

WEEKLY WEATHER AND CROP BULLETIN

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

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National Agricultural Statistics Service and World Agricultural Outlook Board

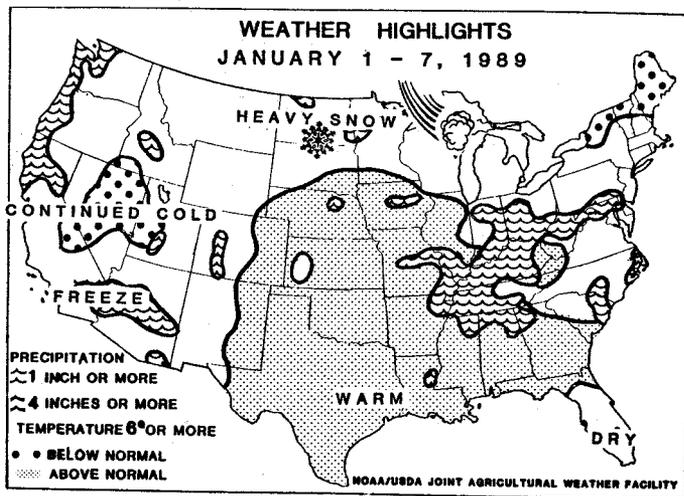
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Jan. 10, 1989

National Weather Summary

January 1-7, 1989



Mississippi to the Carolinas and in the Northwest. Warm weather was over the Southeast and Northwest as high temperature records for January were set along the western Gulf coast.

WEDNESDAY: Strong north winds brought very cold air into the Northeast and along the middle Atlantic coast. A developing storm system caused widespread rain and snow in the Southwest and central Rockies, while a frontal system brought rain with snow in the higher elevations to the Pacific Northwest. Lake-effect snow fell along the Great Lakes. Warm air moved into the northern Plains.

THURSDAY: The storm system moved rapidly out of the central and southern Rockies into the middle and lower Mississippi and Ohio Valleys, spreading rain, freezing rain, and snow. An extensive frontal system caused widespread precipitation in the West.

FRIDAY: The storm spread snow and freezing rain over the lower Great Lakes and into the Northeast and rain into the middle Atlantic Coast States. A major winter storm developed over the northern Rockies and moved into the northern Plains, causing high wind and heavy snow. Scattered precipitation continued along the Pacific coast.

SATURDAY: The intense winter storm crossed the northern Plains into the Great Lakes. Blizzard conditions continued with high wind and low temperatures. Fargo, North Dakota had 20 inches of snowfall. The storm's trailing cold front moved through the Mississippi Valley. Showers and thunderstorms in the warm, moist air ahead of the system produced widespread rain and high wind. Scattered precipitation continued in the West.

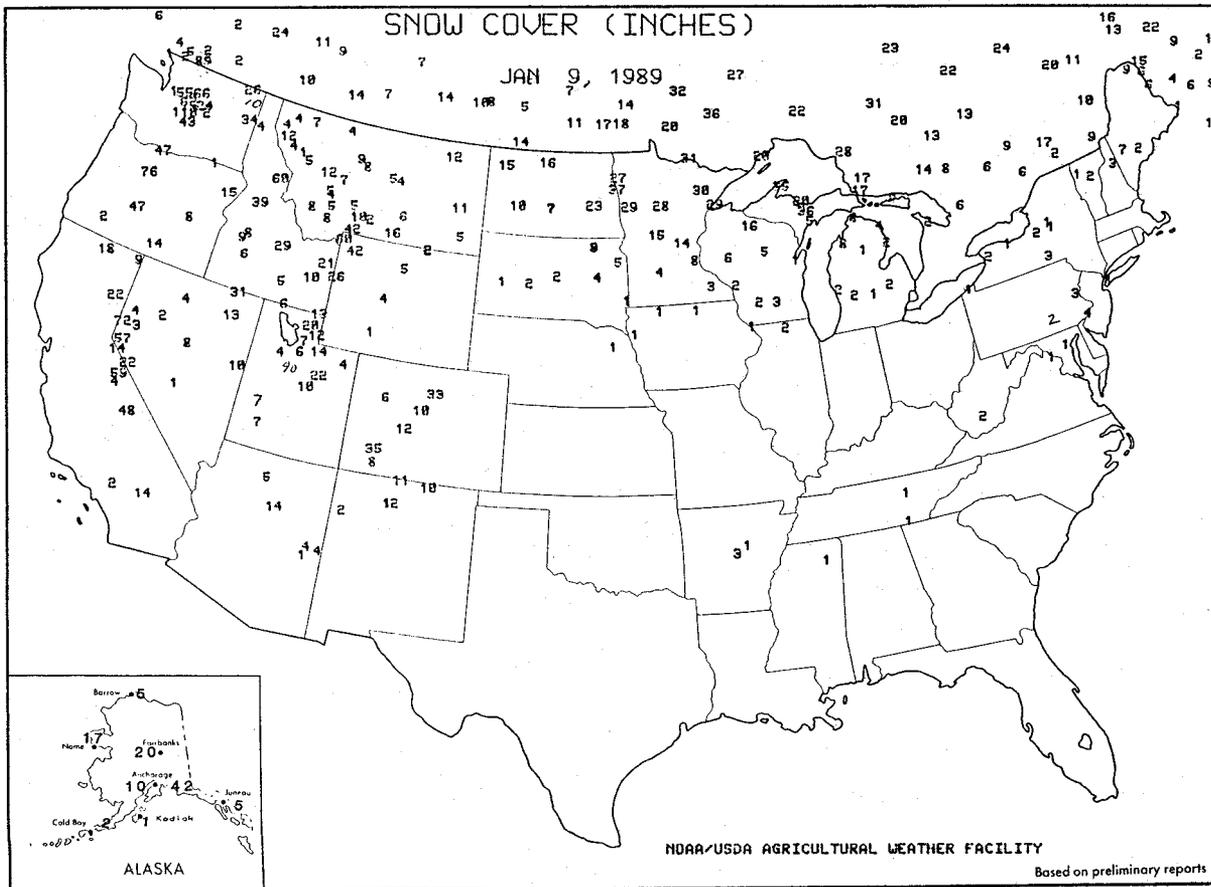
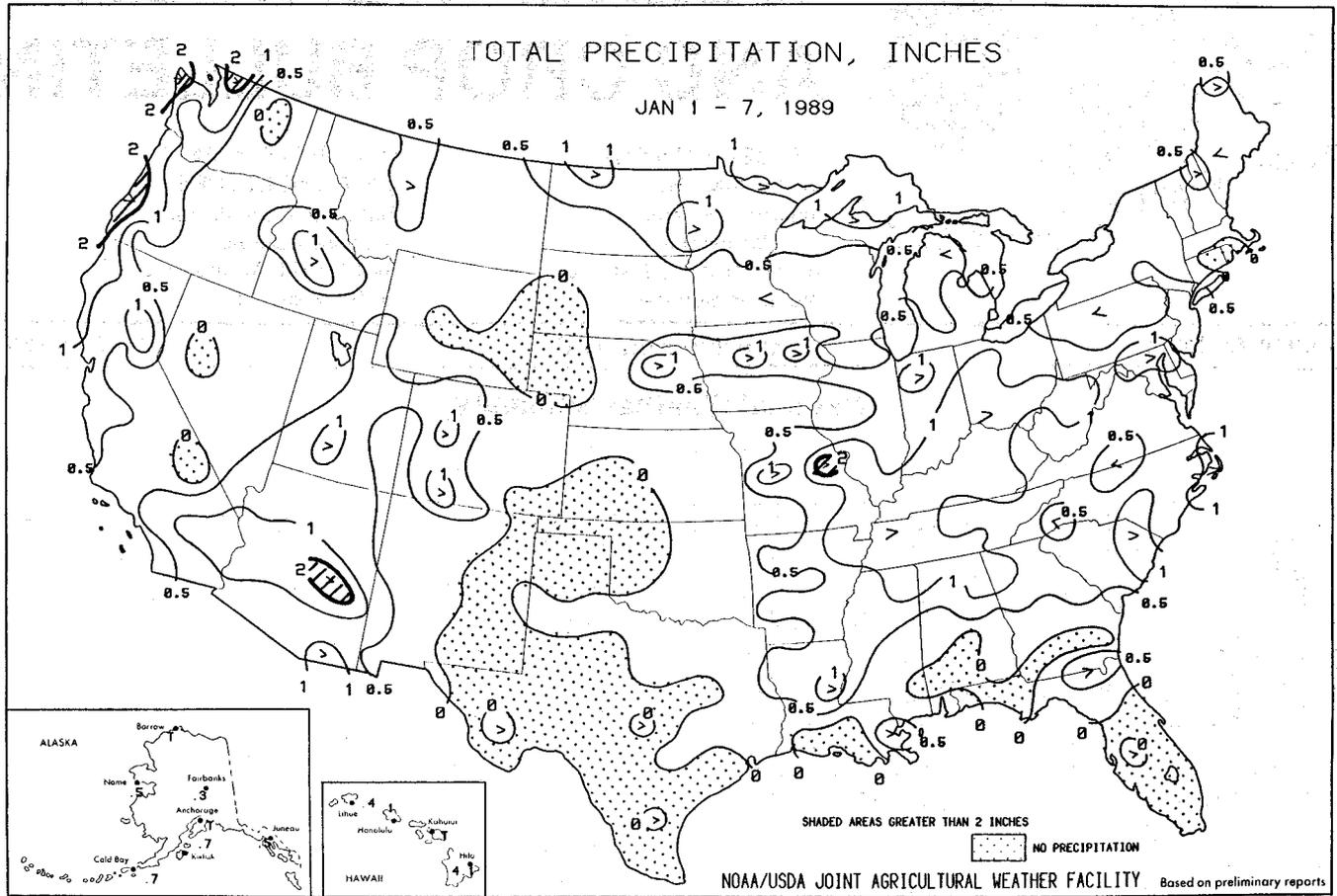
HIGHLIGHTS: A major winter storm with blizzard conditions developed late in the week and dumped very heavy snow across the North Central States. Severe weather occurred in the warm, moist air ahead of the system in the middle Mississippi and Ohio Valleys. Several fast moving systems spread snow and light to moderate rain across the eastern half of the Nation earlier in the week. Dry weather persisted over Florida and much of winter wheat areas in the central and southern Great Plains. Mild weather prevailed over much of the country except for the Northeast, the Great Basin, and California. Temperatures again dropped below freezing in southern California.

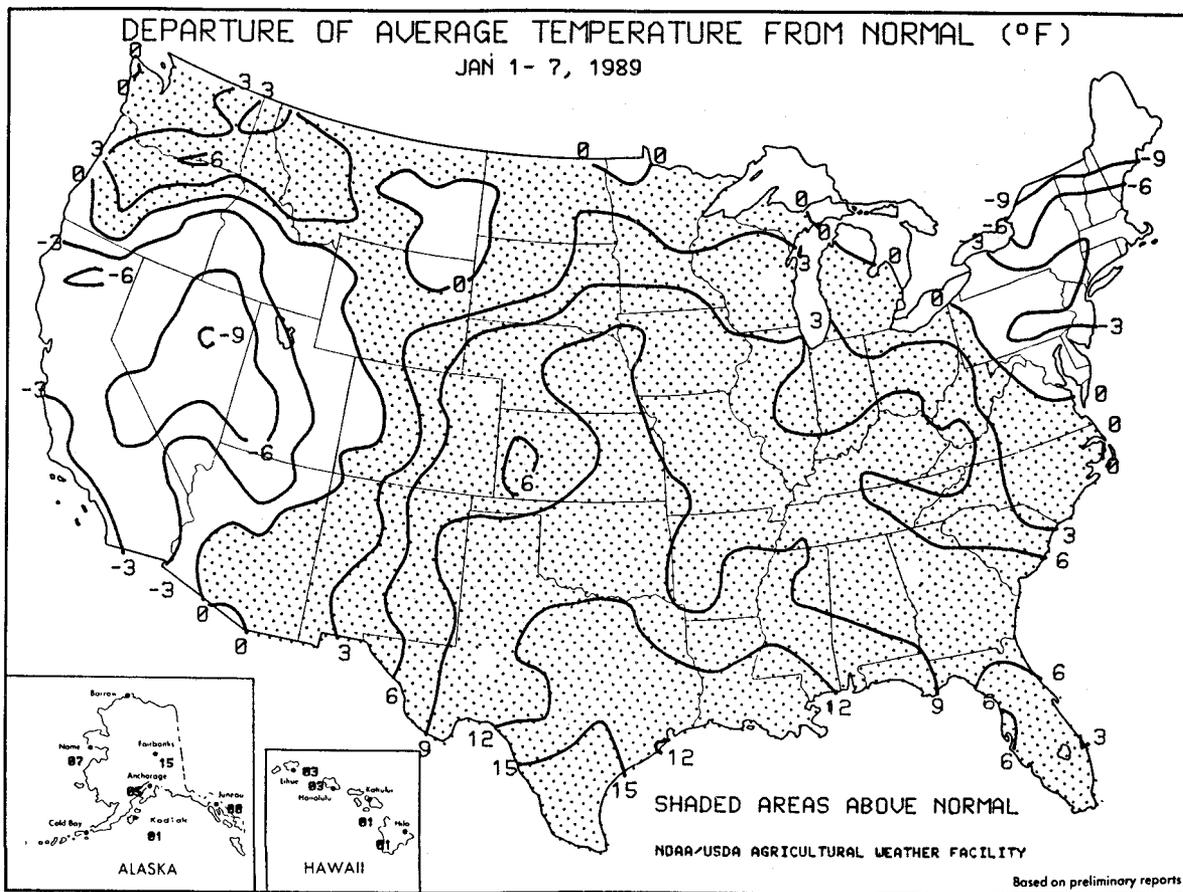
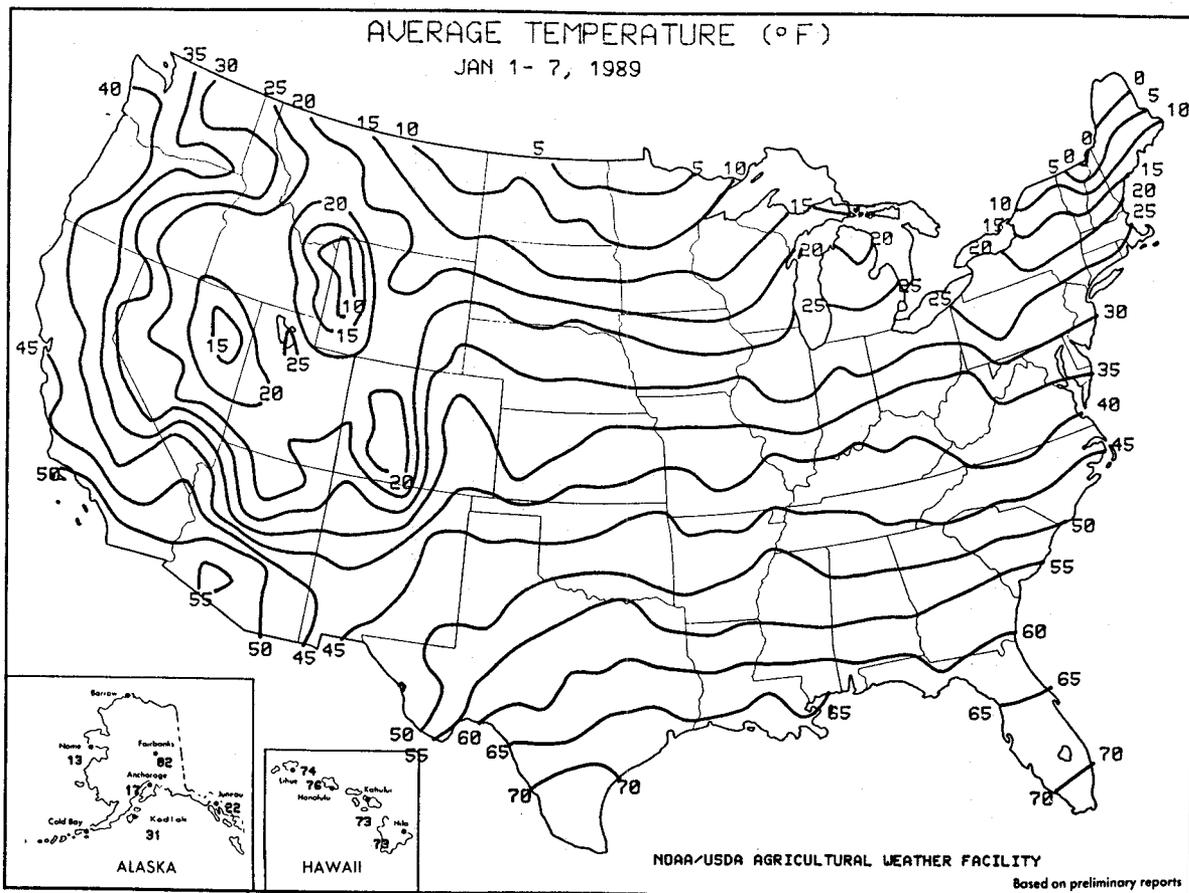
SUNDAY: Precipitation was sparse on New Year's Day over the Nation. Snow and sleet were scattered over the middle and northern Atlantic Coast States, while light rain was scattered across the Northwest. Fog was widespread over the Central United States. Cold arctic air continued to push into the North Central States, while temperatures were unseasonably mild over the remainder of the country.

