began opening in the south. California growers had some bollworm problems.

OTHER CROPS: Grain sorghum harvest advanced into Oklahoma where some early combining began. Texas harvest reached 65%, 7 points ahead of both last year and average. Heading further north in the Great Plains ranged from 60% in Kansas to 90% in Nebraska. In South Dakota, 15% of the acreage showed color and in Kansas 10%.

Rice rated good; heading in Mississippi reached 70% and Arkansas 64%. The Louisiana harvest reached 56%, surpassing recent years, and Texas stood at 33%, equalling the average.

Maine potatoes had a fair set, but dry soils slowed tuber sizing; rains now could cause problems. Michigan and Wisconsin growers harvested early fields Idaho potatoes developed on schedule; 5% of the vines were dying. Northwest producers harvested early Russets.

FRUITS AND NUTS: Northern deciduous fruit growers harvested Bartlett pears, apples, and peaches. Along the West Coast, growers also picked grapes for fresh use, raisins, and wine, as well as plums, nectarines, and prunes. Citrus groves rated good to excellent in western areas and Florida.

VEGETABLES: Northern growers picked sweet corn, tomatoes, cucumbers, cabbage, onions, and snap beans. Arizona farmers prepared land for fall crops and planted lettuce. Texas growers moved a wide variety of vegetables and melons to market and also prepared land to plant fall crops. Florida producers had a large assortment of vegetables developing well, and harvested a light volume of squash, cucumbers, and okra. California growers harvested some broccoli, cauliflower, celery, and lettuce. Tomatoes moved to processors in heavy volume. California growers seeded fall lettuce.

PASTURES AND LIVESTOCK: Pastures generally rated fair to good. Grasslands with ample rainfall scored excellent. Many southern Great Plains grazing lands deteriorated from lack of moisture. Some western rangelands improved after recent rains, notably Arizona and some areas of the Northwest. The fire danger also was temporarily eliminated. California rangeland persisted dry and fires remained a problem.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., Aug. 20, 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 . . .	81	+ 2	.1	-.9	LA. Baton Rouge . . .	82	0	.6	-.4	Youngstown . . .	73	+ 4	.2	-.5
Mobile . . .	84	+ 2	.8	-.7	Lake Charles . . .	82	0	.2	-.8	OKLA. Okla. City . . .	85	+ 4	T	-.6
Montgomery . . .	81	0	T	-.7	New Orleans . . .	83	+ 1	4.0	+ 2.9	Tulsa . . .	86	+ 4	T	-.6
ALASKA. Anchorage . . .	60	+ 4	.4	-.1	Shreveport . . .	87	+ 1	0	-.6	OREG. Astoria . . .	60	0	.6	+ .2
Barrow . . .	39	+ 1	T	-.2	MAINE. Caribou . . .	71	+ 9	.1	-.7	Burns . . .	56	-10	.1	0
Fairbanks . . .	-	-	-	-	Portland . . .	74	+ 7	.1	-.5	Medford . . .	65	-5	.1	0
Juneau . . .	55	+ 1	1.3	+ .2	MD. Baltimore . . .	79	+ 4	0	-1.0	Pendleton . . .	63	-8	1.0	+ .9
Kodiak . . .	-	-	-	-	MASS. Boston . . .	72	+ 7	0	-.8	Portland . . .	65	-2	1.1	+ .9
Nome . . .	52	+ 3	.8	0	Chatham . . .	72	+ 0	.1	-.3	Salem . . .	65	-1	1.2	+ 1.1
ARIZ. Flagstaff . . .	62	+ 1	T	.6	MICH. Alpena . . .	69	+ 5	.3	-.3	PA. Allentown . . .	76	+ 4	0	-.9
Phoenix . . .	91	+ 2	1.2	+ .9	Detroit . . .	74	+ 3	1.0	+ .2	Erie . . .	74	+ 6	1.6	+ .8
Tucson . . .	84	0	.4	-.1	Flint . . .	72	+ 1	2.4	+ 1.8	Harrisburg . . .	79	+ 5	0	-.7
Winslow . . .	75	- 1	T	-.4	Grand Rapids . . .	71	+ 1	.7	+ .2	Philadelphia . . .	82	+ 7	0	-.9
Yuma . . .	91	- 2	0	-.1	Houghton Lake . . .	68	+ 3	1.8	+ 1.2	Pittsburgh . . .	74	+ 4	.4	-.3
ARK. Fort Smith . . .	86	+ 4	T	-.6	Lansing . . .	72	+ 2	1.5	+ 1.2	Scranton . . .	73	+ 3	T	-.7
Little Rock . . .	85	+ 4	.8	+ .1	Marquette . . .	71	+ 2	2.7	+ 2.1	R.I. Providence . . .	76	+ 6	.5	-.4
CALIF. Bakersfield . . .	82	+ 1	0	0	Muskegon . . .	72	+ 3	.5	-.2	S.C. Charleston . . .	84	+ 4	.1	-1.3
Eureka . . .	57	0	0	.1	S. Ste. Marie . . .	66	+ 3	1.2	+ .3	Columbia . . .	82	+ 2	.5	-.8
Fresno . . .	78	0	0	0	MINN. Duluth . . .	66	+ 1	1.5	+ .7	Greenville . . .	80	+ 2	T	-.9
Los Angeles . . .	72	- 2	0	0	Internat. Falls . . .	73	+ 2	1.1	+ .4	S.D. Aberdeen . . .	69	-2	1.1	+ .6
Red Bluff . . .	79	- 1	0	-.1	St. Cloud . . .	70	+ 1	.6	-.2	Huron . . .	69	-2	.4	-.1
San Diego . . .	72	0	0	0	St. Cloud . . .	70	+ 1	.6	-.2	Rapid City . . .	66	-6	1.0	+ .6
San Francisco . . .	65	+ 2	0	0	St. Cloud . . .	70	+ 1	.6	-.2	Sioux Falls . . .	70	-2	1.3	+ .7
Stockton . . .	76	+ 1	0	0	MISS. Jackson . . .	84	+ 3	.1	-.7	TENN. Chattanooga . . .	81	+ 3	.2	-.5
COLO. Denver . . .	67	- 5	T	.3	Meridian . . .	82	+ 1	T	-.8	Knoxville . . .	79	+ 2	.6	-.1
Grand Junction . . .	68	- 7	T	-.3	MO. Columbia . . .	79	+ 3	T	-.7	Memphis . . .	84	+ 4	.5	-.3
Pueblo . . .	72	- 3	0	-.5	Kansas City . . .	77	+ 1	.3	-.5	Nashville . . .	82	+ 3	1.2	+ .5
CONN. Bridgeport . . .	79	+ 6	0	-.9	St. Louis . . .	79	+ 2	T	-.6	TEX. Abilene . . .	86	+ 2	T	-.4
Hartford . . .	74	+ 4	0	-.9	Springfield . . .	78	+ 1	.3	-.3	Amarillo . . .	77	- 1	.1	-.6
D.C. Washington . . .	83	+ 6	.1	-1.0	MONT. Billings . . .	63	- 7	T	-.2	Austin . . .	88	+ 3	T	-.5
FLA. Apalachicola . . .	81	0	T	-1.8	Glasgow . . .	63	- 6	T	-.4	Beaumont . . .	87	+ 4	T	-1.3
Daytona Beach . . .	83	+ 2	.5	-1.0	Great Falls . . .	61	- 7	.7	+ .4	Brownsville . . .	87	+ 3	.5	-.1
Ft. Myers . . .	84	+ 1	2.2	+ .5	Havre . . .	62	- 6	.4	+ .2	Corpus Christi . . .	87	+ 2	0	-.7
Jacksonville . . .	82	+ 1	.6	-1.2	Helena . . .	60	- 6	.1	-.1	Del Rio . . .	88	+ 2	0	-.3
Key West . . .	87	+ 2	.2	-1.8	Kalispell . . .	58	- 5	1.6	+ 1.3	El Paso . . .	84	+ 3	1.4	+ 1.2
Lakeland . . .	83	+ 1	3.3	+ 1.7	Miles City . . .	67	- 5	.1	-.2	Fort Worth . . .	88	+ 3	0	-.5
Miami . . .	85	+ 2	.1	-1.4	Missoula . . .	58	-.6	.6	+ .4	Galveston . . .	86	+ 3	T	-1.0
Orlando . . .	83	+ 1	1.1	-.4	NEBR. Grand Island . . .	71	- 4	.8	+ .9	Houston . . .	85	+ 2	.9	-.1
Tallahassee . . .	81	0	3.1	+ 1.6	Lincoln . . .	73	- 3	1.7	+ .9	Lubbock . . .	83	+ 4	T	-.4
Tampa . . .	83	0	1.0	-.8	Norfolk . . .	70	- 4	2.9	+ 2.3	Midland . . .	84	+ 2	T	-.4
W. Palm Beach . . .	83	+ 1	T	-1.5	N. Platte . . .	68	- 5	.2	-.2	San Angelo . . .	85	0	0	-.3
GA. Atlanta . . .	81	+ 3	.2	-.6	Omaha . . .	72	- 2	1.2	+ .3	San Antonio . . .	86	+ 1	0	-.5
Augusta . . .	82	+ 2	.6	-.3	Valentine . . .	67	- 6	1.3	+ .7	Victoria . . .	85	0	.8	+ .1
Macon . . .	83	+ 2	.5	-.3	NEV. Ely . . .	57	- 9	T	-.1	Waco . . .	89	+ 3	0	-.4
Savannah . . .	84	+ 3	1.2	-.2	Las Vegas . . .	86	- 1	0	-.1	Wichita Falls . . .	84	- 2	1.8	+ 1.4
HAWAII. Hilo . . .	77	+ 1	2.3	-.2	Reno . . .	61	- 6	0	-.1	UTAH. Blanding . . .	67	- 4	T	-.4
Honolulu . . .	80	- 1	.2	0	Winnemucca . . .	62	- 6	T	-.1	Salt Lake City . . .	66	- 9	.2	0
Kahului . . .	81	+ 2	.1	0	N.H. Concord . . .	76	+ 9	T	-.6	VT. Burlington . . .	73	+ 6	.1	-.7
Lihue . . .	80	+ 1	T	-.5	N.J. Atlantic City . . .	78	+ 5	0	-1.1	VA. Lynchburg . . .	79	+ 5	T	-.9
IDAHO. Boise . . .	64	- 8	.1	0	Trenton . . .	79	+ 5	0	-.9	Norfolk . . .	81	+ 4	T	-1.3
Lewiston . . .	65	- 7	.6	+ .5	N.MEX. Albuquerque . . .	76	- 1	.6	+ .3	Richmond . . .	82	+ 6	.1	-1.0
Pocatello . . .	59	- 11	.2	+ .1	Roswell . . .	87	+ 3	1.5	+ 1.2	Roanoke . . .	79	+ 5	T	-1.0
ILL. Cairo . . .	82	+ 3	T	-.8	N.Y. Albany . . .	74	+ 4	T	-.6	WASH. Colville . . .	58	- 9	1.4	-.6
Chicago . . .	75	+ 1	.6	-.1	Binghamton . . .	72	+ 5	T	-.6	Omak . . .	62	- 6	.2	+ .1
Moline . . .	75	+ 2	.7	0	Buffalo . . .	73	+ 5	1.1	+ .3	Quillayute . . .	58	- 1	1.5	+ .9
Peoria . . .	75	+ 1	.7	0	New York . . .	80	+ 5	0	-1.1	Seattle-Tacoma . . .	62	- 2	.3	0
Rockford . . .	73	+ 1	1.5	+ .7	Rochester . . .	75	+ 6	1.2	+ .3	Spokane . . .	58	-10	1.0	+ .9
Springfield . . .	75	+ 1	1.0	+ .4	Syracuse . . .	74	+ 4	.3	-.5	Walla Walla . . .	65	- 9	1.5	+ 1.4
IND. Evansville . . .	78	+ 2	1.1	-.5	N.C. Asheville . . .	75	+ 2	1.1	+ .1	Yakima . . .	62	- 7	.1	0
Ft. Wayne . . .	74	+ 3	.1	-.5	Charlotte . . .	81	+ 3	.1	-.8	W.VA. Beckley . . .	71	+ 2	.1	-.7
Indianapolis . . .	76	+ 3	.9	+ .3	Greensboro . . .	77	+ 1	T	-1.0	Charleston . . .	76	+ 2	.9	+ .1
South Bend . . .	74	+ 3	2.0	+ 1.3	Hatteras . . .	82	+ 4	.1	-1.4	Huntington . . .	77	+ 3	T	-.7
IOWA. Burlington . . .	74	0	1.6	+ .6	Raleigh . . .	82	+ 5	T	-1.1	Parkersburg . . .	76	+ 2	.3	-.4
Des Moines . . .	76	+ 3	.2	-.6	Wilmington . . .	85	+ 5	.2	-1.3	WISC. Green Bay . . .	70	+ 2	.8	+ .2
Dubuque . . .	74	+ 3	.7	-.2	N.DAK. Bismarck . . .	67	- 3	.8	+ .3	La Crosse . . .	76	+ 4	.5	-.2
Sioux City . . .	70	- 4	2.2	+ 1.5	Fargo . . .	68	- 2	1.0	+ .4	Madison . . .	72	+ 3	1.1	+ .4
KANS. Concordia . . .	76	- 1	1.1	+ .4	Williston . . .	65	- 4	.3	-.1	Milwaukee . . .	72	+ 3	1.9	+ 1.3
Dodge City . . .	78	0	T	-.6	OHIO. Akron-Canton . . .	75	+ 5	T	-.6	WYO. Casper . . .	61	- 9	.6	+ .5
Goodland . . .	71	- 3	.1	-.4	Cincinnati . . .	75	0	.9	+ .3	Cheyenne . . .	60	- 8	.1	-.3
Topeka . . .	76	- 1	.1	-.9	Cleveland . . .	76	+ 6	.1	-.6	Lander . . .	59	-10	.2	+ .1
Wichita . . .	82	+ 2	0	-.6	Columbus . . .	75	+ 3	.9	+ .3	Steridan . . .	60	- 9	1.0	+ .8
KY. Lexington . . .	76	+ 1	1.1	+ .4	Dayton . . .	73	0	.6	0	P.R. San Juan . . .	82	+ 1	2.2	+ .6
Louisville . . .	79	+ 3	1.3	+ .7	Toledo . . .	73	+ 2	.5	-.2					

