

# WEEKLY WEATHER AND CROP BULLETIN

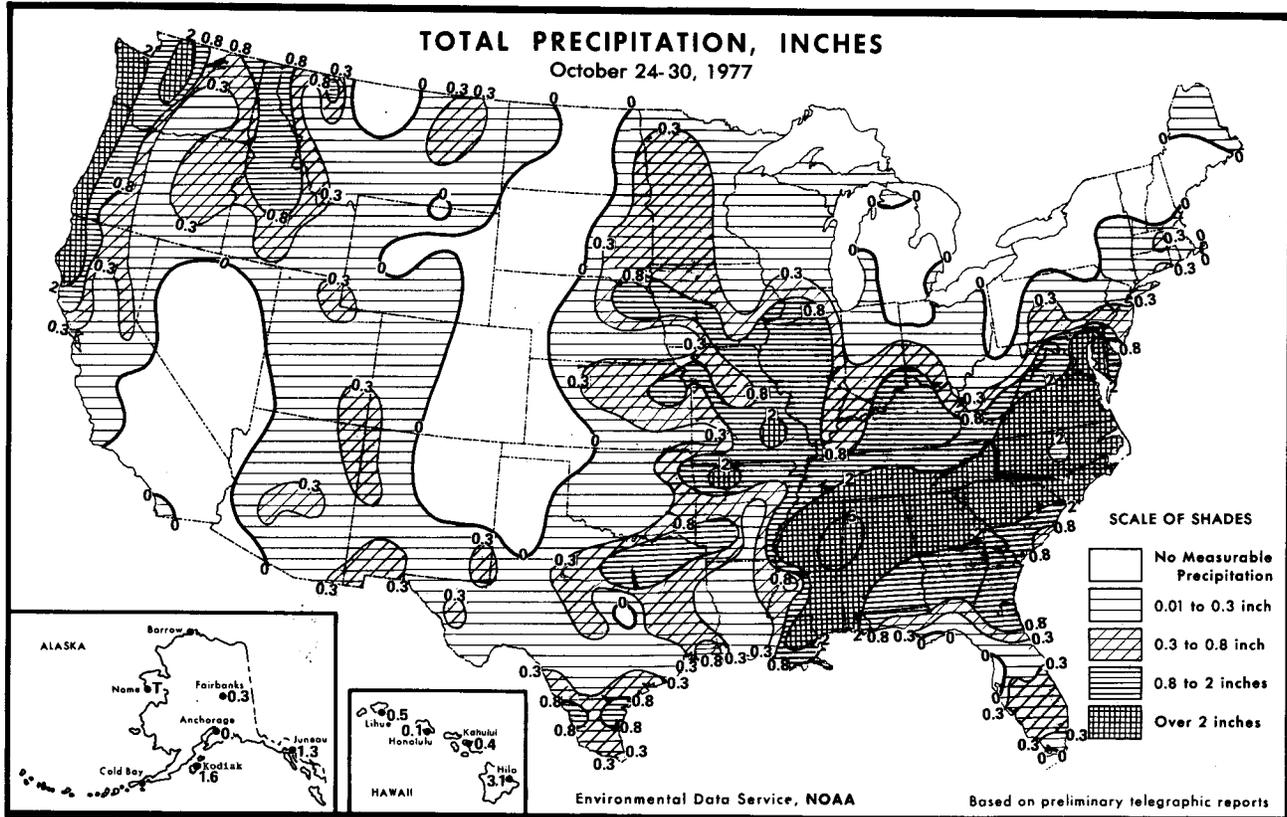
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## National Weather Summary

October 24 - 30

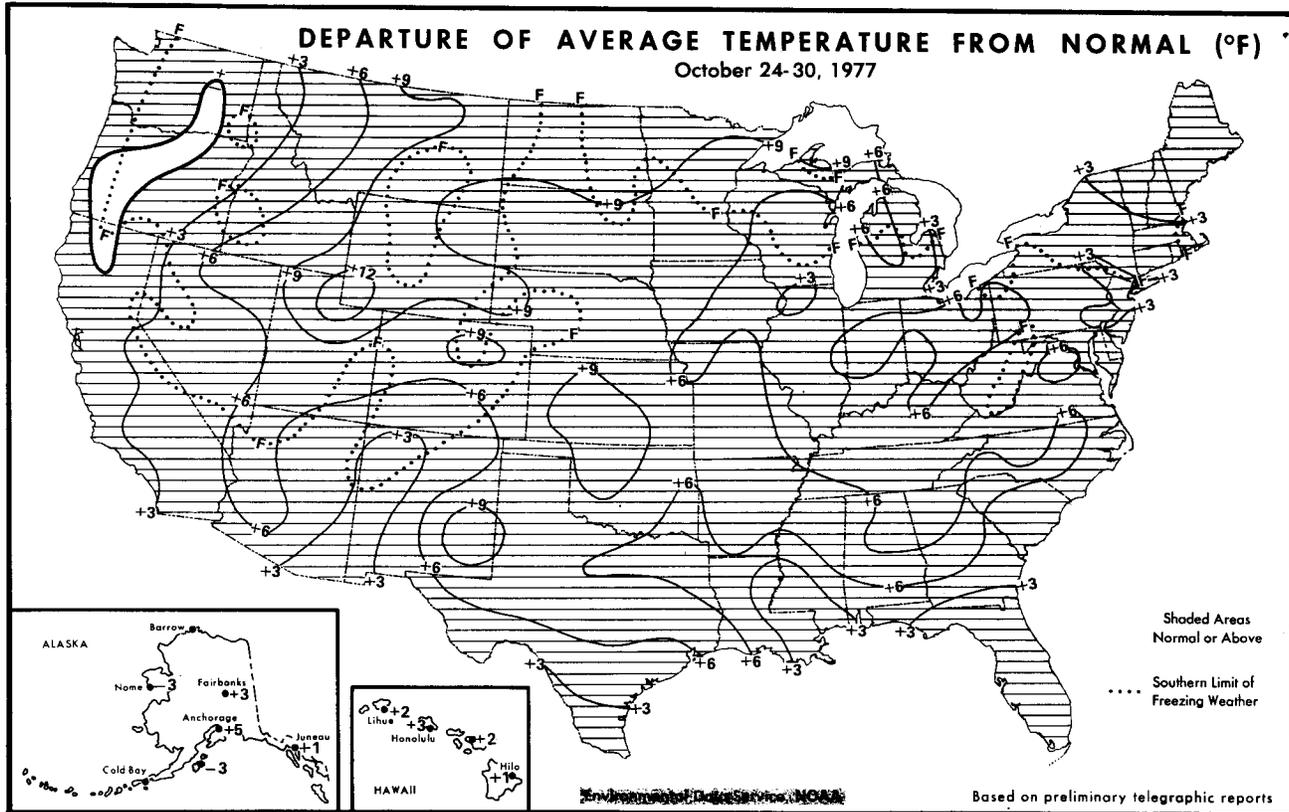
**HIGHLIGHTS:** The dominant weather factor for the week was a low pressure center that formed over the Gulf of Mexico and tracked northeastward. More than 5 inches of rain fell on some points from Mississippi to Maryland before the system moved into the Atlantic off the Virginia coast. Maritime air entered the Pacific Northwest bringing showers as far south as California's Sierra Nevada Mountains. Snow fell on sections of the Rockies.

Temperatures averaged well above normal except in the Pacific Northwest and West Coast where near-normal readings prevailed. Parts of the Rockies and eastern U.S. saw the mercury climb 6 to 10° above normal.

Monday morning showers and thunderstorms continued over the Mississippi Valley, Gulf and middle Atlantic Coasts, and eastern Plains. Mean-

time temperatures plunged below freezing inland through New England to the lower Great Lakes. Rainshowers made for a wet afternoon in the Pacific Northwest. By noon, however, the largest amount of rain had fallen on New Orleans, 1.29 in. A low pressure area over Minnesota in the afternoon was the apex of a cold front through Wisconsin to Oklahoma triggering some rain in the upper Midwest. Another cold front over the Oregon/Washington coast was responsible for the precipitation there. A large rain area moved from the Mississippi Valley eastward during the evening; more than an inch soaked some Mississippi stations.

Tuesday provided busy weather activity; morning began with rain along the Gulf and South Atlantic Coasts as well as the lower Ohio and eastern Mississippi Valleys and upper Great Lakes. Several tornadoes were sighted in Alabama and Florida while streams became uncomfortably high in the Southeast;



Mobile measured more than 2 inches of rain. Intense thunderstorms clipped the same area in the afternoon, and they spread northward. By evening the low pressure center which originated in the Gulf of Mexico had moved to northern Alabama dumping rain on the Appalachians and middle Atlantic States. As it continued eastward several Carolina points reported 2 inches or more. Some cities hardest hit were Greer in northwestern South Carolina, 4.49 in., Athens, Ga., 3.83 in., and Chattanooga's 3.52 in.

High temperatures in the 70's and 80's tied or broke records in Bismarck and Boise as well as Casper, Sheridan, and Cheyenne in Wyoming.

Rain, some locally heavy, drenched a large area from the southern half of the Atlantic Coast to southern Pennsylvania on Wednesday. Scattered storms still prowled parts of the Deep South where some flooding occurred. Measurements of 2 inches or more of rain were notched in Fayetteville, N.C., Anderson, S.C., and Washington, D.C. Some showers dotted the northern Pacific Coast, northern Intermountain Region, and southern Florida.

Record high temperatures were noted once again in the central Rockies.

Recent rains in the Southeast and northwestern Missouri brought rivers and streams over their banks on Thursday. The day began with showers scattered over the southern half of the Atlantic Coast, southern New England, South Texas, northern Minnesota, and parts of California. By afternoon, light rain entered the Intermountain Region and drizzle dampened much of the East Coast. The heaviest rains remained below 1 inch; about one-half inch fell on Sacramento and Wilmington, Del.

Temperatures were especially warm over the lower half of the Plains into the middle Mississippi

Valley; Emporia, Kans., showed 88° while Tulsa reached 87°, and Springfield, Mo., tied its record high reading of 84°.

Three rather small areas of rain were the extent of precipitation of Friday. A frontal system cut through the Northwest and reached into central California dropping light rain; a narrow band of showers ran from Missouri to Texas; and the heaviest rain fell on parts of the Southeast. Cape Hatteras, N.C., measured more than two and one-half inches.

Two cold fronts carried rain to sections west of the Mississippi River on Saturday. The western coasts of Oregon and Washington as well as northern California continued to receive rain; Brookings, in extreme southwestern Oregon, had .83 in. The other front pumped cool air, rain, and snow over the Rockies from western Montana to southern New Mexico. On the East Coast thunderstorms ranged from northeastern North Carolina to Maryland and Delaware.

Houston equalled its record high reading for the day of 88°.

Sunday dawned gray as persistent showers dampened the Pacific Coast's northern half. Showers also were scattered from New Mexico into the western portions of Oklahoma and Texas; from eastern Wyoming into western Nebraska; and over central Minnesota and northern Georgia. A frontal system dipping down from Canada invaded the Great Plains, and later the Mississippi Valley, triggering rain. Some reporting points called in more than one-half inch. By evening, heavy thunderstorms struck eastern Nebraska where Norfolk notched more than one inch. Thunderstorms also rumbled over the Gulf Coast and the southern half of Florida; a tornado touched down near Melbourne.