MONDAY: Precipitation was again sparse over much of the country. Light precipitation was widespread over the Pacific Northwest, while fog, drizzle, and light rain covered the eastern half of the Nation. Strong winds blew over the northern and central Rockies and central High Plains.

TUESDAY: A fast moving low pressure system spread snow and freezing rain from the upper Mississippi Valley to the mid-Atlantic coast. Light to moderate rain fell from northern

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National Weather Data for Selected Cities

Weather Data for the Week Ending January 7, 1989

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	72 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL BIRMINGHAM	62	40	74	29	51	8	.6	-.7	.4	4.0	65	.6	45	97	50	0	2	2	0
MOBILE	72	51	79	40	62	11	.4	-.8	.3	2.2	33	.4	32	95	56	0	0	2	0
MONTGOMERY	68	43	79	28	55	8	.4	-.8	.3	4.4	77	.4	0	96	48	0	1	0	0
AK ANCHORAGE	23	10	34	0	17	5	.5	-.2	.5	1.5	121	.5	5	85	71	0	7	1	0
BARROW	11	-8	28	-27	2	15	.5	-.1	.7	1.3	142	.7	0	86	72	0	7	0	0
FAIRBANKS	10	-5	15	-13	3	16	.3	.2	.3	.8	94	.3	236	90	79	0	7	4	0
JUNEAU	27	17	38	6	22	0	.9	0	.7	5.8	105	.9	102	96	68	0	7	3	1
KODIAK	38	25	42	19	31	1	.7	-.6	.6	11.6	171	.7	51	84	52	0	6	2	1
NOME	24	2	32	-19	13	8	.5	.3	.2	1.8	227	.5	265	96	82	0	7	6	0
AZ PHOENIX	64	42	79	34	53	1	.6	.5	.6	.8	78	.6	376	76	35	0	0	2	1
PRESCOTT	47	24	61	13	36	0	1.1	.7	1.0	1.7	83	1.1	279	82	43	0	5	2	1
TUCSON	62	37	73	29	50	-1	.7	.5	.5	.7	64	.7	353	82	34	0	2	2	0
YUMA	62	43	67	35	53	-3	.6	.5	.4	.7	166	.6	738	70	33	0	0	2	0
AR FORT SMITH	57	33	72	24	45	7	.5	0	.5	2.1	66	.5	107	96	53	0	2	1	0
LITTLE ROCK	58	41	74	34	50	10	.4	-.6	.3	3.5	69	.4	40	83	51	0	0	3	0
CA BAKERSFIELD	50	34	58	30	42	-5	.1	-.1	.1	.9	108	.1	42	97	65	0	2	1	0
EUREKA	48	38	51	36	43	-4	1.9	.3	1.2	8.2	104	1.9	120	92	75	0	0	5	2
FRESNO	45	33	50	29	39	-5	.5	0	.5	2.9	143	.5	109	98	73	0	3	1	0
LOS ANGELES	62	44	70	37	53	-3	.6	0	.5	3.1	138	.6	93	82	40	0	0	2	1
REDDING	47	28	57	23	38	-8	.7	-1.3	.7	4.3	48	.7	34	97	65	0	7	1	1
SACRAMENTO	47	32	54	27	40	-5	.5	-.7	.3	3.5	92	.5	51	98	71	0	3	2	0
SAN DIEGO	62	46	70	39	54	-2	.3	-.2	.1	2.5	103	.3	57	84	46	0	0	4	0
SAN FRANCISCO	52	38	56	33	45	-3	.6	-.4	.5	4.3	92	.6	59	96	59	0	0	3	0
CO DENVER	50	22	63	13	36	6	.3	.1	.3	1.3	202	.3	227	80	24	0	7	1	0
GRAND JUNCTION	35	13	42	3	24	-1	.1	-.1	.1	.3	41	.1	64	94	55	0	7	2	0
PUEBLO	53	19	62	12	36	6	.6	T	0	.6	182	T	33	87	21	0	7	1	0
CT BRIDGEPORT	32	22	40	8	27	-4	.1	-.7	.1	1.7	39	.1	13	66	48	0	7	1	0
HARTFORD	31	15	37	2	23	-3	T	-.9	T	1.4	27	T	0	77	42	0	7	0	0
DC WASHINGTON	38	29	45	19	34	-2	1.0	.4	.6	2.3	61	1.0	156	95	63	0	5	4	1
FL APALACHICOLA	72	54	77	39	63	10	.1	-.7	.1	1.3	29	.1	13	91	63	0	0	1	0
DAYTONA BEACH	77	52	83	40	65	6	0	-.5	0	.9	35	0	0	95	46	0	0	0	0
JACKSONVILLE	73	49	80	32	61	7	.7	-.1	.7	1.8	58	.7	108	97	48	0	1	2	1
KEY WEST	79	68	81	63	73	3	0	-.4	0	.2	9	0	0	85	61	0	0	0	0
MIAMI	81	62	85	54	71	4	0	-.4	0	.1	6	0	0	93	50	0	0	0	0
ORLANDO	77	53	83	44	65	5	0	-.4	0	1.0	43	0	0	95	47	0	0	0	0
TALLAHASSEE	73	46	79	27	59	8	T	-1.0	T	1.1	20	T	2	96	49	0	1	1	0
TAMPA	76	56	80	42	66	6	0	-.4	0	1.6	63	0	0	94	53	0	0	0	0
WEST PALM BEACH	79	58	84	50	69	3	0	-.6	0	1.9	67	0	0	94	53	0	0	0	0
GA ATLANTA	61	40	73	30	51	9	.9	-.3	.5	2.1	39	.9	77	91	42	0	1	3	1
AUGUSTA	65	39	75	26	52	7	.6	-.3	.6	1.9	47	.6	70	95	46	0	2	3	1
MACON	67	41	76	27	54	7	.3	-.7	.2	2.6	51	.3	31	94	43	0	1	4	0
SAVANNAH	69	45	79	29	57	8	.1	-.6	.1	1.1	31	.1	13	92	42	0	1	1	0
HI HILO	80	66	83	61	73	1	4.1	1.9	1.5	17.5	118	4.1	190	93	57	0	0	7	4
HONOLULU	82	69	83	65	76	3	.1	-.7	.1	6.8	159	.1	16	84	54	0	0	2	0
KAHULUI	81	65	84	60	73	1	T	-.9	T	10.2	280	T	3	90	58	0	0	1	0
LIHUE	79	70	80	67	74	3	.4	-1.1	.2	7.2	104	.4	24	87	66	0	0	2	0
ID BOISE	33	15	40	8	24	-5	.3	-.1	.2	1.1	67	.3	86	97	71	0	7	3	0
LEWISTON	40	32	52	19	36	4	.2	-.2	.1	.7	43	.2	52	81	58	0	4	2	0
POCATELLO	28	15	37	5	22	-2	.4	.1	.3	1.6	132	.4	148	94	72	0	7	3	0
IL CHICAGO	35	19	53	9	27	6	.5	0	.2	2.9	103	.5	105	97	68	0	6	3	0
MOLINE	37	21	53	11	29	8	.5	.1	.5	2.1	90	.5	127	94	64	0	6	1	1
PEORIA	36	21	61	8	28	6	.4	0	.4	2.6	109	.4	100	98	76	0	6	3	0
QUINCY	41	25	64	16	33	9	T	-.3	T	1.9	94	T	9	97	66	0	5	1	0
ROCKFORD	31	15	40	6	23	4	.3	-.1	.2	2.0	90	.3	72	96	70	0	7	2	0
SPRINGFIELD	39	24	64	14	32	7	.4	0	.4	3.6	143	.4	97	93	69	0	6	2	0
IN EVANSVILLE	46	32	67	24	39	8	1.1	.4	.7	3.9	93	1.1	155	96	65	0	4	5	1
FORT WAYNE	36	18	59	9	27	2	.9	.4	.5	3.4	115	.9	182	97	71	0	7	4	0
INDIANAPOLIS	39	25	62	16	32	5	.8	.2	.5	3.3	92	.8	130	97	75	0	5	4	0
SOUTH BEND	35	22	56	14	29	4	.9	.3	.5	3.8	108	.9	148	94	73	0	5	4	0
IA DES MOINES	36	19	51	9	28	8	.3	.1	.2	1.2	94	.3	145	92	61	0	6	3	0
SIOUX CITY	37	17	51	4	27	10	.7	.6	.6	1.3	147	.7	500	92	56	0	7	3	1
WATERLOO	30	12	34	4	21	6	.8	.6	.8	1.3	98	.8	385	97	73	0	7	1	1
KS CONCORDIA	45	25	58	14	35	9	.1	0	.1	.7	89	.1	79	89	56	0	4	2	0
DOGE CITY	49	26	67	13	38	8	T	-.1	T	.1	16	T	0	87	43	0	7	0	0
GOODLAND	49	19	66	6	34	7	.1	0	.1	.6	128	.1	150	84	35	0	7	2	0
TOPEKA	45	27	58	17	36	10	.1	-.1	.1	1.0	65	.1	45	96	59	0	5	1	0
WICHITA	48	30	65	16	39	9	T	-.2	T	.5	45	T	6	93	53	0	5	1	0
KY BOWLING GREEN	49	32	67	25	40	6	1.6	.5	.9	7.9	140	1.6	148	98	65	0	4	4	2
LEXINGTON	46	32	64	23	39	7	1.1	.3	.5	4.8	103	1.1	134	95	65	0	5	4	0
LOUISVILLE	47	32	66	25	40	7	1.5	.7	.7	5.0	117	1.5	195	93	63	0	4	5	2
LA ALEXANDRIA	70	51	79	40	60	12	.7	-.3	.6	6.5	111	.7	70	95	62	0	0	2	1
BATON ROUGE	76	56	82	44	66	15	T	-.1	T	8.2	135	T	0	92	55	0	0	0	0
LAKE CHARLES	73	56	82	47	65	14	0	-.1	0	4.8	78	0	0	96	64	0	0	0	0
NEW ORLEANS	74	56	80	44	65	12	.6	-.6	.6	4.5	70	.6	50	96	62	0	0	1	1

Based on 1951-80 normals

Weather Data for the Week Ending January 7, 1989

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
SHREVEPORT	66	46	79	32	56	10	.6	-.4	.5	5.3	109	.6	61	96	54	0	1	2	1
ME CARIBOU	9	-11	16	-18	-1	-13	.3	-.3	.3	1.3	34	.3	47	86	62	0	7	2	0
PORTLAND	25	9	34	-1	17	-5	.5	-.9	.5	1.2	23	.5	2	76	39	0	7	2	0
MD BALTIMORE	37	25	48	13	31	-2	1.2	.5	.6	2.1	52	1.2	165	92	52	0	5	5	1
SALISBURY	42	28	47	16	35	-1	.7	-.1	.3	1.4	30	.7	84	94	62	0	5	5	0
MA BOSTON	32	18	42	5	25	-5	.5	-.9	.5	1.1	19	.5	3	67	42	0	5	6	0
CHATHAM	35	23	42	9	29	-3	.2	-.9	.1	1.5	25	.2	16	78	56	0	6	2	0
MI ALPENA	28	10	41	-18	19	-1	.6	.2	.3	1.9	80	.6	154	96	77	0	7	5	0
DETROIT	35	21	58	7	28	4	.6	.1	.2	2.5	85	.6	115	91	61	0	7	3	0
FLINT	32	17	55	-2	25	2	.8	.4	.5	2.0	86	.8	192	90	68	0	7	4	0
GRAND RAPIDS	32	17	52	0	24	1	.3	-.2	.1	2.2	72	.3	65	94	75	0	7	4	0
HOUGHTON LAKE	25	10	37	-14	18	-1	.5	.2	.3	2.4	106	.5	143	91	74	0	7	6	0
LANSING	32	16	53	-7	24	2	.6	.2	.5	1.9	65	.6	141	92	72	0	7	3	0
MARQUETTE	23	5	32	-6	14	1	.9	.4	.5	3.3	112	.9	186	96	85	0	7	5	0
MUSKEGON	33	18	51	-1	26	2	.8	.3	.4	3.7	116	.8	143	95	75	0	7	4	0
SAULT ST. MARIE	21	3	35	-22	12	-3	.7	.2	.3	4.3	141	.7	132	89	66	0	7	6	0
MN ALEXANDRIA	20	0	30	-15	10	3	.4	.2	.3	.8	81	.4	195	90	78	0	7	3	0
DULUTH	18	0	28	-14	9	2	.9	.7	.7	2.1	134	.9	336	92	73	0	7	4	1
INT'L FALLS	12	-7	19	-21	3	2	1.1	.9	.7	1.9	171	1.1	543	93	73	0	7	6	1
MINNEAPOLIS	27	5	33	-5	16	4	.3	.1	.3	1.0	94	.3	158	92	70	0	7	2	0
ROCHESTER	27	6	32	-3	16	6	.1	-.1	.1	1.2	114	.1	58	94	73	0	7	2	0
MS GREENWOOD	63	42	75	31	52	8	.6	-.7	.5	5.9	89	.6	47	95	55	0	1	3	0
JACKSON	69	44	79	35	57	11	.1	-.1	.1	4.9	74	.1	6	96	52	0	0	2	0
MERIDIAN	67	43	79	32	55	9	.5	-.2	.2	7.5	108	.5	1	98	49	0	1	1	0
MO CAPE GIRARDEAU	50	35	67	28	42	-	1.9	1.2	.9	4.8	108	1.9	266	98	64	0	1	4	2
COLUMBIA	45	28	66	20	37	8	.6	.2	.6	4.0	168	.6	151	98	66	0	5	2	1
KANSAS CITY	43	27	55	16	35	7	.1	-.2	.1	.9	53	.1	27	96	63	0	5	1	0
SAIN'T LOUIS	45	31	68	25	38	8	1.7	1.3	1.3	4.9	190	1.7	412	96	67	0	6	3	1
SPRINGFIELD	51	31	67	23	41	9	.1	-.3	.1	3.2	109	.1	20	95	53	0	4	1	0
MT BILLINGS	33	13	48	-9	23	1	.3	.1	.3	.9	91	.3	155	80	54	0	6	1	0
GLASGOW	19	1	41	-15	10	1	.3	.3	.2	.8	183	.3	413	88	65	0	7	4	0
GREAT FALLS	32	14	50	-15	23	3	.6	.4	.3	1.6	157	.6	273	80	56	0	6	3	0
HAVRE	23	5	42	-23	14	2	.5	-.1	.1	.5	78	.5	29	91	71	0	7	1	0
HELENA	32	11	47	-16	22	3	.4	.3	.3	.7	95	.4	247	87	56	0	7	2	0
KALISPELL	33	20	44	5	26	6	.2	-.2	.1	2.5	127	.2	38	86	60	0	6	3	0
MILES CITY	23	4	41	-14	14	-1	.5	.3	.3	1.1	140	.5	321	79	61	0	7	3	0
MISSOULA	33	19	47	0	26	5	.1	-.2	.1	.9	58	.1	42	98	67	0	7	2	0
NE GRAND ISLAND	42	19	60	7	31	9	.1	0	.1	.4	54	.1	127	91	49	0	7	3	0
LINCOLN	40	20	55	7	30	10	.2	.1	.2	.8	101	.2	157	93	54	0	5	2	0
NORFOLK	40	16	59	5	28	10	.9	.8	.8	1.8	247	.9	818	92	53	0	7	2	1
NORTH PLATTE	45	15	65	6	30	9	.2	.1	.1	.2	31	.2	188	95	42	0	7	2	0
OMAHA	38	20	53	8	29	8	.2	.1	.2	1.0	113	.2	141	87	55	0	6	3	0
SCOTT'S BLUFF	47	15	61	3	31	7	.5	.1	.1	.4	67	.5	0	80	26	0	7	0	0
VALENTINE	39	12	58	0	25	6	.5	.2	.2	.2	65	.5	33	80	45	0	7	1	0
NV ELY	32	0	41	-11	16	-8	.3	.1	.2	1.1	122	.3	165	87	51	0	7	3	0
LAS VEGAS	53	33	59	26	43	-1	.5	.4	.5	.6	156	.5	530	77	32	0	4	2	1
RENO	36	18	44	12	27	-4	.1	-.2	.1	.9	62	.1	30	92	58	0	7	1	0
WINNEMUCCA	31	15	37	8	23	-6	.5	.2	.2	.6	54	.5	21	93	67	0	7	2	0
NH CONCORD	26	9	34	-3	17	-3	.8	0	.6	1.4	32	.8	98	92	53	0	6	3	1
NJ ATLANTIC CITY	38	23	46	8	31	-3	.1	0	.1	.2	27	.1	130	73	31	0	7	1	0
NM ALBUQUERQUE	48	25	59	17	37	3	.1	0	.6	1.4	32	.8	98	92	53	0	6	3	1
CLOVIS	60	32	69	18	46	9	.5	.1	.1	1.5	209	.5	9	62	22	0	3	1	0
ROSWELL	63	32	69	22	47	9	0	-.1	0	.5	111	0	0	63	20	0	4	0	0
NY ALBANY	27	11	37	-1	19	-3	.5	-.6	.5	1.0	29	.5	2	80	46	0	7	1	0
BINGHAMTON	25	13	36	-3	19	-3	.5	-.1	.4	1.7	49	.5	84	92	61	0	7	4	0
BUFFALO	30	17	44	2	23	-2	.3	-.5	.1	2.4	58	.3	34	89	59	0	7	4	0
NEW YORK	34	24	42	12	29	-3	.7	0	.7	1.9	44	.7	99	81	46	0	6	2	1
ROCHESTER	29	15	40	2	22	-3	.3	-.3	.1	1.4	44	.3	52	87	62	0	7	4	0
SYRACUSE	27	8	40	-9	18	-6	.1	-.5	.1	2.0	54	.1	18	88	63	0	7	3	0
NC ASHEVILLE	55	32	62	19	43	6	.3	-.5	.2	1.7	43	.3	38	93	50	0	3	2	0
CHARLOTTE	51	39	55	25	45	4	.7	-.2	.5	2.3	54	.7	82	90	57	0	2	3	0
GREENSBORO	46	34	49	21	40	2	.3	-.6	.1	1.4	35	.3	31	91	64	0	2	3	0
HATTERAS	53	38	68	28	46	0	1.4	.3	.7	2.2	39	1.4	129	94	67	0	2	3	2
NEW BERN	53	39	59	24	46	1	.6	-.3	.4	1.6	34	.6	67	95	57	0	2	3	0
RALEIGH	47	35	51	20	41	1	.5	-.3	.4	1.6	40	.5	67	90	60	0	2	3	0
WILMINGTON	58	38	66	26	48	2	.7	-.2	.6	1.2	29	.7	78	92	57	0	2	3	0
ND BISMARCK	21	0	43	-23	10	2	.4	-.3	.3	1.1	182	.4	345	89	72	0	7	2	1
FARGO	20	-3	27	-20	8	3	1.3	1.2	.7	2.4	324	1.3	943	93	74	0	7	3	2
GRAND FORKS	15	-6	24	-23	4	1	1.0	.8	.5	2.9	366	1.0	565	89	71	0	7	3	2
WILLISTON	18	-3	40	-21	8	0	.6	.5	.2	1.4	230	.6	555	88	73	0	7	4	0
OH AKRON-CANTON	37	22	59	11	29	3	.7	-.1	.4	2.6	78	.7	121	94	71	0	5	5	0
CINCINNATI	43	31	64	22	37	7	1.6	.9	.7	4.4	118	1.6	219	95	68	0	5	5	2
CLEVELAND	38	22	61	13	30	3	.6	0	.3	3.1	92	.6	98	92	70	0	5	5	0
COLUMBUS	40	27	62	18	34	6	.8	.2	.5	3.3	102	.8	125	94	67	0	5	4	0