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 5° above normal. Light rainfall north and south, none central.

Fieldwork: 5.1 days suitable. Soil moisture adequate to short. Major activities. Harvesting hay and silage and weed and insect control. Cotton fair condition; 94% setting bolls, 97% 1977, 97% average. Corn fair to good condition; 50% mature, 58% 1977, 48% average. Soybeans good condition; 57% setting pods, 61% 1977, 59% average. Peanuts good condition.

ALASKA: Temperatures about normal to slightly above normal. Rainy most of midweek.

Rain throughout railbelt lodged barley and interrupted farm activities. Soil moisture adequate to short. Small grain development continues to lag. Most oat, barley fields turning color. Rain halted haying operations. Potatoes and vegetables made good growth. Moderate supplies cabbage, greens, lettuce, radishes, and squash harvested.

ARIZONA: Monsoon season returned eastern areas, other areas dry. Temperatures near normal.

Cotton good progress, bolls maturing at accelerated rate. Limited picking underway west. Sorghum seasonal progress, early plantings reaped out, nearing maturity. Corn making good progress. Sugarbeets growing well. Alfalfa haying active, weather permitting. Fall vegetable, melon field preparations continued. Lettuce planting underway Yuma, virtually complete Cochise. Planting mixed vegetables active. Lemon picking gaining momentum Yuma area. Citrus groves good condition. Range, pastures mostly good condition higher areas, poor to fair desert. Recent showers improved conditions some areas. Topsoil moisture short in desert, adequate mountains. Cattle, calves mostly good condition. Supplemental feeding, water hauling necessary few areas.

ARKANSAS: Temperatures ranged a few degrees above normal with precipitation falling below normal. Highest temperature 104°, lowest 55°. Highest mean 89°, lowest 81°. Most precipitation 2.82 in.

Weekend showers beneficial, soil moisture short. Fieldwork: 6.2 days available. Soybean condition fair; blooms 59%, pod set 42%. Cotton condition fair, open bolls 1%. Squaring rate declining. Rice condition good, 64% forming heads. Corn and sorghum condition fair. Silage harvest active. Corn limited harvest. Sorghum harvest underway. Peach harvest declining. Apple condition and quality good. Grapes good to excellent condition. Tomato harvest active, good quality. Watermelons good quality, harvest declining. Pastures below average condition, growth limited. Hay harvest near standstill. Cattle condition mostly fair; supplemental hay feeding.

CALIFORNIA: Temperatures in interior near or below seasonal normals. Temperatures along coast and in Central Valley near seasonal normals while readings in mountains and southeast deserts were from 1 to 7° below normal. No precipitation.

Field corn tasseled, nearing maturity San Joaquin Valley. Some areas showing heat damage where water low. Silage corn cut. Sugarbeets sizing well. Dry beans making favorable growth. Garbanzos show root rot spotty localities. Cotton suffering bollworms. Rice heading out. Alfalfa hay cut. Alfalfa, clover

seed harvested. Sorghum grain harvested south, heading other areas. Safflower harvested. Apple harvest active Gravensteins. McIntosh, Golden Delicious, juice apple harvest underway. Zante currant grapes on ground to dry. Thompson seedless raisin lay active. Thompson seedless fresh market harvest increasing. Tokay shipment began. Early wine grape crush increasing. Plum, nectarine, peach, Bartlett pear harvests active. Prune harvest increasing. Almond shaking becoming general. Citrus and avocado picking normal levels. Supplies of broccoli, cauliflower, celery, and lettuce near seasonal normals. Fall lettuce planting active San Joaquin Valley. Sweetpotato supplies increasing slowly. Processing tomatoes heavier. Milk, egg production lower levels due earlier high temperatures. Sheep grazing melon, tomato fields San Joaquin. Moderate shipping cattle continues north. Range fires remain problem, ranges extremely dry. Supplemental feeding necessary some areas.

