

# WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration,  
National Weather Service

U.S. DEPARTMENT OF AGRICULTURE  
Statistical Reporting Service  
and World Agricultural Outlook Board

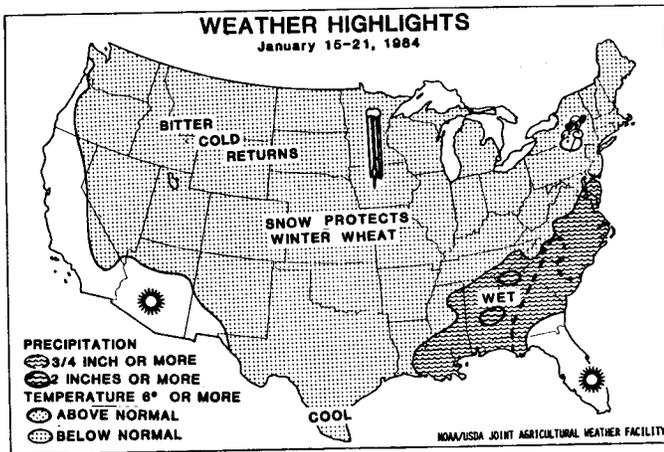
Volume 71, No. 3

WASHINGTON, D.C.

Jan. 24, 1984

## National Weather Summary

January 15 to 21



**HIGHLIGHTS:** Very cold air dominated nearly all of the Nation. Only southern Florida and the coast of California remained near normal. Average temperatures were greater than 20°F colder than normal from the northern Plateau to the central Plains and parts of the Midwest. Subzero temperatures reached into the northern Texas Panhandle, Oklahoma, and eastward through Tennessee. Moderate snow covered the ground from the central Plains to New England. Rainshowers fell along the gulf coast and the Atlantic coast to the mid-Atlantic coast. Sleet or freezing rain fell in the northern part of the Gulf States and inland from the Atlantic coast to southern New England.

**SUNDAY...** Snow fell over the central Plains, the northern part of the southern Plains, and through the Ohio River Valley to central New York. Freezing rain fell in the northern part of the Gulf Coast States and light to moderate rain showers covered the coastal area to northern Florida. Frigid weather prevailed over most of the Nation. Only the gulf coast and most of the west coast remained above freezing.

**MONDAY...** Subzero temperatures set records in the Northeast and settled over the central Plains. Temperatures in the low teens covered parts of Oklahoma and northern Texas and only a thin blanket of snow protected winter wheat. Rain covered the gulf coast and the Southeast, while snow mixed with freezing rain in the mid-Atlantic States. Snow covered the area from central Illinois to southern New England. Rain covered southern California.

**TUESDAY...** Another surge of arctic air pushed into the northern Plains and Rockies while some warming began in the Gulf Coast States and the Southeast. Precipitation covered at least two-thirds of the Nation. Rain or snow fell from the central and southern Rockies eastward to the Atlantic and from the eastern Great Lakes region to western New England. Heavy snow fell over the central Plains and northern Texas and extended eastward through the Ohio Valley to Pennsylvania and New York. Rain fell from eastern Texas to the Southeast, with freezing rain along the northern part of this area.

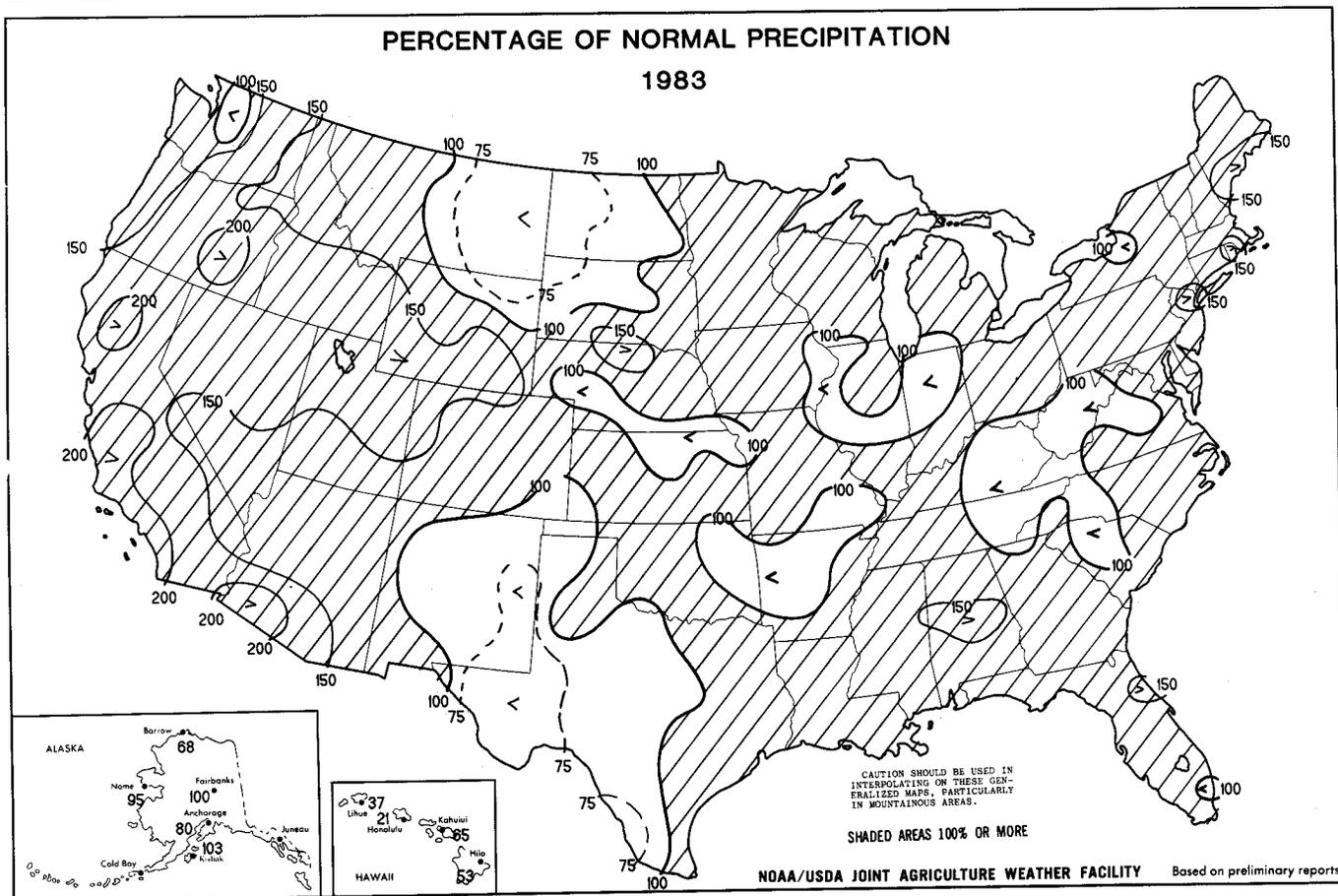
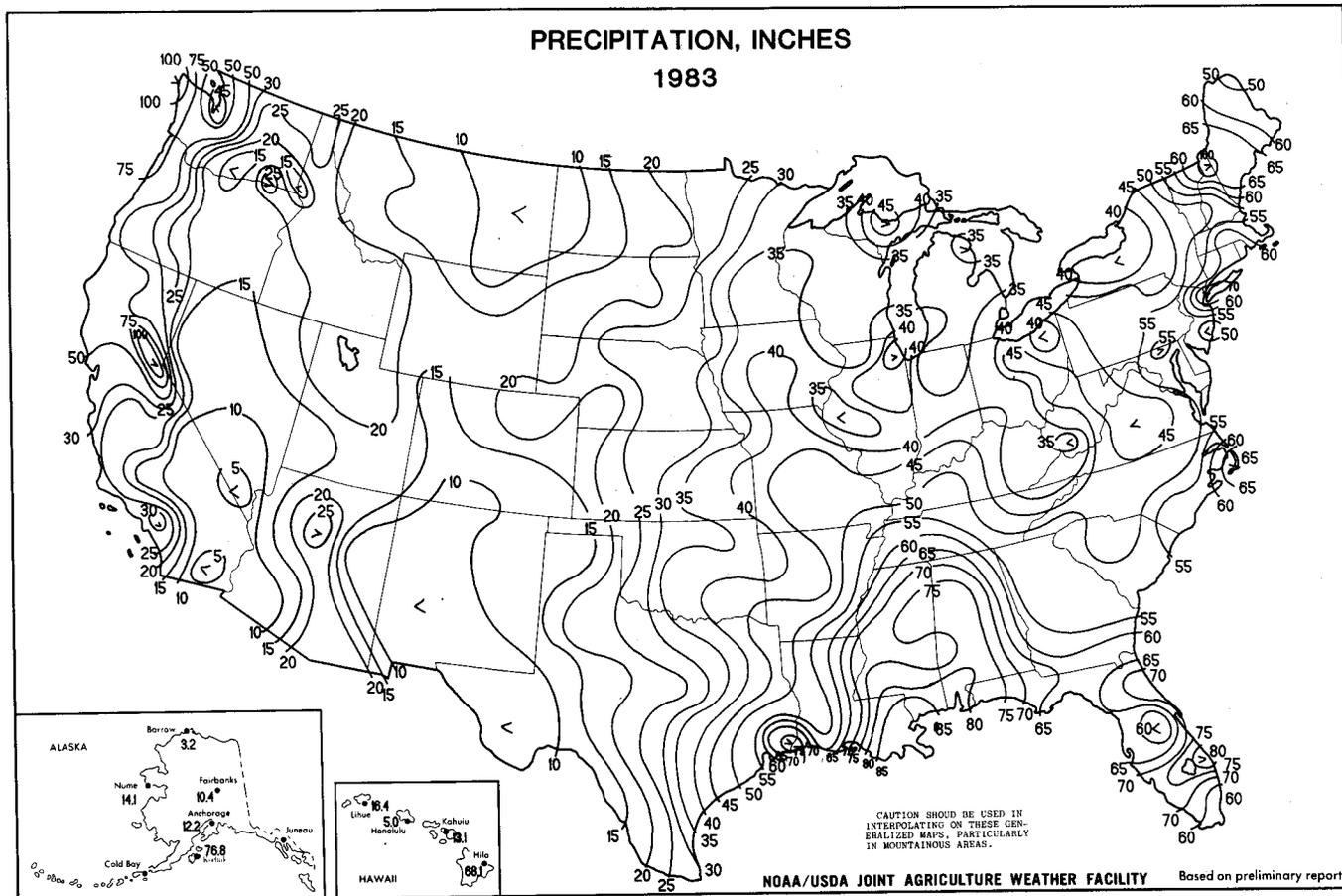
**WEDNESDAY...** Light snow lingered in northwestern Texas and Oklahoma as the new surge of arctic air pushed into these areas. Light snow reached into Arkansas and Missouri and heavier snow reached from western Tennessee to the eastern Great Lakes and northeastward to New England. Light rain fell all along the gulf coast and moderate rain reached from southern Mississippi into the mid-Atlantic area. Rain changed to snow before ending in Virginia and Maryland.

**THURSDAY...** Only light snow remained from the eastern Great Lakes through New England and very light rain fell along the southeastern coast. The frigid arctic air pushed southward through all but southeastern Texas and to the gulf coast in Alabama. Subzero temperatures covered most of Oklahoma and the Texas Panhandle.

**FRIDAY...** Temperatures were not quite so cold in Texas and along the gulf coast as the very cold air pushed eastward, but the cold weather reached the Appalachians from Kentucky to New York. Light rain covered most of the west coast with snow in the mountains. Rainshowers covered most of Florida.

(continued on p. 19)

Contents	Page
National Weather Summary . . . . .	1
1983 Precipitation and Percent of Normal . . . . .	2
1983 Weather Summary &	
Heating Degree Days Maps . . . . .	3
Precipitation and Snow Cover . . . . .	4
Average Temperature & Departure . . . . .	5
Weather Data for Selected Cities . . . . .	6
Heating Degree Days Table . . . . .	9
Severe Freeze of Florida and	
Texas Citrus and Vegetables . . . . .	10
National Agricultural Summary . . . . .	12
State Summaries of Weather & Agriculture . . . . .	13
International Weather & Crop Summary . . . . .	17
Subscription & Mailing Permit Information . . . . .	20



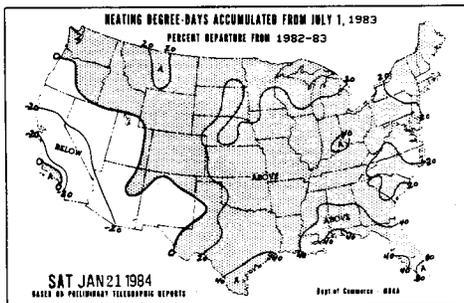
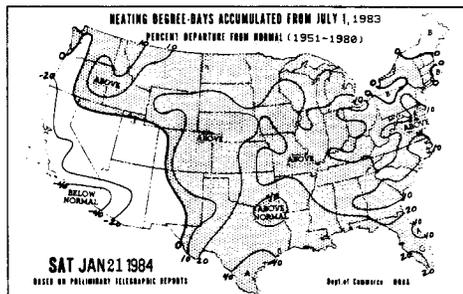
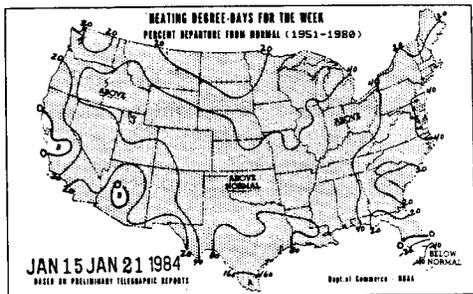
1983 WEATHER REVIEW

