WEEKLY WEATHER AND CROP BULLETIN

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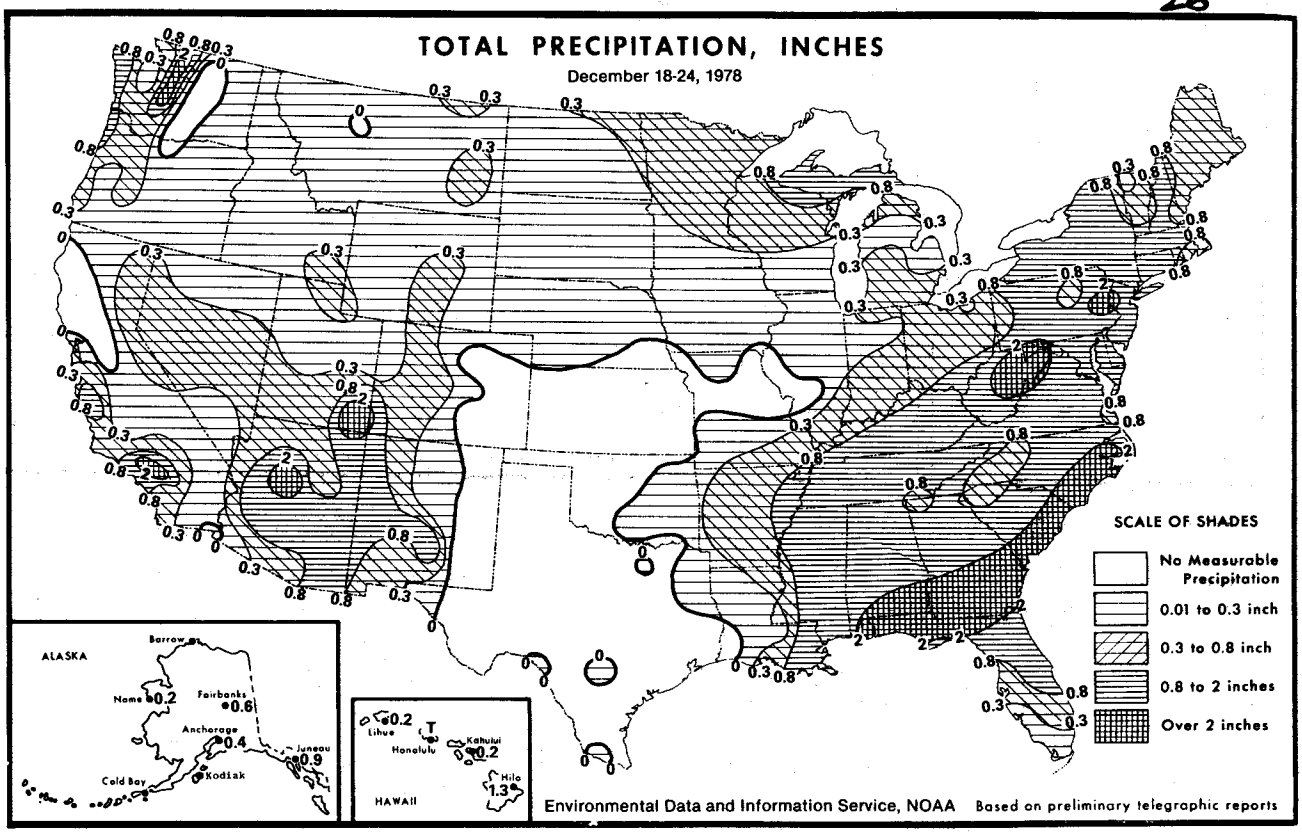


National Weather Summary

December 18 - 24

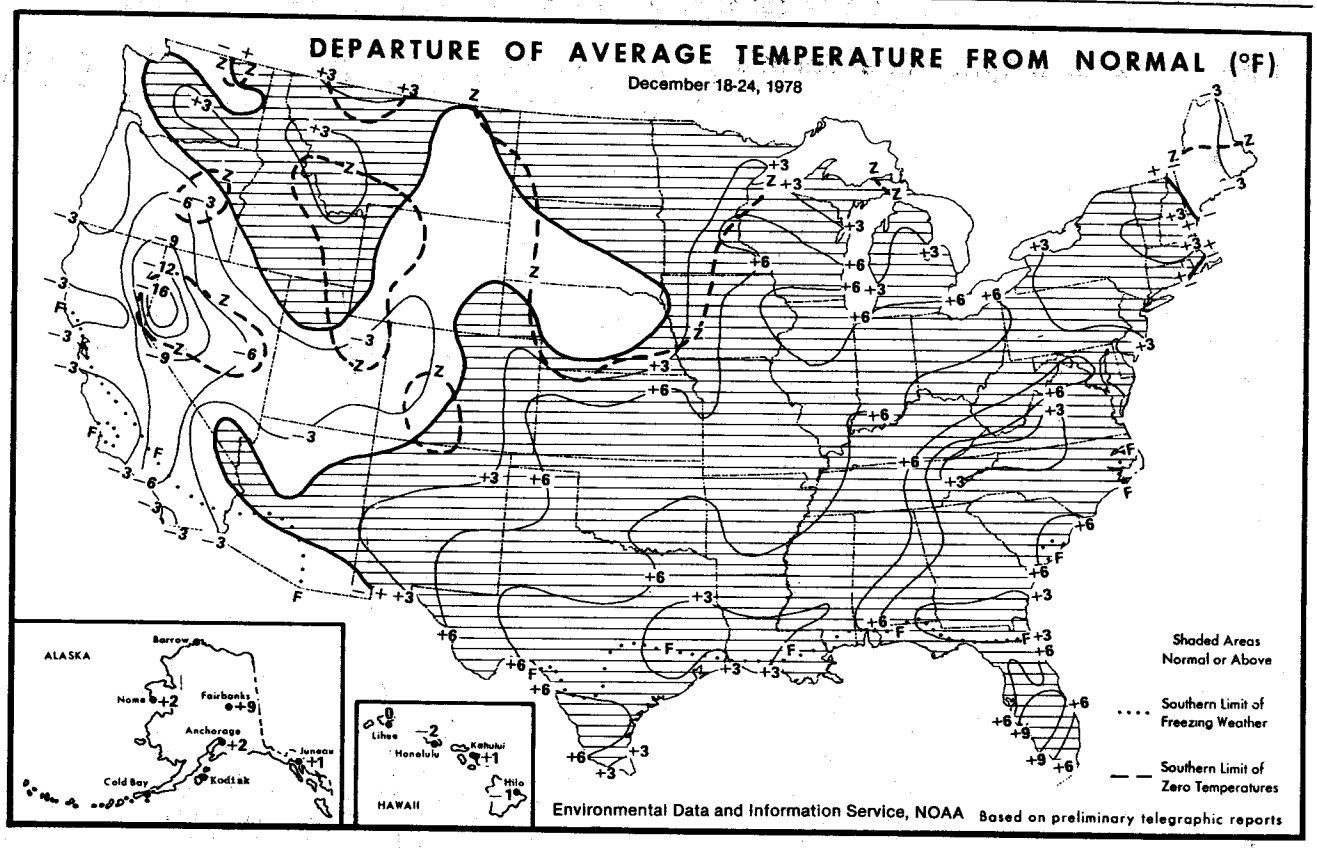
HIGHLIGHTS: Early in the week heavy showers continued in the Southwest adding to the already wet conditions there. Later in the week a complex storm system drew moisture from the Gulf of Mexico and spread rain from Louisiana to Florida and northward to the Great Lakes and mid-Atlantic States and was continuing northward, spreading snow at week's end. Severe weather occurred through the South with tornadoes being reported from Louisiana through Florida. No injuries or major damage was reported. Elsewhere, high winds with snow and blowing snow plagued the northern and central Rockies and northern Plains. Little or no preciipitation fell from Texas through Kansas.

Average temperatures for the week were generally above normal from the Rockies eastward and colder than normal in the West. The coldest area was in Nevada where Reno and vicinity averaged 16° colder than normal.

A major winter storm developed over the Rockies on Monday carrying snow to most of the mountains and heavy rains to parts of southern California, Arizona, and New Mexico. More than a foot of snow blanketed several areas. Especially hard hit by rain were portions of Arizona where 2 to 5 inches triggered widespread flooding.

Snow also fell heavily in northern New England. The 3-day total ranged from 6 to 24 inches. Lubbock, Texas, set a high temperature record of 75°, up 3 degrees from last year's high mark.

The Rocky Mountain storm continued to dump heavy snows in the northern and higher eleva-



tions while devastating floods plagued the lower Southwest on Tuesday. As much as 18 inches of snow collected in Utah with 10 inches in northern Arizona.

Snow and freezing rain spread across the Plains to the Great Lakes.

Meatime record warmth covered the Nation from the southern Plains to Arkansas and across the South to Alabama. A sampling showed 84° at Corpus Christi, eastern Texas; Oklahoma City's 75°; 67° at Dodge City, western Kansas; 69° at Huntsville, northern Alabama; and 77° at Fort Smith, western Arkansas which broke the 1889 record by 3 degrees.

The storm center that hit the Rockies earlier reached the Ohio Valley, but not before producing some of the worst flooding ever in Arizona and New Mexico.

Portions of Kentucky, Tennessee and West Virginia contended with some overflow after steady rains. Further north snow and freezing rain fell.

Warm air persisted in the Gulf Coast States and extended to Missouri and Tennessee. Some new records included Corpus Christi again at 89°; 77° at Fort Worth, Texas; and record- tying readings of 69° at Nashville and 68° at St. Louis.

Snow and high winds raced into the northern Rockies and stretched as far south as the Nebraska Panhandle on Thursday.

Snow fell heavily in the Northeast where some New England stations gathered a half foot. Less than an inch of rain dampened New Orleans and other points in the South and Appalachians. By day's end, some light showers dotted the Pacific Northwest.