COLORADO: High winds eastern foothills and east 14th. Snow in mountains. High temperatures southeast, cooler late in week. Temperatures 3 to 4° above normal southeast, to 6° below normal west.

Corn good condition; silked 93% 1977; average height 81 in., 79 in. 1977. Spring barley good condition; harvested 72%, 63% 1977, 53% average. Spring wheat harvested 60%. Summer potatoes very good condition; harvested 38%, 51% 1977, 30% average. Dry beans good condition; flowered 90% 87% 1977. Alfalfa good condition; second cutting 97%, 75% 1977; third cutting 22%, 32% 1977. Sorghum good condition; headed 76%, 65% 1977. Oats good condition. Sugarbeets very good condition. Ranges and pastures fair to poor condition. Livestock good condition.

FLORIDA: Temperatures near normal with highs in low to mid-90's and lows in low 70's. Rain variable, from less than 0.10 in. to more than 5.50 in. Many totals between 1.00 and 3.00 in.

Soil moisture variable, mostly adequate west and north, slightly excessive in central areas and parts of south. Corn harvest active, tobacco harvest about complete. Peanuts, soybeans, and sugarcane good to excellent condition. Hay cutting as moisture conditions permit. Pasture growth very good with some surplus grass. Army worms active in fertilized pastures. Cattle, calves very good condition. Citrus tree condition excellent; light rains, high temperatures, excellent growth conditions. Caretakers controlling vines and cover crops. Vegetable land preparation continues active for fall plantings. Tomato planting making progress; Gadsden area crop in excellent condition, has been staked. Peppers, eggplant, sweet corn, celery, plantings increasing. Early planted acreage progressing favorably, very little spot resetting. Snap beans, pickles, squash, okra in Dade area making good progress. Light harvest squash, pickles, okra underway. Quality fair to good.

GEORGIA: Temperatures near normal except 1° above along coast and extreme east, 1 to 2° below in central and extreme south. Cloudy with scattered showers and thundershowers, most numerous over north and central sections first of week. Activity more widely scattered rest of week but most concentrated over east, southeast and northeast mountains. Rainfall generally 0.50 to 1.50 in.

Soil moisture mostly adequate, few areas surplus, few still short. Fieldwork: 5 days suitable. Insect and disease control very active. Corn poor to fair, 17% harvested. Peanuts good, all blooming and pegging, same last year. Soybeans good. Cotton mostly fair to good, insect controls active; 99% setting bolls, same last year. Tobacco good, 83% harvested, 79% last year, average 99%. Peaches fair to mostly good, 97% picked, last year 99%. Apples mostly good, 28% picked, 38% last year. Watermelons mostly fair to good, 90% harvested, last year 97%. Hay fair to mostly good. Pastures fair to mostly good. Cattle and hogs good.

HAWAII: Weather favorable. Beneficial showers some sections Island Hawaii. Temperatures higher than normal some parts of Maui, Oahu.

Spraying continues for insect, disease control. Vegetable supplies: Head cabbage heavy, others generally light to moderate. Banana supplies steady. Papaya supplies light to moderate. Sugar harvesting steady. Pineapple harvesting declining sharply. Pastures good; showers beneficial.

IDAHO: Temperatures 7 to 13° below normal. Extremes: 93 and 22°. Precipitation generally 0.25 in. to nearly 2.00 in. above normal.

Cool, wet weather slowed crop harvests and development. Winter wheat 50% harvested, 75% last year. Spring wheat 20% harvested, 45% last year and normal 30%. Spring barley and oats 20% harvested, 50% last year. Mixed grains 35% harvested, 65% last year. Potatoes developing normally with 5% of vines dying. Ranges provided adequate forage and expected to improve with recent rains.

ILLINOIS: Temperature normal to 3° above normal. Precipitation varied; less than 0.10 in. south to near 5.00 in. northeast.

Corn 77% dough, 1977 100%, average 92%; 39% dent, 1977 82% average 64%; condition good. Soybeans 85% set pods, 1977 99% average 97%; few fields turning yellow; good condition. Winter wheat acreage 45% plowed, 1977 68%, average 60%. Third cutting alfalfa hay 40% complete, 1977 70%, average 50%; condition good. Pasture conditions good to fair. Fieldwork: 5.8 days suitable. Soil moisture short to adequate.

INDIANA: Sunny, warm. Heavy scattered thunderstorms southeast. Some flash flooding and loss of life. Temperatures little above normal. Precipitation averaged 0.30 in. west and north central, 1.00 to 2.00 in. central and southeast.

Fieldwork: 5 days suitable. Topsoil and subsoil moisture adequate. Corn 73% in dough, 1977 92%, average 85%; 20% dented. Soybeans 70% setting pods, 1977 80%, average 75%. Wheat land 20% plowed, 1977 15%, average 35%. Corn and soybean condition good. Pastures fair to good.

IOWA: Warm week with scattered showers: moderate in west and light most other localities to continue subnormal rainfalls through 4th week.

Topsoil moisture short to adequate; subsoil moistures adequate. Corn, soybeans, hays, and pastures good condition. Corn milk stage 100%, last year 100%; dough stage 71%, last year 99%, normal 73%; dent stage 13%, last year 63%, normal 33%. Soybean acreage setting pods 95%, last year 100%, normal 92%; leaves turning 13%, 16% last year, normal 7%. Second crop clover hay harvested 92%, last year 69%, normal 70%. Third crop alfalfa hay harvested 28%, last year 53%, normal 33%. Fieldwork: 6.0 days suitable. Livestock good condition.

KANSAS: Significant rains of 0.50 to 2.00 in. many sections north and extreme southeast, little or no moisture elsewhere. Temperatures averaged 74° northwest, 77 to 80° elsewhere; 2 to 5° above normal.

Corn in or past dough stage 60%, last year 80% average 75%; 20% dented, last year 45%, average 35%. Sorghum headed 60%, last year 75%; 10% colored equals average, last year 25%. Soybeans setting pods 60%, average 70%, last year 75%. Third cutting alfalfa 75%, 65% average, 85% last year. Fourth cutting 10%, last year 20%. Soil moisture short. Pastures deteriorating. Fieldwork: 6 days suitable.

KENTUCKY: Precipitation 0.40 in. except little or none far west. Temperatures a little above normal. Fieldwork: 4.6 days suitable. Soil moisture short west, adequate elsewhere. Major activities: Topping and spraying tobacco; harvesting hay weather permitting.

LOUISIANA: Temperatures normal to 5° above. Extremes: 102 and 63°. Scattered showers, heaviest southeast.

Fieldwork: 5.1 days suitable. Soil moisture short north, adequate south. Rice good; 56% harvested, 48% last year, 40% average. Soybeans fair to good; 92% blooming or beyond, 92% last year; 76% setting pods, 73% last year. Cotton fair to good; 14% bolls open, 6% last year. Corn fair to good; 43% harvested, 18% last year, 21% average. Sorghum fair to good; 69% turning color, 48% last year; 29% ripe, 15% harvested. Sugarcane, sweetpotatoes fair to good; sweetpotatoes 18% dug, 20% last year. Pastures, cattle fair to good. Hay fair.

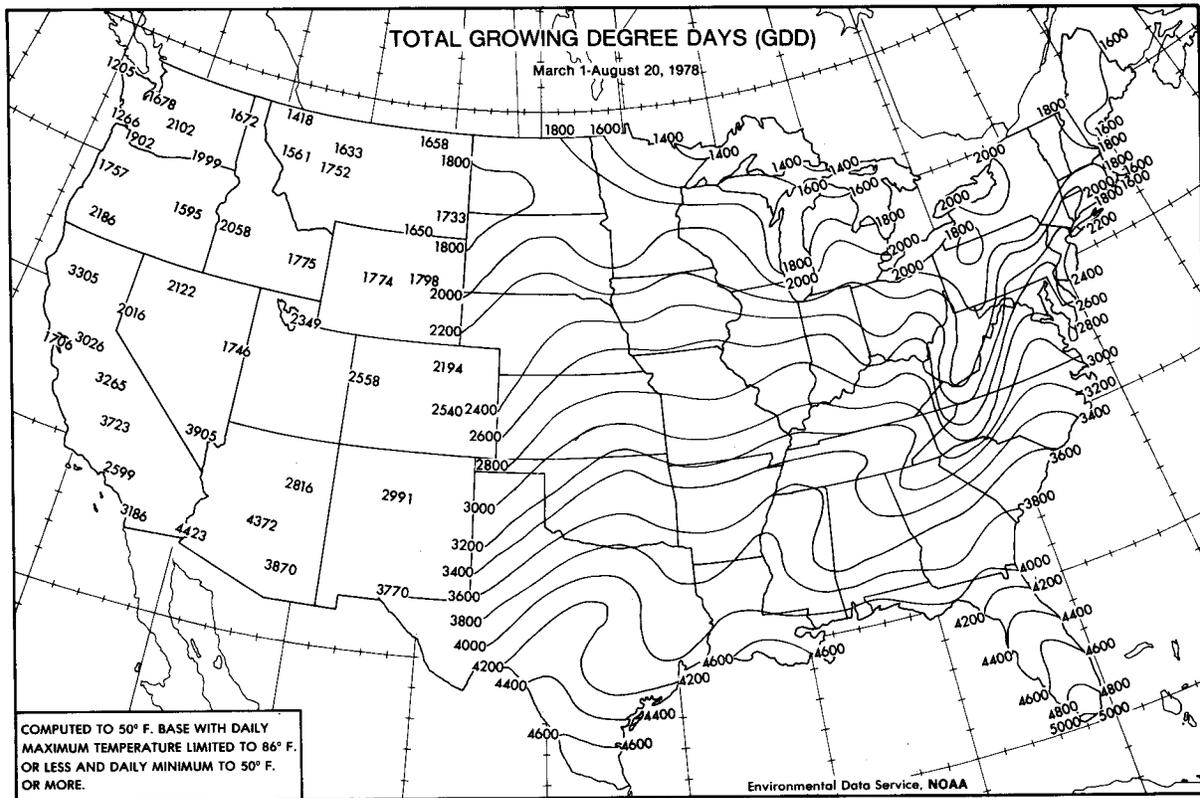
MARYLAND & DELAWARE: Temperatures 4° above normal. Highs in low 90's, lows in mid-60's. Precipitation light, ranging from 0.10 to 1.50 in. Lower Eastern Shore and southern Delaware received 5.00 in., mostly in form of thundershowers.

