

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

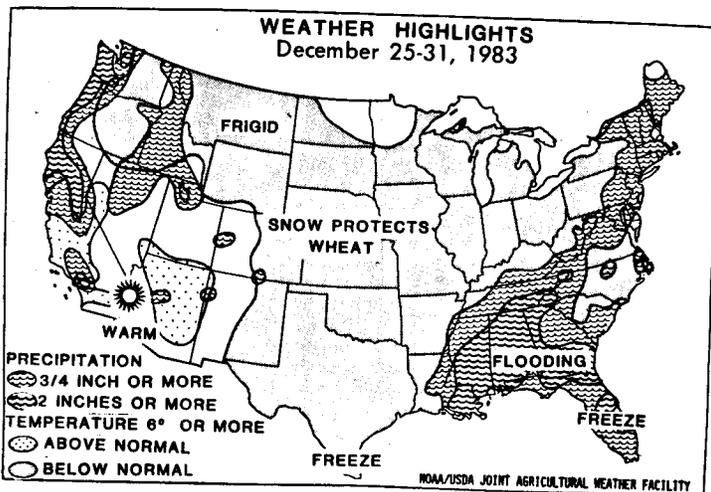
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WASHINGTON, D.C.

Jan. 4, 1984

National Weather Summary

December 25 to 31



It was a little warmer in Texas and Mexico but still below freezing. Later in the day freezing drizzle reached from eastern Texas and Arkansas to central and northern Alabama. Snow fell from Oklahoma through Missouri and the Ohio Valley. Snow also fell over the Rockies and Plateau, and the northern Plains.

TUESDAY...Some form of precipitation fell on nearly all of the Nation. Light rain fell along the west coast and in the Southwest. Snow covered the Plateau and Rockies, the central Plains, the middle Mississippi Valley, the Ohio Valley, the Great Lakes region, and the Appalachians. Freezing rain fell in the South and the mid-Atlantic States. Late in the day warm air from the Gulf of Mexico produced heavy showers and thunderstorms from the lower Mississippi Valley to the southern Appalachians. Temperatures moderated toward normal in much of the Nation.

WEDNESDAY...Temperatures moderated somewhat in the East but another surge of arctic air pushed into the northern Plains and spread to the Pacific Northwest. Freezing temperatures covered Washington and all but the extreme coast of Oregon. Warming temperatures rose to near 80°F in central Florida. Snow fell from the southern Plains to the Great Lakes and Ohio Valley while a mixture of snow, rain, and freezing rain fell from the mid-Atlantic States through the Northeast. Thunderstorms dropped heavy rain on the Southeast.

THURSDAY...Heavy thunderstorms continued to pound Florida while lighter showers extended along the coast to North Carolina. Light snow fell all along the west side of the Appalachians. A Pacific storm, pushing moisture over the very cold air, caused snow or freezing rain over much of Washington, Oregon, and the Plateau. Rain fell along the northern coast of California and southern Oregon. The new surge of arctic air pushed freezing temperatures through Texas into Mexico and into the lower Mississippi Valley.

(continued on p. 14)

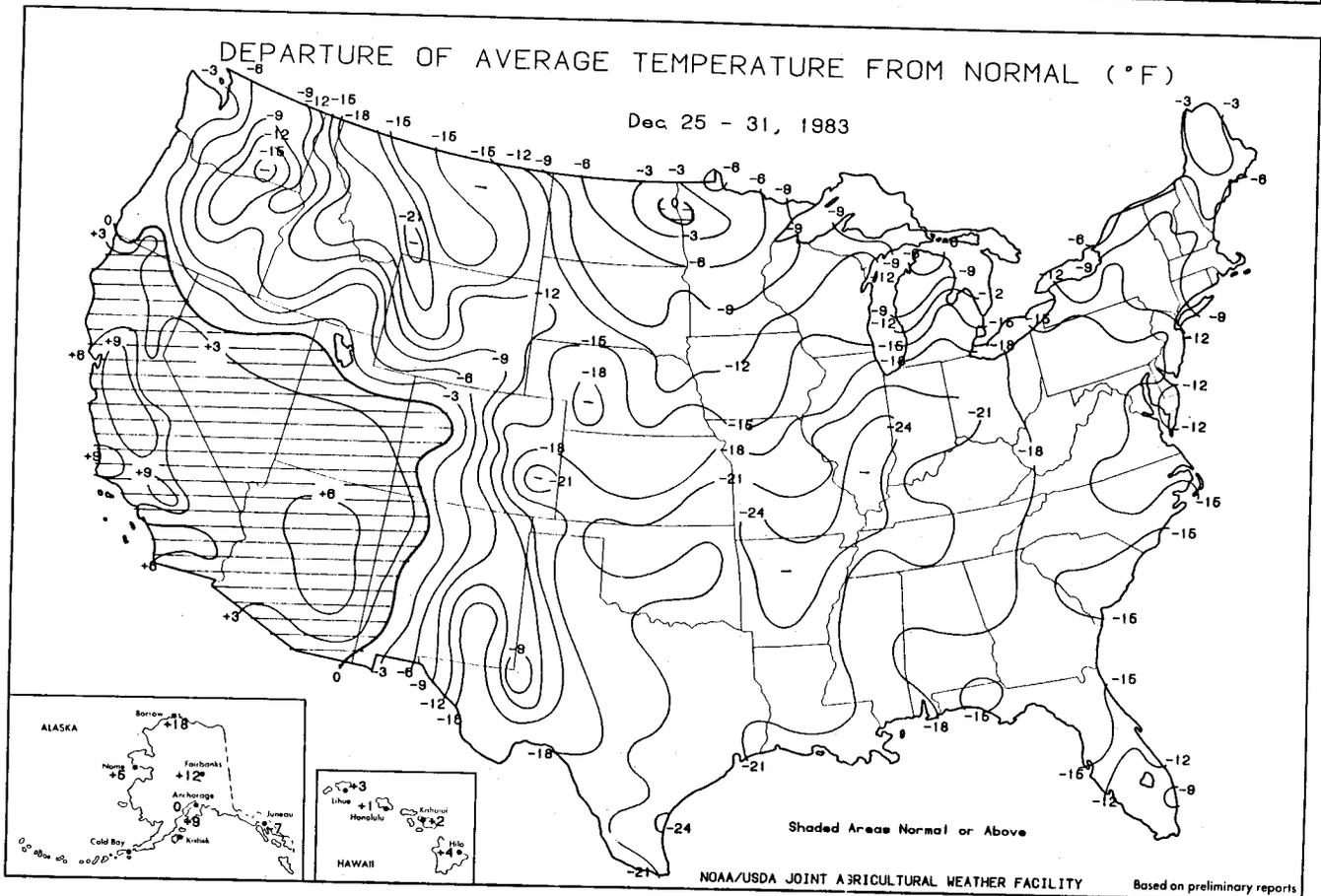
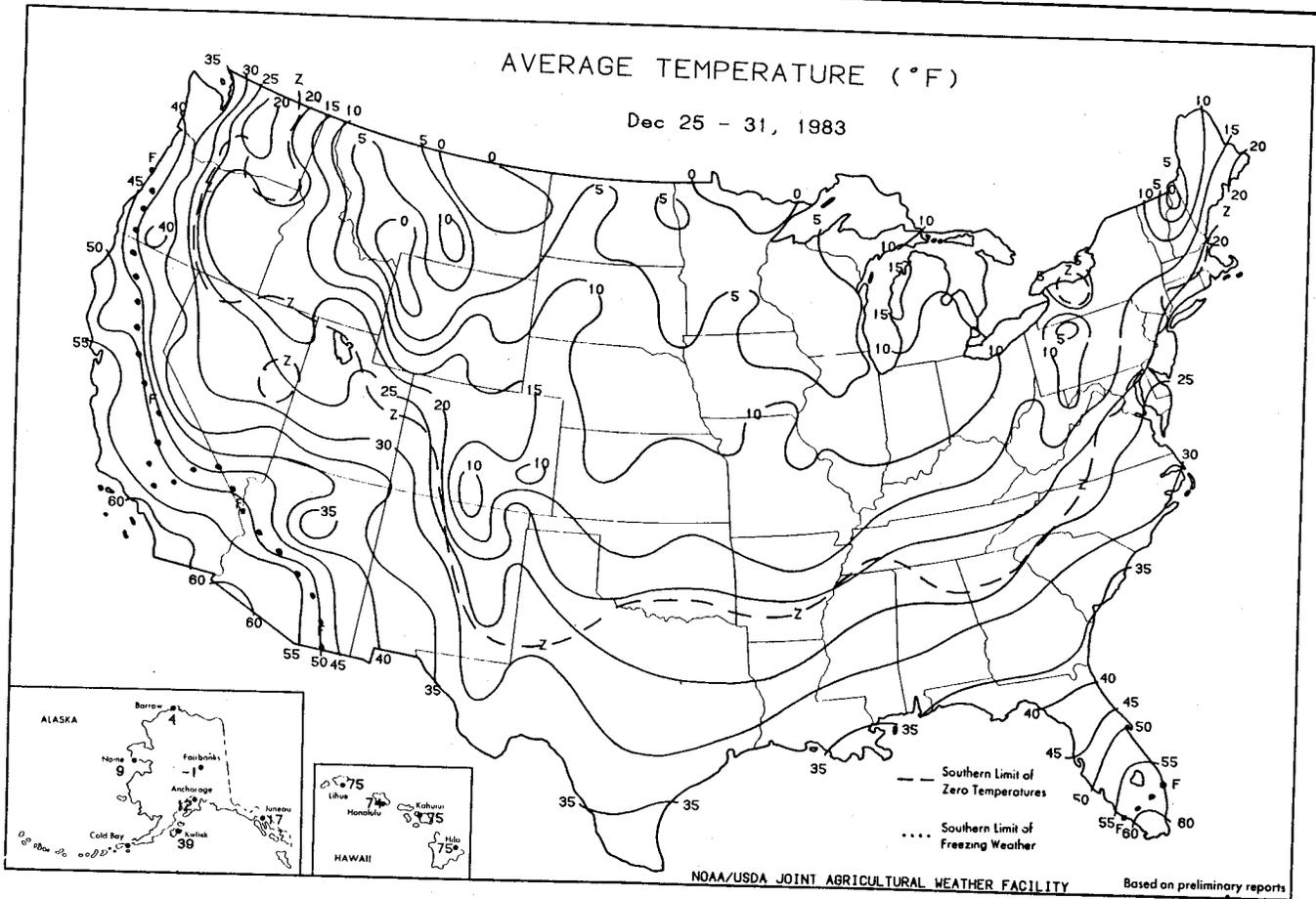
HIGHLIGHTS: Abnormally cold weather continued early in the week and brought a hard freeze to the Texas and Florida citrus and vegetable areas. Another surge of arctic air at midweek pushed into the Pacific Northwest and then southward through Texas and to northern Florida. Daytime temperatures in central Florida rose to near 80°F between the freezes. Much warmer air from the Pacific moved into the Nation at the end of the week and brought temperatures to above freezing for the first time in many weeks to the Plateau, Rockies and high Plains. The East remained cold. Some precipitation covered most of the Nation--mostly in the form of snow. Freezing rain covered much of the South from eastern Texas and Arkansas to Georgia and up the east coast to southern New England. Heavy thunderstorms brought flooding to much of the Southeast.

SUNDAY...Very cold air covered nearly all of the Nation. Only the Southwest stayed above freezing. Subzero temperatures pushed into the deep South and temperatures were well-below freezing through Texas, Mexico, and Florida citrus and vegetable areas. Severe damage was wrought on fruit, trees, and vegetables. Moderate rain covered the west coast and Arizona while snow fell in the Rockies and Plateau. Lighter snow fell through the Great Lakes and New York.

MONDAY...Records tumbled once again across the eastern third of the Nation as the frigid arctic air continued its icy grip. Temperatures below freezing dipped into south Florida and temperatures in the teens covered central and northern Florida.

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Weather Data for the Week Ending Dec. 31, 1983