Friday ushered in the first day of winter. For most of the Nation, the weather was not too severe. Storm systems moving across the Pacific Northwest and Montana spread snow and high winds across the northern and central Rockies into the northern Plains and western Great Lakes. There was rain over Washington State. Elsewhere snow fell over northern New England and rainshowers were reported in southern Florida. The remainder of the Nation enjoyed rather mild weather. The Gulf Coast had temperatures in the 70's. The West Coast was in the 60's and even the Great Plains reached the 40's by Friday afternoon.

Light snow and blowing snow continued on Saturday from the northern Rockies through the Dakotas and the Great Lakes. Temperatures in the northern Plains were below zero with freezing weather dipping into Kansas and Missouri early in the evening. Rainshowers developed over the entire Gulf Coast and Florida by mid-afternoon. Showers and thunderstorms developed late in the day along a line from northeast Texas into Arkansas. The line of weather extended northward into the upper Mississippi Valley. Snow fell in the northern portion while Iowa had a mixture of rain and snow. Illinois reported only rain. Marble sized hail occurred in northeast Texas. The entire storm system was moving rapidly eastward. Cold air was surging in behing the storm system.

On Sunday the line of weather extended from the western Great Lakes southward through the lower Mississippi Valley. Another Storm system developed in the Gulf of Mexico early Sunday. Heavy showers, thunderstorms and tornadoes developed along the Gulf Coast and

(Continued on last page)

National Agricultural Summary

December 18 - 24

HIGHLIGHTS: Rains deluged the Southwest, slowing harvests and fieldwork in Arizona and New Mexico. Low temperatures slowed grass growth in the West while mild weather melted the snowcover in the Great Plains and the Northwest. Farmers gradually harvested the last of the corn and soybeans in the north central States and the Southeast. Cotton picking advanced rapidly in Texas, Arizona and California but rains delayed the New Mexico harvest early in the week. Farmers prepared soils for spring planting in the South; snow cover and frozen soils held northern tillage activity to a minimum. Pastures in the North were unavailable for grazing and in the South rated only poor to fair; mild temperatures and recent rains improved grasslands in the South. Low temperatures in the West slowed grass growth. Freeze damage to the western citrus crop became more evident as fruit moved to processors instead of fresh market. Rains improved Florida citrus groves.

SMALL GRAINS: Winter wheat rated fair to mostly good throughout the Nation. Rains in the South and melting snowcover in the North improved growing conditions. Snow cover in the extreme North protected the crop from low temperatures. Planting was virtually complete in the South; Texas growers reseeded some stands where dry soils reduced germination to unacceptable levels.

Kansas wheat rated fair to good but had no snowcover; topsoil moisture was adequate in the east and short in the west. Subsoil moisture was short throughout Kansas. Dry soils in Oklahoma limited wheat growth. Warm temperatures in Texas stimulated wheat, however, dry soils on the High Plains limited growth. Farmers replanted some dryland wheat on the northern High Plains. Growers from the southern Plains southward sprayed wheat to control greenbugs. Snow covered winter wheat on the northern Great Plains but most areas needed additional snow depth to protect the crop. Wheat in the north central States enjoyed mild temperatures but had only a trace of snowcover. In the Pacific Northwest snowcover melted which provided needed soil moisture but left the crop vulnerable to low temperatures. Oregon growers had trouble with standing water in some fields and possible freeze damage. Low temperatures slowed wheat growth along California's north coast; Sacramento Valley crop began tillering.

COTTON: Cotton picking stood at 99% or more harvested from the Delta States eastward. Many gins closed for the season as cotton volume declined. Texas growers harvested at a fast pace and reached 78% complete, far short of the 100% last year and the 97% average. High winds on the southern High Plains interferred with dumping stripper baskets but harvest proceeded at a steady pace. Farmers that had finished picking, cut stalks, plowed, fertilized, and applied herbicides in preparation for the 1979 crop.

Arizona cotton picking reached the final stage; some ground cotton was lost to rains. New Mexico cotton picking advanced to 55%; rains again delayed the harvest early in the week. California picking stood at 95%; growers plowed down harvested fields.

OTHER CROPS: Very little corn remained to be picked. Only a few States reported any harvest activity, notably Ohio and Georgia.

The soybean harvest centered in the Southeast where combining ranged from 92% in North Carolina to 98% in Georgia. South Carolina and Florida also harvested some beans.

Sugarcane harvests were active in Florida and Texas but almost complete in Louisiana.

Tobacco stripping continued in the South. Most markets were closed for the Holidays.

FRUITS AND NUTS: Decidous fruit growers continued to prune trees and grape vines, apply dormant sprays, and practice weed control. The pecan harvest continued across the South and ranged from 87% complete in Georgia and Texas to 91% in Alabama. Wet conditions delayed the New Mexico harvest to a very late 33%.

Rains improved Florida citrus trees and some new growth was evident because of mild temperatures. Harvest for processing was active. Texas Valencia fruit drop increased as a result of the December freeze. Trees not irrigated at the time of the freeze began dropping leaves. Heavier damage in northern and western areas of the Valley became apparent, especially among oranges. California orchard work ran behind schedule because of recent rains. The Naval fresh pack was reduced by the freeze and many Navals moved to processing.

VEGETABLES: Florida vegetable shipments declined for the Holidays and stood at 12% below the previous week. Shipments advanced considerably for radishes, cabbage, and lettuce; snap beans, cauliflower, and chinese cabbage also increased. Volume of other vegetables held steady or declined. Growers also harvested strawberries and fall watermelons. Spring planting was active for several crops. Texas growers harvested carrots, cabbage, lettuce, broccoli, spinach, and cauliflower from southern areas. Some crops in northern production areas were abandoned to freeze damage. California harvests of cauliflower, carrots, celery slowed along the Central Coast but increased from southern areas. The Imperial Valley lettuce harvest was active.

PASTURES AND LIVESTOCK: Only southern pastures had grazing available to cattle. Grasslands in the Southeast rated poor to fair but was improving from recent rains and mild temperatures. Grazing was available from Kentucky southward. Texas small grian pasture development lagged because of recent dry weather on the High Plains and central and North Texas. Supplemental feeding increased as rangelands and native pastures declined. Ample supplies of dry grass were available in South Texas. Low temperatures slowed growth of Arizona grasslands and froze stock ponds. California stockmen fed heavy rations of supplemental forage.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., Dec. 24, 1978

States and Stations	Temperature °F Average	Temperature °F Departure	Precipitation Inches Total	Precipitation Inches Departure
ALA.Birmingham	48	+ 4	1.4	+ .2
Moblie	58	+ 6	2.0	+ .6
Montgomery	54	+ 6	1.3	+ .2
ALASKA.Anchorage	14	+ 2	.4	+ .2
Barrow	-	-	-	-
Fairbanks	-3	+ 9	.6	+ .5
Juneau	29	+ 2	.9	- .1
Kodiak	-	-	-	-
Nome	4	+ 1	.2	+ .1
ARIZ.Flagstaff	27	- 2	3.0	+1.5
Phoenix	52	0	1.1	+ .9
Tucson	50	- 1	.8	+ .6
Winslow	34	+ 1	.3	+ .2
Yuma	52	- 3	0	- .1
ARK.Fort Smith	45	+ 5	.3	- .3
Little Rock	47	+ 7	.5	- .4
CALIF.Bakersfield	45	- 2	.2	0
Eureka	43	- 5	T	-1.5
Fresno	42	- 3	.2	- .2
Los Angeles	51	- 6	.9	+ .4
Red Bluff	41	- 4	T	- .9
San Diego	54	- 2	.7	+ .3
San Francisco	45	- 4	.2	- .8
Stockton	40	- 5	0	- .6
COLO.Denver	32	0	T	- .1
Grand Junction	22	- 6	.3	+ .2
Pueblo	34	+ 2	T	- .1
CONN.Bridgeport	33	+ 1	.9	+ .2
Hartford	29	+ 3	1.0	+ .1
D.C.Washington	43	+ 7	1.3	+ .6
FLA.Apalachicola	58	+ 4	.8	.0
Daytona Beach	66	+ 7	1.5	+1.0
Ft. Myers	76	+12	.2	- .1
Jacksonville	56	+ 1	.9	+ .3
Key West	76	+ 5	.1	- .2
Lakeland	69	+ 8	-	-
Miami	72	+ 4	.1	- .3
Orlando	67	+ 6	1.1	+ .7
Tallahassee	55	+ 2	4.0	+3.0
Tampa	66	+ 5	.4	- .1
W.Palm Beach	70	+ 4	.5	- .1
GA.Atlanta	49	+ 6	.9	- .1
Augusta	49	+ 3	1.0	+ .2
Macon	52	+ 5	1.4	+ .4
Savannah	55	+ 5	2.1	+1.3
HAWAII.Hilo	70	- 1	1.3	-2.2
Honolulu	71	- 2	T	- .9
Kahului	73	+ 1	.2	- .5
Lihue	72	0	.2	-1.3
IDAHO.Boise	32	+ 1	.1	- .2
Lewiston	36	+ 2	.2	- .1
Pocatello	28	+ 2	.3	+ .1
ILL.Cairo	45	+ 7	.5	- .4
Chicago	31	+ 4	.2	- .3
Moline	28	+ 3	.1	- .3
Peoria	31	+ 5	.2	- .2
Rockford	28	+ 5	2	- .2
Springfield	36	+ 7	T	- .4
IND.Evansville	38	+ 4	.6	- .1
Ft. Wayne	33	+ 6	.3	- .2
Indianapolis	36	+ 7	.5	- .1
South Bend	33	+ 6	.5	- .1
IOWA.Burlington	33	+ 7	T	- .4
Des Moines	29	+ 6	.1	- .1
Dubuque	25	+ 4	.1	- .4
Sioux City	21	- 1	.2	+ .1
KANS.Concordia	33	+ 4	T	- .2
Dodge City	40	+ 8	0	- .1
Goodland	35	+ 6	T	- .1
Topeka	36	+ 6	T	- .4
Wichita	40	+ 7	0	- .3
KY.Lexington	39	+ 5	1.6	+ .8
Louisville	40	+ 6	.6	- .1

