

# Weekly Weather & Crop Bulletin

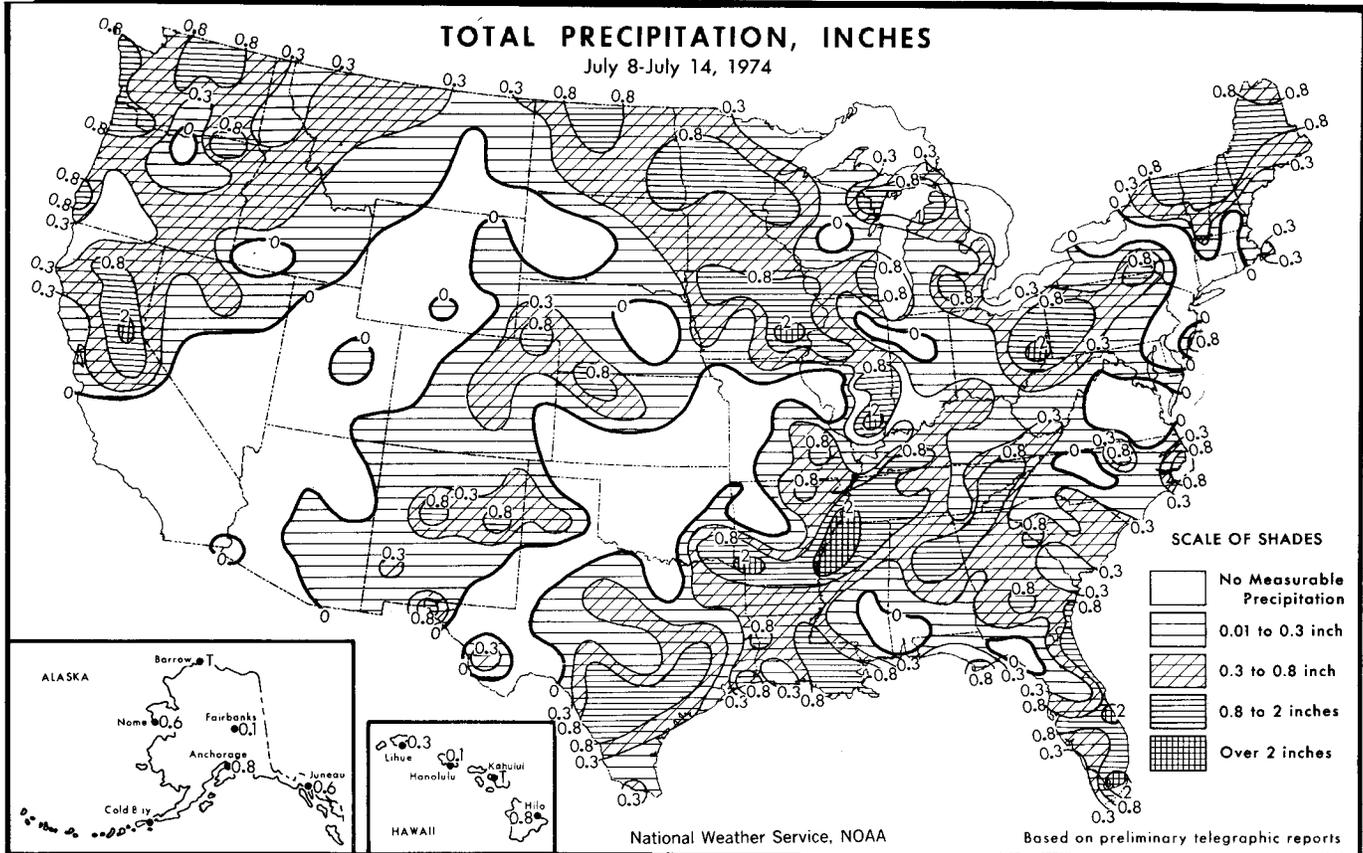
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## NATIONAL WEATHER SUMMARY

**HIGHLIGHTS:** Precipitation was widely diversified across the Nation's eastern third last week, ranging from none to 2.00 in. Scattered showers were reported in dry western Texas and New Mexico. Southwestern Nebraska also got some much needed precipitation. Stations in the Pacific Northwest recorded amounts averaging 0.50 in. to 1.00 in. with some locally heavier amounts in normally dry and fire prone areas of northern California. Sections of Utah, southern Nevada; and southward to the Coast remained dry.

Warm temperatures dominated many of the Central States last week, with an adjoining area of Minnesota, South Dakota, Iowa, and Nebraska averaging 9 to 11° above normal. However, from the central Rockies west temperatures averaged as much as 12° below normal.

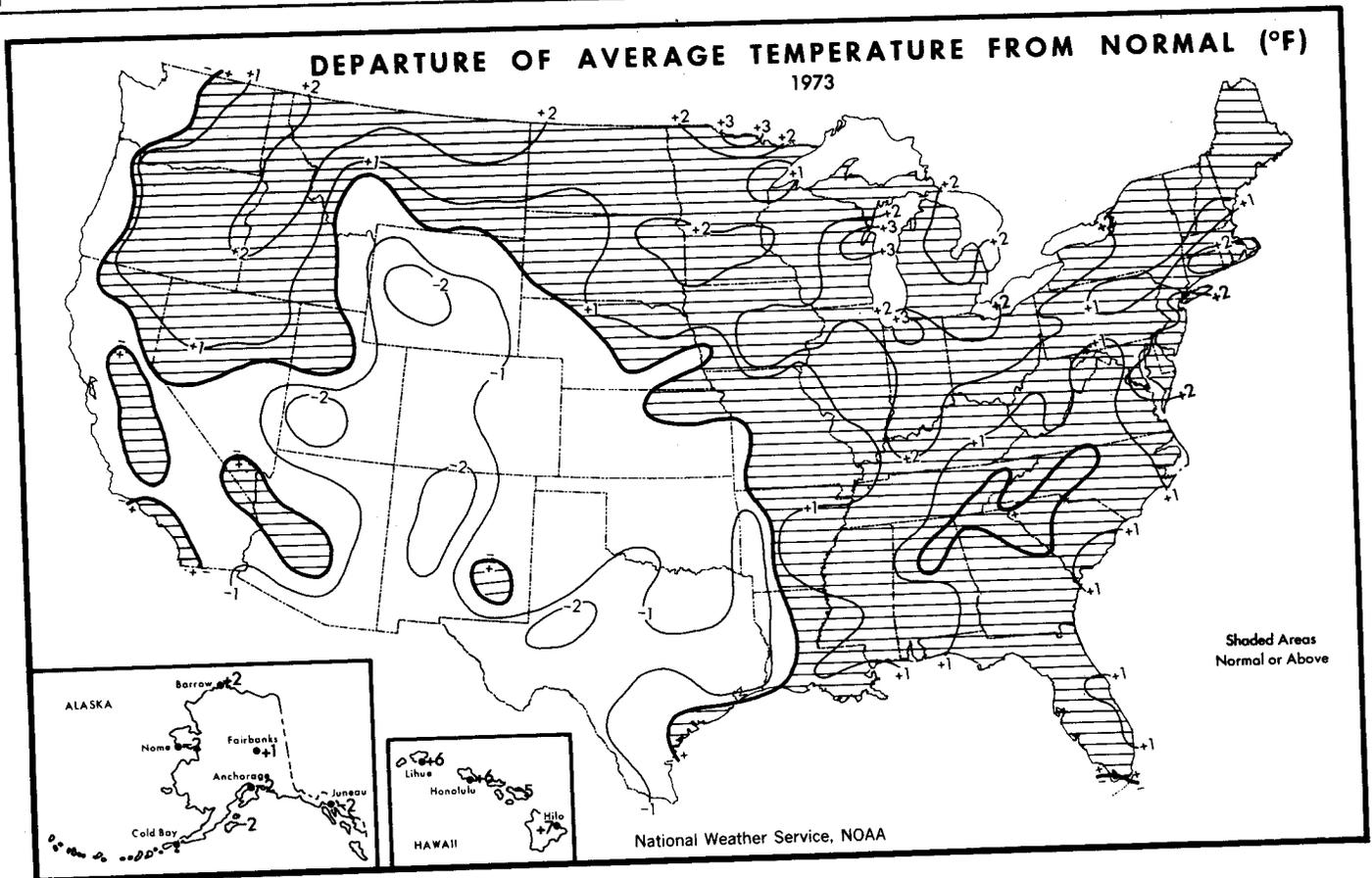
**PRECIPITATION:** Across the Nation, some areas received locally heavy showers last week. Rains of 2.00 in. fell in Ohio, Indiana, Iowa, Tennessee, western Florida, southern Arkansas, and northern California.

Other areas receiving significant rain included: Cape Hatteras, N. C.; Milwaukee, Wis.; New Orleans, La. southwestern Pennsylvania; from Birmingham, Ala. north to Knoxville, Tenn.; and along the Washington coast. Early in the week, a Low over Ontario brought thunderstorms to the upper Plains and western Minnesota. Isolated thunderstorms dumped locally heavy rain in parts of southern New Mexico and Texas.

Meanwhile a Low moved inland from the Pacific Coast triggering showers over northern California and parts of the Northwest. Marysville, Calif. recorded over 1.25 in. in only six hours.

On Tuesday, the 9th, the unusually heavy rainfall persisted in parts of northern California and the coastal northwest. The much needed rain fell across the normally dry areas of northern California and western Nevada.

On July 10, heavy thunderstorms spread from Iowa and eastern Missouri into central Illinois and south through Mississippi and Alabama. Some golfball size hail fell in eastern Iowa and northern Mississippi.



Olin, Iowa reported 4.50 in. of rain in just over an hour.

Late on the 10th, there were some good showers over Washington and western Montana which helped the spring grains.

On Thursday, the 11th, some heavy thunderstorms developed near the cold front along western portions of the central and northern Plains. Several central North Dakota communities reported over 1.00 in. of rain in less than an hour.

Early on the 12th, thunderstorms produced by a Low over Huron, S. Dak. pushed across the northern Plains triggering several tornadoes near Devils Lake, New Rockford, and Strasburg, N. Dak.

On the 13th, a Low triggered thunderstorms from western South Dakota across southeast North Dakota and most of Minnesota into northwest Wisconsin. Several tornadoes roared through southeast South Dakota and west central Minnesota.

Sunday, July 14, a cold front trailed from eastern Canada through central Minnesota into southern Wyoming. As the front moved slowly southeastward, it triggered showers and thundershowers from South Dakota to southern Lake Superior.

**TEMPERATURE:** Many areas of the Nation's midsection reported above normal temperatures last week. Parts of New England and the South Atlantic States were below normal. The Far West including sections of Texas, the southeastern seaboard, and sections of Kentucky and Tennessee recorded temperatures below normal for the week.

Early in the week hot weather prevailed in most places east of the Rockies. Monday the 8th, record highs were set at Sioux Fall, S. Dak., 101°; Baltimore,

Md., 99°; and Atlantic City, N. J., 94°. Temperatures of 90° and above covered a large part of the Nation on the 8th. A band of 100° and higher temperature ran from southwest Oklahoma into southern Minnesota and western Wisconsin. Other 100° readings were recorded in the Desert Southwest.

Tuesday, July 9, the hottest area stretched from north central Texas through central Oklahoma into southwestern Iowa. West of the Rockies temperatures were cooler. From the central Appalachians east, it was humid and hazy with light winds.

Wednesday July 10, haze and fog dimmed the sunrise in the eastern fourth of the Nation. The heaviest fog surrounded the Appalachians and the Piedmont areas. Meanwhile, western parts of the Nation remained hot with temperatures in the upper 90's. Ponca City, Okla., reached 99° by early afternoon; Huron, S. Dak., reported 97°; Hutchison, Kans., 98°; and Miles City, Mont., 98°.

Thursday July 11, warm tropical air continued to dominate the weather over the southern half of the Nation to the south of a frontal system that reached from southern Pennsylvania into the Dakotas.

On the 12th, a High caused some record low temperatures in the Great Lakes region; Lansing, Mich., 43° and Muskegon, Mich., 50°. Temperatures remained mild in the Plains and southeastern U. S. with most spots in the 60's and 70's. Readings along the Pacific Coast ranged from the 50's and 60's.

Saturday the 13th, a High over West Virginia kept portions of the Eastern U.S. cool. Record lows were set at Beckley, W. Va., 48°; Scranton, Pa., 50°; Charleston, W. Va., 54°.

July 14, a cold front trailing through the Midwest from Canada cooled off portions of the northern Plains with readings in the 50's.

## NATIONAL AGRICULTURAL SUMMARY

**HIGHLIGHTS:** Winter wheat harvest rapidly moving northward. Hot, dry weather forcing small grain maturity in many areas. Growing conditions good for corn, soybeans, and cotton. Pastures showing stress in north-central States. Livestock culling early due to deteriorated ranges southern Great Plains and Southwestern States.

**SMALL GRAINS:** Winter wheat harvest continues to move north as above normal temperatures hasten maturity. Harvest is virtually complete for all States north to Nebraska. Missouri has 95% of the combining done, compared with 90% in 1973. Kansas and Illinois farmers finished during the past week. Harvest advanced to 90% complete in Nebraska; 79% in Colorado; and 45% in South Dakota, compared with 15% normally. Winter wheat harvest is well along in the eastern Corn Belt, both Ohio and Indiana are 75% complete. Cool weather and rain delayed harvest in Washington and California. The Idaho winter wheat and barley harvest have started. Montana winter wheat harvest is expected to start about July 26.

High temperatures and continued dry weather in most areas forced rapid maturing of small spring seeded grains. Harvest has even started in a few localities of South Dakota. Recent rains gave temporary relief to crops in most areas of Minnesota and North Dakota but small grains are still in need of moisture for good filling.

**CORN:** Hot, dry weather in much of the Corn Belt aided growth as the crop added a foot of height and continued in fair to good condition. Depleted topsoil moisture and plant stress are evident in many areas. The crop remains behind last year's growth and varies considerably among fields and States.

In Wisconsin the crop ranges from just planted to showing tassels. Average height in Ohio is 40 in.; Minnesota 39 in.; Indiana 32 in., compared with 42 in. in 1973. Silking progress is also generally behind last year's late crop in most States. In Iowa, only 10% of the fields are 75% or more silked, compared with 16% in 1973. The Illinois crop is 15% silking against 12% in 1973.

Good rains are needed in virtually all of the Corn Belt as well as most other major corn States to insure continued growth.

Southern corn is also showing signs of weather stress, but the crop is growing well and is in fair to good condition. Harvest is underway in south Texas and Florida, generally ahead of last year's progress.

**COTTON:** Cotton continues to make rapid growth in most major producing States and the condition ranges from fair to mostly good. Crop development continues to progress ahead of last year's late season in the Delta.

In Mississippi, cotton is 83% squaring, compared with 75% in 1973, while 37% of the acreage is blooming, equal to a year ago. In early fields in Arkansas, blooms are becoming more plentiful. Most cotton in Alabama is squaring with 25% of the acreage setting bolls. Oklahoma cotton is 40% squaring and only 4% is setting bolls, compared with 7% last year.

Growers are continuing a vigorous insect control program in Alabama, but in Arkansas, the "bug" infestation is increasing. Cotton made normal progress in the Western States and is blooming in California. Harvest is 1% complete in South Texas, ahead of last year's progress.

**SOYBEANS:** Growing conditions were good to excellent for soybeans in North and South Central Regions last

week and the crop made good progress. Planting is virtually completed in all States. However, in Mississippi only 88% of the crop is planted and 95% in Arkansas. Both States are behind the 1973 progress.

Development in Ohio matches last year. Illinois soybeans are in mostly fair to good condition with 10% blooming, compared to 16% in 1973 and 37% normally. Iowa soybeans are 18% blooming versus 27% normally. Many cases of Pythium and Rhizoctonia root rot are showing up in Iowa's late planted beans. Soybean development is the most advanced in Minnesota with 23% of the acreage blooming compared to 37% in 1973.

In the South, most early soybean fields are growing vigorously while late plantings are spotty and uneven in some areas due to moisture shortages and poor germination.

**OTHER CROPS:** Farmers were busy in most North Central States cultivating late planted crops, combining small grains and harvesting hay during the average of 6 days favorable for fieldwork last week. Reduced quality of hay in windrows and bales was caused by heavy rains and high winds in Oregon.

Sorghum planting continues in north Texas and Mississippi. The crop is in mostly fair to good condition with some heading in Kansas and over 15% headed in Oklahoma. Harvest gained momentum in south Texas at 20% complete against only 4% in 1973.

