

Weekly Weather & Crop Bulletin

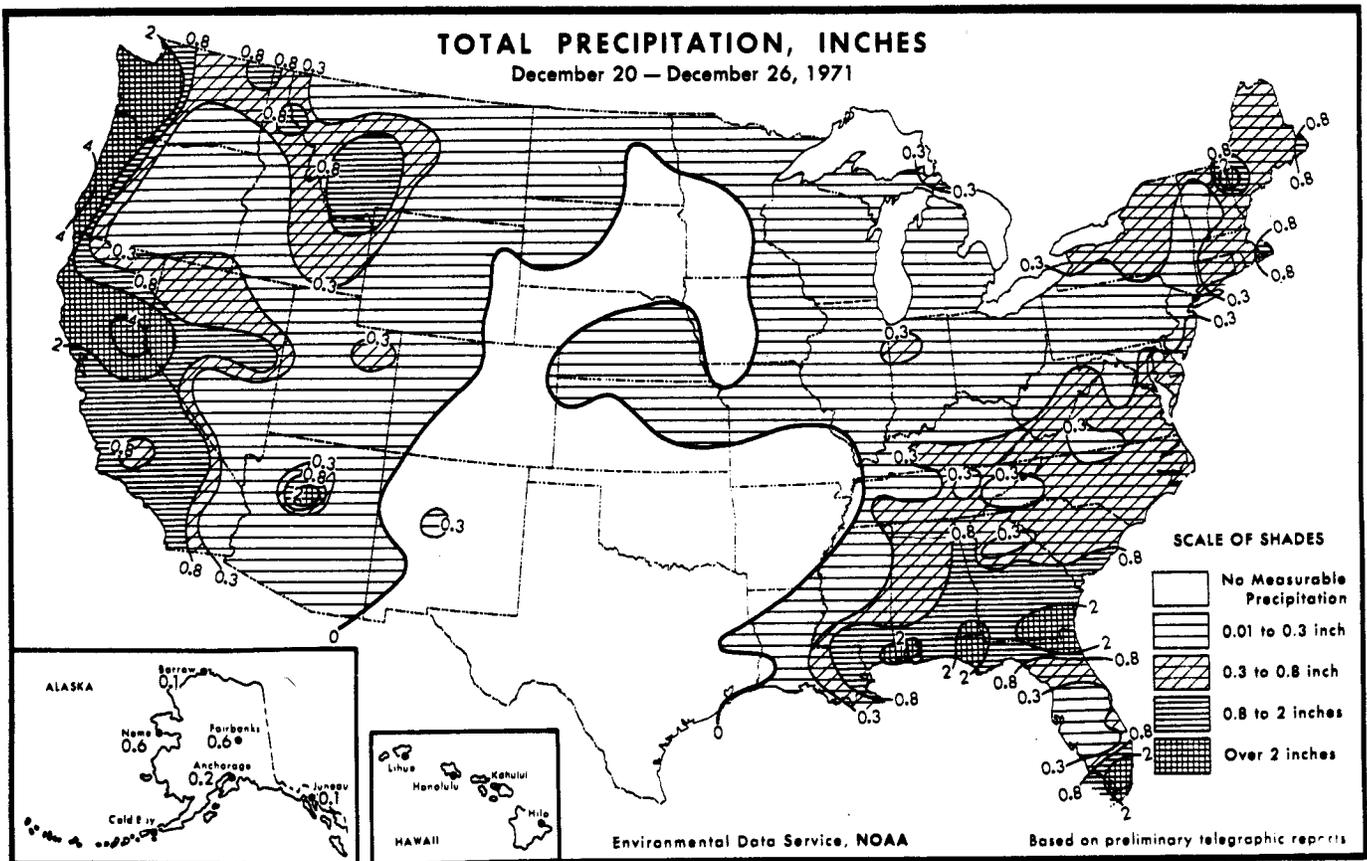
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Washington, D. C.



NATIONAL WEATHER SUMMARY

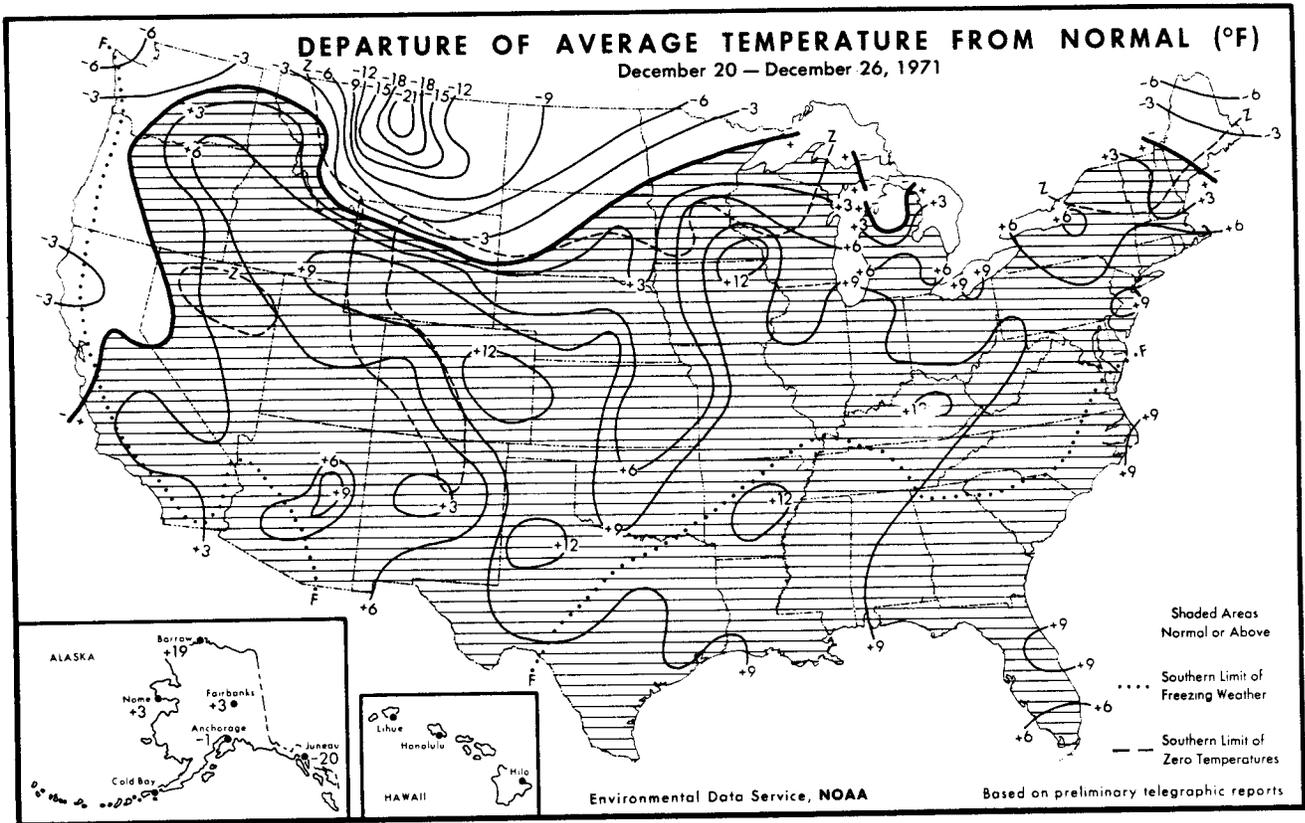
HIGHLIGHTS: Arctic cold covered the extreme northern Great Plains. Mild December weather prevailed most other areas. Heavy snow fell in parts of the Far West.

PRECIPITATION: A huge storm off the northern Pacific Coast brought dismal weather to the Pacific Northwest. The moisture laden air caused rain along the coast and snow inland in the nearby hills, the Cascades, and the northern Rocky Mountains. Snow flurries occurred over the northern Great Plains to the Great Lakes. Fair and dry weather occurred over most other areas from the Far West to the southern Great Plains. Fog covered much of the land from the central Great Plains to the Atlantic Coast. Rain or drizzle mixed with the fog in some of the middle Atlantic

States reduced visibility to near zero in some localities. A few thunderstorms occurred in Georgia and northern Florida Tuesday.

At midweek the rains in the Far Northwest continued to soak the lowland, winds increased to gale velocities, and the snowpack continued to increase in the mountains. Stampede Pass, Wash., measured 111 inches of snow on the ground Wednesday morning. Light snow or freezing drizzle fell in the Northeast at midweek.

Rain and snow continued in the Far West through the weekend. A foot of snow fell in the passes of the Sierra Nevadas falling at the rate of an inch an hour. Friday forenoon. Snow and blowing snow reduced visibility to near zero in places, making highway travel hazardous.



TEMPERATURE: Arctic cold maintained its grip over the northern Great Plains early in the week. Subzero temperatures occurred in northern North Dakota and northern Minnesota Tuesday and by Wednesday subzero weather had spread to northern Wisconsin. Hibbing, Minn., registered -15° , and Park Falls, Wis., $-.2^{\circ}$ Wednesday morning. The winter chill had spread southward to the Ohio River Valley. The temperature at Crossville, Tenn., plunged to 32° Wednesday morning. Subzero temperatures occurred Wednesday at spots in New England. Las Vegas, Nev., in the southern Rocky Mountains, recorded 10° below zero Wednesday. Thursday morning the mercury at Cut Bank, Mont., dropped to a chilly 9° below zero. Warm weather maintained its hold on the South. Meridian, Miss., registered 77° and Ft. Myers, Fla., 85° Tuesday morning.

Mild southerly winds warmed mid-America and the East from Thursday through the weekend. Burwell, Nebr., registered 67° Thursday afternoon and Columbia, Mo., recorded 69° Friday. Bitter cold gripped the northern Great Plains Sunday. Temperatures from Cut Bank, Mont., to Bemidji, Minn., remained below zero throughout the afternoon. Temperatures for the week at Havre, Mont., averaged 2° below zero, 22° below normal. Weekly mean temperatures were below normal along the northern Pacific coast, along the Canadian Border from Washington to Lake Superior and in northern Maine. Elsewhere, weekly mean temperatures were above normal for late December. Parts of the central and southern Great Plains averaged 9° to 13° warmer than normal.

