

Weekly Weather & Crop Bulletin

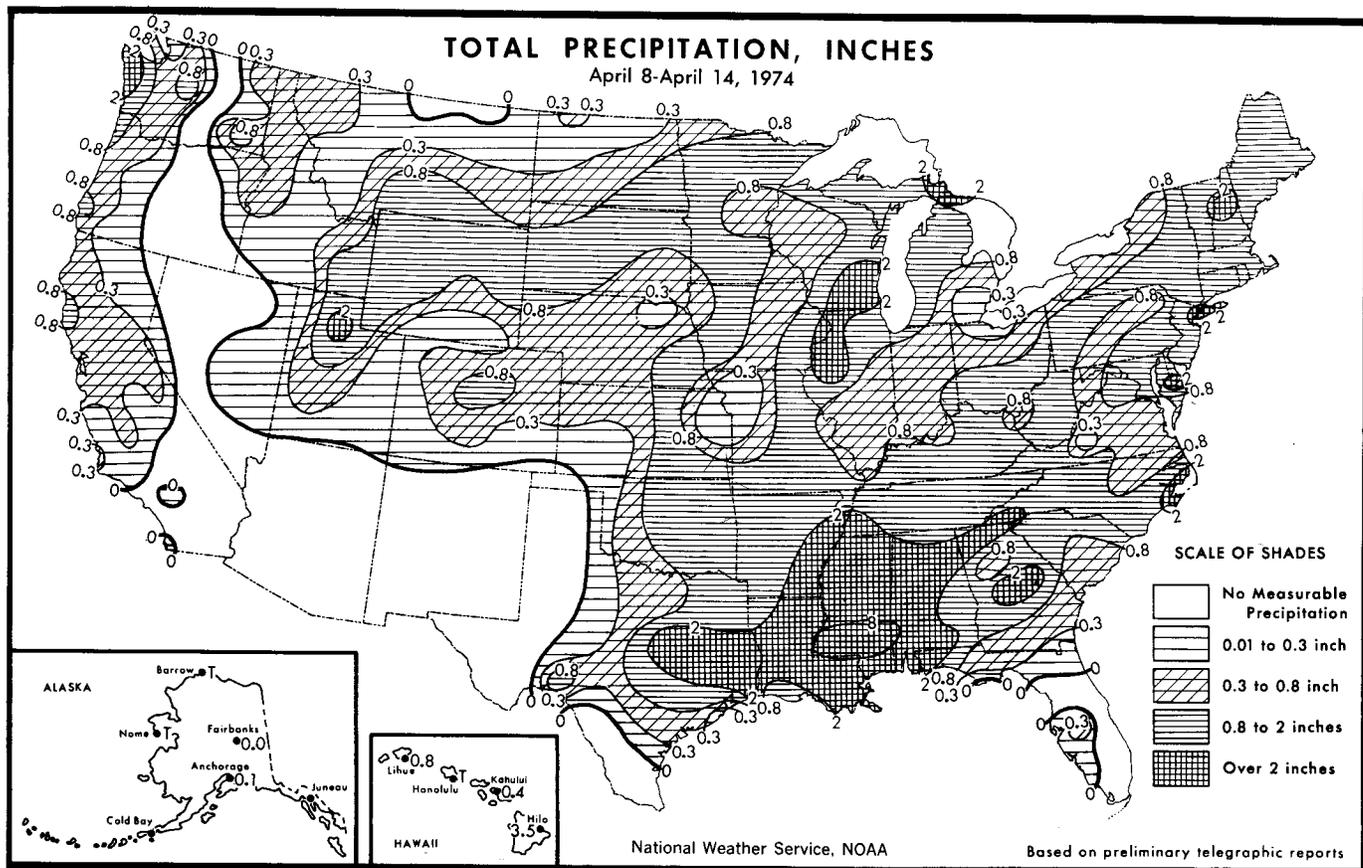
U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

U. S. DEPARTMENT OF AGRICULTURE
Statistical Reporting Service

Volume 61, No. 16

April 16, 1974

Washington, D. C.



NATIONAL WEATHER SUMMARY

HIGHLIGHTS: A series of violent thunderstorms and heavy spring rains drenched sections of the Nation's southeast last week with as much as 15.00 in. of precipitation. Again the southwestern States recorded no precipitation at all, continuing a long time drought condition for that area.

Most of the Nation enjoyed mild temperatures. The only exceptions were upper New England and the Central Plateau region where temperatures averaged 3° to 6° below normal for this time of year.

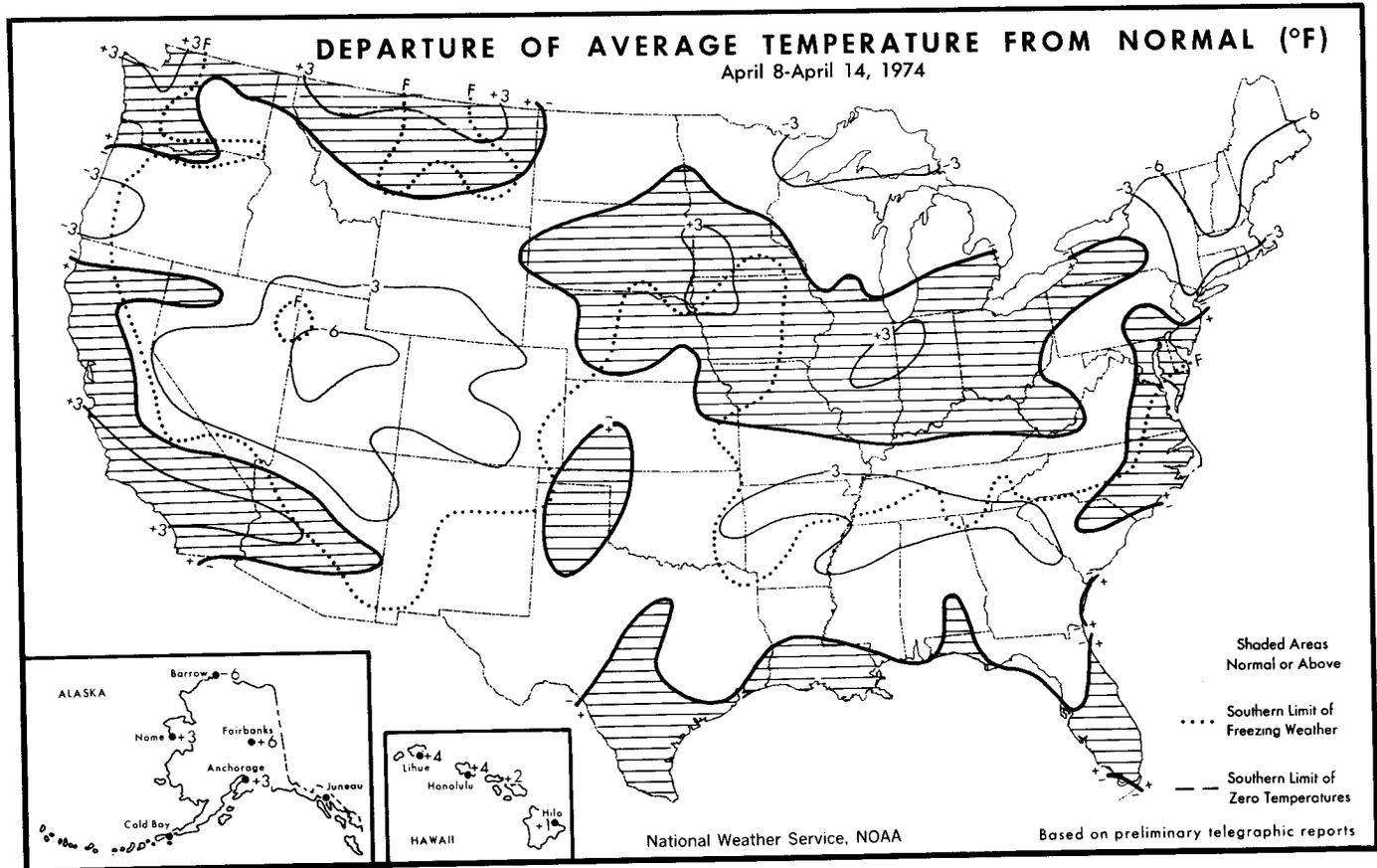
PRECIPITATION: Most of the Nation experienced some precipitation during the week. However, the drought-plagued Southwest recorded no precipitation and the "no rain" area extended north from Arizona through Nevada and western Idaho. In the precipitation areas, some of the heaviest amounts included: Tatoosh Island, Wash., 2.37 in.; Great Lakes area, 2.34 in.; Mt. Washington, N.H., 2.00 in.; and Ne-

wark, N.J., 2.00 in.

Early in the week a Low over West Virginia produced a band of snow reaching from Ohio to southern New York. Both Cleveland, Ohio, and Bradford, Penn., received 2.00 in. while Binghamton, N.Y., and Dayton, Ohio., both got 1.00 in. A cold front trailing southward from the West Virginia Low triggered thunderstorms and tornadoes from Virginia to northern Florida. One death and three injuries occurred in Lester, Ga., and extensive damage was reported in Athens, Tenn.; Templeton, Ala., and Gainesville, Ga. Three more injuries were reported in Cummings, Ga., when one home and one mobile home were damaged by a tornado.

Meanwhile, strong northeast winds piled up waters on the extreme southwest shore of Lake Erie with flooding as far as a half mile inland at one point.

On Tuesday snow fell to the north and west of an intensifying low pressure area that was centered



off the New Jersey Coast. Burlington, Vt., received 12 in. of snow during the day; 10 in. accumulated at Albany, N.Y., and 6 in. at Portland, Me.

By midweek a winterlike atmosphere returned to much of the Northeast and central Rockies. One of the heavy snowfalls in the central Rockies dumped 12 in. around Salt Lake City, Utah, and Albany, N.Y., recorded a record-breaking 12 in. of snow for this late in the season. On Wednesday, the storm center causing the wintry weather in the Northeast moved off the New England Coast.

Toward the end of the week a low pressure system over the Plains influenced much of the Nation's weather. Heavy rains and thunderstorms were reported along a cold front trailing out of a spring storm centered in western Kansas.

Thunderstorms spread from Louisiana and Texas into the middle Mississippi Valley and eastcentral Plains. Tornadoes and damaging winds were reported near Sioux City, Ia.; Weissert, Neb., and Monroe, La. By late Thursday night, 5.00 in. to 8.00 in. of rain had deluged central Louisiana and continued into the weekend with amounts greater than 8.00 to 12.00 in. over southern Mississippi causing considerable flooding.

During the weekend a spring storm dumped snow in the central Rockies and touched off tornadoes and thunderstorms over the central U.S. Most of the tornado damage was in Missouri and Illinois.

On Easter Sunday, a cold front pushed cooler air eastward toward the Atlantic Coast preceded by

numerous showers and thundershowers spreading through the Atlantic and central Gulf Coast States.

TEMPERATURE: Nearly the entire Nation enjoyed mild April temperatures last week.

Monday, an Arctic air mass produced unseasonably cold weather over the Great Lakes area. Morning temperatures dipped into the 20's and 30's in the lower Great Lakes and into the teens near the upper Great Lakes. The coldest spot in the Nation was 3° below zero at the Marquette County Airport.

At midweek, a late winter storm ushered in cold air to the East, sending temperatures dipping to record lows in Florida, New York, Ohio and Pennsylvania. Record low temperatures in Florida were recorded at West Palm Beach, Apalachicola, and Tallahassee. Temperatures dipped into the 20's and teens over most of Pennsylvania, with records at Scranton, 22°; Pittsburgh, 21°. Binghamton, N.Y., dropped to a record 20° and Youngstown, Ohio to 18°.

On Thursday, temperatures began warming in the Atlantic Coast States and from California to the Southwest but generally remained a little below normal for the season.

During the weekend, temperatures were cooler than normal from the upper Pacific Coast through the central Plains into the upper Mississippi Valley and New England. The remainder of the Nation enjoyed seasonal if not warmer temperatures. The Pacific Coast and many other areas enjoyed a near perfect day Easter Sunday.

NATIONAL AGRICULTURAL SUMMARY

AGRICULTURAL HIGHLIGHTS: Substantial rains benefitted winter wheat in Great Plains, but slowed small grain planting in the northern States and fieldwork in the Nation's eastern half. Florida citrus areas need rain urgently to relieve drought conditions. Many northern pastures started to green.

SMALL GRAINS: Substantial rains and seasonal temperatures over most of the Great Plains benefitted winter wheat. The crop is rated in generally good condition from Montana and South Dakota southward and eastward except in Texas with good growth showing in the Kansas-Oklahoma area. The wet weather slowed planting of spring small grains getting underway in northern States to slightly behind usual progress.

The Kansas wheat crop has recovered from recent freezes and made good growth last week in good condition although development is running slightly behind normal. Soil moisture is adequate except in some southwest and northeast Kansas counties. Oklahoma wheat acreage is 80% jointing, about the same as a year earlier. More rain is needed in western Oklahoma counties. In Texas, irrigated wheat looks good and made satisfactory progress but nonirrigated wheat continued to decline. Most wheat is headed out from the Texas Low Plains southward.

In the Northwest, both spring and winter wheat crops are in good shape but warmer weather is needed to stimulate normal growth.

Winter wheat and rye is greening up as far north as southern Minnesota but wetness and cold have limited spring small grain planting in all Canadian border States. Nearly 5% of the spring wheat and oats are seeded in Montana compared to 10% last year. Oats are 16% seeded in South Dakota compared to 30% last year and normal 27%. About 1% of the oats are planted in Minnesota and Wisconsin versus about 7% or 8% normally.

OTHER CROPS: Rains and wet fields limited fieldwork in the eastern half of the Nation although good progress was accomplished in Texas, Louisiana, and Mississippi before late week rains halted activities. Plowing progress for corn and soybean land is ahead of normal in the Corn Belt due to the better-than-average progress last fall. Some plowing completion reports: Indiana 50%, normal 40%; Illinois 75%, normal 63%; and Iowa 70%, normal 50%.

Cotton planting in Texas made excellent progress and at 16% complete leads last year's slow pace of 9%. Cotton land in Arkansas is ready to plant when fields dry some while about 1% of the crop is seeded in Mississippi. Less than 10% of the intended acreage in Alabama and 1% in Georgia is planted and progress is slow. Planting was active in the San Joaquin Valley of California and all areas of Arizona.

Corn planting became more active in southeast Virginia and advanced to 37% complete in South

Carolina versus 14% last year. Georgia corn is 22% planted while Texas acreage reached 56% planted versus 49% in 1973. Progress in Kansas is about normal at 5%.

Sorghum advanced to 38% planted in Texas, ahead of last year's pace of 33% while rice planting at 71% is running well ahead of the 40% in 1973.

Tobacco transplanting is near normal in Georgia at 80% done. Flue-cured tobacco is 4% transplanted in North Carolina and tobacco plants are emerged in 54% of the plant beds in Kentucky.