## National Agricultural Summary

October 24-30

**HIGHLIGHTS:** Rains dumped heavy amounts of moisture across most of the South extending in a band from Mississippi northeastward into Virginia. The rains slowed harvests and small grain seeding. Soil moisture was adequate to surplus in most areas east of the Mississippi River, adequate in the Great Plains, but short from Texas through the Mountain States to the West Coast. Corn harvest reached 70% compared with 74% in 1976 and 59% average. Soybean combining advanced to 67% lagging both last year and the average. In spite of rains and soggy soils cotton picking remained almost double 1976 and the average. Sorghum harvest reached 80% near the 1976 level but 11 points ahead of average. Winter wheat seeding was slow either because of dry soils or wet soils and only advanced to 91% lagging both 1976 and the average. Fruit and vegetable harvests were almost finished; most activity shifted to southern production areas.

**SMALL GRAINS:** Winter wheat seeding got a boost from rains in parts of Texas, California, Washington, and Oregon; these areas needed more rain to assure good stands in non-irrigated fields. In most of the South wet soils kept planting to a minimum. Among the major producing States progress advanced to 91% short of 1976's 94% and the 96% average. Most seeding on the Great Plains was complete. North central States farmers made good progress during the week but were far behind 1976 and the average and only catching up as the planting season was ending.

Kansas farmers reached 95% equalling last year and the average; excessively wet eastern fields slowed final completion. Oklahoma's wheat rated fair to good with 82% up to stand ahead of 74% for 1976 and the average. Wheat grazing was limited. Texas wheat seeding was slow but the tempo should increase where recent rains improved germination conditions.

**CORN:** The Nation's corn harvest reached 70% complete, 4 points less than last year but 11 points higher than average. Various regions maintained their positions relative to the previous year and the average by harvesting about 13% of the crop except in the South where harvest was almost complete. Western Corn Belt farmers stayed behind 1976's progress while eastern Corn Belt farmers held equal. Wisconsin corn stood well, but some other States including Iowa and Kentucky reported lodging and some slow progress at times.

Harvest in the eastern north central States reached 62%, a point off 1976 but 9 points ahead of average. Progress in the western north central States stood at 73% short of 1976's 83% but surpassing the 60% average.

**SOYBEANS:** Farmers reached 67% combining soybeans falling short of both 1976's 75% and the 69% average. Rains delayed harvests in most of the South while Arkansas farmers finished early varieties and waited for maturity of late varieties. Generally soybeans rated fair to good.

In the eastern north central States harvest stood at 81% compared with 1976's 94% and the 86% average. Last year Illinois farmers were at 99%--now they are at 87%.

In the western north central States combining reached 77%, last year 91% and average 82%. Minnesota and Iowa farmers were almost finished last year; progress stood at 93 and 84% respectively.

In the south central States farmers harvested 49% ahead of 1976's 48% and the 44% average.

**COTTON:** Picking reached 60% in the eleven States, almost double the 31% last year and far ahead of the 34% average. Progress was far advanced in all States excepting Louisiana at 69% where picking was 3 points ahead of 1976 and 23 points ahead of average. Arkansas growers led the percentage race at 82%. They also picked a second time and were destroying stalks. Texas growers passed the half-way mark reaching 54% harvesting a very large acreage. Stripping in the Panhandle made good progress in spite of rain and wet mornings. New Mexico growers reached 30% and the Arizona pace increased. California growers enjoyed almost ideal picking conditions; gins operated near capacity.

**OTHER CROPS:** Grain sorghum harvest advanced to 80% short of 1976's 83% but ahead of the 69% average in the seven major producing States. Harvest lagged in all the States except Texas and Colorado.

The 1977 rice harvest was almost complete reaching 95% in Mississippi, 99% in Arkansas, and finished in Louisiana. Rain delayed the second cutting in Texas. Arkansas growers disked stubble.

Sugarcane harvest began in Florida and reached 18% in Louisiana, slightly ahead of 16% last year and the average.

Peanut digging was slowed by rains in parts of the South. Virginia digging reached 85%, North Carolina 97%, Georgia 98% and Texas 73%. The Alabama harvest was nearly done.

Irish potato harvest advanced under very favorable conditions in northern production areas and was almost complete.

**VEGETABLES:** Florida crops rated good to excellent with harvest of most crops underway. Weather was ideal for plant growth and fruit set. Growers harvested sweet corn, tomatoes, radishes, eggplant, squash, cucumbers, peppers, snap beans, carrots, escarole and lettuce. Texas growers harvested melons, cucumbers, peppers, carrots, and lettuce. California tomato harvest was active, but other harvests slowed.

**FRUITS AND NUTS:** Apple harvest was in the later stages ranging from 92% in North Carolina to almost complete in northern areas. Pecan harvest advanced across the South where progress reached 13% in Georgia, 31% in Mississippi, and 11% in Texas. Florida citrus rated excellent as many growers irrigated. Low temperatures reduced new growth, but harvest activity increased. Texas citrus harvest held steady, but fruit sized small. Arizona growers harvested lemons, Navel oranges, and grapefruit. California Navels started to break color.

**PASTURES AND LIVESTOCK:** Pastures rated fair to good except in Texas and from the Rocky Mountains westward. Ranges at high elevations and along the coastal Northwest also rated good. Florida's pastures declined seasonally. Texas ranges needed more moisture; some pastures were overgrazed in spite of heavy culling. Rains improved California rangeland in the north, but elsewhere ranges were very dry.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., Oct. 30, 1977

