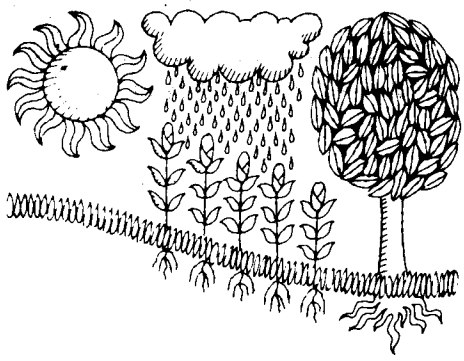

WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE
Environmental Data Service, NOAA

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Statistical Reporting Service

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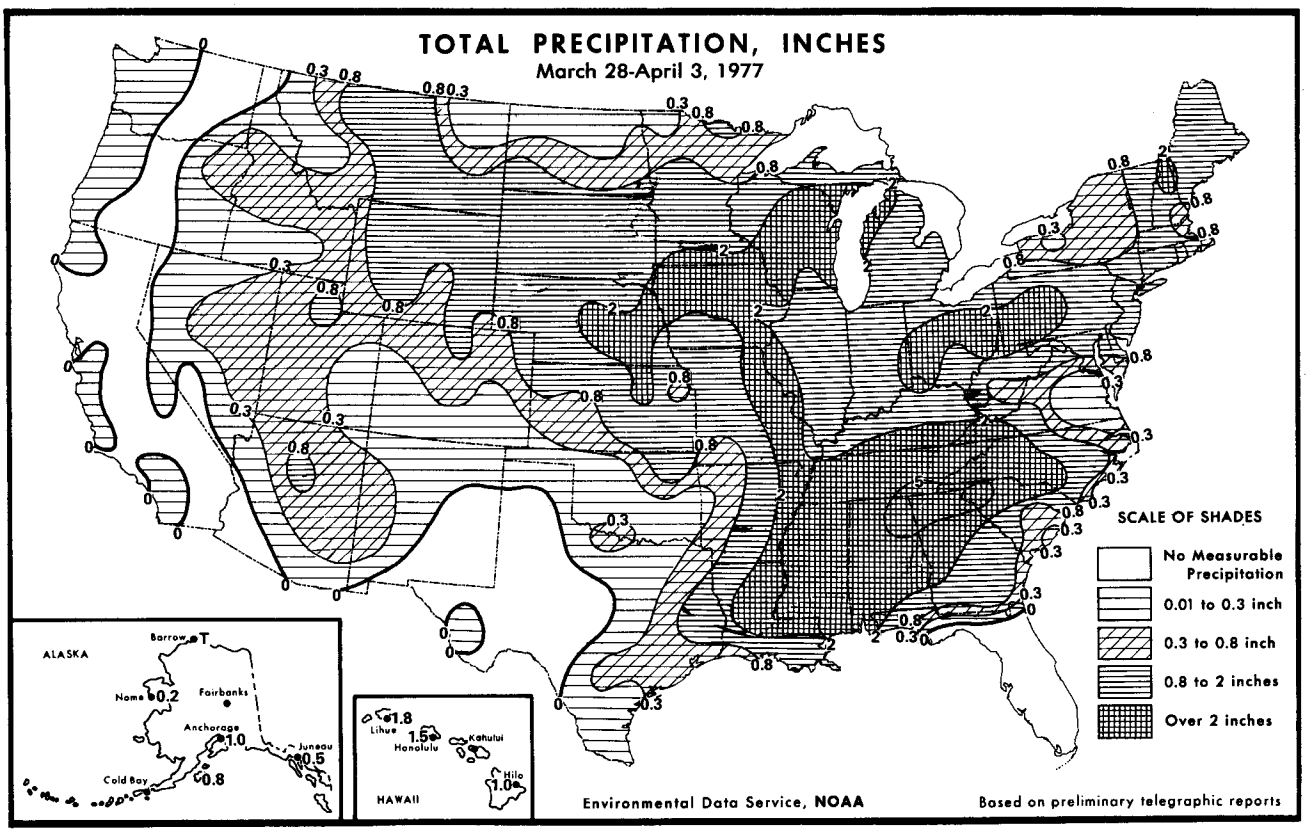


National Weather Summary

For the Week of March 28-April 3

HIGHLIGHTS: Tornadoes caused injury and damage in areas between the Mississippi River and the Atlantic Coast States. Flooding occurred in South Carolina and Alabama. Temperatures were below normal from the Rockies to the eastern Great Plains. The eastern half of the Nation recorded above normal temperatures Precipitation was generally above 0.50 in. except in Florida, western Texas and Oklahoma, southwestern Kansas and west of the Rockies. Snow fell from the Rockies eastward to the Great Plains.

A complex system of low pressure centers was located over Colorado and Kansas early Monday which then consolidated across central Nebraska and moved northeastward.

Significant amounts of snow fell in much of the Rocky Mountain area, and extended into the western Plains northward. Rain and thunderstorms, heavy at times, reached from eastern Oklahoma to the northern Mississippi Valley; locally heavy thunderstorms were scattered from northern Illinois eastward into the lower Great Lakes region.

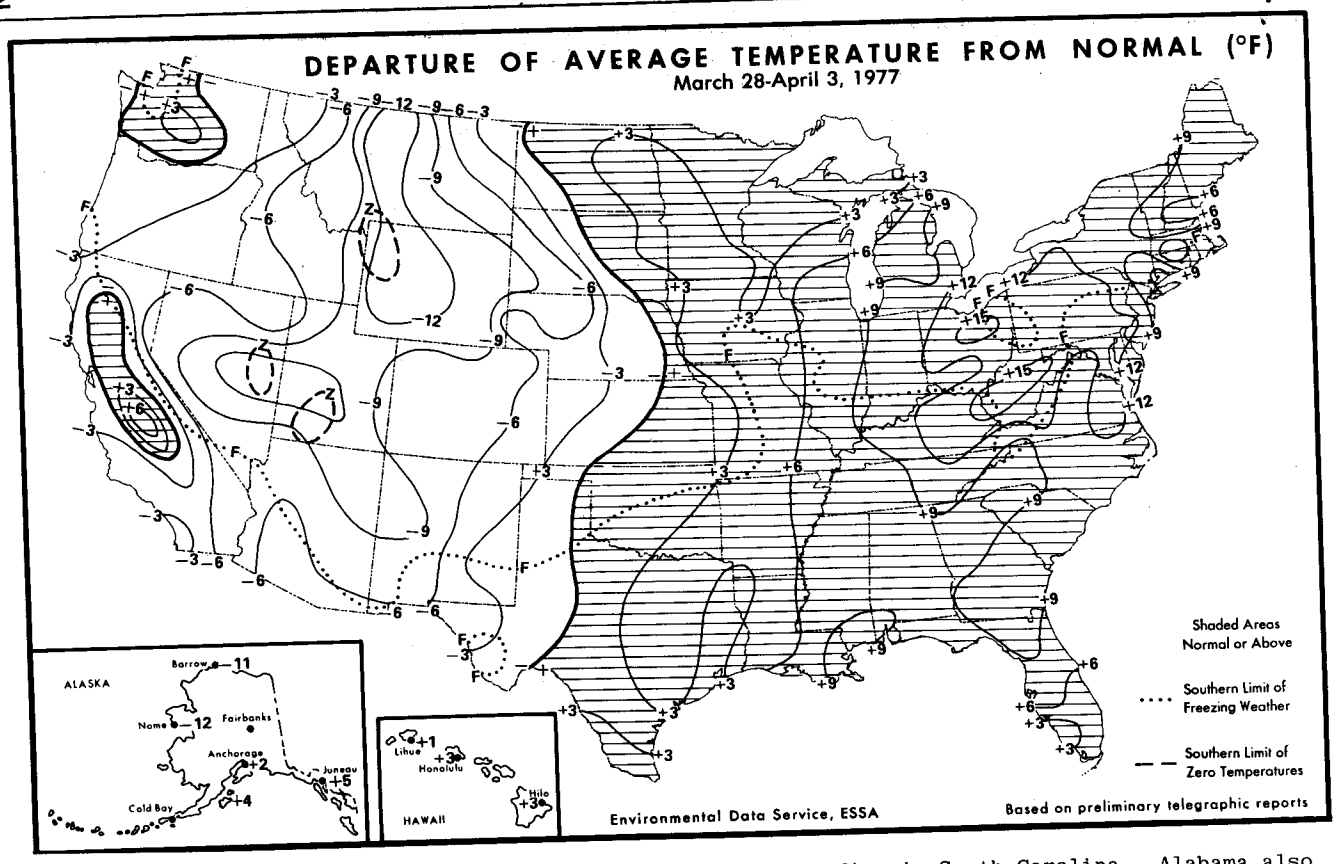
Tornadoes touched down in Illinois and Iowa, and along with thunderstorms, ripped through the lower Mississippi Valley eastward into Alabama.

Rain spread to the North Atlantic Coast States as warm weather continued in the East.

Winter weather continued Tuesday from the northern Rocky Mountains eastward; 6 in. of snow fell in Havre, Mont., and high winds buffeted northeast Wyoming.

Snowfall lessened in the southern Plateau region after 2 ft. forced closing of a portion of Route 66.

Heavy thunderstorms stretched from Louisiana to the Carolinas closing highways in central Alabama. By evening, 3 to 6 in. of rain had fallen in northern Georgia.



Unseasonably warm air held over the eastern half of the U.S. The 70's and 80's prevailed from the lower half of the Mississippi Valley northeastward.

Winter held its icy grip on the northern Great Plains and extreme upper Midwest Wednesday morning, but the intensity diminished by early afternoon. Some areas reported deep snow and wind gusts exceeded 50 mph in the central Great Plains.

Nighttime showers and thunderstorms, some severe, in the lower sections of the Mississippi and Ohio Valleys spread from the southern and central Appalachians eastward by morning. Tornadoes moved across the South, causing injury and property damage. Alabama reported six twisters and golf-ball-size hail.

Heavy thunderstorms hit the lower Great Lakes region, and a tornado touched down in Muskegon, Mich. Late Wednesday, scattered showers dotted central California eastward.

Wednesday's unsettled weather spilled into Thursday morning as thunderstorms ranged from Texas through the South and into New England.

From Mississippi to North Carolina, moderate flooding and overflow occurred; South Carolina experienced the worst of this. A slow-moving cold front triggered additional precipitation across the Gulf Coast Region into the southern Atlantic Coast States.

Early morning frost returned to the Central Plains and the lower Missouri Valley.

Thunderstorms hit south central New York State and light rain dotted the northern Atlantic Coast States at day's end. Strong winds whipped across eastern Colorado accompanied by isolated showers in the western Great Plains.

Rain and snow were scattered over the Pacific Northwest, the northern Rockies and northern California.

Precipitation continued along the Gulf Coast on Friday, and extended northward bringing additional flooding in South Carolina. Alabama also experienced some overflow.

Rainshowers tracked from a low center in Colorado eastward contributing to some minor flooding in southwestern Illinois and southwestern Indiana.

Scattered light precipitation from the Pacific Northwest to the Great Basin increased to heavier snow in northwestern Colorado by evening.

Fair weather prevailed over the Atlantic Coast States, although showers crept into the southern and central Appalachians at nightfall.

A large storm center in north central Kansas brought a new mass of cold air early Saturday. Thundershowers and hail were reported.

Locally heavy thunderstorms and tornadoes plagued the middle Mississippi Valley, and moved into the lower Great Lakes region and the Ohio Valley. Tornado damage was considerable in southern Wisconsin, Michigan and Ohio. Twisters also touched down in Mississippi, Illinois and Kentucky.

The northern half of the Atlantic Coast States and the lower Tennessee Valley received rain.

Heavy snows hit the central and southern Rockies; up to one foot fell northwest of Denver.

Rain and thundershowers occurred from New England to northern Georgia.

Snow, at times heavy, covered an area from the Rockies to the southern Plateau and upper half of the western Plains. Temperatures ranging from the teens to below zero gripped the northern and central Rockies and extended into the central Plateau Sunday morning.

The central Great Plains were hit by a snow-producing low from New Mexico that moved northeastward into southern Minnesota and Wisconsin by night.

Showers and thundershowers were scattered from the lower Mississippi Valley to the Carolinas. Fair weather dominated New England southward later in the day, and the Pacific Coast States as well.

National Agricultural Summary

For The Week of March 28 - April 3

HIGHLIGHT: Rains idled some farmers by making fields too wet for plowing and planting. Topsoil moisture supplies were rated adequate throughout most of the United States east of the Rocky Mountains except some areas in Florida, Kentucky, Illinois, Oklahoma and Texas. Subsoil moisture was short in the west North Central States. The mountain and Pacific Coast States were mostly dry although some late snow storms alleviated the immediate topsoil moisture shortage. Plowing ranged from 5% complete in South Dakota to 78% in Illinois, generally lagging behind the 1976 rate, but ahead of the usual progress at this time. Corn planting extended into Virginia and Missouri. Pasture conditions improved in areas with adequate soil moisture, but the western States had low moisture and poor pastures.

SMALL GRAINS: High temperatures greened the winter wheat crop in the northern Great Plains States, but low soil moisture held growth in check. The crop was heading in the extreme southern States including Arizona, Texas and Florida. The winter wheat crop in most of the Great Plains States needs more precipitation even though the crop improved from the previous week.

Kansas winter wheat conditions improved slightly, though soil was dry. Wind damage was mostly slight to none. Insects started multiplying, but numbers were small so far. Oklahoma wheat also improved following rains, but dry topsoils persist in most of the major wheat areas. Mites, greenbugs and weeds presented some problems. About half the wheat acreage was jointing, which is average for the date. Wheat fields on the Texas northern High Plains needed moisture, but responded to high temperatures. Other Texas wheat grew very well. A few High Plains fields reached the joint stage. Early fields on the Low Plains advanced to the boot stage; elsewhere the crop began heading. In New Mexico, dryland wheat was fair and irrigated wheat was good. Colorado winter wheat rated poor because of the short soil moisture supply.

The Wyoming crop broke dormancy. Wind caused some isolated light to moderate damage. The Montana crop was green, but did not grow because of low topsoil moisture. Both wind damage and winter kill were light. In California, dryland grain was stunted. Irrigated fields were normal. Oregon farmers fertilized and sprayed fall grains.

Spring small grain seeding lagged last year in some States, but ranged from 83% complete in Missouri to only beginning in North Dakota and Minnesota. Last year, at this time, farmers planted 30% of the South Dakota spring wheat crop; this year only 2% was sown.

OTHER CROPS: Corn planting in the United States advanced northward into Virginia, Kentucky, Missouri, and Kansas. Cold, wet weather slowed corn planting in Oklahoma. Corn planting was complete in Florida, and early fields emerged in Alabama. Mississippi growers planted 20% of the crop compared with 17% last year. Louisiana growers planted 37%, ahead of last year's 30%. Texas corn growers planted in the south central, east and northern High Plains. Planting rached 22% lagging the 31% in 1976 and 44% average.

Farmers planted cotton in California, Arizona, Texas and Georgia. Texas producers planted very slowly with only 4% of the crop planted, far behind the 11% for 1976 and the average. Early fields grew well in the south, but cut worms appeared. A few cotton fields were planted in the southern High Plains, but most growers waited for higher soil temperatures. Rains slowed planting in Arizona, and recent low temperatures slowed germination of later cotton plantings. Earlier fields have good stands.