Potato planting remained active on the upper Eastern Shore of Virginia and in eastern Washington. Planting is complete in the Texas High Plains area.

FRUITS AND NUTS: Florida citrus trees remained in good condition but need rain urgently. Blooms and newly set fruit are progressing slowly due to the dryness. Grapefruit harvesting remains very active while Valencia orange harvesting increased.

The Texas citrus harvest moved rapidly nearer to completion. Citrus picking continued on a limited scale in Arizona where groves are in good condition and full bloom.

In California, the Navel orange harvest continued with problems of granulation, drying, and puffing of fruit. Good quality Valencias are being harvested. Orchard and vineyard fieldwork increased following recent rains. Pears and apples are in various stages of bloom.

In Washington, peaches are blooming and cherry buds opened in early orchards. Pears are blooming, at Medford, Oregon.

Peaches are in good condition in South Carolina as growers were busy spraying orchards.

VEGETABLES: Tomatoes continued to lead the volume of shipments from Florida, but some decline was noted from the previous week. Cabbage and celery were down while sweet corn, snap beans, escarole, and lettuce remained steady. Watermelons gained momentum.

In Texas, onion supplies continued to increase as harvest got underway at Laredo and in the coastal bend area and gained in the Lower Rio Grande Valley where cabbage and carrot harvests were active.

Spring lettuce harvesting varied in California from complete at Palo Verde to active at several other areas. Carrot digging is in full swing at Imperial while celery decreased at Oxnard.

PASTURES AND LIVESTOCK: Pastures greened as far north as southern Minnesota and in scattered areas of South Dakota. Pastures are beginning to provide considerable forage in most areas with supplemental feeding declining.

Livestock remain in generally good condition with normal death losses so far during the spring calving and lambing season.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., April 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 . . .	61	- 1	2.9	+1.8	La. Baton Rouge . . .	69	+ 2	2.4	+1.2	Youngstown . . .	46	0	1.0	+ .2
Mobile . . .	66	- 1	3.2	+1.8	Lake Charles . . .	69	+ 1	1.9	+ .9	OKLA. Okla. City . . .	57	- 2	1.1	+ .4
Montgomery . . .	64	0	.8	- .3	New Orleans . . .	70	+ 2	2.7	+1.7	Tulsa . . .	59	- 1	1.0	+ .1
ALASKA Anchorage . . .	37	+ 3	.1	0	Shreveport . . .	63	- 2	1.3	+ .1	OREG. Astoria . . .	48	+ 1	1.4	+ .2
Barrow . . .	10	+ 6	T	- .1	MAINE Caribou . . .	28	- 7	1.0	+ .4	Burns . . .	42	- 1	T	- .1
Fairbanks . . .	32	+ 6	0	- .1	Portland . . .	37	- 4	1.7	+ .9	Medford . . .	46	- 3	T	- .2
Juneau . . .	---	---	---	---	MD. Baltimore . . .	52	0	1.9	+1.2	Pendleton . . .	50	0	.2	0
Kodiak . . .	---	---	---	---	MASS. Boston . . .	42	- 5	1.9	+1.1	Portland . . .	50	0	.5	0
Nome . . .	19	+ 3	T	- .2	Chatham . . .	43	---	1.9	---	Salem . . .	48	- 1	.5	- .1
ARIZ. Flagstaff . . .	41	0	0	- .4	MICH. Alpena . . .	36	- 2	1.1	+ .5	PA. Allentown . . .	48	0	1.8	+ .9
Phoenix . . .	69	+ 3	0	- .1	Detroit . . .	47	+ 1	.2	- .6	Erie . . .	45	+ 2	.7	- .1
Tucson . . .	63	- 1	0	- .1	Flint . . .	46	+ 2	.4	- .3	Harrisburg . . .	52	+ 1	1.6	+1.0
Winslow . . .	48	- 4	0	- .1	Grand Rapids . . .	45	0	.8	0	Philadelphia . . .	51	0	1.7	+ .9
Yuma . . .	69	- 1	0	0	Houghton Lake . . .	39	- 1	1.7	+1.1	Pittsburgh . . .	48	- 1	1.0	+ .2
ARK. Fort Smith . . .	57	- 4	.9	- .2	Lansing . . .	46	+ 1	.2	- .5	Scranton . . .	45	- 2	.8	+ .1
Little Rock . . .	59	- 1	1.5	+ .3	Marquette . . .	36	- 3	1.0	+ .4	R. I. Providence . . .	43	- 3	1.9	+1.0
CALIF. Bakersfield . . .	65	+ 3	.3	+ .1	Muskegon . . .	44	0	1.6	+ .8	S. C. Charleston . . .	61	- 2	.3	- .4
Eureka . . .	50	+ 1	.5	- .2	S. Ste. Marie . . .	33	- 3	2.3	+1.8	Columbia . . .	63	0	.6	- .2
Fresno . . .	59	0	.1	- .2	MINN. Duluth . . .	34	- 3	.8	+ .2	Greenville . . .	57	- 3	1.6	+ .5
Los Angeles . . .	65	+ 4	0	- .4	Internatl Falls . . .	34	- 2	.8	+ .4	S. D. Aberdeen . . .	44	+ 2	1.4	+ .9
Red Bluff . . .	58	0	.3	- .1	Minneapolis . . .	45	+ 2	1.0	+ .6	Huron . . .	46	+ 2	.8	+ .3
San Diego . . .	62	+ 2	T	- .2	Rochester . . .	44	+ 1	.5	0	Rapid City . . .	44	+ 1	1.1	+ .6
San Francisco . . .	57	+ 2	.5	+ .1	St. Cloud . . .	41	0	.6	+ .1	Sioux Falls . . .	47	+ 2	.7	+ .2
Stockton . . .	59	+ 1	.6	+ .2	MISS. Jackson . . .	63	- 2	4.6	+3.5	TENN. Chattanooga . . .	56	- 4	1.2	+ .1
COLO. Denver . . .	44	- 2	1.0	+ .6	Meridian . . .	63	- 1	7.4	+6.2	Knoxville . . .	58	- 1	1.8	+ .9
Grand Junction . . .	46	- 4	.1	- .1	MO. Columbia . . .	53	0	1.4	+ .5	Memphis . . .	59	- 3	2.1	+ .8
Pueblo . . .	45	- 4	.3	0	Kansas City . . .	53	0	.1	- .7	Nashville . . .	56	- 3	1.1	+ .1
CONN. Bridgeport . . .	46	- 2	.9	+ .1	St. Louis . . .	57	+ 2	.5	- .4	TEX. Abilene . . .	63	- 1	.3	- .2
Hartford . . .	43	- 3	1.8	+ .9	Springfield . . .	53	- 2	.9	- .1	Amarillo . . .	56	+ 1	0	- .2
D. C. Washington . . .	55	0	1.6	+1.0	MONT. Billings . . .	43	0	1.1	+ .7	Austin . . .	68	0	1.1	+ .3
FLA. Apalachicola . . .	67	0	T	- .9	Glasgow . . .	45	+ 4	T	- .1	Beaumont . . .	69	+ 1	2.6	+1.7
Daytona Beach . . .	71	+ 2	0	- .6	Great Falls . . .	43	+ 1	.2	- .1	Brownsville . . .	76	+ 2	T	- .3
Ft. Myers . . .	74	+ 1	T	- .5	Havre . . .	45	+ 3	T	- .2	Corpus Christi . . .	74	+ 2	T	- .5
Jacksonville . . .	66	- 1	T	- .7	Helena . . .	43	+ 2	.2	0	Del Rio . . .	71	0	0	- .3
Key West . . .	77	- 1	T	- .5	Kalispell . . .	43	+ 3	.4	+ .2	El Paso . . .	62	- 1	0	- .1
Lakeland . . .	71	0	.4	- .8	Miles City . . .	44	0	.6	+ .3	Fort Worth . . .	64	0	.7	- .3
Miami . . .	76	+ 1	T	- .8	Missoula . . .	42	0	.2	0	Galveston . . .	70	+ 2	.2	- .4
Orlando . . .	72	+ 1	0	- .7	NEBR. Grand Island . . .	49	+ 1	.7	+ .2	Houston . . .	67	- 2	1.0	+ .2
Tallahassee . . .	65	- 2	.5	- .5	Lincoln . . .	49	- 1	1.2	+ .6	Lubbock . . .	59	0	0	- .2
Tampa . . .	71	0	.1	- .4	Norfolk . . .	48	+ 1	.3	- .2	Midland . . .	62	- 1	0	- .1
W. Palm Beach . . .	74	+ 1	0	- .8	N. Platte . . .	47	+ 1	.4	0	San Angelo . . .	65	- 1	.2	- .1
GA. Atlanta . . .	59	- 1	.7	- .4	Omaha . . .	49	+ 1	1.0	+ .4	San Antonio . . .	71	+ 2	.5	- .1
Augusta . . .	60	- 3	1.4	+ .6	Valentine . . .	44	0	.7	+ .3	Victoria . . .	71	+ 1	.5	- .1
Macon . . .	63	- 2	2.2	+1.3	NEV. Ely . . .	36	- 4	.1	- .2	Waco . . .	65	- 2	2.3	+1.4
Savannah . . .	65	0	.6	- .1	Las Vegas . . .	62	0	0	- .1	Wichita Falls . . .	62	- 1	.6	- .1
HAWAII. Hilo . . .	73	+ 1	3.5	+ .4	Reno . . .	43	- 3	T	- .1	UTAH. Blanding . . .	43	- 3	.1	- .1
Honolulu . . .	78	+ 4	T	- .4	Winnemucca . . .	44	0	T	- .1	Salt Lake City . . .	42	- 6	3.3	+2.8
Kahului . . .	76	+ 2	.4	+ .1	N. H. Concord . . .	36	- 7	1.2	+ .5	VT. Burlington . . .	35	- 7	1.6	+1.0
Lihue . . .	77	+ 4	.8	0	N. J. Atlantic City . . .	52	+ 2	1.5	+ .7	VA. Lynchburg . . .	55	- 1	.4	- .2
IDAHO. Boise . . .	47	- 1	.3	0	Trenton . . .	50	- 1	1.7	+1.0	Norfolk . . .	59	+ 2	.7	+ .1
Lewiston . . .	48	- 1	.4	+ .1	N. MEX. Albuquerque . . .	53	- 1	0	- .1	Richmond . . .	58	+ 1	.5	- .1
Pocatello . . .	42	- 2	.9	+ .7	Roswell . . .	57	- 1	0	- .1	Roanoke . . .	55	0	.3	- .3
ILL. Cairo . . .	57	- 2	.5	- .5	N. Y. Albany . . .	41	- 4	1.5	+ .9	WASH. Colville . . .	47	+ 2	.3	+ .1
Chicago . . .	50	+ 2	1.1	+ .2	Binghamton . . .	43	0	1.1	+ .4	Omak . . .	48	0	T	- .2
Moline . . .	50	+ 1	3.0	+2.1	Buffalo . . .	43	- 9	.6	- .1	Quillayute . . .	47	+ 2	2.4	+ .4
Peoria . . .	52	+ 2	2.4	+1.4	New York . . .	47	- 3	2.0	+1.2	Seattle-Tacoma . . .	51	+ 3	.4	- .2
Rockford . . .	47	0	1.1	+ .2	Rochester . . .	45	0	.6	0	Spokane . . .	44	- 1	.2	- .1
Springfield . . .	54	+ 3	.6	- .4	Syracuse . . .	45	0	.9	+ .2	Walla Walla . . .	49	- 3	.8	+ .4
IND. Evansville . . .	56	+ 1	1.2	+ .3	N. C. Asheville . . .	55	0	1.5	+ .6	Yakima . . .	50	+ 2	T	- .1
Ft. Wayne . . .	49	+ 1	.5	- .3	Charlotte . . .	58	- 2	.9	+ .1	W. Va. Beckley . . .	51	0	1.0	+ .2
Indianapolis . . .	53	+ 2	.8	- .1	Greensboro . . .	56	- 1	.8	0	Charleston . . .	58	+ 3	.9	+ .1
South Bend . . .	50	+ 3	.8	- .2	Hatteras . . .	60	+ 2	2.0	+1.3	Huntington . . .	55	0	.7	- .1
IOWA. Burlington . . .	50	0	1.5	+ .6	Raleigh . . .	58	0	.6	- .1	Parkersburg . . .	54	0	.8	0
Des Moines . . .	50	+ 2	.8	+ .2	Wilmington . . .	62	0	1.4	+ .7	WIS. Green Bay . . .	42	- 1	1.6	+1.0
Dubuque . . .	46	0	1.7	+ .7	N. DAK. Bismarck . . .	39	- 2	.7	+ .3	La Crosse . . .	46	0	.6	0
Sioux City . . .	51	+ 4	.6	+ .1	Fargo . . .	41	+ 1	1.2	+ .7	Madison . . .	46	+ 2	2.1	+1.5
KANS. Concordia . . .	50	- 1	1.1	+ .6	Williston . . .	40	0	.2	- .1	Milwaukee . . .	43	- 1	2.4	+1.8
Dodge City . . .	54	+ 2	T	- .4	OHIO. Akron-Canton . . .	49	+ 2	.4	- .4	WYO. Casper . . .	39	- 3	.4	+ .1
Goodland . . .	45	- 2	.5	+ .2	Cincinnati . . .	53	+ 1	1.0	+ .4	Cheyenne . . .	39	- 3	.3	- .1
Topeka . . .	54	+ 1	.1	- .7	Cleveland . . .	49	+ 2	.4	- .4	Lander . . .	39	- 3	1.2	+ .7
Wichita . . .	53	- 2	.9	+ .2	Columbus . . .	53	+ 3	.8	0	Sheridan . . .	41	- 1	1.2	+ .7
KY. Lexington . . .	54	0	.9	- .0	Dayton . . .	51	+ 1	.9	+ .1	P. R. San Juan . . .	79	+ 2	.2	- .5
Louisville . . .	55	0	.5	- .5	Toledo . . .	47	0	.2	- .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: Sunny, cool early in week. Temperatures low 30's Tennessee Valley Tuesday morning. Warmer temperatures remainder of week with heavy rains and thundershowers over State weekend. Rains 3.00 to 6.00 in. fell over west and central sections Friday night and early Saturday with partial lowland flooding. Soil temperatures over southeast varied from minimums in low 50's to maximums in upper 70's.

Fieldwork slowed by frequent rains and wet soil over most of State. Planting of cotton limited to driest upland fields Tennessee Valley, south and central. Cotton less than 10% planted, will carry priority next few weeks. Corn 10% planted, slightly ahead of last year. Few fields of peanuts planted, but rain and wet soil restricted progress. Small grains good, 40% of acreage heading. No excessive rust damage to wheat so far. Pastures made good growth and supplied seasonally short to adequate grazing. Livestock fair to good.

