

WEEKLY WEATHER AND CROP BULLETIN

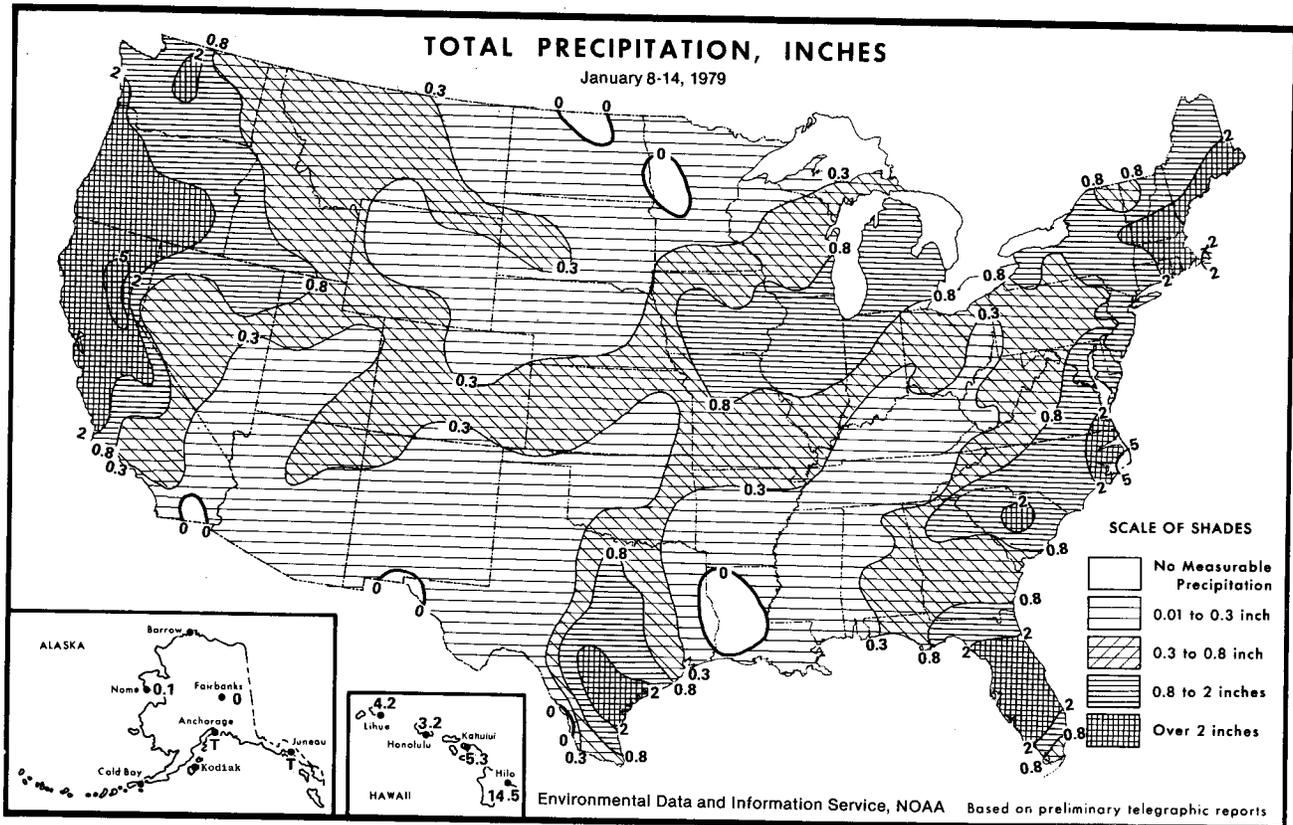
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National Weather Summary

January 8 - 14

HIGHLIGHTS: An unusually dry West Coast December was followed by two storms that dumped welcome moisture on the area during the week. Elsewhere precipitation from the Gulf moved northward forming a major storm in southern Missouri at midweek. The system tracked northeastward bringing heavy snows to the north and west of the center; rain fell to the east and south.

Another low pressure area moved eastward through the Gulf carrying heavy rain to Florida and varied precipitation up the Atlantic Coast.

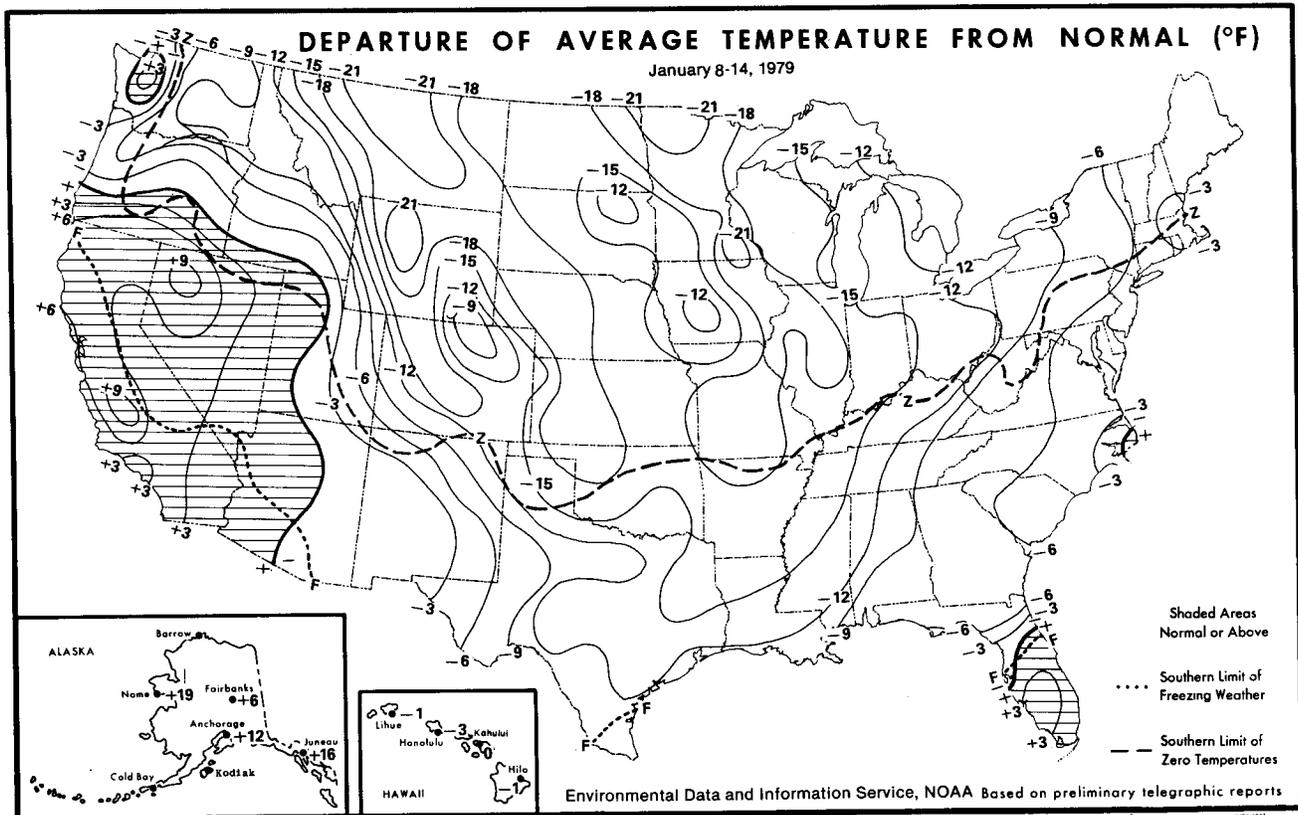
Temperatures averaged colder than normal over much of the country---as much as 18 to 21 degrees below normal in the Great Plains. By contrast,

relatively warm readings covered the Nation west of the Rockies, especially in central California and the Plateau Region which were nine degrees above normal.

Monday began with frontal systems moving over the Atlantic Coast States and northern California. One-half to more than an inch of rain dampened points from Florida to New York State. Further north, the moisture took the form of snow. In upper California, many stations reported three-quarters to more than an inch.

Record cold air rushed into the Plains and Mississippi Valley. A sampling of records showed Kansas City's -10° , -11° at Springfield, central Illinois, and 11° at San Angelo, central Texas.

Much of the Nation was relatively free of precipitation on Tuesday, but shivered under cold temperatures. The mercury dipped below freezing over the entire country except California and southern Florida.



Baton Rouge, La., scored a record 17°, and Jackson, Miss., at 13°, notched its coldest reading in nearly two years.

Some light snow dusted the Great Lakes area and southern Plateau Region while light rain dampened portions of Oregon and Texas.

Two separate storms carried winter weather across the Pacific Northwest and through the southern Plains on Wednesday.

A variety of precipitation stretched from the upper half of the West Coast past the Continental Divide. Parts of California, Oregon, and Washington gathered up to 2 inches of rain; to the east, freezing rain and snow encrusted the region.

Freezing and snow caused problems in a large section that included much of Oklahoma and the northern half of Texas. To the south and east, San Antonio totaled an inch and one-half of rain; Victoria tallied 1.6 inches.

One record temperature showed -10° at Alpena, northern Michigan---an 8-degree drop from the former mark.

Heavy rain and snow extended from northern California to the northern half of the Rockies on Thursday. Some areas reported several inches of rain combining with melting snow and ice-jammed rivers to produce localized flooding.

Meantime snow also fell from the Plains through the Mississippi Valley. Light rain moistened the northern half of Florida.

Bitterly cold temperatures gripped an area from the Midwest to Pennsylvania. Records in Wisconsin included -25° at Green Bay and -28° at Madison. Records set in 1893 were shattered in Akron, Ohio, with -3°, and tied in Detroit at -7°.

Rain, sometimes heavy, doused the Atlantic Seaboard on Friday. Some Florida points reported more than 2 inches. Snow and freezing rain also entered the picture along the middle and upper Atlantic Coast.

Snow persisted from the Rockies to the Midwest. Concordia, northern Kansas, collected 7 inches;

the Colorado Rockies saw 8 inches and Wyoming's Teton Mountains swayed under an additional 13 inches.

Temperatures remained very cold but rising a bit in the midlands; Kansas City ended a record-setting string of 13 days at readings failing to reach 20°.

On Saturday, snow continued falling heavily in the central United States. Especially hard hit was the southern Great Lakes area. By day's end, totals jumped beyond 2 feet in Chicago and some Michigan stations.

Rain, freezing rain, and snow clouded the upper half of the East Coast. Boston measured an inch of rain, and Providence, R.I., chalked up an inch and one-half. Snow diminished in the southern Plains but gave way to icy cold temperatures.

Two major storms blasted the Nation on Sunday.

The persistent unsettled weather in the Midwest produced paralyzing conditions. Ten to 20 inches of snow fell there. Chicago's 21 inches became the second heaviest single snowfall on record in the Windy City. The 29 inches on the ground marked a record accumulation. To complicate the problem, extremely cold air surged into the area. Record low readings stretched from the Rockies to the Great Lakes; for example, records reached -15° at Pueblo, central Colorado; 20° at Austin, Tex.; Kansas City's -9°; -11° at Springfield, southern Missouri; -10° at South Bend, northern Indiana; and Chicago's -14° which undercut the 1881 mark by one.

While comparatively light snow whitened an area from the Appalachians through New England, another storm charged onto the West Coast.

High winds and heavy rains clipped northern California; San Francisco noted more than 3 inches. Portions of Oregon, Washington, Idaho, and the high elevations of California managed 2 to 7 inches of snow.



National Agricultural Summary

January 8 - 14

HIGHLIGHTS: Farmers in the Nation's midsection struggled out from an onslaught of low temperatures and heavy snowfalls. Heavy snow covered most of the country's winter wheat protecting it from winds and low temperatures. Some of the winter wheat in the southern States and the Northwest may have been affected by the low temperatures but should grow out. Pastures were snow-covered throughout most of the Nation, and in the South low temperatures browned permanent pastures and slowed growth of winter grazing. Farmers had very little time for fieldwork and spent most of the day caring for livestock and removing snow. Cattlemen fed heavy rations of hay, roughage, and grains to help animals combat the low temperatures. Most areas held adequate amounts of feed though some spot shortages developed. Cotton farmers wrapped up picking operations in the Southwest from California to Texas. Adverse weather conditions prevented them from finishing the final harvest. Fruit tree pruning was limited by snows and cold temperatures. Some winter injury is expected, particularly in the Pacific Northwest.

SMALL GRAINS: Winter wheat generally rated fair to good in the major production areas. Across the South, stands rated mostly fair with some poor fields reported. Most winter wheat lay snow-covered in the Great Plains, the central States, and the Northwest.

In Kansas, winter wheat showed good snowcover, however, vegetative growth remained short. In Oklahoma, a major winter storm blanketed most of the winter wheat protecting it from subnormal temperatures. Texas wheat stands stood dormant because of the cold weather which slowed growth and restricted grazing. Soil moisture rated adequate to sustain good growth when warm weather returns. Topgrowth freeze damage occurred from the High Plains to South Texas, but most stands should make a good recovery. North Central States winter wheat rated good protected by an ample snowcover. In the Southwest, Arizona early plantings rated good, but late seeding growth reached a standstill. California growers finished planting the 1979 winter wheat crop. Above-normal temperatures stimulated growth of earlier seedings and farmers sprayed for weed control. In the Pacific Northwest, recent storms provided a protective snowcover from subnormal temperatures. Growers expect some freeze damage which may result in thinning of stands but no total freezeout.

OTHER CROPS: Cotton harvest centered in the Southwest; other areas completed picking. The Texas harvest stood at 97%, compared with 100% for last year's crop and the average. No harvesting was accomplished in the past two weeks because of cold, wet, and snowy weather. Gins were able to catch up. Land preparation in southern portions of Texas also came to a standstill because of weather problems. Arizona had some limited acreage to harvest but quantity and quality of the crop remaining in the field were questionable. New Mexico harvest finally reached 80% ginned, well behind previous years. California growers picked some cotton, but wet conditions halted shredding and plowdown operations.

Sugarcane harvest moved actively in Florida. The crop rated good and sustained no wind or cold

damage. The Texas crop suffered some freeze damage and a loss of sugar content.

Tobacco plant beds in Florida and Georgia rated fair to good. Growers in the major production States continued to grade and market the 1978 crop.

FRUITS AND NUTS: Bad weather prevented most deciduous fruit growers from performing orchard maintenance in most northern areas. Pacific Northwest growers did prune some trees. Some winter injury was expected in Washington. The pecan harvest was virtually complete with the exception of New Mexico which stood at 67% picked.

Florida citrus groves rated excellent with very good soil moisture provided by 2 to 4 inches of rain. Leafburn resulted from the low temperatures on January 3 with midseason orange drop increasing. The orange harvest advanced actively.

Texas citrus harvest of fallen oranges for juice kept a brisk pace. Arizona citrus growers harvested lemons, early variety oranges, tangerines, and grapefruit. Freeze damage spanned many groves. California growers harvested moderate volumes of grapefruits, Navels, and lemons for fresh market. Tangerines, tangelos, and mandarins held in light supply.

VEGETABLES: Florida vegetable harvests slowed for a few days because of adverse weather. Shipments decreased 4% from the previous week. Potato shipments advanced considerably and snap beans, carrots, chinese cabbage, and strawberries also were more abundant. Supplies of celery, cabbage, sweetcorn, eggplant, escarole, lettuce, parsley, and peppers remained steady, but all other vegetable supplies declined. Quality and size rated good, but packout declined because of wind scarring and fruit crack. Strong winds burned foliage and whipped plants. Spring planting slowed because of wet conditions.

Texas growers harvested limited supplies of lettuce and salvaged cabbage and carrots from freeze-damaged fields. Some early bell peppers for spring harvest succumbed to freezes. Initial cantaloupe and watermelon plantings got underway. Arizona lettuce harvest from central areas was about finished.

California broccoli and cauliflower harvests moved ahead. Celery moved from the south coast. Lettuce harvest increased in the Imperial Valley.

PASTURES AND LIVESTOCK: Low temperatures deteriorated pastures throughout the southern half of the Nation. Permanent pastures browned from the cold weather and small grains growth was slow. Herdsmen fed large amounts of hay and forage to offset the reduced grazing. Adequate supplies of stored roughage held throughout the Nation, although some local shortages were reported. Cattlemen in northern areas had to combat snowstorms to bring feed to herds. Florida pastures rated fair; rains helped grasslands but cold slowed growth. Texas range and pastures deteriorated as cold and wet weather prevailed. Ice and snow prevented grazing in many areas of the Panhandle and the north central area. Livestock condition declined in spite of supplemental feeding because of the harsh weather and limited forage. Arizona rangeland improved with good winter and spring browse expected; stock tanks were full. California rains helped grass growth, but warmer temperatures were also needed. Calving and lambing began in many areas of the Nation, however, low temperatures increased death losses.