Producers planted sorghum in Texas and Arkansas. Texas growers made good progress reaching 43% planted compared with 45% in 1976 and 38% average. Early planted fields germinated to good stands through the northern Blacklands. Greenbugs infested some fields.

Tobacco transplanting advanced into North Carolina. Plant beds were in good condition, however, plants were small. In Kentucky, tobacco growers seeded 81% of the plant beds, the same as 1976. About 10% of the beds germinated compared with 27% last year. Tennessee growers seeded 95% of the plant beds.

FRUITS AND NUTS: Peach trees bloomed in Oregon and New Jersey. Growers in several East Central States expect heavy peach losses, but not much apple damage from last winter's very low temperatures. Virginia orchard growers pruned and sprayed trees. Georgia peaches were in fair to good condition and apples were in good condition. In Florida, citrus tree conditions varied depending on irrigation. The open bloom period ended, but some groves have a few flowers. Dryness slowed new growth. Arizona and Texas growers harvested some citrus. California fruit and nut trees were in the bloom stage or beyond. Desert grapefruit and lemon harvest continued. Quality of larger sized Navel oranges dropped and harvest was past the peak. Valencia harvest began on a limited scale.

VEGETABLES: Florida vegetable shipments advanced 7%. Leading the increase were snap beans, cucumbers, peppers, squash and eggplant. Other crops which showed increased movement included chinese cabbage, celery, okra, sweet corn, cabbage, greens and radishes. Supplies of carrots, escarole-endive, strawberries, potatoes and lettuce were steady. Tomato shipments were light. The first watermelons are expected in late April. Texas onion harvest began as cabbage, carrot, lettuce and spinach harvests continued. Texas growers planted melons, transplanted tomatoes, bedded sweetpotatoes, set onions and planted potatoes. California growers harvested artichokes, asparagus, broccoli, cauliflower, carrots, celery, lettuce, spinach and strawberries. Farmers planted tomatoes, melons, sweet corn and onions, and irrigated some with available water supplies.

PASTURE AND LIVESTOCK: Pastures improved in most areas east of the Rocky Mountains. The exceptions included Florida, some areas of Texas and several of the western North Central States. Ranges in the western States were poor because of the dry conditions and, in some areas, were dormant because of low temperatures. California rangeland was in poor condition; showers aided grass growth initially, but strong north winds were detrimental. Livestock were in fair to good condition in areas with adequate soil moisture for pasture growth.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., April 3, 1977

States and Stations	Temperature °F Average	Temperature °F Departure	Precipitation Inches Total	Precipitation Inches Departure
ALA.Birmingham. . .	66	+ 8	4.7	+3.4
Mobile.	72	+ 9	2.8	+1.2
Montgomery. . . .	69	+ 8	2.5	+1.2
ALASKA.Anchorage. .	31	+ 2	1.0	+ .9
Barrow.	-21	-11	T	- .1
Fairbanks	--	---	---	----
Juneau.	40	+ 5	.5	- .2
Kodiak.	38	+ 4	.8	0
Nome.	0	-12	.2	0
ARIZ.Flagstaff. . .	31	- 7	1.4	+1.0
Phoenix	58	- 5	.1	0
Tucson.	55	- 6	.3	+ .2
Winslow	40	- 9	.5	+ .4
Yuma.	59	- 8	T	0
ARK.Fort Smith. . .	60	+ 4	.2	- .7
Little Rock . . .	61	+ 5	1.0	- .2
CALIF.Bakersfield .	55	- 4	0	- .2
Eureka.	46	- 3	T	- .9
Fresno.	63	+ 6	T	- .4
Los Angeles . . .	56	- 4	0	- .4
Red Bluff	58	+ 2	0	- .5
San Diego	57	- 2	T	- .3
San Francisco . .	52	- 2	0	- .5
Stockton	56	+ 1	T	- .4
COLO.Denver	36	- 6	.4	0
Grand Junction. .	38	- 8	.2	0
Pueblo.	38	- 7	T	- .2
CONN.Bridgeport . .	48	+ 5	1.3	+ .5
Hartford.	54	+12	1.1	+ .2
D.C.Washington. . .	62	+11	.6	- .1
FLA.Apalachicola. .	71	+ 7	0	-1.0
Daytona Beach . .	75	+ 8	0	- .7
Ft. Myers	73	+ 2	0	- .6
Jacksonville. . .	74	+ 9	0	- .8
Key West.	80	+ 4	0	- .4
Lakeland.	76	+ 7	0	- .8
Miami	77	+ 4	0	- .6
Orlando	75	+ 6	0	- .7
Tallahassee . . .	73	+ 9	0	-1.2
Tampa	76	+ 7	0	- .7
W.Palm Beach. . .	76	+ 4	T	- .8
GA.Atlanta.	64	+ 8	2.2	+ .9
Augusta	69	+10	.9	0
Macon	70	+ 9	1.4	+ .4
Savannah.	72	+10	.4	- .5
HAWAII.Hilo	75	+ 3	1.0	-2.0
Honolulu.	76	+ 3	1.5	+ .9
Kahului	--	---	---	----
Lihue	73	+ 1	1.8	+ .9
IDAHO.Boise	39	- 6	.3	+ .1
Lewiston.	43	- 3	.5	+ .3
Pocatello	32	- 8	.2	0
ILL.Cairo	61	+ 7	.8	- .3
Chicago	51	+ 8	1.8	+1.0
Moline.	48	+ 5	1.8	+1.0
Peoria.	51	+ 7	1.0	+ .1
Rockford.	48	+ 7	1.8	+1.0
Springfield . . .	54	+ 8	1.7	+ .9
IND.Evansville. . .	60	+10	1.1	+ .1
Ft. Wayne	54	+11	1.2	+ .4
Indianapolis. . .	56	+10	1.3	+ .4
South Bend. . . .	53	+11	2.0	+1.2
IOWA.Burlington . .	48	+ 4	2.2	+1.4
Des Moines. . . .	47	+ 5	1.9	+1.3
Dubuque	46	+ 6	2.3	+1.4
Sioux City. . . .	42	+ 1	2.3	+1.9
KANS.Concordia. . .	44	- 2	.5	+ .1
Dodge City. . . .	47	0	.5	+ .2
Goodland.	37	- 5	.8	+ .5
Topeka.	49	+ 2	.8	+ .1
Wichita	50	0	1.4	+ .8
KY.Lexington. . . .	62	+13	.8	- .2
Louisville. . . .	62	+12	1.0	- .1
La.Baton Rouge. . .	70	+ 6	2.0	+ .8
Lake Charles. . .	69	+ 5	.8	- .1
New Orleans . . .	74	+10	1.0	- .1
Shreveport. . . .	64	+ 2	1.0	- .1
MAINE.Caribou . . .	38	+ 8	1.1	+ .7
Portland.	44	+ 7	1.3	+ .5
MD.Baltimore. . . .	60	+12	1.2	+ .4
MASS.Boston	54	+11	.5	- .4
Chatham	46	---	1.1	----
MICH.Alpena	42	+ 9	1.1	+ .6
Detroit	53	+12	1.1	+ .4
Flint	45	+ 6	1.6	+1.0
Grand Rapids. . .	49	+ 9	1.9	+1.2
Houghton Lake . .	41	+ 7	1.8	-1.3
Lansing	49	+ 9	1.1	+ .5
Marquette	35	+ 1	1.6	+1.1
Muskegon.	46	+ 7	1.5	+ .8
S. Ste. Marie . .	33	+ 2	1.7	+1.3
MINN.Duluth	32	+ 1	.7	+ .2
Internatl Falls .	30	0	.9	+ .6
Minneapolis . . .	39	+ 2	1.0	+ .6
Rochester	40	+ 4	1.8	+1.3
St. Cloud	37	+ 3	.9	+ .5
MISS.Jackson. . . .	68	+ 7	2.8	+1.6
Meridian.	68	+ 7	4.6	+3.2
MO.Columbia	51	+ 3	2.0	+1.3
Kansas City . . .	48	0	.9	+ .2
St. Louis	56	+ 6	2.6	+1.8
Springfield . . .	53	+ 3	.4	- .4
MONT.Billings . . .	29	- 9	1.1	+ .8
Glasgow	31	- 3	.1	0
Great Falls . . .	23	-13	1.5	+1.2
Havre	20	-14	1.9	+1.7
Helena.	29	- 7	.2	0
Kalispell	35	- 1	.3	+ .1
Miles City. . . .	30	- 7	.8	+ .6
Missoula.	32	- 6	.1	- .1
NEBR.Grand Island .	42	0	3.8	+3.4
Lincoln	43	- 1	2.0	+1.5
Norfolk	41	+ 1	1.8	+1.4
N.Platte.	36	- 4	1.5	+1.2
Omaha	46	+ 4	1.7	+1.2
Valentine	31	- 7	1.1	+ .8
NEV.Ely	23	-14	.4	+ .2
Las Vegas	51	- 8	T	- .1
Reno.	35	- 8	T	- .1
Winnemucca. . . .	33	- 8	.1	0
N.H.Concord	43	+ 5	.7	+ .1
N.J.Atlantic City .	55	+ 9	1.0	+ .1
Trenton	58	+11	1.0	+ .2
N.MEX.Albuquerque .	41	- 9	.3	+ .2
Roswell	54	0	0	- .1
N.Y.Albany.	49	+ 9	.6	0
Binghamton. . . .	48	+10	.8	+ .1
Buffalo	50	+12	.6	- .1
New York.	54	+ 8	.9	0
Rochester	51	+12	.3	- .3
Syracuse.	49	+ 9	.4	- .3
N.C.Asheville . . .	59	+ 8	3.4	+2.4
Charlotte	63	+ 7	4.8	+3.9
Greensboro. . . .	63	+10	.9	+ .1
Hatteras.	65	+11	.4	- .4
Raleigh	64	+10	1.1	+ .3
Wilmington. . . .	68	+ 9	.2	- .6
N.DAK.Bismarck. . .	35	+ 1	.6	+ .4
Fargo	37	+ 4	.8	+ .5
Williston	33	0	.2	0
OHIO.Akron-Canton .	58	+16	2.3	+1.5
Cincinnati. . . .	58	+10	2.1	+1.2
Cleveland	55	+13	1.7	+ .9
Columbus	57	+12	1.8	+1.0
Dayton.	59	+14	3.3	+2.5
Toledo.	54	+12	1.1	+ .5
Youngstown. . . .	55	+13	1.9	+1.1
OKLA.Okla. City . .	56	+ 2	T	- .6
Tulsa	56	+ 2	.8	0
OREG.Astoria. . . .	46	0	.2	-1.1
Burns	35	- 5	T	- .2
Medford	44	- 3	T	- .3
Pendleton	46	- 1	.1	- .1
Portland.	47	- 1	.2	- .5
Salem	46	- 1	.1	- .7
PA.Allentown. . . .	54	+10	1.3	+ .5
Erie.	51	+12	1.3	+ .6
Harrisburg. . . .	51	+14	1.4	+ .7
Philadelphia. . .	60	+13	.9	+ .1
Pittsburgh. . . .	56	+12	2.2	+1.4
Scranton.	54	+12	1.4	+ .8
R.I. Providence . .	53	+11	1.0	+ .1
S.C. Charleston . .	71	+11	.2	- .7
Columbia.	70	+11	.5	- .5
Greenville. . . .	63	+ 7	5.0	+3.8
S.D. Aberdeen . . .	38	+ 2	.9	+ .6
Huron	40	+ 3	1.9	+1.6
Rapid City. . . .	29	- 8	1.5	+1.1
Sioux Falls . . .	40	+ 2	1.1	+ .7
TENN.Chattanooga. .	64	+ 9	5.4	+4.2
Knoxville	65	+10	2.6	+1.6
Memphis	64	+ 7	2.7	+1.5
Nashville	62	+ 8	3.1	+2.0
TEX.Abilene	60	0	0	- .3
Amarillo.	49	- 2	T	- .2
Austin.	67	+ 3	.1	- .4
Beaumont.	70	+ 6	.5	- .2
Brownsville . . .	76	+ 5	.1	- .1
Corpus Christi. .	71	+ 2	.3	0
Dallas.	--	---	---	----
Del Rio	68	+ 1	T	- .2
El Paso	53	- 6	T	- .1
Fort Worth. . . .	63	+ 3	T	- .8
Galveston	67	+ 2	.4	- .2
Houston	68	+ 3	.4	- .2
Lubbock	54	0	T	- .2
Midland	57	- 2	0	- .1
San Angelo. . . .	62	0	0	- .3
San Antonio . . .	67	+ 2	.4	0
Victoria.	70	+ 4	.2	- .3
Waco.	65	+ 3	.1	- .6
Wichita Falls . .	60	+ 2	.3	- .2
UTAH.Blanding . . .	33	- 9	.1	- .1
Salt Lake City. .	35	- 9	.8	+ .3
VT.Burlington . . .	47	+11	.8	+ .3
VA.Lynchburg. . . .	62	+11	.2	- .5
Norfolk	65	+12	.2	- .5
Richmond.	66	+14	.1	- .6
Roanoke	63	+13	1.4	+ .7
WASH.Colville . . .	41	- 1	T	- .2
Omak.	43	- 1	0	- .2
Quillayute. . . .	42	- 1	.2	-2.0
Seattle-Tacoma. .	48	+ 2	T	- .7
Spokane	40	- 1	T	- .3
Walla Walla . . .	47	- 2	.2	- .1
Yakima.	48	+ 3	T	- .1
W.Va.Beckley. . . .	59	+13	.7	- .2
Charleston. . . .	65	+15	.5	- .4
Huntington. . . .	65	+15	1.0	+ .1
Parkersburg . . .	61	+12	.8	0
WIS.Green Bay . . .	40	+ 4	3.1	+2.6
La Crosse	42	+ 3	2.1	+1.5
Madison	45	+ 7	1.7	+1.1
Milwaukee	46	+ 8	2.0	+1.4
WYO.Casper.	24	-12	.6	+ .3
Cheyenne.	27	- 9	.4	+ .1
Lander.	22	-14	1.2	+ .8
Sheridan.	26	-11	1.5	+1.1
P.R.San Juan. . . .	77	+ 2	T	- .5

Based on 1941-70 normals

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State Summaries of Weather and Agriculture

These summaries provide brief descriptions of crop and weather conditions important on a national scale. More detailed data are available in Weather and Crop Bulletins published each Monday by SRS State offices in cooperation with the National Weather Service.

ALABAMA: Warm and wet. Abundant rainfall, flooding common. Temperatures 8° above normal.

Fieldwork: 1 to 2 days suitable. Small grains fair to good. Livestock and pastures poor to fair. Potatoes good condition. Early corn emerging, good stand. Few corn fields planted.

ARIZONA: From 0.50 to 1.50 in. moisture central, eastern mountains. Southern, western desert valleys less than 0.25 in. Temperatures 5 to 12° below normal.

Rain limited field activities. Recent cold weather slowed germination later cotton plantings. Earlier fields good stands. Small grains good progress, seed heads forming. Sugarbeets, spring harvest very good progress. Planting for fall harvest nearly complete. Lettuce harvest seasonal volume. Winter vegetable harvest virtually complete. Cantaloups, watermelons good progress. Grapefruit, valencia orange harvest seasonally active. Drought conditions prevail. Recent snow, rain helped but stock water, soil moisture critically short lower ranges. Water hauling necessary some desert ranges. Substantial rainfall needed all areas for summer feed. Cattle, calves mostly fair to good condition.