L. W. Dye

NATIONAL AGRICULTURAL SUMMARY

AGRICULTURAL HIGHLIGHTS: Cotton harvest resumed in Texas, making good progress. Unseasonably warm temperatures boosted small grain crops in South and East. Vegetable and citrus shipments slowed due to adverse weather and the Christmas holiday.

SMALL GRAINS: The winter wheat crop continues in good to excellent condition across the country. In the Northern Plains, the wheat crop is dormant and well covered by snow. Fall seeded grains look good in the Pacific Northwest. Seeding of small grains active in Central and Yuma areas of Arizona and to be completed in California when weather permits. Wheat fields began drying in Kansas permitting increased grazing. Ample growth prevented blowing. Considerable yellowing is present in Kansas and Oklahoma wheat fields with some rust, also, seen.

Fall seeded small grains in the north-central States are in good condition with ample soil moisture. Small grains in the South responded well to unseasonably warm temperatures and abundant moisture supplies. Seeding lags in North Carolina due to wet fields.

CORN: Limited progress was made in the final corn harvesting operations during Christmas Week. Only a few scattered fields remain to be harvested in the Northern Corn Belt States. Harvest activity resumed in some Southeastern States as open, mild weather permitted entry of machinery into the fields.

SOYBEANS: Soybean harvest is virtually complete except in the Carolinas and Maryland where growers have as much as 20 to 25 percent of their crop to combine. Harvest in these areas continued during the week but still lagged normal progress as some fields were still too wet for machinery to enter.

COTTON: Harvest resumed in high and low plains of Texas, making good progress. About 49% of the crop is picked while at this time last year, harvest was complete. In Oklahoma, harvest progress was fair on lighter soils but heavy soils are still too wet for machinery. Picking, also, resumed in the South and is nearing completion in Mississippi and Arkansas. Harvesting operations were at a standstill in California due to weather conditions but picking continued in Eastern New Mexico and was nearing completion in Arizona.

OTHER CROPS: Harvesting and marketing of most crops were slow as farmers and their families enjoyed the holiday season. Sorghum grain harvest continued in Oklahoma where some late harvested fields have been badly damaged by hard rains. Sugarcane harvest in Louisiana is 90% complete, slightly behind last year's progress. Tobacco growers in the Carolinas and Virginia are preparing plant beds for next year's crop. In Texas, sugar beet harvest is 68% complete--100% last year. Flaxseed planting in Texas at 86% complete compares with 100% complete a year earlier.

Fruits and Nuts: Heavy rains halted orchard activity in California. In Arizona, citrus harvest continued in Salt River Valley and Yuma Area. Most groves escaped serious damage from recent low temperatures. Florida citrus growers enjoyed spring like temperatures the past week. Some young trees in new growth while most older trees still dormant. Fruit was rapidly ripening. Citrus harvest was fairly active in the Lower Valley of Texas. Pecan harvest is 94 percent complete in Texas and nearing completion throughout the South.

Vegetables: Vegetable shipments declined in Florida due to adverse weather and holidays. Harvest of winter potatoes started light in Everglades area. Spring crop planting is underway. South Texas vegetable harvest was fairly active with mild weather prevailing. Low temperatures slowed lettuce cutting and plant growth in Yuma, Arizona. Vegetable harvest was seasonably active in desert valleys of California but light to moderate in rest of State. Lettuce cutting is increasing in Imperial Valley but nearing end in Palo Verde Valley.

PASTURES AND LIVESTOCK: Routine care of livestock was the main activity on many farms. Supplemental feeding has been minimal in the Eastern half of the Nation due to mild weather. Livestock had greater access to field and pasture grazing in some western States but supplemental feeding continued most areas. Winter wheat pastures are furnishing the best grazing in years. However, grazing was limited due to wet, boggy fields in many areas of the South. Livestock generally are in good condition.

Carl Cross
Agricultural Statistician

Happy New Year

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., December 26, 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 . . .	56	+ 9		-.6	New Orleans . . .	63	+ 8	.9	0	OKLA.Okla. City . . .	47	+ 7	0	-.3
Mobile . . .	64	+10	2.0	+.8	Shreveport . . .	59	+10	0	-1.2	Tulsa . . .	48	+ 9	0	-.3
Montgomery . . .	58	+10	1.3	+.2	MAINE.Caribou . . .	6	- 7	.6	+.1	OREG.Astoria . . .	41	- 2	3.9	+ .9
ALASKA.Anchorage . . .	12	- 1	.2	0	Portland . . .	25	+ 1	.6	-.3	Burns . . .	29	+ 1	.1	-.2
Barrow . . .	6	+19	.1	0	MD.Baltimore . . .	43	+ 8	.3	-.6	Medford . . .	36	- 1	.2	-.6
Fairbanks . . .	7	+ 3	.6	+.5	MASS.Boston . . .	35	+ 4	.5	-.3	Pendleton . . .	42	+ 7	.1	-.2
Juneau . . .	7	-20	.1	-.9	Chatham . . .	36	---	.9	---	Portland . . .	41	0	3.2	+1.8
Nome . . .	8	+ 3	2.6	+.4	MICH.Alpena . . .	25	+ 3	.1	-.3	Salem . . .	40	- 1	2.6	+.9
ARIZ.Flagstaff . . .	33	+ 3		+2.3	Detroit . . .	32	+ 5	.2	-.3	PA.Allentown . . .	36	+ 6	T	-.7
Phoenix . . .	59	+ 8	T	-.2	Flint . . .	33	+ 9	.1	-.3	Eri . . .	---	---	---	---
Tucson . . .	56	+ 5	.1	-.1	Grand Rapids . . .	33	+ 6	.1	-.3	Harrisburg . . .	40	+ 8	T	-.6
Winslow . . .	41	+ 9	.1	0	Houghton Lake . . .	25	- 4	.1	-.3	Philadelphia . . .	41	+ 9	.3	-.3
Yuma . . .	58	+ 4	T	-.1	Lansing . . .	33	+ 7	.1	-.3	Pittsburgh . . .	39	+ 9	.2	-.4
ARK.Fort Smith . . .	50	+ 9	0	-.7	Marquette . . .	24	+ 2	.2	-.2	Scranton . . .	34	+ 6	.2	-.3
Little Rock . . .	54	+12	T	-.9	Muskegon . . .	32	+ 4	.1	-.3	R.I.Providence . . .	34	+ 4	.6	-.2
CALIF.Bakersfield . . .	53	+ 5	.7	+.5	S.Ste.Marie . . .	18	- 1	.6	+.1	S.C.Charleston . . .	58	+ 9	.8	+.2
Eureka . . .	46	- 3	2.0	+.4	MINN.Duluth . . .	14	+ 2	T	-.3	Columbia . . .	53	+ 7	.4	-.4
Fresno . . .	49	+ 3	1.3	+.8	Internatl Falls . . .	4	- 3	T	-.2	Greenville . . .	49	+ 6	.6	-.4
Los Angeles . . .	55	- 2	4.0	+3.4	Minneapolis . . .	23	+ 7	T	-.2	S.DAK.Aberdeen . . .	17	+ 2	.1	0
Red Bluff . . .	43	- 3	2.2	+1.2	Rochester . . .	29	+12	T	-.2	Huron . . .	22	+ 4	T	-.1
San Diego . . .	58	+ 1	1.4	+.8	St. Cloud . . .	18	+ 3	T	-.2	Rapid City . . .	25	- 2	T	-.1
San Francisco . . .	47	- 2	1.9	+1.0	MISS.Jackson . . .	60	+11	T	-1.2	Sioux Falls . . .	22	+ 2	T	-.1
Stockton . . .	46	+ 1	2.2	+1.5	Meridian . . .	60	+12	.5	-.7	TENN.Chattanooga . . .	51	+ 9	.6	-.6
COLO.Denver . . .	43	+12	T	-.1	MO.Columbia . . .	43	+10	T	-.4	Knoxville . . .	50	+ 9	.2	-.8
Grand Junction . . .	33	+ 5	T	-.1	Kansas City . . .	39	+ 4	T	-.4	Memphis . . .	53	+11	0	-1.2
Pueblo . . .	44	+12	0	-.1	St. Louis . . .	44	+10	T	-.4	Nashville . . .	51	+10	T	-1.0
CONN.Bridgeport . . .	38	+ 7	.5	-.2	Springfield . . .	47	+11	T	-.5	TEX.Abilene . . .	57	+11	0	-.3
Hartford . . .	32	+ 4	.8	+.1	MONT.Billings . . .	19	- 9	.2	+.1	Amarillo . . .	50	+11	0	-.2
D.C.Washington . . .	45	+ 8	.3	-.3	Glasgow . . .	7	-10	.1	0	Austin . . .	59	+ 7	T	-.6
FLA.Apalachicola . . .	62	+ 7	.9	+.2	Great Falls . . .	10	-17	.5	+.4	Beaumont . . .	61	+ 7	0	-1.2
Ft. Myers . . .	73	+ 8	.1	-.2	Havre . . .	2	-22	.3	+.2	Brownsville . . .	68	+ 5	0	-.4
Jacksonville . . .	62	+ 7	2.1	+1.6	Helena . . .	19	- 4	.9	+.8	Corpus Christi . . .	67	+ 8	0	-.5
Key West . . .	74	+ 4	1.5	+1.1	Kalspell . . .	23	- 1	.2	-.1	Dallas . . .	58	+10	T	-.6
Lakeland . . .	69	+ 7	T	-.5	Miles City . . .	10	-12	.3	+.2	Del Rio . . .	60	+ 8	T	-.2
Miami . . .	73	+ 5	3.9	+3.5	Missoula . . .	26	+ 3	.6	+.4	El Paso . . .	50	+ 7	0	-.1
Orlando . . .	72	+11	T	-.5	NEBR.Grand Island . . .	35	+ 9	T	-.1	Fort Worth . . .	57	+10	T	-.6
Tallahassee . . .	61	+ 7	1.0	+.1	Lincoln . . .	34	+ 5	T	-.2	Galveston . . .	65	+ 8	T	-1.0
Tampa . . .	70	+ 8	.1	-.3	Norfolk . . .	27	+ 3	T	-.1	Houston . . .	63	+10	0	-1.0
GA.Atlanta . . .	53	+ 8	.3	-.8	North Platte . . .	33	+ 7	T	-.1	Lubbock . . .	54	+13	0	-.2
Augusta . . .	54	+ 8	.6	-.2	Omaha . . .	31	+ 5	T	-.2	Midland . . .	56	+11	0	-.2
Macon . . .	55	+ 7	1.3	+.4	Valentine . . .	28	+ 4	T	-.1	San Angelo . . .	58	+11	0	-.2
Savannah . . .	58	+ 7	1.4	+.7	NEV.Ely . . .	31	+ 5	.9	+.7	San Antonio . . .	59	+ 6	T	-.4
HAWAII.Hilo . . .	---	---	---	---	Las Vegas . . .	47	+ 3	.2	+.1	Victoria . . .	65	+ 8	0	-.7
Honolulu . . .	---	---	---	---	Reno . . .	29	- 2	2.7	+2.5	Waco . . .	58	+ 8	T	-.7
Kahului . . .	---	---	---	---	Winnemucca . . .	31	+ 3	.7	+.5	Wichita Falls . . .	53	+ 9	0	-.3
Lihue . . .	---	---	---	---	N.H.Concord . . .	25	+ 2	.4	-.3	UTAH.Blanding . . .	34	+ 5	.3	0
IDAHO.Boise . . .	39	+ 8	.3	0	N.J.Atlantic City . . .	41	+ 6	.5	-.2	Salt Lake City . . .	37	+ 7	.3	0
Lewiston . . .	39	+ 4	.1	-.2	Trenton . . .	44	+10	.2	-.5	VT.Burlington . . .	24	+ 5	.1	-.3
Pocatello . . .	35	+ 9	.5	+.3	N.MEX.Albuquerque . . .	36	0	.3	+.2	VA.Lynchburg . . .	46	+ 8	.4	-.4
ILL.Cairo . . .	---	---	---	---	Roswell . . .	48	+10	0	-.1	Norfolk . . .	50	+ 9	.4	-.2
Chicago . . .	39	+11	T	-.4	N.Y.Albany . . .	30	+ 6	.3	-.3	Richmond . . .	46	+ 7	.4	-.3
Moline . . .	34	+ 8	T	-.4	Binghamton . . .	30	+ 5	.6	+.1	Roanoke . . .	45	+ 7	.2	-.5
Peoria . . .	37	+ 9	T	-.4	Buffalo . . .	32	+ 6	.4	-.3	WASH.Colville . . .	26	- 1	1.0	+ .6
Rockford . . .	---	---	---	---	New York . . .	40	+ 6	.2	-.6	Omak . . .	19	- 5	.4	+ .1
Springfield . . .	41	+10	T	-.4	Rochester . . .	30	+ 3	.3	-.3	Quillayute . . .	35	- 6	2.4	-1.4
IND.Evansville . . .	44	+ 8	T	-.7	Syracuse . . .	31	+ 6	.5	-.2	Seattle-Tacoma . . .	37	- 4	2.0	+ .6
Fort Wayne . . .	36	+ 9	.1	-.4	N.C.Asheville . . .	48	+ 8	.2	-.5	Spokane . . .	33	+ 4	.3	-.2
Indianapolis . . .	39	+ 9	.1	-.5	Charlotte . . .	49	+ 7	.4	-.5	Walla Walla . . .	43	+ 6	.1	-.3
South Bend . . .	37	+10	.2	-.3	Greensboro . . .	47	+ 8	.3	-.4	Yakima . . .	34	+ 3	.3	0
IOWA.Burlington . . .	36	+ 9	.1	-.2	Hatteras . . .	56	+ 9	.6	-.5	W.VA.Beckley . . .	42	+ 8	.3	-.6
Des Moines . . .	32	+ 9	T	-.2	Raleigh . . .	48	+ 7	.5	-.2	Charleston . . .	47	+10	.2	-.5
Dubuque . . .	31	+ 9	.1	-.3	Wilmingon . . .	55	+ 7	.3	-.5	Huntington . . .	47	+10	.2	-.5
Sioux City . . .	28	+ 5	T	-.2	N.DAK.Bismarck . . .	10	- 6	.1	0	Parkersburg . . .	44	+ 9	.1	-.5
KANS.Concordia . . .	37	+ 6	T	-.2	Fargo . . .	---	---	---	---	WIS.Green Bay . . .	25	+ 5	.1	-.2
Dodge City . . .	43	+10	T	-.1	Williston . . .	5	-10	.1	0	La Crosse . . .	27	+ 7	T	-.3
Goodland . . .	41	+12	T	-.1	OHIO.Akron-Canton . . .	35	+ 6	.2	-.3	Madison . . .	28	+ 8	T	-.3
Topeka . . .	37	+ 5	T	-.3	Cincinnati . . .	42	+10	T	-.5	Milwaukee . . .	30	+ 7	T	-.4
Wichita . . .	39	+ 4	T	-.2	Cleveland . . .	38	+ 9	.3	-.2	WYO.Casper . . .	35	+ 8	.2	+ .1
WY.Lexington . . .	47	+12	.2	-.6	Columbus . . .	37	+ 7	.2	-.3	Cheyenne . . .	40	+11	0	-.1
Louisville . . .	46	+10	.1	-.7	Dayton . . .	39	+ 9	.1	-.4	Lander . . .	32	+10	.1	0
LA.Baton Rouge . . .	64	+11	.8	-.3	Toledo . . .	34	+ 7	.3	-.1	Sheridan . . .	19	- 7	T	-.1
Lake Charles . . .	63	+ 9	T	-1.3	Youngstown . . .	36	+ 8	.2	-.3	P.R. San Juan . . .	---	---	---	---