States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches	
	Average	Departure	Total	Departure		Average	Departure	Total	Departure		Average	Departure	Total	Departure
ALA. Birmingham . . .	64	+ 5	3.8	+ 3.2	La. Baton Rouge . . .	68	+ 3	.1	-. 5	Youngstown . . .	55	+ 7	0	-. 7
Mobile . . .	68	+ 3	2.5	+ 2.1	Lake Charles . . .	72	+ 6	.1	-. 7	OKLA. Okla. City . . .	67	+ 9	.1	-. 4
Montgomery . . .	68	+ 6	1.5	+ 1.0	New Orleans . . .	68	+ 2	1.5	+ 1.0	Tulsa . . .	65	+ 7	.7	+ .1
ALASKA Anchorage . . .	35	+ 5	.4	+ .1	Shreveport . . .	69	+ 6	.1	-. 6	OREG. Astoria . . .	51	+ 1	2.6	+ .7
Barrow . . .	20	+ 3	.3	+ .2	MAINE Caribou . . .	46	+ 6	.2	-. 6	Burns . . .	45	+ 2	.4	+ .1
Fairbanks . . .	39	+ 1	1.3	+ .4	Portland . . .	47	+ 1	0	-. 9	Medford . . .	49	- 1	.8	+ .2
Juneau . . .	35	+ 3	1.6	+ .2	MD. Baltimore . . .	58	+ 5	2.1	+ 1.5	Pendleton . . .	47	- 1	1.4	+ .1
Kodiak . . .	21	+ 3	T	-. 3	MASS. Boston . . .	56	+ 4	.1	-. 7	Portland . . .	52	+ 1	1.4	+ .4
Nome . . .	48	+ 5	T	-. 3	Chatham . . .	47	+ 1	T	-. 4	Salem . . .	51	+ 1	1.9	+ .8
ARIZ. Flagstaff . . .	75	+ 8	.3	+ .2	MICH. Alpena . . .	47	+ 4	T	-. 4	PA. Allentown . . .	56	+ 6	.2	-. 5
Phoenix . . .	69	+ 3	2.2	+ .1	Detroit . . .	52	+ 3	T	-. 6	Erie . . .	52	+ 4	0	-. 8
Tucson . . .	57	+ 3	.0	-. 1	Flint . . .	52	+ 3	0	-. 6	Harrisburg . . .	55	+ 3	.2	-. 4
Winslow . . .	76	+ 5	2.0	+ .1	Grand Rapids . . .	52	+ 3	T	-. 6	Philadelphia . . .	56	+ 3	.6	0
Yuma . . .	65	+ 6	.4	-. 4	Houghton Lake . . .	49	+ 6	T	-. 6	Pittsburgh . . .	56	+ 7	0	-. 6
ARK. Fort Smith . . .	66	+ 8	T	-. 7	Lansing . . .	53	+ 3	T	-. 6	Scranton . . .	51	+ 2	.1	-. 5
Little Rock . . .	67	+ 4	0	-. 1	Marquette . . .	53	+ 3	.1	-. 5	R.I. Providence . . .	54	+ 4	T	-. 8
CALIF. Bakersfield . . .	56	+ 3	2.5	+ 1.5	Muskegon . . .	50	+ 5	.1	-. 5	S.C. Charleston . . .	68	+ 5	.3	-. 2
Fresno . . .	62	+ 2	0	-. 1	S. Ste. Marie . . .	47	+ 5	T	-. 5	Columbia . . .	64	+ 4	3.7	+ 3.2
Los Angeles . . .	66	0	0	-. 2	MINN. Duluth . . .	48	+ 8	T	-. 5	Greenville . . .	64	+ 6	4.6	+ 3.9
Red Bluff . . .	61	0	.1	-. 3	Internatl Falls . . .	48	+ 10	T	-. 3	S.D. Aberdeen . . .	51	+ 9	T	-. 2
San Diego . . .	67	+ 3	.1	0	Minneapolis . . .	51	+ 6	.1	-. 3	Huron . . .	53	+ 7	.6	+ .3
San Francisco . . .	60	+ 1	.2	-. 1	Rochester . . .	51	+ 7	.2	-. 1	Rapid City . . .	53	+ 8	0	-. 1
Stockton . . .	63	+ 3	T	-. 2	St. Cloud . . .	50	+ 8	.6	+ .3	Sioux Falls . . .	52	+ 7	.6	+ .4
COLO. Denver . . .	56	+ 9	T	-. 2	St. Louis . . .	64	+ 2	4.3	+ 3.8	TENN. Chattanooga . . .	61	+ 5	3.5	+ 2.8
Grand Junction . . .	57	+ 7	T	-. 2	MISS. Jackson . . .	67	+ 6	.1	-. 5	Knoxville . . .	61	+ 4	1.7	+ 1.0
Pueblo . . .	55	+ 5	0	-. 2	Meridian . . .	60	+ 7	.6	0	Memphis . . .	66	+ 7	1.3	+ .7
CONN. Bridgeport . . .	57	+ 4	.2	-. 5	MO. Columbia . . .	60	+ 6	.6	0	Nashville . . .	60	+ 4	1.9	+ 1.4
Hartford . . .	53	+ 4	.2	-. 6	Kansas City . . .	60	+ 6	.6	0	TEX. Abilene . . .	68	+ 6	.6	+ .1
D.C. Washington . . .	62	+ 6	2.0	+ 1.4	St. Louis . . .	59	+ 5	1.0	+ .4	Amarillo . . .	62	+ 7	0	-. 3
FLA. Apalachicola . . .	69	+ 2	0	-. 4	Springfield . . .	62	+ 8	.3	-. 4	Austin . . .	73	+ 7	.1	-. 5
Daytona Beach . . .	72	+ 2	.1	-. 9	MONT. Billings . . .	54	+ 9	.2	+ .1	Beaumont . . .	73	+ 7	1.3	+ .5
Ft. Myers . . .	75	+ 1	.4	-. 2	Glasgow . . .	49	+ 8	.3	+ .2	Brownsville . . .	75	+ 2	T	-. 5
Jacksonville . . .	69	+ 2	1.3	+ .6	Great Falls . . .	50	+ 9	T	-. 1	Corpus Christi . . .	74	+ 3	.8	+ .3
Key West . . .	79	+ 1	0	-. 1.0	Havre . . .	46	+ 5	.1	0	Dallas . . .	70	+ 3	.3	0
Lakeland . . .	72	0	.4	0	Helena . . .	41	+ 3	T	-. 3	Del Rio . . .	64	+ 5	.3	+ .2
Miami . . .	77	+ 1	.1	-. 1.4	Kalispell . . .	44	+ 10	.1	0	El Paso . . .	69	+ 6	.9	+ .3
Orlando . . .	73	+ 1	.2	-. 4	Miles City . . .	53	+ 10	.3	+ .1	Fort Worth . . .	74	+ 4	.2	-. 3
Tallahassee . . .	67	+ 2	T	-. 5	Missoula . . .	44	+ 4	.3	+ .1	Galveston . . .	71	+ 4	T	-. 9
Tampa . . .	73	+ 1	T	-. 4	NEBR. Grand Island . . .	57	+ 8	.1	-. 2	Houston . . .	65	+ 8	T	-. 3
W. Palm Beach . . .	76	+ 1	.6	-. 9	Lincoln . . .	56	+ 8	1.1	+ .9	Lubbock . . .	68	+ 7	.1	-. 2
GA. Atlanta . . .	63	+ 5	2.7	+ 2.1	Norfolk . . .	55	+ 8	.2	-. 1	Midland . . .	70	+ 7	.2	-. 1
Augusta . . .	65	+ 5	1.6	+ 1.2	N. Platte . . .	52	+ 6	.2	-. 1	San Angelo . . .	71	+ 4	T	-. 5
Macon . . .	70	+ 8	1.1	+ .6	Omaha . . .	56	+ 7	.8	+ .2	San Antonio . . .	70	+ 7	.5	-. 2
Savannah . . .	68	+ 5	.9	+ .5	Valentine . . .	53	+ 8	.4	0	Victoria . . .	73	+ 4	.5	-. 2
HAWAII. Hilo . . .	76	+ 1	3.1	+ .3	NEV. Ely . . .	48	+ 4	0	-. 1	Waco . . .	73	+ 8	T	-. 5
Honolulu . . .	81	+ 3	.1	-. 4	Las Vegas . . .	68	+ 6	.1	0	Wichita Falls . . .	69	+ 8	.1	-. 4
Kahului . . .	79	+ 2	.4	0	Reno . . .	49	+ 2	.1	0	UTAH. Blanding . . .	53	+ 6	.6	+ .3
Linolea . . .	79	+ 2	.5	-. 6	Winnemucca . . .	50	+ 6	T	-. 2	Salt Lake City . . .	59	+ 12	.1	-. 2
IDAHO. Boise . . .	52	+ 4	.2	0	N.H. Concord . . .	47	+ 2	0	-. 7	VT. Burlington . . .	45	0	T	-. 6
Lewiston . . .	48	+ 1	.4	+ .1	N.J. Atlantic City . . .	57	+ 4	.6	-. 3	VA. Lynchburg . . .	59	+ 5	2.6	+ 2.0
Pocatello . . .	52	+ 8	.2	0	Trenton . . .	56	+ 3	.4	-. 2	Norfolk . . .	63	+ 5	2.2	+ 1.6
ILL. Cairo . . .	60	+ 3	.8	+ .1	N.MEX. Albuquerque . . .	65	+ 3	0	-. 1	Richmond . . .	61	+ 5	4.4	+ 3.7
Chicago . . .	54	+ 4	.1	-. 5	Roswell . . .	65	+ 10	T	-. 2	Roanoke . . .	57	+ 3	2.0	+ 1.3
Moline . . .	53	+ 3	1.5	+ 1.0	N.Y. Albany . . .	52	+ 5	T	-. 6	WASH. Colville . . .	42	0	.6	+ .2
Peoria . . .	54	+ 4	1.2	+ .7	Binghamton . . .	50	+ 4	T	-. 7	Omak . . .	43	+ 1	.7	+ .4
Rockford . . .	51	+ 3	.6	0	Buffalo . . .	52	+ 4	T	-. 7	Quillayute . . .	50	+ 2	4.7	+ 1.7
Springfield . . .	57	+ 5	1.0	+ .4	New York . . .	56	+ 2	.1	-. 6	Seattle-Tacoma . . .	51	+ 2	1.8	+ .7
IND. Evansville . . .	58	+ 5	.4	-. 2	Rochester . . .	52	+ 4	0	-. 6	Spokane . . .	44	+ 1	.4	0
Ft. Wayne . . .	55	+ 6	T	-. 7	Syracuse . . .	54	+ 5	0	-. 8	Walla Walla . . .	51	+ 1	.4	0
Indianapolis . . .	58	+ 7	.7	+ .1	N.C. Asheville . . .	59	+ 6	3.0	+ 2.3	Yakima . . .	47	+ 1	.1	-. 1
South Bend . . .	54	+ 5	T	-. 7	Charlotte . . .	64	+ 6	3.6	+ 3.0	W.Va. Beckley . . .	54	+ 5	.8	+ .2
IOWA. Burlington . . .	56	+ 6	1.2	+ .6	Greensboro . . .	59	+ 4	2.6	+ 2.0	Charleston . . .	57	+ 4	.2	-. 4
Des Moines . . .	55	+ 6	.9	+ .5	Hatteras . . .	66	+ 4	4.8	+ 3.7	Huntington . . .	58	+ 5	.3	-. 2
Dubuque . . .	52	+ 5	.5	-. 1	Raleigh . . .	62	+ 6	1.8	+ 1.2	Parkersburg . . .	59	+ 6	T	-. 5
Sioux City . . .	56	+ 8	1.1	+ .8	Wilmington . . .	66	+ 4	2.4	+ 1.8	WIS. Green Bay . . .	50	+ 5	T	-. 4
KANS. Concordia . . .	60	+ 8	.5	+ .2	N.DAK. Bismarck . . .	51	+ 10	T	-. 1	La Crosse . . .	51	+ 4	.2	-. 2
Dodge City . . .	62	+ 9	0	-. 3	Fargo . . .	52	+ 11	.4	+ .2	Madison . . .	50	+ 5	.2	-. 2
Goodland . . .	56	+ 8	0	-. 2	Williston . . .	51	+ 11	.1	0	Milwaukee . . .	51	+ 5	.1	-. 3
Topeka . . .	61	+ 8	1.0	+ .5	OHIO. Akron-Canton . . .	53	+ 4	T	-. 6	WYO. Casper . . .	52	+ 9	T	-. 2
Wichita . . .	65	+ 10	.2	-. 2	Cincinnati . . .	56	+ 4	1.4	+ .9	Cheyenne . . .	51	+ 8	0	-. 2
KY. Lexington . . .	60	+ 7	.9	+ .4	Cleveland . . .	56	+ 6	.2	-. 3	Lander . . .	51	+ 10	T	-. 3
Louisville . . .	58	+ 5	1.1	+ .5	Columbus . . .	56	+ 6	.2	-. 3	Sheridan . . .	52	+ 9	T	-. 2
					Dayton . . .	55	+ 4	.5	0	P.R. San Juan . . .	82	+ 2	1.0	-. 3
					Toledo . . .	51	+ 3	T	-. 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 SRS State offices in cooperation with the National Weather Service.

**ALABAMA:** Warm with heavy rains on 25th and 26th. Temperatures 6° above normal.

Fieldwork: 3.2 days suitable. Soil moisture adequate. Farm activities: Harvesting cotton, corn, peanuts, and soybeans and sowing small grains. Cotton 61% harvested, 22% 1976, 41% average. Corn 87% harvested, 78% 1976, 72% average. Soybeans 37% harvested, 43% 1976; 46% average. Peanut harvest nearly complete. Pastures, pecans fair to good condition. Small grains 65% sown, 63% 1976.

**ARIZONA:** Moist, tropical air; rain totals over 0.50 in. some areas. Temperatures 1 to 5° above normal.

Cotton harvest increasing. Sorghum harvest winding down. Sugarbeet harvest well underway Cochise County. Beets central, western areas growing well. Limited alfalfa haling. Wheat, barley preparations well advanced, some early plantings emerging. Lettuce harvest active Willcox; just underway central, western areas. Mixed vegetables good progress. Cantaloup harvest just underway Yuma. Salt River Valley areas nearing completion. Lemon harvest full volume. Limited Navel orange, grapefruit harvest underway. Ranges good to excellent condition higher elevations, improved lower to mid-elevation. Winter browse started, stock water supplies, soil moisture improved. Cattle roundup and marketings active. Movement to lower ranges continued. Sheep moved to lower pastures. Cattle, sheep mostly fair to good condition.

**ARKANSAS:** Temperatures extremes 88 and 40°. Temperatures 3 to 10° above normal. Rainfall ranged from 0 to 1.98 in. Scattered showers first half, otherwise no significant precipitation.

Soil moisture short to adequate. Fieldwork: 5.1 days suitable. Rains slowed soybean harvest; 41% complete, 37% last year and average. Early variety harvest complete most areas, many growers waiting on later varieties to mature. Cotton harvest 82% complete, 52% 1976, average 56%. Stalk destruction continued. Most growers picking second time. Rice harvest virtually complete at 99%, 95% year ago, average 97%; stubble being disked. Corn harvest virtually complete. Sorghum harvest 99% complete, 97% 1976, average 92%. Wheat planting 51% complete, 55% last year, average 64%. Oat seeding 61% complete, 67% year ago. Scattered late hay harvest. Pastures providing average amounts feed.

**CALIFORNIA:** Temperatures averaged slightly above normal. Precipitation reported at most northern stations with greatest amounts of over 2.00 in. along northwest coast.

Some fall planting of small grains, soil moisture poor. Irrigated oats grew well. Corn and dry bean harvests nearly complete. Milo harvest continues, good quality. Rice harvest near completion. Cotton harvest full swing, conditions ideal. Gins operate near capacity. Apple harvest continues. Table grape harvest limited to Emperors, Ribiers and Almeria varieties. Wine grape harvest winding down. Navel oranges starting to break color. Brussels sprouts, cantaloup, bell peppers, and processing tomato harvest about complete. Broccoli, cauliflower, carrot, and celery continue strong. Lettuce slowing central coast. Honeydew and market tomatoes continue active. Onions, po-

tatoes, and sweet potatoes continue strong. Rains improved rangeland, northern part, elsewhere extremely dry. Livestock moved to winter pastures. Supplemental feeding, hauling water necessary. Sheep grazing alfalfa fields, melon fields. Calving continues.

**COLORADO:** Mild and dry with above normal temperatures until 29th. Rain portions of northwest 0.50 in. Temperatures 4 to 6° above normal.

Corn grain harvest 83% 1977, 43% 1976, 48% average. Alfalfa 4th cutting 90%. Sorghum harvested for grain 70% 1977, 43% 1976, 37% average. Sorghum cut for forage 97% 1977, 86% 1976, 91% average. Winter wheat condition mostly good. Soil moisture short to very short. Range and pasture poor west slope, fair elsewhere. Livestock condition good.

**FLORIDA:** Temperatures near normal. Scattered rains early week and 30th highly variable but averaged 0.50 to 1.00 in.

Soil moisture mostly short. Soybean harvest increasing. Peanut and hay harvest nearing completion. Pecan harvest increasing. Small grain planting continues; delayed by dry soils some areas. Sugarcane good condition, harvesting cane for sugar just beginning. Grazing conditions declining seasonally. Cool temperatures, decreased rainfall slowing growth pasture grasses. Cattle condition continues mostly good. Citrus grove condition excellent, many irrigating. Cool temperatures helped reduce new growth. Some older groves quasi-dormant. Harvest continues to increase. Vegetable crop conditions mostly good to excellent. Harvest most crops underway. Supplies increasing. Weather ideal for plant growth, fruit set. Plantings active most crops. Sweet corn harvest increased. Tomato harvest slowed. Radish, eggplant, squash, cucumber, pepper harvest gaining momentum. Snap bean harvest continues to gain rapidly. Carrot, escarole, lettuce increasing. Planting most crops continues active.

