

WEEKLY WEATHER AND CROP BULLETIN

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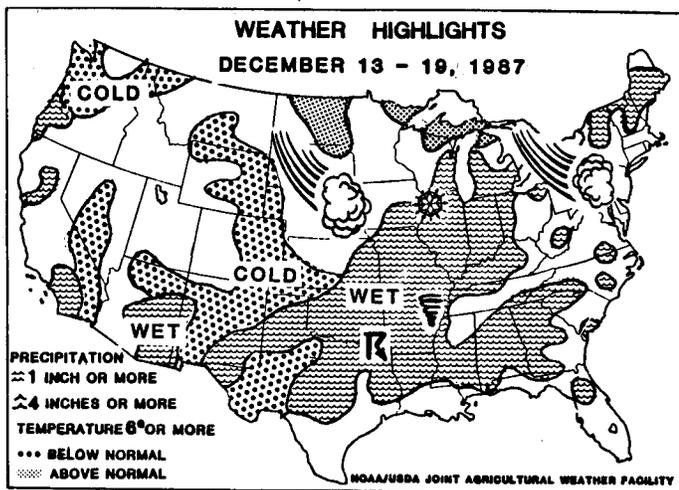
Washington, D.C.

Dec. 22, 1987

HAPPY HOLIDAYS!

National Weather Summary

December 13 - 19, 1987



Valley, spawning numerous severe thunderstorms and tornadoes. Through the day this system moved into the upper Mississippi Valley and finally into the Great Lakes region. Blizzard conditions prevailed across much of the upper Midwest. Freezing rain fell over parts of Pennsylvania and Maryland.

WEDNESDAY...Snow, accompanied by high winds, spread from the Great Lakes and Ohio Valley into the Northwest as the low-pressure system moved into eastern Canada. Thunderstorms were scattered across the Southeast. A winter storm in the West brought rain and snow to the northern and central Pacific Coast regions. Temperatures dipped below freezing from the northern Plateau and the Great Basin through much of the Rocky Mountains, Great Plains, and Mississippi Valley, to northern New England.

THURSDAY...A low-pressure system off the coast of southern California brought rain and snow to much of the Southwest. Scattered snowshowers continued in the Northeast. Cold weather prevailed over most of the Nation.

FRIDAY...Rain and snow continued over the Southwest but diminished during the day. Snowshowers were scattered ahead of a cold front extending from south-central Canada into the central Rockies. Minnesota, Michigan, Wisconsin, and Illinois had snow. Rainshowers were scattered from western Kentucky to New Mexico.

SATURDAY...Rain fell across much of the Nation's midsection. Thunderstorms, with damaging winds and a few tornadoes, advanced across Texas and Louisiana. Snow fell in the Great Lakes, New York State, and in parts of the West.

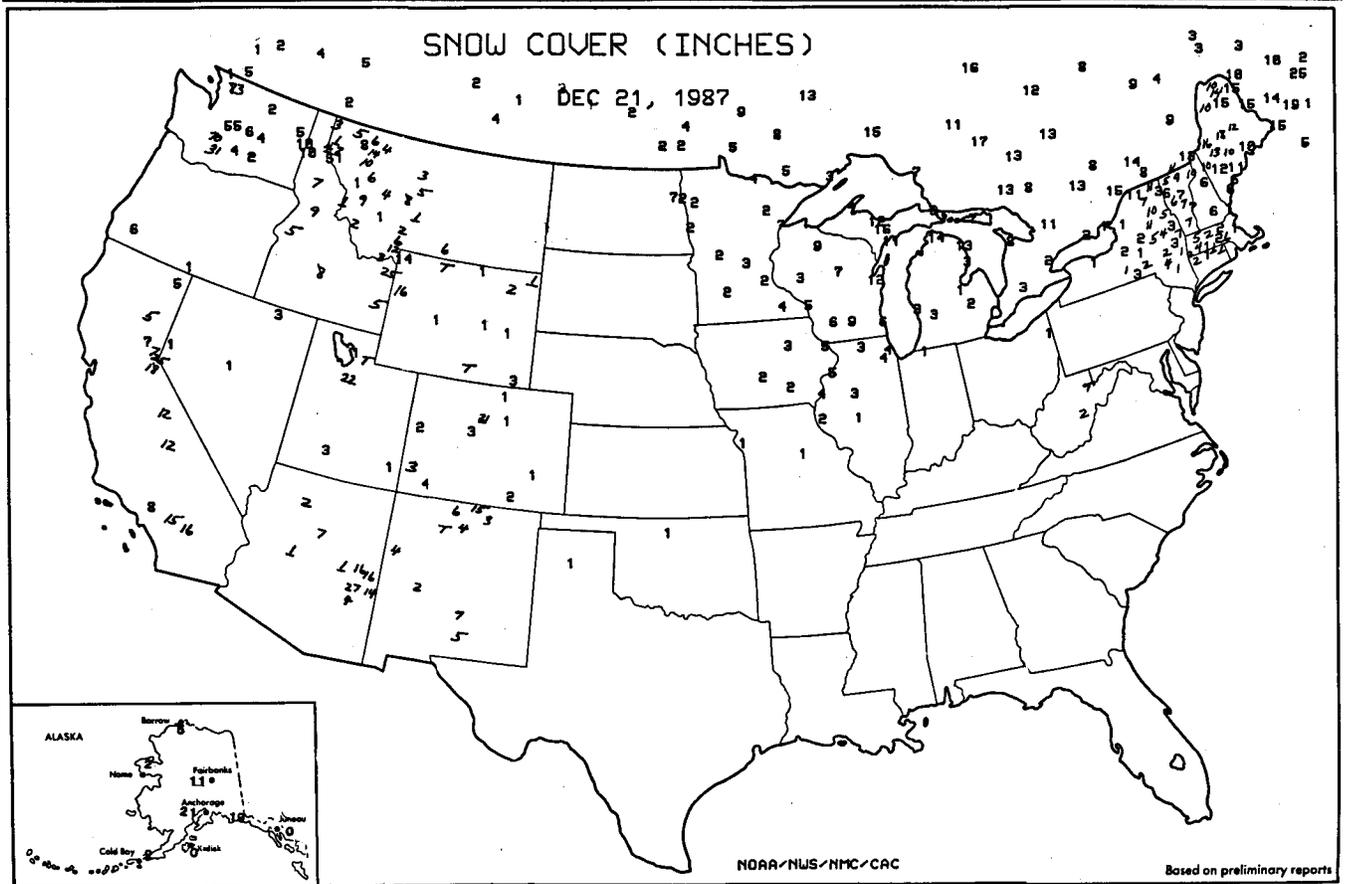
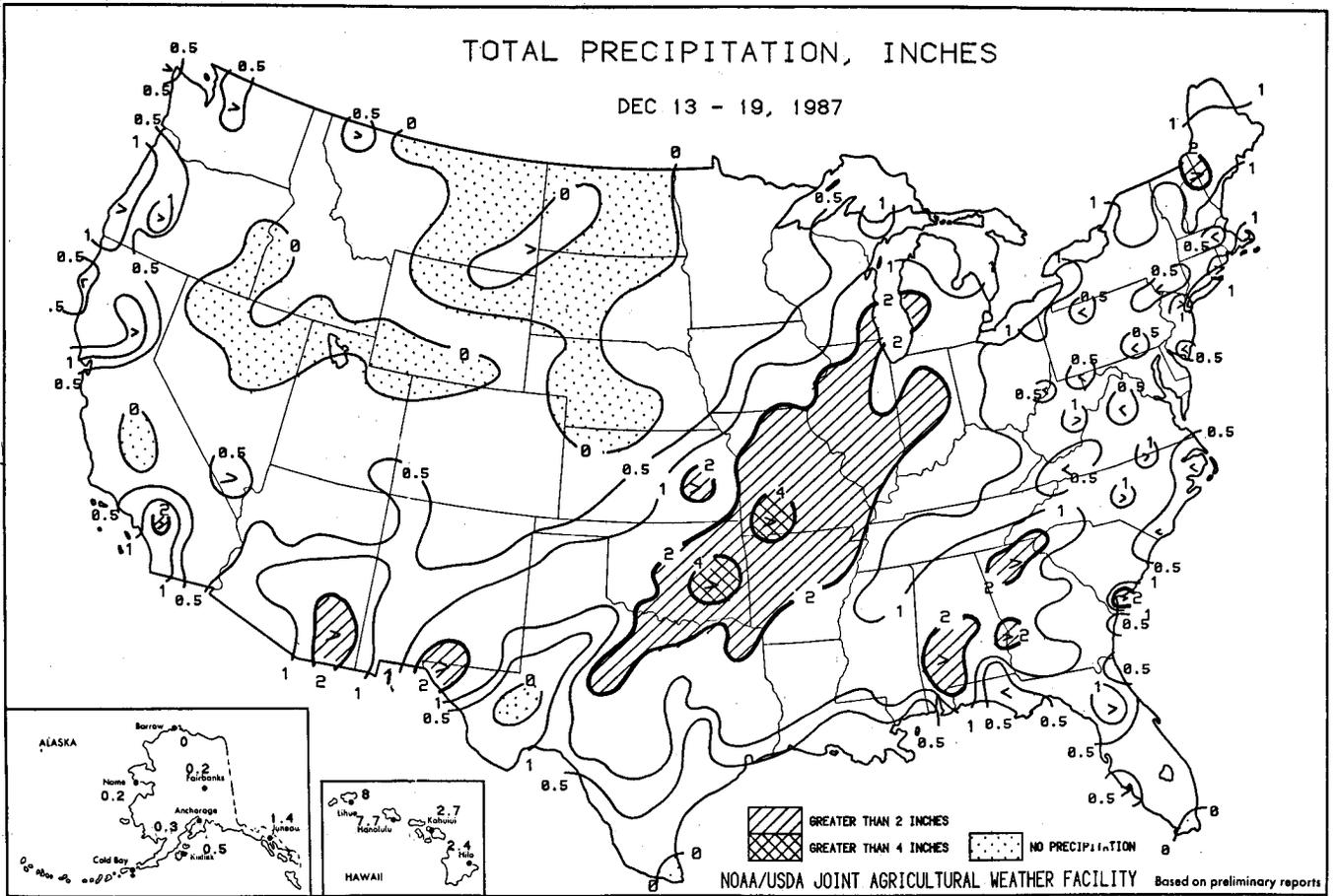
HIGHLIGHTS: The most intense low-pressure system so far this season dominated the week's weather. This storm system started on Sunday with a major snowfall over the Southwest and strengthened greatly Monday and Tuesday as it moved across Oklahoma and northern Texas, spawning killer tornadoes in Arkansas, Missouri, and Tennessee. It produced widespread snowfall across much of the Great Plains, the Mississippi Valley, and the Northeast. The storm's effects were still felt in the Northeast Wednesday and Thursday as strong northwesterly winds accompanied widespread snowshowers.