* 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 Climatologists.

ALABAMA: Temperatures continued much warmer than usual with daily averages 8 to 18° above normal. Only northern sections had readings as low as upper 30's and daily maximums mainly in 70's. Rain 1st day of period, otherwise fair to partly cloudy. Rainfall moderate to heavy south and little or none elsewhere. Open weather north and central permitted resumption cotton, corn, and soybean harvest in driest fields. Rain continued delay harvest south. Several weeks open weather needed to get remaining production out of fields. Ample moisture and warm temperatures provided ideal conditions for growth of small grain. Winter grazing crops good to excellent condition. Few fields too boggy to graze. Cattle receiving supplemental feed. Livestock remain fair to good condition.

ARIZONA: Temperatures were above normal this week over most of State with freezing temperatures in colder sections of Salt River Valley on only one night and in Yuma area on two nights. Storm near beginning of week and another on week end brought precipitation to much of State with snow above about 5,000 feet. Some weekly water totals in excess of two inches were reported at higher elevations in northern part of State and in White Mountains. Cotton harvest nearing completion. Harvest and residue disposal practically completed in Yuma. Shortage of ground machines and high ground cotton price delaying harvest completion central. Wet weather delays cleanup operations in southeast. Sorghum harvest complete in southeast and nearing completion in central and Yuma areas. Growth of fall planted sugar beets slow due to low temperatures. Seeding of small grains and safflower active in central and Yuma areas. Low temperatures have retarded emergence and stand establishment. Growth in alfalfa fields slow due to recent low temperatures. Harvest lettuce, cabbage, other winter vegetables continued Yuma area weather permitting. Low temperatures delayed cutting some fields, slowed growth immature lettuce, cabbage, romaine and carrots. Navel, sweet, tangerine, lemon and grapefruit harvest continued Salt River Valley. Lemon, grapefruit, navel and sweet orange harvest continued Yuma area. Most groves escaped serious damage low temperatures. Ranges remain fair to good, supplying near normal amounts of feed. Limited supplemental feeding continues. Stock water adequate to good. Livestock fair to mostly good.

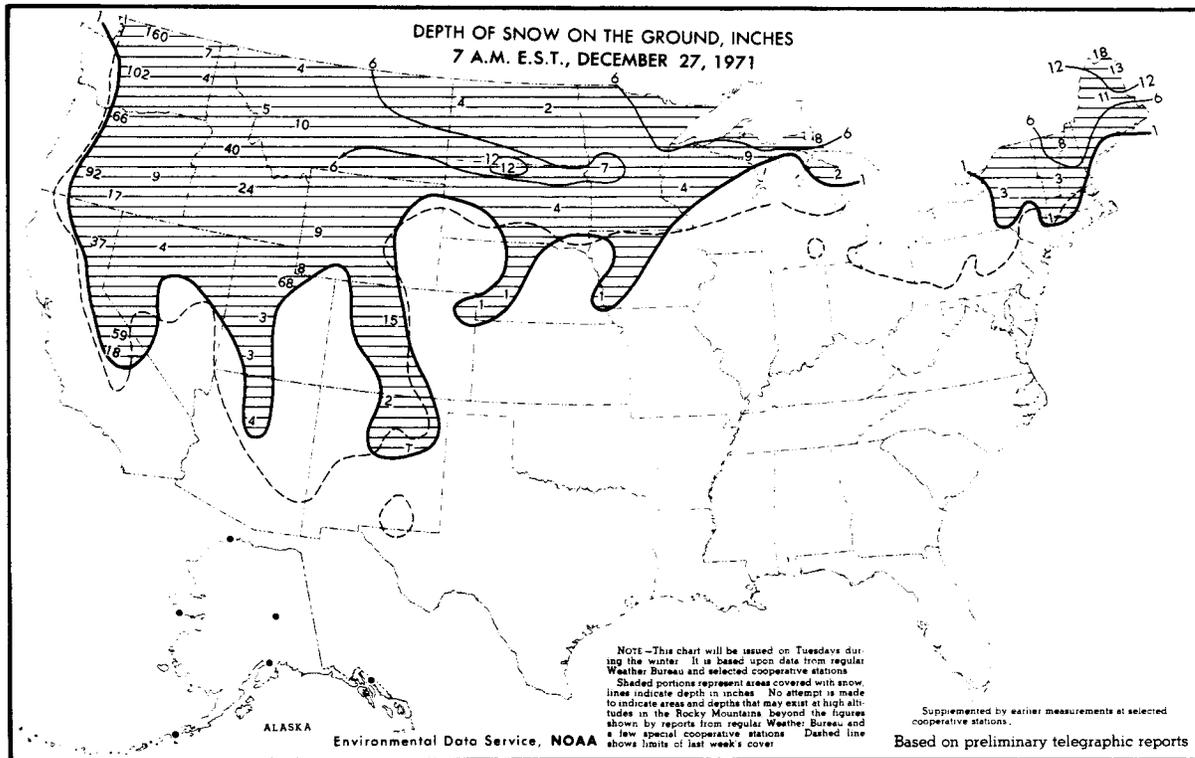
ARKANSAS: Unseasonably warm. Mean temperatures ranged 9° to 15° above normal throughout State with greatest departures in northwest and north-central sections. Rainfall below normal, generally less than 0.10 inch, with most stations reporting trace or no rain. Highest temperature: 75° at Ozark on 25th; lowest 27° at Calico Rock on 21st and on 23d. Open weather permitted field-work to resume. Nearly all cotton and soybeans harvested. Winter grazing crops favorable growth, but many fields too soft for grazing. Livestock mostly fair to good condition.