Tobacco harvest continues ahead of last year in the South Atlantic States, while growth is slow and irregular in Kentucky and Tennessee.

Peanuts are in mostly good condition in the South Atlantic States and planting is still incomplete at 99% in Texas due to the inadequate moisture conditions.

Idaho potato development is good with over 85% middles closing southwest, 60% south central, and 15% east. Potatoes in central Aroostook County are beginning to bud out.

**FRUITS AND NUTS:** Peach harvest increasing in the South, while tart cherry picking is well underway in many northern orchards. Rain last week caused some splitting of cherries in Oregon and Washington. New Jersey blueberry supplies are heavy and prospects are for good crops in the New England States. Walnuts, filberts, and almonds are developing and sizing well in California and Oregon.

**VEGETABLES:** The harvest of vegetables increased in the North Atlantic States. Harvest of green peas for processing was over 50% complete in New York, and Orange County lettuce harvest continues active. Harvest of tomatoes continues in most commercial areas of Texas. Watermelon and cantaloupe harvest is starting in light volume in north Texas but cantaloupe harvest is virtually complete in the San Antonio-Winter Garden area. Irrigated vegetable crops doing fine in Wisconsin but nonirrigated crops need moisture.

**PASTURES AND LIVESTOCK:** Hot weather is drying pastures in many areas of Wisconsin, Iowa, Nebraska, and in Kansas stock ponds are becoming low. Pastures in several South Central States are also showing signs of dry soils and hot temperatures. Range conditions are deteriorating rapidly with supplemental feeding on the increase in Oklahoma and Texas. Pastures are in poor condition in Colorado and very poor in the southeastern corner of the State. Ranchers in the Cross-Timbers and Edwards Plateau areas of Texas are culling herds earlier than usual because of short grazing.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., July 14, 1974

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 . . .	80	0	1.4	+ 2	La. Baton Rouge . . .	82	0	1.1	-.4	Youngstown . . .	72	+ 1	1.6	+ .7
Mobile . . .	83	+ 2	0	-2.1	Lake Charles . . .	82	0	.2	-1.3	OKLA. Okla. City . . .	82	+ 1	0	-.6
Montgomery . . .	82	+ 1	.5	-.7	New Orleans . . .	82	0	1.5	-.1	Tulsa . . .	85	+ 3	0	-.8
ALASKA. Anchorage . . .	57	- 1	.8	+ .3	Shreveport . . .	82	0	.5	-.2	OREG. Astoria . . .	58	- 2	1.6	+1.4
Barrow . . .	36	- 3	T	-.2	MAINE. Caribou . . .	66	+ 1	.7	-.2	Burns . . .	60	- 8	.6	+ .5
Fairbanks . . .	62	+ 1	.1	-.3	Portland . . .	71	+ 3	.2	-.4	Medford . . .	65	- 6	.1	0
Juneau . . .	54	- 2	.6	-.4	MD. Baltimore . . .	77	+ 1	0	-.9	Pendleton . . .	68	- 5	.9	+ .8
Kodiak . . .	50	0	.6	+ .1	MASS. Boston . . .	76	+ 3	.5	-.5	Portland . . .	63	- 4	1.2	+1.1
Nome . . .	65	- 1	.1	-.4	Chatham . . .	70	+ 3	.1	-.5	Salem . . .	61	- 5	.7	+ .6
ARIZ. Flagstaff . . .	89	- 2	.2	+ .1	MICH. Alpena . . .	71	+ 6	.1	-.5	PA. Allentown . . .	76	+ 2	T	-1.0
Phoenix . . .	84	- 4	T	-.5	Detroit . . .	75	+ 3	T	-.7	Erie . . .	67	- 2	.1	-.7
Tucson . . .	76	- 2	T	-.2	Flint . . .	74	+ 4	.2	-.5	Harrisburg . . .	79	+ 3	1	-.7
Winslow . . .	89	- 4	T	-.2	Grand Rapids . . .	74	+ 3	0	-.7	Philadelphia . . .	78	+ 1	0	-.9
Yuma . . .	81	- 1	T	-.8	Houghton Lake . . .	71	+ 5	.5	-.2	Pittsburgh . . .	74	+ 2	1.4	+ .5
ARK. Fort Smith . . .	83	+ 2	T	-.8	Lansing . . .	74	+ 3	1.0	+ .4	Scranton . . .	70	- 2	.1	-.9
Little Rock . . .	78	- 6	0	0	Marquette . . .	70	+ 4	.2	-.5	R.I. Providence . . .	74	+ 2	T	-.6
CALIF. Bakersfield . . .	57	+ 1	T	0	Muskegon . . .	74	+ 4	0	-.6	S.C. Charleston . . .	78	- 2	.3	-1.6
Eureka . . .	75	- 6	T	0	S. Ste. Marie . . .	69	+ 6	.1	-.5	Columbia . . .	81	0	.2	-1.1
Fresno . . .	71	- 2	0	0	MINN. Duluth . . .	70	+ 5	.6	-.2	Greenville . . .	79	+ 1	.1	-.9
Los Angeles . . .	70	-12	.7	+ .7	Internatl Falls . . .	74	+ 8	.1	-.8	S.D. Aberdeen . . .	80	+ 9	.7	0
Red Bluff . . .	69	0	T	0	Minneapolis . . .	81	+ 9	.7	-.1	Huron . . .	83	+10	.2	-.3
San Diego . . .	62	0	.2	+ .2	Rochester . . .	78	+ 8	.4	-.5	Rapid City . . .	80	+ 8	T	-.5
San Francisco . . .	72	- 5	.6	+ .6	St. Cloud . . .	78	+ 8	.7	0	Sioux Falls . . .	83	+10	.6	-.1
Stockton . . .	75	+ 2	.3	-.1	MISS. Jackson . . .	83	+ 2	.1	-1.1	TENN. Chattanooga . . .	75	- 4	.3	-.9
COLO. Denver . . .	80	+ 1	T	-.1	Meridian . . .	82	+ 5	.1	-.8	Knoxville . . .	77	- 1	1.5	+ .4
Grand Junction . . .	81	- 3	.3	-.1	MO. Columbia . . .	85	+ 6	0	-1.0	Memphis . . .	83	+ 2	2.4	+1.6
Pueblo . . .	71	- 3	0	-.8	Kansas City . . .	84	+ 6	0	-.9	Nashville . . .	77	- 2	T	0
CONN. Bridgeport . . .	76	+ 3	T	-.8	St. Louis . . .	81	+ 3	T	-.9	TEX. Abilene . . .	83	- 1	.5	-.1
Hartford . . .	80	+ 1	T	-.9	Springfield . . .	74	+ 3	.1	-.1	Amarillo . . .	79	0	.7	0
D.C. Washington . . .	83	+ 2	1.5	-.3	MONT. Billings . . .	72	+ 2	.1	-.2	Austin . . .	82	- 2	.3	-.2
FLA. Apalachicola . . .	80	- 1	1.9	+ .4	Glasgow . . .	69	0	.3	0	Beaumont . . .	81	- 2	1.1	-.2
Daytona Beach . . .	82	0	.3	-1.9	Great Falls . . .	70	0	.5	+ .2	Brownsville . . .	81	- 3	.1	-.2
Ft. Myers . . .	80	- 1	1.1	-.6	Havre . . .	68	0	.2	0	Corpus Christi . . .	82	- 3	T	-.4
Jacksonville . . .	84	0	.4	-1.5	Helena . . .	61	- 3	.5	+ .3	Del Rio . . .	84	- 3	.1	-.2
Lakeland . . .	83	+ 1	1.5	-.1	Kalispell . . .	79	+ 5	.1	-.3	El Paso . . .	78	- 5	.8	+ .4
Miami . . .	82	+ 1	.2	-1.8	Miles City . . .	64	- 2	.6	+ .4	Fort Worth . . .	85	+ 1	0	-.4
Orlando . . .	82	+ 1	0	-2.1	Missoula . . .	86	+11	T	-.7	Galveston . . .	83	0	.1	-.9
Tallahassee . . .	81	- 1	1.4	-.5	NEBR. Grand Island . . .	88	+11	T	-.8	Houston . . .	82	- 1	.2	-.7
Tampa . . .	81	- 1	1.5	0	Lincoln . . .	86	+11	T	-.8	Lubbock . . .	81	+ 1	0	-.3
V. Palm Beach . . .	78	0	.4	-.7	Norfolk . . .	80	+ 6	.2	-.5	Midland . . .	82	0	.1	-.5
GA. Atlanta . . .	79	- 1	.1	-1.1	N. Platte . . .	86	+11	.4	-.5	San Angelo . . .	82	- 2	.2	-.1
Augusta . . .	81	0	.5	-.6	Omaha . . .	82	+ 8	.1	-.5	San Antonio . . .	82	- 3	1.2	+ .8
Macon . . .	79	- 2	T	-1.8	Valentine . . .	64	- 3	T	-.1	Victoria . . .	83	- 1	.8	+ .2
Savannah . . .	76	+ 1	.8	-1.2	NEV. Ely . . .	85	- 5	0	-.1	Waco . . .	85	0	.7	+ .3
W. Palm Hilo . . .	80	0	.1	0	Las Vegas . . .	60	- 9	.3	+ .2	Wichita Falls . . .	87	+ 2	T	-.5
Honolulu . . .	77	- 1	T	-.1	Reno . . .	62	- 9	.3	+ .2	UTAH. Blanding . . .	71	- 2	.1	-.1
Kahului . . .	80	+ 2	.3	-.1	Winnemucca . . .	60	- 9	.3	+ .2	Salt Lake City . . .	77	- 1	0	-.1
Kaunohouli . . .	67	- 7	.5	+ .4	N.H. Concord . . .	70	0	T	-.7	VT. Burlington . . .	72	- 2	1.0	+ .2
LA. Baton Rouge . . .	68	- 5	.3	+ .2	N.J. Atlantic City . . .	76	+ 1	.8	-.1	VA. Lynchburg . . .	75	+ 1	T	-.9
Leviston . . .	68	- 3	T	-.1	Trenton . . .	78	- 2	1.0	+ .7	Norfolk . . .	79	- 1	0	-1.2
Poeatello . . .	82	+ 1	0	-.7	N.MEX. Albuquerque . . .	80	+ 1	.1	-.3	Richmond . . .	77	- 1	0	-1.3
ILL. Cairo . . .	80	+ 5	.8	-.2	Roswell . . .	70	- 2	T	-.7	Roanoke . . .	75	0	T	-.8
Chicago . . .	83	+ 9	.6	-.5	N.Y. Albany . . .	71	+ 2	.9	0	WASH. Colville . . .	62	- 6	.4	+ .3
Moline . . .	82	+ 7	1.7	+ .8	Binghamton . . .	71	+ 1	T	-.6	Omak . . .	63	- 7	1.2	+1.1
Peoria . . .	80	+ 7	T	-1.0	Buffalo . . .	79	+ 2	T	-.8	Quillayute . . .	56	- 3	1.7	+1.1
Rockford . . .	84	+ 8	T	-.9	New York . . .	73	+ 2	T	-.6	Seattle-Tacoma . . .	62	- 2	.5	+ .3
Springfield . . .	81	+ 3	.1	-.8	Rochester . . .	71	0	0	-.7	Spokane . . .	62	- 7	.5	+ .4
IND. Evansville . . .	78	+ 5	.2	-.7	Syracuse . . .	74	+ 1	.3	-.8	Walla Walla . . .	68	- 7	.9	+ .8
Ft. Wayne . . .	79	+ 4	.1	-.8	N.C. Asheville . . .	77	- 1	.5	-.6	Yakima . . .	62	- 9	.2	0
Indianapolis . . .	82	+ 7	T	-.8	Charlotte . . .	77	0	T	-1.0	W. Va. Beckley . . .	67	- 3	.3	-.8
South Bend . . .	79	+ 7	.5	-.4	Greensboro . . .	77	- 1	1.4	+ .1	Charleston . . .	74	- 1	.1	-1.6
IOWA. Burlington . . .	84	+ 9	.1	-.7	Hatteras . . .	76	- 1	T	-1.1	Huntington . . .	75	0	T	-1.0
Des Moines . . .	82	+ 6	.7	-.3	Raleigh . . .	78	- 2	.2	-.7	Parkersburg . . .	74	+ 1	.4	-.6
Embuque . . .	78	+ 9	.7	-.3	Wilmington . . .	76	+ 6	.7	+ .2	WIS. Green Bay . . .	73	+ 4	T	-.7
Sioux City . . .	83	+10	.3	-.5	N.DAK. Bismarck . . .	76	+ 6	.9	+ .2	La Crosse . . .	80	+ 7	.2	-.6
KANS. Concordia . . .	88	+10	.1	-.7	Fargo . . .	76	+ 6	.3	-.2	Madison . . .	77	+ 7	.5	-.4
Dodge City . . .	80	+ 6	0	-.7	Williston . . .	73	+ 3	.3	-.2	Milwaukee . . .	75	+ 5	1.8	+1.0
Goodland . . .	83	+ 5	.1	-.5	OHIO. Akron-Canton . . .	75	+ 3	1.6	+ .7	WYO. Casper . . .	73	+ 2	T	-.2
Topeka . . .	80	+ 5	.1	-.5	Cincinnati . . .	75	0	.4	-.6	Cheyenne . . .	72	+ 3	.1	-.3
Wichita . . .	87	+ 7	0	-1.1	Cleveland . . .	74	+ 3	.7	-.2	Lander . . .	74	+ 4	0	-.2
KY. Lexington . . .	74	- 2	.4	-.7	Columbus . . .	75	+ 2	.3	-.7	Sheridan . . .	74	+ 4	T	-.3
Louisville . . .	76	- 1	.4	-.5	Dayton . . .	77	+ 3	.2	-.6	P.R. San Juan . . .	84	+ 3	.1	+1.3
					Toledo . . .	75	+ 3	.3	-.5					

Based on 1941-70 Normals.

## CONDENSED STATE SUMMARIES

The Bulletin capsulizes nationally important weather and crop conditions. Every Monday SRS publishes more detailed data in State Weekly Weather and Crop Bulletins in cooperation with the National Weather Service, NOAA. Voluntary weather observers, crop reporters, and county extension agents contribute weekly observations for these reports.

**ALABAMA:** Weak High over State with scattered afternoon and evening thundershowers. Showers most numerous north while south lacked rain. Temperatures near normal, highs averaging near 90°, lows near 70°. Maximum soil temperatures southeast in upper 80's and low 90's.

Crop prospects favorable. Scattered showers benefited cotton, corn, soybeans and peanuts in many localities. Cotton made satisfactory development, 25% of acreage setting bolls, 10% in 1973. Growers continued vigorous insect control programs. Corn is 70% silking, 40% dough stage. Soybean planting virtually complete, latest plantings up to good stand. Early beans growing vigorously with many fields blooming south. Peanuts lapping middles in many fields, 90% of acreage pegging. Hay harvest full swing.

**ALASKA:** Tanana Valley, rainfall was normal. Seasonal totals remained substantially below normal. Matanuska Valley precipitation was nearly normal due primarily to showers and thundershowers. Kenai Peninsula, north portions had considerable shower activity contributing some relief from a protracted dry spell. Peninsula rainfall continues short of normal. Kodiak, light rain fell.

**ARIZONA:** Pleasantly cool, low humidity 8th through 12th. Temperatures 2 to 5° below normal. Marked increase in moisture. Thunderstorm activity 13th and 14th most of State. Rain from traces to over inch in Mogollon Rim, White Mountain areas.

Farmers busy haying, harvesting small grains, cultivating row crops, irrigating, planting sorghum. Cotton good condition, most of crop setting bolls Yuma County, some bolls beginning to crack. Some spraying required control bollworms Yuma, central areas. Wheat nearly all harvested. Rains delayed completion. Wheat, barley yields good. Sorghum being harvested in Bonita area Graham County. Safflower harvest about complete Yuma County, central areas about ready harvest. Hay cutting delayed by rain. Cantaloupe harvest virtually complete. Field preparations started for fall harvested crop, Yuma area. Melon harvest Pinal County slowing, Yuma area continues active. Limited picking grapefruit, Valencia oranges. Limited moisture should help provide runoff to stock tanks, increase palatability of existing feed. Cattle, calves remain poor to fair.

