

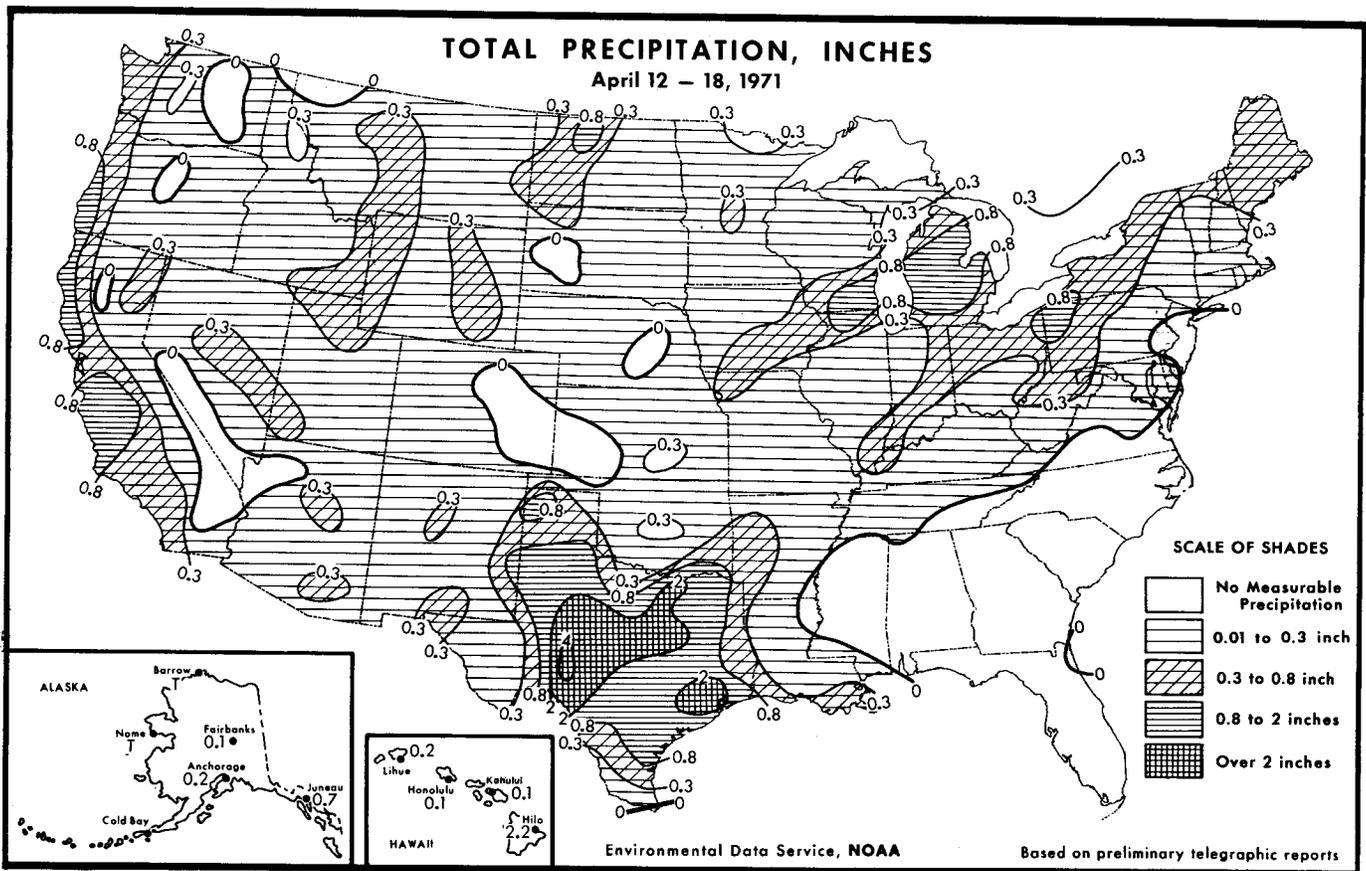
# Weekly Weather & Crop Bulletin

U. S. DEPARTMENT OF COMMERCE  
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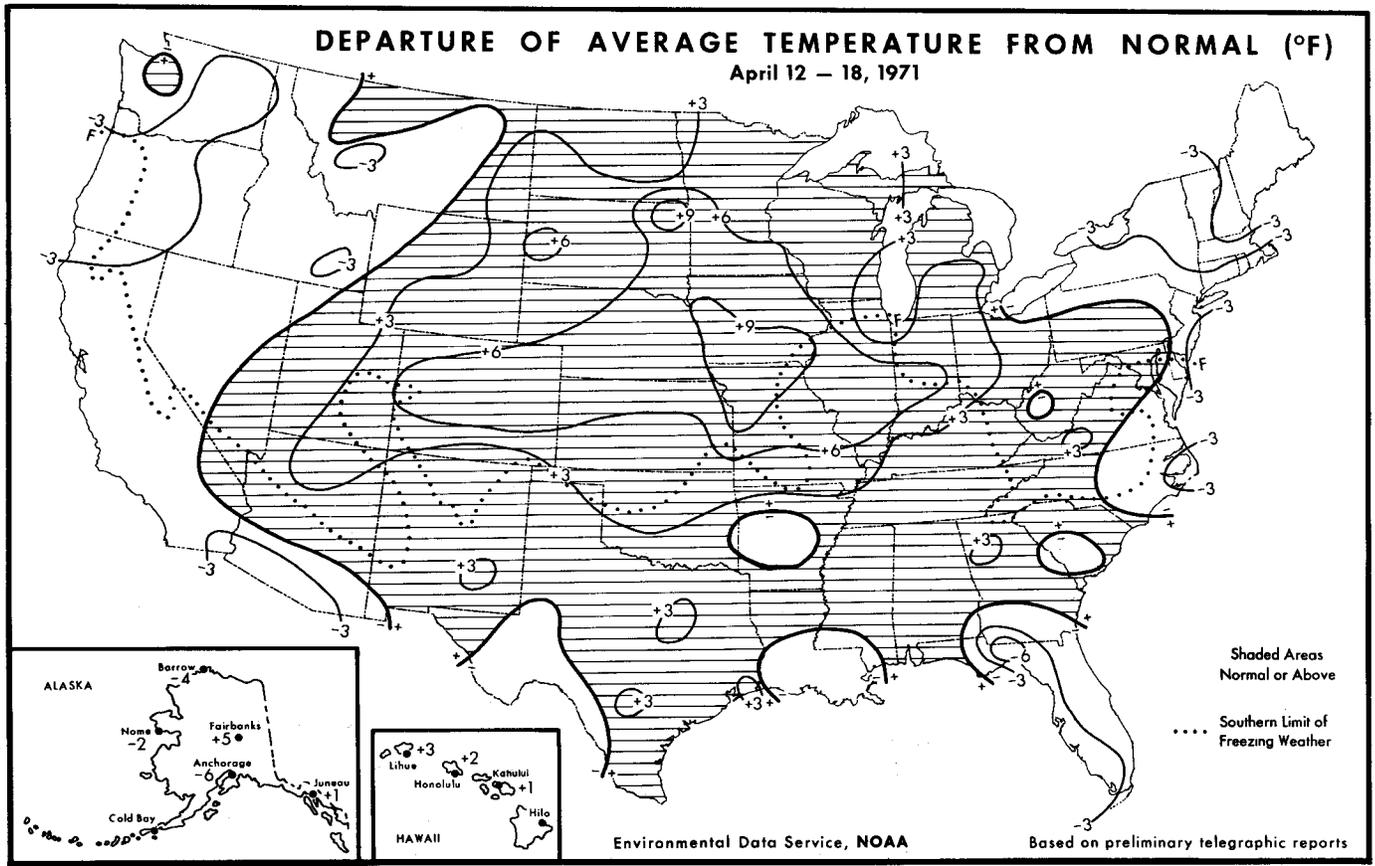


## NATIONAL WEATHER SUMMARY

**HIGHLIGHTS:** Beneficial rains fell in parts of the dry southwest but many areas need more moisture. Little or no rain fell in the Southeast. Moisture is especially short in central and southern Florida.

**PRECIPITATION:** Dry sunny weather prevailed over most of the Nation early in the week. Precipitation was sparse and widely scattered. Light snow flurries occurred in Wyoming, Idaho and southwestern Montana Monday and a few thunderstorms occurred in Wisconsin, lower Michigan, and north-eastern Iowa. Moline, Ill., received 0.26 inch

of rain Tuesday ending a 23-day dry spell. Dust storms in the Southwest reduced the visibility to near zero at times. A Low off the California coast moved southeastward to northern Mexico. It produced some light to moderate showers in the thirsty area from southern California to western Texas and moderate to heavy showers over central and eastern Texas. The showers brought some relief to areas that have received little rain in several months. Flash flooding occurred along some of the streams. Much of the Deep South received no rain during the week.



**TEMPERATURE:** High pressure brought an abundance of sunny weather to much of the Nation last week. One High was centered over Wyoming early in the week; the other covered the Deep South. The Mississippi River Valley warmed to the 80's Monday afternoon. Chicago, Ill., registered 86°. Among the hottest spots in the Nation were Buckeye, Coolidge, and Youngstown, all in Arizona, where the mercury soared to 85°. Tuesday's temperatures ranged widely from 12° at Laramie, Wyo., to 98° at Gila Bend, Ariz. The Atlantic seaboard continued warm. Richmond, Va., recorded 88° Tuesday afternoon. Sharp cooling occurred in the East late Tuesday and early Wednesday. The temperature at Philipsburg, Pa., dropped from 82° Tuesday afternoon to 34° Wednesday morning and climbed only to 46° Wednesday afternoon. Richmond, Va., registered 23° Thursday morning, 45° cooler than Wednesday afternoon. The Northeast remained cool with maximums in New York and Pennsylvania mostly

in the 40's and 50's. The northern and central Great Plains warmed to the 80's on Thursday when the mercury at Pierre S. Dak., reached 88°. A weak disturbance in the Southwest brought clouds, light precipitation, and cooler temperatures. The temperature at Phoenix, Ariz., reached 87° Wednesday afternoon but no higher than 65° Thursday.

The cool weather spread eastward reaching the Great Plains Friday. The Northeast experienced a cool weekend but weekend temperatures over the Deep South continued mild.