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 °F		PRECIPITATION	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	34	14	49	2	24	-20	3.1	1.0	1.7	16.4	293	70.9	126	82	35	0	7	2	2
MOBILE	43	21	67	8	32	-20	2.4	1.2	1.4	9.3	150	83.8	125	74	37	0	5	3	2
MONTGOMERY	41	19	68	5	30	-18	3.3	2.2	1.9	8.5	160	75.8	152	83	38	0	6	1	3
AK ANCHORAGE	18	5	27	-1	12	0	0	0	0	.5	38	12.3	81	89	70	0	7	0	0
BARROW	11	-3	27	-79	4	18	7	-1	7	.1	33	3.1	57	86	66	0	7	0	0
FAIRBANKS	5	-7	15	-19	-1	12	.2	-.1	.2	.6	75	10.2	97	70	51	0	7	2	0
JUNEAU	27	8	40	1	17	-7	.1	-.9	.1	.6	11	40.6	74	98	64	0	7	1	0
KODIAK	44	35	48	24	39	9	.6	-1.0	.3	7.4	106	76.3	107	85	63	0	2	4	0
NOME	15	2	25	-12	9	5	7	-1	7	1.6	200	14.3	87	85	71	0	7	0	0
AZ PHOENIX	66	49	70	41	58	6	.1	-.1	.1	1.1	122	12.9	174	77	37	0	0	2	0
PRESCOTT	51	34	58	21	42	6	.8	.4	.8	1.3	68	19.9	104	95	50	0	3	1	1
TUCSON	64	44	70	36	54	3	.3	-.1	.3	.5	56	22.0	190	75	33	0	0	2	0
YUMA	69	52	74	46	60	5	.4	-.3	.4	.9	225	5.7	173	65	37	0	0	1	0
AR FORT SMITH	26	8	37	-1	17	-21	.1	-.4	.1	2.4	73	35.2	85	80	49	0	7	2	0
LITTLE ROCK	25	9	33	-1	17	-24	.1	-.7	.1	8.6	195	42.9	89	84	65	0	7	3	0
CA BAKERSFIELD	60	47	65	42	53	6	.9	-.8	.9	1.3	186	11.0	204	94	72	0	0	2	1
EUREKA	58	47	65	41	52	5	2.6	1.1	.9	14.3	201	67.1	172	94	74	0	0	6	2
FRESNO	59	48	65	41	54	10	.7	-.3	.5	1.8	95	21.8	212	94	74	0	0	4	0
LOS ANGELES	66	53	71	50	60	4	.7	-.3	.7	2.0	118	29.5	250	92	54	0	0	5	1
RED BLUFF	53	43	60	40	48	3	2.4	1.6	1.1	10.2	255	47.5	224	98	71	0	0	5	2
SACRAMENTO	58	48	61	44	53	9	1.3	.5	.8	4.0	121	33.7	203	93	72	0	0	4	1
SAN DIEGO	68	57	73	50	63	6	.5	-.2	.2	1.5	100	18.8	211	89	66	0	0	3	0
SAN FRANCISCO	60	52	63	50	56	8	1.3	.4	.8	6.3	162	38.3	202	90	67	0	0	3	2
CO DENVER	30	1	50	-15	16	-15	.2	-.2	.1	1.4	233	20.4	130	87	47	0	7	3	0
GRAND JUNCTION	33	20	43	5	27	1	.9	.8	.5	1.7	340	14.8	183	81	55	0	6	1	0
PUEBLO	28	0	46	-20	14	-17	.2	-.1	.2	1.0	250	13.0	109	87	56	0	7	2	0
CT BRIDGEPORT	30	15	54	2	23	-8	1.0	.2	1.0	5.3	126	56.4	136	73	43	0	7	1	1
HARTFORD	29	6	51	-3	18	-8	.9	0	.9	6.9	144	56.2	124	81	46	0	7	1	1
DC WASHINGTON	29	15	37	3	22	-14	1.0	.3	1.0	6.3	175	52.7	131	64	40	0	6	1	1
FL APALACHICOLA	49	26	68	15	38	-16	1.7	.9	1.0	6.9	177	64.5	113	71	39	0	6	2	2
DAYTONA BEACH	55	34	79	19	45	-13	2.0	1.5	1.8	12.5	500	73.9	149	79	58	0	3	2	1
JACKSONVILLE	51	26	74	11	38	-15	4.0	3.4	2.1	6.4	229	62.2	115	79	44	0	5	2	2
KEY WEST	69	56	81	45	63	-7	1.4	1.0	1.0	5.2	248	52.5	128	83	63	0	0	3	1
MIAMI	67	49	84	33	58	-10	1.0	.6	.7	4.4	210	57.7	97	84	54	0	0	3	1
ORLANDO	59	36	80	20	47	-14	2.8	2.4	2.8	5.4	270	55.5	113	87	55	0	3	1	1
TALLAHASSEE	49	25	71	14	37	-15	2.1	1.1	1.1	7.5	144	67.0	102	74	33	0	6	2	2
TAMPA	56	34	76	19	45	-15	1.4	1.0	1.4	4.9	204	60.8	125	88	58	0	3	2	1
WEST PALM BEACH	66	48	85	30	57	-9	2.6	2.1	1.0	7.3	281	83.0	135	91	67	0	1	3	3
GA ATLANTA	35	14	50	0	24	-18	1.9	.8	1.5	10.6	221	51.7	107	79	42	0	7	3	1
AUGUSTA	42	21	65	6	31	-14	.5	-.3	.4	5.6	165	52.9	122	66	33	0	5	3	0
MACON	44	19	67	7	32	-15	.8	-.2	.7	6.8	151	51.2	113	79	39	0	6	3	1
SAVANNAH	45	24	67	9	35	-15	1.6	-.9	.9	4.9	158	54.9	106	71	37	0	5	2	2
HI HILO	83	68	85	65	75	4	2.2	-.2	1.8	3.3	72	68.0	52	92	68	0	0	3	1
HONOLULU	80	68	82	64	74	1	1.3	.5	.9	1.3	33	5.2	22	96	66	0	0	2	1
KAHULUI	82	68	84	63	75	2	5.0	4.3	3.6	5.7	178	12.9	69	90	68	0	0	3	2
LIHUE	81	70	83	64	75	3	.2	-1.1	.2	.8	13	16.3	36	89	57	0	0	3	0
ID BOISE	26	12	30	-4	19	-11	1.0	.7	.4	4.3	287	18.9	162	99	75	0	7	6	0
LEWISTON	30	17	40	6	24	-10	.3	-.1	.2	1.1	73	13.3	105	97	75	0	7	3	0
POCATELLO	28	13	37	-11	20	-4	.6	-.4	.3	3.8	380	20.3	190	91	73	0	7	6	0
IL CHICAGO	11	-4	20	-17	4	-20	.3	-.2	.3	5.7	228	49.4	142	74	50	0	7	2	0
MOLINE	14	0	27	-12	7	-15	.2	-.3	.1	4.0	190	36.8	98	70	49	0	7	2	0
PEORIA	13	-3	25	-14	5	-19	.2	-.2	.2	4.4	191	42.3	116	72	51	0	7	1	0
QUINCY	13	-3	26	-16	5	-21	.1	-.2	.1	4.1	228	34.8	90	84	57	0	7	1	0
ROCKFORD	12	-4	25	-15	4	-17	.2	-.2	.2	3.4	155	34.4	89	75	53	0	7	2	0
SPRINGFIELD	14	-4	25	-15	5	-22	.2	-.2	.2	5.0	227	32.6	94	77	51	0	7	1	0
IN EVANSVILLE	21	4	33	-7	13	-20	.4	-.3	.3	5.2	133	48.9	113	82	51	0	7	2	0
FORT WAYNE	16	-1	27	-11	8	-18	.3	-.2	.3	6.0	214	32.7	91	67	49	0	7	1	0
INDIANAPOLIS	16	-5	27	-15	6	-23	.3	-.3	.3	4.4	133	36.0	90	74	53	0	7	2	0
SOUTH BEND	15	-1	26	-12	7	-19	.3	-.3	.3	4.4	133	30.7	79	76	59	0	7	3	0
IA DES MOINES	15	0	28	-15	8	-14	.1	-.1	.1	2.7	208	41.3	129	72	50	0	7	2	0
SIOUX CITY	14	0	26	-13	7	-12	T	-.1	T	1.8	257	28.3	109	71	51	0	7	1	0
WATERLOO	11	-4	28	-18	4	-13	T	-.2	T	1.9	136	36.6	107	82	58	0	7	1	0
KS CONCORDIA	19	4	30	-8	12	-16	.4	-.2	.4	1.8	180	25.5	92	70	50	0	7	1	0
DODGE CITY	22	5	35	-6	13	-18	.2	-.1	.1	.8	114	24.1	114	74	46	0	7	2	0
GOODLAND	22	4	40	-6	13	-15	.1	0	.1	1.3	325	17.8	106	85	55	0	7	2	0
TOPEKA	19	0	30	-11	10	-19	.1	-.2	.1	2.2	147	36.8	107	74	48	0	7	2	0
WICHITA	19	0	30	-10	10	-22	.3	-.1	.7	1.7	109	36.6	124	75	50	0	7	3	0
KY BOWLING GREEN	24	6	36	-7	15	-21	.8	-.3	.5	8.4	158	54.4	106	98	58	0	7	2	0
LEXINGTON	22	5	41	-9	14	-20	.7	-.2	.6	5.4	123	40.6	86	85	51	0	7	2	1
LOUISVILLE	23	5	34	-7	14	-20	.4	-.4	.4	5.5	134	47.5	104	74	49	0	7	2	0
LA ALEXANDRIA	37	22	44	13	29	-22	.8	-.3	.8	5.8	105	53.0	97	67	38	0	6	2	1
BATON ROUGE	42	20	62	11	31	-21	1.4	.3	1.4	8.9	162	77.8	137	86	49	0	6	1	1
LAKE CHARLES	41	25	52	13	33	-19	.3	-.8	.3	4.0	71	55.2	100	89	45	0	5	1	0
NEW ORLEANS	45	25	68	14	35	-18	5.2	4.0	2.3	8.7	145	84.2	138	76	46	0	5	4	0

BASED ON PRELIMINARY REPORTS AND 1951-80 NORMALS

+100 = NORMAL & ACTUAL NEAR THE SAME

CORRECT NOVEMBER 1983 HEATING DEGREE DAYS FOR THESE STATIONS:

NEW ORLEANS, LA. 183
CHEYENNE, WY. 954

Weather Data for the Week Ending Dec. 31, 1983

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
ME SHREVEPORT	32	15	44	6	24	-23	.7	0	T	7.7	179	40.7	111	88	49	0	7	2	0
ME CARIBOU	19	1	36	-16	10	-1	.6	0	T	7.7	179	40.7	111	88	49	0	7	2	0
ME PORTLAND	29	7	51	-9	18	-5	1.2	.3	T	9.4	184	66.4	151	74	38	0	7	2	0
MD BALTIMORE	27	11	36	0	19	-15	.9	.2	T	7.9	214	51.2	121	81	41	0	7	1	1
MD SALISBURY	36	16	63	5	26	-10	.5	.5	T	4.6	112	51.6	110	70	43	0	7	1	1
MA BOSTON	32	14	57	0	23	-8	.5	.5	T	5.9	113	53.7	121	61	35	0	7	1	1
MA CHATHAM	44	32	44	32	38	5	.2	.2	T	5.1	91	55.4	117	61	35	0	7	1	1
MI ALPENA	20	8	24	-1	14	-7	.3	.2	T	2.0	91	34.5	116	91	66	0	7	1	1
MI DETROIT	16	0	24	-10	8	-17	.4	.2	T	4.7	162	37.0	118	76	46	0	7	2	0
MI FLINT	17	3	24	-6	9	-15	.2	.3	T	2.3	97	32.4	106	76	39	0	7	2	0
MI GRAND RAPIDS	17	3	24	-5	10	-14	.4	.1	T	3.7	128	36.8	105	83	62	0	7	1	1
MI HOUGHTON LAKE	17	4	22	-5	11	-9	.3	.1	T	2.3	105	30.9	108	81	66	0	7	5	0
MI LANSING	15	-1	22	-8	7	-16	.1	.3	T	2.2	88	33.7	109	81	66	0	7	4	0
MI MARQUETTE	15	-4	26	-13	5	-9	.1	.4	T	4.9	169	46.8	124	96	68	0	7	4	0
MI MUSKEGON	19	12	25	4	16	-10	.6	0	T	5.2	173	34.6	105	86	68	0	7	6	0
MI SAULT STE. MARIE	18	0	25	-13	9	-7	.3	.2	T	3.5	121	34.0	99	90	63	0	7	4	0
MN ALEXANDRIA	9	-6	18	-16	2	-7	.4	.2	T	1.5	167	22.6	89	85	50	0	7	5	0
MN DULUTH	10	-5	20	-16	2	-7	.4	.2	T	1.5	167	22.6	89	85	50	0	7	5	0
MN INT'L FALLS	8	-12	20	-22	-2	-5	.1	.3	T	3.0	188	32.0	105	94	71	0	7	0	0
MN MINNEAPOLIS	11	-2	24	-11	5	-10	.1	.2	T	1.0	91	25.0	98	91	58	0	7	0	0
MN ROCHESTER	8	-5	23	-14	2	-12	.1	.1	T	2.7	270	38.9	147	84	57	0	7	1	1
MS GREENWOOD	34	17	48	5	25	-19	1.2	0	T	2.1	191	35.1	170	90	72	0	7	1	1
MS JACKSON	38	17	55	7	28	-19	2.1	.9	T	1.9	128	70.7	131	77	39	0	7	1	1
MS MERIDIAN	41	18	57	8	29	-17	2.1	.8	T	1.6	124	70.7	132	85	32	0	6	2	2
MO CAPE GIRARDEAU	21	3	28	-7	12	-	.1	.7	T	4.5	102	44.9	98	89	65	0	6	2	2
MO COLUMBIA	20	0	34	-19	10	-20	.1	.3	T	3.6	157	46.2	127	64	40	0	7	2	0
MO KANSAS CITY	17	-1	28	-16	8	-20	.2	.1	T	2.3	153	32.7	90	80	52	0	7	2	0
MO SAINT LOUIS	19	2	35	-13	11	-20	.2	.2	T	5.7	238	44.8	131	86	50	0	7	2	0
MO SPRINGFIELD	21	1	40	-10	11	-22	.3	.3	T	2.8	97	45.3	112	76	52	0	7	3	0
MT BILLINGS	20	2	43	-21	11	-13	.1	.1	T	1.0	125	13.0	86	67	43	0	7	2	0
MT GLASGOW	7	-15	22	-24	-4	-16	.1	.1	T	.5	83	7.7	65	70	50	0	7	2	0
MT GREAT FALLS	20	-5	42	-29	7	-15	.1	.1	T	.9	90	16.0	103	80	52	0	7	2	0
MT HAVRE	9	-16	39	-34	-4	-18	.1	.1	T	.3	43	17.1	102	74	53	0	7	1	0
MT HELENA	11	-10	39	-26	1	-20	.1	.1	T	.8	114	14.0	124	74	55	0	7	1	0
MT KALISPELL	12	-11	25	-27	0	-21	.6	.3	T	1.6	94	18.1	109	84	57	0	7	2	0
MT MILES CITY	10	-11	33	-32	0	-18	.5	.2	T	.3	43	8.0	56	85	54	0	7	1	0
MT MISSOULA	15	-2	30	-15	6	-16	.5	.2	T	1.8	150	16.6	130	76	53	0	7	4	0
NE GRAND ISLAND	18	0	34	-16	9	-14	.2	0	T	2.3	230	28.9	120	73	50	0	7	4	0
NE LINCOLN	16	-1	28	-16	8	-15	.2	.1	T	2.0	250	29.3	108	78	52	0	7	2	0
NE NORFOLK	18	0	31	-16	9	-11	.1	0	T	2.2	314	28.5	116	70	51	0	7	2	0
NE NORTH PLATTE	16	-6	37	-16	5	-18	.1	.1	T	1.3	325	19.0	97	74	43	0	7	1	0
NE OMAHA	15	-1	29	-17	7	-14	.2	0	T	3.1	310	32.3	105	83	65	0	7	1	0
NE SCOTTSBLUFF	23	-1	46	-14	11	-14	.3	.2	T	1.3	217	15.6	106	80	47	0	7	2	0
NE VALENTINE	18	-6	39	-25	6	-15	.5	.4	T	1.4	175	14.6	166	96	68	0	7	1	0
NV ELY	38	16	45	-5	27	3	.5	.4	T	1.1	220	28.7	154	64	42	0	7	2	0
NV LAS VEGAS	56	40	64	33	48	4	.3	.2	T	1.4	100	5.0	111	81	48	0	7	4	0
NV RENO	45	29	55	17	37	6	.3	.3	T	1.4	108	12.2	169	87	60	0	0	1	0
NV WINNEMUCCA	35	20	41	1	28	-1	1.2	1.0	T	3.7	370	14.6	178	89	70	0	5	3	0
NH CONCORD	25	-4	41	-19	11	-10	.8	.1	T	6.1	156	48.1	128	93	52	0	7	1	1
NJ ATLANTIC CITY	30	11	55	-2	20	-13	.7	.1	T	5.6	133	48.7	111	90	45	0	7	1	1
NM ALBUQUERQUE	42	20	52	9	31	-3	.1	0	T	.4	80	7.7	91	94	46	0	6	2	0
NM CLOVIS	41	15	61	9	28	-10	.3	.3	T	.3	300	9.8	98	85	58	0	6	2	0
NM ROSWELL	39	9	61	-5	24	-17	.3	.3	T	6.0	11.1	62	68	40	0	7	0	0	0
NY ALBANY	22	2	37	-6	12	-11	.6	0	T	5.9	174	46.4	129	87	50	0	6	2	0
NY BINGHAMTON	21	3	36	-6	12	-11	.6	.1	T	6.7	197	43.0	115	80	51	0	7	1	1
NY BUFFALO	20	8	32	-3	14	-12	.9	.2	T	9.1	233	39.1	101	92	67	0	7	3	0
NY NEW YORK	30	16	54	3	23	-10	1.0	.2	T	7.1	169	60.0	141	72	39	0	7	5	0
NY ROCHESTER	22	8	36	1	15	-11	.5	.1	T	5.5	177	35.3	108	78	54	0	7	1	1
NY SYRACUSE	21	4	35	-6	12	-12	.4	.2	T	5.0	164	36.1	91	87	57	0	7	2	0
NC ASHEVILLE	34	10	54	-7	22	-16	1.7	1.0	T	9.8	251	53.0	110	86	45	0	7	2	1
NC CHARLOTTE	34	17	44	4	26	-15	.5	.3	T	7.7	208	41.6	96	73	36	0	7	2	1
NC GREENSBORO	31	14	39	1	23	-15	.6	.2	T	4.5	122	46.4	107	71	33	0	7	1	1
NC HATTERAS	39	25	67	12	32	-15	2.4	1.4	T	7.1	139	65.2	115	78	58	0	6	4	2
NC NEW BERN	40	19	72	7	29	-15	.6	.2	T	4.8	120	54.5	101	83	45	0	6	2	0
NC RALEIGH	35	16	53	4	26	-14	1.4	.7	T	6.8	194	47.4	112	72	33	0	7	2	1
NC WILMINGTON	43	21	69	9	32	-15	.4	.4	T	5.2	133	58.9	107	74	40	0	6	2	0
ND BISMARCK	13	-7	23	-11	3	-8	.4	.1	T	.6	120	13.3	84	74	45	0	7	1	0
ND FARGO	11	-3	16	-15	4	-4	.4	.1	T	1.3	186	19.9	98	69	48	0	7	1	0
ND GRAND FORKS	14	-3	19	-11	6	0	.4	.1	T	.8	133	21.6	117	76	54	0	7	1	0
ND WILLISTON	9	-9	21	-20	0	-10	.1	.1	T	.7	117	9.5	68	74	55	0	7	1	0
OH AKRON-CANTON	19	1	37	-14	10	-17	.4	.1	T	4.2	140	38.7	105	73	54	0	7	1	0
OH CINCINNATI	19	1	32	-12	10	-21	.6	.1	T	3.8	112	42.5	103	76	51	0	7	2	0
OH CLEVELAND	18	1	31	-10	10	-18	.4	.2	T	3.7	116	40.5	111	84	53	0	7	1	0
OH COLUMBUS	18	2	34	-12	10	-19	.6	0	T	4.4	147	38.5	100	73	44	0	7	2	1

