

# WEEKLY WEATHER AND CROP BULLETIN

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

U.S. DEPARTMENT OF AGRICULTURE  
National Agricultural Statistics Service and World Agricultural Outlook Board

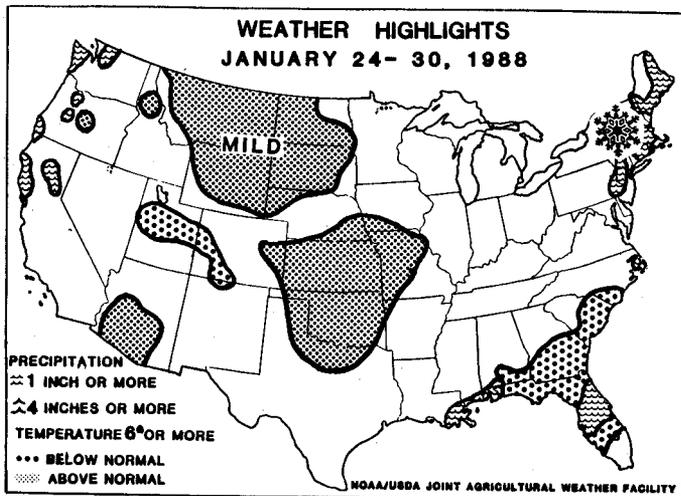
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## National Weather Summary

January 24 - 30, 1988



**HIGHLIGHTS:** Early in the week, a cold air mass spread across the northern Plains, the Mississippi Valley, and the East as a major winter storm moved up the east coast. At midweek, most of the Nation had dry weather, and cold weather continued in the East. In the latter part of the week, a rapid warming occurred over most of the Nation east of the Rockies. This warmup came to an abrupt end in the northern Plains on Saturday as another arctic air mass advanced southward out of Canada.

**SUNDAY...**An arctic air mass moved southward into the Dakotas, Minnesota, and Wyoming, accompanied by snow and blowing snow. Light snow fell in Michigan. Light rain extended along the gulf coast from northwestern Florida to southeastern Texas, and across much of Mississippi and Alabama. Strong, gusty winds brought dry, warm weather to southern California.

**MONDAY...**Arctic air continued to move southward to the Gulf States. In the north, the leading edge of the cold air mass moved across Illinois and Indiana, causing sharp temperature falls. Snow and blowing snow affected Minnesota, the Great Lakes States, the upper Mississippi Valley, and the Ohio Valley. Temperatures remained below zero all day in parts of Minnesota and Iowa. In the East, a major storm produced heavy rain at coastal locations and heavy snow in the interior.

**TUESDAY...**Monday's east coast storm exited the Nation via New England. Snow showers lingered across much of the Northeast, accompanied by strong northwest winds and sharply lower temperatures. Temperatures remained below freezing all day as far south as the Tennessee Valley and the southern Appalachian Mountains. Strong westerly winds began ushering mild air into

the Great Plains. Temperatures warmed into the sixties in Texas and into the seventies in southern Arizona and southern California.

**WEDNESDAY...**Dry weather returned to most of the Nation. However, the lower Great Lakes and the upper Ohio Valley continued to have snow showers. Cold weather prevailed in the Northeast, where afternoon temperatures remained well below freezing. Morning temperatures were below zero across much of the upper Mississippi Valley and the upper Great Lakes. Below-freezing weather moved into the Southeastern States. Frost was widespread in northern Florida. Mild weather continued to advance across the Great Plains.

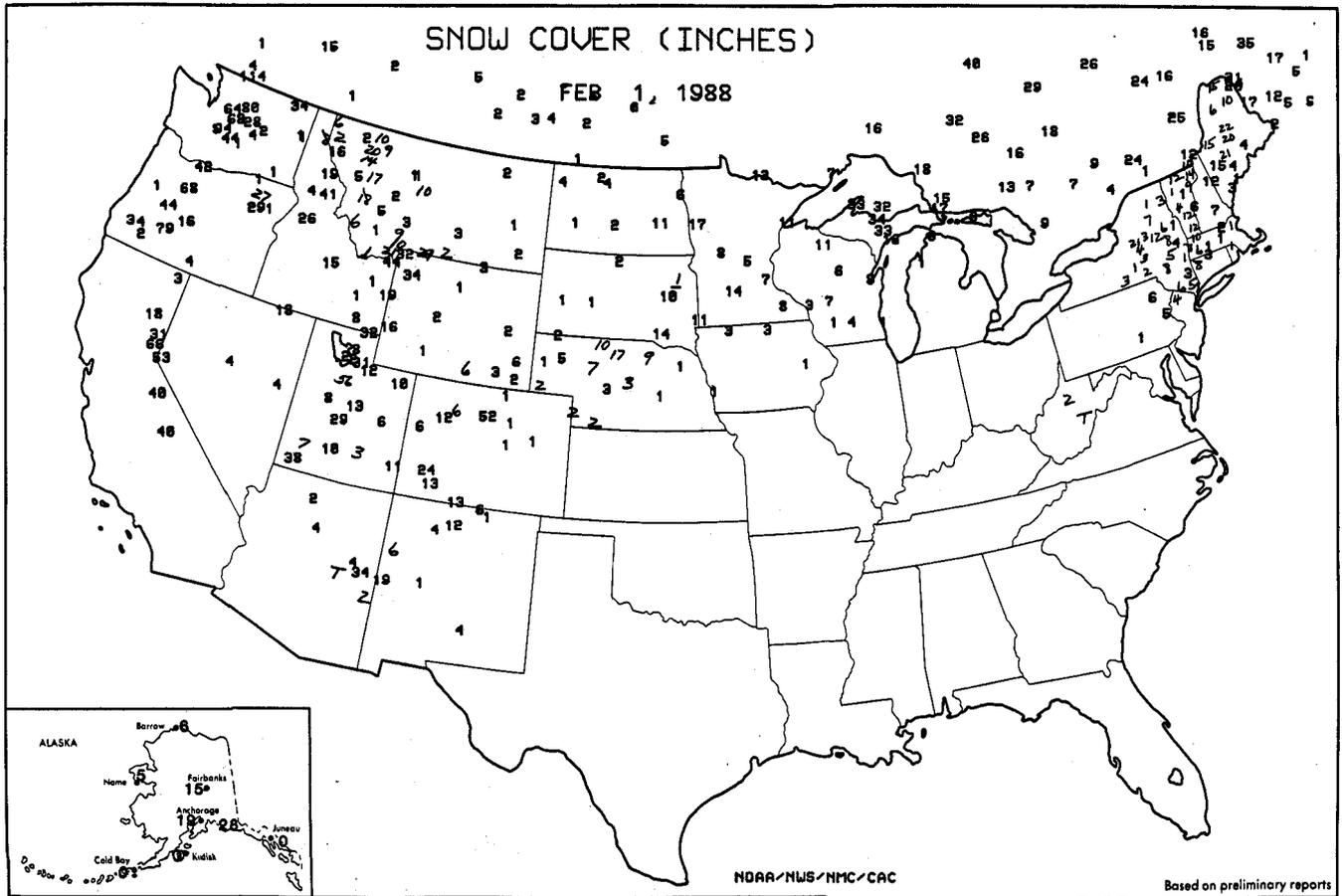
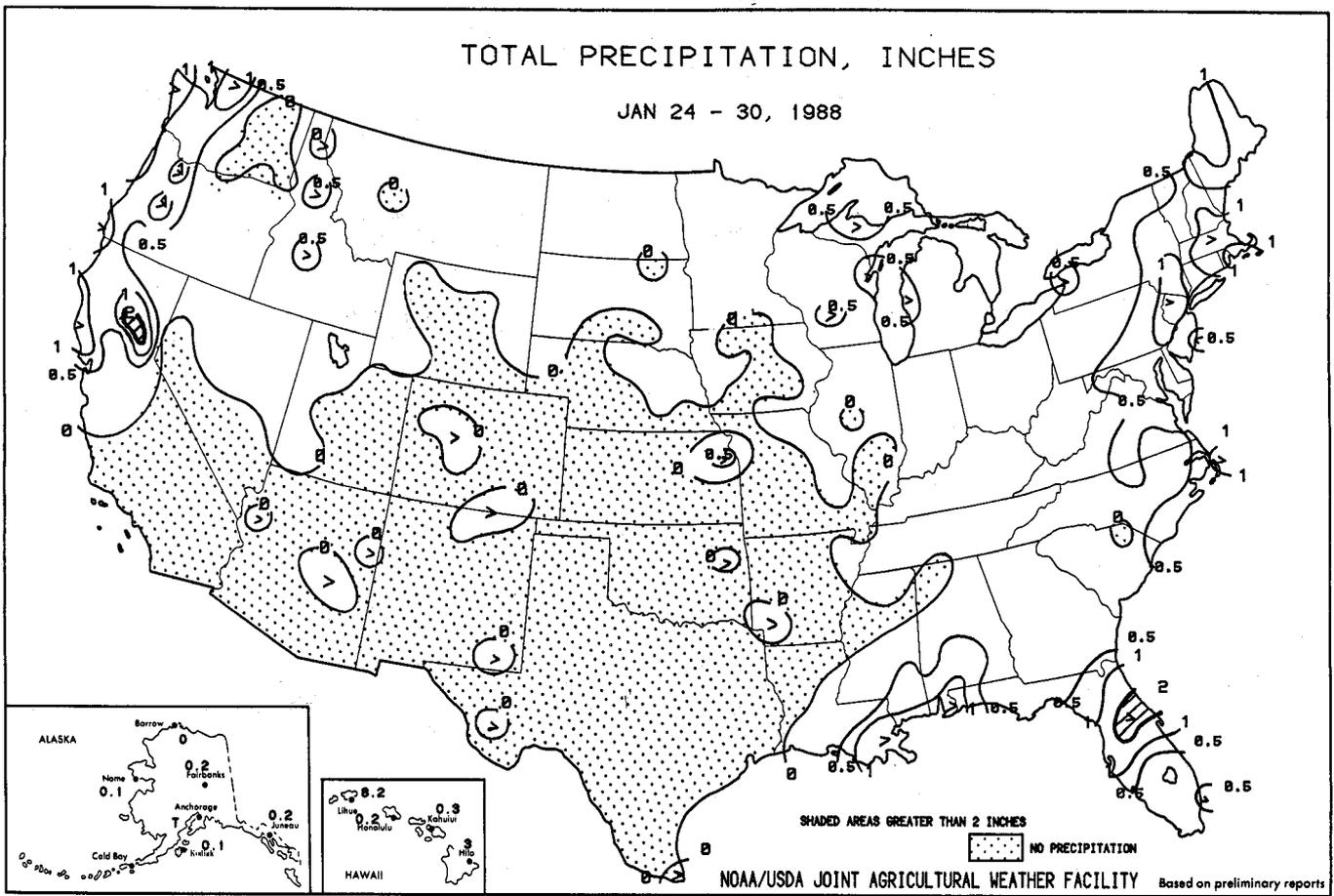
**THURSDAY...**Temperatures dipped into the twenties in northern Florida, but light winds prevented a hard freeze over most of the peninsula. Simultaneously, parts of the Pacific Northwest enjoyed unseasonably mild weather. Snowshowers continued to be widely scattered in Pennsylvania, New York, and Vermont. High temperatures were once again much above normal in the Great Plains. Cold weather continued over the lower Great Lakes and much of the Northeast.

