

# WEEKLY WEATHER AND CROP BULLETIN

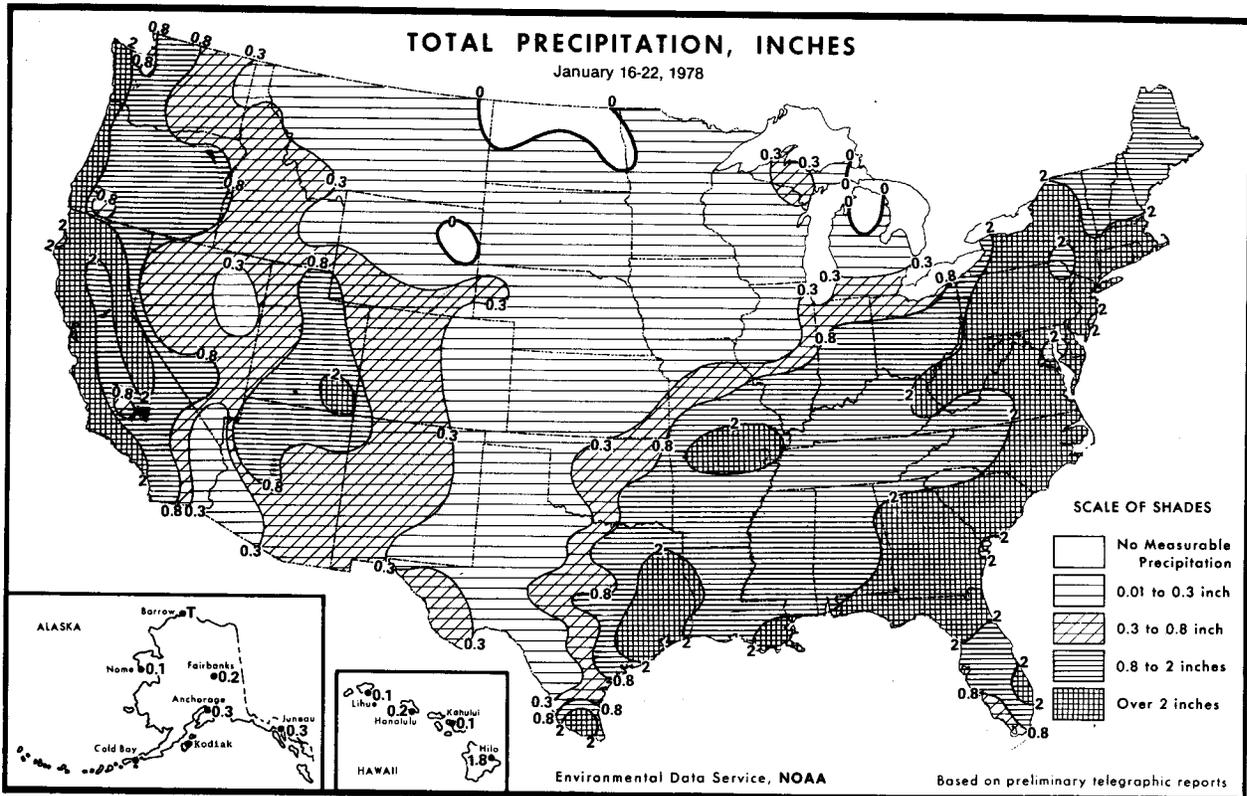
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## National Weather Summary January 16 - 22

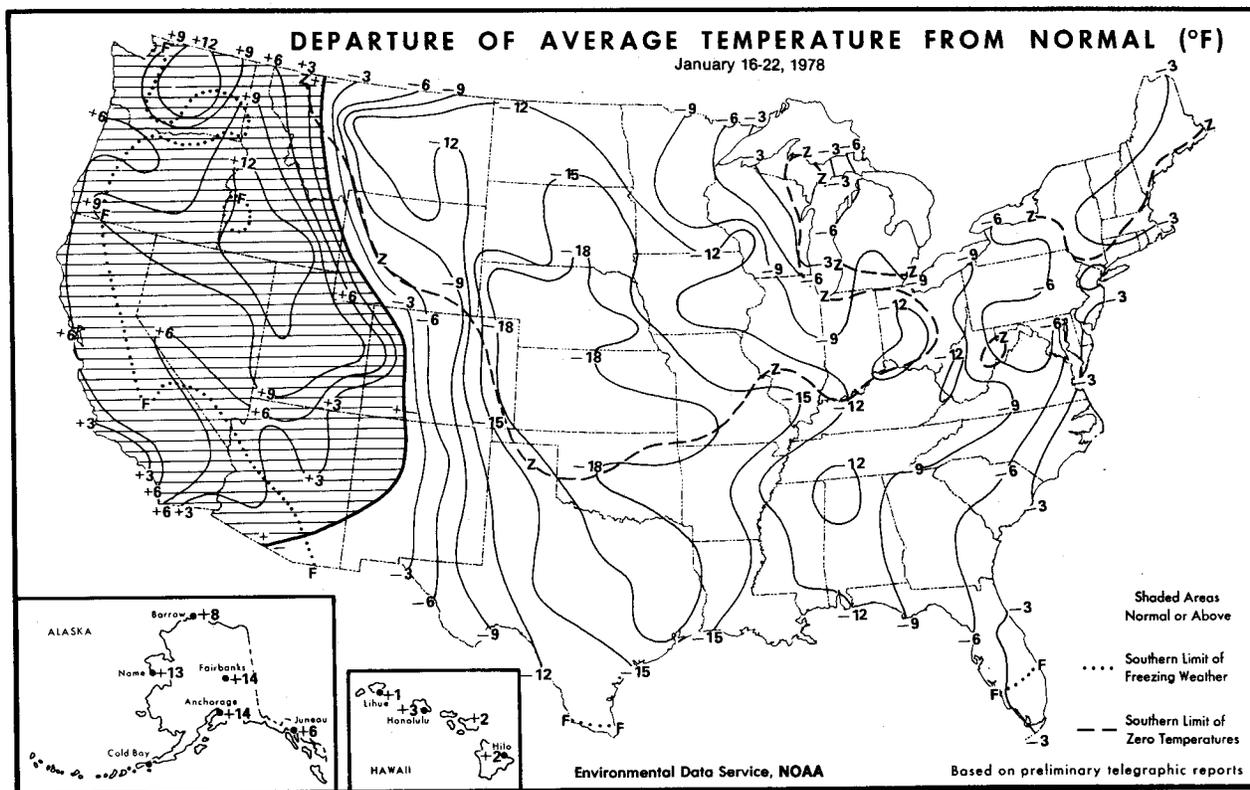
**HIGHLIGHTS:** Two massive winter storms battered a large section of the Nation east of the Mississippi River. One storm rolled northeastward on the western side of the Appalachians dumping heavy snow in the Ohio Valley and points north. The second system charged up the Atlantic Coast producing record snowfall from the middle Atlantic States through New England. Freezing rain and/or snow even reached into the Deep South where cold temperatures touched Florida citrus. The West Coast rainy season persisted when moderate to heavy amounts dampened California, especially the Sierras.

Temperatures held well above normal west of the Rockies. Some premature budding of California almonds could lead to frost damage if temperatures suddenly reverse. East of the Rockies, readings ranged well below what is expected this time of year---as much as 20° colder than the average from the southeastern Great Plains to East Texas.

Much of the Nation braced itself against the unsettled weather of Monday. A large low pressure system marched eastward from the Plains bringing rain, freezing rain, and snow. By afternoon, points in Missouri and Kentucky had collected up to 8 inches of snow. At day's end, the storm approached the middle Atlantic Coast. Another wet weather area formed in the West. In California, Santa Barbara reported nearly 2 inches of rain, and some northern sections noted more than 3 inches. Meantime thunderstorms battered the western Gulf States; Houston measured over an inch of rain while a tornado touched down in southeastern Louisiana.

Bitter cold chilled the northern Plains and upper Midwest as well as Florida; Orlando, 31° and 33° at Fort Myers established records.

Low pressure moved slowly through the central U.S. spreading varied precipitation from the eastern Mississippi Valley to the Atlantic Coast on



Tuesday. Louisville, Ky., set a single-storm record snowfall of 15.7 in. By nightfall, snow was falling in New England after rains dumped over an inch in Philadelphia and Wilmington, Del. Thunderstorms along the southern Atlantic Seaboard spawned a tornado near Saulston in eastern North Carolina. The Pacific disturbance extended as far east as Wyoming carrying rain to the Plateau Region and snow to the mountains.

Frigid temperatures continued in the central U.S.; Concordia, Kans., shattered a 90-year record with  $-14^{\circ}$  while Kansas City, Mo., equalled its 1930 mark of  $-12^{\circ}$ .

The Northeast felt the fury of Wednesday's winter storm when rain, freezing rain, and snow covered the area. One to two feet of the white stuff blanketed the U.S. from the upper Ohio Valley to New England. Unsettled weather brewed in the Nation's center where snow fell from Minnesota to the Texas Panhandle and rain south-eastward to the Gulf Coast; more than two and one-half inches soaked sections of the lower Rio Grande Valley. As the day ended Oklahoma City had 3 inches of snow, and the precipitation marched eastward. Points in Louisiana and Mississippi reported over an inch of rain. Rain persisted on the West Coast; San Francisco measured nearly a half-inch.