**ARKANSAS:** Temperatures 2° below normal southwest to 3° above northeast. Daily maximums mostly in 90's. Many localities reported little or no rain. Larger amounts mainly southwest and northeast, totals mostly in 0.50 in. to 1.00 in. range. Isolated amounts in excess of 2.00 in.

Sunny, hot days dried fields and pastures. Growers irrigated grain crops and cotton. Soil moisture deficient except three southern counties. Cotton progressing very well, blooms becoming more plentiful. Fields weed-free, but bug infestation increasing. Rice making good growth, short season varieties beginning to head. Mid-season nitrogen applications continued. Early soybeans growing well, some wilting during day.

Late fields spotty and uneven, 95% planted. Corn crop ranges from silk to dough stage. Rain or irrigation needed to fill ears. Early sorghum headed out. Hay mowing continued, quality dropped. Pastures hurt from dry soils and hot temperatures. Cattle beginning to suffer from heat. Harvest of early apples nearing completion. Peach harvest continued.

**CALIFORNIA:** Extremely cool, moist air associated with a very unusual July storm brought cool temperatures and rain north on 7th and southward into central 8th through 10th. Record amounts fell some areas with over 1.00 in. in sections of the Sacramento Valley and 6.00 in. areas of the northern Sierra Nevada. Amounts in the southern San Joaquin Valley were light. Average temperatures during period near normal along the coast, 10-15° below normal in the central valley, and below normal in desert southeast.

Field crop development slowed cool weather. Rains delayed grain harvest, hay operations. Some wheat, barley lodged. Safflower should benefit from moisture. Storm caused quality reduction hay, production loss minor. Dry beans, corn, milo, rice good progress. Cotton in bloom. Cardinals, exotic grapes packed Kern County. Almonds and walnuts developing well. Applying fungicides in apples and peaches. Pear harvest continues. Brown rot widespread, caused by rain; sizable loss expected. Prunes sizing well; some fruit splitting. Harvesting plums, nectarines, freestone peaches, lemons, Valencia oranges, summer grapefruit. Broccoli, cauliflower light, central coast. Cantaloupe slowed, cool weather, west. Carrots active; desert, central coast. Celery strong, good quality. Lettuce continues central coast, some rain damage, Salinas. Some rain damage bagged dry onions Stockton. Potato declining Kern district, increasing Fresno. Strawberries continue for processing. Sweet corn heavy volume, Los Angeles. Market tomatoes continues south coast. Processing tomatoes good condition. Watermelons continue late. Livestock remain good condition. Sheep San Joaquin Valley on grain stubble. Recent rains boosted water supplies.

**COLORADO:** Half of south and east received moderate precipitation with reported rainfall generally between 0.25 and 0.75 in. Locally heavier precipitation fell in some spots: Sedgwick in the northeastern corner had nearly 3.00 in., while Breckenridge and Bonny Dam had over 1.00 in. Extreme southwest which has been very dry for weeks got some relief with Durango receiving 0.43 in. Little or no moisture fell in northwest and west central. Weekly mean temperatures averaged 1 to 5° above seasonal east of the Continental Divide and in the northern 1/4 of the State. Elsewhere, readings averaged near normal to 3° below normal. Daily maximum temperatures were generally in the 80's and 90's at the lower elevations and in the 70's in the mountains. Warmest weather, occurred in southeastern Colorado on the 11th with several maxima above 100° in that area. Highest readings noted the 103° at Las Junta. g. e. t. r. a. i. n. g. Winter wheat 79% harvested; 5-year average 51%. Harvest ending east slope, active south-

west. Winter barley 71% cut, normally 54%. Oats, spring barley, sorghum fair to good condition. Dry beans, potatoes, sugarbeets good to excellent condition. Corn excellent condition, 18% tasseled, normally 8%. Spider mites in northeast. Lettuce harvest underway San Luis Valley. Tart cherry picking west slope. First cutting alfalfa 82% complete; second cutting 15%. Pastures poor condition, very poor southeast. Livestock in good flesh.

**FLORIDA:** Temperatures near normal. Scattered mainly afternoon and evening thundershowers brought light to moderate precipitation most of the State.

Soil moisture short in panhandle, adequate north, adequate to surplus central and south. Corn harvest beginning, yields reduced by dry weather in west. Soybeans generally good condition. Flue-cured tobacco harvest continues active. Shade tobacco harvest complete. Peanuts good progress. Sugarcane in mostly good condition. Pastures good to excellent, cattle and calves mostly good condition. Early planting of pepper, eggplant, tomatoes, sweet corn expected late July. Excessive moisture conditions few localities hampering fall land preparation. Citrus tree condition continues excellent, abundant new growth. Hard rains decreasing, groves drying very little erosion. Valencia harvest nearly complete.

**GEORGIA:** Temperatures averaged 1 to 3° below normal statewide. Readings low 70's mountains, low 80's central and south. Precipitation spotty and amounts highly variable but generally heavy in northeast corner of State. Heaviest reported was 4.36 in. at Toccoa. Hot and humid with few isolated thundershowers 13th and 14th.

Soil moisture supplies variable, with many localized areas short. Overall crop prospects continue good. Additional moisture would benefit many sections. Corn rated good condition. Cotton good condition, 74% setting bolls, 1% open, spray programs active. Peanuts good, landplastering active. Soybeans good condition, some Japanese beetle infestation, early fields blooming. Tobacco harvest 45% complete. Pastures and cattle mostly good condition. Peach harvest 81% complete, carlot shipments through July 11, 610 compared with 1,027 same period last year. Vegetables and melons good.

**HAWAII:** Major crop areas of State generally dry. Crop progress fair to good with heavy irrigation. Spraying active to reduce insect damage. Production of bananas steady. Papaya production dropping off. Supply of most vegetables adequate. Cattle and pastures good condition. Pineapple production at peak. Sugar operations active.

**IDAHO:** Unseasonal cool, wet weather throughout State during the period. Average temperatures in 60's were 6 to 10° below normal all areas except east, where temperatures were only slightly below normal. Heavy precipitation, near 1.00 in. above normal, north and southwest. Moderate in south-central, and very light to none reported east. New Meadows received 1.85 in. Light snow was reported above 7,000 feet.

Rains north and southwest slowed farming operations. Eastern areas remain very dry. Winter wheat 50% turning, harvesting few early fields. Spring wheat 85% heading or more advanced. Barley 50% turning, harvest starting. Potato development good with over 85% southwest closing middles, south central 60% closed, east 15%. Second cutting alfalfa starting southwest.

**ILLINOIS:** Temperature departures ranged to 9° above normal warmest west, north sections. Precipitation light, scattered showers, thunderstorms 1 to 2.00 in. central, north sections.

Corn 15% silked, 12% 1973, 3-year (1971-73) average 26%. Condition 35% good, 57% fair. Soybeans about 10% bloomed, 16% 1973, average 37%. Condition 33% good, 59% fair. Winter wheat virtually all harvested. Oats 95% turned, 77% 1973, average 82%, 45% ripe, oats 15% harvested, same as 1973. First cutting red clover hay nearly complete, 93% 1973. Second cutting alfalfa hay about 50% complete, 35% 1973. Barley harvest about 80% complete. Pastures fair to good condition. Soil moisture 61% short, 37% adequate, 2% surplus. Fieldwork: 6.5 days suitable.

**INDIANA:** Hot, sunny, dry weather prevailed during week. High temperatures mostly in 90's except cool, in 50's morning of 11th. Departures zero south to plus 7° west central and northwest. Rainfall light, heaviest south. Ranged from zero north-east to 0.70 in. southeast. Many areas without rain for past three weeks. Four week deficits up to 1.50 in.

Plant heat stress evident many areas. Fieldwork averaged 6 days. Topsoil moisture mostly short to adequate. Subsoil moisture short to mostly adequate. Wheat 75% combined, 65% in 1973, 50% average. Wheat virtually all ripe. Oats 5% combined, 10% average. Barley 85% combined. Rye 45% harvested. Corn 32 in. high, 10 in. less than 1973. Corn 5% silking. Soybeans 5% in bloom. Alfalfa hay 15% cut second time, same as 1973. Pastures declining.

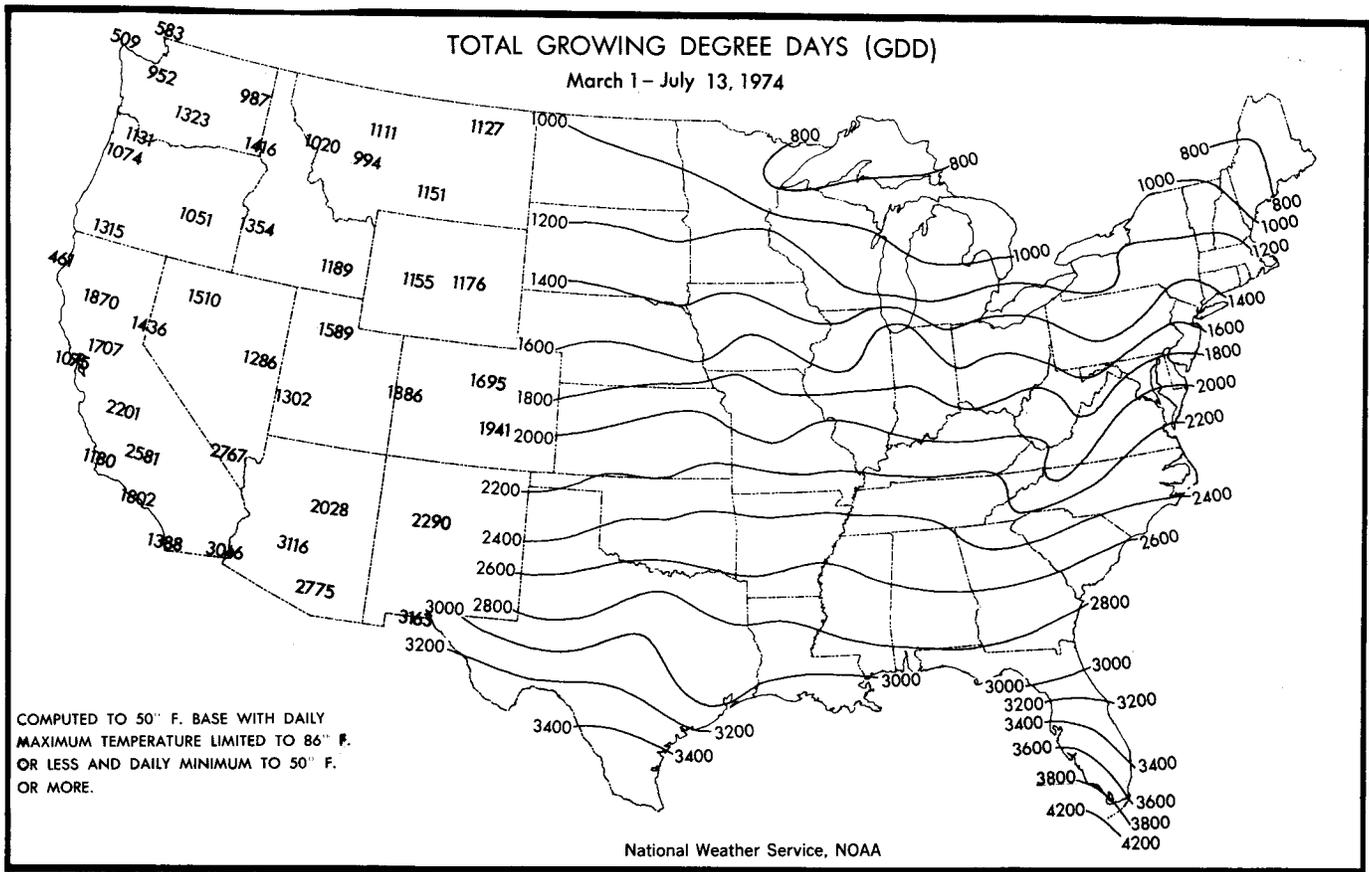
**IOWA:** Temperatures averaged 10° above normal southwest to 5° above northeast. Precipitation below normal except in north central and east central.

Crop growth progressing rapidly, midweek rains helped. Western one third and south central dry, southwest very dry. Fieldwork: 4.9 days suitable. average 4.9 days. Corn: About 10% of the fields are 75% or more silked, 5-year average 16%. Corn growing fast although some rootworm and cutworm reported. Soybeans blooming 18%, average 27%. Many cases of pythium and rhizoctonia root rot, especially in late planted beans. Both crops still well behind normal. Second cutting alfalfa 30% complete, yields hurt by hot dry weather. First cutting red clover 83% complete, yields good. Cutting of oat silage started and some grain harvest started, yields good. Pastures brown in many areas. Topsoil moisture 40% short, 58% adequate, 2% surplus.

**KANSAS:** Gripped by more hot, dry weather. A few localities northwest, west central, extreme south-east received showers. Temperatures averaged 5° above normal southeast to 11° above north central.

Dry weather caused decline condition all crops. Urgently need rain. Some sorghum heading. Corn acreage 90% laid by 1973 and average 85%. Corn acreage tasseled 35%, 1973 15%, average 30%. Some early corn dough stage. Soybeans 5% podded, equal to normal. Second cutting alfalfa 85% harvested, 1973 and average 75%. Third cutting alfalfa 5% harvested, equal to average. Cultivating, plowing, and putting up prairie hay. Livestock showing stress, being fed supplements. Range feed condition fair to poor. Stock ponds becoming low.

**KENTUCKY:** Temperatures averaged near normal. Scattered precipitation 8th through 12th averaged around 1.75 in. West to less than 0.20 in. east.



**Fieldwork:** Averaged nearly 5 days. Soil moisture short western river counties and south-east, short to adequate elsewhere. Cultivating late corn and soybeans, baling hay and spraying tobacco. Corn growing well, 35% tasseled, 17% 1973. Soybeans average 11 in., 10 in. 1973. Tobacco growth irregular. Some fields blooming early due to cool nights, condition remains good. Pasture condition good, but hurt by shortage of soil moisture.

**LOUISIANA:** Temperatures near normal, but several mornings cooler than usual. Extremes: 100° Monroe 13th and 63° Ashland 12th. Scattered thundershowers numerous with highly variable rain pattern. Weekly totals less than 0.50 in. to more than 3.00 in. Greatest 1-day total 3.21 in. at Leesville July 8.

Soil moisture short northeast, adequate most other areas. Fieldwork: 5.2 days favorable. Main activities: haying, cultivation, and insect scouting in cotton. Cotton fair northeast, good elsewhere. Crop fruiting well and 65% setting bolls. Insecticides locally short. Early soybeans mostly good. Some late fields not yet germinated due to moisture shortage. Corn fair to good. Sorghum good. Some rice lodging, few early fields harvested. Sugarcane growth excellent. Borer infestation heavy locally. Peach harvest full swing. Sweetpotato harvest still light. Pastures slightly below normal.

**MARYLAND AND DELAWARE:** Highs low 90's to 101°, lows from low 50's to low 60's; average near normal. Precipitation light except scattered

showers. Amounts ranged 0 to 2.50 in., heaviest in local showers north central. Storm on 11th with damaging winds and scattered hail in Kent County. Weekend hot and dry.

Rain urgently needed, especially parts southern Maryland, Eastern Shore and Delaware. Early corn endangered by weather stress during pollination. Corn 24% silked, 20% 1973 average 19%. Barley harvest nearly done. Wheat well advanced 77%, 1973 65% and average 50%. Soybean planting practically complete. Tobacco prospects favorable, some nitrogen shortages evident. Hay harvest advanced, need rain for later cutting. Vegetable growers using irrigation. Cucumbers, sweet corn harvest underway. Cantaloupes and tomatoes starting. Irish potato digging started central Delaware. Early peach harvest increasing.

**MICHIGAN:** Cold front moved over State 9th. Cold again on weekend. Rain 0.20 in. or less southwest and 0.20 to 0.40 in. rest of State with local amounts of 1.00 to 2.00 in. Locally severe weather southeast 14th. Temperatures averaged 2 to 8° above normal. Maximums in the 90's; Jackson 100° on 14th. Minimums in 40's or low 50's.

Warm weather pushed crop growth, dried out fields south. Fieldwork: 5.5 days favorable. Corn grew rapidly, average height 25 in., near normal. Some fields showing moisture stress. Soybean growth good. Dry beans and sugarbeets growing well. Grain crops rapidly maturing. Wheat mostly yellow south and 12% ripe. Harvest starting. Oats 85% headed and starting to turn. Potato fields drying out, being irrigated. Haying weather excellent,

10% first cutting left. Second growth good. Sweet cherries 50% harvested south, tarts 40%. Harvest just starting central and north, sizing well. Heat pushed vegetables; may reduce set.