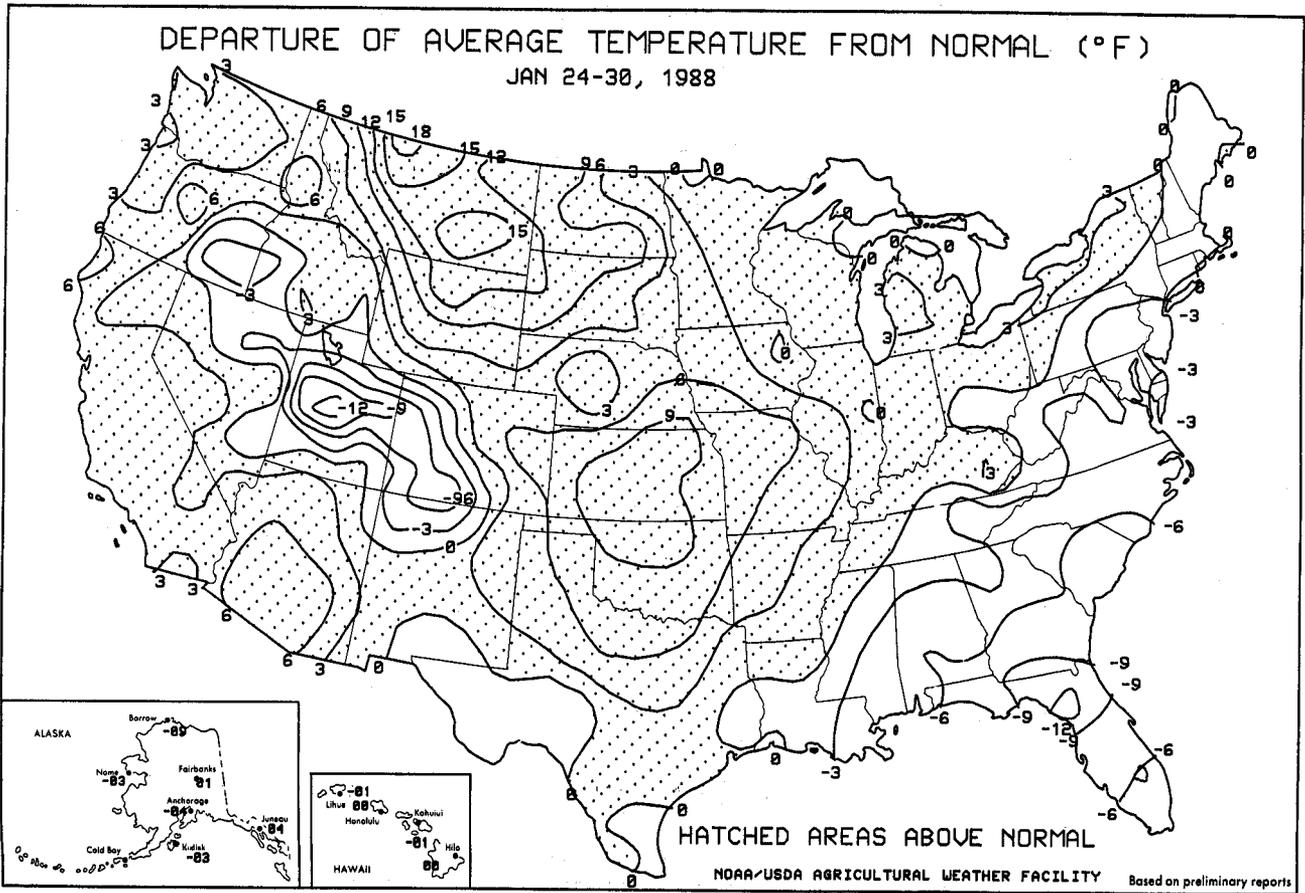
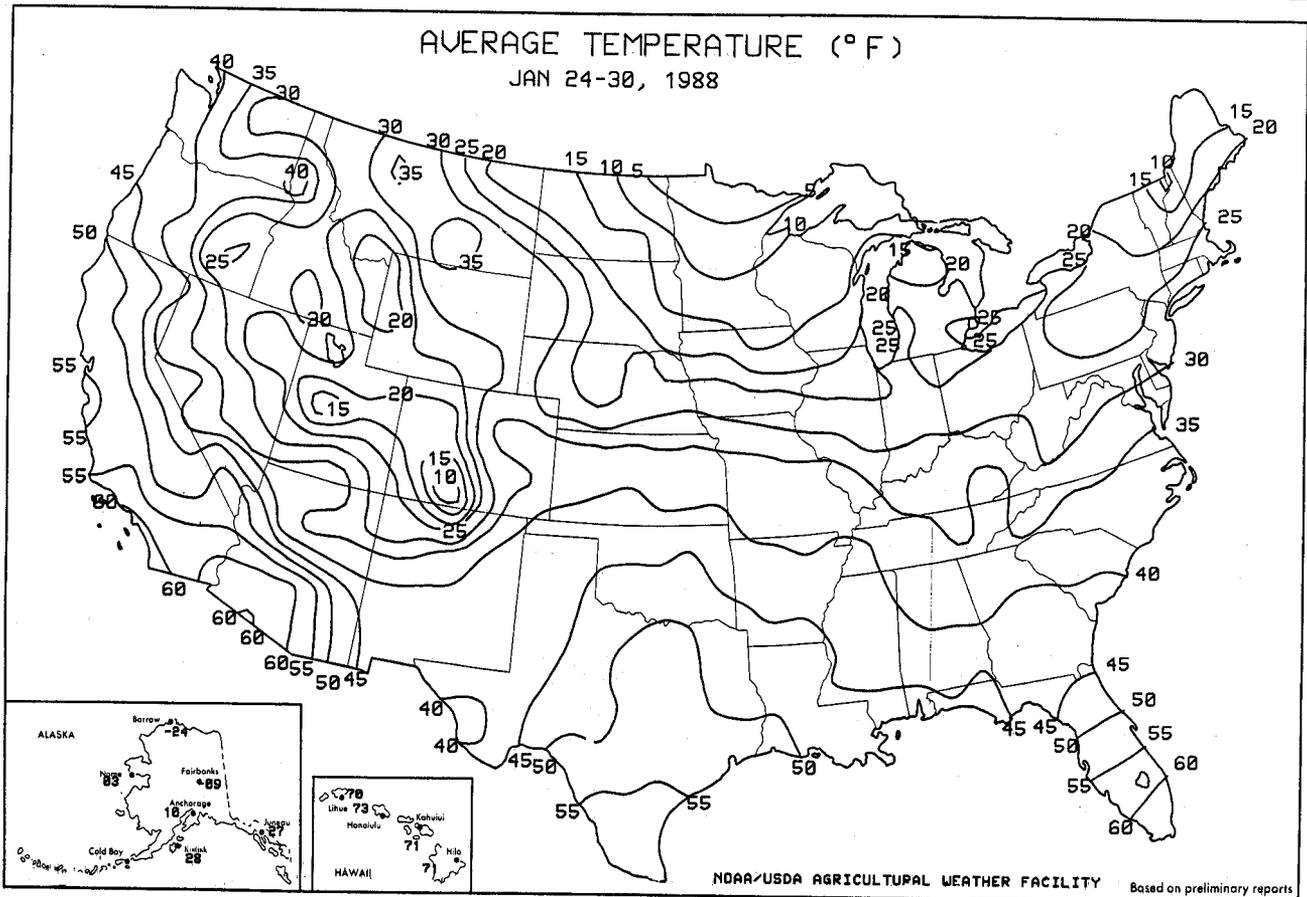
**FRIDAY...**Rainshowers moved into the Pacific Northwest, with snow at higher elevations. High winds accompanied the showers. Temperatures remained below freezing in the northeastern United States. Unseasonably mild weather came to the upper Great Lakes.

**SATURDAY...**Another arctic outbreak began in the northern Rockies and northern Great Plains, as cold air pushed southward into Montana, the Dakotas, Wyoming, and Nebraska. Snowshowers were widespread across the northern Plains and Minnesota. Winds were gusty throughout the day in the central and northern Plains and in the Great Lakes region. Light rain was scattered across central and southern Wisconsin, and lower Michigan. A few showers were scattered along the Oregon and northwest California coast. Most of the Nation east of the Mississippi River enjoyed mild weather.

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# National Weather Data for Selected Cities

Weather Data for the Week Ending January 30, 1988

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		PRECIPITATION	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	52	27	66	16	39	-4	.4	-.8	.4	8.5	85	5.4	107	85	33	0	6	1	0
MOBILE	57	34	70	27	46	-5	1.0	-.0	1.0	8.2	84	4.6	105	92	35	0	3	1	1
MONTGOMERY	56	27	70	21	42	-5	.4	-.5	.2	10.2	116	5.9	146	85	28	0	5	2	0
AK ANCHORAGE	18	2	27	-9	10	-4	T	-.2	T	1.4	79	.3	44	92	70	0	7	1	0
BARROW	-18	-31	-5	-43	-24	-9	0	-.1	0	.2	57	.8	8	75	66	0	7	0	0
FAIRBANKS	-1	-18	12	-32	-9	1	.2	-.0	.1	7.8	67	.3	62	82	69	0	7	3	0
JUNEAU	31	22	39	8	27	4	.2	-.6	.1	9.6	96	2.6	73	85	53	0	6	2	0
KODIAK	33	23	40	16	28	-2	-1.1	-1.2	.1	8.7	78	6.3	113	83	60	0	6	3	0
NOME	10	-4	31	-22	3	-3	-1.1	-1.1	.1	1.7	120	.5	64	83	64	0	7	2	0
AZ PHOENIX	75	49	80	39	62	9	0	-.1	0	2.5	166	.9	126	49	16	0	0	0	0
PRESCOTT	59	28	65	19	44	7	0	-.4	0	1.4	43	.7	44	72	24	0	5	0	0
TUCSON	75	43	81	32	59	8	0	-.2	0	1.7	101	.2	29	54	15	0	1	0	0
YUMA	74	50	82	44	62	5	0	-.1	0	.9	126	.2	69	42	18	0	0	0	0
AR FORT SMITH	56	29	68	17	43	4	T	-.4	0	9.8	212	1.7	93	89	40	0	5	0	0
LITTLE ROCK	53	35	66	23	44	3	0	-.9	0	16.7	210	3.0	78	63	41	0	3	0	0
CA BAKERSFIELD	69	40	77	35	54	5	T	-.2	0	1.5	94	.6	69	93	43	0	0	0	0
EUREKA	63	47	69	43	55	7	.6	-.9	.6	18.1	139	7.2	106	82	58	0	0	3	1
FRESNO	65	39	68	32	52	5	0	-.5	0	2.7	76	1.5	77	97	48	0	1	0	0
LOS ANGELES	74	51	83	45	63	6	0	-.7	0	3.4	75	1.6	55	71	32	0	0	0	0
REDDING	61	39	74	31	50	2	-.9	-1.0	.7	16.3	107	7.3	88	85	44	0	1	2	1
SACRAMENTO	61	41	66	35	51	4	.1	-.8	.1	5.8	85	2.6	68	98	61	0	0	1	0
SAN DIEGO	73	49	78	46	61	5	0	-.4	0	3.7	94	.9	46	76	28	0	0	0	0
SAN FRANCISCO	62	47	69	45	54	5	.4	-.6	.4	8.4	105	3.9	86	91	54	0	0	2	0
CO DENVER	51	22	63	10	36	6	0	-.1	0	1.7	169	.4	85	74	28	0	6	0	0
GRAND JUNCTION	31	4	37	-3	18	-9	0	-.1	0	1.9	165	1.1	186	89	54	0	7	0	0
PUEBLO	47	16	57	1	32	1	0	-.1	0	1.0	187	.6	238	95	41	0	7	0	0
CT BRIDGEPORT	35	22	44	13	29	0	.6	-.1	.3	4.6	66	2.5	79	82	55	0	7	2	0
HARTFORD	34	13	45	-2	24	-2	1.2	.5	1.1	4.9	65	3.4	99	84	51	0	7	2	1
DC WASHINGTON	40	23	53	16	32	-3	.6	0	.6	5.7	98	3.1	117	87	47	0	7	1	1
FL APALACHICOLA	56	36	64	28	46	-7	.4	-.4	.3	3.8	55	2.9	84	89	39	0	3	2	0
DAYTONA BEACH	61	38	72	32	49	-9	3.3	2.7	1.8	5.6	125	5.4	234	91	44	0	3	2	2
JACKSONVILLE	57	33	69	25	45	-9	.7	0	.4	6.5	123	6.3	225	91	36	0	4	2	0
KEY WEST	70	58	77	53	64	-6	.6	.2	.6	7.7	227	4.9	297	81	52	0	0	0	0
MIAMI	71	54	81	45	62	-5	.3	-.2	.2	6.2	161	1.9	95	80	48	0	0	1	1
ORLANDO	62	43	70	36	53	-7	-1.7	1.1	1.2	3.6	91	3.1	151	86	43	0	0	2	1
TALLAHASSEE	58	26	70	19	42	-10	.3	-.7	.2	4.5	49	3.5	77	93	32	0	5	2	0
TAMPA	63	42	76	33	52	-7	1.5	1.0	.9	3.3	78	2.8	134	88	38	0	0	2	2
WEST PALM BEACH	70	51	79	42	61	-5	.1	-.6	0	4.8	100	3.4	129	79	48	0	0	2	0
GA ATLANTA	51	28	63	20	40	-2	.3	-.8	.3	8.8	98	4.6	98	73	29	0	6	1	0
AUGUSTA	54	26	67	18	40	-5	.2	-.7	.2	5.7	81	4.3	112	88	29	0	6	1	0
MACON	55	26	67	19	40	-6	.3	-.6	.3	7.3	90	5.5	132	89	29	0	6	1	0
SAVANNAH	54	30	67	22	42	-7	.2	-.6	.2	4.7	81	3.3	110	84	34	0	4	2	0
HI HILO	78	63	81	60	71	0	3.0	.7	1.2	32.3	147	10.1	111	96	68	0	0	6	3
HONOLULU	79	67	82	63	73	0	.2	-.6	-.1	20.9	296	3.6	99	91	62	0	0	2	0
KAHALUI	77	65	82	59	71	-1	.3	-.6	.2	12.3	185	6.7	172	91	63	0	0	3	0
LIHUE	75	65	80	60	70	-1	8.2	6.9	5.8	20.8	182	10.0	165	94	70	0	0	5	2
ID BOISE	37	19	42	9	28	-3	.3	-.1	.3	2.4	82	1.3	83	95	57	0	7	2	0
LEWISTON	47	35	52	25	41	8	T	-.3	T	1.4	54	.6	46	71	39	0	3	0	0
POCATELLO	34	13	42	2	24	-1	.3	.1	.2	2.4	118	1.1	108	97	64	0	7	2	0
IL CHICAGO	34	12	55	-7	23	3	.1	-.2	.1	5.6	144	1.9	119	88	59	0	6	3	0
MOLINE	34	12	59	-4	23	3	.1	-.2	.1	6.2	178	1.7	111	87	61	0	6	2	0
PEORIA	36	14	56	-3	25	3	.1	-.2	.1	6.1	172	2.0	128	90	65	0	6	1	0
QUINCY	40	18	62	1	29	6	T	-.3	T	5.1	169	1.3	102	83	54	0	6	1	0
ROCKFORD	31	8	51	-13	19	1	.1	-.2	.1	6.5	198	2.4	179	90	66	0	6	2	0
SPRINGFIELD	40	19	59	4	30	5	T	-.3	T	7.2	196	2.2	141	85	55	0	5	0	0
IN EVANSVILLE	42	21	61	6	32	1	T	-.6	T	8.9	141	3.3	112	89	56	0	6	1	0
FORT WAYNE	35	14	55	-2	24	1	.1	-.4	.1	5.0	112	1.5	77	86	60	0	6	2	0
INDIANAPOLIS	36	18	56	-3	27	1	.1	-.5	.1	7.2	130	2.4	94	86	60	0	6	1	0
SOUTH BEND	34	15	54	-5	25	1	.3	-.2	.1	6.3	119	2.2	93	89	62	0	6	4	0
IA DES MOINES	34	14	57	-8	24	5	T	-.1	T	3.0	149	.4	39	85	63	0	6	0	0
SIoux CITY	31	9	49	-14	20	4	T	-.1	T	1.2	91	.7	124	92	68	0	7	1	0
WATERLOO	25	6	47	-10	16	1	.1	-.1	.1	2.6	134	.7	95	96	76	0	6	1	0
KS CONCORDIA	47	23	61	7	35	9	T	-.1	T	1.5	117	.7	122	85	44	0	5	0	0
DODGE CITY	56	25	68	9	41	10	T	-.1	T	1.6	177	.9	222	83	29	0	5	0	0
GOODLAND	47	23	60	5	35	7	T	-.1	T	2.1	277	1.6	454	85	41	0	6	0	0
TOPEKA	47	24	65	8	36	9	.9	-.7	.9	3.9	183	2.0	235	83	46	0	5	1	1
WICHITA	49	28	64	13	39	9	T	-.1	T	2.8	170	.5	78	88	51	0	5	0	0
KY BOWLING GREEN	44	23	62	11	34	0	.1	-.9	.1	10.2	114	3.3	73	89	52	0	5	1	0
LEXINGTON	43	21	62	7	32	0	.1	-.7	.1	9.1	126	2.9	85	79	45	0	5	2	0
LOUISVILLE	43	23	63	9	33	1	T	-.7	T	8.8	132	4.1	128	86	47	0	6	1	0
LA ALEXANDRIA	63	35	72	26	49	0	T	-1.0	T	9.5	104	1.7	40	75	34	0	3	0	0
BATON ROUGE	61	35	74	26	48	-3	.2	-.9	.2	7.8	83	3.9	88	88	30	0	3	1	0
LAKE CHARLES	64	37	71	28	51	0	T	-.9	T	7.7	81	2.7	62	87	36	0	4	1	0
NEW ORLEANS	60	38	73	29	49	-4	1.7	-.6	1.7	6.6	65	3.7	77	88	37	0	2	1	1