ARKANSAS: Warm and wet. Temperatures ranged 2 to 8° above normal. Extremes: 84 and 33°. Rain ranged from 6.20 to 0.86 in.

Fieldwork: 2 days suitable. Soil moisture mostly adequate to surplus. Some soybean acreage disked and fertilized. Considerable rice acreage ready to plant. Some fields already planted. Cotton land preparation made good progress; herbicides and fertilizer applied. Corn and sorghum seedbeds prepared with some fields already planted. Wheat fair to good condition. Pastures short to mostly adequate. Cattle generally in fair condition.

CALIFORNIA: Few scattered showers followed by clear skies with below normal temperatures. Average readings ranged from near or slightly below normal in the Central Valley to 8 to 10° below normal in the southern interior and some mountain locations.

Continued dry weather, drying north wind depleting soil moisture. Dryland grain stunted. Irrigated grain normal. Planting corn, cotton. All fruit and nut trees are bloom stage or past. Avocado, desert grapefruit and lemon harvest continues. Navel orange harvest past peak, quality dropping off in larger sizes. Valencia harvest begun on limited scale. Planting tomatoes, melons, sweet corn, onions. Harvesting artichokes, asparagus, broccoli, cauliflower, carrots, celery, lettuce, spinach, and strawberries. Some irrigating with available water. Rangeland grass in poor condition. Showers aided grass growth but strong north winds detrimental. Supplemental feeding continues. Stock water supplies below normal. Condition of cattle fair to poor.

COLORADO: Light snowfall and very windy conditions over eastern plains. Snowfall amounts of 12 to 24 in. over north central mountains and eastern foothills. Temperatures near seasonal normal over eastern plains. Central and western readings averaged 5 to 7° below normal.

Winter wheat condition poor. Soil moisture short. Spring seeding: Oats 32% 1977, 25% 1976, average 25%; spring barley 24% 1977, 25% 1976, average 21%; sugarbeets 16% 1977, 3% 1976, average 6%; summer potatoes 14% 1977, 8% 1976, average 6%. Range and pasture poor. Livestock fair to good condition.

FLORIDA: Warm and dry, temperatures averaging above normal. No significant rainfall.

Soil moisture short Peninsula, mostly adequate Panhandle. Corn planting about complete. Tobacco, peanut and cotton planting making good progress. Sugarcane harvest about complete. Young cane good condition. Small grains heading, yield outlook very good. Pasture grasses showing considerable browning high spots, some wilt low areas. Pastures poor to fair condition except western Panhandle where moisture still adequate for grass growth. Condition of cattle, calves quite varied, ranging from poor to good. Citrus tree condition varies depending on irrigation. Open bloom period over. Few groves still have few flowers. New growth slowed due to dryness. Vegetable shipments up 7%. Snap bean, cucumber, pepper, squash, eggplant harvest had sharp gains. Other crops with increased movement were chinese cabbage, celery, okra, sweet corn, cabbage, greens, radishes. Steady supplies carrots, escarole-endive, strawberries, potatoes, lettuce. Tomato shipments light. Watermelons making good growth, first supplies expected late April.

GEORGIA: Temperatures 8 to 11° above normal north and central, 5 to 8° above extreme south. Rainfall 29th and 30th averaged from 0.50 to 3.00 in. north, except more than 5.00 in. mountains and less than 0.10 in. extreme south.

Soil moisture excessive north, adequate south. Rains delayed land preparation and planting in north. Fieldwork: 3 days suitable. Pasture fertilization and liming continued northern areas. Tobacco condition much improved, mostly fair to good. Tobacco transplanting 26% complete, last year 65% average 39%; corn 36% planted, same as last year, 13% average. Corn condition fair to mostly good. Peaches fair to mostly good condition. Apples good condition. Wheat condition fair to mostly good. Pastures showing steady improvement, condition now rated fair to mostly good. Cattle fair to good; hogs in good condition.

HAWAII: Weather partly cloudy to cloudy. Rainfall increased.

Southerly winds responsible more rains leeward sections all islands. Beneficial to most crops and pastures but light damage to leafy crops Waianae Oahu. Vegetable supplies adequate. Banana, papaya supplies light, declining seasonally. Sugar mills grinding. Pineapple harvesting light. Rains beneficial to pastures.

IDAHO: Rainfall to end of March about 39% normal. Temperatures well below normal.

Farmers preparing fields and planting. Storms limited fieldwork. Planting more advanced than usual. Livestock in very good condition. Lambing virtually complete. Calving past halfway point. Stock water adequate. Crops planted: Spring wheat, 10%; barley, 10%; oats, 5%; sugarbeets, 10%.

ILLINOIS: Temperatures 1 to 7° above normal. Precipitation 1.00 to 2.00 in. many areas, heavier south, some flooding.

Winter wheat good. Alfalfa good to fair. Oats 35% seeded, 73% 1976, 37% average. Corn and soybean acreage 78% plowed, 85% 1976, 68% average. Winter freeze damage: Apples, mostly light; peaches, mostly moderate to severe. Pastures good to fair. Soil moisture short to adequate. Livestock water supplies adequate. Fieldwork: 1.7 days suitable.

INDIANA: Temperatures averaged near 50°, 11° above normal but weekend brought temperatures in high 20's and some snow to north. Precipitation averaged 1.00 to 2.00 in. south, 1.50 in. central and north. Soil temperatures in high 40's.

Topsoil moisture mostly adequate to surplus. Pastures and wheat fields mostly fair. Fieldwork: 2 days suitable. Corn and soybean land 55% plowed. Wheat 3 in. tall, 1976 5 in. Oats 20% seeded, 1976 45%. Peach buds 10% alive. Apple buds 75% alive.

IOWA: Very wet with over 2.00 in. precipitation. Temperatures average 1 or 2° warmer than normal.

Wet weather slowed fieldwork: 2.3 days suitable. Plowing 66% complete. Fertilizer application 45% complete. Oats seeding 36% complete; some oats emerged. Topsoil moisture adequate. Subsoil moisture short. Livestock in good condition. Lambing, farrowing slowing, calving at its peak. Pastures in fair condition. Pastures opened to livestock in a few areas.

KANSAS: Significant to substantial moisture all but extreme southwest. Amounts ranged generally less 0.25 in. extreme southwest to 1.00 to over 2.00 in. elsewhere. Temperatures ranged 42° northwest to 54° southeast, near normal west and central to 3 to 4° above normal east.

Wheat condition improving very slightly. Few reports of wind damage to wheat, mostly slight to none. Insects more abundant but only small numbers so far. Barley and oats seeding nearly complete with corn plantings beginning. Livestock in good shape on wheat pasture. Farm activities: Seedbed preparation, fertilizing and weed spraying.

KENTUCKY: Near normal temperatures averaged in low 60's. Precipitation averaged about 1.50 in., slightly heavier in west. Most precipitation occurred 2d.

Fieldwork: 5 days suitable. Soil moisture adequate west, short east. Rapid progress of spring work. Spring plowing 56% complete, 64% last year. Corn planting began. Tobacco beds 81% seeded, 87% last year. About 10% plants up, 27% last year. Peach crop 90% lost from winter cold, apples 20% lost. About 10% of winter hay supply left, almost none in localized areas. Pastures being grazed heavily. About 70% of livestock still on winter feed.

LOUISIANA: Temperatures 3 to 8° above normal. Extremes: 48 and 85°. Rainy.

Fieldwork: 2.6 days suitable. Main activities: Land preparation, planting, fertilizing and liming. Rice 25% planted, about same as last year. Corn 37% planted, 30% last year. Small grains good condition. Pastures improving. Cattle fair condition. Strawberry harvest continued. Irish potatoes growing well.

MARYLAND & DELAWARE: Temperatures 9 to 12° above normal. Precipitation less than 0.10 in. except western Maryland where up to 1.00 in. fell.

Fieldwork processing well. Farmers preparing for spring planting.

MICHIGAN: Temperatures ranged from 13° above normal southeastern Lower to 2° above normal north central Upper. Highs in mid 70's over Lower. Temperatures cooled midweek and rose again on the 2d. Precipitation ranged from over 2.00 in. south central Upper and 1.00 in. eastern Lower to 0.60 in. western Upper.

Pruning fruit trees, feeding livestock, repairing equipment and normal spring chores were main farming activities.

MINNESOTA: Temperatures near normal to 4° above normal. Extremes: 63 and 14°. Precipitation near normal to 1.50 in. above normal.

Frost out most areas. Few scattered small grain fields seeded in south and west central areas.

MISSISSIPPI: Temperatures 2 to 6° above normal. Extremes: 38 and 87°.

Soil moisture adequate north, surplus south. Fieldwork: 2.6 days suitable. Acreage plowed 59%, 49% 1976, 42% average. Corn 20% planted, 17% 1976. Irish potatoes 71% planted, 90% 1976. Winter wheat 39% jointing, 67% 1976. Oats 41% jointing, 63% 1976. Winter wheat and oats in fair to good condition. Livestock and pastures in mostly fair condition.

MISSOURI: Temperatures 5° above normal, ranging from 2° above normal in the East Ozarks to 9° above in the Bootheel. Rainfall heavy with heaviest amounts in southeast. Rainfall averaged 1.00 in. west central plains, 1.40 in. northwest and 2.50 in. northeast and West Ozarks.

Fieldwork: 2.1 days suitable. Plowing 71% complete, 83% oats sown, some corn planted. Wheat, pasture and livestock condition fair. Soil moisture supply short to adequate.

MONTANA: Wet, cool. Temperatures well below normal except northwest. Precipitation heavy through central and west central. Major snow storm and blizzard conditions swept across areas east of Divide 28th and 29th.

Topsoil moisture shortages alleviated but short many locations. Subsoil moisture short to adequate. Winter wheat fair to good. Crop green but little growth. Both wind damage and winter kill light. Fieldwork just starting. Calving 55% complete, last year 55%, normal 45%. Lambing 45% done, last year's and normal 40%. Shearing 40% done. Most livestock receiving supplemental feed. Hay and feed grain supplies adequate. Some stockwater shortages eastern third.

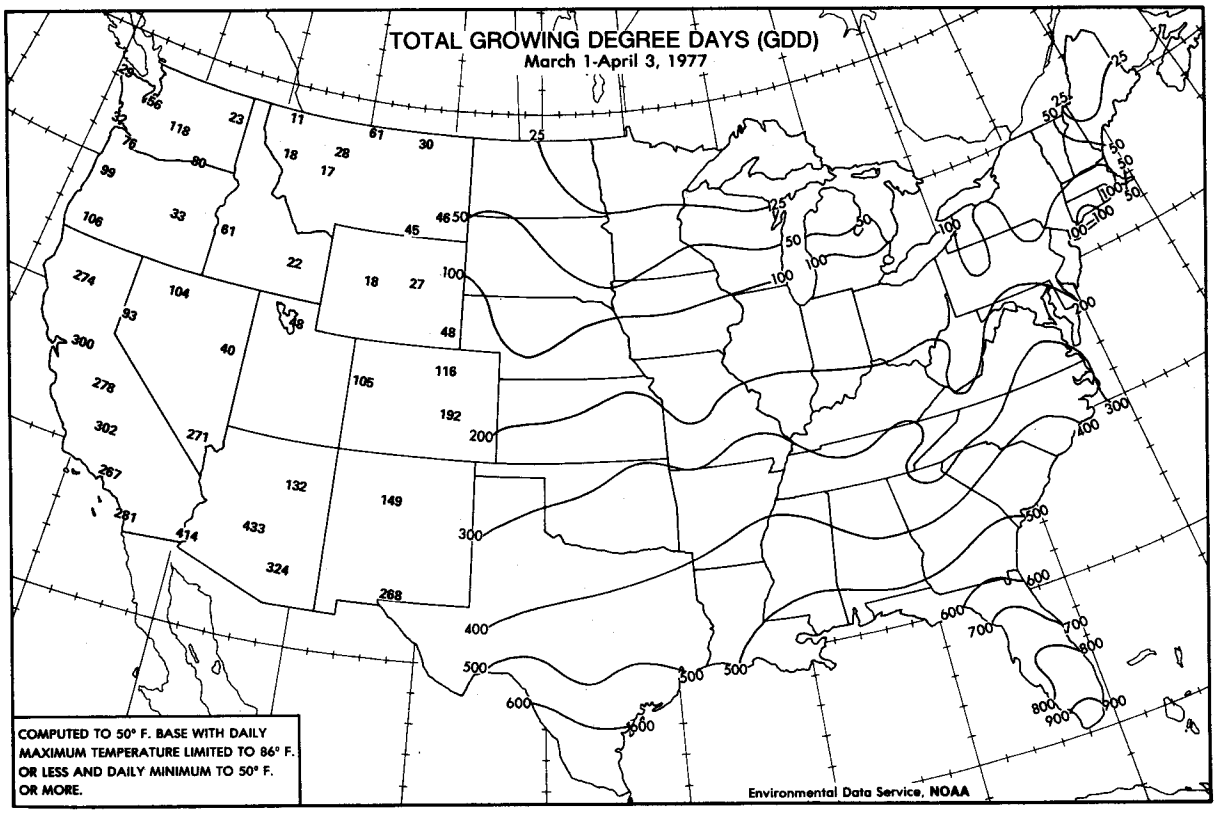
NEBRASKA: Temperatures near normal. Precipitation 1.00 to 2.00 in.

Farmers began spring fieldwork. Topsoil moisture adequate. Subsoil moisture short. Winter wheat mostly fair condition. Oats and barley 25% planted. Pasture and range feed supplies short. Pastures beginning to green. Calving in full swing.

NEVADA: Precipitation as snow confined mostly to northeast averaged about 0.33 in. Temperatures ranged from 75 to -5°.

Seedbed preparation resumed. Ranges and crops still dormant. Irrigation waters in reservoirs extremely short. Calving and lambing continues.

NEW ENGLAND: Trend of above normal temperatures continued. Temperature departures were great-



est during midweek when morning lows were 8 to 16° above normal and afternoon highs 20 to 30° above normal. Precipitation occurred on 4 to 5 days totaling 1.00 to 1.50 in.

NEW JERSEY: Temperatures 8 to 11° above noraml. Extremes: 26 and 85°. Rainfall averaged 1.24 in. north, 0.83 in. central and 0.96 in. south. Estimated soil moisture, in percent of field capacity averaged: 99 north, 97 central and south. Soil temperature averaged 46° north, 50° central and 55° south.

Field activity increased; soil preparation was active. Early plantings responded to warmer temperature. Potato planting continue. Harvest of some early green began. Peaches began to bloom in south.

NEW MEXICO: Precipitation producing storms early week and again weekend. Moisture totals around 0.33 to 0.50 in. mountain and eastern plains. Very little moisture southern desert and southeast.

Dryland wheat, fair. Irrigated wheat, barley, alfalfa, lettuce, onions, good. Ranges poor. Cattle fair with calving active. Sheep good with lambing and shearing active. Moisture needed most areas.

NEW YORK: Temperatures averaged in upper 30's to low 50's, 5 to 11° above normal. Extremes: 13 and 85°. Precipitation ranged up to 1.25 in. with the greatest rainfall in east.

NORTH CAROLINA: Temperatures ranged from low 30's to low 80's. Precipitation above normal.

Fieldwork: 3.1 days suitable. Main farm activities: Fertilizer application, land preparation and some tobacco transplanting and corn planting in the coastal plains. Soil moisture adequate to surplus. Condition of tobacco plant beds and pastures mostly good, small grains and Irish potatoes mostly fair to good.