**MINNESOTA:** Hot with extensive shower and thunderstorm activity 11th and 13th. Temperatures averaged 6 to 9° above normal. Extremes: mid-90's to lower 100's; some at or near record highs over State 8th and south 13th. Local areas received heavy rain, however, weekly district amounts still averaged near 0.25 in. below normal.

Hot weather depleted soil moisture supplies causing deterioration of summer-harvested grains southwest and parts of west central. Recent rain aided crops in some north and west central counties. Oats, barley, spring wheat crops have headed and are starting to ripen. Flaxseed bloomed and started setting bolls in all areas except northwest. Small grain crops in the important Red River Valley continued behind normal development. Corn 2% tasseling, 5-year average 14%, 1973 17%; height 39 in., average 42 in. Soybeans 23% blooming, average 37%, 1973 48%; podding 1%, average 2%, 1973 4%. Soil moisture continues short except very short southwest and adequate southeast.

**MISSISSIPPI:** Average temperatures within a few degrees or normal. Daily thundershower activity very spotty, but most widespread evenings of 5th and 9th. Greatest 24-hour rainfall reported was 3.35 in. on 6th at Belzoni. From 62° at Forest to 100° at Corinth.

Soil moisture short to adequate. Fieldwork: 5.1 days suitable. Peaches 75% harvested, 72% 1973. Wheat 98% harvested. Oats 98% harvested. Watermelons 33% harvested. Cucumbers 75% harvested. Hay 35% harvested, 53% 1973. Soybeans 88% planted, 97% 1973. Soybeans 72% up to a stand. Sorghum 91% planted, 95% 1973. Sweetpotatoes 95% planted. Cotton 83% squaring, 75% 1973, 37% setting bolls. Corn 70% tasseled and 63% silked. Pastures are in fair to good condition. Rice in mostly good condition.

**MISSOURI:** Very hot and generally dry over most of State. Spotty thundershowers mostly over southeast. Temperatures above 90° every day, between 95° and 100° on two or three days over much of State.

Fieldwork: six days suitable. Soil moisture short. Wheat harvest 95% complete, 90% 1973, 79% normal. Oat harvest 67% complete, 53% normal. Corn 33% silked, condition fair to good. Soybeans fair condition. Cotton 65% squaring, condition fair. Second cutting alfalfa 66% harvested, 64% 1973. Clover timothy hay 77% harvested, 74% 1973. Pastures in fair condition.

**MONTANA:** Considerable thunderstorm activity. Precipitation above normal west and north central, below normal southwest and south central; spotty elsewhere. Temperatures below normal west and above normal southeast, near normal elsewhere. The 90's were reached in all areas and the 100° mark in southeast.

Hot weather hastened maturity and dimmed prospects of winter wheat. About 75% of the crop is in turning stage. Spring planted crops range poor to good. Wheat and oats are 15% turning; barley is more advanced. Alfalfa hay is 75% and nearly 40% of wild hay crop has been harvested. Grasshopper activity is light to moderate with some heavy localized infestations.

**NEBRASKA:** Temperatures above normal 5-11°. Precipitation sparse.

Fieldwork: 7 days suitable. Topsoil moisture supplies 96% short and 4% adequate. Subsoil moisture supplies 87% short and 13% adequate. All crops showing signs of severe dryness and drought conditions. Winter wheat 90% harvested, 80% harvested in panhandle, southern and south-eastern counties finished, normal 62%. Corn condition fair to good, drought causing severe damage, corn 10% silked. Dryland corn tasseling very short. Farmers irrigating heavy. Sorghum fair to good condition. Soybean condition mostly fair to good, very short and beginning to blossom. Oats and other small grain harvest in progress. Sugarbeets, field beans good. Alfalfa and wild hay condition declining. Second cutting 50% completed. Pasture and range supplies mostly short. Livestock good. Pig and hog losses due to extreme heat.

**NEVADA:** Unseasonably cold storm moved across northern Nevada early in week. Maximum temperature 57°, lowest recorded in Reno during July. Extremes: 107° Logandale to 28° Mountain City. Temperatures averaged 8° below normal northwest and about 3° below elsewhere. Precipitation general north ranging from 1.15 in. McDermitt to traces Hawthorne and Tonopah.

First cuttings alfalfa hay about completed north, second cuttings started central. Third cuttings about finished southern valleys. Wild hay yields disappointing. Small grain harvest completed south, extending northward. Lower ranges still dry.

**NEW ENGLAND:** Hot and humid early in week with highs in upper 80's and low 90's. Showers and thunderstorms 8th and 9th. Below normal temperatures with lows in 40's and 50's; highs in 70's from 10th to 12th. Readings near normal 13th. Most rain northern New England, 0.75 to 1.50 in. Isolated showers rest of week.

Hot, humid weather helped corn and vegetables. Haying progressing, but delayed by frequent showers. Apples sizing well. Raspberries, blueberries ripening, good crops in prospect. Strawberry harvest complete south, full swing north. Potatoes central Aroostook County beginning to bud out. Warm weather brought cranberries into bloom. Pastures good.

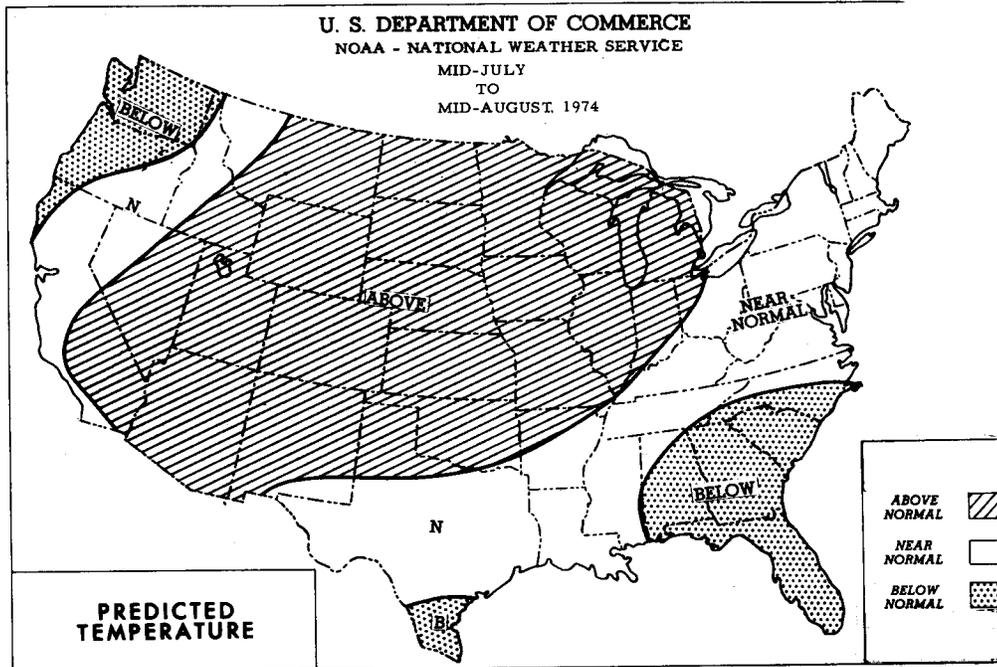
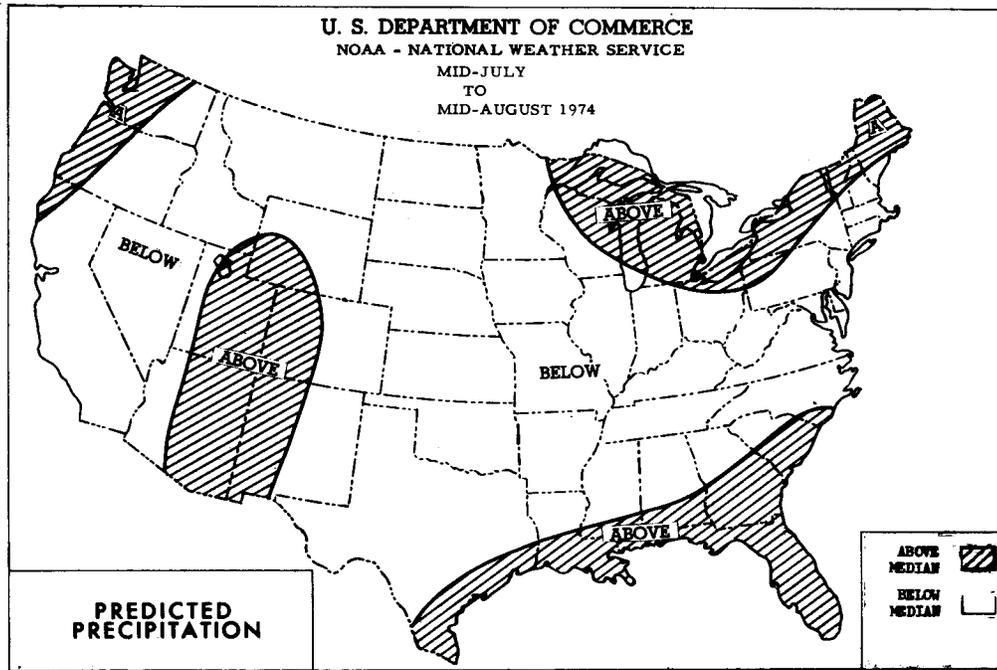
**NEW JERSEY:** Temperatures averaged normal north to 2° above central. Averages: 73° north; 77° central and south. Extremes: 45° at Long Valley 12th and 99° at Belvidere 14th. Rain averaged 0.05 in. north; 0.07 in. central; 0.36 in. south. Heaviest daily total 1.13 in. Atlantic City 10th.

Soil moisture averaged 55% field capacity north, 43% central, and 46% south. Soaking rain would be beneficial. Supplies of cabbage, snap beans, cucumbers and squash available in good volume. Harvest of peppers, eggplant and dry onions underway. Tomato, sweet corn, summer apple volume increasing. White potato harvest light. Sweetpotatoes making good growth. Peach and blueberry harvest becoming general. Wheat combining general. Hay making active.

**NEW MEXICO:** Substantial rains most sections, more than 1.00 in. at Silver City, Truth or Consequences, Alamogordo, Albuquerque, Santa Fe, and Clovis. Driest areas were northern border, southeast plains, and extreme southwest. Most mountain sections have now had appreciable rain. Still very dry southeast, extreme southwest. Temperatures averaged near normal to 8° cooler than normal at Truth or Consequences.

Moisture, short to very short. Cotton fruiting

**AVERAGE MONTHLY WEATHER OUTLOOK**



These prognostic charts show the expected categories of average temperature and total precipitation for the period indicated. They are taken from the Weather Service's publication Average Monthly Weather Outlook which contains additional information necessary for complete interpretation.

well, ahead of 1973. Alfalfa good, second cut 90% north, third cut 50% south, delays due to wet fields. Wheat, barley, oats, harvests virtually complete. Irrigated sorghum good, 30% headed. Dryland sorghum poor, much planting delayed or abandoned. Irrigated corn good, 30% tasseled. Onions good, harvesting in Mesilla Valley. Peanuts good growth. Irish potatoes digging Clovis-Portales. Sweet corn, tomatoes, pinto beans, fair to good. Ranges poor, rainy areas greening. Livestock fair, supplemental feeding, water hauling.

**NEW YORK:** Week started hot and dry; cooled mid-week with cold front and scattered showers. Warmer temperatures into weekend. Precipitation was light and sparse. Totals at most stations below 0.50 in. with only Binghamton 0.90 in. reporting higher amount. Temperatures slightly above normal, with average in low to mid 70's. High was Dansville with 95° on 14th; low at Watertown of 45° on 12th.

Good weather for fieldwork, haying and plant growth. First cutting alfalfa 85% complete, clover-timothy 65% and grass silage 90%. Few areas cut second crop alfalfa. Corn made good growth. Oats heading. Pasture condition fair to good.

Long Island harvesting early sweet corn. Cauliflower and cabbage transplant continues. Potatoes growing and looking good. Harvest of green peas for processing 50% complete. Orange County lettuce harvest continues. Oswego area cutting good quality lettuce, warm, dry weather aided growth of onions. Apples in good condition and sizing normal. Grape set appears good and berries are sizing normally.

**NORTH CAROLINA:** Temperatures near normal during week. Most of State received showers and some areas got heavy thunderstorms. Humidity high midweek. Considerable haze and pollution reduced visibility.

Crops fair to mostly good. Flue-cured tobacco 13% harvested, 6% 1973. Small grain harvest virtually complete. Irish potato harvest 86% complete, 76% 1973. Peach harvest 45% complete, about same as last year. Fieldwork: Averaged 4.2 days suitable.

**NORTH DAKOTA:** Temperatures above normal; from 9° central, east central, and southeast to 6° above in northwest and north central. Highs 104° at Breien, 79° at Fortuna. Lows 43° at Pembina to 75° at Fargo and Wahpeton. Precipitation above normal in north and east central. From .55 in. above normal in north central to .55 in. below in southwest. Greatest weekly rainfall 1.93 at Cooperstown. Greatest 24 hour rainfall 1.76 in at Bottineau on 12th. Weekend moist and fair with thunderstorms many areas.

Showers over state except northwest on 11th and 13th gave temporary relief to most crops. Crops and pasture desperately need more moisture and cooler weather. Haying, working summerfallow, and row crop cultivation are the most common farm activities. Livestock generally in good condition.

**OHIO:** Above normal temperatures most of week. High 99° on 14th and record low 45° 12th. Dry most of week, locally heavy rains south 10th and northeast 14th.

Winter wheat harvest 75% complete, 40% 1973, and 35% normal. Oats 23% ripe, 20% 1973 and normal. Average height: Corn over 40 in.; soybeans 15 in., both normal. Corn 5% silked and soybeans 5% setting pods. Hay harvest first cutting virtually completed.

Alfalfa hay second cutting 25% complete. Days favorable nearly 7. Soil moisture 50% short and 50% adequate. Central and northwest areas very dry.

**OKLAHOMA:** Temperatures ranged 2° below normal south and east to 5° above north central. Precipitation widely scattered with average about 0.20 in. panhandle. Some other areas 0.10 or less, with most reporting none or traces. Hot and mostly dry 13th and 14th.

Top moisture depleted after hot dry week. Row crop growth slowed. Sorghums mostly fair condition, 16% crop heading, one week earlier than 1973. Cotton fair to good, some southwest areas growth has stopped from lack of moisture. Forty percent crop squaring compared with 10% 1973. Peanuts and soybeans mostly good condition with 25% peanuts and 10% soybeans blooming. Corn 50% tasseled, fair condition. Third cutting alfalfa well along. Seed prospects good to fair. Ranges deteriorating rapidly with supplemental feeding on increase. Cattle mostly good condition, marketing active.

**OREGON:** Average temperatures west of Cascades 4 to 8° below normal, except coast. 1 to 3° below. East averaged 7 to 10° below normal. Highest temperatures about 3° below normal. Most areas reported .50 in. or more rainfall. Central and northern coastal locations 1.00 to 1.50 in. Willamette Valley .33 in. south to over 1.00 north. North central and north-east up to 0.90 in.

Heavy rain, high winds shattered grass and clover seed; delayed harvest most crops, split cherries and caused strawberries and raspberries to rot. Hay in windrow and bales quality was reduced. Also some small grain crops shattered or lodged. Rain replenished soil moisture for kernel development of grain crops, reduced fire damage and extended grass season on dryland pastures and ranges. Cattle in good condition, contracting activity slow. Snap bean harvest slowly getting underway. Cranberry harvest continues. Apples, pears, walnuts, filberts sizing well. Potato harvest ready for fresh market activity at Boardman. Spraying down vines at Ontario.

**PENNSYLVANIA:** Hot, humid beginning and end of period, midweek several days of delightful summer weather. Temperatures near normal. Maximum 96° at Allentown on 14th, low 39° at Germania on 12th. Widespread thundershowers brought 0.50 to over 3.00 in.; eastern counties light, heavier southwest and central mountain areas.

Good week for making hay. Most farmers making second cuttings of alfalfa, quality was good. Average amounts of feed being obtained from pastures. Barley 67% harvested. Wheat 50% ripe, 10% harvested. Oats 25% turning yellow. Corn height averages 34 in., growing rapidly. Early sweet corn, tomatoes and snap beans.