**GEORGIA:** Temperatures 1 to 3° above normal east, and 3 to 4° above west and south, ranging from upper 50's northeast to near 70° southeast. Rainfall averaged 2.00 to 4.00 in. north third, and about 1.00 in. elsewhere. Fair and warm 29th while 30th mostly cloudy and cooler with a few showers extreme west.

Soil moisture varied, surplus north, short south. Fieldwork: 4 days suitable. Peanuts fair, 58% dug, 95% threshed, last year 99% dug, 97% threshed, average 99% dug, 98% threshed. Corn rated poor; 92% harvested, 79% last year, 69% average. Cotton mostly poor to fair; 41% picked, last year 29%, average 46%. Soybeans mostly fair to good; 18% combined, 11% last year, average 23%. Pastures improved, mostly fair to good. Cattle mostly fair to good. Hogs fair to mostly good. Pecans mostly fair to good; 23% harvested, last year 14%. Wheat seeding 47%, rye 61%, other small grains 57%. Last year wheat 38%, rye 60%, other small grains 53%.

**HAWAII:** Weather variable. Strong winds early week caused light damage, fruit and vegetable crops exposed areas, Kauai and Oahu. Other Islands weather favorable crop growth. Showers beneficial most areas.

Vegetable supplies: Chinese cabbage heavy, others generally light. Banana, papaya supplies heavy. Pineapple harvest light. Sugar harvest: Some mills expected to shut down this week or next. Pastures fair to good.

IDAHO: Warm; temperatures 1 to 10° above normal. Precipitation well below normal.

Fall harvest operations nearly complete except sugarbeets. Fall tillage main farm activity; dry soil conditions hampering fall tillage, germination. Livestock generally good condition.

ILLINOIS: Temperatures 2 to 7° above normal. Precipitation extremely light northeast, 0.50 slightly over 1.00 in. elsewhere.

Corn 70% harvested, 65% 1976, 62% average. Soybeans 87% combined, 99% 1976, 94% average. Grain sorghum 80% harvested. 1978 winter wheat 80% seeded, 92% last year and average.

INDIANA: Rains early in period slowed outdoor work; 0.10 in. north, 0.60 in. central, 1.00 in. south. Temperatures 6° above normal and ranged from 35 to 74°. Cloudy week, percent possible sunshine 35 to 51%. Humidities 10% above normal.

Fieldwork averaged 4 days. Topsoil moisture mostly adequate to surplus. Subsoil moisture adequate. Corn 65% harvested, 1976 55%, average 45%. Soybeans 75% combined, 1976 90%, average 75%. Wheat 65% seeded, 1976 90%. Wheat 35% emerged, 1976 65%. Wheat stands fair to mostly good. Apples 95% picked, 1976 95%, average 90%. Tobacco 25% stripped. Pastures fair to good.

IOWA: Warm and rainy.

Rains slowed fieldwork. Topsoil moisture adequate to surplus; subsoil adequate. Fieldwork: 3 days suitable. Effects of corn borers continue to affect corn. Corn mostly fair. Corn mature and 71% corn for grain harvested. Corn silage harvest 95% complete. Soybean condition good to excellent; mostly mature, harvest 84% complete. Hay and pasture continue to benefit from additional moisture. Livestock in good to excellent condition.

KANSAS: Dry weather continues west, amounts of 0.25 to 0.50 in. recorded central, 1.00 to over 2.00 in. east. Local heavy amounts over 3.00 in. occurred southeast weekend. Temperatures averaged 59° northwest to 65° south central and southeast or 8 to 11° above normal.

Harvesting row crops mainly west, moisture excessive fields east. Heavy rainfall east, harvesting may be delayed until ground freezes. Wheat seeded 95%, equal last year and average. Winter barley seeded 95%, equal last year, average 90%. Corn harvest 3 weeks ahead average at 85%, last year 70%, average 55%. Sorghum harvest 70%, last year 75%, average 50%. Combining soybeans 60%, last year 75%, average 60%. Harvesting sugarbeets full swing. Pastures above normal. Livestock grazing stubble, volunteer wheat, sudan fields.

KENTUCKY: Near normal temperatures with general 1.00 to 1.50 in. 25th.

Fieldwork: 3 days favorable. Activities: Corn and soybean harvest, seeding wheat and cover crops, stripping tobacco and plowing. Soil moisture adequate to surplus. Corn and soybean harvest slowed; corn now 71%, 65% last year and 69% average; beans made a little more progress, 55%, 1976 49% and slightly behind average. Much corn lodging and field losses heavier than normal. Tobacco stripping reached 24%, 20% last year and average 17%. Large variations in crop weight and quality, mainly due to curing season. Wheat seed-

ing slowed by wet soil, now 59% completed and remainder needing to be in ground soon. Pastures responding to warm fall and adequate moisture in excellent condition and still furnishing most of roughage requirements for cattle and sheep. Hay supplies built up and generally adequate for winter feeding.

LOUISIANA: Temperatures 1 to 7° above normal. Extremes: 44 and 85°. Rain 24th, heavy south, light north.

Soil moisture short north, adequate elsewhere. Main activities: Harvesting soybeans, sugarcane and cotton, and planting small grains and winter pastures. Cotton fair to good; 69% harvested, 66% last year, 46% average. Soybeans fair to good; 60% harvested, 71% last year, 57% average. Sugarcane good; 18% harvested, 16% last year and average. Sweetpotatoes fair to good; 82% harvested, 89% last year. Wheat 59% seeded, 73% last year. Oats 53% seeded, 80% last year. Pecan harvest active. Haying 91% complete. Pastures and livestock fair to good.

MARYLAND & DELAWARE: Temperatures 4° above normal. Highs in mid 60's; lows in upper 40's. Precipitation widespread, averaging 0.50 to 2.00 in.

Topsoil moisture adequate to surplus, subsoil adequate. Corn for grain 95% harvested, 70% 1976, 74% average. Soybeans 45% harvested, 35% 1976, 39% average. Tobacco growers stripping crop and preparing plant beds. Apple harvest continues. Seeding small grains active.

MICHIGAN: Temperatures above normal, ranging 2 to 7° over Lower and 5 to 8° over Upper Peninsula. Extremes: 21 and 74°. Precipitation light and scattered, generally less than 0.10 in.

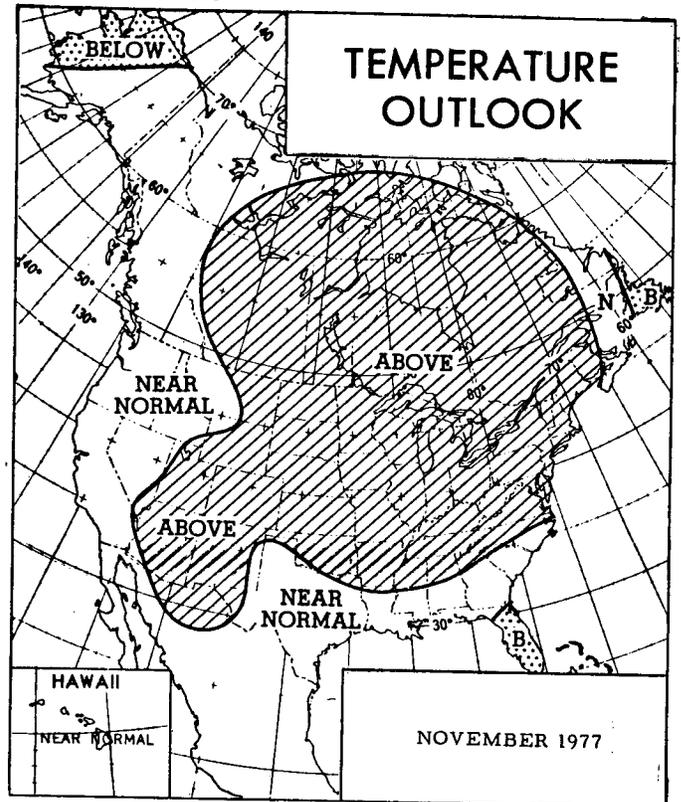
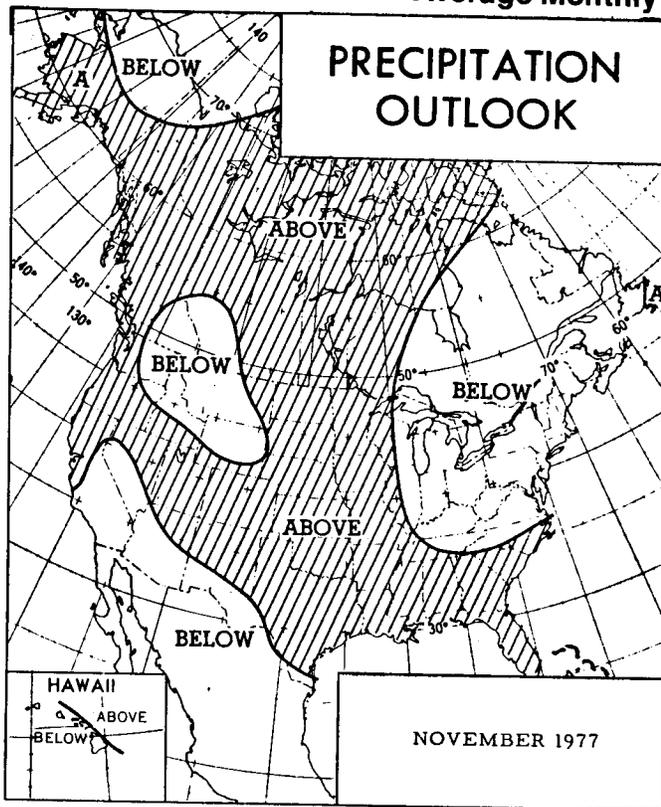
Fieldwork: 6 days suitable. Harvesting activity reached full swing: Picking corn, soybeans, dry beans, potatoes, fall plowing and winter wheat seeding. Soil moisture adequate to surplus. Pastures average or above. Corn harvested 35%, 61% 1976, 42% normal; 90% silage chopped. Dry beans: 75% picked, complete in 1976; soybeans 50% combined, 91% 1976, 73% normal. 3d cut hay 85%. Wheat planting 75%. Sugarbeets 45% dug, 83% 1976, 70% normal. Potatoes 90% dug, 92% 1976. Fall apple and vegetable harvest virtually finished.

MINNESOTA: Temperatures 5 to 10° above normal east and south; 10 to 15° above normal elsewhere. Extremes: 78 and 25°. Precipitation less than 0.25 in. except localized central sections 0.25 to 0.50 in.

Harvesting advanced rapidly despite several foggy days; nearly completed in many areas. Farmers plowing, applying fertilizer before freeze-up. Percent harvested: Corn 85%, 1976 94%, normal 76%; soybeans 93%, 1976 99%, normal 95%; potatoes 98%, 1976 99%, normal 99%; sunflowers 95%, 1976 99%, normal 89%.

MISSISSIPPI: Temperatures near normal. Extremes: 84 and 36°.