Based on 1951-80 normals.

Weather Data for the Week Ending January 30, 1988

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		PRECIPITATION	
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
ME SHREVEPORT	61	32	71	21	47	0	0	-9	0	10.2	130	2.1	53	86	33	0	4	0	0
ME CARIBOU	20	0	36	-21	10	-1	1.1	.6	.9	5.4	99	2.8	125	95	72	0	7	4	1
ME FORTLAND	32	12	41	-4	22	1	.8	0	.5	4.0	49	2.0	54	88	57	0	7	2	1
MD BALTIMORE	39	18	52	8	28	-4	.9	.2	.8	5.3	85	3.2	112	89	46	0	6	2	1
MD SALISBURY	41	22	53	14	31	-3	.6	-1	.6	6.7	96	3.5	108	91	42	0	6	1	1
MA BOSTON	35	22	46	14	29	-1	1.1	.2	.9	4.7	56	2.6	67	78	52	0	6	2	1
MA CHATHAM	36	24	43	15	30	0	1.0	-1	1.0	7.1	78	2.9	69	84	56	0	6	2	1
MI ALPENA	27	7	46	-4	17	-1	.2	-2	-1	3.6	100	1.5	88	91	67	0	7	3	1
MI DETROIT	34	18	53	5	26	0	.4	-1	-1	5.9	137	1.3	73	87	62	0	6	4	0
MI FLINT	32	16	51	0	24	0	.4	-2	-1	3.7	106	1.2	78	88	61	0	6	4	0
MI GRAND RAPIDS	33	18	52	5	25	0	.4	0	1	5.7	126	2.4	124	90	68	0	6	5	0
MI HOUGHTON LAKE	27	10	45	-9	18	2	.2	-1	-1	3.9	117	1.4	99	89	64	0	7	2	0
MI LANSING	32	12	52	-7	22	3	.2	-1	-1	4.9	120	1.5	91	89	65	0	6	4	0
MI MARQUETTE	22	6	36	-7	14	-3	.6	-3	.4	7.6	203	4.0	241	97	69	0	7	4	0
MI MUSKOGON	32	21	49	15	26	4	.5	-1	.3	7.0	143	2.8	122	91	67	0	6	4	0
MI SAULT ST. MARIE	20	3	38	-11	11	-1	.2	-3	-1	6.2	133	3.1	148	90	62	0	7	4	0
MI ALEXANDRIA	20	-1	38	-23	9	3	0	T	T	1.8	115	1.1	137	89	67	0	7	1	0
MI DULUTH	17	-3	35	-19	7	3	0	T	T	1.5	61	.8	72	88	63	0	7	3	0
MI INT'L FALLS	14	-9	34	-31	3	2	1	T	T	.7	37	.4	53	89	60	0	7	2	0
MI MINNEAPOLIS	21	4	39	-14	13	1	1	T	T	2.7	164	1.4	178	87	66	0	7	1	0
MI ROCHESTER	21	0	39	-18	10	0	0	T	T	2.8	168	1.1	138	93	77	0	6	1	0
MS GREENWOOD	55	31	71	19	43	-1	1	-1	0	6.4	61	2.0	40	84	38	0	4	0	0
MS JACKSON	58	30	72	19	44	-1	0	-1	0	5.7	56	2.2	46	92	35	0	4	1	0
MS MERIDIAN	57	25	71	10	41	-1	0	-1	0	7.6	73	3.1	65	95	36	0	6	1	0
MO CAPE GIRARDEAU	47	27	61	14	37	0	0	-6	0	10.8	165	2.6	94	82	47	0	5	0	0
MO COLUMBIA	46	23	64	4	35	6	0	-4	T	7.0	191	1.6	92	80	46	0	5	0	0
MO KANSAS CITY	45	23	63	1	34	6	0	-2	T	3.4	131	1.4	119	87	50	0	5	1	0
MO SAINT LOUIS	46	24	67	6	35	6	0	-4	T	10.8	278	3.3	198	76	47	0	5	1	0
MO SPRINGFIELD	49	27	64	11	38	7	0	-3	T	215	1.3	85	75	35	0	4	0	0	0
MT BILLINGS	49	28	60	0	38	17	1	-1	-1	8.8	48	.5	54	54	29	0	4	1	9
MT GLASGOW	30	9	41	-10	20	11	1	0	0	4	64	.4	114	91	68	0	7	2	0
MT GREAT FALLS	47	26	57	-2	37	16	0	-2	T	1.0	57	.7	79	60	32	0	4	1	0
MT HAVRE	42	18	55	-10	30	17	0	-1	T	.1	6	.3	2	79	41	0	6	1	0
MT HELENA	43	18	50	2	31	11	0	-1	T	.7	54	.3	41	84	42	0	7	0	0
MT KALISPELL	37	16	43	0	26	6	1	-3	0	2.3	73	.7	44	92	58	0	6	2	0
MT MILES CITY	45	18	55	1	32	17	0	0	1	.3	26	.2	39	74	42	0	6	2	0
MT MISSOULA	37	20	45	10	28	6	0	-3	T	1.9	73	.7	55	93	61	0	7	2	0
NE GRAND ISLAND	39	15	55	-2	27	6	0	-1	T	1.9	172	1.1	240	88	58	0	7	1	0
NE LINCOLN	43	16	58	-1	29	9	0	-2	T	1.2	94	.5	77	90	47	0	7	0	0
NE NORFOLK	35	11	49	-10	23	5	0	-1	T	1.5	136	.7	147	91	63	0	7	1	0
NE NORTH PLATTE	37	9	46	-5	23	1	0	-1	T	1.5	203	.7	209	94	56	0	7	1	0
NE OMAHA	38	15	56	-8	26	6	0	-2	T	1.2	82	.4	61	88	61	0	5	1	0
NE SCOTTSBLUFF	43	18	54	7	31	6	0	0	T	1.7	188	.7	167	86	47	0	7	1	0
NE VALENTINE	34	9	43	-11	22	3	0	0	T	2.6	512	.8	313	92	63	0	7	2	0
NV ELY	45	13	53	0	29	3	0	-1	1	1.9	132	1.2	174	81	39	0	7	1	0
NV LAS VEGAS	62	37	70	30	50	4	0	0	0	1.5	203	.7	141	68	22	0	2	0	0
NV RENO	48	26	60	19	37	4	0	-3	T	1.3	55	.7	60	90	44	0	6	0	0
NV WINEMOCCA	43	18	48	8	31	-1	0	-2	0	1.8	108	1.1	135	88	43	0	7	0	0
NH CONCORD	31	7	44	-10	19	-1	0	.3	0	3.5	57	2.0	73	90	55	0	7	2	1
NJ ATLANTIC CITY	38	19	51	9	29	-3	0	-4	0	5.2	74	3.0	89	93	50	0	6	1	0
NM ALBUQUERQUE	51	23	60	11	37	1	0	-1	0	.5	57	.2	41	69	22	0	6	0	0
NM CLOVIS	58	27	67	16	43	5	0	-1	T	1.9	181	.1	19	57	19	0	5	0	0
NM ROSWELL	59	23	67	14	41	1	0	-1	0	1.6	224	.2	63	71	22	0	7	0	0
NY ALBANY	31	11	42	-8	21	0	0	.3	0	3.7	71	2.1	90	91	53	0	7	2	1
NY BINGHAMTON	29	14	44	5	21	1	0	-2	0	3.8	71	1.6	64	90	56	0	7	2	0
NY BUFFALO	35	19	54	5	27	4	0	-1	0	4.4	69	1.6	55	85	58	0	6	4	0
NY NEW YORK	36	25	46	19	30	-1	0	-1	0	4.9	73	2.6	86	81	54	0	6	2	0
NY ROCHESTER	34	18	54	6	26	3	0	-5	T	2.7	55	.7	30	83	55	0	7	1	0
NY SYRACUSE	34	19	53	7	26	4	0	-3	0	3.5	61	1.5	60	85	52	0	6	4	0
NC ASHEVILLE	45	19	59	14	32	-5	0	-5	0	6.0	97	3.7	121	87	35	0	6	1	0
NC CHARLOTTE	48	26	61	17	37	-4	0	-6	0	6.9	98	3.5	95	82	39	0	5	1	0
NC GREENSBORO	46	22	62	15	34	-3	0	-5	0	5.8	86	2.4	71	83	36	0	6	1	0
NC HATTERAS	50	30	64	24	40	-5	1.0	-1	1.0	8.0	89	5.8	124	92	46	0	6	1	1
NC NEW BERN	51	27	67	19	39	-5	0	-3	0	8.3	110	4.8	123	90	35	0	6	1	1
NC RALEIGH	48	24	64	15	36	-4	0	-3	0	6.1	93	3.0	89	87	36	0	5	1	1
NC WILMINGTON	51	28	67	20	40	-6	0	-9	0	6.8	97	5.4	153	94	34	0	6	1	1
ND BISMARCK	28	3	44	-22	16	9	0	-1	0	.8	84	.7	147	89	65	0	7	3	0
ND FARGO	18	0	35	-19	9	4	0	.2	0	2.3	204	1.6	312	92	76	0	7	2	0
ND GRAND FORKS	16	-4	32	-19	6	4	0	0	0	1.0	77	.7	92	89	73	0	7	2	0
ND WILLISTON	30	2	40	-18	16	8	0	1	0	.8	84	.7	157	93	69	0	7	3	0
OH AKRON-CANTON	33	16	55	3	24	0	0	-4	0	3.5	68	1.2	48	83	58	0	6	4	0
OH CINCINNATI	39	18	61	1	29	0	0	-5	0	6.2	104	2.8	93	82	50	0	6	3	0
OH CLEVELAND	34	17	55	4	26	1	0	-4	0	4.1	80	1.2	48	85	59	0	6	4	0
OH COLUMBUS	37	17	57	-1	27	0	0	-1	0	5.0	97	2.2	81	83	48	0	6	5	0