Weather Data for the Week Ending January 7, 1989

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	PRECIPI- TATION	
																		.01 INCH OR MORE	.50 INCH OR MORE
DAYTON	39	26	62	17	32	5	1.4	.8	.8	4.1	132	1.4	231	96	72	0	5	4	1
TOLEDO	36	19	60	9	28	3	.7	.2	.2	2.6	85	.7	132	94	71	0	7	4	0
YOUNGSTOWN	35	19	51	6	27	2	.4	-.2	.3	2.3	69	.4	65	94	69	0	7	3	0
OK OKLAHOMA CITY	57	35	70	29	46	10	T	-.2	T	1.4	101	T	5	87	42	0	1	1	0
TULSA	57	36	70	29	46	11	T	-.3	T	1.8	88	T	6	91	44	0	3	1	0
OR ASTORIA	46	37	52	29	42	1	1.3	-1.3	.3	8.6	61	1.3	50	98	82	0	2	7	0
BURNS	29	15	36	-2	22	-4	.1	-.3	.1	.8	43	.1	31	87	68	0	7	1	0
MEDFORD	42	33	44	28	38	1	.5	-.4	.3	1.7	40	.5	55	98	72	0	4	5	0
PENDLETON	44	33	60	24	39	6	.3	-.1	.3	.7	33	.3	76	80	58	0	3	2	0
PORTLAND	48	38	60	28	43	4	.9	-.6	.4	3.3	41	.9	59	97	73	0	1	6	0
SALEM	48	39	59	32	44	5	.7	-1.0	.5	4.0	45	.7	42	96	74	0	1	5	0
PA ALLENTOWN	32	20	42	8	26	-2	.3	-.5	.3	1.3	28	.3	34	86	52	0	7	2	0
ERIE	34	19	50	4	27	1	.3	-.3	.2	3.0	77	.3	55	89	61	0	7	3	0
HARRISBURG	32	22	43	12	27	-3	.6	-.1	.3	1.5	37	.6	81	93	57	0	7	5	0
PHILADELPHIA	35	24	45	11	30	-3	.6	-.1	.5	1.6	39	.6	81	88	52	0	6	3	1
PITTSBURGH	37	24	56	12	30	2	.6	-.1	.3	2.8	85	.6	88	97	70	0	7	4	0
SCRANTON	30	18	39	4	24	-2	.1	-.4	.1	1.2	39	.1	17	86	52	0	7	2	0
RI PROVIDENCE	32	19	40	6	25	-7	T	-1.0	T	1.0	19	T	0	74	43	0	7	0	0
SC CHARLESTON	65	45	77	33	55	7	1.3	.6	.9	2.1	53	1.3	181	94	52	0	0	2	1
COLUMBIA	61	39	68	26	50	5	.7	-.3	.6	1.5	32	.7	73	94	53	0	2	3	1
FLORENCE	57	39	67	25	48	3	1.0	-.2	.8	1.8	47	1.0	129	92	55	0	2	3	1
GREENVILLE	53	37	62	23	45	3	.5	-.5	.3	2.4	48	.5	51	92	61	0	2	4	0
SD ABERDEEN	22	1	30	-21	11	2	.2	-.1	.1	1.5	257	.2	155	90	77	0	7	2	0
HURON	29	6	38	-10	18	6	.2	-.1	.2	.9	147	.2	250	91	73	0	7	3	0
RAPID CITY	32	13	50	0	23	1	T	-1.1	T	.5	90	T	0	88	54	0	7	0	0
SIOUX FALLS	32	11	44	-2	21	8	.2	-.1	.2	.5	67	.2	155	95	69	0	7	2	0
TN CHATTANOOGA	57	36	71	25	47	8	.7	-.5	.4	4.2	66	.7	56	96	53	0	2	5	0
KNOXVILLE	52	35	69	21	44	5	.8	-.3	.6	4.8	84	.8	71	98	63	0	2	5	1
MEMPHIS	58	41	74	33	49	10	1.0	-.1	.6	6.9	117	1.0	93	92	53	0	0	3	1
NASHVILLE	53	37	70	27	45	7	.7	-.4	.4	4.7	82	.7	67	94	59	0	2	3	0
TX ABILENE	69	44	75	37	57	13	T	-.2	T	.8	74	T	0	61	22	0	0	0	0
AMARILLO	63	30	71	20	46	11	T	-.1	0	.2	28	0	0	62	20	0	5	0	0
AUSTIN	76	53	84	40	64	15	T	-.3	T	1.1	48	T	0	92	37	0	0	0	0
BEAUMONT	74	56	81	46	65	13	.1	-.9	.1	5.9	101	.1	8	97	63	0	0	2	0
BROWNSVILLE	84	67	86	65	76	15	0	-.3	0	.1	5	0	0	98	59	0	0	0	0
CORPUS CHRISTI	82	62	90	54	72	17	0	-.3	0	1.0	63	0	0	99	58	1	0	0	0
DEL RIO	75	51	82	43	63	13	0	-.1	0	.4	58	0	0	81	32	0	0	0	0
EL PASO	60	34	70	23	47	4	T	-.1	T	.5	100	T	13	63	24	0	3	1	0
FORT WORTH	69	45	77	37	57	13	T	-.4	T	2.5	118	T	3	84	35	0	0	1	0
GALVESTON	71	60	78	53	66	12	T	-.7	T	2.9	67	T	0	98	72	0	0	0	0
HOUSTON	76	56	83	43	66	14	T	-.8	T	1.3	28	T	3	93	48	0	0	1	0
LUBBOCK	63	36	68	28	50	11	T	-.1	T	.6	129	T	25	58	20	0	2	1	0
MIDLAND	68	36	74	22	52	8	0	-.1	0	.5	102	0	0	68	23	0	2	0	0
SAN ANGELO	73	41	80	29	57	12	T	-.1	T	.8	104	T	0	82	23	0	1	0	0
SAN ANTONIO	76	53	86	42	65	14	T	-.3	T	.7	41	T	0	92	41	0	0	0	0
VICTORIA	79	59	85	48	69	16	T	-.4	T	2.2	88	T	0	96	56	0	0	0	0
WACO	73	45	79	32	59	12	T	-.4	T	2.0	89	T	0	94	35	0	1	0	0
WICHITA FALLS	65	39	75	31	52	12	T	-.2	T	1.1	81	T	14	84	30	0	1	1	0
UT CEDAR CITY	36	8	40	-9	22	-7	.8	.7	.4	1.5	196	.8	593	99	59	0	7	3	0
SALT LAKE CITY	34	17	41	14	25	-3	.3	0	.2	.9	55	.3	93	97	62	0	7	3	0
VT BURLINGTON	22	2	35	-11	12	-6	.1	-.4	.1	1.0	34	.1	13	97	60	0	7	1	0
VA NORFOLK	46	36	53	26	41	0	.8	0	.3	1.5	38	.8	101	91	56	0	2	4	0
RICHMOND	45	30	56	17	38	0	.6	-.1	.3	1.4	34	.6	85	94	56	0	3	3	0
ROANOKE	45	32	56	21	39	3	.8	-.1	.4	2.1	58	.8	122	92	59	0	2	5	0
WA QUILLAYUTE	43	33	49	22	38	0	2.3	-1.3	1.4	14.4	68	2.3	64	100	90	0	3	7	1
SEATTLE-TACOMA	44	37	53	28	40	1	1.0	-.4	.6	4.5	58	1.0	70	99	82	0	2	6	1
SPOKANE	33	23	44	7	28	3	.2	-.4	.2	2.0	64	.2	38	98	80	0	5	4	0
YAKIMA	41	24	57	16	33	5	.1	-.2	.1	.8	51	.1	42	97	68	0	6	3	0
WV BECKLEY	45	28	56	14	37	6	.9	-.1	.4	3.1	79	.9	110	95	68	0	3	5	0
CHARLESTON	47	31	67	17	39	6	.9	-.1	.3	3.6	88	.9	114	96	61	0	3	6	0
HUNTINGTON	45	31	68	17	38	4	.7	0	.2	3.9	100	.7	95	96	61	0	3	5	0
PARKERSBURG	42	29	63	17	36	4	1.1	.5	.5	3.7	108	1.1	173	95	64	0	4	5	0
WI GREEN BAY	28	14	37	1	21	6	.1	-.2	0	.9	53	.1	17	96	76	0	7	2	0
LACROSSE	27	7	35	-5	17	2	.1	-.2	.1	.9	65	.1	32	92	66	0	7	1	0
MADISON	29	15	38	4	22	5	.3	0	.2	1.8	102	.3	89	93	71	0	7	3	0
MILWAUKEE	33	17	43	10	25	5	.3	-.1	.2	1.8	73	.3	83	95	73	0	7	4	0
WAUSAU	24	8	33	-6	16	4	.3	.1	.1	1.7	115	.3	139	93	72	0	7	4	0
WY CASPER	35	14	46	-9	25	2	T	-.1	T	.5	87	T	18	78	44	0	7	1	0
CHEYENNE	43	21	55	9	32	5	0	-.1	0	.5	118	0	0	76	26	0	7	0	0
LANDER	35	9	45	-1	22	2	T	-.1	T	.7	116	T	0	84	43	0	7	0	0
SHERIDAN	30	7	45	-7	19	-1	.1	-.1	.1	.7	77	.1	35	89	55	0	7	1	0
PR SAN JUAN	83	70	84	67	77	0	.2	-.6	.1	4.3	83	.2	21	90	64	0	0	3	0

DECEMBER WEATHER SUMMARY

HIGHLIGHTS: Dryness continued along the southern Atlantic seaboard and in the winter wheat areas of the Great Plains. South Florida received the least amount of rainfall on record for the September to December period. Dryness also prevailed over the northern Atlantic seaboard, the western Corn Belt, and the interior of the Pacific Northwest. Winter storms brought near- to above-normal precipitation into most of the Mississippi and Ohio Valleys. Heavy snow fell in the northern and central Rockies. Cold weather prevailed over the northern and central Intermountain Plateau, while above-normal temperatures persisted in the central and southern Great Plains.

DECEMBER 1-3: High pressure and sunny skies dominated most of the Nation as the storms stayed north of the Canadian border.

DECEMBER 4-10: Cold, arctic air replaced the mild weather that prevailed over the eastern half of the Nation during the first part of the week. At midweek, a major winter storm brought snow and high wind to the southern Rockies and southern Plains, while Santa Ana winds fanned fires in southern California. Lake-effect snow fell across the Great Lakes into the Northeast. Little or no precipitation fell over the Corn Belt, northern and central Plains, and the Southwestern States. Substantial rain fell across the western Gulf coast at week's end.

DECEMBER 11-17: Frigid arctic air and several low pressure systems brought winter conditions to the Northern United States, while the winter wheat areas in the central Plains remained relatively dry. An arctic outbreak early in the week resulted in record-low temperatures throughout the Northeast. Another outbreak occurred midweek over the northern Plains and Northeast. Several fast moving storm systems produced snow across the northern Plains and eastward to the north Atlantic coast. These storms were responsible for heavy lake-effect snow across the southern and northern shores of the Great Lakes. Late in the week, heavy snow and strong winds occurred in the mountains of southern California, with rain occurring at lower elevations. The central Plains, low on soil moisture reserves, received only light snow which subsequently melted.

DECEMBER 18-24: The west Coast was buffeted by several storm systems, which brought snow to the mountains and rain to the coast. High winds produced high surf and coastal erosion. Much of the Intermountain and Rocky Mountain States received snow from these storms. Low temperatures on Monday morning were well below freezing in northern and interior Florida. Mild weather during the week prevented a white Christmas throughout the eastern half of the country except for the northern Plains

and Great Lakes. Late-week heavy rain spread over the lower Mississippi Valley to the Ohio Valley. Severe weather produced several tornadoes in Tennessee on Saturday.

DECEMBER 25-31: A major winter storm trekked across the United States during the first half of the week. Heavy rain fell in the warm, moist air ahead of the system in the lower Mississippi and Ohio Valleys. Thunderstorms brought more drenching rain to the Delta and into the Southeast at year's end. Wet weather persisted along the northern Pacific coast, while much of the winter wheat region in the Great Plains remained dry. The mild weather along the Gulf and Atlantic seabords contrasted with the persistent cold in the West. Temperatures dropped to below freezing over much of California.

WINTER WHEAT

Lack of moisture stressed winter wheat in the central and southern Plains during December. At midmonth, some reseeding occurred in Texas. Greenbug infestation was a continuing problem. By the end of the month, greenbugs were a problem as far north as Nebraska. Moisture improved conditions in eastern Kansas and the Texas Blacklands late in December. Early in the month, producers were concerned about lack of snow cover in the northern Plains and the Corn Belt. By month's end, snow cover was improved but still limited in some areas. Despite limited snow cover in Colorado and Montana, wind damage was light. Russian wheat aphids were a problem in Oregon and Washington during most of the month. Storms slowed seeding in California during the latter half of December. Winter wheat was mostly good to fair in the Southeast. Seeding was nearly complete by month's end.