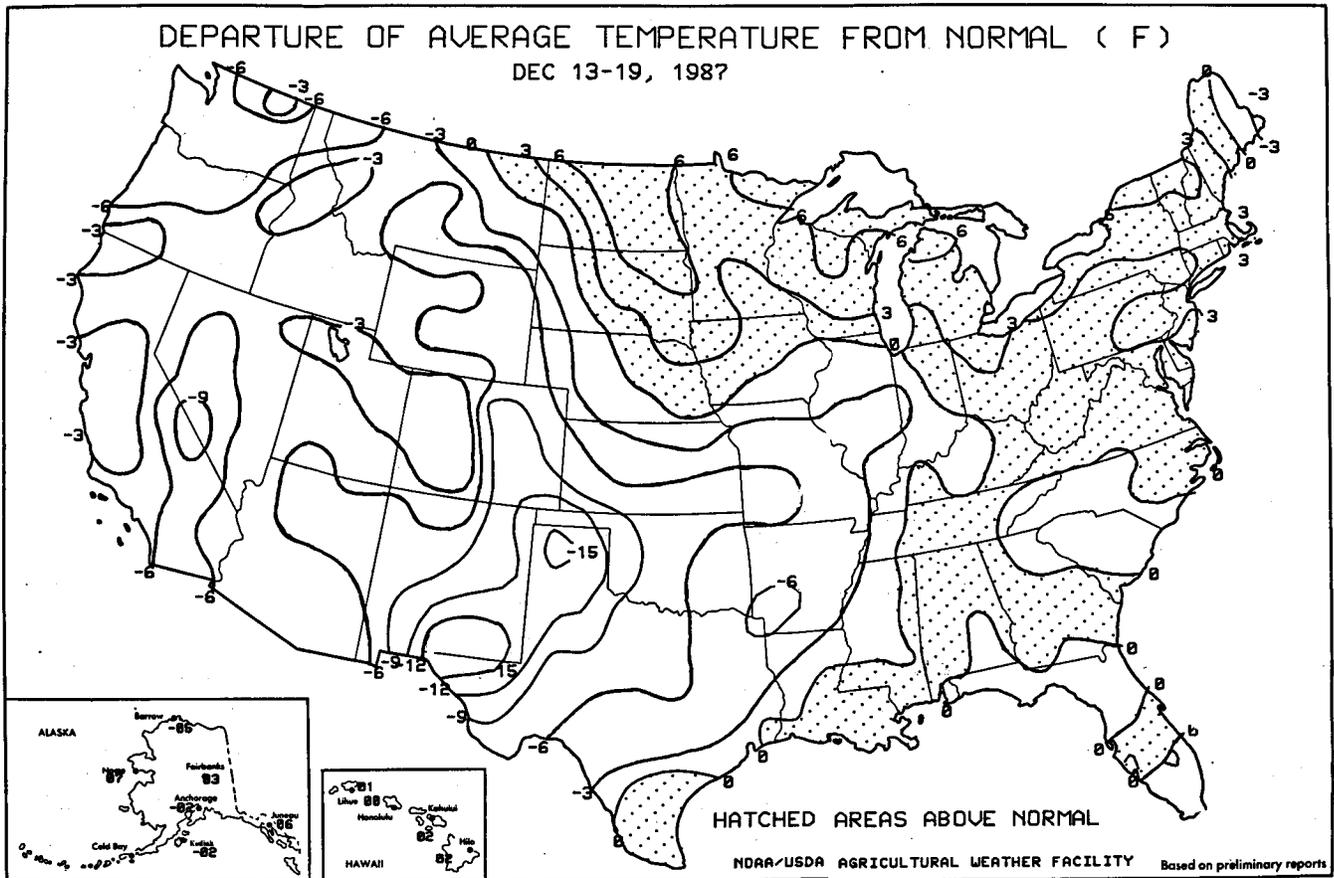
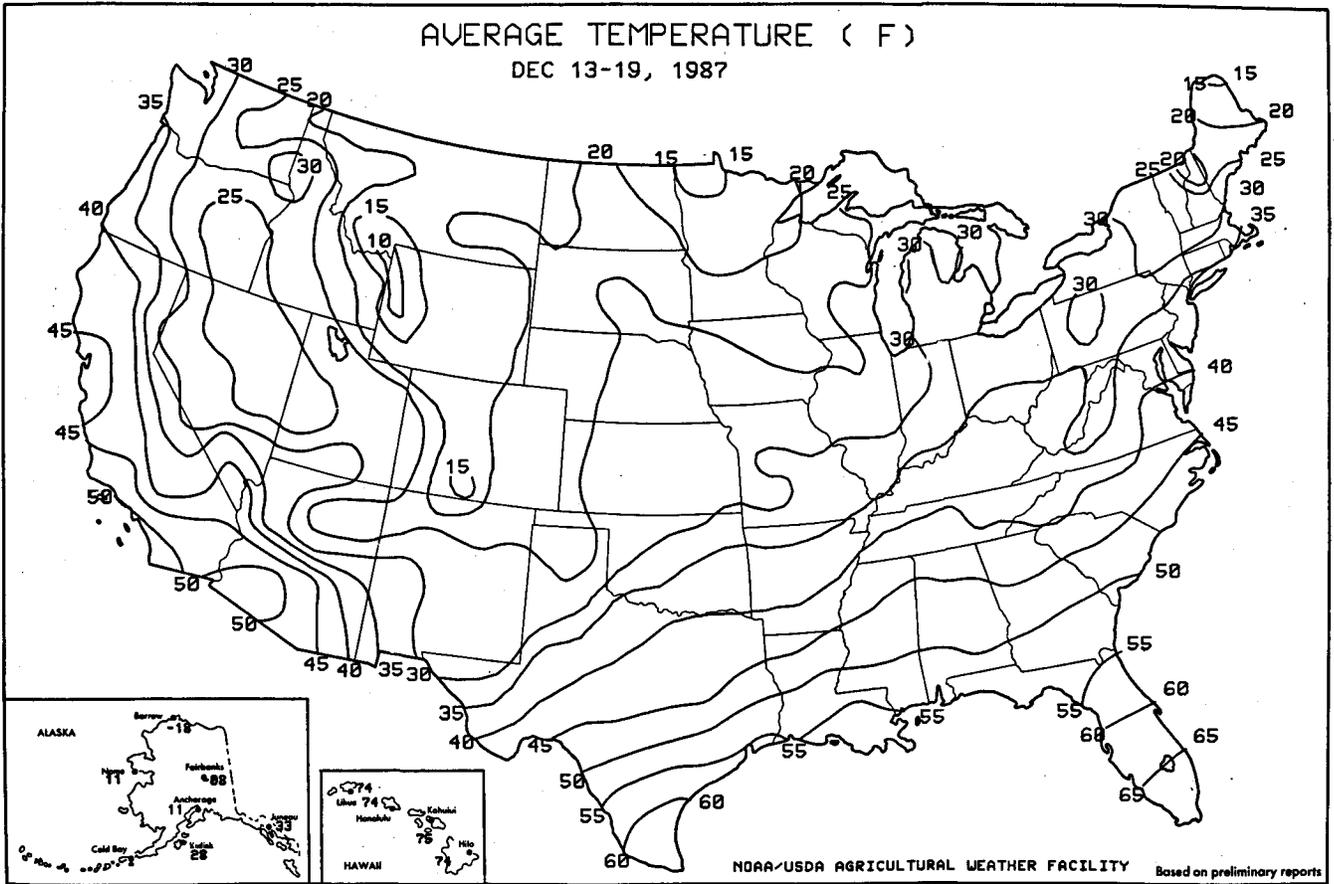
SUNDAY...Strong, gusty winds brought unseasonably cold air into the Southwest as a major snowstorm developed over Arizona and New Mexico and spread into Texas and Oklahoma. Thunderstorms developed over east Texas and the lower Mississippi Valley. Snowshowers were scattered across the northern Plains, the lower Great Lakes, and the Ohio Valley.

MONDAY...Heavy snowfall spread across northwest Oklahoma into southwest Kansas. Very cold air moved southward behind the snowstorm. Temperatures in Wyoming and Montana dipped to below zero.

TUESDAY...The low-pressure system which produced record snowfalls over much of the Southwest reached its maximum intensity over the lower Mississippi

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National Weather Data for Selected Cities

Weather Data for the Week Ending December 19, 1987

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 DEC. 1	PCT. NORMAL SINCE DEC. 1	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	57	34	68	20	46	0	1.5	.4	1.0	1.5	53	38.8	74	84	33	0	3	3	1	0
MOBILE	63	41	73	28	52	-1	1.2	-1.1	.1	1.6	48	65.3	105	85	45	0	3	2	2	0
MONTGOMERY	61	35	73	24	48	-1	1.2	.1	1.0	1.2	43	51.4	109	84	35	0	3	2	1	0
AK ANCHORAGE	18	4	36	-9	11	-2	.3	.1	.1	.8	118	14.3	99	92	79	0	7	5	0	0
BARROW	-14	-23	-8	-30	-18	-5	.7	.0	.0	.1	133	4.9	110	77	67	0	7	0	0	0
FAIRBANKS	0	-16	29	-30	-8	3	.2	.0	.1	.3	69	6.3	62	84	69	0	7	5	0	0
JUNEAU	37	28	41	17	33	6	1.4	.4	.4	3.2	108	57.2	112	93	74	0	4	6	0	0
KODIAK	35	20	41	14	28	-2	.5	.4	.4	1.1	31	68.9	118	86	56	0	6	3	0	0
NOME	15	7	23	-7	11	7	.2	.0	.1	.2	50	11.0	77	86	67	0	7	4	0	0
AZ PHOENIX	56	42	61	34	49	-4	1.5	1.3	1.3	1.6	331	8.4	127	74	36	0	0	2	1	0
PRESCOTT	38	23	42	13	31	-6	.3	-.1	.1	.5	49	15.8	87	83	48	0	7	4	0	0
TUCSON	55	38	61	23	46	-6	1.8	1.6	1.2	1.8	327	12.9	121	87	40	0	3	4	2	2
YUMA	58	44	63	36	51	-5	.8	.7	.7	.8	395	3.8	165	56	33	0	0	2	1	0
AR FORT SMITH	45	29	57	20	37	-4	3.2	2.6	1.4	3.9	211	38.5	100	97	60	0	4	4	2	2
LITTLE ROCK	44	31	56	26	38	-5	3.2	2.2	1.9	3.5	135	44.6	94	84	56	0	4	4	1	1
CA BAKERSFIELD	54	36	60	30	45	-3	.7	-.1	.1	.7	181	6.3	119	77	36	0	2	0	0	0
EUREKA	53	39	57	35	46	-2	.1	-1.3	.1	9.7	260	33.0	92	81	54	0	0	2	0	0
FRESNO	51	33	56	27	42	-3	.7	-.4	.1	.5	53	8.5	88	93	53	0	4	0	0	0
LOS ANGELES	58	45	64	41	51	-6	.9	.5	.7	1.6	187	7.1	63	60	26	0	0	2	1	0
REDDING	50	35	59	33	42	-5	.8	-.8	.6	7.7	187	31.0	82	88	47	0	0	2	1	1
SACRAMENTO	53	38	58	32	45	0	.6	.0	.6	2.2	134	14.9	95	85	47	0	1	2	1	1
SAN DIEGO	59	45	63	37	52	-6	1.9	1.6	1.4	2.8	372	11.7	136	71	43	0	0	4	1	1
SAN FRANCISCO	54	43	59	40	48	-1	.4	-.4	.2	3.5	174	14.5	81	80	52	0	0	3	0	0
CO DENVER	32	11	39	0	21	-11	.1	.0	.1	.3	76	19.0	128	90	43	0	7	2	0	0
GRAND JUNCTION	34	21	44	12	27	-1	.2	.1	.1	.5	153	11.2	147	80	48	0	7	3	0	0
PUEBLO	35	8	47	-11	21	-11	.1	.1	.1	.1	65	10.1	94	98	54	0	7	2	0	0
CT BRIDGEPORT	43	31	47	24	37	3	.9	.0	.9	1.6	70	32.5	82	72	43	0	4	1	1	1
HARTFORD	39	25	47	19	32	3	.6	-.4	.6	1.0	39	44.3	104	86	52	0	6	1	1	1
DC WASHINGTON	44	35	50	30	40	1	.7	.0	.5	1.6	81	35.6	95	78	46	0	2	3	1	1
FL APALACHICOLA	64	44	75	29	54	-1	.1	-.7	.0	.1	5	47.2	88	86	47	0	1	2	0	0
DAYTONA BEACH	71	47	79	34	59	0	.3	-.2	.3	.3	19	45.6	96	94	52	0	0	1	0	0
JACKSONVILLE	67	41	79	28	54	-1	.1	-.5	.1	.2	12	43.4	86	90	44	0	2	1	0	0
KEY WEST	75	66	82	58	71	0	.7	-.4	.7	2.7	232	49.0	127	88	64	0	0	0	0	0
MIAMI	77	59	82	48	68	-1	.1	-.3	.1	4.3	379	50.4	89	88	50	0	0	1	0	0
ORLANDO	71	51	79	38	61	0	.5	.1	.5	.5	45	56.8	117	92	49	0	0	1	0	0
TALLAHASSEE	65	41	76	27	53	0	.8	-.3	.8	.8	30	67.6	108	90	32	0	2	1	1	0
TAMPA	72	50	79	36	61	0	.4	-.1	.4	.5	39	49.1	107	92	49	0	0	1	0	0
WEST PALM BEACH	76	57	82	44	66	-1	.7	-.5	.7	.9	62	58.1	99	89	52	0	0	1	0	0
GA ATLANTA	54	35	62	27	44	0	1.5	.5	.8	1.6	63	43.7	94	79	33	0	3	2	2	2
AUGUSTA	60	34	72	23	47	0	.7	.0	.7	.7	40	40.5	98	89	33	0	3	1	1	1
MACON	60	35	72	23	47	-1	.9	-.1	.6	.9	36	37.1	86	88	34	0	3	2	1	1
SAVANNAH	63	39	75	28	51	0	.4	-.2	.4	.7	42	55.6	114	84	40	0	2	1	0	0
HI HILO	78	69	80	67	74	2	12.4	9.5	8.7	15.5	185	135.1	109	96	79	0	0	6	3	3
HONOLULU	79	69	83	65	74	0	7.7	6.9	3.1	12.4	603	18.2	83	96	75	0	0	7	3	3
KAHULUI	81	69	85	67	75	2	2.7	2.1	2.3	2.8	179	20.3	119	95	65	0	0	5	1	1
LIHUE	78	70	82	67	74	1	8.0	6.8	2.1	9.7	298	34.9	84	95	81	0	0	7	4	4
ID BOISE	36	20	41	15	28	-4	.0	-.3	.0	.8	101	8.3	76	86	42	0	7	0	0	0
LEWISTON	36	27	41	22	32	-3	.7	-.3	.7	.5	58	8.6	70	80	58	0	7	1	0	0
POCATELLO	32	11	42	2	21	-5	.1	-.2	.1	.6	102	9.6	94	92	55	0	7	1	0	0
IL CHICAGO	34	23	37	12	28	1	1.4	.8	.7	2.7	184	40.3	121	94	68	0	7	3	2	2
MOLINE	32	20	39	5	26	-1	2.5	2.1	1.4	3.1	258	36.3	100	92	70	0	6	3	2	2
PEORIA	32	20	41	7	26	-2	2.2	1.7	1.2	3.2	250	26.5	78	98	76	0	7	3	2	2
QUINCY	32	21	40	8	27	-3	2.3	1.9	1.5	2.6	239	28.0	76	89	65	0	6	3	1	1
ROCKFORD	31	19	36	6	25	0	1.6	1.2	.9	2.5	202	37.3	104	94	73	0	7	3	2	2
SPRINGFIELD	32	21	41	4	27	-4	2.7	2.2	1.2	4.0	297	28.3	85	92	73	0	6	3	3	3
IN EVANSVILLE	45	26	60	19	36	0	1.4	.6	.5	1.8	81	30.5	76	98	66	0	6	5	0	0
FORT WAYNE	34	27	41	24	30	1	1.7	1.2	1.2	2.8	182	33.6	100	92	73	0	7	4	1	1
INDIANAPOLIS	36	26	45	18	31	0	2.7	2.0	1.2	3.8	207	32.5	86	91	67	0	7	3	2	2
SOUTH BEND	34	27	38	22	30	1	2.0	1.3	1.3	3.0	168	33.5	91	93	70	0	7	5	1	1
IA DES MOINES	32	20	43	4	26	0	1.4	1.2	.6	1.9	285	36.2	120	94	65	0	7	3	2	2
SIOUX CITY	34	21	41	12	28	4	.7	-.1	.7	.2	51	24.3	97	89	59	0	7	1	0	0
WATERLOO	28	17	36	1	22	1	.8	.6	.6	1.2	157	31.6	98	92	73	0	7	3	1	1
KS CONCORDIA	37	22	43	11	30	-1	.1	-.1	.1	.2	39	33.6	125	89	55	0	6	2	0	0
DODGE CITY	36	18	44	8	27	-7	.5	.4	.4	.5	150	23.5	116	95	63	0	7	3	0	0
GOODLAND	35	13	45	4	24	-6	.7	-.1	.7	.2	79	19.5	122	91	49	0	7	1	0	0
TOPEKA	36	21	44	6	29	-3	1.4	1.2	.8	1.4	174	36.7	111	94	59	0	6	3	2	2
WICHITA	35	20	42	3	28	-7	1.5	1.3	1.1	1.5	236	37.9	134	96	71	0	5	3	1	1
KY BOWLING GREEN	46	28	61	17	37	-1	1.6	.5	.8	1.7	61	38.5	81	92	54	0	5	3	1	1
LEXINGTON	43	28	60	21	35	-1	1.6	.7	.8	1.9	81	32.4	73	87	57	0	5	4	1	1
LOUISVILLE	45	28	62	17	36	-1	1.0	.2	.7	1.1	52	29.1	69	87	54	0	5	4	1	1
LA ALEXANDRIA	60	41	81	28	50	0	1.7	.6	1.7	3.8	126	55.2	110	78	42	0	2	1	1	1
BATON ROUGE	67	44	82	29	55	2	.4	-.7	.3	.9	29	59.0	110	78	38	0	1	2	0	0
LAKE CHARLES	63	43	78	31	53	0	.6	-.6	.6	3.7	119	61.3	118	87	51	0	1	2	1	0
NEW ORLEANS	65	48	78	37	57	2	.7	-.2	.7	.5	17	58.2	101	82	50	0	0	2	0	0