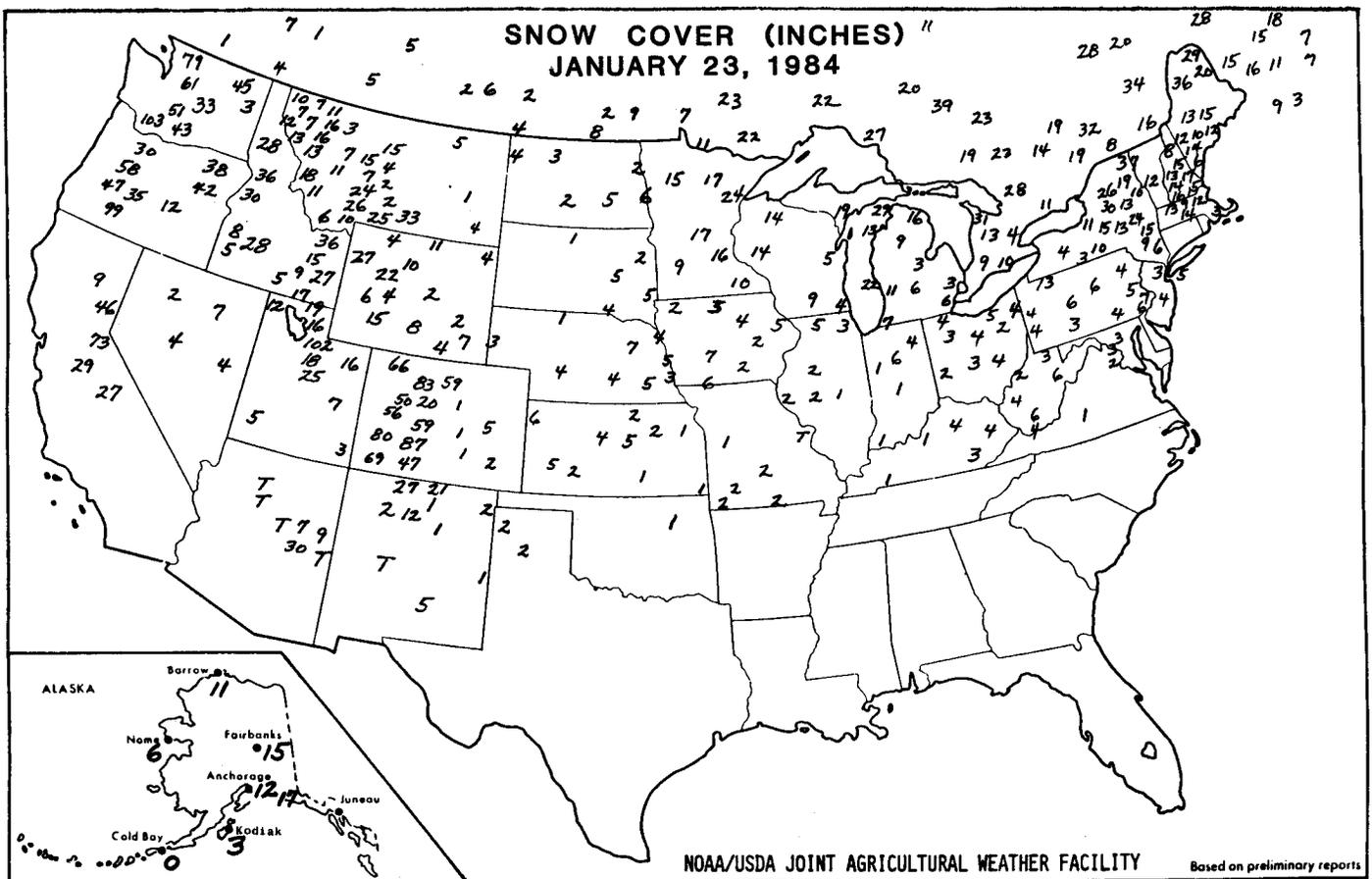
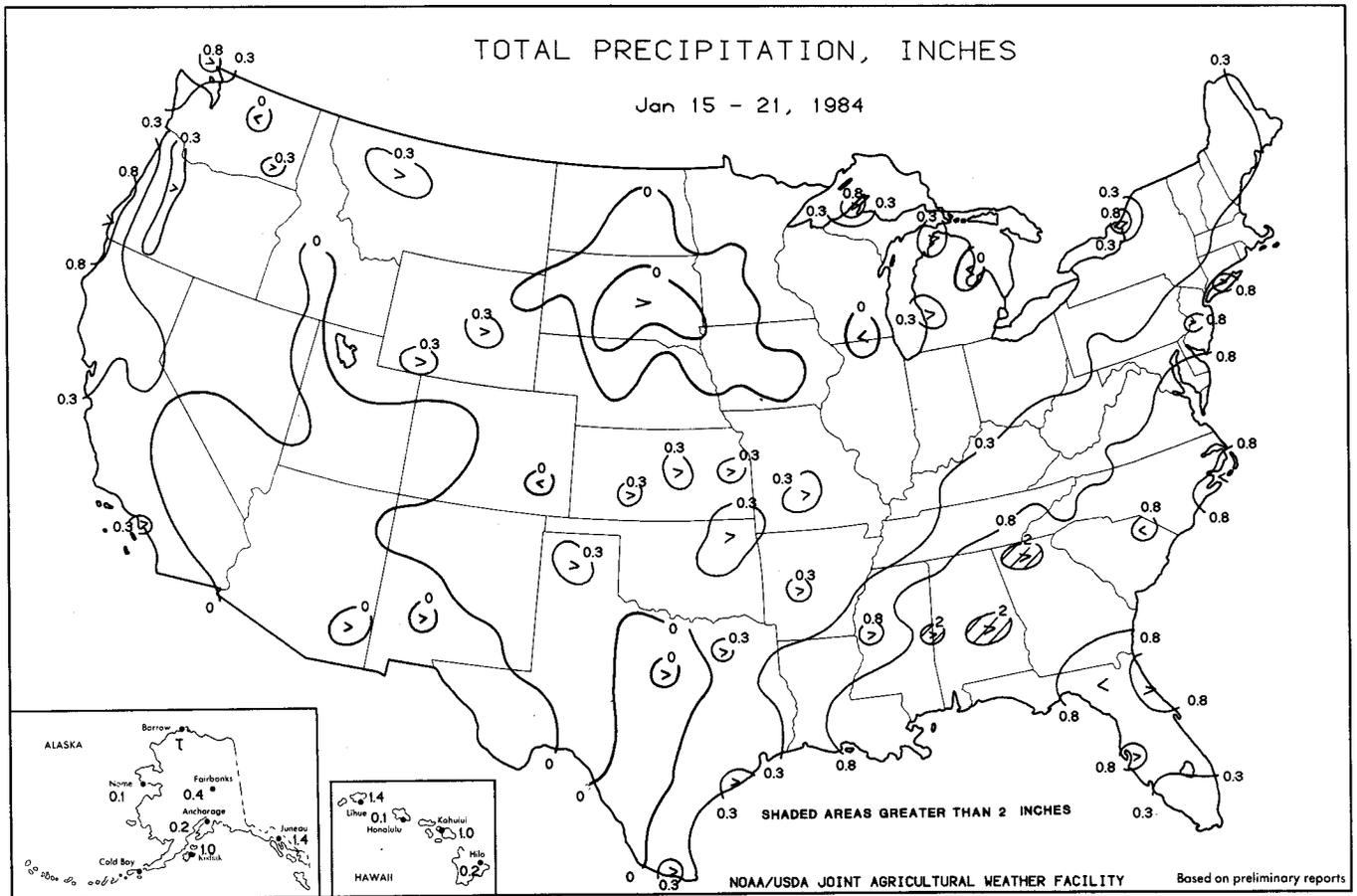
**WINTER (DEC 1982-FEB 1983):** The season was warmer than normal over all but the south central part of the Nation. The northern Plains was as much as 10 to 12° warmer than normal while parts of Texas were 2 to 3° cooler than normal. Winter grains stayed green from Oklahoma to the southern part of the Corn Belt and were in and out of dormancy in other areas. Several cold outbreaks reached into the Southeast to northern Florida but damage was minimal. Precipitation was above normal in most of the West, the Southwest, from western Texas to southern Minnesota and Wisconsin, through most of the Mississippi Valley, and the Southeast. Frequent rain and occasional freezing rain from eastern Texas to Georgia caused farmers to abandon some harvesting and delayed other fieldwork. Heavy rain with high winds and thunderstorms in California damaged some crops. Below normal precipitation kept the area dry from central Tennessee to the eastern Great Lakes and through the Appalachians to southern New England.

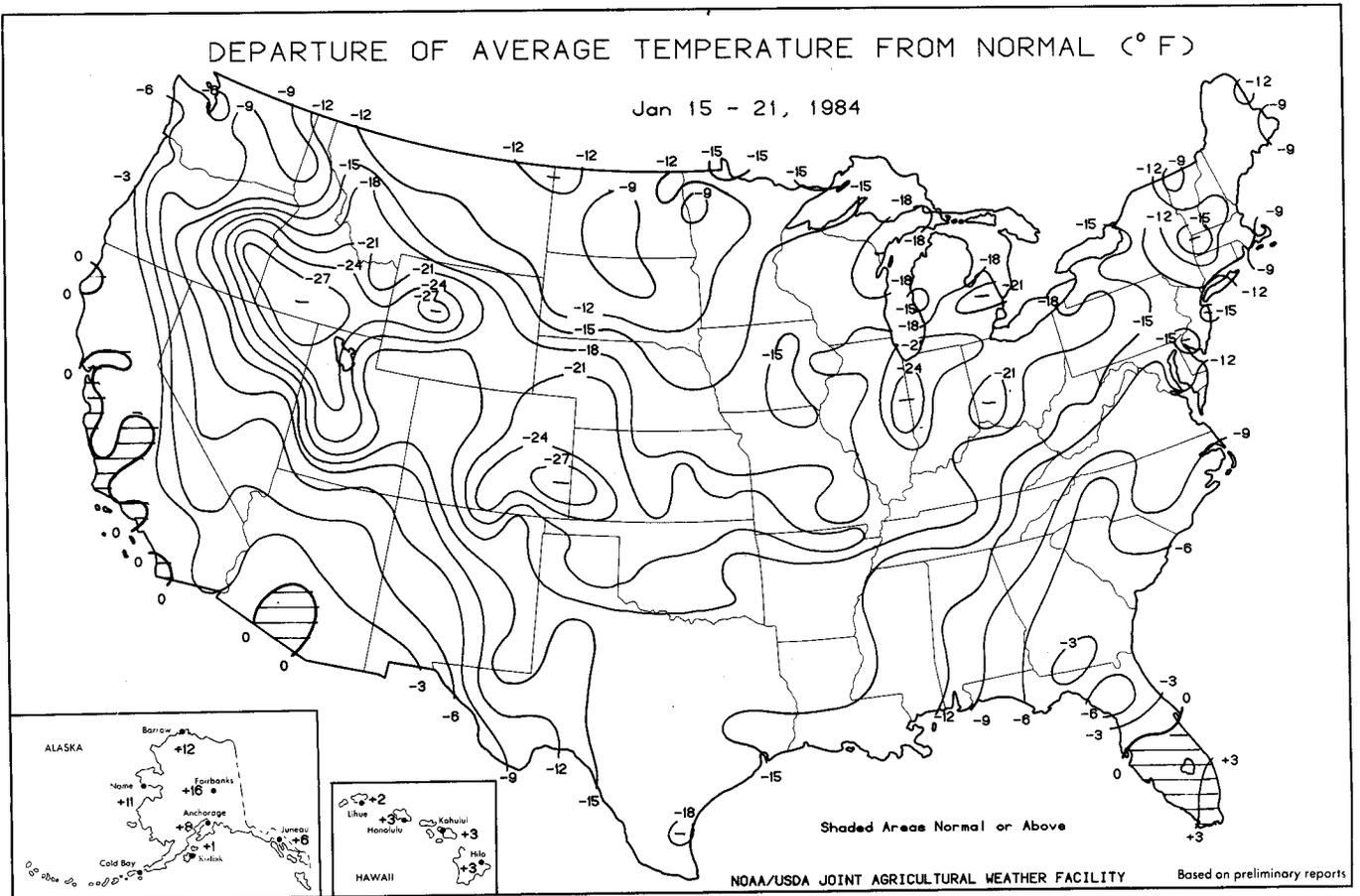
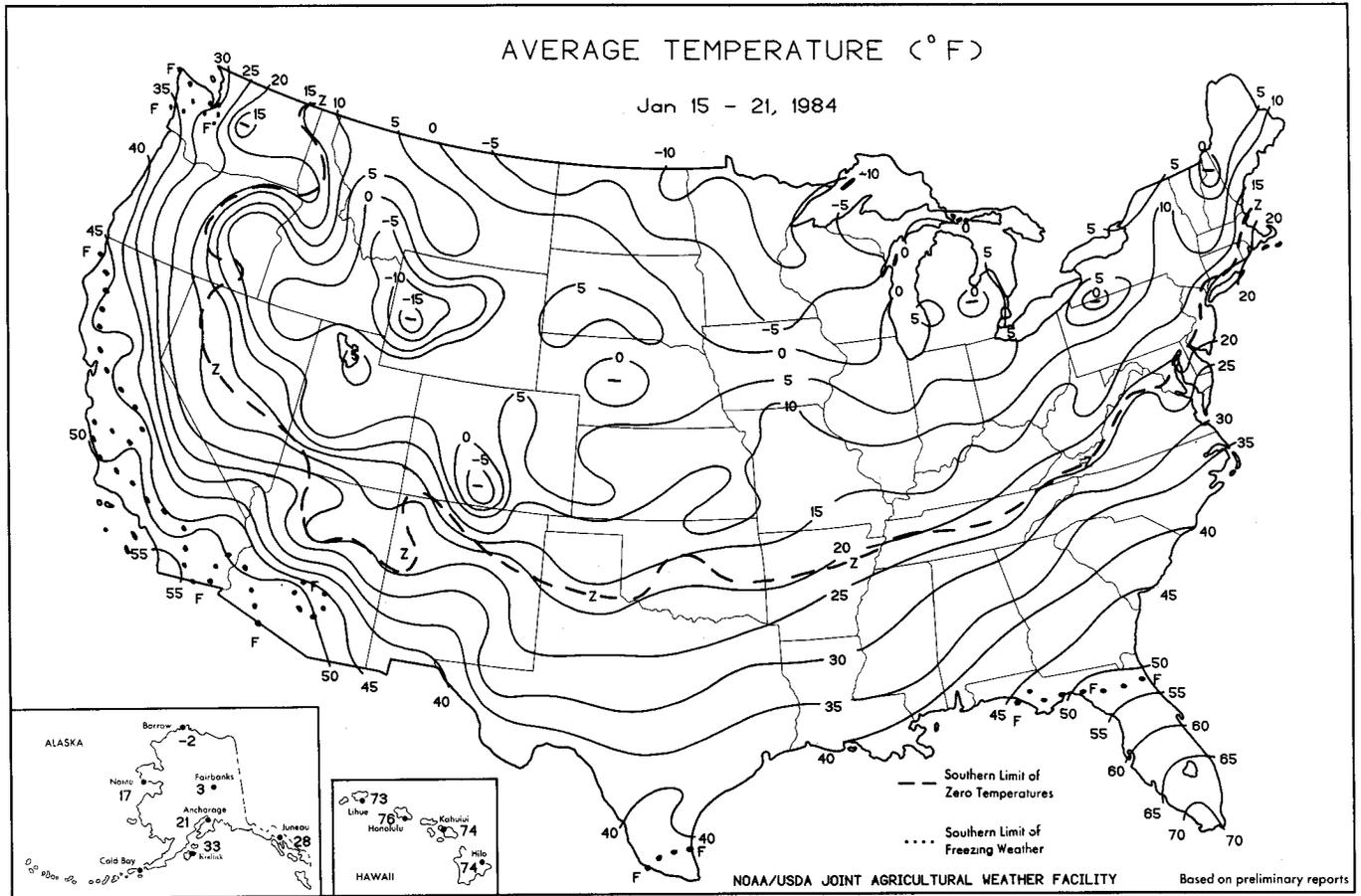
**SPRING (MAR-MAY):** Cool and wet characterized most of the Nation's weather. Above normal precipitation continued in the West but diminished toward the end of the season. Heavy snowpack in the West began to melt late in the season and, after filling reservoirs and rivers, caused extensive flooding. Precipitation increased in much of the East and began to restore some of the soil moisture in the dry area through the Appalachians and eastern Great Lakes region but more was needed. Western Texas and parts of New Mexico had very little precipitation. The northern Plains had less than normal precipitation but amounts were near to adequate in most places. Only the Pacific Northwest, the extreme west coast, New England, and part of the mid-Atlantic Coast were a little warmer than normal; the rest of the Nation averaged cooler than normal. The central Plains were 4 to 5° cooler than normal. Freezing temperatures in late April spread into northern Alabama, Georgia, and the Carolinas, severely damaging fruits and vegetables. Heavy downpours of rain in the Mississippi Delta, the Tennessee Valley, and the Ohio Valley caused extensive flooding of agricultural land late in the season.

**SUMMER (JUNE-AUG):** Cool, wet weather continued early in the summer. However, warming began over the northeastern quarter of the Nation in the middle of June and spread throughout the East to become a record-breaking heat wave. Rainfall was less than half normal amounts over much of the East. Most areas west of the Rockies averaged above normal rain but some parts had a respite from the wet weather during June and July. The already dry western Texas area received less than half the normal rainfall. Temperatures for the summer season averaged 4 to 6° warmer than normal across the Corn Belt but many afternoon high temperatures reached the high nineties or over a hundred degrees during July and August. Hurricane Alicia crashed onto the southeastern coast of Texas during August and caused severe damage but then spread welcome rains northward.