Soil moisture adequate to surplus. Fieldwork: 3.6 days suitable. Soybeans 89% mature, 83% 1976; 53% harvested, 34% 1976, 39% average. Cotton 79% harvested, 59% 1976, 48% average. Rice 95% harvested, 96% 1976, 92% average. Corn 84% harvested, 80% 1976, 70% average. Sorghums 89% harvested, 93% 1976, 84% average. Peanuts 97% harvested, 94% 1976, 92% average. Pecans 31% harvested, 19% 1976. Hay crops 96% harvested, 97% 1976, 96% average. Sweetpotatoes 86% harvested, 91% 1976, 85% average. Winter wheat 73% planted, 77% 1976, 66% average.



Oats 78% planted, 86% 1976, 74% average. Winter wheat, oats, and livestock in good to fair condition. Pecans in fair condition. Pastures in fair to good condition.

**MISSOURI:** Temperatures 7 to 9° above normal. Highs in 70's and 80's beginning and end of week; 50's and 60's midweek. Precipitation general 0.57 in. Bootheel, 1.50 in. in northwest and west central, 2.00 to 2.50 in. southwest, and up to 3.00 in. north.

Fieldwork: 1.6 days suitable. Soybeans 56% harvested, last year 75%, normal 62%. Corn 67% harvested, last year 81%, normal 60%. Grain sorghum 76% harvested, last year 81%, normal 65%. Cotton 76% harvested, last year 46%, normal 58%. Winter wheat seeding, 48% completed, last year 74%. Plowing for spring planted crops 19% completed, last year 38%. Pasture condition good to excellent. Soil moisture adequate to surplus.

**MONTANA:** Week started with warm weather, ended near normal. Temperatures 4 to 9° above normal. Precipitation below normal in north central and south central, but well above normal in the west and southwest. Frequent gusty winds along east slopes.

Winter wheat condition generally good. Topsoil moisture mostly adequate, subsoil moisture short to adequate. About 95% potatoes, 90% sugarbeets harvested. Nearly 85% all livestock moved to wintering areas, about 10% livestock receiving supplemental feed. Hay and roughage supplies for winter short to adequate. Grains and concentrates adequate. Livestock condition fair to good.

**NEBRASKA:** Temperatures well above normal. Precipitation with exception Panhandle widespread. Heaviest central, eastern portions.

Topsoil moisture short to adequate. Subsoil moisture adequate. Corn harvest 70% complete, 75% year ago, normal 60%. Grain sorghum 80% harvested, same as normal, 95% year ago. Soybeans 80% harvested, 95% year ago, normal 85%. Sugarbeets over 80% completed. Winter wheat good. Range and pasture feed adequate. Cattle grazing stalk fields.

**NEVADA:** Cloudy scattered showers early; mostly sunny and mild remainder.

Potato harvest about completed. Livestock movement from summer ranges active all areas.

**NEW ENGLAND:** Generally fair weather except short period of rain midweek in southern portions. Rainfall amounts ranged from 0.01 to 0.20 in. Temperatures early week frosty with lows in teens and 20's. Towards midweek they moderated. However, by weeks end they again plummeted to lows in 20's in northern portions.

Favorable for potato harvest in Aroostook County, Maine. Expect all potato harvest will be completed in week beginning 10/30. Some corn for silage still to be harvested. Outlook for completion now much improved.

**NEW JERSEY:** Temperatures 2 to 3° above normal. Extremes: 23 and 76°. Precipitation below normal averaging 0.08 in. north, 0.59 in. south and 0.53 in. coastal sections.

Harvest of vegetables limited to mostly light to moderate volume of late season marketings. Widespread killing frost in south would end the

harvest of tender vegetables. Apple, cranberry and sweetpotato harvest nearing completion. Harvest of field corn and soybeans expected to resume as weather permits. Planting of fall grains and cover crops nearing completion.

**NEW MEXICO:** A few light showers south on 27th then widespread light rains all sections except northeast 29th. Rainfall 0.25 to 0.50 in. few places but most totals 0.10 in. or less.

Cotton harvest 30% completed. Cleanup operations in progress for fourth and fifth cuttings of alfalfa in northern and southern areas, respectively. Grain sorghum harvest 70% completed. Irrigated winter wheat good. Dryland winter wheat fair. Pecans beginning to drop. Ranges fair to good. Livestock good.

**NEW YORK:** Very dry; rainfall 0.10 in. or less. Temperatures 1 to 6° above normal. Killing frost nearly all areas, growing season over.

Corn silage harvest 65% complete. Grain corn 23% done. Slow progress in dry bean harvest. Cabbage for kraut and Upstate onion harvest continuing. Potato harvesting progress variable. Apple harvesting in late stages.

**NORTH CAROLINA:** Temperature and precipitation above normal.

Fieldwork: 3 days suitable. Soil moisture adequate to surplus. Conditions: Soybeans, cotton and pastures fair. Harvested: Corn for grain 95%, 1976 86%, average 84%; peanuts dug 97%, 1976 88%, average 96%; peanuts threshed 91%, 1976 79%, average 86%; apples 92%, 1976 95%, average 92%; sweetpotatoes 90%, 1976 83%, average 85%; cotton 47%, 1976 26%, average 36%; soybeans 15%, 1976 10%, average 16%. Planted: Wheat 48%, 1976 35%, average 48%.

**NORTH DAKOTA:** Weather conditions warm and dry. Northwest and north central received nearly 0.10 in.; elsewhere none to less than 0.05 in. Temperatures ranged from 5 to 13° above normal. Extremes: 79 and 22°.

Major activity, sunflower harvest. Also fall tillage, fertilizing and hauling hay.

**OHIO:** Temperature above normal. Extremes: 74 and 37°. Precipitation trace northeast, 1.42 in. southwest.

Excellent harvest weather. Fieldwork: 6 days favorable. Main activities: Corn, soybean and sugarbeet harvest. Limited fertilizing fall plowing and tobacco stripping. Normal high moisture in corn and soybeans, quality good. No unusual transportation problems. Harvest completed: Corn 50%, 45% last year and average; soybeans 80%, equal to average, 85% 1976; sugarbeets 60%, 55% last year and average. Popcorn 60%, 65% last year, 55% average. Winter wheat seeding 85%, behind normal. Warm weather speeded germination and growth, condition good. Soil moisture adequate, some areas surplus.

**OKLAHOMA:** Temperatures 5 to 8° above normal south, 7 to 9° above normal north. Precipitation light except far east.

Topsoil moisture supplies improved but rated short. Subsoil moisture supplies generally short. Wheat rated fair to good, 82% up to stand, 74% 1976 and normal. Wheat grazing remains limited. Oats rated fair to good; 65% up to stand, 60% 1976 and 65% normal. Barley fair to good condition, 54% up to stand, 63% 1976 and 69% normal. Corn harvest virtually complete at 94%. Sorghums good condition with 97% mature, the same as last year and normal; harvest 50% complete, 64% 1976

and 48% normal. Cotton rated good; 94% open bolls, 94% 1976 and 80% normal; harvest 18% complete, 3% 1976, 7% normal. Peanut harvest 69% complete, 68% 1976 and 52% normal. Soybean harvest 50% complete. Pasture and ranges good to fair condition. Livestock rated good.

**OREGON:** Rainfall reported all areas; coastal regions and northern cascades averaged 2.00 in. Rainfall in western valleys ranged from 0.50 to 1.00 in. East received less than 0.25 in. except northeast with 0.50 in. Temperatures averaged 3 to 6° above normal. Extremes: Mid-70's, mid-30's west; low 80's, low 20's east.

Fall field activity nearing completion. Seeding continues as weather permits. Fruit harvests nearly complete, some apples still to pick. Vegetables nearing completion; cauliflower, carrots, beets, sweet corn continue. Potatoes moving towards completion. Filberts and walnut harvest continue. Range and pastures showing good growth in west, poor to fair in east. Cattle and calves generally in good shape. Feed outlook good.

**PENNSYLVANIA:** Mild, dry. Showers midweek, otherwise fine autumn weather. Mild days, cold nights; temperatures 3 to 6° above normal. Extremes: 79 and 32°. Precipitation trace west; 0.50 to 0.75 in. south central mountains.

Apple, corn and soybean harvest continued as old fall plowing and winter grain seeding. Emerged stands of winter grains look good.

**PUERTO RICO:** Island rainfall 1.09 in. or 0.67 in. below normal. Temperatures about 81° on coasts and 76° interior. Extremes: 95 and 59°.

**SOUTH CAROLINA:** Temperatures below normal early, above normal later in week. Extremes: 35 and 83°. Heavy rains of 3.00 to 6.00 in. fell west, north, central 25th, 26th. Some flash flooding mountains with major streams rising.

Soil moisture mostly adequate, some areas too wet. Last tobacco market closed. Cotton harvesting halted by midweek rains. Corn harvest practically complete. Soybeans in fair condition. Rains halted harvesting. Rains caused good comeback of previously dry pastures. Weather interrupted hay harvest. Winter grazing planting 84% completed, continued with improved moisture. Fall vegetable condition fair; harvest winding down seasonally. Pecans in fair condition; harvest underway as weather permits. Corn harvested 98% 1977, 96% 1976, 90% average. Cotton harvested 62% 1977, 38% 1976, 53% average. Soybeans harvested 10% 1977, 5% 1976, 14% average.

**SOUTH DAKOTA:** Temperatures mostly 5 to 11° above normal. Extremes: 26 and 82°. Precipitation 1.91 to less than 1.00 in.

Topsoil moisture adequate. Full scale harvest underway. Completion still behind normal but progressing at near normal rate. Corn harvested 60%, 1976 95%, normal 71%. Grain sorghum harvested 77%, 1976 99%, normal 80%. Soybeans harvested 91%, 1976 99%, normal 97%. Sunflowers 72% harvested.

**TENNESSEE:** Precipitation 1.00 in. west to 2.00 in. east. Temperatures 4 to 8° above normal.

Soil moisture adequate. Fieldwork: 2.3 days suitable. Cattle condition good. Sorghum mature 97%, 84% 1976, 78% normal. Soybeans harvested 53%, 35% 1976, 33% normal. Cotton harvested 76%, 30% 1976, 44% normal. Corn harvested 70%, 56% 1976, 60% normal. Burley tobacco stripped 52%, 48% 1976, 43% normal. Fall plowing completed 82%, 78% 1976, 81% normal. Wheat seeded 73%, 68% 1976,

69% normal. Oats seeded 94%, 88% 1976, 89% normal. Barley seeded 93%, 88% 1976, 90% normal.

TEXAS: Little precipitation. Warm dry week. Temperatures above normal. Rainfall near normal southwest, middle gulf coast; elsewhere, below normal.

Cotton, sorghum harvest continuing at fast pace; corn harvest virtually complete. Scattered rains beneficial to fall seeded small grain. Cotton harvest passed half-way point. Stripping on Panhandle good progress despite rain, wet mornings. Few fields southern High Plains damaged by hail. Corn harvest virtually complete; only few scattered fields left. Sorghum harvest proceeded at fast pace, although slowed by showers. Many fields to be harvested still too green; probably won't be combined until after killing frost. Soybean harvest excellent progress. Peanut harvest making good progress. Sunflower harvest continuing High Plains. Late planted fields too green for harvest. Wheat seeding little progress. Planting should increase following last week's rains; some areas still dry. Where rain received, stands given much needed boost. Second cutting rice delayed by showers. Sugarbeet harvest active. Oat seeding fair progress. Recent rains gave boost to emerged stands; germinated seeds in dry planted fields. Sorghum harvested 95%, 90% 1976, 84% average. Corn 100%, 91% 1976, 89% average. Cotton 54%, 19% 1976, 24% average. Peanuts 73%, 64% 1976, 68% average. Soybeans 54%, 42% 1976, 40% average. Pecans 11%, 9% 1976, 7% average. Sugarbeets 42%, 35% 1976, 66% average. Sunflowers 86%, 57% 1976, 64% average. Wheat planted 79%, 84% 1976, 89% average. Oats planted 73%, 71% 1976, 84% average. Citrus harvest steady, sizes running small. Movement watermelons, bell peppers, carrots, lettuce, cantaloup, honeydew melons, cucumbers continues. Dry conditions hamper vegetable development some areas. Pecan harvest continues. Scattered showers benefited winter grasses, small grains some areas; most areas need more rain. Heavy culling continues but slowed by rainfall. Livestock condition holding up well. Many pastures, ranges extremely overgrazed due extended dry weather. Many ranchers feeding protein supplements, hay.