Based on 1951-80 normals.

Weather Data for the Week Ending January 30, 1988

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 OF			
																90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
DAYTON	37	16	58	-2	27	0	.1	-.5	.1	4.5	90	1.5	59	82	54	0	6	3	0
TOLEDO	33	16	53	5	24	1	.2	-.2	.2	4.9	108	1.1	58	92	67	0	6	3	0
YOUNGSTOWN	34	17	56	3	26	2	.2	-.4	.1	3.7	68	.9	36	87	61	0	6	2	0
OK OKLAHOMA CITY	56	35	69	22	45	9	0	-.2	0	5.0	237	1.2	132	76	37	0	4	0	0
TULSA	55	35	67	19	45	9	0	-.3	0	7.0	225	1.1	85	72	37	0	4	0	0
OR ASTORIA	53	38	60	34	45	4	.8	-1.4	.6	15.2	69	6.3	61	93	58	0	0	3	1
BURNS	35	16	42	2	25	3	.7	-.4	.7	3.2	93	1.1	61	***	***	0	7	1	0
MEDFORD	53	34	61	25	43	4	.2	-.5	.2	6.2	92	2.4	74	91	45	0	3	2	0
BENDLETON	45	30	55	28	37	3	.1	-.3	.1	3.1	92	1.8	109	91	57	0	6	1	0
PORTLAND	49	35	53	30	42	2	.6	-.7	.3	12.8	103	4.8	80	96	63	0	3	3	0
SALEM	49	34	60	29	41	1	.1	-.8	.3	17.7	127	6.7	98	97	72	0	3	3	0
PA ALLENTOWN	32	11	47	-6	22	5	.9	-.2	.8	4.2	61	2.7	84	93	59	0	7	2	1
ERIE	36	20	55	10	28	4	.4	-.1	.1	4.8	86	1.4	61	82	55	0	6	4	0
HARRISBURG	34	14	48	2	24	4	.8	-.2	.8	4.0	66	2.2	76	93	54	0	7	2	1
PHILADELPHIA	36	18	49	12	27	4	.8	-.1	.7	4.4	68	2.7	89	91	57	0	7	2	1
PITTSBURGH	37	19	58	5	28	1	.1	-.5	.1	3.9	74	1.5	55	86	54	0	6	3	0
SCRANTON	31	13	44	-1	22	3	.7	-.2	.6	2.4	51	1.4	65	97	60	0	7	2	1
RI PROVIDENCE	37	21	47	11	29	1	1.0	-.1	.8	4.9	58	2.7	69	82	53	0	6	2	1
SC CHARLESTON	53	30	67	21	41	1	-.7	-.3	.4	4.3	68	2.7	85	94	38	0	4	1	0
COLUMBIA	52	25	67	16	39	6	.2	-.8	.2	5.6	73	4.1	97	90	31	0	6	1	0
FLORENCE	52	26	68	18	39	6	.7	-.8	.7	5.1	80	2.7	79	88	31	0	6	0	0
GREENVILLE	50	24	62	15	37	4	.1	-.9	.1	8.5	104	3.9	95	84	31	0	5	1	0
SD ABERDEEN	28	4	48	-14	16	8	.7	-.1	.7	4.4	41	.3	64	92	65	0	7	1	0
HURON	26	5	38	-16	15	4	.7	-.1	.7	1.7	190	.4	103	91	69	0	7	1	0
RAPID CITY	47	19	66	6	33	11	.1	0	.1	.5	60	.2	49	79	39	0	6	2	0
SIOUX FALLS	26	6	40	-20	16	3	.1	-.1	.1	2.9	247	1.5	321	93	68	0	7	1	0
TN CHATTANOOGA	50	22	64	14	36	3	.2	-1.0	.1	10.3	101	7.1	140	87	32	0	7	2	0
KNOXVILLE	50	22	66	13	36	2	.2	-.8	.1	7.7	85	4.2	94	85	35	0	6	2	0
MEMPHIS	51	31	67	9	41	2	.7	-1.0	.7	15.7	169	4.3	97	75	39	0	4	1	0
NASHVILLE	49	24	65	13	36	1	.1	-.9	0	9.2	103	3.7	86	83	40	0	5	2	0
TX ABILENE	62	38	71	24	50	6	0	-.2	0	4.6	254	.1	5	71	30	0	4	0	0
AMARILLO	58	26	69	18	42	6	0	-.1	0	2.1	219	.4	74	70	19	0	5	0	0
AUSTIN	66	40	75	33	53	4	0	-.4	0	1.6	44	.3	18	77	30	0	0	0	0
BEAUMONT	64	39	72	26	52	1	0	-.9	0	9.3	105	3.1	78	86	38	0	2	0	0
BROWNSVILLE	71	45	76	35	58	3	.1	-.3	.1	4.4	190	4.0	333	93	42	0	0	1	0
CORPUS CHRISTI	70	42	76	28	56	1	0	-.4	0	1.8	64	.9	54	90	38	0	2	0	0
DEL RIO	66	38	72	28	52	0	0	-.1	0	.7	62	.1	12	72	27	0	3	0	0
EL PASO	60	27	69	19	44	2	0	-.1	0	3.1	433	.3	71	69	18	0	5	0	0
FORT WORTH	63	38	73	25	50	6	0	-.4	0	3.3	97	.4	23	82	33	0	3	0	0
GALVESTON	62	49	67	41	55	2	0	-.6	0	4.7	72	2.9	100	79	46	0	0	0	0
HOUSTON	65	38	73	29	52	1	0	-.8	0	5.8	82	1.3	38	86	34	0	3	0	0
LUBBOCK	59	29	68	18	44	5	0	-.1	0	1.2	171	.1	40	76	26	0	5	0	0
MIDLAND	61	26	69	14	44	0	0	-.1	0	.4	48	.3	3	79	26	0	5	0	0
SAN ANGELO	62	34	68	20	48	2	0	-.2	0	2.1	166	.2	2	81	30	0	4	0	0
SAN ANTONIO	67	38	75	24	53	2	0	-.4	0	2.5	88	.3	22	80	29	0	3	0	0
VICTORIA	69	40	76	32	54	2	0	-.4	0	2.2	55	.3	17	90	36	0	1	0	0
WACO	65	36	72	26	51	4	0	-.4	0	3.8	108	.5	29	82	31	0	3	0	0
WICHITA FALLS	62	35	74	26	48	7	0	-.2	0	6.0	291	1.2	134	81	33	0	3	0	0
UT BLANDING	41	15	48	6	28	0	0	-.3	0	2.8	108	2.0	155	88	58	0	7	0	0
CEDAR CITY	44	18	53	2	31	0	.3	-.2	.3	2.2	175	1.1	187	90	45	0	5	1	0
SALT LAKE CITY	34	18	40	13	26	4	.7	-.3	.7	2.1	80	1.0	78	94	63	0	7	2	0
VT BURLINGTON	29	8	43	-7	18	2	.2	-.2	.1	1.9	44	.7	39	86	52	0	7	3	0
VA NORFOLK	46	26	64	18	36	4	.3	-.6	.3	5.5	81	3.1	87	88	36	0	5	1	0
RICHMOND	44	22	62	14	33	3	.5	-.3	.5	5.4	83	2.6	82	91	39	0	6	1	0
ROANOKE	44	20	63	13	32	4	.2	-.4	.2	4.1	72	1.9	69	85	36	0	7	1	0
WA QUILLAYUTE	49	37	54	31	43	4	1.9	-1.1	1.3	21.0	67	9.3	66	99	71	0	1	4	1
SEATTLE-TACOMA	47	35	54	28	41	1	.6	-.7	.5	10.2	84	4.1	70	97	69	0	2	3	1
SPOKANE	37	24	47	12	30	3	.1	-.4	0	6.7	138	1.8	74	91	66	0	6	3	0
YAKIMA	39	23	43	19	31	2	.7	-.3	.7	4.0	151	.7	51	93	60	0	7	1	0
WV BECKLEY	36	20	58	4	28	2	.3	-.5	.2	6.4	100	2.1	64	88	51	0	6	4	0
CHARLESTON	42	22	64	9	32	1	.2	-.6	.1	5.7	87	1.6	47	85	46	0	5	4	0
HUNTINGTON	44	24	64	10	34	1	.1	-.6	.1	6.8	109	2.0	64	83	40	0	5	3	0
PARKERSBURG	39	20	61	6	30	2	-.1	-.6	0	4.3	78	1.1	39	77	44	0	6	2	0
WI GREEN BAY	24	6	41	-15	15	1	.6	.3	.3	3.9	153	1.9	162	96	68	0	6	4	0
LACROSSE	25	5	45	-15	15	1	.7	-.2	.7	2.8	139	.9	103	89	65	0	6	2	0
MADISON	26	6	46	-18	16	0	.4	-.1	.3	5.9	230	1.8	171	89	66	0	6	3	0
MILWAUKEE	31	14	53	-5	22	3	.3	-.1	.1	8.7	242	3.3	209	95	69	0	6	4	0
WAUSAU	23	4	42	-17	14	3	.2	0	.1	1.8	85	.4	41	88	64	0	6	3	0
WY CASPER	41	21	50	9	31	8	.7	-.1	.7	.9	95	.3	60	67	38	0	5	0	0
CHEYENNE	42	23	55	10	33	6	0	-.1	0	1.3	183	.5	134	64	34	0	6	0	0
LANDER	41	16	48	7	29	8	.7	-.1	.7	.8	83	.1	19	70	40	0	7	0	0
SHERIDAN	46	22	58	11	34	13	.2	0	.2	.8	53	.4	61	84	38	0	6	1	0
PR SAN JUAN	83	71	84	69	77	0	.8	.3	.3	11.5	160	3.8	134	92	71	0	0	5	0

Based on 1951-80 normals.

Heating Degree Days Summary

CLIMATE ANALYSIS CENTER-NMC-NWS-NOAA
ASSESSMENT AND INFORMATION SERVICES CENTER-NESDIS-NOAA

LAST DATE OF DATA COLLECTION PERIOD IS 1-30-1988
ACCUMULATIONS ARE FROM JULY 1
\*\* = NORMAL LESS THAN 100 OR RATIO INCALCULABLE

Table with columns: STATE CITY, CALL WEEK, WEEK, WEEK, CUM, CUM, CUM, CUM, CUM. Lists heating degree days for various cities including Birmingham, Mobile, Montgomery, etc.