ARIZONA: Dry week, very low humidities except scattered traces rain, snow in higher elevations north, central on 10th. Humidity dropped to 3% Phoenix, Saturday afternoon. Strong, dry cold front crossed State on 9th, wind gusts 40 to 60 mph, blowing dust. Another dry front on 12th, 13th with gusts 35 to 55 mph in north. Temperatures averaged from few degrees above normal westcentral to 5° subnormal north.

Small grain development progressed normally. Barley, wheat turning color in early planted areas. Planting cotton virtually all areas, major areas 20% to as high as 70% planted. Some remaining plantings to follow harvest of small grain crop. Very little sorghum planting. Sugarbeets continued good growth, development. Haying increased, winds hampered curing.

Lettuce harvest nearly complete Yuma, Salt River Valley at volume levels and harvesting underway Pima County. Cochise County lettuce satisfactory progress, excellent conditions. Carrot harvest picking up Yuma. Cabbage, broccoli Yuma nearly complete. Valencia oranges picked Yuma, Maricopa areas on limited scale. Kinnow Mandarins picked Salt River Valley, good demand. Limited picking grapefruit Yuma. Citrus groves full bloom, good condition. Ranges vary fair to poor, very dry. Stockwater, soil moisture short. Feed grain, hay supplies adequate most areas. Livestock generally fair. Movement sheep from desert pasture to mountain ranges virtually completed.

ARKANSAS: Temperatures slightly subnormal. Greatest subnormal departure eastcentral. Cool early week, warm midweek, cooling trend weekend. Extremes: 21° at Gilbert 9th, 85° Fort Smith 13th. Rain general midweek, lightest northwest, heaviest southeast. Most stations got 1.50 in. or more, least 0.69 in. at Fayetteville, greatest 3.74 in. at Eudora in extreme southeast.

Rain firmed seedbeds, rice levees, prevented wind erosion and boosted small grains, hay and pasture. Fieldwork suspended until soils dry, no flooding occurred. Soil moisture adequate except southwest and northcentral. Cotton land fertilized, bedded, ready to plant. Drier, warmer weather needed. Limited rice acreage planted, growers wait-

ing for warmer weather. No rice up. Wheat, oats made vigorous growth. Wheat heading south, boot stage north. Corn, sorghum, and soybeans limited to seedbed preparation. Forage growth normal. Tomato transplanting continued. Cattle good. Ticks, flies, and lice increased but controls used.

CALIFORNIA: Much colder air moved southward rapidly through State midweek. Some precipitation all regions. Largest totals about 0.50 to nearly 1.00 in. over north half. Thunderstorms, some hail reported. Reports of frost scattered and light. Rapid warming occurred by end of week.

Small grains good growth. Cutting for hay started. Planting field corn started. Sugarbeets doing well, some planting still. New crop being dug Imperial Valley. First cutting alfalfa San Joaquin Valley. Cotton planting active San Joaquin valley, mostly good stands Imperial Valley.

Orchard and vineyard fieldwork increased after recent rains. Few reports of frost protection practices, some widely scattered hail damage. Grapevines continued leaf out, some mildew work done. Almonds good to excellent. Pears varying stages bloom, leaves developing. Thinning early varieties peaches started. Thrip treatment continued in nectarines. Apple bloom varies by variety, area, spraying for scab continued. Prune set reported good, new leaves pushing. Navel oranges blooming, harvest continued, granulation problem in larger sizes, drying and puffing showing up. Valencia harvest continued, quality good. Grapefruit, lemon, avocado harvest slow.

Asparagus continued, increased movement to processors. Broccoli heavy Santa Maria, cauliflower declined. Carrot digging full swing Imperial. Light digging processing Santa Maria. Celery decreased slightly Oxnard, light harvest Orange. Spring lettuce Palo Verde virtually completed, cutting Westside, Santa Maria, Oxnard increased, light harvest started Salinas. Strawberry continued increase south. Light picking started Salinas-Watsonville. Light bloom showing spring market tomatoes. Rangelands, pastures very good. Water ample, livestock good to excellent. Spring calving north good rate. Sheep shearing declined. First cattle into mountain range east.

COLORADO: High temperatures in 60's and 70's Monday and Tuesday, dropping into 40's and 50's rest of week. Gusty winds most days. Precipitation averaged around 0.33 in. in Colorado and Kansas River Basins while considerable moisture added to Platte, Arkansas and Kansas Basins over weekend by spring snowstorm. This storm added from 0.50 to near 1.00 in. moisture to north and eastcentral portions, while under 0.50 in. fell southeast. Southwest got very light amounts.

Precipitation further delayed field activities most areas. Early week drying wet fields, by weekend more rain and snow. Most moisture confined northern half. Southern portion cool and windy. Early spring seeded crops and soil preparation falling behind schedule. Oats 52%

seeded, 17% emerged. Spring barley 34% seeded, 16% emerged. Sugarbeets 29% seeded, 10% emerged. Summer potatoes 8% seeded, 1% emerged. Winter wheat, barley good to excellent. Livestock good. Ranges and pastures improved slowly.

FLORIDA: Mild during week but warm by weekend. Temperatures averaged slightly below normal. Rain-fall light to locally moderate statewide in scattered showers.

Soil moisture short for field crops south and central, mostly adequate north and west. Fieldwork and planting active. Planting corn and tobacco about complete. Sugarcane harvest nearly finished, young plant and stubble cane good. Small grains heading. Pastures very poor to poor. Cattle and calves fair to good, mostly fair.

Citrus trees generally good condition but need rain urgently. Bloom and newly set citrus fruit progressing slowly due to general dry conditions since first of March. Drought southcentral causing heavy stress on remaining grapefruit and Valencia oranges in those areas. Grapefruit harvest remains very active for fresh and processing markets. Valencia harvest increased.

Tomatoes continued volume leader but off from last week's high level. Cabbage, celery down. Potatoes held steady, increase expected after this week, as Hastings deal gets going. Peppers remain heavy. Sweet corn steady, in transition between east coast sandlands, Everglades. Snap beans, escarole, lettuce steady. Cucumbers declined. Watermelons gained momentum.

GEORGIA: Temperatures averaged 6° to 8° subnormal ranging from mid-40's mountains to near 60° coast, mostly low to upper 50's. Rainfall most areas but amounts ranged from less than 0.10 in. to locally more than 1.00 in. Highest at Macon, 2.08 in. Severe weather abated somewhat, few severe storms Monday afternoon and evening northwest, southwest. Weekend warmer with scattered showers.

Soil moisture supplies mostly adequate to surplus all areas. Field preparations and plantings frequently interrupted by scattered showers. Clean-up following recent tornadoes continued active. Tobacco transplanting near normal at 80% complete. Corn 22% planted. Cotton remains 1% planted. Cool weather hindering plant growth. Small grains mostly fair to good, diseases still a problem. Pastures and cattle good.

HAWAII: Shower activities increased in all windward areas of islands. Warm weather favorable to crop progress. Harvest prospects of leafy crops high level. Other vegetable supplies also increased. Banana production holding steady. Papaya production on uptrend. Cattle, pastures good. Sugar plantations idle because of strike. Pineapple operations normal on Molokai, but other Islands' operation on strike.

IDAHO: Scattered showers, gusty winds, and cooler temperatures midweek after a few warm days early week. End of week below freezing, 6 to 7 in. snow fell southeast. Temperatures below normal averaged in low to mid-40's. High winds, rain, and snow delayed farming operations. Less than 10% spring grains and peas planted north. About 60% spring wheat, barley, potatoes, onions, sugarbeets planted southwest. Spring grains 25% planted southcentral valleys but very few grain fields east. Peach and apricots in bloom, cherry blossoms appearing southwest fruit areas. Livestock moving to spring grazing areas. Lambing, calving finishing. Range,

pasture moisture supplies plentiful, forage growth slowed by cool weather.

ILLINOIS: Temperatures slightly above normal. Highs in 50's and 60's 6th, 7th. Coldest day 5th, 40's north, 50's south. Cold night on 9th, low in 20's. Warming trend 10th to 12th, highs in 70's. Precipitation heaviest north, averaged 1.00 to 3.00 in., south averaged 0.50 in.

Oats 60% seeded, 33% last year, 1970-73 average 59%. About 75% corn and soybean acreage plowed, 32% last year, average 63%. Winter wheat mostly good, 80% reporting no damage or only light freeze damage. Pastures mostly good, supplying nearly 40% roughage needs. Apple crop damage moderate to severe according to 78% reporters. Nearly 80% reported peach crop severely damaged. Hay crops mostly fair to good. Soil moisture adequate 29%, surplus 71%. Main activities fertilizer application, plowing, seeding oats, disking stalks. Wet weather delayed fieldwork, 2 days suitable.

INDIANA: Cool week. Most days cloudy or rainy. Temperatures ranged from 20's to 70's. Precipitation averaged 0.80 in. west and central, 0.50 in. east. Soil temperatures subnormal. High winds on 14th.

Fieldwork limited, soils still wet, less than one day suitable. Topsoil moisture surplus. Subsoil moisture adequate to surplus. Fieldwork slightly behind normal. Vegetative growth about average. Wheat 6 in. tall, same as 1973, average 4 in. Oats 10% seeded, same as last year, average 40% seeded. Land plowed 50% complete, 15% in 1973, average 40%. Little progress plowing since last fall. Pastures remain fair. Potential peach crop severely damaged by March freeze. Some damage to apple buds.

IOWA: Temperatures averaged near normal. Showers and thunderstorms on 9th, 11th, 13th, and 14th.

Fieldwork made good progress through midweek when interrupted by a general rain on 11th and 12th. Fields slow in drying under cloudy conditions. Averaged 4 days suitable fieldwork. Plowing, fall and spring, 70% complete, 1968-72 average 50%, 1973 32%. Oats 58% seeded, average 50%, 1973 22%. Topsoil moisture 68% adequate, 30% surplus, 2% short. Other farm activities: Fertilizer application, discing, stalk shredding. Pastures greening-up but provided little feed.

KANSAS: Substantial rains midweek, again over weekend brought beneficial amounts all areas except portions extreme northeast and extreme southwest. Temperatures averaged 2° below normal southwest to 1° above normal northwest and east.

Winter wheat crop showed good growth, in good condition, slightly behind normal. Wheat recovered from late freezes. Cutworm infestations not serious. Topsoil and subsoil moisture adequate except some southwest and northeast counties. Corn acreage 5% seeded, same as 10-year average. Spring barley acreage 85% seeded, 75% 10-year average. Spring oats 90% seeded, 80% 10-year average. Alfalfa weevil common statewide, some spraying in east. Cattle mostly off sown wheat, some supplemental feeding still prevalent.

KENTUCKY: Temperatures near normal. Weekly lows in upper 20's and low 30's, highs around 80°. Rainfall averaged 0.75 in. west to around 1.25 in. east.

Fieldwork limited to 2.5 days. Soil moisture 65% surplus, 35% adequate. Few corn fields planted. Plowing 60% complete. Tobacco plants up in 54% of beds. Wheat fair to good, average height 12 in. About 6% small grains suffered injury from recent low temperatures. Pastures excellent. Less clover and grass seeded because increased cost of seed and fertilizer.

LOUISIANA: Temperatures averaged 1° to 8° subnormal. Cool early week, highs in 70's, warming rest of week. Extremes: 84° Shreveport and Alexandria, 34° Homer. Precipitation widespread with thundershowers 11th west and 12th east. Heaviest amount 11.2 in. Winnfield Thursday night.

Farmers busy completing preparation to plant cotton. Most soybean land plowed. Soil moisture mostly adequate. Fieldwork averaged 5.5 days suitable. Cotton planting begun northwest on limited scale. Corn planting good progress, 40% planted, stands good. Rice seeding 60% complete, good stands. Sugarcane cultivation active. Strawberries good quality and yield, volume increased. Subnormal temperatures slowed growth of peppers and most other plants.

MARYLAND AND DELAWARE: Temperatures averaged 3° to 5° subnormal. Lows ranged from low 20's to low 30's, highs low 60's to mid-70's. Precipitation over two States ranged from slightly over 0.50 to over 1.33 in.

Fieldwork slowed early in week. Plowing and planting active by week's end on drier soils. Oat seeding normal progress. Potato and sweet-potato planting underway. Green peas for processing neared completion. Small grain growth responded to warmer weather. Tobacco stripping nearly completed.

MICHIGAN: Precipitation generally totaled 1.50 to around 2.50 in. -extreme eastern upper and northwest lower and 0.50 in. or less over south-east lower and extreme west upper. Elsewhere precipitation totaled 0.50 to 1.50 in. Precipitation fell as showers or thundershowers last half of week.

Temperatures averaged near to 2° above normal over south lower, near to 3° below normal over northern lower, and 2° below to 4° below normal over upper peninsula.

MINNESOTA: Temperatures 1° to 3° below normal northeast half and 1° to 3° above in southwest half. Lows 0° to 32°, highs 45° to 65°. Precipitation 0.75 to 1.25 in. most sections or 0.25 to 0.50 in. above normal. River and field flooding in Red River Valley.

Spring wheat, oats seeding underway few west central, southwest counties. Elsewhere, wet conditions and frozen ground preventing start fieldwork. Statewide, 1% oats and spring wheat planted compared with 5-year averages of 7% oats and 9% spring wheat. No barley seeded, 5-year average 5%. Top and subsoil moisture adequate to surplus. Surplus soil moisture in north third and southeast. Winter wheat, rye, pastures, and haylands greening up south half.

MISSISSIPPI: Temperatures cool until warming trend on 10th. Average temperatures below normal. Extremes: 83° at Gulfport, 27° at Holly Springs. Rainfall averaged 1.00 to 3.00 in. over State until Friday. Friday, heavy rains portions central and south persisted through Sunday. Totals near 5.00 in. over area bounded by Vicksburg, east to Meridian, south to Hattiesburg, and west to McComb and Natchez. A 30-

mile band of extremely heavy rain from Brookhaven to Bay Springs had in excess of 10.00 in. Monticello had 14.40 in. through Sunday morning, Magee had 17.00 in.

Soil moisture mostly adequate northwest and adequate to excessive elsewhere. Fieldwork averaged 4.1 days suitable. Corn 25% planted, 18% in 1973, normal 20%. Cotton 1% planted. Rice 18% seeded. Wheat 40% and oats 35% headed, conditions fair to good. Corn, truck crops, potatoes, pastures and livestock poor to excellent, mostly fair. About 89% of respondents indicate tractor fuel supplies adequate and 74% indicate fertilizer supplies short.

MISSOURI: Rainfall averaged over 1.00 in. except for northwest and northcentral. Hail, high winds and a few tornadoes with severe thunderstorm activity on 13th. Low temperatures Monday mid-20's to low 30's most of State. Temperatures for week averaged from 6° subnormal in Bootheel to near normal elsewhere. Warming last half week to highs near 80° or above except northwest on 13th.