Temperature and Precipitation Data for the Week Ending Midnight, l.s.t., Jan. 14, 1979

States and Stations	Temperature OF		Precipitation Inches		States and Stations	Temperature OF		Precipitation Inches		States and Stations	Temperature OF		Precipitation Inches	
	Average	Departure	Total	Departure		Average	Departure	Total	Departure		Average	Departure	Total	Departure
ALA. Birmingham . . .	33	-11	.1	-1.0	LA. Baton Rouge . . .	39	-12	T	-1.0	Youngstown . . .	15	-11	.1	-.6
Mobile . . .	45	-6	.2	-.9	Lake Charles . . .	40	-12	0	-.9	OKLA. Okla. City . . .	19	-17	.1	-.1
Montgomery . . .	41	-6	.7	-.2	New Orleans . . .	42	-11	.2	-.8	Tulsa . . .	21	-15	.3	0
ALASKA. Anchorage . . .	23	+12	T	-.2	Shreveport . . .	32	-15	T	-.9	OREG. Astoria . . .	39	-1	2.1	-.1
Barrow . . .	--	--	--	--	MAINE. Caribou . . .	5	-6	1.2	+ .8	Burns . . .	25	+1	2.7	+ 2.3
Fairbanks . . .	-7	+6	0	-.1	Portland . . .	19	-3	2.8	+ 2.1	Medford . . .	42	+6	2.6	+ 1.8
Juneau . . .	7	-16	T	-.9	MD. Baltimore . . .	28	-5	1.3	+ .6	Pendleton . . .	17	-4	1.0	+ .6
Kodiak . . .	--	--	--	--	MASS. Boston . . .	29	0	3.2	+ 2.4	Portland . . .	31	-6	1.9	+ .5
Nome . . .	25	+19	.1	-.1	Chatham . . .	31	--	1.5	--	Salem . . .	34	-4	2.1	+ .5
ARIZ. Flagstaff . . .	30	+3	.4	0	MICH. Alpena . . .	7	-11	1.0	+ .6	PA. Allentown . . .	21	-7	.8	+ .1
Phoenix . . .	52	+1	T	-.2	Detroit . . .	13	-12	.8	+ .4	Erie . . .	15	-10	.5	-.1
Tucson . . .	50	-1	.2	0	Flint . . .	11	-11	1.0	+ .6	Harrisburg . . .	24	-6	.7	+ .1
Winslow . . .	32	0	.1	0	Grand Rapids . . .	10	-13	1.1	+ .6	Philadelphia . . .	28	-4	1.2	+ .6
Yuma . . .	56	+1	T	-.1	Houghton Lake . . .	5	-12	.8	+ .4	Pittsburgh . . .	16	-12	.5	-.1
ARK. Fort Smith . . .	22	-16	.1	-.4	Lansing . . .	11	-12	1.2	+ .7	Scranton . . .	18	-8	.6	+ .1
Little Rock . . .	22	-17	.1	-.8	Marquette . . .	6	-12	.3	0	R.I. Providence . . .	26	-3	3.7	+ 2.9
CALIF. Bakersfield . . .	56	+9	.7	+ .5	Muskegon . . .	12	-12	1.3	+ .7	S.C. Charleston . . .	43	-5	.8	+ .2
Eureka . . .	53	+6	2.9	+ 1.2	S. Ste. Marie . . .	4	-10	.6	+ .2	Columbia . . .	40	-5	2.1	+ 1.3
Fresno . . .	53	+8	1.6	+ 1.2	MINN. Duluth . . .	-8	-16	T	-.3	Greenville . . .	36	-6	1.2	+ .3
Los Angeles . . .	57	+1	.3	-.4	Internatl Falls . . .	-19	-21	.1	-.1	S.D. Aberdeen . . .	-1	-10	.1	0
Red Bluff . . .	51	+6	3.9	+ 2.8	Huron . . .	-3	-15	.1	-.1	Huron . . .	-2	-14	.1	0
San Diego . . .	59	+4	.1	-.3	Rochester . . .	-8	-21	.3	+ .2	Rapid City . . .	3	-18	.3	+ .2
San Francisco . . .	52	+4	4.9	+ 3.9	St. Cloud . . .	-10	-19	.1	0	Sioux Falls . . .	-1	-15	.2	+ .1
Stockton . . .	50	+6	3.1	+ 2.4	MISS. Jackson . . .	33	-14	T	-1.0	TENN. Chattanooga . . .	31	-9	T	-1.2
COLO. Denver . . .	19	-11	.1	0	Meridian . . .	34	-13	.1	-.9	Knoxville . . .	32	-8	T	-1.1
Grand Junction . . .	16	-10	.4	+ .3	MO. Columbia . . .	11	-18	.5	+ .1	Memphis . . .	25	-15	.1	-1.0
Pueblo . . .	12	-17	.3	+ .2	Kansas City . . .	9	-18	.6	+ .3	Nashville . . .	25	-13	.1	-1.0
CONN. Bridgeport . . .	25	-5	1.9	+ 1.3	St. Louis . . .	14	-17	.5	+ .1	TEX. Abilene . . .	33	-10	.3	+ .1
Hartford . . .	22	-3	2.0	+ 1.2	Springfield . . .	13	-19	.4	0	Amarillo . . .	22	-13	.1	0
D.C. Washington . . .	31	-4	1.1	+ .5	MONT. Billings . . .	-2	-19	.3	+ .1	Austin . . .	35	-14	.9	+ .5
FLA. Apalachicola . . .	48	-5	.5	-.1	Glasgow . . .	-9	-18	.1	0	Beaumont . . .	42	-10	.1	-.8
Daytona Beach . . .	59	+1	3.2	+ 2.8	Great Falls . . .	1	-19	.3	+ .1	Brownsville . . .	49	-11	.6	+ .3
Ft. Myers . . .	66	+3	2.3	+ 1.9	Havre . . .	-12	-23	.3	+ .2	Corpus Christi . . .	45	-11	2.0	+ 1.6
Jacksonville . . .	48	-6	1.7	+ 1.1	Helena . . .	0	-17	.6	+ .5	Del Rio . . .	40	-10	.2	+ .1
Key West . . .	71	+1	.3	-.1	Kalispell . . .	-2	-16	.6	+ .2	El Paso . . .	42	-1	T	-.1
Lakeland . . .	--	--	--	--	Miles City . . .	-6	-21	.2	+ .1	Fort Worth . . .	33	-11	.5	+ .1
Miami . . .	69	+2	.5	0	Missoula . . .	10	-10	.5	+ .2	Galveston . . .	43	-11	.4	-.3
Orlando . . .	62	+2	3.8	+ 3.3	NEBR. Grand Island . . .	6	-16	.3	+ .2	Houston . . .	40	-12	.5	-.3
Tallahassee . . .	46	-6	1.5	+ .7	Lincoln . . .	6	-16	.3	+ .2	Lubbock . . .	31	-8	T	-.1
Tampa . . .	59	-1	2.7	+ 2.2	Norfolk . . .	3	-15	.3	+ .2	Midland . . .	36	-7	.1	0
W. Palm Beach . . .	67	+1	.9	+ .3	N. Platte . . .	3	-20	.1	0	San Angelo . . .	33	-13	.1	-.1
GA. Atlanta . . .	35	-7	1.0	0	Omaha . . .	6	-14	.3	+ .2	San Antonio . . .	39	-11	2.2	+ 1.8
Augusta . . .	39	-7	.6	-.2	Valentine . . .	1	-19	.3	+ .2	Victoria . . .	40	-13	2.5	+ 2.1
Macon . . .	40	-8	.7	-.1	NEV. Ely . . .	25	+2	.3	+ .2	Waco . . .	33	-13	1.1	+ .7
Savannah . . .	43	-7	.4	-.3	Las Vegas . . .	46	+2	.2	+ .1	Wichita Falls . . .	27	-14	.6	+ .4
HAWAII. Hilo . . .	70	-1	14.5	+12.6	Reno . . .	35	+4	.4	+ .1	UTAH. Blanding . . .	23	-4	.4	+ .1
Honolulu . . .	69	-3	3.2	+ 2.1	Winnemucca . . .	36	+9	.6	+ .4	Salt Lake City . . .	29	+2	.3	0
Kahului . . .	72	0	5.3	+ 4.5	N.H. Concord . . .	19	-2	2.2	+ 1.6	VT. Burlington . . .	12	-5	.7	+ .3
Lihue . . .	70	-1	4.2	+ 2.7	N.J. Atlantic City . . .	28	-5	.9	+ .1	VA. Lynchburg . . .	29	-7	.8	+ .2
IDAHO. Boise . . .	25	-3	1.6	+ 1.2	Trenton . . .	27	-5	.5	-.1	Norfolk . . .	37	-4	2.0	+ 1.2
Lewiston . . .	20	-10	.5	+ .2	N.MEX. Albuquerque . . .	34	-1	T	-.1	Richmond . . .	32	-5	1.0	+ .4
Pocatello . . .	21	-1	.3	0	Roswell . . .	35	-3	T	-.1	Roanoke . . .	29	-7	.4	-.2
ILL. Cairo . . .	20	-16	.4	-.5	N.Y. Albany . . .	16	-6	1.2	+ .7	WASH. Colville . . .	16	-7	.3	-.2
Chicago . . .	8	-16	1.4	+ 1.0	Binghamton . . .	14	-8	.8	+ .3	Omak . . .	15	-7	.3	-.1
Moline . . .	1	-20	1.8	+ 1.4	Buffalo . . .	15	-9	1.5	+ .9	Quillayute . . .	36	-2	1.4	-1.9
Peoria . . .	6	-17	1.2	+ .8	New York . . .	27	-5	1.3	+ .7	Seattle-Tacoma . . .	41	+4	.9	-.4
Rockford . . .	2	-18	1.1	+ .7	Rochester . . .	15	-9	.5	0	Spokane . . .	17	-7	.6	0
Springfield . . .	9	-17	.8	+ .4	Syracuse . . .	17	-7	1.2	+ .6	Walla Walla . . .	21	-11	.9	+ .4
IND. Evansville . . .	16	-16	.2	-.6	N.C. Asheville . . .	33	-5	.5	-.3	Yakima . . .	17	-9	.9	+ .6
Ft. Wayne . . .	10	-15	.4	-.2	Charlotte . . .	35	-7	1.3	+ .5	W.VA. Beckley . . .	25	-6	.2	-.6
Indianapolis . . .	13	-15	.3	-.4	Greensboro . . .	32	-7	1.2	+ .5	Charleston . . .	25	-9	.4	-.4
South Bend . . .	11	-13	1.8	+ 1.2	Hatteras . . .	46	+1	5.5	+ 4.6	Huntington . . .	22	-12	.2	-.5
IOWA. Burlington . . .	4	-19	1.0	+ .6	Raleigh . . .	35	-5	1.2	+ .5	Parkersburg . . .	21	-12	.1	-.6
Des Moines . . .	9	-10	1.1	+ .8	Wilmington . . .	42	-4	1.2	+ .5	WISC. Green Bay . . .	-1	-16	.7	+ .4
Dubuque . . .	-1	-18	1.4	+ 1.0	N.DAK. Bismarck . . .	-8	-16	T	-.1	La Crosse . . .	-1	-17	.7	+ .5
Sioux City . . .	2	-15	.3	+ .2	Fargo . . .	-12	-18	T	-.1	Madison . . .	-1	-16	.7	+ .4
KANS. Concordia . . .	10	-16	.6	+ .5	Williston . . .	-8	-16	T	-.1	Milwaukee . . .	6	-13	1.5	+ 1.1
Dodge City . . .	10	-20	.4	+ .3	OHIO. Akron-Canton . . .	13	-13	.3	-.3	WYO. Casper . . .	9	-14	.2	+ .1
Goodland . . .	14	-13	.3	+ .2	Cincinnati . . .	16	-15	.3	-.5	Cheyenne . . .	20	-6	T	-.1
Topeka . . .	12	-15	.2	0	Cleveland . . .	16	-11	.3	-.3	Lander . . .	-2	-21	T	-.1
Wichita . . .	14	-17	.1	-.1	Columbus . . .	15	-13	.4	-.3	Sheridan . . .	0	-20	.3	+ .2
KY. Lexington . . .	19	-14	.2	-.7	Dayton . . .	14	-14	.2	-.4	P.R. San Juan . . .	78	+2	.5	-.2
Louisville . . .	19	-14	.1	-.7	Toledo . . .	11	-14	.5	0					

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 11° below normal. Precipitation below normal, except east central areas. Rain during weekend, heaviest amount central areas. Fieldwork: 2.1 days suitable. Soil moisture adequate; limited outside activity. Fieldwork slightly behind schedule. Pasture feed supply short, mostly poor condition. Stored feed supply adequate. Wheat, livestock fair condition.

ARIZONA: Weak weather disturbances 9th, 12th; brief, light showers, gusty winds. Dense fog Prescott, Tucson, Phoenix areas. Temperatures near normal.

Wet fields restricted field activities some areas. Limited cotton remaining, quantity, quality doubtful. Earlier planted small grains good growth. Later planting virtual standstill. Sugarbeets spring harvest good top, tap root development; beet harvest Cochise County unfinished. Alfalfa haying seasonally slow, new planted hay good progress. Vegetable harvest progressed conditions allowing. Lettuce harvest central areas about finished. Other vegetables all stages development, growing well. Citrus harvest good progress. Lemons, early variety oranges, tangerines, grapefruit being picked; freeze damage evident many groves. Range conditions improving. Widespread rain, snow. Stock tanks mostly full, soil moisture adequate. Good prospects winter, spring browse. Cattle, calves good condition.

ARKANSAS: Bitterly cold weather; lowest normal 36°, highest normal 45°. Lowest mean 17°; highest mean 29°. Lowest temperature -4°; highest temperature 49°. All normals ranged from 21 to 13° below normal. Most precipitation 0.53 in.

Cold weather prevented fieldwork. Feeding of livestock and equipment maintenance major activities. Limited forage from pasture.

CALIFORNIA: Series of storms produced precipitation over much of State during most of week. Storms mostly from warmer latitudes and average temperatures few to several degrees above normal. San Joaquin Valley as much as 10° above normal. Rain generally 1.00 to 2.00 in., were as much as 5.00 to 10.00 in. Sierra Nevada and coast ranges. Winter planted small grains in ground Sacramento Valley, south coast. Growth small grains slow central coast. Rains, warm temperatures stimulated growth small grains Sacramento, San Joaquin Valley. Small grains sprayed for weed control San Joaquin Valley. Alfalfa fields replanted San Joaquin Valley. Cotton being harvested San Joaquin Valley; plowdown shredding stopped by rains. Pruning, spraying, weeding typing in deciduous fruit orchards and vineyards. Avocados, grapefruit, Navel oranges, lemons moderate fresh market harvest. Table grapes light. Tangerines, tangelos, and mandarins light supplies. Harvest broccoli, cauliflower active. Celery active south coast. Lettuce harvest increased Imperial Valley. Recent rains beneficial ranges, pastures. Warmer temperatures needed improve growth. Supplemental feeding remains near peak levels. Movement bee hives almond orchards increasing.

COLORADO: Moist air from Pacific produced from 12 to 30 in. snow in the mountains where temperatures 4 to 8° below normal. Arctic cold front dropped 2 to 6 in. snow over eastern plains. Temperatures 10 to 14° below normal.

FLORIDA: Arctic cold front 8th dropped temperatures into 20's north and 30's central, morning of 9th. Dry and cool 9th, 19th, increasing cloudiness and mild, 11th. Showers, thunderstorms late 11th and 12th dropped 1.00 to 3.00 in. rain except 0.50 in. south Peninsula. Mild and dry 13th. Few light showers preceded new arctic front 14th with gusty northwest winds. Temperatures near normal.

Soil moisture mostly adequate, a few wet spots upper east coast, south central and eastern Gulf Coast of Panhandle. Sugarcane harvest active, crop good condition, no cold or wind damage. Tobacco plant beds good condition. Small grains good condition but growth slow due to cold. Land preparation for early spring planting underway. Pastures mostly fair. Rain beneficial but cold turned central and northern permanent pastures brown. Some supplemental feeding. Cattle in fair to good condition. Excellent citrus tree condition. Very good soil moisture, rain 2.00 to 4.00 in. most areas. Some leaf burn from January 3 cold; mid-season orange droppage increasing. Orange harvest very active. Vegetable harvest slowed few days due to adverse weather. Overall shipments decreased 4% from previous week. Potato shipments unconsiderably. Snap beans, carrots, chinese cabbage, strawberries increased. Supplies cabbage, celery, sweet corn, eggplant, escarole, lettuce, parsley, peppers held steady but cauliflower, cucumbers, okra, radishes, squash, tomatoes decreased. Quality, size, mostly good but packout lowered by wind scarring, some fruit crackage. Strong winds burning foliage, whipping plants. Spring planting activities slowed due to wet conditions. Strawberry crop condition good; fruit bloom loss from earlier cold heavier than expected. Decreased production next few weeks. Spring watermelon crop condition fair to good. Windburn heavier than expected. Growth, germination slow. Planting heavy, expected to continue into February. New crop winter potato digging gaining.

GEORGIA: Sharply colder temperatures early week 3 to 9° below normal. Extremes: 72 and 2°. Rain-fall 0.19 to 4.49 in. Precipitation 13th and 14th variable with heaviest amount of 1.32 in. Soil moisture adequate to mostly surplus. Cold, wet conditions held outside activities to minimum. Small grains fair in southern half to good in northern half. Pasture conditions deterioriated somewhat, now only fair. Cattle mostly good. Tobacco plants fair to good.

HAWAII: Weather cool, wet, windy. Low temperatures continue throughout island chain. Rains heavy some districts. Spoilage losses expected. Gusty winds damage plantings exposed areas. Few papaya trees toppled. Banana orchards leaf stripping.

Farm activities confined mainly to harvesting. Vegetable supplies generally light; quality and yield down. Banana supplies light to moderate. Papaya supplies light. Pineapple harvesting slow. Sugar slack. Pastures generally good.

IDAHO: Winter blasted south. Precipitation ranged up to 1.73 in. Accumulations of near 12 in. snow recorded. Temperatures 2 to 17° below normal, a marked improvement from a week earlier. Warmer temperatures at week end responsible. Extremes: -35 and 48°.

Snow and cold again restricted most farm activities. Repairs and livestock care primary work. Due to weather additional feed necessary but supplies adequate. Early calving and lambing require close attention. Slight increase in potato marketings but still hampered by weather.

ILLINOIS: Temperatures 16 to 20° below normal. Widespread snow, water equivalent 0.20 in. south-east to over 1.10 in. north. Snowfall 1 to 2 in. south, 20 in. northeast. Snow depths 2 in. south, 20 in. northeast.

Soil moisture adequate. Winter wheat good condition, snowcovered. Livestock condition good, cold increasing feed and care requirements. Farm activities: chores, livestock care.

INDIANA: Severe weather. Weekend storm brought rain, freezing rain, then snow. Severe in northwest where snow 18 in. deep. Numerous roads closed. Elsewhere ground covered with ice then snow which is 3 to 6 in. deep in non-drifted places. Temperatures 15° below normal and ranged from -13 to 43°. Sunshine 52% of possible. Precipitation 0.80 in. northwest diminishing to 0.20 in. southeast and south.

Fieldwork nil. Snow removal, caring for livestock, hauling manure and chores.

IOWA: Very cold and snowy. Temperatures 14° to 18° subnormal. Weekend minima from -10 to -25°. Heavy snow fell 11th through 13th and snowcover varies from 6 to 8 in. west and 20 to 28 in. east at weekend.

KANSAS: Bitter cold with major snow storm 12th to 13th. 1 to 3 in. snow extreme west and extreme south to 8 to 12 in. northeast. Serious blowing and drifting. Temperatures 10° southwest to 16° southeast or 12 to 15° below normal east and north to 17 to 20° below normal southwest.

Bitter cold and blowing snow caused heavy supplemental feeding. Feed supplies short south central and southeast. Good snowcover on wheat. Vegetative cover remains short.

KENTUCKY: Temperatures 10° below normal. Light, mixed precipitation end of period averaging less than 0.25 in.