Table with columns: STATE CITY, CALL WEEK, WEEK, WEEK, CUM, CUM, CUM, CUM, CUM. Lists heating degree days for various cities including Kalispell, Miles City, Missoula, etc.

**National Agricultural Summary**

January 25 to 31, 1988

**HIGHLIGHTS:** Freezing temperatures swept into Florida but left vegetables and citrus fruit virtually unharmed. Above-normal temperatures promoted small grain growth in southern Great Plains and Delta but melted snow cover in the northern and central Great Plains, leaving small grains vulnerable to freeze damage. Cotton harvest crept towards completion in Oklahoma. Thawing soils limited fieldwork in the Corn Belt. Livestock was mostly good.

**SMALL GRAINS:** Winter wheat and small grains were mostly good to fair. Small grains responded well to warmer temperatures in California. Indiana's wheat was mostly good but was hurt by cold weather in some areas from the lack of snow cover. Rain and warm temperatures eliminated virtually all snow protection in Michigan. Winter grain growth progressed slower than normal in New Mexico. In Ohio, early-week snow cover provided some protection to winter wheat from extreme cold and wind. Georgia's small grains were topdressed as the weather permitted. Melted snow subjected the wheat crop to possible freeze damage in Kansas. Warm temperatures promoted winter grain growth in Mississippi. Nebraska's wheat was protected from subzero temperatures and high winds in most areas, but exposed fields were susceptible to winterkill. Oklahoma's wheat began growing, and growers planned topdressing. Wheat and barley developed slowly in eastern Oregon. Most growers were concerned with the signs of Russian grain aphids. Texas small grains improved slowly with warmer weather. Many fields need moisture for growth and greening. Producers topdressed some fields in the Blackland and central areas.

**OTHER CROPS:** Cotton harvest reached 95 percent completion in Oklahoma. New Mexico's harvest was virtually finished Statewide. Stalk plowdown continued in central Arizona. Soil preparation for the 1988 cotton crop was active in western and south-central areas. Herbicide application continued in California.

Sugarbeets were seeded in California. Sugarcane harvest continued in Florida. Sugarcane harvest resumed in Rio Grande Valley after delays from wetness. Tobacco bed preparation was virtually complete in Georgia. Tobacco bed preparation and seeding continued in the Carolina's. Thawing ground limited fieldwork in the Corn Belt.

**FRUITS AND NUTS:** Freezing temperatures swept through Florida's citrus producing area, causing very little if any cold damage to citrus trees or fruit. A few young tree leaves were frost burned, but the wood was not damaged. Early variety fruit harvest was very active. Caretakers were busy hedging, cultivating, and fertilizing. Texas citrus harvest progressed well. Pecan harvest was finished. Arizona's citrus harvest continued in central and western areas. Pecans and apples were shipped from storage in eastern areas with pecan shipments only in central Arizona. In California, some almonds and early plum variety buds swelled. Early table grapes reached bud break in Riverside County. Grapefruit, lemon, royal and kinno mandarins, navel orange, and minneola tangelo harvests continued. Pommelo harvest neared completion. Cultural practices were active in all areas. Fruit trees were pruned in Alabama, North Carolina, Oregon, and Washington.

**VEGETABLES:** Freezing temperatures caused minimal damage in Florida's vegetable producing areas. Land preparation and planting for spring crop and winter crop harvests were very active. Volume leaders were tomatoes, cabbage, celery, lettuce, peppers, snap beans, squash, carrots, radishes, and escarole. Producers began killing winter potato vines. In the Rio Grande Valley, harvest and planting progressed without delay. Spinach, cabbage, carrots, broccoli, and other greens were harvested in the San Antonio-Winter Garden area. Lettuce planting progressed in southeast Arizona. Lettuce, broccoli, cauliflower, romaine and leaf lettuce, bok choy, cabbage, napa, escarole, greens, parsley, and spinach were packed in western areas. Young lettuce was thinned and irrigated at Westside, California. Onions were planted at Westside and young onions developed normal in the Cutler-Orosi area. A few growers planted processing tomatoes, but most continued preparing land at Westside. Land preparation continued in the Sacramento Valley. Vegetable movement was seasonally light. Broccoli, carrots, and cauliflower were harvested at Riverside, Salinas, Santa Maria, and Westside. Asparagus and celery were harvested at Riverside.

**PASTURES AND LIVESTOCK:** Livestock was mostly good. Above-normal temperatures eased supplemental feeding and stress, but the varying temperatures caused some respiratory problems. Pastures were mostly fair to good.

**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 NASS State Statistical Offices in cooperation with the National Weather Service.

**ALABAMA:** Rainfall limited to north, mostly 0.10 in. or less. Temperatures averaged 2 to 4° below normal.

Wheat fair to good. Livestock mostly fair. Pastures poor to fair. Hay, roughage supplies for remainder of feeding season 34% short, 66% adequate. Primary activities: General care of livestock, poultry; repairing fences, farm equipment; applying fertilizer to wheat, winter grazing crops, pastures; soil testing; building fish ponds; pruning fruit trees; working farm records; routine farm chores.

**ARIZONA:** Dry, sunny weather with warming trend 24th to 28th. Maximum temperatures upper 50s high country; 60s at 5,000 ft.; upper 70s, low 80s lower deserts. Dry cold front morning 30th lowered temperatures 5° north, 8° southern deserts. Average temperatures 2 to 9° above normal. No precipitation.

Soil moisture adequate. Field preparation cotton active west, south central. Plowdown continued central. Small grains continued to progress, stands good. Alfalfa production slow. Moderate sheepling-off statewide. Packing western lettuce,

broccoli, cauliflower, romaine, leaf lettuce, bok choy, cabbage, napa, escarole, greens, parsley, spinach, asparagus expected late this week. Central area shipped mixed vegetables. Lettuce plantings progressed southeast. Shipments of grapefruit, lemons, valencia oranges continued west. Navels, kinnow tangerines, grapefruit, valencia orange shipments central. Pecan shipments out of storage central, east. Apples out of cold storage east. Cattle, calf conditions mostly good. Heavy feeding hay northeast. Ranges providing short to adequate feeding conditions with hay supplies dwindling northeast. Sheep, lambs mostly good to fair. In north central, recent snow, rain improved grazing conditions. Stock water mostly adequate.

**ARKANSAS:** Warming trend through kept average temperatures above normal. Temperature extremes 12°; 73°. Light showers weekend. Rainfall total none to 0.24 in.

Wheat looks good cold protected it when moisture was surplus. Livestock, pastures good. Stockmen still feeding hay.

**CALIFORNIA:** Strong high pressure dominated weather pattern. High temperatures 60 to 70° north; 70 to 80° southland. Weak Pacific cold front brought showers north 29th. Precipitation generally light.

Seasonal work good progress open weather. Herbicide application active. Soil fumigation, pre-irrigation, fertilization for 1988 crops. Some sugarbeets, alfalfa seeded. Small grains good progress response warmer temperatures. Southern alfalfa sheeped-off, green-chopped. Cultural practices active. Buds swelling some almonds, early plum varieties. Bud break early table grapes Riverside County. Harvest continued for grapefruit, lemons, kinnow mandarins, royal mandarins, navel oranges, minneola tangelos. Pomelo harvest neared completion. Vegetable movement seasonally light. Broccoli, carrots, cauliflower harvested Riverside, Salinas, Santa Maria, Westside. Asparagus, celery harvested Riverside. Lettuce movement light, fair quality Palo Verde Valley. Young lettuce thinned, irrigated Westside. Onions planted, Westside; young onions developed normally Cutler-Orosi. Fall potatoes harvested Hemet-San Jacinto, Coachella. Few growers planted processing tomatoes Westside, most continued preparing land. Ground preparation continued Sacramento Valley. Livestock good. Movement light, moderate. Moderate, heavy supplemental feeding. Water supply good, more needed maintain pasture. Calving, lambing increased.

**COLORADO:** Snow showers in mountains, little to no precipitation Eastern Plains. High winds in mountains, Front Range areas early week. Temperatures near normal on Eastern Plains; 5 to 10° below normal San Luis Valley, West Slope.

Feeding, caring for livestock major activities. Snow cover on Eastern plains diminished with warmer temperatures.

**FLORIDA:** Wet, cool early week then cold, warming again by weekend. Rains 1.00 to 2.00 in. or more northern half, 25th; near 0.25 in. south. Hard freezes Panhandle north, 26th through morning of 29th. Freezing to near freezing central interior, south with moderate to heavy frost local areas. Record high pressure 27th, 28th most areas. Balmy through weekend with above normal temperatures.

Soil moisture mostly adequate. Land preparation spring crops continued. Small grains mostly good. Very minimal cold damage to young sugarcane. Sugarcane harvest continued. Cold temperatures curtailed forage growth during most of week; frosts further browned permanent pastures, particularly

central, northern Peninsula. Small grain pastures generally improved, providing some grazing most areas following slow start earlier. Grazing poor to good Panhandle, mostly very poor to fair, middle, upper Peninsula, generally good south. Cattle, calves somewhat stressed colder areas; condition fair to good, supplemental feeding active. Very little if any cold damage to citrus trees or fruit; freezing temperatures coldest spots short duration. Few young tree leaves frost burned, no wood damage. Harvest very active all early varieties. Caretakers busy hedging, cultivating, fertilizing. Season's coolest weather over vegetable producing areas. Near freezing temperatures but very minimal damage. Land preparation, planting, harvest winter crops active. Volume leaders: Tomatoes, cabbage, celery, lettuce, peppers, snap beans, squash, carrots, radishes, escarole. Also good supplies strawberries, sweet corn, eggplant. Killing winter potato vines underway.

**GEORGIA:** Temperatures well below normal most of period. Readings above normal over weekend 30th, 31st. Temperatures 4° below normal most locations. Extremes 11° Clayton, Blairsville to 77° Blakely. Most minimums 25° or lower mornings of 27th, 28th. Minimums below freezing about 4 days. Rain only one day most locations. Total under 0.10 in.

Soil moisture adequate. Pruning peach trees, land preparation, small grain topdressing active as weather permitted. Tobacco bed preparation virtually complete. Wheat, rye, other small grains fair to good. Pastures poor to good, mostly fair. Cattle mostly fair to good. Hogs fair to mostly good.

**HAWAII:** Mostly sunny leeward sections. Heavy showers windward areas late week. Field activity delayed, temporarily halted. Isolated flooding. Agricultural losses expected light. Irrigation decreased. Pesticide spraying increased. Temperatures mid 60s to low 80s. Rainfall none to 6.30 in. Variable winds 10 to 25 mph.

Days suitable for fieldwork 7.0. Banana, papaya production on seasonal decline. Chinese cabbage supplies higher. Head cabbage output moderate to heavy, good quality. Head lettuce production very light. Ginger root harvesting rain-delayed, crop quality good.

**IDAHO:** North 5° above normal, remainder below normal. Precipitation below normal.

Winter wheat good despite minimal snow cover. Main activity feeding, caring for livestock. Others included marketing, shipping products, machinery maintenance, attending seminars, preparing income taxes, planning upcoming year. Livestock remained good. Calving, lambing underway. Hay, roughage supplies adequate, some surplus.

**ILLINOIS:** Temperatures average -1° below to 9° above normal. Precipitation averaged 0.30 to 0.50 north, central; 1.00 to 3.00 in. south. Mild air, rain brought soil temperatures above freezing at 4 in. depth all areas.

Winter wheat relatively good. Livestock good to fair. Thawing ground, rain could cause problems with muddy lots.

**INDIANA:** Temperatures averaged 3 to 6° above normal. Lows single digits below zero, highs 50s to low 60s. Precipitation totals 0.30 to 0.60 in. north, 1.00 to 2.00 in. south.

Field activities limited by snow cover, muddy conditions. Other activities: Hauling grain to market, spreading manure, machinery repair, tax preparation, purchasing supplies, attending meetings, care of livestock. Hay supplies adequate. Wheat mostly good but hurt some areas

by lack of snow cover during cold weather. Livestock good.

**IOWA:** Temperatures 2° above normal north to 7° south. Precipitation eastern most counties to 0.50 in. Temperature extremes -24° Decorah 27th to 60° Lamoni, Burlington 30th. Snow cover limited to northern areas 2 to 3 in. average.

Winter activities include livestock care, machinery maintenance, preparing income taxes, analyzing 1988 Farm Program.