Based on 1951-80 normals.

Weather Data for the Week Ending December 19, 1987

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 DEC. 1	PCT. NORMAL SINCE DEC. 1	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
SHREVEPORT	54	35	66	24	45	-4	1.4	.5	.7	3.7	153	50.9	120	86	43	0	3	4	2
ME CARIBOU	21	9	27	0	15	-1	.5	-.2	.5	1.8	92	28.1	80	94	76	0	7	2	1
FORTLAND	37	21	46	10	29	4	.7	-.4	.4	1.2	42	40.0	96	93	59	0	7	2	0
MD BALTIMORE	43	33	47	27	38	2	.5	-.3	.5	1.0	46	39.5	98	74	46	0	2	2	0
SALISBURY	48	32	64	24	40	1	1.0	.1	1.0	1.7	76	37.0	84	83	44	0	4	1	1
MA BOSTON	41	30	47	23	35	2	.8	-.2	.8	1.7	62	45.2	108	86	49	0	5	3	1
CHATHAM	42	31	49	24	37	2	1.3	.2	1.1	2.7	88	49.9	111	80	61	0	3	3	1
MI ALPENA	33	26	39	21	30	5	.5	.1	.2	1.1	87	23.6	84	94	70	0	7	3	0
DETROIT	37	31	45	27	34	5	1.8	1.2	1.5	3.1	200	36.8	124	85	62	0	7	4	1
FLINT	34	29	37	24	32	3	1.3	.7	.8	2.1	163	29.1	103	91	69	0	7	3	1
GRAND RAPIDS	33	29	37	25	31	3	1.2	.6	.6	2.6	156	32.3	99	88	71	0	7	2	2
HOUGHTON LAKE	30	27	33	22	29	6	.9	.2	.6	1.5	121	25.0	92	89	76	0	7	3	1
LANSING	34	29	37	24	31	5	.7	.3	.5	2.0	126	29.3	102	86	67	0	7	5	0
MARQUETTE	28	18	33	11	23	0	1.6	1.2	1.2	2.7	206	35.6	118	95	79	0	7	3	0
MUSKEGON	34	29	36	26	32	3	2.8	2.2	2.1	4.6	286	35.5	117	86	69	0	6	4	2
SAILT ST. MARIE	31	23	37	12	27	7	.7	.1	.3	2.3	140	30.1	93	91	71	0	7	4	0
MN ALEXANDRIA	23	11	31	2	17	3	T	-.2	T	.5	109	16.8	69	94	77	0	7	1	0
DULUTH	24	12	27	-2	18	4	.3	0	.1	.4	50	19.4	67	90	77	0	7	4	0
INT'L FALLS	23	9	30	-5	16	8	T	-.2	T	.1	14	19.3	81	94	74	0	7	2	0
MINNEAPOLIS	28	17	33	10	22	3	.2	0	.1	.9	169	32.0	124	90	70	0	7	3	0
ROCHESTER	26	16	32	3	21	3	.4	-.2	.2	1.3	235	27.6	99	93	80	0	7	2	0
MS GREENWOOD	55	35	75	23	45	-1	1.0	-.3	.5	1.0	29	40.2	79	88	41	0	3	2	1
JACKSON	59	35	81	21	47	-1	1.8	.5	1.5	1.8	55	45.6	92	91	39	0	4	3	1
MERIDIAN	61	35	75	22	48	0	1.6	.3	1.2	1.6	47	52.3	103	89	34	0	3	2	1
MO CAPE GIRARDEAU	41	28	55	23	34	-1	2.5	1.6	1.2	3.4	141	38.0	88	92	63	0	6	6	2
COLUMBIA	35	22	42	13	28	-5	3.5	3.1	2.0	3.8	303	31.9	89	92	63	0	6	3	1
KANSAS CITY	35	20	42	7	28	-5	1.6	1.3	1.1	1.6	181	33.5	95	95	66	0	6	4	2
SAINT LOUIS	37	25	49	16	31	-3	3.4	2.9	1.8	4.5	316	35.5	108	92	65	0	6	4	2
SPRINGFIELD	36	22	44	10	29	-7	4.0	3.4	1.8	4.4	267	52.6	136	96	64	0	6	5	2
MT BILLINGS	32	14	45	9	23	-4	T	-.2	T	T	0	12.1	83	73	32	0	7	0	0
GLASGOW	27	9	33	4	18	1	T	-.1	T	T	11	9.3	87	92	63	0	7	0	0
GREAT FALLS	29	13	38	8	21	-5	.1	-.1	.1	.2	36	14.0	95	79	54	0	7	1	0
HAVRE	29	5	41	0	17	-2	T	-.1	T	T	0	7.8	68	88	57	0	7	0	0
HELENA	27	11	33	2	19	-4	T	-.1	T	.4	103	10.0	89	94	59	0	7	1	0
KALISPELL	27	9	33	-3	18	-7	.6	-.3	.3	1.2	122	15.0	100	94	71	0	7	4	0
MILES CITY	29	10	35	1	20	-2	T	-.1	T	T	8	12.1	87	82	55	0	7	0	0
MISSOULA	29	17	32	13	23	-2	T	-.3	T	.9	125	10.0	79	92	64	0	7	2	0
NE GRAND ISLAND	35	18	44	8	27	0	T	-.1	T	.2	55	25.2	110	90	51	0	7	0	0
LINCOLN	38	22	46	12	30	4	T	-.1	T	.3	83	31.2	117	88	51	0	7	1	0
NORFOLK	35	19	42	10	27	-3	T	-.1	T	.5	130	28.2	121	91	54	0	7	0	0
NORTH PLATTE	36	13	46	6	25	-1	T	-.1	T	.4	146	20.0	105	89	39	0	7	2	0
OMAHA	35	23	44	13	29	1	T	-.1	T	.4	88	32.1	107	84	66	0	7	2	0
SCOTTSDUFF	35	8	46	-1	21	-6	.1	-.1	.1	.1	30	22.8	159	88	35	0	7	1	0
VALENTINE	36	13	47	0	24	0	.3	-.2	.3	.3	169	21.1	125	81	39	0	7	1	0
NV ELY	32	10	39	-2	21	-5	T	-.1	T	.3	73	11.9	139	85	43	0	7	1	0
LAS VEGAS	46	34	57	24	40	-5	.7	-.6	.4	.9	524	6.6	170	63	39	0	2	2	0
RENO	36	18	41	12	27	-5	.2	-.1	.1	.4	61	7.4	110	86	48	0	7	3	0
WINNEMUCA	37	11	44	1	24	-6	T	-.2	T	.2	40	8.6	117	87	42	0	7	0	0
NH CONCORD	35	20	44	10	28	3	.8	0	.5	1.0	47	36.2	102	94	62	0	7	3	1
NJ ATLANTIC CITY	47	29	60	21	38	2	.6	-.2	.6	1.2	53	40.3	100	80	45	0	5	1	1
NM ALBUQUERQUE	36	21	45	9	29	-7	1.3	.2	.2	.3	100	8.3	108	87	53	0	6	3	0
CLOVIS	36	19	50	7	28	-12	1.5	1.4	.8	1.5	431	24.3	145	78	50	0	6	4	1
ROSNELL	36	15	53	0	26	-14	.9	.8	.4	.9	405	15.5	149	92	54	0	6	3	0
ALBANY	36	23	42	16	29	3	.7	0	.5	1.0	54	38.6	112	91	62	0	6	3	1
BINGHAMTON	31	24	36	17	28	2	.6	0	.5	1.2	65	33.4	94	93	67	0	7	5	0
BUFFALO	37	29	46	24	33	4	1.1	.3	.8	1.8	86	41.2	114	87	60	0	6	3	1
NEW YORK	44	35	51	29	39	3	.9	.1	.9	1.4	60	43.4	105	80	50	0	3	1	1
ROCHESTER	35	27	42	24	31	2	.9	.3	.4	1.4	85	34.0	112	92	62	0	7	4	0
SYRACUSE	36	28	42	19	32	4	.7	0	.5	1.4	69	33.1	88	90	64	0	5	5	0
NC ASHEVILLE	48	28	62	17	38	-1	1.1	.4	.8	1.6	80	42.5	100	85	33	0	6	2	1
CHARLOTTE	52	33	62	25	43	0	1.0	.2	.8	1.6	80	37.4	90	79	36	0	4	2	1
GREENSBORO	49	29	56	21	39	-1	.8	0	.7	2.2	109	46.6	114	78	38	0	6	2	1
HATTERAS	55	37	69	27	46	-3	T	-.1	T	.5	18	59.3	110	88	49	0	2	1	0
NEW BERN	59	34	73	25	47	1	.3	-.6	.3	1.7	79	50.0	97	86	35	0	3	1	0
RALEIGH	53	31	67	22	42	0	.8	.1	.8	1.3	68	40.5	101	80	36	0	6	1	1
WILMINGTON	59	35	73	26	47	-1	.3	-.4	.3	.4	18	50.3	97	90	33	0	4	1	0
ND BISMARCK	29	15	39	0	22	6	T	-.1	T	.1	27	17.2	115	84	54	0	7	0	0
FARGO	24	12	32	7	18	5	T	-.1	T	.4	116	14.8	87	77	72	0	7	1	0
GRAND FORKS	23	6	30	-3	15	4	T	-.1	T	.2	62	18.4	102	90	72	0	7	0	0
WILLISTON	26	12	32	1	19	4	T	-.1	T	T	10	11.6	88	87	58	0	7	5	0
OH AKRON-CANTON	37	28	56	24	32	2	.8	.2	.3	1.7	105	28.9	84	91	63	0	5	3	1
CINCINNATI	41	27	59	21	34	0	1.0	.4	.6	1.4	79	30.8	79	84	54	0	6	3	0
CLEVELAND	38	30	58	26	34	3	.7	.1	.3	2.1	126	37.2	109	89	61	0	6	5	0
COLUMBUS	39	30	58	28	35	3	.5	-.1	.2	1.4	86	25.3	71	85	59	0	6	3	0