NORTH DAKOTA: Temperatures ranged from just above normal to 9° above normal, south to north. Extremes: 8 to 70°. Precipitation ranged from 0.11 in. to 0.95 in. above normal southern areas to 0.20 in. below normal northwest and north central.

Fieldwork remains scattered consisting mostly of cultivation, fertilizer application and limited early seeding. Livestock fair to good condition.

OHIO: Temperatures above normal. Record highs central and north 29th and 30th. Extremes: 84 and 27°. Rainfall above normal totaling 1.00 to 2.00 in.

Winter wheat condition fair to good. Plowing for corn and soybeans 60% complete, 75% 1976, 50% normal. Planting completion: Oats 15%, 25% 1976 and 10% average; sugarbeets not started, equal to 1976, over 5% 1975. Tobacco beds 35% sown, 45% 1976 and 30% normal. Soil moisture adequate. Fieldwork: 3.5 days suitable.

OKLAHOMA: Temperatures ranged from 3° below normal to 5° above normal. Precipitation generally light. Greatest amount near 0.75 in. western Panhandle.

Wheat condition improved following rains in east and south, but dry topsoil persist most of main wheat areas. Brown spider mites problem in northwest and Panhandle. Need rain for control. Greenbugs and weeds cause for spray programs many areas. Half wheat acreage

now jointing, about average for date. Spring oats and barley crops now mostly up to stand in good to fair condition. Corn planting near standstill as eastern soils wet and cold. Panhandle acreage being watered before final seedbed preparation. Outlook for peach crop only fair. Ranges expected to make good growth in east, but rains needed in west. Cattle condition making slow improvement. Supplement feeding necessary to some extent except cattle on wheat pasture.

OREGON: Heavy shower activity early. Coastal areas received from 0.50 to 1.25 in.; Willamette Valley received 0.40 in. and east ranged from 0 to 0.50 in. Temperatures near normal west but 3 to 7° below normal east.

Land preparation and grain seeding underway. Fall grains in mixed condition. Fertilizing and spraying fall grains. Orchard crops developing normally. Peaches approaching full bloom. Potatoes being planted Hermiston area. Livestock in fair to good condition. Pastures and ranges in poor to fair condition, need moisture. Hay supplies tight in some areas.

PENNSYLVANIA: Temperatures 9 to 12° above normal. Extremes: 85 and 25°. Rain almost every other day totaled from 1.00 in. Upper Susquehanna and Erie Shore to 2.50 in. parts of northwest with 1.50 to 2.00 in. elsewhere.

Rains sharply curtailed fieldwork.

PUERTO RICO: Island average rainfall 0.81 in. or 0.24 in. above normal. Temperatures averaged about 76° on coasts and 70° interior. Extremes: 92 and 51°.

Showers over northeast and west interior relieved crop stress. Severe drought continued south. Dry weather favored sugarcane maturity and tobacco harvest and drying but insufficient rainfall for development of ratoons. Coffee trees blooming but bean formation affected by lack of rain. Pastures south affected seriously by drought. Cattle losing weight.

SOUTH CAROLINA: Temperatures averaged 3 to 4° above normal. Rainfall above normal in northwest, below normal in southeast.

Tobacco plant bed moisture fair to good. Tobacco plants smaller than normal; transplanting underway. Corn planting underway. About 70% of land prepared for spring planting. Corn planted 30% 1977, 40% 1976. Watermelons planted 62% 1977, 57% 1976. Tobacco planted 5% 1977, 34% 1976.

SOUTH DAKOTA: Snow and rain amounted to at least 0.75 in. Precipitation over 2.00 in. west. Snow depth in west varies from 10 to 30 in. Extremes: -1 and 68°.

Topsoil moisture adequate, subsoil still short. Fieldwork halted by moisture. Spring plowing 5% complete, 1975 15%, normal 1%. Percent seeded: Spring wheat 2%, 1976 30%, normal 0%; oats 2%, 1976 24%, normal 0%; barley 1%, 1976 22%, normal 0%. Fall sown grains poor to fair. Some livestock losses, mostly calves and lambs in west due to blizzard. Large feed shipments moving into State. Pastures greening up but very poor condition. Stock water supplies adequate.

TENNESSEE: Precipitation 1.50 to 5.00 in. Temperatures near normal east, 4° above normal mild and west.

Fieldwork: 4.1 days suitable. Soil moisture adequate. Pastures, oats and wheat fair condition. Plowing 65% completed. Tobacco seedbeds 95% completed. Cattle fair condition.

TEXAS: Cool, dry west, northwest, east half. Thunderstorms 3d gave east significant rain. Temperatures west, northwest 2 to 5° below normal, elsewhere normal. East 8° above normal. Rainfall in eastern third near or above normal, up to 1.00 in. received. Remainder, rain less than 0.25 in. Soil temperature averaged from upper 40's in northern high plains to mid-70's in lower valley.

Wet slowed planting in north and east. Seedbed preparation, planting active other areas. Small grains most areas good progress. Fields on northern high plains very dry. Wheat fields on northern high plains badly need moisture, but responded to warm. Wheat other areas doing very well. Few fields on northern high plains entered joint stage. Early fields on northern low plains in boot stage while those in east and central heading. Greenbugs built up in fields where moisture adequate; beneficial insects also increasing. Cotton planting made slow progress, 4% complete, behind 11% in 1976 and average. Early fields in south growing well, although cut worms reported. Few fields planted as far north as southern High Plains. Most farmers waiting higher soil temperatures. Sorghum planting made fair progress despite wet in north and east. Now 43% complete, 45% 1976 and 38% average. Early fields up to good stands. Corn planting active in south central and east. Planting 22%, behind 44% average and 31% 1976. Rice planting at 30% done behind 49% in 1976 and 56% average.

Onion harvest began. Harvest citrus, cabbage, carrots, lettuce, spinach continues. Planting tomatoes, cucumbers, cantaloups, watermelons active. Peaches in east in fall to shuck split stage. Some areas thinning to allow for additional fruit sizing. Fruit in north and west developing. Pecans in central, east, south leafing out. Ranges on northern High Plains poor. Elsewhere respond favorably to rain, warm. Cattle improve as grasses improve.

UTAH: Temperatures 5 to 10° below normal. Precipitation widely scattered ranging from very light to moderate.

Soil moisture deposit still very critical. Spring fieldwork in progress. Planting small grain well along where early spring irrigation water available. Spring runoff expected to be small, has not yet begun. Range calving and lambing continued. Sheep shearing also continued. Range feed on winter ranges becoming short. Ranchers hauling water. Livestock in good condition with supplemental feeding.

VIRGINIA: Temperatures above normal. Extremes: 85 and 27°. Rainfall slightly over 0.50 in.

Fieldwork: 5.0 days suitable. Topsoil moisture adequate. Pasture in good condition. Tobacco prospects remain promising. Wheat and barley in fair condition. Tobacco plant beds doing well. Small amount of corn planted in east. Plowing, liming, fertilizing active. Potato planting on Eastern Shore nearing completion. Early vegetables being planted. Livestock in good condition. Spraying orchards active.

WASHINGTON: West: Temperatures averaged 1° subnormal to near normal. Precipitation averaged 0.50 in. below normal to 1.50 in. above normal.

Farmers plowed and cultivated fields for new pasture plantings. Pastures made moderate growth; most not ready for grazing. Dairymen started to green chop rye.

East: Temperatures averaged 5° subnormal to

near normal. Precipitation averaged 0.10 in. to 0.30 in. subnormal. Apricots in bloom; pears are swelling; peaches near popcorn stage; apples showing fruit buds. Dormant spray applied. Orchards 10 days early. Grape pruning complete with bud break near. Planting sugarbeets, mint, alfalfa, potatoes, green peas, spring wheat and barley. Fall wheat in good condition although cool weather slowed growth. Farmers spraying weeds. Dryland planting oats, wheat, peas, lentils, hay dependent on spring rain. Cattle still on feed; ranges, pastures show little growth. Calving, lambing nearly complete.

WEST VIRGINIA: Temperatures much above normal. Precipitation below normal southwest, averaged less than 0.50 in. near normal central and south, above normal elsewhere.

Soil moisture adequate. Hay supplies short. Fieldwork: 5.2 days suitable. Field preparation and general chores main farm activities.

WISCONSIN: Unsettled weather with rain daily. Rainfall amounts substantial ranging from 1.40 in. northwest to 3.00 in. south central. Temperatures averaged about 5° above normal.

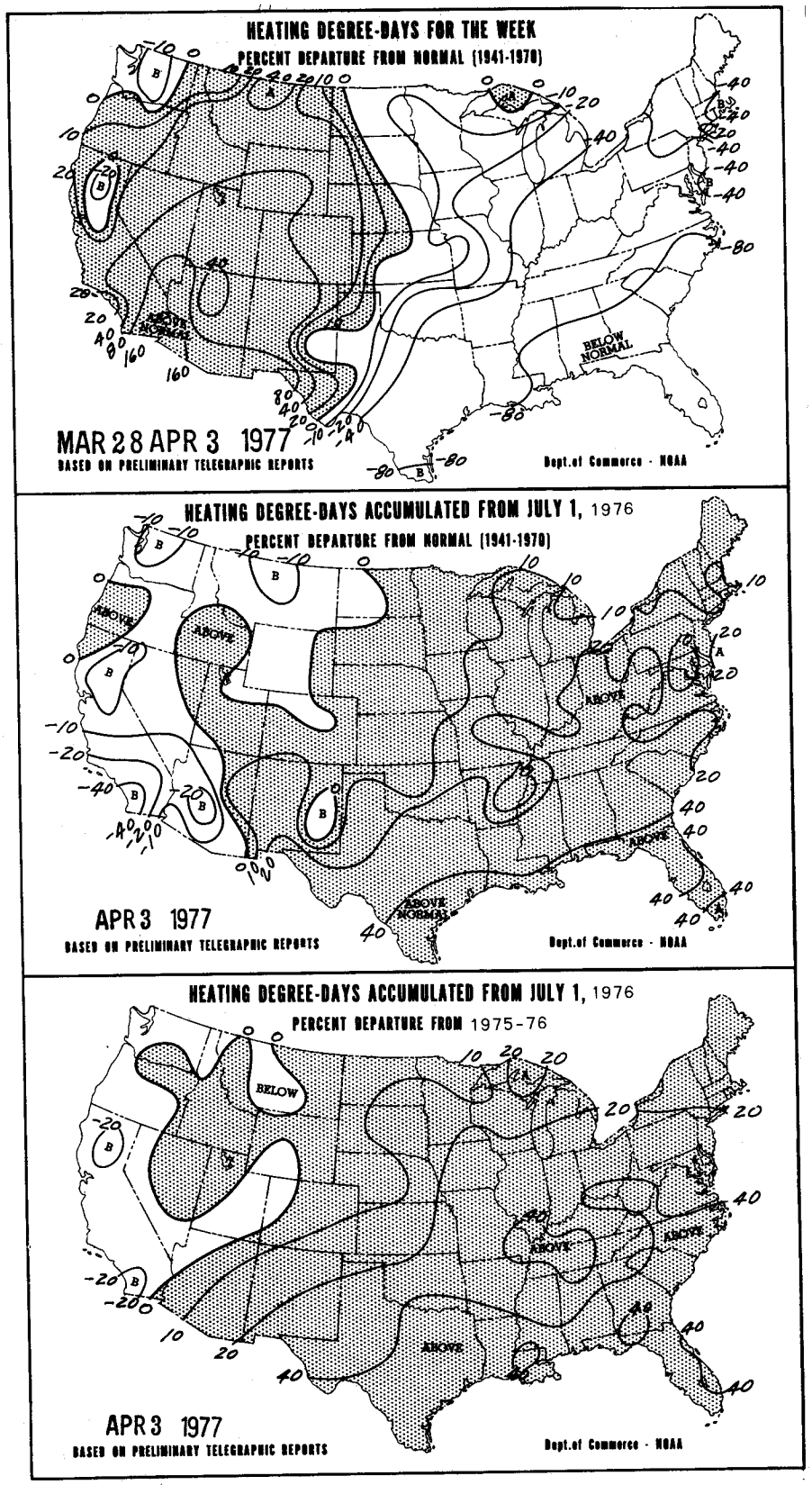
WYOMING: Temperatures below normal. Precipitation above normal.

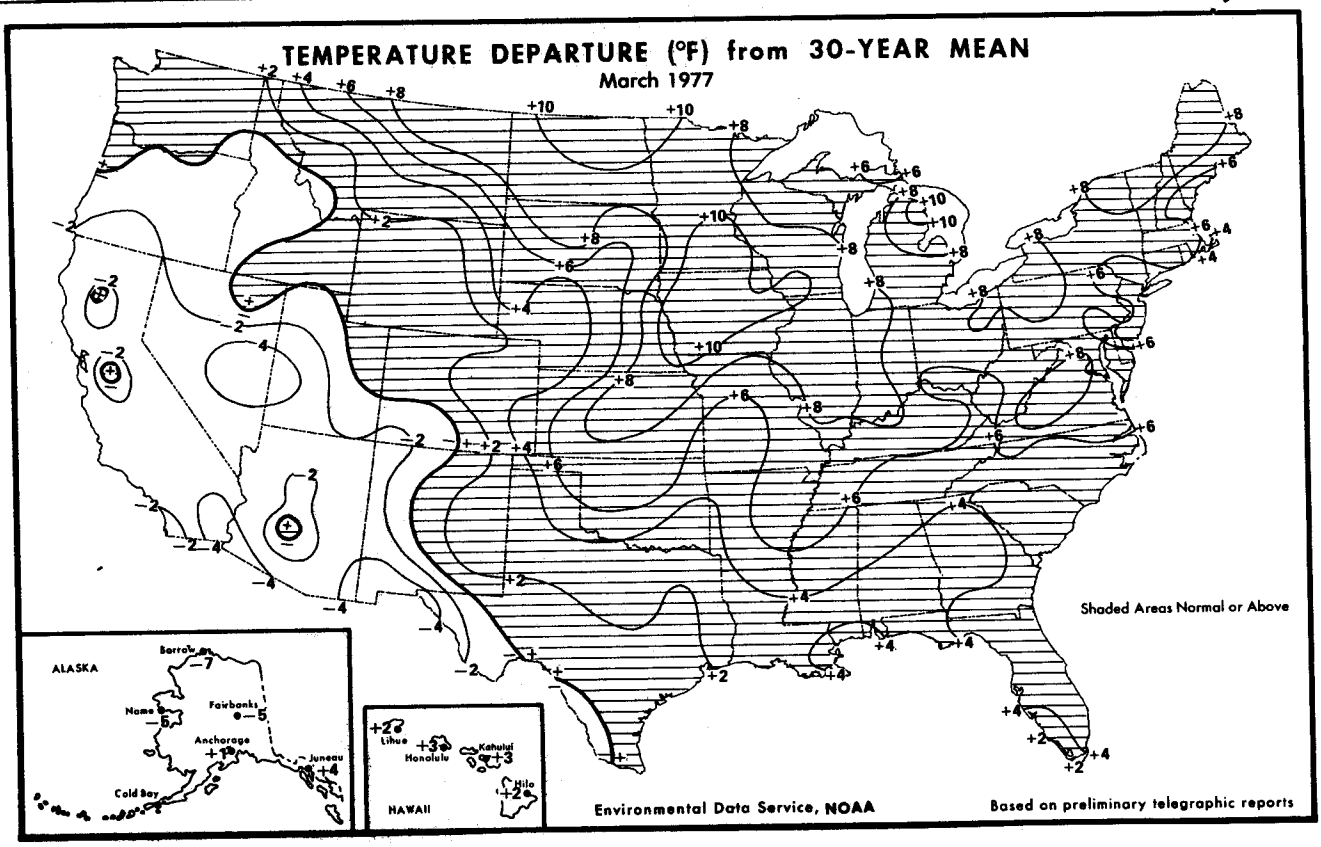
Soil moisture short. Major activities: Plowing, fertilizing, seedbed preparations, calving and lambing. Planting progress: Spring wheat 3%; oats 4%; barley 12%. Winter wheat breaking dormancy, prospects fair. Some isolated wind damage reported, light to moderate. Calving, lambing and shearing ahead of last year.