HARVESTING PROGRESS

Cotton harvest was normal or ahead of normal early in December. Harvest was 92 percent complete, 7 points ahead of normal by December 11. Most of the unharvested acreage was in New Mexico, Oklahoma, and Texas. Rain and snow slowed harvesting early in the month in those States. Snow, ice, and blowing sand reduced the quality of the unharvested crop in Texas. Soybean harvest was still in progress in the Delta, the Southeast, and portions of the eastern Corn Belt. By midmonth, soybean harvest was nearly complete except in the Southeast. Cotton harvest was nearly complete by the end of December. Producers in Arizona, California, and Texas began preparing for seeding the 1989 cotton crop late in the month. Soybean harvest was nearly complete in the Southeast at month's end.

DECEMBER CLIMATE, 1895-1988

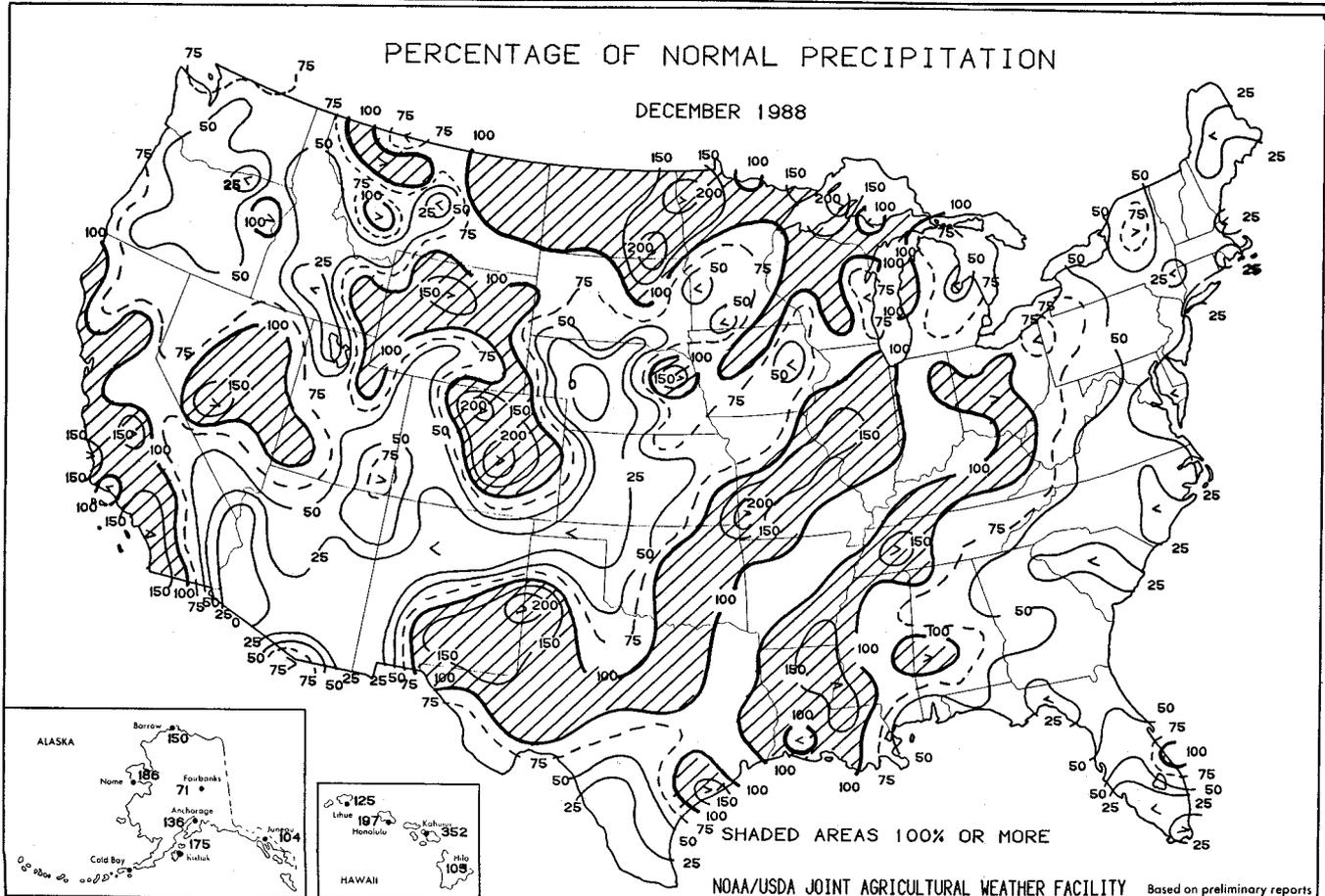
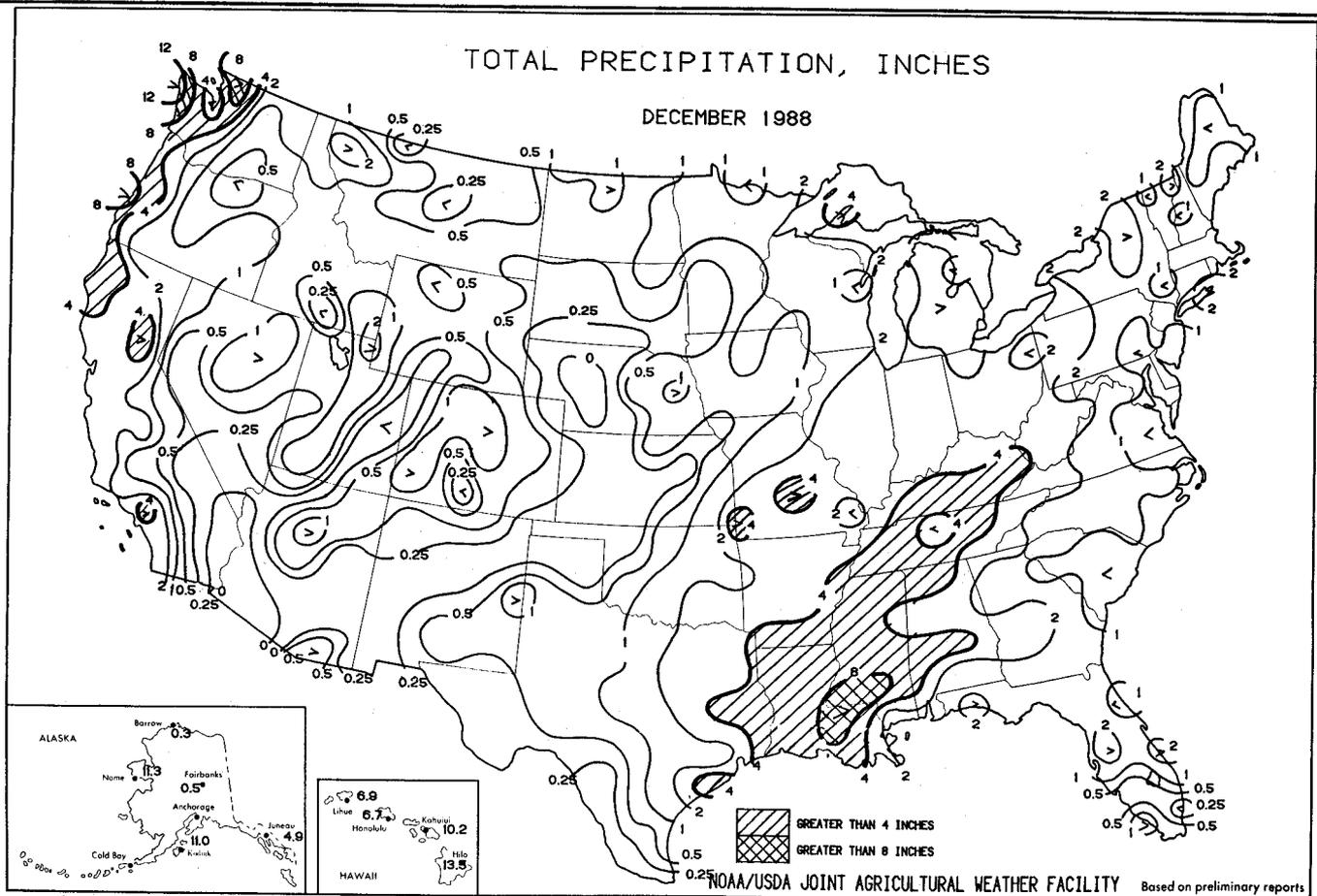
National Climatic Data Center, NOAA

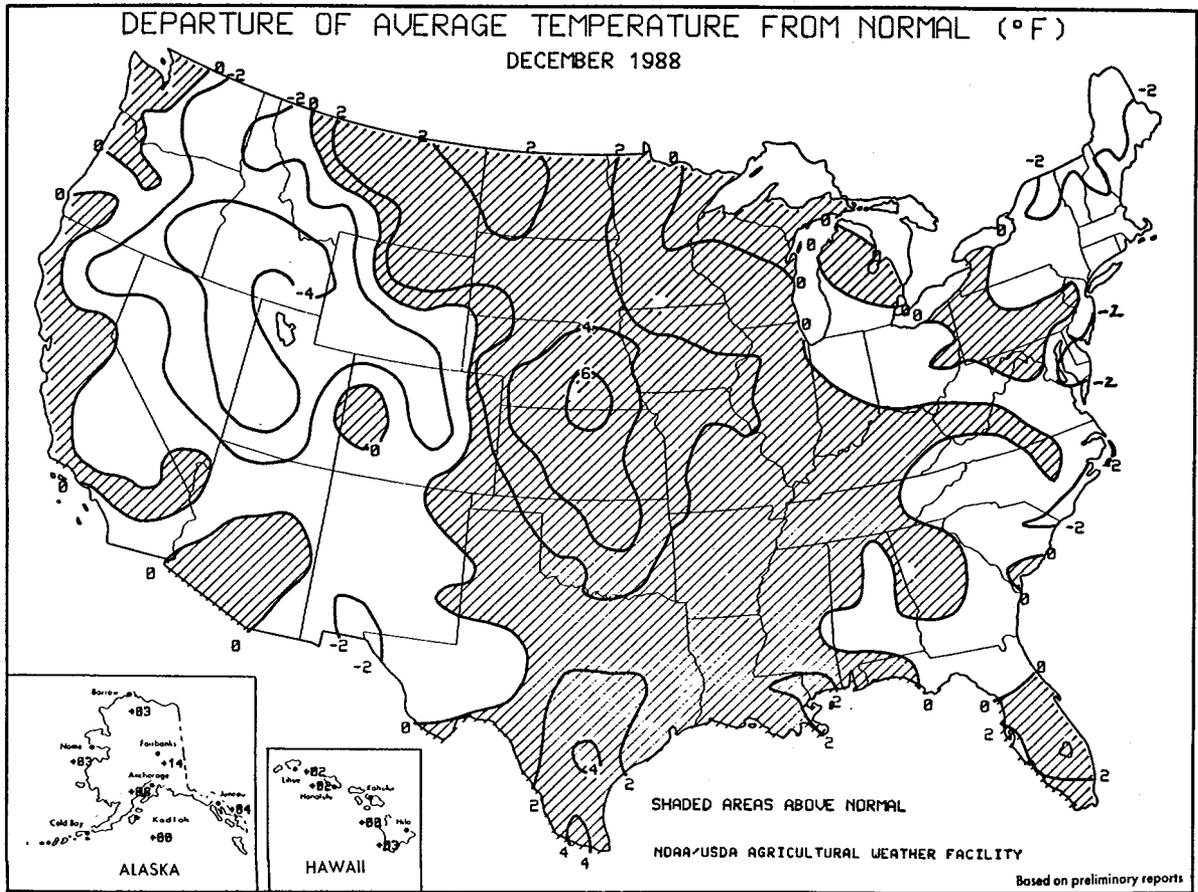
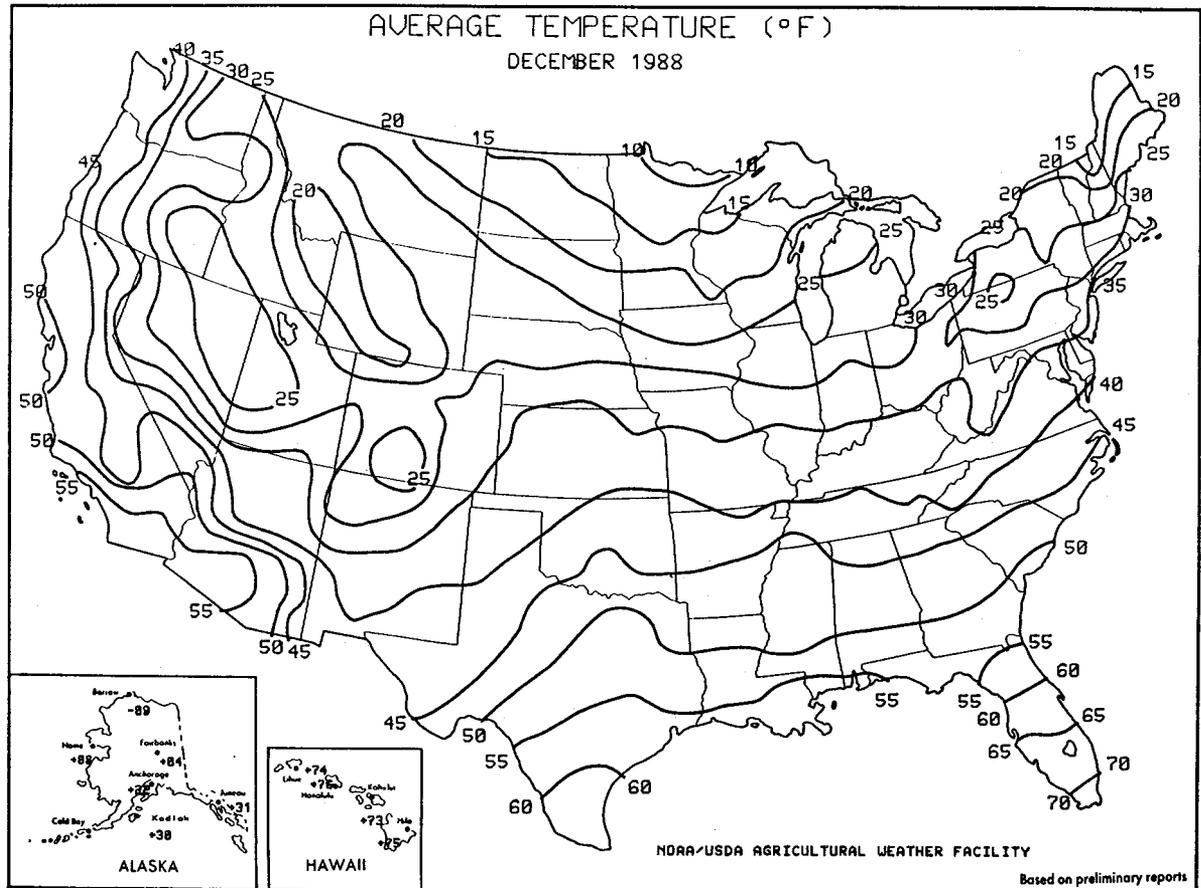
Preliminary data for December 1988 indicate that temperatures across the contiguous United States were near the long-term mean (fig. 1). Areally averaged precipitation for the Nation was below the mean (fig. 2).

Below-average precipitation fell in the West and East. December 1988 was the fifth driest December on record for the Northeast and Southeast. Precipitation in the remaining regions was near or slightly below the long-term mean.

The warmest Decembers for the Nation as a whole occurred during the 1930's and 1950's. The coldest Decembers occurred near the beginning of the 1900's and again during the 1960's and 1980's, with December 1983 ranking as the coldest December on record.