States and Stations	Temperature °F Average	Temperature °F Departure	Precipitation Inches Total	Precipitation Inches Departure
LA.Baton Rouge	55	+ 3	.2	- .9
Lake Charles	56	+ 2	0	-1.3
New Orleans	58	+ 4	1.2	0
Shreveport	52	+ 4	T	-1.0
MAINE.Caribou	11	- 3	.7	+ .1
Portland	22	- 2	.3	- .6
MD.Baltimore	39	+ 5	1.8	+1.1
MASS.Boston	34	+ 3	1.5	+ .6
Chatham	32	- -	.7	- -
MICH.Alpena	23	+ 1	.5	+ .1
Detroit	31	+ 4	.4	- .1
Flint	29	+ 4	.3	- .1
Grand Rapids	29	+ 3	.7	+ .2
Houghton Lake	24	+ 3	.2	- .2
Lansing	30	+ 4	.4	0
Marquette	23	+ 1	1.4	+1.0
Muskegon	29	+ 2	.4	- .1
S. Ste. Marie	18	0	1.0	+ .5
MINN.Duluth	16	+ 3	.6	+ .3
Internatl Falls	6	0	.5	+ .3
Minneapolis	23	+ 6	.4	+ .2
Rochester	20	+ 3	.3	+ .2
St. Cloud	15	+ 1	.4	+ .2
MISS.Jackson	52	+ 4	.8	- .3
Meridian	50	+ 3	1.0	- .3
MO.Columbia	42	+11	T	- .4
Kansas City	35	+ 4	T	- .4
St. Louis	40	+ 7	0	- .4
Springfield	42	+ 7	T	- .6
MONT.Billings	26	0	.2	+ .1
Glasgow	13	- 2	.1	0
Great Falls	26	+ 1	T	- .1
Havre	20	+ 3	.1	0
Helena	27	+ 5	T	- .1
Kalispell	25	+ 2	.3	- .1
Miles City	21	0	.3	+ .2
Missoula	27	+ 3	.2	- .1
NEBR.Grand Island	23	- 2	.1	0
Lincoln	28	+ 2	T	- .1
Norfolk	22	- 1	.1	- .1
N.Platte	22	- 4	.1	0
Omaha	26	+ 2	.1	0
Valentine	21	- 2	.1	0
NEV.Ely	19	- 6	.4	+ .3
Las Vegas	45	+ 1	.5	+ .4
Reno	16	-16	.5	+ .2
Winnemucca	25	- 4	.1	- .1
N.H.Concord	27	+ 4	.5	- .2
N.J.Atlantic City	37	+ 3	1.0	+ .1
Trenton	36	+ 3	1.5	+ .8
N.MEX.Albuquerque	38	+ 3	.2	+ .1
Roswell	46	+ 8	0	- .1
N.Y.Albany	27	+ 3	.8	+ .2
Binghamton	24	0	1.3	+ .7
Buffalo	30	+ 4	.8	+ .2
New York	35	+ 1	1.1	+ .3
Rochester	29	+ 2	1.1	+ .3
Syracuse	28	+ 2	.8	+ .3
N.C.Asheville	43	+ 5	1.0	- .2
Charlotte	45	+ 4	.6	0
Greensboro	42	+ 3	.8	+ .1
Hatteras	50	+ 3	1.2	+ .2
Raleigh	43	+ 3	.8	+ .1
Wilmington	50	+ 4	3.9	-3.1
N.DAK.Bismarck	16	+ 2	.1	0
Fargo	13	+ 2	.3	+ .2
Williston	14	0	.2	+ .1
OHIO.Akron-Canton	34	+ 6	.4	- .2
Cincinnati	36	+ 4	.6	0
Cleveland	35	+ 6	.2	- .3
Columbus	35	+ 6	.4	- .1
Dayton	35	+ 6	.5	0
Toledo	33	+ 7	.3	- .2

States and Stations	Temperature °F Average	Temperature °F Departure	Precipitation Inches Total	Precipitation Inches Departure
Youngstown	34	+ 7	.7	+ .1
OKLA.Okla. City	46	+ 7	T	- .3
Tulsa	46	+ 7	T	- .4
OREG.Astoria	40	- 2	1.1	-1.3
Burns	22	- 5	.1	- .3
Medford	35	- 2	.1	- .7
Pendleton	36	+ 1	.2	- .2
Portland	37	- 3	.5	- .8
Salem	39	- 1	.6	- .9
PA.Allentown	31	+ 2	2.2	+1.4
Erie	31	+ 3	.9	+ .3
Harrisburg	35	+ 4	1.8	+1.1
Philadelphia	37	+ 3	1.7	+1.0
Pittsburgh	34	+ 5	.8	+ .2
Scranton	25	- 2	1.1	+ .5
R.I. Providence	30	0	.6	- .3
S.C. Charleston	55	+ 7	3.4	+2.6
Columbia	50	+ 5	1.1	+ .3
Greenville	45	+ 3	.6	- .4
S.D. Aberdeen	16	+ 1	T	- .1
Huron	19	+ 2	.1	0
Rapid City	25	0	.1	0
Sioux Falls	20	+ 2	.1	0
TENN.Chattanooga	47	+ 7	.7	- .5
Knoxville	43	+ 2	1.5	+ .4
Memphis	48	+ 6	1.3	+ .2
Nashville	44	+ 5	1.4	+ .4
TEX.Abilene	51	+ 6	0	- .3
Amarillo	42	+ 4	T	- .2
Austin	55	+ 4	T	- .5
Beaumont	59	+ 6	0	-1.1
Brownsville	64	+ 2	T	- .3
Corpus Christi	64	+ 6	T	- .4
Del Rio	56	+ 5	T	- .1
El Paso	47	+ 3	T	- .1
Fort Worth	54	+ 7	T	- .4
Galveston	61	+ 5	0	- .8
Houston	56	+ 2	0	- .9
Lubbock	47	+ 7	0	- .1
Midland	50	+ 5	T	- .1
San Angelo	51	+ 4	0	- .2
San Antonio	55	+ 3	T	- .3
Victoria	58	+ 3	T	- .4
Waco	52	+ 3	T	- .4
Wichita Falls	49	+ 6	T	- .3
UTAH.Blanding	27	- 2	2.3	+2.0
Salt Lake City	32	+ 3	.2	- .1
VT.Burlington	21	+ 1	.3	- .2
VA.Lynchburg	39	+ 2	1.1	+ .4
Norfolk	44	+ 3	.5	- .2
Richmond	42	+ 4	1.0	+ .3
Roanoke	40	+ 4	1.1	+ .4
WASH.Colville	28	+ 2	.1	- .4
Omak	22	- 4	0	- .4
Quillayute	39	- 1	1.3	-2.3
Seattle-Tacoma	41	+ 1	.2	-1.1
Spokane	27	- 1	.1	- .5
Walla Walla	10	+ 4	.2	- .3
Yakima	33	+ 3	0	- .3
W.VA.Beckley	37	+ 6	1.6	+ .8
Charleston	39	+ 4	1.4	+ .7
Huntington	38	+ 4	1.3	+ .7
Parkersburg	37	+ 3	1.1	+ .5
WISC.Green Bay	23	+ 4	.3	0
La Crosse	28	+ 8	.2	0
Madison	28	+ 8	.2	- .1
Milwaukee	29	+ 7	.2	- .2
WYO.Casper	23	- 2	.5	+ .4
Cheyenne	31	+ 2	T	- .1
Lander	21	- 1	.2	+ .1
Sheridan	21	- 4	.2	+ .1
P.R.San Juan	79	+ 2	1.0	+ .2

Based on 1941-70 normals

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State Summaries of Weather and Agriculture

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

ALABAMA: Temperatures variable, averaged 6° above normal. Rainfall averaged 1.31 in. Most areas had 3 days with rain; heaviest near 2.00 in. southern areas.

Fieldwork: 4.2 days suitable. Soil moisture mostly adequate; routine farm chores main activity. Small grain seeding virtually complete. Pecans 91% harvested, 95% 1977. Wheat mostly fair condition. Livestock, pastures fair condition.

ARIZONA: Tropical air early in week, snow 9,000 ft. Heavy rainfall central, eastern sections. Precipitation higher elevations 3.00 to 8.00 in. Widespread flooding caused by heavy rains, melting snowpack. Precipitation continued until midweek, snow level dropping to 5,000 ft. Clearer weather prevailed after midweek. Temperatures mostly below normal.

Activities slowed by rain in desert; rain and snow higher elevations. Fields in central area beginning to dry. Field preparations, planting, harvesting gained momentum. Cotton harvest final stages; much ground cotton lost. Seeding small grain continued. Muddy fields delayed sugarbeet harvest. Weather slowed vegetable harvests; supplies reduced. Resuming harvest as damage detected; good quality maintained. Cold weather set back annual forage crops; ranges good to excellent condition. Stock water, soil moisture adequate. Frozen ponds, windmills causing problems. Cattle, calves good condition; sheep excellent.

ARKANSAS: Warmer with light precipitation. Means 3 to 10° above normal. Extremes: 17 and 80°. Precipitation ranged from trace to 0.63 in.

Harvest activities continued. Fieldwork: 3 days suitable. Soybeans 99% complete. Cotton harvest practically complete; less than 1% remain for scrapping. Most gins closed for season. Fall plowing continuing. Small grain conditions good; plant growth improved with moisture and warmer temperatures; generally good stands. Pasture condition improved as weather permitted; northern areas good; southern areas fair. Cattle fair to good condition, depending on pasture condition.

CALIFORNIA: Early week very cold air plunged south. Thunderstorms dumped large amounts of rain over south; heaviest rains there except for isolated localities in southern Sierra Nevada. High pressure followed and trapped cold air in San Joaquin and Sacramento Valleys and overnight minimums dropped to low 20's and mid-20's respectively. Fog in those valleys sharply reduced daytime temperatures; all areas showed average temperatures well below normal.