BASED ON PRELIMINARY REPORTS AND 1951-80 NORMALS

Weather Data for the Week Ending Dec. 31, 1983

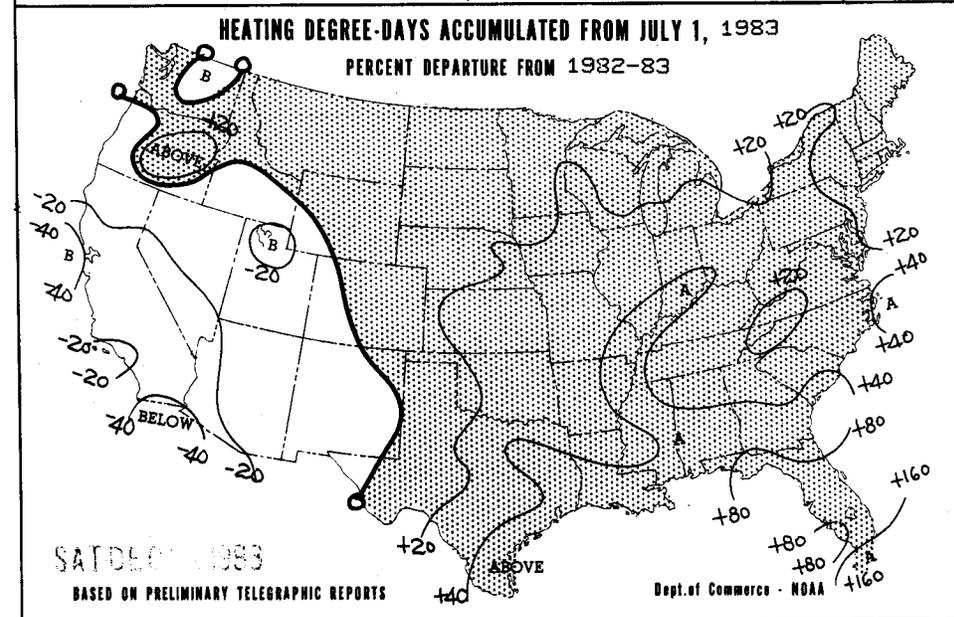
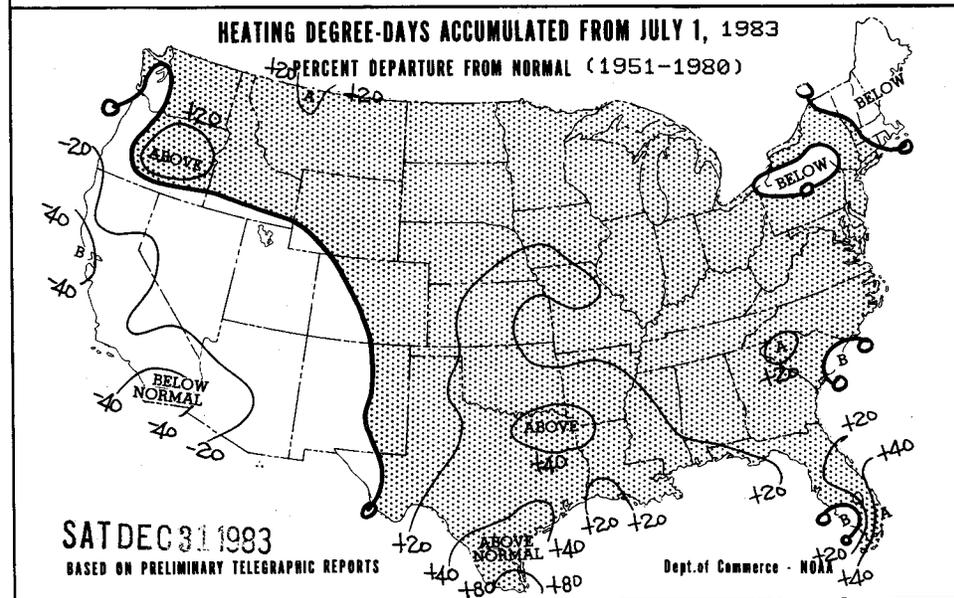
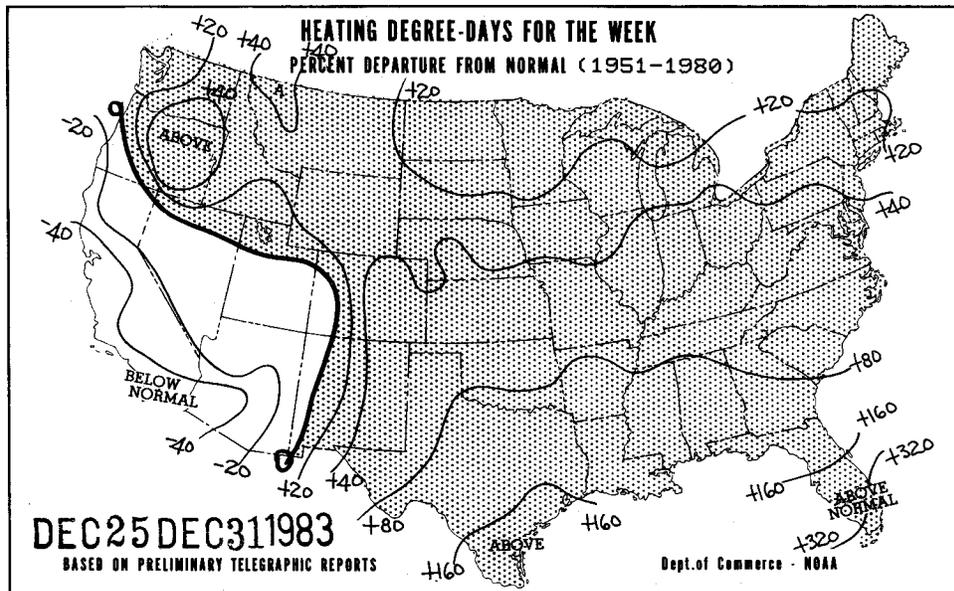
STATES AND STATIONS	TEMPERATURE °F						PRECIPITATION						RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS				
	AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE NOV 27	PCT. NORMAL SINCE NOV 27	TOTAL, IN., SINCE JAN. 1	PCT. NORMAL SINCE JAN. 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	TEMPERATURE °F		PRECIPITATION	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
DAYTON	16	-1	30	-13	8	-21	.3	.3	.3	3.6	124	38.0	105	73	43	0	7	2	0
TOLEDO	14	-1	23	-12	6	-19	.3	.3	.3	5.0	172	35.5	109	74	49	0	7	1	0
YOUNGSTOWN	20	2	46	-12	11	-15	.6	.1	.6	4.8	150	38.8	101	75	49	0	7	1	1
OK OKLAHOMA CITY	25	9	40	-1	17	-20	.2	.1	.2	.7	47	38.9	122	79	46	0	7	1	0
TULSA	26	9	41	-2	18	-19	.1	.3	.1	1.0	45	34.9	88	75	47	0	7	2	0
OR ASTORIA	47	33	55	26	40	-2	3.6	1.0	2.2	9.5	73	79.0	116	98	74	0	4	7	2
BURNS	27	11	36	-17	19	-7	.7	.5	.7	3.7	370	18.4	180	--	--	0	7	5	0
MEDFORD	47	35	55	27	41	4	.7	.1	.4	7.0	179	30.2	150	97	76	0	2	6	0
PENDLETON	27	13	43	4	20	-14	.9	.4	.5	3.6	180	15.9	131	98	80	0	7	5	0
PORTLAND	35	28	45	22	32	-8	1.9	.5	1.7	5.3	74	47.1	125	92	70	0	5	4	1
SALEM	43	31	55	20	37	-3	2.2	.5	1.3	7.1	88	55.5	136	86	63	0	4	4	2
PA ALLENTOWN	24	9	36	-2	16	-12	1.0	.2	1.0	8.5	207	52.4	117	79	45	0	7	1	1
ERIE	21	5	38	-7	13	-14	.7	.1	.5	5.0	139	45.7	114	73	49	0	7	3	1
HARRISBURG	23	8	34	-3	15	-15	.9	.2	.9	7.9	101	47.2	110	83	52	0	7	2	1
PHILADELPHIA	29	13	53	1	21	-12	1.1	.3	1.1	7.6	195	54.4	130	80	39	0	7	1	1
PITTSBURGH	21	4	44	-12	13	-16	.6	0	.6	5.3	189	41.4	111	79	48	0	7	2	1
SCRANTON	22	7	39	-5	15	-12	.7	.2	.7	6.7	223	43.3	121	82	52	0	7	1	1
RI PROVIDENCE	32	12	58	1	22	-8	1.0	.1	1.0	8.5	167	67.6	148	69	38	0	7	1	1
SC CHARLESTON	45	25	69	11	35	-14	1.5	.7	1.0	4.4	129	54.3	102	78	43	0	5	2	2
COLUMBIA	41	20	61	6	30	-15	.5	.4	.4	6.9	177	45.5	93	80	36	0	5	3	0
FLORFNCE	40	21	60	8	30	-15	.7	.1	.4	6.4	183	51.7	118	85	43	0	5	2	0
GREENVILLE	34	17	42	6	25	-16	.8	.1	.8	9.1	212	54.4	106	68	35	0	7	2	1
SD ABERDEEN	12	-6	18	-11	3	-8	.1	0	.7	1.0	200	18.6	98	82	61	0	7	1	0
HURON	14	-1	26	-11	7	-8	.1	.1	.7	1.0	200	18.6	98	82	61	0	7	1	0
RAPID CITY	21	1	42	-22	11	-13	.1	.1	.7	.5	83	15.5	93	62	38	0	7	1	0
SIoux FALLS	12	-4	27	-16	4	-11	.7	.1	.7	1.1	138	26.6	105	84	56	0	7	1	0
TN CHATTANOOGA	30	12	43	-2	21	-19	2.4	1.2	1.8	11.6	200	52.7	98	82	42	0	7	2	2
KNOXVILLE	30	11	46	-6	21	-18	1.5	.4	1.3	6.8	128	42.6	88	83	43	0	7	2	1
MEMPHIS	30	13	38	0	22	-19	.9	.1	.8	9.3	172	57.7	109	87	45	0	7	2	1
NASHVILLE	29	8	43	-5	18	-21	1.1	.1	.8	9.6	188	51.7	104	95	51	0	7	2	1
TX ABILENE	35	15	54	5	25	-19	.1	.1	.1	.7	78	19.4	80	73	36	0	7	2	0
AMARILLO	28	6	51	-5	17	-19	.1	.1	.7	1.0	153	76	80	54	0	7	2	0	
AUSTIN	39	18	58	10	29	-22	.7	.4	.9	38	34.5	103	71	31	0	7	0	0	
BEAUMONT	41	25	50	15	33	-20	.1	.8	.1	7.9	155	78.1	143	83	49	0	5	2	0
BROWNSVILLE	51	30	69	20	41	-20	.7	.2	.5	36	28.3	106	80	41	0	5	0	0	
CORPUS CHRISTI	43	25	61	14	34	-23	.7	.3	.6	38	37.0	116	74	40	0	6	0	0	
DEL RIO	41	21	55	13	31	-20	0	.1	0	0	0	14.0	77	57	24	0	7	0	0
EL PASO	48	21	58	10	35	-8	.1	.1	.1	.1	25	8.0	96	81	40	0	6	1	0
FORT WORTH	32	14	49	6	23	-23	.7	.3	.7	1.1	61	31.3	107	83	45	0	7	1	0
GALVESTON	41	26	51	14	34	-21	.1	.7	.7	3.3	79	53.5	127	78	54	0	6	2	0
HOUSTON	40	21	49	11	31	-22	.7	.8	.7	4.8	114	53.2	113	77	44	0	7	0	0
LUBBOCK	39	11	59	0	25	-15	.1	0	.1	.3	75	20.4	109	78	43	0	7	1	0
MIDLAND	46	17	68	7	31	-13	.7	.1	.7	.1	20	10.0	70	68	34	0	6	1	0
SAN ANGELO	43	13	70	-1	28	-19	.1	.1	.1	.1	14	15.3	80	73	29	0	7	1	0
SAN ANTONIO	41	17	57	9	29	-22	0	.3	.6	35	26.3	87	67	29	0	7	0	0	
VICTORIA	43	21	59	14	32	-22	.7	.4	.9	38	42.6	111	87	41	0	7	0	0	
WACO	35	17	52	7	26	-21	.7	.4	.9	39	24.2	74	80	43	0	7	0	0	
WICHITA FALLS	30	10	46	2	20	-22	.1	.2	.1	.9	60	25.3	90	82	49	0	7	2	0
UT BLANDING	39	25	46	12	32	5	.5	.2	.4	1.1	79	16.1	139	92	69	0	5	3	0
CEDAR CITY	44	23	48	7	33	4	.6	.5	.4	.8	133	14.6	142	88	60	0	6	3	0
SALT LAKE CITY	31	19	35	6	25	-3	1.3	1.0	.4	4.3	269	24.4	159	87	70	0	7	6	0
VT BURLINGTON	22	5	39	-11	14	-5	.8	.3	.8	5.9	203	50.5	146	77	48	0	7	1	1
VA NORFOLK	36	20	64	7	28	-13	.4	.4	.2	6.1	169	49.6	107	68	38	0	7	2	0
RICHMOND	31	17	41	3	24	-14	.8	0	.8	4.6	118	43.6	98	68	34	0	7	1	1
ROANOKE	31	11	40	-4	21	-15	.7	.1	.7	6.1	185	48.2	120	72	37	0	7	1	1
WA COLVILLE	23	13	32	-6	18	-8	1.0	.5	.4	2.4	86	28.4	159	95	84	0	7	3	0
QUILLAYUTE	45	33	50	24	39	0	3.6	0	1.8	8.9	49	121.1	116	98	70	0	3	6	3
SEATTLE-TACOMA	44	34	51	28	39	-1	1.0	.5	.7	5.1	72	41.2	107	90	56	0	3	4	1
SPOKANE	22	6	32	-6	14	-13	.7	.2	.4	2.5	89	22.8	132	96	80	0	7	4	0
YAKIMA	27	14	30	0	21	-8	.7	.4	.5	2.1	140	13.1	170	88	70	0	7	5	1
WV BECKLEY	25	4	47	-15	15	-17	.5	.3	.4	2.4	65	34.9	81	85	48	0	7	3	0
CHARLESTON	26	7	49	-10	16	-18	.7	.1	.6	3.5	97	42.7	99	86	43	0	7	2	1
HUNTINGTON	23	7	45	-9	15	-19	.4	.3	.4	3.6	103	37.0	89	74	46	0	7	2	0
PARKERSBURG	25	7	48	-7	16	-16	.2	.5	.2	4.3	134	46.3	111	97	68	0	7	1	0
WI GREN BAY	11	-3	23	-16	4	-13	.7	.3	.7	2.1	124	30.3	106	85	48	0	7	3	0
LA CROSSE	11	-5	25	-15	3	-14	.7	.2	.7	1.2	100	29.0	93	86	55	0	7	1	0
MADISON	11	-3	23	-15	4	-15	.1	.2	.1	3.2	168	31.4	99	88	60	0	7	1	0
MILWAUKEE	14	0	24	-12	7	-14	.2	.2	.2	4.1	178	37.5	121	82	50	0	7	3	0
WAUSAU	10	-5	26	-18	2	-12	.1	.1	.1	1.6	107	31.1	94	77	44	0	7	1	0
WY CASPER	24	1	39	-26	13	-11	.2	.2	.2	.7	140	18.1	157	85	61	0	7	4	0
CHFYENNE	28	3	43	-16	15	-12	.2	.1	.1	1.4	233	20.9	155	88	54	0	7	3	0
LANDER	14	-6	34	-18	4	-17	.1	0	.1	.7	100	15.6	116	79	58	0	7	2	0
SHERIDAN	17	-8	41	-32	4	-17	.1	.1	.1	.5	63	9.7	62	81	46	0	7	2	0
PR SAN JUAN	87	73	90	70	80	3	1.0	.1	.3	3.6	71	41.7	74	91	61	1	0	6	0