(Continued to p. 16)





Temperature and Precipitation Data for December 1988

States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches		States and Stations	Temperature °F		Precipitation Inches	
	Average	Departure	Total	Departure		Average	Departure	Total	Departure		Average	Departure	Total	Departure
AL BIRMINGHAM	46	0	3.4	-1.6	LA ALEXANDRIA	52	1	5.8	0.9	COLUMBUS	31	-1	2.5	-0.1
MOBILE	54	1	1.8	-3.6	BAYON ROUGE	55	2	8.2	3.2	DAYTON	31	-1	2.7	0.2
MONTGOMERY	48	-1	4.4	-0.3	LAKE CHARLES	55	1	4.8	-0.3	TOLEDO	28	-1	2.0	-0.6
AK ANCHORAGE	22	8	1.5	0.4	NEW ORLEANS	56	1	3.9	-1.3	YOUNGSTOWN	30	0	1.9	-0.8
BARROW	-9	3	0.3	0.1	SHREVEPORT	49	1	4.7	0.8	OK OKLAHOMA CITY	44	4	1.4	0.2
FAIRBANKS	4	14	0.5	-0.2	ME CARIBOU	13	-3	1.0	-2.2	TULSA	43	4	1.8	0.0
JUNEAU	31	4	4.9	0.2	PORTLAND	26	0	1.2	-3.3	OR ASTORIA	44	0	7.3	-4.3
KODIAK	30	0	11.0	5.5	MD BALTIMORE	36	0	1.0	-2.4	BURNS	22	-5	1.0	-0.6
NOME	8	3	1.3	0.7	SALISBURY	37	-2	0.7	-3.0	MEDFORD	38	1	1.3	-2.2
AZ FLAGSTAFF	28	-2	1.0	-1.3	MA BOSTON	33	-1	1.0	-3.4	PENDLETON	34	-2	0.4	-1.3
PHOENIX	56	2	0.1	-0.7	CHATHAM	34	-1	1.4	-3.6	PORTLAND	42	1	2.4	-4.0
PRESCOTT	37	0	0.6	-1.0	MI ALPENA	24	0	1.2	-0.8	SALEM	41	0	3.2	-3.8
TUCSON	52	0	0.1	-0.9	DETROIT	29	0	2.0	-0.5	PA ALLENTOWN	32	0	1.0	-2.7
WINSLOW	35	2	0.1	-0.5	FLINT	27	0	1.3	-0.7	ERIE	32	1	2.6	-0.6
YUMA	58	1	T	-0.2	GRAND RAPIDS	27	-1	1.9	-0.7	HARRISBURG	33	0	0.9	-2.3
AR FORT SMITH	42	1	1.7	-1.2	HOUGHTON LAKE	24	1	1.9	0.0	PHILADELPHIA	35	0	1.0	-2.4
LITTLE ROCK	45	1	3.2	-1.1	LANSING	27	0	1.3	-1.2	PITTSBURGH	32	0	2.2	-0.4
CA BAKERSFIELD	47	-1	0.8	0.1	MARQUETTE	16	-2	2.4	-0.1	SCRANTON	30	0	1.1	-1.4
EUREKA	48	0	6.3	0.1	MIKESBORG	29	0	2.8	0.2	RI PROVIDENCE	32	0	1.0	-3.4
FRESNO	45	-1	2.5	0.9	SAULT ST. MARIE	19	-1	3.6	1.1	SC CHARLESTON	51	0	0.7	-2.4
LOS ANGELES	57	-1	2.5	0.9	MN ALEXANDRIA	16	1	0.4	-0.4	COLUMBIA	46	-1	0.8	-2.7
REDDING	45	-2	3.7	-3.3	DULUTH	14	-1	1.1	-0.2	FLORENCE	46	-1	0.8	-2.2
SACRAMENTO	46	1	3.0	0.2	INT'L FALLS	9	0	0.8	-0.2	GREENVILLE	43	-1	1.9	-2.1
SAN DIEGO	56	-2	2.2	0.3	MINNEAPOLIS	21	1	0.7	-0.2	SD ABERDEEN	19	2	1.4	0.9
SAN FRANCISCO	51	1	3.7	0.1	ROCHESTER	19	1	1.1	0.2	HURON	22	3	0.7	0.2
STOCKTON	45	-1	2.3	-0.1	ST. CLOUD	16	1	0.6	-0.3	RAPID CITY	29	2	0.5	0.0
CO DENVER	31	-1	1.0	0.5	MS GREENWOOD	47	1	5.3	-0.1	SIoux FALLS	22	2	0.4	-0.3
GRAND JUNCTION	30	1	0.2	-0.4	JACKSON	49	1	4.8	-0.6	TN CHATTANOOGA	42	1	3.5	-1.6
PUEBLO	31	-2	0.6	0.3	MERIDIAN	48	0	7.5	1.8	BRISTAL	38	0	2.7	-0.8
CT BRIDGEPORT	33	-1	1.6	-2.2	MO COLUMBIA	34	1	3.4	1.4	KNOWVILLE	40	-1	4.0	-0.6
HARTFORD	29	0	1.4	-2.8	KANSAS CITY	35	2	0.9	-0.6	MEMPHIS	45	1	5.9	1.1
DC WASHINGTON	39	0	1.3	-1.9	SAINT LOUIS	37	3	3.2	1.0	NASHVILLE	42	1	4.0	-0.7
FL APAJACHICOLA	55	0	1.2	-2.3	SPRINGFIELD	37	1	3.1	0.5	TX ABILENE	47	1	0.8	-0.1
DAYTONA BEACH	60	0	0.9	-1.3	MT BILLINGS	29	2	0.6	-0.2	AMARILLO	39	0	0.2	-0.3
FT. MYERS	67	2	0.3	-1.3	GLASGOW	19	2	0.4	0.1	AUSTIN	56	3	1.1	-0.9
JACKSONVILLE	54	-1	1.1	-1.3	GREAT FALLS	30	4	1.0	0.2	BEAUMONT	55	1	5.8	0.9
KEY WEST	71	0	0.2	-1.5	HAVRE	23	3	0.5	0.0	BROWNSVILLE	64	2	0.1	-1.1
MIAMI	70	2	0.1	-1.7	HELENA	23	0	0.3	-0.3	CORPUS CHRISTI	61	2	1.0	-0.2
ORLANDO	62	1	1.0	-0.9	KALISPELL	24	0	2.3	0.8	DEL RIO	53	1	0.4	-0.2
TALLAHASSEE	51	-2	1.1	-3.5	MILES CITY	25	3	0.6	0.0	EL PASO	43	-2	0.4	0.1
TAMPA	63	2	1.6	-0.5	MISSOULA	23	-2	0.8	-0.4	FORT WORTH	49	1	2.5	0.8
WEST PALM BEACH	68	1	1.9	-0.4	NE GRAND ISLAND	33	6	0.3	-0.4	GALVESTON	58	1	2.9	-0.7
GA ATLANTA	46	2	1.2	-3.0	LINCOLN	32	5	0.6	-0.1	HOUSTON	55	1	1.3	-2.5
AUGUSTA	46	-1	1.3	-1.9	NORFOLK	29	5	0.9	0.3	LUBBOCK	42	0	0.6	0.2
MACON	48	-1	2.3	-1.8	NORTH PLATTE	30	4	T	-0.4	MIDLAND	44	-2	0.5	0.1
SAVANNAH	51	0	1.0	-1.8	OMAHA	30	3	0.8	0.0	SAN ANGELO	48	0	0.8	0.2
HI HILO	75	3	13.5	0.6	SCOTT'SBLUFF	28	0	0.4	-0.1	SAN ANTONIO	56	3	0.7	-0.7
HONOLULU	76	2	6.7	3.3	VALENTINE	26	2	0.2	-0.1	VICTORIA	58	2	2.2	0.1
KAHULUI	73	0	10.2	7.3	NV ELKO	22	-4	1.0	0.0	WACO	51	1	2.0	0.1
LIHUE	74	2	6.9	1.4	ELY	22	-4	0.8	0.1	WICHITA FALLS	46	2	1.1	-0.1
ID BOISE	27	-5	0.8	-0.5	LAS VEGAS	46	1	0.1	-0.2	UT CEDAR CITY	27	-4	0.7	0.1
LEWISTON	34	-1	0.5	-0.8	RENO	31	-1	0.8	-0.4	MILFORD	22	-6	0.6	0.0
POCATELLO	22	-5	1.2	0.3	WINNEMUCCA	29	-2	0.5	-0.3	SALT LAKE CITY	28	-2	0.6	-0.7
IL CAIRO	--	-	1.3	-2.9	NH CONCORD	23	-2	1.1	-2.4	VT BURLINGTON	23	0	0.9	-1.5
CHICAGO	28	0	2.4	0.1	NJ ATLANTIC CITY	34	-3	0.6	-3.0	VA LYNCHBURG	38	0	1.2	-2.0
MOLINE	29	2	1.6	-0.3	NM ALBUQUERQUE	34	-2	T	-0.5	NORFOLK	42	-1	0.6	-2.5
PEORIA	30	2	2.2	0.2	CLOVIS	38	-1	1.4	0.8	RICHMOND	39	-1	0.8	-2.6
QUINCY	32	2	1.9	0.2	ROSWELL	41	0	0.5	0.1	ROANOKE	39	0	1.3	-1.6
ROCKFORD	26	1	1.8	-0.1	ALBANY	26	0	1.0	-2.0	WA COLEVILLE	24	-4	1.5	-1.0
SPRINGFIELD	32	1	3.2	1.1	BINGHAMTON	25	-1	1.2	-1.7	QUILLAYUTE	42	1	12.1	-5.4
IN EVANSVILLE	37	1	2.8	-0.7	BUFFALO	30	1	2.2	-1.3	SEATTLE-TACOMA	42	1	3.5	-2.8
FORT WAYNE	28	-1	2.5	0.0	NEW YORK	36	0	1.2	-2.5	SPOKANE	27	-2	1.8	-0.7
INDIANAPOLIS	31	0	2.5	-0.5	ROCHESTER	29	0	1.1	-1.5	YAKIMA	28	-3	0.7	-0.6
SOUTH BEND	29	-1	2.9	0.0	SYRACUSE	28	-1	1.9	-1.3	WV BECKLEY	34	0	2.2	-0.9
IA DES MOINES	29	3	0.8	-0.2	NC ASHEVILLE	39	-1	1.4	-1.8	CHARLESTON	37	0	2.7	-0.6
DUBOUE	25	2	1.5	-0.4	CHARLOTTE	44	1	1.6	-1.8	ELKINS	32	0	2.4	-0.9
SIoux CITY	27	4	0.6	-0.2	GREENSBORO	39	-1	1.2	-2.2	HUNTINGTON	37	0	3.2	0.0
WATERLOO	23	1	0.5	-0.6	HATTERAS	48	-1	0.8	-3.7	PARKERSBURG	35	-1	2.5	-0.2
KS CONCORDIA	37	5	0.6	-0.1	NEW BERN	45	-2	1.0	-2.7	WI GREEN BAY	21	0	0.8	-0.6
DODGE CITY	38	4	0.1	-0.4	RALEIGH	42	0	1.0	-2.1	LACROSSE	22	0	0.8	-0.3
GOODLAND	35	4	0.5	0.1	WILMINGTON	46	-2	0.6	-2.8	MADISON	25	2	1.6	0.1
TOPEKA	35	3	0.9	-0.4	ND BISMARCK	18	3	0.7	0.2	MILWAUKEE	27	1	1.4	-0.6
WICHITA	39	4	0.5	-0.5	FARGO	15	2	1.1	0.5	WAUSAU	18	0	1.4	0.1
KY BOWLING GREEN	39	0	6.3	1.8	GRAND FORKS	13	2	1.9	1.3	CASPER	26	0	0.5	0.0
JACKSON	39	5	4.0	0.5	WILLISTON	17	2	0.8	0.3	CHEYENNE	29	-1	0.5	0.2
LEXINGTON	36	0	3.6	-0.2	OH AKRON-CANTON	30	-1	1.8	-0.8	LANDER	21	-2	0.7	0.2
LOUISVILLE	38	1	3.5	0.0	CINCINNATI	34	0	2.8	-0.2	SHERIDAN	28	3	0.6	-0.1
					CLEVELAND	31	0	2.5	-0.2	PR SAN JUAN	77	-1	4.1	-0.3

Based on 1951-80 normals.

Heating Degree Days (Base 65°) For December 1988

States and Stations	TOTAL	Depart	States and Stations	TOTAL	Depart	States and Stations	TOTAL	Depart
AL. Birmingham . . .	585	-16	MD. Baltimore . . .	882	-2	OK. Okla. City . . .	644	-134
Mobile . . .	363	-19	MA. Boston . . .	992	22	Tulsa . . .	662	-119
Montgomery . . .	510	11	Chatham . . .	940	19	OR. Astoria . . .	663	-16
AK. Anchorage . . .	1326	-261	MI. Alpena . . .	1269	-18	Burns . . .	1314	151
Barrow . . .	2307	-108	Detroit . . .	1118	-14	Medford . . .	822	-24
Fairbanks . . .	1863	-465	Flint . . .	1161	-11	Pendleton . . .	957	58
Nome . . .	1751	-128	Grand Rapids . . .	1162	-7	Portland . . .	705	-42
AZ. Flagstaff . . .	1141	50	Houghton Lake . . .	1276	-29	Salem . . .	752	-1
Phoenix . . .	284	-84	Lansing . . .	1155	-23	PA. Allentown . . .	1026	-13
Tucson . . .	402	-1	Marquette . . .	1504	44	Erie . . .	1006	-79
Winslow . . .	926	-75	S. Ste. Marie . . .	1413	9	Harrisburg . . .	975	-5
Yuma . . .	234	-42	MN. Duluth . . .	1590	3	Philadelphia . . .	908	-7
AR. Fort Smith . . .	692	-46	Internatl Falls . . .	1743	-18	Pittsburg . . .	1018	-24
Little Rock . . .	620	-56	Minneapolis . . .	1373	-47	Scranton . . .	1083	-11
CA. Bakersfield . . .	544	23	Rochester . . .	1414	-28	RI. Providence . . .	1003	-11
Eureka . . .	529	11	St. Cloud . . .	1514	-30	SC. Charleston . . .	442	-29
Fresno . . .	629	18	MS. Jackson . . .	484	-29	Columbia . . .	584	17
Los Angeles . . .	265	-284	Meridian . . .	511	-16	Greenville . . .	674	4
Redding . . .	602	362	MO. Columbia . . .	955	-40	SD. Aberdeen . . .	1426	-78
Stockton . . .	606	1	Kansas City . . .	915	-111	Huron . . .	1331	-95
San Diego . . .	275	35	St. Louis . . .	854	-101	Rapid City . . .	1127	-79
San Francisco . . .	447	-43	Springfield . . .	852	-41	Sioux Falls . . .	1321	-83
CO. Denver . . .	1043	39	MT. Billings . . .	1099	-76	TN. Chattanooga . . .	697	-32
Pueblo . . .	1062	64	Glasgow . . .	1422	-69	Knoxville . . .	755	14
CO. Bridgeport . . .	995	40	Great Falls . . .	1090	-128	Memphis . . .	618	-55
Hartford . . .	1101	-12	Havre . . .	1299	-133	Nashville . . .	693	-54
DC. Washington . . .	807	-2	Helena . . .	1292	5	TX. Abilene . . .	539	-38
FL. Apalachicola . . .	298	-22	Kalispell . . .	1260	-5	Amarillo . . .	812	-16
Jacksonville . . .	332	0	Miles City . . .	1250	-99	Austin . . .	307	-99
Key West . . .	10	-12	Missoula . . .	1300	57	Beaumont . . .	328	1
Miami . . .	36	-6	NE. Grand Island . . .	997	-190	Brownsville . . .	123	-27
Orlando . . .	135	-22	Lincoln . . .	1025	-165	Corpus Christi . . .	181	-39
W. Palm Beach . . .	49	-8	Norfolk . . .	1101	-173	Del Rio . . .	346	-42
Tallahassee . . .	426	43	North Platte . . .	1067	-145	El Paso . . .	684	45
Tampa . . .	127	-46	Omaha . . .	1061	-157	Fort Worth . . .	487	-46
GA. Atlanta . . .	566	-70	Valentine . . .	1195	-76	Galveston . . .	209	-58
Augusta . . .	594	33	NV. Ely . . .	1324	115	Houston . . .	306	-43
Macon . . .	513	8	Las Vegas . . .	581	-27	Lubbock . . .	707	-22
Savannah . . .	423	-21	Reno . . .	1042	34	Midland . . .	654	65
ID. Boise . . .	1169	146	Winnemucca . . .	1146	73	San Angelo . . .	520	-7
Lewiston . . .	948	15	NH. Concord . . .	1287	31	San Antonio . . .	291	-87
Pocatello . . .	1330	140	NJ. Atlantic City . . .	949	44	Victoria . . .	252	-39
IL. Chicago . . .	1149	-7	NM. Albuquerque . . .	959	48	Waco . . .	434	-47
Moline . . .	1109	-88	NY. Albany . . .	1185	-9	Wichita Falls . . .	587	-67
Peoria . . .	1090	-63	Binghamton . . .	1231	28	UT. Milford . . .	1339	198
Rockford . . .	1193	-53	Buffalo . . .	1078	-44	Salt Lake City . . .	1138	62
Springfield . . .	1027	-36	New York . . .	872	-21	VT. Burlington . . .	1298	-16
Fort Wayne . . .	1118	2	Rochester . . .	1095	-21	VA. Lynchburg . . .	828	0
Indianapolis . . .	1027	-12	Syracuse . . .	1148	10	Norfolk . . .	692	25
South Bend . . .	1116	3	NC. Asheville . . .	808	11	Richmond . . .	794	16
IA. Des Moines . . .	1114	-104	Charlotte . . .	653	-41	Roanoke . . .	802	-26
Dubuque . . .	1226	-85	Greensboro . . .	781	12	WA. Ouillayute . . .	1252	502
Soix City . . .	1165	-128	Hatteras . . .	525	15	Seattle-Tacoma . . .	708	-36
KS. Concordia . . .	869	-191	Raleigh . . .	695	-18	Spokane . . .	1171	55
Dodge City . . .	835	-135	Wilmington . . .	559	38	Walla Walla . . .		
Goodland . . .	942	-134	ND. Bismark . . .	1448	-90	Yakima . . .	1136	97
Topeka . . .	912	-117	Fargo . . .	1537	-84	WV Beckley . . .	953	-17
Wichita . . .	814	-135	Williston . . .	1479	-74	Charleston . . .	849	-22
KY. Lexington . . .	877	-19	OH. Akron-Canton . . .	1083	7	Huntington . . .	849	-22
Louisville . . .	833	-29	Cincinnati . . .	949	-18	WI. Green Bay . . .	1365	-5
LA. Baton Rouge . . .	325	-55	Cleveland . . .	1040	-11	Madison . . .	1242	-79
Lake Charles . . .	309	-42	Columbus . . .	1032	12	Milwaukee . . .	1183	-54
New Orleans . . .	301	-35	Dayton . . .	1052	23	WY Casper . . .	1191	-27
Shreveport . . .	482	-23	Toledo . . .	1141	-3	Cheyenne . . .	1116	9
ME. Caribou . . .	1582	54	Youngstown . . .	1086	-18	Lander . . .	1370	74
Portland . . .	1201	-14				Sheridan . . .	1124	-128

Based on 1951-80 normals.