UTAH: Fair and mild forepart of period. Scattered showers weekend principally northwest. Amounts generally light to moderate. Temperatures ranged 3 to 12° above normal.

Harvest of late summer crops continued. Conditions for harvest good. Sugarbeet and potato harvest moving along. Still some movement of cattle and sheep to fall and winter ranges. Range feed prospects not optimistic. Scattered thunder-showers at end of period hindered harvesting.

VIRGINIA: Rainfall averaged 2.50 in. Temperatures 4° above normal. Extremes: 24 and 80°.

Topsoil moisture adequate to surplus. Corn combining over 75%, 60% 1976, 61% average. Soybean harvest 15%, 14% 1976, 19% usual. Milo harvest 22%, 21% 1976. Peanuts: 85% dug, 75% 1976, 84% average. Some foliage damage and harvest problems caused by frost 17-18th. Combining slowed by rain. Seeding: Wheat 50%, 45% 1976, 55% usual; barley 81%, 66% 1976, 76% average; winter oats 90%, 69% 1976, 78% usual.

WASHINGTON: West: Temperatures near normal to 2° above normal. Precipitation one half normal except 0.20 to 0.40 in. above in Sound and San Juans.

Carrots, celery, sweet corn, cauliflower and silage being harvested. Some liming and pasture seeding. Pastures in good condition.

East: Temperatures 1 to 3° above normal. Precipitation 0.30 in. below normal central area; near normal east slopes of Cascades and more easterly portions.

Digging beets and potatoes. Harvest of field corn picking up as moisture content drops. Germinated winter wheat looks good some areas, poor others. Soil moisture for wheat marginal most areas. Some operators postponed planting till spring because of dry conditions.

WEST VIRGINIA: Temperatures above normal. Precipitation above normal south and northeast, well below normal elsewhere.

Soil moisture adequate. Fieldwork: 4.5 days suitable. Haying, corn picking, planting small grains main farm activities. Feed supplies: Hay short to adequate; grain adequate. Pasture good to fair.

WISCONSIN: Temperatures 7° above normal. Dense early morning fog but clearing allowed temperatures to reach 60's and a few 70's. Overnight lows 30's and 40's except some 20's northwest. Light rain beginning of week, less than 0.50 in. except in thunderstorms southwest 25th.

Corn harvest continues; 60% harvested, 1976 80%, normal 55%. Unharvested corn standing well most places. Soybeans 55% combined, 1976 70%, normal 60%. Most haying completed. Fall pastures well above normal. Harvesting of potatoes and cranberries near end. Fall plowing 25% done, 1976 20%, normal 40%. Moisture generally adequate for plowing, some areas too wet. Topsoil moisture supplies 75% adequate.

WYOMING: Temperatures above normal. Precipitation below normal.

Topsoil and subsoil short. Potatoes 97% harvested. Sugarbeets 94% dug. Corn for grain 69% picked. Winter wheat mostly good condition. Livestock mostly good condition.

USSR. Harvesting of row crops continued in European USSR favored by generally mild, sunny weather in most areas. Subsoil moisture was adequate in the southern regions where vegetative growth of winter crops continued, but surface moisture was short throughout much of the Ukraine and could pose a problem for late seeded winter grains. Cotton harvesting neared completion in central Asia, but rain complicated the harvest in some areas.

ASIA. Heavy rains fell throughout North China, relieving the dry conditions that had affected winter grains in some areas while restoring soil moisture. The heavy rainfall, however, may have caused some localized waterlogging problems. Conditions were generally favorable for the rice harvest in the south although heavy precipitation occurred in the central provinces of Hunan, Hubei, and parts of Szechwan. The lower third of the Indian Peninsula continued to receive moderate to heavy showers, but the northern half did not receive any significant rainfall during the week except in the northeast where some moderate thunderstorms were registered. But grain crops and pastures continued to deteriorate over most of the principal grain areas of Australia as the only significant rainfall occurred in the extreme southwest corner of western Australia. Moisture was urgently needed in most areas to prevent further crop deterioration.

AFRICA. Winter crops and pastures in Morocco were helped by light to moderate showers, but only scattered light showers fell in Algeria. Tunisia was without significant rainfall. Light to moderate rains moistened the Transvaal and the Orange Free State in South Africa, boosting spring sowing while improving pastures in these important agricultural regions. The dry season is being established over most of central Africa, and little rainfall is expected in the Sahel until spring.

AMERICAS. Excellent rains over Argentine grain areas continued to aid development of winter grains, pastures, and spring crops. But moderate to locally heavy showers in Brazil's Rio Grande do Sul are affecting the wheat harvest in that important wheat state. Two successive weeks of fairly mild sunny weather in the Prairie Provinces of Canada have assured successful completion of the grain harvest which was seriously lagging in mid-October.

EUROPE. Field activities throughout the United Kingdom, Denmark, Benelux, and northern France progressed under a weather pattern that produced seasonally mild temperatures with only brief periods of light precipitation. Excellent rains in southern Spain continued to replenish soil moisture while improving pastures and winter grains. Eastern Europe also was treated to a week of mild weather with only light scattered showers to interfere with fieldwork. Dry, sunny weather prevailed over agricultural areas in Turkey, Lebanon, and Israel following the heavy rains of the previous weeks which had hindered unharvested cotton in those countries.

## World Weather and Crop Update

October 24 - 30

## THE HEATING DEGREE DAY STATISTIC: A MEASURE OF FUEL NEEDS

Already winter has crept into many northern States, and for most of the rest of the Nation is just around the corner. Though this year's heating fuel supply prospects may not be as grim as some previous year's, a prolonged cold period over a broad geographic area could cause severe problems. An excellent indicator of an area's demand for heating fuel is the heating degree day statistic, which relates average temperature to fuel needs. Starting with this issue the Bulletin will provide the latest information on the heating degree-day situation.

At the turn of the century heating engineers developed the heating degree-day statistic to integrate temperature and fuel consumption. Concerned only with the outdoor air temperature, the heating degree-day statistic neglects other factors like solar radiation and wind. Many studies have shown that when the daily mean air temperature is 65° or above most buildings require no heat to maintain an inside temperature of at least 70°.

To determine the daily degree-day statistic subtract the daily mean temperature from a base temperature of 65° as shown:

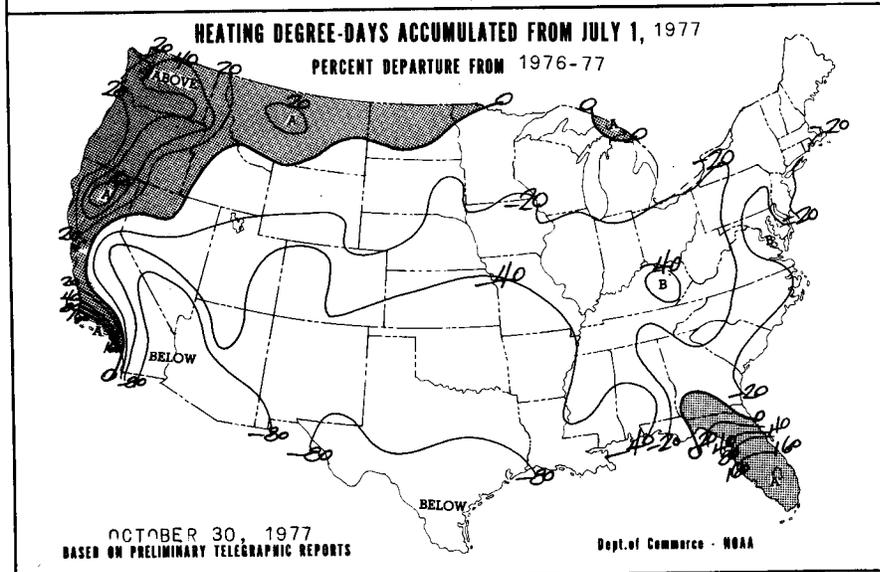
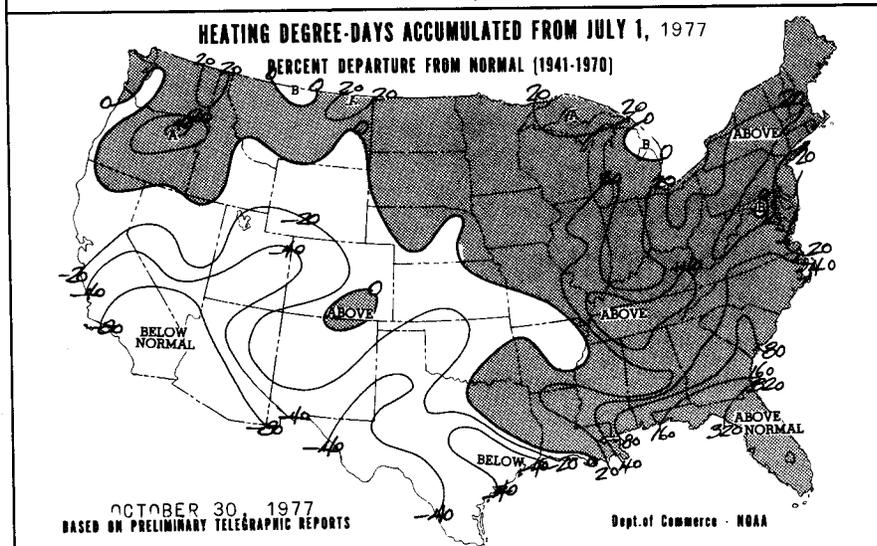
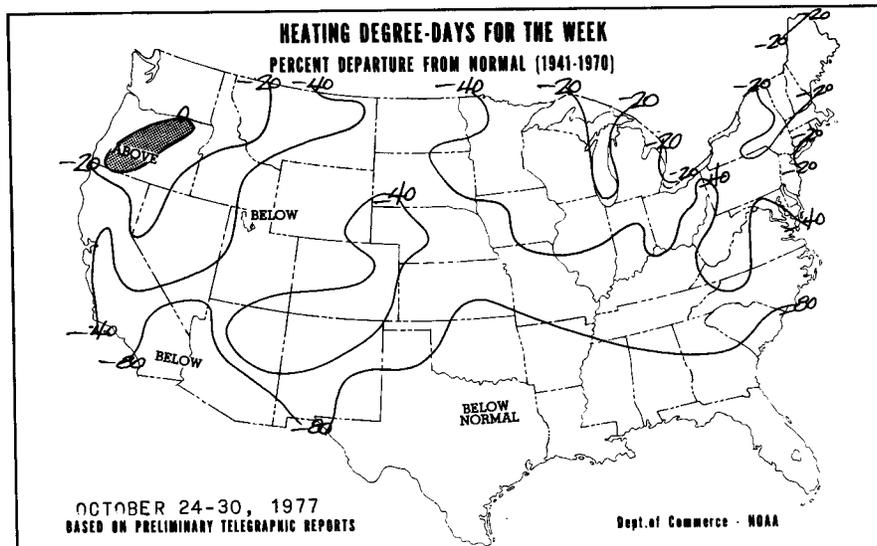
$$65^{\circ} - \frac{\text{max temp} + \text{min temp}}{2.0} = \text{daily heating degree-days}$$

Each degree of mean temperature below 65° is 1 degree-day unit. If the daily mean temperature is 45°, 20 heating degree-days are accumulated. In the same way a daily mean temperature of 25° means 40 degree-day units have been accumulated. About twice as much fuel is needed on a day with 40 heating degree-day units than on a day with 20 heating degree-day units. When the mean temperature exceeds 65°, the heating degree-day value for the day is zero. To determine the degree-days for any given period add the degree-days for each day of the period.