**PUERTO RICO:** Average rainfall 0.33 in. or 0.93 in. below normal. Highest weekly total 1.66 in. at Pico Del Este, Luquillo. Highest 24 hour total 1.00 in. at Hacienda Constanza. Temperatures averaged low 80's on coasts and mid 70's interior maximum 95° at Rio Piedras and Dos Bocas; minimum 55° at Adjuntas.

Water rationing continued San Juan Metropolitan area and other municipalities. Water storage levels very low. Drought continued affecting development of sugar cane ratoons and new plantations except in some western/interior zones. Coffee zones poor, flowering and bean development. Cultivation and fertilizing operations were carried out. Little activity in tobacco zones. Pastures and food crops severely affected by dry weather.

**SOUTH CAROLINA:** Temperatures averaged near normal most areas; 2 to 3° below normal north central and west central, rain averaged 0.25 to 0.50 in. Midlands and Piedmont on 7th. Low temperatures in lower 70's, shower activity greatly reduced on 11th. Temperatures fell slightly below normal; highs mid to upper 80's, lows in 60's.

Soil moisture adequate, scattered areas surplus. Weather condition favorable. Tobacco harvest 45% complete, 25% 1973, condition good. Thickness cured leaf thin to medium, color good. Cotton: condition improved good to excellent; insecticide controls successful; 90% squaring, 55% setting bolls. Corn: condition fair to good; 86% silked, 60% dough stage, 6% mature; year ago, 64% silked, 44% dough stage, 5% mature. Soybean planting nearly complete, 90% 1973; condition good to excellent. Sorghum planting complete. Peanut condition good. Peaches 62% harvested, quality good to excellent. Grapes and hay crops condition fair to good. Pasture condition good. Watermelons 53% harvested.

**SOUTH DAKOTA:** Continued hot, averaged 8° above normal. Extremes: 110° at Philip the 11th and Pierre the 12th; 50° at Camp Crook the 12th. Scattered thundershowers with less than 1.00 in. central and west received none or only a trace. Deficit as great as 6.50 in. since first of year.

Hot, dry and windy weather hastening maturity of small grains. Winter wheat 90% ripe, rye 88% ripe. Winter wheat 45% harvested, 24% in 1973, and 15% normally. Major areas over 50% harvested. Rye harvest 20% complete. Spring seeded grains ripening well ahead of normal, harvest started same locations. Many fields oats being cut for hay. Late planted grains hardest hurt by lack of moisture. Corn beginning to tassel. Heat curling leaves some areas. Second cutting alfalfa greatly reduced due to drought. Livestock generally good condition, flies still bad resulting in some pinkeye problems. Pastures providing adequate feed, but shortage of stock water causing movement of cattle.

**TENNESSEE:** Weak cold front moved through state 11th and 12th. Widely scattered thundershowers 8th through 12th brought rain to most sections. Some rain locally heavy. Temperatures remained near normal with lows in 60's and low 70's; highs in 80's and low 90's.

Crops in general are late and short, but grew rapidly during week. Rain is needed to continue good crop development. Wheat, oats, and barley 95% harvested, a few days earlier than usual. Cotton made rapid growth, 80% squared compared to 75% 1973 and average 95%. Corn 50% silked with 10% in dough stage. Normally 60% has silked by mid-July. Dry weather is affecting some areas. Tobacco crop late and short. Blooming started on plants that are quite small.

**TEXAS:** Weather pattern underwent little change. Precipitation concentrated east. Most areas 0.50 below normal. Driest portions centered in west Texas, west of Pecos and northwest. Near normal temperatures most of State. Coastal sections 1 to 3° above normal, west Texas dropped 2 to 4° below weekly normal.

Harvest sorghum gaining momentum south. Harvest cotton, corn, rice underway, generally ahead 1973 progress. Yields most areas satisfactory. Planting peanuts, soybeans, incomplete because inadequate moisture. Harvest peanuts expected south end of month. Major crops percent planted: Cotton 100, 1973 100; Sorghum 98, 1973 100; Peanuts 97, 1973 98. Major crops percent harvested:

Cotton 1, 1973 0; Corn 1, 1973 0; Sorghum 20, 1973 4; Rice 4, 1973 0. High Plains: Onion harvest continues, movement slow. Potato digging plains growing areas. Cucumber harvest gained momentum. Irrigation and insect control among major activities on crops of tomatoes, carrots, and cabbage. Trans-Pecos: Harvest of tomatoes, peppers continues. Cantaloupes off to good start. North: Watermelons and cantaloupes and tomatoes being harvested. Knox-Haskell: Potato harvest complete. Watermelons and cantaloupes now going to market. East: Tomato harvest continues past peak. Peppers and squash still available as watermelon harvest increasing. Central: Tomatoes, cucumbers and cantaloupe still being harvested. San Antonio-Winter Garden: Onion and cantaloupe harvest in final stages. Ground preparation for fall plantings is major vegetable farm activity. Lower Rio Grande Valley: Land and seedbed preparation for fall vegetables. Peach harvest passed peak Gillespie County and continues active other eastern and northern areas. Pecans showing effects of dry weather. Mid-season drop fairly heavy.

Range conditions deteriorate as drought conditions become worse most areas. Ranchers: In Plains, Cross-Timbers, Edwards Plateau culling herds earlier than usual because short grazing. Livestock good condition south, supplemental feeding underway west. Hay baling active east and south.

**UTAH:** Few isolated light showers and thunderstorms past week. Not sufficient to have much impact on serious drought conditions. Temperatures averaged 4° below normal to 4° above.

Irrigation water supplies vary considerably. Ample supplies for current needs available from major river drainage and pump wells. Supplies from smaller streams, however, range from none to barely adequate. Soil moisture in nonirrigated crop and range land continues very short. Range feed on ranges now in use, rated only fair. Winter wheat 20% ripe, varies considerably. Harvest started, 6% combined. Sweet cherries 85% picked, quality, yield and size good. Tart cherry and apricot harvest started. A good peach crop in prospect, pears expected to be normal, apple prospects light. Alfalfa second cutting started.

**VIRGINIA:** Hot and hazy with air stagnation advisory up to midweek. Thunderstorms mainly north and east 10th, with hail and damaging winds at Nelsonia. Cooler remainder of period, average temperature near normal. Extremes: 97° and 48°. Two-thirds State dry, only southern Piedmont and southwestern areas have adequate moisture.

Topsoil moisture 51% short, 45% adequate, 4% surplus. Fieldwork: 5.2 days suitable. Crops showing stress from moisture shortage, rain needed to prevent yield damage. Corn statewide 38% silked, over 75% silked in Tidewater and southwest. Soybean growth slow and condition lower due to moisture shortage. No-till soybeans planted. Peanuts condition down, some fields treated for weeds and leafspot damage. Small grain harvest: Barley virtually complete; wheat and oats about 80%. Flue-cured tobacco less than 1% harvested, irrigation necessary some areas. Hay crop needs moisture. Potato and vegetable harvest on Eastern Shore continues.

**WASHINGTON:** West: Average temperatures 2 to 3° below normal. Precipitation end of week, ranging from 0.50 to over 2.00 in. Strawberry harvest coming to an end, raspberry harvest picking up. Green pea harvest underway, with some mildew due to rain. Haying, silage making and green chopping continued active.

East: Cooler, 7 to 12° below normal. Heavy thundershowers two days during the week, hit Okanogan County and the Palouse-Blue Mountains. Cherry harvest past mid-point; rain caused some cracking. Apricot harvest began with some coryneum blight. Apples and pears continue to size well. Harvest of early potatoes is expected. Second cutting of alfalfa is active. Wheat harvest in irrigated areas delayed by rain. Dryland wheat will start combining this week. Barley harvest also got underway. Seed grass damaged by rain.

WEST VIRGINIA: Temperatures below normal central and above northeast. Record low 13th over State. Thundershowers with heavy rain midweek, mostly northwest.

Soil moisture adequate. Favorable work days 4.9. Major field activities: harvesting hay, gardening and cutting weeds. Hay first cutting 75% complete, condition fair to good. Wheat 33% harvested. Barley 60% harvested. Oats 49% headed, 37% yellow, 12% ripe. Corn in good condition. Pasture and livestock in good condition.

WISCONSIN: Week began and ended hot. Temperatures averaged 4 to 8° above normal with readings in 90's. Midweek was cooler with showers. Rainfall varied but heaviest south where some totals exceeded an inch. Cold front brought cooler, less humid air late 14th.

Corn continued to develop very well in warm temperatures and timely rain. Corn averages 30 in. high; 34 in. 1973, normal 32 in. Crop ranges from just planted to showing tassels. Small grains changing color fast. Oats 85% headed, 1973 80%, normal 95%.

WYOMING: Scattered light showers statewide. Temperatures averaged near to well above normal, greatest departures in northeast. Maximum's generally 80's west of Divide, high 80's and 90's east. Minimums generally 30's to low 40's west, 40's to low 50's east.

Topsoil moisture supplies short. Winter wheat 90% turning color, 45% mature, combining getting underway 5% completed. Spring wheat 95%, barley 85%, and oats 70% headed. First cutting alfalfa hay 70% harvested, other hay 15%.

## NATIONAL CLIMATOLOGICAL SUMMARY - 1973

THE YEAR IN BRIEF: Except for the Central and Southern Plains, the Desert Southwest, and along the Pacific Coast, the Nation enjoyed a much warmer than usual year.

Moisture totals for the year varied from 1.89 in. at Yuma, Ariz., to 101.77 in. at Quillayute, Wash. Compared to normal, most departures occurred on the plus side, although significant droughts occurred during the year. Most of the Nation's midsection was 125 to 150% of normal. Topeka, Kans., received 60.89 in., compared to a normal of 34.66 in., the greatest annual total ever recorded. Other annual precipitation records included Meridian, Miss., with 79.03 in., and LaCrosse, Wis., with 44.11 in.

Significant droughts occurred during the year in both the Northwest and Southwest, although precipitation totals were near normal for the year. The Pacific Northwest region was in a very serious drought for the first eight months of the year. A wet fall ended the drought, but a drought was rapidly developing in the Southwest.

WINTER: After a bitter December over the western two-thirds of the Nation, which included heavier than normal precipitation, some relief occurred in January. Temperatures during January were well above normal across the northern third of the Country, but much below to the south. Much of Colorado, Wyoming, and Utah averaged 6 to 12° below normal. Frequent snows accumulated to record depths in many areas. Grand Junction, Colo., averaged 11.5° for the month, the coldest January in a 74 year record.

Over the Northern Plains, one of the warmest Januarys in recent years occurred. Minneapolis-St. Paul, Minn., averaged 17.4°, the warmest since 1964. Aberdeen, S.Dak., averaged 17.0°, the warmest in its 15 year record.

Most of the stormy weather in January occurred early and late in the month. The month began on a stormy note and variable weather continued into the second week. Rain fell along the Pacific Coast, snow flurries in the Great Lakes region, and a mixture of snow, sleet, freezing rain, and freezing drizzle over much of the South.

The last week of January was stormy along the Pacific Coast. Heavy snow fell from the Pecos River to the hill country of Texas. As the precipitation spread eastward, blizzards occurred in the

Great Plains, and snow fell in the Northeast.

Overall, Montana, northern Idaho, Washington, and Oregon experienced one of the driest Januarys on record. However, to the south, far wetter than normal conditions were experienced, at least in terms of snowfall. A trace of precipitation at Havre, Mont., was the least in its 93 year record. Williston, N. Dak., received only 0.03 in., the least in 65 years. However, Billings, Mont., received 1.30 in., the sixth wettest in 39 years, and Lander, Wyo., received 25.7 in. of snow, the second greatest in its 81 year record.

February was generally drier than usual in most areas. The major exceptions were the Desert Southwest where two to four times the expected precipitation fell, parts of Iowa and Missouri, and the Southeastern tier of States.

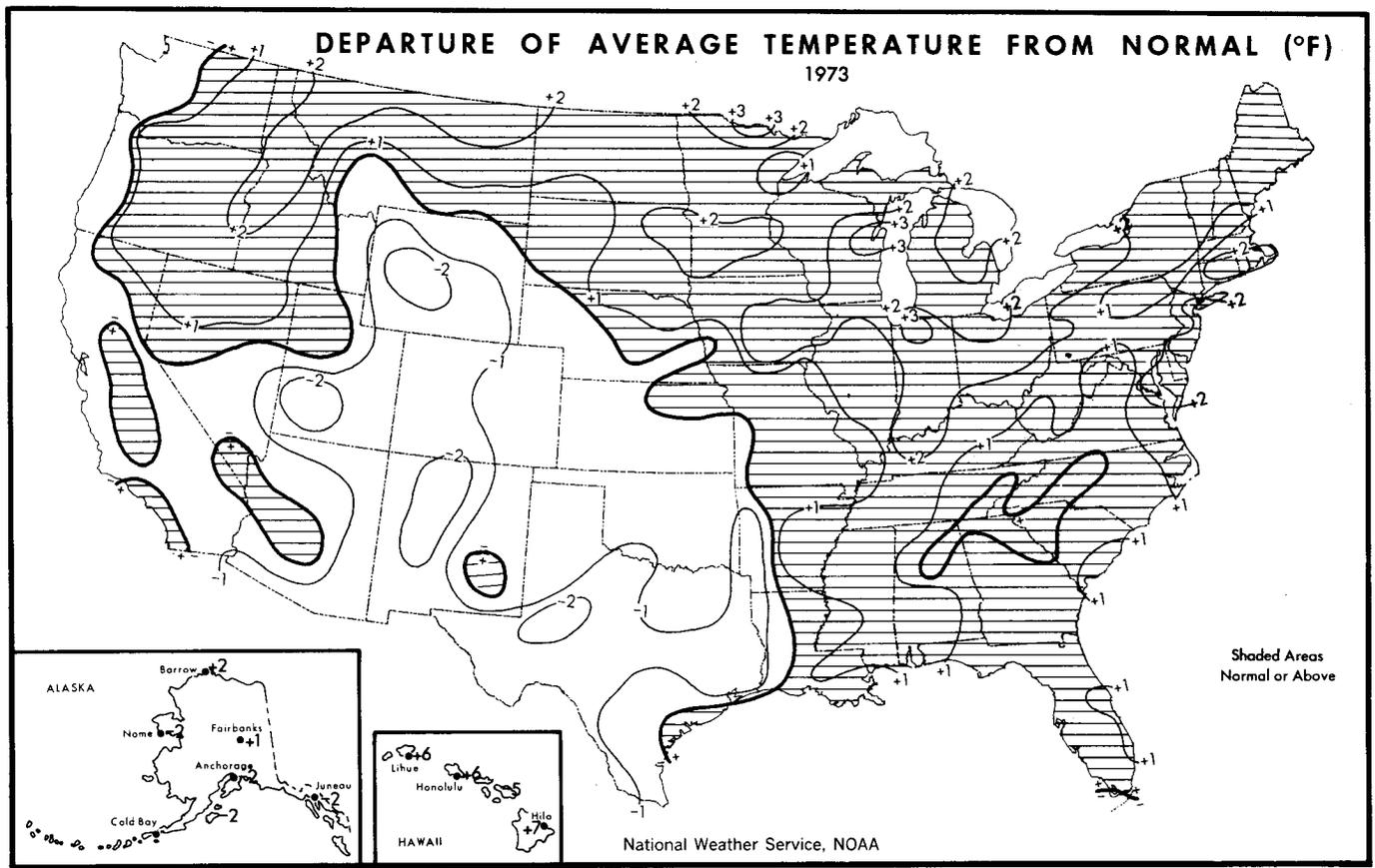
Temperatures in the West warmed markedly except for the Rocky Mountain States where temperatures continued at least 3°, up to 9°, below normal. Most Eastern States were also well below normal.

The Far West was warmer than normal most of the month. The western slopes of the central Rocky Mountains were cool through most of the month. Temperatures over the Great Plains changed irregularly in response to the storms crossing them. Brisk Canadian air cooled the Great Plains at the beginning of the second week of February. The temperatures at Great Falls, Mont., plunged to 46° below zero the morning of the 7th. Freezing temperatures reached all the way south to Mexico. Brownsville, Texas registered 27° on the 9th. Subfreezing temperatures also reached Florida. Tallahassee registered 31° on the 20th.

The Great Plains warmed during the final week, but the South and much of the East continued cool. On the afternoon of the 22d, Bismarck, N.Dak. reached 53°, which was warmer by 1° than the maximum at Atlanta, Ga.