HEATING DEGREE DAYS (BASE 65°) FOR WEEK ENDING APR. 3, 1977.

STATES AND STATIONS	WEEKLY TOTAL	WEEKLY DEPARTURE*	SEASONAL ACCUMULATION + TOTAL	SEASONAL ACCUMULATION + DEPARTURE*	SEASONAL ACCUMULATION + DEPARTURE FROM 1975-76
ALA. BIRMINGHAM	11	-45	3450	720	974
MOBILE	0	-27	2379	725	992
MONTGOMERY	4	-37	2999	798	910
ARIZ. FLAGSTAFF	234	43	5732	-302	77
PHOENIX	46	19	1062	-441	25
TUCSON	71	34	1616	-70	243
WINSLOW	175	61	4965	671	556
YUMA	42	28	908	-79	46
ARK. FORT SMITH	38	-30	4056	843	1037
LITTLE ROCK	32	-36	3557	337	854
CALIF. BAKERSFIELD	74	26	1785	-258	-111
EUREKA	132	20	3643	57	-248
FRESNO	78	17	2378	-55	-370
LOS ANGELES	67	11	897	-564	-111
RED BLUFF	55	-14	2002	-425	-562
SAN DIEGO	60	18	711	-539	-198
SAN FRANCISCO	93	16	2439	-15	-289
STOCKTON	66	-4	2247	-292	-408
COLO. DENVER	204	39	5076	-150	209
GRAND JUNCTION	195	62	5292	189	-57
PUEBLO	184	45	5169	299	464
CONN. BRIDGEPORT	124	-30	5264	486	878
HARTFORD	83	-81	5916	267	804
DEL. WILMINGTON	81	-46	5021	538	1048
D.C. WASHINGTON	29	-72	4284	369	1155
FLA. APALACHICOLA	0	-21	1984	645	646
DAYTONA BEACH	0	-14	1131	245	283
FORT MYERS	0	-1	596	139	199
JACKSONVILLE	0	-19	2023	713	670
KEY WEST	0	0	93	31	36
LAKELAND	0	-7	1014	342	389
MIAMI	0	0	311	105	109
ORLANDO	0	-9	1060	337	401
TALLAHASSEE	0	-22	2173	635	599
TAMPA	0	-8	1046	334	378
WEST PALM BEACH	0	0	373	74	67
GA. ATLANTA	15	-52	3775	825	1136
AUGUSTA	5	-42	3061	596	984
MACON	2	-38	2841	658	825
SAVANNAH	0	-34	2492	590	806
IDAHO. BOISE	179	36	5534	470	441
LEWISTON	158	26	4458	-304	-34
POCATELLO	234	58	6236	165	315
ILL. CAIRO	42	-40	4617	966	1534
CHICAGO	98	-54	6453	951	1522
MOLINE	116	-37	6724	907	1560
PEORIA	100	-45	6541	997	1435
ROCKFORD	110	-56	7067	920	1267
SPRINGFIELD	77	-54	6055	951	1524
IND. EVANSVILLE	46	-57	5147	840	1331
FORT WAYNE	79	-77	6561	998	1553
INDIANAPOLIS	68	-65	6124	1049	1525
SOUTH BEND	86	-77	6378	634	1505
IOWA. BURLINGTON	111	-37	6504	899	1510
DES MOINES	126	-38	6309	209	1191
DUBUQUE	127	-49	7421	893	1422
SIOUX CITY	163	-5	6845	520	1080
KANS. CONCORDIA	146	10	5309	184	808
DODGE CITY	126	-2	4709	91	688
GOODLAND	197	34	5568	142	861
TOPEKA	111	-13	5386	553	1098
WICHITA	100	-9	4636	278	682
KY. LEXINGTON	37	-73	5277	920	1276
LOUISVILLE	39	-68	4911	619	1366
LA. BATON ROUGE	5	-19	2127	481	583
LAKE CHARLES	5	-19	2084	603	687
NEW ORLEANS	0	-23	2042	597	624
SHREVEPORT	16	-23	2720	608	951
MAINE. CARIBOU	180	-65	8649	407	229
PORTLAND	146	-48	7089	666	751
MD. BALTIMORE	46	-71	4775	948	1111
MASS. BOSTON	75	-77	5255	308	849
MICH. ALPENA	159	-66	7484	225	623
DETROIT	86	-79	6541	846	1205
FLINT	121	-59	6967	796	1456
GRAND RAPIDS	117	-60	6956	951	1271
HOUGHTON LAKE	173	-44	7967	733	1207
LANSING	122	-55	6944	848	1164
MARQUETTE	219	0	8428	1368	1693
MUSKEGON	135	-48	6875	880	1508
S. STE. MARIE	223	-16	8628	836	958
MINN. DULUTH	229	-8	8987	603	680
INTERNATL FALLS	245	-2	9721	506	641
MINNEAPOLIS	176	-22	7624	317	1045
ROCHESTER	173	-30	8091	766	1559
ST. CLOUD	189	-25	8462	578	773
MISS. JACKSON	6	-36	2930	694	898
MERIDIAN	6	-36	3144	826	817
MO. COLUMBIA	97	-23	5691	1007	1479
KANSAS CITY	115	-6	5472	699	1156
ST. LOUIS	65	-43	5376	968	1339
SPRINGFIELD	87	-20	4966	729	1224
MONT. BILLINGS	252	61	5871	-397	-94
GLASGOW	237	17	7550	-348	384
GREAT FALLS	294	90	5759	-800	-469
HAVRE	306	92	6685	-981	174
HELENA	255	50	6388	-623	-337
KALISPELL	212	7	6742	-521	72
MILES CITY	240	45	6692	-281	178
MISSOULA	229	41	6626	-152	278
NEBR. GRAND ISLAND	165	5	5883	83	507
LINCOLN	140	-11	6031	359	883
NORFOLK	168	-6	6435	129	660
NORTH PLATTE	202	29	6374	385	108
OMAHA	137	-7	5954	406	1040
VALENTINE	227	37	6651	195	509
NEV. ELY	292	93	6589	113	256
LAS VEGAS	98	46	2143	-343	-53
RENO	206	51	5005	-63	-187
WINNEMUCCA	218	47	5244	-352	266
N.H. CONCORD	132	-56	7385	944	546
N.J. ATLANTIC CITY	69	-63	5352	891	1006
TRENTON	50	-79	5183	702	1231
N. MEX. ALBUQUERQUE	165	62	4645	651	523
ROSWELL	71	-6	3427	-96	719
N.Y. ALBANY	119	-54	6680	550	966
BINGHAMTON	124	-67	7141	781	1193
BUFFALO	106	-81	6678	659	1168
NEW YORK	79	-54	4987	567	1046
ROCHESTER	107	-73	6456	560	994
SYRACUSE	111	-66	6513	639	894
N.C. ASHEVILLE	37	-62	4651	767	1027
CHARLOTTE	14	-53	3831	766	1113
GREENSBORO	19	-65	4283	686	1242
HATTERAS	16	-59	3016	490	983
RALEIGH	13	-63	4177	861	1389
WILMINGTON	9	-40	2795	497	976
N. DAK. BISMARCK	208	-10	7946	-66	737
FARGO	198	-24	8659	409	955
WILLISTON	224	1	7977	-117	211
OHIO. AKRON-CANTON	61	-98	6502	975	1648
CINCINNATI	63	-58	5943	1312	1796
CLEVELAND	76	-84	6540	1099	1611
COLUMBUS	63	-75	6328	1177	1726
DAYTON	68	-71	6189	1083	1682
TOLEDO	77	-83	6887	1204	1463
YOUNGSTOWN	82	-82	6797	1119	1582
OKLA. OKLAHOMA CITY	61	-21	3798	287	879
TULSA	63	-18	3911	403	836
OREG. ASTORIA	135	-1	3851	-336	-194
BURNS	209	32	5860	-195	-144
MEDFORD	146	20	4364	169	168
PENDLETON	134	7	4547	-33	451
PORTLAND	124	2	3863	-156	128
SALEM	132	7	4079	58	-43
PA. ALLENTOWN	84	-63	5679	455	979
ERIE	101	-83	6489	584	1137
HARRISBURG	70	-57	5248	470	971
PHILADELPHIA	47	-78	5116	689	1266
PITTSBURGH	68	-78	6575	1256	1732
SCRANTON	98	-61	6364	758	1382
R.I. PROVIDENCE	84	-77	5814	601	893
S.C. CHARLESTON	2	-38	2653	566	882
COLUMBIA	5	-43	3088	567	1028
GREENVILLE	16	-51	3787	771	983
S. DAK. ABERDEEN	190	-15	7749	68	923
HURON	178	-16	7600	387	915
RAPID CITY	252	57	6416	77	567
SIOUX FALLS	174	-16	7346	321	848
TENN. CHATTANOOGA	19	-53	4053	736	820
KNOXVILLE	17	-56	4076	789	854
MEMPHIS	24	-42	3407	307	924
NASHVILLE	33	-46	4323	817	1424
TEXAS. ABILENE	36	-15	3155	640	828
AMARILLO	113	12	4416	558	896
AUSTIN	12	-17	2281	577	834
BEAUMONT	8	-17	2123	629	714
BROWNSVILLE	0	-5	970	318	400
CORPUS CHRISTI	2	-4	1377	447	604
DEL RIO	5	-13	1963	450	748
EL PASO	86	39	3161	554	696
FORT WORTH	22	-25	2942	630	1075
GALVESTON	6	-16	1774	562	770
HOUSTON	10	-12	2250	831	819
LUBBOCK	76	5	3733	375	845
MIDLAND	54	3	2956	413	754
SAN ANGELO	25	-14	2734	553	650
SAN ANTONIO	12	-12	2160	612	744
VICTORIA	5	-13	1792	574	726
WACO	12	-25	2651	635	961
WICHITA FALLS	38	-21	3378	576	983
UTAH SALT LAKE CITY	212	65	5197	-48	55
VT. BURLINGTON	124	-77	7377	472	772
VA. LYNCHBURG	24	-74	4595	667	1039
NORFOLK	19	-67	3716	472	1015
RICHMOND	19	-71	4263	578	1176
ROANOKE	23	-79	4755	791	1330
WASH. QUILLAYUTE	145	-8	4390	-321	-331
SEATTLE-TACOMA	121	14	3502	-771	-586
SPOKANE	172	6	5745	-121	-29
WALLA WALLA	129	15	4334	46	361
YAKIMA	117	-22	5177	-92	132
W. VA. BECKLEY	46	-86	5959	961	1685
CHARLESTON	29	-76	5357	1134	1725
HUNTINGTON	30	-76	5159	911	1558
PARKERSBURG	37	-77	5308	893	1315
WIS. GREEN BAY	173	-28	8054	938	1265
LACROSSE	154	-26	7362	663	1082
MADISON	138	-54	7643	794	1576
MILWAUKEE	132	-56	7115	641	1514
WYO. CASPER	284	82	6378	-57	124
CHEYENNE	261	59	6255	136	322
LANDER	296	96	6672	-85	-47
SHERIDAN	274	75	6599	-6	308

* BASED ON 1941-70 NORMALS. + ACCUMULATION FROM JULY 1, 1976.


HEATING DEGREE-DAYS FOR THE WEEK
PERCENT DEPARTURE FROM NORMAL (1941-1970)
MAR 28 APR 3 1977
BASED ON PRELIMINARY TELEGRAPHIC REPORTS
Dept.of Commerce - NOAA
HEATING DEGREE-DAYS ACCUMULATED FROM JULY 1, 1976
PERCENT DEPARTURE FROM NORMAL (1941-1970)
APR 3 1977
BASED ON PRELIMINARY TELEGRAPHIC REPORTS
Dept.of Commerce - NOAA
HEATING DEGREE-DAYS ACCUMULATED FROM JULY 1, 1976
PERCENT DEPARTURE FROM 1975-76
APR 3 1977
BASED ON PRELIMINARY TELEGRAPHIC REPORTS
Dept.of Commerce - NOAA



March Weather Summary

HIGHLIGHTS: A change in weather patterns early in March brought welcome precipitatiton to much of the dry central and northern Plains. From Montana and Wyoming eastward, through most of the previously dry area, greater than normal precipitation fell. However, dry conditions persisted in the southwestern half of Kansas, western Oklahoma and the Texas Panhandle. Northern North Dakota and northeastern Montana also remained dry. Most of the western U.S. had less than normal precipitation except in minor areas.

March temperatures averaged above normal east of the Rocky Mountains, and colder than normal in the West. The greatest departures were in the central Plains where the average temperatures for the month were as much as 11° warmer than normal.

A major storm system moved across the northern half of the Nation during the first week of March. Substantial moisture occurred in many of the dry areas of the Pacific Northwest and the central Plains. More than two inches of rain fell along the Washington and Oregon coasts; lesser amounts reached into northern California. Some heavy snow fell in the northern Rockies and dry areas from southern South Dakota to the Great Lakes region.