**FALL (SEP-NOV):** A series of cooler air masses began moving from the Plains and Rockies eastward early in the season breaking the severe heat wave that had dominated the East for most of the summer. Although average temperatures stayed near or somewhat warmer than normal, the persistence of the very hot afternoon temperatures waned. Early in the season freezing temperatures reached into the Texas Panhandle and the eastern portion of the central Plains--about a month earlier than usual. At mid-season the remnants of Hurricane Tico moved through Mexico and brought much needed rain to western Texas. Torrential rains in parts of Oklahoma required farmers to replant some fields of winter wheat but overall the moisture was beneficial. Other tropical moisture moved over the Southwest. Heavy rain in southern Arizona and New Mexico caused flooding. Precipitation for the season was above normal in most of the Nation. Areas from south central Texas to central Arkansas, the western portion of the central Plains, and the northern high Plains had below normal precipitation. Snow began to accumulate in the Cascades and Sierras early in November and by the end of the season was the dominant precipitation type over the Plateau, the Rockies, the northern Plains, and the upper Great Lakes.







Weather Data for the Week Ending Jan. 21, 1984

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION								RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE NOV 27	PCT. NORMAL SINCE NOV 27	TOTAL, IN., SINCE JAN. 1	PCT. NORMAL SINCE JAN. 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERATURE		PRECIPITATION		
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE	
AL BIRMINGHAM	38	24	45	11	31	-12	1.1	.1	.8	19.0	207	2.6	72	85	53	0	5	3	1	
AL MOBILE	47	32	59	22	40	-11	1.1	.1	.4	13.0	138	3.7	116	78	55	0	4	0	0	
AL MONTGOMERY	44	31	54	18	38	-9	2.2	1.3	1.3	12.4	153	3.9	139	88	62	3	3	2	2	
AK ANCHORAGE	26	17	34	2	21	8	.2	.1	.2	1.7	100	1.2	300	91	77	0	7	1	0	
AK BARROW	6	-9	27	-17	-2	12	T	T	T	.2	67	.1	+100	85	59	0	7	3	0	
AK FAIRBANKS	10	-4	30	-26	3	16	.4	.3	.2	1.3	108	.7	175	81	61	0	7	5	0	
AK JUNEAU	31	24	34	17	28	6	1.4	.7	.7	3.5	44	2.9	116	90	88	0	7	4	1	
AK KODIAK	37	29	42	20	33	1	1.0	1.0	.4	14.6	117	7.2	131	94	77	0	5	5	0	
AK NOME	23	11	32	-6	17	11	.1	.1	.1	2.3	153	.7	100	76	61	0	7	3	0	
AZ PHOENIX	65	40	68	36	53	1	0	.1	0	1.4	100	.3	60	69	23	0	0	0	0	
AZ PRESCOTT	46	21	49	14	34	-2	0	.4	0	1.3	42	0	0	79	30	0	7	0	0	
AZ TUCSON	61	34	66	28	48	-3	T	T	T	1.1	73	.6	100	74	24	0	2	0	0	
AZ YUMA	65	44	69	41	54	-2	0	.1	0	1.0	143	.1	31	47	70	0	0	0	0	
AR FORT SMITH	29	13	33	2	21	-16	.2	.2	.1	2.9	64	.5	42	85	51	0	7	2	0	
AR LITTLE ROCK	30	16	38	4	23	-16	.1	.7	.1	9.1	134	.5	21	82	58	0	7	3	0	
CA BAKERSFIELD	55	37	59	31	46	-2	T	T	T	1.3	100	0	0	93	57	0	1	1	0	
CA EUREKA	54	39	55	35	47	0	.5	1.1	.4	15.0	126	.7	15	96	67	0	0	3	0	
CA FRESNO	54	39	57	33	47	1	.1	.4	.1	1.9	59	.1	8	93	66	0	0	1	0	
CA LOS ANGELES	62	45	70	41	54	-2	.4	.3	.4	2.4	65	.4	20	85	43	0	0	1	0	
CA RED BLUFF	53	34	58	30	44	-1	.4	.7	.2	10.6	149	.4	13	91	52	0	3	3	0	
CA SACRAMENTO	54	38	58	33	46	1	.1	.9	.1	4.1	67	.1	4	94	65	0	0	2	0	
CA SAN DIEGO	65	48	71	45	57	0	.3	.2	.3	2.0	67	.5	33	85	46	0	0	1	0	
CA SAN FRANCISCO	55	42	57	38	48	0	.5	.6	.3	6.8	96	.5	16	91	57	0	0	4	0	
CO DENVER	22	-4	37	-19	9	-20	T	T	T	1.5	167	.1	33	77	39	0	7	1	0	
CO GRAND JUNCTION	20	-2	28	-8	9	-16	T	T	T	2.0	222	.3	75	72	48	0	7	0	0	
CO PUEBLO	20	-10	41	-19	5	-25	T	T	T	1.1	157	.1	33	81	47	0	7	2	0	
CT BRIDGEPORT	25	12	32	1	19	-10	.4	.3	.3	5.8	91	.5	23	81	58	0	7	3	0	
CT HARTFORD	22	-1	31	-12	10	-15	.2	.5	.2	7.9	110	1.0	42	90	52	0	7	3	0	
DC WASHINGTON	30	19	37	7	24	-11	.6	0	.5	7.7	143	1.4	78	75	47	0	7	3	1	
FL APALACHICOLA	55	42	65	32	49	-4	1.4	.7	1.4	8.5	139	1.6	73	83	64	0	1	1	1	
FL DAYTONA BEACH	62	48	80	39	55	-3	1.1	.6	.5	13.9	348	1.4	93	93	73	0	0	4	0	
FL JACKSONVILLE	56	41	74	31	49	-4	.8	.1	.5	7.4	154	1.0	50	96	70	0	1	5	0	
FL KEY WEST	76	67	82	58	72	4	.1	.4	.1	5.3	161	.1	8	83	69	0	0	1	0	
FL MIAMI	77	62	83	50	70	3	.1	.4	.1	4.5	129	.1	7	94	60	0	0	1	0	
FL ORLANDO	66	50	81	38	58	-2	.8	.3	.4	7.2	218	1.8	138	90	72	0	0	4	0	
FL TALLAHASSEE	56	42	68	26	49	-3	.7	.3	.6	8.4	102	.9	30	92	64	0	1	3	1	
FL TAMPA	67	53	80	40	60	0	.8	.4	.8	6.5	176	1.6	123	94	65	0	0	2	1	
FL WEST PALM BEACH	76	59	81	50	68	3	.6	0	.4	8.3	184	1.0	53	99	74	0	0	4	0	
GA ATLANTA	41	27	46	15	34	-8	1.8	.7	1.2	14.1	174	3.5	106	82	60	0	1	3	1	
GA AUGUSTA	48	34	55	26	41	-4	1.3	.4	1.1	7.8	130	2.2	85	76	50	0	4	5	1	
GA MACON	48	34	56	22	41	-5	1.9	1.0	1.3	9.9	136	3.1	111	82	61	0	3	4	1	
GA SAVANNAH	52	40	68	31	46	-3	1.8	1.1	1.3	7.3	140	2.4	114	83	52	0	1	4	1	
HI HILO	82	65	85	62	74	3	.2	1.8	.1	6.1	29	2.8	47	89	58	0	0	2	0	
HI HONOLULU	82	69	85	64	76	3	.1	.8	.1	1.4	21	.1	4	89	58	0	0	1	0	
HI KAHULUI	84	64	87	62	74	3	1.0	0	.8	7.2	120	1.5	54	93	66	0	0	3	1	
HI LIHUE	79	67	81	63	73	2	1.4	.1	.6	2.4	23	1.6	36	91	70	0	0	4	2	
ID BOISE	12	-4	20	-10	4	-26	T	T	T	4.5	173	.2	18	85	59	0	7	1	0	
ID LEWISTON	30	15	31	10	23	-9	T	T	T	1.2	50	.1	11	82	46	0	7	1	0	
ID POCAHELLO	10	-15	19	-28	-3	-26	.2	.1	.2	4.1	241	.3	43	83	58	0	7	2	0	
IL CHICAGO	10	-10	19	-22	0	-21	T	T	T	6.2	172	.5	45	72	44	0	7	1	0	
IL MOLINE	13	-5	23	-16	4	-15	T	T	T	4.3	34	.3	27	66	47	0	7	1	0	
IL PEORIA	14	-6	24	-17	4	-17	T	T	T	4.6	39	.2	20	79	53	0	7	2	0	
IL QUINCY	16	0	26	-11	8	-15	T	T	T	4.1	58	0	0	76	54	0	7	1	0	
IL ROCKFORD	9	-12	19	-22	-1	-19	T	T	T	3.7	16	.3	30	80	55	0	7	0	0	
IL SPRINGFIELD	15	-4	24	-15	6	-18	.1	.2	T	5.4	64	.4	36	80	54	0	7	4	0	
IN EVANSVILLE	20	2	30	-15	11	-19	.1	.5	.1	5.5	93	.3	15	82	54	0	7	2	0	
IN FORT WAYNE	13	-7	21	-21	3	-20	.1	.4	T	6.4	149	.4	27	75	55	0	7	3	0	
IN INDIANAPOLIS	16	-5	25	-21	6	-20	.3	.3	.2	5.0	96	.6	32	78	53	0	7	3	0	
IN SOUTH BEND	12	-9	20	-21	1	-21	T	T	T	4.7	96	.3	19	77	54	0	7	2	0	
IA DES MOINES	11	-5	21	-16	3	-15	T	T	T	3.4	179	.7	117	72	51	0	7	0	0	
IA SIOUX CITY	10	-5	20	-16	3	-13	T	T	T	1.9	190	.1	33	67	50	0	7	0	0	
IA WATERLOO	8	-8	19	-17	0	-13	T	T	T	2.0	105	.1	20	75	52	0	7	0	0	
KS CONCORDIA	17	0	23	-6	9	-16	.7	0	.2	2.1	150	.3	75	65	47	0	7	2	0	
KS DODGE CITY	17	-4	27	-13	7	-22	.4	.3	.2	1.5	136	.7	175	82	55	0	7	2	0	
KS GOODLAND	16	-7	32	-20	5	-22	.2	.1	.1	2.1	300	.8	267	85	51	0	7	2	0	
KS TOPEKA	18	-1	27	-7	8	-17	.1	.1	.1	2.3	110	.1	17	74	44	0	7	2	0	
KS WICHITA	17	-3	25	-10	7	-22	.2	.1	.1	1.4	93	.2	50	76	49	0	7	3	0	
KY BOWLING GREEN	22	8	38	-17	15	-18	.4	.6	.4	9.1	110	.7	23	98	67	0	7	1	0	
KY LEXINGTON	20	7	30	-17	14	-17	.5	.3	.5	6.1	88	.7	28	86	61	0	7	2	0	
KY LOUISVILLE	22	9	34	-9	16	-16	.1	.6	.1	5.8	91	.3	13	75	53	0	7	2	0	
LA ALEXANDRIA	40	29	42	20	34	-18	.5	.5	.2	7.8	92	2.0	67	73	50	0	1	3	0	
LA BATON ROUGE	43	30	47	21	37	-14	1.1	.1	.5	10.8	129	1.9	66	83	59	0	4	3	1	
LA LAKE CHARLES	44	34	51	26	39	-13	.8	.2	.3	8.0	94	4.0	138	83	58	0	3	3	0	
LA NEW ORLEANS	45	35	51	28	40	-12	1.4	.3	.6	11.2	120	2.5	76	76	59	0	3	3	1	