BASED ON PRELIMINARY REPORTS AND 1951-80 NORMALS

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

LAST DATE OF DATA COLLECTION PERIOD IS 12-31-1983
ACCUMULATIONS ARE FROM JULY 1
** = NORMAL LESS THAN 100 OR RATIO INCALCULABLE
-- = DATA MISSING FOR THIS WEEK

STATE CITY	CALL	WEEK	WEEK	WEEK	CUM	CUM	CUM	CUM	CUM	STATE CITY	CALL	WEEK	WEEK	WEEK	CUM	CUM	CUM	CUM	CUM	
		TOTAL	DEV	DEV	TOTAL	DEV	DEV	DEV	DEV			TOTAL	DEV	DEV	TOTAL	DEV	DEV	DEV	DEV	
			FROM	FROM		FROM	FROM	FROM	FROM				FROM	FROM		FROM	FROM	FROM	FROM	
			NORM	L YR		NORM	L YR	NORM	L YR				NORM	L YR		NORM	L YR	NORM	L YR	
AL BIRMINGHAM	BHM	297	139	207	1260	148	360	13	39	MT MILES CITY	MLS	454	121	130	2604	493	378	18	12	
AL MOBILE	MOB	229	131	171	839	189	290	29	53	MT MISSOULA	MSO	409	111	53	2073	445	376	14	11	
AL MONTGOMERY	MGM	244	120	198	929	37	369	4	66	NE GRAND ISLAND	GRI	389	95	42	2073	452	409	18	15	
AK ANCHORAGE	ANC	374	3	134	4633	-186	-268	-4	-5	NE LINCOLN	LNK	398	100	95	2913	480	552	20	23	
AK BARROW	BRW	424	-131	-69	8619	-29	-420	0	-5	NE NORFOLK	NFK	393	78	56	3139	420	552	20	23	
AK FAIRBANKS	FAI	440	-87	119	6109	-306	175	-5	3	NE NORTH PLATTE	NPT	419	126	89	3159	415	438	15	21	
AK JUNEAU	JNU	333	46	119	4156	200	452	5	12	NE OMAHA	OMA	403	109	93	3020	366	603	28	25	
AK KODIAK	KOD	179	-66	-4	3134	-734	-384	-19	-11	NE VALENTINE	VTN	409	99	86	3390	524	483	18	17	
AK NOME	NOM	393	-38	74	2407	-159	-46	-28	-11	NV LAS VEGAS	LAS	119	-28	-85	816	-201	-324	-20	-28	
AZ FLAGSTAFF	FLG	216	-41	-103	5300	-789	-52	-13	-1	NV RENO	RNO	194	-44	-72	1960	-513	-727	-21	-28	
AZ PHOENIX	PHX	51	-40	-67	337	-236	-464	-8	-15	NH CONCORD	CON	260	8	-42	2436	-176	-438	-7	-15	
AZ TUCSON	TUS	75	-23	-84	574	-42	-129	-2	-18	NJ ATLANTIC CITY	ATC	378	71	192	2798	-59	285	-2	11	
AZ WINLOW	WIN	193	-55	14	1637	-309	-102	-16	-9	NM ALBUQUERQUE	ABQ	313	90	188	1910	98	269	5	4	
AZ YUMA	YUM	30	-40	-65	226	-150	-151	-40	-40	NM CARMEL	CAR	234	17	-35	1667	-128	-244	-7	-14	
AR FORT SMITH	FSM	332	148	146	1648	298	366	22	29	NM ROSWELL	ROU	284	116	24	1415	38	-132	7	19	
AR LITTLE ROCK	LRI	336	168	171	1602	371	458	30	40	NY ALBANY	ALB	394	76	181	2623	108	362	4	16	
CA BAKERSFIELD	BFL	80	-46	-78	968	-171	-300	-20	-31	NY BINGHAMTON	BGM	369	76	178	2636	-101	303	-4	13	
CA BUREKA	BKA	87	-37	-40	1330	-698	-256	-34	-16	NY BUFFALO	BUF	356	80	175	2598	139	491	6	23	
CA FRESNO	FAT	78	-59	-79	713	-342	-355	-32	-33	NY NEW YORK	LGA	293	71	158	1749	39	248	2	17	
CA LOS ANGELES	LAX	36	-27	-46	363	-143	-15	-29	-4	NY ROCHESTER	ROC	347	72	173	2436	55	414	2	20	
CA RED BLUFF	RBL	118	-22	-23	973	-34	-98	-3	-9	NY SYRACUSE	SYR	367	85	171	2736	272	460	11	20	
CA SAN DIEGO	SAN	14	-46	-57	189	-209	-120	-53	-39	NC ASHEVILLE	AVL	300	108	194	1726	29	217	2	14	
CA SAN FRANCISCO	SFO	62	-57	-76	717	-508	-472	-41	-40	NC CAPE HATTERAS	HAT	228	99	190	882	20	276	2	46	
CA STOCKTON	STK	96	-61	-90	813	-219	-332	-21	-29	NC CHARLOTTE	CLT	273	105	192	1417	118	291	9	26	
CO DENVER	DTN	343	103	-18	2762	420	210	18	3	NC GREENSBORO	GSO	293	104	201	1676	179	298	12	22	
CO GRAND JUNCTION	GJT	269	-9	-17	1957	-334	-184	-15	-9	NC RALEIGH DURHAM	RDU	274	99	198	1454	95	312	7	27	
CO PUEBLO	PUB	266	115	33	2420	243	155	11	7	NC WILMINGTON	ILM	230	99	167	940	30	171	3	22	
CT BRIDGEPORT	BRP	284	57	139	1942	88	173	4	10	ND BISMARCK	BIS	433	52	107	3977	439	453	12	13	
CT HARTFORD	HDF	329	56	157	2326	10	284	0	14	ND FARGO	FAR	427	26	75	3966	368	475	10	14	
DE WILMINGTON	ILG	325	89	200	1931	116	333	6	21	ND WILLISTON	WIS	452	68	82	4026	374	532	10	9	
DC WASHINGTON	DCA	299	98	159	1540	31	317	2	26	OH AKRON-CANTON	CAK	380	116	209	2311	5	232	0	24	
FL APALACHICOLA	APC	189	105	159	605	107	284	21	38	OH CLEVELAND	CLE	385	125	219	2431	183	50	8	28	
FL DAYTONA BEACH	DAY	142	86	140	386	94	214	32	124	OH COLUMBUS	CMH	380	130	217	2307	163	510	8	28	
FL FORT MEYER	FMY	88	60	88	102	-12	47	-9	4	OH CINCINNATI	CVG	383	144	232	2234	250	736	13	29	
FL JACKSONVILLE	JAX	184	100	163	607	35	12	25	**	OH DAYTON	DAY	400	145	225	2445	317	586	15	32	
FL KEY WEST	EYW	35	28	35	97	86	239	17	65	OH TOLEDO	TOL	409	129	213	2652	189	477	8	23	
FL MIAMI	MIA	67	53	67	74	28	49	**	**	OH YOUNGSTOWN	YNG	377	106	205	2497	60	583	2	30	
FL ORLANDO	MCO	126	84	126	259	52	132	25	105	OK OKLAHOMA CITY	OKC	334	140	106	1788	365	457	26	34	
FL TALLAHASSEE	TLH	195	97	167	724	96	352	15	94	OR ASTORIA	AST	172	10	-13	2173	67	276	-3	19	
FL TAMPA	TPA	142	94	142	281	43	155	18	123	OR BURNS	BRN	489	11	11	11	11	11	11	11	
FL WEST PALM BEACH	PBI	73	59	73	99	33	50	**	**	OR MEDFORD	MFR	166	-31	-47	1797	-143	-103	-7	-5	
GA ATLANTA	ATL	283	126	205	1333	165	363	14	37	OR PENDELTON	PDT	314	97	58	2443	285	92	13	4	
GA AUGUSTA	AGS	233	94	174	1049	43	276	4	36	OR PORTLAND	PDX	231	52	22	1793	-68	61	-4	4	
GA MARIETTA	MRI	231	105	180	934	44	309	5	49	OR SALEM	SLE	197	19	-14	1802	-174	-116	-9	-6	
GA SAVANNAH	SAV	211	99	174	772	30	287	4	59	PA ALLENTOWN	ABE	340	95	166	2207	35	344	2	18	
HI HILO-MAUI	IHO	0	0	0	0	0	0	**	**	PA ERIE	ERI	363	95	186	2256	-153	333	-6	17	
HI HONOLULU-OAII	HNL	0	0	0	0	0	0	**	**	PA HARRISBURG	CXY	346	105	196	2231	238	552	12	33	
HI KAHULUI-MAUI	KOH	0	0	0	0	0	0	**	**	PA PHILADELPHIA	PHL	307	80	167	1877	80	322	4	21	
HI LIHUE-KAUAI	LHI	0	0	0	0	0	0	**	**	PA PITTSBURGH	PIT	364	108	215	2381	131	505	6	27	
ID BOISE	BOI	321	74	-24	2474	128	-39	5	-2	PA SCRANTON	AVP	352	84	172	2380	-3	300	0	14	
ID LEWISTON	LUS	268	84	26	2390	151	133	7	6	RI PROVIDENCE	PVD	299	50	150	1970	-158	154	-7	8	
ID POCAHELLO	PIH	312	27	71	2917	68	-148	2	-5	SC CHARLESTON	CHS	210	88	172	765	-44	230	-5	43	
IL CHICAGO	ORD	428	140	226	2713	287	574	12	27	SC COLUMBIA	CAE	241	101	168	1157	128	227	12	24	
IL MOLINE	MLI	404	105	136	2713	287	574	12	27	SD GREENVILLE	GSP	276	113	198	1513	251	419	20	38	
IL PEORIA	PIA	417	130	211	2534	194	358	8	28	SD ABERDEEN	ABR	429	57	118	3726	415	596	13	19	
IL ROCKFORD	RFD	423	113	203	2933	317	590	12	25	SD HURON	HON	406	52	86	3478	353	606	11	21	
IL SPRINGFIELD	SPI	417	151	217	2425	320	545	15	29	SD RAPID CITY	RAP	379	86	98	3329	501	454	19	16	
IN EVANSVILLE	EVV	364	137	217	1956	150	566	8	41	SD SIOUX FALLS	SFD	424	76	87	3466	425	476	14	16	
IN FORT WAYNE	FWA	400	124	224	2355	1	429	0	22	TN CHATTANOOGA	CMA	308	130	218	1548	135	359	10	20	
IN INDIANAPOLIS	IND	414	157	233	2328	201	499	9	27	TN KNOXVILLE	MVH	310	128	214	1622	180	356	12	38	
IN SOUTH BEND	SNB	405	129	220	2529	193	547	9	22	TN MEMPHIS	MEM	303	134	181	1403	169	407	14	41	
IA DES MOINES	DSM	401	95	131	2910	463	648	19	28	TX ABILENE	ABI	278	134	66	1251	217	214	21	21	
IA DUBUQUE	DBQ	435	108	180	3104	314	563	11	22	TX AMARILLO	AMA									