The fuel industry can monitor fuel consumption by keeping up-to-date on the heating degree-day accumulations. Then, forecasts can be converted into heating degree-day statistics and used to determine future fuel needs. High storage costs for oil and gas put a premium on the precise evaluation of use and demand rates for fuel and on the efficient scheduling of fuel deliveries--especially in times of tight supplies.

For the rest of the heating season the Bulletin will feature three maps. The first will show heating degree-days for the week as the percent departure from normal (1941-70); the second, the number of heating degree-days accumulated from July 1, 1976 as the percent departure from normal; and the third, the number of heating degree-days accumulated since July 1, 1976 as the percent departure from last year.

Heating degree data supplied by National Weather Service Offices are summarized and maps are prepared by the National Meteorological Center, Suitland, Maryland. For monthly normals for all cooperative stations, see Climatography of the United States No. 81. Daily normals appear in Climatography of the United States No. 84. Both publications are available from the National Climatic Center, Asheville, North Carolina 28801.

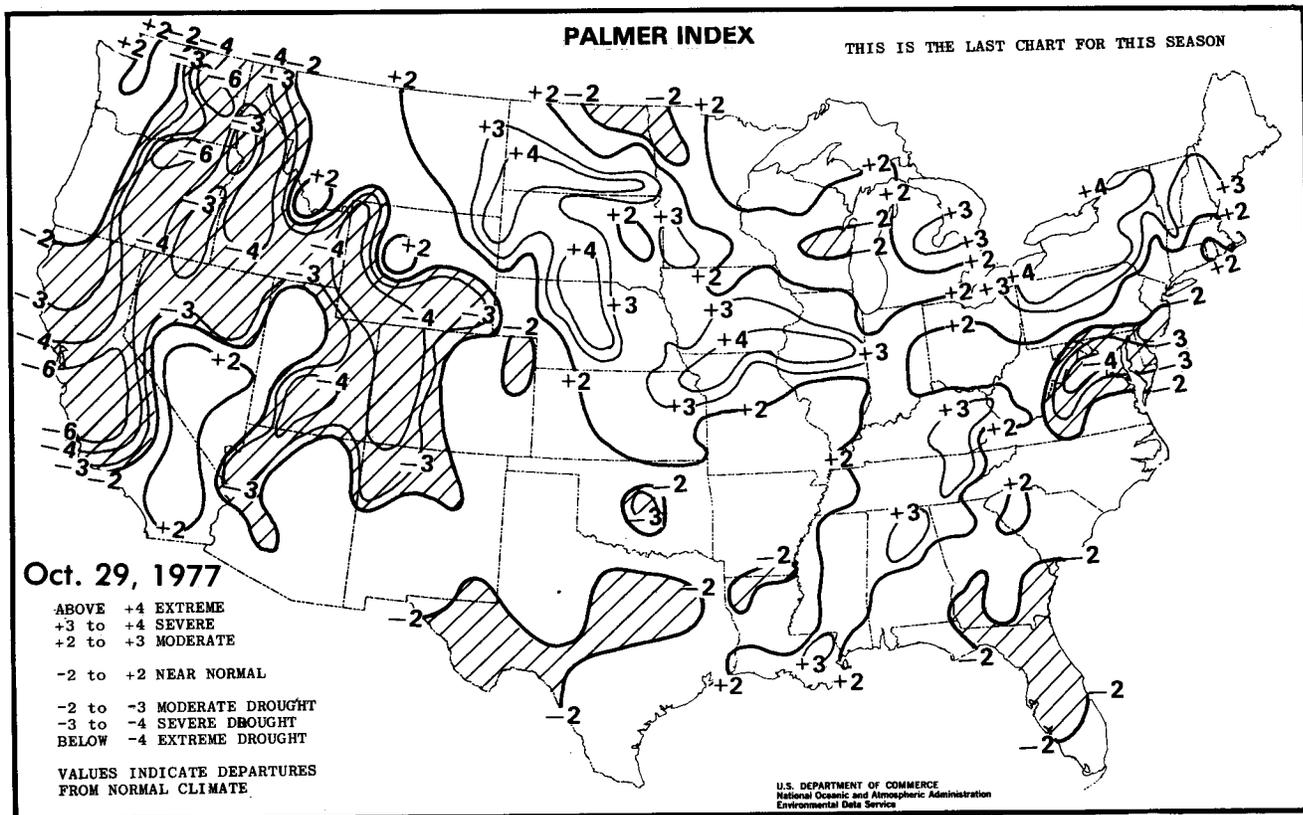


HEATING DEGREE DAYS (BASE 65°) FOR WEEK ENDING OCT. 30, 1977.

STATES AND STATIONS	WEEKLY		SEASONAL ACCUMULATION *			STATES AND STATIONS	WEEKLY		SEASONAL ACCUMULATION *			STATES AND STATIONS	WEEKLY		SEASONAL ACCUMULATION *		
	TOTAL	DEPARTURE*	TOTAL	DEPARTURE*	DEPARTURE FROM 1976-77		TOTAL	DEPARTURE*	TOTAL	DEPARTURE*	DEPARTURE FROM 1976-77		TOTAL	DEPARTURE*	TOTAL	DEPARTURE*	DEPARTURE FROM 1976-77
ALA. BIRMINGHAM...	11	11	187	4	50	MAINE CARIBOU...	11	11	1170	16	207	OKLA. OKLAHOMA CITY...	70	46	536	18	282
MOBILE...	11	11	187	4	50	PORTLAND...	11	11	1170	16	207	TULSA...	70	46	536	18	282
MONTGOMERY...	11	11	187	4	50	MD BALTIMORE...	11	11	1170	16	207	OREG ASTORIA...	70	46	536	18	282
ARIZ FLAGSTAFF...	11	11	590	32	258	MASS BOSTON...	66	25	390	19	60	BURNS...	100	140	905	33	208
PHOENIX...	11	11	590	32	258	MICH ALPENA...	11	11	935	14	11	MEDFORD...	100	140	905	33	208
TUCSON...	11	11	590	32	258	DETROIT...	11	11	935	14	11	ENDLETON...	100	140	905	33	208
WINSTON...	11	11	590	32	258	GRAND RAPIDS...	11	11	935	14	11	PORTLAND...	100	140	905	33	208
YUMA...	11	11	590	32	258	HOUGHTON LAKE...	11	11	935	14	11	SALEM...	100	140	905	33	208
ARK FORT SMITH...	11	11	14	1	17	LANSING...	11	11	935	14	11	PA ALLENTOWN...	100	140	905	33	208
LITTLE ROCK...	11	11	14	1	17	MARQUETTE...	11	11	935	14	11	ERIE...	100	140	905	33	208
CALIF BAKERSFIELD...	1	1	10	1	10	MUSKOGEE...	11	11	935	14	11	HARRISBURG...	100	140	905	33	208
EUREKA...	1	1	10	1	10	S. STE. MARIE...	11	11	935	14	11	PHILADELPHIA...	100	140	905	33	208
FRESNO...	1	1	10	1	10	MINN DULUTH...	11	11	935	14	11	PITTSBURGH...	100	140	905	33	208
LOS ANGELES...	1	1	10	1	10	INTERNAL FALLS...	11	11	935	14	11	SCRANTON...	100	140	905	33	208
ONTARIO...	1	1	10	1	10	WINNEPEG...	11	11	935	14	11	R.I. PROVIDENCE...	70	46	478	41	160
SAN DIEGO...	1	1	10	1	10	ROCHESTER...	11	11	935	14	11	S.C. CHARLESTON...	11	11	110	10	43
SAN FRANCISCO...	1	1	10	1	10	ST. CLOUD...	11	11	935	14	11	COLUMBIA...	11	11	110	10	43
STOCKTON...	1	1	10	1	10	MISS JACKSON...	11	11	935	14	11	GREENVILLE...	11	11	110	10	43
COLO DENVER...	1	1	397	112	224	HERIDIAN...	11	11	935	14	11	S.DAK ABERDEEN...	101	77	779	39	44
GRAND JUNCTION...	1	1	397	112	224	MO COLUMBIA...	11	11	935	14	11	HURON...	101	77	779	39	44
PUEBLO...	1	1	397	112	224	KANSAS CITY...	11	11	935	14	11	RAPID CITY...	101	77	779	39	44
CONN BRIDGEPORT...	1	1	32	90	74	ST. LOUIS...	11	11	935	14	11	STOUX FALLS...	101	77	779	39	44
HARTFORD...	1	1	32	90	74	SPRINGFIELD...	11	11	935	14	11	TENN CHATTANOOGA...	101	77	779	39	44
DEL WILMINGTON...	1	1	360	87	63	MONT BILLINGS...	11	11	935	14	11	KNOXVILLE...	101	77	779	39	44
D.C. WASHINGTON...	1	1	193	116	116	GLASSBORO...	11	11	935	14	11	MEMPHIS...	101	77	779	39	44
FLA APALACHICOLA...	1	1	67	47	10	GREAT FALLS...	11	11	935	14	11	NASHVILLE...	101	77	779	39	44
DAYTONA BEACH...	1	1	67	47	10	HELENA...	11	11	935	14	11	TEXAS ABILENE...	2	1	66	1	20
DART MIVERS...	1	1	67	47	10	KOLLSPELL...	11	11	935	14	11	AMARILLO...	2	1	66	1	20
JACKSONVILLE...	1	1	67	47	10	MILES CITY...	11	11	935	14	11	AUSTIN...	2	1	66	1	20
KEY WEST...	1	1	67	47	10	MISSOULA...	11	11	935	14	11	BEAUMONT...	2	1	66	1	20
LAKELAND...	1	1	67	47	10	NEBR GRAND ISLAND...	11	11	935	14	11	BIRMINGHAM...	2	1	66	1	20
MIAMI...	1	1	67	47	10	LINCOLN...	11	11	935	14	11	BOZEMAN...	2	1	66	1	20
ORLANDO...	1	1	67	47	10	NORFOLK...	11	11	935	14	11	COCHRAN...	2	1	66	1	20
TALLAHASSEE...	1	1	67	47	10	NORTH PLATTE...	11	11	935	14	11	DEL RIO...	2	1	66	1	20
TAMPA...	1	1	67	47	10	OHAMA...	11	11	935	14	11	EL PASO...	2	1	66	1	20
WEST PALM BEACH...	1	1	67	47	10	VALENTINE...	11	11	935	14	11	FORT WORTH...	2	1	66	1	20
GA ATLANTA...	1	1	183	44	85	NEV ELY...	12	4	78	129	24	UTAH SALT LAKE CITY...	42	81	346	147	113
AUGUSTA...	1	1	183	44	85	LAS VEGAS...	12	4	78	129	24	BURLINGTON...	119	21	851	110	121
Macon...	1	1	183	44	85	RENO...	12	4	78	129	24	VA LYNCHBURG...	119	21	851	110	121
SAVANNAH...	1	1	183	44	85	WINNEBUCA...	12	4	78	129	24	NORFOLK...	119	21	851	110	121
IDAHO BOISE...	1	1	539	13	72	N.H. CONCORD...	12	9	892	183	56	RICHMOND...	119	21	851	110	121
LEWISTON...	1	1	539	13	72	N.J. ATLANTIC CITY...	12	9	892	183	56	ROANOKE...	119	21	851	110	121
POCATELLO...	1	1	539	13	72	TRENTON...	12	9	892	183	56	WASH QUILLAYUTE...	119	21	851	110	121
ILL CATRO...	2	2	229	91	129	N.MEX ALBUQUERQUE...	12	19	185	132	211	SEATTLE-TACOMA...	119	21	851	110	121
CHICAGO...	2	2	229	91	129	ROSNELL...	12	19	185	132	211	SPOKANE...	119	21	851	110	121
HOLINE...	2	2	229	91	129	N.Y. ALBANY...	12	19	185	132	211	HALL HALLA...	119	21	851	110	121
PEORIA...	2	2	229	91	129	BINGHAMTON...	12	19	185	132	211	YAKIMA...	119	21	851	110	121
ROCKFORD...	2	2	229	91	129	BUFFALO...	12	19	185	132	211	W.VA BECKLEY...	119	21	851	110	121
SPRINGFIELD...	2	2	229	91	129	NEW YORK...	12	19	185	132	211	CHARLESTON...	119	21	851	110	121
IND EVANSVILLE...	4	4	297	40	101	ROCHESTER...	12	19	185	132	211	HUNTINGTON...	119	21	851	110	121
FORT WAYNE...	4	4	297	40	101	SYRACUSE...	12	19	185	132	211	PARKERSBURG...	119	21	851	110	121
INDIANAPOLIS...	4	4	297	40	101	N.C. ASHEVILLE...	12	19	185	132	211	GREEN BAY...	107	36	778	44	174
SOUTH BEND...	4	4	297	40	101	CHARLOTTE...	12	19	185	132	211	LACROSSE...	107	36	778	44	174
IOWA BURLINGTON...	7	7	441	60	196	GREENSBORO...	12	19	185	132	211	HADISON...	107	36	778	44	174
DES MOINES...	7	7	441	60	196	HATTERAS...	12	19	185	132	211	WILBAUKEE...	107	36	778	44	174
DUBUQUE...	7	7	441	60	196	RALEIGH...	12	19	185	132	211	CASPER...	86	70	680	91	171
STOUX CITY...	7	7	441	60	196	WILMINGTON...	12	19	185	132	211	CHEYENNE...	86	70	680	91	171
KANS CONCORDIA...	6	6	320	12	179	N.DAK BISMARCK...	97	97	947	104	43	LANDER...	86	70	680	91	171
DODGE CITY...	6	6	320	12	179	FARGO...	97	97	947	104	43	SHERIDAN...	86	70	680	91	171
GOODLAND...	6	6	320	12	179	HILLSTON...	97	97	947	104	43	OHIO AKRON-CANTON...	84	70	680	91	171
TOPERA...	6	6	320	12	179	CINCINNATI...	84	70	680	91	171	CLEVELAND...	84	70	680	91	171
WICHITA...	6	6	320	12	179	COLUMBUS...	84	70	680	91	171	DAYTON...	84	70	680	91	171
KY LEXINGTON...	3	3	299	27	221	TOLEDO...	84	70	680	91	171	WYO CASPER...	86	70	680	91	171
LOUISVILLE...	3	3	311	48	92	LA. BATON ROUGE...	1	1	51	1	1	CHEYENNE...	86	70	680	91	171
LA BATON ROUGE...	1	1	51	1	1	LAKE CHARLES...	1	1	51	1	1	LANDER...	86	70	680	91	171
LAKE CHARLES...	1	1	51	1	1	NEW ORLEANS...	1	1	51	1	1	SHERIDAN...	86	70	680	91	171
NEW ORLEANS...	1	1	51	1	1	SHREVEPORT...	1	1	51	1	1						