**KANSAS:** Temperatures averaged much above normal. Averages ranged mid 30s northwest, low 40s southeast. Readings 7 to 11° above normal. No measurable precipitation.

Warming temperatures melted most remaining snow cover, subjecting wheat to possible freeze damage. Warmer temperatures favorable calving, lambing operation. Feedlots pastures extremely muddy, making livestock activities difficult.

**KENTUCKY:** Very cold early, temperatures averaged 10 to 15° below normal; later more like spring, as temperatures warmed into 50s and 60s. Weekly temperatures averaged mid and upper 30s, 2 to 3° above average. Light snow early, rain spread western areas 31st. Precipitation 0.40 in. west, no precipitation southeast.

Topsoil moisture mostly adequate. Warm weather, farmers thinking grass seeding and fertilizing. Virtually no fieldwork to date. Livestock continued to winter well, highly variable weather caused some respiratory problems.

**LOUISIANA:** Temperatures normal to 5° below normal. Temperature extremes 19°; 75°. Rainfall averaged none to 0.88 in.

Main activities: Livestock care, winter chores, small amount of spring plowing, harvesting crawfish.

**MARYLAND & DELAWARE:** **Maryland:** Average temperature 30°, normal 33°. Lowest temperature 0°, highest temperature 53°. Precipitation averaged 0.58 in., approximately normal.

Main farm activity caring for livestock. Snow present to insulate plants from cold temperatures.

**Delaware:** Average temperature 29°, normal 33°. Precipitation averaged 1.01 in.

Main farm activity caring for livestock.

**MICHIGAN:** Temperatures ranged 1 to 5° above normal. Temperature extremes -14°; 51°. Precipitation 0.10 to 0.62 in. across State. Cold temperatures, major snowstorm early week provided good snow cover. Record high temperatures, light rains late week eliminated virtually all snow cover in central and southern Lower Peninsula. Winter wheat good but snow cover needed.

Activities: Cutting wood, spreading manure, general farm maintenance, equipment repair, marketing grain and livestock, attending farm meetings, preparing income tax forms. Livestock remained good. Feed supplies remained adequate. Mild weather really helped livestock. Snowstorm early week slowed cattle movement.

**MINNESOTA:** Temperatures averaged near normal to 2° above normal. Extremes -35°; 47°. Precipitation averaged 0.06 to 0.21 in. above normal northwest, north central; 0.10 to 0.14 in. below normal elsewhere. Greatest weekly total 0.75 in. Snowfall averaged 2 to 4 in. northern third, trace to 1 in. elsewhere. Snow depth at weeks end averaged 10 to 16 in. northern third, southwest; 6 to 8 in. elsewhere.

Livestock in good winter condition.

**MISSISSIPPI:** Temperatures 3° below normal. Extremes 10°; 73°. Generally fair, warm afternoon cool nights. Greatest 24-hour total rainfall 1.05 in. Greatest weekly rainfall 1.05 in.

Days suitable for fieldwork 2.5, 1.0 1987, 2.1 avg. Soil moisture adequate to surplus. Livestock fair to good; wheat fair to good. Pastures fair; hay supply adequate; feed grain supply adequate. Recent warm temperatures promoted growth in winter crops.

**MISSOURI:** Temperatures 6° above normal except Bootheel normal. Little or no precipitation.

Topsoil moisture 5% short, 81% adequate, 14% surplus. Wheat 2% poor, 53% fair, 43% good, 2% excellent. Hay supplies 6% short, 87% adequate, 7% surplus. Livestock 1% poor, 27% fair, 69% good, 3% excellent. Major temperature changes of past 2 weeks caused stress to livestock, but no severe losses.

**MONTANA:** Continued very warm week. Temperatures averaged 5° above normal west, 7 to 10° above normal southwest. Plains temperatures very mild, 12 to 20° above normal. Much colder temperatures north central, northeast weekend. Precipitation very light.

Winter wheat mostly fair to good. Wind damage to winter wheat fields mostly light. Snow cover protection for winter wheat fields poor to fair. Livestock generally good. Nearly all livestock received supplemental feed. Grazing mostly open. Livestock losses average.

**NEBRASKA:** Week mild, mostly dry with average temperatures 1 to 8° above normal. Weekend low temperatures, chilling north wind return. Temperature extremes -15°; 58°. Precipitation light. Average snow depth 6.1 in. Higher levels north, west; diminishing east.

Winter wheat 27% fair, 70% good, 3% excellent. Snow cover adequate most areas, protecting wheat from sub-zero temperatures, high winds. Exposed fields susceptible to winterkill. Pasture, range adequate. Supplemental feeding active. Feed, forage supplies adequate. Snow, wind stressed unsheltered cattle. Drifting snow problem in farm yards, feedlots. Spring calving 2%, losses light. Overall cattle 22% fair, 76% good, 2% excellent. Spring lambing also underway.

**NEVADA:** Temperatures moderated to within 3° normal. Extremes 25° below zero; 70°. Precipitation light north, none south.

Milder weather more favorable newborn calves, lambs. Feed requirements livestock eased. Marketing potatoes on upswing.

**NEW ENGLAND:** Average precipitation (rain, water equivalent of snow) 0.50 to 1.00 in. Average temperature ranged low teens near Canadian border to upper 20s south. Temperatures near normal.

Major farm activities: Machinery maintenance, tending livestock.

**NEW JERSEY:** Temperatures much below normal, averaging 23° north, 28° south, 29° coastal. Extremes -12°; 65°. Precipitation near normal, averaging 0.89 in. north, 0.79 in. south, 0.72 in. coastal. Heaviest 24-hour total 1.04 in. on 25th, 26th. Heaviest 24-hour total snowfall 16 in. on 25th, 26th. Depth of snow on ground 1st 5 to 6 in. north.

Farmers caring for livestock, tending to normal winter chores.

**NEW MEXICO:** Average weekly temperatures -11° Taos to 73° Carlsbad; few showers higher mountain elevations.

Days suitable for fieldwork 6.1. Soil moisture 46% short, 46% adequate, 8% surplus. Cotton

harvest virtually complete statewide. Barley 17% poor, 66% fair, 17% good. Wheat 41% poor, 48% fair, 11% good. Growth slower than normal. Pecans 75% fair, 25% good; 95% harvested. Cattle 45% fair, 55% good. Sheep 40% fair, 60% good; lambing gained momentum. Range 8% very poor, 17% poor, 50% fair, 25% good. Onions, lettuce 100% good; planting of lettuce continued.

**NEW YORK:** Large coastal storm early week produced widespread snow southeastern areas. Water content high. Precipitation elsewhere light. Midweek temperatures frigid but averaged well above normal throughout State.

Farmers busy with routine winter chores.

**NORTH CAROLINA:** Temperatures averaged 5 to 8° below normal across State. Temperature extremes 4°; 67°. Precipitation 0.12 to 1.30 in. across State.

Days suitable for fieldwork 1.8. Soil moisture 3% short, 42% adequate, 55% surplus. Wheat 30% fair, 70% good. Oats 4% poor, 28% fair, 68% good. Barley 2% poor, 30% fair, 66% good, 2% excellent. Rye 2% poor, 31% fair, 67% good. Pasture 3% very poor, 18% poor, 46% fair, 31% good, 2% excellent. Hay and roughage supplies 9% short, 89% adequate, 2% surplus. Feed grains supplies 13% short, 87% adequate. Major farm activities: Equipment repair, maintenance; tending livestock; preparing tobacco plantbeds; pruning fruit trees; general farm maintenance.

**NORTH DAKOTA:** Temperatures averaged 4 to 12° above normal. Extremes -25° north central, 25th, 26th; 53° southwest, 29th. Precipitation variable statewide, averaged 0.03 in. north central to 0.17 in. east central. Snow depth averaged 1 in. southwest to 15 in. east central.

Soil moisture below normal. Winter seedings 51% snow cover protection. Winter wheat fair to poor. Insect infestations in stored grain. Livestock good, calving 2%, lambing 6%. Feed supplies remained adequate. Pastures open for grazing 26%.

**OHIO:** Arctic air mass early week followed by unseasonably mild Gulf air late week. Average high temperatures mid 30s to low 40s. Average lows upper teens to upper 20s, averages above normal. Extreme temperatures ranged single digits to mid 60s. Precipitation 0.25 to 0.50 in.

Soil temperatures lower 30s; topsoils thawed. Snow cover early week provided some protection to winter wheat from extreme cold, wind. Mild temperatures late week melted all snow. Some cold stress to livestock early week.

**OKLAHOMA:** Temperatures averaged 10° above normal north central, south central to 13° above normal northeast. Southeast precipitation 0.01 in.

Topsoil moisture 5% short, 60% adequate, 35% surplus. Subsoil moisture 100% adequate. Wheat 15% fair, 80% good, 5% excellent; 50% acreage grazed. Growers plan topdressing. Wheat beginning growth. Cotton 95% harvested. Pastures fair, cattle good.

**OREGON:** Temperatures mostly slightly above normal for period. Minimum temperatures single digits range extreme south central, east, northeast during first of period kept temperatures below normal. Areas from Cascades westward generally received from 0.50 to 1.00 in. precipitation. East of Cascades 0.10 in. or less.

Soil moisture adequate to surplus east, surplus west. Much of east remained snow covered; wheat, barley still developing very slowly; growers concerned over Russian grain aphid signs. Western wheat fields good; grass seed fields still showing stress from dry fall, fruit tree pruning continued.

Calving, lambing underway; range, pastures poor to fair over State.

**PENNSYLVANIA:** Cool, dry week. Average temperature 23°, 30° below normal. Temperature extremes -12°; 58°. Average precipitation 0.46 in., 0.18 in. below normal.

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

**PUERTO RICO:** Island average rainfall 0.56 in., 0.07 in. below normal. Highest weekly total rainfall 3.45 in. Pico Del Este-Luquillo, 1.39 in. Toa Baja, 1.34 in. Rio Piedras Aes. Highest 24-hour total 0.99 in. Rio Piedras Aes. San Juan WSFO mean temperature 76°, 2° above normal. Total rainfall 0.84 in., 0.04 in. below normal. Divisional temperatures averaged about 74 to 77° on coasts, 69 to 72° interior divisions with mean station temperature ranging 63° Pico Del Este-Luquillo to 79° San Juan City. Lowest minimum temperature 47° Adjuntas. Highest maximum temperature 90° several places.

**SOUTH CAROLINA:** Weather varied from unseasonably cold beginning of period to unseasonably warm weekend. Averages 5 to 10° below normal. Rainfall light, generally less than 0.50 in.

Main activities: Preparing and planting tobacco seedbeds, late pecan harvest, caring for livestock and poultry, equipment maintenance, preparing tax records, attending farm meetings.

**SOUTH DAKOTA:** Average temperatures 2° below to 15° above normal. Extremes -33°; 67°. Light precipitation Black Hills area.

Winter wheat remained much the same. Crop mostly good to fair but there are definitely some poor areas that went into winter dry and still don't have any snow cover. Livestock good.

**TENNESSEE:** Cold front brought light rainfall to State 25th followed by cold high pressure 26th to 27th. Warming trend 28th through weekend. Rain west 31st with approaching cold front. Average temperatures normal to 6° above. Precipitation 0.50 in. southwest, 0.30 in. or less elsewhere.

Livestock fair to good. Crop season planning, livestock care, routine maintenance main activities.

**TEXAS:** High pressure dominated. Dry air masses beautiful, mild winter days; weather took toll on topsoil moisture. Evaporation at or above normal. Temperatures generally above normal all parts, except Lower Valley. Rainfall below normal.

**Crops:** Small grain conditions slowly improving because warmer weather. Many fields need moisture for growth, greening. Some irrigated fields limited growth. Forage availability grazing light. Producers topdressing some fields Blacklands, central. Insect problems light. Sugarcane harvest Rio Grande Valley underway after some delays from wet conditions. Yields, sugar content good. Other crops harvested: Pecans 100%, 99% 1986, 100% avg.

**Commercial Vegetables:** Rio Grande Valley harvest, planting operations progressed without delay. Onion progress good. Harvest citrus steady levels. San Antonio-Winter Garden harvest spinach, cabbage, carrots, broccoli, other greens continued. Some virus problems spinach fields. Onions good growth. Trans-Pecos land preparations melons, onions continued. Some onions planted Presidio area. Pecan harvest completed.