The heaviest rains in February fell along the Pacific Coast and over a broad area from southern Texas to New England and southward to the Gulf of Mexico.

A variety of winter weather covered the eastern half of the Nation in early February. The unpleasant weather dropped snow in the North, rain in South, and freezing drizzle sandwiched in between. Cyclogenesis occurred over the eastern Gulf early on the 9th. The new storm intensified, crossed the Flori-



da peninsula, and dropped a once-in-a-century type snowfall from Alabama to North Carolina and lesser amounts in Mississippi and Virginia. From 12 to 20 in. fell in parts of Alabama, Georgia, and South Carolina.

On February 11, a storm intensified over the Great Basin. It dumped heavy snow in the western mountains and lighter amounts in the western Great Plains. Depths of 10 to 12 in. were common along the Mogollon Rim in Arizona and 20 in. accumulated south of Flagstaff. Many mountain areas in Utah received over 2 ft. of new snow and 8 to 10 in. in lower areas. As the storm moved over the Great Plains, it dumped from 6 to 10 in. from the central Great Plains to the Great Lakes. Strong northerly winds drifted the snow, hampering highway travel.

**SPRING:** Most of the Nation experienced a wetter than normal Spring, with record flooding throughout the Mississippi River Valley and adjoining areas. The notable exception was the Northwest where severe drought continued to develop. In addition, portions of Texas, the eastern Dakotas and southern Florida were considerably below normal.

As a whole, temperatures were below normal in most of the western half of the Nation and parts of the South, and the Appalachians. The remainder of the Country experienced above normal temperatures. However, the distribution of temperatures at various times during the period was quite different. March temperatures were exceptionally warm while temperatures during April and May were considerably below normal.

Wet was the word to describe March precipitation

patterns. Almost the entire Nation received above normal precipitation during the month. The only areas receiving below normal precipitation were the Pacific Northwest, Montana, North Dakota, northern Minnesota, parts of New England, and the southern tip of Texas. Yakima, Wash., received only 0.01 in. precipitation; Havre, Mont., 0.03 in.

From two to four times the normal precipitation for March fell on the southern portions of the western Great Plains, the Desert Southwest, and portions of the South. Rains were frequent and heavy in many areas, setting new monthly records, or tying old ones. Dodge City, Kans., received 8.84 in.; Alamosa, Colo., 1.42 in.; Wichita Falls, Texas, 3.89 in.; Columbia, Mo., 10.09 in.; and, Madison, Wis., 5.04 in. Most of the soils in the areas receiving this heavy moisture were already saturated from plentiful moisture last fall, and at the month's end some flooding was occurring along many of the tributaries of the Missouri and Mississippi Rivers. Most of the snowcover in the Northern States had already melted early in the month due to exceptionally warm temperatures.

Temperatures in March were warmer than normal over the entire Nation except for the Southwest. The Great Plains averaged 9 to 12° above normal while the South and Atlantic Gulf Coasts were generally 3 to 6° above normal. Bismarck, N. Dak. averaged 39.4°, the warmest March since 1910.

During early March, the entire Nation was much warmer than usual except for the New England States and a few isolated areas in the Western States. The northern Great Plains were 12 to 21° above normal, resulting in an early removal of existing snow cover. Temperatures were at least 9° above

normal in this area the entire month.

Temperatures during the second week of March were again warmer than normal over the entire Nation except for the Southwest. Except for a few areas along the Atlantic Coast, temperatures east of a line from Mobile, Ala., to Havre, Mont., were at least 9° above normal with the greatest departures over Ohio, Indiana, Kentucky and parts of West Virginia and Pennsylvania. Temperatures were 18° to 24° above normal in this area.

Temperatures continued to average 6° to 12° warmer than usual over the eastern two-thirds of the Nation until late in the month.

Precipitation in April was highly variable, but generally on the heavy side, particularly along the Mississippi River, the Deep South, and the New England areas. Much of the moisture came as late snowfall, particularly over the mountains and in Iowa. Nearly 20 in. of snow fell in parts of Iowa on April 8-10 in one of the worst snowstorms on record for any time of the year. Over 8.00 in. of rain fell over much of the lower Mississippi River Valley resulting in record flooding. To the north, parts of Iowa, Wisconsin and Illinois again received more than twice the normal precipitation: LaCrosse Wis., 261%; Moline, Ill., 353%; and Rockford, Ill., 319%. On April 28, at St. Louis, Mo., the Mississippi River crested at 43.4 ft., breaking the old record of 42.0 ft. established in 1785. This crest came after some of the heaviest precipitation of the month which fell on the 16-22d, when a sprawling low pressure system, which extended from the Texas Gulf Coast to the Great Lakes, dropped heavy precipitation over the entire area.

Nearly all of Montana and Wyoming received from 150 to 450% of normal precipitation. Most of the moisture came from a snowstorm which dumped several feet of snow in many areas beginning on the 19th. This storm broke many existing records for a single snowstorm at any time of the year. For the month, Lander, Wyo., recorded 66 in. of snow, a new record. Great Falls, Mont., received 21 in. in the storm on the 19th alone, a record for a single storm dating back to 1893.

Numerous precipitation records were also set in the New England area: Caribou, Maine 5.26 in.; Portland, Maine 9.90 in.; Syracuse, N.Y., 6.91 in.; Bridgeport, Conn., 8.14 in.; and Harrisburg, Pa., 6.23 in.

The West Coast was dry the entire month, with little or no precipitation. Drought conditions in the Pacific Northwest continued to deteriorate as precipitation was from 0 to 50% of normal. Less than 0.50 in. fell during April in much of this area.

With the exception of the third week of April, temperatures during the month were generally below normal over most of the Nation. Much of New Mexico and the Texas Panhandle was 6° to 8° below normal. A mean temperature of 59.7° at Tucson, Ariz., was the coolest April since 1920.

Temperatures were well below normal except along the Pacific Coast, the North Central States, New England, and southeastern Florida. At Yuma, Ariz., 80° was reached for the first time in 1973 on April 5, a new record. The previous record for the latest first 80° occurrence was March 14, 1891.

The month started with temperatures far below normal, particularly in the Southwest where they were 6° to 12° below normal. During the week of April 9-15, winter-like conditions struck much of the Nation. The eastern half of the Nation was 6° to 12° below normal with freezing temperatures reaching almost to the Gulf. On April 10, McComb, Miss., reported 30°, Birmingham, Ala., and Atlanta, Ga., 26°. A 24° reading at El Paso on the 9th

marked the coldest April morning low since readings began in 1879.

A large High pressure system followed the cold air passage and brought very mild temperatures to the Nation during the third week. Temperatures were 6° to 18° above normal in much of the Northeast. Temperatures again cooled as the month ended.

The heavy rains continued into May, with a much needed respite occurring at midmonth. As a whole, precipitation was above normal from the Mississippi eastward, while the western half of the Nation was below normal except for a narrow band extending from Iowa to Arizona.

Considerable violent weather was experienced, particularly at the end of May. Tornadoes, high winds, and torrential rains occurred in many areas. Between the 26th and 29th of May, at least 195 tornadoes occurred.

Conditions remained very dry over much of the Pacific Northwest during the entire period, prolonging the period of below normal precipitation which began in 1972. Fourteen of the last 15 months at Helena, Mont., were below normal.

The month began with a continuation of the heavy rains which had fallen during March and April. The lower Mississippi Valley, already flooded, received an additional 2.00 to 4.00 in. during the first week of May. Parts of Oklahoma, Kansas, Missouri, and Illinois, and nearly all of Iowa and Wisconsin received over 2.00 in. of rain, delaying fieldwork for another week.

While parts of the Corn Belt received a brief respite from the rains, violent weather continued in many areas the second week in May. Much of the Deep South received an additional 2.00 to 4.00 in. On the 7th and 8th, a Low pressure system moved across the Corn Belt. Ahead of a cold front associated with the Low, violent weather struck southeast Texas, Louisiana, Arkansas, and western Tennessee. Another storm system later in the week repeated the weather of the first. When the storm finally cleared the East Coast, the first week of really clear, dry weather in many months covered the Nation's midsection.

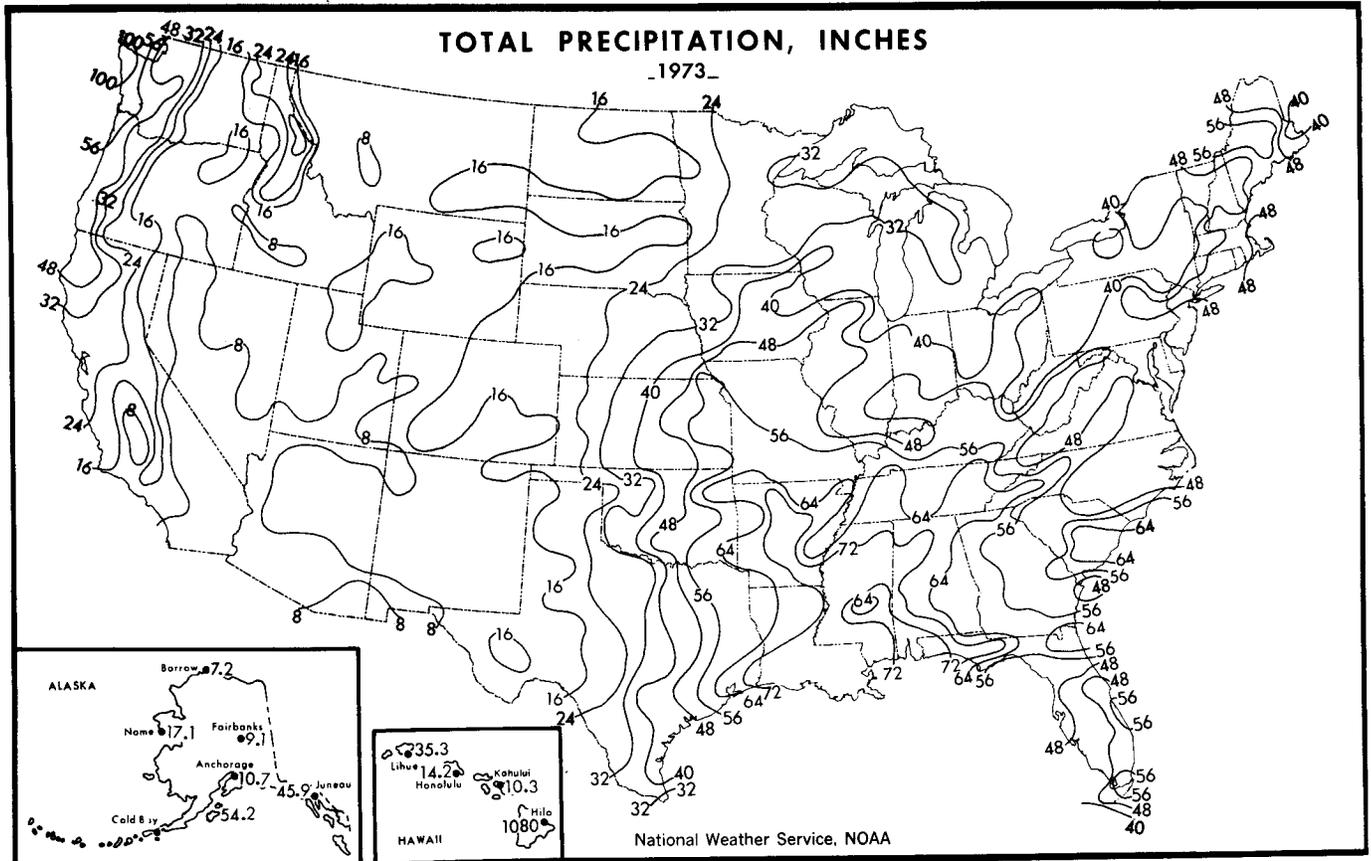
Except for some rainfall over the Rockies, the western two-thirds of Nation received virtually no rainfall during the week ending May 21. The remains of the previous storm dropped heavy rains on portions of the East Coast early in the week, but once it cleared the entire Nation was dry.

The last decade of May was again wet in many areas. Heavy rains fell over the upper Mississippi Valley and the Ohio River southward to the Gulf with a slightly drier area between. A large Low pressure system over Canada brought cold to much of the Nation over the Memorial Day weekend. Violent weather in the South caused several deaths.

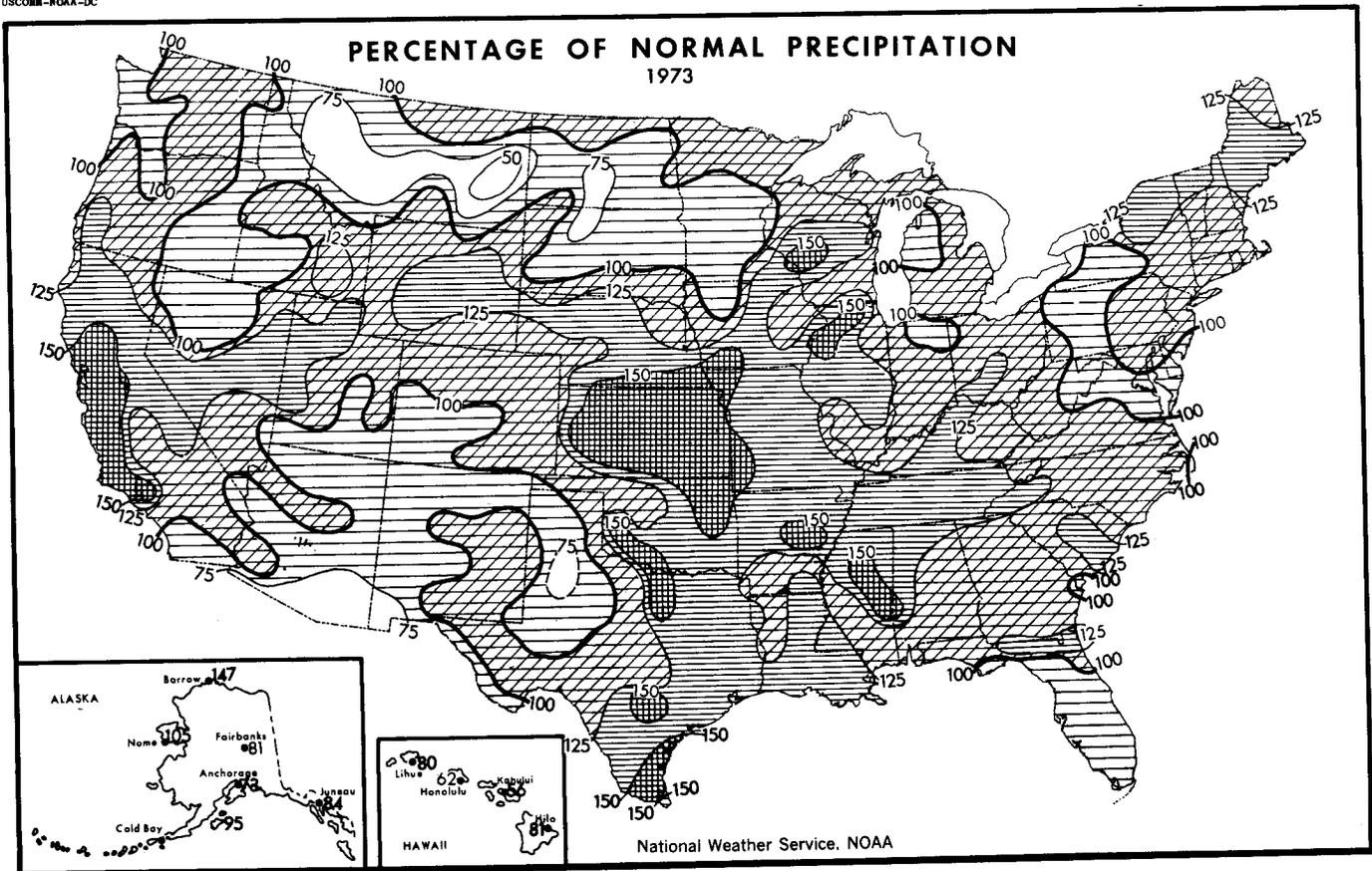
From the Rockies eastward, temperatures were below normal for the month, while to the west, temperatures were 3° to 6° above normal. Temperatures were generally below normal during the first week of May over the entire Nation. The only exceptions were the New England area and parts of the California coast. Temperatures in most areas were 3° to 6° below normal, with the Rocky Mountain area 6° to 9° above normal.