National Agricultural Summary

January 2-8, 1989

HIGHLIGHTS: Insect damage and lack of precipitation continued to stress winter wheat in the central and southern Plains. Snow cover for fall-seeded small grains was generally adequate in the northern Plains but was limited in portions of the Corn Belt. Florida's citrus and vegetable producing areas remained dry. In California, damage to citrus groves and vegetable crops from last week's subfreezing temperatures was minimal. Inclement weather slowed vegetable harvest in portions of Arizona and California. Cold weather and snow stressed livestock in the northern Plains.

SMALL GRAINS: Lack of moisture continued to stress winter wheat in central and western Kansas. Greenbug infestation was a continuing problem due to mild temperatures. In Oklahoma, winter wheat showed signs of moisture stress. Lack of moisture stressed small grains in Texas. Greenbug infestation was a problem, especially in the Cross Timbers and Low Plains areas. In the Hill Country and portions of central Texas, some fields have died from lack of moisture. In the northern Plains, snow cover for small grains was mostly adequate. Wind damage in Colorado and Montana remained mostly light. Additional snow cover was needed in portions of the Corn Belt. Seeding was slowed by rain in Arizona and California. Small grains were mostly fair to good in the Southeast.

COTTON: Texas' cotton harvest was virtually complete. Cotton harvest was nearly complete in Arizona. Stalk shredding and disking were active.

OTHER FIELD CROPS: In Kentucky, continued rain and high humidity provided favorable conditions for burley tobacco stripping. Tobacco markets remained closed for the holidays. Tobacco plant bed preparation was active in North Carolina. Rain slowed fall plowing and fertilizer application in portions of the Delta.

FRUIT AND NUTS: In Florida, continued warm, dry weather forced citrus producers to irrigate extensively in all areas. Orange harvest continued active and grapefruit movement increased. In central and western Arizona, cold weather slowed citrus harvest. Groves required protection from subfreezing temperatures. Citrus harvest continued steadily in Texas. Cooler weather slowed new growth. Pecan harvest continued in Georgia, Oklahoma, and Texas. Orchard pruning was active in Oregon and Washington. Citrus harvest continued in California. Damage from the previous week's freezing temperatures was minimal. Date harvest was complete in Riverside County.

VEGETABLES: Spring vegetable planting was active in Florida. Winter vegetable harvest was active. Volume leaders were tomatoes, peppers, cabbage, celery, lettuce, squash, strawberries, and snap beans. Lesser supplies of carrots, radishes, eggplant, endive, sweet corn, and cucumbers were available. Vegetable harvest was slowed by inclement weather in central and western Arizona. Vegetable harvest progressed well in the Rio Grande Valley and the San Antonio-Winter Garden areas of Texas. Land preparation for spring planting was active in portions of east Texas, the Trans-Pecos, and the High Plains. In California, artichoke fields in the Salinas area suffered only minor frost damage from the previous week's freezing temperatures. Rain slowed vegetable harvest in Riverside County.

PASTURES AND LIVESTOCK: Pastures in the South were mostly good to fair. Livestock was mostly good. High winds and subzero temperatures stressed livestock in Minnesota. Cold weather and snow cover forced additional supplemental feeding in Montana and Wyoming. Rain, snow, and below-normal temperatures stressed newborn calves in Nevada. Permanent pastures in portions of Florida provided limited forage due to frost damage. Stock water supplies remained short in northern Missouri. Rain continued to improve range and pasture conditions in California. Range and pasture conditions continued to decline in Texas.

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 mostly 0.50 in. or less south; 1.00 to 2.00 in. common north. Temperatures 8 to 12° above normal.

Soil moisture mostly adequate. Winter wheat mostly good. Primary farm activity: Routine care livestock, poultry.

ARIZONA: Sunny skies 1st. Warm moist air, showers, snow flurries White Mountains 2nd. Partly cloudy, warmer temperatures 3rd. Rain below 6,000 ft. central, 7 in. snow north central 4th. Cold storm system 6th, heavy snow northern mountains; scattered rain showers below 5,000 ft. Skies cleared, cold temperatures 7th. Temperatures 4° below normal to 3° above.

Wheat, barley progressed through jointing stages; primarily in elongation stage. Plantings delayed by holidays, rain. Seedings 88%, 75% stands established; 80% seeded 1987. Heavy grazing, alfalfa fields, sheep, lambs. Light frost damage to alfalfa west. Cotton harvest final stages. Stalk shredding, disking active. Harvest of lemons, grapefruit, tangerines, mineolas, sweets delayed by cold weather west, central areas. Groves required protection from sub-freezing temperatures. Boston, leaf, romaine, head lettuce; broccoli, cauliflower, cabbage, kale, napa, escarole, bok choy, endive, greens, rapini, green onions, parsley, carrot harvest slowed by inclement weather central, west. Fall lettuce harvested Parker-Poston, Salt River Valley. Pecan harvest west, central, east. Apples shipped east.

ARKANSAS: Very warm, some record highs. Scattered showers midweek. Cooler temperatures late week some snow. Temperature extremes 20°; 78°. Rainfall 0.08 to 2.69 in.

Soil moisture adequate. Very little farm activity. Wheat progressed normally. Livestock fair to good, being fed more supplemental feed as hay still tight some areas.

CALIFORNIA: Generally, cold, rainy; below normal temperatures, above normal precipitation. Significant additional snowpack Sierra Nevada; cold storms 4th to 7th.

Small grain seeding progressed between storms. Germination, growth earlier seedings good, favorable soil moisture. Broadleaf weed controls, weather permitted. Alfalfa, barley, green-chop southern areas good growth, harvest ongoing. Sheep grazed alfalfa. Seedbed preparation spring crops slow. Spraying, pruning, vine tying continued. Date harvest complete Riverside County. Avocado harvest underway. Citrus harvests continued, minimal freeze damage. Artichokes Salinas minor frost damage. Broccoli fairly light Salinas, variable quality. Santa Maria moderate broccoli, variable quality. Palo Verde broccoli harvest good quality. Cauliflower movement Santa Maria light, variable quality. Salinas-Watsonville fall season about finished. Palo Verde cauliflower harvest good quality. Celery harvest Santa Maria light, variable quality. Orange County strawberry harvest slowed by recent cold weather, no critical damage. Winter peas growing well Merced. Early planted potatoes Hemet good yields, later fields suffered lower yields frost. Lettuce Palo Verde good. Rain Riverside County slowed vegetable harvest. Fresno County lettuce planted. Westside garlic, onion fields treated herbicides. Cabbage, cauliflower, celery, broccoli harvested. Other vegetables packed westside include napa, diakon, green onions,

bok choy. Livestock fair to good. Range, pasture improved, frequent rain showers. Supplemental feeding continued. Cattle movement foothills still occurring. Feed adequate, water levels improved.

COLORADO: Week began dry, mild. Pacific system crossed State midweek. Most mountains 6 in. snow up to 12 in. of new snow southwest mountains. Eastern Plains rain night of 4th. More snow 6th to 7th mountains, while weekend dry but significantly colder elsewhere. Temperatures 5 to 10° above normal east of Divide. West of Divide near or slightly below normal. Some moisture eastern Plains wheat, amounts generally light. Winds not resulted in serious blowing of topsoils yet although plants where growth is limited have experienced some wind damage.

FLORIDA: Warm, humid conditions prevailed early week as warm front lingered near Georgia border. Locally dense fog occurred particularly central, north. Cold front moved across State late 3rd, early 4th. Only traces of rain with frontal passage. Windy, drier, much cooler air moved in behind front. Freezing temperatures, frost north morning of 5th with frost into colder central areas. Lows upper 20s to low 30s north, mid 30s to low 40s central, mostly mid 40s to mid 50s south, except 30s coldest interior. Southerly winds 6th, allowed temperatures to warm well into 70s. Dry, weekend. Cold front west early, 9th; few areas rain. Weekly temperatures 5 to 10° above normal. Extremes 86° several southern areas to 27° northwest. Few areas west up to 0.13 in. rain on one day. Otherwise, no rain most areas.

Soil moisture short to adequate throughout. Tobacco bed work continued. Warm temperatures promoted rapid growth winter wheat. Sugarcane harvest active. Permanent pastures much of lower Peninsula through Panhandle continued to show effects of heavy frosts, providing very limited forage. Winter forage generally growing well. Many areas need rain, however. Grazing conditions vary widely, very poor to good Panhandle, upper Peninsula; elsewhere, poor to good or better. Cattle fair to good. Citrus groves dry, rain needed all areas, extensive irrigation. Warm temperatures could produce vulnerable new foliage growth. Orange harvest very active, grapefruit movement increased. Temple harvest beginning all areas. Mild weather, very limited rainfall throughout vegetable producing areas. Planting spring crops gaining. Harvest active. Volume leaders: Tomatoes, peppers, cabbage, celery, lettuce, squash, strawberries, snap beans. Lesser supply carrots, radishes, eggplant, escarole, endive, sweet corn, cucumbers. Planting Hastings spring potatoes underway.

GEORGIA: Unseasonably warm. Temperatures 4 to 6° above normal northeast mountains, 8 to 10° above normal elsewhere. Warmest temperatures low 80s extreme south, near 60s higher mountains. Coldest temperatures 20s. Rain 1.00 in. north., 0.50 to 1.00 in. central. No rain south central, southeast. Rain 4 to 6 days north, 1 to 3 days central, southwest.

Soil moisture short north, adequate elsewhere. Activities: Land preparation, small grain seeding, pecan harvest. Cotton, soybean harvest nearly complete. Small grains fair to mostly good. Showers, mild temperatures provided good growing conditions. Pastures poor to mostly fair. Cattle, hogs fair to mostly good.

HAWAII: Variable weather. Sunny, passing showers most week. Increased showers over weekend. Winds diminished, but strong 5 to 30 mph. Crop conditions varied fair windward areas to good leeward, higher elevations. Temperatures low 80s to high 60s. Rainfall none to 7.50 in. Winds mostly trades 5 to 30 mph.

Days suitable for fieldwork 7.0. Chinese cabbage production steady, moderate volume. Head cabbage output steady, good quality. Tomatoes expected to increase. Banana production seasonal decline, orchards fair. Papaya production also seasonal decline. Ginger root harvesting active, yields good.

IDAHO: Northern temperatures 3 to 8° above normal while rest of State near normal to 6° below normal. Most locations above normal precipitation.

Snowfall throughout week virtually brought farm activity to standstill. Main farm activities livestock feeding, general care. Other activities included marketing, shipping products, cleaning corrals, equipment maintenance, planning upcoming season. Lambing picked up some areas. Some calving underway. Livestock mostly good. Hay, roughage mostly adequate.

ILLINOIS: Temperature lows near normal northeast, east central; 3 to 9° above normal west central, south. Highs 1 to 4° above normal north, 3 to 9° above normal central, south. Precipitation 0.40 to 0.70 in. north, west central; 1.00 to 1.70 in. south, east central. Mostly 0.30 to 1.00 in. above normal central, south; near normal northwest. Little or no snow remained central, south by weekend.

Winter wheat mostly good. Livestock good to excellent.

INDIANA: Temperatures above normal. Lows upper teens to 30°, highs mid 50s north to mid 60s south. Precipitation 0.50 to 1.00 in.

Snow cover limited field activities. Other activities: Plowing, hauling manure, moving grain, building fence, processing tobacco, machinery repair, purchasing supplies, attending meetings, record keeping, care of livestock.

IOWA: Temperatures 4 to 10° above normal despite turn to bitterly cold weather. Temperature extremes -5° Spencer, Mason City 9th to 57° Burlington 7th. Precipitation near to above normal; extremes 0.12 to 1.10 in., average 0.40 in.

Livestock mostly good. High winds, blowing snow on weekend caused some wind erosion where there was no snow cover. Main activities: Feeding livestock, machinery repair, bookkeeping for tax purposes.

KANSAS: Temperatures 6 to 10° above normal. Readings 30s, 40s. Southeast, east central areas 10° warmer than normal; western third 6 to 7° warmer than usual. Most State little precipitation. Northeast most area Mankato to Manhattan to Kansas City 0.10 to 2.00 in. Independence 0.97 in. one storm. Other areas southeast corner 0.25 in., little over 0.10 in. St. Francis, Goodland. Rest State no precipitation, trace amounts.

Mild, dry conditions over most area continued to cause problems in wheat. Greenbugs remained problem, result mild temperatures. Moisture needed western two-thirds, northeast. Lack snow cover leaving wheat vulnerable freeze damage.

KENTUCKY: Temperatures mild. Lows 30s, 8 to 12° above normal. Highs upper 40s, lower 50s; 5 to 10° above normal. First half dry, last half several storm systems produced rainfall 1.00 to 2.00 in.

No snow cover, soil moisture adequate. Soils unfrozen. Winter grains generally good, could be vulnerable to sharp temperature drop. Recent weeks

favorable for burley stripping, markets reopened. Livestock satisfactory. Feed expected to be generally adequate, some local shortages.

LOUISIANA: Temperatures much above normal. Temperature extremes near freezing; lower 80s. Rainfall less than 0.50 in.

Main activities: Livestock care, routine chores. Some scraping of cotton.

MARYLAND & DELAWARE: **MARYLAND:** Precipitation 0.98 in. Temperature 33°, normal 34°. Temperature extremes 8°; 63°.

Main farm activities caring for livestock, maintaining machinery.

DELAWARE: Precipitation 0.92 in. Temperature 33°, normal 35°. Temperature extremes 11°; 51°.

Main farm activities caring for livestock, maintaining machinery.

MICHIGAN: Temperatures 1 to 4° above normal. Temperature extremes -21°; 54°. Precipitation 0.33 to 0.96 in. across State. Both rain, snow over area. Snow cover increased northern areas. Mild weather late week reduced snow cover southern counties.

Winter wheat good but snow cover needed. Activities: Pruning fruit trees, cutting wood, spreading manure, attending farm meetings, feeding, caring for livestock. Limited grain marketing. Livestock good. Feed mostly adequate.

MINNESOTA: Temperatures 1 to 7° above normal. Temperature extremes -27°; 42°. Precipitation 0.18 to 0.98 in. Greatest weekly total 1.31 in. Snowfall 2 to 20 in. Snow depth 2 to 33 in. Major winter storm dumped up to 2 ft. snow.

High winds, sub-zero temperatures forced cattle owners to use much more feed, bedding. Cold winter will deplete hay stocks very quickly.