December 28, 1983 to January 1, 1984

HIGHLIGHTS: Abnormally cold weather dominated most of the Nation and brought record lows to many areas early in the week. Some winterkill was reported in wheat fields across the southern Plains but stands in the northern producing areas generally had adequate protective snow cover at midweek, rain and ice halted field activities from eastern Texas through the Delta States and Southeast. Soil moisture supplies continued adequate to mostly surplus throughout the Nation. Rain, ice, and freezing temperatures limited fieldwork to less than 1 day across the South. Winter wheat was in fair to mostly good condition. Some winterkill was expected in late planted fields across the southern Plains. Cotton harvesting was halted by snow, ice, and freezing temperatures across the southern Plains and in New Mexico. Elsewhere, cotton picking was virtually complete. Florida's citrus trees were in a post-freeze stress condition. Growers picked fruit for processing as rapidly as possible. A fresh fruit shipping embargo was established to prevent freeze-damaged fruit from entering the fresh market. In Texas, the remaining citrus for fresh market was virtually lost. Producers were busy picking the crop for juice. Vegetable producers salvaged remaining vegetable hit by the early week freeze in Florida and Texas. Discing and replanting were active. Extremely cold temperatures caused heavy supplemental feeding of livestock and resulted in minimal weight gains. Feed supplies were generally adequate.

SMALL GRAINS: Snow cover provided winter wheat with adequate protection from freezing temperatures in most producing areas, except in the southern Plains where some winterkill of late-planted stands is expected. Rain and ice prevented completion of small grain seeding across the South. Winter wheat continued in fair to mostly good condition in all areas. In Oklahoma, wheat stands were dormant and western producers were concerned about possible winterkill of late-planted fields. Small grain growth was limited by freezing temperatures in Texas; some burning of foliage was evident. However, cold temperatures were beneficial in reducing insect populations. Winter wheat was in good condition with adequate snow cover in Montana, and wind damage was minimal.

COTTON: Cotton harvesting was virtually complete, except in New Mexico and across the southern Plains where snow, ice, and freezing temperatures halted progress. In Texas, adverse weather prevented completion of harvesting on the Plains and ginning operations were at a standstill. Producers had harvested 98% of their acreage. Only limited acreage was left for second picking in Arizona. Growers worked to meet the plowdown date. Most California cotton producers met plowdown regulations and were applying herbicides.

OTHER CROPS: At midweek, soybean harvesting was halted by rain, sleet, and freezing rain across much of the South. However, in some areas fields were harvested earlier when frozen ground permitted combining.

Tobacco planted preparation was slowed by the extreme cold in most areas. Virginia producers prepared burley, fire-cured, and sun-cured tobacco for market. The Kentucky burley market will reopen on January 9.

Florida's sugarcane harvest was very active. Most of the freeze-damaged cane is expected to be harvested with some reduction in yields. Young cane was killed back or hurt but should recover.

FRUITS AND NUTS: Most of Florida's citrus trees were in a post-freeze stress period. Only trees in the extreme south escaped serious leaf damage from the early week freeze. Favorable soil moisture during the month may reduce twig and wood loss in the areas hardest hit by cold temperatures. Harvesting of freeze-damaged oranges for processing was active for most of the week. A fresh fruit shipping embargo started on January 2 and will continue through January 8 to prevent freeze-damaged fruit from entering the fresh market. The remaining fresh market citrus in Texas was damaged by the freeze. Some will be utilized for juice. Producers were busy harvesting oranges but a considerable amount of grapefruit may be left in the orchards. Tree damage is being evaluated. The demand for Arizona citrus was good. Lemon and grapefruit picking was steady. Navel orange harvesting was past peak volume and lessening. Fruit quality was excellent and sizes were larger than normal. Rain hampered citrus harvesting in California. A few Navel oranges, tangelos, and lemons were shipped. Growers applied dormant sprays and pruned trees. Date harvesting continued in the Coachella Valley.

VEGETABLES: Freeze damage to vegetables was severe in north, central, and southwest Florida while light to moderate losses occurred along the east coast. Damage was generally light in Dade County. Extensively damaged crops were cabbage, carrots, cauliflower, tomatoes, peppers, eggplant, snap beans, and strawberries. Celery and lettuce showed less damage. Most volume for the next six weeks will come from Dade County and the east coast. Shipments declined 32% from the previous week because of the holidays. Growers seeded and transplanted crops for late winter and spring. Most freeze-damaged areas should resume production in 6 to 7 weeks if good weather prevails. Texas growers tried to salvage freeze-damaged crops in the Rio Grande Valley. Carrots and onions were frozen back but carrots are expected to recover. Tomatoes and bell peppers were totally destroyed. San Antonio-Winter Garden area vegetables were also damaged by the freeze. The remaining vegetables in East Texas were completely destroyed. Only greenhouse tomatoes remain.

In Arizona, lettuce, broccoli, and cauliflower were harvested in heavy volumes from the Yuma area. Central Valley producers harvested broccoli, cauliflower, leaf lettuce, beets, cabbage, greens, green onions, radishes, parsley, and spinach. California producers harvested moderate volumes of asparagus, broccoli, and carrots. Cauliflower harvesting was light. Celery cutting increased along the south coast. Lettuce harvesting was in full swing in the Imperial Valley. Preparation for fresh market and processing tomato planting was active.

PASTURES AND LIVESTOCK: Abnormally cold weather pushed most southern pastures into dormancy and stressed livestock. Supplemental feeding of livestock was heavy but weight gains were minimal. Death losses of newborn calves and lambs were above normal due to the harsh 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: Temperatures averaged 15° below normal. Freezing rain and sleet on 27th. Rainfall varied from 1.50 to 3.50 in. Soil moisture surplus.

ARIZONA: General precipitation over State first half of week, snow level reached 5,000 ft. level some areas. Snowfall 1 to 5 in. common over Grand Canyon, Mogollon Rim, 5 to 15 in. White Mountains. Moisture amounts mostly 0.10 to 0.50 in. western, southern sections, 0.50 to 1.50 in. remainder. Mostly cloudy skies latter part of week. Average temperatures varied normal to 7° above.

Cotton practically all first picked, small acreage left second pick. Yuma harvest complete, most growers met January 1 plowdown date. Growers worked to meet plowdown dates, February 15 Cochise County, February 1 other producing counties. Wheat, barley seeding active, 60% complete. Land preparation, seeding, delayed by rain. Plants emerging, some stands established all areas. Yuma county acreage 60% seeded, 20% jointing. Yuma lettuce packing increased, normal seasonal volumes expected by 8th. Lettuce heads heavier, quality improved. Harvest light Parker-Poston, Central Valley, picking practically complete. Yuma broccoli, cauliflower heavy volume. Harvest active Central Valley for broccoli, cauliflower, leaf lettuce, beets, cabbage, greens, green onions, radishes, parsley, spinach harvested. Demand for citrus increased as result recent freezes in Florida, Texas. Lemon, grapefruit harvest steady. Navel orange harvest past peak, volumes lessening. Fruit quality excellent, sizes larger than normal. Pecan harvest Marana light first month now increasing to normal levels. Ranges, pastures good condition. Winter temperatures normal higher elevations, periodic rains produced good livestock feed. Feed from ranges, pastures adequate mid-elevations, stock water, soil moisture reduced. Grass feed, soil moisture average desert ranges. Cattle, sheep good condition, northern areas. Central, southern livestock above average.

ARKANSAS: Very cold most of week. Temperatures averaged 16 to 24° below normal for most of State. Highest temperature 49°, lowest -12°. Most rainfall 0.54 in., least rainfall in trace amounts. Snow and ice from previous week remained, but significant melting during latter part of week due to higher temperature.

Few soybeans left in fields will be harvested if ground conditions permit. Livestock feed hay and silage. Some dairies buying hay. Wheat crop in good conditions. Ice and snow hampered poultry feeding.

CALIFORNIA: Storms brought warm and moist air from sub-tropical latitudes across the State. Weekly mean temperatures were as much as 10° warmer than normal in the San Joaquin Valley and several degrees warmer than normal over the remainder of the State. An exception was the northeast corner where weekly means were as much as 5° colder than normal. Precipitation deluged virtually the entire State with weekly totals generally in multiple inches. Only the southeast desert region had rain generally less than 1.00 in.

Sacramento Valley low-lying fields flooded. Cotton meets plowdown regulations. Herbicides applied. Alfalfa hay plantings continue. Winter wheat and barley show water stress in

Sacramento Valley. Oat and barley planting near completion. Fall sugarbeets look good. Rains slowed field activities. Growers applied dormant sprays to apples, pears, and stone fruits. Herbicide and pesticide applications noted. Avocado harvest continues. Date harvest progressing, Coachella Valley. Pruning and cane tying in grape vineyards. Shipments of table grapes from cold storage slowed. Rain hampered citrus harvest. A few Navels, tangelos, and lemons shipped. Almonds sprayed for twig borers and scale. Walnut trees pruned, nursery stock digging slowed by rain. Asparagus harvest starting Desert. Cutting asparagus fern delta. Broccoli harvest moderate Central Coast, full swing Desert, moderate San Joaquin Valley. Carrot harvest still light Desert, moderate other areas. Cauliflower harvest light Central Coast, fairly light other areas. Celery harvest increasing South Coast. Lettuce harvest full swing Imperial Valley, decreasing Palo Verde Valley. Movement storage potatoes active. Preparation active for planting tomatoes for market and processing. Low temperatures, cloudy weather hampering range feed growth. Supplemental feeding continues many areas. Livestock good condition, movement bee colonies into State for almond pollination continues.

COLORADO: Arctic high pressure dominated the week. This resulted in temperatures 5 to 15° below normal in the east and 3 to 8° below normal in the mountains and west. Rain and snow showers occurred Statewide with the most precipitation falling on the mountains and western slope.

FLORIDA: A severe freeze settled into the north, portions of central Florida Christmas Eve, early Christmas day. Minimum temperatures: morning, 7 to 10°, Panhandle: 11 to 17° elsewhere, north; 16 to 23° north central portions Peninsula; 20's, south central areas, low to mid 30's south except 30's-40's lower east coast. Gusty, northerly winds of 15 to 20 mph swept the State. Christmas night and early morning of the 26th was also frigidly cold. Minimum readings at early morning northern and central areas were nearly the same as a day earlier, in south Florida, however, freezing temperatures early morning of the 26th were more widespread. Minimum temperatures, southern interior were generally in mid 20's with a few readings low 20's; readings along lower east coast held upper 20's to mid 30's. Temperatures moderated night of 26th, however, freezing continued in the north. In contrast to the record cold early week, temperatures warmed rapidly by midweek and maximum readings soared to the 70's to 80's, 28th. Colder air returned morning of 30th, with readings into the 20's. Thunderstorms, heavy, widespread rains of 2.00 to 3.00 in. fell, Panhandle late 28th, early 29th; across rest of north, central by end of day. A few local rains of 4.00 in. fell 29th and 30th, northeastern sections. Rainfall south generally under 1.00 in.

Soil moisture adequate central and southern areas, mostly excessive along upper coasts, north and west. Soybeans practically harvested. Sugarcane harvest very active. Total damage to mature cane undetermined but some lowering of yield possible. Young cane killed back but expected to recover. Small grains damaged but most expected to recover. Tobacco plant beds not hurt, most not planted. Some

fieldwork underway for early spring planting. Supplemental feeding, caring for livestock active as producers attempt to recover from last week's severe cold. Some pig and poultry losses in the north were also claimed by the cold weather. Cattle remain in generally fair condition. Citrus trees in post freeze condition. Moisture continues adequate, leaf damage showing colder areas; little leaf loss, lower east and west coasts, south central. Harvest for processing active. A massive cold front invaded vegetable areas Christmas weekend, damage was severe north, central, southwest areas. Light to moderate loss occurred east coast. Generally light damage occurred Dade County. Virtually all tender crops squash, cucumbers wiped out except in Dade County. Extensive damage occurred cabbage, carrots, cauliflower, tomatoes, peppers, eggplant, snap beans, strawberries. Celery, lettuce received less damage. Most volume next six weeks will come from Dade County and east coast. Overall shipments declined 32% from previous week. Most decline occurred snap beans, cauliflower, cucumbers, sweet corn, lettuce, peppers, radishes, squash, tomatoes. Areas hardest hit should resume production in six to seven weeks if good weather prevails. Growers actively seeding and transplanting crops for late winter, spring.