Snow and rain fell from the Plains to the Tennessee Valley on Thursday morning and as far south as Houston and Louisiana; up to 4 inches of snow fell around Shreveport. Thunderstorms inundated parts of Florida, Georgia, and the Carolinas. From one to two and one-half inches drenched the Southeast. Eleven tornadoes were sighted in

Florida causing some damage but no reported injuries.

Still another weather system edged into the West and reached Utah and Arizona; nearly a half-inch of rain dampened Long Beach. By day's end, the eastern storm gathered steam pumping heavy snow and freezing rain into the Ohio Valley and across the Appalachians to the Atlantic.

Heavy snow hammered the East on Friday. Some areas were paralyzed; 4 to 6 inches fell in the Washington, D.C. area, and it became more than 2 feet in New England. Record snowfalls for January were already registered in Cleveland, Dayton, Pittsburgh, Albany, Boston, and Hartford, Conn. At the height of the storm, snow accumulated at the rate of 2 inches per hour in some locations. Freezing rain slipped down to the Deep South. Snow also covered the lower half of the Plains.

Houston, at  $21^{\circ}$ , set a record low reading for the day.

Snow continued on Saturday from the Ohio Valley to New England, but it rapidly dissipated into flurries. However, precipitation picked up in two locations. West Coast stations got one-half to three-quarters inch of rain while freezing rain and snow clipped Texas and the Delta States. Five inches of snow surprised Dallas/Fort Worth.

Sunday brought welcome relief to the country after the week's snow siege. No significant areas of precipitation appeared; only scattered light showers or snow hit some areas. Temperatures continued dropping from the Plains to New England; the Nation's cold spot was Saranac Lake, N.Y.,  $-17^{\circ}$ . Freezing readings dipped to the northern tier of the Deep South.

## National Agricultural Summary

January 16 - 22

**HIGHLIGHTS:** Low temperatures again kept a chilling grip on the Nation from the Rocky Mountains to the eastern seaboard. Average readings dipped as much as 20° below normal causing livestock producers to increase feed rations. The frosty temperatures slowed southern pasture growth and snow covered northern grazing lands. Two storms moved from Texas to the Northeast bringing rain, snow, and sleet to various parts of the Nation along its course. Transportation systems became snarled limiting milk pickup and grain hauling in the hard-hit Northeast. The West enjoyed above normal temperatures; precipitation increased the important snowpack and replenished reservoirs. Farmers harvested scattered fields of remaining row crops where weather permitted.

**SMALL GRAINS:** Winter wheat rated good except fair in the southern Great Plains. Snow covered most of the Nation's crop except in the South, the Atlantic Coast north to Virginia, and the important Texas and Oklahoma Panhandles and adjacent areas in Kansas, Colorado, and New Mexico. Nature's white blanket protected the northern Great Plains winter wheat crop from the extreme temperatures and strong winds. The Pacific Northwest crop was also snow-covered.

In Kansas light snow protected wheat from sub-zero temperatures and blowing winds. Oklahoma wheat rated fair with no winterkill reported. Both top and subsoil moisture supplies were short, but snows should help dry topsoils. Low temperatures in most areas of Texas kept wheat growth to a minimum. Some snow and sleet fell in the Plains area, but total moisture was light and dryland stands needed moisture. Freezing rain and snow fell in varying amounts from Cross-Timbers southward and into the northern Upper Coast with enough moisture in some areas to boost growth when temperatures rise. New Mexico-irrigated winter wheat rated fair to good yielding moderate grazing. Dryland wheat scored poor to fair with very light grazing. Wyoming wheat rated fair to good with some snow cover and little blowing. Early seedings in Arizona were up to good stands.

Across the Southeast low temperatures slowed growth but the crop rated good. Mississippi's crop only rated poor to fair; Virginia's wheat rated good to excellent. The Illinois crop scored good. Winter wheat in the Pacific Northwest was doing well. In California rain and mild temperatures stimulated small grains.

**OTHER CROPS:** Precipitation in the East and along the Pacific Coast States and snow cover in the North kept most fieldwork to a minimum. A few fields of row crops were unharvested particularly in the South, but producers plan to harvest whenever conditions permit. Cotton and soybeans were the usual crops waiting to be harvested.

Sugarcane harvest also fell victim to wet fields in Texas. Florida's cane harvest was active and well past the halfway mark; damage from recent low temperatures was slight. Sugarbeets grew well in California and Arizona.

Georgia growers finished preparing tobacco plant beds prior to seeding.

**FRUITS AND NUTS:** Stormy weather and frigid temperatures limited orchard maintenance except in Washington and Oregon where growers pruned trees and grape vines. California's mild temperatures caused almond buds to swell.

Florida citrus groves rated excellent in spite of the cold weather. Low temperatures damaged very little fruit except in cold pockets. Picking was very active in all areas. Rain and drizzle halted citrus harvest in the lower Rio Grande Valley. Arizona growers harvested lemons, Navel and sweet oranges, grapefruit, and tangerine-type fruit as conditions permitted. No freezing temperatures were reported in the Arizona citrus area. California's citrus harvest advanced on a limited scale.

**VEGETABLES:** Florida vegetable crops were generally in good condition. Cold winds and frost burned some foliage and killed some young plants. Shipments declined 21% from the previous week; plant growth slowed and fruit set was light. Volume of most crops was steady, but those declining included celery, sweet corn, cucumbers, eggplant, escarole, lettuce, radishes, and tomatoes. Watermelon seeding advanced. Potato and strawberry harvests were steady, but improved weather should spur an increase.

Low temperatures in Texas slowed growth throughout most production areas, but damaged crops only in the upper Gulf Coast and East Texas areas. Growers harvested beets, broccoli, cauliflower, cabbage, carrots, and spinach. Cold, wet weather halted most land preparation and planting, however, some growers seeded watermelons. Rains brought the Arizona vegetable harvests to a standstill but later plantings were growing well. New Mexico growers planted spring lettuce and mid-season onions. Rain and wet fields also slowed California vegetable harvests. Growers used helicopters to lift crates of vegetables out of water-logged fields. Lettuce and celery movement increased. Limited amounts of broccoli, cauliflower, and cabbage were cut.

**PASTURES AND LIVESTOCK:** Only pastures in a few southern States provided limited grazing for cattle. Low temperatures slowed grass and small grain growth except in California. Livestock producers east of the Rocky Mountains increased rations of feed and roughage to help animals meet the demands of the subnormal temperatures. The wintery weather apparently did not significantly increase death losses.

In Florida grazing conditions were fair to good; however, small grain pastures grew slowly and permanent pastures were heavily frosted. Texas ranges provided very little forage and most ranchers fed liberally. Frozen stock tanks and ponds caused some problems in North Texas. In Arizona prospects for winter and spring browse were excellent; rains vastly improved range conditions and raised stock water supplies. Heavy rains in California replenished stock water and, along with warm temperatures, provided excellent growing conditions for rangelands and pastures although supplemental feeding continued.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., Jan. 22, 1978