Based on 1951-80 normals.

Weather Data for the Week Ending December 19, 1987

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 DEC. 1	PCT. NORMAL SINCE DEC. 1	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	38	28	56	25	33	1	1.0	.5	.6	1.9	128	23.9	71	86	60	0	6	3	1
TOLEDO	37	29	48	26	33	3	1.7	1.1	1.3	3.0	180	29.9	98	88	65	0	7	4	1
YOUNGSTOWN	36	28	55	23	32	3	1.0	.4	.5	1.9	110	37.7	105	93	64	0	7	5	0
OK OKLAHOMA CITY	40	26	49	12	33	-7	2.3	2.1	1.1	2.3	316	43.2	142	93	64	0	4	3	2
TULSA	41	27	49	15	34	-6	3.3	2.9	1.9	3.3	281	43.4	114	91	56	0	4	3	2
OR ASTORIA	43	28	46	24	36	-7	.4	-2.3	.3	7.5	106	46.0	71	96	70	0	6	2	0
BURNS	29	13	31	4	21	-7	.2	-2.2	.2	1.7	166	10.7	100	**	**	0	7	3	0
MEDFORD	40	31	45	22	36	-2	.5	-1.3	.3	3.6	173	14.6	80	95	68	0	3	2	0
PENDLETON	34	23	43	20	29	-7	T	-1.3	T	.9	88	7.3	64	93	72	0	7	3	0
PORTLAND	40	30	46	25	35	-6	.2	-1.2	.2	7.5	196	29.5	85	99	72	0	6	3	0
SALEM	37	32	43	30	34	-7	.7	-1.9	.4	9.2	217	34.7	93	100	83	0	6	4	0
PA ALLENTOWN	41	29	44	24	35	4	.8	0	.8	.9	38	46.0	108	84	45	0	5	2	1
ERIE	37	30	51	28	34	3	1.0	.2	.4	2.4	114	43.8	113	88	61	0	6	5	0
HARRISBURG	41	31	44	25	36	3	.4	-1.3	.4	.7	34	38.1	101	79	48	0	2	1	0
PHILADELPHIA	46	32	56	27	39	4	.7	-1.1	.7	1.0	46	32.7	82	73	43	0	4	1	1
PITTSBURGH	39	29	60	25	34	2	.9	-1.3	.4	1.5	99	38.4	109	92	59	0	7	5	0
SCRANTON	37	28	42	21	33	3	.2	-1.3	.2	.4	25	38.9	115	88	58	0	6	4	0
RI PROVIDENCE	42	28	48	23	35	3	1.0	-1.1	1.0	1.8	67	40.2	93	88	46	0	5	1	1
SC CHARLESTON	61	38	73	29	50	0	.8	-1.1	.8	.9	51	55.4	111	86	38	0	2	1	1
COLUMBIA	58	32	72	23	45	-1	.6	-2.2	.6	.8	38	53.4	112	88	31	0	4	1	1
FLORENCE	59	33	70	25	46	-1	.5	-2.2	.5	1.2	70	36.1	85	89	32	0	3	2	0
GREENVILLE	53	32	62	24	42	-1	1.5	-1.6	1.2	2.3	96	42.4	86	86	36	0	4	2	1
SD ABERDEEN	31	16	42	5	24	7	T	-1.1	T	T	0	12.2	70	91	57	0	7	0	0
HURON	34	13	39	4	23	4	T	-1.1	T	T	10	18.2	99	90	52	0	7	1	0
RAPID CITY	35	11	46	3	23	-3	T	-1.1	T	T	0	12.1	76	80	36	0	7	0	0
STIOUX FALLS	32	15	43	7	24	4	.1	-1.1	.1	.3	63	17.5	74	94	61	0	7	1	0
TN CHATTANOOGA	51	32	60	23	42	0	1.2	0	.8	1.2	38	44.5	88	83	38	0	3	3	1
KNOXVILLE	50	30	65	19	40	-1	.8	-3	.5	.9	33	33.8	75	88	47	0	5	2	1
MEMPHIS	48	33	59	25	41	-3	1.5	.4	1.1	1.5	51	42.4	86	80	47	0	4	3	1
NASHVILLE	51	31	62	21	41	0	.8	-2.2	.5	.9	32	25.5	55	84	45	0	3	4	0
TX ABILENE	47	29	64	15	38	-8	2.3	2.2	1.5	2.3	433	24.9	108	93	53	0	4	4	1
AMARILLO	31	13	42	-5	22	-16	1.5	1.4	.8	1.5	513	21.8	116	97	74	0	7	3	1
AUSTIN	55	38	75	29	47	-5	1.0	.6	.7	1.0	78	36.4	119	92	47	0	2	5	1
BEAUMONT	66	44	76	34	55	1	.7	-4	.7	3.1	102	62.0	116	87	50	0	0	2	1
BROWNSVILLE	71	56	84	43	64	1	T	-3	T	T	0	28.3	114	88	56	0	0	0	0
CORPUS CHRISTI	68	51	79	34	60	1	.2	-1.1	.2	.2	29	30.0	98	86	53	0	0	2	0
DEL RIO	57	38	71	28	48	-5	.5	.4	.3	.5	150	22.6	133	73	38	0	2	3	0
EL PASO	39	19	54	6	29	-16	3.2	3.1	1.6	3.2	11.3	152	95	64	0	6	3	2	
PORT WORTH	50	34	66	23	42	-6	1.5	1.2	1.0	1.6	147	26.3	87	94	47	0	4	4	1
GALVESTON	62	49	74	39	56	-1	.3	-5	.3	.9	38	34.3	88	82	56	0	0	1	0
HOUSTON	63	42	79	30	52	-3	1.4	.6	1.4	1.8	79	38.0	85	90	49	0	1	3	1
LUBBOCK	39	19	52	2	29	-13	.9	.8	.4	.9	386	18.7	108	100	71	0	5	4	0
MIDLAND	48	26	63	11	37	-9	.1	-1.1	0	.1	20	13.9	104	98	49	0	5	2	0
SAN ANGELO	52	30	66	16	41	-7	1.5	1.3	.9	1.5	374	31.3	177	98	47	0	3	4	1
SAN ANTONIO	58	39	76	27	49	-4	1.7	1.4	.8	1.7	194	37.5	132	90	42	0	2	4	2
SANTO DOMINGO	65	46	77	32	56	0	.2	-3	.2	.3	21	41.5	115	92	56	0	1	2	0
WACO	52	35	69	23	43	-6	.9	.5	.8	1.0	80	32.7	109	94	45	0	3	4	1
WICHITA FALLS	45	28	60	15	37	-7	2.9	2.6	1.4	2.9	381	32.7	126	94	61	0	4	4	2
UT BLANDING	30	19	40	11	25	-4	.6	.3	.3	.6	76	19.7	177	96	74	0	7	4	0
CEDAR CITY	33	16	40	5	25	-6	.2	0	.1	.2	56	12.5	125	93	54	0	7	3	0
SALT LAKE CITY	36	20	46	12	28	-2	T	-3	T	.6	74	12.0	82	79	42	0	7	1	0
VT BURLINGTON	33	23	42	13	28	6	.6	0	.4	.8	48	27.0	83	94	67	0	6	4	0
VA NORFOLK	52	36	70	27	44	1	.7	-1.1	.7	1.1	61	44.0	101	76	40	0	2	1	1
RICHMOND	51	32	66	25	42	2	.6	-2.2	.5	2.0	95	39.4	93	79	41	0	3	2	1
ROANOKE	46	31	61	22	39	1	.4	-2.2	.2	1.0	56	50.5	134	77	41	0	3	2	0
WA QUILLAYUTE	42	26	45	21	34	-7	.5	-3.6	.3	9.7	91	78.9	79	100	65	0	7	3	0
SEATTLE-TACOMA	40	29	42	26	34	-7	.7	-1.2	.1	5.3	138	29.2	81	98	64	0	7	3	0
SPOKANE	28	18	33	10	23	-6	.4	-2.2	.2	4.4	298	17.2	111	96	75	0	7	4	0
YAKIMA	31	18	35	10	25	-7	.4	-1.1	.3	3.3	437	8.2	114	95	71	0	7	2	0
WV BECKLEY	41	26	61	20	34	0	.8	.1	.6	1.2	66	35.5	87	91	48	0	7	5	1
CHARLESTON	45	31	65	26	38	1	.8	-1.1	.7	1.3	65	34.3	84	86	50	0	5	3	1
HUNTINGTON	44	31	63	28	38	0	.8	-1.1	.6	1.2	62	29.9	76	84	46	0	5	4	1
PARKERSBURG	42	30	62	25	36	0	.5	-2.2	.2	1.1	68	24.1	66	80	51	0	5	4	0
WI GREEN BAY	31	18	35	8	25	4	1.0	.7	.7	1.6	178	22.7	83	94	70	0	7	3	1
LACROSSE	30	20	35	7	25	3	.7	.4	.4	1.3	190	33.1	112	88	70	0	7	2	0
MADISON	30	22	33	10	26	3	1.6	1.3	.9	2.9	300	32.2	107	88	70	0	7	2	2
MILWAUKEE	32	24	36	12	28	3	2.6	2.1	1.6	4.3	340	38.1	127	92	73	0	7	2	2
WAUSAU	30	20	32	15	25	7	.5	.2	.3	1.1	138	25.5	82	90	70	0	7	3	0
WY CASPER	29	6	43	-4	18	-8	.1	0	.1	.2	80	12.7	116	84	49	0	7	2	0
CHEYENNE	32	9	43	0	21	-9	.2	-1	.2	.2	77	14.6	111	80	37	0	7	3	0
LANDER	25	6	37	-3	16	-7	.1	-1.1	.1	.1	19	14.4	113	82	50	0	7	1	0
SHERIDAN	29	7	39	0	18	-7	.1	-1.1	.1	.1	16	14.2	97	89	50	0	7	1	0
PR SAN JUAN	87	73	90	72	80	2	1.2	.2	.8	4.4	152	58.2	110	86	70	1	0	2	1

Based on 1951-80 normals.

Heating Degree Days Summary

LAST DATE OF DATA COLLECTION PERIOD IS 12-19-1987
ACCUMULATIONS ARE FROM JULY 1
** = NORMAL LESS THAN 100 OR RATIO INCALCULABLE

Table with columns: STATE CITY, CALL, WEEK TOTAL, WEEK DEV, WEEK FROM, CUM TOTAL, CUM DEV, CUM FROM, CUM FROM, CUM FROM, CUM FROM, CUM FROM. Rows list various cities and their corresponding heating degree day data.