GEORGIA: Record breaking bitter cold 24th and 25th. Gradual warming to 10 to 15° below normal 28th, but very cold again by 30th. Average temperatures about 15° below normal south and 20° below normal north. Precipitation Statewide near 2.00 in. except near 1.00 in. east central. Gradually moderating temperatures with no precipitation 31st and 1st. Temperatures about 5° below normal by 1st.

Soil moisture surplus except adequate north and adequate to surplus southeast. Field activity limited due to freeze. Tobacco bed preparation slowed by extreme cold. Some small grain damage from low temperatures. Extent of damage not yet assessed. Cotton and soybean harvest nearing completion. Pecan harvest slow progress last week. Extra feeding and caring for livestock required because of record low temperatures. Pasture feed sharply reduced by low temperatures.

HAWAII: Island weather turned mostly sunny after heavy rains drenched the State early in the week. Some minor crop damage was reported, but the rains proved beneficial to crops suffering from recent dry conditions. Gustly winds caused some light damage to crops in exposed areas. Cool temperatures continued to prevail overnight. Local production of head cabbage, head lettuce, and Chinese cabbage continue to be heavy. Recent rains benefitted the papaya crops which is currently seasonally down in production. Leaf shredding from gusty winds was reported on banana trees on Kauai, Oahu and Maui.

IDAHO: The Arctic conditions gave way to a relatively warm, moist westerly flow. Temperatures in all locations were running below normal for this time of year. Average departures ranged from 7 to 16° below normal in the south and 13 to 19° below normal in the north. Extremes last week were found at Grangeville with a high of 42° and Fairfield with a low of 38° below zero at midweek. Precipitation for the week was generally above normal except for a few spot locations in the Panhandle and east. Heaviest precipitation was in the south with many locations reporting over 1.00 in. Departures ranged from 1.13 in. above normal at Bosie to 0.34 in. below normal at Moscow.

Bitter cold kept farming activities at minimal levels. Adequate snow covers protected crops from the cold weather in most areas. Frozen water supplies were a problem for some livestock producers. Scattered reports of lambing were received. Feed supplies were generally adequate.

ILLINOIS: Temperatures 9 to 18° below normal. Precipitation mostly 0.10 to 0.50 in., heaviest north.

Wheat condition fair to good, mostly snow covered. Livestock condition mostly fair, considerable stress from adverse weather.

INDIANA: Temperature averages were 10 to 15° below normal. Daily highs averaging in the upper teens to lower 20's were balanced by average lows in the single figures to lower teens. Precipitation was generally light with water equivalent totals mostly 0.25 to 0.50 in. Snowfall of 1 to 3 in. affected most of the State.

Heavy snow cover and cold halted most outside activity. Frozen water lines common. Activities included thawing pipes, snow removal, caring and feeding livestock, making plans for 1984, cutting wood, butchering, preparing tobacco for market, and usual chores. Overwintering crops mostly under snow cover.

IOWA: A cold week with heavy snowfall in south and east. Temperatures moderated from the previous week, but continued much below normal Statewide. Snow covers the entire State with up to 19 in. at Algona.

KANSAS: Temperatures averaged 14 to 18°, 16 to 17° below normal southeast and south central and 10 to 13° below normal elsewhere. Bitter record breaking cold first of period with moderation rest of week. Precipitation averaged 0.25 in. north central and 0.20 in. elsewhere with additional snow accumulation of 1 to 3 in. Little progress noted in late crop harvest due to snow depth. Cattle feeding major activity in effort to minimize death losses.

KENTUCKY: Mixture of light snow and freezing rain during week. Precipitation amounts averaged 0.50 in., 0.33 in. below normal. Mean temperatures generally 15 to 18° below normal with most readings near 20°.

Burley markets to reopen January 9th. Livestock care and feeding principal activities.

LOUISIANA: Rainfall heaviest southeast, turning to freezing rain and sleet on 29th. Rainfall amounts 0.50 to 5.00 in. Temperatures 15 to 20° below normal. Low 9°, high 73°.

Activities: Routine chores and caring for livestock. As weather warms, the freeze damage to wheat, nursery and citrus crops will become more apparent. Freezing temperatures killed back growth of winter pastures, particularly in the northern half of the State.

MARYLAND AND DELAWARE: Maryland: Temperatures were cold and precipitation averaged 0.80 in. Temperatures were 13 to 16° below normal north and west and 7 to 11° below normal on the Shore and the lower counties west of the Bay. Maximum temperatures ranged from the high thirties to near 60 on the lower Shore. Minimum temperatures ranged from a -14° in extreme west to 6° above zero in some other areas. Precipitation averaged 0.80 in. with totals ranged from 0.47 in. at Oakland to 1.05 in. at Smithsburg. Weekend weather was cool. High

temperatures on 31st were in the 20's and lows ranged from 5 to 15°. The first day of 1984 was warmer than the last of '83' with highs climbing to the low 30's and lows dipping into the teens.

Delaware: Temperatures were 6 to 10° below normal and precipitation averaged close to 1.00 in. Maximum temperatures were in the mid 50's north to 60° south while minimum temperatures were 2° below zero north to 3° above normal south. Precipitation ranged from 0.75 in. south to 1.04 in. in the north. Weekend weather was dry with highs in the low to mid 30's and lows ranging from 10 to 15°.

MICHIGAN: A deep snow cover blanketed the State. Temperatures were well below normal throughout the State. Temperatures averaged 15° below normal in southern areas. Snow and drifting snow were common in all areas.

MINNESOTA: Temperatures averaged 2 to 10° below normal. High: 33°, low: -24°. Precipitation averaged 0.10 to 0.24 in. below normal. Greatest reported weekly total: 0.13 in. Snowfall averaged a trace to 1.5 in. for the State. Heaviest amounts occurred in the southeastern quarter of the State. Snow depth at weeks end averaged 3 to 11 in. for the western third of the State and southeast; and 14 to 31 in. elsewhere.

MISSISSIPPI: Record breaking low temperatures with snow, sleet and freezing rain. Temperature extremes -4 and 69°. Greatest 24-hour precipitation 4.03 in. Greatest weekly precipitation 5.20 in.

Soil moisture surplus. Fieldwork 0.3 days suitable, 0.2 1983, 2.1 average. Main farm activity was feeding livestock and hauling water to livestock due to frozen pipes. Hay supplies and feed supplies adequate. Wheat condition, livestock condition and pasture condition all rated as fair.

MISSOURI: Arctic air covered the State as temperatures averaged 22° below normal with many record lows set. Precipitation was widespread and generally in the form of snow. Three to 10 in. covered the ground at weeks end.

Extreme cold temperatures causing very heavy livestock feeding activities. Above average losses occurring in cattle and hogs due to record low temperatures. General livestock condition still rated as 78% fair and good at 20%, only 2% poor.

MONTANA: Very cold temperatures continued first of week. By end of week temperatures had moderated over entire State. Temperatures averaged 15 to 25° below normal. Precipitation mostly light to moderate over the plains, and moderate to heavy in southwest and west. About 0.10 in. fell over the plains, while southwest and west received from 0.50 to 1.00 in.

Both winter wheat condition and snow cover protection good. Wind damage to winter wheat none to light. Livestock general condition fair to good. Extreme cold weather-related livestock losses not significant. Feed requirements much above average due to cold. Some problems reported of starting feeding equipment and keeping water available.

NEBRASKA: Temperatures 9° below normal but 14° above previous week. Precipitation less than 0.50 in.

Winter wheat fair to good. Marginal plant stands in parts of the Panhandle and southwest. Heavy ice accumulations in parts of southeast

may cause wheat plant damage. Pasture and range feed supplies below average due to heavy snow cover. Hay and forage supplies average to below average. December cold conditions halted feedlot cattle weight gains with many cattle losing weight. Average snow cover 12 to 14 in.

NEVADA: Series of rapidly developing storms spread moderate amounts precipitation north, and light amounts south early in period. A moderate air mass and cloudy skies kept temperatures mild. All areas about 5° above normal. Extremes: 64 and 5° below zero.

Caring for and feeding livestock main ranch activity this time of year. Movement potatoes to market continues.

NEW ENGLAND: Average precipitation ranged from 0.50 to 1.00 in. across the entire region. Most of the precipitation, which occurred during midweek, was in the form of rain. Snowfall was limited to flurry activity which resulted in no significant accumulation. Average snow depth across the region ranges from 12 in. over northern New England, 6 in. over central New England, and a trace over southern New England. Average temperatures ranged from the teens along the Canadian Border to near 30° along the south coast.

NEW JERSEY: Temperatures well below normal, averaging 21° north, 24° south and 28° coastal. Extremes -1 and 59°. Precipitation above normal, averaging 1.18 in. north, 1.09 in. south and 2.87 in. coastal. The heaviest 24-hour total reported 1.63 in. on 28th to 29th. Heaviest 24-hour snowfall was 1 in. on 1st to 2nd.

Fieldwork: farmers tending to winter chores and caring for livestock. Wet weather has slowed outside activities.

NEW MEXICO: Average temperatures much below normal over eastern plains, slightly below normal elsewhere. Minimum temperature: -16°, northern mountains. Maximum temperature: 64°, southeastern plains. Precipitation reported over most of State first half of week. Most significant amounts recorded in mountain areas: 0.50 to 1.00 in. common.

Soil moisture supplies short to adequate. Cotton harvest slowed by wet, snowy conditions. Irrigated wheat, barley fields rated good, dryland fields fair condition. Grazing of dryland fields less common than normal, poorly established stands. Mesilla Valley pecan, red chile harvest progressed slightly. Despite extreme cold, cattle and sheep rated good; heavy supplemental feeding. Ranges snow-covered many areas.

NEW YORK: Subzero temperatures were noted early in the week and in scattered areas again late in the week. Mean temperatures were as much as 10° below normal. Precipitation was near and above normal. West received snow and snow squalls early in the week. On 28th, a general storm led to widespread freezing rain followed by warmer temperatures and rain. Precipitation ranged from 0.50 to 1.00 in.

NORTH CAROLINA: Temperatures 10 to 15° below normal. Precipitation average 0.50 to 1.00 in. Soil moisture 33% adequate, 67% surplus. Days suitable for fieldwork: 1.6. Condition: Wheat: 27% fair, 73% good. Oats: 29% fair, 71% good. Barley: 25% fair, 75% good. Rye: 22% fair, 78% good. Harvests: soybeans: 95%, 1982 98%, average 99%. Farm feed supplies: Hay and roughage: 35% short, 65% adequate.

Feed grains: 26% short, 74% adequate. Major farm activities: Soybean harvest, cutting firewood, tending livestock, and general farm maintenance.

NORTH DAKOTA: Temperatures warmed during week but continued below normal. Precipitation continued monthly trend of below normal amounts. Average temperature ranged from 3° above northwest, east central and south central to 3° below north central. Temperature departures were 11° below normal to 5° below normal. All districts received precipitation with amounts from 0.01 in. southwest and south central to 0.05 in. north central and west central. Normal precipitation is 0.09 in.

Bitter cold released its grip on State. Livestock producers relieved, and counting losses of weaker animals. Feed supplies remain adequate. Snow cover adequate in most areas for winter wheat, rye and alfalfa, although some fields blown bare by high winds. Winter wheat and rye still rate mostly fair to good, although effects of severe cold not yet known.

OHIO: Average temperatures 8 to 16° below normal. Highs from upper-teens to low 20's. Lows from 0 to lower teens. Soil temperatures from lower teens to upper 20's at 4.00 in. Precipitation from 0.25 to 0.75 in. Snow cover 1.00 to 4.00 in. north. Precipitation occurred as rainfall in south.

No reports of damage to winter wheat received.

OKLAHOMA: Temperatures averaged from 19° below normal Panhandle to 23° below south central. Precipitation averaged 0.20 in. or less in all districts.

Cold weather caused wheat dormancy and some cattle losses. Snow cover prevented pasture grazing. Western producers concerned with winter-kill of late planted wheat. Overall, wheat in good to fair condition. Pastures and livestock in fair condition. Little weight gains reported despite heavy supplemental feeding. Wheat grazed: 45%, 1984.

OREGON: Extremely cold, dry air in beginning of week changed to more normal moist air late in week. Precipitation ranged from 0.50 in. in eastern areas to 4.20 in. at coast, with amounts of 1.00 to 2.00 in. in central areas.

Condition of the 1984 winter wheat crops good, with most fields east of Cascades protected by snow cover. Extremely cold temperatures may have damaged cranberries, strawberries, filberts and some fruits. Livestock have been under stress from extreme cold, snow and ice. Heavy supplemental feeding required in many areas. Some losses of newborn lambs and calves.

PENNSYLVANIA: Extreme cold beginning of week with daytime highs ranging from below zero to positive single digits. Moderate warming trend remainder of week. State average temperature of 13° was 14° below normal. Midweek brought an ice storm to the State with rainfall amounts ranging from 0.03 in. in the north central counties to just over 1.00 in. in the southeast. State average precipitation was near the normal.

PUERTO RICO: Island average rainfall 0.61 in. or 0.33 in. below normal. Highest weekly total 3.31 in. Highest 24-hour total 1.50 in. Temperature averaged about 79 to 77° on coasts

and 71 to 70° Interior Divisions. Mean station temperature ranged from 80.5 to 64.5°. Extremes 91 and 53°.

SOUTH CAROLINA: Record lows, then above normal 28th, normal changing to much colder. Rains 0.50 to 1.00 in. midweek with some damaging windstorms.

Cotton harvest 100%. Harvesting pecans when conditions permit. Tobacco bed preparation continuing. Equipment maintenance, routine chores.

SOUTH DAKOTA: Average temperatures 7 to 17° below normal. Extremes: 49 and -36°. Average temperatures ranged between 0 and 15° across the State. Precipitation was widespread and very light. Most stations reported a trace to 0.10 in. of melted precipitation. Warmer temperatures late week started to diminish snow coverage north central and southwest. Snow depth between 7 and 11 in. throughout most of State, and just under 20 in. southeast.