Stockmen feeding large amount supplemental feed as ice and snow covering many areas along with extreme cold minimizing grazing. Volume and price down at burley auctions; quality remains about same.

LOUISIANA: Temperatures 10 to 14° below normal. Extremes: 13 and 68°. Widespread light rain. Activities: Feeding and care of livestock.

MARYLAND & DELAWARE: Temperatures well below normal. Highs in mid-30's to low 40's except mountains where highs around 30°. Lows in upper teens to mid-20's except mountains where lows 10°. Precipitation moderate; 1.00 to 1.50 in. Weekend cold and wet with clearing, windy and cold conditions late 14th.

MICHIGAN: Temperatures 10 to 13° below normal. Extremes: -37 and 32°. Precipitation below normal over western Upper and above normal elsewhere. Precipitation ranged from 0.09 in. to 1.57 in. Snow depths changed relatively little over Upper Peninsula, increased 5 to 7 in. extreme northern and southeastern Lower Michigan, and 8 to 14 in. over the remainder of Lower Peninsula.

Farm activities primarily feeding livestock and farm chores.

MINNESOTA: Temperatures 15 to 21° below normal. Extremes: 21 and -40°. Precipitation near normal to 0.25 in. below normal except extreme southeast where precipitation averaged 0.25 to 0.45 in. above normal. Precipitation total less than 0.25 in. except southeast where totals 0.25 to 0.69 in. Snowfall less than 1 in. northern third, 1 to 4 in. central third, 4 to 8 in. southern third. Snow depth 7 to 10 in. west half and 10 to 16 in. east half, except to 20 in. extreme southeast and extreme north.

MISSISSIPPI: Rain and freezing rain early week. Cool temperatures but considerably warmer during remainder of week. Lowest temperature 5°.

Soil moisture surplus. Fieldwork: 0.8 days suitable. Cattlemen feeding increased amounts due extreme cold temperatures. Bad ice storm northern areas early week left some areas without electricity for several days. Winter wheat mostly very poor condition. Livestock fair condition. Hay, roughage, and feed grain supplies adequate to short.

MISSOURI: Temperatures extremely cold for second consecutive week, averaging 16° below normal. Snow and freezing rain 10th and 11th. Major winter storm 12th and 13th; 1 to 3 in. southeast, 4 to 10 in. snow elsewhere.

Snow and bitter cold caused major difficulties in livestock feeding and other farm activities.

MONTANA: Some moderation in temperatures; west and southwest 10° below normal, 20° above previous week. North central area a little colder overall; temperatures averaged near 25° below normal. Elsewhere temperatures 20° below normal. Precipitation moderate to heavy with snow falling almost daily.

Winter wheat condition and snowcover good. Livestock condition fair to good. Grazing closed with all livestock on supplemental feed.

NEBRASKA: Temperatures 15 to 20° below normal. Precipitation 0.10 to 0.30 in. Generally, 5 to 12 in. new snow 12th and 13th created problems for travelers, farmers, and others. Winds of 35 to 40 mph caused considerable drifting.

No unusual reports of livestock losses.

NEVADA: Intermittent snow or rainfall entire week. Minor flooding Reno-Carson area. Temperatures slightly above normal. Extremes: 67 and -12°.

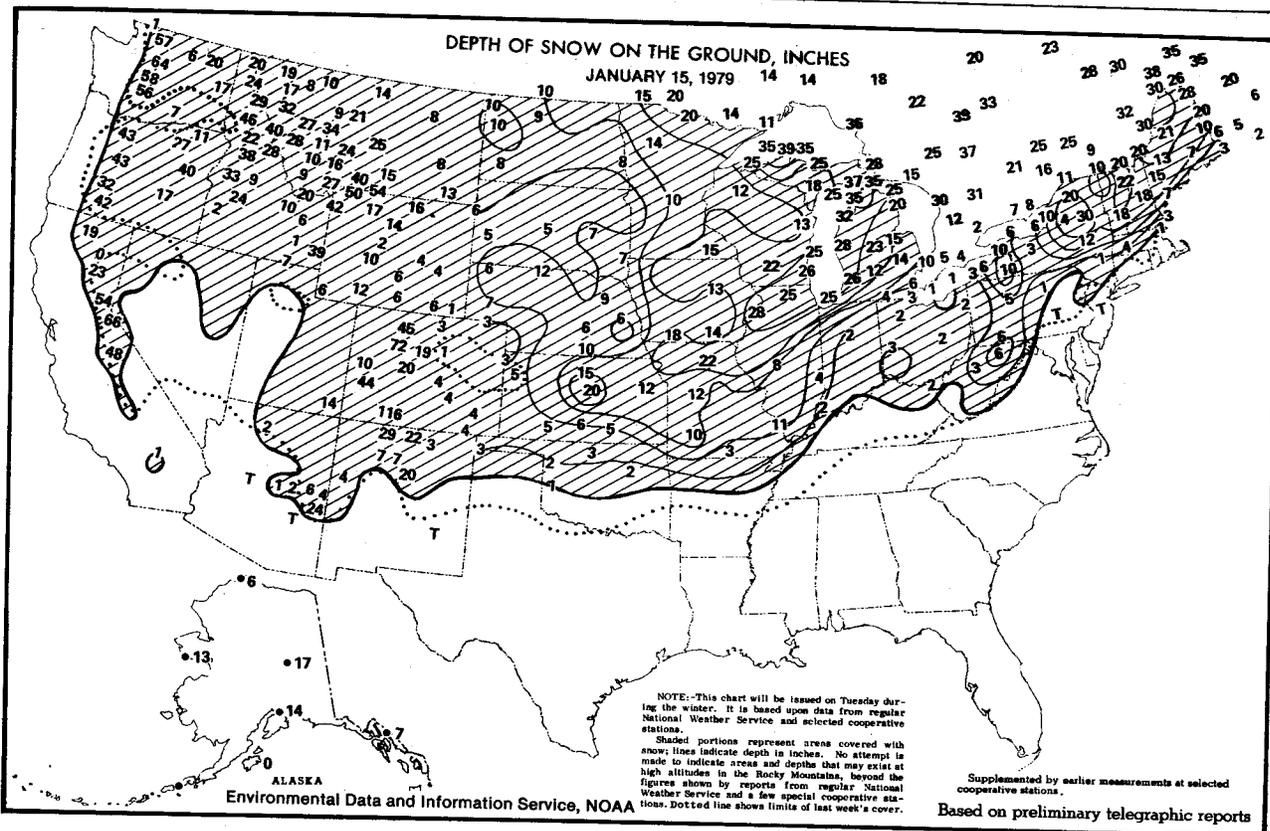
Supplemental feeding requirements livestock increased with inclement weather.

NEW ENGLAND: Coldest weather of season arrived 11th and 12th when lows ran 10 to 20° below zero in northern New England and zero to 10° above in southern areas. Rest of week near or slightly above normal. Precipitation heavy at weeks beginning and ending.

NEW JERSEY: Temperatures 4° below normal coastal and 7° below normal inland section, averaging 22° north, 26° south and 30° coastal. Extremes: 5 and 56°. Precipitation above normal, averaging 0.86 in. north, 1.08 in. south, and 1.05 in. coastal. Snow on 12th to 13th, 1 to 3 in. most sections.

Farmers caring for livestock and tending to other winter chores.

NEW MEXICO: Light rains and snows 12th and 13th. Otherwise mostly dry. Temperatures 8 to 11° colder than normal north and east and near normal elsewhere.



Conditions cold with ice and snowcover in many areas even though little new snow fell. Eastside at standstill but southwest area harvests active as conditions permit. Cotton harvest still in progress with over 80% ginned. Wheat and barley good. Pecan harvest about 67% complete. Livestock fair.

NEW YORK: Temperatures mostly in teens; 5 to 10° below normal. Precipitation in the form of snow, sleet, freezing rain and rain averaged well above normal.

NORTH CAROLINA: Temperatures normal east, 4 to 7° subnormal elsewhere. Precipitation above normal; 2.00 in. mountains; 0.50 in. elsewhere. Fieldwork: 2.4 days suitable. Soil moisture adequate to surplus. Condition of small grains fair to good, pastures fair. Supplies of hay and roughage mostly adequate to surplus. Feed grains adequate.

NORTH DAKOTA: Temperatures last week well below normal and snowfall light. All minimum temperatures below -20° with points in south central and northeast dropping to -35°. High temperature of 20° recorded south central. Precipitation less than 0.10 in. Snow depths ranged from 6 in. southeast to 25 in. southwest.

Farm activities slow as cold continued. Livestock maintenance, road clearing and some seed buying main activities. Livestock holding up well, but much supplemental feed being used.

OHIO: Temperatures well below normal. Highs in 20's, lows in single digits. Precipitation about 0.33 in. but some western and eastern sections received up to 1.00 in. water equivalent.

OKLAHOMA: Arctic air over State second straight week. Temperatures 15 to 17° below normal in southern two-thirds and 17 to 19° below normal in northern third. Precipitation fell several times in form of freezing rain or drizzle and snow. Amounts ranged from 0.03 in. south central to 0.19 in. northeast.

Major winter storm at weekend, leaving most of winter wheat blanketed under snow. Duration of storm short, allowing most producers to care for livestock. Cattle continue to hold up well, but eating large quantities of hay.

OREGON: Cold, wet. Temperatures well below normal. Northern two-thirds mostly 10 to 20° below normal. Southern third 3 to 6° above normal. Precipitation along coast ranged from 1.75 in. north to nearly 7.00 in. south. Western valley averaged over 2.00 in. Eastern precipitation mostly 0.50 to 1.50 in. Precipitation was freezing rain or snow north and mainly rain south.

Activities slow at present. Heavy wind storms past week precluded fieldwork. Feeding livestock, chores, main activities. Possible freeze damage to late seeded clover and grass seed in west. Some stand thinning of winter wheat but no general freeze-out anticipated.

PENNSYLVANIA: Very cold midweek. Precipitation near normal. Periods of rain and snow at beginning and end of period; 0.50 in. common with more in central mountains and extreme northwest and southeast. Snow depths on 15th ranged 1 to 6 in. Temperatures 5 to 15° below normal with greatest in central mountains. Extremes: 47 and -23°. Normal winter chores plus attending State Farm Show.

PUERTO RICO: Island average rainfall 1.51 in. or 0.70 in. above normal. Temperatures averaged about 75° on coasts and 69° interior. Extremes: 87 and 44°.

SOUTH CAROLINA: Unusually cold midweek with freezing rain 12th in north central section, but changed to rain 13th. Some damage to utilities and trees. Northeastern precipitation of 1.00 in. increased to over 2.00 in. west central.

Cold, rainy weather interrupted fieldwork. Activities: Equipment maintenance, farm planning.

SOUTH DAKOTA: Third consecutive week of extreme cold, 12 to 22° below normal. Southwest and south central had warmer readings early week. Extremes: -31 and 39°. Snow observed most of State, heaviest in south. Precipitation 0.20 in. north, 0.10 to 0.40 in. south.

TENNESSEE: Arctic high early week, again at week-end. Temperatures below normal. Highs in 30's, lows in teens. Precipitation light. East 0.32 in., west 0.06 in.

Soil moisture adequate. Pastures and small grains fair. Cattle good on supplemental feed. Main activities general chores and care of livestock.

TEXAS: Cold front 10th brought precipitation north, west, rain southwest, south, south central. As cold front moved toward Gulf, precipitation ended north, west but continued in south. Second cold front 12th by 13th had pushed through entire State but no precipitation associated with front. Temperatures ranged from 29° in Plains to 47° lower Valley. Precipitation very much above normal mid to upper coast, south central. Above normal Blacklands, below normal northeast. Elsewhere rainfall near normal.

Wheat, oats little growth cold weather continued. Stands sustained some freeze damage top growth. Grazing restricted but moisture adequate for good growth when warmer weather returns. Cotton harvest at standstill nearly two weeks because cold, wet weather. Cotton 97% harvested, 100% last year and average. Some stands expected to show losses in quality. Gins able to catch up because of halt in harvest operations. Land preparations also come to halt southern half because cold, wet weather. Sugarcane harvest continued active lower Rio Grande Valley, recent freeze expected cause some loss sugar content. Wheat stands dormant due to cold weather; growth slow, grazing restricted. Moisture adequate to sustain good growth rates when warm weather returns. Freeze damage, especially top growth, occurred from High Plains to south but most stands expected make good recovery. Oats at standstill; little or no growth visible for past two weeks. Freeze damage light to moderate to top growth from northeast to south. Most stands showing signs recovery but grazing limited. Flax damaged by freezing weather south some stands lost. Stands that survived made virtually no growth because low temperatures.

Harvest of fallen oranges for juice active as fruit droppage continued. Grapefruit droppage increased. Limited supplies lettuce, cabbage salvaged from freeze-damaged fields. Carrot harvest active. Heavy top damage in some mature carrot fields prevented machine harvest. Some early bell pepper fields for spring harvest lost due to recent freeze. Initial cantaloup, watermelon planting underway. Some spinach fields lost due previous two freezes.

Range, pasture conditions continued to deteriorate as cold, wet weather prevailed. Grazing

prohibited many areas Panhandle and north central due ice or snowcovered ranges, pastures. Supplemental feeding increased. Livestock conditions declined result of harsh winter weather and limited available forage. Although recent cold, damp weather increased shrinkage and caused some loss of life, particularly among newborn lambs, kids, overall livestock conditions ranged from fair to good depending upon extent supplemental feeding, available grazing.

UTAH: Recurring rain or snow; light to moderate but locally heavy. Temperatures followed rising trend to range from near normal south to 14° below normal Cache Valley and 13° below normal Uintah Basin.

Grading, sorting, and marketing onions, potatoes, and apples continued. Farm activities limited to feeding and caring for livestock and poultry.

VIRGINIA: Temperatures near 30°, well below normal. Extremes: 68 and 1°. Precipitation moderate occurring first part of week averaging 1.00 in. Few locations in higher elevations 1 to 2 in. snow. Some areas reported freezing sleet and snow on 12th.

Topsoil moisture mostly adequate. Fieldwork: 1.5 days suitable. Winter grains and grazing good. Cold, wet weather limited fieldwork. Some small grains topdressed in east. No snowcover extended grazing period in some northern, eastern areas. Extreme cold increased deaths of newborn in southwest. Other activities: Feed and care of livestock; marketing grains and peanuts; tobacco grading and marketing.

WASHINGTON: West: Temperatures averaged 4 to 10° below normal. Precipitation ranged from 0.10 to 2.40 in. below normal. Dry, freezing weather continued to midweek when trend came with rain, moderate temperatures.

Warming trend thawed frozen ground and replaced needed moisture. Major farm activities: Repairing equipment, feeding livestock. Feed adequate.

East: Temperatures 10 to 15° below normal. Precipitation ranged from 0.70 in. below to 0.20 in. above normal.

Winter injury to fruit trees and winter grain stands expected, but extent of damage is unknown. Ground frozen to 3 feet. Heavy snowfall midweek gave welcome ground cover to grain stands. Pruning continued. Calving, lambing started with some losses due to weather. Other activities: Livestock feeding. Hay adequate.

WEST VIRGINIA: Temperatures 5 to 13° below normal. Coldest 9th, warmest 14th. Precipitation above normal, fell nearly every day. Greatest total 1.60 in.

Fieldwork: 0.5 days suitable. Soil moisture adequate to surplus. Hay supply adequate. Calving and lambing season getting underway; livestock in good condition.

WISCONSIN: Temperatures well below normal. Some moderation late week but accompanied by snow. Highs reached 20's 13th but fell sharply 14th when skies cleared following a major snow storm. Coldest readings on 11th ranged from -16° southeast to -29° northwest. Precipitation heavy except in northwest. Snowfall from 11th to 13th totaled 3 in. north central, 4 to 6 in. northeast, 6 to 14 in. south. Blizzard conditions developed southeast 13th. Frost depth 6 in.; increase of less than 1 in. from two weeks ago. Snow depths averaged 13 in.; increase of 4 in. from two weeks ago and the most

for this time of season since 1971. Following weekend's heavy snow, Milwaukee had 28 in. on ground, while Madison had 23 in.

WYOMING: Temperatures below normal. Mean temperatures in Big Horn and Wind River drainages below

zero. Precipitation generally about normal with exception of Upper and Lower Platte drainages. Snowcover and extreme cold causing ranchers to feed heavy in most areas. Livestock condition deteriorating. Snow covered winter wheat in most areas, minimizing wind and freeze damage.

WATER SUPPLY OUTLOOK FOR THE WESTERN UNITED STATES
Issued as of January 1, 1979

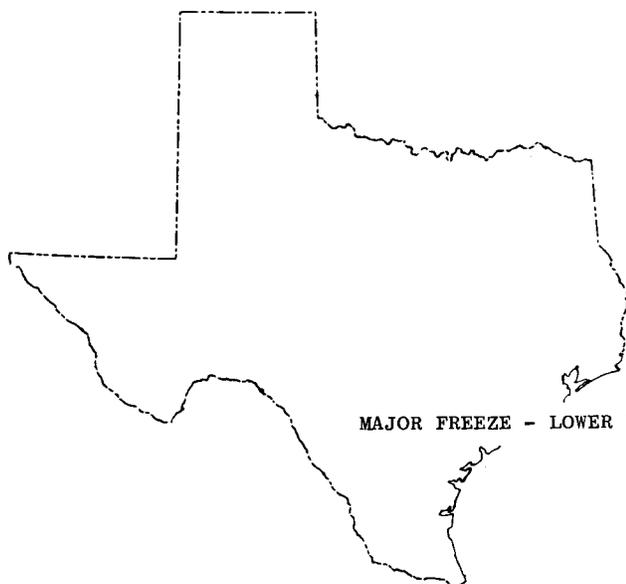
The table below shows the runoff forecast in percent of the 15-year (1963-77) average. The forecasts are for the remainder of the water year (October thru September), except for the full water year for the Sacramento and San Joaquin Basins; April 1 to September 30, 1979, for the Missouri, Yellowstone, and North Platte Basins; November 1, 1978 to June 30, 1979 for the Little Colorado Basins; and January 1 to June 30, 1979, for the Gila Basin. The publication "Water Supply Outlook for the Western United States," issued as of January 1, 1979, contains the complete water supply forecasts for about 375 stations in the Western United States.