Temperatures averaged slightly cooler than normal in California, Nevada, the Northwest, in New York, New England, the Atlantic seaboard from New Jersey to Wilmington, N.C., in Florida, and southern Louisiana. Elsewhere, temperatures averaged slightly above normal. Parts of the central Great Plains averaged 6° to 10° above normal.

L. W. Dye

## NATIONAL AGRICULTURAL SUMMARY

**AGRICULTURAL HIGHLIGHTS:** Light to moderate precipitation in Texas, except for parts of South Texas and the Lower Valley, helped to relieve the severe drought conditions and allowed planting to resume. Over the rest of the Country only light scattered showers were received except in the southeastern States where drought conditions continue.

**SMALL GRAINS:** Winter wheat and other small grains benefited from rains during the past week in the Lower Great Plains, but additional moisture is still needed. Kansas wheat growth was rapid despite the dry topsoil. However, additional growth is expected in some areas from the week-end rains. Oat seeding is 89% complete, while spring barley is 87% planted. Small grain conditions in Oklahoma worsened from a week earlier. Rains were insufficient to be of much help in western and northern Oklahoma, but the rains did bring some temporary relief in other areas. About 88% of the wheat, 77% of the barley, and 58% of the oats are jointing. Winter wheat stands in Montana are fair to good, and wind damage has been light. Spring wheat and oats are 10% planted and barley is 15% complete. Winter wheat in Washington is in good condition but stands are poor in some areas. Nebraska wheat conditions are mostly good with some areas in fair condition. Pale western cutworm activities have been noticed in some western and southwestern counties of Nebraska. Colorado winter wheat and barley are in good condition, but blowing in the eastern plains during the week caused some light damage. Oats and rye are in excellent condition with very little insect damage. Oats in Illinois are 90% planted, but the crop is slow in germinating because of the dry topsoil. Small grains in the southern States are in fair to good condition. Mississippi wheat and oats are 10% headed. Winter wheat and oats in Arkansas are mostly in fair to good condition, with maturity ranging from booting to heading. California small grains are making good growth with most fields headed.

**COTTON:** Cotton planting is well underway in California with good stands on the earliest planted acreage. In Texas only 12% of the cotton acreage is planted, compared with 16% a year ago. Cotton emergence is progressing satisfactorily in the southwestern and central areas of Arizona. Seedbed preparation for cotton is well along in Arkansas, but very little planting has been done because of dry soils. Alabama has 15% of its cotton acreage planted, Mississippi 5%, and Louisiana 10%.

**OTHER CROPS:** Sorghum planting is making good progress in most areas with 31% of the acreage in Texas planted. Seedbed preparation for dry-land grain sorghum made little progress during the week in Oklahoma. Arkansas has 30% of its acreage planted. Corn planting in the southern states is making good progress although dry soils have delayed planting in some areas. In Illinois nearly 90% of the corn land has been plowed compared with 70% last year. Land preparation is 70% complete in Indiana compared with 40% a year ago. Corn planting is 5% complete in Ohio, 53% in Texas, 16% in Kentucky, and 43% complete in Georgia. Planting of field corn is well along

in California. Corn planting is 14% complete in Kansas, well ahead of last year. Sugar beets are making good growth in California. Seeding of sugar beets in Colorado is 45% complete and 40% in Idaho. Rice fields are being flooded in California with seeding and fertilizing underway in the Sacramento Valley and the northern San Joaquin Valley areas. In Texas 88% of the rice crop has been seeded compared with only 47% a year ago. Seeding of the Louisiana crop is 70% complete. Tobacco beds in Kentucky are in fairly good condition with 27% of the plants up. Planting of flue-cured tobacco is still incomplete in Florida. Flue-cured plantbeds in North Carolina are mostly in good condition, except in the north-east and other localized areas where the conditions are fair. Tobacco transplanting is 90% complete in Georgia. Planting of peanuts is 10% complete in Georgia and 6% in Texas.

**Fruits and Nuts:** California harvest of grapefruit and lemons continues in southern California with the quality good. Naval orange harvest is nearing completion, and valencias are increasing. Apricots are being thinned, but are showing some brown rot. Citrus harvest continues moderately active in Texas. Peaches and pecans were nipped by the frost in the northern half of Texas in early April. Irrigated watermelons setting fruit in south Texas. Citrus tree conditions in valencia oranges are good to excellent. Blooms in northern orchard areas of Washington are expected to be 10 days late, and orchard heaters are being used in Yakima Valley. In the Hudson Valley area of New York, apple buds are approaching the green tip stage. Fruit trees generally have come through the winter months in good shape.

**Vegetables:** Texas onion harvest was at peak volume in the Lower Valley with harvest becoming active in the Laredo and Coastal Bend areas. Harvest of early onions is expected to begin in Winter Garden in late April. Cabbage and carrot harvest moderately active in Lower Valley with light supplies in the Winter Garden area. Tomato harvest is beginning in Lower Valley with harvest of sweet corn and cucumbers expected to begin this week. In California, broccoli harvest was active in Santa Maria and Salinas areas, while cauliflower shipments were light. Palo Verde lettuce harvest is complete, but harvest in the Kern and Santa Maria Districts is active. Vegetable shipments are showing a gradual increase in Florida, with cabbage, celery, tomatoes and potatoes leading in quantities shipped.

**PASTURES AND LIVESTOCK:** Pastures, ranges, and livestock, generally, are in fair condition over most of the Country. But in some areas, range and pasture conditions have declined from last week because of short moisture supplies. Supplemental feeding continues in most areas with movement to spring ranges underway in a few areas. In Texas and Oklahoma larger than normal movements of cattle from farms and ranches to market outlets are being prompted by the scarcity of hay, adequate grazing, and stock water. Pastures and livestock in the Southeast are in fair to good condition, but more moisture is needed.