Cotton harvest 95% complete; plowdown underway all areas. Planting small grains continued. Growth small grains slow north coast. Early small grains tillering stage Sacramento Valley. Sugarbeet harvest continued San Joaquin Valley. Freezing temperatures damaged sugarbeet crop Riverside County. Grain sorghum harvest complete Sacramento Valley; nearing completion San Joaquin Valley. Seed crops harvest continued Sacramento Valley. Seed alfalfa discing, San Joaquin Valley. Winter cultural practices continuing. Pruning, dormant oil sprays and weed control taking up most time. Orchard work behind schedule due to rains. Avocado harvest light. Date harvest almost complete. Fig irrigation continued. Emperor and Calmeria grapes moving from cold storage. Freeze reduced packed volume Navel oranges. Many Navels going for by-products. Mandarin harvest nearing completion. Harvest cauliflower, carrots, celery slowing central coast, increasing south. Lettuce harvest active Imperial Valley, ending Palo Verde Valley. Frost damage radishes Riverside County. Supplemental feeding heavy.

COLORADO: Moisture moved into southwest early week bringing substantial amounts of precipitation as snow at high elevations and rain and snow at lower elevations. Elsewhere moderate amounts of snow over mountains. Light amounts in northern mountains and virtually no precipitation in eastern plains. Generally dry end of week. Temperatures 5 to 7° above normal southeast; 5 to 7° below normal in western valleys and San Luis Valley.

FLORIDA: Coldest temperatures of season north half morning of 18th and mid-20's north to low 40's central. Freezing temperatures southward to Ocala. Temperatures averaged 2 to 4° above normal remainder of week. Weak cool front, 21st, dropped rainfall of over 0.25 in. Cloudiness and showers statewide, 23d. Cool front 24th brought strong line of showers and thunderstorms with general rains near 1.00 in. and scattered areas receiving up to 2.00 to 4.00 in.

Soil moisture mostly adequate Panhandle, variable or short to adequate Peninsula. Rainfall late in week and over weekend very beneficial. Harvest of soybeans, cotton practically complete. Sugarcane harvest continues active; crop in good condition. Small grains planted; early seedings small but good condition; weekend rains central and northern areas very beneficial. Cattle good condition. Citrus tree condition to improve with rains on 24th; irrigation early in week. Some new growth due to warm temperatures. Processing harvest active. Vegetable harvest slowed for the holidays; overall shipments down 12% from previous week. Shipments radishes, cabbage, lettuce up considerably. Snap bean, cauliflower, chinese cabbage increased. Supplies carrots, celery, sweet corn, escarole, parsley, squash held steady while cucumbers, eggplant, okra, peppers, tomatoes decreased. Quality, size good to very good, some excellent. Spring planting continues active several crops. Strawberry harvest increasing; quality, size generally good. Harvest of the small fall watermelon crop active; seeding of spring crop underway, gaining momentum.

GEORGIA: Temperatures ranged mid-40's in mountains to upper 50's in south. Temperatures 3° to 7° above normal. Rainfall ranged from 1.00 in. some northern sections to less than 0.50 in. elsewhere.

Soil moisture adequate. Fieldwork: 5 days suitable. Planting of small grain nearing completion. Corn 99% harvested, the same as last year. Soybeans 98% gathered, last year 93%. Cotton 99% picked, last year 92%. Pecans mostly fair to good; 87% gathered, last year 93%. Wheat seeding 96% complete, last year 98%. Rye 97% planted, last year 99%. Other small grains 95% planted, last year 99%. Pastures poor to fair condition. Cattle fair to good. Hogs good.

IDAHO: Temperatures slightly cooler than normal. Highs mostly in 30's and 40's. Extremes: 53 and -15°. Precipitation recorded most stations but amounts generally below normal.

Activities limited mostly to livestock chores and machinery repair. Fields snow covered many

areas. Feed supplies adequate. Light movement of wheat and potatoes.

ILLINOIS: Temperatures 3 to 7° above normal. Precipitation light; 0.50 in. extreme south.
Winter wheat mostly good. Livestock good condition due to mild weather. Farmwork mainly general chores. Soil moisture short to adequate.

INDIANA: Mild early week and warmed into 50's and 60's near midweek. Cooler air 22d and snow showers tried to cover ground 24th. Temperatures ranged from 3° above normal north to 5° above normal central and south. Precipitation generally light but some widely scattered heavy showers central near midweek. Measurable snow accumulations lingered only in northwest but many areas of north central did have a trace of snow.
Fieldwork limited; hauling manure, mending fences, finishing tobacco stripping.

IOWA: Temperatures few degrees above normal with light to moderate precipitation falling as rain, drizzle or snow at midweek and mostly as light snow late week. Weekend snow cover limited to northern two-thirds with depths of 8 to 10 in. northwest.

KANSAS: Dry and mild, generally scattered traces precipitation midweek and during weekend with cooler air outbreaks. Temperatures 29° Northwest to 34° Southeast; 6 to 8° above normal.
Wheat condition fair to good. Topsoil moisture adequate east, short west. Subsoil moisture short. Cattle receiving some supplemental feed, although warm weather helped.

KENTUCKY: Cloudy and cool first of week with widespread rain 20th averaging less than 1.00 in. Mostly sunny 21st to 24th. Near normal temperatures 18th and 21st to 24th, well above normal 19th and 20th.
Absence of snow left pastures open and in fair to good condition. Livestock in good condition with little supplemental feeding necessary. Tobacco stripping continued. Burley markets closed for holidays, will reopen Jan. 4.

LOUISIANA: Temperatures 3 to 5° above normal. Extremes: 81 and 24°. General light rain; heaviest southeast.
Activities: Harvesting few remaining sugarcane fields. Care and feeding of livestock.

MARYLAND & DELAWARE: Temperatures 4° above normal. Highs in upper 40's and lows in 30's. Precipitation widespread with most stations reporting 0.50 to 0.75 in.

MICHIGAN: Temperatures 5° above normal over southern Lower to near 5° below normal at northern end of Lower Peninsula. Upper Peninsula near normal. Precipitation above normal over Upper Peninsula with amounts ranging from 0.60 in. to near 1.50 in. Northern Lower precipitation varied from 0.40 to 0.60 in. Central Lower had 0.20 to 0.40 in. Southern Lower amounts ranged from 0.20 to 0.70 in.
Activities: Feeding livestock, reparing buildings and equipment.

MINNESOTA: Temperatures 3° above normal. Extremes: 36 and -27°. Precipitation 0.15 in. above normal; amounts ranges 0.10 in. southwest and 0.56 in. northeast. Snowfall less than 1 in. southwest to more than 9 in. northeast. Snow depth ranged from 2 to 5 in. southwest and west central; 9 to 18 in. north central and northeast; 5 to 11 in. elsewhere.

MISSISSIPPI: Temperatures 1 to 7° above normal. Extremes: 81 and 19°.
Soil moisture adequate. Fieldwork: 1.6 days suitable. Winter wheat fair condition. Livestock condition fair to good. Hay and roughage supplies adequate. Feed grain supplies adequate.

MISSOURI: Temperatures 6 to 8° above normal. Warmest days 19th and 20th when maximum temperatures reached 60's and 70's in south and 40's and 50's in north.
Little or no precipitation except 0.25 in. southeast. Snow and ice gone from fields.

MONTANA: Temperatures near normal. Many weather disturbances produced scattered heavy snow. Greatest new snow depth under 8 in. Many roads closed because of snow and strong winds.
Winter wheat condition good. Livestock condition generally good with most on supplemental feed. Grazing continues difficult to closed.

NEBRASKA: Temperatures mostly below normal in west and central, slightly above normal east. Weekend cold snap brought below normal readings statewide. Midweek snowstorms yielded widespread light precipitation.
Farm activities limited to care of livestock.

NEVADA: Cotton harvest continued Pruhmp Valley. Normal winter livestock activities.

NEW ENGLAND: Three intense storms; strong winds with gusts to more than 60 mph in each. Snow accumulating 12 to 24 in. north, mostly rain along southern coastal plain. Temperatures near normal.

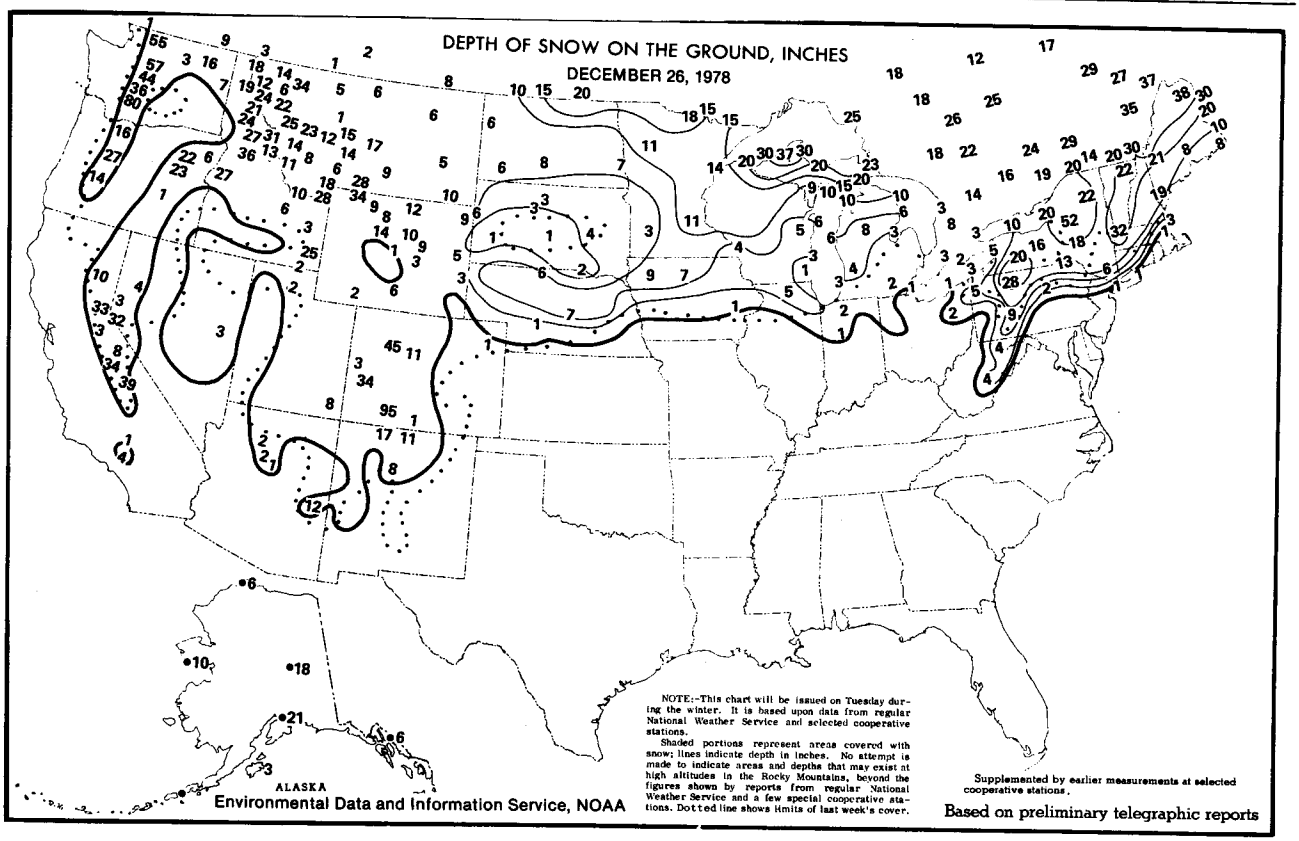
NEW JERSEY: Temperatures close to normal averaging 30° North, 35° South, and 37° Coastal. Extremes: 12 and 55°. Precipitation 0.40 to 0.80 in. above normal, averaging 1.32 in. North, 1.53 in. South, and 1.61 in. Coastal.
Farm activities limited to caring for livestock and other winter chores. Some fruit tree and blueberry pruning being done.