BASED ON PRELIMINARY REPORTS AND 1951-80 NORMALS

+100 = NORMAL & ACTUAL NEAR THE SAME

CORRECTION FOR WEATHER DATA TABLES

Volume 71 #1 JAN. 7, 1983  
Should read JAN. 7, 1984

Volume 71 #2 JAN. 14, 1983  
Should read JAN. 14, 1984

Weather Data for the Week Ending Jan. 21, 1984

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS				
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE NOV 27	PCT. NORMAL SINCE NOV 27	TOTAL, IN., SINCE JAN. 1	PCT. NORMAL SINCE JAN. 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERA- TURE		PRECIPI- TATION	
																90 AND ABOVE	52 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
ME SHREVEPORT	36	23	39	16	29	-17	.4	.5	.4	9.2	131	1.5	56	90	57	0	7	2	0
ME CARIBOU	11	-8	22	-27	1	-9	.4	.2	.3	6.5	123	.9	53	92	67	0	7	4	0
ME PORTLAND	21	2	29	-12	12	-9	.1	.7	.1	11.0	145	1.6	64	82	50	0	7	2	0
MD BALTIMORE	27	12	33	-4	19	-13	1.7	.1	.6	9.5	167	1.6	80	83	52	0	7	3	1
MD SALISBURY	33	20	39	9	26	-9	1.0	.2	.7	7.0	108	2.4	100	86	58	0	7	3	1
MA BOSTON	24	15	29	7	19	-10	.4	.5	.2	7.4	94	1.5	56	69	45	0	7	2	0
MA CHATHAM	30	20	35	9	25	-6	.3	.7	.2	6.5	76	1.4	47	41	1	7	2	0	0
MI ALPENA	13	-10	22	-21	1	-16	T	.3	T	2.5	74	.5	42	89	50	0	7	1	0
MI DETROIT	13	-6	25	-21	4	-19	T	.4	T	5.1	121	.4	31	81	52	0	7	2	0
MI FLINT	9	-11	19	-18	-1	-22	T	.3	T	2.6	74	.3	27	85	60	0	7	2	0
MI GRAND RAPIDS	14	-9	22	-15	2	-20	.3	.1	.1	4.3	102	.6	46	88	54	0	7	4	0
MI HOUGHTON LAKE	12	-12	20	-25	0	-17	T	.3	T	2.8	88	.5	50	79	53	0	7	1	0
MI LANSING	11	-11	20	-25	0	-21	.1	.3	.1	2.5	66	.3	73	81	58	0	7	1	0
MI MARQUETTE	7	-17	17	-24	-5	-17	T	.4	T	5.7	133	.8	57	98	64	0	7	1	0
MI MUSKOGON	16	4	22	-7	10	-13	.4	.7	.2	6.2	129	1.0	56	82	54	0	7	6	0
MI SAULT STE. MARIE	8	-19	21	-33	-5	-18	.1	.4	T	4.5	100	1.0	63	86	52	0	7	2	0
MN ALEXANDRIA	1	-17	12	-31	-8	-13	T	.7	T	1.7	113	.2	33	93	56	0	7	0	0
MN DULUTH	-1	-18	14	-30	-9	-15	.1	.2	.1	3.5	140	.5	56	90	64	0	7	3	0
MN INT'L FALLS	-4	-25	10	-38	-14	-13	.1	.7	.1	1.2	67	.2	29	76	54	0	7	1	0
MN MINNEAPOLIS	3	-16	13	-25	-7	-17	T	.2	T	3.3	206	.6	100	72	50	0	7	1	0
MN ROCHESTER	3	-14	14	-25	-6	-16	T	.1	T	2.2	129	.1	17	83	63	0	7	1	0
MS GREENWOOD	36	23	46	15	30	-13	.6	.6	.3	18.3	189	2.0	57	76	49	0	7	3	0
MS JACKSON	37	26	42	17	31	-14	.6	.5	.2	9.4	99	1.7	49	86	58	0	4	3	0
MS MERIDIAN	38	24	40	14	31	-14	1.4	.3	.9	9.9	102	2.1	62	96	67	0	6	3	1
MO CAPE GIRARDEAU	22	6	30	-9	14	-	.2	.2	.2	5.0	78	.5	25	89	58	0	7	2	0
MO COLUMBIA	20	3	27	-9	12	-	.2	.4	.1	3.8	112	.2	18	83	47	0	7	3	0
MO KANSAS CITY	16	0	22	-7	8	-17	.1	.1	.1	2.4	109	.1	14	81	55	0	7	1	0
MO SAINT LOUIS	20	4	29	-6	12	-16	.2	.1	.1	6.4	183	.7	64	95	58	0	7	4	0
MO SPRINGFIELD	22	1	29	-13	11	-20	.3	0	.2	3.9	98	1.1	100	82	53	0	7	3	0
MT BILLINGS	16	-3	32	-9	7	-13	.3	.1	.3	1.6	114	.6	100	80	46	0	7	2	0
MT CLASGOW	7	-15	17	-24	-4	-11	T	.1	T	.7	88	.2	100	70	50	0	7	2	0
MT GREAT FALLS	18	-2	32	-19	8	-10	.4	.1	.3	1.6	89	.7	88	85	52	0	7	4	0
MT HAVRE	14	-16	30	-25	-1	-11	T	.1	T	.4	36	.1	75	80	50	0	7	1	0
MT HELENA	14	-5	31	-15	4	-13	.1	.1	.1	1.1	85	.3	50	76	46	0	7	1	0
MT KALISPELL	13	0	18	-18	7	-12	.3	.1	.2	2.2	79	.6	55	82	58	0	7	3	0
MT MILES CITY	13	-9	25	-18	2	-11	T	.1	T	.4	40	-1	33	85	57	0	7	1	0
MT MISSOULA	12	-7	20	-17	2	-18	.1	.2	.1	2.5	114	.7	70	77	47	0	7	1	0
NE GRAND ISLAND	14	-5	25	-13	4	-16	T	.1	T	2.5	192	.2	67	71	52	0	7	1	0
NE LINCOLN	13	-5	18	-15	4	-15	T	.1	T	2.2	200	.2	67	77	48	0	7	1	0
NE NORFOLK	14	-7	24	-18	4	-13	T	.1	T	2.5	250	.3	100	70	49	0	7	1	0
NE NORTH PLATTE	12	-14	22	-22	-1	-22	.1	0	T	1.7	243	.4	133	74	45	0	7	2	0
NE OMAHA	11	-5	20	-15	3	-15	T	.1	T	3.4	243	.3	75	77	60	0	7	0	0
NE SCOTTSSBLUFF	18	-9	26	-24	4	-20	.1	.1	.1	1.7	213	.4	200	74	46	0	7	2	0
NE VALENTINE	15	-11	32	-24	2	-16	.2	.2	.2	1.5	250	.4	400	65	41	0	7	1	0
NV ELY	32	-5	36	-16	14	-11	.1	.1	.1	1.7	171	.3	50	83	38	0	7	1	0
NV LAS VEGAS	48	28	51	21	38	-6	0	.1	0	.4	57	0	0	59	26	0	7	0	0
NV RENO	34	14	43	1	24	-8	.3	0	.2	1.8	82	.4	44	90	60	0	7	2	0
NV WINNEMUCCA	27	5	35	-2	16	-13	.1	.2	T	3.8	224	.1	14	81	54	0	7	2	0
NH CONCORD	20	-7	29	-25	6	-13	.1	.5	.1	7.2	124	1.1	58	95	55	0	7	3	0
NJ ATLANTIC CITY	26	9	35	-5	18	-14	.5	.3	.3	7.1	109	1.5	65	96	68	0	7	3	0
NM ALBUQUERQUE	35	17	39	8	26	-9	.1	0	.1	.7	88	.3	100	78	40	0	7	1	0
NM CLOVIS	30	12	45	4	21	-16	.2	.1	.2	.6	67	.3	75	73	56	0	7	1	0
NM ROSWELL	34	19	49	8	27	-14	T	0	T	.3	150	0	0	85	59	0	7	1	0
NY ALBANY	18	-6	25	-13	6	-15	.1	.5	.1	6.9	135	1.0	59	85	53	0	7	2	0
NY BINGHAMTON	17	1	27	-9	9	-12	.2	.4	.1	7.7	145	1.0	53	86	51	0	7	1	0
NY BUFFALO	14	0	24	-10	7	-16	.2	.5	.1	9.9	165	.8	38	94	71	0	7	4	0
NY NEW YORK	26	16	34	6	21	-10	.5	.7	.9	8.0	127	.9	43	78	55	0	7	2	0
NY ROCHESTER	17	0	27	-12	8	-15	.2	.3	.1	6.7	146	1.2	80	81	54	0	7	3	0
NY SYRACUSE	17	-1	27	-16	8	-15	.1	.5	.1	6.7	126	.8	47	92	60	0	7	4	0
NC ASHEVILLE	38	21	49	8	30	-7	.8	0	.8	11.4	181	1.6	67	95	56	0	6	2	1
NC CHARLOTTE	41	28	52	20	35	-6	1.2	.4	1.1	11.3	185	3.6	150	82	52	0	5	2	1
NC GREENSBORO	36	23	49	11	30	-8	.8	0	.8	7.2	118	2.7	113	82	49	0	7	2	1
NC HATTERAS	40	33	47	24	37	-8	.6	.5	.3	8.2	99	1.1	34	80	64	0	3	4	0
NC NEW BERN	41	31	47	17	36	-8	.8	.1	.5	6.8	101	2.0	74	89	62	0	3	4	0
NC RALFICH	37	23	46	12	30	-9	1.3	.5	1.3	11.5	195	4.7	196	85	55	0	7	3	1
NC WILMINGTON	43	31	50	19	37	-8	.8	0	.6	6.7	106	1.5	63	84	60	0	4	4	1
ND BISMARCK	9	-12	19	-31	-1	-7	T	.1	T	.8	89	.2	50	80	58	0	7	0	0
ND FARGO	2	-17	13	-31	-8	-11	T	.1	T	1.5	150	.2	67	63	49	0	7	1	0
ND GRAND FORKS	5	-16	16	-24	-6	-7	.1	.1	.1	.9	82	.1	20	71	50	0	7	2	0
ND WILLISTON	6	-17	17	-34	-6	-11	T	.1	T	1.1	122	.4	133	75	55	0	7	1	0
OH AKRON-CANTON	14	-1	26	-19	7	-18	.1	.4	.1	4.7	100	.5	29	80	51	0	7	3	0
OH CINCINNATI	15	1	27	-21	8	-20	.1	.6	.1	4.0	73	.2	10	84	58	0	7	2	0
OH CLEVELAND	13	-2	24	-17	6	-19	.1	.5	.1	4.2	84	.5	28	89	60	0	7	1	0
OH COLUMBUS	15	3	27	-16	9	-18	.1	.5	.1	4.7	96	.3	16	72	52	0	7	2	0

BASED ON PRELIMINARY REPORTS AND 1951-80 NORMALS

Weather Data for the Week Ending Jan. 21, 1984

STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS				
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE NOV 27	PCT. NORMAL SINCE NOV 27	TOTAL, IN., SINCE JAN. 1	PCT. NORMAL SINCE JAN. 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
DAYTON	13	-3	25	-20	5	-21	.2	-.4	.1	4.1	87	.5	28	84	59	0	7	3	0
TOLEDO	11	-7	22	-20	2	-21	.1	-.4	.1	5.4	123	.4	27	76	56	0	7	3	0
YOUNGSTOWN	14	-2	25	-16	6	-18	.1	-.6	.1	5.4	104	.6	30	79	55	0	7	1	0
OK OKLAHOMA CITY	26	7	37	-3	16	-19	.3	0	.1	1.1	50	.4	57	86	58	0	7	4	0
TULSA	25	9	35	-1	17	-18	.5	.2	.5	1.9	63	.9	113	80	50	0	7	3	0
OR ASTORIA	43	27	47	20	35	-6	.3	2.3	.2	12.6	60	3.1	39	88	56	0	6	2	0
BURNS	11	-9	17	-22	1	-26	.1	-.1	.1	3.8	271	.1	25	82	67	0	7	2	0
MEDFORD	43	26	47	19	35	-3	.1	-.7	.1	7.1	113	.1	4	95	58	0	5	2	0
PENDLETON	26	15	30	11	21	-12	.1	-.3	.1	3.9	122	.3	25	94	68	0	7	1	0
PORTLAND	39	26	43	19	33	-6	T	1.4	T	6.3	56	1.0	23	79	45	0	7	1	0
SALEM	42	23	50	15	32	-7	.1	1.5	.1	8.5	65	1.4	28	79	46	0	6	2	0
PA ALLENTOWN	22	6	29	-8	14	-13	.3	-.5	.2	9.3	143	.8	33	83	53	0	7	2	0
ERIE	15	-1	27	-10	7	-17	.1	-.5	.1	5.8	105	.8	42	76	49	0	7	1	0
HARRISBURG	23	8	31	-6	16	-13	.3	-.4	.2	8.0	84	.5	24	83	53	0	7	3	0
PHILADELPHIA	24	10	31	-3	17	-14	.8	-.1	.6	9.1	149	1.5	68	85	57	0	7	3	1
PITTSBURGH	18	3	27	-15	10	-16	.2	-.4	.2	5.9	126	.6	32	79	50	0	7	4	0
SCRANTON	19	4	29	-11	12	-13	.2	-.3	.1	7.3	159	.6	38	84	62	0	7	2	0
RI PROVIDENCE	25	10	31	0	17	-11	.4	-.6	.3	9.6	119	1.1	37	72	46	0	7	2	0
SC CHARLESTON	50	38	63	27	44	-4	1.2	.5	.9	7.1	129	2.7	129	90	65	0	2	4	1
COLUMBIA	45	34	53	24	39	-5	1.3	.3	1.2	9.9	143	3.0	100	87	58	0	4	4	1
FLORENCE	45	32	53	20	38	-7	.8	0	.7	8.1	140	1.7	74	94	64	0	4	4	1
GREENVILLE	42	27	51	18	35	-6	1.2	.2	1.1	11.8	164	2.7	93	80	48	0	5	2	1
SD ABERDEEN	8	-13	22	-25	-3	-10	T	.1	T	.8	100	.1	33	81	53	0	7	0	0
HURON	12	-10	21	-22	1	-9	T	-.1	T	1.2	150	.2	67	75	52	0	7	1	0
RAPID CITY	20	-3	33	-14	9	-11	T	.1	T	.6	67	.1	33	65	38	0	7	0	0
SIoux FALLS	10	-12	20	-24	-1	-13	T	.1	T	1.3	130	.2	100	65	38	0	7	1	0
TN CHATTANOOGA	36	23	45	8	29	-9	.8	-.4	.6	13.3	141	1.7	47	82	53	0	5	4	1
KNOXVILLE	35	24	42	8	29	-9	.9	-.1	.8	8.4	99	1.6	50	84	53	0	5	4	1
MEMPHIS	32	18	43	8	25	-14	.2	-.8	.1	10.0	116	.7	27	77	51	0	7	2	0
NASHVILLE	26	12	38	-5	19	-18	.4	-.6	.4	10.9	133	1.3	42	82	54	0	7	2	0
TX ABILENE	34	18	42	10	26	-17	T	.2	T	1.7	113	1.0	167	83	51	0	7	0	0
AMARILLO	23	2	34	-9	12	-23	.4	-.3	.2	1.3	130	.6	200	92	76	0	7	3	0
AUSTIN	39	27	44	17	33	-16	T	-.3	T	2.4	71	1.5	150	73	47	0	4	0	0
BEAUMONT	43	35	51	28	39	-12	.6	-.3	.3	13.5	171	5.6	200	84	58	0	3	3	0
BROWNSVILLE	46	40	52	35	43	-17	.1	-.2	.1	1.0	48	.5	71	93	74	0	0	3	0
CORPUS CHRISTI	43	35	47	26	39	-17	.2	-.2	.1	4.4	157	3.8	317	85	60	0	2	2	0
DEL RIO	41	32	49	26	37	-14	T	-.1	T	1.2	171	1.2	600	81	55	0	5	1	0
EL PASO	56	27	61	14	41	-3	T	-.1	T	.4	67	.3	150	73	29	0	6	0	0
FORT WORTH	34	20	42	10	27	-17	T	-.3	T	1.9	68	.8	80	87	47	0	7	0	0
GALVESTON	42	34	47	28	38	-15	.1	-.5	.1	5.6	90	2.3	115	80	60	0	3	2	0
HOUSTON	42	30	48	20	36	-15	.1	-.7	T	7.6	119	2.8	127	80	56	0	4	3	0
LUBBOCK	33	15	49	6	24	-14	T	0	T	.3	50	0	94	67	0	7	2	0	
MIDLAND	34	23	41	15	29	-15	T	-.1	T	.5	63	.4	133	88	69	0	7	1	0
SAN ANGELO	35	23	42	11	29	-16	T	-.1	T	2.5	227	2.4	600	86	62	0	7	1	0
SAN ANTONIO	41	28	45	18	35	-15	T	-.3	T	1.9	70	1.3	130	72	46	0	4	0	0
VICTORIA	44	32	47	20	38	-15	.1	-.4	.1	2.7	73	1.8	138	87	59	0	3	2	0
WACO	38	23	45	14	30	-16	T	-.4	T	1.6	47	.7	64	87	50	0	7	0	0
WICHITA FALLS	32	14	42	5	23	-17	T	-.2	T	1.1	50	.2	29	87	49	0	7	1	0
UT BLANDING	29	4	36	-3	17	-10	0	-.3	0	1.7	71	.6	60	83	52	0	7	0	0
CEDAR CITY	31	5	37	0	18	-12	T	-.1	T	1.0	100	.2	50	84	43	0	7	0	0
VT SALT LAKE CITY	20	-1	29	-6	10	-19	T	-.2	T	4.5	188	.2	25	84	59	0	7	2	0
BURLINGTON	18	3	25	-14	10	-6	T	-.4	T	6.4	152	.5	38	80	50	0	7	2	0
VA NORFOLK	33	24	40	16	29	-11	1.3	.4	1.0	8.7	140	2.6	100	83	59	0	6	2	1
RICHMOND	31	19	42	9	25	-11	.9	-.2	.8	7.7	126	3.1	141	87	63	0	7	2	1
ROANOKE	33	20	46	4	27	-9	.8	-.1	.7	7.4	140	1.3	65	85	52	0	7	2	1
WA COLVILLE	19	5	25	-1	12	-12	.3	-.2	.3	3.4	77	1.0	63	89	72	0	7	1	0
QUILLAYUTE	43	21	45	15	32	-7	.6	-2.8	.3	17.5	61	8.6	83	96	61	0	6	2	0
SEATTLE-TACOMA	41	27	45	21	34	-5	T	-1.3	T	6.8	61	1.7	41	75	37	0	6	1	0
SPOKANE	24	8	28	3	16	-9	.1	-.4	.1	3.3	73	.8	47	82	58	0	7	1	0
YAKIMA	29	11	34	3	20	-8	.1	-.3	.1	2.3	88	.2	18	77	53	0	7	1	0
WV BFCLEY	25	9	34	-13	17	-13	.5	-.3	.4	3.5	57	1.1	46	93	67	0	7	2	0
CHARLESTON	26	11	34	-13	19	-14	.6	-.2	.4	4.6	77	1.1	46	84	51	0	7	3	0
HUNTINGTON	22	10	31	-14	16	-16	.6	-.1	.5	4.7	82	1.1	50	73	53	0	7	3	1
PARKERSBURG	22	8	31	-15	15	-15	.3	-.6	.2	4.9	83	.6	22	99	71	0	7	3	0
WI GREEN BAY	4	-16	18	-24	-6	-19	T	-.2	T	2.2	88	.1	13	77	45	0	7	1	0
LA CROSSE	7	-14	18	-23	-4	-17	T	-.2	T	1.3	72	.1	17	75	50	0	7	1	0
MADISON	7	-11	18	-19	-2	-17	T	-.3	T	3.5	125	.3	33	78	52	0	7	0	0
MILWAUKEE	11	-7	22	-19	2	-16	T	-.3	T	4.6	135	.5	45	65	42	0	7	1	0
WAUSAU	5	-17	19	-26	-6	-17	T	-.2	T	1.8	86	.2	33	60	41	0	7	1	0
WY CASPER	13	-8	26	-21	3	-19	.3	.2	.3	1.5	188	.8	267	74	51	0	7	2	0
CHEYENNE	20	-10	38	-29	5	-21	.2	0	.1	1.9	173	.5	100	84	39	0	7	2	0
LANDER	3	-18	12	-27	-8	-27	.1	0	.1	1.6	160	.9	300	76	54	0	7	2	0
SHERIDAN	17	-12	27	-21	2	-16	.1	-.1	.1	.8	67	.3	75	78	43	0	7	1	0
PR SAN JUAN	86	72	88	71	79	3	.3	-.3	.2	4.9	68	1.3	62	88	56	0	0	5	0

BASED ON PRELIMINARY REPORTS AND 1951-80 NORMALS

HEATING DEGREE DAY DATA WEEKLY SUMMARY
CLIMATE ANALYSIS CENTER-NMC-NWS-NOAA
ASSESSMENT AND INFORMATION SERVICES CENTER-NESDIS-NOAA

LAST DATE OF DATA COLLECTION PERIOD IS 1-21-1984
ACCUMULATIONS ARE FROM JULY 1
\*\*\*\* = NORMAL LESS THAN 100 OR RATIO INCALCULABLE

Table with columns: STATE CITY, CALL WEEK, WEEK DEV, WEEK FROM, CUM TOTAL, CUM DEV, CUM FROM, CUM FROM, CUM FROM, CUM FROM. Lists weather data for various cities including Birmingham, Atlanta, Chicago, etc.