TENNESSEE: High pressure of Arctic origin continued to dominate the weather picture. Average weekly temperatures were well below normal with 26th being the coldest. Statewide, lows ranged between zero and 9 above. Precipitation in the form of snow and sleet exceeded 1.00 in. across middle and east with lesser amounts in the west.

Farm activities were limited to caring for livestock and necessary farm chores.

TEXAS: Beginning week another blast Arctic air across State. Record low temperatures set portions Texas. Hard freeze over South Texas, Rio Grande Valley. Warming trend weekend bringing temperatures closer normal. Temperatures 10 to 15° below normal for week.

Precipitation near normal, except far West Texas, Edwards Plateau, 0.20 in. above normal. **Crops:** Freezing weather damaged fall crops, livestock across State, hinder producer operations. Snow over much Panhandle did not provide relief to moisture-stressed wheat, oat fields. Ice Central Texas halted field operations. Recent cold weather Rio Grande Valley considerable damage citrus, vegetables. Snow, ice, sub-freezing temperatures prevented farmers High, Low Plains finishing cotton harvest. Ginning operations at standstill. Harvest continue drier winter conditions. Small grains little, no growth, continue to suffer effects of freezing temperatures. Across Plains, growth late planted wheat, oats slowed, fields providing little, no grazing. Throughout Central Texas, minimal damage wheat fields reported; oats showing more damage. Wheat pastures Central Texas fair condition. Insect populations reduced due cold temperatures. Statewide wheat condition rated 66% of normal, compared with 69% last year. Current conditions 2% excellent; 27% good; 63% fair; 8% failure.

Cotton harvested 98%, 92% 1982, 93% average. Wheat emerged 100%, 100% 1982, 98% average. Pecans harvested 93%, 94% 1982, 92% average.

Commercial vegetables: Freezing temperatures throughout first part week Rio Grande Valley, possibly causing further damage vegetable crops. Warmer temperatures midweek possible harvest speed up, growers tried salvage remaining vegetables hurt by Christmas weekend freeze. Freezing temperatures recorded night of December 29, did not linger long enough to cause additional damage. Vegetable growers evaluate freeze damage. Carrots, onions frozen back,

carrots expected make good comeback. However, early onions damaged, yields expected to be reduced. Damage cabbage crop unknown at this time. Tomatoes wiped out, with bell pepper crop. Remaining citrus fresh market virtually lost. Some remaining crop utilized for juice. Producers busy picking, first early, mid-season oranges, then Valencia, if time permits, demands exist, pick grapefruit for processing. Considerable grapefruit end up falling to ground, rotting. Tree damage continues evaluated, outcome unknown at this time. San Antonio-Winter Garden, vegetables damaged freeze, extent unknown. Freezing conditions prevented tillage operations. Quality, yield likely affected. East Texas, remaining vegetables completely destroyed by freeze. Only greenhouse tomatoes left.

Range and livestock: Freezing conditions plague range conditions, livestock. Wheat, oat fields not providing grazing State. Supplemental feeding very necessary. Hay crops good this year, heavy feeding continues, depletion supplies result. Native grasses not providing grazing. Stock tanks continue freeze, everyday practice to break ice. Cattle losses beginning to rise with bad weather. Weight losses, due to limited grazing, being experienced. Warmer temperatures needed to aid recovery.

UTAH: Precipitation moderate to heavy, division averages ranged from 0.50 to 2.00 in. Temperatures slightly above normal south one-third to well below north two-thirds. Individual stations ranged 15° below to 5° above normal.

Farm activities limited to farm chores and care of livestock. Range feeding necessary on some northern areas. Sorting, marketing and shipping of apples, onions and potatoes continues.

VIRGINIA: Very cold through week with temporary moderation midweek. Temperatures averaged 16° below normal. Lows ranged from -10 to -15° in mountains to 5 to 10° above in coastal areas. Highest temperatures ranged from low 30's in north to 60's in east and southeast. Precipitation on 18th and 19th averaged 0.80 in. as mixed rain and sleet or snow in west and rain and freezing rain in east. Amounts ranged from a trace at places in northwest to nearly 1.50 in. southwest.

Topsoil moisture continued abundant with 39% adequate and 61% surplus. Days suitable for fieldwork decreased to less than 1. A few soybeans harvested in east region after ground froze. Major activities were burley, fire and sun tobacco preparation for sales and livestock care. Livestock were in fair to mostly good condition. Calves and lambs doing well except for a few deaths of newborns during week. Condition of winter grains and other winter grazing crops still rated good to excellent for this time of year.

WASHINGTON: Strong high pressure system that brought extremely cold air began to shift positions on 25th. Warmer southwesterly flow began late in day and temperatures west of Cascades were into forties and low fifties that afternoon. Flow not strong enough to totally replace cold air last of mountains, but air gradually modified and temperatures near seasonal normals late in week. Moist southwest flow produced significant precipitation over State, near normal west of mountains, greater than normal totals to east.

East had heavy rains at end of week causing some field flooding. Christmas tree growers cleaning up fields after harvest. In eastern

part of State, concern exists several areas of possibility of cold injury to fall-seeded grain crops in areas still lacking snow cover. Cold temperatures continued to restrict pruning activities fruit orchards. Cold weather severe enough to cause bud damage to stone fruits, but no widespread injury reported. Winter hay supplies being used faster than anticipated since severe weather made extra feeding necessary.

WEST VIRGINIA: Temperatures for entire State were below zero first part of week. Little warming at midweek, turning unseasonably cold by week end. Temperature averages 15 to 19° below normal. The high was 52° at Webster Springs and the low -22° at Terra Alta. Precipitation average a little above normal. Most areas received 0.50 to 0.75 in. of rain or snow.

Soil moisture adequate. Days suitable for fieldwork average 1.0. Main activities were feeding livestock and general maintenance, especially water line. Feed supplies adequate to short.

WISCONSIN: The week began with subzero cold common to most of the State early 26th. Daytime highs finally reached above 0° in places. Temperatures moderated during the week with highs reaching in the upper 20's and low 30's over the new year's weekend. The coldest spot was a minus 22° reading at Harrison on the 29th. The warmest reading was 31° at Richland Center, Brookfield and Peru on 1st. Scattered light snow occurred early in the week with amounts ranging from around 0.50 to 2.00 in. In the southeast, 1 to 3 in. snowfalls occurred over the 31st and 1st.

WYOMING: Cold Arctic air caused record cold temperatures. Readings below average 21.9°. Precipitation near normal.

Winter wheat mostly good condition with snow cover protection from bitter cold most areas. Cold weather, snow cover continued to increase livestock feed requirements. Death losses due to bitter cold expected to be low.

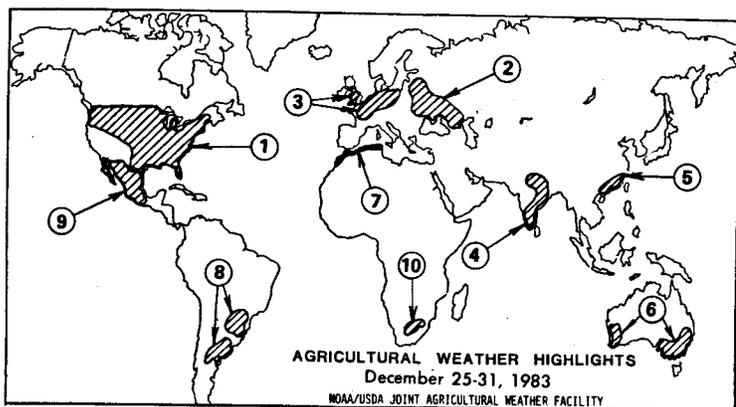
National Weather Summary (continued from front cover)

FRIDAY...The frigid arctic air continued to push through Texas into Mexico and dropped temperatures into the teens in the lower Rio Grande Valley. Freezing temperatures dipped into northern Florida. Warmer temperatures began to push onto the west coast but snow and freezing rain continued over much of the Pacific Northwest. Rain moved into central California and heavy snow fell over the high Sierras. Snow fell in the northern and central Rockies.

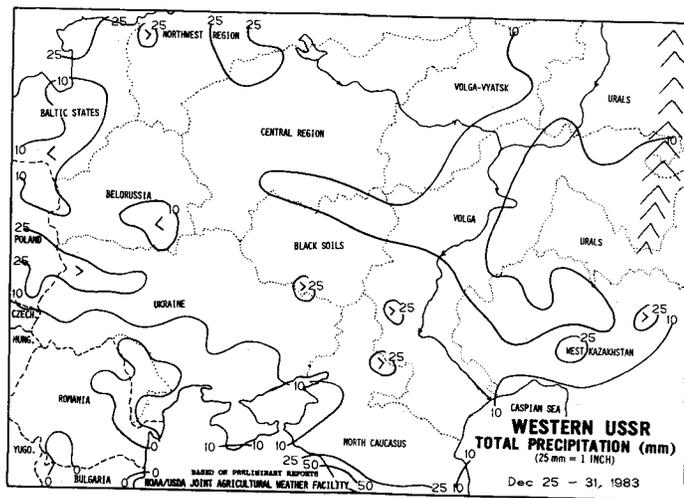
SATURDAY...Cold weather continued over most of the Nation early in the morning and freezing temperatures reached through Texas and into northern Florida. Warmer weather pushed in from the West and brought temperatures to above freezing for the first time in weeks to many areas through the Rockies and the western portion of the Plains. Light rain began in the central Rockies but changed to freezing rain at night and extended eastward through southern Iowa.

International Weather and Crop Summary

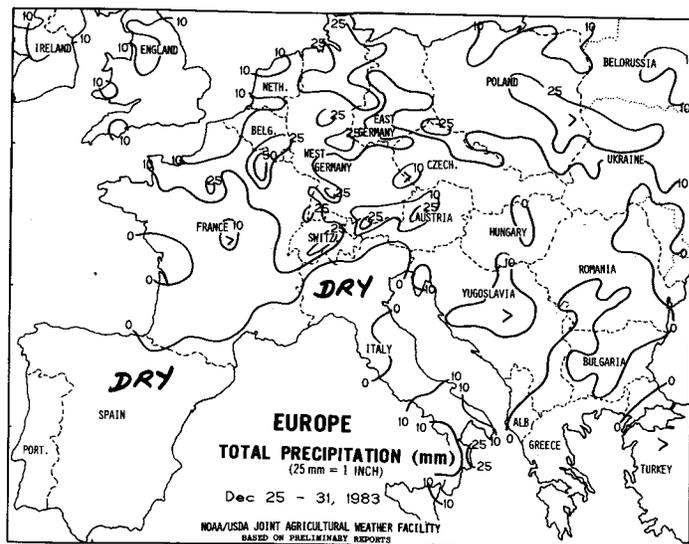
December 25 to 31



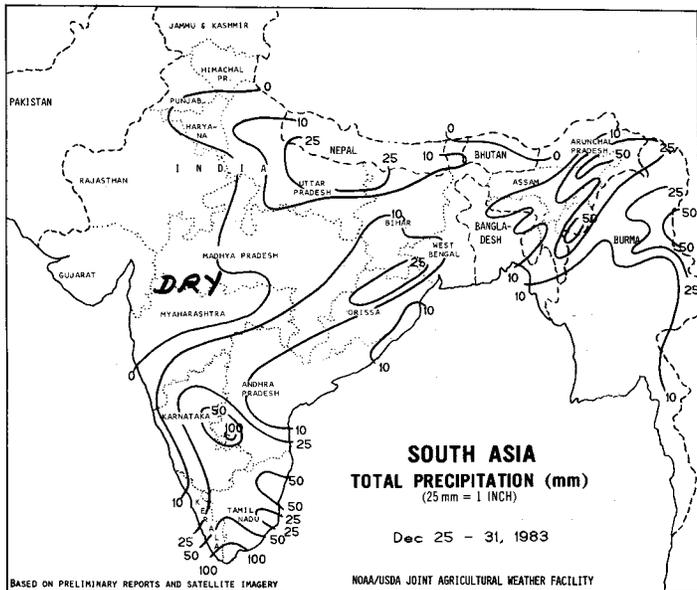
1. UNITED STATES ... Unusually frigid air covers the nation except the Southwest. Freeze-damaged vegetables and citrus are being salvaged and vegetable fields replanted. Snow protects most of the Central Plains wheat but snowless fields in the southern Plains and Pacific Northwest may be damaged.
2. WESTERN USSR ... Above-normal temperatures continue over much of the region. Winter grains in the west and south lack a protective snow cover.
3. EUROPE ... Warmer-than-normal weather diminishes snow cover over much of the region. Wet weather covers the north while dry conditions prevail further south.
4. SOUTH ASIA ... Timely rains benefit wheat in northern India. Favorable conditions continue for cotton harvesting.
5. EASTERN ASIA ... Moderate precipitation falls to the south of the winter wheat region. Most wheat is now dormant, but precipitation would benefit irrigation supplies.
6. AUSTRALIA ... Unusually heavy rain throughout the wheat belt delays harvest and may lower the quality of mature grain, but the moisture aids summer crop growth in the east.
7. NORTHWESTERN AFRICA ... Dry weather allows planting to continue. Moisture supplies should be adequate for emergence and early plant growth.
8. SOUTH AMERICA ... Rain and cooler weather aid summer crops in Buenos Aires but more rain is needed elsewhere in Argentina and Brazil as crops progress through reproductive phases of development. Unfavorably hot weather covers Brazil's soybean belt.
9. MEXICO ... Freezes hurt some northeastern citrus and tender vegetation while west coast vegetables progress well under sunny, mild weather.
10. SOUTH AFRICA ... Light to moderate rain covers the corn area as the crop progresses through the early reproductive period. Moisture conditions remain mostly favorable.