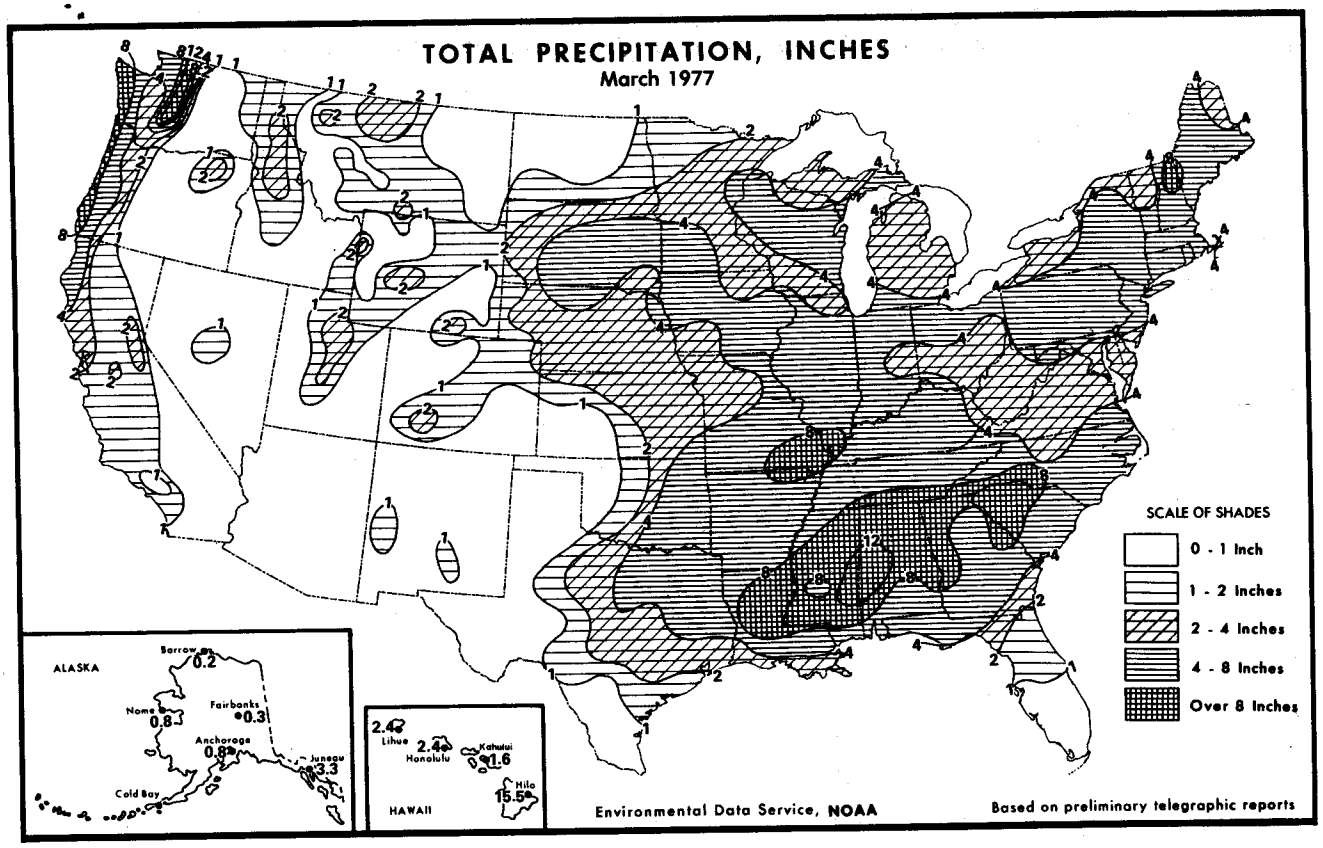
Later in the week, moisture from the Gulf of Mexico moved northward and caused heavy rain and thunderstorms in the South; a few tornadoes touched down. The rain moved northeastward, and some heavy snow fell in New England.

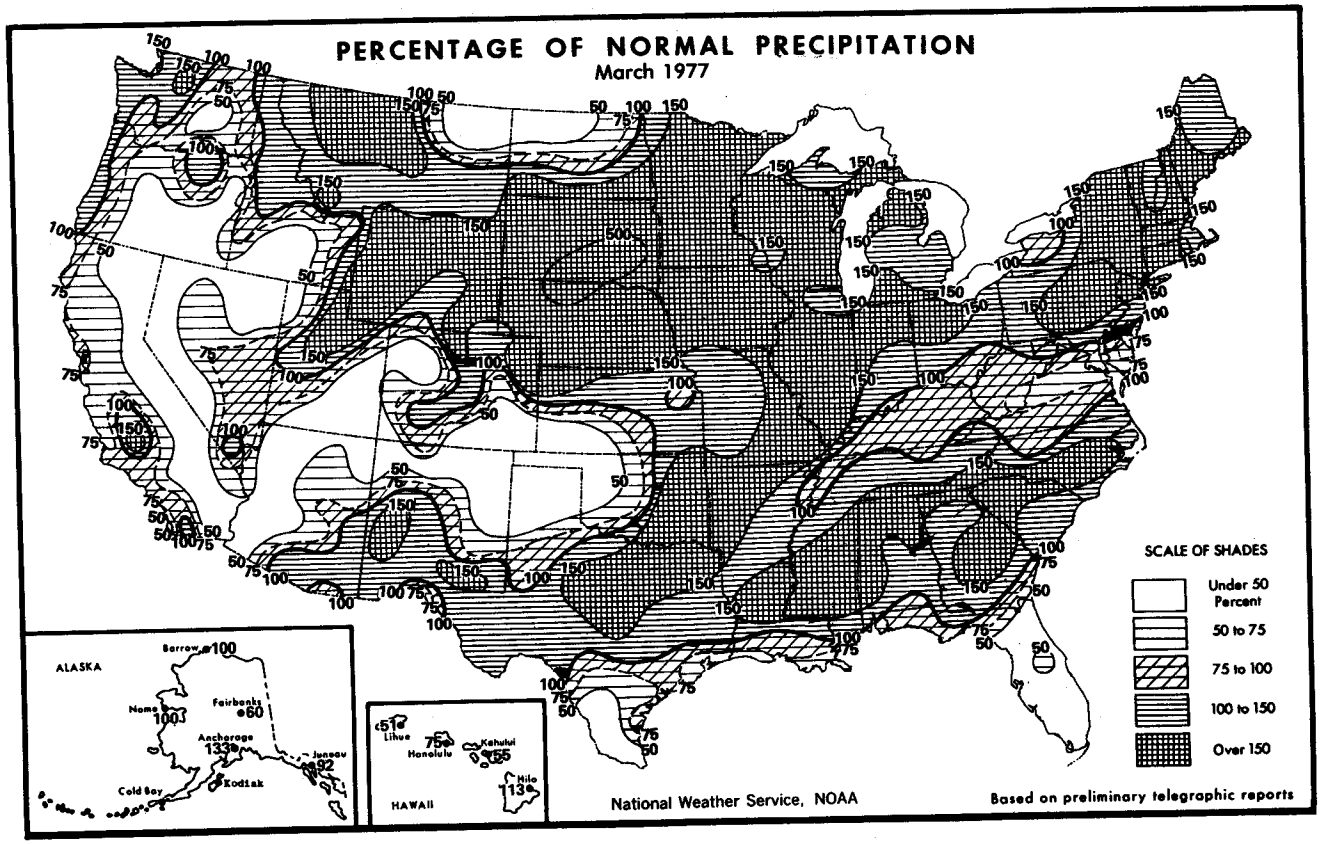
The weather patterns of the second week were similar to the first. A series of storm systems moved across the northern States and moisture from the Gulf spread northeastward. Rain in the West spread into central California and snow covered the central and northern Rockies. Rain fell in most of the central and northern Plains, with two to three inches in parts of South Dakota and Nebraska. The southwestern U.S. remained dry.

The warm moist air from the Gulf of Mexico spread rain and showers all the way to New England. Severe weather, including some tornadoes, reached from central Mississippi to southeastern Kentucky. In nearly all of the U.S., temperatures averaged above normal.

The pattern changed somewhat after midmonth, and a storm system moved southward along the California Coast depositing heavy precipitation. The rain and snow were lighter in the mountains, but most welcome. The Southwest, from southern Kansas and Texas through Arizona, had little or no precipitation. The northern Rockies continued to have snow showers, and rain fell from the central Plains through the Lakes area and New England.

The South was a little quieter, but some thunderstorm activity did occur. The mid-Atlantic States received an inch or more of rain. East of the Rockies temperatures averaged above normal, however, winter-like weather returned to the West. Moderate rain continued on the West Coast in the last week. The heaviest amounts fell near Los Angeles where thunderstorms deposited over two inches in some places. The rain and showers extended eastward to the Atlantic Coast. Snow fell throughout the Rocky Mountains, but the precipitation stopped in the central Plains where little or no moisture was recorded. Thunderstorms, heavy rain, and a few tornadoes occurred along a line from central Texas to southern Illinois. Heavy rain caused local flooding from central Alabama into North Carolina. Moderate to heavy rain extended into eastern New England.


TOTAL PRECIPITATION, INCHES
March 1977
SCALE OF SHADES
0 - 1 Inch
1 - 2 Inches
2 - 4 Inches
4 - 8 Inches
Over 8 Inches
ALASKA
Barrow 0.2
Nome 0.8
Fairbanks 0.3
Anchorage 0.8
Juneau 3.3
Cold Bay
HAWAII
Lihue 2.4
Honolulu 2.4
Kahului 1.6
Hilo 15.5
Environmental Data Service, NOAA
Based on preliminary telegraphic reports


PERCENTAGE OF NORMAL PRECIPITATION
March 1977
SCALE OF SHADES
Under 50 Percent
50 to 75
75 to 100
100 to 150
Over 150
ALASKA
Barrow 100
Nome 100
Fairbanks 60
Anchorage 133
Juneau 92
Kodiak
Cold Bay
HAWAII
Lihue 75
Honolulu 75
Kahului 55
Hilo 113
National Weather Service, NOAA
Based on preliminary telegraphic reports

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., April 3, 1977

States and Stations	Temperature °F Average	Temperature °F Departure	Precipitation Inches Total	Precipitation Inches Departure
ALA.Birmingham	66	+ 8	4.7	+3.4
Mobile	72	+ 9	2.8	+1.2
Montgomery	69	+ 8	2.5	+1.2
ALASKA.Anchorage	31	+ 2	1.0	+ .9
Barrow	21	-11	T	- .1
Fairbanks	--	---	---	----
Juneau	40	+ 5	.5	- .2
Kodiak	38	+ 4	.8	0
Nome	0	-12	.2	0
ARIZ.Flagstaff	31	- 7	1.4	+1.0
Phoenix	58	- 5	.1	0
Tucson	55	- 6	.3	+ .2
Winslow	40	- 9	.5	+ .4
Yuma	59	- 8	T	0
ARK.Fort Smith	60	+ 4	.2	- .7
Little Rock	61	+ 5	1.0	- .2
CALIF.Bakersfield	55	- 4	0	- .2
Eureka	46	- 3	T	- .9
Fresno	63	+ 6	T	- .4
Los Angeles	56	- 4	0	- .4
Red Bluff	58	+ 2	0	- .5
San Diego	57	- 2	T	- .3
San Francisco	52	- 2	0	- .5
Stockton	56	+ 1	T	- .4
COLO.Denver	36	- 6	.4	0
Grand Junction	38	- 8	.2	0
Pueblo	38	- 7	T	- .2
CONN.Bridgeport	48	+ 5	1.3	+ .5
Hartford	54	+12	1.1	+ .2
D.C.Washington	62	+11	.6	- .1
FLA.Apalachicola	71	+ 7	0	-1.0
Daytona Beach	75	+ 8	0	- .7
Ft. Myers	73	+ 2	0	- .6
Jacksonville	74	+ 9	0	- .8
Key West	80	+ 4	0	- .4
Lakeland	76	+ 7	0	- .8
Miami	77	+ 4	0	- .6
Orlando	75	+ 6	0	- .7
Tallahassee	73	+ 9	0	-1.2
Tampa	76	+ 7	0	- .7
W.Palm Beach	76	+ 4	T	- .8
GA.Atlanta	64	+ 8	2.2	+ .9
Augusta	69	+10	.9	0
Macon	70	+ 9	1.4	+ .4
Savannah	72	+10	.4	- .5
HAWAII.Hilo	75	+ 3	1.0	-2.0
Honolulu	76	+ 3	1.5	+ .9
Kahului	--	---	---	----
Lihue	73	+ 1	1.8	+ .9
IDAHO.Boise	39	- 6	.3	+ .1
Lewiston	43	- 3	.5	+ .3
Pocatello	32	- 8	.2	0
ILL.Cairo	61	+ 7	.8	- .3
Chicago	51	+ 8	1.8	+1.0
Moline	48	+ 5	1.8	+1.0
Peoria	51	+ 7	1.0	+ .1
Rockford	48	+ 7	1.8	+1.0
Springfield	54	+ 8	1.7	+ .9
IND.Evansville	60	+10	1.1	+ .1
Ft. Wayne	54	+11	1.2	+ .4
Indianapolis	56	+10	1.3	+ .4
South Bend	53	+11	2.0	+1.2
IOWA.Burlington	48	+ 4	2.2	+1.4
Des Moines	47	+ 5	1.9	+1.3
Dubuque	46	+ 6	2.3	+1.4
Sioux City	42	+ 1	2.3	+1.9
KANS.Concordia	44	- 2	.5	+ .1
Dodge City	47	0	.5	+ .2
Goodland	37	- 5	.8	+ .5
Topeka	49	+ 2	.8	+ .1
Wichita	50	0	1.4	+ .8
KY.Lexington	62	+13	.8	- .2
Louisville	62	+12	1.0	- .1
La.Baton Rouge	70	+ 6	2.0	+ .8
Lake Charles	69	+ 5	.8	- .1
New Orleans	74	+10	1.0	- .1
Shreveport	64	+ 2	1.0	- .1
MAINE.Caribou	38	+ 8	1.1	+ .7
Portland	44	+ 7	1.3	+ .5
MD.Baltimore	60	+12	1.2	+ .4
MASS.Boston	54	+11	.5	- .4
Chatham	46	---	1.1	----
MICH.Alpena	42	+ 9	1.1	+ .6
Detroit	53	+12	1.1	+ .4
Flint	45	+ 6	1.6	+1.0
Grand Rapids	49	+ 9	1.9	+1.2
Houghton Lake	41	+ 7	1.8	-1.3
Lansing	49	+ 9	1.1	+ .5
Marquette	35	+ 1	1.6	+1.1
Muskegon	46	+ 7	1.5	+ .8
S. Ste. Marie	33	+ 2	1.7	+1.3
MINN.Duluth	32	+ 1	.7	+ .2
Internatl Falls	30	0	.9	+ .6
Minneapolis	39	+ 2	1.0	+ .6
Rochester	40	+ 4	1.8	+1.3
St. Cloud	37	+ 3	.9	+ .5
MISS.Jackson	68	+ 7	2.8	+1.6
Meridian	68	+ 7	4.6	+3.2
MO.Columbia	51	+ 3	2.0	+1.3
Kansas City	48	0	.9	+ .2
St. Louis	56	+ 6	2.6	+1.8
Springfield	53	+ 3	.4	- .4
MONT.Billings	29	- 9	1.1	+ .8
Glasgow	31	- 3	.1	0
Great Falls	23	-13	1.5	+1.2
Havre	20	-14	1.9	+1.7
Helena	29	- 7	.2	0
Kalispell	35	- 1	.3	+ .1
Miles City	30	- 7	.8	+ .6
Missoula	32	- 6	.1	- .1
NEBR.Grand Island	42	0	3.8	+3.4
Lincoln	43	- 1	2.0	+1.5
Norfolk	41	+ 1	1.8	+1.4
N.Platte	36	- 4	1.5	+1.2
Omaha	46	+ 4	1.7	+1.2
Valentine	31	- 7	1.1	+ .8
NEV.Ely	23	-14	.4	+ .2
Las Vegas	51	- 8	T	- .1
Reno	35	- 8	T	- .1
Winnemucca	33	- 8	.1	0
N.H.Concord	43	+ 5	.7	+ .1
N.J.Atlantic City	55	+ 9	1.0	+ .1
Trenton	58	+11	1.0	+ .2
N.MEX.Albuquerque	41	- 9	.3	+ .2
Roswell	54	0	0	- .1
N.Y.Albany	49	+ 9	.6	0
Binghamton	48	+10	.8	+ .1
Buffalo	50	+12	.6	- .1
New York	54	+ 8	.9	0
Rochester	51	+12	.3	- .3
Syracuse	49	+ 9	.4	- .3
N.C.Asheville	59	+ 8	3.4	+2.4
Charlotte	63	+ 7	4.8	+3.9
Greensboro	63	+10	.9	+ .1
Hatteras	65	+11	.4	- .4
Raleigh	64	+10	1.1	+ .3
Wilmington	68	+ 9	.2	- .6
N.DAK.Bismarck	35	+ 1	.6	+ .4
Fargo	37	+ 4	.8	+ .5
Williston	33	0	.2	0
OHIO.Akron-Canton	58	+16	2.3	+1.5
Cincinnati	58	+10	2.1	+1.2
Cleveland	55	+13	1.7	+ .9
Columbus	57	+12	1.8	+1.0
Dayton	59	+14	3.3	+2.5
Toledo	54	+12	1.1	+ .5
Youngstown	55	+13	1.9	+1.1
OKLA.Okla. City	56	+ 2	T	- .6
Tulsa	56	+ 2	.8	0
OREG.Astoria	46	0	.2	-1.1
Burns	35	- 5	T	- .2
Medford	44	- 3	T	- .3
Pendleton	46	- 1	.1	- .1
Portland	47	- 1	.2	- .5
Salem	46	- 1	.1	- .7
PA.Allentown	54	+10	1.3	+ .5
Erie	51	+12	1.3	+ .6
Harrisburg	51	+14	1.4	+ .7
Philadelphia	60	+13	.9	+ .1
Pittsburgh	56	+12	2.2	+1.4
Scranton	54	+12	1.4	+ .8
R.I. Providence	53	+11	1.0	+ .1
S.C. Charleston	71	+11	.2	- .7
Columbia	70	+11	.5	- .5
Greenville	63	+ 7	5.0	+3.8
S.D. Aberdeen	38	+ 2	.9	+ .6
Huron	40	+ 3	1.9	+1.6
Rapid City	29	- 8	1.5	+1.1
Sioux Falls	40	+ 2	1.1	+ .7
TENN.Chattanooga	64	+ 9	5.4	+4.2
Knoxville	65	+10	2.6	+1.6
Memphis	64	+ 7	2.7	+1.5
Nashville	62	+ 8	3.1	+2.0
TEX.Abilene	60	0	0	- .3
Amarillo	49	- 2	T	- .2
Austin	67	+ 3	.1	- .4
Beaumont	70	+ 6	.5	- .2
Brownsville	76	+ 5	.1	- .1
Corpus Christi	71	+ 2	.3	0
Dallas	--	---	---	----
Del Rio	68	+ 1	T	- .2
El Paso	53	- 6	T	- .1
Fort Worth	63	+ 3	T	- .8
Galveston	67	+ 2	.4	- .2
Houston	68	+ 3	.4	- .2
Lubbock	54	0	T	- .2
Midland	57	- 2	0	- .1
San Angelo	62	0	0	- .3
San Antonio	67	+ 2	.4	0
Victoria	70	+ 4	.2	- .3
Waco	65	+ 3	.1	- .6
Wichita Falls	60	+ 2	.3	- .2
UTAH.Blanding	33	- 9	.1	- .1
Salt Lake City	35	- 9	.8	+ .3
VT.Burlington	47	+11	.8	+ .3
VA.Lynchburg	62	+11	.2	- .5
Norfolk	65	+12	.2	- .5
Richmond	66	+14	.1	- .6
Roanoke	63	+13	1.4	+ .7
WASH.Colville	41	- 1	T	- .2
Omak	43	- 1	0	- .2
Quillayute	42	- 1	.2	-2.0
Seattle-Tacoma	48	+ 2	T	- .7
Spokane	40	- 1	T	- .3
Walla Walla	47	- 2	.2	- .1
Yakima	48	+ 3	T	- .1
W.Va.Beckley	59	+13	.7	- .2
Charleston	65	+15	.5	- .4
Huntington	65	+15	1.0	+ .1
Parkersburg	61	+12	.8	0
WIS.Green Bay	40	+ 4	3.1	+2.6
La Crosse	42	+ 3	2.1	+1.5
Madison	45	+ 7	1.7	+1.1
Milwaukee	46	+ 8	2.0	+1.4
WYO.Casper	24	-12	.6	+ .3
Cheyenne	27	- 9	.4	+ .1
Lander	22	-14	1.2	+ .8
Sheridan	26	-11	1.5	+1.1
P.R.San Juan	77	+ 2	T	- .5