River	Station	Forecast 1,000 Acre-feet	Percent 15-year average
Columbia	Grand Coulee, WA	57,500	85
Columbia	The Dalles, OR	83,000	80
Snake	Lower Granite, WA	17,800	77
Sacramento	Red Bluff, CA	5,500	61
San Joaquin	Big Creek, CA	1,200	94
Weber	Gateway, UT	405	93
Jordan	Utah Lake, UT	500	102
Truckee	L. Tahoe-Farad	260	75
Colorado	L. Powell infl.	11,000	119
Green	Green River, UT	4,000	106
San Juan	Bluff, UT	1,900	153
Little Colo.	Woodruff, AZ	17.5	143
Gila	Solomon, AZ	238	140
Rio Grande	San Marcial, NM	380	115
Arkansas	Pueblo, CO	275	107
Missouri	Ft. Peck, MT	4,380	89
Yellowstone	Sidney, MT	7,280	93
North Platte	Glendo, WY	930	96

Office of Hydrology
National Weather Service

Correction to Vol. 66, No. 2, dated Jan. 9, 1979, page 12, Monthly Temperature and Precipitation Table for December, 1978.

ALASKA. Barrow...Avg. Temp. -14, Depart. -2, Heating Degree Day 2448
Kodiak...Avg. Temp. 36, Depart. +6, Total Precip. 10.0, Depart. +4.9
Nome.....Heating Degree Day 1567



MAJOR FREEZE - LOWER RIO GRANDE VALLEY OF TEXAS

JANUARY 2-3, 1979

A major freeze caused heavy crop damage over most agricultural areas of South Texas on January 2-3, 1979. Colder-than-normal readings undercut the moderate 1973 freeze but failed to reach the frigid and devastating temperatures as of 1962's severe freeze. This year, the Nation's supply of certain winter vegetables, and to a lesser extent citrus, may drop. South Texas produces about 58% of the winter spinach and early spring onions, 30% of the winter cabbage and carrots, 16% of the grapefruit, 5% of winter lettuce and cauliflower, 3% of the oranges and winter broccoli, and a few avocados.

Losses varied with crop-type, developmental stage, amount unharvested, cold-hardiness, temperature minima and duration of critical temperatures, cold protection, post-freeze weather, and recovery (cloudy and cool provides better conditions than sunny and warm).

Cold Temperatures and Durations

Temperature minima on the coldest night ranged from 19° to 29° across the normally warm Lower Rio Grande Valley and other crop districts (fig. 1). The coldest temperatures chilled the western portions where many winter vegetables and part of the citrus grow. A temperature/duration profile of a station in the coldest citrus area (fig. 2) indicates that readings stayed critically cold for 11 hours or nearly the entire night for oranges, and 7 hours for grapefruit. Some growers protected fruit against the cold with heaters, irrigation water, and a few wind machines which mixed the warmer air aloft with the colder air near the surface. But for those without cold protection, a "watch and hope" situation prevailed. Temperatures of 26° to 29° near the coast did not significantly affect crops. However, most of the citrus is pro-

duced in the central section where temperatures ranged from 20° to 24°. This freeze will reduce next year's citrus set and crop because of twig and limb damage.

Crop Losses

Citrus fruit loss for this season may tally about \$25 million based upon an estimated 50% loss of the total crop. Only a third of the grapefruit had been harvested. On much less acreage, oranges were about two-thirds picked. Some of the fruit was salvaged by processing.

Young cabbages were nearly wiped out. Mature cabbages in most fields suffered considerable damage. Carrot and onion tops showed moderate damage. Cauliflower was lost in winter production areas further north near San Antonio. The large acreage of spinach in Crystal City, Tex., was burned but should recover.

Not only will the freeze hurt the future market but also the established market. In some cases, years are required to build up a crop product and market.

Some benefits result from freezes. For example, South Texas will realize control of insects, diseases, and weeds; maintain cold-hardiness in orchard trees; accumulate chill hours needed by peaches and certain deciduous trees; and accelerate research toward introduction of varieties that are more cold-hardy as well as higher yielding or mature at a more opportune market time.

Southward Movement

The arctic airmass that froze South Texas on January 2-3 edged southward out of Canada as early as December 27. However, it was not fully evident until New Year's Eve and Day that the high pressure center of the frigid surface airmass would be

FIGURE 1. CITRUS AND WINTER VEGETABLE PRODUCTION AREAS AND TEMPERATURE MINIMA DURING THE MAJOR FREEZE OF JANUARY 2-3, 1979

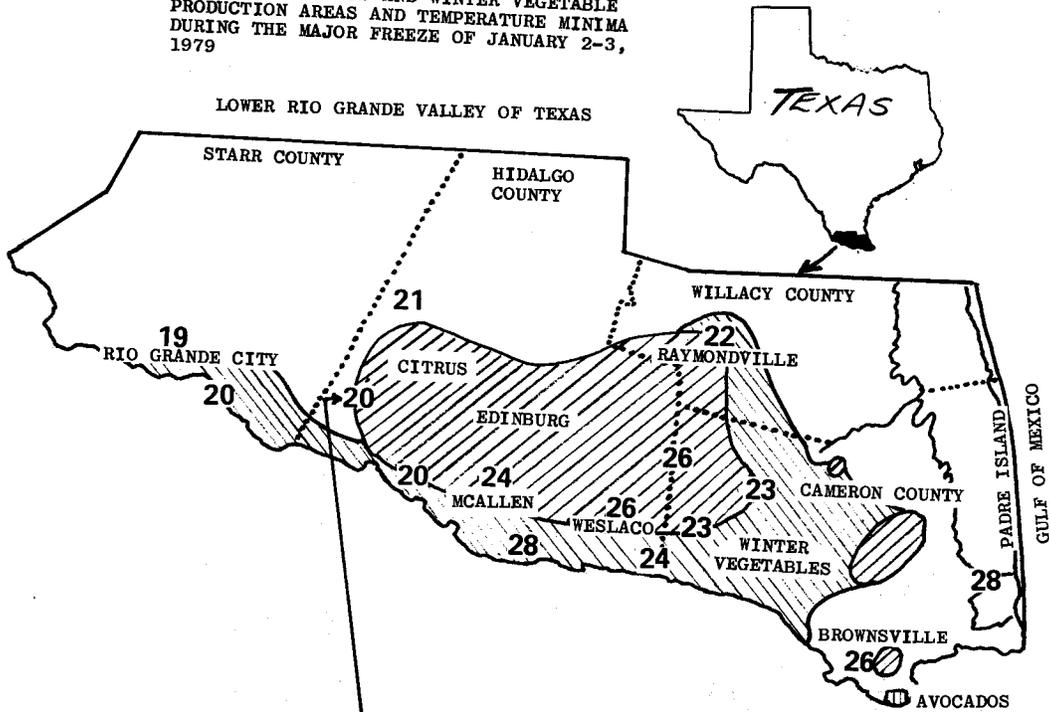
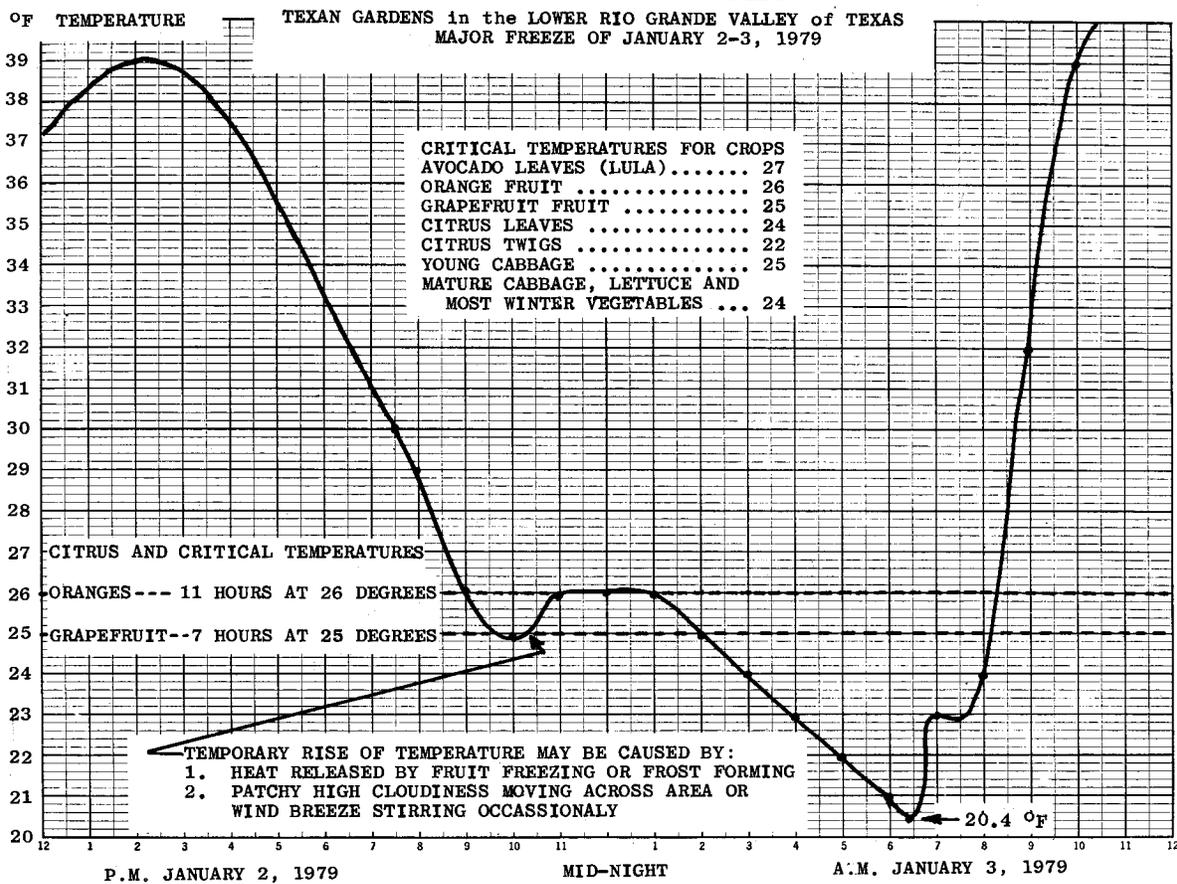


FIGURE 2. TEMPERATURE GRAPH

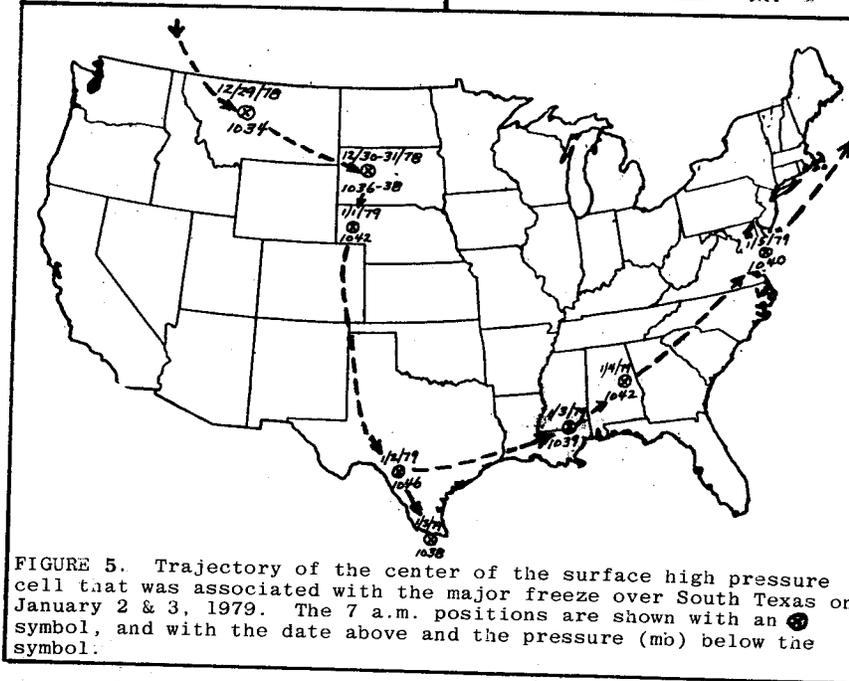
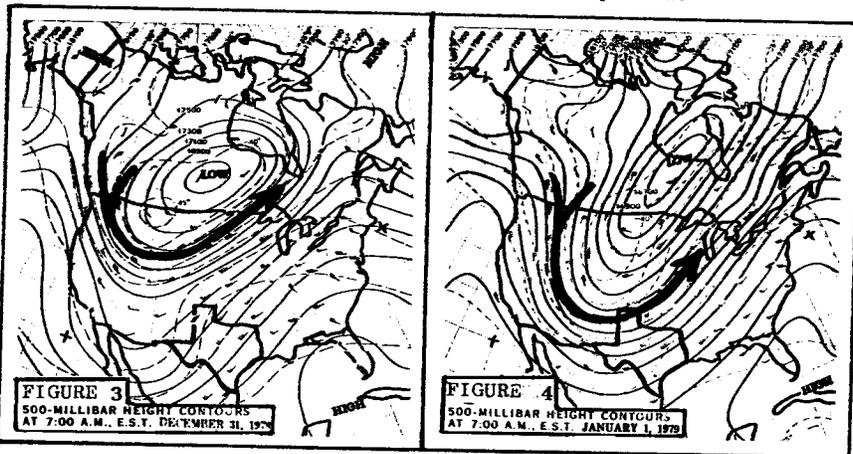


pushed into Texas by the upper steering current (figures 3 and 4). The upper steering current had prevailed for the past few days and had nudged the center of the large high pressure cell southeastward into South Dakota (fig. 5). The surface high center remained stationary on the 30th-31st. However, a key change was taking place aloft---the steering current changed to a southerly direction and pushed the high center into western Nebraska. The steering current became very strong; in only 24 hours, it shoved the surface high about 1000

miles at 42 mph from Nebraska to South Texas. The rapid change in direction and speed of the arctic airmass left growers with little time to force harvest. Unfavorable working conditions existed with a strong wind chill, and to make the situation worse, New Year's Day meant most field workers were in Mexico.

By the morning of the 2nd, temperatures dropped to 16° at San Antonio under radiational conditions and to 26° to 30° across the Lower Rio Grande Valley under strong cold advection. 1/ After-

1/ During advection, conditions show a frigid airmass moving into an area on northerly winds usually on the first night after a frontal passage. Cooler air continues to surge into the area. Radiation indicates a frigid airmass already over an area which contains generally calm winds at nighttime. Cooling takes place through radiation or plant heat loss to outer space, usually producing the coldest night of the period.



noon temperatures rose to the upper 30's in most areas. The very dry airmass with dewpoints in the teens prevailed during the night as winds became light or calm and skies remained mostly clear. By sunrise on the 3rd (the coldest period for the Valley), temperature minima ranged from 19° to 29° (fig. 6).

The arctic airmass became so large and cold that it also caused a minor freeze over agricultural areas of central Florida on the morning of the 3rd. The northern fringes of the citrus belt had 23° to 24° with some icing of fruit. Some vegetables suffered wind/cold burn. The airmass slowly moderated, and temperatures climbed about 4 degrees the next morning. Overall, the Florida freeze was minor.

Return Period for a Major Freeze

The average return period for a freeze in the Texas valley such as the one on January 2-3, 1979, takes about six years. Temperatures 20° or colder such as those in the "severe" freezes of 1949, 1951, and 1962, require an average return period

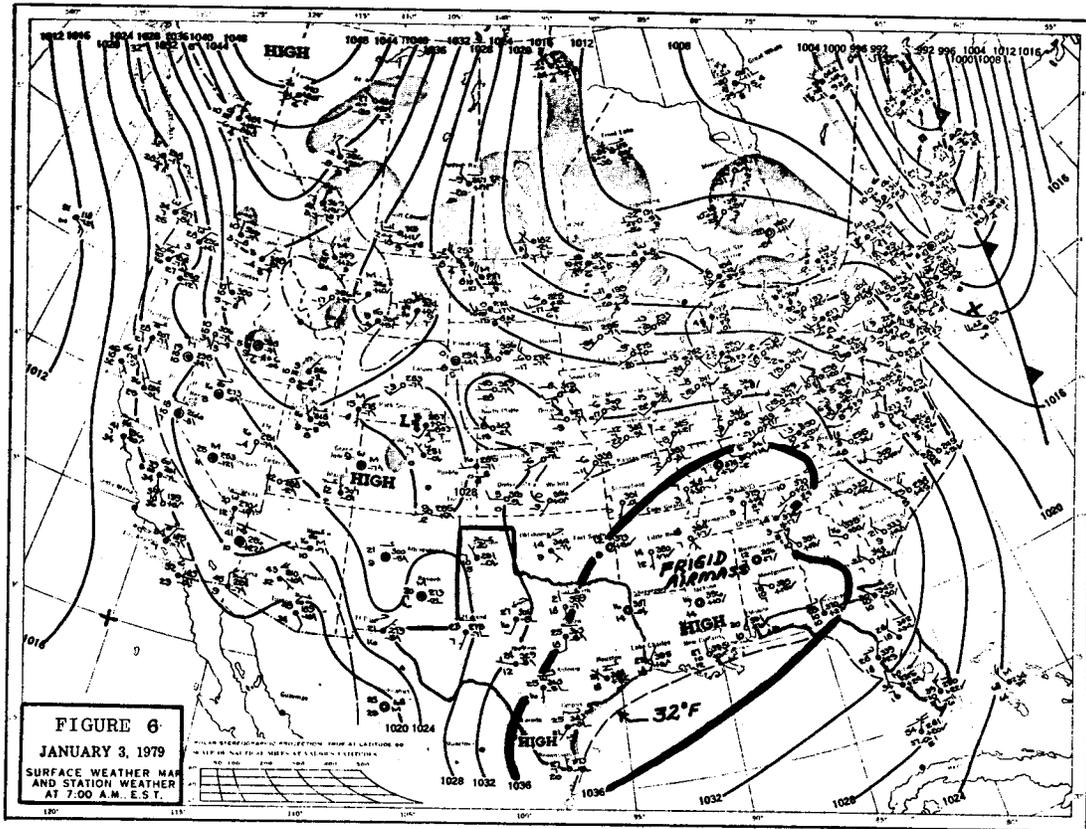
of about 12 years causing great damage across the entire valley.

Agricultural Areas Colder than the Airport

Agricultural areas were generally colder on radiational freeze nights than nearby cities and airports. In California and Arizona, the difference averaged 5 degrees on the coldest night of the major freeze of December 6-9, 1978 (page 10, table 2, Weekly Weather and Crop Bulletin of 12/27/78). In the Lower Rio Grande Valley, the difference between the average minima of the regular reporting 16 substations and the Brownsville Airport is usually 3 degrees on freeze nights. Thus, the Brownsville minima may be a general index to the freeze over the valley's agricultural area. For example, if the Brownsville minimum was 26°, then the agricultural area would average 23° and approach the threshold of a major freeze. A 22° reading at Brownsville would indicate a "severe" freeze over the valley with intense damage to most citrus and winter vegetables.