SEVERE FREEZE OF FLORIDA AND TEXAS CITRUS AND VEGETABLES  
December 25-26, 1983

Don Haddock, NOAA Section Chief  
NOAA/USDA Joint Agricultural Weather Facility

A huge, bitterly frigid airmass produced one of the coldest weeks on record throughout much of the Nation. It brought havoc to citrus and vegetables from Texas to Florida on Christmas eve. Unusual features of this cold system were the large size of the airmass, which severely froze citrus and vegetables in both South Texas and most of Florida, and the looping path of the airmass, which centered over North America before returning with a vengeance to the southern United States.

HISTORY AND PATH OF THE AIRMASS

The high-pressure center of the arctic air slowly moved out of Siberia, U.S.S.R., to near the North Pole in mid-November. It remained almost stationary until mid-December when it moved to the northeastern Alaska/Yukon border. The center of the high-pressure cell split. One section remained quasi-stationary, while the other moved across the Great Lakes region, looped counterclockwise around Hudson Bay, crossed its original path, and plunged southeastward through the Great Plains. By Christmas it transversed the Gulf Coast States and finally traveled into the Atlantic Ocean (figure 1). It produced one of the coldest weeks in weather records, with temperatures averaging up to 42° F below normal in the northern Plains and up to 21° F sub-normal in South Texas.

Minimum temperatures on Christmas morning were 14° F to 20° F across the citrus and vegetable fields in the Lower Rio Grande Valley, Texas, approximately 22° F to 24° F in the northernmost citrus orchards of northeastern Mexico, and 16° F to 20° F in Florida's north-central orchards (figure 2). By the morning of December 26, the extreme cold had settled further south in Florida (figure 3), freezing tender vegetables in all but the extreme southern and southeastern coastal areas. Vegetables, citrus fruit, and many trees were severely damaged in Texas. The damage was less severe in Florida, except in parts of the north-central region which had temperatures similar to those in South Texas. This freeze concerned the Brazilian citrus and Mexican vegetable industries which supply winter produce to the United States.

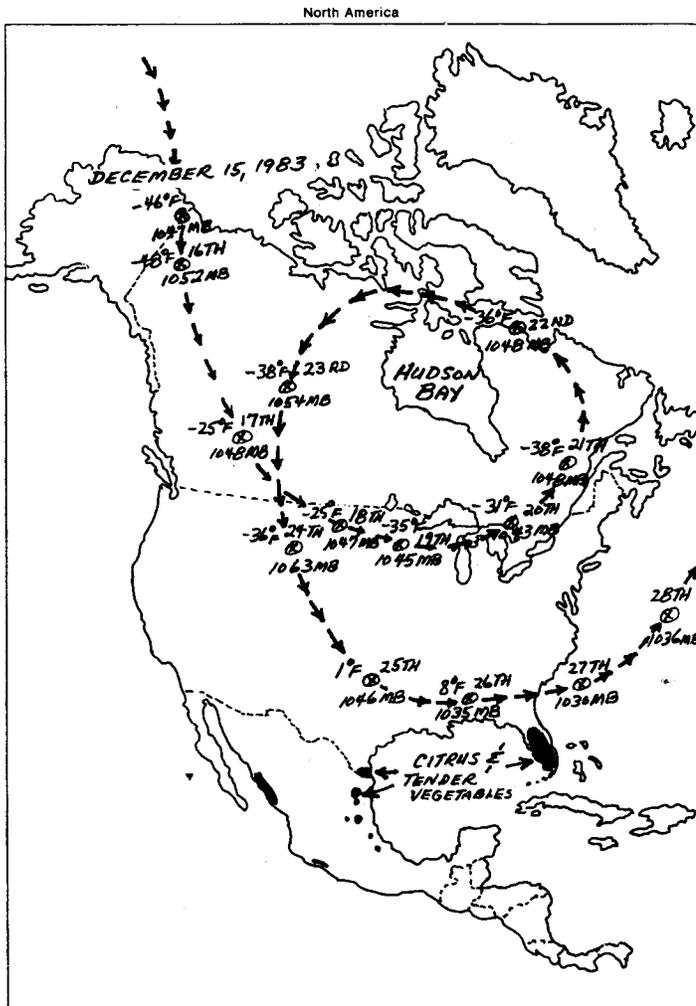
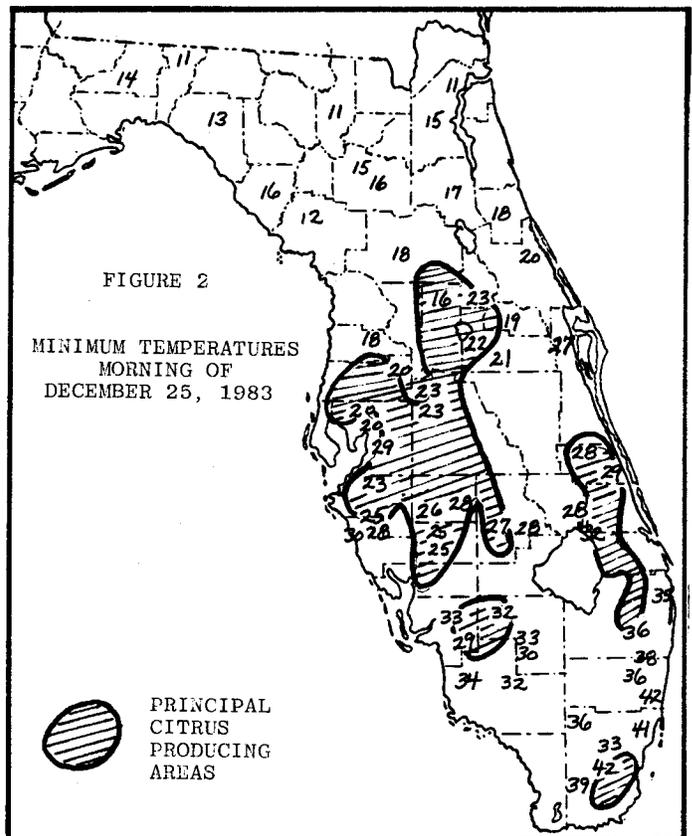
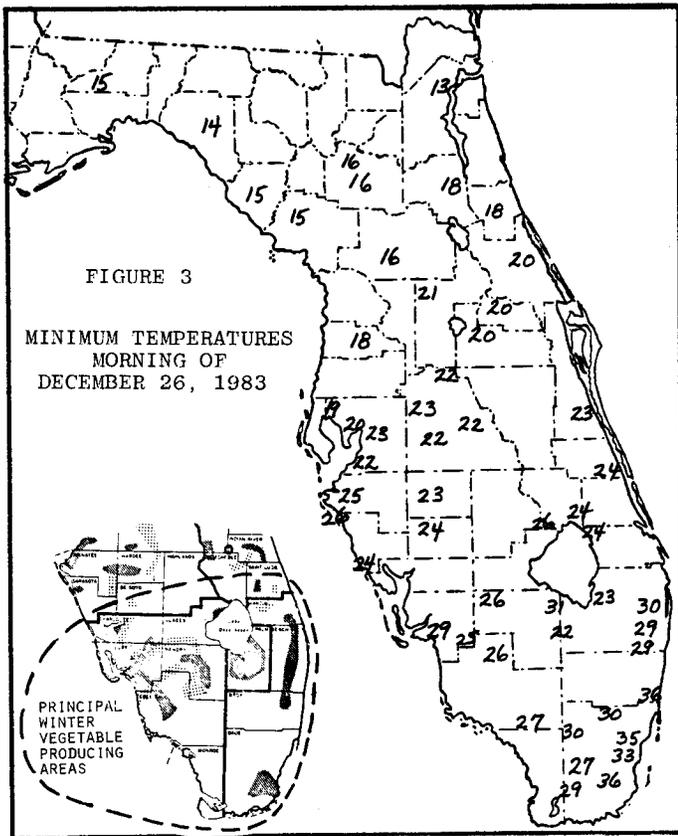


Figure 1. Path of Arctic airmass with associated central pressures and minimum temperatures.



The quasi-stationary high-pressure cell remaining over the Yukon finally moved southeastward in late December, and brought temperatures of 18° F to 26° F to the Lower Rio Grande Valley of Texas on the morning of December 30. Minimal additional damage occurred in Texas, but the airmass warmed slightly before arriving over Florida. Florida's citrus and vegetable producing areas affected by the cold are depicted in figures 2 and 3.



**CRITICAL TEMPERATURES**

Critical temperature thresholds for citrus are shown in the table below:

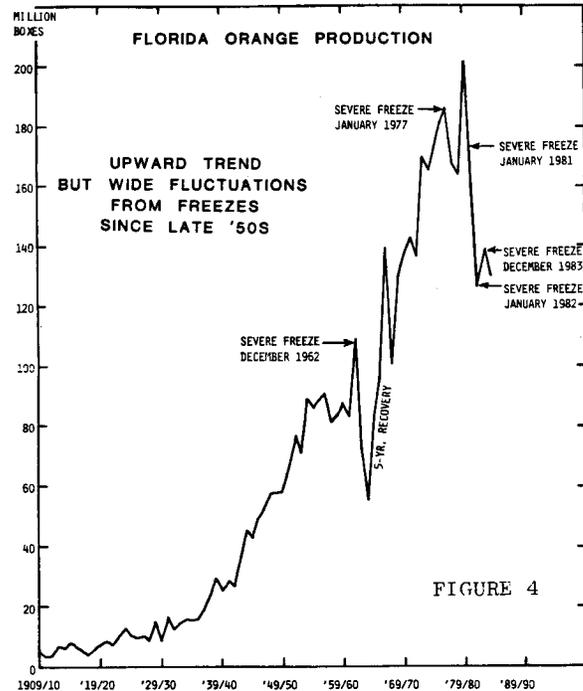
Citrus	Winter (Dec to mid-Feb)	Spring (mid to Feb-March)
Bloom		29 - 30
Fruit-orange	26	29 small green
Grapefruit	25	29 small green
Leaves	24	27
Twigs	22	24
Branches	20	22

**RETURN PERIOD**

The return period for severe freezes averages around 10 years, but has a great deal of variability. It is generally impossible to accurately forecast severe freezes more than a few days in advance, because of fluctuations in upper air steering currents and airmass warming rates.

**FLORIDA ORANGE PRODUCTION HISTORY**

Florida's orange production rose rapidly and steadily since the mid-thirties. However, it fluctuated greatly after 1962 because of several severe freezes (figure 4). Good citrus weather dominated Florida for a long period from the thirties to the early fifties, but the need for more frequent cold protection and rapid processing of frozen fruit has increased since.



**CITRUS PRODUCTION RECOVERY**

The period required for citrus production to climb back to prefreeze levels often varies with the intensity and duration of the freeze. The recovery period was 5 years following the "severe" freeze of 1962, 3 years after the 1977 severe freeze and 1 to 3 years after the hard freezes of the 1950's.

As a general rule, the recovery period for citrus production for the various types of freezes can be summarized as follows:

Freeze types	Minimum temperature (°F)	Citrus recovery (No. of years)
Light	32 - 29	0
Moderate	28 - 25	0
Hard	24 - 21	1-3
Severe	<20	3-7

## National Agricultural Summary

January 16 to 22

**HIGHLIGHTS:** Portions of the Great Plains had limited snow cover to protect winter wheat from the bitter cold temperatures which pushed as far south as Texas. Some wheat was damaged but the crop generally continued in fair to good condition across the Nation. Cold weather stressed livestock and increased feed requirements in most regions. Rain and ice brought most farm activities to a standstill across the Southeast with less than 2 days suitable for fieldwork. Soil moisture continued adequate to surplus across the South.

Cotton harvesting was virtually complete. Limited modules remained for transport from fields to gins in Texas and minimal acreage was left for harvesting in Arizona. Harvesting of freeze-damaged citrus continued active in Florida but processing ceased in Texas. Florida's vegetable shipments declined 11% from the previous week. Warmer temperatures aided the recovery of some previously damaged vegetables. Harvesting of remaining vegetables was slow in Texas. Volumes continued steady from other major producing areas. Supplemental feeding of livestock was heavy because of the extreme cold covering the Nation. Feed supplies were generally adequate. However, spot shortages of hay were reported and may become more widespread if heavy feeding continues.

**SMALL GRAINS:** Moderate snow cover protected winter wheat across much of the Great Plains. However, areas with light to no snow cover could suffer winterkill from record-cold temperatures which pushed southward into Texas. Stands continued in generally fair to good condition across the major producing areas.

Snow accumulations in Kansas provided some protective cover for winter wheat fields, particularly central and western areas. Rainfall helped winter wheat green up in central and south Texas but cold weather limited growth. Wheat fields were snow covered on the Texas Plains; stands need sunshine and additional moisture to aid growth. Spider mites and green bugs were beginning to appear in some small grain fields. Wheat conditions across Texas were mostly fair to poor. Winter wheat fields in Oklahoma continued in fair to good condition.

In Montana, snow cover protection was good. Winter wheat continued in good condition with only light wind damage. Small grain seeding was active in Arizona; established stands were in good condition with few weed or insect problems reported.

**OTHER CROPS:** Cotton harvesting was complete in Texas. A few modules were left in fields awaiting transport to gins. Dryland cotton yields were poor in west Texas but irrigated stands were slightly better. Cotton harvesting was virtually complete in Arizona; cleanup operations continued in many fields. Growers prepared fields for planting the new crop in California.

Tobacco growers continued to prepare plantbeds, except in Georgia where preparation was complete. Fire-cured and sun-cured tobacco was prepared for sale in Virginia.

Soybean harvesting crept closer to completion. North Carolina producers had combined 99% of their acreage. In Kansas, some southeastern fields were combined on frozen ground but additional soybean acreage remains to be harvested.

Sugarcane harvesting continued active in Florida. Young freeze-damaged cane is recovering.

Sugarcane cutting in the Rio Grande Valley of Texas continued active but quality was declining. California's sugarbeets were cultivated and most fields were in good condition.

**FRUITS AND NUTS:** Orchard pruning was extensive in the Pacific Northwest. Producers applied dormant sprays when the weather permitted. The pecan harvest was virtually complete in Georgia and Texas. Pecan harvesting increased in the Marana area of Arizona but was behind the normal pace.

The frozen foliage in Florida's citrus groves had mostly dropped and new growth was forming. This new growth is very vulnerable to frost damage. Picking continued very active for processing. Some processing plants in freeze areas began regrading loads. In the Texas Rio Grande Valley, processing of the remaining citrus has ceased. Tangerine, lemon, and grapefruit harvesting was moving ahead rapidly in Arizona's Central Valley, but Navel orange harvesting neared completion. Steady volumes of lemons and grapefruit were harvested in the Yuma area while some Navel oranges were picked. In the Reedley-Orange Cove area of California, Navel orange harvesting was 30% finished. The volume of oranges for export was increasing and the fruit was in good condition. Tangelo harvesting continued with most fruit showing good quality. Citrus picking continued in the Desert area.