CALIFORNIA: Moderate rains last three days of week, heavy amounts south coast, mountains. Heavy snow, high winds Sierras. Precipitation totaled

2.00 to 4.00 inches Los Angeles Basin, north coast; 1.00 inch Central Valley, few hundredths Desert. Average temperatures mostly 2° to 4° below normal, 8° below normal northeastern interior basin, slightly above normal San Joaquin Valley. Rain and snow limited activities to general chores. Seeding of small grains to be completed when weather permits. Cotton harvest at standstill. Sugar beets remaining in fields to be overwintered. Fall seeded sugar beet and alfalfa fields in generally good condition. Heavy rains past week halted orchard activity. Navel orange harvest slow due lack maturity. Fruit small. Grapefruit and tangerines harvest continues. Lemon harvest nearing completion Desert, increase other areas. Avocado harvest continues, good fruit quality. Grass growth benefited by rain; slowed by cold weather, livestock good condition. Supplemental feeding active. Sheep grazing alfalfa and barley fields. Artichoke harvest slow. Broccoli, cauliflower slow Salinas, light to moderate rest of State. Carrots seasonally active desert valleys. Celery Salinas nearly complete, active Oxnard, San Diego. Lettuce increasing Imperial Valley, nearing end Palo Verde Valley. Potato harvest Riverside County, San Joaquin Valley seasonally active. Tomatoes San Diego County harvest near end.

COLORADO: Warm all week east, cold thru Thursday or Friday mountains and west. Much warmer over weekend. Near record maximums in 60's and 70's last portions on 25th. Light scattered rain or snow mountains and west during week. Heavier snows starting Sunday west portions. Weather favorable past week for growth of fall seeded small grains. No moisture received eastern plains. Surface soil moisture supply generally adequate. No wind damage to small grains. Conditions of fall seeded small grains good to excellent. Range and pasture conditions fair. Small grains, stubble fields providing bulk of forage. Supplemental feeding required western slope and local areas eastern plains. Livestock conditions generally good statewide.

FLORIDA: Temperatures continued to average 5° to 10° above normal as cold frontal passages on weekend of 18-19 and later during midweek brought little change. Strong northeasterly winds of 20 to 30 miles per hour, higher gusts on 23d, affected north and central Florida. Showers and thunder-showers accompanied the frontal passage during midweek with northwest Florida averaging over 1.00 inch and 0.50 to 0.75 inch elsewhere except for locally heavy rain above 2.00 inches along lower east coast. Scattered showers occurred in the Keys. Continued summerlike weather promoting growth of small grains and young plant sugarcane. Harvest of sugarcane continued full swing. Pastures and cattle fair to good. Temporary pastures now providing considerable grazing. Annual pastures still green. Calving active. Supplemental feeding light. Citrus area enjoying spring like temperatures. Some young trees in new growth. Most older trees still dormant. Fruit rapidly ripening. Rainfall light, more needed. Vegetable shipments declined due to adverse weather and holidays. Strong winds burned foliage, caused



bloom drop, scarred young tender fruit. Precipitation restored needed soil moisture lower east coast, Hastings area, prevented excessive sand blasting. Harvest of winter potatoes started light Everglades area. Spring crop planting underway. Early melons emerging, planting tempo accelerating.

GEORGIA: Temperatures cooler than last 2 weeks but still well above December normals. Highs ranged from 50's to the 70's and lows were in 30's and 40's north and 40's and 50's south. Warmest during weekend when several new record highs for date. Averages ranged from 7° to 10° above normal. Rain at beginning of week but little or none after Tuesday. Amounts were light in north but ranged from moderate to heavy central and south. Some totals over 4.00 inches extreme south. Christmas celebrations limited activities mainly to routine care of livestock and poultry. Soil moisture adequate. Small grains and pastures mostly good. Harvest conditions improved for soybeans and cotton.

HAWAII: Temperatures cool all islands. Rainfall moderate to heavy on Hawaii and Kauai, Amui dry; but soils wet from recent rain. Vegetable and fruit supplies generally adequate. Harvesting about over in sugar plantations, limited fieldwork. Moisture good for pineapple crop, light harvesting, planting about over; other work generally light. Rain improved pasture. Cattle condition fair to good.

IDAHO: Temperatures for the week averaged 5° to 15° warmer than last week to average 4° to 8° above normal north and parts of east. Locally moderate amounts were recorded north and north-east. Snow depths above 5000 feet increased and decreased lower elevations. Heavy snow portions of south central and eastern areas hampered some livestock feeding operations. Overall there were

no unusual problems and farming activity was minimal except for routine chores.

ILLINOIS: Warm and cloudy with numerous periods of light precipitation and fog. Temperatures over weekend in 50's. Temperatures averaged about 10° above normal for late December. Winter small grains good condition. Livestock in good condition. Wet and muddy lots and fields making livestock feeding somewhat difficult. Soil moisture adequate. Routine farm chores and livestock care main activities. Virtually no fieldwork being done.

INDIANA: Warm and cloudy. Several periods of drizzle, light rain, and fog. Temperatures ranged from 22° to 56° and averaged 12° above normal. Precipitation averaged 0.10 inch. No snow cover. Soils, streams and lakes still mostly unfrozen. Few fields of corn and soybeans remain for harvest as 1971 draws to a close. Soggy fields continue to prevent completion of harvest. Livestock still out on pastures because of warm weather. Cleaning bunkers, chores, and preparation for the holidays were the major activities of farmers.

IOWA: Warm cloudy week with fog and negligible precipitation. At weekend, drizzle, snow, and glaze.

KANSAS: Unseasonably warm weather prevailed. Cloudy and foggy much of week eastern portion. Generally fair to partly cloudy west. Storm late in week brought light precipitation and much colder weather. Precipitation totals for the period under 0.10 inch. Wheat fields began to dry permitting increased grazing. Ample growth prevented blowing. Yellowing still noticeable and some wheat leaf rust and mustard reported. Livestock had greater access to field and pasture grazing but supplemental feeding continued most areas. Some disease loss among cattle in muddy lots. Cattle movement slow in small areas. Coyotes bothered grazing sheep. Lambing and farrowing continued with no unusual

problems. Farmers dwindled unharvested corn and sorghum grain acreages. Other activities included hay hauling, fertilizing, machinery repair and year end updating of farm records.

KENTUCKY: Unseasonably mild temperatures averaging 8° to 14° above normal. Cloudy most days. Rainfall light to moderate .10 to .70 inch occurring mostly on 20th but a few sprinkles scattered locations last 4 days. Farmers stripping out some remaining tobacco crop. Burley markets closed until January 4. Occasional late grain harvest but ground mostly too soft. Winter small grains and pastures greening. Many cattle still on pastures saving winter feed supply.

LOUISIANA: Weather continued unusually warm for the third consecutive week. Weekly departures 6° to 12° above normal. Extremes 80° Amite and Baton Rouge Tuesday, 35° Winnfield Thursday. Precipitation light. Totals locally more than 0.50 inch extreme southeast, but most areas had no measurable amounts. Heavy fogs blanketed State several mornings hampering transportation. Very little field work possible as excessive moisture and mud continued to delay completion of harvest. Sugarcane harvest progressed slowly about 18% of crop remaining to harvest. About 5% of cotton crop still in field. Soybean harvest virtually complete. Some acreage still to be harvested. Unusually warm weather favored growth of winter pastures but grazing was limited due to wet fields. Livestock condition fair to good.

MARYLAND AND DELAWARE: Unseasonably warm temperatures continued for 3d week. Weekly temperatures averaged 7° to 9° above normal with Christmas Day temperatures averaging 10° above normal. Rainfall on 20th mostly 0.30 inch or less except 0.30 to 0.75 inch Eastern Shore and Delaware. Limited progress in corn and soybean harvest. Most small grain fields in good condition. Late seedings rated fair. Topsoil moisture surplus many areas and subsoil moisture adequate to surplus.

MICHIGAN: Temperatures were normal entire State ranging from slightly above normal to 10° above normal southwest portion. Near normal temperatures beginning of week warming to much above normal by end of week. Precipitation under 0.10 inch except in eastern Upper Peninsula where amounts of over 0.25 inch.

MINNESOTA: Temperatures varied from 3° below normal in northwest to 7° above normal in southeast. Little to no precipitation. Snow depth averaged 3 to 10 inches across State except northwest, southeast, and south-central districts with generally less than 2 inches. Heavy snowfalls of greater than 4 inches occurring in south on 27th.

MISSISSIPPI: Temperature averages above normal for 3d week at most locations; this week, averages were 3° to 10° above normal. Weekly extremes: 80° on 20th at Jackson Airport, 24° on 19th at Tupelo. Some rain on 1 to 2 days and weekly totals ranged from 0.01 inch at Port Gibson to over 3.00 inches several locations in southern 1/3 of State. The greatest 1-day amount of 3.28 inches was reported on 20th at Tylertown. Over weekend: No rain; some dense morning fog southern portion of State, and unseasonable warm temperatures continued. Very little fieldwork since most soils too soggy to support harvesting equipment. Corn and soybeans are 98% harvested, while picking of cotton is

99% completed. Progress is unchanged from a week earlier. Also 92% of pecan crop harvested. Winter grains and fall pastures in good shape because of warm weather and abundant moisture.

MISSOURI: A warm cloudy week. Except for minor cooling at midweek, temperatures were well above normal, averaging 5° to 10° above the usual December values. Rainfall was light, confined generally to a few periods of drizzle or light rain. Amounts averaged less than 0.25 inch.