National Agricultural Summary

December 14 to 20, 1987

HIGHLIGHTS: Precipitation prolonged cotton harvest in the southern Great Plains and soybean harvest in the Southeast. The rain and snow provided much needed moisture for winter wheat growth and development in the Delta, southern Great Plains, Corn Belt, and Southeast. However, the rain hampered seeding in the Southeast and Delta. Inadequate snow cover and moisture concerned small grain producers in the central and northern Great Plains. Low temperatures caused minor fruit and vegetable damage in California and Arizona. Livestock was mostly good.

SMALL GRAINS: Precipitation hampered small grain seeding in the Delta and Southeast. Seeding was still underway in Alabama, Georgia, Mississippi, North Carolina, and South Carolina. Small grain seeding continued in northern California as the weather permitted. Cool temperatures slowed growth in the southern half of the State. Snow benefited dryland, small grains in the Texas Plains. In the Blacklands, producers began spraying to control mites and greenbugs, and cold temperatures slowed growth. Many fields were fertilized in central Texas, but additional moisture was still needed. In Kansas, snow protected wheat early in the week but melted by week's end. Winter wheat lacked snow cover and needed moisture in Colorado. Indiana's wheat was good, but heavy rain caused standing water in low areas. Inadequate snow cover caused concern for winter grain in North Dakota. South Dakota producers were concerned whether the wheat crop was drying from the cold weather or lack of moisture. Snow protected winter grain crops in Douglas, Grant, Lincoln, and Spokane Counties in Washington. Low temperatures threatened winter grain where snow cover was unavailable.

SOYBEANS: Rain prolonged soybean harvest in the Southeast. Harvest was underway in Georgia, North Carolina, and South Carolina.

COTTON: Texas cotton harvest climbed 3 percentage points ahead of the previous week to 93 percent (%) completion. This compares with 63% harvested in 1986 and the 78% 5-year average. Cotton in the field will suffer from the heavy snowfall. The poor weather condition closed gins in many areas of the Plains. Rain and snow halted cotton harvest in Oklahoma at 85% completion. Harvest was 55 points ahead of the slow 1986 pace and 15 points ahead of normal. Limited second picking was underway in California. Most fields have been shredded and disced in compliance with quarantine regulation. Growers continued making preparation for seeding the 1988 cotton crop. Rain, snow, and freezing temperatures prolonged cotton harvest in Arizona.

OTHER FIELD CROPS: Peanut harvest was virtually finished in Texas. Some acreage may not be harvested at Cross-Timbers after the freezing weather.

Burley tobacco markets were closed for the Christmas holidays. Tobacco bed preparation was about 50% finished in Georgia.

Wetness curtailed land preparation and fall plowing throughout most of the eastern half of the Nation. Some fertilizer spreading was accomplished in the Corn Belt.

FRUIT AND NUTS: Rain reduced the need for irrigation in Florida's citrus groves. Trees produced very little new growth, and fruit droppage was not excessive. Harvest was very active in all areas for fresh and processed uses. In California, low temperatures caused very little if any damage to the citrus crop. High winds caused above-normal avocado fruit droppage and minor damage. Citrus harvest progressed normally, but Riverside County navel orange harvest slowed. Grapefruit, tangerines, and lemons were harvested in the desert. California fruit and nut growers fumigated ground for new plantings, pruned, sprayed herbicides, fertilized, and replanted existing orchards. Arizona's citrus groves were good, with some twig damage. Grapefruit harvest advanced quickly in western areas. Navel orange packing was heavy in central areas.

VEGETABLES: Light frost caused virtually no damage in Florida's central vegetable producing areas. Land preparation, planting, and harvesting was active except in west-central areas where activities were winding down. Strawberry, tomato, snap bean, cabbage, celery, squash, cucumber, eggplant, escarole, endive, pepper, carrot, radish, and specialty lettuce volumes were good. High winds caused minor damage in the San Antonio-Winter Garden areas. Vegetable harvest continued without major delays in most areas. Arizona's mixed vegetable shipments were heavy from the central valley. Head and leaf lettuce cutting continued on a large scale as conditions permitted. Cooler temperatures decreased broccoli and cauliflower movement and delayed maturity in California. Celery movement declined seasonally along the central coast. Lettuce quality improved in the Palo Verde Valley. Spring lettuce was planted at Fresno and the lower Westside. Carrot harvest increased slightly at Salinas.

PASTURES AND LIVESTOCK: Livestock was mostly good. In North Dakota, pneumonia caused problems for some producers. Livestock feeding was difficult in Michigan because of snow and high winds. A winter snowstorm stressed livestock in Wyoming. Supplemental feeding increased in most areas. Cooler temperatures slowed pasture growth.

State Summaries of Weather and Agriculture

ALABAMA: Rainfall totals mostly 1.00 in.; local amounts over 2.00 in. Temperatures averaged 3° above normal.

Small grain seedings completed most areas. Primary activity: Routine care of livestock, poultry.

ARIZONA: First major winter storm developed 12th, strengthened 13th. Snow above 3,000 ft., heaviest amounts northeast; 5 to 10 in. White Mountains, eastern Mogollon Rim 14th; 1 to 3 in. central basins. Minimum temperatures 3 to 15° below zero White Mountains; teens 5,000 ft.; 20s, 30s lower deserts. Mostly sunny skies continued 15th. Clouds thickened 16th, light showers. Clouds, precipitation 17th; locally heavy rains lower elevations, snow down to 4,000 ft. Precipitation ended 18th. Rainfall totals mostly 1.00 to 3.00 in. Snowfall ranged 1 to 5 in. central basins; 4 to 14 in. Mogollon Rim, White Mountains. Rains, snow 19th light. Heavy fog 20th. Temperatures 4 to 11° below normal.

Rains, snow, freezing temperatures prolonged cotton season; harvest nearly complete. Cotton residue disposal continued as weather permitted. Inclement weather brought alfalfa harvest, curing to standstill west; widespread frost damage. Sheeping off increased. Rains delayed small grain plantings central; established stands benefit. Stands good west; additional plantings delayed due to rain. Cauliflower, broccoli harvest heavy west; head, leaf lettuce cutting continued large scale as conditions permitted. Lettuce movement light elsewhere. Bok choy, napa, spinach harvest west, volumes small. Mixed vegetable shipments heavy central valley. Grapefruit harvest advanced actively west; lemons, oranges, tangerines picked. Citrus groves generally good; twig damage. Navel packing heavy central; grapefruit, lemons, minneolas picked. Pecan harvest continued. Apple shipments to juice markets southeast.

ARKANSAS: Cool statewide. Moderate to heavy rains all sections. Temperatures averaged 2 to 8° below normal. Temperature extremes 13°; 75°. Rainfall total 0.90 to 3.07 in.

Soil moisture excessive. Winter wheat good. Pasture good. Livestock good.

CALIFORNIA: Weather began, ended with high pressure, mostly dry conditions. Low pressure system midweek moved down coast into southern part of State bringing light rain to north with heavier amounts south.

Growers seeding small grains as weather permitted, northern half State. Planting wheat, oats, barley continued southern half, emerged fields growing slowly as temperatures cool. Limited 2nd picking cotton done Tulare. Most fields shredded, disced in compliance with quarantine regulation. Growers making preparations for next year's crop. Sorghum grain, sugarbeet harvests continued. Wet soil conditions got new alfalfa plantings off to good start. Mature fields being grazed, tilled, prepared for new plantings. Normal fall cultural practices vineyards, orchards throughout State; fumigating ground for new plantings, pruning, spraying, fertilizing, replanting. Deglet noor date harvest continued; persimmon harvest neared completion. Avocado harvest wrapping up Tulare County; Hass avocado harvest just underway Riverside County. High winds Riverside County caused 10 to 20% avocado drop, little citrus damage. Minor avocado wind damage Ventura County. Desert grapefruit, tangerine, lemon harvesting Riverside County. Merced County tangerine harvest light, good quality fruit. Butte County navel orange harvest

continued. Riverside County navel harvest slow; good sizes, quality prevailed. Fresno County navel harvest active; fruit quality very good, except large sizes show some drying. Tulare County navels 25 to 30% harvested. No indications low temperatures damaged citrus crop. Broccoli, cauliflower harvest active Fresno, Westside, Merced-Atwater, Cutler-Orosi, Salinas, Santa Maria. Cooler temperatures decreased movement, delayed maturity. Quality variable. Carrot harvest increased slightly Salinas, continued lower Westside, Palo Verde. Celery movement seasonally declined central coast, variable quality. Lettuce harvest continued improved quality Palo Verde. Lettuce planted Fresno, lower Westside. Onions planted, progressing normally Fresno, Cutler-Orosi. Growers prepared tomato land Fresno. Winter potato harvest continued Palo Verde. Livestock good Statewide. Movement to market active northern districts. Supplemental feeding heavy Shasta, Calaveras. Heavy snow made cattle feeding difficult Tulelake-Butte Valley. Westside feedlots in excess of 50% capacity. Range, pasture conditions about normal, however growth will slow as temperatures drop. Water supply levels improve, but more needed. Calving, lambing active.

COLORADO: Early portion of week dry, snow in mountains midweek. Snow southwest 18th. Eastern plains very little moisture. Average temperatures well below normal for period.

Winter wheat continued to lack snow cover, topsoils most areas need moisture. Major activities livestock care, equipment repair.

FLORIDA: Showers accompanied strong cold front, 15th. Rain averaged 0.75 in. Panhandle; 0.50 in. or less elsewhere. Dry, colder, 16th through 18th with light freezes, frosts north; patchy frost southward to northern Everglades. Warmer 19th, 20th. Temperatures averaged 2 to 3° below normal north, central Peninsula, near normal elsewhere.

Soil moisture adequate lower half of Peninsula; other areas, short to adequate. Some late winter wheat seeded. Cotton farmers scrapped last fields. Sugarcane harvest good progress; some cane planting continued. Spotty showers benefited winter forage crops, but some localities, particularly northwestern Peninsula, central, eastern Panhandle, continued very dry. Pastures mostly fair these areas; fair to mostly good elsewhere. Cattle continued fair to good. Welcome showers citrus areas, 15th. Irrigation reduced. Very little new growth. Fruit drop not excessive. Harvest very active all areas for fresh, processed use. Caretakers clean cultivating for fire prevention. Very light frosts, central vegetable areas, caused virtually no damage. Land preparation, planting, harvest active except winding down west central areas. Good volume strawberries, tomatoes, snap beans, cabbage, celery, squash, cucumbers, eggplant, escarole, endive, peppers, carrots, specialty lettuce, radishes. Lesser volume sweet corn, iceberg lettuce.

GEORGIA: Temperatures 2 to 4° above normal. Minimum temperatures 20s mornings 17th to 18th, teens in mountains. Warmest 60s north near 80° extreme south. Rain 4 days north, 2 days over south. Rains 0.50 to 1.50 in. common, local totals near 3.00 in. extreme north.

Soil moisture very short to adequate, mostly short. Main activities included ongoing planting of small grains, land preparation. Late harvesting continued for cotton, pecans, soybeans. Tobacco bed preparation 50% completed. Wheat, rye, other small grains mostly fair to good; pasture poor to mostly fair; cattle mostly fair to good; hogs fair to mostly good.

HAWAII: Heavy rains continued. Daily showers most areas. Rainfall exceeds previous monthly record on Oahu. Flooding low-lying areas. Winds southerly 10 to 25 mph. Temperatures mid 60s to low 80s. Rainfall 0.40 to 12.10 in.

Days suitable for fieldwork 7.0. Farming activity slowed, halted. Gusty winds uprooted banana, macadamia nut trees. Overall crop losses light to moderate. Banana trees uprooted on Kauai and Oahu. Moderate losses. Production seasonally light. Papaya production steady, little tree loss. Chinese, head cabbage harvesting steady, slight loss expected. Sugarcane harvesting halted, losses little if any. Pineapple fields benefited from rain. Tomato fruit cracking, lower yields. Macadamia nut, coffee past peak harvest, rains benefit next season's crop. Livestock losses limited to chickens, structural damage. Mostly structural damage suffered by nursery farms.

IDAHO: Temperatures, precipitation below normal statewide.

Fieldwork slow due to weather. Activities included isolated plowing, marketing products, plowing snow, repairs, maintenance on machinery, attending meetings. Livestock good. Activities included cleaning barns, hauling manure, pregnancy testing, weaning calves, vaccinating, isolated calving, isolated lambing. Some feeding hay to supplement pastures.