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Weekly Weather and
Crop Bulletin Staff

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World Weather and Crop Update

January 8 - 14 and December Summary

USSR. Snowfall in the Ukraine began in early December following a relatively dry November. Snow depths accumulated sufficiently to protect wheat against some very cold conditions in northeastern parts of the belt. The most southerly areas were often snow-free, but temperatures there stayed above critical levels. Only in some central areas was the combination of of snow depth and cold such that winterkill might have occurred, and in no case were any widespread areas affected. During the second week in January, southerly winds brought warmer temperatures causing significant snowmelt. By the end of the week, an extensive snowless area existed (fig. 1) with temperatures remaining mild (near freezing); appearances pointed to more snow blanketing the area before colder temperatures returned. Precipitation in the Volga Valley and the New Lands continued above normal in December, and with the abundant snowcover, should provide excellent soil moisture for spring planting.

PEOPLE'S REPUBLIC OF CHINA. Only light precipitation fell in the wheat belt in December which is the normal condition. However, light totals in southern China ranged much below normal prompting some concern about inadequate soil moisture for spring planting. Much-above-normal rains of 25 to 40 mm partially relieved somewhat dry conditions in southern areas near the Vietnam border in the first week of January. These rains spread north-eastward dropping 15 to 35 mm over much of south-eastern China during the second week of January; although the dry conditions have not been totally alleviated, the outlook is more optimistic.

AUSTRALIA. Rainfall in most wheat areas dropped below normal in December after a wet November. This provided good harvest conditions with an excellent crop reported. The onset of normal summer rains in the north lagged in December and came only in the last week. In January, extreme northerly areas received near-normal rainfall, and northern Queensland reported some flooding in sugarcane areas; however, interior regions received much-less-than-normal rainfall.

INDIA. Rains of the northeast monsoon in the peninsula dropped abundant December totals and assured a successful crop season there. Most areas to the north remained quite dry; significant rain fell only in the first few days of December. The dry weather continued into January, and precipitation in Pakistan during the second week barely extended into India. The outlook for irrigation water supplies in the spring remains pessimistic.

AFRICA. The rainfall pattern in northwestern Africa reversed itself in December. Coastal Algeria and Tunisia dried out with lower-than-normal rainfall, and Morocco got some relief from previously dry weather. Rainfall in Morocco was concentrated mostly in one week, however. January saw a return to relatively dry weather, so the wheat crop is probably not in good condition yet. Algeria and Tunisia received near-normal rainfall during the first two weeks of January, and crop conditions should be better there. A rainfall deficit continued in the Maize Triangle of South Africa. Southeastern and extreme northern portions of the area showed adequate moisture, but rainfall totals for November and December reached only 30 to 40% of normal over much of the growing area. January amounts have remained below normal, and it appears that substantial reductions in corn yields may be expected over a fairly large portion of the Triangle.

S.E. ASIA. Most of the region continued to have quite dry weather in December, and only in Vietnam did substantial rains fall. January has been almost rainless too---good for rice harvest---but some rain may be needed for other, minor crops.

EUROPE. December brought wetter conditions to most of Europe after a relatively dry November. Dry pockets persisted in eastern Spain and in a limited area covering much of Austria, Hungary, and Czechoslovakia. Some relief came to parts of eastern Spain in the first two weeks of January, but wheat development lagged behind normal. Winter grains in the eastern European area mentioned above

(continued on back page)

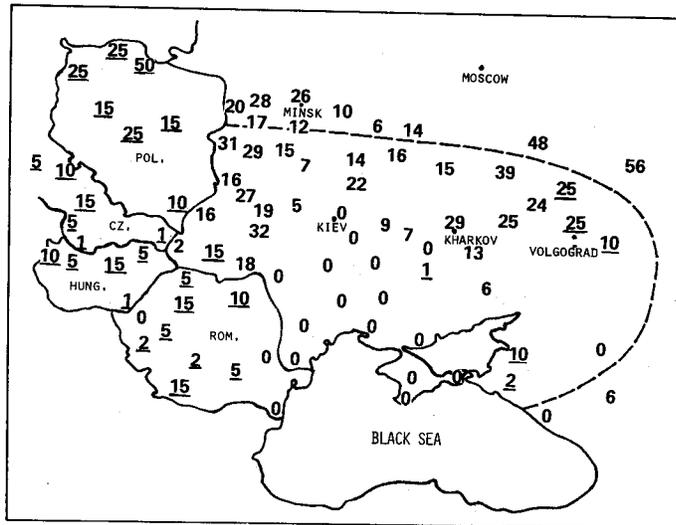
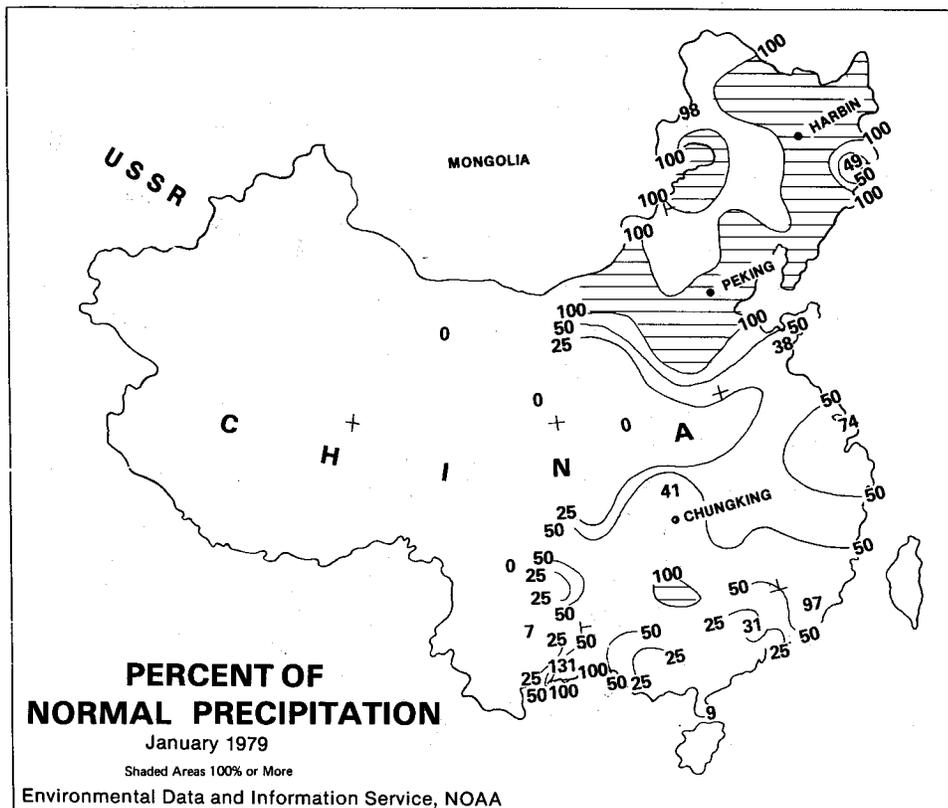
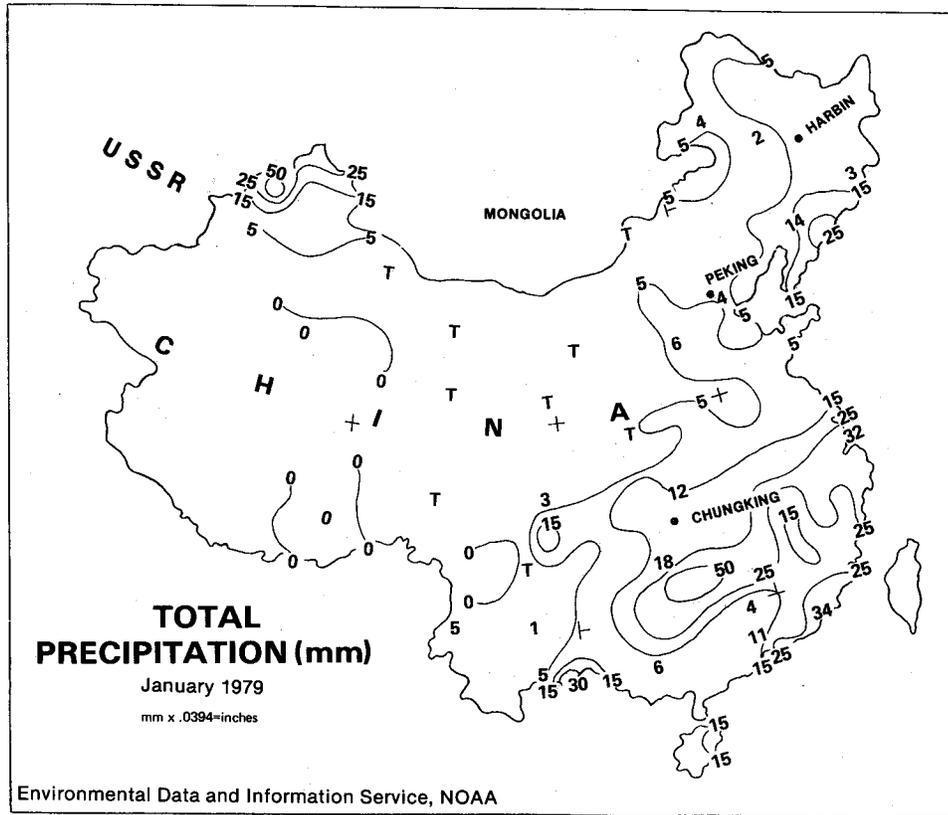
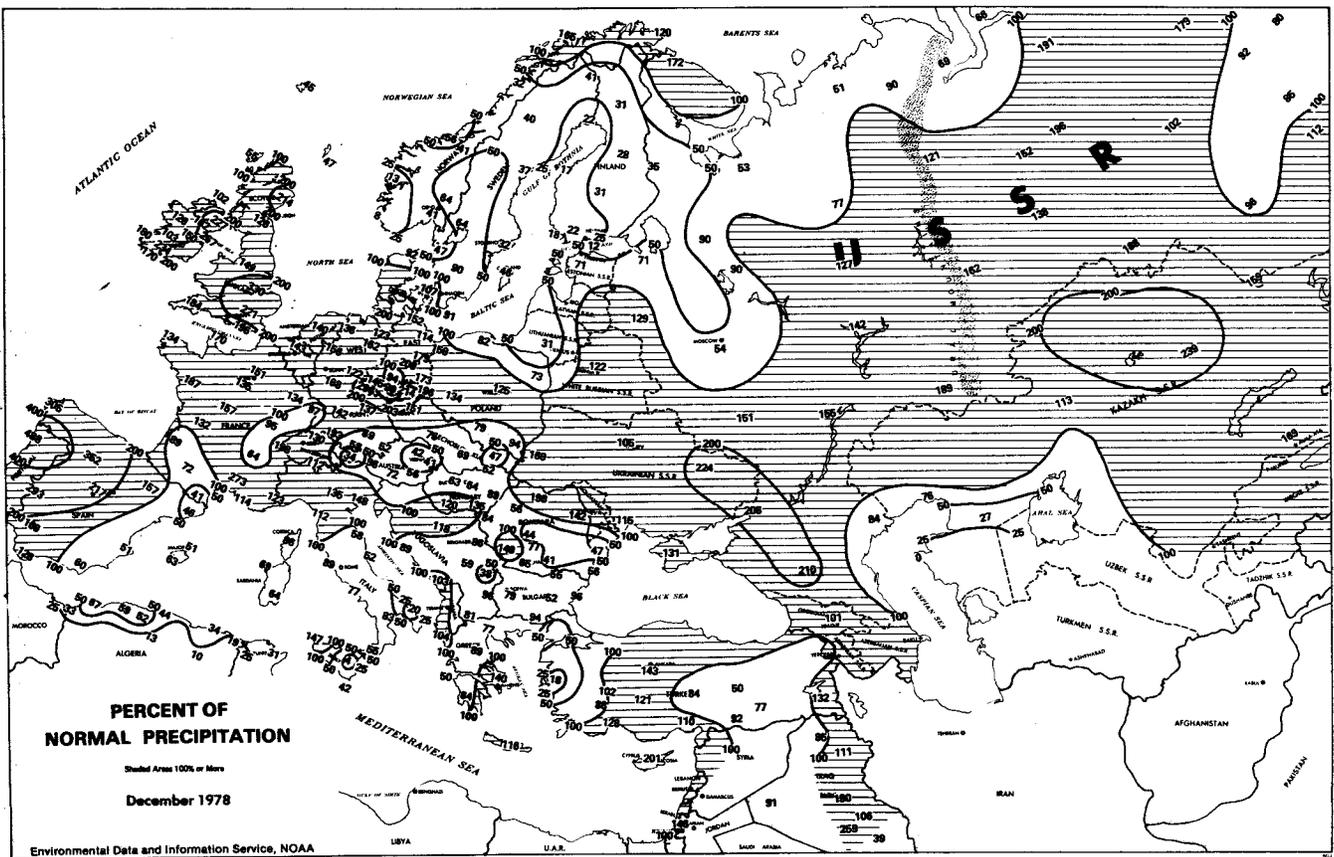
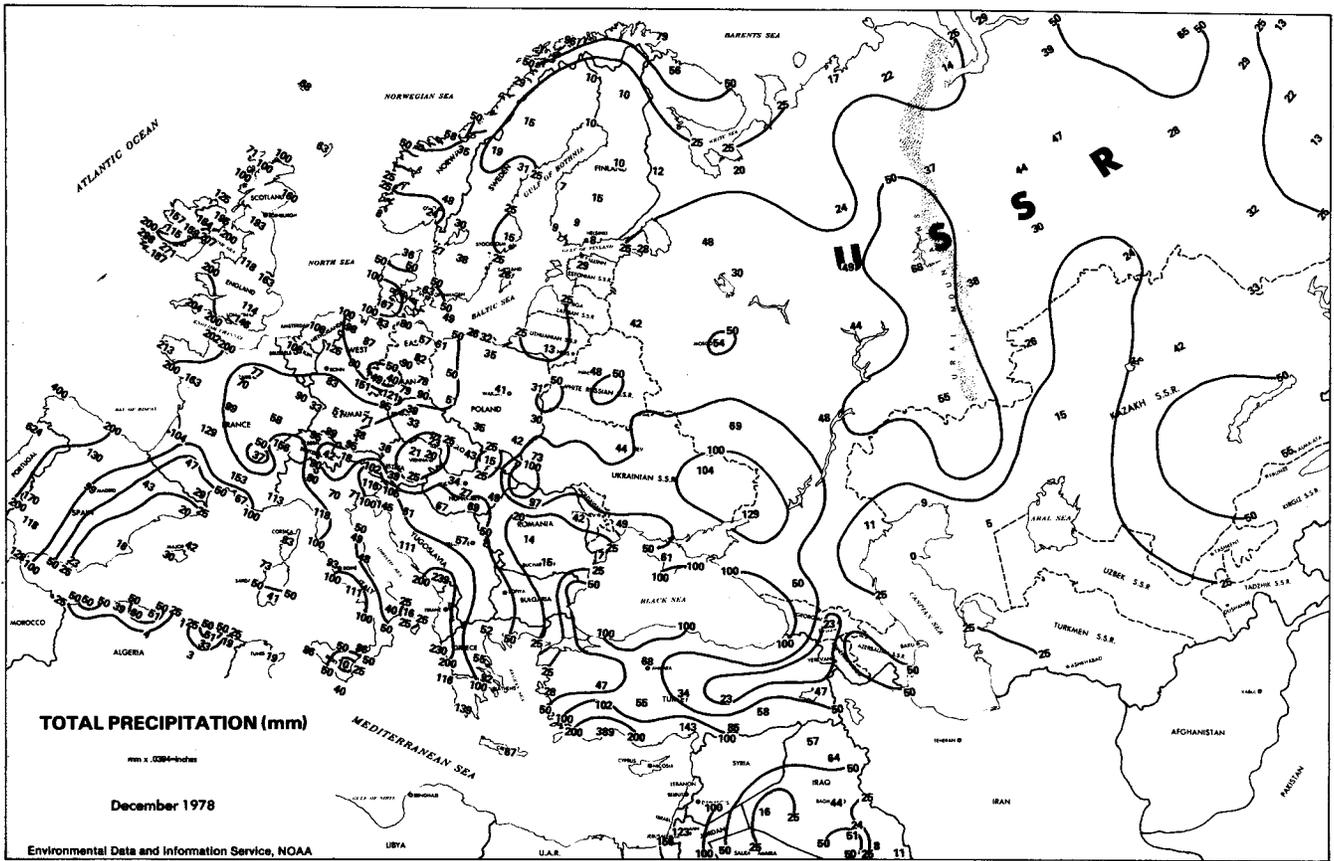
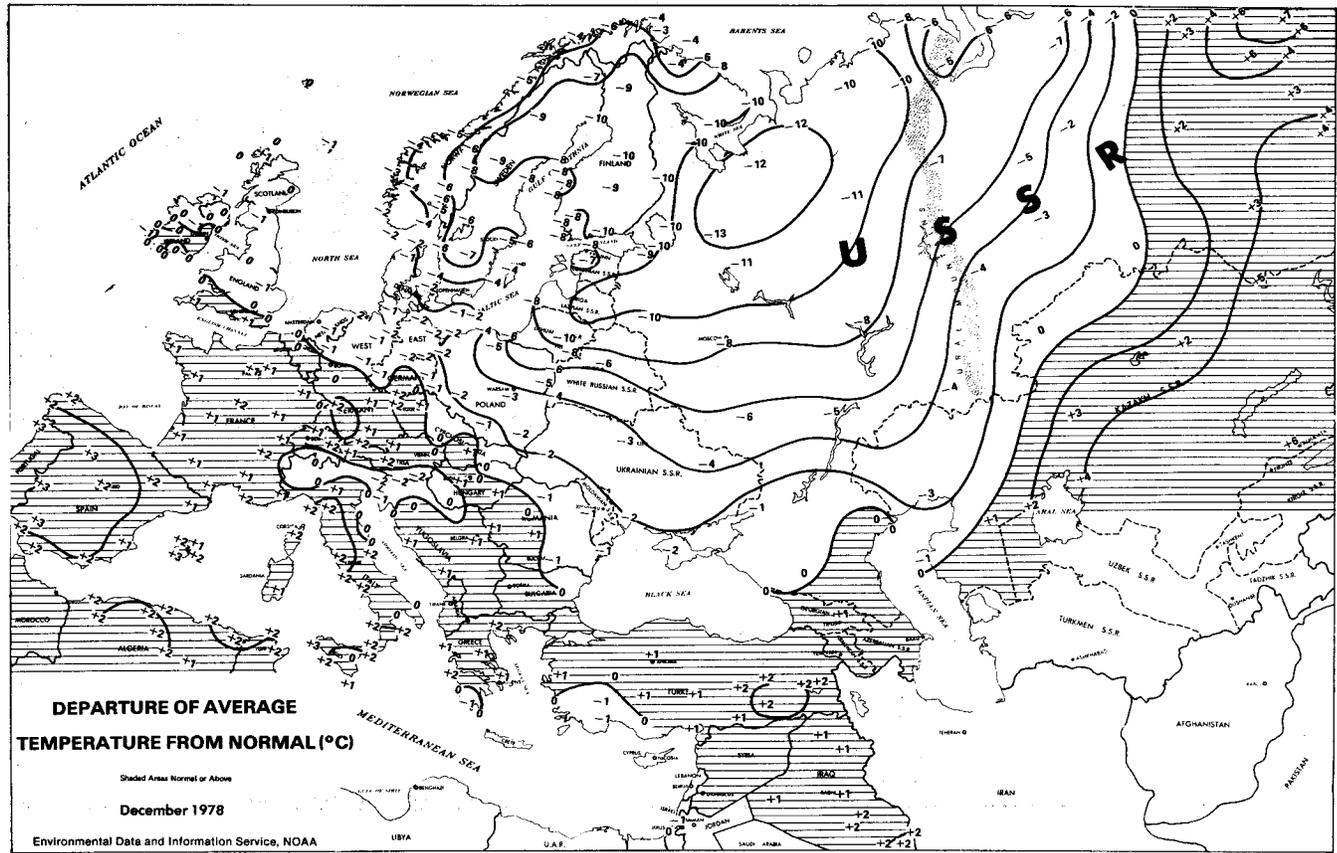
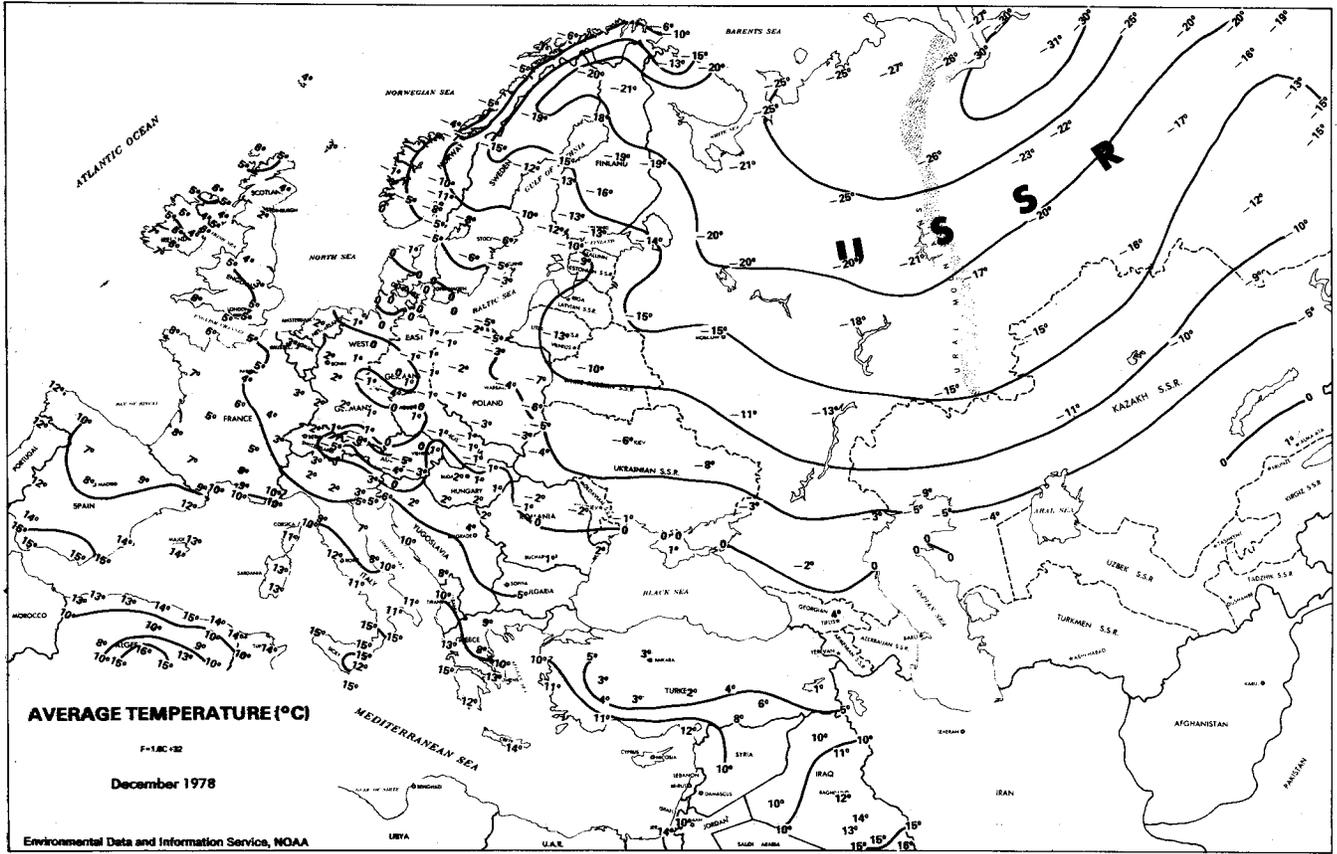