MISSISSIPPI: Warmer than normal. Temperatures 2 to 8° above normal. Extremes 28°; 81°. Rainfall 0.77 in. below normal. Maximum weekly precipitation 1.47 in.

Days suitable for fieldwork 1.1, 2.4 1988, 2.4 avg. Soil moisture mostly surplus. Too wet for tillage. Wheat, pasture, livestock good. Hay, roughage adequate. Feed grains short to adequate. Short hay crop offset by good grazing conditions later in year than normal. Activities: Repair work, livestock chores, soil sampling.

MISSOURI: Temperatures 9° above normal. Rainfall slight west, 0.50 in. central, over 1.00 in. east.

Soil moisture, stock water still very short northern counties. Farm chores main activity. Livestock mostly good.

MONTANA: Temperatures above normal west, central; near normal east. Cold Arctic air invaded central, east start and end of week. All areas good amounts precipitation.

Cold making livestock care more difficult. Feed requirements increased. Grazing most closed. Snow cover protection helping winter wheat.

NEBRASKA: Week started out mild, light scattered precipitation midweek before turning much colder weekend. Precipitation traces to near 1.00 in. Temperatures 5 to 9° above normal. Extremes -7°; 68°.

NEVADA: Wet, cool weather pattern continued all areas. Precipitation widespread, heaviest extreme south. Temperatures none to 8° below normal. Temperature extremes 11° below zero; 66°.

Rain, snow, below normal temperatures hard on newborn calves, lambs. Sloppy conditions feedlots hampered feeding operations.

NEW ENGLAND: Precipitation (rainfall, water equivalent of snow) 0.25 in. northern Maine, less than 0.25 in. remainder. Temperatures single digits near Canadian border to mid 20s south coast. Temperatures 5 to 10° below normal.

Major farm activities: Tending livestock, machinery repair.

NEW JERSEY: Temperatures below normal, 26° north, 31° south, 35° coastal. Extremes 6°; 61°. Precipitation near normal, 0.64 in. north, 0.56 in. south, 0.72 in. coastal. Heaviest 24-hour total 0.80 in. on 6th, 7th.

Farmers caring for livestock, plowing snow, tending to normal winter chores.

NEW MEXICO: Late week mild temperatures replaced by frigid air. Temperatures 71° to 17° below zero. Rain, snow occurred statewide. Largest amounts over mountains, southwest.

NEW YORK: Week started with temperatures normal to slightly above normal, turned sharply colder by midweek, returned to normal by weekend. Storm on 6th brought 1 to 3 in. snow to parts of western, central areas; 3 to 6 in. along southern tier. Snow other areas light, spotty.

Major farm activities: Machinery repairs, tending livestock, spreading manure, pruning fruit trees, routine chores.

NORTH CAROLINA: Temperatures 5° above normal mountain area, none to 3° above normal Piedmont; none to 1° above normal along coast. Temperature extremes 10°; 68°. Precipitation 0.21 to 1.64 in. across State.

Days suitable for fieldwork 4.1. Soil moisture 21% short, 73% adequate, 6% surplus. Pasture 4% very poor, 21% poor, 34% fair, 39% good, 2% excellent. Oats 2% poor, 26% fair, 69% good, 3% excellent. Barley 2% poor, 28% fair, 66% good, 4% excellent. Rye 4% poor, 26% fair, 66% good, 4% excellent. Wheat 2% poor, 26% fair, 66% good, 6% excellent. Feed grains 1% very short, 4% short, 93% adequate, 2% surplus. Hay, roughage 6% short, 90% adequate, 4% surplus. Major farm activities: Tending livestock, general farm maintenance. Other activities: Plowing; repairing equipment; tobacco plant bed preparation; cutting firewood.

NORTH DAKOTA: Temperatures 1° below normal southwest to 3° above normal southeast. Extremes -27° west central, east central, northeast, 2nd; 45° south central, 4th. Major winter storm late week snowfall 2 in. south central, southwest to 24 in. east central, north. Precipitation 0.28 in. southwest to 0.83 in. north central.

Soil moisture below normal. Snow cover for fall seeded crops, alfalfa adequate over most of State. Hay, feed mostly adequate, kochia feeding increased. Limited farm activity included feeding cattle, book work.

OHIO: Temperatures above normal. Lows upper teens to upper 20s. Highs upper 30s to mid 40s. Extremes single digits to 60s. Precipitation mostly near 1.00 in.

Soil temperatures 4.00 in. above freezing which allowed rains to penetrate, increased soil moisture supplies. No snow cover in wheat producing areas.

OKLAHOMA: Temperatures 7° above normal Panhandle to 11° above normal southeast. Precipitation none Panhandle, west central, central to 0.48 in. southeast.

Recent moisture shortage created crop stress. Wheat growth dependent on moisture. Cold weather needed to reduce insect infestations. Pecans 85 to 90% harvested. Cattle good; prices stable.

OREGON: Willamette Valley 4° warmer than normal; north central up to 7° above normal. Remainder of State normal or little below (up to 4° cooler). Coldest overnight lows as low as -6° northeast, south central. Precipitation west of Cascades measured 1.00 to 1.50 in. Cascades, eastward; precipitation mostly snow, moisture content less than 0.30 in. Heaviest precipitation 2.10 in. high plateau area.

Soil moisture surplus west, adequate east. Some weed spraying on grain, clover fields Willamette Valley. Fall grains look good Columbia Basin. Most higher elevation fields snow covered. Pruning, dormant spraying continued on fruit crops Willamette Valley. Vegetable seed crops over wintered good condition with mild weather west. Livestock good. Western pastures mostly good. Eastern ranges snow covered, winter feeding is routine. Good hay movement. Snowpack above normal southeastern desert.

PENNSYLVANIA: Wide swing in temperatures, snow over State. Temperature 25°, 2° below normal. Temperature extremes -4°; 56°. Precipitation 0.68 in., 0.01 in. above normal.

Activities: Hauling manure; caring for livestock; maintaining machinery; fixing fences; grading potatoes.

PUERTO RICO: Island climatological report not available due to insufficient data. San Juan WSFO temperature 76°, 1° above normal. Total rainfall 0.15 in., 1.01 in. below normal.

SOUTH CAROLINA: Temperatures 3° warmer than usual northwest to 5° above normal near coast. Precipitation light, although Blackville in Barnwell County 1.74 in.

SOUTH DAKOTA: Temperatures mostly above normal; -1° below to 8° above. Extremes -23°; 61°. Heaviest precipitation northeast. Southern two-thirds of State, none to 2.00 in. Precipitation for year mostly below normal. Snow cover 1 ft. north central, northeast; up to 2 ft. extreme northeast, lesser amounts rest of State.

Winter wheat benefited some from snow cover, melted precipitation.

TENNESSEE: Weak cold front 3rd. Warm front 5th, 6th triggered generally light rainfall across State. Cold front 7th, 8th set off heavier showers, much cooler temperatures. Temperatures 5 to 15° above normal. Highest readings south, west. Precipitation above normal Plateau, eastern valley; below normal middle, west. Heaviest amounts generally between 0.50 to 1.00 in. west 7th, east 8th.

Primary activities: Routine farm chores, care of livestock, meetings.

TEXAS: Record warm weather rule for much week across large part of area. Some daily highs, lows almost 30° above normal. Shower activity concentrated coastal Plains, eastern half State early week. Cold air arrived weekend, brought temperatures back near, slightly below normals. Very light precipitation accompanied cold air. Temperatures above normal all growing areas. Precipitation below normal.

Crops: Cotton harvest moved ahead Plains because open weather, virtually completed most areas. Ginning operations behind but should catch up now harvest almost over. Yields good. Cotton 100% harvested, 100% 1987, 98% avg. Small grains

signs severe moisture stress portions central, Hill Country. Many stands totally lost. Some remaining fields topped hopes rain come soon. Growth, grazing limited. Warmer temperatures, some moisture boosted growth Blacklands, east. Greenbug treatment continued, cooler weather help problem. Insects still problem Cross-Timbers, low Plains. These areas need moisture. Dryland fields suffered high Plains; windy conditions further depleted topsoil moisture. Grazing short. Irrigation pumps running fairly steady. Other Field Crops: Pecans 98% harvested, 96% 1987, 95% avg.

Commercial Vegetables: Rio Grande Valley open weather; harvest good progress. Growing conditions excellent for onions. Land preparations melons continued. Citrus harvest continued steady. Cooler weather help slow new growth. San Antonio-Winter Garden harvest proceeded vegetables without delay. Spinach quality fair. Land preparations occurred portions east, Trans-Pecos, high Plains. Pecan harvest moved ahead slowly, many producers waited rise in prices. Harvest many areas completed

Range and Pasture: Range, pasture conditions continued decline with lack of moisture much central, Hill Country. Producers full feed livestock. Small grains provided little grazing. Grazing light dryland fields Plains. Movement stockers to feedlots steady because lack of grazing. Many counties received emergency feed aid. Livestock basically good, hard freeze now would surely hurt livestock.

UTAH: Precipitation light to heavy. Temperatures 3 to 8° below normal.

Snow cover moderate. Livestock fair to good. Feed adequate. Major activities; livestock chores, equipment maintenance, hauling manure, summarizing tax records, attending farm meetings.

VIRGINIA: Temperatures few degrees below normal north. Elsewhere few degrees above normal. Range 10 to 60°. Moderate precipitation, 0.50 to 1.00 in.

Days suitable for fieldwork 3.1. Topsoil moisture 35% short, 51% adequate, 14% surplus. Feed adequate, livestock care, record keeping, planning. Winter grains, grazing crops 3% very poor, 13% poor, 61% fair, 20% good, 3% excellent.

WASHINGTON: Temperatures 1° below to 6° above normal across State. Weather mostly unsettled. Precipitation west of Cascades 2.16 to 5.04 in. Eastside none to 1.09 in. Arctic air over State midweek dropped temperatures east.

Fieldwork limited. Pruning trees, vines west. Exposed winter wheat subject to Russian wheat aphid. Christmas tree shearing west. Early calving, lambing east and west.

WEST VIRGINIA: Temperature 37°, 1 to 9° above normal. Extremes 0° Greenbank; 69° Williamson. Precipitation 0.91 in.

Days suitable for fieldwork 2.8. Soil moisture 25% short, 50% adequate, 25% surplus. Wheat, barley 50% fair and 50% good. Livestock good to fair. Feed 45% short, 33% adequate, 22% surplus. Farm activities: General farm maintenance, livestock care, tobacco stripping.

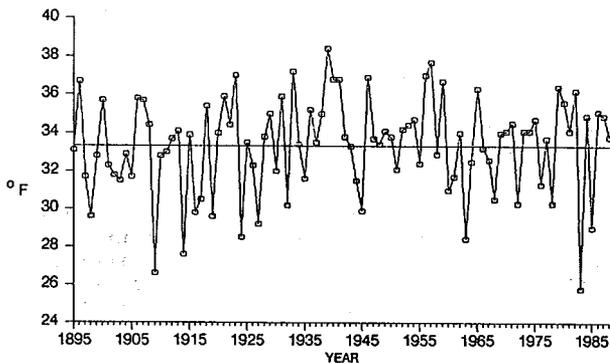
WISCONSIN: Temperatures 17°. Extremes -15°, 46°. Precipitation 0.20 to 0.70 in. Snow 5 to 11 in. northwest, 1 to 3 in. south. Freezing drizzle south.

WYOMING: Temperatures mostly above normal. Precipitation slightly below normal.

Winter wheat mostly good. Livestock fair to good. Supplemental feeding underway most areas. Winter feed marginal over much of State. Colder temperatures, snow cover increased feed requirements.

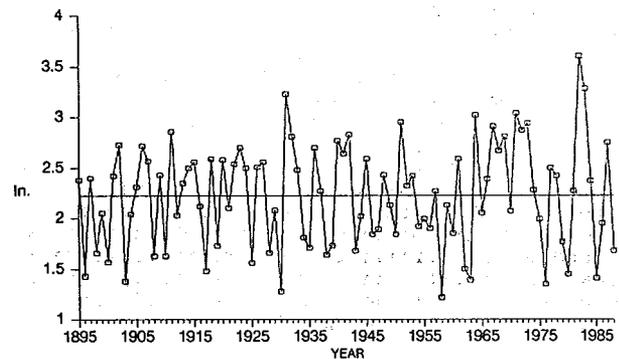
(Continued from p. 7)

Figure 1 NATIONAL TEMPERATURE
DECEMBER, 1895-1988



National Climatic Data Center, NOAA

Figure 2 NATIONAL PRECIPITATION
DECEMBER, 1895-1988



National Climatic Data Center, NOAA

International Weather and Crop Summary

January 1-7, 1989

HIGHLIGHTS

WESTERN USSR ... A warming trend follows an early-week cold snap. Winter grains remain dormant.

EUROPE ... Light to moderate rain helps ease dryness in the southwest. Warmer-than-normal temperatures continue across the north.

SOUTH ASIA ... Showers in northern Pakistan and north-central India benefit vegetative to heading winter wheat.

EASTERN ASIA ... Moderate to heavy rain and snow help relieve dryness in the North China Plain and Yangtze Valley. Heavy rain continues in southeastern China.

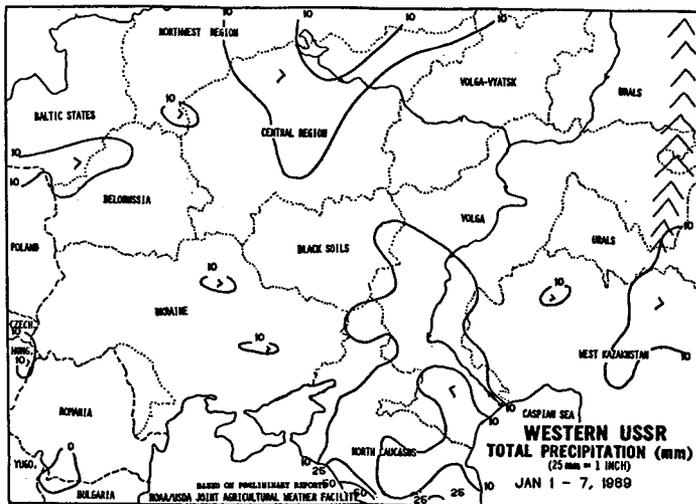
SOUTHEAST ASIA ... Heavy showers persist over northern and eastern Java, causing more flooding.

SOUTH AMERICA ... Unfavorable heat and dryness increase stress on reproductive crops in Argentina. Persistent wetness soaks previously dry crop areas of Brazil.

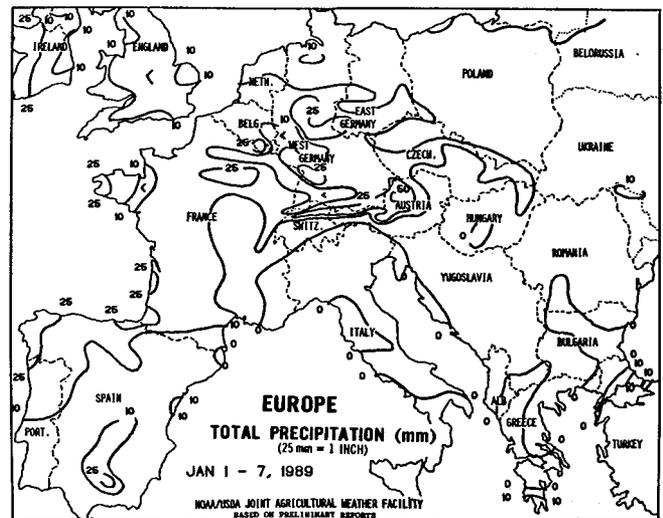
AUSTRALIA ... Scattered moderate to heavy rain benefits summer crops in the east.

SOUTH AFRICA ... Widespread showers improve moisture conditions for vegetative corn but likely cause local flooding.

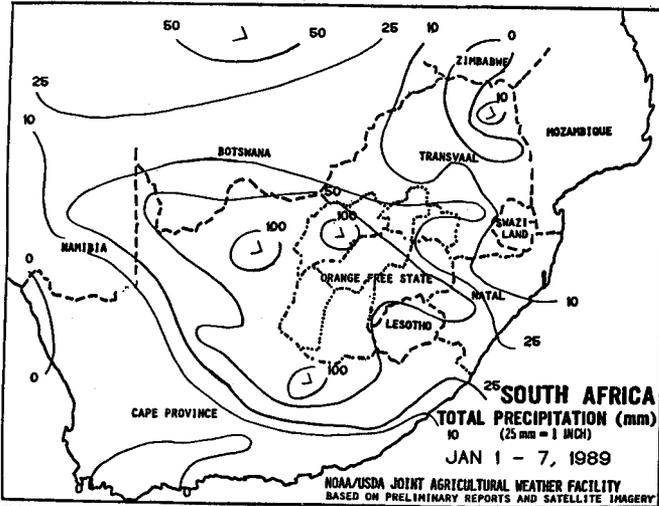
NORTHWESTERN AFRICA ... Minimal rain continues to cover winter grains in the vegetative stage.