Four days suitable fieldwork. Plowing 56% complete. Oats 82% sown, 48% normal. Corn planting 6% complete, normal 4%. Pastures generally fair to good. Fertilizer supplies short.

MONTANA: Temperatures near to 4° above normal. Temperatures cooled midweek but warmed over week-end. Highs mostly 60's, lows in 20's. Significant precipitation some stations west, central, southcentral, and southeast divisions and heavy snowfall mountains.

Winter wheat condition improved, mostly good except northcentral where mostly fair to good. Topsoil moisture generally adequate except northcentral and central where shortages still exist. Ranges growing except northeast and high elevation areas. Spring planting progress slow. Nearly 5% spring wheat and oats, 15% barley, and 25% sugarbeets seeded. Calving and lambing over 67% done. Livestock mostly good still on supplemental feed.

NEBRASKA: Temperatures averaged above normal during daylight hours early in the week and above normal during nights midweek resulting in near or slightly above normal temperatures for week. Rain and snow brought 1.00 to 1.50 in. of moisture to west and northcentral portions. Elsewhere thunderstorms brought 0.25 to 0.50 in.

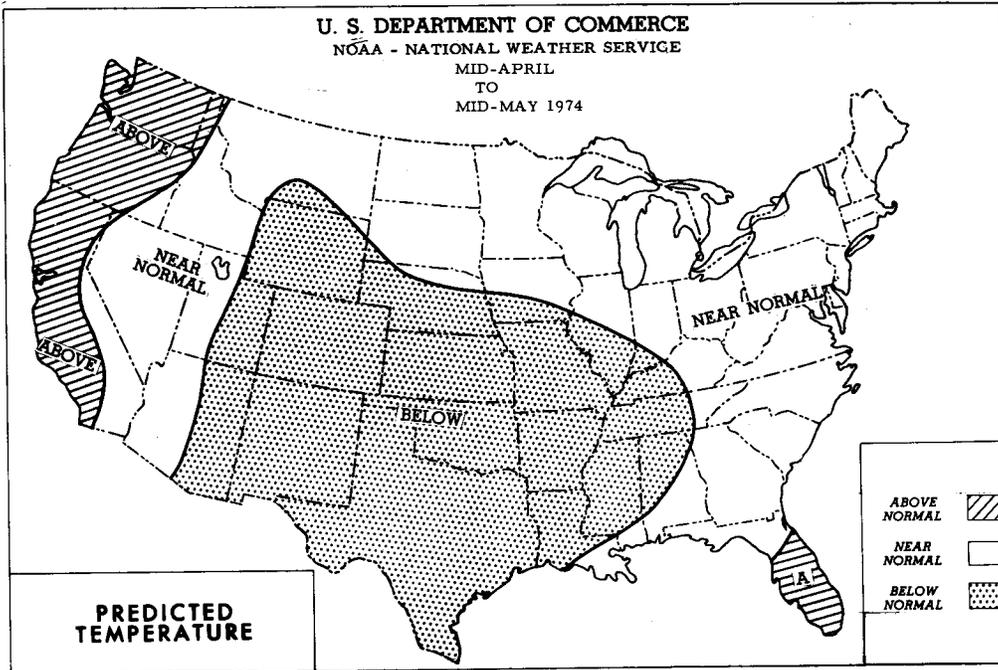
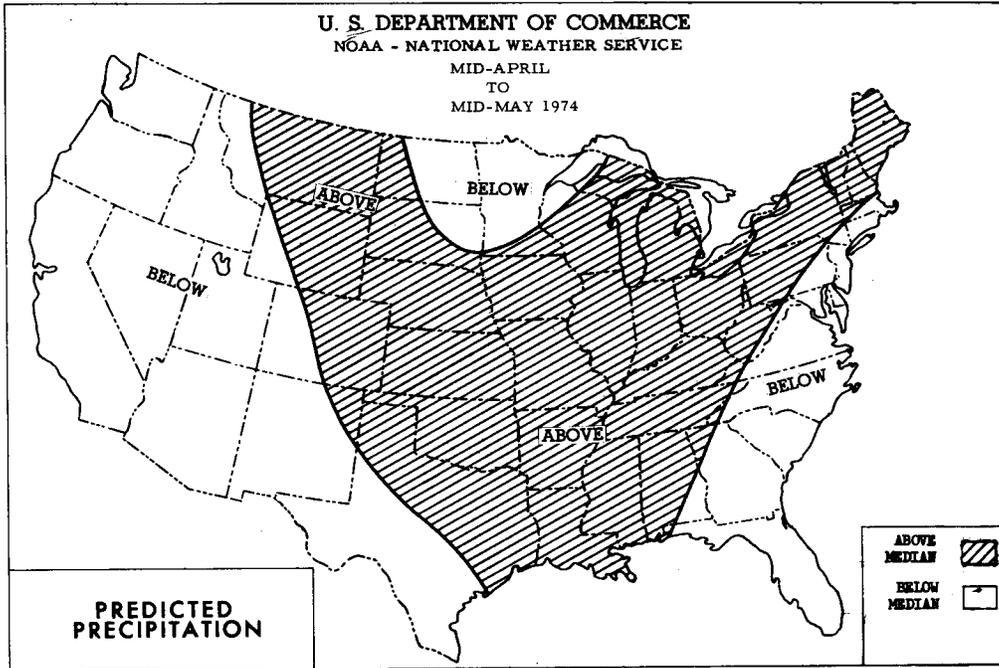
Soil moisture generally adequate. Winter wheat 6% excellent, 82% good, and 12% fair. High winds damaged some fields. Some fields heavily infested with weeds being plowed under. Sugarbeet planting in panhandle progressing well, ahead of last year. Seeding of oats and barley 70% complete. Alfalfa and wild hay good. Range and pasture feed supplies short in 23% of counties and adequate 77%. Cool weather delayed growth, development of pastures. Livestock good in spite of snow, wind. Fertilizer supply short of demand most of State. Fieldwork averaged 4.5 days suitable.

NEVADA: Temperatures ranged from a high of 87° Las Vegas to low 10° McDermitt. Precipitation midweek light, confined to north. Heaviest amount at McDermitt. Deepest snow depths: 104 in. at Alpine Meadows, 101 in. at Norden and 71 in. at Echo Summit.

Ranges greening up. Seedbed preparation in full swing. Cotton planting underway Pahrump Valley. Vegetable harvest continued Moapa Valley.

(Continued on Page 14)

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.

THE WORLD AGRICULTURAL WEATHER WATCH
MARCH 1974

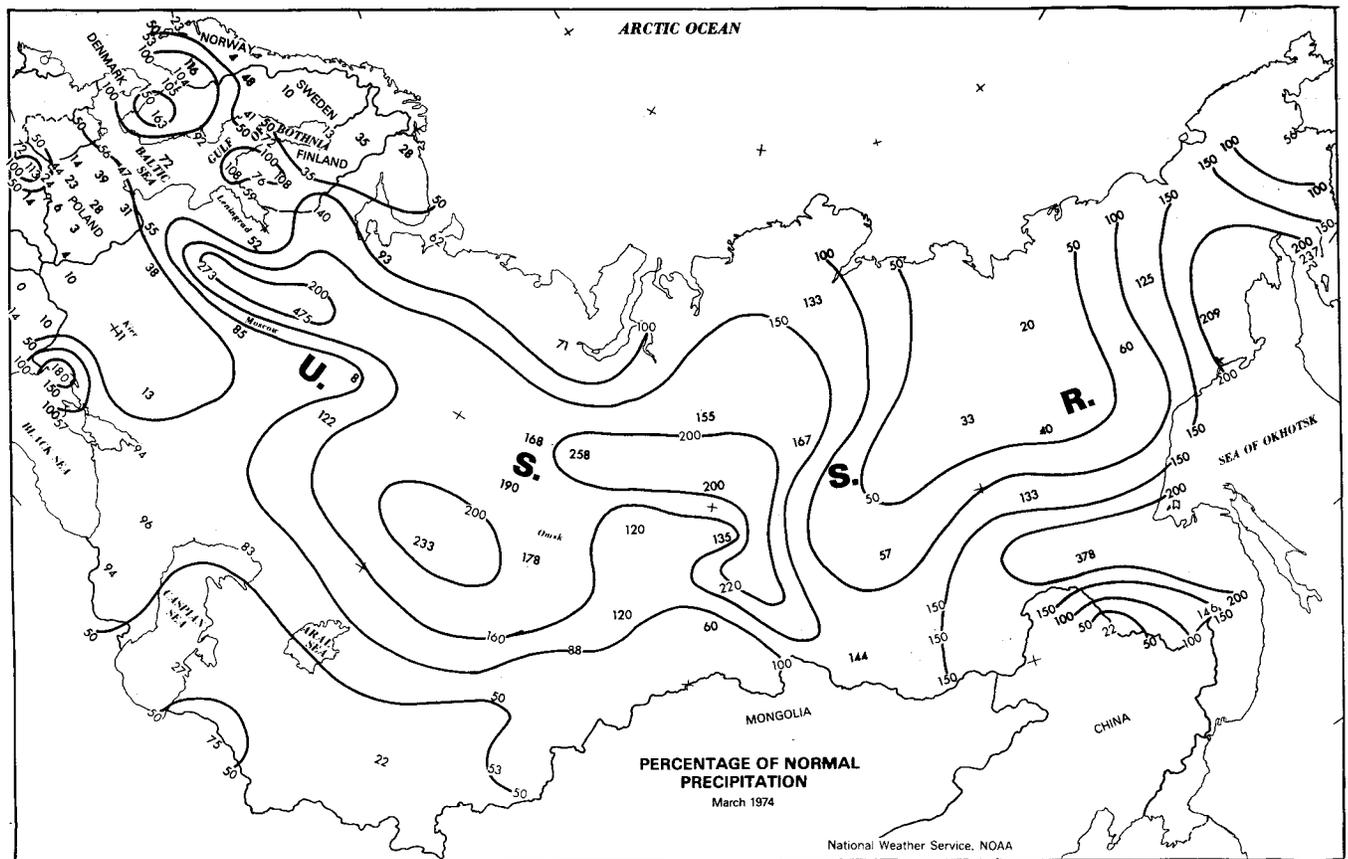
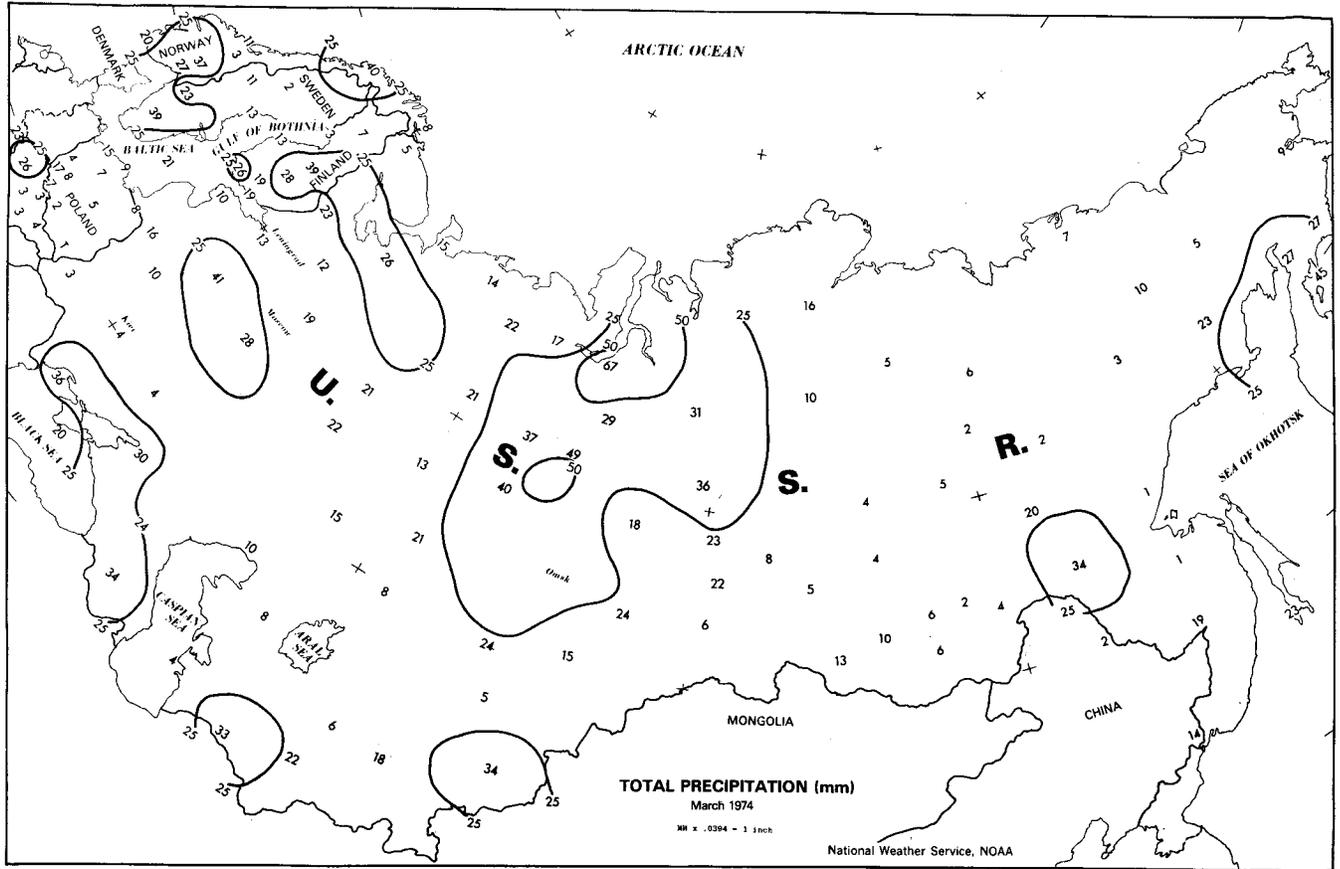
The weather is a key factor in world food production. As world population continues to increase, the need for information on weather conditions around the world becomes imperative, particularly in major crop production areas. For this reason, it was decided to develop a World Agricultural Weather Watch within the National Weather Service, NOAA. The first results of this effort were published in the February 19 issue of the Weekly Weather and Crop Bulletin. Those maps showed data for January, 1974.