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 . . .	32	-12	1.1	0	LA. Baton Rouge . . .	38	-13	1.1	+ .1	Youngstown . . . . .	17	-9	1.3	+ .6
ALA. Mobile . . . . .	38	-13	1.5	+ .5	LA. Lake Charles . . .	37	-15	1.8	+ 1.0	OKLA. Okla. City . .	20	-17	.8	+ .6
ALA. Montgomery . . .	38	-10	1.6	+ .7	LA. New Orleans . . .	40	-13	2.2	+ 1.2	OKLA. Tulsa . . . . .	16	-20	.5	+ .2
ALASKA. Anchorage . .	26	+14	.3	+ .1	MAINE. Shreveport . .	29	-18	1.8	+ .9	OREG. Astoria . . . .	47	+7	2.4	+ .2
ARIZ. Barrow . . . . .	7	+8	T	- .1	MAINE. Caribou . . .	20	-1	1.3	+ .9	OREG. Burns . . . . .	32	+7	.9	+ .5
ARIZ. Fairbanks . . . .	2	+14	.2	+ .1	MAINE. Portland . . .	7	-1	1.2	+ .4	OREG. Medford . . . .	45	+9	.5	+ .3
ARIZ. Juneau . . . . .	29	+6	.3	+ .6	MD. Baltimore . . . .	28	-6	2.2	+ 1.6	OREG. Pendleton . . .	40	+8	.5	+ .1
ARIZ. Kodiak . . . . .	20	+13	.1	- .1	MD. Baltimore . . . .	27	-2	2.3	+ 1.5	OREG. Portland . . . .	44	+6	1.2	- .1
ARIZ. Nome . . . . .	20	+13	.1	- .1	MASS. Boston . . . . .	30	--	2.6	--	OREG. Salem . . . . .	44	+5	1.4	- .2
ARIZ. Phoenix . . . . .	29	+1	.8	+ .4	MASS. Chatham . . . .	10	-7	T	- .4	PA. Allentown . . . . .	23	-5	2.5	+ 1.8
ARIZ. Tucson . . . . .	54	+3	.5	+ .4	MICH. Alpena . . . . .	19	-5	3	- .1	PA. Erie . . . . .	16	-9	1.1	+ .5
ARIZ. Winslow . . . . .	37	+4	.2	+ .4	MICH. Detroit . . . . .	14	-8	2	- .2	PA. Harrisburg . . . .	25	-5	2.6	+ 2.0
ARIZ. Yuma . . . . .	57	+2	.1	0	MICH. Flint . . . . .	15	-8	2	- .2	PA. Philadelphia . . . .	27	-5	4.0	+ 3.4
ARK. Fort Smith . . . .	22	-17	1.2	+ .7	MICH. Grand Rapids . .	10	-7	T	- .4	PA. Pittsburgh . . . . .	22	-6	2.8	+ 2.2
ARK. Little Rock . . . .	25	-15	1.7	+ .7	MICH. Houghton Lake . .	15	-8	T	- .2	PA. Scranton . . . . .	22	-4	1.4	+ 1.0
CALIF. Bakersfield . . .	56	+8	.7	+ .5	MICH. Lansing . . . . .	12	-10	2	- .2	R.I. Providence . . . .	24	-4	2.2	+ 1.4
CALIF. Eureka . . . . .	52	+5	1.6	- .1	MICH. Marquette . . . .	17	-1	.3	- .1	S.C. Charleston . . . .	45	-4	2.5	+ 1.9
CALIF. Fresno . . . . .	52	+7	1.7	+ 1.3	MICH. Muskegon . . . . .	16	-8	2	- .3	S.C. Columbia . . . . .	38	-7	3.2	+ 2.4
CALIF. Los Angeles . . .	57	0	2.1	+ 1.4	MICH. S. Ste. Marie . . .	6	-8	T	- .4	S.C. Greenville . . . . .	35	-7	1.9	+ 1.0
CALIF. Red Bluff . . . . .	52	+7	1.7	+ .7	MINN. Duluth . . . . .	2	-6	1	- .2	S.D. Aberdeen . . . . .	7	-16	T	- .1
CALIF. San Diego . . . . .	61	+7	1.1	+ .7	MINN. Internatl Falls . .	-8	-9	T	- .2	S.D. Huron . . . . .	-4	-16	T	- .1
CALIF. San Francisco . . .	53	+5	2.1	+ 1.1	MINN. Minneapolis . . . .	4	-7	1	0	S.D. Rapid City . . . . .	8	-13	T	- .1
CALIF. Stockton . . . . .	53	+8	1.0	+ .4	MINN. Rochester . . . . .	1	-11	1	0	S.D. Sioux Falls . . . . .	-2	-16	.1	0
COLO. Denver . . . . .	21	-9	.1	0	MISS. Jackson . . . . .	33	-14	1.2	+ .2	TENN. Chattanooga . . .	31	-9	1.9	+ .7
COLO. Grand Junction . . .	35	+9	.1	0	MISS. Meridian . . . . .	37	-10	1.4	+ .5	TENN. Knoxville . . . . .	30	-10	1.5	+ .7
COLO. Pueblo . . . . .	20	-10	.1	0	MO. Columbia . . . . .	15	-14	4	0	TENN. Memphis . . . . .	27	-11	1.8	+ .7
CONN. Bridgeport . . . .	25	-5	2.8	+ 2.2	MO. Kansas City . . . . .	11	-16	3	0	TENN. Nashville . . . . .	27	-17	.1	- .1
CONN. Hartford . . . . .	21	-3	3.1	+ 2.4	MO. St. Louis . . . . .	16	-15	1.0	+ .6	TEX. Abilene . . . . .	22	-14	.2	+ .1
CONN. New Haven . . . . .	32	-4	1.8	+ 1.2	MO. Springfield . . . . .	12	-21	1.0	+ .6	TEX. Amarillo . . . . .	33	-16	.4	0
FLA. Apalachicola . . . .	45	-9	2.0	+ 1.3	MONT. Billings . . . . .	9	-12	1	- .1	TEX. Beaumont . . . . .	36	-16	1.9	+ 1.0
FLA. Daytona Beach . . .	55	+3	1.5	+ 1.0	MONT. Glasgow . . . . .	-4	-12	T	- .1	TEX. Brownsville . . . .	48	-12	1.2	+ .9
FLA. Ft. Myers . . . . .	60	-3	.5	+ .1	MONT. Great Falls . . . .	9	-11	1	- .1	TEX. Corpus Christi . . . .	42	-14	.3	- .1
FLA. Jacksonville . . . . .	50	-5	2.7	+ 2.1	NEBR. Havre . . . . .	16	-5	1.2	+ .1	TEX. Dallas . . . . .	--	--	--	--
FLA. Key West . . . . .	66	-5	.3	- .1	NEBR. Helena . . . . .	23	+4	.2	- .2	TEX. Del Rio . . . . .	41	-10	T	- .1
FLA. Lakeland . . . . .	56	-1	1.4	+ .8	NEBR. Kalispell . . . . .	18	-4	.2	+ .1	TEX. El Paso . . . . .	42	-2	.3	+ .2
FLA. Miami . . . . .	66	-1	1.0	+ .5	NEBR. Miles City . . . . .	4	-11	2	+ .1	TEX. Fort Worth . . . . .	22	-2.0	1.0	+ .6
FLA. Orlando . . . . .	58	-2	1.3	+ .8	NEBR. Missoula . . . . .	25	+5	.2	- .1	TEX. Galveston . . . . .	37	-17	2.8	+ 2.1
FLA. Tallahassee . . . . .	45	-8	3.1	+ 2.3	NEBR. Grand Island . . .	4	-18	.1	0	TEX. Houston . . . . .	32	-20	4.4	+ 3.6
FLA. Tampa . . . . .	56	-4	1.4	+ .8	NEBR. Lincoln . . . . .	3	-19	.1	0	TEX. Lubbock . . . . .	26	-13	T	- .1
GA. Atlanta . . . . .	35	-7	2.0	+ 1.0	NEBR. Norfolk . . . . .	3	-15	.1	0	TEX. Midland . . . . .	32	-11	T	- .1
GA. Augusta . . . . .	40	-6	2.4	+ 1.6	NEBR. N. Platte . . . . .	3	-20	.1	0	TEX. San Angelo . . . . .	30	-16	.4	+ .2
GA. Macon . . . . .	41	-7	2.1	+ 1.3	NEBR. Omaha . . . . .	5	-15	T	- .1	TEX. San Antonio . . . .	38	-13	.3	- .1
GA. Savannah . . . . .	46	-4	2.0	+ 1.4	NEV. Valentine . . . . .	5	-15	1	0	TEX. Victoria . . . . .	38	-15	1.4	+ 1.0
HAWAII. Hilo . . . . .	73	+2	1.8	0	NEV. Las Vegas . . . . .	48	+4	.2	+ .1	TEX. Waco . . . . .	30	-17	.5	+ .1
HAWAII. Honolulu . . . . .	75	+3	.2	- .8	NEV. Reno . . . . .	39	+7	.5	+ .2	UTAH. Blanding . . . . .	23	-18	.1	- .1
HAWAII. Kahului . . . . .	74	+2	.1	- .7	NEV. Winnemucca . . . . .	37	+9	.5	+ .2	UTAH. Salt Lake City . .	30	+2	2.5	+ 2.3
HAWAII. Lihue . . . . .	72	+1	.1	- 1.3	N.H. Concord . . . . .	18	-2	.9	+ .3	VT. Burlington . . . . .	38	+10	1.0	+ .7
IDAHO. Boise . . . . .	41	+12	.6	+ .2	N.H. N.J. Atlantic City . .	31	-2	1.8	+ 1.0	VA. Lynchburg . . . . .	28	-9	1.5	+ 1.1
IDAHO. Lewiston . . . . .	41	+10	.3	0	N.MEX. Albuquerque . . .	37	-5	2.1	+ 1.5	VA. Norfolk . . . . .	38	-3	2.4	+ 1.6
IDAHO. Pocatello . . . . .	36	+13	.3	0	N.MEX. Roswell . . . . .	31	-7	T	- .1	VA. Roanoke . . . . .	32	-6	2.4	+ 1.8
ILL. Cairo . . . . .	23	-13	1.7	+ .8	N.Y. Albany . . . . .	20	-1	2.0	+ 1.5	WASH. Colville . . . . .	26	-10	2.0	+ 1.4
ILL. Chicago . . . . .	17	-7	4	0	N.Y. Binghamton . . . . .	16	-6	1.6	+ 1.1	WASH. Omak . . . . .	35	+13	.7	+ .4
ILL. Moline . . . . .	10	-11	.1	- .3	N.Y. Buffalo . . . . .	18	-6	2.2	+ 1.1	WASH. Quillayute . . . .	45	+6	2.4	- .9
ILL. Peoria . . . . .	13	-11	.2	- .2	N.Y. New York . . . . .	26	-6	2.2	+ 1.6	WASH. Seattle-Tacoma . .	47	+9	.8	- .5
ILL. Rockford . . . . .	11	-9	T	- .4	N.Y. Rochester . . . . .	20	-4	2.3	+ 1.8	WASH. Spokane . . . . .	33	-8	.2	- .4
ILL. Springfield . . . . .	14	-12	.2	- .2	N.Y. Syracuse . . . . .	19	-4	2.3	+ 1.7	WASH. Walla Walla . . . .	40	+7	.4	- .1
IND. Evansville . . . . .	20	-13	.8	0	N.C. Asheville . . . . .	29	-11	1.7	+ .9	WASH. Yakima . . . . .	39	+12	.5	+ .2
IND. Ft. Wayne . . . . .	14	-11	.3	- .2	N.C. Charlotte . . . . .	36	-6	1.5	+ .7	W.Va. Beckley . . . . .	22	-9	1.6	+ .8
IND. Indianapolis . . . . .	18	-10	.9	+ .3	N.C. Greensboro . . . . .	30	-9	1.7	+ 1.0	W.Va. Charleston . . . .	23	-12	2.5	+ 1.7
IND. South Bend . . . . .	16	-8	.5	0	N.C. Hatteras . . . . .	45	0	5.0	+ 4.0	W.Va. Huntington . . . .	25	-9	2.1	+ 1.4
IOWA. Burlington . . . . .	11	-12	T	- .4	N.C. Raleigh . . . . .	35	-6	2.2	+ 1.5	W.Va. Parkersburg . . . .	23	-10	1.2	+ .5
IOWA. Des Moines . . . . .	8	-11	.1	- .2	N.C. Wilmington . . . . .	45	-1	3.1	+ 2.4	WIS. Green Bay . . . . .	12	-3	.1	- .2
IOWA. Dubuque . . . . .	7	-10	T	- .4	N.DAK. Bismarck . . . . .	-6	-13	T	- .1	WIS. La Crosse . . . . .	3	-13	.1	- .1
IOWA. Sioux City . . . . .	3	-15	1	0	N.DAK. Fargo . . . . .	-6	-11	T	- .1	WIS. Madison . . . . .	9	-7	T	- .3
KANS. Concordia . . . . .	9	-17	.1	0	OHIO. Williston . . . . .	-5	-13	T	- .1	WIS. Milwaukee . . . . .	17	-2	.1	- .3
KANS. Dodge City . . . . .	11	-20	.2	+ .1	OHIO. Akron-Canton . . .	17	-9	1.4	+ .8	WYO. Casper . . . . .	15	-8	T	- .1
KANS. Goodland . . . . .	7	-20	.1	0	OHIO. Cincinnati . . . . .	18	-13	.8	0	WYO. Cheyenne . . . . .	18	-8	.2	+ .1
KANS. Topeka . . . . .	12	-16	.1	- .1	OHIO. Cleveland . . . . .	17	-10	.7	+ .1	WYO. Lander . . . . .	12	-7	T	- .1
KANS. Wichita . . . . .	11	-20	.1	0	OHIO. Columbus . . . . .	16	-12	1.4	+ .7	WYO. Sheridan . . . . .	9	-12	T	- .1
KY. Lexington . . . . .	22	-11	1.4	+ .5	OHIO. Dayton . . . . .	17	-11	1.4	+ .8	P.R. San Juan . . . . .	78	+3	.1	- .7
KY. Louisville . . . . .	22	-11	1.9	+ 1.1	OHIO. Toledo . . . . .	15	-10	.4	- .1					