ILLINOIS: Temperatures averaged 6° above normal for first 15 days. Precipitation totals 1.25 to 3.00 in., 2.00 to 2.50 in. common central section. Soil moisture 33% short, 59% adequate, 8% surplus. Winter wheat 9% fair, 75% good, 16% excellent. Livestock good to excellent until snow storm hit 14th to 15th.

INDIANA: Temperatures slightly above normal. Lows mid 20s highs mid 30s to low 40s. Rainfall amounts 1.00 to 3.00 in. statewide.

Recent rains, frozen ground limited fieldwork. Activities included spreading lime, manure; doing shop work, maintaining equipment, working on taxes, stripping tobacco, caring for livestock, other usual farm chores. Wheat generally good. Some ponding in low areas due to heavy rains. Livestock good. Hay supplies generally adequate.

IOWA: Mild north and west; near normal temperatures elsewhere. Subnormal precipitation west increased southeastward to 3.22 in. Burlington. Snowfall upward to 12 in. southeast 14th, early 15th; 1 or 2 in. southeast two-thirds State 19th. Weekend, little snow cover west; 1 to 5 in. eastward.

Livestock mostly good. Availability of hay, roughage for livestock feed mostly adequate. Quality of hay, roughage mostly good to fair. Heavy snow some areas making chores difficult.

KANSAS: Snow storm covered most southeast areas snow deep 13 in. Water equivalent moisture ranged 1.00 to 0.50 in. Weekly district average east central near 0.90 in. Elsewhere precipitation averages ranged trace northeast to 0.50 in. south central district. Temperatures below normal. District average temperatures ranged 30 to 35°. Readings 5 to 6° below normal southern districts, 1 to 3° below normal northern districts.

Snow early week covered most State with blanket giving good cover for wheat. However, snow gone by end week due rain melting except where drifts. Feeding cattle main activity pastures crop residues covered. Fieldwork limited due to snow, muddy fields.

KENTUCKY: Wet weather, precipitation averaging 0.50 to more than 1.00 in. above normal. Rainfall averaged 1.00 to 2.00 in., few locations far west

averaged 2.50 in. Temperatures averaged near seasonal normals. Readings below normal 16th to 17th.

Topsoil moisture improved, still short to adequate; subsoil moisture low most areas. Winter wheat stands poor to good. Dry fall hurt germination, limited early growth. Burley market closed for holidays, expected to reopen 4th. Livestock satisfactory.

LOUISIANA: Temperature normal to 4° above normal. Temperature extremes 21°; 85°. Rainfall averaged 0.10 to 1.55 in.

Main activities: Finishing sugarcane, pecan harvest; winter wheat planting; caring for livestock.

MARYLAND & DELAWARE: Maryland: Average temperature 40°, normal 36°. Precipitation averaged 0.66 in.

Main farm activities fall machinery work, caring for livestock. Some farmers packed sweetpotatoes or marketed nursery, greenhouse production. Small grains good.

Delaware: Average temperature 42°, normal 37°. Precipitation 0.60 in.

Main farm activities fall machinery work, caring for livestock. Small grains good.

MICHIGAN: Temperatures ranged 4 to 8° above normal. Temperature extremes 9°; 45°. Precipitation 0.54 to 2.82 in. across State. Major snowstorm early week resulted in 8 to 12 in. accumulation western, northern parts of State, lesser amounts elsewhere. Widespread rains occurred late week.

Snow cover beneficial for winter wheat. Activities: Machinery, building maintenance; marketing crops, snow removal, routine livestock care. Livestock good, marketing active; snowstorm, high winds made livestock feeding difficult, feed supplies adequate, hay supplies tight some areas.

MINNESOTA: Temperatures averaged 2 to 6° above normal. Extremes -6°; 40°. Precipitation averaged 0.31 in. above normal southeast, near normal to 0.15 in. below normal elsewhere. Precipitation totals averaged 0.52 in. southeast, 0.02 to 0.25 in. elsewhere. Greatest weekly total 0.78 in. Snowfall averaged 2 to 6 in. Snow depth weekend averaged 1 to 4 in.

Livestock management main activity. Livestock remained good as we continue to have mild winter weather.

MISSISSIPPI: Temperatures 3 to 4° below normal; extremes 15°; 82°. Week of contrasts with early week warm temperatures, rain; midweek cold temperatures. Warm temperatures, precipitation returned during weekend. Greatest 24-hour total rainfall 1.48 in.; greatest weekly total 1.95 in.

Days suitable for fieldwork 6.1, 0.4 1986, 2.2 avg. Soil moisture mostly short. Wheat 98% planted, 88% 1986, 90% avg. Cold weather should affect growth of late planted winter crops. Pecans 80% harvested, 90% 1986, 88% avg. Hay, roughage supplies adequate. Feed grain supplies adequate. Anticipate early spring shortage of feed due to current full ration feeding levels. Livestock fair to good. Wheat fair. Pastures poor to fair.

MISSOURI: Temperatures averaged 5° below normal as winter storm dropped heavy snow, rain. Some flooding from 3.00 to 4.50 in. precipitation southwest to east central. Over 1.00 in. precipitation northern half, over 2.00 in. southeast. Snow cover disappeared.

Farmers recovered from snow storm, caring for livestock. Winter wheat in better condition than in several years.

MONTANA: Cooler temperatures over State. Temperatures 5° below normal southwest, 3 to 4° below west, central, south central, southeast; near normal north central, northeast. Continued dry over plains, 0.10 in. west, southwest.

Topsoil, subsoil moisture supplies mostly short. Winter wheat fair to good. Wind damage to winter wheat fields remained light to moderate. Winter range, pastures fair to good.

NEBRASKA: Temperatures first part of week cool, warmed toward weekend. Temperatures averaged 5° below normal west to 4° above normal over remainder of State. Extremes -3°; 52°. Precipitation light. Snow cover light, limited to southeast corner of State.

Farm, ranch activity centered around livestock management, grain handling, general farm chores.

NEVADA: Cold north winds brought brisk weather early. Clear skies produced coldest of season morning temperatures. Cold continued midweek as clouds dominated weather system. Skies cleared end period bringing lower temperatures steady, light snow western areas. Rain extreme south.

Low night temperatures hard on newborn lambs, calves. Chopping ice required many areas. Light snow cover to none not beneficial winter grains. Movement potatoes to market hampered by low temperatures.

NEW ENGLAND: Average temperatures ranged from teens near Canadian border to upper 30s along south coast; near normal north, slightly above normal south. Average precipitation (rain or water equivalent of snow) ranged from 0.50 to 1.00 in. across region.

Major farm activities: Tending livestock, poultry.

NEW JERSEY: Temperatures averaged above normal, averaged 34° north, 39° south, 40° coastal. Extremes 15°; 80°. Precipitation above normal averaged 1.12 in. north, 1.10 in. south, 0.78 in. coastal. Heaviest 24-hour total 1.31 in. on 15th, 16th.

Excess soil moisture continued to delay combining of field corn, soybeans in scattered low areas of fields. Percent of these crops remained to be harvested. Fruit pruning active. Farmers busy cutting, selling Christmas trees; tending to livestock.

NEW MEXICO: Snow, rain statewide. Many areas received between 0.50 to 1.00 in. water equivalent of snow. Temperatures well below normal. Temperatures ranged 17° below zero to 56° above zero.

NEW YORK: Seasonable temperatures, precipitation. Northern areas received 4 to 5 in. of snow. Producers busy with year end chores.

NORTH CAROLINA: Temperatures averaged 2° below normal Mountain Region, normal across remainder of State. Temperature extremes 15°; 73°. Precipitation 0.02 to 2.53 in. across State.

Days suitable for fieldwork 4.0. Soil moisture 2% very short, 19% short, 65% adequate, 14% surplus. Soybeans 97% harvested, 71% 1986, 83% avg. Wheat 98% planted, 94% 1986, 92% avg.; 92% emerged, 88% 1986. Small grains fair to mostly good. Pastures 2% very poor, 13% poor, 38% fair, 48% good. Hay, roughage supplies, feed grains supplies mostly adequate. Major farm activities: Harvesting soybeans; seeding small grains; tending livestock; fall plowing; preparing tobacco plantbeds; marketing peanuts, soybeans, cotton; general farm maintenance.

NORTH DAKOTA: Dry, temperatures mostly above normal. Temperatures ranged 2° below normal southwest to 5° above normal north central. Extremes -5° west central 16th; 40° southwest 18th. Light snow received statewide early week. Heaviest precipitation northeast, 0.08 in.

Soil moisture below normal. Inadequate snow cover caused concern for winter grain, alfalfa producers. Livestock mostly good, pneumonia caused problems for some producers. Feed supplies adequate, cattle on pastures with supplemental hay, west.

OHIO: Average temperatures up to 6° above normal. Temperatures ranged teens and 20s to 50s. Precipitation above normal; 0.60 in. south to 1.00 in. north. Soil temperatures 4 in. depth averaged mid to upper 30s; range lower 30s to lower 40s.

Precipitation helped sustain soil moisture supplies for winter wheat. High winds damaged some farm structures.

OKLAHOMA: Temperatures averaged 13° below normal Panhandle to 5° below normal southeast. Precipitation averaged 0.17 in. Panhandle to 3.44 in. northeast.

Major winter storm stopped fieldwork, aided dry conditions west. Wheat good. Cotton 85% harvested, 30% 1986, 70% avg. Livestock cold stress severe.

OREGON: Temperatures below normal all areas except extreme south coast. West 2 to 9° below normal; east 3 to 8° below normal. Rain or snow statewide. Coastal areas as much as 2.00 in. Western interior received from 0.20 in. northern Willamette Valley to over 1.00 in. southwest. Eastern precipitation 0.02 to 0.30 in.

Soil moisture mostly adequate east, adequate to surplus west. All fieldwork halted east, ground mostly frozen and snow covered. Western grass seed, clover, fall grains growing, conditions good. Some weed control spraying. Filbert pruning Willamette Valley. Fall seeded onions, cool season vegetable crops emerged west; long, warm fall benefited both. Livestock good. Ranges, pastures fair to good. Supplemental feeding of livestock east.

PENNSYLVANIA: Mild, wet week. Average temperature 33°, 3° above normal. Temperature extremes 14°; 60°. Average precipitation 0.95 in., 0.25 in. above normal.

Activities: Hauling manure; machinery maintenance; caring for livestock; grading potatoes.

PUERTO RICO: Island report is not available due to insufficient data. San Juan mean temperature averaged 78°, 3° above normal. Total rainfall 0.38 in., 0.63 in. below normal.

SOUTH CAROLINA: Temperatures averaged 4 to 6° below normal although moderating over weekend; rainfall 0.50 to 0.75 in. average across State although up to 3.00 in. some coastal locations.

Soybean harvesting, wheat planting continued.

SOUTH DAKOTA: Average temperatures 4° below to 9° above normal. Extremes -8°; 49°. Black Hills low -9°. Precipitation light across State; average less than 0.10 in. No snow except Black Hills.

Many areas of State really dry for winter wheat crop. Producers concerned whether crop is drying down from colder weather or just drying up. What happens next month may be critical for winter wheat's crop ability to withstand winter loss. Need good rain or melting snow, snow cover not sufficient. Livestock good with normal supplemental feeding.

TENNESSEE: Temperatures 3° above normal. Extremes 16°; 71°. Precipitation statewide. Rainfall 0.50 in. above normal west. Heaviest rains exceeded 2.00 in. Middle, east 0.33 in. below normal.

Soil moisture adequate. Main activities: Livestock chores, farm maintenance, tobacco marketing. Cattle satisfactory.

TEXAS: Early week, upper level storm system produced showers across much State, dropped foot of snow sections far west, Panhandle. Fair weather returned much State midweek; late 17th light showers. Showers continued 19th morning, some scattered thunderstorms with locally heavy rainfall central, north. Temperatures below normal. Precipitation above normal.

Crops: Cotton producers suffered first major setback of season with heavy snowfall; most cotton harvested. Cotton still left in field will suffer from heavy snow. Gins closed because bad weather many portions Plains. Cotton 100% open bolls, 98% 1986, 100% avg.; 93% harvested, 63% 1986, 78% avg. Snowfall Plains should benefit dryland small grains, prior hurting for moisture. Additional moisture necessary throughout winter. Because snow, grazing limited. Blacklands, spraying began, mites, greenbugs increased. Growth slowed by cold temperatures. Central producers fertilized many fields. Additional moisture needed. Generally, any moisture would improve conditions. Wheat 99% emerged, 99% 1986, 97% avg. Peanut harvest continued wind down more areas central, south. Some remaining fields Cross-Timbers may not be harvested after freezing weather. Sugarcane harvest proceeded with few delays because bad weather. Yields good. Other crops planted: Oats 100%, 96% 1986, 97% avg. Other crops harvested: Peanuts 99%, 98% 1986, 96% avg. Pecans 83%, 89% 1986, 84% avg. Sorghum 100% harvested, 98% 1986, 99% avg.