Fieldwork: 5.0 days suitable. Soil moisture adequate except surplus lower Eastern Shore and southern Delaware. Corn 70% dough stage, 72% 1977, 65% average. Soybeans 80% blooming, 91% 1977, 77% average; 40% podded, 50% 1977, 46% average. Third cutting alfalfa 73% completed, second cutting clover and clover mixtures 95% completed. Tobacco 20% harvested, 24% 1977, 24% average. Vegetable harvest continues. Fruit crops in good condition.

MICHIGAN: Temperatures 1 to 5° above normal. Beginning of week warm with highs in 90's cooling by weekend to lows in 40's and 50's. Precipitation mid to late week reaching 7.00 in. part of west central Lower and over 2.00 in. part of southwestern upper. Severe thunderstorms occurred.

Fieldwork: 6 days suitable. Soil moisture short. Corn 10% dented 65% in dough. Oats 90% harvested, 90% last year, 80% normally. Potatoes 10% dug. Dry beans 34% leaves turning, 90% setting pods. Soybeans 70% setting pods; a few fields turning color. Hay second cutting 85% complete, 90% normally. Pastured feed supplies short to adequate. Summer apple, peach, blue-berrie and other fruit harvests continue. Pickle harvesting 65% complete, 55% last year. Sweet corn, tomato, onion, and other fresh vegetable harvests continue.

MINNESOTA: Temperatures 1° above normal. Extremes: 99 and 37°. Precipitation above normal, except below normal west central, extreme northwest and extreme southeast. Precipitation totals ranged from 0.23 in. extreme northwest to more than 2.30 in. much of north central, northeast and northern east central.



Rains improved crop prospects, slowed small grain harvest. Topsoil moisture adequate except west central where short and north central, northeast where surplus. Small grain combining nearly completed in south. Few corn fields denting, some soybeans turning yellow. Corn 45% in dough, 1977 98%, normal 59%. Soybeans 96% setting pods, 1977 98%, normal 93%. Combined: Spring wheat 65%, 1977 83%, normal 62%; oats 84%, 1977 93%, normal 81%; barley 87%, 1977 97%, normal 79%; winter wheat 97%, 1977 99%, normal 96%; rye 96%, 1977 99%, normal 99%; flax 10%, 1977 33%, normal 31%.

MISSISSIPPI: Temperatures near normal. Scattered thundershowers. Soil moisture short to adequate. Fieldwork: 5.8 days suitable. Soybeans 94% blooming, 95% 1977, 75% average; 63% podding, 68% last year. Cotton 5% open bolls, 16% 1977, 2% average. Corn 90% dented, 96% 1977; 55% mature, 48% 1977; 10% harvested, 7% last year. Corn silage 67% harvested, 65% 1977. Rice 70% headed, 80% 1977; 10% mature, 7% 1977. Sorghum 50% ripe, 54% 1977; 15% harvested, 13% 1977. Sorghum silage 45% harvested, 40% 1977. Hay 75% harvested, 63% 1977, 66% average. Soybeans, corn cotton, pastures, fair to good condition. Rice good condition.

MISSOURI: Temperatures 2 to 4° above normal. Precipitation 0.10 in. northwest; 0.30 to 1.00 in. elsewhere. Fieldwork: 5.4 days suitable. Grain sorghum 73% headed, last year 91%, normal 80%. Soybeans 78% blooming, last year 91%, normal 84%. Soybeans 50% setting pods, last year 77%, normal 68%. Corn 95% tasseled and beyond, 56% silking and beyond, 40% in dough stage. Alfalfa hay third cutting 52% harvested, last year 73%, normal 58%. Cotton 1% with open bolls, last year 7%, normal 5%. Con-

dition of corn, soybeans, cotton and pasture fair to good. Soil moisture short to adequate.

MONTANA: Cool and wet with brief warming periods. Temperatures 6 to 10° below normal. Heaviest precipitation fell in west and north-central, with some stations reporting over 1.00 in.

Topsoil moisture short to adequate. Winter wheat turning 5%, ripe 30%, harvested 65%; normal 5%, 25%, 70%. Spring wheat headed and green 10%, turning 40%, ripe 35%, harvested 15%; normal 5%, 25%, 35%, 35%. Barley headed and green 10%, turning 45%, ripe 30%, harvested 15%; normal 5%, 25%, 30%, 40%. Oats headed and green 15%, turning 30%, ripe 30%, harvested 25%; normal 5%, 20%, 35%, 40%. Second cutting alfalfa 40%, wild hay cut 80%. Range feed supplies and stockwater adequate. Livestock movement from summer ranges minimal.

NEBRASKA: Temperatures 3 to 6° below normal. Rainfall statewide, heaviest east. Amounts ranged 0.25 to 2.65 in.

Corn dough 45%; year ago 70%; normal 60%. Sorghum grain heading 90%; year ago 100%; normal 100%. Soybeans podding 85%; year ago and normal 100%. Third cutting alfalfa 40% complete; year ago 70%. Fieldwork: 5.3 days suitable.

NEVADA: Mostly cool and dry. Temperatures below normal all but extreme south. Precipitation spotty and light north. Extremes: 22 and 102°. Small grain harvest extending north. Potatoes showing good growth.

NEW ENGLAND: Unseasonably warm and very dry. Scattered thunderstorms 19th produced up to 0.25 in. at isolated sections northern Vermont. Thunderstorms 20th resulted in up to 0.50 in. isolated areas of Massachusetts, Rhode Island, and

Connecticut. Temperatures well above normal. Lows ranged from 50's and 60's in north to mid-60's and lower 70's south. Highs mostly in 80's to low 90's.

Soil moisture very short northern New England, elsewhere adequate. Corn on light soils in dry areas showing stress. Vermont, corn looks good and ample hay stored. Aroostook County potato development retarded by lack of moisture. Potato set fair, but tubers sizing slowly. Rainfall now could cause other problems. Apples are sizing well. Sweet corn being picked.

NEW JERSEY: Dry, warm temperatures 4° above normal. Extremes: 51 and 92°. Rainfall 0.01 in. north, 0.01 in. central and none south.

Soil moisture surplus. Hay making being done but much delay due to wet, humid weather. Wet weather increased spraying and dusting activity, caused losses of tomatoes and peppers, reduced pollination of cucumbers and produced mold in some snap beans. Too wet to dig potatoes in many fields, potato beetles active. Growth and general condition of soybean, field corn and sweetpotatoes very good.

NEW MEXICO: Warm midweek with eastern half above normal and western half as much as 5° below normal. Showers last of week with heaviest over southern half; over 1.00 in. recorded in some sections.

Soil moisture mostly short. Hot, dry weather permitted uninterrupted field activity and good crop development. Cotton opening south. Alfalfa 50% fourth cut south, third cut north. Grain sorghum mostly headed. Corn mostly dough stage. Winter wheat seeding started east. Green chili, onion harvests continue. Cattle, sheep good condition. Ranges fair but need rain.

NEW YORK: Temperatures 4 to 8° above normal. Scattered rains above normal to lee of Great Lakes, below normal elsewhere.

Good growing conditions. Wheat combining 90% done. Oats 55% harvested, 60% 1977. Second cutting alfalfa 75% in; humid weather slowed curing. Hay regrowth improving. Onion, snap bean, cabbage, sweet corn, and tomato harvests continue. Early apples, peaches, and pears being picked.

NORTH CAROLINA: Temperatures 3 to 6° above normal. Scattered thundershowers; heaviest in mountains and coastal areas.