Based on 1941-70 normals

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## State Summaries of Weather and Agriculture

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

**ALABAMA:** Snow north, rain south; cold statewide. Temperatures 11° below normal.

Fieldwork minimal. Outdoor activities mainly care and feeding of livestock and poultry. Growth of small grains and winter grazing crops limited by low temperatures. Large amount of stored roughage fed; supplies becoming low.

**ARIZONA:** Two storms, substantial moisture. Temperatures mostly normal to 5° above.

Wet, muddy conditions. Some cotton remains, most complete. Earlier planted small grains making good stands. Sugarbeets good growth. Alfalfa hay seasonally slow, new hay good progress. Vegetable harvest standstill, later plantings growing well. Harvest lemons, Navels, sweets, grapefruit, tangerine-types active, conditions permitting. No freezing temperatures reported citrus areas. Range conditions vastly improved. Rain, snow restoring stock water soil moisture. Prospects winter, spring browse generally excellent. Cattle, calves mostly fair to good.

**ARKANSAS:** Highest normal 46°, lowest 36°. Highest mean 32°, lowest 18°. Extremes: 58 and -1°. Readings 13 to 18° subnormal. Most precipitation 2.85 in., least 0.64 in. Precipitation mostly snow or frozen rain.

No fieldwork accomplished due to snow cover. Cattle herds on supplemental feed entirely. Approximately 150 poultry houses collapsed due to pressure of snow and ice.

**CALIFORNIA:** Moisture-laden storms originating from warmer, subtropical Pacific Ocean brought record or near-record precipitation. Precipitation totals generally measured in inches with mountain stations mostly 5.00 in. or more. Sierra Nevada snowpack increased dramatically, now 100 in. deep or greater above the 7,000 foot elevation. Temperatures much above normal; generally by 4 to 8° and as much as 13°.

Rain, warm temperatures beneficial alfalfa, hay, small grains. Field cultural activities slowed. Cotton scrapping delayed. Sugarbeets growing well. Cultural operations at a standstill due to wet conditions. Harvest citrus crops continued limited scale. Almond buds swelling. Some vegetables lifted out field by helicopter. Lettuce harvest increasing desert. Celery movement increased south coast. Limited amounts broccoli, cauliflower, cabbage being cut. First tray strawberries picked Orange County. Rains heavy; replenished stock water. Moisture, warm temperatures excellent growing rangelands, pastures. Supplemental feeding continues. Calving, lambing strong.

**COLORADO:** Some heavy snowfall in mountains first of week; scattered snows in mountains and west remainder. Upslope conditions with colder arctic air brought some light snow to eastern plains through midweek. Eastern plains chilled by colder air from Canada, with temperatures 2 to 16° below normal. Temperatures over mountains west and San Luis Valley 4 to 8° above normal.

**FLORIDA:** Frigid cold front brought widespread rain and gusty winds 19th. Mild air which dominated weather early week became much cooler over weekend. Rainfall on 19th generally ranged from 1.00 to 3.00 in. Temperatures well below normal; north,

elsewhere slightly below normal, becoming near normal by end of period.

Soil moisture adequate west and south, excessive north and central. Sugarcane harvest active; well past 50% mark. Damage from recent cold slight. Small grains good condition, but growth slow due to cold. Land preparation beginning for spring planting. Grazing conditions fair to good, however, cold weather slowing growth small grain pastures. Permanent pastures heavily frosted. Cattle, calf condition generally good. Citrus grove condition excellent in spite of cold weather. Very little fruit damage except in cold pockets. Harvest very active all areas. Vegetable crops generally in good condition. Some foliage burn and young plant loss due to cold wind and frost. Shipments down 21% from previous week. Quality, yields continue good. Plant growth slow, fruit set light. Volume steady most crops. Crops holding steady are snap beans, cabbage, carrots, chinese cabbage, okra, peppers, squash. Celery, sweet corn, cucumbers, eggplant, escarole, lettuce, radishes, tomatoes declined in supply. Watermelon seeding continues to gain. Potato digging, strawberry harvest steady but should increase with improved weather. Quality, size continues very good.

**GEORGIA:** Temperatures 9 to 12° below normal. Averages ranged from 29° extreme northeast to 44° extreme south. Precipitation occurred through week with heaviest on 20th. Up to 1 in. snow extreme north on 20th.

Soil moisture continues excessive. Cold and wet weather limited field activities. Wet weather prevented final harvest of cotton, pecans and soybeans. Small grain good condition. Pastures fair, very little growth due to extreme cold weather. Cattle fair condition. Tobacco bed preparation about over.

**HAWAII:** Weather favorable crop areas. Some beneficial showers parts of Islands. However ranch sector Kona, parts of Hawaii need moisture. Dry for several months. Emergency drought condition declared. Domestic water hauling started.

Heavy supplemental feeding livestock. Vegetable supplies increasing; cabbage crops, daikon, dasheen heavy. Others light to moderate. Banana production heavy. Papaya, pineapple harvesting light. Sugar slack. Pastures some areas received beneficial rains. Drought condition localized Hawaii.

**IDAHO:** Temperatures 5 to 16° above normal. Extremes: 56 and 6°. Precipitation below normal extreme north, elsewhere above normal. Precipitation 2.11 to 0.07 in.

Continues wet weather limited farm activities to caring for livestock, marketing and record keeping. Livestock holding areas becoming muddy. Calving and lambing continuing normal pace. Livestock generally good condition. Feed supplies adequate.

**ILLINOIS:** Temperatures 7 to 15° below normal. Precipitation 0.25 to 0.50 in. northern two-thirds, some local areas only trace amounts. Southern sections more than 1.00 in.

Winter wheat good. Livestock doing well, some pig losses. Soil moisture adequate.

**INDIANA:** Several snow storms hit State. Snow depth exceeded 12 in. south and near Lake Michigan.

Mid-State average 6 in. Highway travel severely restricted south. County roads clogged throughout and many schools closed. Relief came over weekend. Temperatures 10° below normal and ranged from -6 to 32°.

Little fieldwork done. Major activities: Snow removal, hauling grain, caring for livestock and chores.

IOWA: Temperatures 10 to 15° subnormal and snowfalls produced negligible moisture. Snow cover varies from 1 or 2 in. southwest to 5 or 6 in. northeast. Coldest mornings 17th and 21st with subzero readings as low as -20°.

KANSAS: Temperatures ranged 14° below normal northeast to 20° below normal southwest. 2 to 6 in. snow covered State; water equivalent 0.10 to 0.33 in. west, to 0.75 in. southeast.

Light snow protected wheat from subzero temperatures, blowing winds. Livestock given special attention, heavy supplemental feeding. Farm chores: Caring for livestock, breaking ice, repairing machinery.

KENTUCKY: Temperatures 15° below normal. Precipitation ranged from 1.00 in. east to 2.00 in. west; mostly as snow with big snow storm on 16th and 17th. Additional snow on 19th.

Snow and cold weather necessitating heavy supplemental livestock feeding. Marketing agricultural products greatly hampered by snow, some milk dumping reported. Livestock death losses minimal, primarily newborn calves.