NEW MEXICO: Widespread rain and snow western two-thirds early week. Extensive flooding Gila, San Francisco, and Mimbres drainages and in Ruidoso area. Fair and dry last half of week. Temperatures up to 8° colder than normal northern mountains and 4 to 8° warmer than normal southeast. Elsewhere near normal.
Additional moisture received southwest again delayed harvests. Presently clear and dry all southern areas and harvest again full swing. Cotton picking again active, about 55% harvested. Grain sorghum, peanuts about finished. Pecan harvest resumed as orchards dried out, about 33% completed, far behind normal. Wheat, barley good condition, 80% of irrigated, 50% of dryland being grazed. Ranges, livestock fair to good condition, supplemental feeding underway.

NEW YORK: Warmer than normal, with moderate to heavy precipitation. Rain on 20th and 21st averaged 0.50 in. and heavy snow on 24th and 25th averaged 12 in. or more.

NORTH CAROLINA: Temperatures 4 to 5° above normal. Precipitation moderate to heavy.
Fieldwork: 3.7 days suitable. Soil moisture adequate. Condition of wheat, oats, barley and rye fair to mostly good. Pasture fair to good. Soybeans 92% harvested, 1977 86%, average 93%.

NORTH DAKOTA: Temperatures near normal and averaged around 9° northeast to upper teens in southwest. Fresh snow but mostly light with water equivalent



generally less than 0.25 in.

More winter snow cover needed. Roads in generally good winter condition. Grain railcar shortage remains a problem. Livestock in good condition.

OHIO: Temperatures above normal; extremes wide, with afternoon highs stretching into 50's and 60's near midweek followed quickly by below freezing readings. Precipitation ranged from 0.25 to 0.33 in. over much of central and north to over 1.00 in. along southern border.

Activity limited to farm chores. A few acres of corn picked in northeast.

OKLAHOMA: Temperatures 5 to 7° above normal. Scattered light rains 19th and 20th in eastern third and south central.

Open weather favored harvest of row crops. Short soil moisture limiting growth of wheat pasture. Livestock mostly good with supplemental feeding on increase.

OREGON: Precipitation nearly 2.00 in. along coast but decreased inland to 0.40 in. Willamette Valley, and ranged from zero to 0.25 in. over most of east. Temperatures 2 to 7° below normal. Extremes: mid-50's, mid-20's west; mid-40's, below zero east.

Possible freeze damage to fall seeded crops west. Few fields plagued with standing water. Growth nil. Farming activity at standstill. Storage crops keep moving. Livestock feeding heavy. Pastures not producing any usable feed now.

PENNSYLVANIA: Near seasonal temperatures but coldest week of season. Extremes: 58 and -4°. Precipitation 20th and 24th mostly as rain south and freezing rain and snow elsewhere totaled 1.00 to 2.50 in. melted. Weekend snow from 4 to 26 in. in northern tier counties.

Normal winter chores.

PUERTO RICO: Island average rainfall 1.01 in. or 0.01 in. above normal. Temperatures averaged about 77° on coasts and 70° interior. Extremes: 90 and 57°.

SOUTH CAROLINA: Above normal temperatures with late cooling trend. Rainfall at midweek and 23d below normal.

Cotton scrapping, soybean harvest approaching completion when weather permits. Pruning fruit trees, grape vines. Small grains, winter grazing making good growth where soil moisture adequate; some areas need more rainfall. Soil sampling, liming, applying fumigants, disking in preparation for spring planting.

SOUTH DAKOTA: Temperatures near normal. Extremes: 49 and -13°. Snow fell in all areas but precipitation mostly less than 0.15 in. Snowcover varied greatly, less than 1 in.

TENNESSEE: Mostly fair. Rainfall at weekend; amounts less than 0.50 in. Temperatures 1 to 2° above normal. Lows mid-30's, highs mid-50's.

Soil moisture mostly surplus. Pastures fair. Cattle good condition. General chores and care of livestock main activities. Small grains fair condition.

TEXAS: Little or no rain. Temperatures above normal, ranging 5 to 7° above normal west, south Texas; 8 to 12° above normal elsewhere.

Open weather Plains, Trans-Pecos allowed cotton growers to proceed with harvest at rapid pace. Warmer weather stimulated small grain growth where adequate moisture was available. In many areas,

growers busy preparing for spring planting; applying preplant herbicides, fertilizing, controlling weeds. Sugarbeet harvest continued High Plains, now 95% complete. Sugarcane harvest lower Rio Grande Valley active. Wheat growth stimulated by warmer temperatures, however, growth generally remained slow High Plains as dry weather continued. Some dryland wheat northern High Plains replanted because of poor stands. On southern Low Plains, Cross-Timbers, Blacklands, some fields being sprayed to control greenbugs. Damage from grain mites continued to increase in central. Oats recovering from hard freeze of two weeks ago and again making good growth in response to warm weather. Flax seeding active. Cotton harvested 78%, 100% 1977, 97% average. Pecans harvested 87%, 93% 1977, 95% average. Sugarbeets harvested 95%, 100% 1977, 100% average. Flax planted 88%, 17% 1977, 94% average.

Lower Rio Grande Valley fruit droppage increased in Valencia orange groves result of early December freeze. All citrus trees not recently irrigated at time of freeze have begun dropping leaves. Damage heavier in western and northern areas of valley. Harvest, especially among oranges, increased. Initial carrot digging underway; cabbage and lettuce harvest continued. Irrigation of onions, young cabbage and lettuce active. Laredo broccoli, spinach harvest continued. Eagle Pass: harvest cabbage, cauliflower active. Some broccoli abandoned due freeze damage. San Antonio-Winter Garden some cabbage with severe freeze damage plowed under. Carrot, cabbage, broccoli, cauliflower harvest active. Some late onions, carrots showing signs top burn damage from freeze but expected to recover. Warm, misty weather increased white rust in new spinach growth. East Texas: tender winter greens showing signs freeze burn. Land preparation spring planting begun some areas. Pecan: harvest winding down.

Small grain pasture development behind schedule due recent dry weather on High Plains and Central and North Texas. Supplemental feeding increased as rangeland and native pastures declined. Ample supplies dry grass available in South Texas. Livestock in fair to good condition with some weight loss in southeast.

UTAH: Recurring rain and snow forepart of period. Amounts generally light to moderate but locally very heavy south. Temperatures variable, ranging from near normal to 14° below normal.

Limited farm activities; caring for livestock, maintaining and repairing farm equipment. Sorting and marketing potatoes, onions and apples.

VIRGINIA: Temperatures little above normal. Extremes: 66 and 14°. Precipitation averaged 0.50 to 0.75 in. occurring as mostly rain near end of period.

WASHINGTON: West: Temperatures 1 to 5° below normal. Precipitation 0.60 to 2.30 in. below normal.

Pruning and tying bush berries continued. Equipment and facility repair. Livestock on winter rations; feed adequate.

East: Temperatures 2 to 6° below normal. Precipitation 0.30 to 0.40 in. below normal.

Snowcover on winter wheat melted in many areas. improving soil moisture but leaving stands vulnerable. Potatoes moving from storage to processing. Some corn and sugarbeets still to be harvested. Pruning in orchards and vineyards continued. Livestock on winter programs.

WEST VIRGINIA: Temperatures 3 to 4° above normal. Extremes: 66 and 19°. Most precipitation midweek. Precipitation near normal north west, above normal elsewhere.

Fieldwork: 2.2 days suitable. Soil moisture adequate to surplus. Hay and grains supply adequate. Winter wheat and livestock good condition.

WISCONSIN: Temperatures near or little below normal; no especially warm or cold days. Moisture from 0.20 to 0.40 in. across south half and 0.30 to 0.60 in. across north half.

WYOMING: Temperatures generally below normal. Precipitation above average some locations and below in others. Some snow on ground at few stations.

Feeding livestock and keeping roads open main activity. If weather does not break some ranchers will be looking for hay before spring.

World Weather and Crop Update

December 18 - 24

USSR. Only very light moisture fell over the Ukraine and Volga River region. Abundant but warm rains the previous week had reduced the snow cover significantly. The southern one-third of the Ukraine was generally without snow cover. Very cold temperatures moved into the area and persisted all through the week. Temperatures dropped into the -15 to -18° c range nearly every morning. Analysis of the temperature and snowfall pattern indicate that the bulk of the areas have adequate snow cover, but areas along the edge of the snow line may be suffering from the prolonged cold. In the New Lands, precipitation was above normal with amounts in the range of 10 to 60 mm, providing additional moisture for next season.