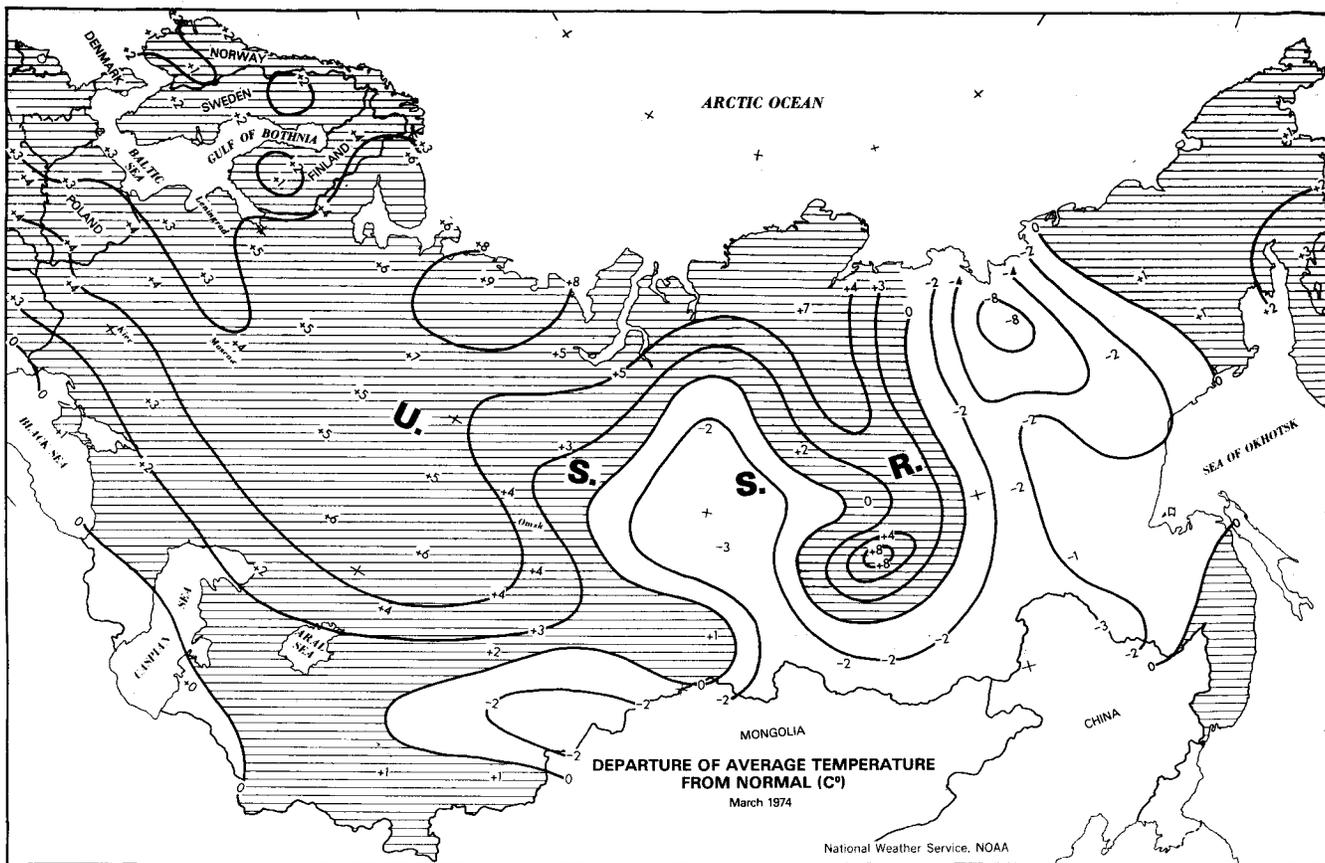
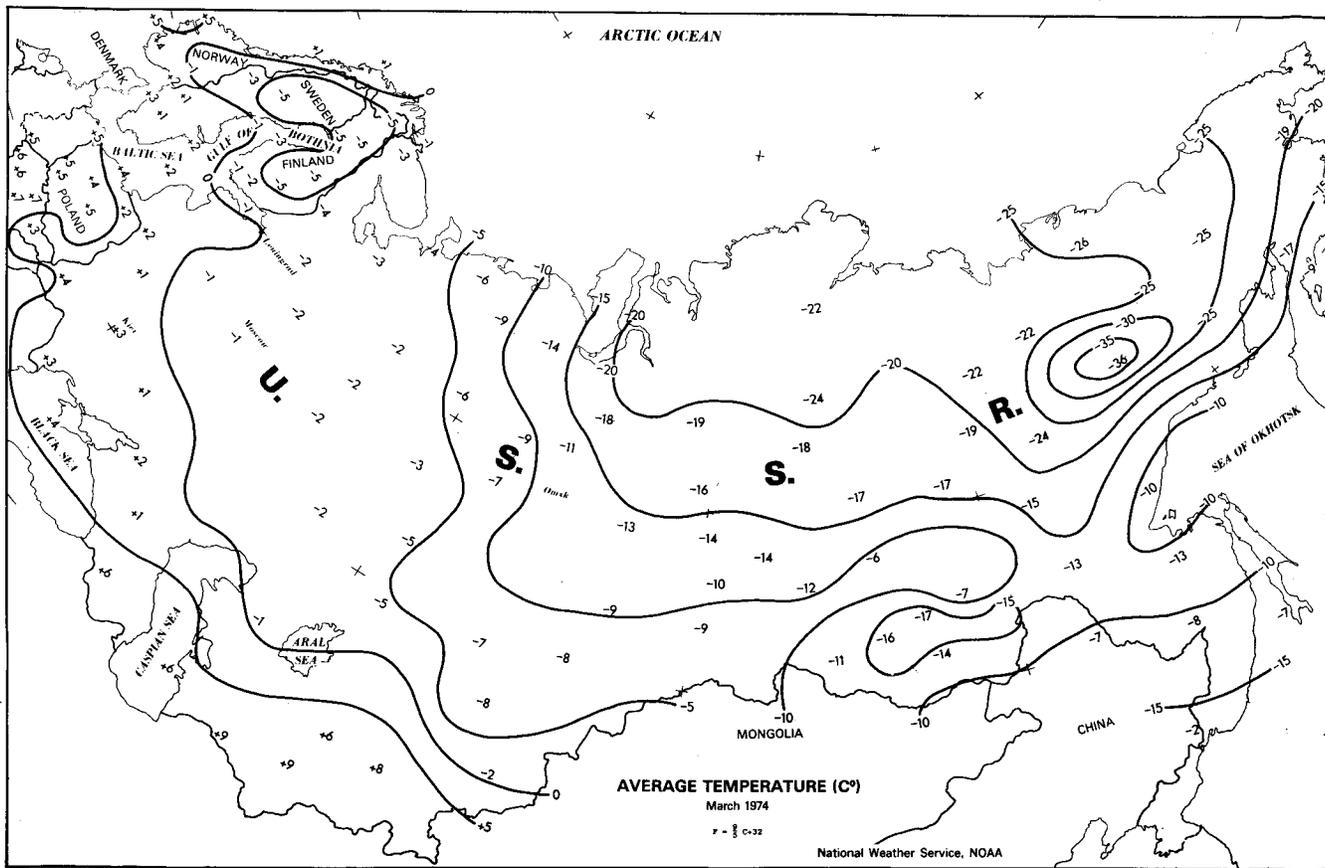
The maps on the following eight pages show the temperature and precipitation conditions during March, 1974, for two major areas of the world: Africa-India; and, the USSR and Scandinavia. Four maps are presented for each area: Actual monthly mean temperature, °C.; Temperature departure from normal; Total precipitation, mm.; and, Percentage of normal precipitation.

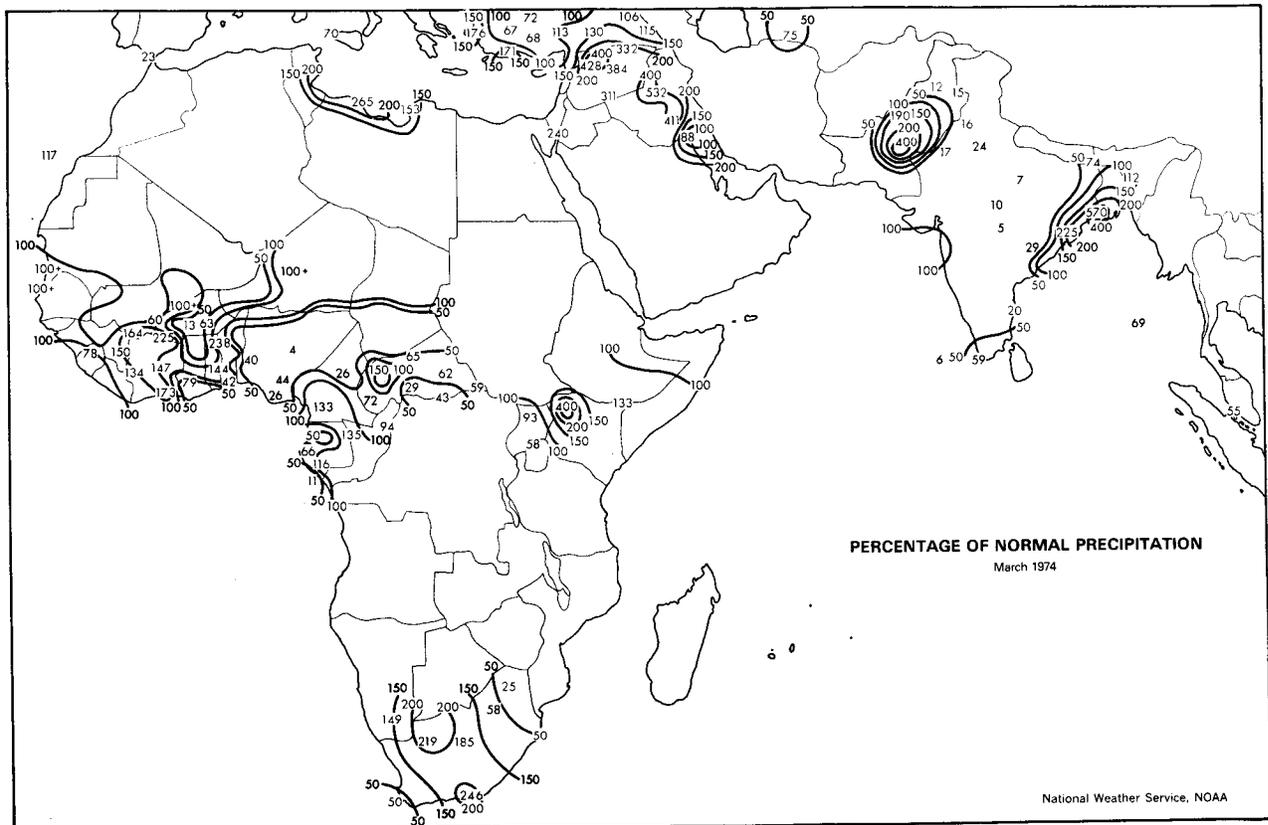
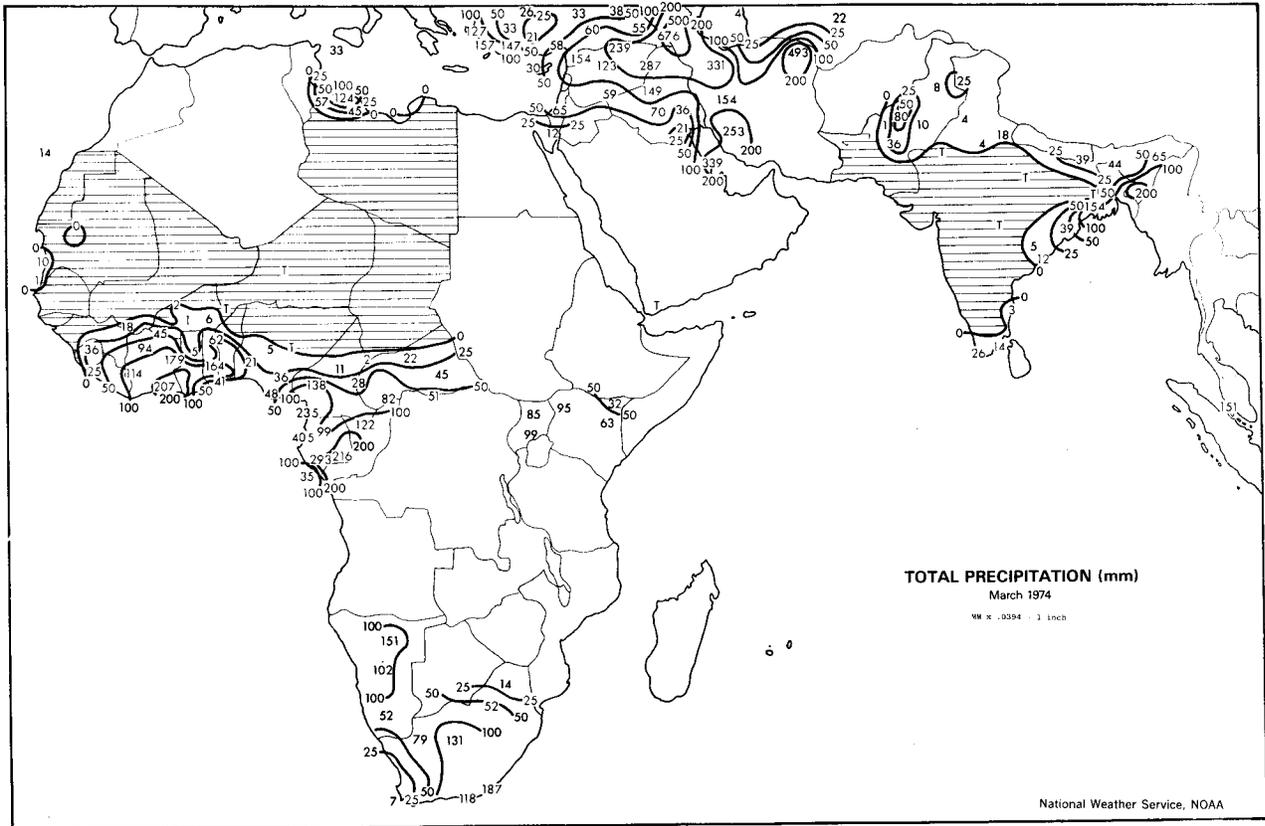
The same series of maps will be published in next week's issue of the Bulletin for Central and South America and Australia. Space considerations necessitated the two issue presentation.