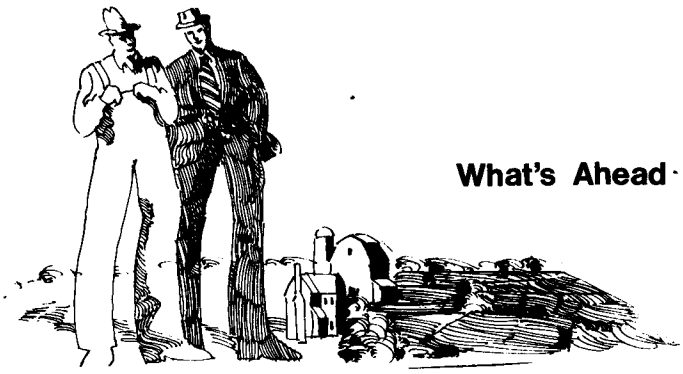
Based on 1941-70 normals

Heating Degree Days (Base 65° F.)

March 1977

ALA.Birmingham	252	MAINE,Caribou	1002	OKLA.Okla. City	338
Mobile	141	Portland	888	Tulsa	309
Montgomery	216	MD.Baltimore	469	OREG.Astoria	628
ALASKA,Anchorage	1241	MASS.Boston	623	Burns U.	928
Barrow	2711	Chatham	770	Medford	675
Fairbanks	----	MICH.Alpena	892	Pendleton	639
Juneau	893	Detroit	721	Portland	596
Nome	2173	Flint	794	Salem	629
ARIZ.Flagstaff	970	Grand Rapids	765	PA.Allentown	604
Phoenix	149	Houghton Lake	932	Erie	751
Tucson	287	Lansing	761	Harrisburg	588
Winslow	711	Marquette U	946	Philadelphia	505
Yuma	159	S. Ste. Marie	1119	Pittsburgh	658
ARK.Fort Smith	352	MINN.Duluth	1033	Scranton	756
Little Rock	266	Internatl Falls	1089	R.I.Providence	653
CALIF.Bakersfield	333	Minneapolis	844	S.C.Charleston	186
Eureka U.	577	Rochester	808	Columbia	211
Fresno	386	St. Cloud	927	Greenville	319
Los Angeles U	247	MISS.Jackson	196	S.DAK.Aberdeen	968
Red Bluff	355	Meridian	231	Huron	958
Stockton	348	Vicksburg U	----	Rapid City	877
San Diego	224	MO.Columbia	548	Sioux Falls	891
San Francisco	432	Kansas City	521	TENN.Chattanooga	353
COLO.Denver	771	St. Louis	471	Knoxville	319
Grand Junction	743	Springfield	476	Memphis	212
Pueblo	708	MONT.Billings	896	Nashville	350
CONN.Bridgeport	710	Glasgow	967	TEX.Abilene	464
Hartford	684	Great Falls	952	Amarillo	497
D.C.Washington	389	Havre	929	Austin	148
FLA.Apalachicola	121	Helena	1005	Beaumont	110
Ft. Myers	15	Kalispell	935	Brownsville	43
Jacksonville	102	Miles City	887	Corpus Christi	65
Key West	0	Missoula	950	Dallas	----
Lakeland U.	28	NEBR.Grand Island	729	Del Rio	122
Miami	3	Lincoln	659	El Paso	469
Orlando	41	Norfolk	733	Fort Worth	241
Daytona Beach	53	North Platte	856	Galveston U.	102
Tallahassee	116	Omaha	579	Houston	166
Tampa	28	Valentine	990	Lubbock	397
GA.Atlanta	300	NEV.Ely	1121	Midland	320
Augusta	206	Las Vegas	374	San Angelo	227
Macon	190	Reno	828	San Antonio	144
Savannah	152	Winnemucca	855	Victoria	82
IDAHO,Boise	772	N.H.Concord	870	Waco	175
Lewiston	701	N.J.Atlantic City	587	Wichita Falls	281
Pocatello	926	Trenton U	533	UTAH,Blanding R	----
ILL.Cairo U.	314	N.MEX.Albuquerque	669	Salt Lake City	839
Chicago	622	Roswell	393	VT.Burlington	842
Moline	656	N.Y.Albany	764	VA.Lynchburg	417
Peoria	623	Binghamton	831	Norfolk	330
Rockford	697	Buffalo	775	Richmond	366
Springfield	543	New York	591	Roanoke	385
IND.Evansville	428	Rochester	777	WASH.Colville	835
Fort Wayne	662	Syracuse	767	Omak	----
Indianapolis	567	N.C.Asheville	437	Quillayute	703
South Bend	640	Charlotte	306	Seattle-Tacoma	591
IOWA,Burlington	626	Greensboro	358	Spokane	824
Des Moines	624	Hatteras R.	309	Walla Walla U.	598
Dubuque	722	Raleigh	358	Yakima	684
Sioux City	745	Wilmington	241	W.VA.Beckley	565
KANS.Concordia	567	N.DAK.Bismarck	956	Charleston	482
Dodge City	529	Fargo	1015	Huntington	474
Goodland	803	Williston U	959	Parkersburg U.	508
Topeka	469	OHIO.Akron-Canton	627	WIS.Green Bay	861
Wichita	456	Cincinnati U.	571	Madison	772
KY.Lexington	449	Cleveland	689	Milwaukee	790
Louisville	421	Columbus	601	WYO.Casper	1040
LA.Baton Rouge	141	Dayton	600	Cheyenne	1015
Lake Charles	134	Toledo	718	Lander	1063
New Orleans	117	Youngstown	703	Sheridan	989
Shreveport	188				

Preliminary reports from airport locations, except those marked U for urban and R for rural.
*Estimated.



What's Ahead for Weather and Agriculture in 1977

The winter of 1976/77 is finally behind us, leaving many stories and harsh memories to be recounted in the future. The 1977 growing season is rapidly approaching and it is very evident that the weather will be a key factor in determining the level of production.

The winter touched nearly every production area of the United States in one way or another. States west of the Rockies had an extremely dry winter, accumulating less than one-third of normal snowfall. The snowpack is the primary source of irrigation water supplies during the summer. The coastal States were the most severely affected, and California was hit even harder because it was their second dry winter in a row.

The Deep South was affected by the cold weather that plaqued the eastern half of the Country. Prolonged cold temperatures halted the growth of pastures, forcing supplemental feeding. Severe cold froze citrus and vegetable crops thoughout Florida; West Palm Beach received snow for the first time in its history.

The Great Plains continued dry and very cold all winter, causing some damage to winter wheat which rarely had adequate, if any, snowcover. Some 10 million acres were in condition to blow, with significant damage occurring on over a million acres. The Corn Belt also continued dry until late February, raising concern over the potential for corn and soybean crops.

Parts of New England and the Great Lakes area felt they would never see the end of the snow which buried them, while the Middle Atlantic States were much drier than normal.

Setting this behind us, what will 1977 hold? Weather forecasts extend to a maximum of 30 or 90 days. Yet careful consideration of the current weather situation and what is expected the next 30 days does give some insight into the potential for 1977, or at least the general direction the situation is moving. Past and present conditions can set into motion a chain of events which future conditions can do relatively little to avert or change. The key comes in understanding the impact of weather on crop and animal production, particularly at critical stages or times.

DROUGHT: 1977

Drought has been a keyword so far in 1977. Low reservoir levels in the West and severe dust storms on the Great Plains brought back haunting memories of the dust-bowl days. Fortunately for the Great Plains, the situation has improved markedly during the month of March. The western States, however, are facing the beginning of the long, dry summer when little or no moisture is expected.

Drought is a difficult term to define because the meaning is often dependent upon the context in which it is being used. To the farmer, drought usually means a shortage of moisture in the root zone of the growing crops. However, the distribution of precipitation may cause conditions that will be called drought. When seeds are sown in dry topsoil, germination may not occur until it rains, even though ample moisture for growth exists in the soil profile. Poor distribution of rain also causes drought when soil moisture is low and there has been just enough rain to support a crop during a low demand period; then the crop enters a high demand period. The crop suffers immediate stress and may fail, even though subsequent rain is adequate.

A second problem is how to quantitatively assess or evaluate a drought. One tool is the Palmer Drought Index.

PALMER AND CROP MOISTURE INDEXES

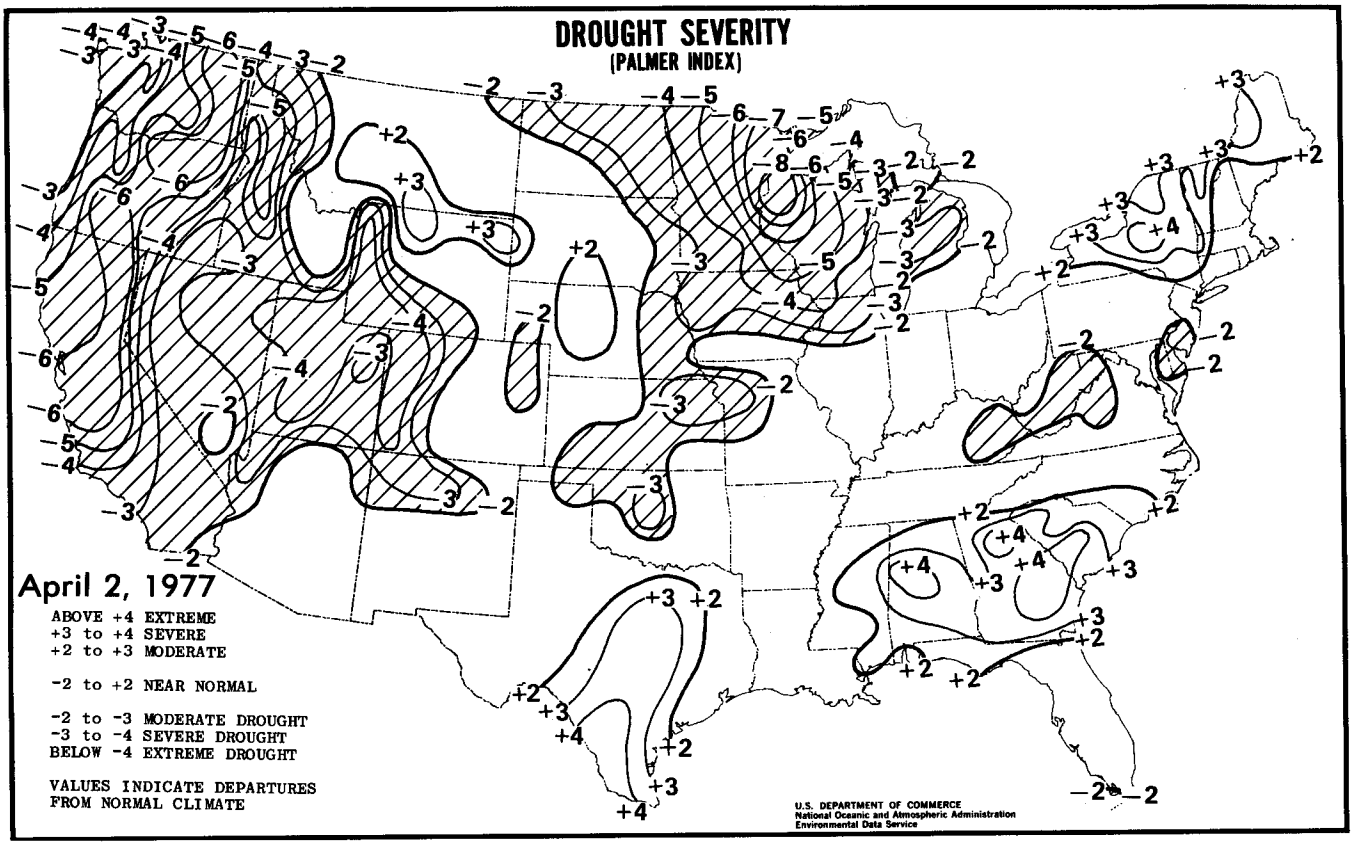
The Palmer Index was designed to evaluate the scope, severity, and frequency of prolonged periods of abnormally wet or dry weather. For this purpose it works reasonably well. However, it does not measure the current status of agricultural drought which is impacted by short periods of very dry weather, or short period of very wet weather which can relieve the impact of drought. For this reason the Crop Moisture Index was developed to respond rapidly to changes in the soil moisture situation and takes into account only those moisture aspects that affect vegetation and field operations.