Fieldwork: 4.8 days suitable. Soil moisture adequate. Condition of tobacco, corn, cotton, peanuts, soybeans, hay crops, Irish potatoes, sweetpotatoes, apples, and pasture mostly good. Harvested: Flue-cured tobacco 50%, 1977 55%, average 60%. Sweetpotatoes 8%, 1977 4%, average 6%. Hays 88%, 1977 74%, average 73%. Apples just getting underway, 1977 8%, average 14%.

NORTH DAKOTA: Scattered thunderstorms and showers mainly southeast. Significant rain also received in areas of central, east central and northeast. Precipitation ranged from 2.17 in. southeast to traces southwest. 0.1 or less northwest and zero portions of northeast and north central. Rain was measured at 1.59 in. at a station central and 1.49 in. northeast. Temperatures near normal. Extremes: 37 and 101°.

Showers slowed harvesting operations but brought welcomed relief to dry soil moisture. Late seeded small grains and row crops need additional moisture. Spring wheat 45% harvested, 64% 1977, 40% average; durum 25% harvested, 44% 1977, 22% average; barley 80% harvested, 83% 1977, 61% average; oats 55% harvested, 77% 1977, 56% average.

OHIO: Temperatures 1 to 4° above normal, ranging from high 80's to upper 40's. Rainfall below normal, particularly north.

All crops in good condition. Late planted beans continue to lag. Quality of hay reduced by rains in south. Japanese beetles a problem in this area. Corn dough stage 65%, 75% 1977, 70% average. Corn silage harvested 5%, 10% 1977, 5% average. Soybean pods set 45%, 55% 1977, 50% average. Processing tomatoes harvested 10%, 20% 1977. Alfalfa 3d cut 25%, 35% 1977, 25% average. Tobacco topped 50%, 70% 1977, 50% average. Fieldwork: 5 days favorable. Pasture condition good. Soil moisture short to adequate.

OKLAHOMA: Temperatures near normal Panhandle and west central to 6° above normal northeast and east central. Rain below 0.20 in. except southwest which averaged 1.29 in.

Topsoil and subsoil moisture supplies short. Corn rated good to fair with 12% mature 1978 and 1977, 27% normal. Sorghum good to fair with 63% headed, 88% 1977 and normal. Greenbugs, spider mites, and cornleaf aphids troublesome in Panhandle. First sorghum grain harvested. Cotton rated fair with 77% setting bolls, 90% 1977, 71% normal. Bollworms heavy in extreme southwest. Peanuts rated fair with 57% pegging, 66% 1977, 70% normal. Soybeans rated fair with 27% setting pods, 52% 1977, 38% normal. Native ranges very dry and rated fair to poor. Livestock in good to fair condition with some supplemental feeding required.

OREGON: Cool and wet. Temperatures near normal along coast, 4 to 8° below normal other areas. Extremes: low 90's, high 40's west; low 90's, mid-30's east. Rainfall ranged from 0.50 to over 1.00 in. except across southeast where rainfall under 0.20 in. Heaviest rainfall along north coast, Willamette Valley, and northeast mountains.

Soil moisture adequate. Grain harvest near completion west, at various stages of completion east. Grass seed harvest in final stages. Mint and hop harvests underway. Barlett pears, peaches and apples being harvested. Sweet corn, beans and cucumbers being harvested. Potato harvest continue. Onions being dug. Pastures and rangelands benefitted from rains. Livestock and poultry in good condition.

PENNSYLVANIA: Hot and very humid. Much cooler and drier 20th when temperatures 10 to 15° lower. Extremes: 93 and 38°; averages 2 to 6° above normal. Rainfall confined to west from 0.10 to 0.50 in., up to 1.60 in.

Fieldwork: 5 days suitable. Soil moisture adequate. Activities: spraying; plowing; making hay; filling silos; alfalfa seeding; combining wheat, oats; digging potatoes; baling straw. Potatoes 16% dug, same as last year. Fall plowing 12%, last year 18%. Corn 37% dough, little dented; last year 48% dough. Silage corn under 5% cut. Tobacco 5% harvested, last year 18%. Alfalfa first cut 82%, second cut 23%, second cut 42% last year. Clo-tim second cut 53%, last year 63%. Hay quality mostly fair. Feed from pastures average.

PUERTO RICO: Island average rainfall 3.29 in. or 1.63 in. above normal. Temperatures averaged about 81° on coasts and 75° interior. Extremes: 95 and 60°.

SOUTH CAROLINA: Temperatures near normal, generally higher near weekend. Scattered thundershowers amounts near normal in southern, mountain areas, subnormal elsewhere.

Soil moisture adequate. Fieldwork: 4 days available. Late corn fair to good; 76% mature, 86% last year, 63% average; 22% harvested, 28% last year. Cotton fair to good; 4% open bolls, 22% last year 7% average. Soybeans blooming 76%, 82% last year, 74% average; setting pods 44%, 41% last year. 43% average; benefitted greatly from recent rains, sunny weather. Tobacco 79% harvested, 81% last year, 90% average; marketing active. Apples 7% harvested, 15% last year, quality good. Grapes 30% harvested, 66% last year, 46% average. Peaches 94% harvested, 96% average; most supplies from Piedmont area.

SOUTH DAKOTA: Readings high but near normal. Extremes: 37 and 101°. Rainfall significant all but northwest.

Wheat harvest concentrated in north. Greenbugs, grasshoppers heaviest in east central. Topsoil moisture short to adequate. Fieldwork: 4.4 days suitable. Soybeans 90% podded, 1977 88%, normal 92%. Sorghum 80% headed, 1977 98%, normal 79%; 15% showing color, 1977 32%, normal 0%. Corn 54% in dough, 1977 89%, normal 52%; 15% dented, 1977 35%, normal 35%. Flax 55% ripe, 1977 91%, normal 82%; 20% harvested, 1977 60%, normal 50%. Spring wheat 77% harvested, 1977 100%, normal 100%. Alfalfa 85% harvested 2nd time, 1977 97%, normal 99%.

TENNESSEE: Showers each day; amounts 0.50 to 1.00 in. Temperatures 1 to 3° above normal.

Fieldwork: 4.1 days suitable. Soil moisture adequate mid and east, short west. Corn dent stage 57%, 1977 69%, average 51; mature 11%, 1977 22%, average 11%. Soybeans 91% blooming, 1977 94%, average 86%; setting pods 62%, 1977 77%, average 48%. Burley tobacco topped 58%, 1977 79%. Burley harvested 8%, 1977 35%, average 19%. Fall plowing completed 24%, 1977 29%, average 28%. Lespedeza hay harvested 35%, 1977 45%, average 36%. Bollworms increasing. Pastures and cattle good condition.

TEXAS: Early week cold front moved through west turned warm, moved northward and triggered thunderstorms over Panhandle and portions of southwest. Rainfall above normal for Valley, below normal elsewhere. Temperatures in Panhandle and south central region near normal; upper Gulf Coast, Trans-Pecos, Low Plains, Cross-Timbers about 3° above normal.

Grain sorghum harvest gained momentum in southern Low Plains; almost complete in Blacklands; 65% harvested, last year and average 58%. Few dryland sorghum fields on southern Low Plains baled for hay due to hot, dry weather; irrigated sorghum good condition. Corn harvest in full swing in Blacklands; harvest complete in Valley and Coastal Bend; 32% harvested; above last year's 15% and average 17%. Crop approaching maturity on northern High Plains; silage harvest active. Cotton harvest fast pace from Valley into Blacklands; 11% harvested 7% last year, and average 6%. Dryland cotton in some areas of southern High Plains stressed for moisture; few dryland fields plowed under. Rice harvest progressing well along upper Gulf Coast; 83% harvested, last year's 87% and average 83%. Most fields for second crop harvest were flooded. Peanut harvest 8% complete, 3 percentage points ahead of last year, same as average. Some producers sprayed for leaf spots in Cross-Timbers. Peanut stands on southern High Plains good condition; fruiting well. Soybeans along upper Gulf Coast blooming; early fields setting pods. Crop in Blacklands and east need rain; few fields cut for hay. Sunflowers progressing normally on northern High Plains; early crop approaching maturity. Hay

harvest continued; second cuttings light in east due to lack of moisture. Alfalfa 4th cutting complete in parts of Trans-Pecos.

Growers irrigating citrus. Cabbage, cucumbers, spinach, and bell peppers progressing well. Planting fall beans, tomatoes active. Squash, peas, tomatoes, melons, potatoes harvested.

Recent rains prompted grasses in many areas to green; pastures in east, Blacklands, Plains, south remain dry. More rains needed for winter pastures. Livestock fair to good condition with some supplemental feeding continuing in dry areas.

UTAH: Precipitation locally moderate to heavy north and west, generally light southeast. Temperatures ranged from near normal to 11° below.

Soil moisture deficit continues serious. Outlook for fall/winter range feed poor to fair. Winter wheat harvest 93% complete, spring wheat 81%, and barley 75% complete. Second crop alfalfa 87% complete. Production prospects for vegetable crops fair to good. Sweet corn 33% and snap beans 50% harvested.