NEBRASKA: Temperatures 5° to 10° above normal until weekend when cold front accompanied by light snow dropped temperatures to much below normal. Only scattered fields of corn remain to be harvested. Small amount harvested last week. Year end record keeping, fencing, attending farm sales, livestock chores, and holiday celebrations major farm activities. Condition of winter wheat unchanged with mostly good to excellent conditions reported. Topsoil moisture good to excellent most areas. Feed grain, hay and forage supplies adequate as moderate weather helped prevent large reduction in supplies. Livestock conditions unchanged.

NEVADA: Wet week. Two major storms dropped heavy snow in north, ranging from 1 inch to over 1 foot in cities and 1 to 4 feet in mountains. Precipitation ranged from 0.60 to 3.33 inches north, 0.22 to 1.06 inches northeast, 0.30 inch south-central and about 0.15 inch south. Temperatures remain relatively warm with cloud cover, although well below normal early part of week. Temperatures averaged near normal in north and south-central to 5° above normal northeast. Cotton harvest in Pahrump Valley nearly complete. Scrapping operations will be limited. Livestock wintering well with adequate feed in most areas. Heavy snow making feeding and caring for livestock more difficult.

NEW ENGLAND: Very cold week extreme north but quite mild in south, with means from 4° below normal to 5° above normal from north to south. Warm in southern half on 21st, 24th, and 26th with maxima in 40's and low 50's. Subzero readings in north common on 23d and 24th. Strong winds night of 24th and 25th with local damage and utility outages. Precipitation frequent but mostly light. Totals variable from less than 0.10 to 1.00 inch. No snowcover on Christmas over most of south.

NEW JERSEY: Very warm week with afternoon temperatures ranging from mid 30's to upper 50's. Minimum readings varied from low 40's to upper teens. Precipitation averaged 0.10 inch over most of State except 0.20 inch along Shore. Greatest weekly total was 0.50 inch at Atlantic City.

NEW MEXICO: Generally fair with showers in the northwestern half of State beginning Sunday. Temperatures averaged five to thirteen degrees above normal except for near normal in the center of the State. Lowest temperatures early in week warming to mild temperatures in midweek. Top and subsoil moisture mostly adequate. Few areas short. Cotton harvest continuing eastern producing areas. Wheat barley good. Wheat pasture good. Pecan harvest in Mesilla Valley continuing, ranges livestock good to fair.

NEW YORK: Temperatures warmer than normal for third week, cold mid-week with variable temperatures Christmas weekend. Maximum in 20's to low

30's on 22nd, 23rd and 25th ranging to low 50's coastal in mid 40's interior. Upstate 24th and 26th coldest minimum -5° north and +5° east central on 23rd with low teens western half to near 20° on Long Island. Precipitation light, occurring mostly late week in variable mixture of rain freezing rain and very light snow. Totals 0.30 to 0.50 inch western central decreasing to 0.10 to 0.25 inch eastern valleys and coastal snow cover abnormally light. Depth less than 6 inches at reporting station in Adirondacks as essentially bare ground continued for second week. Remainder of State first Christmas without wide spread snow cover since 1965.

NORTH CAROLINA: Much colder than previous week but still averaging above normal. Highest near 70°, lowest near 20°. Mostly fair weather but rain on 20th and scattered light showers other days. Totals averaged 0.50 inch. Soil moisture adequate to surplus, mostly adequate. Corn, soybean, sorghum grain and cotton harvest continued but lagged normal progress. Small grain mostly good, seeding lags. Pastures mostly good.

NORTH DAKOTA: Temperatures averaged 1° below normal east, 6° below normal central and 9° below normal west. Precipitation was light except in west where amounts ranged from 0.05 to 0.20 inch. Snow depth ranged from 1 to 7 inches with greatest amounts recorded in southern 1/3 of State. Some grazing with supplemental feeding. Livestock good condition. No appreciable shrink in absence of storms or extreme cold. Farm roads open. Main farm activities caring for livestock and poultry and preparing for Christmas.

OHIO: Cloudy, wet and warm week. Except for 22nd, which had near normal temperatures, week was warmer than normal with highs climbing into 50's. On 26th readings in the low 60's were recorded. Lows were generally 5°-10° above normal. Precipitation was recorded every day except 22nd and 23rd with the amounts varying from a trace to 0.40 inches. Farm activities limited to manure hauling, caring for and feeding of livestock, and building and machine maintenance as wet soil limited field activities in most areas.

OKLAHOMA: Temperatures averaged much above normal all areas ranging from 7° to 13° above normal. Extremes: 80° and 17°. No precipitation except few traces. Cotton harvest made fair progress on lighter soils. Heavy soil still too wet most areas. Morning dew limited harvest to about 6 hours per day. Small grain good to excellent condition, some rust and yellowing several areas. Fair growth during past week. Grazing very favorable although wet fields continue to limit grazing many localities. Livestock mostly good condition, gains generally good. Ranges still furnishing fair to good supply forage but quality deteriorating due rain. Some supplemental feeding most areas. Scattered death loss. Harvesting remaining sorghum grain continues. Pecan harvest fair progress, winding up some areas. Soil moisture adequate to surplus.

OREGON: Mostly cloudy with moisture last half of week providing light snow east and heavy rain central coast. Temperatures averaged 2° to 9° above northern half, 2° to 7° below southern half. Minima 0° to 35°, maxima 38° to 58°. Precipitation east 0.10-0.40 inch, west of Cascades mostly 1.00-2.60 inches except 5.00-6.60 inches central coast. Supplemental feeding

of livestock continues. Hay supply adequate. Fall seeded grains look good. Onions and potatoes continue to move to market.

PENNSYLVANIA: Mild, dry week. Temperatures continued above normal with maximums in 40's and 50's common. Brief cooling midweek, quite mild weekend. Weekly temperatures 2° to 6° above normal northern counties, 6° to 10° above central and southern sections. Extremes: 60° and 6° Precipitation very light most areas. Weekly totals 0.50 to 0.75 northwest interior, 0.25 to 0.50 in rest of northwest and parts of northeast. Less than 0.25 elsewhere. Most of southeast 1/3 less than 0.10 inch. Brown Christmas across State. Routine winter farm chores.

SOUTH CAROLINA: The week began cold and ended warm. Temperatures average 2° above normal in the northwest and 4° above normal in the south. Rainfall amounts measured 1.00 inch Piedmont and 0.50 to 0.75 inch elsewhere. Farmers had a good week for farm activities. In spite of the holidays, farmers took advantage of favorable weather to continue harvesting cotton and soybeans. Some fields still are too wet for farm machinery. Small grains and pastures responding to favorable weather.

SOUTH DAKOTA: Temperatures averaged from 7° below normal in northwest to 5° above normal in southeast. Extremes ranged from -10° at Lemmon on 26th to 60° at Rapid City on 22d and Oral on 24th. Precipitation fell as light snow scattered through week with amounts 0.10 inch or less. Snow cover end of week ranged from trace in south to 1 foot in north-central. Mild weather part of week further reduced snow cover until weekend. Over the weekend temperatures cooled and snow began to fall. Livestock condition good. Feed supplies adequate. General farm chores main farm activity. Condition of fall-seeded grain remains good.

TENNESSEE: Unseasonably mild week, with temperatures as much as 10° above normal. Extremes 31°, 71°. Precipitation light, rain early in period, amounts generally less than 0.25 inch. Week end weather mostly sunny and very mild. Farm activity mostly routine chores during Holiday Season. Some cotton scrapping continued. Hay and roughage supplies adequate. Livestock and small grains in good condition. Tobacco market recessed for holidays.

TEXAS: Little or no precipitation fell during week. Temperatures unseasonably warm. Cotton harvest resumed in high and low plains, making good progress. Sorghum harvest nearing completion, restricted to early mornings while ground frozen. Wheat and oats making good to excellent growth, furnishing above average grazing. Greenbugs and rust increasing but not problem. Early flax stands good growth. Percent harvested major crops: cotton 49, 100 last year; sorghum 99, 100 last year; soybeans 99, 100 last year; sugarbeets 68, 100 last year. Flaxseed 86% planted, 100% last year. South Texas vegetable harvest fairly active in mild weather. Moderate supplies cabbage, carrots, spinach, lettuce available with light shipments broccoli, cauliflower, greens. Harvest fall peppers, cucumbers, tomatoes nearing completion but light supplies still available. Winter vegetables, spring onions generally good progress in mild temperatures. Land being prepared for spring vegetables Lower Valley with seeding few fields beginning. Citrus harvest fairly active Lower Valley. Pecan harvest 94% complete.

UTAH: Rising temperature trend with local areas of rain latter half of period. Warm temperatures and rain melted much of valley snow cover but rain changed to snow extreme northwest portion Sunday replenishing snow cover in some valleys. Average temperatures for period much warmer than previous week but continue a few degrees below normal most localities. Improving weather permitted farmers and ranchers to carry on usual functions for end of year. Care and feeding of cattle and sheep in feedlots and on valley farms, dairy cattle and poultry flocks continues leading activity. Turkey plants have completed processing 1971 crop, now closed. Sugar processing will resume full force right after New Years, sorting, grading and marketing of potatoes, dry onions and apples from storage continues. Irrigation water supply for 1972 expected to be best ever.

VIRGINIA: Temperatures below normal near end of week. Otherwise above to much above normal. Rain near beginning with totals less than 0.50 inch. Weather favorable for field work. Fall plowing, small grain seeding, harvesting and spreading of fertilizer and lime progressed well. Harvest of corn, soybeans and sorghum in final stages. Marketing of Burley and dark fired tobacco continued. Prepared tobacco plant beds. Forage obtained from grazing declined seasonably but greater than last year. Lambing and calving picked up momentum.

WEST VIRGINIA: Mild, cloudy and damp most of week. Light rain December 20th and 26th totaled less than 0.50 inch. Supplemental feeding of livestock minimal due to relatively mild weather. Most farm work routine chores and caring for livestock.

WISCONSIN: Average temperatures ranged between slightly above normal in north and well above normal in south. Precipitation very light and consisted mainly of a little freezing drizzle or light snow falling as period ended. Snow cover restricted to northwest half of State and averaged 4 to 6 inches in depth. Frost depths remain shallow. Farm activities mainly care and feeding of livestock.