**VEGETABLES:** Florida's vegetable areas enjoyed sunny weather early in the week, but cool, wet conditions later slowed the germination of newly seeded fields. Total shipments declined 11% from the previous week. Snap bean, eggplant, and strawberry volumes continued steady, while cabbage, Chinese cabbage, sweet corn, cucumber, escarole, lettuce, okra, parsley, and squash showed increases. Warmer weather helped crops recover; fields continued to improve along the east coast and in Dade County. Winter potato digging was getting underway. Harvesting of broccoli, cabbage, and carrots was slow in the Rio Grande Valley of Texas. Some harvesting was stopped due to freeze-damage losses. Early onions should become available in early February. The broccoli crop was virtually a total loss in Laredo. Spinach and cabbage harvesting continued in the San Antonio-Winter Garden area. A wide variety of vegetables were harvested in Arizona's Salt River Valley. Yuma growers packed asparagus, broccoli, cauliflower, and lettuce. Lettuce harvesting was complete in Marana and nearly finished in the Parker-Poston area. California producers harvested light to moderate volumes of asparagus, broccoli, cauliflower, carrots, and celery. Lettuce harvesting was past its peak in the Imperial Valley. Potato digging was limited in the Kern and Riverside areas. Tulalake-Butte Valley growers packed potatoes from storages for shipping.

**PASTURES AND LIVESTOCK:** Bitter cold temperatures stressed livestock across most of the Nation. Although growers continued heavy supplemental feeding, weight gains were nearly non-existent. Feed supplies were generally adequate but hay supplies were becoming tight in many areas and producers were concerned about diminishing supplies. Pastures continued in fair to mostly poor condition across the South due to the abnormally cold weather.

## 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 Statistical Offices in cooperation with the National Weather Service.

**ALABAMA:** Averaged 5 to 15° below normal. Rain-fall totals exceeded 0.50 in. Statewide with many areas receiving 1.00 to 2.00 in.

**ARIZONA:** Mostly sunny skies, clear cold nights prevailed except scattered light showers, snow flurries eastern half first part week. Moisture amounts ranged traces to 0.25 in. except near 0.50 in. locally White Mountains. Minimum temperatures below zero high country, teens at 5,000 ft., 20's lower deserts. Average temperatures mostly 1 to 6° below normal.

Heavy volumes greens, leaf lettuce, harvested Salt River Valley, carrot harvest increased. Radishes, parsley, spinach, cabbage, beets, endive, turnips, escarole harvested. Yuma growers packed seasonal volumes Iceberg lettuce, broccoli, cauliflower. Leaf lettuce, asparagus harvested Yuma. Lettuce harvest completed Marana, nearly finished Parker-Poston area. Land preparation, seeding wheat, barley active. Seeding progress ranged from 50% seeded Graham County to 95% Yuma, over 95% Central Valley. Established stands good condition, little weed, insect controls required. Cotton harvest virtually complete, spotted picking activities. Alfalfa hay harvested limited scale Yuma, some green chop harvested Central Valley. Some sheep taken off alfalfa moved to ranges. Land preparation for spring planting of vegetables, field crops active. Tangerines, lemons, grapefruit picking active Central Valley, Navel orange harvest approached completion. Lemon, grapefruit packing continued steady Yuma. Some Navel oranges harvested. Citrus groves, maturing fruit good condition. Pecan harvest increased Marana area, progress behind normal levels.

**ARKANSAS:** Very cold week. Some temperatures below zero in northern part of State during late part of week. Precipitation 0.33 in. mostly in form of snow. Temperatures averaged 14 to 20° below normal. The low was -15°, the high 45°.

Pasture conditions mostly poor. Soil moisture ample in most of State. Wheat in good condition. Livestock in fair to good condition.

**CALIFORNIA:** Small scale weather systems sped southeast across the State. Light amounts of precipitation, generally less than 0.50 in, were reported. Most areas had weekly mean temperatures below normal, but isolated localities were slightly warmer than normal. While all areas had minimum temperatures below freezing, the northeast interior was the coldest; temperatures went below zero.

Weather improving, fieldwork resuming. Weed control, fertilization continuing. Wheat, barley, oats development normal. Imperial County Wheat looks good. Desert alfalfa harvested. Cotton fields prepared for planting. Field corn harvested. New sugarbeets up, good condition. Favorable weather aided pruning and cultural practices. Orchard applications of dormant sprays and herbicides continue. Sacramento Valley nurseries continued to dig bare root trees. San Joaquin Valley growers irrigating, fertilizing, and cultivating vineyards, treatments made for dead arm and spanish measles. Bees being moved into State for almond pollination--one month away. Navel orange harvest 30% complete. Reedley-Orange Cove area. Orange export volume increasing, fruit in good condition. Tangelo harvest continues, good quality. Citrus harvest continued in Desert area. Haas and Fuerte avocados packed from

Riverside County, good quality, fair demand. Asparagus volume light, increasing Desert. Broccoli, cauliflower growth slowed by cool weather. Harvest light central districts, active Southern California. Carrot harvest moderate Desert, light central districts. Celery harvest active Desert, South Coast. Lettuce harvest past peak Imperial Valley. Potato digging limited Kern, Riverside. Packing potatoes from storage very active Tulelake-Butte Valley. Supplemental feeding necessary northern districts. Cool Temperatures northern foothill valley areas slowed grass growth. Warmer temperatures southern districts maintained growth. Some feeder lambs moving to slaughter.

**COLORADO:** The week was highlighted by extremely cold weather in all areas of the State. Temperatures were generally 15 to 20° below normal in the mountains and northwest and 20 to 25° below normal in the east. All locations reported sub-zero temperatures with most spots colder than 15° below zero for the low. Thermometers dropped below -30° in the high valleys. Most areas received some snowfall, but the only significant amounts were 5 to 10 in. in the mountains and northeast.

**FLORIDA:** Considerable cloudiness and periods of light rain and drizzle with widespread dense fog continued through midweek. Temperatures climbed into the mid 80's central and south, 17th, 18th, but much cooler air returned latter half of week. Rains of 1.00-2.00 in. Panhandle mainly in advance of a midweek cold front. Elsewhere, rainfall under 0.50 in., a few spots along lower east coast of 1.00 in. Clearing began, early weekend with some sunshine most of State, 22nd.

Soil moisture variable, adequate south, east coast, most central and northern areas, surplus central west coast, northern east coast and most of Panhandle. Sugarcane harvest active, good progress to date. Very little fieldwork due to wet, cold conditions. Farmers now behind schedule. Small grains slow to recover, some replanting being done. Pastures remain in extremely poor to fair condition central, north, Panhandle localities. In the lower southern Peninsula, pastures remain very short but in generally fair condition. Cattle continue to be in poor to fair condition. The week was wet, cool in citrus growing areas. Frozen foliage mostly dropped, new growth forming; vulnerable to frost or freeze. Harvest continues very active, processing plants in freeze areas regrading many loads. Most vegetable areas had warm and sunny days first half of week. Cloudy skies, cool weather, light rain prevailed most growing areas last of week. Foggy conditions occurred some areas during week. Overall vegetable shipments declined 11% from previous week. Crops declining in movement were carrots celery, greens, peppers, radishes, tomatoes. Crops remaining steady were snap beans, eggplant, strawberries. Increasing in volume were cabbage, Chinese cabbage, sweet corn, cucumbers, escarole, lettuce, okra, parsley, squash. Warmer temperatures have helped crop recovery. Crops along the east coast and Dade County continue to improve. Volume should gain most crops mid to late February. Digging winter potatoes getting underway.

**GEORGIA:** Cool early in week, mild midweek, but much cooler early 20th. Temperatures mid 30's north to upper 40's coast, some 5 to 7° below normal. Rainfall midweek averaged 1.50 to 1.75 in. but around 0.50 in. extreme south. Over weekend of 21st and 22nd fair and cold except some

clouds in extreme southeast with precipitation amounts averaging 0.25 in. or less.

Soil moisture adequate to mostly surplus. Field activity limited due to cold and wet conditions. Pecan harvest nearly complete; tobacco bed preparation complete. Small grains in mostly fair condition, but growth hampered by cold weather in some areas. Pastures poor to mostly fair condition. Cattle mostly fair condition. Hogs poor to fair condition.

**HAWAII:** Weather was generally fair for agricultural crops. A winter storm brought heavy showers to the eastern part of the State at midweek, and light to moderate showers to the rest of State. Farm activities were slowed and minor damage from gusty 15 to 25 mph winds was reported. Sunny days and drying winds late in the week helped to bring many of the fields back to normal. Supplies of leafy vegetables remain heavy, especially head cabbage, head lettuce, and Chinese cabbage. Banana supplies remain steady and papaya production was on a seasonal decline.

**IDAHO:** High pressure was the dominant weather pattern, with very cold temperatures. The week began with temperatures averaging a little below normal, and by mid-week, Arctic air from Canada caused temperatures to plummet to very cold readings. Average temperatures were some 20° below normal in the south and 10 to 15° below normal in the north. Only the lowest valley in the northern escaped low temperatures of below zero. Fairfield was the coldest reporting station with a low of 45° below zero.

Little precipitation fell, most regions had less than usual amount. The north was driest, with porthill 0.50 in. below normal, and Sandpoint nearly 1.00 in. below normal. The south averaged from 0.10 to 0.25 in. below normal. The exception was from about Mountain Home to Twin Falls, where weekly precipitation averaged near to a little above normal.

Frigid temperatures cooled farm activities to minimal levels. Livestock were under stress in some areas. A few reports of early calving and lambing were received. Feed usage was higher than normal due to the cold. Feed supplies were short in some localities and tightening in others.

**ILLINOIS:** Temperatures 14 to 25° below normal. Precipitation mostly none to 0.50 in., heaviest south.

Soil moisture 3% short, 81% adequate, 16% surplus. Wheat condition 5% excellent, 64% good, 27% fair, 4% poor. Snow cover helping protect wheat plants. Livestock condition mostly fair. Considerable stress from adverse weather. Supplemental feeding heavy, hay supplies mostly short.

**INDIANA:** Another record breaking cold period. Temperatures from 17 to 20° colder than usual. Negative 20's morning of 21st. Precipitation light. Weekly totals less than 0.10 in. Snow depths 1 to 2 in. far south.

Extreme cold limiting outside activity. Activities include caring for livestock, keeping water lines running, cutting firewood, hauling manure, attending meetings, buying chemicals and seed, preparing taxes, making plans for 1984 and usual chores.

**IOWA:** A cold, dry week. Temperatures averaged about 13° subnormal ranging from -1° northeast to 7 or 8° south. Coldest -24° at Dubuque the 21st and -23° at Decorah the 20th. Snow cover settled to 2 to 7 in. deep at weekend.

**KANSAS:** Snowfall 1 to 2 in. northeast and 4 to 8 in. elsewhere occurred mostly during the first half of the week producing 0.10 to 0.20 in. water equivalent northeast and 0.25 to 0.50 in. elsewhere. Temperatures averaged 12° northeast and southeast districts and 7 to 11° elsewhere, ranging 18 to 22° below normal west and south and 13 to 14° below normal in the northeast third of State.

Farmers and ranchers spent most of their time feeding and caring for livestock because of below normal temperatures and additional snow. Snow accumulations should provide some protective cover for wheat fields, particularly central and western areas. Some soybean fields southeast were combined early in week traveling over frozen ground. However, additional soybean acreage remains to be harvested.

**KENTUCKY:** Second severe cold snap of winter produced low temperatures which plunged to as much as 20° below zero. Average temperatures were 10 to 20° below normal. Average highs range from 40 to 50° and lows are usually in low 20's. First winter storm of season occurred as snow fell. Amounts ranged from as little as 1 in. in parts of northwest to 9 in. in east. Water equivalency of snow ranged from 0.10 in. to over 0.50 in.

Primary agricultural activities, feeding livestock and keeping watering facilities from freezing solid. Heavy demands on feed with snow cover and extreme cold.

**LOUISIANA:** Rainfall amounts ranged from 0.33 to 3.33 in. Temperatures averaged 14 to 19° below normal. High 58°, low 13°.

Activities: Routine chores and caring for livestock.

**MARYLAND AND DELAWARE:** Temperatures remained below normal for the fifth week in a row with precipitation averaging 0.69 in., coming mostly as snow. Maximum temperatures ranged from the high 80's to low 40's. Minimum temperatures ranged from a low of minus 9 at Okland to plus 13 at Patuxent and Snow Hill. Departures from the normal temperatures ranged from 8 to 9° below normal. Precipitation came mostly as snow and ranged from 0.24 in. at Cumberland to 1.23 in. at Snow Hill. Weekend weather was clear and cold with highs on 21st Saturday 8 to 15° above zero and lows 8 to 15° below zero. Highs were 22 to 30° on 22nd and lows were 5 above to 15 below.

Delaware: Temperatures were below normal for the fifth week now and ranged 7 to 12° below the normal. Maximum temperatures were in the high 30's with low temperatures from -8 at Wilmington to 9 above zero at Georgetown. Precipitation averaged 0.70 in. with lighter amounts north. Weekend weather was cold and clear with maximum temperatures on 21st near 20 and lows 5 to 6° above zero. Highs were in the mid 20's on 22nd with lows near 4° below zero.

**MICHIGAN:** The Siberian Express brought record cold temperatures to the State. Saulte St. Marie had the coldest reading with a report of 33° below zero. Detroit recorded its coldest temperature of this century with a reading of 21° below zero on the 21st. Overall temperatures averaged 17° below normal for the week. Light to moderate amounts of snow fell Statewide.

**MINNESOTA:** Temperatures average 9 to 16° below normal. High 23°. Low -38°. Precipitation averaged 0.10 to 0.18 in. below normal. Greatest reported weekly total: 0.09 in. Snowfall averaged 1.50 in. for the northeast and a trace

to 0.50 in. elsewhere. Snow depth at weeks end averaged 4 to 7 in. for the western third and southeast; and 11 to 20 in. elsewhere.

**MISSISSIPPI:** Temperatures averaged 18 to 20° below normal. Extremes 2 and 58°. A cold front swept through the State on the 18th bringing widespread precipitation.

Soil moisture surplus. There were no days suitable for fieldwork due to cold weather and wet ground, last year 2.0 days suitable for fieldwork and 1.8 days for average. Hay, roughage and feed supplies were rated adequate in the western and central areas and short in the eastern third of the State. Wheat condition was rated as fair to good. Livestock condition as fair, and pasture condition was rated as poor.

**MISSOURI:** Extremely cold air covered the State as temperatures plunged to 16 to 19° below normal. Precipitation in the form of snow was light with less than 0.25 in. falling over the northern half and between 0.25 and 0.50 in. falling over the southern half of the State.

**MONTANA:** Cold air covered State all week resulting in temperatures 10 to 20° below normal. Subzero temperatures reported from the entire State. Precipitation for most part light and most came first of week, from 0.10 to 0.25 in. One to eight inches of snow covered the plains and valleys at end of the week.

Cold weather increased feed requirements, livestock condition fair to good. Local feed shortages could develop later. Winter wheat remains in good condition. Wind damage so far light.

**NEBRASKA:** Temperatures averaged 18° below normal over Panhandle and 13° below normal over remainder of State. Precipitation less than 0.10 in. except in south central average 0.25 in.

**NEVADA:** Entire week relatively cold, with most sections averaging 5 to 15° below normal. Precipitation heaviest northeast portion, especially close to east side of Sierras. Storm beginning of week dumped 4 to 8 in. of upslope snow in extreme west. Precipitation otherwise fairly light occurring as scattered light snow across north. Dry in extreme south.

Feeding requirements livestock high as result cold weather. Snow some northern areas added to problem. Movement potatoes to market slowed by low temperatures.

**NEW ENGLAND:** Another cold week with average temperatures generally between 8 and 15° below normal. Snowfall ranged from a trace in parts of northwestern Maine and extreme north portions of Vermont and New Hampshire to 5 in. or more in eastern Maine, northeastern Massachusetts, Rhode Island and southwestern Connecticut. Highest snowfall measurement was 6 in. at Eastport, Holden and Caribou, Maine.

**NEW JERSEY:** Temperatures much below normal, averaging 11° north, 15° south and 19° coastal. Extremes -24 and 37°. Precipitation below normal averaging 0.32 in north, 0.58 in. south and 0.53 in. coastal. The heaviest 24-hour total reported 0.75 in. on 18th and 19th. Heaviest 24-hour snowfall was 6.5 in. on 18th to 19th. Snow on ground ranged from 12 to 4 in.