PEOPLE'S REPUBLIC OF CHINA. Precipitation was seasonally low across the PRC, with only light amounts of 5 mm or less across the region. December totals averaged less than 15 mm across the north and 25 to 50 mm across the Southeast. Although the overall moisture situation was much improved because of heavier rains earlier this winter, additional moisture is still needed. Climatologically, heavier rains are not expected until spring.

INDIA-SOUTHEAST ASIA. The only precipitation reported over the area occurred on the southeast coast of India, all of Sri Lanka, parts of the Malay Peninsula, and the coast of Vietnam. This would be benificial for the harvest of some early crops.

AUSTRALIA. Dry weather persisted over most of the country with the only precipitation along the upper northeast coast where 15 to 19 mm fell.

AFRICA. The onset of serious rainfall along the northwest part of the African continent continued to be delayed, but above normal moisture did fall in Morocco. Tunisia and eastern parts at Algeria continued dry for the second consecutive week, after good rains early in the month. The remainder of the northern half of the continent was seasonally dry. Rainfall activity tapered from the previous week in the East African countries, but amounts were still near or above normal. In the South

Africa maize triangle rainfall was light, ranging from 8 to 24 mm. Some crop stress was reported in western areas.

EUROPE. Most of Europe returned to a very dry pattern this week after good moisture the previous week. Precipitation was generally in the range of 1 to 10 mm over most of both western and eastern Europe. The most notable exceptions were western France and southern United Kingdom, northern Italy and the western coasts of Yugoslovia, and northwestern Spain and Portugal. Moisture conditions are generally short across much of the continent, and even those areas which received the heavier amounts, the totals were only near normal and no significant recovery of moisture levels will occur.

SOUTH AMERICA. The major agricultural areas of Brazil enjoyed a week of warm and relatively dry weather. With the excellent soil moisture conditions in southern areas, crops should be developing without difficulty, but western Parana was relatively dry for the third consecutive week. In Argentina, heavy rains did fall in parts of Buenos Aires Province. Wheat harvest had been moving rapidly because of two weeks of dry weather. Some temporary delays may be experienced.

MAJOR FREEZE - CALIFORNIA AND ARIZONA IN DECEMBER 1978

Don Haddock
Weekly Weather and
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The biggest freeze in several years blanketed important agricultural areas of California and Arizona on December 6-9, 1978. The nation's supply of certain fresh fruits and vegetables could be affected as the area produces almost all of the lemons, about 90% of the navel oranges (fresh market), 88% of the fall and winter lettuce, 85% of the avocados, 18% of the total oranges, and 11% of the grapefruit. Crop production areas are depicted in figure 1.

Damage to citrus and avocados during the freeze was variable depending upon the extent of freezing temperatures, fruit maturity, tree dormancy, and cold protection used. Minimum temperatures on the coldest night averaged 21° in the Salt River Valley of Arizona and 26° in Orange County, California. Durations of critical temperatures were rather long during the coldest period. Temperature-duration data is contained in table 1. In some districts the damage was severe and similar to the freeze of 1967-68. But in other areas, damage was minor to moderate and

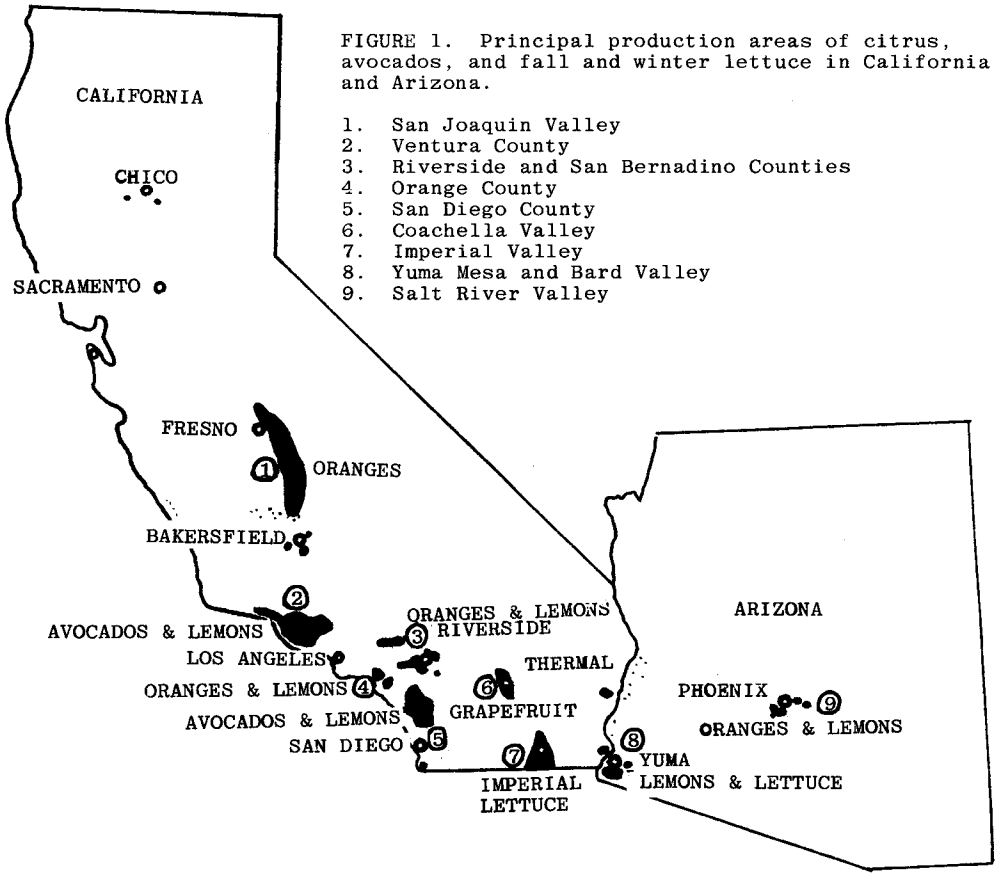


FIGURE 1. Principal production areas of citrus, avocados, and fall and winter lettuce in California and Arizona.

1. San Joaquin Valley
2. Ventura County
3. Riverside and San Bernadino Counties
4. Orange County
5. San Diego County
6. Coachella Valley
7. Imperial Valley
8. Yuma Mesa and Bard Valley
9. Salt River Valley

resembled that caused by a cold snap 3 years ago. Industry sources estimates the losses of 25 to 35% of the unharvested navel oranges and 25% of the unpicked lemon crop. Avocado losses were 25 to 35% in Ventura County where most of the crop is the Hass variety (tender to frost, matures next spring and summer). San Diego County avocado damage was estimated at 10% but some "fuertes" were already harvested. Damage to citrus and avocado trees may not be fully evident until next spring when new growth begins. The freeze killed the remaining tender vegetables such as market tomatoes, beans, squash, and peppers. Winter vegetables such as lettuce suffered only minimal damage ... mostly leaf burn, but growth was slowed and harvesting activity shortened. Winds increased the chilling effect on exposed young leaves and fruit. The freeze could also lower fruit quality and cause some downgrading. However, some benefits of freezes are the accumulation of chilling hours needed by certain orchard crops, and insect, weed, and disease control.

METEOROLOGICAL SITUATION

An intensely cold airmass at the surface over northwestern Canada on December 5th was steered rapidly southward into California and Arizona by an upper level jet stream, see figure 2 and 3. The strong north-south jet stream developed along the west coast from Alaska to Baja California on December 5th and prevailed through the 7th. It steered the center of the huge arctic airmass and its associated "high" pressure system into Nevada on the 8th which was the general peak of the freeze over the Southwest. By the night of the 9th the center of the moderating airmass moved into South Texas where it killed the remaining tender fall vegetables. Temperatures chilled down to 22 to 24° in the northwestern fringes of the Lower Rio Grande Valley's citrus district. Overall damage was generally small--mostly in the northwest. The airmass moderated more as it moved to the East Coast and only slowed development of Florida crops. New records of cold were set at several sites ... the Los Angeles Civic Center's 30° became the coldest December temperature since records began a little over a hundred years ago.

RETURN PERIOD FOR MAJOR FREEZE

Climatology or long-term weather records indicate an average return period of about 8 years for a major freeze in the Southwest. This is only an average, and intervals between major freezes have varied from 1 to 13 years. Mother nature has a way of evening the score between districts as well as between the wintertime production areas of Florida and South Texas.

ORCHARDS COLDER THAN AIRPORTS & CITIES

During the December 6-9 freeze, agricultural districts in California and Arizona averaged 5 degrees colder than the regular reporting sites at nearby airports and cities, see table 2. The largest difference was 10° between the San Diego airport (Lindberg Field) and the main avocado district. An exception to the rule was the Thermal city airport which was 2° colder than the average minimum of the surrounding Coachella Valley. Minimum temperatures and winds vary greatly within agricultural districts, especially those having small valleys with peculiar cold air drainage patterns like in the western U.S. This is the key reason agricultural forecasters are sent into most of the major crop districts of California during the winter and spring to give detailed weather information essential for cold protection of food crops.

Table 1. Temperature-duration data for citrus, avocado and lettuce areas of California and Arizona during the coldest night of the major freeze of December 6-9, 1978.

Agricultural District	Temperature (°F) extreme minimum		Durations (hours) at or below:			
	average	range	32°	30°	27°	26°
1. San Joaquin Valley	23	20-26	13	12	9	7
2. Ventura County	25	22-28	9	7	4	3
3. Riverside and San Bernadino Counties	22	19-25	12	11	8	7
4. Orange County	26	23-30	8	6	2	1
5. San Diego County	24	19-27	10	8	5	4
6. Coachella Valley	23	17-28	12	10	7	5
7. Imperial Valley	23	17-26	12	10	7	5
8. Yuma Mesa & Bard Vly	23	22-24	13	12	9	6
9. Salt River Valley	21	19-24	15	14	11	10

Critical threshold temperatures for crops

32° ..... tender vegetables
30° ..... Hass avocados
27-30° ..... Lemons (varies with fruit size, rootstock, dormancy)
27° ..... Fuerte avocados
26° ..... Oranges, some grapefruit and winter vegetables

Table 2. Minimum temperature variations between urban sites and agricultural districts of California and Arizona during the coldest night of the major freeze of December 6-9, 1978.