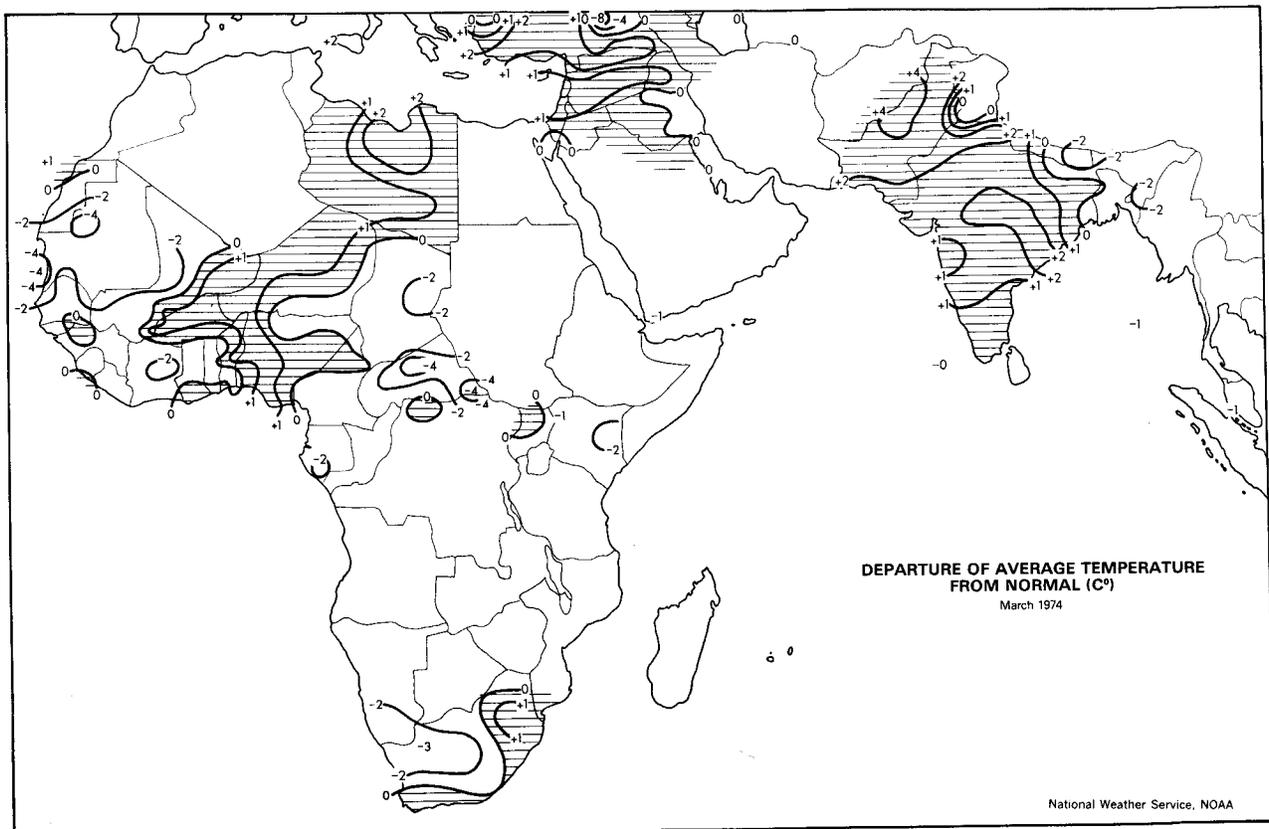
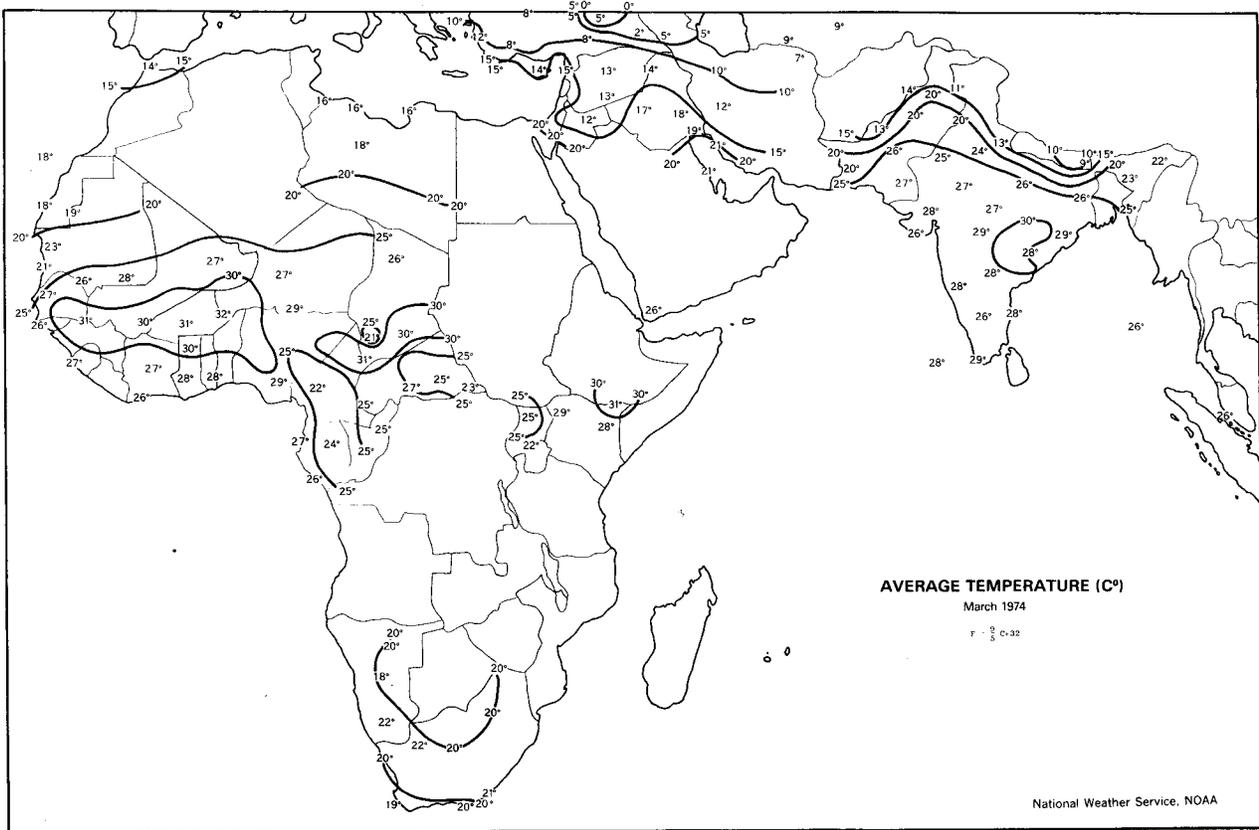
The data used to prepare these maps are routinely prepared by the individual countries and sent out on the Global Telecommunications system. By international convention all units are in the metric system, and we have followed that convention here.

Your comments and suggestions regarding this effort will be greatly appreciated. We have already received several excellent suggestions.









(Continued from Page 7)

Starting to cut alfalfa hay south valleys. Normal progress calving and lambing. Livestock look good.

NEW ENGLAND: A vigorous storm system pushed into area morning of 9th. The low continued northeastward just off coast during 9th raking area with gale force winds, and dropping heavy rains along coast, and up to a foot or more of snow north and west mountain areas. Fair but unseasonably cold weather settled in over region on 10th and continued through 12th. More cloudiness on 13th with a few tenths in. rain mostly central and north.

NEW JERSEY: Temperatures averaged 2° subnormal north, about normal elsewhere. Extremes: 74° at Bridgeton and Seabrook on 14th, 23° at Charlotteburg on 11th. Subfreezing temperatures all sections on 10th and 11th. Rainfall for week averaged 2.40 in. north, 1.60 in. central and south interior, and 1.30 in. coast. Highest weekly total 3.30 in. at Long Valley. Light snow and snowflurries at many stations on 10th.

Peaches in full bloom south, some tender varieties damaged slightly from freeze. Wet weather slowed soil preparation. Fruit spraying and pruning progressed as weather permitted. Soil moisture surplus all areas.

NEW MEXICO: Another very dry, windy week. No precipitation. Widespread gusty winds with considerable blowing dust due to low soil moisture. Temperatures averaged near normal extreme south and east to as much as 8° subnormal northern mountains. Subfreezing readings still reported most of State on some nights.

Moisture very short, high winds. Livestock fair. Ranges poor to fair, some supplemental feeding. Calving, lambing, shearing continued. Irrigated winter wheat mostly fair, dryland mostly poor, jointing continued. Alfalfa good. Some cotton planting started. Lettuce, onions good. Pecans budding. Freeze damage some red delicious apples and stone fruits. Land preparation, irrigation continued.

NEW YORK: Temperatures averaged from 2° to 6° subnormal east, near normal west. Extremes: 9° Glens Falls, 82° Rochester. Above normal precipitation east from Adirondacks southward with more than 1.00 in. above normal coast. Amounts decreased westward and northward averaging near to below normal elsewhere. Heavy snow across much of interior on 9th. Mixed precipitation fell in lower Hudson Valley with rain in coastal areas.

Late snowfall and wet fields limited fieldwork. Some winterkill damage to wheat and hay from open winter. Another mediocre season for maple syrup producers. Potato planting started on Long Island. Early planting of onions underway in Elba area and Orange county. Early iceberg emerging in Orange County. Minimal winter injury to fruit trees and vineyards. Pruning, spraying, and maintenance operations underway in orchards and vineyards.

NORTH CAROLINA: Temperatures averaged few degrees below normal. Frost or freezing temperatures most inland sections early in week. Showers and thundershowers preceded a cold front across State. Snowflurries in mountains over weekend. Precipitation 0.25 to 1.00 in. over most of State.

Farm operators limited to 2.7 days fieldwork. Wet soil conditions limiting land preparation

or planting most areas. Flue-cured tobacco transplanting 4% complete. Small grains good. Irish potatoes, truck crops fair to good with scattered reports of frost damage. Pastures fair to good.

NORTH DAKOTA: Temperatures slightly subnormal. Highs from 62° several locations to 22° at Pembina 6th, 7th. Lows from 2° below zero at Pembina and Bisbee to 43° at Fargo and Wahpeton. Precipitation above normal most sections with northwest, northcentral and northeast divisions below normal. Central division 1.00 in. above normal for week. McCluskey greatest for week with 2.36 in. Weekend cloudy with precipitation most areas.

Spring fieldwork being delayed by cold temperatures and mixtures of rain and snow late last week. Tillage operations expected to start late this week. Hay supplies short some areas. Calving, lambing increased. Preparation of equipment for spring fieldwork major farm activity. Pastures starting to green some scattered areas.

OHIO: High winds, locally heavy snow, lake flooding, rain, and cold weather 8th and 9th. Snow depth ranged up to 7 in. at Piqua. Springlike weather returned 10th through 13th, followed by severe weather on Easter Sunday. Unseasonably cold weather 8th and 9th followed by slow warming trend. Highs in low 30's on 8th to low 80's on 14th. Lows ranged from 20's to low 50's. Precipitation each day except 10th. Amounts for week ranged from 0.25 to 1.00 in.

Very little fieldwork due to wet ground. Nitrogen supplies reported short by 87% of reporters, phosphate 65% short, potash 56% short. Wheat fair to good although part of acreage yellow due to excess water.

OKLAHOMA: Temperatures averaged 5° below normal southeast to 6° above normal in panhandle. Precipitation ranged from 0.02 in. panhandle to about 1.20 in. southeast and westcentral. Weekend temperatures cool to mild with a few showers eastcentral and a trace panhandle.

Midweek rains beneficial to wheat but panhandle and west counties need moisture as crop nears heading. Strong winds over the weekend blew sandy soils from some fields being prepared for row crops. Wheat crop 80% jointing, about same as year earlier, with occasional southern field starting to head. Oats and barley rated mostly good, about half acreage jointing. Corn planting slow east as soils stay cool, but good progress panhandle. Fields for row crops 80% to 90% plowed. Alfalfa making fair recovery from freeze but farmers still combating weevil infestations. Pecans coming out of dormancy. Pastures, ranges making fair growth, supplemental feeding eased.

OREGON: Precipitation most of week averaged above normal along coast, Willamette Valley, northcentral area, northeast. Cloverdale with 3.76 in. greatest along coast. Temperatures averaged normal, highs in 60's midweek. North Bend warmest with 75°. Lows mid-20's to upper 30's, occurred early week east, end of week west.

Rain, saturated soils limited fieldwork west. Plowing, spraying, fertilizing, seeding spring crops main activities east. Behind schedule for planting green peas. Early potatoes emerging. Planting continued Umatilla, Ontario areas. Stone fruit bloom continued. Pears blooming at Medford, pre-pink stages at Hood River. Rain

disrupting spray schedules. Growth of grass slow. Pastures soft. Feed supplies growing shorter. Stockmen anxious to get stock on pasture or ranges.

PENNSYLVANIA: Temperatures averaged a little below normal mainly but varied widely. Cold, snow blanketed north counties on 10th gave way to summer temperatures in 70's on 14th. Rain-fall for week totaled 1.00 to 2.00 in. except less in central and northwest. Snow depths of 6 to 8 in. common on 9th, 10th. Thunderstorms, hail, wind gusts, and a tornado late on 14th. No casualties reported.

Very little fieldwork. Rain or snow in all parts brought spring plowing and planting to a halt. A few farmers able to spread manure, but most did rainy-day chores. Some orchardists pruned trees. Spring plowing 20% completed, very little in north third. Oats 25% seeded in southeast, very few planted elsewhere. Winter grains good, growth slow.

PUERTO RICO: Island average rainfall 0.88 in. or 0.02 in. above normal. Highest weekly total 4.17 in. at Toa Baja. Highest 24-hour total 2.56 in. at Toa Baja. Temperatures averaged about 77° coasts, 70° interior. Extremes: 91° at Coloso, 50° at Adjuntas.

Dry weather favorable for continuation of sugarcane harvest. Weather favored cultivation, insect control, fertilization, and other practices necessary for good coffee production. More rain needed for development of tobacco. Pastures seriously hurt by drought. Department of Agriculture has started an emergency program to help those affected by the drought. Farmers preparing soil for food crops but are waiting for rain to plant.

SOUTH CAROLINA: Temperatures below normal most of State. Central, northeast portions above normal. Scattered frost inland portions about midweek. Rainfall 1.00 in. over mountains, southern foothills and ranged from 0.50 to 0.75 in. elsewhere. Cold front moved from west to east on 8th, 9th.

Cotton planting still behind schedule. Corn good, 37% planted, 14% last year. Tobacco good, 59% planted, 1973 13%. Problems with blue-mold, cutworms, flea beetles. Small grains good. Leaf spot on oats, more powdery mildew damage on wheat. Peaches good, sprays applied to orchards. Spring vegetables and pastures good. Watermelons 56% planted, 57% 1973. Peanuts 13% planted, 3% 1973.

SOUTH DAKOTA: Precipitation statewide. Snows containing 1.00 to 2.00 in. moisture fell in west, rainfall averaged 1.00 in. central and east. Precipitation helped relieve moisture shortages. In southeast, deficit since January 1 nearly 1.50 in. However, since late March most areas received up to 1.00 in. above early April normal. Temperatures averaged only 2° to 3° above normal. Extremes: 73° at Philip and Wasta on 9th, 20° at Kennebec on 9th.

Spring fieldwork made good progress early in week but delayed by snow and rain 11th and 12th. Spring seeding, plowing behind normal and last year. Oats 16% seeded, 1973 30%, normal 27%. Barley 12% seeded, 1973 25%, normal 21%. Spring wheat 18% planted, 1973 and normal 31%. Spring plowing 14% complete, normal 17%. Moisture improved condition of water grains with most winter wheat and rye fields good to excellent. Army cutworm infestations checked by spraying. Livestock good. Cool, wet weather hard on young stock. Pastures starting to green-up, rain should help grass growth.