Commercial Vegetables: Rio Grande Valley lettuce harvest increased with good market conditions. Harvest cabbage, celery continued. Carrots beginning to come off. Some thrip damage

onions. San Antonio-Winter Garden harvest continued without major delays. Some damage from high winds, no major damage. Pecan harvest progressed central, southern areas. Most northern areas slow or no progress because weather problems. Quality good, quantities down.

Range and Pasture: Ranges improved some areas rainfall, snow provided some moisture. Improvement light, because colder temperatures. Snow Plains help dryland small grains. Grazing light. Supplemental feeding must depending on travel conditions. Livestock weight gains hurt by cold weather. Some death losses. Livestock other areas good under steady feeding protein, hay.

UTAH: Precipitation moderate south, mountains, none to light elsewhere. Temperature maximums 6 to 13° below normal. Minimums 10° below to 6° above normal.

Snow cover light. Livestock good to excellent. Feed supplies adequate. Major farm activities: Livestock chores, attending extension organization meetings, summarizing farm tax records, care of feed supplies, equipment maintenance.

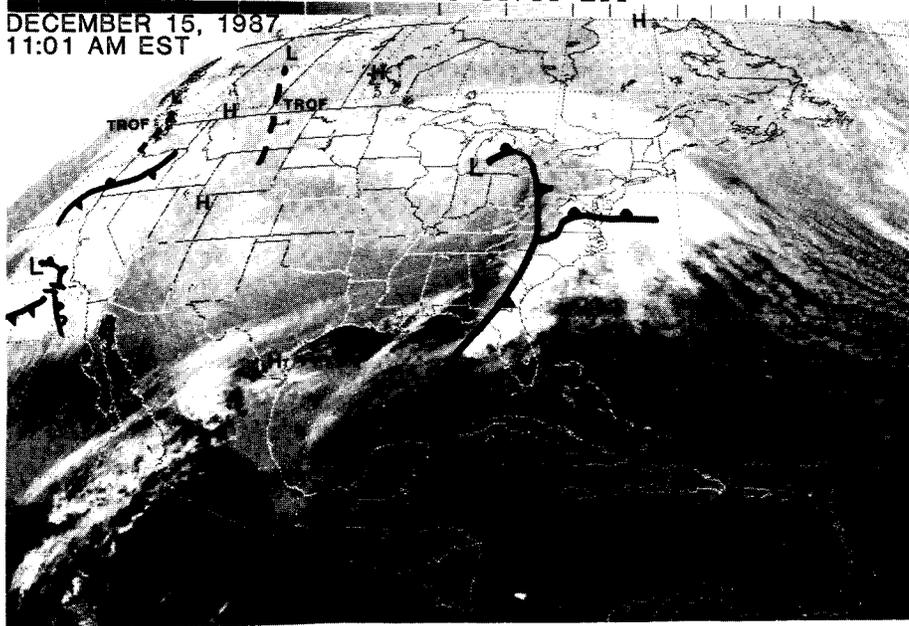
VIRGINIA: Cloudy skies, temperatures 2 to 3° above normal. Mid period precipitation statewide. Rain most areas, some light snow, sleet mountain areas. Temperature range 16 to 71°. Precipitation from 0.25 to 0.71 in.

Days suitable for fieldwork 2.7. Topsoil moisture 5% short, 74% adequate, 21% surplus. Soybeans 98% harvested, 86% 1986, 89% avg. Winter grains good to excellent. Some normal spraying to control rye grass in small grain fields. Marketed burley, dark fire-cured tobacco. Livestock care, normal winter chores active. Lambing, calving active.

WASHINGTON: Weak disturbances dropped down from Gulf of Alaska, produced generally light precipitation across State; mixed rain and snow west, snow in east. Prevailing west, northwest flow kept temperatures below normal through entire week.

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DECEMBER 15, 1987
11:01 AM EST



AN EARLY-SEASON BLIZZARD WITH A DEEP, LOW-PRESSURE CENTER OF 978 MILLIBARS (28.9 INCHES OF MERCURY) MOVES ACROSS THE GREAT LAKES AND MIDWEST. EARLIER IN THE DAY, THE STORM LEFT HEAVY SNOW OVER THE CENTRAL GREAT PLAINS AND MIDDLE MISSISSIPPI VALLEY AND GENERATED SEVERE THUNDERSTORMS AND TORNADOES IN THE LOWER MISSISSIPPI VALLEY. RAIN FALLS ALONG THE EASTERN SEABOARD, AHEAD OF THE STORM'S ASSOCIATED FRONTAL SYSTEM.

ANOTHER INTENSE STORM SYSTEM IN THE PACIFIC APPROACHES THE CALIFORNIA COAST.

Soil moisture 60% short, 40% adequate. Douglas, Grant, Lincoln, Spokane Counties 4 to 5 in. snow cover protects winter grain crops. Adams, Whitman Counties lighter snow depths. Low temperatures threatened winter crops where snow cover unavailable. Dryland wheat mostly fair, some poor. Orchardists continued pruning, major activity. Fresh market carrot harvest completed Franklin County. Most cattle on full feed. Hay, other roughage feed supplies mostly adequate.

WEST VIRGINIA: Average temperature 37°; 2 to 6° above normal except 4° below northeast. Extremes 10° Greenbank; 67° Williamson, Greenbank. Precipitation averaged 0.74 in.

Days suitable for fieldwork 3.7. Soil moisture 55% short, 46% adequate. Farm activities: General farm maintenance, livestock care, plowing. Wheat, barley fair to good. Feed supplies adequate to short.

International Weather and Crop Summary

December 13-19, 1987

HIGHLIGHTS:

UNITED STATES...Precipitation prolongs cotton harvest in the southern Great Plains and soybean harvest in the Southeast. Rain and snow provide needed moisture for winter wheat growth and development in the Delta, southern Great Plains, Corn Belt, and Southeast.

WESTERN U.S.S.R....Snow covers most winter grain areas, while rain falls along the Black Sea coast.

EUROPE...Heavy rain falls over central and northern sections, bringing soils back to saturation and possibly causing flooding.

SOUTH ASIA...Scattered, light rain in central India helps vegetative wheat and late filling rice. Showers in the south benefit filling cotton and rice plantings.

WISCONSIN: Temperatures near normal, averaged 24°. Extremes -3°; 40°. Precipitation 0.20 to 2.50 in. Snowfall 1 to 12 in. on 15th, heaviest south central, southeast; 2 to 4 in. 19th to 20th, rain only southeast.

Topsoil moisture moist to wet. Average frost depth on 18th 1.2 in. Average snow depth on 18th 7 in.

WYOMING: Temperatures below normal. Below normal precipitation entire State, very dry.

Winter wheat fair to good. Livestock mostly good. Winter pastures, fields with crop residue being utilized. Winter storm late week increased snow cover and stress in livestock. Supplemental feeding in areas with snow cover. Hay supplies continued to be adequate or better most areas.

NORTHWESTERN AFRICA...Showers benefit winter grains in Morocco, but dry weather prevails in Algeria and Tunisia.

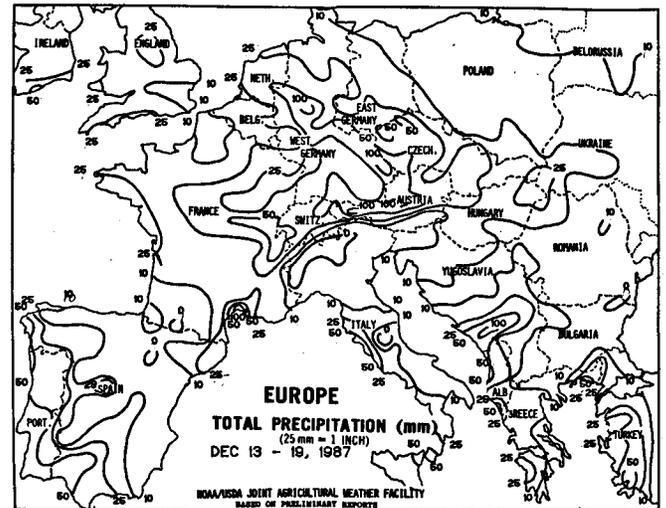
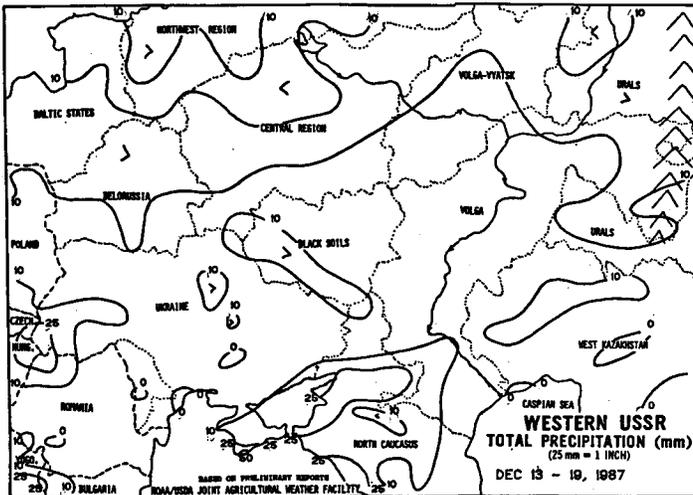
SOUTH AFRICA...Showers maintain mostly favorable conditions for corn emergence and establishment.

SOUTHEAST ASIA...Dryness in Indochina benefits maturing rice. Typhoon Phyllis brings rain and high winds to central Philippine crop regions.

EASTERN ASIA...Light rain falls over southwestern sections, while most other growing areas remain dry.

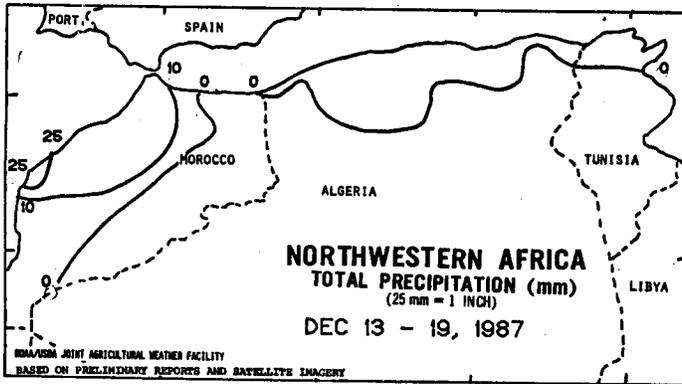
SOUTH AMERICA...Mostly light showers benefit emerging crops in Argentina, while beneficial rain falls in southern Brazil.

AUSTRALIA...Dry weather favors wheat harvest in most southern production areas except for the southwest, where rain-delays continue.

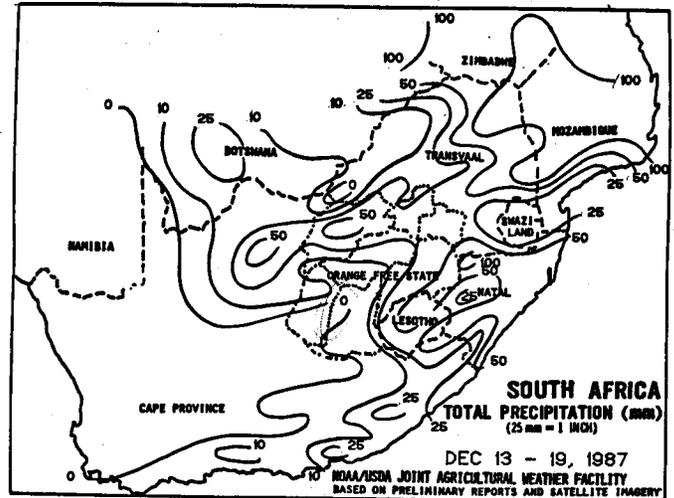


WESTERN U.S.S.R....Weekly precipitation, mostly snow, averaged 10mm in the major winter grain areas. Mixed rain and snow fell in the North Caucasus, while mostly rain fell along the Black Sea coast. Weekly temperatures generally averaged 1-3 degrees C below normal throughout the region. Average maximum temperatures remained mostly below freezing except along the Ukraine's southern fringe and adjacent areas of the North Caucasus. Winter grains remained dormant under sufficient snow cover in northern and central crop areas. Snow cover diminished rapidly in the southern Ukraine and North Caucasus.