For purposes of computing the Palmer Drought Index, drought is defined as a prolonged period of abnormal moisture deficiency. "Prolonged" and "abnormal" are not specifically defined because they are relative to each other. If precipitation falls far below normal and temperatures remain above normal, evidence of drought soon appears as the stored soil moisture is used up. However, if rainfall is only slightly less than demand and continues deficient, conditions worsen until its finally recognized that a drought began some time before.

The Palmer Index provides the best evaluation of the overall soil moisture situation, since it integrates the effects of the past weather over weeks and even months. However, the Crop Moisture Index best indicates the availability of moisture to meet current demands. For example, a recent rain might have replenished the soil sufficiently to meet the current demands. However, the overall soil moisture situation would be reflected in a highly negative Palmer Index reading. This situation is reflected in the current Palmer

Index map. Large areas of the Corn Belt are noted as suffering from drought, but significant relief has already occurred in the past few weeks. This will be discussed in more detail later.

The Crop Moisture Index provides a measure of the weekly abnormal evapotranspiration deficit for each climatological division. This is a computed value, an estimate of the amount by which the actual weekly evapotranspiration falls short of the expected weekly evapotranspiration. The actual evapotranspiration takes into account the actual temperature and precipitation during the week as well as the computed amount of soil moisture, both topsoil and subsoil, existing at the start of the week. The expected evapotranspiration is an adjusted normal value; which means the long term value is adjusted upward or downward depending on the departure of the week's temperature from normal. Successive weekly values of this computed abnormal evapotranspiration deficit have been combined into a measure of the cumulative severity of agricultural drought. In other words, as the accumulated evapotranspiration deficit gradually increases from week to week during dry weather, the crop moisture situation becomes progressively more serious.



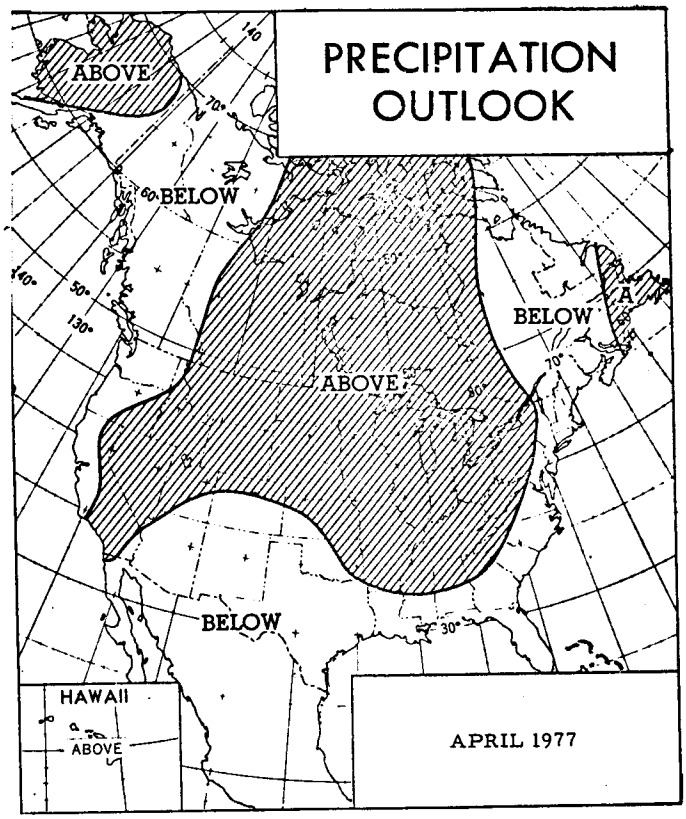
THE MOISTURE SITUATION: APRIL 1977

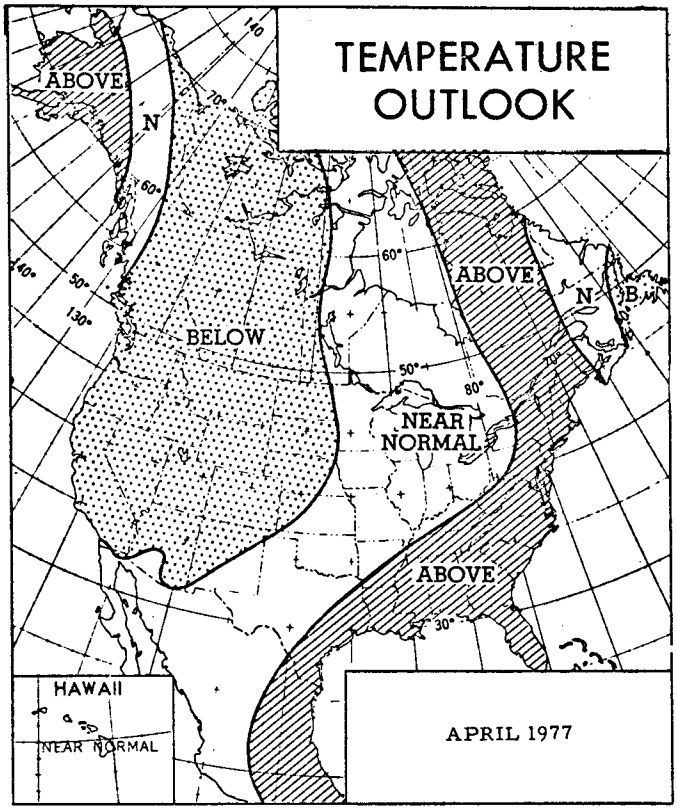
The current Palmer Index Map indicates large areas of drought in the Great Plains, the Corn Belt and the western States. The Great Plains and Corn Belt have received well above moisture during March and early April. Therefore, the Crop Moisture Index more accurately reflects the moisture situation, in terms of agricultural demand for moisture. This moisture has built up soil moisture supplies sufficiently to provide ample moisture for the greening wheat in most areas and is sufficient for seeding. However, soil profiles are not full in many areas and little runoff has occurred to build up streamflow and water tables. Therefore, as the Palmer Index map indicates the area is still experiencing a degree of drought.

It is well to point out that the Palmer Index does have a probability associated with it. In other words, the indicated values have only a certain probability associated with them. In persistent periods of wetness or dryness this probability if quite high. During transition periods, such as appears to be occurring in the Great Plains and Corn Belt the index may have a relatively low probability associated with it. After a period of time a specific index value will be assigned. If the wetness persists in the central States, the negative values currently indicated may end up to be positive.

In the western States, most agriculture is dependent upon irrigation water. Current reservoir levels are low and the mountain snowpack is less than 30 percent of normal. Near normal moisture since mid-February will help the western portions of Oregon and Washington, but the remainder of the area continued in the below normal pattern. Therefore, there will not be sufficient water to meet all of the needs. As a result, the total number of acres planted will be reduced somewhat and dryland agriculture will experience a number of difficulties.

Average Monthly Weather Outlook





THE 30-DAY OUTLOOK

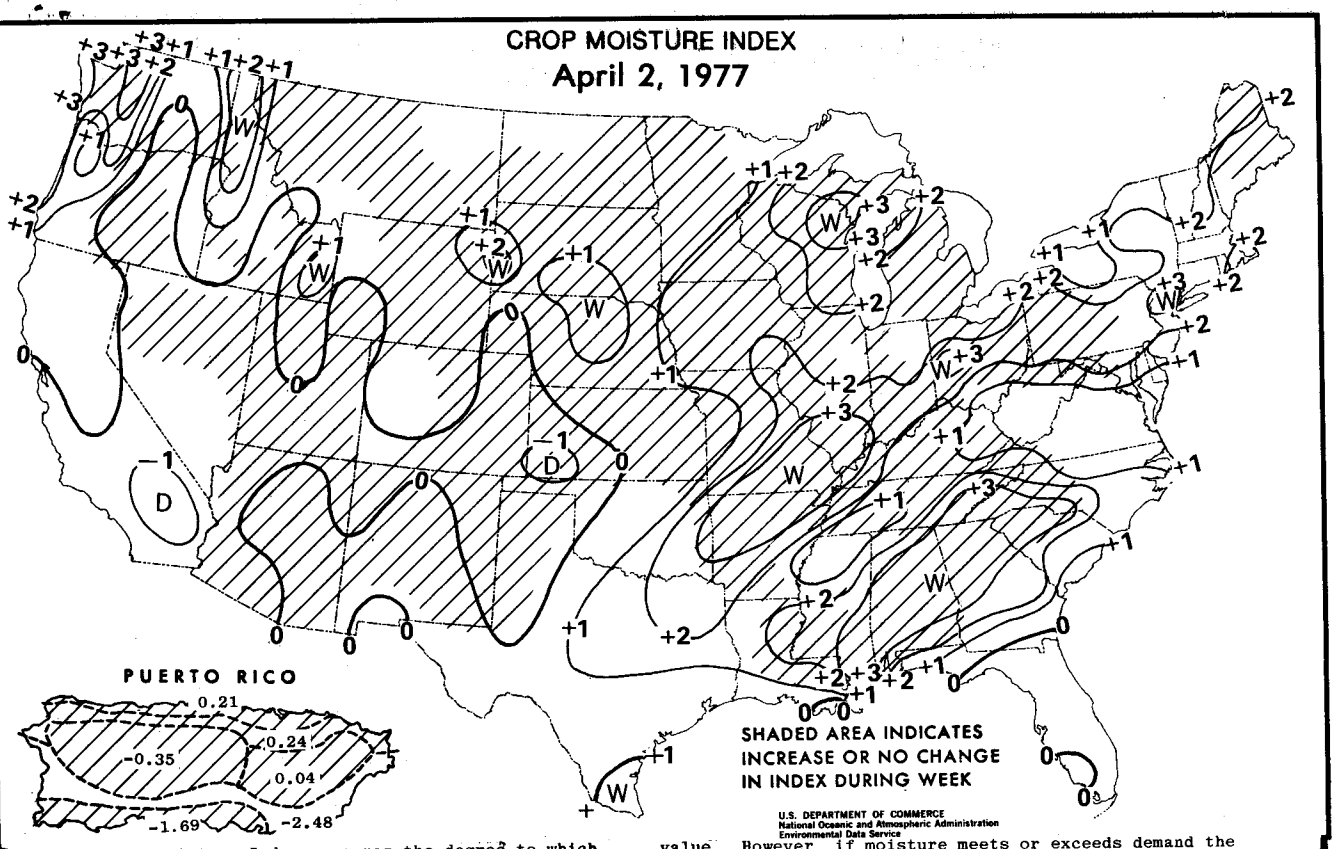
The latest 30-day outlook published by the National Weather Service calls for the above normal moisture pattern to continue across the northern Great Plains and the entire Corn Belt. Temperatures are expected to be near normal in the Corn Belt, above normal in the east and below normal in the western States.

AGRICULTURAL IMPLICATIONS OF THE OUTLOOK

If the above normal moisture pattern continues in the Corn Belt and northern Great Plains, corn and soybean planting should move ahead normally. One possible exception might be in the southeastern Corn Belt where moisture could be excessive. The drought in the western Corn Belt should be ended with full soil moisture profiles in most areas.

The moisture will also be beneficial to winter wheat in Kansas, Nebraska and Montana, and provide good moisture for seeding of spring grains in the Dakotas.

Even with above normal moisture expected in portions of California, this moisture would be inadequate to significantly improve the situation. They are moving into the drier summer period where normal moisture is very low.



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

If the potential moisture demand, or potential evapotranspiration, exceeds available moisture supplies, actual evapotranspiration is reduced and the CMI gives a negative value. However, if moisture meets or exceeds demand the index is positive.

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

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

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

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

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World Weather and Crop Update

USSR. General showers fell over much of European USSR during the reporting period from the Baltic Plain in the north to the northern half of the Ukraine and eastward to the Urals. Rainfall was light or insignificant in the southern half of the Ukraine, Moldavia, and in the North Caucasus. Temperatures turned colder at midweek with minimums well below freezing over the Baltics, Bielorussia, Central region and even into the Black Soil Zone, but damage, if any, to crops was probably light. By the end of the reporting period, temperatures were again above normal. Light to moderate scattered showers were recorded over Western and Eastern Siberia and in North Kazakhstan where total March precipitation was only about 50 percent of normal.

ASIA. Precipitation was fairly extensive in the People's Republic of China as moderate to heavy showers were recorded from the Yangtse River Valley southward into Kwangtung, the PRC's southernmost province. The southern fringe of the main winter wheat belt--southern Honan, northern Kiangsu and northern Anhivei--again received some much needed rainfall. But there was little significant precipitation throughout the main portion of the principal winter wheat growing provinces. More precipitation is needed in the far South where transplanting of the early rice crop is being delayed because of the shortage of irrigation water. Precipitation was seasonally light in Manchuria. In India, it was hot and dry except in the northeast and in Goa on the west coast. Unirrigated crops are under stress over much of that country as temperatures have soared into the 90's and low 100's. Light showers were recorded over the main wheat growing areas of Australia including southwest Australia where precipitation has been well below normal.

AFRICA. Data are incomplete for South Africa. Some light showers, however, were indicated in the data available for the principal maize region, but water demands for the maturing crops are now considerably reduced. In North Africa, showers, locally heavy, have brought some relief to winter grain crops that have been under heavy stress in recent weeks because of the lack of rainfall and high temperatures.

SOUTH AMERICA. Frost, with record low temperatures for this time of year, has been reported for Buenos Aires province in Argentina. The northern third of the country experienced general showers, but precipitation was insignificant in the principal wheat growing areas where fall planting is getting underway. Heavy precipitation occurred throughout the principal corn and soybean areas of Brazil during the reporting period. The heavy rainfall interrupted the harvest of these crops, and some crop damage probably occurred.

EUROPE. Showers were fairly general over Western Europe during the reporting period with precipitation ranging from 4-8 mm in Denmark to 25-30 mm in some parts of Benelux, France and West Germany. Winter grains throughout the area are in good condition, but a spell of dry weather is badly needed to enable farmers to prepare fields for spring planting. In Spain, the principal agricultural areas did not receive any significant rainfall over the past week. Rainfall also was light in southern Italy, but generous rains fell in the northern agricultural areas. In Eastern Europe, light precipitation-- 5 mm to 10 mm--fell in East Germany and Poland. Heavier amounts, however, were recorded in Czechoslovakia and Hungary. Yugoslavia also received some excellent rains, but precipitation was generally insignificant in Bulgaria and Romania. Moisture - short Greece also was essentially rainless during the period.

NORTH AMERICA. The moisture situation has continued to improve in the moisture deficit areas east of the Rocky Mountains in the United States. Excellent rains were recorded throughout the Corn Belt States while snow fell in the northern Great Plains. Winter wheat areas of Texas, Oklahoma and Kansas also received light to moderate showers, locally heavy with up to 2 inches in some places. But there was no relief for the drought stricken states on the West Coast as little significant precipitation fell in California and only light scattered showers occurred in Washington.