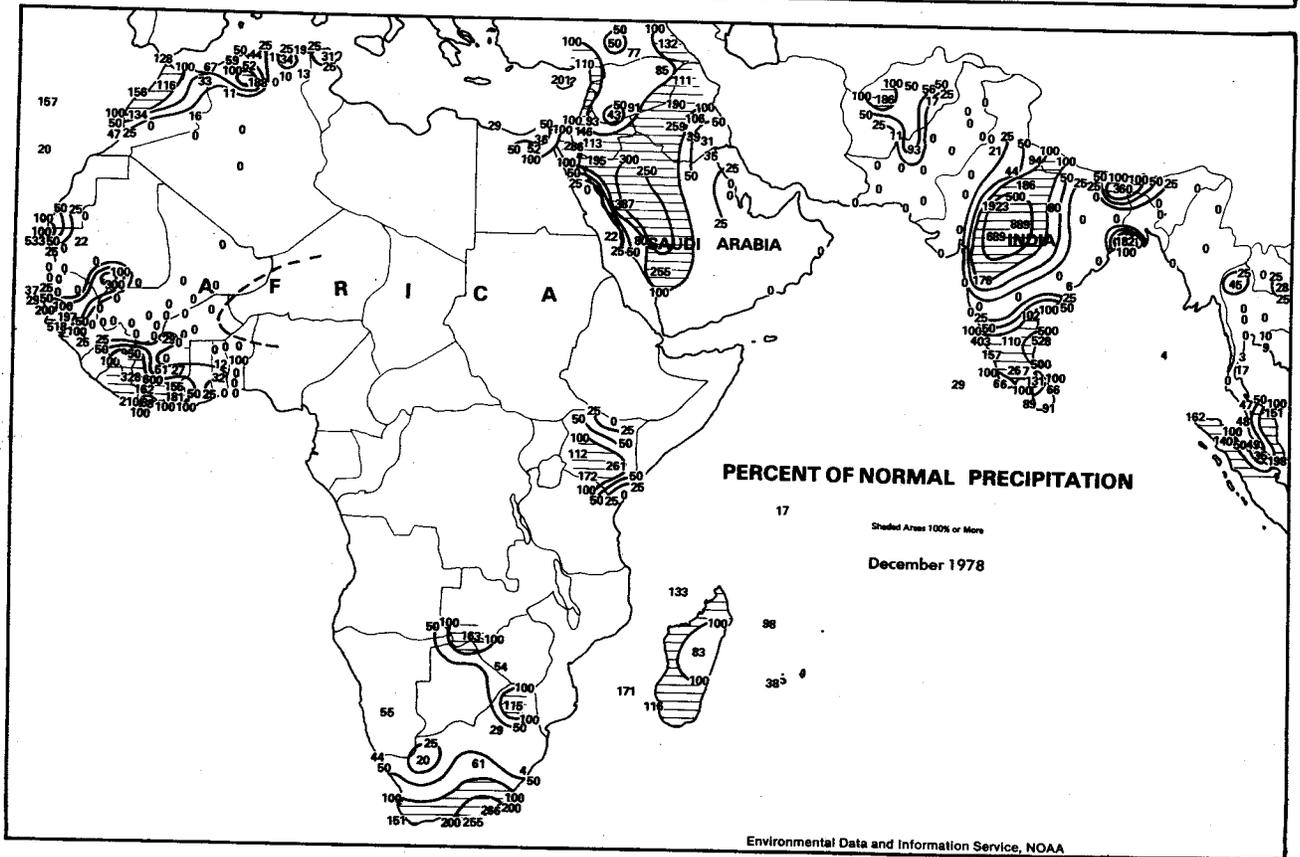
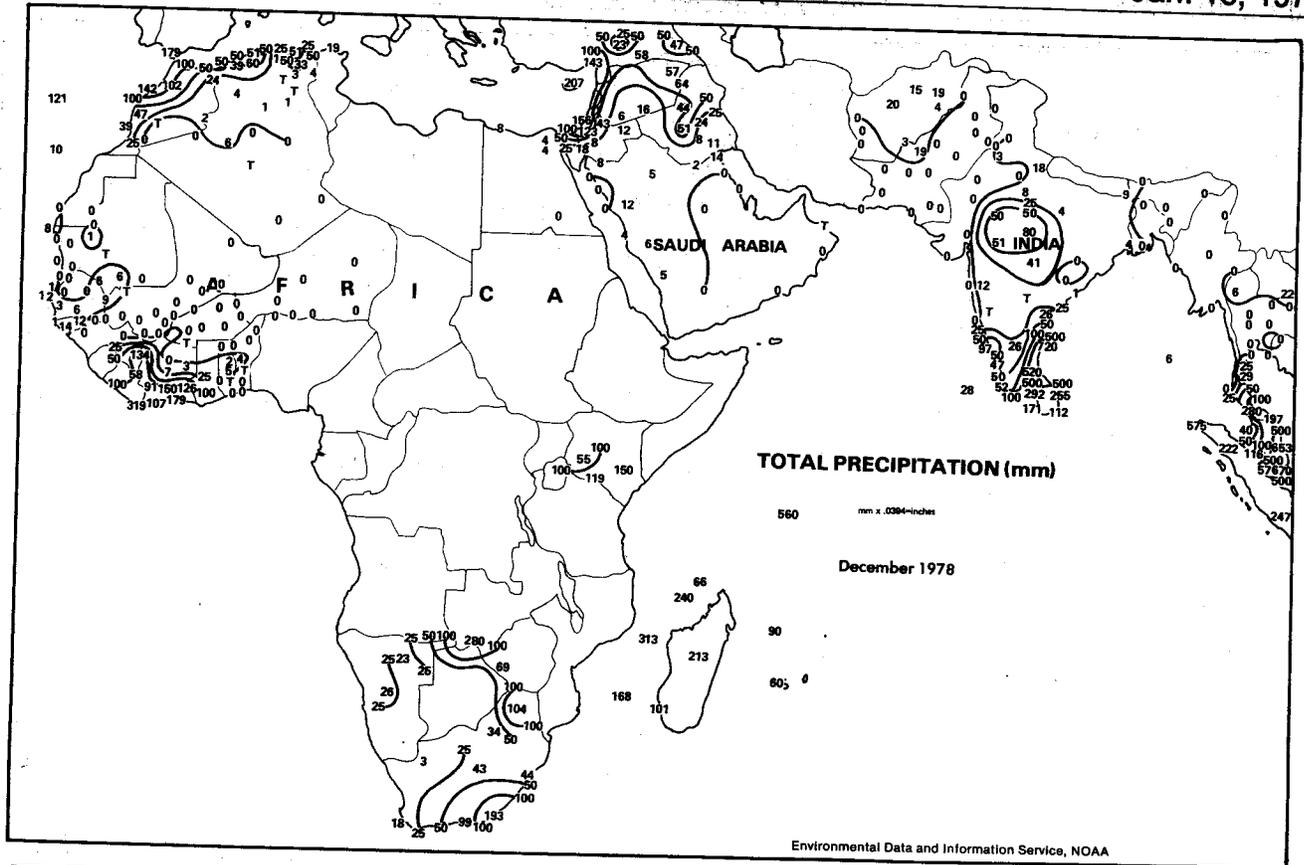
Figure 1. Snowcover (in cm) at 06 GMT on Jan. 14, 1979, in Eastern Europe and the Soviet winter wheat area (outlined by dashed line). Underlined numbers are approximate values.

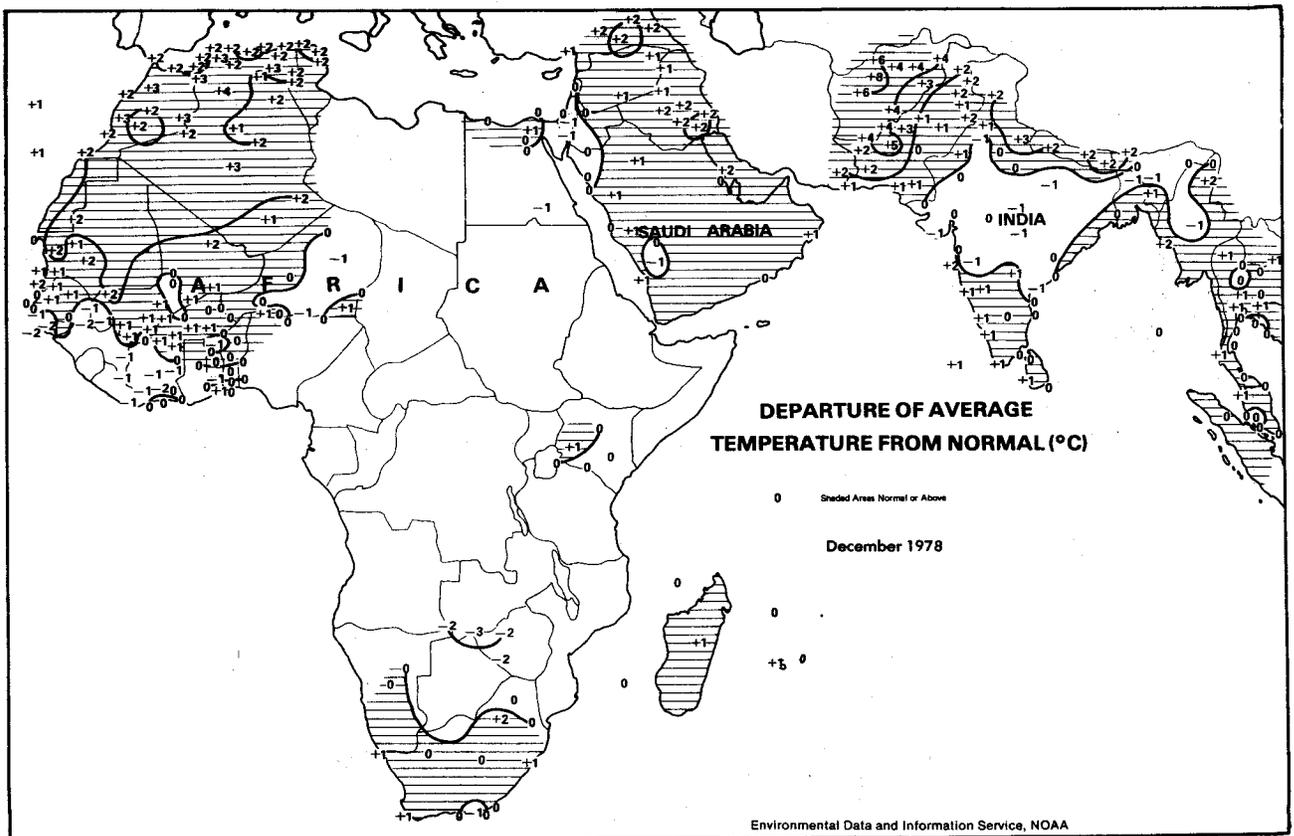
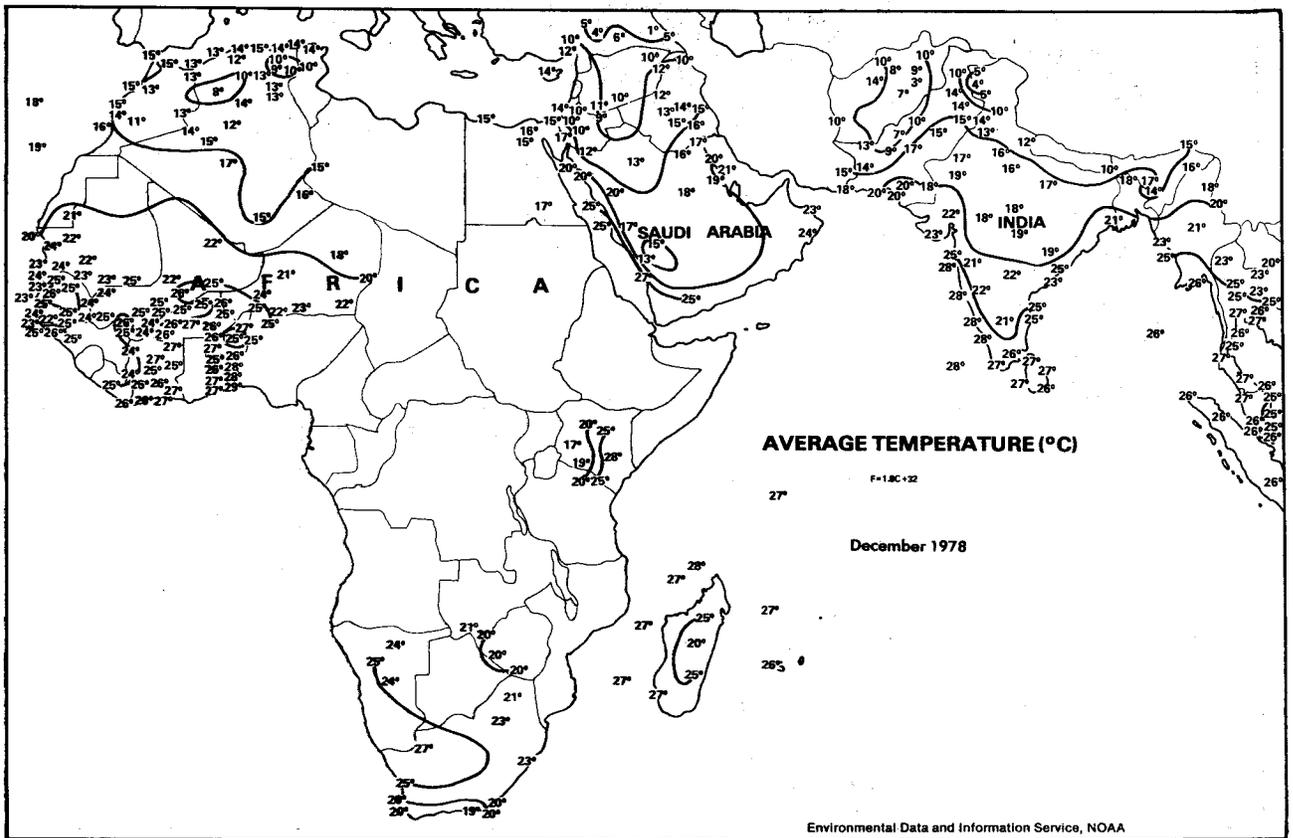
China Precipitation