WYOMING: Light to moderate snows occurred west of Divide, widely scattered light east. Thayne reported the most moisture with 0.78 inch. Temperatures averaged near normal west of Divide, 3° to 14° above normal east. Maxima were mostly 35° to 45° west of Divide, 40° to 63° east. Minima were mostly 0° to -17° west of Divide, -2° to 23° east. Temperature extremes were 63° at Lagrange and -17 at Big Piney. Except for isolated areas, both livestock and range conditions continue good. Soil moisture and stock water supply continue adequate.

WASHINGTON: Western Washington: Cold, wet weather prevailed with frequent showers of snow or rain and many times both. Christmas tree and greenery cutting over. Some tree and berry pruning continues and some rhubarb crowns being dug. No frost damage reported yet but signs of water damage to seed crop fields apparent. Eastern Washington: Cool with snow along east slopes and over higher elevations, rain or mixed rain and snow in valleys. Some pruning continues otherwise very little farm activity. Snow cover melted down in most areas, providing soil moisture.

WEATHER HIGHLIGHTS—1971

1. Very favorable weather in Corn Belt.
2. A year with few major floods.
3. Heavy March snowfall in Northeast.
4. Cool July central and eastern areas.
5. Drought in Texas and southern Florida.
6. Precipitation adequate most of West.

WINTER: Temperatures for the winter of 1970-71 averaged below normal from the central and upper Great Plains to the Atlantic coast and in portions of the eastern Gulf States, but were above normal elsewhere. From the northern Great Plains to New England both December and January were abnormally cold. Precipitation was near to above normal in most northern and eastern areas, but well below from Arkansas and Louisiana through the southern two-thirds of California. In much of Texas, New Mexico, Arizona, and southern California less than half the usual amounts were recorded.

The January temperature anomaly pattern was about the same as that for the winter in the 48 States—cold in the northeastern half where a flow of cold northern air persisted most of the month, and warm in the southwestern half as a result of frequent inflows of mild Pacific air. Even though temperatures in the West averaged well above normal for the month, the first decade was extremely cold with subzero minima extending deep into Arizona and New Mexico. A new alltime record low of -40° for Arizona was recorded at Hawley Lake on the 7th and the lowest temperature ever recorded in New Mexico during January, -47° , was reported by Eagle Nest on the 6th. This freeze caused some damage to citrus and vegetables in the Southwest.

The rest of January was unusually mild in the West, with temperatures rising to record high levels for the month at many stations. These included Los Angeles, 95° on the 18th; Phoenix, Ariz., 88° on the 19th; Albuquerque, N. Mex., 69° on the 31st; and San Antonio, Tex., 89° on the 30th.

January was extremely cold in New England. Portland, Maine, had its coldest month on record and recorded its lowest temperature for January, -26° on the 19th. Albany, N.Y., recorded its lowest temperatures for any month, -28° , on the 18th. Below-freezing temperatures dipped down into the Florida Peninsula on the 20th and 21st and damaged citrus, truck and other crops as the low temperatures were comparable to those of some other historic freezes.

This January was among the coldest on record in Alaska. Fairbanks observed its coldest month ever with an average temperature of -31.7° , a high for the month of 27° and a low of -60° . On the 25th the highest temperature was -54° , and after the 12th the highest was only -19° . A temperature of -79.8° was recorded at Prospect Creek Camp on the 23d, the lowest ever for Alaska and the United States.

Temperatures for February were quite changeable and averaged within 3° of normal. Most of the western Great Basin, New England and the Middle Atlantic States were warmer than normal and most of the southeastern quarter of the 48 States was abnormally cold. The first week, relative to normal, was very cold east of the Rockies and warm in the West, while the reverse was true the second week. The third week was mild from coast to coast, and the last week was mild in the East and cold in the West. Temperatures in the 48 States ranged from -46° at Van Norman, Mont., on the 7th to 97° at McCook and Mission, Tex., on the 1st.

Precipitation was abnormally heavy during January in the eastern portions of Georgia and the

Carolinas, west of the Great Lakes and in the Central Great Plains. Elsewhere January totals were below normal, less than half normal from Arkansas and Louisiana westward. February was a stormy month east of the Rockies, with above-normal precipitation that was unusually heavy from the Central Great Plains to the Great Lakes, in the lower Ohio Valley and Middle Atlantic States. Many stations reported near record amounts, and local flooding occurred in a number of areas. In most of Texas and west of the Great Plains, February precipitation was well below normal.

Winter snowfall in the West was above average in many northern areas, decreasing to much below in Arizona, New Mexico and adjacent areas of adjoining States. Snowfall was unusually heavy in northern areas during December and generally above average during January. Nearly all areas had below average amounts in February. On March 1, the western water supply outlook was good to excellent except poor in New Mexico, Arizona and southern Colorado.

SPRING: The spring season was mostly dry and cool. Only Maine, the upper Great Plains, central and southern Texas, and the lower east coast of Florida were warmer than normal. Both March and April were abnormally cool in the Pacific Northwest, and all three spring months were cool east of the Mississippi. Precipitation was above normal in Washington, Oregon, Nevada, Wyoming, a small portion of the central Great Plains, and an area including Virginia, the Carolinas and central portions of Georgia, Alabama and Mississippi. The season was unusually dry in Florida, Oklahoma, Texas, New Mexico and Arizona. Snowfall was above average in many northern areas and some sections of the Southeast. Drought became severe in Florida, parts of Texas, Oklahoma, Arizona and New Mexico. Severe local storms took the usual toll of life and property. Damage resulting from spring floods and freezes was mostly limited to local areas and was less than usual. March temperatures averaged below normal in the Pacific Northwest and east of the Mississippi and above elsewhere. Monthly averages set no new records, but a number of stations reported new record highs and lows for the month. The first week was very cold. Boise, Idaho recorded 6° on the 1st, the lowest there for March in 65 years, and 23° on the 5th tied the record March low at Tallahassee, Fla. New record March highs occurred in the Southwest during the closing days of the month, with record March highs of 100° for Waco and San Antonio, Tex., on the 28th. On the 29th 95° equaled the record March high for Phoenix, Ariz., Alaska was unusually cold with many new March lows including -19° for St. Paul on the 2d, -42° for King Salmon on the 13th (lowest for any month), and -46° for Nome on the 11th.

March precipitation was deficient in most areas and less than half normal in the Southwest, southern Florida, the Ohio Valley and much of the midcontinent area. In the lower Great Plains and Southwest more than 300 stations reported no precipitation at all. With less than 30 percent of normal precipitation, this was one of the driest Marches in Texas and the fifth consecutive dry month. In southern Florida where Key West recorded only a trace for the third time during any month in the last 100 years, March continued the dry regime of the past several months. Above-normal precipitation was limited mainly to the Pacific Northwest, northern New England, parts of the Great Lakes region, and an area in the South-

east that extended from Mississippi to the Carolinas.

In Washington, Oregon and much of the north-eastern quarter of the Nation, a considerable portion of the monthly precipitation fell in the form of snow. Much above average totals set new March totals, at many stations including Elkins, W. Va., 33.0 inches; Yakima, Wash., 10.8 inches; Binghamton, N.Y., 33.5 inches; and Alpena, Mich., 35.8 inches, most of it falling during storms on March 6-7 and 18-19.

In addition, March snowfall boosted seasonal totals to new records at a number of stations among which were Portland, Maine, 132.3 inches; Erie, Pa., 117.0 inches. A general snow cover of 40 to 60 inches in Vermont, following a heavy snowstorm on the 7th and 8th, ranged up to 116 inches at Mt. Mansfield, a new State record. After another storm on the 11th and 12th, Guilford and Springfield, Maine each reported a depth of 76 inches, a new record for that State.

Snowfall in the Southeast during a storm on the 25th and 26th was unusually heavy for so late in the season. In several counties of northwestern South Carolina falls ranged from 7 to 11 inches. Columbia, S.C. measured a record late-season fall of 1.7 inches, and Greensboro, N. C. one of 33 inches.

In the West mountain snowfall was above average in the Cascades and parts of the central Rockies. April was relatively dry, cool, and sunny in most areas. Average monthly temperatures, ranging within 3° of normal, were above only in the upper Great Plains, central Texas and along the lower east coast of Florida. New temperature records were few and scattered and only for a particular day or for so early or late in the season. Considerable fruit was damaged in western Colorado on the 1st when Grand Junction recorded 16°.

Precipitation during April was below normal except above in parts of the west and a few small scattered areas in the East. The wettest area, relative to normal, was centered in Wyoming where monthly totals exceeding four inches ranged up to more than 200 percent of normal. In contrast, less than half the normal precipitation fell in a large area extending from the central Great Plains to the central Appalachians, an area in which several stations with records dating back 90 to more than 100 years reported the driest April on record. Other areas with less than half normal included northeast Oregon, southern California and western Arizona, most of Louisiana parts of Oklahoma, east Texas, and southern Florida. The dry weather permitted rapid progress of agricultural activities which were about two weeks ahead of normal in much of the Corn Belt. But the dry weather also created a high fire hazard in the Ohio Valley and intensified the droughts in southern Florida and part of Texas. Extreme drought developed in central Texas, and even though 1- to 3-inch rains fell about the 15th to 17th benefits were only temporary. By the end of April southern Florida was in the grip of one of its worst droughts. Fires spread over 250,000 acres of the Everglades, Lake Ocheechee fell to near a record low level, and with a below-sea-level water table in the Miami area salt water threatened the city's water supply.

April snowfall was unusually heavy in northern New York, New England, New Jersey, the lower Appalachians, portions of Michigan and the central and upper Mississippi Valley, Wyoming and Nevada. In Wyoming 45.2 inches at Lander and 24.2 inches at Casper were record amounts for April in 26 and 31 years respectively. Cairo, Ill., recorded 1.0 inch on the 5th, the most snow there for April in 61 years; and Birmingham, Ala., a trace on the 7th, the first April snowfall in 61 years. At Burlington,

Vt., 7.3 inches on the 10th was a record amount for so late in the season. Heavy snows in the Cascades and in the mountains of Wyoming produced one of the heaviest snowpacks on record for those areas. Heavy snowfall in Alaska also left an unusually heavy snowcover.

The May weather regime was persistently cool and wet. Drought conditions were eased in Florida, in parts of Texas and in southwest Oklahoma. Few major storm systems developed, but many tornadoes and other severe local storms occurred in the unstable air that covered areas east of the Rockies at intervals throughout the month.