Most of the Nation's midsection and the Northwest continued below normal as the result of a large High late in the second week. Warmer than average temperatures prevailed over most of the East and West Coasts, the Gulf areas of

(Continued on Page 17)



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Temperature and Precipitation Data for

1973

States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches	
	Average	Departure	Total	Percent Of Normal		Average	Departure	Total	Percent Of Normal		Average	Departure	Total	Percent Of Normal
ALA. Birmingham . . .	62	0	66.1	124	La. Baton Rouge . . .	69	+1	79.0	146	Youngstown . . .	50	+2	36.7	97
Mobile . . .	69	+2	70.8	106	Lake Charles . . .	68	0	75.0	136	OKLA. Okla. City . . .	59	-1	41.8	133
Montgomery . . .	66	+1	49.9	117	New Orleans . . .	69	+1	79.3	140	Tulsa . . .	60	0	69.9	189
ALASKA. Anchorage . . .	33	-2	10.7	73	Shreveport . . .	65	-1	58.2	129	OREG. Astoria . . .	50	0	65.2	98
Barrow . . .	12	+2	7.2	147	MAINE. Caribou . . .	40	+2	42.7	119	Burns . . .	47	+1	10.2	86
Fairbanks . . .	27	+1	9.1	81	Portland . . .	47	+2	52.3	128	Medford . . .	56	+3	18.9	92
Juneau . . .	38	-2	45.9	84	MD. Baltimore . . .	56	+1	45.8	113	Pendleton . . .	54	+1	14.7	119
Kodiak . . .	38	-2	54.2	95	MASS. Boston . . .	53	+2	42.8	100	Portland . . .	54	+2	41.7	111
Nome . . .	24	-2	17.1	105	Worcester . . .	49	+2	57.3	126	Salem . . .	52	0	47.7	115
ARIZ. Flagstaff . . .	45	-1	19.7	103	MICH. Alpena . . .	44	+2	34.6	125	PA. Allentown . . .	53	+2	48.2	114
Phoenix . . .	72	+2	6.1	85	Detroit . . .	51	+2	34.1	108	Erie . . .	49	+2	38.0	100
Tucson . . .	66	-1	7.2	65	Flint . . .	49	+2	33.4	112	Harrisburg . . .	55	+1	43.8	120
Winslow . . .	54	-1	7.6	104	Grand Rapids . . .	49	+2	34.4	106	Philadelphia . . .	56	+2	46.1	115
Yuma . . .	73	-1	1.9	71	Houghton Lake . . .	45	+2	26.7	94	Pittsburgh . . .	53	+2	39.7	110
ARK. Fort Smith . . .	60	-1	57.3	135	Lansing . . .	48	+1	31.8	105	Scranton . . .	50	0	39.0	107
Little Rock . . .	63	+2	74.4	153	Marquette . . .	44	+2	31.7	103	R.I. Providence . . .	53	+3	48.2	113
CALIF. Bakersfield . . .	67	+2	6.8	119	Muskegon . . .	49	+1	31.4	100	S.C. Charleston . . .	66	+1	72.2	141
Eureka . . .	52	0	49.0	124	S. Ste. Marie . . .	42	+2	36.5	115	Columbia . . .	64	+1	67.6	146
Fresno . . .	63	+1	12.7	124	MINN. Duluth . . .	40	+1	32.1	106	Greenville . . .	60	-1	54.6	115
Los Angeles . . .	65	0	17.5	124	Internatl Falls . . .	40	+3	28.2	110	S.D. Aberdeen . . .	46	+3	13.9	73
Red Bluff . . .	62	-1	31.7	143	Minneapolis . . .	47	+3	21.1	78	Huron . . .	46	+2	17.4	89
San Diego . . .	63	+1	7.5	89	Rochester . . .	45	+2	40.9	148	Rapid City . . .	47	+1	15.1	88
San Francisco . . .	57	0	31.4	160	St. Cloud . . .	44	+2	25.2	94	Sioux Falls . . .	48	+2	28.2	114
Stockton . . .	62	+1	23.6	167	MISS. Jackson . . .	66	+1	55.1	112	TENN. Chattanooga . . .	60	0	71.6	138
COLO. Denver . . .	50	0	23.0	147	Meridian . . .	66	+1	79.0	159	Knoxville . . .	59	-1	58.0	126
Grand Junction . . .	51	-2	7.9	94	MO. Columbia . . .	55	+1	50.5	137	Memphis . . .	63	+1	64.2	130
Pueblo . . .	53	0	13.2	111	Kansas City . . .	55	0	55.3	149	Nashville . . .	61	+1	59.8	130
CONN. Bridgeport . . .	54	+2	54.9	142	St. Louis . . .	56	0	39.8	111	TEX. Abilene . . .	63	-2	24.1	98
Hartford . . .	52	+3	51.1	118	Springfield . . .	57	+1	59.4	149	Amarillo . . .	57	0	18.1	90
D.C. Washington . . .	59	+2	35.0	90	MONT. Billings . . .	47	+1	16.2	114	Austin . . .	67	-1	40.5	124
FLA. Apalachicola . . .	69	+1	52.2	91	Glasgow . . .	44	+3	11.2	103	Beaumont . . .	67	-1	78.9	143
Daytona Beach . . .	71	+1	44.2	86	Great Falls . . .	46	+2	12.2	81	Brownsville . . .	73	-1	29.6	118
Ft. Myers . . .	74	0	44.3	82	Havre . . .	45	+2	11.7	102	Corpus Christi . . .	72	0	43.5	152
Jacksonville . . .	69	0	70.6	138	Helena . . .	43	0	6.3	56	Dallas . . .	66	0	48.0	134
Key West . . .	78	0	32.7	82	KallsPELL . . .	44	+2	11.9	73	Del Rio . . .	69	-1	20.0	118
Lakeland . . .	72	0	45.4	92	Miles City . . .	47	+2	17.6	45	El Paso . . .	62	-2	7.5	97
Miami . . .	76	+1	53.2	89	Missoula . . .	46	+2	9.0	67	Fort Worth . . .	65	0	50.6	157
Orlando . . .	73	+2	55.4	93	NEBR. Grand Island . . .	50	0	31.7	135	Galveston . . .	70	0	60.5	143
Tallahassee . . .	68	0	87.8	142	Lincoln . . .	51	0	39.2	147	Houston . . .	68	-1	70.2	146
Tampa . . .	73	0	49.7	101	Norfolk . . .	50	+1	29.3	120	Lubbock . . .	59	0	12.9	70
W. Palm Beach . . .	76	+1	54.7	88	N. Platte . . .	48	-1	21.7	109	Midland . . .	61	-3	11.3	83
GA. Atlanta . . .	61	+1	55.2	114	Omaha . . .	51	0	38.3	127	San Angelo . . .	65	-2	18.4	105
Augusta . . .	63	0	43.6	103	Valentine . . .	48	+1	23.3	131	San Antonio . . .	68	0	52.3	190
Macon . . .	66	0	48.5	109	NEV. Ely . . .	43	-1	11.2	129	Victoria . . .	71	+1	45.7	133
Savannah . . .	67	+1	45.4	89	Las Vegas . . .	66	0	4.7	124	Waco . . .	66	-1	45.0	143
HAWAII. Hilo . . .	74	+1	108.0	81	Reno . . .	50	0	9.2	128	Wichita Falls . . .	63	-1	30.7	113
Honolulu . . .	77	+1	14.2	62	Winneucca . . .	50	+2	7.9	93	UTAH. Milford . . .	47	-2	10.5	125
Kahului . . .	75	-1	10.3	56	N.H. Concord . . .	46	+1	42.0	116	Salt Lake City . . .	51	0	20.4	134
Lihue . . .	76	+1	35.3	80	N.J. Atlantic City . . .	55	+2	41.5	91	VT. Burlington . . .	46	+2	46.3	142
IDAHO. Boise . . .	53	+2	11.4	98	Trenton . . .	56	+2	47.6	128	VA. Lynchburg . . .	57	0	50.7	132
Lewiston . . .	54	+2	12.4	93	N.MEX. Albuquerque . . .	55	-2	10.9	140	Norfolk . . .	61	+2	45.5	102
Pocatello . . .	47	0	13.7	127	Roswell . . .	59	0	11.6	109	Richmond . . .	59	+1	40.5	95
ILL. Cairo . . .	60	0	58.7	124	N.Y. Albany . . .	49	+2	38.7	116	Roanoke . . .	57	+1	48.0	123
Chicago . . .	52	+2	38.0	110	Binghamton . . .	48	+2	33.4	89	WASH. Colville . . .	-	-	-	-
Moline . . .	52	+2	56.4	157	Buffalo . . .	49	+2	36.8	102	Olympia . . .	49	-1	49.9	98
Peoria . . .	52	+1	50.2	143	New York . . .	56	+1	50.0	120	Quillayute . . .	48	-1	101.8	96
Rockford . . .	50	+2	56.5	154	Rochester . . .	51	+3	29.2	94	Seattle-Tacoma . . .	52	+1	35.0	91
Springfield . . .	54	+1	44.3	126	Syracuse . . .	50	+2	52.7	145	Spokane . . .	49	+1	17.1	98
IND. Evansville . . .	58	+2	46.2	111	N.C. Asheville . . .	57	+1	64.9	143	Walla Walla . . .	55	+1	17.6	110
Ft. Wayne . . .	52	+2	34.5	96	Charlotte . . .	60	-1	44.1	103	Yakima . . .	51	+1	9.0	112
Indianapolis . . .	54	+2	42.3	109	Greensboro . . .	58	-1	46.8	113	W. Va. Beckley . . .	52	+1	43.5	102
South Bend . . .	53	+4	34.8	96	Hatteras . . .	63	+2	47.0	84	Charleston . . .	56	+1	49.3	121
IOWA. Burlington . . .	52	+1	50.1	145	Raleigh . . .	60	+1	46.4	109	Huntington . . .	57	+1	38.3	98
Des Moines . . .	52	+3	45.2	146	Wilmington . . .	64	+1	61.2	114	Parkersburg . . .	56	+1	38.9	101
Dubuque . . .	48	+2	39.6	98	N.DAK. Bismarck . . .	43	+1	11.0	68	WIS. Green Bay . . .	47	+3	34.9	129
Sioux City . . .	50	+2	27.9	109	Fargo . . .	42	+1	21.5	110	La Crosse . . .	48	+2	44.1	152
KANS. Concordia . . .	53	0	44.4	161	Williston . . .	43	+2	12.1	85	Madison . . .	48	+3	35.5	108
Dodge City . . .	54	-1	32.4	158	OHIO. Akron-Canton . . .	53	+3	36.8	104	Milwaukee . . .	48	+3	33.8	116
Goodland . . .	50	-1	20.9	126	Cincinnati . . .	54	+1	49.4	126	WYO. Casper . . .	44	-1	15.1	135
Topeka . . .	55	0	60.9	173	Cleveland . . .	53	+3	41.3	118	Cheyenne . . .	45	-1	17.6	120
Wichita . . .	56	-1	42.0	137	Columbus . . .	54	+3	46.3	126	Lander . . .	42	-3	19.3	140
KY. Lexington . . .	57	+1	50.9	114	Dayton . . .	54	+2	38.5	112	Sheridan . . .	45	0	15.1	94
Louisville . . .	58	+2	54.0	125	Toledo . . .	50	+1	32.7	103	P.R. San Juan . . .	81	+3	44.6	75

Based on 1940-1971 Normals

(Continued from Page 14)

the Deep South and the Southwest.

The middle week brought both extreme warmth and cold, depending in which half of the country one lived. From the Rockies westward, temperatures were generally 3 to 12° above normal, while to the east, temperatures were 3 to 12° sub normal.

As the month ended, temperature variations were large, with conditions generally averaging below normal.

**SUMMER:** Rainfall during the summer season was generally normal to above east of the Mississippi, but generally below normal to the west. The most notable exceptions in the West occurred over eastern Nevada and northwestern Utah and most of Texas. San Antonio, Texas, received 18.60 in. which was 250 % of normal. The greatest rainfall over the 3 month period was 37.50 in. at Charleston, S.C.

The generally wet spring continued through much of the Nation during the beginning of summer and did not begin to fall off until August. For example, most of eastern Texas had twice its normal rain during June and July but fell below expectations only in August, leaving them, on the average, much wetter than normal. The summer ended with many drying areas in the Country. Southern New York, Pennsylvania, eastern Ohio, Maryland, northern Virginia, and eastward to the coast all averaged below normal rain -- some of these areas, as little as half the expected amount.

The areas that were already experiencing drought conditions at the beginning of summer saw a persistence of that condition as rainfall averaged far below normal and the drought got worse. Northern California, Oregon, Washington, northern Idaho, western Montana, central North and South Dakota all had less than half the normal amount of rain and many gauges recorded nothing for the period.

The western and northwestern drought area experienced a continual danger from forest fires. As many as 14 major fires were burning at once.

The average temperature for the summer season was widely diversified but warmer than normal areas were somewhat more predominant. The Northeast and North Central States were above normal with highest departures being 3 to 4° in New England and around Lake Michigan. Other areas that averaged warmer than normal for the season were the Gulf Coast, with maximum departures plus 2° from Mobile to New Orleans, and the mountain areas where the drought dominated and departures were 2 to 4° above normal. Great Falls, Mont., hit 105° on July 10 parching the already dry area. These same areas were above normal in each of the three summer months.

The distribution of precipitation during June was highly variable. West of a line from El Paso, Tex., to Sagaw, Mich., precipitation was below normal except for a portion of northern Wisconsin, northern Montana, the coasts of Oregon and Washington and much of New Mexico, eastern Arizona, western Colorado, southern Utah, and eastern Nevada. Albuquerque, N.M., received 1.37 in. rain, or 233% of normal. To the east, precipitation was above normal except along the Lower Mississippi River Valley and much of Mississippi and Alabama. Much of Florida also received below normal precipitation. The northern Appalachians and adjoining areas were also below normal. The Pacific Northwest drought continued. Lewiston, Idaho received 0.24 in., the driest June on record; Pendleton, Oreg., 0.15 in., the

second driest on record.

The month started clear and dry. During the first full week the western third of the Nation received virtually no precipitation. Thunderstorm activity brought 2.00 to 4.00 in. of rain to parts of the Corn Belt, the Deep South, and eastern Texas. Much of this activity was associated with a slow moving cold front which took almost a week to move across the eastern half of the Nation.

Rainfall was more general at midmonth with excessive amounts in Texas, Georgia and South Carolina. Charleston, S.C., received 11.30 in. of rain during the week ending the 17th, while Houston, Texas, received 9.95 in.

Heavy rains continued in many areas during the next week, associated mainly with thunderstorm activity. Virtually no rain fell in the West while south Texas and the Carolinas received 4.00 in. or more. On Monday, June 18, Quincy, Ill., received 5.26 in. of rain.

The month ended with dry conditions in the West and heavy rains in many portions of the eastern half of the Nation. The Mississippi River was bank-bound along its entire length for the first time since early March.

Except for an area over the Dakotas and Nebraska, temperatures for June averaged above normal for the northern two-thirds of the Nation. From Arizona westward, temperatures were below normal in the South except for southern portions of Mississippi, Alabama, and Florida. Most of Texas averaged 3 to 5° below normal.

Temperatures during the month were highly variable. The month began on the cool side, but quickly turned warm as a large High over the Southeast brought unseasonably warm temperatures to much of the Nation. Only Texas and adjoining States remained below normal.

At midmonth temperatures continued above normal east of a line from Louisiana to Montana, while temperatures were below normal over the Western States.

A slow moving cold front during the week ending June 24 brought cooler temperatures to much of the Nation except for the Western States and much of New England. As the month ended this cold air mass continued to keep the eastern half of the Nation cool, but temperatures were above normal from the Rockies westward.

During July, precipitation was generally above normal from the Rockies to the Appalachians, with virtually no precipitation to the West and generally below normal precipitation along the eastern seaboard. Actual totals ranged from nothing over much of the western third to over 8.00 in. in parts of Iowa, Missouri, and Kansas. Some records included 5.16 in. at Alpena, Mich., wettest July ever; Fort Worth, Texas, wettest ever with 11.13 in.; and, Lewiston, Idaho 0.01 in., the driest since 1953. The first week of July was on the dry side, but heavy thunderstorms in some areas produced heavy rains and violent weather. On the 2nd, 16 tornadoes struck South Dakota, Minnesota and Nebraska. Hailstones 1 in. in diameter and winds up to 100 mph also struck Nebraska. The heaviest rains of the month came at midmonth. Along the Kansas-Nebraska border 6.00 in. or more fell, with an area stretching from Wyoming to the Appalachians receiving 2.00 in. or more. This heavy moisture was triggered by thunderstorm activity along a cold front extending from a Low located over the Hudson Bay. Thunderstorm activity continued to be the major source of rainfall as the month ended. Scattered but intense thundershowers struck from the Rockies to the East Coast. Heavy rains struck Appalachia and the Deep South on the 26th. Millington, Tenn., received 2.01 in. in an hour; Chattanooga had 1.99 in. of rain;

while Macomb, Miss., got 1.44 in. The Pacific Northwest continued to be very dry.