LOUISIANA: Temperatures 13 to 19° below normal. Extremes: 67 and 15°. Sleet, freezing rain and snow from midweek on.

Farm activities: Mainly feeding and care of livestock.

MARYLAND & DELAWARE: Temperatures 3 to 6° below normal except much below normal in mountains. Highs averaged low 30's to low 40's except low 20's in mountains. Lows averaged low to mid-20's except low to mid-teens in mountains. Precipitation moderate to heavy occurring as snow, except rain over lower Eastern Shore. Light snow 21st with 22d mostly sunny and cold.

Farmers limited to inside work and winter chores.

MICHIGAN: Temperatures generally 4 to 10° below normal except western Upper Peninsula where temperatures normal to 3° below normal. Lower Peninsula maximum temperatures ranged from upper teens to upper 20's. Precipitation totaled 0.10 in. to around 0.40 in. falling as snow mainly 20th and 21st over southern Lower. Northern Lower and Upper precipitation totaled less than 0.10 in. except for western Upper near Lake Superior where up to 0.30 in. fell as snow showers. Snow depths over Lower Peninsula ranged from 3 to 6 in. southwest; 5 to 10 in. west and north.

Main farm activities were feeding livestock and performing farm chores.

MINNESOTA: Temperatures 10° below normal. Extremes: 26 and -33°. Precipitation averaged 0.10 in. below normal; 0.20 in. below normal northeast. Totals ranged from trace to 0.10 in. New snowfall averaged 1 to 2 in. Snow depth 4 to 8 in. most of west, south and east; up to 20 in. north central.

MISSISSIPPI: Temperatures 14° below normal coastal area to 19° below normal in east central.

Extremes: 9 and 62°. Precipitation about normal. Snow ranged up to 5 in.

Soil moisture surplus. Fieldwork: 0.1 days suitable. Winter wheat and oats in fair to poor condition. Livestock in fair condition. Hay and roughage supplies adequate. Feed grain supplies adequate to short.

MISSOURI: Snow 16th. Snow heaviest in Bootheel with 18 to 20 in.; 10 in. snow common in Ozarks. Snow lightest in Northwest prairie with less than 0.25 in. of water equivalent. Temperatures ranged from 20° below normal in west central plains to 13° below normal north.

Snow halted most outdoor activity.

MONTANA: Cold except southwest and west well above normal. Significant warming east of Divide by weekend. Precipitation mostly below normal except above normal north central and southeast.

Livestock fair to good condition. Majority on supplemental feed. Grazing difficult or closed.

NEBRASKA: Temperatures 15 to 20° below normal; most minimums below 0. Precipitation range 0.10 to 0.25 in. with heavy amount in Panhandle.

NEVADA: Moderate to heavy precipitation mainly in form of rain in valleys. Snowfall heavy in Sierras. Temperatures much above normal. Extremes: 64 and 15°.

Supplemental feeding supplies ample. Livestock mostly good condition.

NEW ENGLAND: Weather dominated by two snow storms. The first on 17th and 18th gave about 6 to 10 in. accumulations with generally 1.00 in. water equivalent. The second late 19th night and 20th produced amounts generally between 10 and 20 in. Water equivalent was over 2.50 in. over parts of southern New England. Temperatures averaged some 5 to 10° below normal with the coldest days following wake of two storms.

NEW JERSEY: Temperatures 4 to 8° below normal, averaging 21° north, 26° south, and 30° coastal areas. Extremes: 4 and 50°. Precipitation 1.70 in. above normal, averaging 2.56 in. north, 2.52 in. south and 2.14 in. coastal sections.

Outdoor farm chores brought to standstill by heavy snowfall.

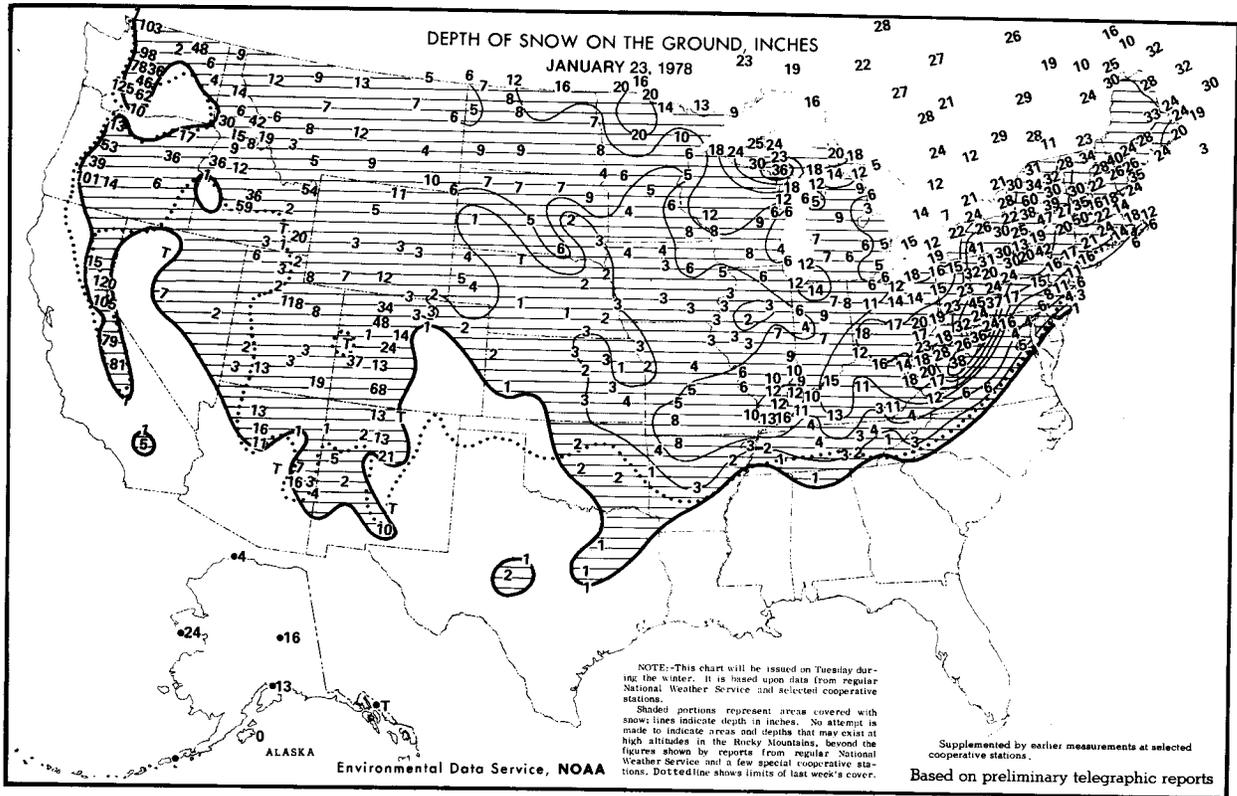
NEW MEXICO: Cloudy with recurring rains and snows. Substantial precipitation all sections except eastern plains where most totals were less than 0.10 in.; 0.33 in. to over 1.00 in. central and west.

Planting of spring lettuce and midseason onions continued in Mesilla Valley. Irrigated winter wheat and barley, fair to good condition, grazing moderate. Dryland wheat, poor to fair, very light grazing. Ranges, fair with light to moderate supplemental feeding. Livestock, good with some calving reported.

NEW YORK: Two major snow storms. First on 17th left 6 to 20 in. Upstate, with heaviest amounts over Finger Lakes and mountain areas. Second 20th left nearly 24 in. in Adirondacks, 12 in. New York City. Temperatures near normal, mostly 10 to low 30's.

NORTH CAROLINA: Temperatures near normal along coast; 5 to 10° below normal elsewhere. Precipitation excessive.

Fieldwork: 1 day suitable. Soil moisture surplus. Condition small grains fair to good, pas-



tures fair. Supplies hay, roughage and feed grains short to mostly adequate.

**NORTH DAKOTA:** Much below normal temperatures and light precipitation. Below normal temperatures with many stations recording below  $-30^{\circ}$  readings. Extremes:  $24$  and  $-42^{\circ}$ . Most divisions received less than  $0.05$  in. moisture.

Blowing snow continued to make travel difficult in rural areas. Farm activity: Caring for livestock.

**OHIO:** Heavy snow 16th and 17th and again 19th and 20th. Snow depth ranged from  $5$  to  $25$  in. Temperatures much below normal.

Livestock feeding and maintenance increased. Milk runs again hampered by drifted snow.

**OKLAHOMA:** Temperatures  $22^{\circ}$  below normal central to  $15^{\circ}$  below normal southwest. Precipitation in all areas averaging from  $0.07$  to  $1.26$  in. Greatest snowfall was about  $6$  in. in central area.

Topsoil and subsoil moisture short. Snowfall will alleviate dry topsoils somewhat. More precipitation needed. Wheat fair condition; no winter-kill reported. Native pastures and ranges fair condition; most covered with snow or ice. Producers busy hauling hay and feed to herds. Livestock remain in good to fair condition. No unusual death losses reported.

**OREGON:** Temperatures  $10^{\circ}$  above normal along eastern border and  $3$  to  $8^{\circ}$  above normal elsewhere. Precipitation along coast  $2.30$  to  $5.06$  in. Western valley rainfall ranged from  $0.64$  to  $3.06$  in. Eastern Oregon reported from  $0.25$  to  $0.50$  in. Some areas in northeast received up to  $1.50$  in. Extremes: Mid- $60$ 's, mid- $30$ 's west; low  $50$ 's, mid-teens east.