Fieldwork: Soil moisture in adequate supply throughout the State. Good conditions of small grain crops have been reported. Due to below normal temperature and frozen ground most outdoor work had ceased. Farmers tending to livestock and winter chores.

**NEW MEXICO:** Average temperatures much below normal north and east, slightly below normal

southwest. Minimum temperature; -25°, northern mountains. Maximum temperature; 61°, southeastern plains. Storm moved over State early in week; small precipitation amounts, most areas.

Soil moisture supplies short-adequate, some improvement. Crops harvest limited to clean-up. Moisture has improved small grain fields. Some greenbugs reported. Mesilla Valley vegetable fields on schedule. Maintenance of irrigation ditches in progress. Cattle, sheep fair to good. Some showing cold weather stress. Predator problems expected to increase.

**NEW YORK:** Very cold weather all week; temperatures in many areas averaged more than 10° below normal. Coldest temperatures 20th and 21st, many reading under -15°. Precipitation totals lighter than normal. Storm on 17th brought 4 to 6 in. of snow to Long Island, lesser amounts Upstate. Locally heavy snow squalls to lee of Great Lakes.

**NORTH CAROLINA:** Temperatures 10° below normal Statewide. Precipitation varied but was significant at all reporting stations.

Soil moisture: 32% adequate, 68% surplus. Days suitable for fieldwork: 1.7. Condition: wheat: 6% poor, 56% fair, 38% good. Oats: 4% poor, 64% fair 32% good. Barley: 6% poor, 58% fair, 36% good. Rye: 4% poor, 60% fair, 36% good. Harvests: Soybeans: 99%, 1982 100%, average 100%. Farm feed supplies: Hay and Roughage: 34% short, 66% adequate. Feed Grains: 20% short, 78% adequate, 2% surplus. Major farm activities: Cutting firewood, tending livestock, general farm maintenance, and machinery repair, pruning fruit trees, preparing tobacco beds, updating farm records, planning for the 1984 growing season and attending farm association meetings.

**NORTH DAKOTA:** Weather was below normal for both temperature and moisture. Highest temperature was 28°, lowest was -39°. District average temperatures were all below normal and ranged from 12 to 9° below normal. Moisture was only a trace or less in all districts. At the end of the week snow depths averaged from 2 to 4 in. with the greatest amount being 8 in.

Another week of extremely cold weather further tapped feed reserves. The weekend brought warmer temperatures and an easing of the cold stress on livestock

**OHIO:** Frigid temperature levels. Averages from 14 to 20° below normal. Record lows broken. Four-inch bare soil temperatures mid-20's to 30°. Deepest frost depth penetration to 17 in. Precipitation widespread, light. Totals from less than 0.10 to 0.50 in.

Winter wheat condition fair to good, adequate snow cover.

**OKLAHOMA:** Temperatures averaged from 17 to 19° below normal south and 22 to 24° below normal northeast. Precipitation averaged from 0.11 in. Panhandle and north central to 0.48 in. southeast.

Wheat forage and hay supplies dwindling. Some cattle producers concerned about feed problems. Livestock weight gains nearly stagnant. Wheat in good to fair condition. Cattle in fair condition.

**OREGON:** Dry and extremely cold weather prevailed bring record low average temperatures in all areas of the State. Overnight lows of -10 to -19° were common in the extreme northeastern areas. The only measureable precipitation was 0.30 in. at the southern coast early in the week, and less than 0.10 in. in the northeastern corner of the State.

Most eastern winter wheat fields remain snow covered; in the west fields were mainly bare. Cold weather has damaged winter vegetable crops and reduced berry crop expectations for 1984 in the mid-Willamette Valley region. Also in the west, pruning and spraying of fruit trees continues. Livestock condition mostly good; cold weather has resulted in high rates of hay feeding. Lambing underway.

**PENNSYLVANIA:** Very cold week light to moderate snowfall on the 16th and 18th. Early week temperatures ranged from  $-21^{\circ}$  in Bradford to  $13^{\circ}$  in Philadelphia. Latter part of week was coldest day of winter in many locations. Statewide, overnight lows were all below zero. Melted precipitation was generally light with amounts of less than 0.50 in. The exception being in the extreme southeast where approximately 0.50 to 0.75 in was observed.

Normal winter chores.

**PUERTO RICO:** Island average rainfall 0.75 in. or 0.02 in. below normal. Highest weekly total 2.68 in. highest 24-total 1.50 in. Temperature averaged about  $77^{\circ}$  on coasts and  $74$  to  $69^{\circ}$  Interior Divisions. Mean station temperature ranged from  $79.1$  to  $62.9^{\circ}$ . Extremes  $90$  and  $58^{\circ}$ .

**SOUTH CAROLINA:** The weather was wetter and colder than average. Above normal temperatures midweek, later considerably below normal. Mid-week rainfall totaled 1.00 to 2.00 in. Statewide.

Activity slowed due to wet, cold conditions. Marketing strategy, planning spring crops. Routine chores, pruning fruit trees, supplementing livestock feed, repairing farm machinery.

**SOUTH DAKOTA:** Average temperatures from  $8$  to  $17^{\circ}$  below normal. Extremes:  $35$  and  $-31^{\circ}$ . Cold, dry weather was typical for most of the State. Only the southwest and west central received significant melted precipitation. Greatest amount reported was 0.25 in. in the Black Hills region. Snow cover diminished to 2 in. or less across the northeastern third of the State and throughout much of the west. Snow cover in the southeast is about 5 in.

**TENNESSEE:** Light precipitation fell over most of the state during the first of the week with moderate amounts falling in the east. Snow was common over the west and middle sections of the State on the 18th with amounts of 2 to 4 in. reported. Temperatures averaged from  $13$  to  $20^{\circ}$  below normal and ranged from the mid teens to the upper 20's. Extremes were from  $-5^{\circ}$  (Nashville) to  $45^{\circ}$  (Chattanooga).

**TEXAS:** Week characterized general cloud cover, bitterly cold temperatures. First part week, cool polar air covered State overrunning moisture. Upper air disturbance 1 to 3 in. snow High Plains, parts Northwest Texas. Elsewhere, drizzle, freezing drizzle. Midweek, Arctic air mass, temperatures record lows Panhandle. Cloudiness gradually decreased 20th, west to east, weak surface eastward over weekend. Southerly flow brought cloudy skies, drizzle western part State. Drizzle, light rain eastern two-thirds State. Overall, week cold daily averages varying from  $11^{\circ}$  below normal Trans-Pecos to  $10^{\circ}$  below normal High Plains, Rio Grande Valley. Most state drier than normal.

**Crops:** Cold weather much State halted field operations. Supplemental feeding livestock continues, small grains, grasses providing little, no grazing. Wheat shown slight signs recovery with limited moisture received. Citrus processing halted Valley. Cotton harvest complete for year, few modules left in field transported gins. Yields, production poor year West Texas dryland cotton. Irrigated cotton slightly better yields. Small grains some recovery freezing conditions, cold

weather halted slow recovery. Plains, snow on wheat fields, preventing grazing. Wheat in area needs sunshine, moisture. Central, South Texas, rainfall helped green up wheat; cold weather prevented much growth. Wheat stressed, additional moisture providing little, no grazing. Some oats destroyed freezing temperatures, replanted spring grazing purposes. Spider mites, green bugs beginning show. Statewide wheat condition 54% normal compared 68% last year. Current reported conditions 8% good; 70% fair; 22% poor. Sugarcane harvest valley continues, quality going down. Pecan harvested 100% 1983, 100% 1982, 98% average.

**Commerical vegetables:** Rio Grande Valley, harvesting broccoli, cabbage, carrots slow, some reports harvesting stopped due freeze-damage loss. Prices responded reduced crops. Some early onions available early February. Processing remaining citrus ceased. Laredo, broccoli crop virtually total loss due freeze. San Antonio-Winter Garden, spinach harvesting reported. Cabbage harvest continues, despite freeze damage. Diseases beginning show up. Land preparations slow due cold, wet weather.

**Range and livestock:** Pastures, ranges providing very little grazing, freezing temperatures prevented additional growth. Plains, small grains snow covered much week, little grazing. Central Texas wheat fields, grasses benefited showers during week; however little growth. Throughout State, heavy supplemental feeding continues, reports hay stocks diminishing. Cattle fair to good condition supplemental feeding. Weight losses reported. Movement cattle on rise drought, freezing conditions.

**UTAH:** Recurring periods precipitation throughout week. Accumulations light to moderate. Division temperatures  $12$  to  $19^{\circ}$  below normal except 6 below Dixie. Woodruff reported State low temperature of  $-39^{\circ}$

Cold temperatures and snow cover has most farm work at a standstill. Livestock care and feeding major activity. Deer herds competing with cattle and sheep for available feed. Haystacks below normal. Feed use much above normal.

**VIRGINIA:** Below normal temperatures continued across the State during week. Averages were  $5$  to  $15^{\circ}$  below normal. Extremes: minus  $20^{\circ}$  to plus  $50^{\circ}$ . Precipitation was moderate to heavy-averaging from 0.50 to 1.50 in. A mixture of snow--sleet--rain and freezing rain was reported with heaviest snow totals in northwest portion where up to 6 in. was reported.

Below normal temperatures and moderate to heavy precipitation kept days suitable for field-work well below 1. Topsoil moisture continues high with 38% adequate and 62% surplus. Care and feeding of livestock main activity. Calving and lambing going well but some deaths due to cold, wet weather. Feed supplies mostly tight to adequate. Winter grains and other grazing crops still good for this time of year. Fire and sun-cured tobacco preparation for sale active.

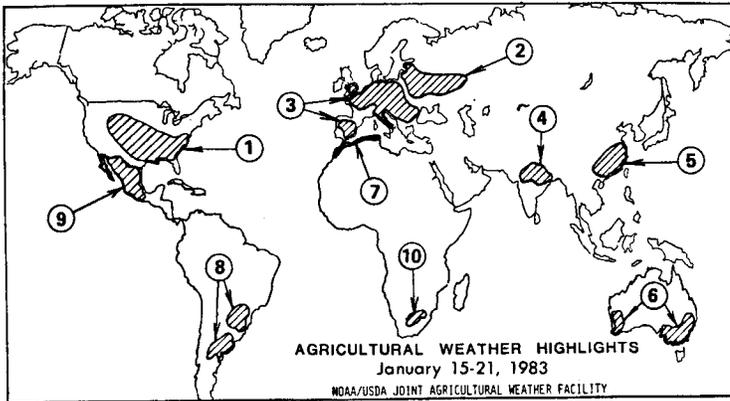
**WASHINGTON:** Strong high pressure over western Canada dominated weeks weather. Cold, dry air plowing around high forced weekly average temperatures  $8$  to  $12^{\circ}$  below normals over east and  $5$  to  $2^{\circ}$  less than normal west of cascades. Just 0.02 in. precipitation observed with many stations east of mountains reporting none at all.

Very cold temperatures both sides of State limited all agricultural activity. Fruit and berry growers on westside busy with winter pruning. Christmas tree growers active with post harvest clean-up, inventory and some planting early in week. In east, concern of winter kill again exists areas lacking snow cover. Pruning in orchards and vineyards continues. Lambing

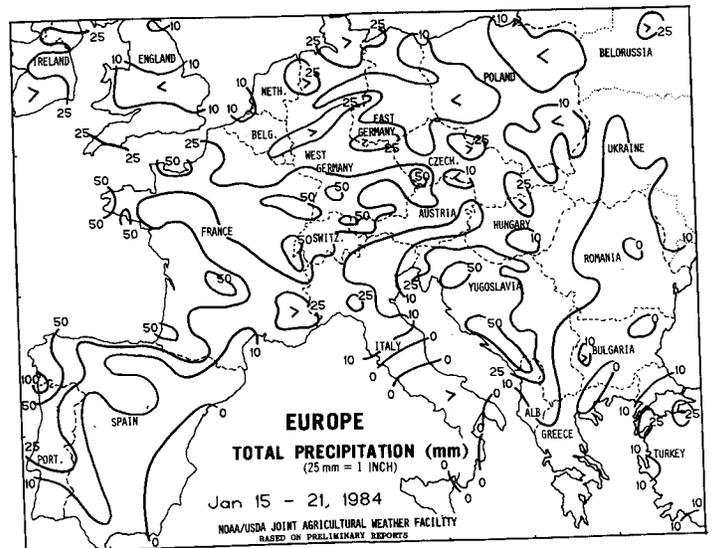
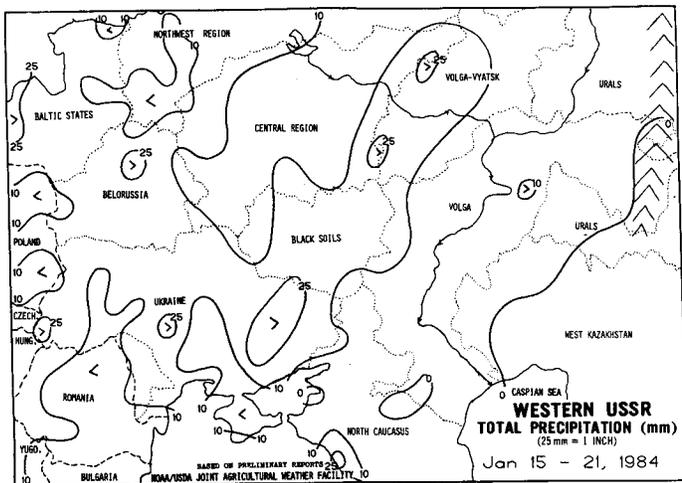
(continued on back cover)

# International Weather and Crop Summary

January 15 to 21

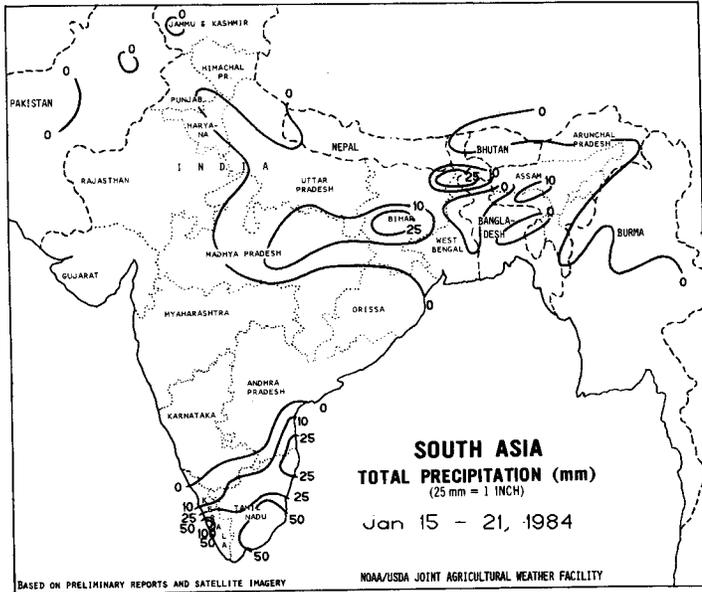


1. UNITED STATES ... Abnormally frigid air returns to most of the Nation. Snow generally protects central Plains wheat but some spots may be damaged. Livestock is stressed. Cold and wet weather keeps fieldwork slow across the Southeast.
2. WESTERN USSR ... Temperatures continue above normal over most winter grain areas and snow cover advances further south.
3. EUROPE ... Moisture supplies increase over most winter grain areas. Winter grains are dormant across northern, central, and eastern crop areas.
4. SOUTH ASIA ... Light showers favor central wheat in the grain-filling stage. Mostly dry but cooler weather aids northern wheat.
5. EASTERN ASIA ... Unseasonably heavy precipitation aids soil moisture in the south and the southern wheat region.
6. AUSTRALIA ... Drier weather across the wheat belt favors late wheat harvesting. Early week showers in the east keep summer crop areas moist as crops advance through vegetative growth and reproduction.
7. NORTHWESTERN AFRICA ... Seasonably cool but mostly dry weather covers winter grains across the region. Rain is needed in southwestern Morocco for winter grains stressed by persistent dryness.
8. SOUTH AMERICA ... Unfavorably dry weather persists over Sao Paulo and western Parana, stressing flowering soybeans. Heavy showers and cooler weather prevail in Rio Grande do Sul as soybeans begin to flower. Highly variable rainfall, but mild weather, generally aids summer crops in Argentina.
9. MEXICO ... Seasonal sunny weather favors vegetables along the west and southwestern coastal sections while unusual cold continues over northeastern citrus.
10. SOUTH AFRICA ... Hot dry air covers the western Maize Triangle stressing corn in the reproductive stage. Additional rains are needed, especially in the west.