VIRGINIA: Temperatures almost 4° above normal. Extremes: 97 and 51°. Rain first half of period averaged 0.90 in.; north wettest.

Topsoil moisture mostly adequate to surplus. Fieldwork: 4.5 days available. Tobacco harvests: Flue 15%, 31% 1977, 31% average; fire 2%, 20% 1977, 16% average; burley 1%, 5% 1977, 6% average; sun 1%, 17% 1977, 6% average. Pasture, corn, soybeans, tobacco, peanuts, all hay good to excellent. Peaches large sized. Activities: Corn silage harvesting, hay baling, fruit picking, controlling grasshoppers in forages.

WASHINGTON: West: Temperatures 1 to 5° below normal. Precipitation averaged 0.40 to 1.10 in. above normal.

Blueberry and blackberry harvests continued. Green pea harvest complete. Bush beans, sweet corn, cauliflower, cucumbers and carrots being harvested. Weather good for all crops. Pastures restored by rain. Fire danger eased.

East: Temperature 9° below normal. Precipitation 0.30 to 1.90 in. above normal. Bartlett pear harvest active. Peach harvest continues. Apples coloring well. Early Italian prune harvest complete. Hop harvest beginning. Early Russet potato harvest beginning. Rain interrupted grain harvest.

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

Fieldwork: 4.0 days suitable. Soil moisture adequate. Major activities: Haying, pasture clipping. Hay second cutting 46% complete 52% 1977, 48% average. Oats 80% complete, 87% 1977, 84% average. Potatoes 20% complete, 26% 1977, 25% average. Pasture, all crops good.

WISCONSIN: Warm, humid and rainfall heavy. Thunderstorms produced over 3.00 in. rain north and northeast 15th, 3.00 to 6.00 in. rains in east central and southeast 18th. Other areas 0.50 to 3.00 in. rain mainly 15th and 18th.

Rains benefitted growing crops but slowed harvest. Fieldwork: 6 days suitable. Corn for grain 40% dough, 1977 75%, normal 35%. Late corn needs 4 to 6 weeks to mature. Soybeans look good. Oat harvested 70%, 1977 90%, normal 67%. Oats lodged, heavy growth weeds, and new seedings make combining difficult. Second crop hay 80% harvested, 1977 98%, normal 70%. Pasture conditions above normal and benefitted by recent rains. Tobacco topping continues, some starting harvest. Early apples being picked. Sweet corn harvested. Early potato harvest continues.

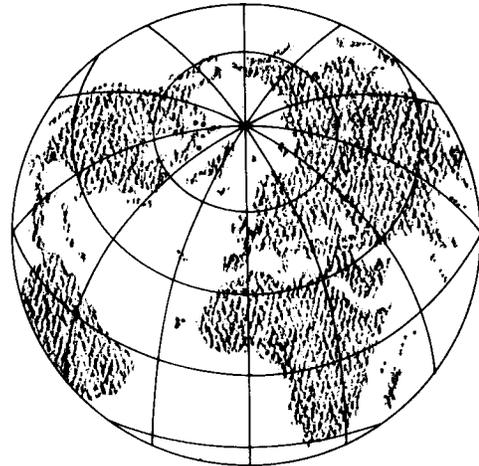
WYOMING: Temperatures well below normal. Precipitation generally above normal.

Topsoil moisture adequate. Winter wheat 98% mature, harvest 87% complete. Spring wheat 85% turning color, 58% mature, 39% harvested. Barley 94% turning color, 75% mature, 39% harvested. Oats 79% turning color, 48% mature, 39% harvested.

Small amount of wheat for 1979 crop seeded. Most corn tassel stage. Dry beans 87% bloom, 72% setting pods, 11% leaves turning color. Second cutting alfalfa 43% complete, third cutting started in a few areas. Other hay 83% harvested. Ranges and pasture mostly good condition with good prospects for fall grazing.

World Weather and Crop Update

August 14-20, 1978



USSR. Light to moderate showers, locally heavy, were concentrated mainly over the Baltic Plain, Belorussia, central non-Black Soil zone, Volga Vyatsk, and southwestern Ukraine. Except for the latter, these are the regions in European USSR where the small grain harvest is now centered. Precipitation fell lightly in other areas of European USSR with some areas, especially parts of North Caucasus, in need of rain to sustain generally good growing conditions for row crops. Heavy showers dampened some areas of western Siberia and northern Kazakhstan, but the heavy rains occurred in areas where the spring wheat harvest had yet to begin. By August 14, small grains and pulses had been cut on 50.5 million hectares--40% of the seeded area; threshing was completed on 39.3 million hectares. The pace of harvesting is the slowest in a decade, excepting the record 1976 harvest year. Mass harvesting of a good spring wheat crop will soon be underway in western Siberia and northern Kazakhstan--areas where harvesting and post-harvesting operations are frequently complicated by inclement weather.

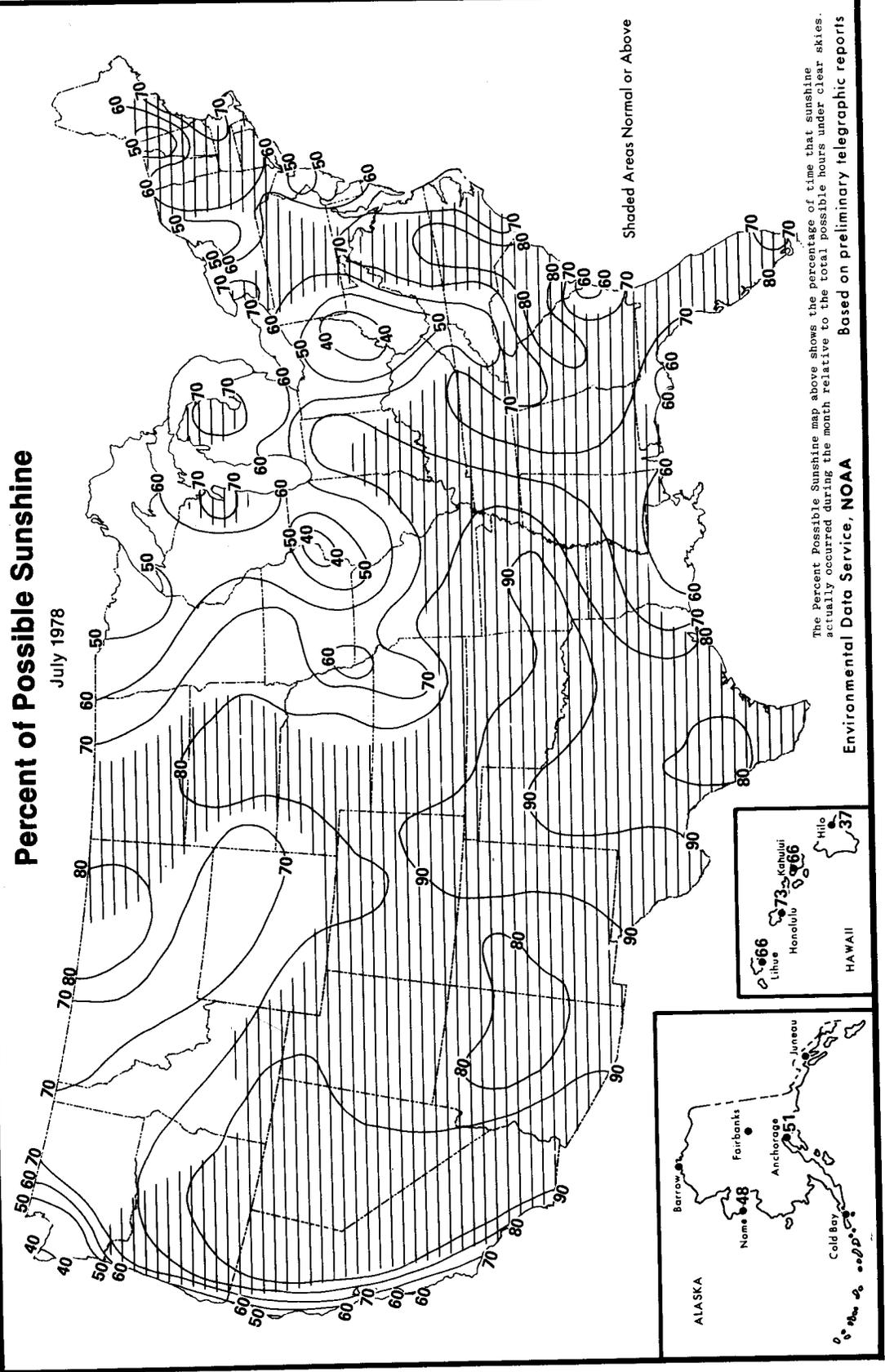
ASIA. In the People's Republic of China, rainfall varied considerably over the northern and north-eastern provinces with moderate to very heavy amounts of moisture reported throughout these important coarse grain, cotton, and soybean areas. In the rice growing areas south of the Yangtze River, heavy rains were general in the coastal provinces of the extreme south and southeast. Variable, but generally ample, rains fell over most of the other provinces. Chinese media, however, continued to show some concern with small areas where precipitation has been below normal. Monsoon activity in India intensified with 23 out of 35 weather zones reporting normal or above-normal rainfall. Cumulative rainfall from June 1 to August 16 was normal or above for all of India except eastern Gujarat and northern parts of West Bengal with moisture deficiencies of 32 and 22 percent, respectively. Although floods have damaged crops in parts of Assam, West Bengal, Bihar, Uttar Pradesh, Haryana, Rajasthan and Punjab, crops are considered to be in good condition over most of the country.