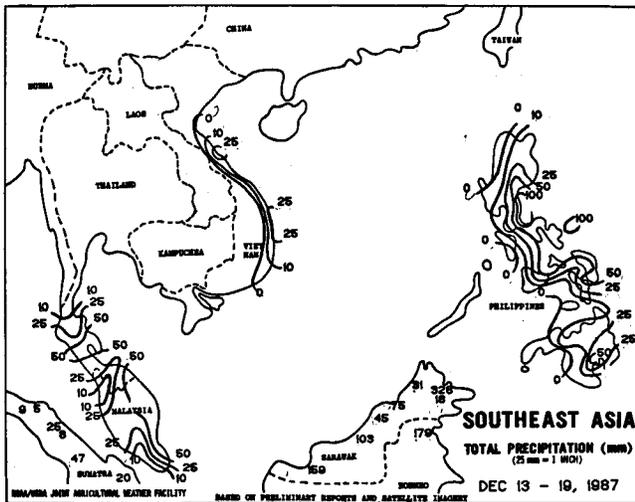
EUROPE...Moderate to heavy rain (up to 130mm) fell over parts of central and northern Europe, bringing most soils to or beyond saturation. Locally heavy rains (greater than 100mm) may have caused flooding in central and southeastern sections of West Germany. Temperatures moderated over most of northern and western Europe, allowing further cold hardening and establishment of late-planted winter grains. In the south, rain fell mainly in western sections of Portugal, Spain, Italy, and Yugoslavia, benefiting emerging winter grains. Seasonal to above-normal temperatures in southwestern Europe favored germination and establishment of crops.



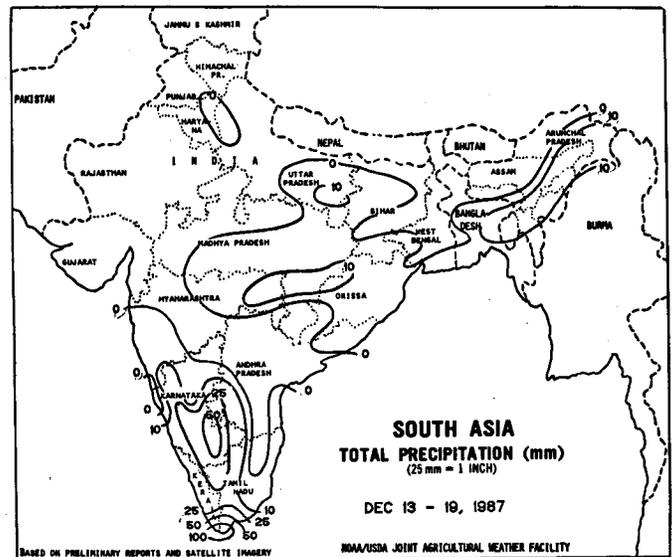
NORTHWESTERN AFRICA... Showers covered Morocco's crop areas, producing weekly rainfall averaging 10-25mm. The moisture provided favorable topsoil conditions for winter grain establishment. Mostly dry weather prevailed over grain areas of Algeria and Tunisia, where moisture is generally adequate for crop planting in major winter grain producing areas. Southernmost crop areas of eastern Algeria and Tunisia have limited moisture reserves for planting and establishment.



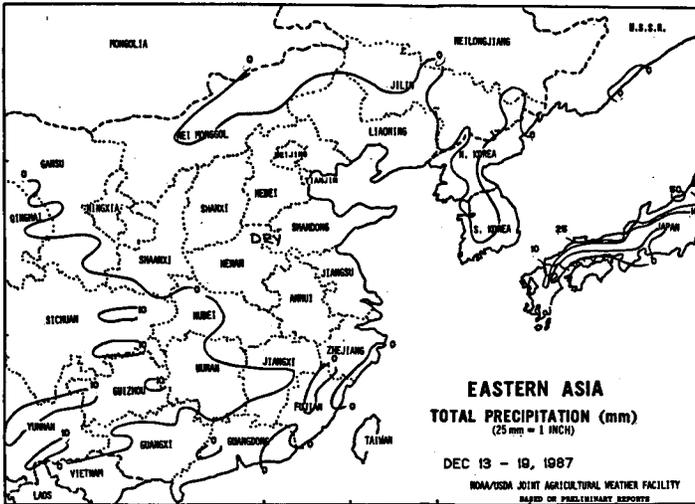
SOUTH AFRICA... Beneficial showers (10-50mm or more) swept through the primary grain regions, maintaining favorable moisture levels for corn emergence and establishment. Heaviest rain (50-100mm or more) fell in minor production regions of Natal, northeastern Transvaal, and the western Maize Triangle. Below-normal rainfall, however, persisted over minor corn regions of the southern Maize Triangle. Temperatures averaged 20-25 degrees C throughout the major corn regions, with average maximum temperatures in some of the drier, minor production regions in the mid-thirties C, increasing the moisture demand of early vegetative crops.



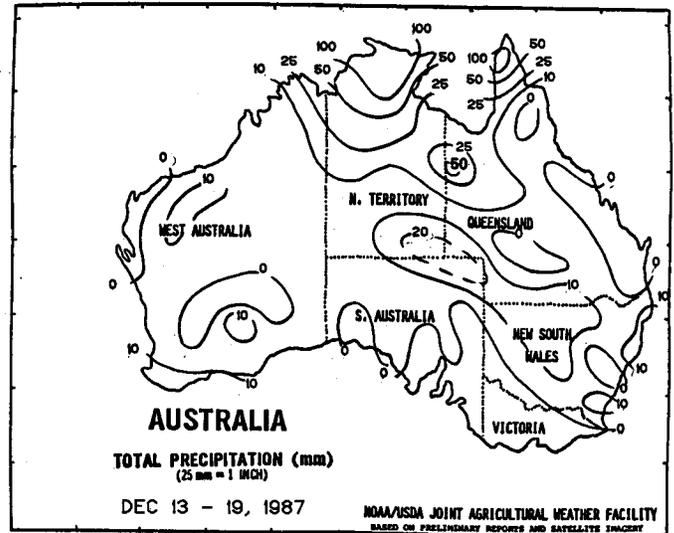
SOUTHEAST ASIA... Dry weather continued throughout Indochina, benefiting maturing, late-planted rice. Light to moderate rain (7-33mm) covered coastal Vietnam. Mostly light to moderate showers (10-57mm) fell along the Malay Peninsula, where inundating rain the first 2 weeks of December caused flooding and crop damage. Moderate to heavy showers fell elsewhere in Malaysia and Indonesia, increasing moisture reserves for rice planting. Typhoon Phyllis brought heavy showers (100mm or more) and high winds to areas of the east-central Philippines hit hard in November by Typhoon Nina. The storm passed over grain, sugarcane, and copra areas of the central Philippines before dissipating, but corn areas of northern Luzon received only light rain, not affecting planting.



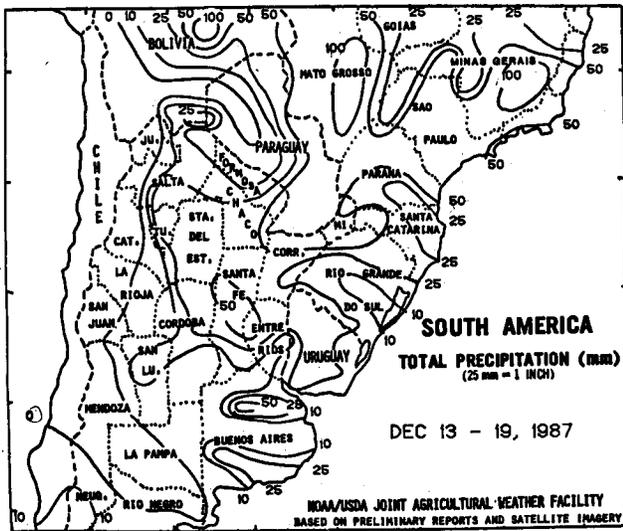
SOUTH ASIA... Scattered, light to moderate rain (1-18mm) fell over central India's rainfed grain regions, bringing some relief to early vegetative wheat and late-filling rice. Mostly dry weather covered winter wheat in northern and northwestern India, following last week's much needed rainfall in drought stricken regions too dry for planting. Moderate to heavy showers (10-65mm) in southern India from Karnataka southward maintained favorable moisture levels for boll forming cotton and rice plantings.



EASTERN ASIA...Light rain fell over Sichuan, Yunnan, Guizhou, Hunan, and Hubei, while other Chinese growing areas remained mostly dry. Some light snow developed over far northern areas of Jilin and Heilongjiang, where considerable snow cover already existed. Temperatures over winter wheat areas were normal to above normal, allowing further establishment of late planted crops. In the south, warm and sunny weather enhanced drying conditions and raised prospects for secondary crops. Above-normal precipitation and saturated soils have been a problem across southeastern China for much of the past 2 months.



AUSTRALIA...Mostly dry weather covered production areas of South Australia, Victoria, and southern New South Wales, favoring wheat harvest. Late-season rains continued over Western Australia's wheat growing areas, however, causing harvest delays in southern sections. Rainfall in the southwest has been above normal since November, although November and December are normally among the driest months of the year. Elsewhere, scattered showers provided some relief to cotton and other summer crops in Queensland and New South Wales after a second consecutive week of above-normal temperatures.



SOUTH AMERICA...In Argentina, mostly light showers (less than 10mm) favored planting of sorghum (over 75 percent complete) and soybeans (about 50 percent complete) in Cordoba, Santa Fe, and northern Buenos Aires. Corn and sunflower plantings are nearly complete. Locally heavier showers (10-50mm) fell in east-central and southern Buenos Aires, causing brief delays in the wheat harvest which, nationally, is about 40 percent complete. Substantial rain (25-50mm) benefited emerging cotton in northern growing areas. Widespread showers covered much of Brazil's center-south corn and soybean growing areas, maintaining favorable moisture for vegetative growth. The rain was especially helpful in Rio Grande do Sul where 10-50mm of rain late in the week improved topsoil conditions. Maximum temperatures on December 16 ranged from 35 to 37 degrees C in the major soybean areas of western Rio Grande do Sul, creating stressful conditions for newly emerging soybeans.

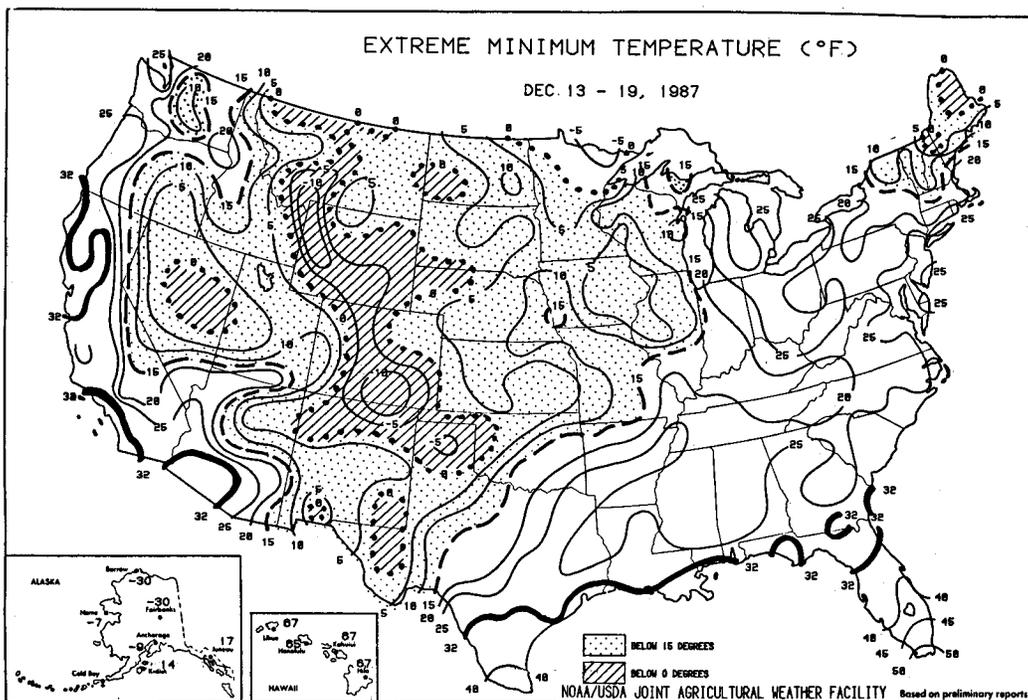
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