Phillip Hardy  
Agricultural Statistician

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., April 18, 1971

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. . .	63	0	0	-1.1	New Orleans . . .	66	-2	.8	-.3	OKLA.Okla. City . .	64	+4	.3	-.5
Mobile . . . . .	69	+2	0	-1.4	Shreveport. . . .	67	+2	.2	-.9	Tulsa . . . . .	64	+5	.1	-.9
Montgomery. . . .	64	-1	0	-1.1	MAINE,Caribou . .	36	-1	.7	+1	OREG.Astoria. . . .	47	-2	.4	-.8
ALASKA,Anchorage. .	30	-6	.2	+1	Portland. . . . .	40	-2	.4	-.5	Burns . . . . .	43	-3	.1	-.1
Barrow. . . . .	5	-4	T	0	MD,Baltimore. . .	54	0	.1	-.8	Medford . . . . .	47	-4	.1	-.2
Fairbanks . . . . .	35	+5	.1	0	MASS,Boston . . .	43	-5	.3	-.6	Pendleton . . . .	49	-2	.3	0
Juneau. . . . .	39	+1	.7	0	Chatham . . . . .	42	---	.2	---	Portland. . . . .	49	-3	.3	-.2
Nome. . . . .	19	-2	T	-.2	MICH,Alpena . . .	39	0	.8	+2	Salem . . . . .	47	-4	.3	-.2
ARIZ,Flagstaff. . .	46	+3	.4	+1	Detroit . . . . .	50	+2	.4	-.3	PA.Allentown. . . .	50	0	0	-.9
Phoenix . . . . .	67	0	.1	0	Flint . . . . .	48	+4	1.2	+6	Erie . . . . .	43	-2	.8	-.1
Tucson. . . . .	63	-3	.6	+5	Grand Rapids. . .	50	+4	1.7	+1.0	Harrisburg. . . . .	53	+1	.1	-.6
Winslow . . . . .	57	+1	.4	+3	Houghton Lake . .	43	+2	1.8	+1.2	Philadelphia. . . .	52	0	T	-.8
Yuma. . . . .	66	-5	.2	+2	Lansing . . . . .	50	+4	1.2	+6	Pittsburgh. . . . .	49	0	.3	-.4
ARK, Fort Smith. . .	62	0	.5	-.5	Marquette . . . .	43	+4	.2	-.4	Scranton. . . . .	47	-1	.1	-.7
Little Rock . . . .	62	-1	.2	-1.0	Muskegon. . . . .	47	+2	1.4	+8	R.I.Providence. . .	45	-2	.1	-.9
CALIF,Bakersfield . .	62	-1	.5	+3	S.Ste.Marie . . . .	38	0	.1	-.4	S.C.Charleston. . .	65	0	0	-.6
Eureka. . . . .	48	-3	1.1	+4	MINN,Duluth . . .	42	+5	.1	-.5	Columbia. . . . .	64	0	0	-.9
Fresno. . . . .	59	-2	1.0	+7	Internatl Falls . .	43	+5	.4	0	Greenville. . . . .	63	+1	0	-.9
Los Angeles . . . .	60	-2	.5	+3	Minneapolis . . .	50	+5	.1	-.3	S.DAK,Aberdeen. . .	53	+9	.2	-.3
Red Bluff . . . . .	58	-2	T	-.4	Rochester . . . .	51	+7	T	-.5	Huron . . . . .	51	+6	.1	-.3
San Diego . . . . .	60	-2	.8	+6	St. Cloud . . . .	48	+5	.7	+2	Rapid City. . . . .	51	+6	T	-.4
San Francisco . . . .	54	-2	.6	+3	MISS,Jackson. . .	65	0	T	-1.1	Sioux Falls . . . .	53	+7	.2	-.4
Stockton. . . . .	58	-2	.8	+5	Meridian. . . . .	64	0	0	-1.3	TENN,Chattanooga. .	61	0	0	-1.0
COLO,Denver . . . .	55	+8	T	-.5	MO,Columbia . . .	63	+8	.1	-.7	Knoxville . . . . .	61	+2	T	-.9
Grand Junction. . . .	59	+7	T	-.2	Kansas City . . . .	66	+10	.1	-.7	Memphis . . . . .	62	+1	.1	-1.0
Pueblo. . . . .	57	+6	T	-.3	St. Louis . . . . .	63	+8	.1	-.8	Nashville . . . . .	61	+1	.1	-.7
CONN,Bridgeport . . .	46	-2	T	-.9	Springfield . . . .	60	-4	T	-.9	TEX,Abilene . . . .	65	+1	2.4	+1.9
Hartford. . . . .	45	-3	T	-.8	MONT,Billings . . .	45	-1	.1	-.2	Amarillo. . . . .	59	+1	.5	+2
D.C.Washington. . . .	57	+1	.1	-.6	Glasgow . . . . .	42	-2	T	-.2	Austin. . . . .	70	+2	1.0	0
FLA,Apalachicola. . .	67	0	0	-1.1	Great Falls . . . .	45	+1	.6	+4	Beaumont. . . . .	71	+3	1.2	+3
Ft. Myers . . . . .	68	-5	0	-.6	Havre . . . . .	44	+1	.3	+1	Brownsville . . . .	75	+3	T	+.3
Jacksonville. . . . .	68	-1	T	-.8	Helena. . . . .	40	-3	.2	0	Corpus Christi. . . .	73	+1	.8	+3
Key West. . . . .	73	-3	0	-.6	Kalispell . . . . .	43	-1	T	-.2	Dallas . . . . .	68	+3	2.0	+1.1
Lakeland. . . . .	70	-2	T	-.8	Miles City. . . . .	49	+3	.3	0	Del Rio . . . . .	71	-1	2.1	+1.8
Miami . . . . .	72	-3	0	-.9	Missoula. . . . .	44	0	.2	0	El Paso . . . . .	65	-2	.4	+3
Orlando . . . . .	71	0	0	-.8	NEBR,Grand Island .	58	+8	T	-.5	Fort Worth. . . . .	66	+1	2.0	+1.1
Tallahassee . . . . .	62	-6	0	-1.3	Lincoln . . . . .	60	+8	.1	-.5	Galveston . . . . .	69	0	1.8	+1.1
Tampa . . . . .	67	-4	0	-.6	Norfolk . . . . .	57	+8	T	-.5	Houston . . . . .	68	+1	2.1	+1.4
GA,Atlanta. . . . .	64	+4	0	-1.0	North Platte. . . .	55	+7	.3	-.2	Lubbock . . . . .	61	+1	1.2	+9
Augusta . . . . .	62	-1	0	-.8	Omaha . . . . .	59	+9	.1	-.5	Midland . . . . .	64	-1	.8	+6
Macon . . . . .	67	+1	0	-.9	Valentine . . . . .	55	+5	T	-.5	San Angelo. . . . .	68	0	3.7	+3.2
Savannah. . . . .	67	+1	0	-.9	NEV,Ely . . . . .	43	0	.3	+1	San Antonio . . . .	73	+4	1.3	+6
HAWAII,Hilo . . . . .	71	-1	2.2	-.6	Las Vegas . . . . .	66	+2	T	-.1	Victoria. . . . .	71	+1	1.2	+7
Honolulu . . . . .	76	+2	.1	-.3	Reno. . . . .	47	-1	T	-.1	Waco. . . . .	70	+3	2.4	+1.5
Kahului . . . . .	74	+1	.1	-.4	Winnemucca. . . . .	45	-1	.1	-.1	Wichita Falls . . . .	64	0	.1	-.5
Lihue . . . . .	76	+3	.2	-.6	N.H.Concord . . . .	42	-2	.1	-.7	UTAH,Blanding . . . .	53	+5	.1	-.1
IDAHO,Boise . . . . .	49	-1	T	-.3	N.J.Atlantic City . .	46	-5	T	-.8	Salt Lake City. . . .	51	+1	.4	0
Lewiston. . . . .	49	-2	T	-.3	Trenton . . . . .	51	-1	T	-.8	VT,Burlington . . . .	36	-5	.3	-.3
Pocatello . . . . .	44	-3	.3	0	N.MEX,Albuquerque .	56	0	.5	+4	VA,Lynchburg. . . . .	58	+2	T	-.7
ILL,Cairo . . . . .	64	+4	.3	-.7	Roswell . . . . .	61	+3	.3	+2	Norfolk . . . . .	57	-1	T	-.7
Chicago . . . . .	49	0	.2	-.5	N.Y.Albany. . . . .	43	-4	.1	-.6	Richmond. . . . .	57	-1	T	-.7
Moline. . . . .	59	+9	.4	-.3	Binghamton. . . . .	43	-1	.1	-.6	Roanoke . . . . .	59	+3	0	-.7
Peoria. . . . .	59	+8	T	-.9	Buffalo . . . . .	44	0	.7	0	WASH,Colville . . . .	44	-3	T	-.2
Rockford. . . . .	53	+5	1.0	+3	New York. . . . .	50	-1	T	-.8	Omak. . . . .	46	-4	0	-.2
Springfield. . . . .	62	+8	T	-.9	Rochester . . . . .	43	-3	.6	0	Quillayute. . . . .	45	-2	.5	-1.2
IND,Evansville. . . .	61	+3	.3	-.6	Syracuse. . . . .	44	-2	.6	-.1	Seattle-Tacoma. . . .	50	+1	.2	-.4
Fort Wayne . . . . .	54	+4	.5	-.2	N.C.Asheville . . . .	57	+1	0	-.8	Spokane . . . . .	43	-4	.1	-.1
Indianapolis. . . . .	57	+6	.4	-.5	Charlotte . . . . .	62	+1	0	-.8	Walla Walla . . . . .	50	-4	.4	0
South Bend . . . . .	52	+4	.1	-.6	Greensboro. . . . .	57	0	0	-.8	Yakima. . . . .	46	-5	.2	+1
IOWA,Burlington . . . .	60	+9	.1	-.7	Hatteras. . . . .	55	-4	0	-.6	W.VA,Beckley. . . . .	53	+2	.1	-.8
Des Moines. . . . .	58	+9	.5	-.1	Raleigh . . . . .	59	-1	0	-.8	Charleston. . . . .	54	-1	.1	-.7
Dubuque . . . . .	53	+6	.5	-.2	Wilmingon. . . . .	63	0	0	-.7	Huntington. . . . .	57	+1	.2	-.6
Sioux City. . . . .	58	+9	.1	-.4	N.DAK,Bismarck. . .	47	+3	.1	-.2	Parkersburg . . . . .	55	+1	.4	-.4
KANS,Concordia. . . .	60	+7	.1	-.4	Fargo . . . . .	46	+3	.2	-.2	WIS,Green Bay . . . .	48	+5	.2	-.4
Dodge City. . . . .	59	+5	T	-.4	Williston . . . . .	46	+3	.3	+1	La Crosse . . . . .	52	+5	.1	-.6
Goodland. . . . .	56	+7	T	-.4	OHIO,Akron-Canton .	51	+2	.6	-.2	Madison . . . . .	50	+5	1.7	+1.1
Topeka. . . . .	61	+6	.1	-.7	Cincinnati. . . . .	58	+4	.3	-.5	Milwaukee . . . . .	45	+1	.8	+2
Wichita . . . . .	61	+4	.4	-.2	Cleveland . . . . .	46	-1	.8	0	WYO,Casper. . . . .	47	+3	.8	+4
KY,Lexington. . . . .	56	+1	.3	-.7	Columbus. . . . .	54	+3	.1	-.7	Cheyenne. . . . .	47	+4	.2	-.3
Louisville. . . . .	59	+4	.2	-.7	Dayton. . . . .	57	+6	.3	-.5	Lander. . . . .	46	+3	.1	-.5
LA,Baton Rouge. . . .	68	-1	.1	-1.1	Toledo. . . . .	52	+5	.6	-.1	Sheridan. . . . .	46	+2	.4	-.1
Lake Charles. . . . .	67	-1	.5	-.5	Youngstown. . . . .	47	0	1.1	+2	P.R. San Juan . . . .	79	+3	1.2	+4

\* Departures are from 30-year means (1931-60).

Based on preliminary reports.

## CONDENSED STATE SUMMARIES

These summaries provide brief descriptions of condition and activities important on a national scale. Detailed reports of crop and weather conditions during the growing season are contained in State issues of Weekly Weather and Crop Bulletins published by field offices of the Statistical Reporting Service, U.S.D.A. in cooperation with NOAA State Climatologists.

**ALABAMA:** Sunny warm days and clear mild nights all week. Temperatures warmer than usual. No precipitation. Land preparation and planning in high gear. Heavy planting in south, little in central, but substantial in Tennessee Valley. Ample sunshine and wind dried plowed fields rapidly. Several sections need rain to improve soil moisture and aid growing crops. Young crops made good recovery from early cool temperatures. Corn 18% and cotton 15% planted, both about same as a year ago. Peanut planting off to good start. Potato planting about complete on Sand Mountain, commercial southern crops need rain. Small grains mostly good, heading in south and central areas. Pastures and livestock condition improving.

**ARIZONA:** Temperatures at beginning of week were above normal but fell after 14th to below normal values most sections. Showers reached most parts of State but were light in irrigated valleys in southern part and maximum weekly water totals even in mountains in northern part of State were mostly less than 0.50 inch. Strong winds and blowing dust in most agricultural sections during week. Cotton emergence progressing satisfactorily southwestern and central areas. Small grains making good progress. Central areas most fields headed. Lodging of barley Yuma area. Early sorghum plantings in good condition. Planting, seedbed preparations continue. Alfalfa harvest nearing completion in warmer desert valleys. Lettuce harvest continued Salt River Valley, Harquahala Valley, Pinal, and Pima counties. Cantaloupes making good growth Yuma area. Limited harvest of grapefruit and valencia oranges in Yuma, and Salt River Valley. Arizona ranges poor to fair. Limited precipitation fell many areas of State. Supplemental feeding continued. Hauling stock water continued. Cattle and calves fair.

**ARKANSAS:** Weekly mean temperatures averaged 2° to 3° above normal and ranged in 60's. Daily extremes: 27° to 89°. Showers mostly light and scattered over weekend with amounts totaling below 0.50 inch except for some locally heavy showers southwest sections. Bog Springs high with 1.75 inches. Soil moisture short over State, very short upland counties. Seedbed preparation for cotton is well along, but very little planting because of dry soil. Rice 55% seeded, well ahead of normal, but need rain for stand. Soybean land being prepared, ahead of schedule as growers waiting on rain to plant cotton. Corn 60% in, sorghum 30%. Hay crops slow because of dry weather. Wheat and oats mostly fair to good, range from boot to early head. Peach prospects good, strawberries blooming. Watermelon planting well along, transplanting tomatoes nearing completion. Pastures dry, slightly less than normal feed in upland areas. Feeding cattle continues where pastures short. Livestock mostly good condition.