BASED ON 1941-70 NORMALS.

\* ACCUMULATION FROM JULY 1, 1977.



The Palmer Index was designed to evaluate the scope, severity, and frequency of prolonged periods of abnormally wet or dry weather. For this purpose it works reasonably well. However, it does not provide a measure of the current status of agricultural drought; i.e. the effects of short periods of very dry weather. For this reason the Crop Moisture Index was developed to respond rapidly to changes in the soil moisture situation and take into account only those moisture aspects which affect vegetation and field operations.

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

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

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

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

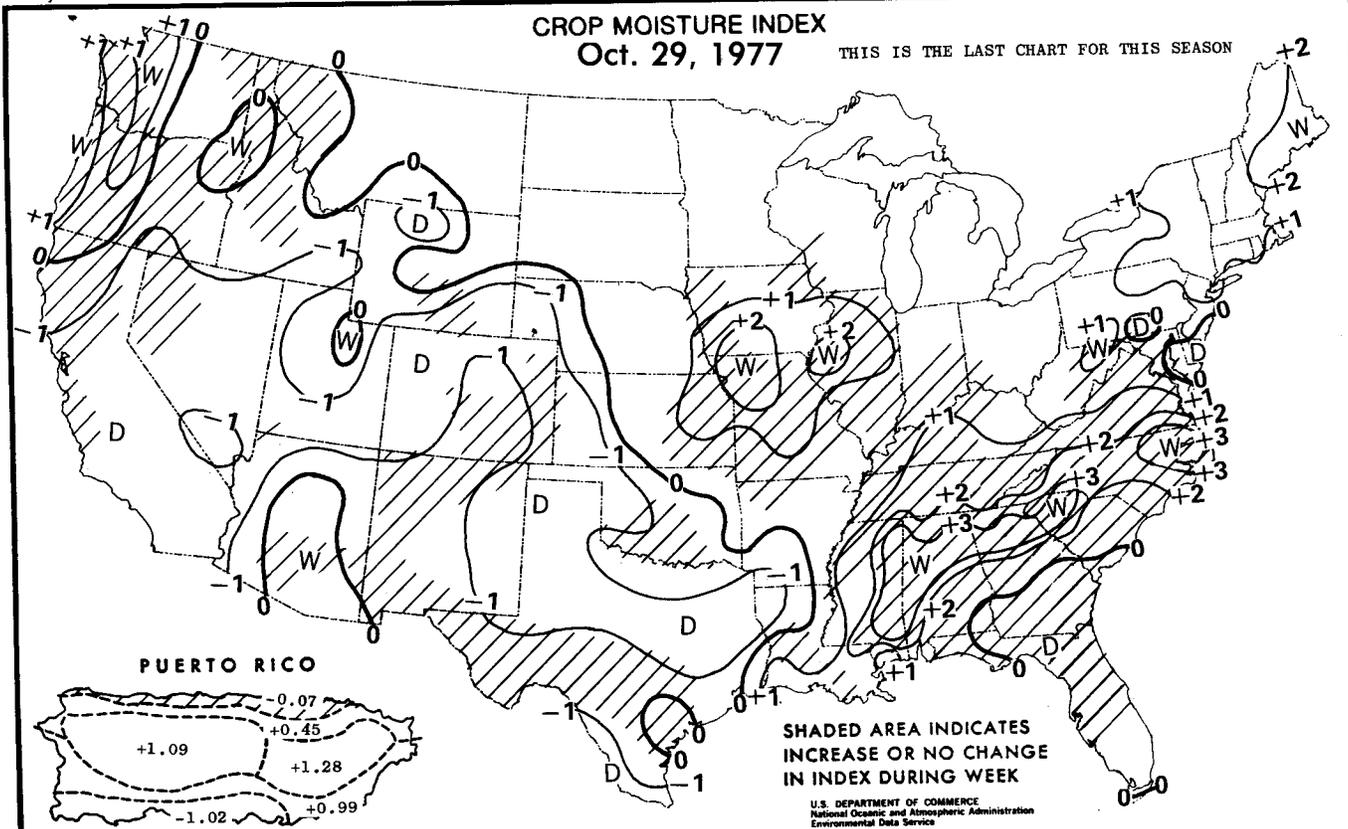
However, positive PI values indicate that the moisture supply either from current or antecedent rainfall exceeded the amount required to sustain soil moisture levels that would be considered as normal and appropriate for the climate of the area.

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

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

**CROP MOISTURE INDEX**  
**Oct. 29, 1977**

THIS IS THE LAST CHART FOR THIS SEASON



**SHADED AREA INDICATES INCREASE OR NO CHANGE IN INDEX DURING WEEK**

U.S. DEPARTMENT OF COMMERCE  
 National Oceanic and Atmospheric Administration  
 Environmental Data Service

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

SHADED AREA: INDEX INCREASED OR DID NOT CHANGE	
ABOVE	3.0
2.0 to 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



# FIRST CLASS MAIL

COM 210

## HARVESTING PROGRESS

Percent of acres harvested as of October 30

CORN				SORGHUM			
	1977	1976	Avg.		1977	1976	Avg.
Ga	92	79	69	Colo	70	43	37
Ill	70	65	62	Kans	70	75	50
Ind	65	55	45	Mo	76	81	65
Iowa	71	81	50	Nebr	80	95	80
Kans	85	70	55	Okla	50	64	48
Ky	71	65	69	S Dak	77	99	80
Mich	35	61	42	Tex	95	90	84
Minn	85	94	76				
Mo	67	81	60	7 States	80	83	69
Nebr	70	75	60				
N C	95	86	84				
Ohio	50	45	45				
Pa	NA	NA	NA				
S Dak	60	95	71				
Tex	100	91	89				
Wisc	60	80	55				
U. S.	70	74	59				

These 16 States produced  
 92% of the 1976 U. S.  
 corn crop.

### COTTON

	1977	1976	Avg.
Ala	61	22	41
Ark	82	52	56
Ga	41	29	46
La	69	66	46
Miss	79	59	48
Mo	76	46	58
N C	47	26	36
Okla	18	3	7
S C	62	38	53
Tenn	76	30	44
Tex	54	19	24
11 Southern States	60	31	34

These 11 States produced  
 67% of the 1976 U. S.  
 cotton crop.

### SOYBEANS

	1977	1976	Avg.
Ala	37	43	46
Ark	41	37	37
Ga	18	11	23
Ill	87	99	94
Ind	75	90	75
Iowa	84	100	91
Kans	60	75	60
Ky	55	49	67
La	60	71	57
Mich	50	91	73
Minn	93	99	95
Miss	53	54	39
Mo	56	75	62
Nebr	80	95	85
N C	15	10	16
Ohio	80	85	80
S C	10	5	14
Tenn	53	75	33
U. S.	67	75	69

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

## SEEDING PROGRESS

Percent of acres planted as of October 23

### WINTER WHEAT

	1977	1976	Avg.
Colo	100	100	100
Ill	80	92	92
Ind	65	90	NA
Kans	95	95	95
Mo	48	74	NA
Mont	100	100	100
Nebr	100	100	100
Ohio	85	95	90
Okla	100	100	100
Tex	79	84	89
U. S.	91	94	96

These 10 States produced  
 74% of the 1977 U. S.  
 winter wheat crop.

1/ Less than 5%.  
 NA Not Available.