Temperatures over the Nation as a whole were about normal in July, with cooler than normal conditions in the Nations midsection and above normal temperatures to the east and to the west. The month began with a traditionally hot week of the 4th. Independence Day itself was hot and clear in most parts of the Nation except where thunderstorm activity occurred locally: Rapid City, S.D., 110°; Valentine, Neb., 104°; and Denver, Colo., 103°; a record for July. Temperatures for the week averaged 3 to 6° above normal over much of the Nation. The remainder of the month was generally below normal over the Rockies and Great Plains, with above normal temperatures confined to the western part of the Country. Several record highs and lows were recorded as large variations in temperature occurred. On July 10, the Atlantic City airport recorded a record 92°, and Great Falls, Mont., hit 105°. Just two days later record lows were observed in these same areas as a large High brought cool air to the Nation's midsection. Record lows on the 13th included Bradford, Pa., 33°, Baltimore, Md., 54°, El Paso, Tex., 61° and Cleveland, Ohio, 48°.

July rainfall was below normal except for a few scattered areas. Notable areas above normal included: New England, the Ohio River Valley, the Southeastern seaboard and Florida, southern Texas, Minnesota, and Wisconsin and a narrow area extending from Oklahoma, through Utah and Nevada. Rainfall amounts in the last area, however, were generally small. While Winnemucca, Nev., received 250% of normal, that amounts to only 0.50 in. of rain. Duluth, Minn., received 8.46 in. of rain, 224 % of normal and the second greatest on record. Record low totals included: 0.75 in. at Lincoln, Neb.; 0.09 in. at Scottsbluff, Neb., and trace at Phoenix, Ariz.

August began with most heavy precipitation in New England and along the Atlantic Coast, although some scattered thunderstorms occurred over the rest of the Nation. The Passaic River brought death and destruction when it reached record heights.

A slow moving front brought thundershowers to the Nation's eastern half during the week ending the 12th. One storm dumped 2.10 in. of rain at Randolph, Iowa, in 45 minutes; another, 2.81 in. at Baileyville, Kans., in 1 1/2 hours.

At midmonth, the western half was dry, with thunderstorm activity in the East. During the last decade of the month, the weather was dominated by a massive High located over the southeast. Rainfall was spotty during the week of the 20th; the Gulf States, the southern Great Plains and Texas received no rain. Rainfall was associated with thunderstorm activity: Peterson, Iowa, had 9.45 in. on the 22nd, 8:00 in. of it in 6 hours, Sheldon measured 6.31 in. Shower activity was heavy at month's end along a slow moving cold front located over the Dakota and Wyoming.

Temperatures in August across the Nation mostly averaged above normal, but below normal temperatures occurred in the south central and southeastern States, and along the Pacific coast.

Average temperatures varied greatly. August began with subnormal temperatures except along the coasts and the Pacific Northwest, but ended with an intense heat wave which roasted areas from the Rockies to the Atlantic.

The month began with a large Canadian high bringing cool, dry air southward to the Gulf, setting many record lows: Omaha, Neb., 53° on 2nd; Fort Smith, Ark., 57° on the 3rd. As the

High moved eastward, temperatures warmed markedly, but a second cold air mass kept temperatures below normal over the Rockies and Plains States for the 3rd consecutive week. Temperatures averaged 3 to 6° below normal in much of this area, while from the Mississippi eastward and over the western mountains they were 3 to 6° above normal.

The midmonth temperature pattern reversed itself except over the western mountains, the Atlantic Coast, and New England.

The Plains continued above normal through the rest of August; temperatures averaged from 6 to 16° above normal across the northern Plains.

FALL: The Atlantic Seaboard and the Southwest were generally below normal during the fall months, while the remainder of the Nation received above normal precipitation. The drought in the Pacific Northwest finally broke as good rains began to fall there. However, a drought situation began to develop in the Desert Southwest.

Temperatures over the eastern half of the Nation averaged warmer than normal during the fall months, but below normal over the western half.

September precipitation was considerably above normal over most of the Plains States with rainfall amounts generally normal to below normal over the eastern third of the Nation. Much of the above normal precipitation, particularly in the southern Plains, was associated with tropical storm Delia.

Tropical storm Delia came ashore near Galveston, Texas on the 3d, meandered in the area for several days and finally moved northward up through Missouri and Iowa before breaking up. By the time the storm had cleared away, over 10.00 in. had fallen in the Port Arthur, Texas area.

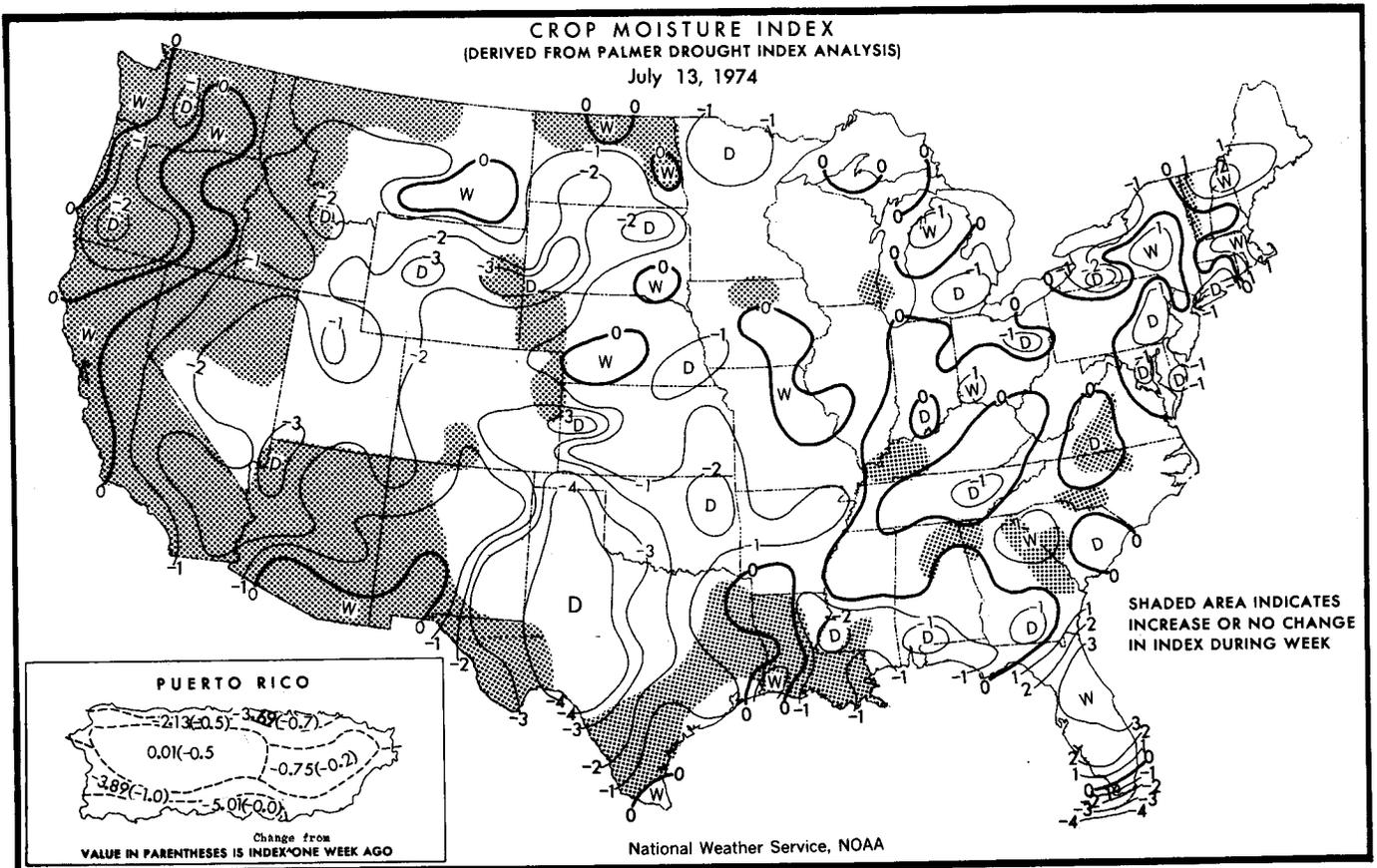
Temperatures averaged cooler than normal during September in the western half of the Nation, but were warmer than normal in the eastern half. The greatest departures in the West occurred over the Rocky Mountains and the western Plains. Goodland and Concordia, Kans., and North Platte, Nebr., all averaged 6° below normal. In the East, the greatest departures occurred down through the Ohio River Valley, western Kentucky, and Tennessee and southeastward through Georgia to the Atlantic and Gulf Coasts.

Precipitation during October was mostly above normal over the Central States and the Pacific Northwest. Large areas in the Corn Belt and in east Texas and Arkansas received twice the normal rainfall for October. Some Texas totals included Waco with 9.36 in., a new record, Houston with 9.31 in., the greatest since 1951, and Corpus Christi with 9.95 in., the 2nd greatest on record.

Areas receiving less than normal precipitation included the Atlantic States, the extreme Northern Plains, and most of the Southwest. It was the driest October in over ten years in the Southwest. Lakeland, Fla., recorded 0.11 in., the least on record. Cape Hatteras, N.C., received 1.34 in., the driest since 1941.

Most of October's precipitation fell during the first 2 weeks. Torrential rains during October 8 to 14 drenched a strip stretching from Texas to Minnesota with 2.00 to 6.00 in.

October temperatures averaged near or slightly above normal over the entire Nation. Most of the Corn Belt and lower Mississippi River Valley averaged 3° above normal. The upper Great Lakes and northern Great Plains were also unusually warm. International Falls, Minn., averaged 47.7°, the warmest October since 1953; Rochester, Minn., 53.9°.



**SHADED AREAS:** Index increased or did not change last week

**UNSHADED AREAS:** Index decreased last week

Index

Above	3.0 Excessively wet, some fields flooded
2.0 to	3.0 Too wet, some standing water
1.0 to	2.0 Prospects good, some fields too wet
0 to	1.0 Moisture adequate for present normal needs
0 to	-1.0 Prospects improved, but rain still needed
-1.0 to	-2.0 Some improvement, but still too dry
-2.0 to	-3.0 Drought eased, but still serious
Below	-4.0 Not enough rain, still extremely dry

Index

Above	3.0 Some drying, but still excessively wet
2.0 to	3.0 More drying weather needed, work delayed
1.0 to	2.0 Favorable, except still too wet in spots
0 to	1.0 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 near ruin

The map gives a general picture of how wet or dry the Nation was last week. It shows areas where abnormal wetness or dryness have hindered crops and areas where moisture conditions have favored them.

The lines show the crop-moisture situation according to an index computed from values of temperature and precipitation by areas...350 climatological divisions, which correspond roughly to SRS's crop reporting districts. Previous weekly computations of soil moisture account for the effects of prior weather.

Shaded areas are those where precipitation increased the index last week or where soils did not dry. Unshaded areas dried last week.

The centers of wet or dry areas are marked: W=wet; D=dry. The map lines mark off crop situations. Use the legend to interpret.

Local variations caused by isolated rain or by soil differences are not shown. While shallow rooted crops in poor soils may suffer more than the map shows, conditions may be better where soils are good. Also, legends apply to growing rather than mature plants. Any map interpretation must consider both the growth stage and moisture status and trend. In irrigated regions, the index values reflect only departures from ordinary irrigation requirements.



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the warmest since 1963; Marquette, Mich., averaged 53.4°, the 4th warmest in the past 40 years.

Warmer than normal temperatures were persistent throughout most of the month in most areas. The month began with below normal temperatures restricted to the Pacific Northwest, California, and Nevada, and parts of Arizona, New Mexico, Kansas, and Nebraska. The Pacific Northwest averaged 6 to 9° below normal for the first week. The pattern generally persisted during the second week of October, but the extremes were intensified. West of the Continental Divide, temperatures were generally 3 to 6° below normal, while to the east temperatures were far above normal. Most of the Corn Belt and the Deep South averaged 6 to 12° above normal.

The month of November was extremely variable for both temperature and precipitation. The entire east coast was well below normal in precipitation. Virtually no rain fell over most of Texas and New Mexico. Meanwhile, much of the South, the Ohio River Valley, Arizona, and the entire Pacific Northwest received over twice the normal rainfall. Over 8.00 in. fell in Arkansas, western Tennessee and Kentucky, and southern Missouri. From 2.00 to 8.00 in. fell in the Pacific Northwest, helping to alleviate and break the drought there. Kalispell, Mont., received 2.80 in., the wettest November since 1909; 4.13 in. at Walla Walla, Wash., was the 2nd greatest on record. Other records in the area included Salem, Oreg., 15.33 in.; Eugene, Oreg., 24.09 in.; Eureka, Calif., 16.58 in.; Oakland, Calif., 7.42 in.; and, San Francisco, Calif., 7.80 in.

Much of New England was the driest in many years. Concord, N.H., measured 1.82 in., the driest since 1952; Boston, Mass., 1.74 in.

Temperaturewise, November began much colder than usual, ended unusually warm, and experienced very marked variations in between times. Overall, the Nation was generally warmer than normal except for the northern Rockies and Great Plains, California, and parts of New England and Florida. Glasgow, Mont., and Williston, N.Dak., averaged 21.3° and 20.2°, respectively, the coldest November since 1955 at both locations. It was the warmest November on record along the Texas-Louisianac coast. New records included the following: Corpus Christi, Texas 72.9°; Galveston, 70.4°; New Orleans, La., 66.6°; Mobile, Ala., 65.3°; and, Tallahassee, Fla., 63.8°.

Total precipitation during December was highly variable, ranging from over 20.00 in. along the Washington-Oregon Coast to none in much of Arizona, New Mexico and Texas. Many new precipi-

tation records were established: Caribou, Maine, 7.97 in.; Pendleton, Oreg., 4.68 in.; Glasgow, Mont., 0.78 in.

Precipitation during the first decade was light to moderate in most areas except from Iowa to the Gulf and along the Atlantic Seaboard where 2.00 in. or more fell. A large Low developed on the 3d, bringing severe weather to most of the Nation's midsection. Snow and sleet, driven by high winds blanketed the Central Plains. To the east, 84 mph winds were measured at Carbondale, Ill. Most of the heavy rain along the coast was associated with a large storm which moved northward as the decade ended. Heavy rain fell from the Carolinas to New England, with snow over the Appalachians.

The eastern and western thirds of the Nation averaged warmer than normal in December, while the central third was below normal, particularly over the Northern Plains and western Corn Belt. It was one of the warmest Decembers on record in parts of New England, the Carolinas, and the Northwest. Caribou, Maine averaged 23.9°, the warmest on record. Wilmington, N.C., averaged 55°, which is the 2nd warmest on record.

The first decade was much warmer than usual in the East and Northwest. Temperatures averaged 6° or more above normal northeast of a line from Wilmington, N.C., to Chicago, Ill. Burlington, Vt., was 14° above normal during this period. Record highs were experienced in many eastern cities on several days during this period as a large High off the Atlantic Coast pushed warm air northward.

During the second decade the cold hand of winter took hold over the Nation except in the West and parts of New England. The freeze line dropped well into Texas and Florida during the period as two distinct cold waves affected the areas. Initially, two Lows over the Great Lakes and eastern Canada teamed up to push cold air to the Gulf. These storms were replaced by a massive High which extended from Canada into Mexico, bringing frigid Artic air southward. Early morning lows on the 20th included 27° at Mobile, Ala., 28° at Lake Charles, La. The next morning Corpus Christi, Texas reached a record breaking 18°, the coldest December temperature ever recorded there.

Temperatures warmed markedly during the final decade of December, and the year ended with much warmer than usual weather across the Country except for the Central and Northern Plains. December favored the heating fuel situation as the most heavily populated areas averaged much above normal most of the month.