Farm activity light. Soil too moist for any spring land preparation. Ryegrasses and grasses for seed look good. Some spraying as weather permits. Most fall grains doing well. Cattle feeding continues heavy. Feed supply good. Calving and lambing continues.

**PENNSYLVANIA:** Snowy, cold. Major snowstorms mid-week and weekend. Snowfall  $12$  to over  $36$  in. Some sleet and freezing rain southeast. Snow emergency in most communities. Schools and businesses closed. Traffic at standstill. Weekly precipitation  $1.00$  to  $4.00$  in. Temperatures  $6$  to  $10^{\circ}$  below normal. Extremes:  $40$  and  $-15^{\circ}$ .

Farmers doing normal winter chores and digging out from major snowstorm.

**PUERTO RICO:** Island rainfall  $0.32$  in. or  $0.45$  in. below normal. Temperatures about  $76^{\circ}$  on coasts and  $70^{\circ}$  interior. Extremes:  $91$  and  $48^{\circ}$ .

**SOUTH CAROLINA:** Low temperatures first days upper teens, low  $20$ 's. Temperatures  $6$  to  $8^{\circ}$  below normal. Mountains averaged  $9^{\circ}$ ;  $5^{\circ}$  below normal south. High temperatures  $40$ 's inland,  $50$ 's coastal locations.  $1.50$  to  $2.50$  in. rainfall 18th, 19th.

Rain and wet fields hampered cotton scrapping, soybean harvest completion. Equipment maintenance, pruning fruit trees and grapevines.

**SOUTH DAKOTA:** Temperatures  $10$  to  $20^{\circ}$  below normal. Extremes:  $-30$  and  $39^{\circ}$ . Precipitation below normal, generally less than  $0.10$  in. except locally up to  $0.30$  in. central through southeast and extreme southwest.

**TENNESSEE:** Winter storm beginning and another at midweek bringing freezing temperatures and mixed

precipitation. Temperatures averaged from teens to 30's which was 9 to 14° below normal. Precipitation 1.00 to 2.00 in. and many places had up to 2.00 in. in north.

Farm activities limited by weather to general care of livestock and regular chores.

TEXAS: Cold temperatures north; thunderstorm, upper Gulf Coast. Mostly cloudy skies prevailed with freezing rain, snow over northern half; southern areas had rain, drizzle. Rainfall from about 0.33 in. above normal south central to about 1.75 in. above normal in parts of east, Gulf Coast. Temperatures from 10 to 22° below normal.

Cold weather, coupled with freezing rain, snow, halted nearly all fieldwork. Wheat most areas little or no growth due cold temperatures. Some snow, sleet received over plains area, but total moisture generally light; dryland stands remain moisture stressed. Freezing rain, snow received in varying amounts from Cross-Timbers southward into northern Upper Coast; some areas received enough moisture to boost growth when temperatures rise. Oat fields limited growth due cold temperatures. Snow, freezing rain will boost growth in Blacklands; east, south central when weather warms. Stands Edwards Plateau received little moisture; need rain. Few cotton gins still operating on plains; but ginning nearing completion. Flax stands south central growing slowly due cold weather. Stands Coastal Bend received needed boost from rainfall; fields, south need rain. Sugarcane harvest lower Rio Grande Valley halted by rainfall, wet fields.

Lower Rio Grande Valley rain and drizzle halted field activities for citrus and vegetables. Carrot harvest delayed for another week due to wet conditions. Recent cold temperatures did not cause freeze damage to fruit or vegetables, but growth was slowed. Onion blight prevalent in some fields. San Antonio-Winter Garden area had little freeze damage although vegetables growth slowed by cold temperatures. Dry conditions continue as harvest activities in full swing on beets, broccoli, cauliflower, cabbage, carrots, spinach. Potato and watermelon planting begun in some areas. Onions making normal progress, small bulbs now forming. Laredo carrot harvest nears completion; onions making fair progress. Eagle Pass broccoli, cauliflower, spinach harvest active. Upper Gulf Coast subfreezing temperatures caused damage to remaining winter produce. Land preparation for spring crops at standstill due cold and wet conditions. East Texas frost damage evident on winter greens. Most fieldwork stopped by cold, wet weather. Central Texas cold temperatures, snow, freezing rain limited field activities.

Ranchers feeding heavily. Cold temperatures, freezing rain caused weight losses most livestock. Most cattle being fed enough to remain strong. Frozen stock tanks, ponds caused problems, northern areas. Calving, lambing continuing.

UTAH: Recurring snow in mountains and rain or rain changing to snow in lower valleys. Accumulated moisture generally moderate to heavy. Temperatures much above normal.

Marked improvement in soil moisture. Farm and ranch activities: Feeding and caring for livestock; grading, sorting and marketing potatoes, onions and apples.

VIRGINIA: Rainfall 2.50 in. Temperatures 7 to 10° below normal. Extremes: 57 and 0°.

Heavy snows west, north; sleet, freezing rain and rain elsewhere limited field activities. Topsoil moisture surplus. Winter grains, grazing crops good to excellent. Livestock grazing limited by snow cover. Other activities: Tobacco grading and marketing, removing snow, calving, lambing.

WASHINGTON: West: Temperatures 7 to 10° above normal. Precipitation below normal, varying considerably from 0.50 in. San Juans to 1.40 in. coastal area.

Mild rainy conditions; no field activity.

East: Temperatures averaged 9 to 10° above normal. Precipitation averaged 0.20 in. below normal to 0.60 in. above normal.

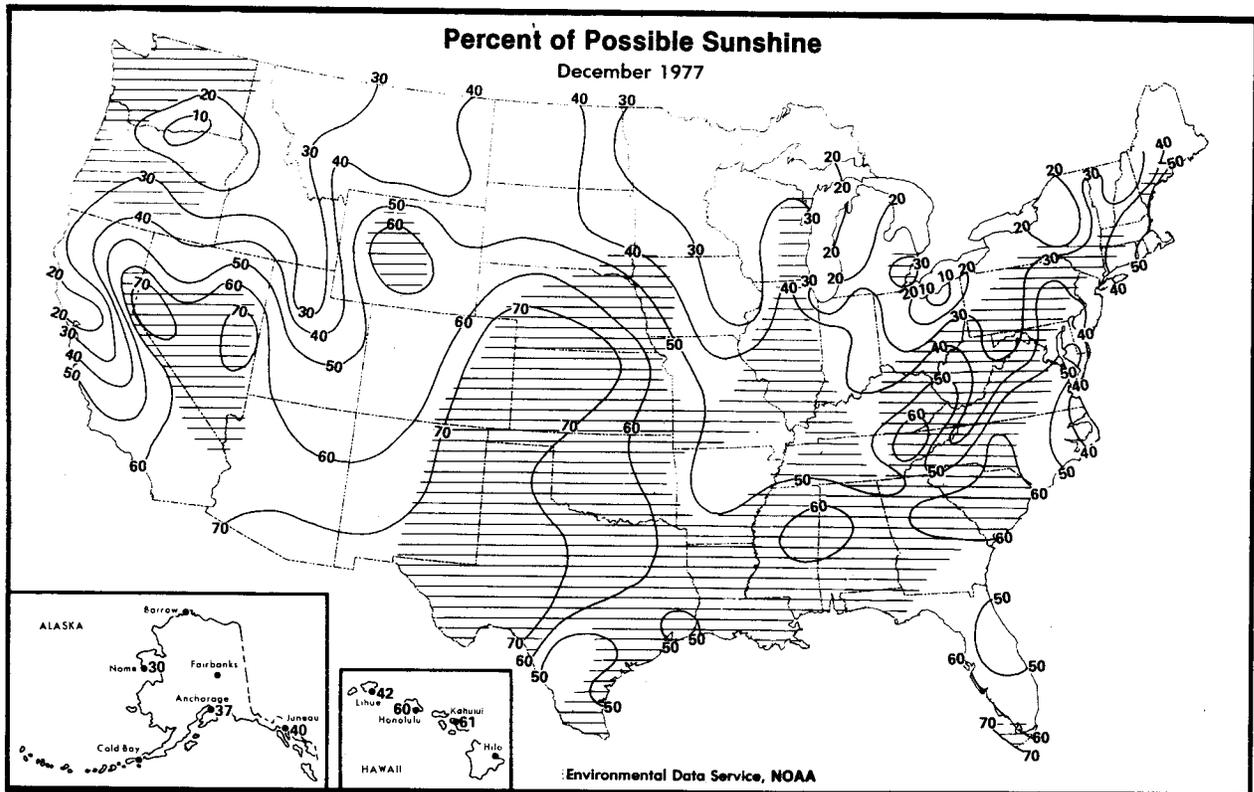
Pruning orchards and vineyards. Winter wheat good condition. Lambing and calving continued.

WEST VIRGINIA: Temperatures well below normal. Precipitation, mostly snow, well above normal. Snow coverage up to 24 in.

Soil moisture adequate to surplus. Main activity: Feeding livestock. Hay and grain supplies short to adequate.

WISCONSIN: Seasonably cold weather. Minumums below zero most days. Highs teens and low 20's. Extremes: -26 and 30°. Precipitation light. Only traces snow most areas except near Lake Michigan where 4 to 6 in. 16th and 1 to 3 in. 19th to 20th.