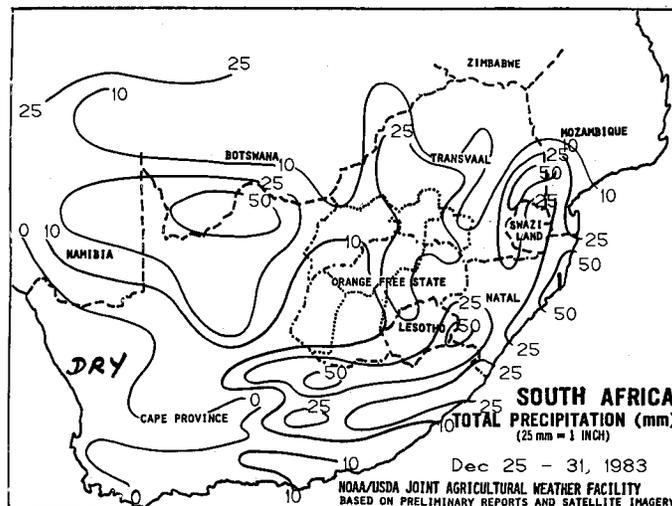
WESTERN USSR...Temperatures continued above normal over the region, with weekly temperatures as much as 6°C to 8°C above normal reported across the south and east. Winter grains remained dormant throughout the region, and snows over the extreme north and east increased snow cover in winter rye areas. Most of the precipitation which covered winter wheat in the west and south occurred as rain, increasing moisture supplies. Winter wheat areas in the west and south lack a protective snow cover, and the crop remains highly vulnerable to winterkill in the event of a cold outbreak.



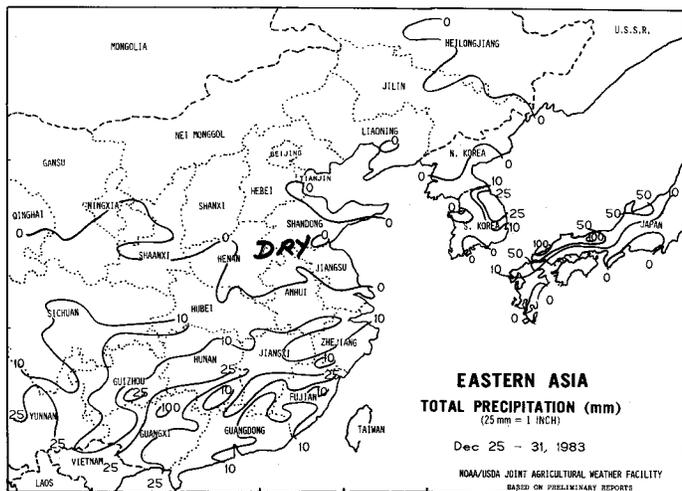
EUROPE...Warmer-than-normal weather continued to cover much of the region during the week. Dry weather covered most of southern Europe while moderate amounts of precipitation, mainly in the form of rain, covered the north. The warm weather may have allowed winter grains to slip out of dormancy in the northwest, and most winter grain areas in the north and east lack a protective snow cover. Fieldwork for winter grain planting likely continued in Spain, where moisture supplies are adequate for emergence and early plant growth. Additional precipitation would benefit southern and eastern Europe where moisture supplies appear low.



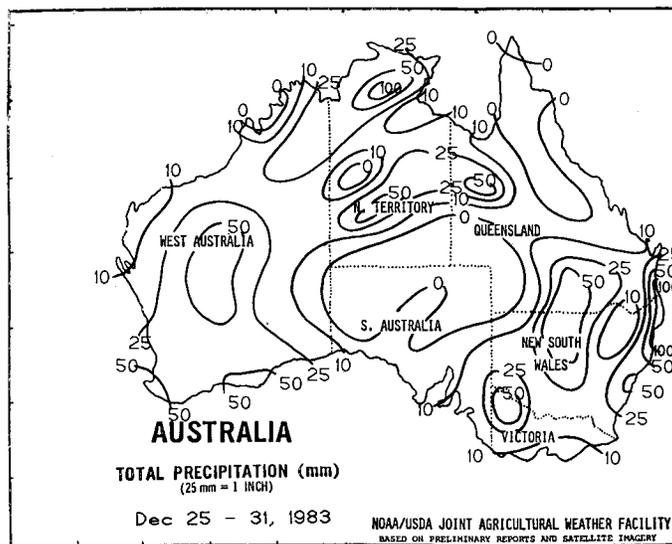
SOUTH ASIA...The remains of last week's tropical storm lingered over India, bringing mostly light precipitation to a large area. The first significant dry-season rains fell in the northern and eastern wheat regions. The moisture was very timely for wheat entering the heading stage in northern India. Greater than 25 mm of precipitation fell in Uttar Pradesh, with generally lighter amounts falling in the remaining wheat areas. Moderate rain in southern India continued the pattern of the past few weeks. Central India was relatively dry for most of the week, favoring the cotton harvest. Temperatures were below normal in most areas but favorably mild for wheat growth.



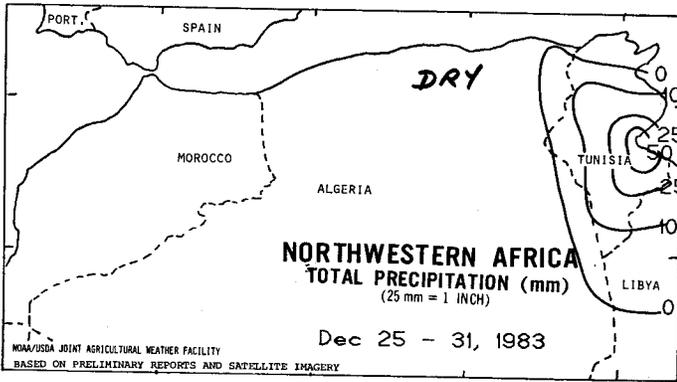
SOUTH AFRICA...Moderate to heavy rain fell in southern Africa this week, mostly outside of the important Maize Triangle. Precipitation in the corn region continued the normal pattern, with more rain falling in the eastern half. However, up to 25 mm of rain fell in the western West Transvaal area which has been unfavorably dry. The recent precipitation maintained good moisture conditions in the east and improved conditions in the northwest for corn, which is entering the sensitive reproductive stage. Temperatures were slightly above normal in the Maize Triangle but mostly below the critical level for corn. The amount of precipitation during the next two months will have a large impact on the final yields for this season's corn crop.



EASTERN ASIA...Early in the week, light to moderate rain covered most of southern China. Light precipitation extended slightly north of the Yangtze River along the southern edge of the major winter wheat region. The amounts were not large enough to greatly add to central China's already adequate moisture supply. Temperatures were below normal in most of eastern China this week forcing more winter wheat into dormancy. Nearly all wheat north of the Yangtze Valley is in the dormant stage, and it normally resumes growth in early March. Winter precipitation would be beneficial in supplying irrigation reserves for northern crop areas.



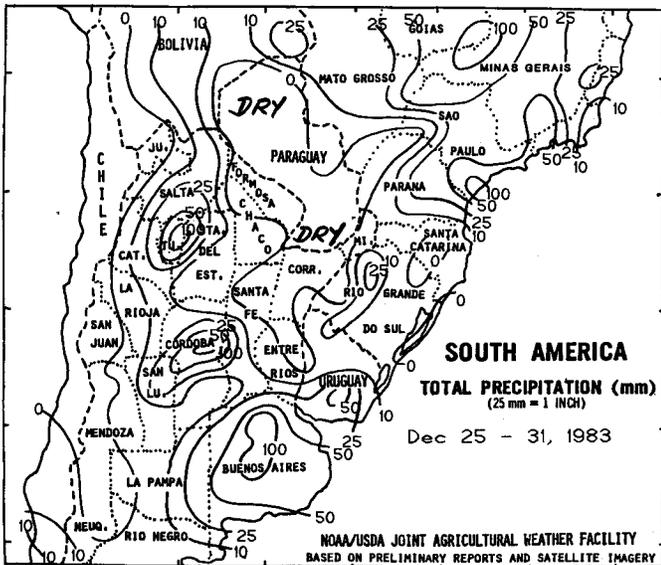
AUSTRALIA...Heavy rain fell over most wheat areas of Australia. Of the five major wheat producing states, South Australia was the only state to escape unusual rains for this time of year. The wheat harvest should be nearly complete in northern portions of the wheat belt. In the south, the heavy rain in southern New South Wales, Victoria, and Western Australia caused harvest delays and may hurt the quality of mature grain. Heavy showers over southern Queensland and northern New South Wales improved moisture supplies for summer crop development.



NORTHWESTERN AFRICA...Generally dry weather covered winter grains in Morocco, Algeria, and Tunisia, allowing planting efforts to near completion with few delays. The moisture which fell over southern Tunisia fell outside of the principal winter grain areas which are located further north. At present, moisture supplies should be adequate for proper emergence and good early plant growth over much of the region. However, timely rains are needed during the remainder of the growing season to maintain favorable yield prospects.



MEXICO...Very cold air continued over the northeast with a major freeze on the 25th and a moderate freeze on the 30th. Temperatures were sufficiently cold to damage citrus fruit around Montemorelos and possibly northern fringes of the Ciudad Victoria orchards. Freezing temperatures as far south as near Ciudad de Valles, in eastern San Luis Potosi state, may have hurt some winter vegetables, pastures, sugarcane, bananas and other tender vegetation. Light rains were scattered along the southeastern coast and interfered with some harvesting and field activities. The rest of the country was sunny and dry, favorable for fieldwork. Mild to warm temperatures over the west coast farming districts aided development of tomatoes, peppers, and other tender vegetables.



SOUTH AMERICA...Substantial rains (35 to 150 mm) covered Buenos Aires and eastern La Pampa as well as a small area of central Cordoba. The much cooler weather behind the storm system relieved the high-stress potential caused by hot, dry weather earlier in the week. While the wetness slowed wheat harvesting and subsequent late second-crop soybean planting, moisture supplies improved considerably for summer crop development in Buenos Aires. Rainfall was highly variable in corn areas of southern Cordoba and Santa Fe, and in northern cotton areas, leaving these crops vulnerable to further heat stress. Some rain fell over soybean areas of Rio Grande do Sul, but temperatures remained above average throughout the week. The high crop moisture demand, caused by the hot weather, has stressed soybeans which are in vegetative growth and has slowed planting and emergence of the late crop. Scattered showers fell elsewhere in Brazil's soybean belt. Frequent rain will be needed to alleviate stress during upcoming weeks as the early seeded crop begins to flower.

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Don't Overheat—Humidify

You can feel warmer and save energy and money by humidifying your home. NOAA is offering a guide to humidity with this advice.

It has prepared a table that shows the feeling of warmth obtainable at various combinations of temperatures and humidity.

The table was prepared by NOAA which notes that when cold, dry air puts a chill in the air, many people overheat to compensate.

NOAA however, recommends that you increase humidity by using humidifiers, vaporizers, steam generators or by simply placing large pans of water around the room.

It also suggests purchasing a simple device called a hygrometer to measure the amount of moisture in the air.

Apparent Temperatures for values of Room Temperature and Relative Humidity

		RELATIVE HUMIDITY (%)										
		0	10	20	30	40	50	60	70	80	90	100
ROOM TEMPERATURE (°F)	75	68	69	71	72	74	75	76	76	77	78	79
	74	66	68	69	71	72	73	74	75	76	77	78
	73	65	67	68	70	71	72	73	74	75	76	77
	72	64	65	67	68	70	71	72	73	74	75	76
	71	63	64	66	67	68	70	71	72	73	74	75
	70	63	64	65	66	67	68	69	70	71	72	73
	69	62	63	64	65	66	67	68	69	70	71	72
	68	61	62	63	64	65	66	67	68	69	70	71
	67	60	61	62	63	64	65	66	67	68	68	69
	66	59	60	61	62	63	64	65	66	67	67	68
	65	59	60	61	61	62	63	64	65	65	66	67
	64	58	59	60	60	61	62	63	64	64	65	66
	63	57	58	59	59	60	61	62	62	63	64	64
	62	56	57	58	58	59	60	61	61	62	63	63
	61	56	57	57	58	59	59	60	60	61	61	62
	60	55	56	56	57	58	58	59	59	60	60	61

Wind Chill (Equivalent Temperatures)

Your thermometer is not always a reliable indicator of how chilly it is outdoors, according to the National Oceanic and Atmospheric Administration. Better check the windspeed, too.

Studies show that heat loss from the surface of the body is strongly affected by both temperature and wind. This is windchill.

For example, a 15-mile-an-hour breeze with the thermometer standing at a cold but not unbearable 35 degrees, produces the effect of a bitter, freezing 16 degrees.

NOAA, a Commerce Department agency created to improve man's understanding and uses of the physical environment and oceanic life, has produced an "equivalent temperature" chart to demonstrate the remarkable cooling power of windchill and assist the public in "what-to-wear-outdoors" decisions. The chart is based on studies made by Arctic explorers and military experts and shows the combined effects of wind and temperature as equivalent calm-air temperatures.

Windchill information is included routinely in the messages issued by many of NOAA's National Weather Service forecast offices.

WIND CHILL TABLE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



INDICATES THE WIND CHILL INDEX (equivalent in cooling power on exposed flesh)

		AIR TEMPERATURE °F																
		35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
WIND SPEED (MILES/ HOUR)	4	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
				COLD		VERY COLD			BITTER COLD			EXTREME COLD						
	5	32	27	22	16	11	6	0	-5	-10	-15	-21	-26	-31	-36	-42	-47	-52
	10	22	16	10	3	-3	-9	-15	-22	-27	-34	-40	-46	-52	-58	-64	-71	-77
	15	16	9	2	-5	-11	-18	-25	-31	-38	-45	-51	-58	-65	-72	-78	-85	-92
	20	12	4	-3	-10	-17	-24	-31	-39	-46	-53	-60	-67	-74	-81	-88	-95	-103
	25	8	1	-7	-15	-22	-29	-36	-44	-51	-59	-66	-74	-81	-88	-96	-103	-110
	30	6	-2	-10	-18	-25	-33	-41	-49	-56	-64	-71	-79	-86	-93	-101	-109	-116
	35	4	-4	-12	-20	-27	-35	-43	-52	-58	-67	-74	-82	-89	-97	-105	-113	-120
40	3	-5	-13	-21	-29	-37	-45	-53	-60	-69	-76	-84	-92	-100	-107	-115	-123	
45*	2	-6	-14	-22	-30	-38	-46	-54	-62	-70	-78	-85	-93	-102	-109	-117	-125	

*Wind speeds greater than 40 MPH have little additional cooling effect.

EXAMPLE - A 30 MPH wind, combined with a temperature of 30 degrees F, (-1 degree Celsius), can have the same chilling effect as a temperature of -2 degrees F, (-19 degrees Celsius), when it is calm.

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