Temperatures averaged below normal except slightly above in a few small scattered areas. Relative to normal the Southeast and southwestern desert were the coolest areas. Nashville, Tenn., had its coolest May in 47 years and its third coolest in 100 years; Montgomery, Ala., had its second coolest in 98 years and a record low of 40° for the month on the 4th. Tallahassee, Fla., had its coolest May and a new May low of 34° on the 4th.

In Arizona, Yuma had its coolest May in 38 years, and Winslow a late-season low of 27° on the 19th. Even San Francisco, Calif., where temperature departures from normal are usually small, this was the coolest May in 40 years. Farther north in the Medford, Oregon Area, frost damaged gardens and unheated orchards on the 17th. On the 13th during advection of cold air across the Great Lakes region, Detroit, Mich., recorded a late-season low of 30°. One of the few record highs was an early-season high of 92° at Syracuse, N.Y., on the 19th during a day of sunny skies and a southerly flow of warm air in advance of a low pressure system.

Precipitation for May was near normal in most areas. Wettest areas relative to normal, were Virginia and southern portions of Nevada and California where monthly totals ranged up to more than twice the usual amounts. Driest areas of less than half normal included most of Texas, New Mexico and Arizona, the Snake River Valley of southern Idaho and small areas around Lake Michigan.

Precipitation was well distributed throughout the month. During the first decade 1- to 2-inch rains which fell in central and east Texas were beneficial but much more was needed to completely relieve the drought. During the last week beneficial rains fell in southern Texas but the drought there was still rated severe to extreme at the end of the month. The drought in southern Florida was relieved by 2- to 4-inch rains during the week ending the 16th. Moisture conditions were generally good in central and northern areas of the Nation at the end of May.

Snowfall in the 48 States was mostly limited to high mountains or extreme northern areas. St. Cloud, Minn., recorded 3.2 inches on the 19th, the second greatest May snowfall there during a 79-year record.

SUMMER: Temperatures averaged below normal east of the Rocky Mountains and above in the West. Departures from normal as much as 2° included only a few small scattered areas. June was warmer than normal except relatively cool in a few western areas, the reverse was true for July, while August was abnormally warm in New England, the northern Great Plains and Far West, and relatively cool elsewhere. The highest summer temperature, 124°, occurred in the southwest desert during both July and August.

Precipitation for the summer months was above normal in most of the Pacific Northwest, the southern half of the area east of the Rockies, and

parts of the Middle Atlantic and New England States, only a few small scattered areas in the west and another near Lake Michigan had less than half normal. Summer totals exceeded eight inches from the eastern Great Plains to the Atlantic coast ranging up to 20 inches or more in the Southeast.

June temperatures were persistently above normal in the upper Mississippi Valley and most of the Great Lakes region. This was the hottest June in Iowa since 1956 and the hottest in southeast Wisconsin since 1933. In the latter State temperatures in the middle and high 90's with high humidity produced very uncomfortable weather. Below normal temperatures persisted in the Pacific Northwest where Olympia, Wash., experienced its coolest June during a 30-year record and Helena, Mont., recorded a late-season low of 33° on the 29th.

Precipitation during June was above normal in the Pacific Northwest, parts of the Great Plains and much of the Southeast. Less than half the normal amounts fell in the Rocky Mountains and Southwest, east Texas and large portions of Illinois and Indiana. Most of the month's precipitation was the thundershower type. Many of these thunderstorms were associated with damaging hail, winds, heavy rains, and tornadoes, particularly in the midcontinent area. July temperatures averaged above normal in extreme southern Florida, and parts of Texas through California to Washington, and below normal elsewhere. The main temperature feature of the month was the persistently below normal temperatures in the central and upper midcontinent area. Abnormally cool weather prevailed in the upper Great Plains virtually throughout the month and from the Appalachians to the Rockies the second half. This cool weather regime was climaxed during the last week by advection of the cool air over the entire midcontinent area, and weekly averages ranged from 9° to 12° below normal in most of the Great Plains region, the upper Mississippi and lower Ohio Valleys and the Great Lakes region. This was one of the coolest Julies on record in the north-central United States, and it was the coolest at many individual stations. Among these were Fargo and Bismarck, N. Dak., coolest in 67 and 56 years, respectively; and Dubuque, Iowa, coolest in 120 years. More remarkable, however, was the great number of stations reporting record lows for July during the last week. In Nebraska at least 45 stations reported new record lows, and frost was observed in many sections of the Sandhills and at some northeastern locations. A reading of 29° at Agate on the 30th was the lowest temperature for July ever recorded in Nebraska, and 36° at Oakland, Iowa, on the same date was among the lowest for July in that State. Fort Smith, Ark., and Oklahoma City, Okla., both recorded 53° on the 31st, new lows for July during records dating back 89 and 81 years, respectively. Farther west Helena, Mont., reported its third coolest July in 91 years, and in the East, Albany, N.Y., had its second July in 111 years. The first decade was unusually cool in the Pacific Northwest, and on the 7th Spokane, Wash., recorded a 91-year low of 38°. The month was unusually warm in the Southwest where Winslow, Ariz., had its second warmest July in 83 years. A number of record highs in that area included 105° at Pueblo, Colo., on the 11th and 12th, and 109° at Winslow, Ariz., on the 13th.

Precipitation during July was fairly well distributed east of the Rockies and was generally adequate for most purposes. A notable exception occurred in Texas where rains the first and last weeks were limited in extent and for most of the State severe to extreme drought continued and

even intensified in south-central and upper coastal sections.

Heavy downpours caused many damaging flash floods east of the Rockies. A number of these occurred in the central Great Plains early in the month, in Kentucky on the 18th, in central and eastern Kansas on the 22d and 23d, and at Meridian, Miss., on the 30th.

Temperatures for August averaged above normal in New England and west of a line joining western Minnesota and southeast Arizona and below normal elsewhere. This temperature pattern persisted through the first half and last week, but for the week ending the 21st the northern two-thirds of the Country was relatively warm and the southern one-third cool.

Relative to normal, the southern Great Plains was the coolest area. In Texas, Port Arthur had its coolest August in 55 years, Midland in 41, and Amarillo in 51 years, and Oklahoma City, Okla., reported its coolest August in 21 years. The temperature failed to reach 90° for the first time in 51 years at Nashville, Tenn., and in 76 years at Greensboro, N.C., where the month was the coolest in 42 years. Erie, Pa., had its coolest August in 98 years. Temperatures in the upper Rockies and Pacific States were well above normal, 9° above in north-central Montana. Medford, Oreg., recorded 101° on the 11th the highest in 29 years. Havre and Great Falls, Mont., had their warmest in 92 and 78 years, respectively. A high of 118° at Red Bluff, Calif., on the 10th was a record high for any month.

Precipitation for August was above normal in parts of nearly all the coastal and southern border States, 200 to 400 percent in much of Texas and over 200 percent in New Jersey and adjacent areas of Pennsylvania, Maryland and Delaware. Rainfall was heavy in many sections from Texas and the lower Mississippi Valley to New England during the first week, in parts of Texas, Oklahoma, Florida and Wisconsin the second week, in parts of the extreme Southeast and some other small scattered areas the third week. Heavy rains along the Atlantic Coast the last week occurred during the passage of Tropical Storm Doria, and locally heavy thundershowers occurred elsewhere east of the Rockies and in the Southwest.

Cool, wet weather in Texas eased the severity of the drought in all sections of that State with greatest improvement in the South. Damaging flash floods occurred along several Texas streams as a result of heavy downpours ranging up to as much as 11 inches in 24 hours.

Heavy thundershowers in Arizona were responsible for near record to record totals for August in some localities. Prescott reported 10.51 inches, a new August record and the second greatest amount for any month since 1898; and 6.22 inches at Casa Grande was a record for August since 1880.

Although rainfall was near to mostly above normal throughout Florida, one of the worst droughts in 40 years continued along the lower east coast. The State Climatologist for Florida stated that a contributing factor to the critical drought in the area was the lack of daily rainfall amounts great enough to allow moisture to reach sub-surface water tables.

Less than half the normal rainfall was recorded in the central and upper Great Plains and middle Mississippi Valley. In Iowa precipitation was only 30 percent of normal and the driest of record and five stations in the State reported no precipitation at all. Some stations in Nebraska had their driest August and two stations reported only a trace of rain.

AUTUMN: Temperatures for autumn averaged from 1° to 4° above normal in the eastern half of the conterminous United States and 1° to 4° below in the western half. The temperature patterns and magnitude of departures for both September and October were very much like the seasonal, but November was somewhat cooler in the East and somewhat warmer in the West.

This was a wet autumn in the Great Plains, Rocky Mountain and middle Atlantic States. Some areas in the Great Plains and Rocky Mountains had 200 percent of normal. Several Tropical Storms brought heavy rains to the Gulf and Atlantic coasts. Only a few small scattered areas had less than half the normal amounts, and most of these were in Michigan, Montana, and California.

September temperatures averaged above normal in the East, and below in the West except above in western California and extreme southwest Arizona. The warmest area, relative to normal, extended from the upper Mississippi Valley to the Atlantic coast with departures as much as 4°, and the coldest area included the northwest Rockies and the extreme northern Great Basin where departures were 6° or more. The few temperature records set during the month consisted mostly of late-season highs in Kansas and Nebraska on the 7th, and at others in California and Nevada near mid-month. For San Francisco a high of 101° on the 13th equaled the highest of record. In contrast, this was the coldest September in 70 years at Flagstaff, Ariz., and an early-season low of 33° was recorded by Roswell, N. Mex., on the 20th.

Precipitation during September was near normal to much above over most of the conterminous United States. In scattered areas across the Country monthly totals ranged from 150 to 200 percent of normal. Frontal systems, thunderstorm activity and tropical storms all contributed to the generous precipitation.

During the first few days of the month a low pressure system produced heavy precipitation in the Pacific Northwest and a few days later in the northern and central Great Plains. During the period 11th to the 13th five tropical storms were going at the same time. A weak tropical depression in southeastern Louisiana on the 5th produced 6 to 7 inches of rain in that area and lesser amounts in other Gulf coastal areas, and then moved back southwestward over the Gulf where it gained hurricane intensity before reaching southern Texas near Freeport on the 10th. In southern Texas the storm, now Hurricane Fern, produced up to more than 20 inches of rainfall that resulted in destructive floods and spawned a few tornadoes.