Urban Site	Agricultural District	Difference that "Ag" colder than "Urban" (°F)
Fresno Airport	Central San Joaquin Valley	2
Bakersfield Airport	Southern San Joaquin Valley	4
Los Angeles Civic Center	Eastern Los Angeles Basin	8
Los Angeles Civic Center	Ventua County	5
Los Angeles Civic Center	Orange County	4
San Diego Lindberg Field	San Diego County	10
Thermal Airport	Coachella Valley	-2
Imperial Airport	Imperial VAlley	2
Yuma Airport	Yuma Mesa & Bard Valley	7
Phoenix Airport	Salt River Valley	5
Average difference		5

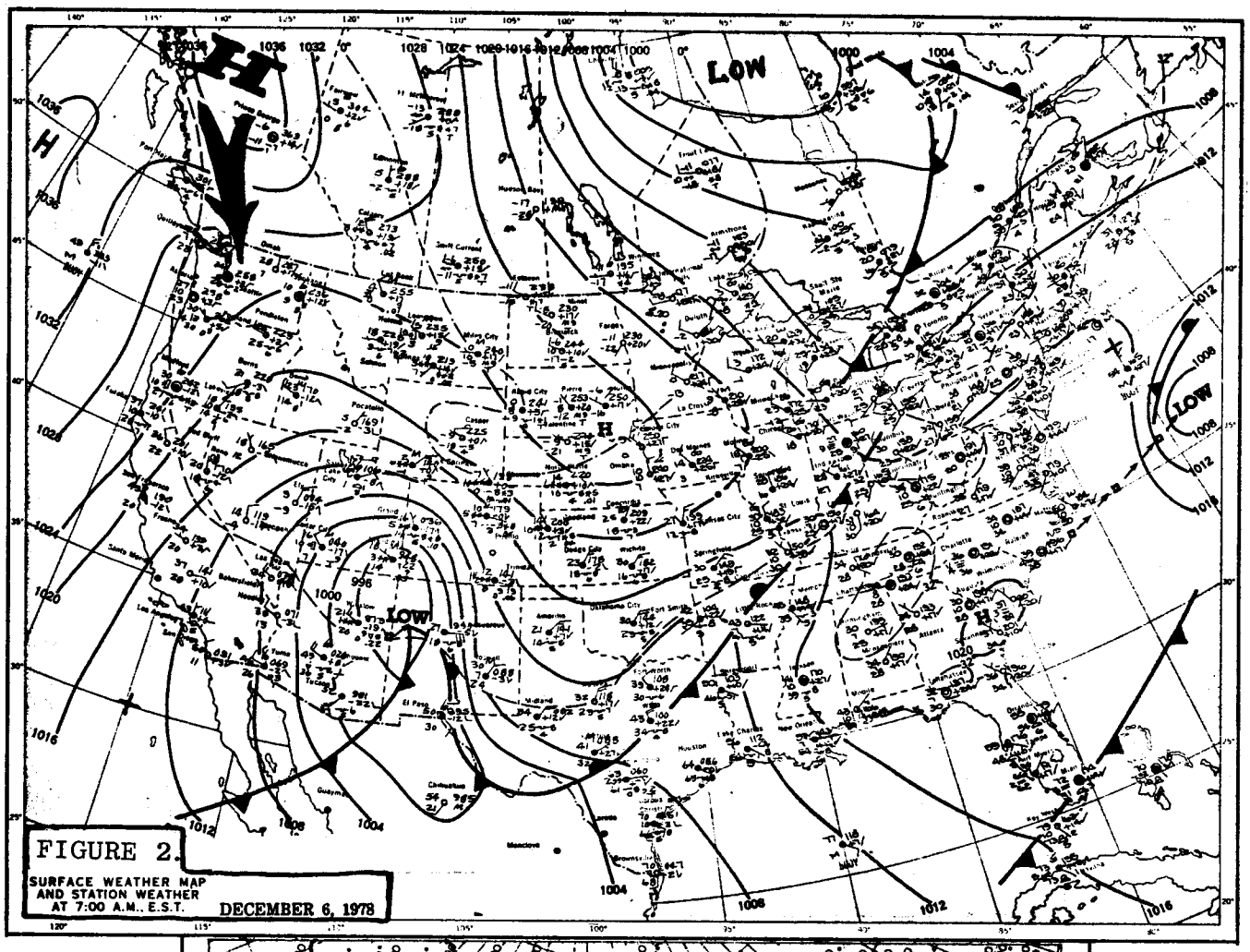


FIGURE 2.
SURFACE WEATHER MAP AND STATION WEATHER AT 7:00 A.M., E.S.T. DECEMBER 6, 1978

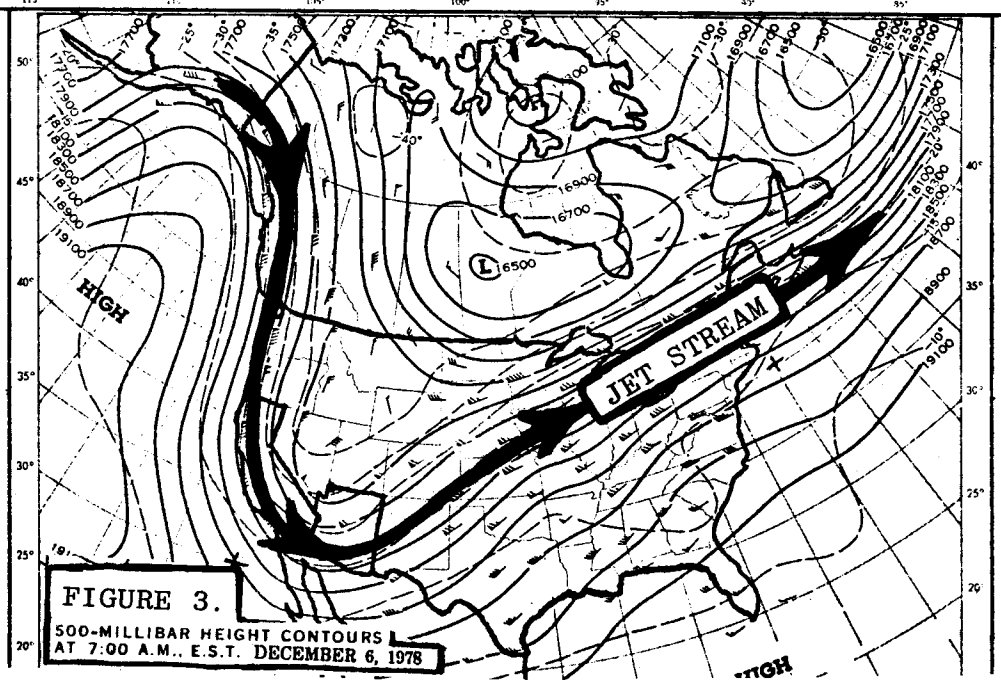
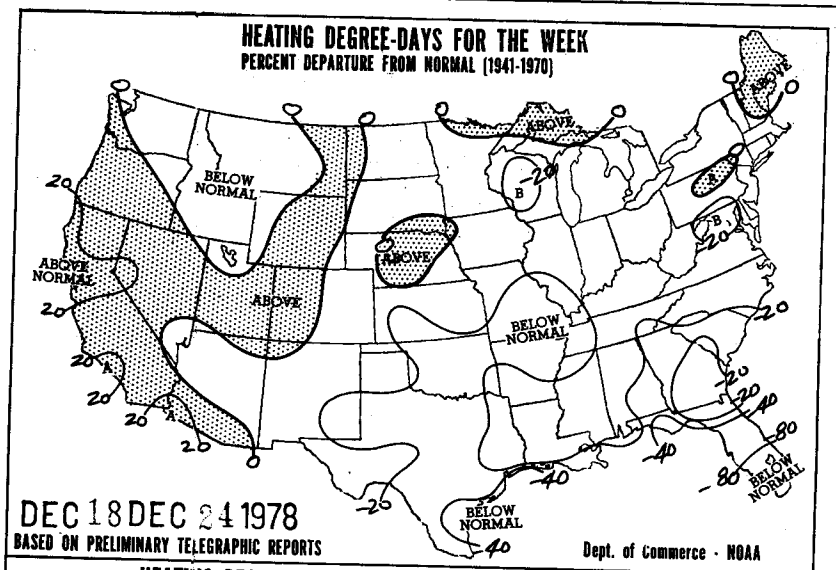


FIGURE 3.
500-MILLIBAR HEIGHT CONTOURS AT 7:00 A.M., E.S.T. DECEMBER 6, 1978


HEATING DEGREE-DAYS FOR THE WEEK
PERCENT DEPARTURE FROM NORMAL (1941-1970)
BELOW NORMAL
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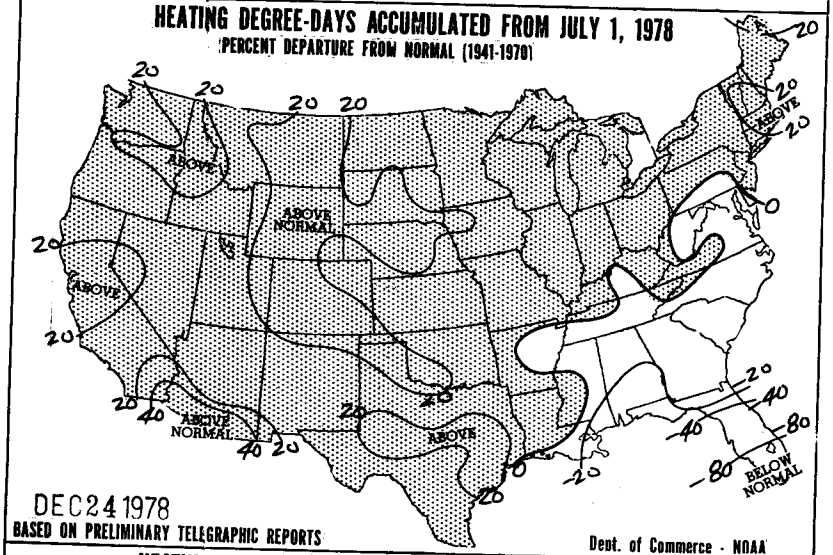
DEC 18 DEC 24 1978
BASED ON PRELIMINARY TELEGRAPHIC REPORTS
Dept. of Commerce - NOAA