WYOMING: Temperatures below normal except west above normal. Precipitation generally above normal. All stations received some precipitation. Winter wheat fair to good, some snow cover, little blowing. Livestock mostly good. Increased supplemental feeding. Feed supplies adequate.



## World Weather and Crop Update

January 16 - 22

**USSR.** Winter grains in European USSR again were exposed to temperatures that may have damaged dormant wheat plants where there is only a light snow cover. The Ukraine, in particular, had a very uneven snow cover, and plants in some areas with snow cover of 1 to 3 cm had to contend with temperatures in the critical range of  $-20^{\circ}$  to  $-22^{\circ}$  C.

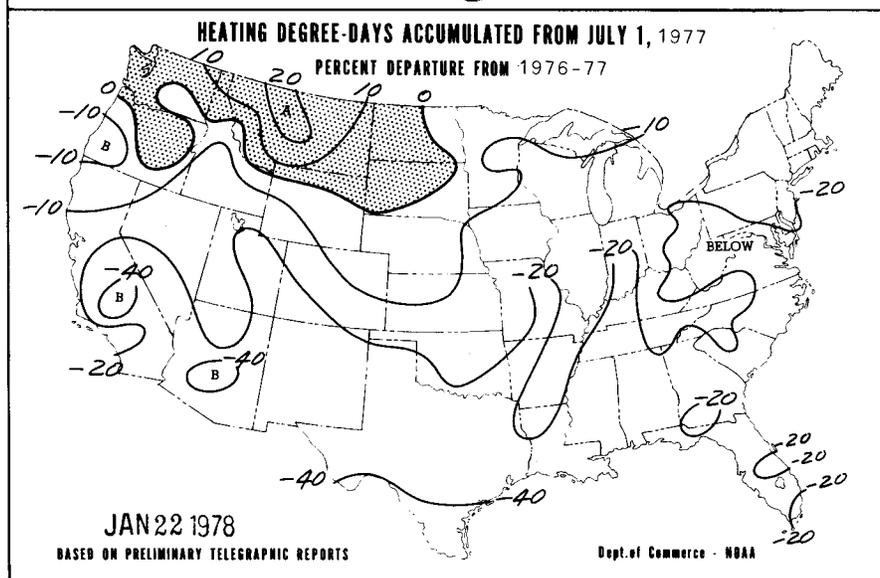
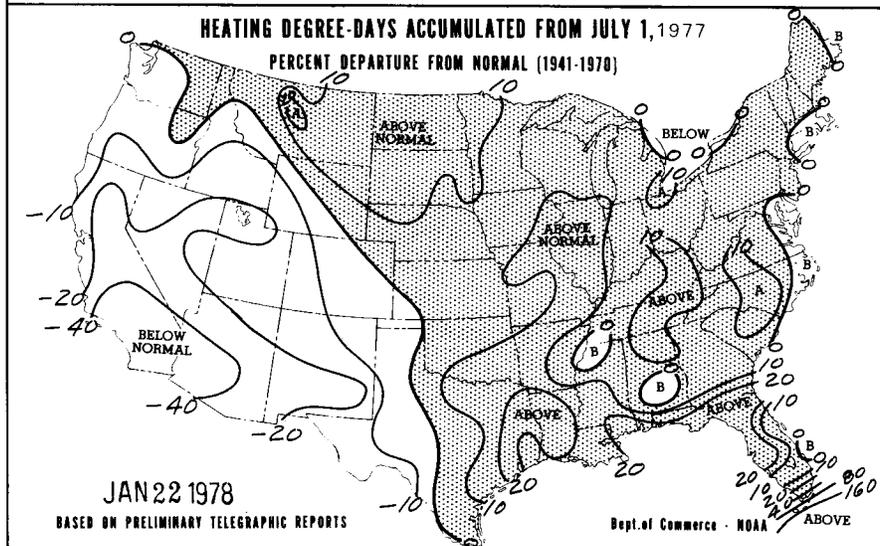
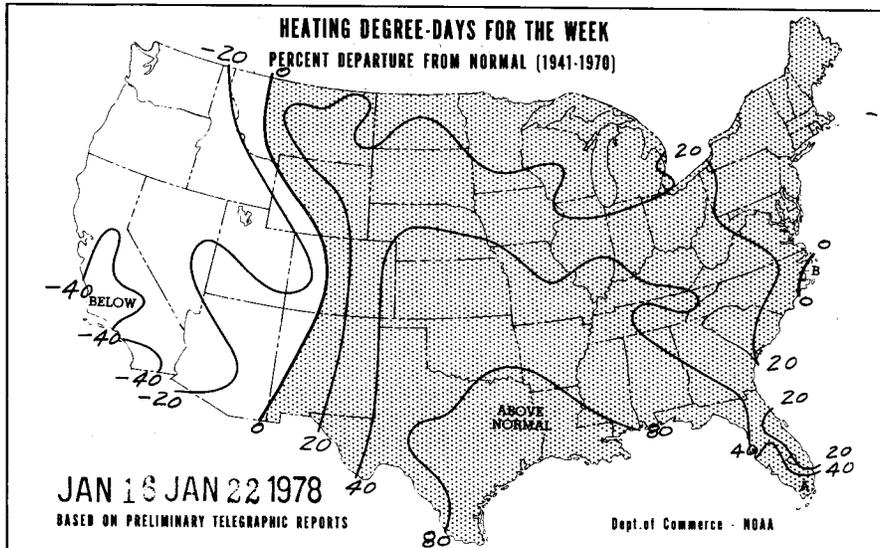
**ASIA.** Moderate rains, ranging from 10 to 20 mm, were widespread over Australia's principal agricultural regions in the east and south. Some light rain also fell in the southwest. The rain and cooler temperatures brought welcome relief from the summer hot spell of the previous week, but drought continued to prevail over many areas. Timely rain aided winter vegetables and wheat in China's Kwangtung province, but it was seasonally dry elsewhere. Chinese media have indicated some concern over the wheat's vulnerability to frost damage in the northern winter wheat belt; there has been excessive plant growth because of mild weather thus far.

**AFRICA.** In North Africa, Moroccan crops and pastures were aided by moderate to heavy showers over most areas. But only scattered light showers teased agricultural areas in Algeria and Tunisia

where non-irrigated crops and grazing lands urgently required moisture. Light to moderate showers fell over South Africa's maize triangle.

**SOUTH AMERICA.** Substantial rains fell throughout Argentina with most areas recording at least 30 to 60 mm of precipitation during two separate rainfall periods. Crops in Brazil's prime southern soybean and corn areas were helped by heavy showers that dumped up to 50 mm of moisture over Rio Grande do Sul, Santa Catarina, and the eastern half of Parana. However, precipitation was generally light throughout the other southeastern and eastern agricultural areas.

**EUROPE.** It was cooler than normal during the first half of the week in western Europe, but temperatures returned to near normal by the end of the reporting period. Light snow fell in some of the northern areas, but had generally disappeared by weekend. Heavy rains fell in southern France and northern Spain. Temperatures were seasonal in eastern Europe and posed no threat to winter grains despite little or no snow cover to protect the plants. Heavy precipitation drenched Greece while Turkey's central wheat belt received a welcome layer of snow.



HEATING DEGREE DAYS (BASE 65°) FOR WEEK ENDING JAN. 22, 1978.