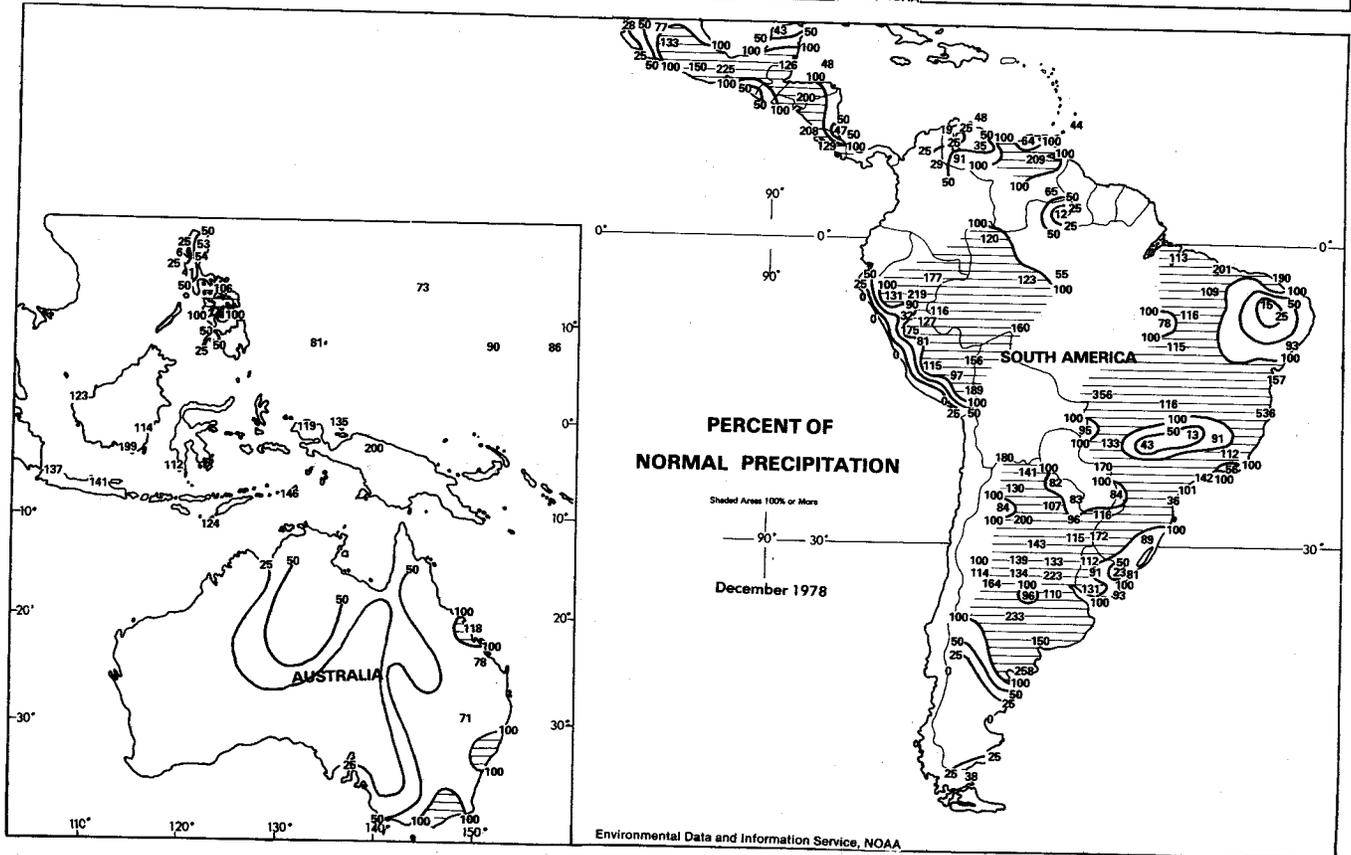
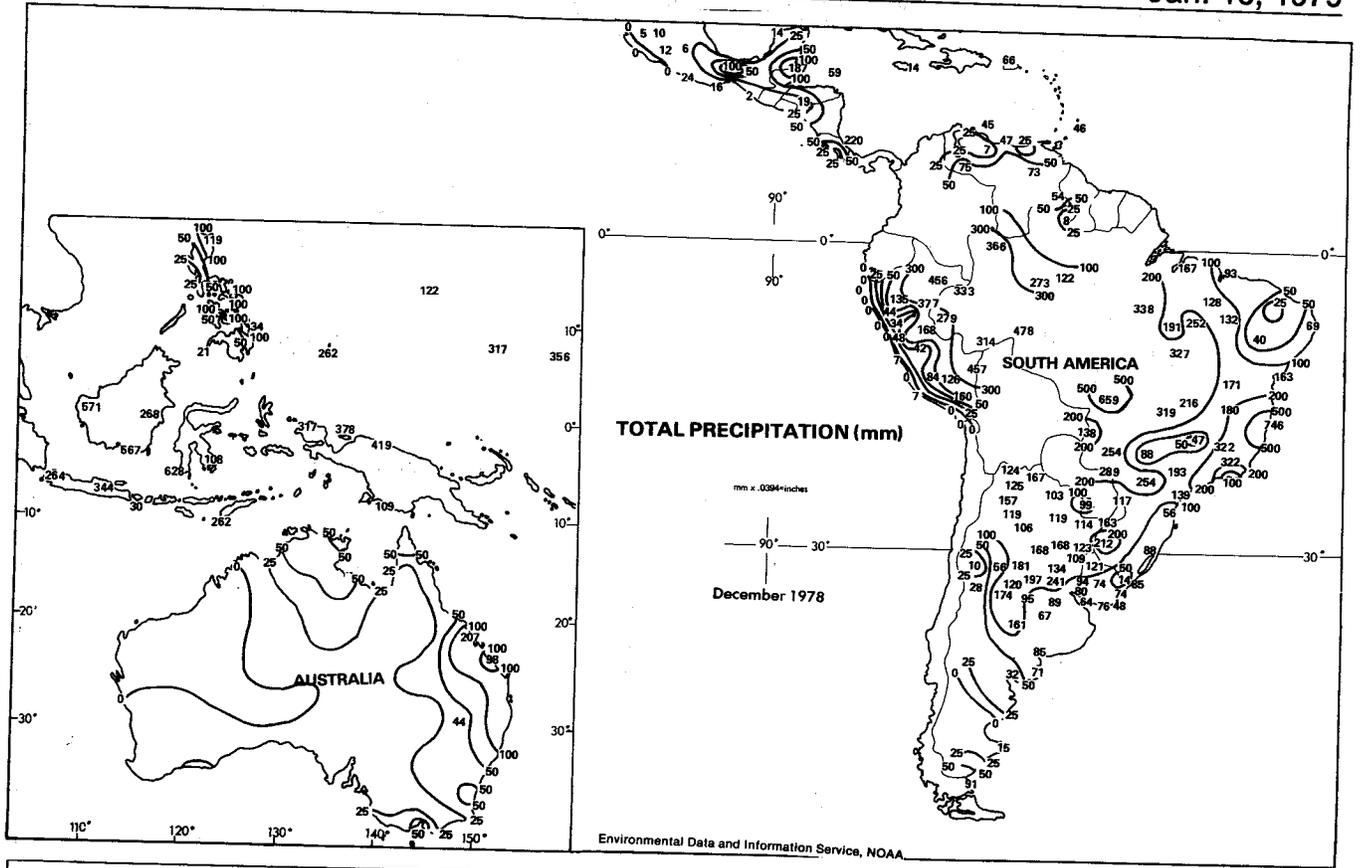


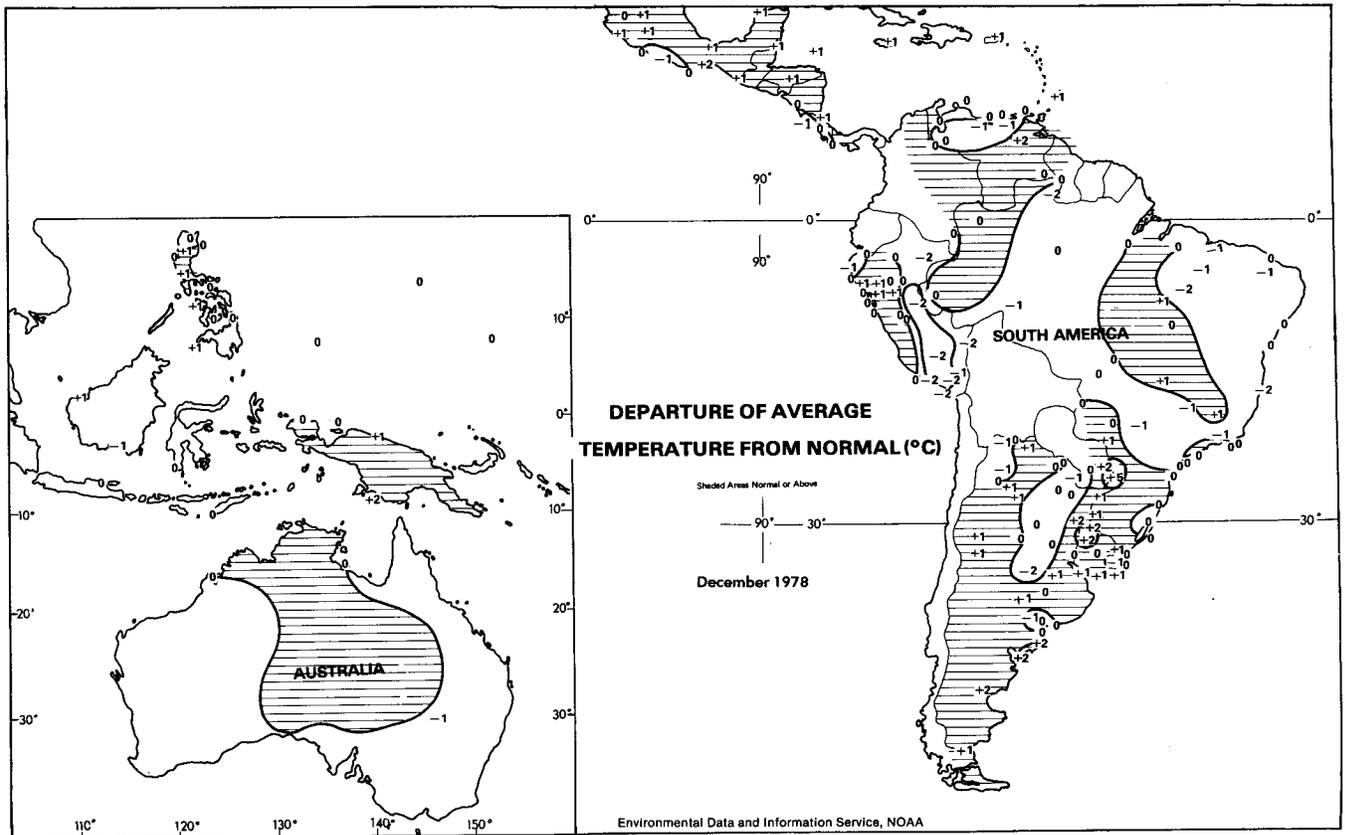
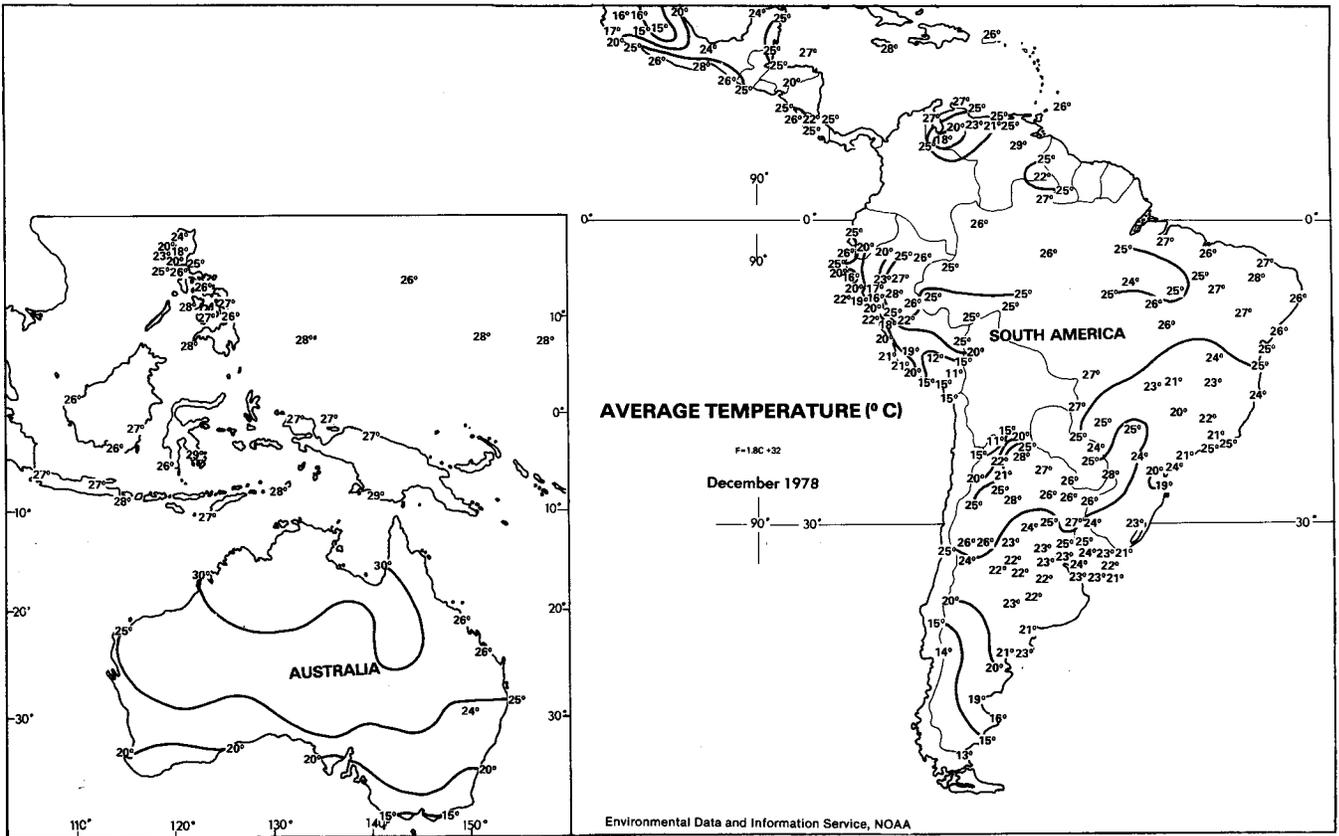


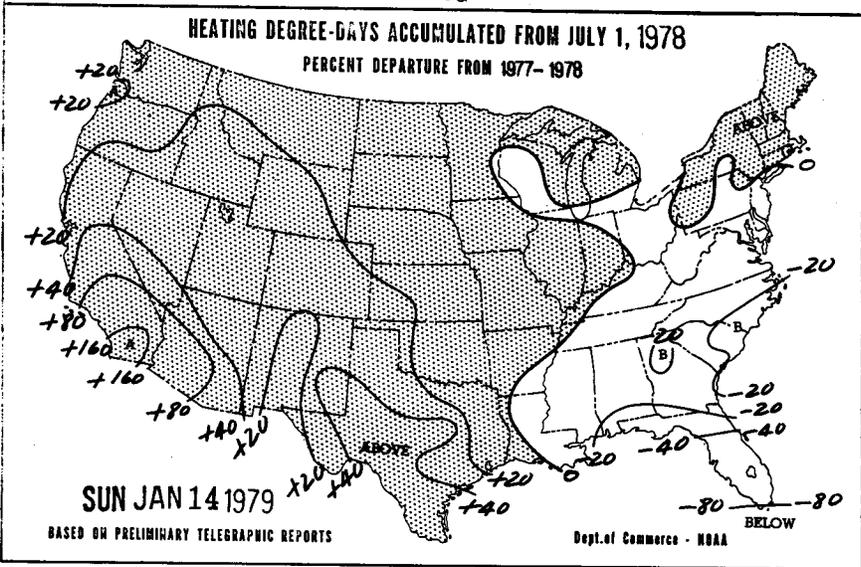
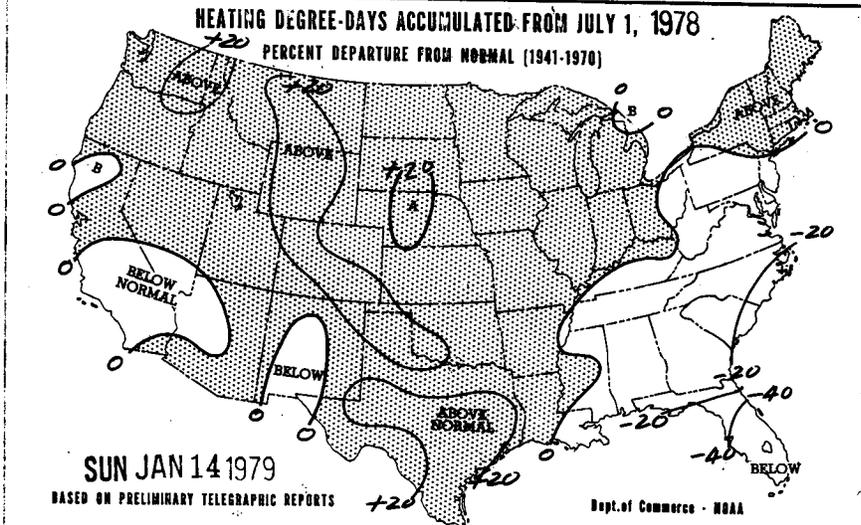
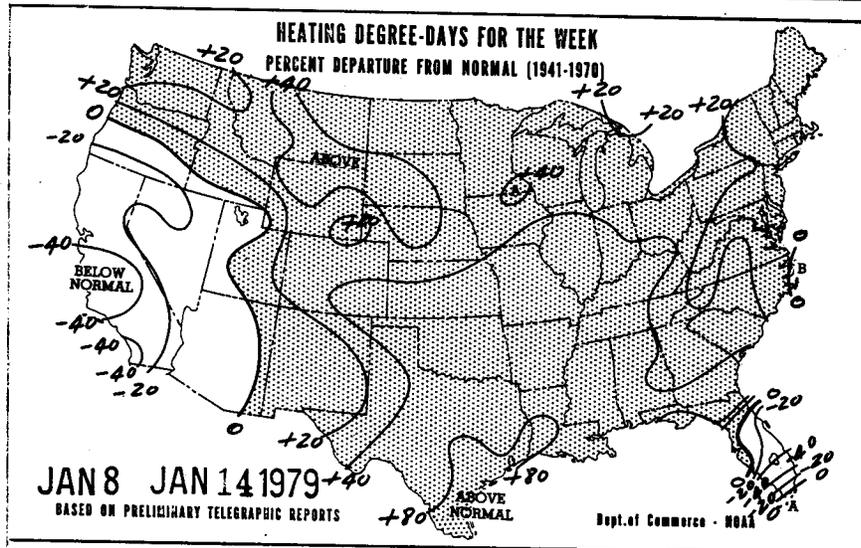












HEATING DEGREE DAYS (BASE 65°) FOR WEEK ENDING JAN. 14, 1979.