HEATING DEGREE-DAYS ACCUMULATED FROM JULY 1, 1978
PERCENT DEPARTURE FROM NORMAL (1941-1970)
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ABOVE NORMAL
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BASED ON PRELIMINARY TELEGRAPHIC REPORTS
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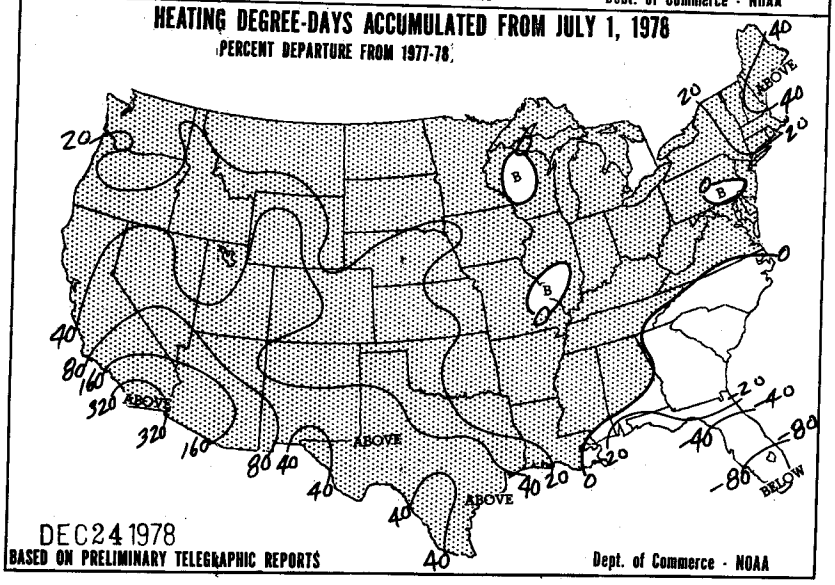
HEATING DEGREE-DAYS ACCUMULATED FROM JULY 1, 1978
PERCENT DEPARTURE FROM 1977-78
ABOVE
BELOW
DEC 24 1978
BASED ON PRELIMINARY TELEGRAPHIC REPORTS
Dept. of Commerce - NOAA

HEATING DEGREE DAYS (BASE 65°) FOR WEEK ENDING DEC. 24, 1978.

STATES AND STATIONS	WEEKLY TOTAL	WEEKLY DEPARTURE*	SEASONAL ACCUMULATION + TOTAL	SEASONAL ACCUMULATION + DEPARTURE*	SEASONAL ACCUMULATION + DEPARTURE FROM 1977-78
ALA. BIRMINGHAM	131	-14	968	-33	61
MOBILE	75	-17	417	-120	-117
MONTGOMERY	81	-39	582	-203	7
ARIZ. FLAGSTAFF	244	-8	2886	261	904
PHOENIX	90	-4	561	72	403
TUCSON	105	7	705	150	416
WINSLOW	216	-11	1972	311	621
YUMA	86	17	515	201	382
ARK. FORT SMITH	138	-35	1213	91	132
LITTLE ROCK	119	-53	1077	-60	96
CALIF. BAKERSFIELD	138	12	801	72	419
EUREKA	154	35	2199	314	389
FRESNO	153	13	1076	192	374
LOS ANGELES	91	23	515	16	338
RED BLUFF	161	24	979	122	256
SAN DIEGO	69	6	417	21	331
SAN FRANCISCO	138	26	1289	262	364
STOCKTON	171	29	1173	268	479
COLO. DENVER	226	-7	2437	376	619
GRAND JUNCTION	300	43	2614	640	897
PUEBLO	212	-18	2356	487	622
CONN. BRIDGEPORT	219	-12	1784	182	322
HARTFORD	251	-19	2598	523	609
DEL. WILMINGTON	195	-27	1664	89	22
D.C. WASHINGTON	155	-48	1213	-148	14
FLA. APALACHICOLA	44	-33	284	-134	-148
DAYTONA BEACH	12	-37	92	-168	-147
FORT MYERS	3	-25	10	-118	-107
JACKSONVILLE	70	-7	426	-6	-23
KEY WEST	0	-3	0	-3	-15
LAKELAND	8	-28	65	-121	-117
MIAMI	0	-14	2	-53	-33
ORLANDO	6	-36	46	-157	-108
TALLAHASSEE	80	-11	480	-40	-82
TAMPA	10	-32	68	-130	-147
WEST PALM BEACH	0	-21	2	-77	-56
GA. ATLANTA	124	-33	860	-199	-120
AUGUSTA	114	-22	798	-87	-37
MACON	105	-18	666	-112	-36
SAVANNAH	86	-23	467	-192	-101
IDAHO. BOISE	231	-6	2483	409	547
LEWISTON	206	-11	2415	421	432
POCATELLO	257	-19	2988	486	738
ILL. CAIRO	142	-48	1387	111	144
CHICAGO	238	-29	2286	311	189
MOLINE	260	-21	2504	399	249
PEORIA	233	-37	2272	247	98
ROCKFORD	260	-33	2567	287	92
SPRINGFIELD	204	-48	1968	129	56
IND. EVANSVILLE	185	-31	1656	86	158
FORT WAYNE	222	-44	2194	130	90
INDIANAPOLIS	210	-39	1938	68	194
SOUTH BEND	225	-44	2185	62	113
IOWA. BURLINGTON	253	-21	2419	391	278
DES MOINES	247	-45	2428	220	271
DUBUQUE	261	-46	2777	327	89
SIOUX CITY	306	3	2932	599	584
KANS. CONCORDIA	223	-31	2126	257	295
DODGE CITY	180	-49	1902	205	399
GOODLAND	210	-41	2437	324	464
TOPEKA	199	-44	2014	262	281
WICHITA	180	-42	1780	217	353
KY. LEXINGTON	185	-29	1691	99	214
LOUISVILLE	176	-38	1521	-49	74
LA. BATON ROUGE	76	-15	507	-38	52
LAKE CHARLES	79	-3	511	47	99
NEW ORLEANS	57	-21	366	-96	-16
SHREVEPORT	100	-17	767	51	63
MAINE. CARIBOU	376	17	4003	658	726
PORTLAND	302	14	2916	428	376
MD. BALTIMORE	170	-48	1508	-33	90
MASS. BOSTON	228	-8	2123	396	520
MICH. ALPENA	276	-28	2872	-7	21
DETROIT	235	-32	2354	250	97
FLINT	249	-30	2463	136	254
GRAND RAPIDS	247	-27	2667	437	386
HOUGHTON LAKE	287	-22	3165	312	347
LANSING	239	-37	2530	249	205
MARQUETTE	300	-1	3193	417	422
MUSKEGON	253	-13	2663	422	350
S. STE. MARIE	330	3	3600	486	378
MINN. DULUTH	341	-27	3810	424	265
INTERNATL FALLS	415	-5	4396	663	427
MINNEAPOLIS	294	-44	2976	235	50
ROCHESTER	310	-26	3349	571	445
ST. CLOUD	348	-11	3504	480	277
MISS. JACKSON	114	-5	787	17	41
MERIDIAN	119	-7	831	-15	171
MO. COLUMBIA	174	-61	1732	57	43
KANSAS CITY	201	-40	1905	223	94
ST. LOUIS	174	-48	1702	132	5
SPRINGFIELD	154	-58	1661	126	234
MONT. BILLINGS	273	-3	3316	808	562
GLASGOW	361	13	3832	747	245
GREAT FALLS	274	-4	3343	685	240
HAVRE	317	-22	3546	510	297
HELENA	271	-29	3460	477	459
KALISPELL	281	-15	3692	435	332
MILES CITY	311	0	3335	601	333
MISSOULA	268	-22	3574	585	581
NEBR. GRAND ISLAND	290	13	2727	564	640
LINCOLN	248	-27	2446	373	281
NORFOLK	297	0	2800	454	460
NORTH PLATTE	304	-28	3062	704	663
OMAHA	235	-35	2269	278	231
VALENTINE	294	1	3099	590	494
NEV. ELY	314	36	3323	537	847
LAS VEGAS	138	-8	986	91	457
RENO	336	105	2710	516	843
WINNEMUCCA	277	28	2814	401	818
N.H. CONCORD	314	19	3132	650	486
N.J. ATLANTIC CITY	194	-26	1811	241	366
TRENTON	195	-27	1647	90	78
N.MEX. ALBUQUERQUE	185	-24	1640	119	314
ROSWELL	137	-50	1455	92	626
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BURNS	271	3	3128	504	547
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PA. ALLENTOWN	236	-15	2048	128	205
ERIE	225	-37	2275	62	171
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PHILADELPHIA	193	-27	1629	-78	-11
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R.I. PROVIDENCE	243	-4	2272	381	462
S.C. CHARLESTON	92	-24	528	-185	-66
COLUMBIA	105	-35	715	-187	-186
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BASED ON 1941-70 NORMALS. + ACCUMULATION FROM JULY 1, 1978.

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Agricultural Weather Facility
USDA South Bldg., Room 1248
Washington, DC 20250

IMMEDIATE – U. S. Weather Report

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spread eastward and northward. Tornadoes were reported from Louisiana to Georgia and Florida. Trees were uprooted and power lines were downed but no injuries or major damage were reported. The storm centered along the Southeast Coast and was moving rapidly northward along the Coast bringing rain, heavy at times, in its wake. As the week ended at midnight the storm was along the mid-Atlantic Coast and continuing northward toward New England. Meanwhile rain fell in the Midwest ahead of the storm line and snow was falling behind it and throughout the Great Lakes area. Elsewhere high winds, snow and blowing snow continued to plague the northern and central Rockies.