AUSTRALIA. Fair weather, broken only by light scattered showers, prevailed over the principal grain areas.

AFRICA. North Africa was basically sunny and dry except for a few isolated light showers. Cool, dry weather continued to dominate South Africa's main agricultural areas. Seasonal rainfall in West Africa continued to be somewhat below the long-term average while precipitation is close to average in the Sudan and Ethiopia. Drought of varying degrees continued in the Kiffa area of south central Mauritania and in extreme southern Chad and adjacent areas of the Central African Republic. Precipitation in parts of Senegal, coastal Ghana, Togo, and parts of the Ivory Coast persisted well below normal.

EUROPE. Weather held generally favorable for agriculture for most of the week in both western and eastern Europe. Light to moderate showers dampened northern Europe--France, Benelux, Denmark, Germany--early in the week, but the latter half was sunny and dry with the harvest advancing accordingly. Precipitation was generally light throughout eastern Europe except for heavy rains in parts of Poland. Scattered light showers fell along Turkey's Black Sea coast, but the parched interior received little significant rain. Non-irrigated crops and pastures are suffering stress from dryness.

AMERICAS. A late winter cold spell brought light frost and chilling winds to part of Brazil's coffee-growing areas early in the week. Damage to coffee trees and the effects on next year's coffee crop have not been completely assessed. Light showers--generally under 10 mm--moistened wheat-growing areas of Rio Grande do Sul and Santa Catarina. Argentina was seasonally cold with little significant precipitation. Two different weather systems brought cool temperatures and widespread showers--10 mm to 40mm, locally heavier--to Canada's Prairie Provinces. Light, scattered frost was reported in the more northerly regions.



BRAZILIAN COFFEE AND FREEZING TEMPERATURES

Freezing temperatures chilled parts of the Brazilian coffee-growing regions early in the week of August 14, causing a great deal of concern about the possible repeat of the devastating 1975 frost. Sub-freezing temperatures were reported on the mornings of August 14 and 15, with the coldest readings occurring on the 15th. However, analysis of the synoptic situation indicates that the coldest temperatures occurred in only marginal producing areas, with only very limited freezing in the primary producing areas. However, it will be some time before the actual damage can be accurately assessed. Certainly the damage is nowhere as great as that of 1975. Temperatures were much warmer than in 1975, and the area affected was much smaller.

Brazil continues as the world's leading producer of coffee, even after the devastating freeze of 1975. Brazil's current 1978 crop is expected to be about 20 million bags (each weighing 60 kilograms) compared to a world production of 75 million bags and a low of 9 million bags in 1975/76. Columbia is a respectable second, followed by the Ivory Coast and Mexico. Coffee is grown in several regions of Brazil; Parana, Sao Paulo, and Minas Geras are the three largest. Parana is both the largest and the most susceptible to freezing temperatures. In 1975, nearly every tree in Parana was damaged with approximately one-half of them being pulled completely. Sixty-six percent of the trees in Sao Paulo were injured while only 10% of those in Minas Geras were hurt.

The Meteorological Situation

A typical "winter" circulation pattern for South America is the movement of a high pressure system across Chile and Argentina on a southeasterly track. Once into Argentina the movement shifts to a northeasterly direction. Moderation of cold temperatures usually takes place over the Atlantic before reaching or affecting Brazil's weather. Periodically the high pressure system remains over land and moves in a more northerly track. This allows the penetration of colder air into Brazil's vulnerable coffee-growing regions.

(continued on next page)

FIGURE 1

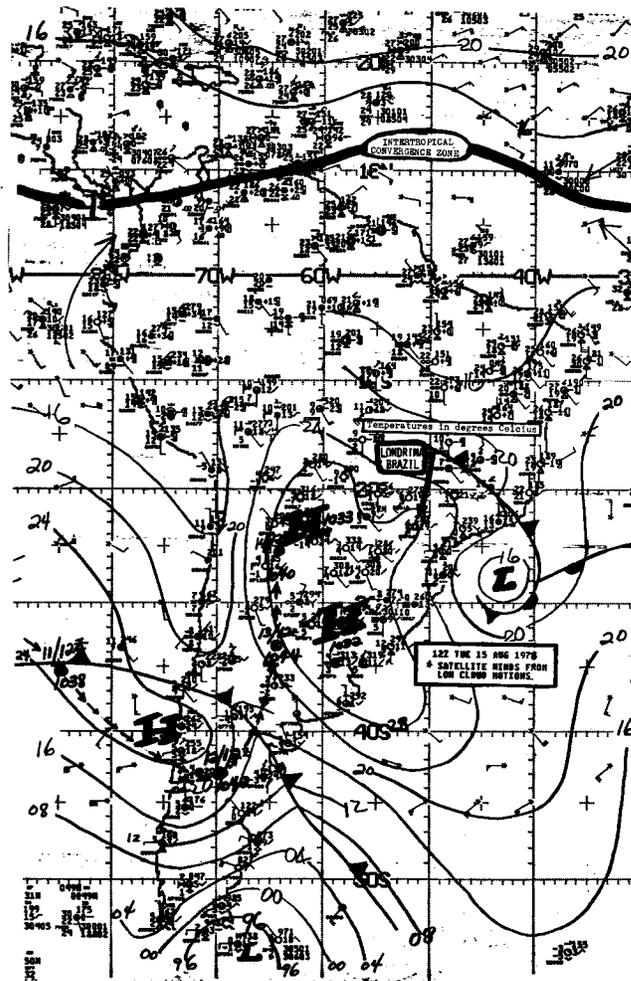


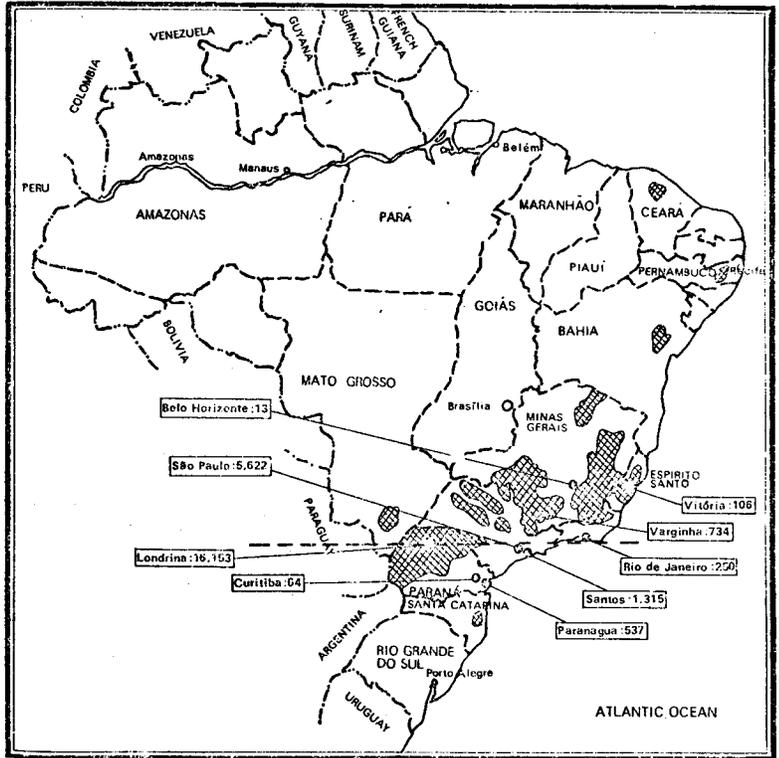
FIGURE 2. BRAZIL
LOCATION OF PRINCIPAL COFFEE AREAS AND OF
VERIFIED STOCKS AS AT 31 MARCH 1976
(000 bags)

The meteorological situation on the morning of August 15, 1978, is shown in Figure 1. Primary production areas are shown in Figure 2. The 1978 cold wave was minor in comparison to the 1975 severe freeze. The 1978 system held a few degrees warmer, resulting in only generally light frost. The system also contained a smaller central pressure and occurred later in the winter. (Winter in the southern hemisphere occurs during the northern hemisphere's summer.)

A more detailed analysis has been made for the station located at Londrina, Parana. Only a very few stations are available, but Londrina is fairly representative of the surrounding area, which is a very rich, fertile coffee-producing area. Figure 3 gives a reconstruction of the daily temperatures during both freezes. The extreme minimum temperature at Londrina was five degrees warmer in 1978 than in 1975: a plus 1 in comparison to minus 4 degrees celcius. Also, the 1975 blast occurred rather late in the winter and about a month past the usual peak cold period. The coldest period was the third night after frontal passage in comparison to the second night during 1975.