**CALIFORNIA:** Average temperatures southeastern interior were 2° to 6° above normal, near normal to a few degrees below normal elsewhere. This is 4th consecutive week with above normal temperatures in desert. Rain most of State on 14th and weekend. Heaviest amounts vicinity of coastal mountains

from north to south. First rain since middle of February in Imperial Valley. Small grain good growth; most fields headed. Some lodging due to recent rains. Cotton planting well underway; earliest planted fields good stands. New sugar beets making good growth. Planting of field corn well along. Some milo and bean planting continues. Alfalfa cutting, windrowing, baling, chopping, and cubing on increase as fields reach maturity. Rain damage expected to be minimal. Safflower fields normal progress. Rice fields being flooded; seeding and fertilizing underway Sacramento Valley and northern San Joaquin Valley areas. Vineyards making good growth. Apricots being thinned, some brown rot reported. Cherries, pears past bloomed. Most tree fruits good sets. Navel orange harvest nearing completion; valencias increasing. Harvest of grapefruit, lemons, and avocados continues southern California; good quality. Rains benefited northern California ranges; livestock in good condition. Cattle to feedlots, lambs to market. Sheep shearing Sacramento and San Joaquin Valley. Milk and egg production normal. Delta asparagus shipments declining; mostly to processors. Broccoli active Santa Maria-Salinas. Cauliflower shipments light. Imperial Valley carrots active. Southern California celery expected to decrease this week. Palo Verde lettuce complete; harvest in Kern and Santa Maria Districts active. Fresno and Salinas underway. Grading of dry market onions to begin April 19. Strawberry harvesting southern California active; San Jose and Salinas starting.

**COLORADO:** Temperatures well above normal. Cooler west over weekend. Scattered mostly light rain or rain and snow eastern plains, southwest, and few mountain areas. Shower activity increasing over weekend with snow some mountain areas. Fieldwork and seeding at rapid pace. Spring barley 73% planted, 29% emerged. Oats 77% planted, 33% emerged. Corn planting underway. Seeding sugar beets 45% complete. Late summer potatoes 26% planted. Winter wheat and barley in good condition. Blowing occurred eastern plains during week, damage light most locales. Oats, spring barley and rye in excellent condition. Very little insect damage. Some wheat fields sprayed for worms. Topsoil moisture generally short, very short southeast. Rain over the weekend gave relief to most areas. Livestock condition good. Wheat being pastured most areas.

**FLORIDA:** A high pressure area dominated weather throughout Florida for week. Temperatures averaged 2° to 4° below normal northern sections and 4° to 7° below normal central and southern sections. High daytime readings in 80's throughout State were offset by very low nighttime readings. Record low for date was set by Tallahassee, 38° on 15th. Precipitation very sparse with most stations reporting no rain. Drought in central and south causing further decline in pastures, supplemental feeding necessary. Grazing fair in north, but poor in central and south. Flue-cured tobacco and corn plantings still incomplete. All crops in good condition and progressing well. Rain still needed in sugarcane area. Citrus tree condition in valencia oranges good to excellent.

Moisture short. Irrigation in progress. New crop fruit sizing. Vegetable shipments showing gradual increase. Cabbage, celery, tomatoes, and potatoes lead in quantities shipped. Harvest active for most commodities, with planting declining, mostly limited to sweet corn in central muckland areas. Most areas of State, except Hastings, continues dry. Irrigation active.

GEORGIA: No rain during week. Last rainfall occurred on April 6 or 7 giving at least 12 rainless days statewide. This is one of the longest periods without rain over entire State in recent years. Low humidities and almost 100% sunshine have caused rapid drying. Frequency of grass and woods fires has increased sharply and soils are becoming very dry. Warm days and mild nights most of week. Cool briefly at midweek when lows dropped to near or slightly below freezing in the mountains and to the low 40's in other areas. Most places had their highest temperatures of the year on Sunday, April 18, with 91° at Savannah. Reading in the mid- to high 80's were common over the State. Averages ranged from near normal to about 3° above normal. Land preparation progressed rapidly under favorable conditions. Soils becoming somewhat dry by end of period. Cool temperatures delayed seed germination and growth. Tobacco transplanting 90% complete. Seeding of corn 43%, cotton 16%, and peanuts 10% complete. Small grains and pastures generally good and improving. Peaches fair to good. Truck crops poor to fair.

HAWAII: Weather favorable with light scattered showers. Farm operations on schedule. Harvesting of sugarcane normal all plantations. Gradual increase in pineapple harvesting. Banana harvest light. Disease continued to affect papaya production. Supplies of vegetables ample. Watermelon harvesting on uptrend. Cattle and pastures in fair to good condition. Adequate soil moisture.

IDAHO: Cool and rather dry except north where several stations reported precipitation to 0.50 to 0.75 inch. Elsewhere precipitation was spotty and light. Temperatures averaged 1° to 5° below normal. High temperatures reached 65° to 75° midweek. Early morning low temperatures were below freezing most areas prior to midweek and again last day. Lowest temperatures 13° to 20° were recorded upper Snake River plains, 10 degrees or lower mountain valleys. Winds dried topsoils causing some stress of emerging crops. Most areas fieldwork is 7-10 days behind schedule. Planting operations general except at higher elevations. Spring wheat and barley plantings about 25% complete, sugar beets 40%. Irrigation water being made available. Crop development slow.

ILLINOIS: Precipitation totals mostly less than 0.25 inch south and central and 0.25 to 0.50 north. Temperature averages mostly 4° to 8° above normal. Oat seedings 90% complete, 80% last year. Oat germinating slowly because of dry topsoil. Wheat in good condition. Red clover, and alfalfa hays in fair condition. Some dry weather problems. Pastures fair, dry weather slowed growth but supplying 45% of livestock roughage requirements. Nearly 90% of corn and soybean land plowed. About 70% plowed last year. Soil moisture 56% short, 44% adequate. About 6 days suitable for fieldwork. Main activities were plowing, disking spreading fertilizer, corn planting, and oat seeding.

INDIANA: Highest above-normal temperatures since 2d week of March. Precipitation near 0.50 inch on

13th. In last 3 weeks precipitation, 1.50 to 2.00 inches below normal. Sunshine and evaporation more than usual. Soil temperatures at 4-inch depth in low 50's except colder near Lake Michigan. Six days suitable for fieldwork. Both topsoil and subsoil moisture short to mostly adequate. Pastures poor to mostly fair. Corn and soybean land 70% plowed, 40% average. Oats 75% seeded, 50% average. Oats 1 inch high. Wheat 4 inches high, 5 average. Good week for fieldwork and greening up.

IOWA: A warm dry week. Light showers at beginning and end of week. Temperatures into 80's on 12th and 16th. Coldest 14th with minima in 20's. Fieldwork progressed rapidly with over 6 days suitable. Oats about 80% seeded for State. Southern counties nearing completion. Last year State average 60%, 5-year average near 60%. Over 70% of 1971 crop acreage plowed. Last year 60%, 5-year average 65%. Feed supplied by pastures below average to average. Topsoil moisture 51% short, 45% adequate, and 4% surplus. Last week 8% short, 80% adequate, and 12% surplus. Last year 5% short, 81% adequate, and 14% surplus.

KANSAS: Dry weather alleviated portions northwest and west central, 0.75 to 2.00 inches rain much of those areas. Locally over 4.00 inches extreme west-central. Light to locally moderate precipitation southern Kansas and eastern 2/3 of State. Weekly mean temperatures averaged above normal. Light to moderate winds during period. Wheat growth rapid despite dry topsoil and will be helped in some areas by weekend rains. Wheat jointing and needling moisture where heavily pastured. Mustard infestation widespread and many farmers have sprayed. Insect infestation mostly light. Oat seeding 89% complete, 93% year earlier, 80% average. Spring barley seeding 87% completed, 94% last year, 84% normal. Corn 14% planted well ahead of last year and average. Alfalfa growing well although pea aphids damaged some areas. Many cattle still grazing wheat in central and northern counties. Calves readied for grass grazing. Pasture growth behind normal.

KENTUCKY: Six days dry and sunny. Rainfall on 13th generally less than 0.30 inch, several totals less than 0.05 inch, some about 0.75 inch. Temperatures average near to about 5° above normal. Cool to mild 14th and 15th; unseasonably mild to warm balance, afternoon temperatures in 70's and 80's first 2 days and last 2 days. Much field activity preparing ground for planting, with 5 1/2 days favorable for fieldwork. Soil moisture mostly adequate to short. Plowing well advanced, 75% complete, tying record set in 1967. Corn planting 16% complete, 10 days ahead of normal. Tobacco beds in fairly good condition, 27% have plants up. Fruit prospects good. Peach trees blooming with petal fall rapid. Apples in budding or early bloom stage. Grass and legume growth retarded by dry weather, but cattle now getting 57% of roughage from pastures, about normal. Small grains, generally, growing well.

LOUISIANA: A few scattered light showers last half of week. Otherwise weather mostly fair and dry. Temperatures slightly above normal extreme north but below normal central and south for 5th straight week. Weekly extremes 85° at Oberlin and Monroe Monday and at Monroe Tuesday and Friday and 40° Tallulah last Monday. Weekly precipitation totals mostly less than 0.30 inch most areas, a few higher amounts extreme south. Greatest 1-day total 0.71 at New Orleans Moisant 6 a.m. Tuesday.

Fieldwork very active all areas. Most land ready to plant. Some corn, rice, and cotton planted but many growers awaiting rain and warmer weather. Soil moisture generally short but adequate in northeast. Corn 60% planted, cotton 10%, and rice 70%, compared with 40%, 65% and 50% respectively a year ago. Soybean planting just starting, most acreage for turning under in sugar belt. Earlier planted corn and rice germinating and growing slowly. Fertilization and application of chemicals for weed control in sugarcane nearing completion, growth slow. Wheat and oats fair to good, but need moisture. Strawberry production and quality good, but acreage is small. Pasture feed below average. Livestock mostly good.

**MARYLAND AND DELAWARE:** Dry with near normal temperatures. Exceptional drying conditions brought about by strong drying winds, low humidities, bright sunshine, and very light rainfall. Temperature extremes mostly upper 70's and low 80's, 20's and low 30's. Rapid progress in fieldwork. Soil moisture generally adequate except light soil areas. Spring oats mostly seeded except in west. Corn planting started, ahead of normal. Small grain growth slowed by cool, dry weather. Peaches full bloom in south, beginning in northern orchards.