TENNESSEE: Heavy rains, strong gusty winds, hail and several tornadoes early and late week. Rain-fall averaged over 2.00 in. west and around 1.00 in. mid and east portions. A general frost reported around midweek. Temperatures averaged 1° to 3° below normal.

Rains and wet fields hampered land preparation for spring planting for 4th week. Soil moisture 70% surplus, 30% adequate. Fieldwork less than 2 days suitable. Tornadoes during week caused little damage to crops and livestock but destroyed many farm homes, outbuildings and farm equipment. Spring plowing 55% complete, average 65%. Nearly all tobacco beds planted, many plants doing poorly due to cold, wet weather. Corn 2% planted, 10% normal. Many small grains affected with disease from continuing damp weather. Few cotton fields planted. Hay, pastures good.

TEXAS: Moisture returned to central, east Texas. Rainfall heaviest eastcentral, totals over 2.00 in. Local heavy thunderstorms dumped to 9.00 in. scattered points, flooding some southeast Texas Rivers, streams. Rains 1.00 to 2.00 in. fell across northcentral, northeast. Rainfall scarce south, west. Temperatures above normal southcentral, near normal elsewhere.

Dryland wheat continued decline most of State. Irrigated wheat looks good, made satisfactory progress. Wheat from low plains southward headed out. Oats furnishing adequate grazing east. Planting cotton, corn, sorghum, peanuts, rice excellent progress. Replanting cotton, corn, sorghum necessary following cold, wet weather. Seedbed preparation rapid progress high, low plains. Major crops percent planted: Cotton 16, 1973 9; corn 56, 1973 49; sorghum 38, 1973 33; rice 71, 1973 40; peanuts 5, 1973 11.

Lower Rio Grande Valley: Onion supplies continued increase. Cabbage and carrot harvest remained active. Cantaloups good progress. Laredo: Onion harvest underway. Carrot digging continued. Coastal Bend: Light onion harvest underway. Watermelons and cucumbers started to set fruit. San Antonio-Winter Garden: Onions made good growth. Cabbage supplies declined. Light carrot supplies still available. Central: Dryness and cold slowed growth of watermelons, cantaloups, tomatoes. East: Green peppers, tomatoes field set. Seedbed preparation done for sweetpotatoes. Watermelon planting continued. Knox-Haskell: Potatoes normal progress. North: Tomato field setting underway. Dryness delayed some planting cantaloup and watermelon acreage. Trans-Pecos: Lettuce, onions good growth. Most early cantaloups planted. High Plains: Potato planting complete. Onion planting rapidly neared completion. Some cabbage, carrot fields planted.

Pecans leafing north, blooming central and south. Citrus harvest rapidly neared completion. Livestock fair to good most areas. Ranges continued decline west half where moisture critically short. East half moisture adequate, grazing good to excellent. Goat shearing about complete, sheep shearing excellent progress. One confirmed case screwworms south. Drouth in west Texas created fire hazards, several large range fires occurred.

UTAH: Very heavy precipitation from record to near-record snowfall northcentral and southcentral portions and north mountains. Average temperatures ranged 3° to 6° below normal. Soil temperatures at 4 in. depth ranged from low 40's Cache Valley to mid-40's Salt Lake City and Richfield and low 60's St. George.

Spring plowing and planting, growth of winter wheat, alfalfa hay, range feed, about a week behind

normal, but stone fruit tree development about a week ahead of normal, apples and pears about normal. Fieldwork: 4 days suitable. Soil moisture adequate. Estimated percent completion of spring planting: spring wheat 40%, oats 30%, barley 45%, green peas 25%, dry onions 85%, sugarbeets 25%. Calving 65% completed, farm flock lambing 75% completed, range lambing 15% completed. Shearing started West Desert. Below freezing temperatures caused minor damage to apricots, probably none to other fruits.

VIRGINIA: Cold early week with frost on 10th and 11th in all but extreme east. Very warm with showers and thunderstorms at week's end. Extremes: 86° and 18°.

Soil moisture improved somewhat, 57% adequate, remainder surplus. Fieldwork limited to 2.4 days. Corn planting in southeast becoming more active. A few soybean fields planted. Wheat, barley mostly good to excellent, continued aphid infestation in some barley fields. Tobacco plantbeds in good condition. Potato planting upper Eastern Shore. Peach cold damage locally severe in southern areas to no damage in north. Pastures remain mostly excellent. Current supplies of nitrogen and mixed fertilizer continued tight in most areas.

WASHINGTON: West: Temperatures averaged below normal. Highs 50's, lows 40's. Precipitation almost every day, amounts from 0.10 to over 3.00 in. Local gusty winds midweek. Raspberry planting nearly completed. Fields showing good growth, little freeze damage. Field rhubarb, certified strawberries, tulips being harvested. Lifting of tree seedlings about completed but planting and fertilization slow. Pastures very wet, only a few cattle being turned out. Green chopping of rye started. Hay, silage being fed.

East: Temperatures normal. Highs 60's, lows 30's. Precipitation from 0.02 to 0.90 in. Local gusty winds. Blowing dust 10th, 11th caused some crop damage. Apple, pear pruning, general spraying, sprinkler installation in orchards. Peaches in bloom. Cherry buds opening in early orchards. Planting potatoes, corn, beans, barley, wheat. Asparagus harvest begun. Hop stringing continued. Pastures growing slowly. Cattle on supplemental feed. Hay scarce. Spring, winter wheat in good shape but needs warmer weather for normal growth.

WEST VIRGINIA: Temperatures averaged slightly below normal entire State with warmer temperatures at beginning and end of week. Readings ranged from low 20's to high 70's. Precipitation near normal and scattered throughout week.

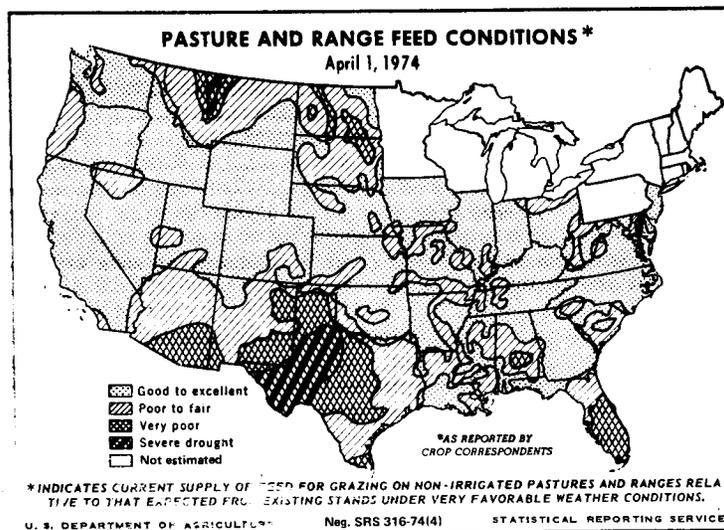
Conditions not conducive to drying out soils, hence very little soil preparation or planting of gardens during week. Grass continued to make good growth. Some vegetation nipped by midweek freeze and frost. Apparently no significant damage to fruit in eastern panhandle.

WISCONSIN: Temperatures averaged near normal. Cool early week but warmer after midweek. Dry through Wednesday but heavy rains Thursday and weekend. Precipitation heaviest southeast half on weekend. Rain changed to snow Sunday, 1 to 4 in. snow fell southwest and eastcentral. Weekly precipitation averaged from around 1.00 in. northwest to 2.50 in. southeast.

Small amount fieldwork started central and south before rain interfered. Oats 1% planted, 1973 6%, normal 8%. Spring plowing 1% done, 1973 10%, normal 8%. Hay supplies adequate north but some shortages elsewhere. Bedding and oats very short all areas. Feed prices high at auctions as is straw. Fuel, fertilizer, and seed available but at premium prices. Some shortages of fertilizer, seed oats, baler twine. Maple sap run varying considerably. Soil moisture 65% adequate, 35% surplus prior to weekend rains.

WYOMING: Precipitation widespread and generally above normal for week. Alva reported 2.90 in. for week with several others reporting more than 1.00 in. Temperatures mostly above normal. Extremes: 73° at Basin, 9° at Big Piney. Highs generally mid-50's to mid-60's, lows upper teens to mid-20's. Seedbed preparation, planting small grains and sugarbeets delayed from scattered spring storms which improved moisture supplies, but progress ahead of 1973. Topsoil moisture mostly adequate to surplus. Spring wheat about 25% seeded, oats 20%, barley 40%. Sugarbeet planting has good start. Supplies fertilizer available reported delayed to actual shortage many areas. Calving over half complete. Range lambing 20% done, farm flocks about 70%. Newborn losses light to normal. Shearing in progress.

Standard copy for the Weekly Weather and Crop Bulletin is prepared by: Richard E. Felch, Lyle M. Denny, Orus W. Byrd, National Weather Service, NOAA; Arlon M. Scott, Nancy Burt, Statistical Reporting Service, USDA.



WATER SUPPLY OUTLOOK FOR THE WESTERN UNITED STATES
 Issued as of April 1, 1974

The table below shows the runoff forecast in percent of the 15-year (1958-72) average. The forecasts are for the remainder of the water year (October thru September), except for the full water year for the Sacramento and San Joaquin Basins; April 1 to September 30, 1974, for the Missouri, Yellowstone, and North Platte Basins; November 1, 1973 to June 30, 1974 for the Little Colorado Basins; and January 1 to June 30, 1974, for the Gila Basin. The publication "Water Supply Outlook for the Western United States," issued as of April 1, 1974, contains the complete water supply forecasts for about 375 stations in the Western United States.

River	Station	Forecast 1,000 Acre-feet	Percent 15-year average
Columbia	Grand Coulee, WA	82,800	120
Columbia	The Dalles, OR	133,000	127
Snake	Lower Granite, WA	31,100	140
Sacramento	Red Bluff, CA	14,500	162
San Joaquin	Big Creek, CA	1,475	113
Weber	Gateway, UT	284	93
Jordan	Utah Lake inflow, UT	288	110
Truckee	L. Tahoe-Farad	258	91
Colorado	L. Powell inflow	8,830	113
Green	Green River, UT	3,480	112
San Juan	Bluff, UT	910	89
Little Colo.	Woodruff, AZ	4.9	57
Gila	Solomon, AZ	37	69
Rio Grande	San Marcial, NM	290	82
Arkansas	Pueblo, CO	360	102
Missouri	Ft. Peck, MT	6,060	128
Yellowstone	Sidney, MT	8,100	116
North Platte	Glendo, WY	1,010	122

1/ Period, 1958-72

Office of Hydrology
 National Weather Service

CROP MOISTURE INDEX

The Meteorological Drought Index was designed to evaluate the scope, severity, and frequency of prolonged periods of abnormally dry weather. For this purpose it works reasonably well. However, since some people have been trying to interpret it strictly as a measure of the current status of agricultural drought; i.e., as a measure of the effects of abnormally dry weather on crops, a separate procedure has been developed that responds rapidly to changes in the soil moisture situation and takes into account only those moisture aspects which affect vegetation and field operations. Except under wet conditions, this Crop Moisture Index stands at zero at the start of the growing season and returns to near zero at the end of the growing season.

If one's interests require answers to broad questions such as, What is the crop moisture situation in the soybean producing regions? the meteorological approach can provide useful information. In such cases there is no interest in or need for details as to the situation in individual fields. The Crop Moisture Index was designed to provide information in response to the broad-scale general questions, rather than the localized questions.

In its simplest terms agricultural drought is a transpiration deficit. However, if one uses computed potential evapotranspiration as an estimate of the moisture need, the subhumid and semiarid regions turn out to have evapotranspiration deficits much of the time during summer. Maps drawn on the basis of such computations reflect climate as much or more than they show weather. Maps become more meaningful if one bases them on the abnormal evapotranspiration deficit.

The computer printouts for the Palmer Drought Index provide 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 account of 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; i.e., the long-term mean 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 map with its legend, page 8, translates the computed evapotranspiration anomaly index into a picture of the scope and severity of the agricultural drought situation.

Of course, the weather is sometimes too wet for crops just as it is sometimes too dry. Too wet often means soils are too wet to permit timely field operations or rains have been so heavy that fields are actually flooded. In the weekly printouts of the Palmer Drought Index analysis, heavy rains in excess of the maximum weekly water use by the crops produce positive values of R (soil moisture recharge) until the soils reach field capacity, then any ex-

cess water shows up in the RO (runoff) term. These two measures of "excess" moisture have been combined into a wetness index which is always positive.

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

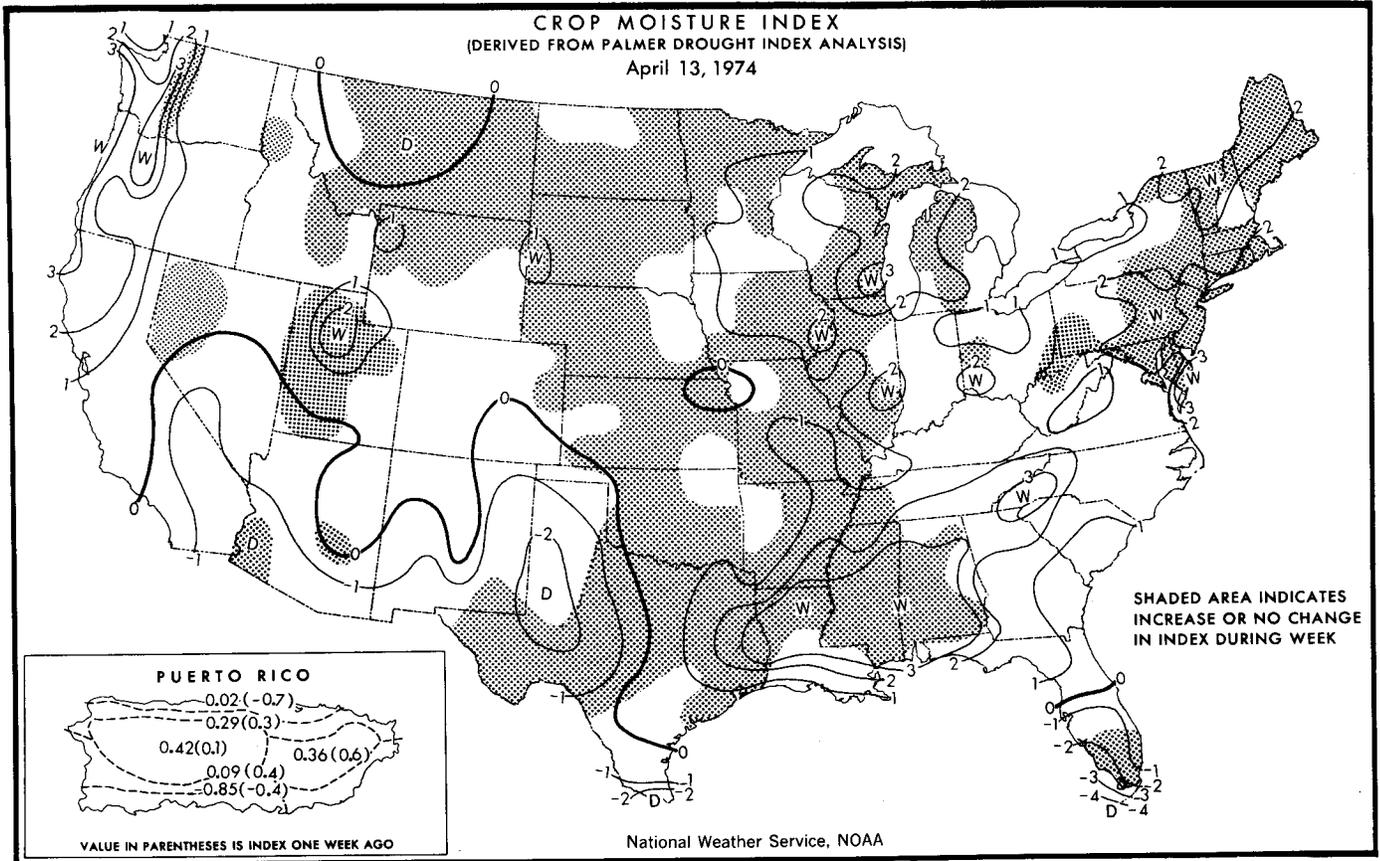
On the other hand, positive CMI values mean that either actual evapotranspiration exceeded the expected amount, or recent rainfall exceeded the moisture requirements of crops and the additional moisture was added to the soil or was regarded as runoff. However, positive PI values indicate that the moisture supply either from current or antecedent rainfall exceeded the amount required to sustain the evapotranspiration, runoff and moisture storage which could be considered as normal and appropriate for the climate of the area. So, positive PI values only indicate abnormally wet weather and do not indicate which aspects of the moisture picture were affected. Thus, PI values are based on all aspects of the moisture situation, but CMI values refer only to the crop moisture situation.