During a frontal passage across the eastern States on the 11th to 13th, heavy rains totaling from 9 to 13 inches in northeastern Maryland and up to 15 inches in northern Delaware caused damaging flash floods.

Hurricane Edith moving northeastward from the western Gulf area and producing 6-foot tides along the Texas coast finally reached land in southwestern Louisiana on the 16th. Heavy rains fell in southern portions of that State and Mississippi, much of Alabama and central and northern Georgia as the weakening storm pushed northeastward. Several tornadoes occurred in Louisiana and Mississippi.

Tropical Storm Olivia off the west coast of northern Mexico in the closing days of the month brought beneficial showers to Arizona and New Mexico.

Hurricane Ginger crossed the North Carolina coast near Morehead City on September 30, weakened rapidly, and passed into southern Virginia on October 2 and then out over the Atlantic.

Snowfall was observed the first week in the northern Rockies, and unusually heavy snow fell on the western slopes of the Rockies the third week, particularly in the Colorado area. Boulder and Denver recorded up to 14 or 15 inches. Some light snow fell in the northern Plains. Four inches fell at Harrison, Nebr., on the 21st. Near the end of the month snow fell in the Northwest, and four inches at Salt Lake City was the second time in September measurable snow fell there in 40 years.

October temperatures averaged 3° to 6° above normal in much of the eastern half of the conterminous United States and a like amount below in the western half. This was one of the warmest Octobers on record east of the Mississippi River, the warmest in 101 years in the Nation's Capital, in 22 years in Atlanta, Ga., tied with 1920 as the third warmest in Boston, Mass., in 142 years, and was the second warmest in Rochester, N.Y., in 101 years. In the East, Indian Summer type weather prevailed during most of the second half.

The month was unusually cold in the West, particularly in southern portions where a number of stations had their coldest October in more than 50 years. More notable, however, was a record-breaking cold spell during the closing days when many stations throughout the West reported their lowest temperatures for October in many years, some stations with records dating back 80 years or more. Among the stations with at least 80 years of record reporting new October lows were: Salt Lake City, Utah, 16° on the 30th; Yuma, Ariz., 35° on the 30th; Bakersfield, Calif., 19° on the 30th; Reno, Nev., 8° on the 29th; and Fremont, Oreg., -9° on the 29th, the lowest temperature ever recorded in Oregon during October.

Precipitation was above normal along the East Coast, in the Great Plains and in the Rocky Mountain States. This was the wettest October in North Dakota where precipitation ranged from about 200 to 600 percent of normal, and North Carolina also had their wettest October, and Kansas its second wettest.

October was unusually dry from the Mississippi River to the Appalachians, with precipitation less than 50 percent of normal in much of this area. Fall harvesting operations made good headway in the Corn Belt. Monthly precipitation totals also were well below normal in the Pacific States, western portions of Montana and Idaho, and most of central Colorado and eastern Wyoming.

October snowfall was unusually heavy in parts of the West where the month was abnormally cold. Walla Walla, Wash., measured 2.5 inches, most in 99 years; Salt Lake City, Utah, 16.6 inches, most in 87 years; Flagstaff, Ariz., 24.7 inches, most in 73 years; Lander, Wyo., 39.9 inches, most in 80 years; and Rapid City, S. Dak., 10.2 inches, most in 52 years.

The heaviest snowstorm during October occurred during the last week when near-record amounts were measured in northern portions of the Rockies and Great Plains and heavy amounts in most of the higher mountain areas of the West. Six to 10 inches were reported in the mountains of Oregon. As much as two feet fell in the Black Hills of South Dakota. In parts of northern Utah snow accumulations exceeded 20 inches. Blizzard conditions occurred in central and southern Wyoming during the heavy snowstorm over the States on the 27th through the 29th.

Temperatures for November averaged near normal in the entire conterminous United States, slightly below in the Appalachian region and much of the Northeast and in a large western area including most of Wyoming, Utah, Nevada, California and Arizona, and slightly above normal elsewhere.

Temperature variations during the month seldom were extreme and few records were set.

In New England below-normal temperatures persisted after the first week, resulting in the coldest November in 67 years at Concord, N.H. During the second week when the weather was dry and sunny in the Great Plains, temperatures rose to unusually high levels and 83° set a new November record at Pueblo, Colorado on the 11th. Temperatures rose to unusually high levels along the east coast in a southerly flow of air in advance of a cold front at the beginning of the month, and 83° at Wilmington, N.C. equaled the highest for November there in 101 years. These high temperatures in the East were followed by a period of abnormally cold weather, and on the 9th Albany, N.Y. recorded an early-season low of 11°.

November precipitation, relative to normal, presented a very irregular pattern across the Nation. Areas with above-normal amounts included most of the Pacific Northwest, a broad belt extending from northern New Mexico and southern Colorado through the central and upper Great Plains and upper Mississippi Valley, a portion of south-central Texas, the Appalachian region, and the Atlantic coastal States from Delaware to Massachusetts. Most other areas had less than normal, and an area extending from Indiana to northern portions of Alabama and Mississippi, a considerable portion of the central and northern Rockies, the southwestern desert and the southern half of California had less than half normal.

A few stations reported unusually heavy amounts. Dodge City, Kansas measured 3.75 inches, the most for November in 97 years; and Huron, S. Dak., 2.04 inches, the most in 90 years.

Snowfall was unusually heavy for November in many northern areas, particularly during the second half of the month.

In the Cascade Mountains of the Northwest, frequent snowfall accumulated to several feet in the higher mountains. In the East some heavy snows fell in the lee of the Lakes, at the end of the first week, portions of the Cleveland, Ohio area reporting nearly a foot on the ground and some locations in western New York up to 8 inches.

Cold weather which overspread the eastern part of the Nation in the closing days of November persisted with even lower temperatures during the first few days of December, and advection of cold air reduced temperatures to below normal levels in central and western areas. Subzero minima occurred in extreme north-central and northeastern areas and at high elevations in the northern Rockies.

Unusually cold weather persisted in western areas during the next two weeks but became unusually mild in the East during that period. Subzero minima reached into the southern Rockies and sometimes maximum temperatures along the north-central border did rise above zero. In contrast, daily maxima in the 80's were the rule in Florida, and the mild 60's occurred as far north as southern New England.

Light to heavy precipitation fell across the Nation the first few days of November as rain in southern areas and along the Pacific coast and snow in northern interior and mountainous areas. A severe storm in the west on the first day of the month brought nearly a foot of snow to portions of the southwestern Great Plains, and heavy rains in the Gulf states as it moved across that area to the Atlantic. From northern Georgia to southern Virginia freezing rain and snow made highway travel hazardous. Charlotte, N.C., measured an

early-season snow cover of 8 inches on the 3d, and depths up to 18 inches were reported in the Carolina mountains.

For the week ending December 12, cold, stormy weather with occasional blizzard conditions in northern interior areas prevailed over the western half of the Nation. Heavy rains ranging from 4 to 8 inches or more from northeast Texas to Tennessee and southern Illinois caused flooding along numerous streams.

Abnormally cold, snowy weather in the West during the week ending the 19th continued to increase the mountain snowcover. Rainfall was again heavy from the Great Lakes to the Gulf. An outbreak of tornadoes in the Midwest on the 15th killed one person in Springfield, Mo., injured several in Poplar Bluff, Mo., and caused widespread damage in northeast Arkansas. **Severe Storms:** Severe storms took the usual toll of life and property. Storms took more than 500 lives and were blamed for nearly 5,000 injuries. Property losses were measured in the hundreds of millions.

Tropical storms took only eight lives, but caused property damage estimated at \$212.58 million. Four hurricanes entered the United States. The first, Doria, crossed into North Carolina on the afternoon of August 27. The combination of Doria and a front along the coast produced heavy rains and flooding from North Carolina to New England. Greatest damage, \$138.5 million dollars, occurred in New Jersey, but New York reported \$4.32 million and New England \$4.5 million. Total damage for this storm was estimated at \$147.35 million.

Hurricane Edith entered Louisiana September 16. Most losses from the storm occurred in this State, amounting to about \$25 million. Edith spawned several tornadoes in Louisiana and caused heavy rains in parts of Mississippi, Alabama, and Georgia.

Fern, as a weak LOW, moved up across the Gulf to southern Louisiana where she produced 6- to 7-inch rains before turning back southwestward across the Gulf. She became a Tropical Storm on the 7th and a hurricane on the 8th. She crossed the Texas coast near Freeport on the 10th in a southwestward course that took her across southern Texas into Mexico. Heavy rains that ranged from 15 to 26 inches in an area north and west of Corpus Christi resulted in devastating floods. She also spawned five tornadoes. Total damage in Texas was estimated at \$30.23 million.

Hurricane Ginger entered North Carolina near Moorehead City on September 30, crossed into southern Virginia on October 2 and then turned out over the Atlantic. Winds and rain caused heavy crop damage in coastal areas.

Tornadoes were more numerous than usual, around 800 by the end of October. One of the earliest outbreaks of these storms occurred in Mississippi on February 21 when 107 persons were killed, 1,514 injured, and damage estimated at \$17 million.

A single tornado on May cut a path of destruction through western Tennessee. Three persons were killed, 137 injured, and losses were estimated at \$5,750,000.

A windstorm of unusual severity and accompanied by hail swept the southwestern quarter of Tennessee early on April 23, damaging property and crops to the extent of \$25 million or more.

One of the many damaging hailstorms of the year occurred on May 5 in San Antonio and west-central Bexar County, Texas, causing damages estimated at \$6 million. Another of these storms

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with hail to golf ball size caused 50 to 100 percent destruction to 250,000 acres of field crops in southeastern Missouri on July 15. Total losses were expected to exceed \$17 million.

Numerous flash floods occurred during the year, each causing heavy losses. On August 1-2 one of these occurred in the Baltimore, Maryland Metropolitan area, including Harford County. Severe thunderstorms associated with a frontal

system produced rainfall totaling 7 to 12 inches in 12 hours. Fourteen deaths and property damage totaling \$6.5 million were blamed on the storm.

On September 11-14 during the passage of a cold front across the eastern United States severe thunderstorms in southeastern Pennsylvania produced 8 to 14 inches of rain. Resulting damage was estimated at \$17 million, and 16 persons lost their lives.