**MICHIGAN:** Temperatures averaged near normal in eastern Upper Peninsula and northeast Lower Michigan while elsewhere averaged 2° to 4° above normal. After a mild period early in week, temperatures dropped sharply and by midweek subfreezing temperatures were reported over much of Michigan. Some minor freeze injury in cherries in southwest Michigan mostly on poor sites. Temperatures moderated again as week ended. Showers fell early in week in west-central and central portions of Lower Michigan with amounts ranging from 1.00 to 1.75 inches. The rest of Lower Michigan received from 0.25 to 0.75 inch. In Upper Peninsula amounts were around 0.10 inch or less.

**MINNESOTA:** Temperatures averaged 5° above normal. Extremes: 82°, 13°. Rains of 0.25 inch to 0.50 inch late in period fell in the western half of State, rest of State received precipitation amounts of less than 0.25 inch. Most lakes from Mille Lacs north are still ice-covered. Aircraft flying off from lakes in Ely area. Seeding of small grains progressing rapidly in west-central and southwest. Fieldwork beginning elsewhere. About 12% spring wheat, 3% flax, 11% oats, and 5% barley seeded. Normally, spring wheat 11%, flax 2%, oats 14%, and barley 7% seeded. Topsoil moisture short west-central and northern part of southwest district, adequate elsewhere. Subsoil moisture generally adequate. Winter wheat, rye, hayfields, and pastures generally dormant, some fields turning green in south.

**MISSISSIPPI:** Second week of rainfall totals of 0.06 inch or less. Most measurable amounts were in northern 1/3 of State on Wednesday. Temperatures moderated; most weekly averages a few degrees below normal except in parts of Delta section where averages ranged up to 2° above normal. Over weekend, scattered light showers or thunderstorms moved into western and central portions of State. Most totals were under 0.10 inch except near Mississippi River. At Anguilla 0.72 inch of rain was measured this Monday morning. Soil moisture short to adequate south and mostly adequate remainder of State. Considerable progress made in land preparation and planting. An aver-

age of 6 days suitable for fieldwork. Corn 23%, and cotton 5% planted. Winter wheat 10%, and oats 10% headed. Irish potatoes, peaches, pastures, and truck crops in mostly fair to good condition. Livestock fair to mostly good.

**MISSOURI:** A warm dry week. Temperatures reached 90° on Monday, April 12, and were mild to warm through the remainder of week. Precipitation sparse, with most areas receiving less than 0.25 inch. Average of 6 days suitable for fieldwork. Plowing 82% completed. Corn 20% planted, wheat condition fair. Pasture condition fair. Topsoil moisture short. Subsoil moisture adequate.

**MONTANA:** Near normal east, slightly cooler locally central, freezing at least 1 morning all areas. Precipitation heavy upper Yellowstone and Gallatin Basins adding to already record heavy mountain snowpacks. Locally heavy elsewhere central and east, mostly light west. Spring wheat and oats 10% planted. Barley seedings 15% complete. Sugar beets 25% planted. Winter wheat stands and condition fair to good. Wind damage light. About 85% range cattle and sheep receiving supplemental feed, calving 75%, lambing 70% complete. Shearing 65% completed.

**NEBRASKA:** Warm and windy. Much fieldwork accomplished with some spring small grains and sugar beets planted. Topsoils continued to dry out with some dust blowing. Wheat condition mostly good but a few areas fair. Pale western cutworm activity noted some western and southwestern counties. Cool season grasses making some growth but providing very limited grazing. Livestock condition generally good.

**NEVADA:** Temperatures began warm but ended cool over weekend. Temperatures averaged normal in northeast, 2° below normal in northwest, 3° to 5° above normal in south. Light precipitation in north, averaging about 0.10 inch, trace in south. Light snow in north over weekend. Higher amounts in mountains. Planting of cotton in progress in Pahrump Valley. Harvest of green onions and radishes nearing completion in Moapa Valley. First cutting of alfalfa hay in progress in the southern valleys. Cold weather and spring snow flurries slowed fieldwork in some areas during the past week. Livestock remain in generally good condition with movement to spring ranges underway in many areas. Death losses about normal with calving and lambing progressing satisfactorily.

**NEW ENGLAND:** Quite warm until sharply cooler on 14th. Week averaged mostly 1° to 3° below normal except 3° to 6° below normal in Vermont. Precipitation frequent from 14th on, but scattered and very variable in amount; mostly as snow in north. Up to 3 inches of snow fell locally as far south as Massachusetts on April 16. Total precipitation ranged from less than 0.10 inch to over 1.00 inch, with the least in Connecticut and the most in extreme northern Maine. Snow cover still widespread over much of north. Many snow courses in higher elevations averaged from 25 to 50 inches deep, with water equivalents of 10 to 19 inches. Recent weather conditions have been favorable for maple syrup production. Prospects are well below average. Quality of the syrup produced is excellent.

**NEW JERSEY:** No measurable rain all week. Temperatures ranged from near normal to below normal. Highest readings in 70's 1 or 2 days early in week but cool otherwise. Freezing temperatures at most stations during week. Windy weather has

dried topsoil. Moisture short in some areas. Plowing and planting continues. Asparagus harvest to begin next weekend. Early peaches in bloom. Trees being sprayed. Fall-sown grains look good. Some beans being green-chopped for livestock. Oat seeding begun. Preparations for corn and soybeans begun. Some limited pasture grazing has started.

**NEW MEXICO:** Cooling with showers midweek and on weekend. First significant showers in 6 weeks, but totals generally less than 0.25 inch except locally to more than 1.00 inch in eastern plains. Temperatures averaged near normal for week with nights slightly warmer than seasonal. Warmest on Monday. Surface, subsoil moisture short to very short. Irrigated winter wheat, barley fair. Dryland wheat in poor condition. Spring vegetables fair to good. Cotton planting becoming more active. Alfalfa good. Livestock fair to poor. Calving, lambing progressing well. Shearing sheep near completion. Supplemental feeding necessary for livestock maintenance. Ranges fair.

**NEW YORK:** 70's on 12th and 13th cooling sharply on 14th especially west and central. Nights cold entire week. Precipitation on 13th and 14th totaled 0.50 to 0.90 inch western 1/3 to St. Lawrence Valley decreasing to 0.05 inch or less eastern Upstate. Light snow northeast 1/4 on 16th. Dry week on Long Island. Fieldwork beginning slowly in New York State. Soil moisture generally adequate, some areas have surplus. Potato planting in Suffolk County 70% complete. Apple buds approaching green tip stage in Hudson Valley. Fruit trees have come through winter months in good shape. Limited farm activity includes plowing, pruning and dormant spraying.

**NORTH CAROLINA:** Clear skies nearly all week with mild to warm days and cool nights. Temperature range 19° to 91°. No precipitation. Soil moisture decreased to mostly adequate. Small grains and pastures mostly good and improving. Corn planting accelerating and about 1/5 complete. Tobacco transplanting active in southeast. Condition fairly good. Flue-cured plantbeds mostly good, except fair in northeast and other localized areas. Vegetable planting active. Cotton and soybean planting beginning in southeast. Condition of peaches, vegetables, and Irish potatoes fair to good.

**NORTH DAKOTA:** Temperatures averaged 4° to 8° above normal. Windy most of week with some blowing dust in parts of southeast. Rain showers over weekend. Amounts mostly 0.50 to 1.00 inch west half, 1.00 to 2.00 inches northeast, 0.20 inch or less southeast. Mild temperatures with scattered showers over weekend were favorable to new born calves and lambs. Spring fieldwork underway slightly earlier than normal, with most activities in south and west. Hay and roughage supplies mostly adequate. Calves and lambs progressing well. Grass beginning to show green.

**OHIO:** A warm week with temperatures averaging 3° to 5° above normal. Rainfall on 13th and 14th averaged 0.40 to 0.60 inch north and 0.20 to 0.40 inch elsewhere. Scattered northern areas also reported 0.10 inch or less on 17th. Brush fire hazard remains especially acute southeast, central, and south-central. Six days favorable for fieldwork. Soil moisture supplies 1/2 short, and 1/2 adequate. Plowing for corn and soybeans 85% completed, year earlier 60%, 50% average. Oat seeding 80% finished, last year 35%, 50% normal. Planting potatoes 45% completed, year ago 10%,

usual 20%. Sugar beets 85% planted, 10% last year, 40% normal. Slightly under 5% of corn planted. Tobacco beds seeding 85% completed, year earlier 65%, normal 75%. Livestock obtaining 10% of forage requirements from pastures.

**OKLAHOMA:** The best statewide rains of 1971 occurred Friday, Saturday, and Sunday. Several weather stations in southeast half State received over 1.00 inch. Weekly precipitation averaged 0.27 inch Panhandle, 0.17 inch north-central, 0.05 inch northeast, 0.22 inch west-central, 0.92 inch central, 0.62 inch east-central, 0.18 inch southwest, 0.72 inch south-central, and 0.66 inch southeast. Temperatures averaged 2° to 5° below normal. Extremes: 98° and 28°. Small grain condition worsened from week earlier. Weekend rainfall insufficient to be of much help western and northern Oklahoma, temporary relief elsewhere. Wheat condition 99% poor to fair, 96% last week. Wheat 88% jointing, 82 percent year ago. Oats 58%, and barley 77% jointing. Corn 20% planted, 5% up to stand, moderately behind year ago. Seedbed preparation for dryland grain sorghum and cotton made little progress but good progress for soybeans and peanuts. Growth alfalfa hay slow, crop mostly poor to fair. Range and pasture condition mostly poor to fair, very little growth. Supplemental feeding continues, livestock marketing heavy many western localities.

**OREGON:** First of week rain and clouds with midweek sunshine. Rain showers at close, mostly traces. Weekly temperatures averaged mostly 2° to 5° below normal except near normal south coast and east-central border. Minima east of Cascades mostly 23° to 30° except 9° to 17° higher elevations. West side 32° to 42° except 28° central Willamette Valley. Maxima 54° to 78°. Precipitation on 1 to 4 days totaled less than 0.10 inch southeast, up to 0.40 inch northeast, 0.40 to 1.50 inches west side except 2.80 inches central coast. Crop season continues late due to cool weather. Vegetable planting in western Oregon slowed by recent rains. Pea planting continues eastern Oregon. Asparagus harvest active there. Heavy bud set on pears at Hood River. Livestock being turned out on range even though feed not quite ready. Hay supplies very short. Grain planting and growth behind due to cool weather.