In addition, PI values are highly dependent on antecedent moisture conditions, whereas CMI values are much less dependent on the past and therefore respond quickly to weekly rainfall or the lack of it. However, both Indexes do take account of the duration of anomalous periods of weather.

The map is drawn for a final crop moisture index which is the algebraic sum of the two numbers described above; viz., the evapotranspiration anomaly index and the wetness index. These values were computed in each of 325 climatological divisions. The equations are so constructed that the final index responds rather quickly to abrupt changes of weather which alter the crop moisture situation from "wet" to "dry" or vice versa.

The legend for the map is in two parts because an index value that occurs as an area becomes drier can also occur as the area becomes progressively wetter after having been very dry. The interpretation is different in the two cases. The map is shaded where conditions have changed little or became wetter during the past week; i.e., the index has not decreased during the week. Thus, the map shows both the trend and the status of the moisture situation. The top legend applies to the lines in the unshaded areas, the other to the lines in shaded areas. The legends are to be applied primarily to growing rather than matured vegetation. Interpretation of the effects on crops and native vegetation must, therefore, take account of the stage of growth as well as the status and trend of moisture conditions. Centers of relative maximum and minimum index values are marked for easier recognition--W for wet and D for dry.

The CMI Map will appear each week in the Bulletin during the season from April through October and the PI Map will be published in the first issue of each month during the same period.



SHADED AREAS: Index increased or did not change 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

UNSHADED AREAS: Index decreased last week

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.



FIRST CLASS MAIL

Total Annual Subscriptions: \$5.00 in U.S. and possessions, \$6.50 including domestic airmail, \$11.25 including foreign airmail. For December through March issues only, \$1.50, \$2.00 with domestic airmail, \$3.50 with foreign airmail. Make checks payable to Department of Commerce, NOAA.

Publication of this bulletin began in 1872 as the Weekly Weather Chronicle. It is now issued under general authority contained in the Act of January 12, 1895 (44 USC 213), 53d Cong., III. Sess. Quotation or reproduction of this material is encouraged. Please give credit to this publication and, in case of special articles, to authors.

Please send subscriptions and any questions or comments to the Editor at above address.

Heating Degree Days (Base 65°) For Week Ending April 14, 1974

States and Stations	Weekly		Seasonal + Accumulation			States and Stations	Weekly		Seasonal + Accumulation			States and Stations	Weekly		Seasonal + Accumulation		
	TOTAL	Departure*	TOTAL	Departure*	Departure From 1973-73		TOTAL	Departure*	TOTAL	Departure*	Departure From 1973-73		TOTAL	Departure*	TOTAL	Departure*	Departure From 1973-73
ALA. Birmingham	35	3	2069	-718	-876	Portland.	192	25	6229	-464	-461	Tulsa.	44	-5	3265	-328	-692
Mobile	16	4	1025	-652	-564	MD. Baltimore.	89	0	4107	-367	-219	OREG. Astoria	120	-5	4557	-170	263
Montgomery	24	3	1599	-640	-555	MASS. Boston.	158	32	4827	-323	-269	Burns.	164	10	6083	-221	-392
ARIZ. Flagstaff	170	1	5772	-534	-1426	MICH. Alpena	202	16	7292	-269	-69	Medford.	130	20	4010	-363	-339
Phoenix	1	-15	1093	-438	-450	Detroit	123	-9	5716	-196	-107	Pendleton.	106	0	4292	-461	-703
Tucson	15	-7	1636	-47	-679	Flint	131	-13	6018	-389	-46	Portland.	103	-4	3890	-311	-43
Winslow	120	30	4514	72	105	Grand Rapids.	139	-2	6098	-139	-134	Salem.	107	-6	4209	7	-255
Yuma	3	-4	907	-91	-278	Houghton Lake	177	4	7263	-255	2	PA. Allentown	115	-2	4852	-564	-382
ARK. Fort Smith	56	19	2987	-292	-821	Lansing	131	-10	6195	-132	-292	Erie	138	-14	5545	-608	-343
Little Rock.	44	6	2579	-709	-629	Marquette.	202	18	7338	-20	-134	Harrisburg	86	-11	4390	-548	-359
CALIF. Bakersfield.	18	-19	1724	-380	-447	Muskegon.	147	-1	6184	-53	116	Philadelphia	80	-16	4203	-382	-214
Eureka	106	-5	3780	19	124	S. Sts. Marie	222	22	8242	126	371	Pittsburgh	118	4	4824	-683	-312
Fresno	38	-9	2313	-199	-462	MINN. Duluth.	218	21	8950	245	-61	Scranton	139	13	5731	-83	-184
Los Angeles.	37	-12	1242	-297	4	Internat Falls	220	19	9519	-29	436	R.I. Providence	150	17	5010	-192	-192
Red Bluff.	44	-13	2576	56	-433	Minneapolis	141	-15	7363	-315	-37	S.C. Charleston	57	38	1351	-772	-568
San Diego.	22	-13	985	-324	-81	Rochester	147	-10	7430	-154	-228	Columbia	36	12	1355	-1009	-872
San Francisco.	56	-14	2381	14	70	St. Cloud.	170	1	8121	-40	18	Greenville	60	20	2629	-457	-427
Stockton	41	-15	2380	-251	-917	MISS. Jackson.	154	-18	6687	-576	-647	S. DAK. Aberdeen	142	-17	7963	19	652
COLO. Denver.	146	13	5381	-63	-489	Meridian	19	-4	1511	-848	-729	Huron.	133	-15	7097	-360	51
Grand Junction	133	28	5659	383	-463	MO. Columbia.	80	-3	4608	-215	-447	Rapid City	149	-7	6281	-314	-509
Pueblo	128	23	4948	-197	-770	Kansas City	79	3	4680	-233	-462	TEX. Austin	122	-23	6903	-362	-230
CORN. Bridgeport.	127	1	4507	-478	-644	St. Louis	65	-6	4406	-123	-310	Sioux Falls	68	24	2777	-617	-875
Hartford	152	19	5368	-439	-185	Springfield	82	9	3683	-477	-651	Knoxville	51	4	2440	-628	-677
DEL. Wilmington	87	-13	4085	-363	-14	MONT. Billings	151	3	6092	-428	-780	Memphis	41	5	2442	-723	-988
D.C. Washington	70	0	3233	-801	-494	Glasgow	139	-31	7781	-398	147	Nashville	62	15	2840	-748	-574
FLA. Apalachicola	11	2	789	-567	-379	Great Falls	127	-36	6566	-260	-248	TEX. Abilene	29	0	2071	-495	-180
Daytona Beach.	5	-2	507	-390	-233	Havre	136	-35	7368	-656	27	Amarillo	67	-5	3338	-642	-1342
Ft. Myers	0	0	234	-223	-114	Helena	152	-15	6940	-344	-960	Austin	7	-6	1302	-427	-812
Jacksonville	23	10	907	-418	-263	Kallspeil	154	-18	6767	-876	-473	Brownsville	0	0	421	-231	-500
Key West	0	0	41	21	-20	Miles City.	145	-6	6657	-565	-413	Corpus Christi	0	0	697	-233	-537
Lakeland	2	0	383	-295	-242	Missoula	160	2	6543	-491	-417	Del Rio	1	-4	1061	-462	-684
Miami	0	0	131	-75	-7	NEBR. Grand Island	105	-14	5895	-104	-311	El Paso	21	-4	2266	-386	-598
Orlando	1	-1	408	-296	-101	Lincoln	112	4	5912	58	-171	Fort Worth	24	-1	1831	-526	-822
Tallahassee	27	17	1076	-480	-419	Las Vegas	116	-13	6165	-356	-378	Galveston	3	-2	726	-498	-676
Tampa	4	2	418	-300	-204	North Platte.	127	-8	8268	57	-424	Houston	14	7	1123	-311	-765
W. Palm Beach.	0	0	174	-125	-14	Omaha	114	-3	5935	-248	-300	Lubbock	42	-9	2593	-854	-1413
GA. Atlanta	44	4	2234	-786	-642	Valentine	145	-1	6339	-359	-495	Midland	27	-1	2003	-590	-1282
Augusta	46	21	1915	-598	-414	NEV. Ely	199	24	6628	-130	-685	Beaumont	7	3	1092	-422	-802
Macon	34	16	1551	-666	-484	Las Vegas	26	-9	2397	-148	-579	San Angelo	15	-6	1623	-596	-1077
Savannah	27	9	1252	-683	-325	Reno	155	19	4945	-344	-09	San Antonio	5	-4	1210	-356	-641
IDAHO. Boise.	123	2	4786	-474	-503	Winnemucca.	146	-2	5171	-664	-968	Victoria	3	-1	836	-391	-679
Lewiston	116	5	4683	-260	-264	N.H. Concord	198	41	6683	-13	-531	Waco	21	4	1616	-432	-1019
Pocatello	158	10	6139	-173	-672	N.J. Atlantic City	92	-13	4085	-548	-182	Wichita Falls	28	-4	2247	-612	-1096
ILL. Cairo	57	9	3345	-390	-504	Trenton	103	3	4250	-396	-200	UTAH. Salt Lake C	156	36	5212	-230	-593
Chicago	108	-10	5465	-228	-171	N.MEX. Albuquerque	79	4	4124	6	-487	VT. Burlington.	208	42	7018	-159	-290
Moline	106	7	5767	-228	-31	Roswell	55	4	2972	-639	-704	VA. Lynchburg	78	10	3512	-531	-459
Peoria	93	-14	5434	-289	-305	N.Y. Albany.	165	27	6324	-28	111	Norfolk	51	-10	2583	-764	-529
Rockford	120	-9	6025	-335	-89	Binghamton.	150	-3	6115	-496	-463	Richmond	60	-1	3172	-616	-382
Springfield	79	-16	4866	-397	-415	Buffalo	154	3	5974	-292	-54	Roanoke	73	-1	3397	-691	-575
IND. Evansville	67	2	3753	-671	-720	New York.	127	24	4213	-377	-378	WASH. Quillayute	129	-11	5165	230	173
Fort Wayne	113	-10	5479	-293	-101	Rochester	140	-3	5781	-350	-42	Seattle-Tacoma	98	-23	4147	-320	-297
Indianapolis	81	-18	4551	-689	-455	Syracuse	140	-1	6030	-75	42	Spokane	147	5	5921	-175	-18
South Bend	100	-29	5187	-768	-285	N.C. Asheville	84	11	3233	-771	-457	Walla Walla.	108	14	4061	-380	-510
IOWA. Burlington.	104	-3	5467	-317	-297	Hatteras	45	-6	1782	-831	-470	Yakima	105	-13	5120	-340	-277
Des Moines	107	-14	5767	-535	-546	Charlotte	60	20	2668	-466	-579	W.A. Beckley	95	-8	4283	-884	-628
Dubuque	135	0	6252	-190	-133	Greenboro.	73	19	3223	-457	-364	Charleston	83	8	3675	-673	-504
Sioux City	99	-24	5982	-548	-348	Raleigh	109	10	2673	-727	-637	Huntington	79	2	3634	-742	-683
KANS. Concordia	103	4	5090	-200	-401	Wilmington.	42	15	1641	-756	-581	Parkersburg	84	1	3962	-592	-364
Dodge City	76	-14	4450	-320	-958	N. Dak. Bismarck.	178	10	8626	337	804	WIS. Green Bay.	160	0	7094	-284	144
Goodland	136	11	5522	-111	-608	Fargo	170	-3	8902	367	583	LaCrosse	135	0	6718	-205	-121
Topeka	80	-6	4783	-196	-371	Williston	176	3	8481	102	413	Madison	132	-17	6733	-360	-39
Wichita	84	11	4458	-27	-527	OHIO. Akron-Canton	112	-14	5023	-712	-501	Milwaukee.	153	0	6243	-481	-237
KY. Lexington	76	3	3745	-745	-379	Cleveland.	112	-15	4913	-737	-379	WYO. Casper	183	16	6695	-13	-736
Louisville	69	-6	3584	-834	-492	Columbus.	75	-32	4537	-793	-379	Cheyenne	185	18	6304	-88	-824
LA. Baton Rouge	7	-3	1044	-621	-591	Cincinnati.	85	3	4323	-458	-396	Lander	180	14	6857	-170	-1665
Lake Charles	6	-2	1093	-402	-890	Dayton.	123	-2	5775	-117	-56	Sheridan	170	9	6513	-255	-574
New Orleans	4	-5	927	-535	-874	Toledo.	100	-6	4778	-504	-284						
Shreveport	24	6	1876	-270	-555	Youngstown.	132	0	5460	-434	-422						
MAINE. Caribou	257	45	8603	18	-406	OKLA. Okla. City.	57	8	3227	-369	-869						

* Based on 1941-70 Normals. † Accumulated from July 1, 1973.