**Range and Pasture:** Ranges, pastures milder weather; moisture needed for further improvement. Small grain fields limited forage. Supplemental feeding continued some hay supplies becoming short. Livestock conditions improved milder weather. Markets strong.

**UTAH:** Precipitation light north, central none rest of State. Temperatures 2 to 10° below normal.

Soil moisture adequate. Snow cover moderate. Winter wheat fair to good. Winter range feed fair to good. Feed supplies adequate. Supplemental feed required on snow covered ranges. Major farm activities: Livestock chores, marketing calves, hauling manure, equipment repair, maintenance, financial records.

**VIRGINIA:** Temperatures 5 to 10° below normal. Moderate, uniform precipitation with most locations 0.25 to 0.50 in.

Days suitable for fieldwork less than 1.0. Topsoil moisture 57% adequate, 43% surplus. Some snow accumulated 25th. Winter grains good to excellent. Livestock good. Most areas adequate to ample feed supplies, some shortages. No tobacco beds seeded.

**WASHINGTON:** Temperatures slightly above normal most areas. Precipitation basically dry, weekend rains accounted for light amounts east, light to moderate west.

Soil moisture mostly adequate, some short areas eastern border. Winter wheat mostly fair with variable snow cover. No excessive runoff, melting snow soaking. Orchard pruning active Yakima,

north central valleys. Calving, lambing underway. Western caneberry pruning, tying continued. Hothouse rhubarb harvest increased.

**WEST VIRGINIA:** Average temperature 29°; 2° below normal. Extremes -5° Elkins, 70° Creston. Precipitation averaged 0.30 in., 0.40 in. below normal.

Days suitable for fieldwork 2.7. Soil moisture 100% adequate. Feed supplies adequate to short. Wheat, barley good.

**WISCONSIN:** Temperatures above normal, averaged 18°. Extremes -30°; 54°. Precipitation 0.10 to 1.00 in. Snowfall 2 to 4 in. south central, east central; 12 to 24 in. northeast, north central on 25th. Average frost depth on 29th 12.8 in. Average snow depth 14.1 in.

Good soil moisture.

**WYOMING:** Far west, temperatures below normal. Elsewhere, temperatures above normal. Dry all areas except far west, northeast.

Winter wheat fair to good. Unseasonable warm temperatures reduced snow cover. Livestock fair to good. Early calving, lambing, shearing started. Supplemental feeding underway many areas. Feed supplies adequate. Winter pastures being utilized where possible.

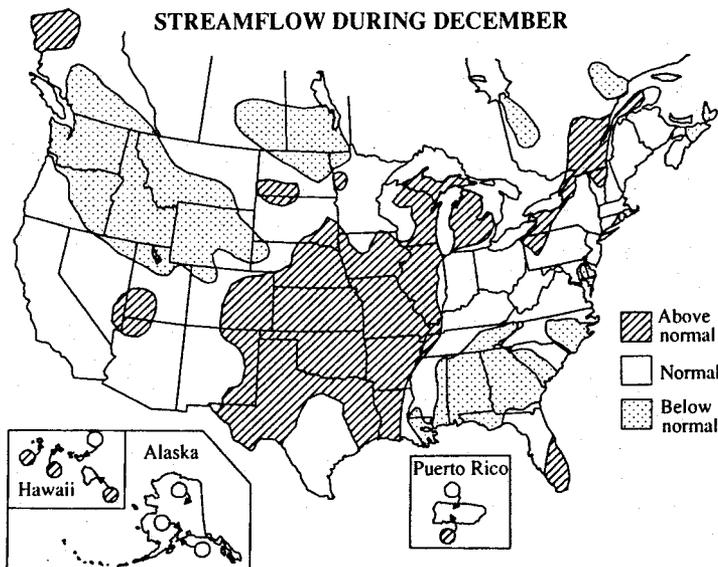
Streamflow was in the normal to above-normal range at 75 percent of the 191 reporting index stations in southern Canada, the United States, and Puerto Rico, compared with the 73 percent in those ranges for last month. Total December flow was the lowest for December in the last 6 years. There were no December lows, but new December highs occurred at index stations in Oklahoma, Florida, and Puerto Rico. Mean December elevations at the four master gages on the Great Lakes (provisional National Ocean Service data) declined from last month at two gages and increased from last month at the other two gages. The level of Utah's Great Salt Lake declined to a seasonal low of 4,209.35 feet above National Geodetic Vertical Datum of 1929 on December 20, then rose to 4,209.40 by December 31. Contents of 75 percent of reporting reservoirs were near or above average for the end of December, compared with 70 percent for the end of November. The combined flow of the 3 largest rivers in the lower 48 States--Mississippi, St. Lawrence, and Columbia--was in the normal range during December after increasing about 43 percent from November to December.

## National Water

### Conditions

DECEMBER 1987

#### STREAMFLOW DURING DECEMBER



## International Weather and Crop Summary

January 24- 30, 1988

### HIGHLIGHTS:

**UNITED STATES...**Freezing temperatures sweep into Florida but leave vegetables and citrus fruit virtually unharmed. Above-normal temperatures promote small grain growth in the southern Great Plains and Delta but melt snow cover in the northern and central Great Plains, leaving small grains vulnerable to freeze damage.

**WESTERN U.S.S.R....**Bitter cold stresses winter grains.

**EUROPE...**Widespread wet weather continues in the west. Light to moderate precipitation helps to relieve some dryness in the southeast.

**SOUTH ASIA...**Light rain and cool weather covers northern grain regions. Dry, warm weather in the south favors mature cotton.

**NORTHWESTERN AFRICA...**Minimal rain covers winter grain areas.

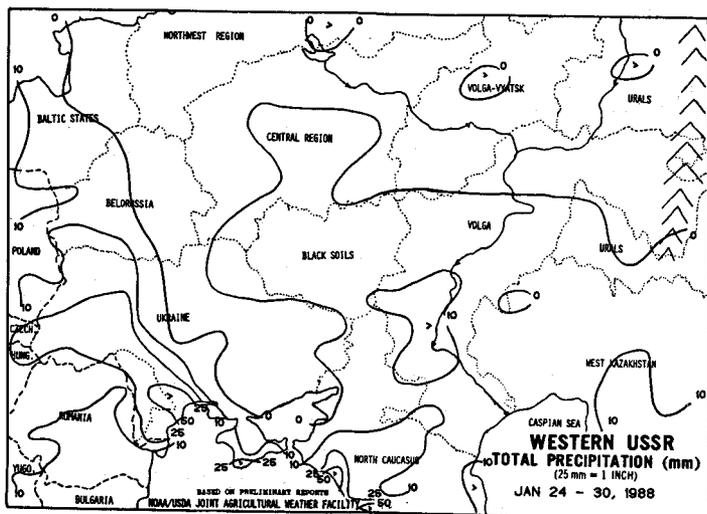
**SOUTH AFRICA...**Light rain and above-normal temperatures stress reproductive to filling corn.

**SOUTHEAST ASIA...**Widespread showers continue throughout Malaysia and Indonesia, increasing irrigation levels.

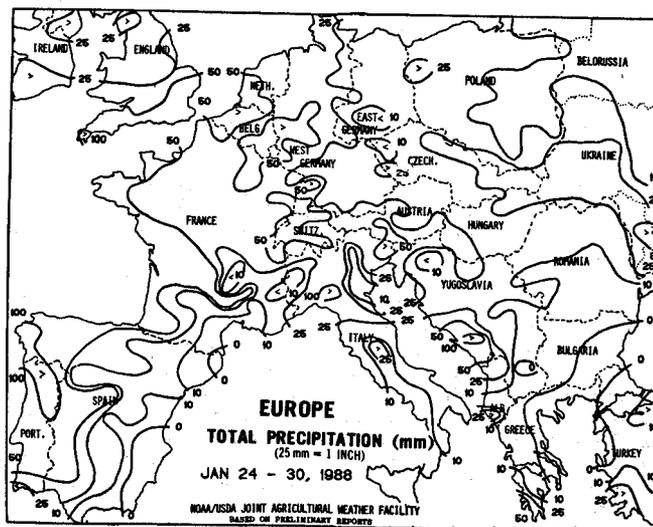
**EASTERN ASIA...**Cold weather covers winter grain areas. Widespread rain in southern China favors soil moisture levels and secondary crops.

**SOUTH AMERICA...**Showers cover most crop areas of south-central Brazil and Argentina, favoring crop development.

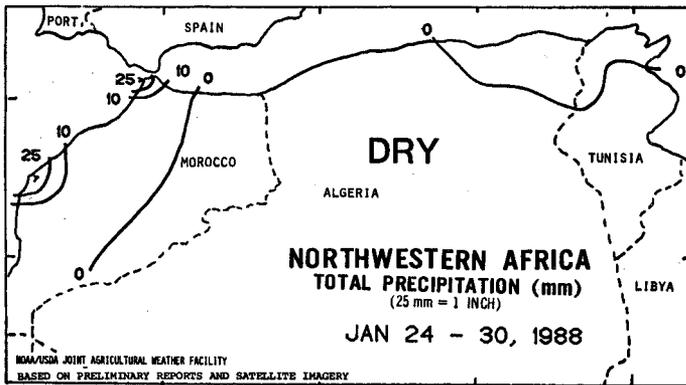
**AUSTRALIA...**Rain favors crops in eastern coastal areas while most interior summer crop areas remain dry.



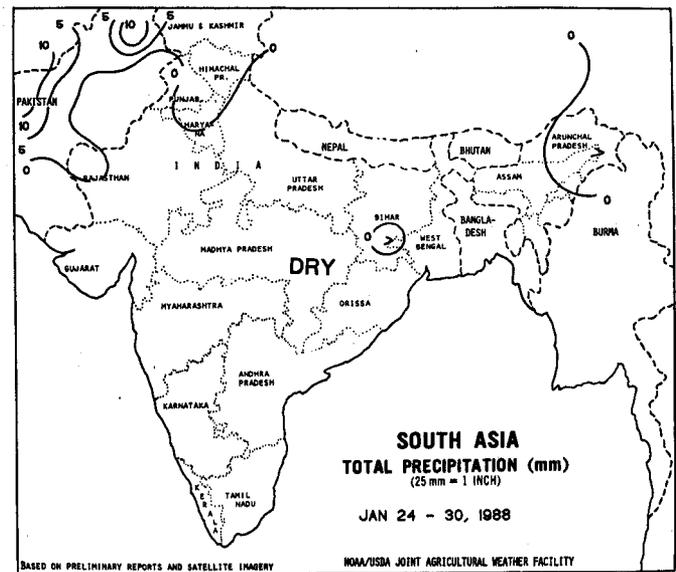
**WESTERN U.S.S.R...**The coldest weather so far this winter covered winter grain areas. On January 30, minimum temperatures in the Central Region, the Volga Vyatsk, the Volga, the eastern Ukraine, and the northern North Caucasus ranged from -25 to -30 degrees C, while maximum temperatures ranged from -15 to -20 degrees C. Warmer weather accompanied moderate to heavy snow in the western Ukraine, the southern Ukraine, and the western North Caucasus. Daily temperatures in these areas ranged from -4 to -10 degrees C. Although winter grains were stressed by the bitter cold, snow cover was adequate in most areas to protect the crop from potential winterkill. However, some crop damage is possible in the extreme eastern Ukraine and the northern North Caucasus where a shallow snow cover may not have been sufficient to protect winter grains from extreme cold, ranging from -26 to -32 degrees C.



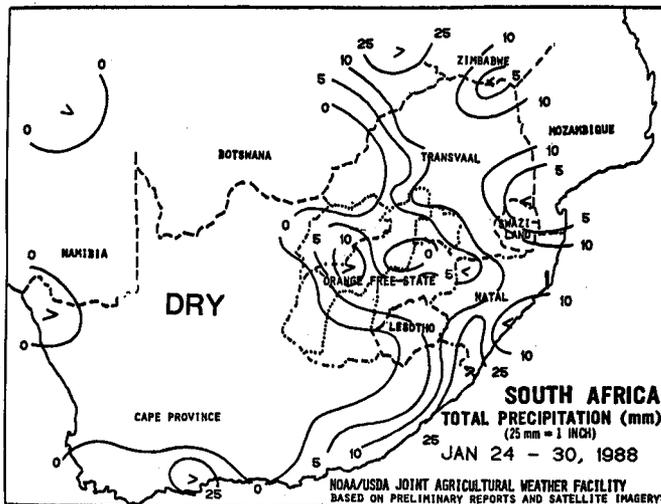
**EUROPE...**Widespread moderate to heavy rain (greater than 25mm) fell over much of northern and western Europe, keeping soils saturated. Very heavy rain (up to 160mm) in northern Portugal, northwestern Spain, western France, and southern Great Britain may have caused flooding. Moderate to heavy rain also covered parts of northern Italy and western Yugoslavia, favoring soil moisture levels for winter grains. Light to moderate rain and snow (generally less than 20mm) helped to relieve dryness in southeastern Europe, although a few areas of Bulgaria, Yugoslavia, and Romania received little or no precipitation. Temperatures over Europe remained mostly above normal except in far eastern and northern sections, where seasonable subfreezing temperatures and some snow cover returned.