**PENNSYLVANIA:** A mild rather dry week. Cold front Tuesday and a weak disturbance on Saturday gave generally light showers over western half of State. Very little precipitation eastern portion. Weekly totals generally in the 0.30 to 0.75-inch range over western half to less than 0.10 inch in eastern half. Highest total, 1.18 inches at Rlairsville. Temperatures averaged near normal. Warm at start of week, sharp change to cooler Wednesday, and a gradual warmup remainder of week. High 86° at Huntingdon on 14th; low 20° at Wellsboro on 15th and Warren on 16th. Preparation of soil and seeding of oats made good progress. Wheat and barley have wintered well. Planting of early potatoes made good progress. Planting of seedleaf tobacco seedbeds in Lancaster County nearing completion. Sweet cherries are blooming and peach buds swelling. Only slight frost damage to early peaches reported to date. Grape growers busy trimming and tying vines. Early vegetable planting progressing well.

**PUERTO RICO:** Light to moderate rainshowers well distributed islandwise except few areas southwest and eastern interior where little or no rain. Island average rainfall 1.30 inches or about 0.20

inch above normal. Highest weekly total 4.80 inches Western Cordillera. Crop moisture conditions near normal islandwide, except few zones western interior too wet. Temperatures averaged 76° to 77° on coast and 71° to 72° interior divisions with average departure of 0.6° below normal. Highest maximum 90°, lowest minimum 51°. Sugar cane harvesting and grinding operations continued good progress all zones. Coffee plantations active cultivating and fertilizing. Under favorable weather, tobacco harvesting and drying operations made good progress all zones. Pastures generally excellent, except good due to dry weather some sections eastern interior. Minor crops made good progress. Seeding plantains and bananas. Citrus crop tapering off most zones. Cultivating and fertilizing operations also made good progress.

**SOUTH CAROLINA:** Sunny skies prevailed and there was no rain. Maximum temperatures ranged from the low 70's to the high 80's. Lows were in the 30's and 40's. No rain has fallen since the 7th of the month. Soil moisture short in part of Piedmont and Ridge Districts, but adequate other areas. Fields dry. Preparation and planting in full swing. Tobacco, 22% transplanted, plant supply adequate. Corn 40%, and cotton 14% planted. Soil temperatures below desired level for planting cotton in some locations of Piedmont. Small grains, hay crops and pastures in good condition. Peach crop fair to good, thinning in Ridge area. Fertilizing and spraying active all areas. Vegetable planting continued, crop conditions improved. Watermelons 70%, and peanuts 9% planted.

**SOUTH DAKOTA:** Weekly temperatures averaged 6° to 11° above normal. Extremes ranged from 12° at Summit on 13th to 93° at Kennebec on 15th. Precipitation fell mostly as scattered showers and thundershowers end of week with amounts ranging from a trace to about 1.00 inch but most areas received 0.20 inch or less. Lemmon reported 0.88 inch. Generally favorable weather prevailed during week. Fieldwork progressed rapidly. Plowing 24% completed, 17% ahead of last season but 6% below average. Spring planting progressing rapidly. Spring wheat 55%, barley 40%, and oats 52% planted, slightly earlier than normal and well ahead of last season. Soil blowing caused considerable damage in south-central and central district. Livestock remain in good condition with little movement to pasture.

**TENNESSEE:** Week began warm, turned briefly cold at midweek, warm again on weekend. Extremes: 87°, 30°. Light showers Wednesday, otherwise mostly fair. Total precipitation generally less than 0.10 inch except in northwest where some amounts reached 0.25 inch. Forest fire hazard high over much of State. Farm activity last week was at seasonal high. Field preparation, machinery repair, purchasing of supplies and seed all aided by fair weather during week. Most small grains made good growth and development. In west Tennessee rain is needed before planting can commence. Pastures in fair condition, better than a year ago. Tobacco seeding complete. Plowing 70% complete. Corn 20% planted. Five days suitable for fieldwork. Soil moisture 56% adequate, and 44% short.

**TEXAS:** Beneficial rains fell over most of State during past week beginning Trans-Pecos Thursday with scattered moderate amounts and spreading over all but parts of South Texas and Lower Valley Thursday night through Saturday. Rainfall totals of 1.00 to 2.00 inches were most common. Represent-

tative totals include: Dalhart 1.76 inches, Amarillo 0.77 inch, Childress 1.17 inches, Wichita Falls 0.13 inch, Texarkana 0.52 inch, Lubbock 1.21 inches, Fort Worth 2.02 inches, El Paso 0.42 inch, Midland 0.81 inch, Abilene 2.39 inches, Waco 2.40 inches, San Angelo 3.66 inches, Lufkin 0.67 inch; Alpine 0.01 inch, Sanderson 1.01 inches, Austin 1.02 inches, Del Rio 2.35 inches, Victoria 1.20 inches, Galveston 1.76 inches, Cotulla 0.69 inch, Laredo 0.02 inch, Corpus Christi 0.80 inch, McAllen 0.10 inch, Brownsville none. Temperatures averaged 2° to 4° above normal. Light to moderate precipitation covered much of the State and brought a respite to Texas drought conditions. Delayed planting activities across the State should resume as farmers take advantage of available soil moisture. Larger than normal movements of cattle from farms and ranches to livestock auctions are being prompted by the scarcity of hay, grazing land, and stock water. Main activities were pre-planting activities, planting of spring crops, and tending of livestock. Percent planted to date: cotton 12, 16 year ago; corn 53, 61 year ago; sorghum 31, 36 year ago; rice 88, 47 year ago; peanuts 6, 8 year ago, and sugar beets 87%. 41%  
**UTAH:** Light to moderate precipitation over weekend took edge off drought conditions most sections of State. Temperatures averaged 2° to 8° above normal. Soil temperatures at 4-inch depth ranged from low 50's in north to low 70's Dixie area. Accumulated growing degree days to date generally 15 to 30 ahead of last year. Weekend rains should improve soil moisture, crop growth prospects, pasture, and range feed growth. Most fruits now blooming or will bloom next week. Clearing from present cold wet spell could bring freeze damage to Utah fruits, now in vulnerable growth stage. Irrigation water in reservoir storage best ever and stream flow prospects good most areas. Winter wheatfields greening, prospects fair to good. Planting moved rapidly last 2 weeks. Percent of acreage planted: 70 for spring wheat and barley, 40 for oats, 95 for green peas, 100 for dry onions, and 70 for sugar beets. Calving 70% completed, farm flock lambing 85% and range lambing 20%, about on schedule. Shearing started. Spring and summer range feed slow, should improve rapidly with weekend rains.

**VIRGINIA:** Temperatures above normal at beginning and normal to below normal for remainder. Extremes: 89° and 22°. Quite dry except for light rain late Saturday. Fieldwork progressed well with fair weather. Topsoil moisture mostly adequate but in some areas rain would be helpful. Corn 5% planted. Most tobacco plantbeds up and being watered. Pasture growth slow, feeding some hay. Harvesting spinach, bedding sweet potatoes, and planting sweet corn and snap beans. Peaches full bloom in central Piedmont and southern Shenandoah Valley. Nearing full bloom in upper Piedmont and Shenandoah Valley. Apples pink to full bloom.

**WASHINGTON:** West of Cascades: Cool and wet first half week, warmer latter half. Rainfall amounts 0.50 to 1.00 inch interior valleys, 1.50 to 2.00 inches coastal area. Growth of crops and pastures slow. Planting strawberries, raspberries, and tree seedlings continues. Harvesting field rhubarb starting. East of Cascades: Average temperatures 2° to 4° below normal. Below freezing 1 or more nights in orchard and agricultural areas. Bloom in northern orchard areas expected to be 10 days late. Orchard heaters used in Yakima Valley. Asparagus harvest set back by frost. Carrots, potatoes, cereals, and corn being planted. Early-seeded crops emerging. Most early-

seeded winter wheat in good condition. Spotty stands in some areas. Hay supply short.