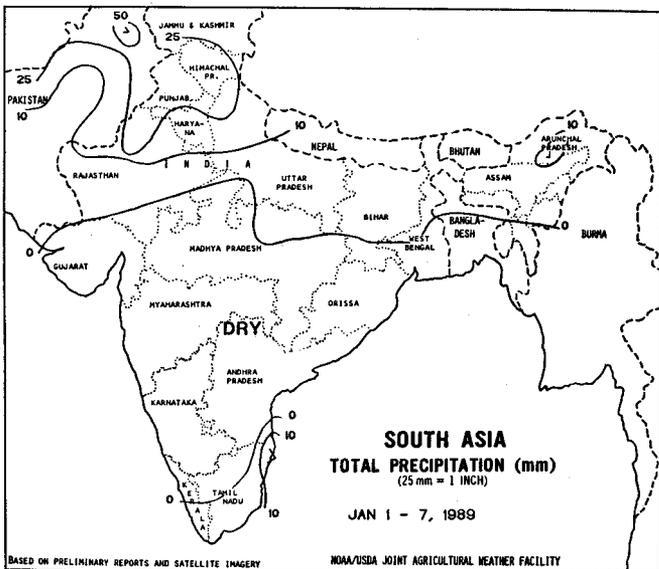
WESTERN USSR ... Following a cold snap early in the week, unseasonable warm weather returned to the Baltic States, Belorussia, the western Ukraine, the Central Region, and the Black Soils Region, where weekly temperatures averaged 2-4 degrees Celsius (C) above normal. In addition, maximum temperatures in these areas rose to above freezing on several days during the latter half of the week. Elsewhere, unseasonable cold weather covered the southern Ukraine, the North Caucasus, and the Volga, where weekly temperatures averaged 2-4 degrees C below normal. Although extreme minimum temperatures ranging from -20 to -27 degrees C in these areas exceeded the threshold for potential winterkill, snow preceded the extreme cold, providing adequate protection from widespread damage. By week's end, cooler weather was accompanied by light snow over the Baltic States, Belorussia, and the western Ukraine.



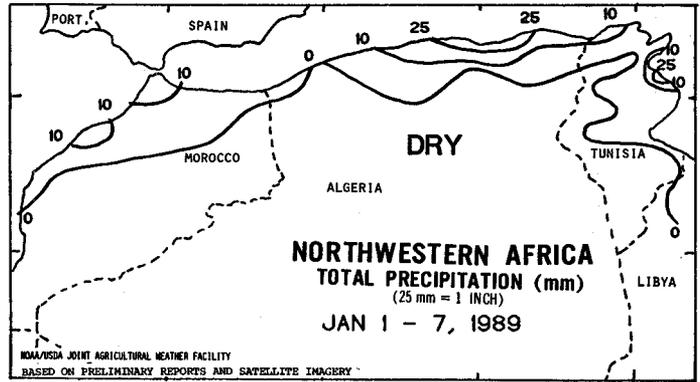
EUROPE ... Light to moderate rain (5-20mm, with isolated rainfall greater than 20mm) helped ease dryness across Portugal, Spain, and southern France, while scattered light rain fell across the remainder of southern Europe. Precipitation in much of the southwest has been below normal since November, creating dry conditions for winter grains, which are semidormant. In the north, cooler weather developed by week's end, although temperatures for the week still averaged above normal. Scattered moderate to heavy rain (15-35mm) fell over sections of northern France, central and southern West Germany, and southern East Germany, keeping soil moisture at high levels. Light to moderate rain (5-20mm, with isolated amounts greater than 20mm) fell over the remainder of the northwest, while light to moderate rain and snow (5-20mm) covered the northeast.



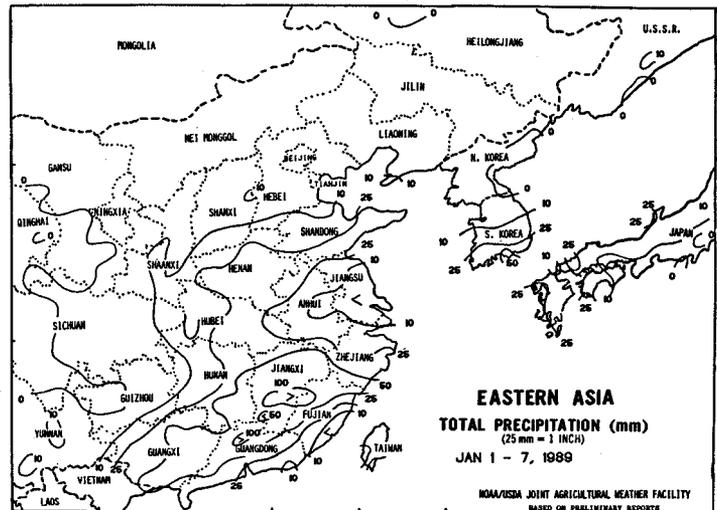
SOUTH AFRICA ... Moderate to heavy showers (25-50mm or more) covered a large area from the northern Cape Province to the eastern Cape Province and Natal, improving moisture conditions for vegetative crops but possibly causing local flooding. Rainfall totaled 12-32mm over the eastern half of the Maize Triangle, but in the west, rainfall in most areas ranged from 49 to 105mm, improving conditions in the southwestern Transvaal and northern Orange Free State which were drier than normal. Excessive rain (100mm or more), however, occurred locally in the southwestern Transvaal, the northern and central Cape Province, and Natal, likely causing flooding and some crop damage. Temperatures averaged as much as 2 degrees C below normal, slowing evaporation rates.



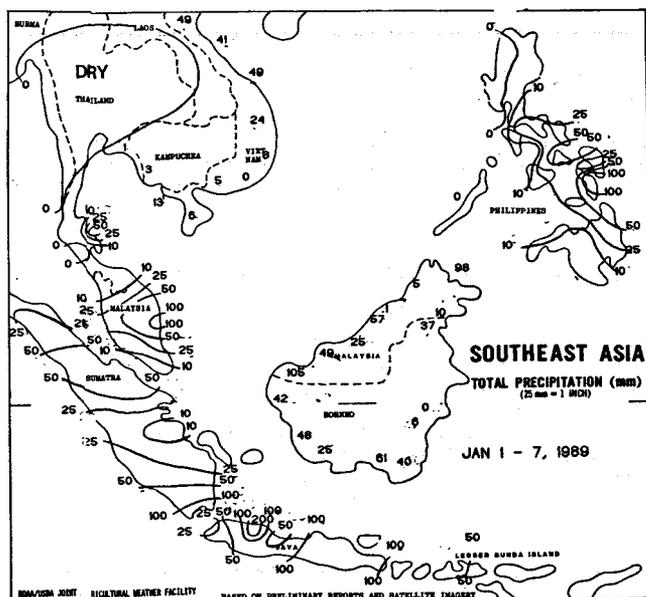
SOUTH ASIA ... Moderate showers (10-39mm) swept across a large portion of northern Pakistan and north-central India, benefiting winter wheat that is mostly in the vegetative to heading stages of development. Coverage in India included Punjab, Haryana, and northern Rajasthan, but rainfall was minimal (1-3mm) from Uttar Pradesh eastward. Temperatures across the north generally averaged 1-2 degrees C above normal, stimulating vegetative growth and increasing moisture demands. Scattered rain (1-14mm) fell over rice regions of the southeast coast, but dry weather continued elsewhere over India.



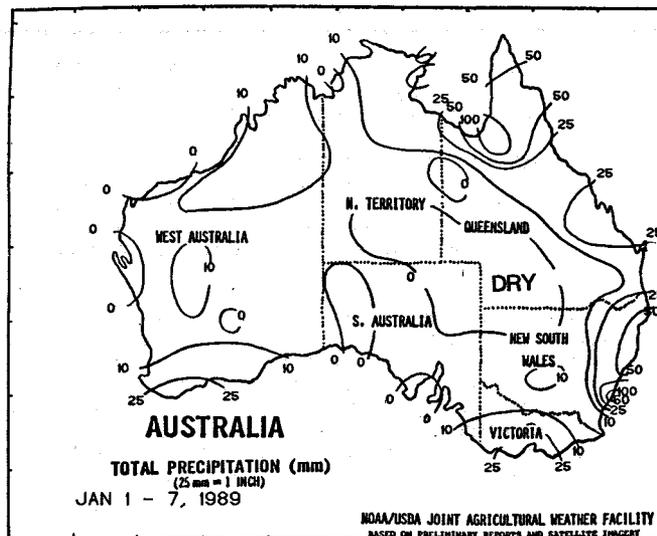
NORTHWESTERN AFRICA ... Minimal rain covered most winter grain areas in Morocco, Algeria, and Tunisia. Precipitation was generally light and spotty, with rainfall amounts ranging from 1 to 10mm. A narrow band of locally moderate rain (19-45mm) covered coastal areas around Algiers, Algeria. Weekly average temperatures, ranging from 2 to 5 degrees C below normal, helped to lower evaporation rates. Moisture reserves, however, were becoming depleted over most of the region. Widespread rain is needed over the entire region to promote normal vegetative growth.



EASTERN ASIA ... A slow moving frontal system brought moderate to heavy rain and snow (15-60mm, with isolated amounts in excess of 100mm) to much of the North China Plain and Yangtze Valley, helping to relieve persistent dryness. In Shandong, the precipitation was the heaviest since early September and helped increase unfavorably low soil moisture and reservoir levels. Heavy rain (50-100mm) continued across much of southeastern China, with very heavy rain (100-150mm) and possible flooding across sections of southern Jiangxi, northern Guangdong, and western Fujian. Elsewhere, moderate to heavy rain (15-50mm) fell across southern sections of South Korea and southern and western Japan, while light snow (less than 10mm) covered northern and northeastern Chinese crop areas. Warmer-than-normal mean temperatures continued over nearly all growing areas, with departures from normal as much as 9 degrees C in Manchuria.

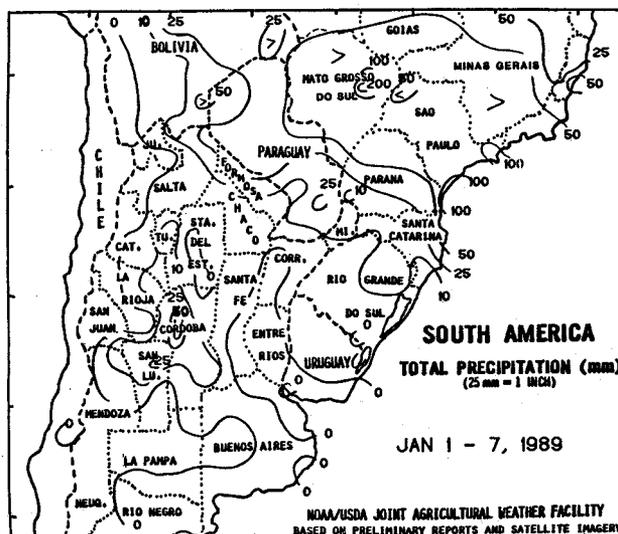


SOUTHEAST ASIA ... Moderate to heavy showers (25-50mm or more) continued over Malaysia and Indochina, with excessive rainfall (100-200mm or more) persisting over recently flooded regions of northern and eastern Java, causing more flooding and hindering rice planting. Elsewhere across the region, irrigation reserves are adequate to abundant for rice planting and vegetative growth. In the Philippines, moderate to heavy showers (25-100mm or more) lingered from southeastern Luzon to northeastern Mindanao as drier weather returned to most other areas.



AUSTRALIA ... Scattered moderate to heavy rain (15-26mm) benefited vegetative to reproductive crops across extreme southeastern Queensland and northeastern New South Wales, with mostly light rain (less than 10mm) covering the remaining eastern summer crop areas. Scattered heavy rain (25-100mm, with isolated amounts in excess of 100mm) fell along coastal eastern Queensland and New South Wales, favoring vegetative sugarcane. In the south, light rain (less than 10mm) caused minor delays in late winter grains harvest, which is near completion. Mean temperatures continued below normal over all but extreme northeastern crop areas, slowing growth and development of most summer crops.

SOUTH AMERICA ... In Argentina, unfavorable heat and dryness increased stress on corn, soybeans, and other summer crops. Weekly temperatures averaged 4-6 degrees C above normal, with maximum daily temperatures near or above 38 degrees C throughout much of the week before slightly cooler weather moved in at week's end. Scattered showers fell over Cordoba and Buenos Aires, but amounts and coverage were insufficient to alleviate the worsening conditions for crops advancing into reproduction. In south-central Brazil, light showers and hot weather spread into Rio Grande do Sul's important crop areas, with soybeans beginning to flower. In contrast, more rain soaked the previously dry crop areas of Parana, Sao Paulo, Mato Grosso do Sul, and southern Minas Gerais. Three consecutive weeks of locally heavy rain (50-100mm) have alleviated the moisture deficiency in northern soybean, corn, and coffee areas. In fact, sporadic downpours likely caused localized flooding.



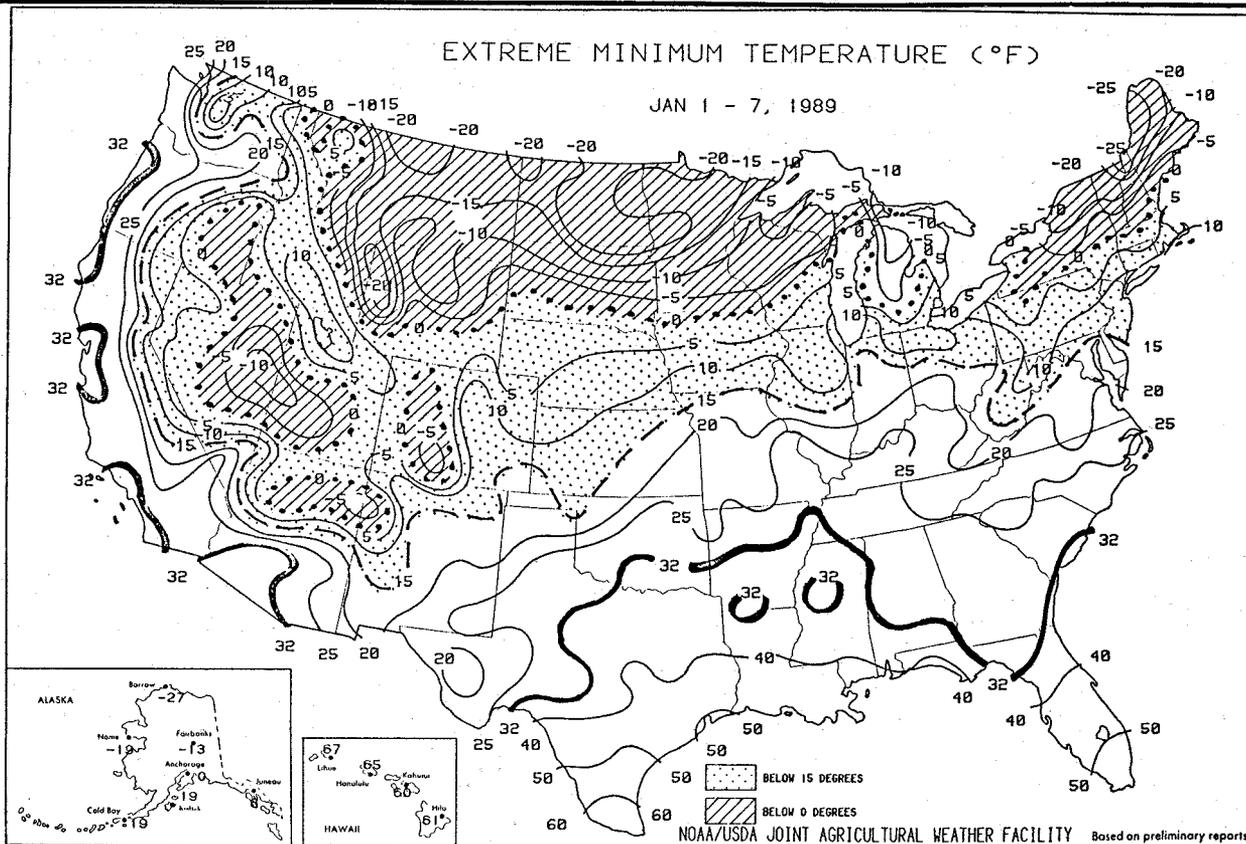
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