STATES AND STATIONS	WEEKLY					SEASONAL ACCUMULATION +					STATES AND STATIONS	WEEKLY					SEASONAL ACCUMULATION +						
	TOTAL	DEPARTURE*	TOTAL	DEPARTURE*	DEPARTURE FROM 1977-78	TOTAL	DEPARTURE*	TOTAL	DEPARTURE*	DEPARTURE FROM 1977-78		TOTAL	DEPARTURE*	TOTAL	DEPARTURE*	DEPARTURE FROM 1977-78	TOTAL	DEPARTURE*	TOTAL	DEPARTURE*	DEPARTURE FROM 1977-78		
ALA. BIRMINGHAM.....	292	74	1391	56	133	MAINE. CARIBOU.....	420	42	4668	200	188	YOUNGSTOWN.....	552	79	2954	9	37	OKLA. OKLAHOMA CITY	291	88	2015	206	231
MOBILE.....	292	74	1391	56	133	PORTLAND.....	420	42	4668	200	188	TULSA.....	291	88	2015	206	231	OREG. ASTORIA.....	181	6	2693	212	246
MONTGOMERY.....	292	74	1391	56	133	MD. BALTIMORE.....	259	35	2036	177	102	BURNS.....	181	6	2693	212	246	MEDFORD.....	181	6	2693	212	246
ARIZ. FLAGSTAFF.....	20	20	340	4	79	MASS. BOSTON.....	255	3	2572	103	230	WENDLETON.....	181	6	2693	212	246	PORTLAND.....	181	6	2693	212	246
PHOENIX.....	20	20	340	4	79	MICH. ALPENA.....	396	67	368	157	197	SALEM.....	181	6	2693	212	246	PA. ALLENTOWN.....	307	48	2261	82	33
TUCSON.....	20	20	340	4	79	DETROIT.....	396	67	368	157	197	ERIE.....	307	48	2261	82	33	HARRISBURG.....	307	48	2261	82	33
HINSON.....	20	20	340	4	79	FLINT.....	396	67	368	157	197	PHILADELPHIA.....	307	48	2261	82	33	PITTSBURGH.....	307	48	2261	82	33
YUMA.....	20	20	340	4	79	GRAND RAPIDS.....	396	67	368	157	197	SCRANTON.....	307	48	2261	82	33	R.I. PROVIDENCE.....	267	13	2767	118	149
ARK. FORT SMITH.....	297	109	1861	188	100	HOUGHTON LAKE.....	396	67	368	157	197	S.C. CHARLESTON.....	156	37	828	242	201	COLUMBIA.....	156	37	828	242	201
LITTLE ROCK.....	297	109	1861	188	100	LANSING.....	396	67	368	157	197	GREENVILLE.....	204	43	1498	83	80	S.DAK. ABERDEEN.....	487	95	4549	467	61
CALIF. BAKERSFIELD.....	297	109	1861	188	100	MARQUETTE.....	396	67	368	157	197	HURON.....	436	96	490	227	27	RAPID CITY.....	436	96	490	227	27
EUREKA.....	297	109	1861	188	100	MUSKOGEE.....	396	67	368	157	197	ST. LOUIS.....	131	101	4006	625	286	ST. PAUL.....	131	101	4006	625	286
FRESNO.....	297	109	1861	188	100	S. STE. MARIE.....	396	67	368	157	197	SPRINGFIELD.....	101	173	451	131	131	TENN. CHATTANOOGA.....	237	62	1591	171	228
LOS ANGELES.....	297	109	1861	188	100	MINN. DULUTH.....	114	114	493	379	219	KNOXVILLE.....	237	62	1591	171	228	MEMPHIS.....	237	62	1591	171	228
RED BLUFF.....	297	109	1861	188	100	INTERNAT. FALLS.....	114	114	493	379	219	NASHVILLE.....	237	62	1591	171	228	TEXAS. ABILENE.....	222	68	1524	219	268
SAN DIEGO.....	297	109	1861	188	100	ROCHESTER.....	114	114	493	379	219	AMARILLO.....	222	68	1524	219	268	AMARILLO.....	222	68	1524	219	268
SAN FRANCISCO.....	297	109	1861	188	100	ST. CLOUD.....	114	114	493	379	219	AUSTIN.....	222	68	1524	219	268	AUSTIN.....	222	68	1524	219	268
STOCKTON.....	297	109	1861	188	100	MISS. JACKSON.....	220	87	1197	42	90	BEAUMONT.....	222	68	1524	219	268	BEAUMONT.....	222	68	1524	219	268
COLO. DENVER.....	323	75	3219	426	663	HERDIAAN.....	212	12	1240	2	2	BROWNSVILLE.....	222	68	1524	219	268	BROWNSVILLE.....	222	68	1524	219	268
GRAND JUNCTION.....	323	75	3219	426	663	MO. COLUMBIA.....	378	126	2574	15	63	CORPUS CHRISTI.....	222	68	1524	219	268	CORPUS CHRISTI.....	222	68	1524	219	268
PUEBLO.....	323	75	3219	426	663	KANSAS CITY.....	378	126	2574	15	63	DEL RIO.....	222	68	1524	219	268	DEL RIO.....	222	68	1524	219	268
CONN. BRIDGEPORT.....	285	40	2343	19	120	SPRINGFIELD.....	378	126	2574	15	63	EL PASO.....	222	68	1524	219	268	EL PASO.....	222	68	1524	219	268
HARTFORD.....	285	40	2343	19	120	MONT. BILLINGS.....	435	127	4341	938	514	FORT NORTH.....	222	68	1524	219	268	FORT NORTH.....	222	68	1524	219	268
DEL. WILMINGTON.....	256	25	2189	77	224	GLASGOW.....	435	127	4341	938	514	GALVESTON.....	222	68	1524	219	268	GALVESTON.....	222	68	1524	219	268
D.C. WASHINGTON.....	236	28	1699	289	164	GREAT FALLS.....	435	127	4341	938	514	HOUSTON.....	222	68	1524	219	268	HOUSTON.....	222	68	1524	219	268
FLA. APALACHICOLA.....	110	26	525	141	271	HAVRE.....	435	127	4341	938	514	LUBBOCK.....	222	68	1524	219	268	LUBBOCK.....	222	68	1524	219	268
DAYTONA BEACH.....	110	26	525	141	271	HELENA.....	435	127	4341	938	514	MIDLAND.....	222	68	1524	219	268	MIDLAND.....	222	68	1524	219	268
FORT MYERS.....	110	26	525	141	271	KALISPELL.....	435	127	4341	938	514	SAN ANGELO.....	222	68	1524	219	268	SAN ANGELO.....	222	68	1524	219	268
JACKSONVILLE.....	110	26	525	141	271	MILES CITY.....	435	127	4341	938	514	SAN ANTONIO.....	222	68	1524	219	268	SAN ANTONIO.....	222	68	1524	219	268
KEY WEST.....	110	26	525	141	271	MISSOULA.....	435	127	4341	938	514	VICTORIA.....	222	68	1524	219	268	VICTORIA.....	222	68	1524	219	268
LAKELAND.....	110	26	525	141	271	NEBR. GRAND ISLAND.....	415	112	3642	588	567	WICHITA FALLS.....	222	68	1524	219	268	WICHITA FALLS.....	222	68	1524	219	268
MIAMI.....	110	26	525	141	271	LINCOLN.....	415	112	3642	588	567	UTAH. SALT LAKE CITY	252	14	2889	5	645	UTAH. SALT LAKE CITY	252	14	2889	5	645
ORLANDO.....	110	26	525	141	271	NORFOLK.....	415	112	3642	588	567	VT. BURLINGTON.....	376	40	3789	208	181	VT. BURLINGTON.....	376	40	3789	208	181
TALLAHASSEE.....	110	26	525	141	271	NORTH PLATTE.....	415	112	3642	588	567	VA. LYNCHBURG.....	252	51	1978	76	180	VA. LYNCHBURG.....	252	51	1978	76	180
TAMPA.....	110	26	525	141	271	OHIA. CANTON.....	364	93	2905	43	22	NORFOLK.....	252	51	1978	76	180	NORFOLK.....	252	51	1978	76	180
WEST PALM BEACH.....	110	26	525	141	271	VALLENTINE.....	364	93	2905	43	22	RICHMOND.....	252	51	1978	76	180	RICHMOND.....	252	51	1978	76	180
GA. ATLANTA.....	213	52	1300	242	333	NEV. ELV.....	282	12	1395	294	41	ROANOKE.....	252	51	1978	76	180	ROANOKE.....	252	51	1978	76	180
AUGUSTA.....	213	52	1300	242	333	LAS VEGAS.....	282	12	1395	294	41	SEATTLE-TACOMA.....	182	27	2990	157	83	SEATTLE-TACOMA.....	182	27	2990	157	83
MACON.....	213	52	1300	242	333	RENO.....	282	12	1395	294	41	SPOKANE.....	182	27	2990	157	83	SPOKANE.....	182	27	2990	157	83
SAVANNAH.....	213	52	1300	242	333	MINNEAPOLIS.....	282	12	1395	294	41	HALLA HALLA.....	182	27	2990	157	83	HALLA HALLA.....	182	27	2990	157	83
IDAHO. BOISE.....	278	19	3249	414	688	N.H. CONCORD.....	320	12	3718	316	70	YAKTIA.....	182	27	2990	157	83	YAKTIA.....	182	27	2990	157	83
LEHISTON.....	278	19	3249	414	688	N.J. ATLANTIC CITY.....	250	36	2328	86	153	WASH. QUILLAVUTE.....	182	27	2990	157	83	WASH. QUILLAVUTE.....	182	27	2990	157	83
POCATELLO.....	278	19	3249	414	688	TRENTON.....	250	36	2328	86	153	SEATTLE-TACOMA.....	182	27	2990	157	83	SEATTLE-TACOMA.....	182	27	2990	157	83
ILL. CAIRO.....	336	133	2134	257	168	N.MEX. ALBUQUERQUE.....	215	4	2082	79	209	HALLA HALLA.....	182	27	2990	157	83	HALLA HALLA.....	182	27	2990	157	83
CHICAGO.....	401	114	3182	362	89	ROSMELL.....	215	23	1991	52	664	WASH. SEATTLE-TACOMA.....	182	27	2990	157	83	WASH. SEATTLE-TACOMA.....	182	27	2990	157	83
MOLINE.....	401	114	3182	362	89	N.Y. ALBANY.....	47	47	3374	20	257	YAKTIA.....	182	27	2990	157	83	YAKTIA.....	182	27	2990	157	83
PEORIA.....	401	114	3182	362	89	BINGHAMTON.....	47	47	3374	20	257	VA. BECKLEY.....	281	43	2430	272	262	VA. BECKLEY.....	281	43	2430	272	262
SPRINGFIELD.....	401	114	3182	362	89	BUFFALO.....	47	47	3374	20	257	CHARLESTON.....	281	43	2430	272	262	CHARLESTON.....	281	43	2430	272	262
IND. EVANSVILLE.....	343	112	2345	95	40	GREENSBORO.....	47	47	3374	20	257	HUNTINGTON.....	281	43	2430	272	262	HUNTINGTON.....	281	43	2430	272	262
FORT WAYNE.....	343	112	2345	95	40	HATTERAS.....	47	47	3374	20	257	PARKERSBURG.....	281	43	2430	272	262	PARKERSBURG.....	281	43	2430	272	262
INDIANAPOLIS.....	343	112	2345	95	40	RALEIGH.....	47	47	3374	20	257	WIS. GREEN BAY.....	463	118	4123	38	186	WIS. GREEN BAY.....	463	118	4123	38	186
SOUTH BEND.....	343	112	2345	95	40	WILMINGTON.....	47	47	3374	20	257	LACROSSE.....	463	118	4123	38	186	LACROSSE.....	463	118	4123	38	186

IMMEDIATE - U. S. Weather Report

This Report Will be Treated in All Respects as Letter Mail

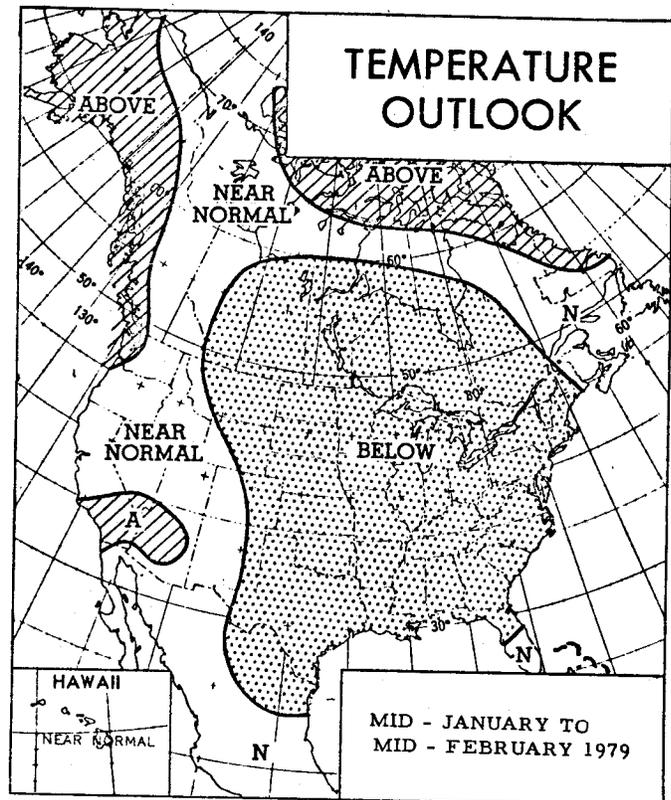
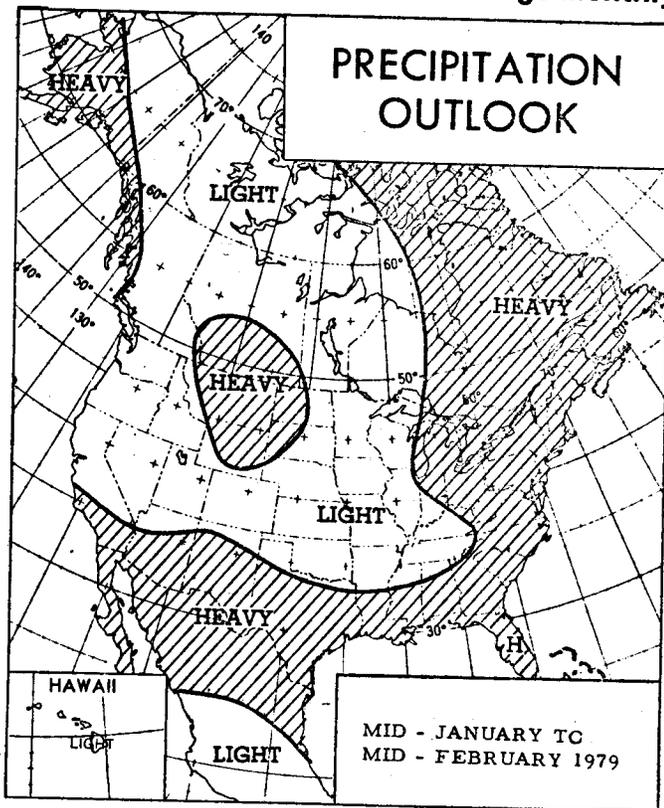
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U.S. DEPARTMENT OF COMMERCE

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FIRST CLASS MAIL

Average Monthly Weather Outlook



(continued from page 14)

went into dormancy after less-than-normal development; snowfall there has been deficient posing the possibility of winterkill. Only in the second week of January did substantial snowfall (fig. 1) afford the crop some protection.

SOUTH AMERICA. Soybean-growing areas in Brazil followed the November pattern of quite adequate rainfall into December. Temperatures tended to be warmer than normal, so the crop should have developed rapidly. Rainfall tapered off in January---

most abruptly in Rio Grande do Sul---but abundant rains during the last week of December should have replenished soil moisture sufficiently to carry the crop to the present. Conditions now may be getting somewhat dry. In Argentina, rainfall also continued above normal in December somewhat disrupting planting and wheat harvesting, but both were regarded as successful in the end. Most corn and soybean areas turned drier in January with only southern and western portions receiving normal amounts of 40 to 60 mm so far, but there is no cause for alarm yet.