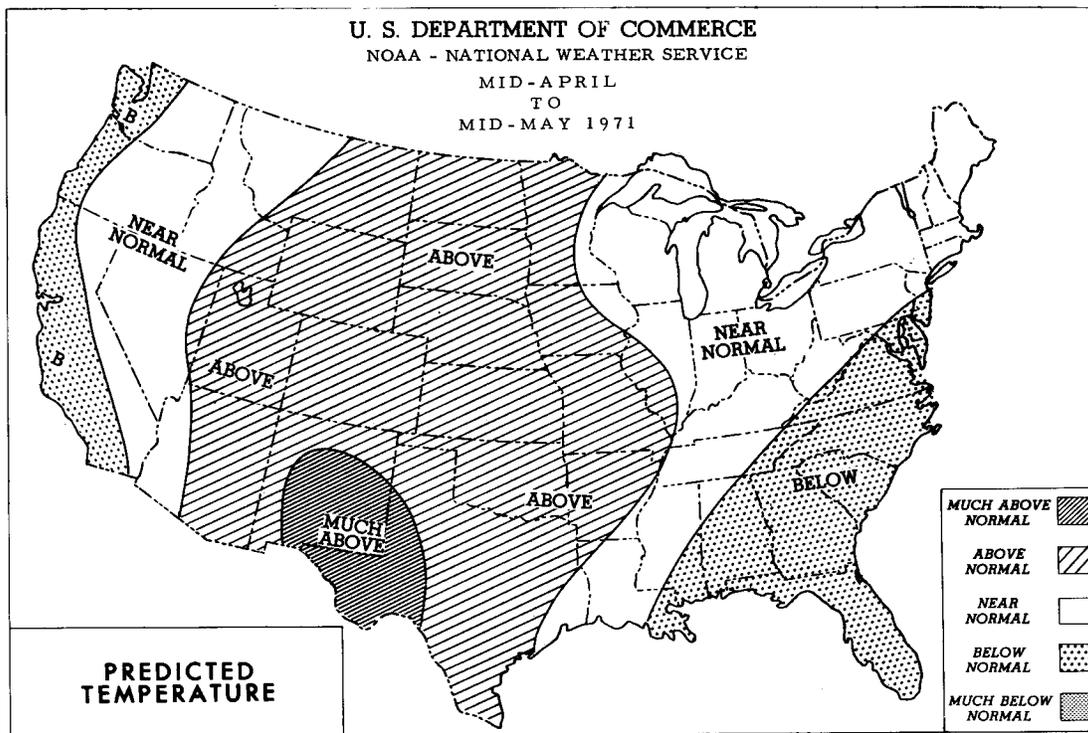
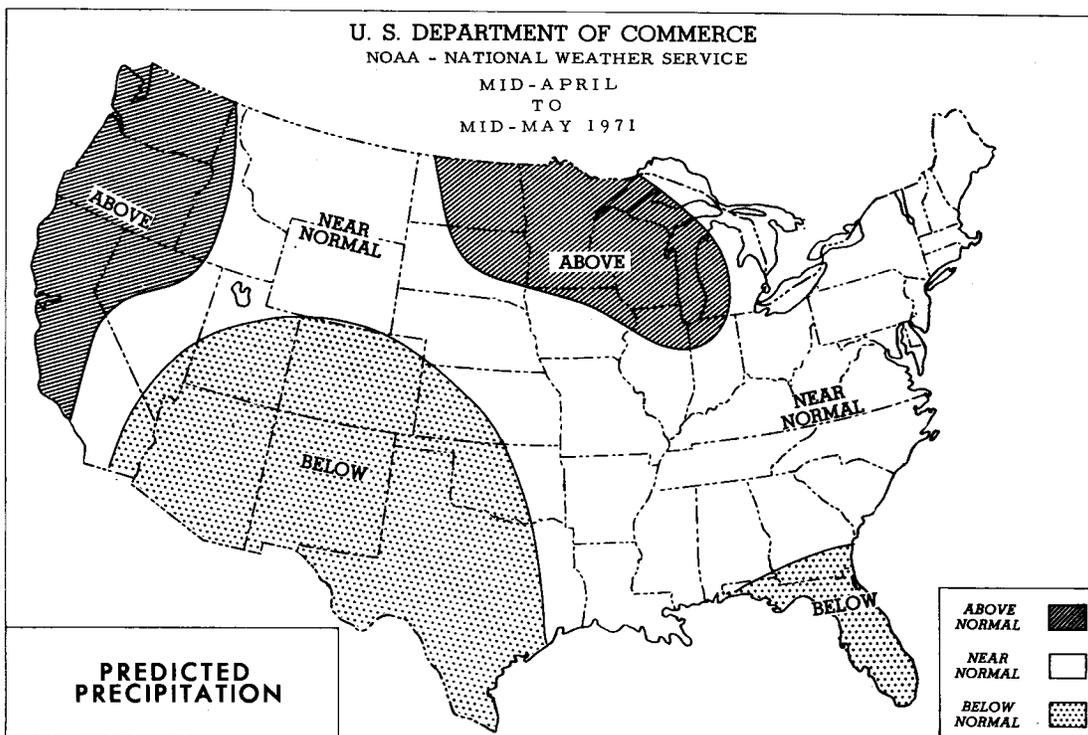
WEST VIRGINIA: Sunny week with highs in 80's April 13. Strong cold front with thunderstorms evening April 13 abruptly lowered temperatures balance of period and gave only significant rain. Fieldwork during week an average of 5 days. Main activities were mending fences, hauling manure, and preparing soil for spring planting. Oats 28% planted, potatoes 33%. Tobacco beds 98% seeded, 23% emerged. Grains and fruit in fair to good condition. Pastures late and only poor to fair. Soil moisture short to adequate.

WISCONSIN: Week of pleasant spring weather. Sunshine plentiful and afternoon temperatures generally in 60's and 70's away from Lake Michigan. Thunderstorm rains with some hail across southern 1/3 of State on Monday. Some 2.00-inch rainfall totals locally. Light thunder-showers most areas on Friday. Fieldwork slowed by wet ground. Oats about 10% planted Southeast areas farthest advanced. Spring plowing about 10% completed. Feed supplies generally ample,

except short in areas hit by last summer's drought. A few early potatoes and peas planted. New seedings wintered well. Snow cover nearly all gone. A little remains in shady areas of the North Woods. Rivers running bankfull with a little overflow here and there. Soil moisture 2/3 adequate and 1/3 surplus.

WYOMING: Scattered light precipitation over much of Wyoming and temperatures averaged from 1° to 7° above normal. Chugwater reported most moisture with 0.32 inch. Maxima were mostly mid-50's to 60's west of Divide, high 60's to low 80's east. Minima were mostly zero to 15° west of Divide, 10° to 25° east. Temperature extremes were 85° at Torrington and -3° at Moran. 20-inch depth soil temperatures gained 2° to 6° during week, 40-inch depth gained 1° to 3°, and 72 inch depth gained 1° to 2°. Good progress was made with spring farming. By weekend about 1/4 of oat acreage and 40% of barley was seeded. Nearly 20% of the sugar beets have been planted. Calving is slightly more than 1/2 completed with light to normal losses.

AVERAGE MONTHLY WEATHER OUTLOOK



The above prognostic charts show the expected categories of average temperature and total precipitation for the period indicated. They were extracted from the Extended Forecast Division's publication "Average Monthly Weather Outlook" which contains additional information necessary for complete interpretation.

## CHARTING THE PROGRESS OF SPRING

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Plants can be used as living integrators of environmental conditions. That's what phenology is concerned with: the study of periodic events in the animal and plant world as they are influenced by climate and weather. Plants can be observed methodically year after year and dates can be recorded when certain distinguishable growth stages occur. Phenological studies in the Western United States have been reported previously in this publication (Feb. 3, 1969; April 13, 1970; and Feb. 22, 1971).

In the Northeastern United States a network of phenological observation sites was initiated in 1965 as part of the NE-35 regional research project of a group of Agricultural Experiment Stations: "Climate of the Northeast - Analysis and Relationship to Plant Response." This project was superseded in 1970 by NE-69, "Atmospheric Influences on Ecosystems and Satellite Sensing." At present the network consists of about 200 sites from Maine to West Virginia and Tennessee. The Persian lilac, cultivar Red Rothomagensis, is used as the indicator plant. The plants used are genetically identical. They are vegetatively propagated from the same parent stock or clone to avoid differences in their response to environmental factors.

Cooperators observe the plants and report the dates of certain phenological events such as first leaf, first flowers, full bloom, and end of bloom. A manual<sup>1</sup> was prepared to assist the cooperators in establishing and maintaining the phenological sites and to insure consistency in the observations. Most of the plantings are established in the proximity of weather observation stations. This allows comparisons of phenological data with routinely collected weather data.

Gaps in the existing phenological network in the Northeast are being filled by adding about 40 sites in Pennsylvania in spring 1971 through the cooperation of the NOAA Climatologist in University Park, Pa. In West Virginia the network is being expanded by about 15-20 sites for a study using a chemical reaction temperature integrator. North Carolina joined the project in 1971, and a network is also being established in

the Province of Quebec.

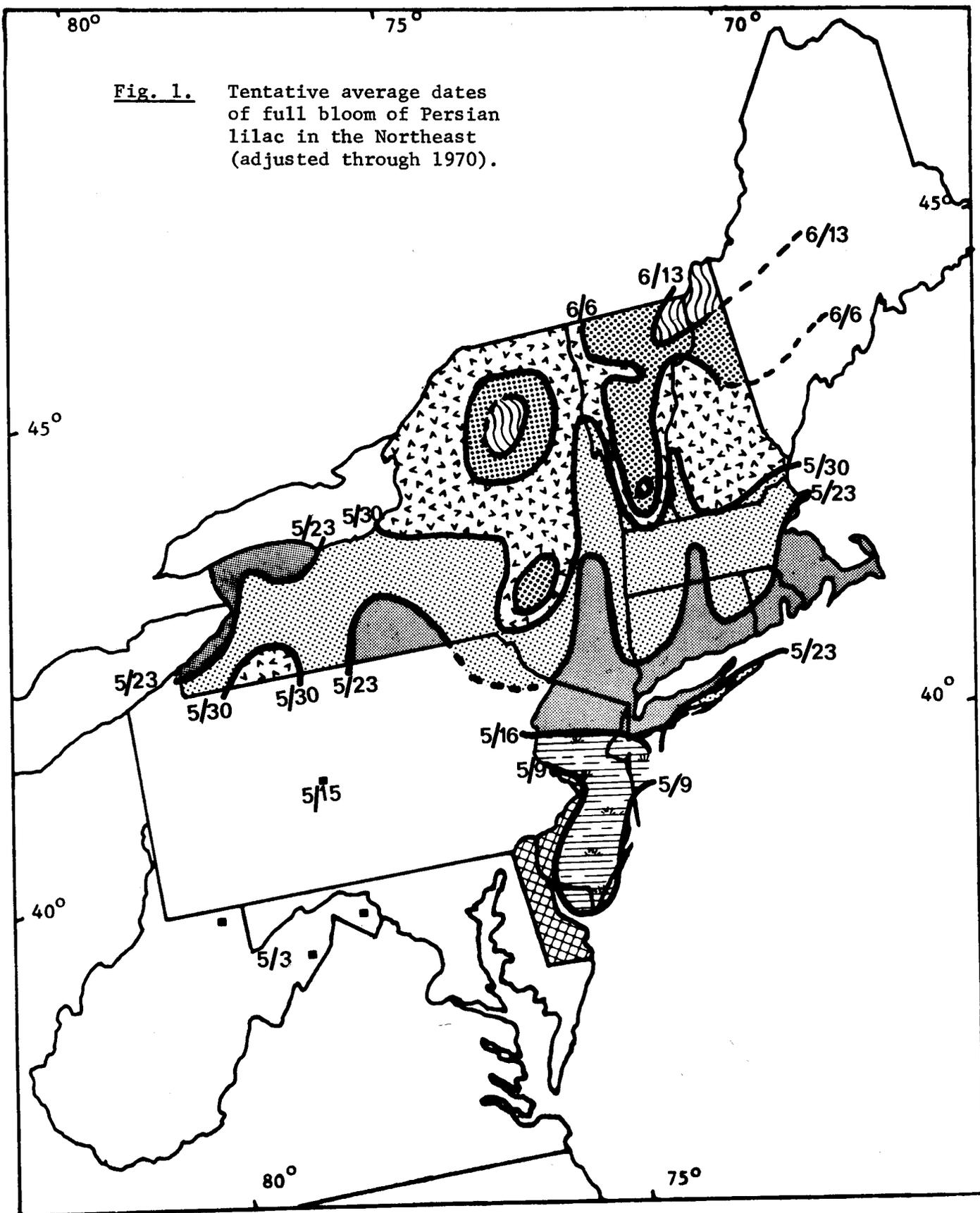
The northerly progression of phenological events and thus the progress of spring can be charted from these uniform observations. Compared with 1969, the 1970 dates of full bloom of the indicator plants were generally later in the southern part of the region and earlier in the northern part. A distinct dividing line ran through southern New York State somewhat north of the 42°N parallel and through Connecticut. South of this line full bloom averaged about 5 days later than in 1969, north of this line full bloom averaged about 5 days earlier. At sites in northern Vermont and New Hampshire full bloom occurred up to 14 days earlier than in the previous season.