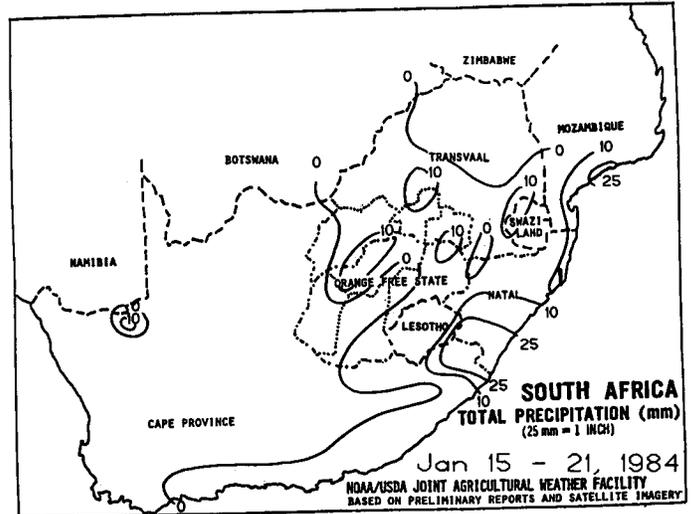
**WESTERN USSR...**Moisture supplies continued to gradually increase over much of the region, except in the North Caucasus where generally dry weather occurred. Precipitation fell mainly in the form of snow showers, giving winter grains in the west and parts of the south a light snow cover. Temperatures remained above normal with weekly temperatures averaging 4°C to 6°C above normal in the north, and 2°C to 4°C above normal in the south. The coldest weather during the week occurred in the northeast Ukraine and the western Black Soils. Minimum temperatures, one night late in the week, dropped to around -15°C. The cold weather had little impact on winter grains because a light snow cover protected the crop, and temperatures quickly moderated the following day.

**EUROPE...**Light showers benefited winter grains in the Iberian Peninsula. Although temperatures over the region warmed this week, they still remained seasonably cool. Wet weather extended northeastward from England and France through the Netherlands, Belgium, and West Germany into East Germany increasing moisture supplies. Most of the precipitation fell as rain and later turned to snow across the north, increasing the snow cover. In eastern Europe, light precipitation in the form of rain and snow showers increased moisture supplies. Weekly temperatures were below normal across the north, and above normal across the south. Winter grains in most northern, central, and eastern crop areas were dormant.

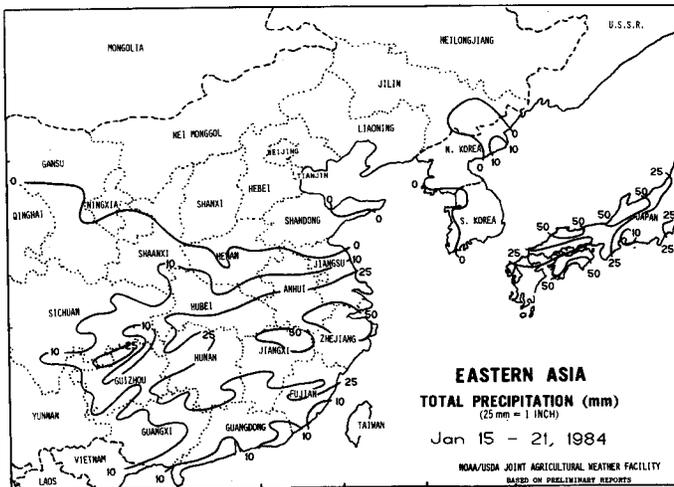


**SOUTH ASIA...**Mostly light rain fell in northern India this week. Precipitation was heaviest in a narrow band from northeastern Madhya Pradesh into central Bihar. Winter precipitation, scattered through the southern wheat region, has benefited the crop during the heading and early grain-filling periods. Little winter precipitation has fallen in the major northern wheat belt. Precipitation would benefit irrigation supplies as the crop progresses through the heading and grain-filling stages during the next month. Temperatures were below normal in the north, easing the crop moisture demand. Southern India was warmer than usual this week, however moderate precipitation aided soil moisture conditions in this normally dry season in the south.

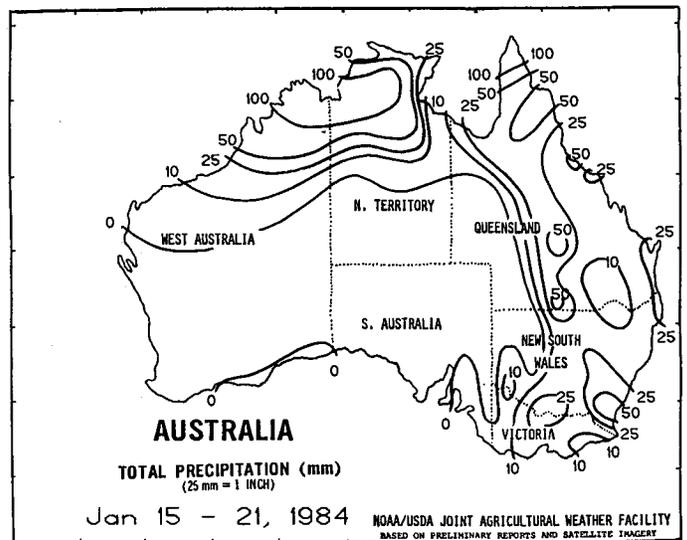
rain in Guangdong and Fujian improved soil moisture conditions for winter crops and early rice which is normally planted in March.



**SOUTH AFRICA...**No significant widespread precipitation has fallen in the western Maize Triangle for nearly two weeks. This week, scattered thundershowers brought some moisture to isolated areas. Temperatures have remained unfavorably warm along the western edge of the Triangle for two weeks. The hot, dry air advanced into the western half of the Triangle during this week, likely stressing corn in the reproductive stage. Temperatures as high as 38°C (100°F) were recorded in the corn region. Temperatures remained mostly below the critical level in the northeastern Maize Triangle. Until recently, precipitation accumulations have been normal to above normal throughout most of the area. Cooler weather and additional rains are needed to maintain good yield potential.



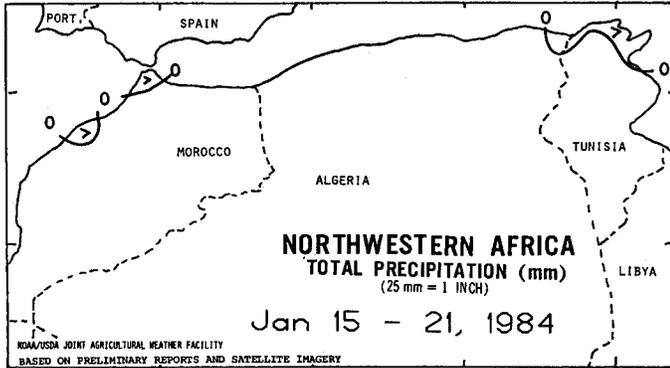
**EASTERN ASIA...**Widespread precipitation covered southern China during midweek. As much as 90 mm of precipitation fell in the lower Yangtze Valley, unusually heavy for this time of year. Much of the precipitation occurred as snow north of the Yangtze. The moisture, extending as far north as Henan and Jiangsu, was beneficial for winter wheat. Temperatures were a little below normal in the north and winter wheat remains dormant. Seasonally dry weather continued in Hebei and Shandong, however, winter precipitation would benefit irrigation supplies. Late in the week,



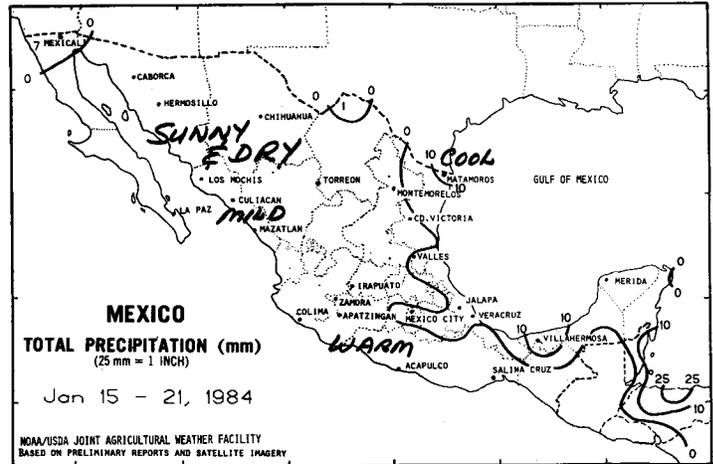
**AUSTRALIA...**Drier weather returned to the wheat belt, but not before early week rain dampened crop areas of Queensland, New South Wales, and eastern Victoria. The dry weather in the south and west aided harvest activities. The Australian wheat harvest should be nearing completion. The wet weather in the east has lowered the quality of about 20 percent of the harvested grain. The persistent wetness has kept summer crop areas

moist, providing adequate moisture for crop development. However, mild, dry weather is needed to promote growth and reduce the potential for fungal diseases, which commonly develop with persistent wetness. Tropical showers occurred across much of northern Australia, including the sugarcane areas of east coastal Queensland, during the week.

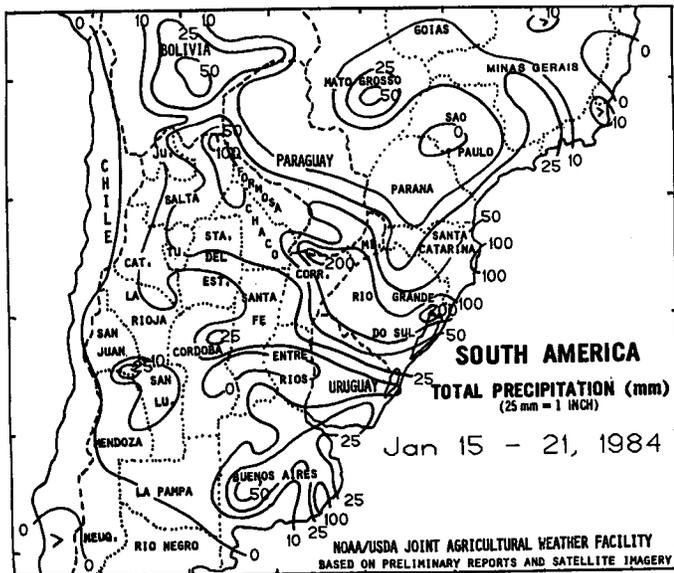
covered the corn/soybean area and the southern wheat area. The higher-yielding first-crop soybeans are flowering, while the later planted soybeans are still in vegetative growth. Generally favorable temperatures also aided corn which is advancing into the grain-filling stage. The wheat harvest should be nearly complete, except in southern Buenos Aires where locally heavy showers slowed fieldwork.



**NORTHWESTERN AFRICA...**Seasonably cool, but mostly dry weather covered winter grains across the region. Winter grains are in the early vegetative growth stage. The unfavorably dry weather this week had little impact on the crops in Algeria and Tunisia because plants were able to rely on adequate soil moisture for growth. In contrast, the dry weather in southwestern Morocco further aggravated the low-moisture situation, and rain is needed soon for proper emergence and good early establishment. Most winter grains in the region normally advance through the heading stage in April and are harvested by late June.



**MEXICO...**Seasonal sunny weather with mild temperatures, from the west coast to the State of Colima, favored development of tender vegetables. In contrast, cold air continued over the northeast as temperatures averaged 6 to 10 degrees below normal. Minimum temperatures dipped to near freezing in the northernmost citrus orchards, but were several degrees warmer than during the Christmas freeze. Rainfall was very light and mostly limited to eastern coastal sections, and did not significantly interfere with field activities.



**SOUTH AMERICA...**A pocket of unfavorably dry weather persisted over southern Sao Paulo, much of western Parana, and extreme southern Mato Grosso do Sul, stressing soybeans which are flowering and forming pods. Temperatures remained unfavorably high until the weekend, when a cooling trend occurred throughout the region. Locally heavy showers and thunderstorms inundated Rio Grande do Sul's soybean area, where earlier-seeded soybeans are flowering. Substantial rain (40-50 mm) fell over northern sorghum and cotton areas of Argentina, but a highly variable rainfall pattern

**National Weather Summary (continued from front cover)**

**SATURDAY...**Rain became light over California but moderate along the coast of Washington and Oregon. Snow spread over the Cascades and onto the northern Plateau. Record cold with subzero temperatures spread through the Northeast and south to the Tennessee Valley.

NOAA/USDA Joint Agricultural  
Weather Facility  
Room 5844 USDA South Building  
Washington, D.C. 20250

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

210



**WEEKLY NEWS BULLETIN**  
**SECOND CLASS**

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300

(continued from p. 16)

continues and calving has begun. Calves must receive protection right after drop. Hay supplies adequate at present time. Livestock in good condition despite cold weather.

WEST VIRGINIA: Temperatures in all areas of the State were below 0° by end of the week. Very cold and snowy. Some of coldest temperatures in several years were reported over portions of the State. The high temperature in the State was 38° at Charles Town and the low -24° at Elxins. Snowfall generally averaged 4 to 6 in. with water equivalent slightly below normal.

Soil moisture adequate. Days suitable for field work averaged 0.30. Main activities: Feeding livestock and general indoor maintenance. Livestock stress due to sub zero temperatures. Feed supplies adequate.

WISCONSIN: The week started cold and became bitterly cold on 18th through 20th. Most stations were colder than 20 below zero on mornings the 19th and 20th. The coldest temperatures were -39° at Lake Thompson and -40° at Minorg. Temperatures slowly moderated on 21st and 22nd. The high was 28° at Racine. Some light snow fell on 16th and again on 22nd but amounts ranged only from a trace to 1 in.

WYOMING: Again a cold week. Temperatures around 20° below normal. Precipitation near normal.

Winter wheat mostly good condition, snow cover most areas. Livestock good condition most areas. Condition declining some areas due to cold weather, snow cover, some losses. Supplemental feed short some areas.

The Weekly Weather and Crop Bulletin (ISSN 0043-1974) is published weekly and jointly prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA). Publication began in 1872 as the Weekly Weather Chronicle. It is issued under general authority of the Act of January 12, 1895 (44-USC 213), 53d Congress, 3d Session. NOAA is responsible for managing, printing, and distributing the Bulletin. The contents may be reprinted freely, with proper credit.

Annual subscriptions: domestic \$25, foreign \$33 (in U.S. funds by international money order or check drawn on U.S. bank), payable to U.S. Department of Commerce, NOAA. POSTMASTER: Send address changes to NOAA/USDA Joint Agricultural Weather Facility, USDA South Building, Room 5844, Washington, D.C. 20250. Order subscriptions from the office and address listed above. Second class postage paid at Washington, D.C. and additional mailing offices.

U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Weather Service/Climate Analysis Center  
Managing Editor . . . . . Don Haddock  
Meteorologists . . . . . Jim Williams  
Ray McInturff  
Lyle Denny  
Wes Byrd  
Dan Sullivan

Subscriptions (202) 447-7917 . . Cheryl Caleco

U.S. DEPARTMENT OF AGRICULTURE  
Economics Management Staff  
Editor . . . . . Gloria Ruggiero  
Statistical Reporting Service  
Agricultural Statistician . . . Bill Brannen  
World Agricultural Outlook Board  
Agricultural Weather Analysts . Ray Motha  
Tom Puterbaugh Ron Lundine