Coffee and Weather

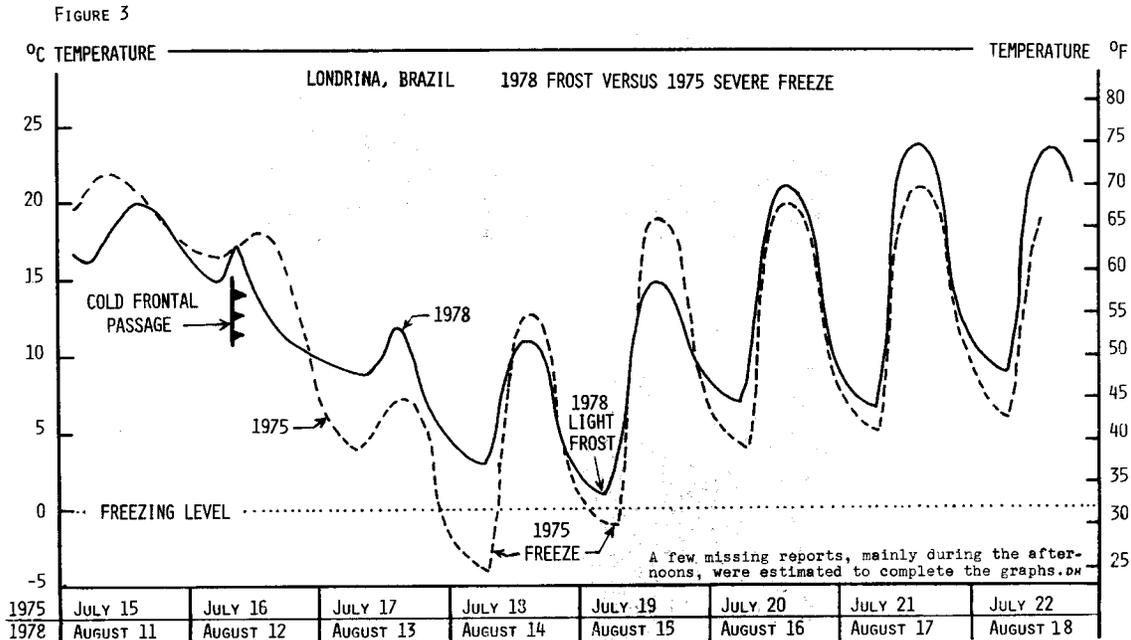
Coffee is a tropical plant, but is adapted to a wide range of temperatures. However, freezing temperatures are a definite limiting factor. It also requires a growing season with a distinct wet and dry period. In Brazil, the growing period is associated with the rainy season which occurs from mid-September to about April. During the dry season from May to September, the plant goes into a dormant state. Also during this period the coffee beans are harvested. Coffee is an evergreen and therefore does not lose its leaves.



(continued on next page)

Sources: Map and coffee areas - National Coffee Policy Plan of Brazil
Verified stocks - Information supplied by the General Superintendence Company Ltd. (Geneva)

 Coffee areas
 Location and volume (000 bags green coffee equivalent) of verified stocks



However, the physiology of the plant does drop to a minimum level. If the dry season persists unusually long into the fall, and a drought develops leaf drop will occur. Some leaf renewal does occur during the spring months when the rainy season commences. The fact that the plant is in a state of dormancy during the coldest months does provide some natural protection from colder temperatures since leaf water contents would be at a minimum and therefore less susceptible to ice formation.

After the commencement of the rainy season in late September or early October, the coffee plant normally undergoes four flushes of flowering. These are normally about two weeks apart with the greatest number of flowers on the second and third flushes. Flowering occurs on "nodes" which formed during the flowering period the year before. Two factors are particularly important in determining the actual fruit set. First, the condition of the plant during the flowering period—if the crop has been stressed by drought, or possibly damaged by frost during the dry season, fruit set will be

reduced. Secondly, heavy rainfall during the flowering period reduces the number of flowering flushes. Interestingly, once a flower has set fruit, very few abort or drop off before reaching maturity.

A coffee tree may produce for as long as 50 years, depending on the climate and soils of the area. However, peak production usually runs from six to 18 years of age. Yields generally drop off when the trees get older. Coffee is a deep rooted plant and requires a fairly high level of fertility. Soils of volcanic origin appear to be the best suited. Where soils are poorer, trees may be productive for only six to 10 years.

Coffee is also vulnerable to a biennial fluctuation in production. Apparently a heavy crop sufficiently drains the nutrients of the plant lowering the condition of the nodes which will flower the following spring. This fluctuation can be reduced by good management practices—particularly with respect to fertility and pruning.

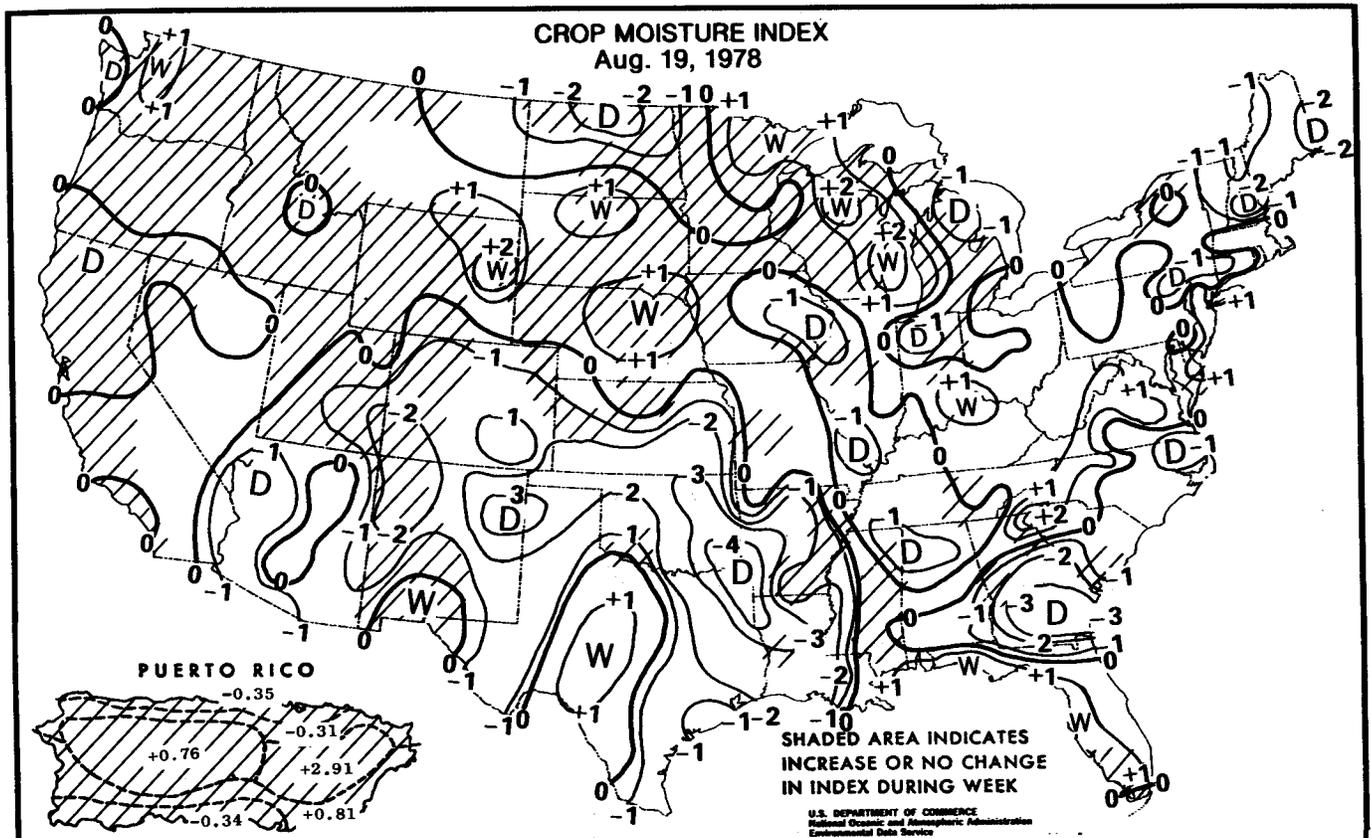
FIGURE 4



The verdant richness of coffee trees on a Brazilian plantation, top, contrasts starkly with the withered leaves and bare branches left in the wake of the savage frost that blanketed Brazil's main coffee areas July 17-18. Seriously damaged trees, above left, were pruned to the stump, and will take up to 4 years to produce—if they survive. Those that could not be salvaged were uprooted, above, to be replaced with new trees or alternative crops.

(1975 freeze)

from USDA's
Foreign Agriculture



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

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

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

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

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

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

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

Agricultural Weather Facility
USDA South Bldg., Room 1248
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HARVESTING PROGRESS

SPRING WHEAT
PERCENT OF ACREAGE HARVESTED
AS OF AUGUST 20

	1978	1977	AVG.
IDA	20	45	30
MINN	65	83	62
MONT	15	45	35
N DAK	45	64	40
S DAK	77	100	100
5 STATES	49	70	53

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