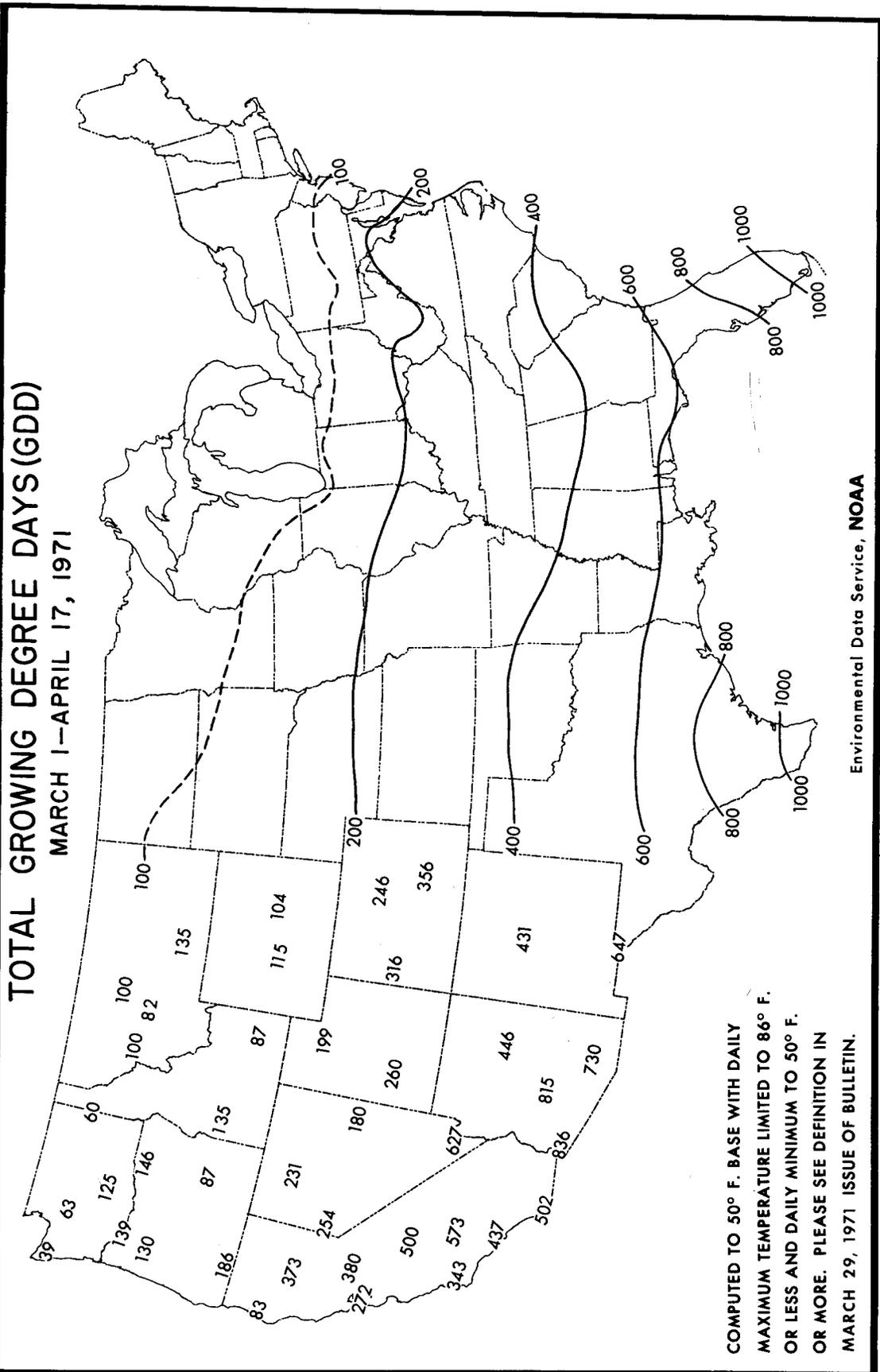
Long term data are needed to establish valid norms or average dates of phenological events. But in recent years the Northeast apparently has experienced representative variability in spring development, so it was possible to establish tentative average dates based mostly on 5-year records. The resulting isolines for full bloom of Persian lilac are shown in Figure 1. A pattern begins to emerge in the general northerly progression of the observed phenological events in spring, modified by the influence of mountain ranges, river valleys, and large bodies of water.

During the 5-year period, 1966-1970, the Persian lilac did not reach full bloom in northern Vermont until 30 to 53 days after it blossomed in West Virginia. The latitudinal difference between these locations is just over 5 degrees or about 365 miles. The overall northerly advance by latitude was therefore at the rate of 7 to 12 miles per day. The direct point-to-point distance is about 550 miles. On this basis the progression was at the rate of 10 to 18 miles per day. The average of 14 miles agrees closely with the old New England concept that spring advances at the rate of 100 miles per week.

<sup>1</sup>Hopp, R. J., M. T. Vittum, and N. L. Canfield. 1969. Instructions for phenological observations: Persian lilac. Vt. Agr. Exp. Sta. Pamphlet 36.

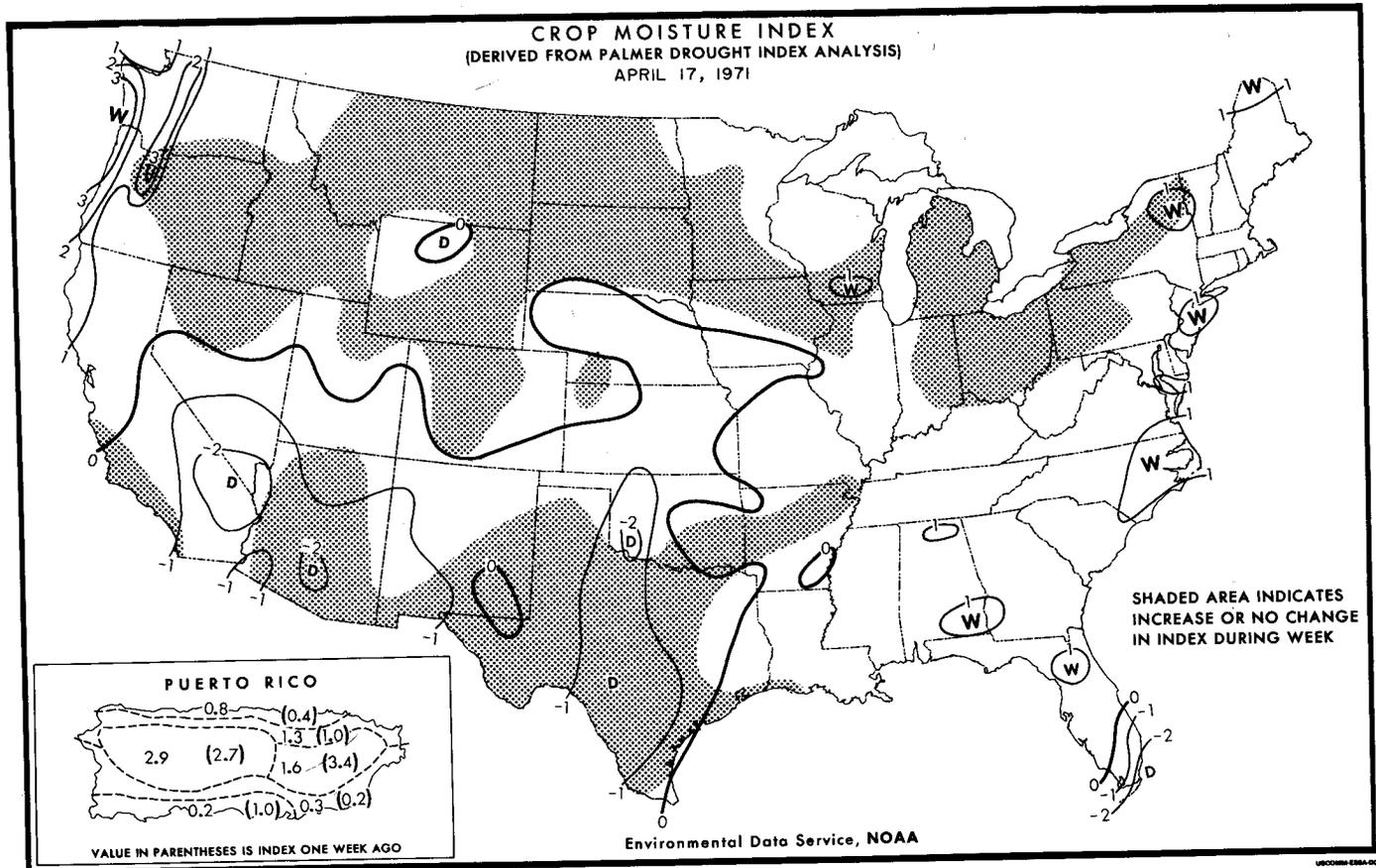
**Fig. 1.** Tentative average dates of full bloom of Persian lilac in the Northeast (adjusted through 1970).





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WPA, 1004



INDEX DECREASED DURING WEEK  
(Unshaded Areas)

INDEX INCREASED OR DID NOT CHANGE DURING WEEK  
(Shaded Areas)

INDEX

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	EXTREME DROUGHT, MOST CROPS ABOUT RUINED.

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 ABOVE NORMAL, 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.
	-3.0 to -4.0	DROUGHT STILL SEVERE, RAIN URGENTLY NEEDED.
BELOW	-4.0	NOT ENOUGH RAIN, DROUGHT STILL EXTREME.

Drought Eased in Texas; Intensified in Florida

Moderate to locally heavy rain fell in the drought areas of Texas late last week, bringing temporary relief to parched crop and pasture lands. However, continued rains are needed to break the extended dry spell. The moisture has allowed farmers to begin previously delayed planting activities.

No rain fell in the Florida drought region during the past week, as pasture conditions declined. Other areas in the Southeast had little or no rainfall and rapid drying increased the incidence of grass and wood fires.

J. J. Rahn

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