STATES AND STATIONS	WEEKLY		SEASONAL ACCUMULATION +			STATES AND STATIONS	WEEKLY		SEASONAL ACCUMULATION +			STATES AND STATIONS	WEEKLY		SEASONAL ACCUMULATION +		
	TOTAL	DEPARTURE*	TOTAL	DEPARTURE*	DEPARTURE FROM 1976-77		TOTAL	DEPARTURE*	TOTAL	DEPARTURE*	DEPARTURE FROM 1976-77		TOTAL	DEPARTURE*	TOTAL	DEPARTURE*	DEPARTURE FROM 1976-77
ALA. BIRMINGHAM.....	232	88	1790	128	515	MAINE CARIBOU.....	407	24	4912	107	815	YOUNGSTOWN.....	338	65	3375	118	958
MOBILE.....	232	88	1790	128	515	PORTLAND.....	414	6	3842	107	587	OKLA. OKLAHOMA CITY.....	331	13	2151	117	424
MONTGOMERY.....	232	88	1790	128	515	MD. BALTIMORE.....	257	38	2448	16	628	TULSA.....	334	15	2219	185	518
ARIZ. FLAGSTAFF.....	249	1	289	49	675	MASS. BOSTON.....	264	12	2693	64	481	OREG. ASTORIA.....	22	51	22	84	181
PHOENIX.....	249	1	289	49	675	MICH. ALPENA.....	372	17	4206	17	606	BURNS.....	22	51	22	84	181
TUCSON.....	249	1	289	49	675	FLINT.....	372	17	4206	17	606	MEDFORD.....	22	51	22	84	181
WINSLON.....	249	1	289	49	675	GRAND RAPIDS.....	372	17	4206	17	606	PORTLAND.....	22	51	22	84	181
YUMA.....	249	1	289	49	675	LANSHING.....	372	17	4206	17	606	SALEM.....	22	51	22	84	181
ARK. FORT SMITH.....	299	117	2104	223	640	MARQUETTE.....	372	17	4206	17	606	PA. ALLENTOWN.....	91	33	330	14	370
LITTLE ROCK.....	299	117	2104	223	640	MUSKOGEE.....	372	17	4206	17	606	ERYE.....	91	33	330	14	370
CALIF. BAKERSFIELD.....	57	65	551	70	499	S. STE. MARIE.....	372	17	4206	17	606	HARRISBURG.....	91	33	330	14	370
EUREKA.....	57	65	551	70	499	MINN. DULUTH.....	444	45	3357	348	591	PHILADELPHIA.....	91	33	330	14	370
FRESNO.....	57	65	551	70	499	INTERNATL FALLS.....	444	45	3357	348	591	PITTSBURGH.....	91	33	330	14	370
LOS ANGELES.....	57	65	551	70	499	MINNEAPOLIS.....	444	45	3357	348	591	SCRANTON.....	91	33	330	14	370
RED BLUFF.....	57	65	551	70	499	ROCHESTER.....	444	45	3357	348	591	R. I. PROVIDENCE.....	286	27	2973	28	676
REDAWOOD.....	57	65	551	70	499	ST. CLOUD.....	444	45	3357	348	591	S. C. CHARLESTON.....	286	27	2973	28	676
SAN FRANCISCO.....	57	65	551	70	499	MISS. JACKSON.....	222	93	1547	244	468	COLUMBIA.....	286	27	2973	28	676
STOCKTON.....	57	65	551	70	499	MO. COLUMBIA.....	222	93	1547	244	468	GREENVILLE.....	286	27	2973	28	676
COLO. DENVER.....	303	56	2887	189	255	KANSAS CITY.....	222	93	1547	244	468	S. DAK. ABERDEEN.....	116	5084	554	6.9	331
GRAND JUNCTION.....	303	56	2887	189	255	ST. LOUIS.....	222	93	1547	244	468	HURON.....	116	5084	554	6.9	331
PUEBLO.....	303	56	2887	189	255	SPRINGFIELD.....	222	93	1547	244	468	RAPID CITY.....	116	5084	554	6.9	331
CONN. BRIDGEPORT.....	280	35	2581	42	501	MONT. BILLINGS.....	388	88	4284	531	564	SIoux FALLS.....	116	5084	554	6.9	331
HARTFORD.....	280	35	2581	42	501	GLASGOW.....	388	88	4284	531	564	TENN. CHATTANOOGA.....	375	60	2110	148	498
DEL. WILMINGTON.....	266	35	2649	119	544	GREAT FALLS.....	388	88	4284	531	564	KNOXVILLE.....	375	60	2110	148	498
D. C. WASHINGTON.....	232	29	2147	73	623	HAVRE.....	388	88	4284	531	564	MEMPHIS.....	375	60	2110	148	498
FLA. APALACHICOLA.....	133	49	919	107	333	HELENA.....	388	88	4284	531	564	NASHVILLE.....	375	60	2110	148	498
DAYTONA BEACH.....	133	49	919	107	333	KALISPELL.....	388	88	4284	531	564	TEXAS. ABILENE.....	112	1538	71	652	732
FORT MYERS.....	133	49	919	107	333	KALISPELL.....	388	88	4284	531	564	AMARILLO.....	112	1538	71	652	732
JACKSONVILLE.....	133	49	919	107	333	KANSAS CITY.....	388	88	4284	531	564	AUSTIN.....	112	1538	71	652	732
KEY WEST.....	133	49	919	107	333	LAKESIDE.....	388	88	4284	531	564	BEAUMONT.....	112	1538	71	652	732
LAKELAND.....	133	49	919	107	333	MISSOULA.....	388	88	4284	531	564	BOCA RATON.....	112	1538	71	652	732
MIAMI.....	133	49	919	107	333	NEBR. GRAND ISLAND.....	420	11	3366	234	234	CHRISTIANIA.....	112	1538	71	652	732
ORLANDO.....	133	49	919	107	333	LINCOLN.....	420	11	3366	234	234	DEL RIO.....	112	1538	71	652	732
TALLAHASSEE.....	133	49	919	107	333	NORFOLK.....	420	11	3366	234	234	EL PASO.....	112	1538	71	652	732
TAMPA.....	133	49	919	107	333	NORTH PLATTE.....	420	11	3366	234	234	FORT WORTH.....	112	1538	71	652	732
WEST PALM BEACH.....	133	49	919	107	333	OMAHA.....	420	11	3366	234	234	GALVESTON.....	112	1538	71	652	732
GA. ATLANTA.....	207	42	1888	165	597	VALLENTINE.....	420	11	3366	234	234	HOUSTON.....	112	1538	71	652	732
AUGUSTA.....	207	42	1888	165	597	NEV. ELY.....	235	35	3444	546	580	LUBBOCK.....	112	1538	71	652	732
Macon.....	207	42	1888	165	597	LAS VEGAS.....	235	35	3444	546	580	MIDLAND.....	112	1538	71	652	732
SAVANNAH.....	207	42	1888	165	597	RENO.....	235	35	3444	546	580	WIDLAND.....	112	1538	71	652	732
IDAHO. BOISE.....	165	82	2744	382	646	SPRINGFIELD.....	235	35	3444	546	580	SAN ANTONIO.....	112	1538	71	652	732
LEWISTON.....	165	82	2744	382	646	WINNEVOCA.....	235	35	3444	546	580	VICTORIA.....	112	1538	71	652	732
POCATELLO.....	165	82	2744	382	646	N. H. CONCORD.....	345	31	4096	336	580	HACO.....	112	1538	71	652	732
ILL. CAIRO.....	302	92	2495	390	407	N. J. ATLANTIC CITY.....	238	14	2485	13	867	NICHITA FALLS.....	112	1538	71	652	732
CHICAGO.....	302	92	2495	390	407	TRENTON.....	238	14	2485	13	867	UTAH. SALT LAKE CITY.....	184	75	2444	746	640
MOLINE.....	302	92	2495	390	407	N. MEX. ALBUQUERQUE.....	211	23	2103	297	846	VT. BURLINGTON.....	377	37	4070	101	592
PEORIA.....	302	92	2495	390	407	ROSWELL.....	211	23	2103	297	846	VA. LYNCHBURG.....	261	65	2421	143	597
ROCKFORD.....	302	92	2495	390	407	N. Y. ALBANY.....	316	34	3324	324	564	NORFOLK.....	261	65	2421	143	597
SPRINGFIELD.....	302	92	2495	390	407	BINGHAMTON.....	316	34	3324	324	564	RICHMOND.....	261	65	2421	143	597
IND. EVANSVILLE.....	320	88	2688	178	664	BUFFALO.....	316	34	3324	324	564	ROANOKE.....	261	65	2421	143	597
FORT WAYNE.....	320	88	2688	178	664	NEW YORK.....	316	34	3324	324	564	WASH. QUILLAYUTE.....	136	49	3057	12	251
INDIANAPOLIS.....	320	88	2688	178	664	ROCHESTER.....	316	34	3324	324	564	SEATTLE-TACOMA.....	136	49	3057	12	251
SOUTH BEND.....	320	88	2688	178	664	SYRACUSE.....	316	34	3324	324	564	SPOKANE.....	136	49	3057	12	251
IOWA. BURLINGTON.....	371	74	3610	367	695	N. C. ASHEVILLE.....	246	53	2483	191	498	HALLA HALLA.....	136	49	3057	12	251
DES MOINES.....	371	74	3610	367	695	CHARLOTTE.....	246	53	2483	191	498	YARIMA.....	136	49	3057	12	251
DUBUQUE.....	371	74	3610	367	695	GREENSBORO.....	246	53	2483	191	498	VA. BECKLEY.....	301	66	3076	105	793
SIoux CITY.....	371	74	3610	367	695	HATTERAS.....	246	53	2483	191	498	CHARLESTON.....	301	66	3076	105	793
KANS. CONCORDIA.....	390	117	3196	207	288	RALEIGH.....	246	53	2483	191	498	HUNTINGTON.....	301	66	3076	105	793
DODGE CITY.....	390	117	3196	207	288	WILKINGTON.....	246	53	2483	191	498	PARKERSBURG.....	301	66	3076	105	793
GOODLAND.....	390	117	3196	207	288	N. DAK. BISHARCK.....	497	93	5287	552	115	WIS. GREEN BAY.....	369	19	4380	241	891
TOPEKA.....	390	117	3196	207	288	FARGO.....	497	93	5287	552	115	LACROSSE.....	369	19	4380	241	891
NICHITA.....	390	117	3196	207	288	MILLISTON.....	497	93	5287	552	115	MADISON.....	369	19	4380	241	891
KY. LEXINGTON.....	305	80	2687	167	780	OHIO. AKRON-CANTON.....	337	64	3352	178	844	MILWAUKEE.....	331	9	3879	123	687
LOUISVILLE.....	305	80	2687	167	780	CINCINNATI.....	337	64	3352	178	844	WYO. CASPER.....	350	56	3893	38	47
LA. BATON ROUGE.....	194	89	1026	588	498	CLEVELAND.....	337	64	3352	178	844	CHEYENNE.....	350	56	3893	38	47
LAKE CHARLES.....	194	89	1026	588	498	COLUMBUS.....	337	64	3352	178	844	LANBER.....	350	56	3893	38	47
NEW ORLEANS.....	194	89	1026	588	498	DAYTON.....	337	64	3352	178	844	SHERIDAN.....	350	56	3893	38	47
SHREVEPORT.....	194	89	1026	588	498	TOLEDO.....	337	64	3352	178	844						

BASED ON 1941-70 NORMALS.

+ ACCUMULATION FROM JULY 1, 1977.

Agricultural Climatology Service Office  
South Building Mail Unit  
U. S. Department of Agriculture  
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