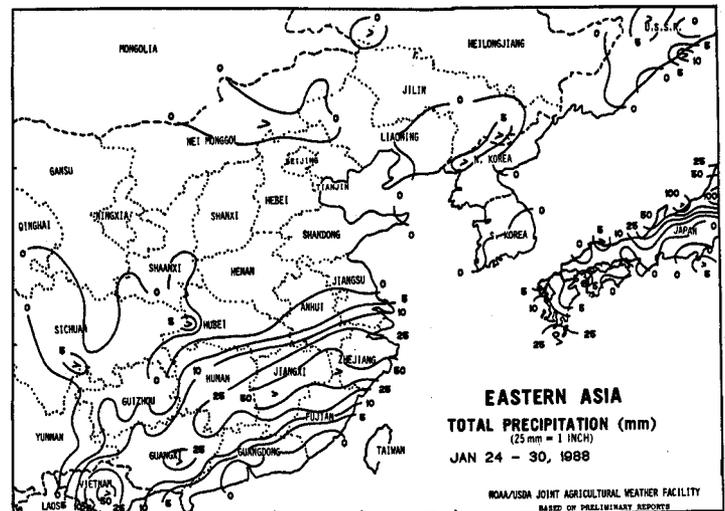
**NORTHWESTERN AFRICA**...Minimal rain covered winter grain areas in Morocco, Algeria, and Tunisia. Adequate moisture reserves in Morocco and northwestern Algeria were able to meet the moisture demands of winter grains in the vegetative stage. Dry weather in eastern Algeria and Tunisia continued an inadequate rainfall pattern that has covered crop areas since December. In addition, weekly average temperatures in these areas were 4-6 degrees C above normal, increasing crop stress. Crop conditions are likely deteriorating and rain is needed soon to stabilize declining crop prospects.



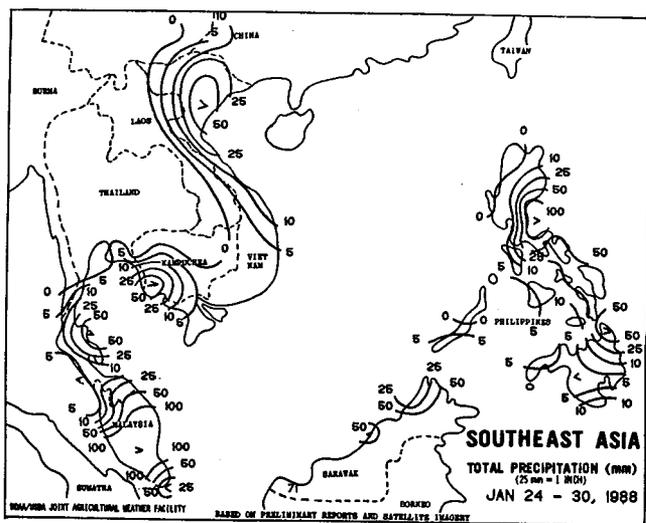
**SOUTH ASIA**...Generally light rain (1-4mm) continued in winter wheat regions of northern Pakistan and north-central India. Cooler weather accompanied the rain, as temperatures dropped below 5 degrees C in many northern growing regions. Moisture continued limited for normal development of India's vegetative to heading wheat. Dry, warm weather in southern India benefited mature cotton. The seasonable, warm weather in the south spurred vegetative growth of the mostly irrigated summer rice crop.



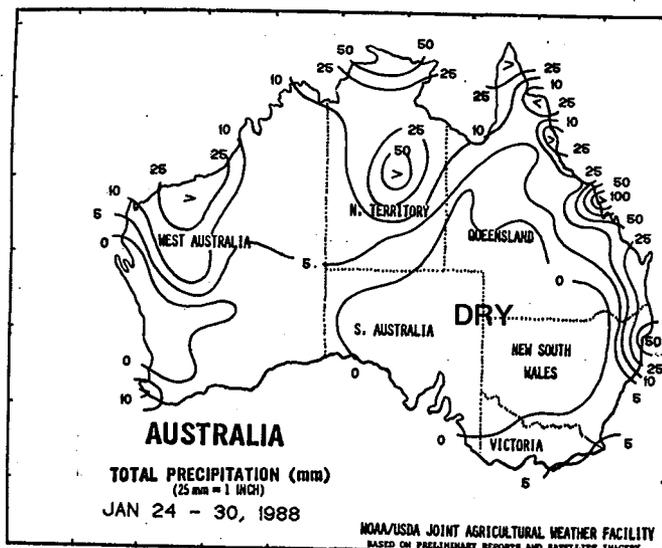
**SOUTH AFRICA**...Light rain (less than 10mm) covered most primary corn areas, with heavier rain (10-25mm) over minor growing regions of northern Transvaal and Natal. Temperatures averaged 1-2 degrees C above normal throughout the corn belt, increasing evaporation rates and crop moisture demands. Maximum temperatures in the western and central Maize Triangle reached the middle thirties C by week's end, stressing reproductive to filling corn. However, maximum temperatures were generally below 30 degrees C in parts of the eastern Maize Triangle where late-planted corn is still in the vegetative stage of development.



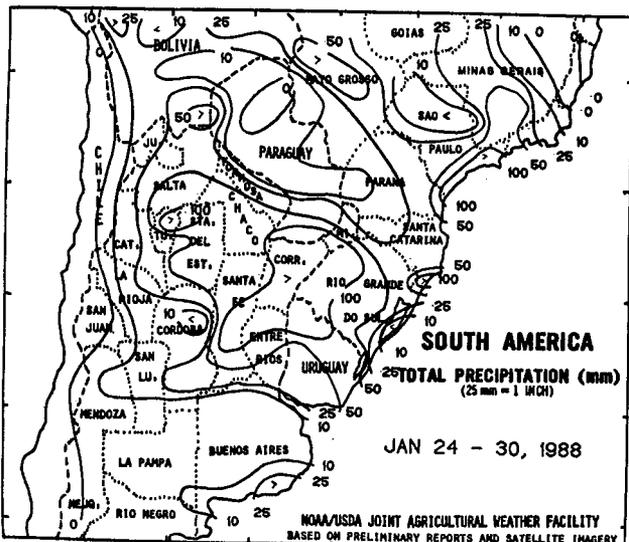
**EASTERN ASIA**...High pressure continued to dominate weather in the northern half of China, with subfreezing weekly average temperatures over most growing areas north of the Yellow River. While much of the North China Plain lacks protective snow cover for dormant winter grains, minimum temperatures over growing areas remained above winterkill damage thresholds. Some light snow fell over northern China and the Korean Peninsula, but snowfall and coverage were limited. In southern China, widespread rain (up to 65mm) favored soil moisture recharge and benefited secondary crops. Heavy rain (greater than 75mm) in western Japan and southern Taiwan may have caused temporary flooding in some areas.



**SOUTHEAST ASIA...**Heavy rain (50-100mm or more) covered most regions of Malaysia and Indonesia, improving irrigation levels for rice. The rainfall was the heaviest since late-December along the southeastern Malay Peninsula. For the second week, rainfall averaged more than 200mm in northern Java, likely flooding some north-central rice areas. Moderate to heavy showers (10-78mm) benefited crops in central areas of peninsular Thailand. In the Philippines, moderate to heavy showers (25-100mm or more) continued in east-central growing areas, but rainfall averaged less than 10mm over crop areas of northern Luzon and Mindanao.



**AUSTRALIA...**Scattered showers fell over coastal areas of Queensland and New South Wales, while interior summer growing areas remained mostly dry. Soil moisture for summer crops was generally adequate, with many crops entering sensitive reproductive stages. Rain along Queensland's northeast coast favored vegetative sugarcane, although area coverage and amounts were highly variable. Summer rainfall in the cane areas, which normally makes up the majority of annual rainfall, has been below normal thus far. In the south, scattered light rain benefited post-season soil moisture levels over coastal areas, while most interior wheat areas remained dry.



**SOUTH AMERICA...**In Brazil, heavy showers (50-170mm) soaked Rio Grande do Sul again. Cooler weather late in the week also improved conditions for flowering to pod-setting soybeans in the south. Highly variable showers covered most soybean areas, with drier pockets (less than 10mm) confined to southwestern Parana, west-central Sao Paulo, and far northern areas of Minas Gerais. Weekly temperatures generally averaged above normal from Parana northward, increasing the rate of crop moisture usage. In Argentina, substantial rain (50-179mm) fell throughout Santa Fe, the northern cotton areas of Chaco and southeastern Formosa, and the extreme northeast. Beneficial showers (10-34mm) also fell in southern Cordoba, providing favorable moisture for reproductive grains and oilseeds. Very light rain (1-6mm) fell in La Pampa and Buenos Aires, except in the extreme south where weekly rainfall averaged 10-30mm. A brief midweek episode of hot weather was replaced with much cooler air by the weekend.

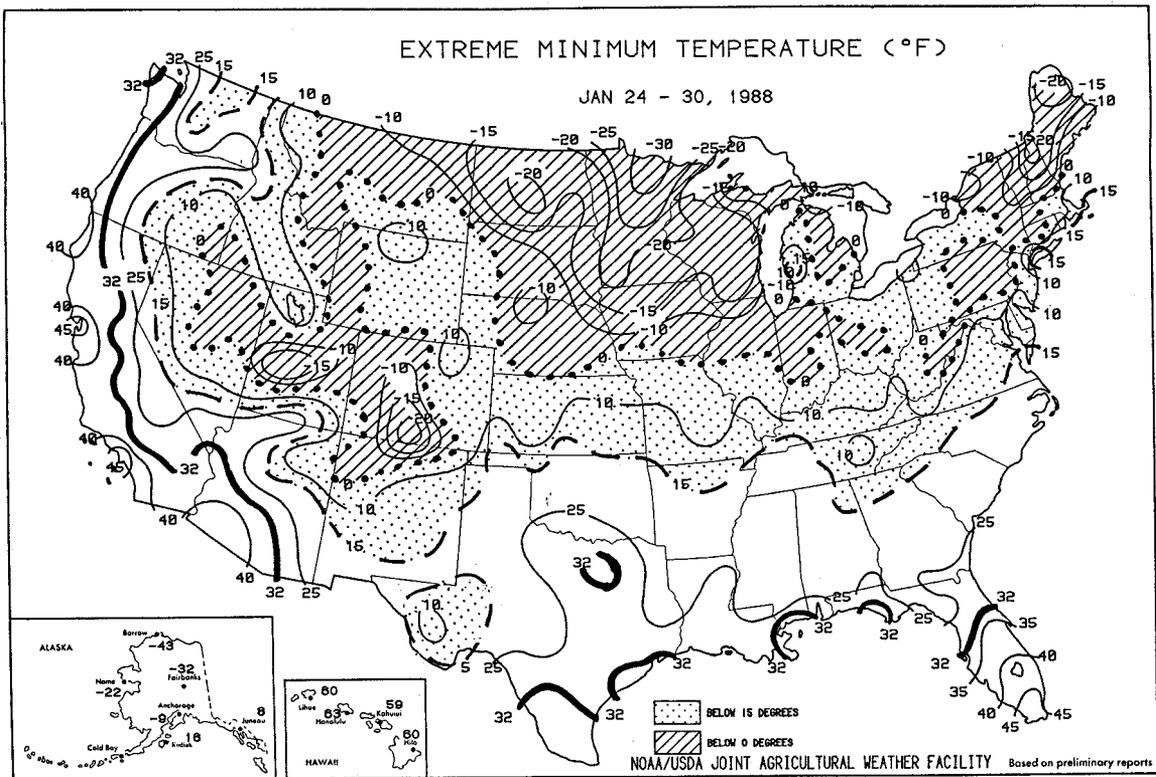
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